MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

Highways Department

Route 8
Between Tsing Yi and Cheung Sha Wan
Phase 3
Stonecutters Bridge

Monthly Environmental Monitoring & Audit Report
(29th July 2009 – 28th August 2009)

EP – 085/2000/E
Route 8
Between Tsing Yi and Cheung Sha Wan
Phase 3
Stonecutters Bridge:

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Certified by the Environmental Team Leader

Signed: _____ Date: 9 September 2009
Ms Natalie Kwok

Verified by the Independent Environmental Checker

Signed: _____ Date: 9 September 2009
Mr. Y T Tang

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EXECUTIVE SUMMARY

ES 1 An Environmental Permit (EP-085/2000/E) was granted to Highways Department by the Environmental Protection Department for the construction of Route 8 Project between Tsing Yi and Cheung Sha Wan. This EP covers four phases of the Route 8 Project namely Phase 1 – Ngong Shuen Chau Viaduct, Phase 2a – Nam Wan Tunnel and West Tsing Yi Viaduct, Phase 2b – East Tsing Yi Viaduct and Phase 3 – Stonecutters Bridge.

ES 2 This is the 61st monthly Environmental Monitoring and Audit (EM&A) Report for "Phase 3 – Route 8 Stonecutters Bridge (HY/2002/26)". The construction commencement of this Contract was on 2nd July 2004 and this report presents the results of the EM&A works conducted during the period between 29th July 2009 and 28th August 2009 in accordance with the EM&A Manual which forms part of the EIA Report. (Register No. AEIAR-018/1999).

ES 3 It is considered that there would be no significant air quality and noise impact to be generated from the Project Contract to surrounding public at Tsing Yi Island. A proposal on the termination of air quality and noise monitoring at Mayfair Gardens and Cheung Ching Estate was therefore issued to EPD on 27th April 2009 for approval in accordance with EP Condition 4.1. The proposal was approved by EPD (ref.(6) in Ax(3) to EP2/N3/A/28 Pt.41) on 3rd June 2009 and thus, no further air quality and noise monitoring would be carried out at Mayfair Gardens and Cheung Ching Estate with effective from 1st June 2009.

ES 4 The major construction activities carried out during normal hours are as follows: -

i. Access to Tower (Western and Eastern Tower Site)
ii. Steel deck finishing work
iii. Roads and utilities construction (Eastern Tower Site)
iv. E&M works
v. Demolition of uploading platform

ES 5 The major construction activities carried out during restricted hours are as follows:-

i. Steel deck finishing work (Eastern and Western Tower Site – evening, night-time and public holidays)

ES 6 Monitoring of Total Suspended Particulates (TSP) and noise were carried out in accordance with the EM&A Manual. Weekly site inspections were conducted by ET on 29th July, 5th, 12th, 20th and 27th August 2009 and the joint IEC monthly audit was conducted on 27th August 2009.

Air Quality

ES 7 A total of 54 sets of 1 hour TSP and 18 sets of 24-hours TSP measurements were carried out at all monitoring locations (ASR1, ASR2 & ASR5) during the reporting period and the results of all measurements taken were below the Action/Limit (AL) Levels.

Noise

ES 8 In order to assess the construction noise impact effectively for all noise monitoring locations (NSR1 to NSR5) from this Contract, an adjustment approach was adopted since 29th March 2005 and had been consulted with EPD to audit merely the construction noise levels against the statutory noise limits. The measured noise levels were adjusted with the corresponding baseline levels in order to facilitate the interpretation of the construction noise levels and this in turn would determine the actual construction noise impact contributed solely by the Phase 3 construction activities.

Daytime Monitoring

ES 9 A total of 12 sets of $L_{eq(30min)}$ measurement were undertaken in daytime (0700 to 1900 hours on normal weekdays) at three monitoring locations during the reporting period and no exceedances were recorded.

Evening-time Monitoring

ES 10 A total of 12 sets of 6 x $L_{eq(5min)}$ measurements were taken in evening-time (1900 to 2300 hours on normal weekdays) at three monitoring locations during the reporting period and no exceedances were recorded.

Night-time Monitoring

ES 11 A total of 12 sets of 4 x $L_{eq(5min)}$ measurements were taken in night time (i.e. 2300 to 0700 hours next day) at three monitoring locations during the reporting period and no exceedances were recorded.

Public Holidays Monitoring

ES 12 A total of 12 sets of 6 x $L_{eq(5min)}$ measurements were taken during public holidays at three monitoring locations during the reporting period and no exceedances were recorded.

Water Quality

ES 13 Two Effluent Discharge Licenses were granted by EPD, one for the Eastern Tower Site (EP760/269/009124I) and the other for the Western Tower Site (EP760/350/008933I) on 20th September 2004 and 21st December 2004 respectively. The variation of the Discharge License (EP760/350/008933I) was granted by EPD on 13th June 2005.

ES 14 In accordance with the approved licenses' conditions, water sampling is required on a bi-monthly basis. One water sample was taken for CT8 site area by MHYHJV on 31st July 2009. The water sample was subsequently tested by a HOKLAS accredited laboratory and the results indicated that they have fully complied with the Specific Condition as stipulated in the approved license.

ES 15 One water sample was taken on 31st August 2009 at CT9 site area. The water sample was subsequently tested by a HOKLAS accredited laboratory and the results will be reported in coming EM&A monthly report. The next sampling is scheduled for September 2009 for CT8 site area.

Waste Management

ES 16 The Waste Management Plan (WMP–Issue 08) was approved by EPD on 8th December 2006.

ES 17 Since May 2004, all non-inert C&D material from the Phase 3 Contract had been disposed of at WENT Landfill. A total of 50 m^3 of general refuse were delivered to WENT Landfill during the reporting period.

ES 18 With effect from 6th February 2005, all inert C&D material had been disposed of at Tuen Mun Fill Bank. During this reporting period, a total of 1,344 m^3 of public fill and 159 m^3 of broken concrete were delivered to Tuen Mun Area 38.

ES 19 On 18th March 2005, approval was granted by PFC, CEDD to deliver a maximum of 4,000m^3 of surplus filling material to TW/98/02 – Route 9 Section between Shek Wai Kok and Chai Wan Kok for re-usage purposes. From March 2005 onwards, a total of 4,512 m^3 (752 dump trucks) were delivered to TW/98/02.

ES 20 On 7th December 2005, approval was granted by PFC, CEDD to deliver a maximum of 3,000 m^3 of surplus filling material to HY/2000/21 – Phase 1 Ngong Shuen Chau Viaduct for re-usage purposes. From December 2005 onwards, a total of 2,004 m^3 (334 dump trucks) were delivered to HY/2000/21.

ES 21 On 23rd January 2006, approval was granted by PFC, CEDD to deliver a maximum of 3,000 m^3 of surplus filling material to "Drainage Improvement in East Kowloon (DC/2004/03)" for re-usage purposes. From January 2006 onwards, a total of 138 m^3 (23 dump trucks) were delivered to DC/2004/03.

ES 22 CEDD was notified that a total of 1,600 m^3 of broken concrete and broken asphalt had been delivered to "Ampliacao Do Novo Terminal Maritimo Da Taipa" Project in Macau by a derrick barge for the formation of internal haul roads in November 2007.

ES 23 With the Marine Department Notice, a total of 1,345 nos. of concrete blocks were delivered and laid on the designated seabed as artificial reefs since 7th July 2008.

ES 24 No chemical waste was disposed of site during the reporting period.

Site Inspections

ES 25 ET carried out weekly site inspections during the reporting period and the major issues identified on site are presented below:

Item	Findings	MHYHJV's Corrective and Preventive measures	Effectiveness of measures
1	MHYHJV was reminded to replace geo-textile for the existing gullies at the site entrance at area P3-SA6.	The existing gullies had been protected properly by geo-textile.	Completed and closed. (Please refer ***Appendix Q*** Photo 01).
2	C&D waste was found scattering around at area P3-SA6.	All general refuse was collected and temporarily stored in waste skip on site. The frequency of removal of C&D waste from site has been increased.	Completed and closed. (Please refer ***Appendix Q*** Photo 02).
3	Asphalt breaking without water spraying was observed during the site inspection.	Remedial action was carried out by MHYHJV immediately during site inspection. Labors have been allocated to carry out water spraying for all dust emissive mechanical breaking operation.	Completed and closed. (Please refer ***Appendix Q*** Photo 03).
4	The sandbag barrier along the u-channel at area P3-SA4 was damaged. MHYHJV was also reminded to protect the u-channel at area P3-SA3 properly in order to avoid loose material entering into the drainage system.	The damaged sandbags had been replaced. The channel at area P3-SA3 had been covered by tarpaulin sheet and plywood in order to avoid loose material entering into the drainage system.	Completed and closed. (Please refer ***Appendix Q*** Photo 04 and 05).

ES 26 The monthly IEC audit was carried out on 27th August 2009, two general reminders were recorded by IEC and they are presented as follows:-

Item	Findings	MHYHJV's Corrective and Preventive measures	Effectiveness of measures
1	MHYHJV was reminded to replace geo-textile for the existing gullies at the site entrance at area P3-SA6.	The existing gullies had been protected properly by geo-textile.	Completed and closed. (Please refer ***Appendix Q*** Photo 01).
2	C&D waste was found scattering around at area P3-SA6.	All general refuse was collected and temporarily stored in waste skip on site. The frequency of removal of C&D waste from site has been increased.	Completed and closed. (Please refer ***Appendix Q*** Photo 02).

EPD Audits

ES 27 No joint site inspections were carried out with EPD during the reporting period.

Environmental Licenses and Permits

ES 28 The following permits / licenses have been granted by EPD for the construction of the Phase 3 Contract and they are:-

i. Environmental Permit (EP-085/2000/E)
ii. Chemical Waste Producer Registration (5213-350-M2640-01)

iii. 2 Effluent Discharge Licences (WT00004483-2009 and EP760/350/008933I)
iv. Licence for the conduct a Tar and Bitumen Works (Mastic Asphalt Plant) (L-15-033(1))
v. 6 Construction Noise Permits

Environmental Complaints

ES 29 No environmental complaints were received during the reporting month.

Notifications of Summonses and Prosecutions

ES 30 Since the commencement of construction, no notifications of summonses or prosecutions were received on the environmental performance for this Contract.

Future Key Issues

ES 31 The tentative program of major site activities and the impact prediction and control measures for the coming three months, i.e. September 2009 to November 2009 are summarized as follows:

Construction Works	Major Impact Prediction	Control Measures
Tower and steel deck finishing work; Roads and utilities construction	Air impact (dust)	i) Frequent watering (or remove dusty material) of haul road and unpaved/exposed areas; ii) Frequent watering or covering open stockpiles with tarpaulin or similar means; and iii) Watering of any earth moving activities.
	Water quality impact (construction effluent and surface run-off)	i) Diversion of collected effluent to adequate de-silting facilities for treatment prior to discharge to public storm water drains; ii) Provision of adequate de-silting facilities for treating surface run-off and other collected effluent prior to discharge; and iii) Provision of perimeter protection such as perimeter channel.
	Noise Impact	i) Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; ii) Controlling the number of plants use on site; iii) Regular maintenance of machinery; and iv) Use of acoustic barriers if deemed necessary.

Route 8 - Traffic Control and Surveillance System (TCSS)

ES 32 The construction of the "Route 8 – Traffic Control and Surveillance System Contract (HY/2003/05)" (TCSS) Contract was awarded to Delcan-Imtech-GECS-Joint Venture (DIGJV).

ES 33 The construction work of TCSS within Phase 1 Contract (Route 8 - Ngong Shuen Chau Viaduct) and Phase 2a Contract (Route 8 Nam Wan Tunnel and West Tsing Yi Viaduct) site area was commenced on 4th April 2007 and 25th October 2006 respectively. Since the no further EM&A during construction phase would be carried out for both Phase 1 and Phase 2a Contracts and therefore, all future TCSS works within Phase 1 and Phase 2a would be reported in this monthly EM&A report.

ES 34 A joint site audit amongst IEC/ET/RSS/DIGJV was carried out on 27th August 2009. No adverse comments were raised by ET, IEC and RSS.

1 INTRODUCTION

An Environmental Permit (EP-085/2000/E) was granted to Highways Department by the Environmental Protection Department for the construction of Route 8 Project between Tsing Yi and Cheung Sha Wan. This EP covers four phases of the Route 8 Project namely Phase 1 – Ngong Shuen Chau Viaduct, Phase 2a – Nam Wan Tunnel and West Tsing Yi Viaduct, Phase 2b – East Tsing Yi Viaduct and Phase 3 – Stonecutters Bridge.

1.1 Purpose of the Report

This is the 61st monthly Environmental Monitoring and Audit (EM&A) Report for the "Phase 3 - Route 8 Stonecutters Bridge (HY/2002/26)" (hereafter known as the "Phase 3 Contract"). This report presents the results of the EM&A programme conducted during the period between 29th July 2009 and 28th August 2009 in accordance with the Environmental Permit EP-085/2000/E and the EM&A Manual which forms part of the EIA Report (Register No. AEIAR-018/1999).

1.2 Structure of the Report

The structure of the report is as follows:

Section 1: **INTRODUCTION** – details the scope and structure of the report.

Section 2: **PROJECT INFORMATION** – summarizes the background and scope of the project, project organization, construction programme and the construction works undertaken during the reporting period.

Section 3: **ENVIRONMENTAL MONOTORING REQUIREMENTS** – summarizes the monitoring programmes, Action and Limit Levels, Event Action Plans, environmental mitigation measures as recommended in the EIA Report and relevant environmental requirements.

Section 4: **IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS** – summarizes the implementation of environmental protection measures during the reporting period.

Section 5: **ENVIRONMENTAL LICENCE AND PERMITTING REQUIREMENTS** – summarizes the environmental licences and permits obtained or being applied during the reporting period.

Section 6: **MONITORING RESULTS** – reports the monitoring results obtained in the reporting period.

Section 7: **AUDIT RESULTS** – summarizes the audit findings in the reporting period.

Section 8: **COMPLAINTS, NOTIFICATIONS OF SUMMONS AND PROSECUTIONS DURING THE REPORTING PERIOD** – summarizes the complaints, notifications of summons and prosecutions recorded during the reporting period.

Section 9: **ROUTE 8 – TRAFFIC CONTROL AND SURVEILLANCE SYSTEM**

Section 10: **FUTURE KEY ISSUES** – summarizes the future key issues as reviewed from the works programme and work method statements.

Section 11: **RECOMMENDATIONS AND CONCLUSIONS**

2 PROJECT INFORMATION

2.1 Background

2.1.1 Ove Arup and Partners Hong Kong Ltd (Arup) was awarded the Design and Construction Consultancy Assignment No. CE61/2000 "Stonecutters Bridge Design and Construction Assignment".

2.1.2 The construction of the Phase 3 Contract was awarded to Maeda-Hitachi-Yogogawa-Hsin Chong Joint Venture (MHYHJV) on 19th April 2004 and is scheduled to be substantially complete by end of 2009.

2.1.3 The Construction Works under the Phase 3 Contract involves a cable-stayed bridge of 1.6km long with 1,018m main span and 290m high mono towers. It will span across the Rambler Channel between the Kwai Chung Container Terminal 8 (CT8) at Stonecutters Island and Container Terminal 9 (CT9) at the east side of Tsing Yi.

2.2 Site Description

2.2.1 The Phase 3 Contract has two distinct sites; namely the Eastern Tower site which is located on the Stonecutters Island and the Western Tower site locates on the east side of Tsing Yi Island adjacent to CT9.

2.2.2 Five sensitive receivers have been identified for the Phase 3 Contract in accordance with the EM&A Manual and the EIA. Two monitoring stations are located at the Tsing Yi Hong Kong Institute of Vocational Education (IVE) in the Main Education Building and Fok Ying Tung Hall of Residence, one at Mayfair Gardens, one at Cheung Ching Estate and one at the DSD Pumping Station located adjacent to the Container's Port Road in the proximity of the Stonecutters Military base at the Stonecutters Island. The site location plan and the monitoring locations are presented in ***Appendix A*** and ***F*** respectively.

2.2.3 It is considered that there would be no significant air quality and noise impact to be generated from the Project to surrounding public at Tsing Yi lsland. A proposal on the termination of air quality and noise monitoring at Mayfair Gardens and Cheung Ching Estate was therefore issued to EPD on 27th April 2009 for approval in accordance with EP Condition 4.1. The proposal was approved by EPD (ref.(6) in Ax(3) to EP2/N3/A/28 Pt.41) on 3rd June 2009 and thus, no further air quality and noise monitoring would be carried out at Mayfair Gardens and Cheung Ching Estate with effective from 1st June 2009.

2.3 Project Organisation

2.3.1 The Phase 3 Contract organization chart and contact details are shown in ***Appendix B***.

2.4 Project Work Programme

2.4.1 The Phase 3 Contract's Three Months Rolling Programme is presented in ***Appendix C***. The major site activities undertaken during the normal hours and restricted hours during the reporting period are summarized in ***Table 2.1*** and ***Table 2.2*** respectively.

Table 2.1 Major Site Activities undertaken during the Reporting Period (Normal Hours)

Area	Details of Site Activities
P3-SA3 (Western Tower Site)	Access to Tower, steel deck finishing work
P3-SA5 (Eastern Tower Site)	Access to Tower, steel deck finishing work
P3-SA6 (Eastern Tower Site)	Roads and utilities construction.
P3-SA5A	Demolition and reinstatement of uploading platform

Table 2.2 Major Site Activities undertaken during the Reporting Period (Restricted Hours)

Area	Details of Site Activities
P3-SA3 & SA5 (Eastern & Western Tower Site)	Tower and steel deck construction (evening, night-time and public holidays)

3 ENVIRONMENTAL MONITORING REQUIREMENTS

3.1 Air Quality

Monitoring Requirements

3.1.1 In accordance with the Phase 3 Contract's EM&A Manual, 1-hour and 24-hour Total Suspended Particulates (TSP) are required to be conducted to monitor the construction dust impact. The established Action/Limit Levels for the environmental monitoring works are presented in ***Appendix D1***.

Monitoring Frequency and Schedule

3.1.2 The monitoring parameters and frequency are summarized in ***Table 3.1***. The monitoring schedule for the reporting period is presented in ***Appendix E***.

Table 3.1 TSP Monitoring Parameter and Frequency

Parameters	Duration / hour	Frequency
24-hour TSP	24	Once Every Six Days
1-hour TSP	1	Three Times Every Six Days

Monitoring Locations

3.1.3 As identified in the EM&A Manual, five air quality monitoring locations were selected for the Phase 3 Contract and they are listed in ***Table 3.2*** and presented in ***Appendix F***. The proposal on the termination air quality at Mayfair Gardens and Cheung Ching Estate (ASR 3 and ASR4) was approved by EPD (ref.(6) in Ax(3) to EP2/N3/A/28 Pt.41) on 3rd June 2009 and thus, no further air quality would be carried out at ASR 3 and ASR4 with effective from 1st June 2009.

Table 3.2 TSP Monitoring Locations

Location I.D.	Description
ASR1	HK Institute of Vocational Education-Tsing Yi Fok Ying Tung Hall of Residence
ASR2	HK Institute of Vocational Education-Tsing Yi 5th Floor Block D of the Main Education Building
*ASR3	Mayfair Gardens 1st Floor adjacent to Swimming Pool

Location I.D.	Description
*ASR4	Cheung Ching Estate At Roof of Ching Yung House (25/F)
ASR5	DSD Pumping Station G/F, in the proximity of the Stonecutters Military Base

* ASR 3 & ASR 4 was terminated since 1st June 2009.

3.1.4 All meteorological data was obtained from the Hong Kong Observatory website.

Monitoring Equipment

3.1.5 Continuous 24-hour and 1-hour TSP air quality monitoring was performed using a TE-5170 Tisch Environmental Inc. High Volume Sampler (HVS), which was installed at the monitoring stations. The sampler composed of a motor, filter holder, flow controller and a sampling inlet. Its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

Details of the monitoring equipment are given in ***Table 3.3***. A copy of the calibration certificate for the HVS and wind data monitor is attached in ***Appendix G1***.

Table 3.3 Air Quality Monitoring Equipment

Equipment	Model	Qty.
HVS	TE-5170 Tisch Environmental Inc.	5
Calibrator	TE-5028A Tisch Environmental Inc.	1

Monitoring Procedures and Calibration Details

3.1.6 Calibration Procedures - Calibration procedures of HVS are as follows (calibration certificates are presented in ***Appendix G3***) :

i. A certified orifice transfer standard with a calibration curve was used for the calibration.
ii. The transfer standard was connected to the inlet of the sampler. The orifice manometer was then connected to the orifice pressure port. The manometer's connecting tubing was inspected to make sure that there are no leaks between the orifice unit and the sampler.
iii. The motor was then disconnected from the flow controller and plugged directly to an AC power source.
iv. The ambient temperature, Ta (K) and the barometer pressure Pa (mmHg) were obtained from the Hong Kong Observatory website for TSP calculation.
v. The sampler was allowed to run for at least 2 minutes to re-establish the run temperature conditions. The pressure drop across the orifice and the well-type manometer reading was recorded during calibration. The variable resistance was adjusted to repeat recording for four different flow rates.
vi. The best fit straight line was determined by linear regression and the slope (m1), intercept (b1) and correlation coefficient (r) are then determined.

3.1.7 Operating/Analytical Procedure

i. The flow rate of the high volume sampler was set to about 1.1 m^3/min - 1.7 m^3/min prior to commencement of the dust sampling in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
ii. The samplers was located such that:
   a. the filter was about 1.3 meters above ground.
   b. it was greater than 20 meters away from trees.

c. it was separated from any obstacle by at least twice the height of the obstacle protruding above the sampler.
d. it has unrestricted airflow 270° around the sampler.

iii. Fiberglass filters were used for TSP sampling (G810) [Note: these filters have a collection efficiency of > 99% for particles of 0.3 mm diameter.
iv. All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment has a temperature setting between 25°C and 30°C and should not vary by more than ±3°C; the relative humidity was < 50% and should not vary by more than ±5%.
v. A new filter was placed with stamped number upward on a supporting screen.
vi. The filter was properly aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter.
vii. Shelter lid closed and catch secured with the aluminum strip.
viii. The sampler was then allowed to run for at least 5 minutes to establish run-temperature conditions.
ix. The flow indicator reading was recorded and the sampler flow rate was determined.
x. The programmable timer was set and the starting sampling time, weather condition and the filter number was recorded.
xi. At the end of sampling, the filter was transferred from the filter holder of the HVS to a sealable plastic bag and sent to the HOKLAS accredited laboratory for weighing. The elapsed time was also recorded. A copy of the HOKLAS Certificate is attached in ***Appendix G5.***
xii. Before weighing, all filters were equilibrated in a desiccator for 24 hours with temperature of 25°C±3°C and the relative humidity (RH) 50%±5%, preferably 40%.

3.1.8 Maintenance

i. The high volume sampler and their accessories were maintained in good working condition, include replacing motor brushes routinely and checking electrical wiring to ensure continuous power supply.
ii. The high volume samplers were calibrated at bi-monthly intervals using TE-5028A Tisch Environmental Inc. Calibration Kit throughout all stages of the air quality monitoring.

Event/Action Plan

3.1.9 The Event/Action Plan for Air Quality is presented in ***Appendix H1***.

3.2 Noise Quality

Monitoring Requirements

3.2.1 According to the field study, the noise generated from the major roads (such as Tsing Yi Road and Container Port Road) was noticeable at noise monitoring stations and therefore the major roads were considered as an influencing factor of the noise sensitive receivers.

3.2.2 As the noise monitoring stations are located at urban area and directly affected by this Influencing Factor (IF), the Area Sensitivity Rating of the noise monitoring stations is considered to be "C" according to the ***Table 1*** of the Technical Memorandum on Noise from Construction Work other than Percussive Piling under Noise Pollution Control Ordinance.

3.2.3 Noise monitoring was conducted at five monitoring stations to monitor the construction noise impact from the Phase 3 Contract. ***Appendix D2*** presents the established Action/Limit Levels for the environmental monitoring works.

Monitoring Frequency and Schedule

3.2.4 The monitoring schedule is presented in ***Appendix E*** and the frequency and parameters of noise measurement are summarized in ***Table 3.4***.

Table 3.4 Noise Monitoring Frequency and Parameters

Time Period	Duration / min.	Parameters	Frequency
Daytime (0700 to 1900)	30 (6 consecutive L_{eq}(5min) in average)	Leq, L_{90} & L_{10}	Once per week
*Evening (1900 to 2300)	5	Leq, L_{90} & L_{10}	Six times per week
*Night (2300 to 0700 next day)	5	Leq, L_{90} & L_{10}	Four times per week
*Holiday (0700-1900 on holidays)	5	Leq, L_{90} & L_{10}	Six times per week

* Restricted hour noise monitoring: to be conducted only when there is construction work under valid CNP.

Monitoring Locations

3.2.5 As identified in the EM&A Manual, five noise monitoring locations (as detailed in ***Table 3.5*** and presented in ***Appendix F***) were selected for noise measurement. The proposal on the termination air quality and noise monitoring at Mayfair Gardens and Cheung Ching Estate was approved by EPD (ref.(6) in Ax(3) to EP2/N3/A/28 Pt.41) on 3rd June 2009 and thus, no further noise monitoring would be carried out at NSR 3 and NSR 4 with effective from 1st June 2009.

Table 3.5 Location of the Noise Monitoring Stations

Location I.D.	Description	Type of measurement
NSR1	HK Institute of Vocational Education-Tsing Yi Fok Ying Tung Hall of Residence	Free Field
NSR2	HK Institute of Vocational Education-Tsing Yi 5th Floor Block D of the Main Education Building	Free Field
*NSR3	Mayfair Gardens, 1st Floor adjacent to Swimming Pool	Free Field
*NSR4	Cheung Ching Estate At Roof of Ching Yung House (22/F)	Free Field
NSR5	DSD Pumping Station (in the proximity of Stonecutters Military Base)	Free Field

* NSR 3 & NSR 4 was terminated since 1st June 2009.

Monitoring Equipment

3.2.6 Integrating Sound Level Meters were used for noise monitoring which were Type 1 sound level meters capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (Leq) and percentile sound pressure level (Lx). They comply with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). Also, a portable electronic wind speed indicator capable of measuring wind speed in m/s was used to monitor the wind speed. ***Table 3.6*** summarizes the noise monitoring equipment required.

Table 3.6 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	30, Pulsar; 2236 and 2238 B&K
Calibrator	100B, Pulsar; 4231 B&K
Portable Wind Speed Indicator	PWM2, Dwyer

Monitoring Procedures and Calibration Details

3.2.7 Field Monitoring

i. The microphone of the Sound Level Meter (with weatherproof kit) was mounted on a tripod at a height of 2m above ground level.
ii. For free field measurement, the meter was positioned away from any nearby reflective surfaces.
iii. AC power supply was checked to ensure good functioning of the meter.
iv. Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
   a. frequency weighting : A
   b. time weighting : Fast
   c. time measurement : 30 minutes / 5 minutes
v. Prior to and after each noise measurement, the meter was calibrated using the Calibrator for 94 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
vi. The wind speed was frequently checked with the portable wind meter.
vii. At the end of the monitoring period, the L_{eq}, L_{90} and L_{10} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
viii. Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
ix. Noise monitoring was cancelled in the presence of fog, rain, and wind with steady speed exceeding 5 m/s, or wind with gusts exceeding 10m/s.

3.2.8 Maintenance and Calibration

i. The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
ii. The meter was sent to the supplier to check and calibrate yearly.
iii. Calibration certificates are presented in ***Appendix G4***

3.2.9 Event/Action Plan

The Event/Action Plan for Noise impact is presented in ***Appendix H2***.

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

MHYHJV has implemented a series of environmental mitigation measures to fulfill requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status during the reporting period is summarized in ***Appendix I***.

5 ENVIRONMENTAL LICENCES AND PERMITS

5.1 Status of Permits and Licenses

5.1.1 The status of permits, licenses and EPD notifications for all relevant environmental issues of the Phase 3 Contract for the reporting period is presented in ***Appendix R***.

6 MONITORING RESULTS

6.1 Air Quality

6.1.1 The 1-hour TSP monitoring was carried out at three monitoring stations during the reporting period. All monitoring data are presented in ***Appendix J***. A summary of the measured 1-hour TSP levels is given in ***Table 6.1***. Graphical presentations of the 1-hour TSP monitoring results for the reporting period and the trend of 1-hour TSP results are shown in ***Appendix K***. Meteorological data such as atmospheric pressure and temperature used for the calculation of TSP values was obtained from the Hong Kong Observatory.

Table 6.1 Summary of 1-hour TSP Impact Monitoring Results

Location I.D.	1-hour TSP (μg/m^3)		Action Level (μg/m^3]	Limit Level (μg/m^3)
	Range	Mean		
ASR1	79.1 – 218.4	124.3	350	500
ASR2	52.5 – 158.6	102.8	350	500
ASR5	25.1 – 322.9	189.7	324	500

6.1.2 The 24-hour TSP monitoring was carried out at three monitoring stations during the reporting period. All monitoring data are presented in ***Appendix J***. A summary of the measured results is given in ***Table 6.2***. Graphical presentation of the results and the trend of 24-hour TSP results are shown in ***Appendix K***.

Table 6.2 Summary of 24-hour TSP Impact Monitoring Results

Location I.D.	24-hour TSP (μg/m^3)		Action Level (μg/m^3)	Limit Level (μg/m^3)
	Range	Mean		
ASR1	24.2 – 38.7	32.5	174.0	260
ASR2	21.5 – 50.6	32.5	185.5	260
ASR5	28.8 – 127.0	73.9	178.0	260

6.1.3 No exceedances of the Action/Limit Levels of 1-hour and 24-hour TSP were recorded during the reporting period. The wind data monitoring results recorded during the reporting period are summarized in ***Appendix L***.

6.1.4 Observations

Several significant dust sources were identified during the reporting period and they were mainly contributed by the following activities:

i. On site traffic;
ii. Roads and utilities construction; and
iii. Vehicular emission from local traffic network.

6.2 Noise

6.2.1 In accordance with the Phase 3 Contract's EM&A Manual, all noise monitoring were carried out in the absence of fog, rain and wind with a steady speed exceeding 5m/s, or wind gust exceeding 10m/s. Furthermore, an additional 3dB(A) façade correction for free field measurements were made for all monitoring locations.

6.2.2 In order to assess the construction noise impact effectively for all noise monitoring locations from Phase 3 Contract, an adjustment approach was adopted since 29th March 2005 and had been consulted with EPD to audit merely the construction noise levels against the statutory noise limits. The measured noise levels were adjusted with the corresponding baseline levels in order to facilitate the interpretation of the construction noise levels and this in turn would determine the actual construction noise impact contributed solely by the Phase 3 construction activities. No adjustments will be made on the measured noise levels, if they were lowered or equal to the corresponding baseline levels.

6.2.3 Normal Hour Monitoring

Daytime noise monitoring was carried out at all noise monitoring stations during the reporting period. All corrected noise levels are presented in ***Appendix M1***. A summary of the results is given in ***Table 6.3***. Graphical presentation of the monitoring results for the reporting period and the trend of noise monitoring results are shown in ***Appendix N1***.

Table 6.3 Summary of Corrected Impact Noise Levels for Normal Hour Monitoring

Daytime 0700-1900 hrs on normal weekdays	Measured Noise Level [1],dB(A), (Range)			Construction Noise Level, dB(A) (Range)	Limit Level dB(A)
	$L_{eq(30min)}$	$L_{10(30min)}$	$L_{90(30min)}$	$L_{eq(30min)}$	$L_{eq(30min)}$
NSR1	64.1 – 66.6	65.3 – 68.1	62.2 – 64.7	– [4]	75
NSR2[2]	63.4 – 65.8	64.1 – 67.1	62.3 – 63.9	– [4]	70
NSR5	69.0 – 70.1	71.8 – 73.3	64.6 – 65.3	– [4]	75

1 Additional 3dB (A) façade correction was made to the Free-field measurements.
2 Limit Level is reduced to 70dB(A) for schools and 65dB(A) during examination periods.
3 No adjustments were made on some of the measured noise levels, since corresponding baseline level ≥ measured noise level. The measured noise levels were mainly dominated by local traffic noise and the construction noise generated from the Phase 3 Contract was not noticeable at NSRs according to the field study record.
4 No adjustments were made on all measured noise levels, since corresponding baseline level ≥ measured noise level.

6.2.4 Observations

The major noise source(s) identified at the NSRs during the normal hour monitoring were dominated by local traffic noise (such as Tsing Yi Road and Container Port Road), in particular container trucks.

6.2.5 Restricted Hour Monitoring

Construction works were carried out at site areas P3-SA3 (Western Tower Site) and P3-SA5 (Eastern Tower Site) during evening time, night-time and public holidays. Noise monitoring was carried out at all monitoring locations public-holidays (0700 – 1900 hours) and at NSR1, NSR2 and NSR5 during evening-time (1900 – 2300 hours), night time (2300-0700 hours next day). All measured noise levels are presented in ***Appendix M2*** and a summary of the results is given in ***Table 6.4***. Graphical presentation of the monitoring results for the Reporting period is shown in ***Appendix N2***.

Table 6.4 Summary of Corrected Impact Noise Levels for Restricted Hour Monitoring

Evening-time 1900-2300 hrs	**Measured Noise Level [1],dB(A), (Range)**			**Construction Noise Level, dB(A) (Range)**	**Limit Level dB(A)**
	$L_{eq(5min)}$	$L_{10(5min)}$	$L_{90(5min)}$	$L_{eq(5min)}$	$L_{eq(5min)}$
NSR1	62.3 – 64.6	63.0 – 66.0	60.5 – 62.5	51.1 – 59.4 [2]	70
NSR2	60.6 – 63.8	61.5 – 65.5	59.5 – 62.5	50.3 [2]	70
NSR5	67.6 – 69.1	70.4 – 73.4	61.9 – 65.6	– [3]	70
Night-time 2300 – 0700 hrs next day	**Measured Noise Level [1],dB(A), (Range)**			**Construction Noise Level, dB(A) (Range)**	**Limit Level dB(A)**
	$L_{eq(5min)}$	$L_{10(5min)}$	$L_{90(5min)}$	$L_{eq(5min)}$	$L_{eq(5min)}$
NSR1	59.0 – 59.9	60.5 – 63.0	58.0 – 58.5	45.9 – 53.9 [2]	55
NSR2	59.2 – 61.7	60.0 – 62.5	58.0 – 60.5	49.2 – 54.8 [2]	55
NSR5	64.3 – 65.5	67.8 – 70.5	58.8 – 61.6	– [3]	55
Public Holiday 0700-1900 hrs	**Measured Noise Level [1],dB(A), (Range)**			**Construction Noise Level, dB(A) (Range)**	**Limit Level dB(A)**
	$L_{eq(5min)}$	$L_{10(5min)}$	$L_{90(5min)}$	$L_{eq(5min)}$	$L_{eq(5min)}$
NSR1	61.3 – 63.1	62.0 – 64.0	60.5 – 61.5	56.5 [2]	70
NSR2	59.9 – 64.2	61.0 – 63.5	58.5 – 60.5	– [3]	70
NSR5	68.6 – 71.0	70.7 – 74.8	62.0 – 66.6	– [3]	70

1 Additional 3dB (A) façade correction was made to the Free-field measurements.
2 No adjustments were made on some of the measured noise levels, since corresponding baseline level ≥ measured noise level. The measured noise levels were mainly dominated by local traffic noise and the construction noise generated from the Phase 3 Contract was not noticeable at NSRs according to the field study record.
3 No adjustments were made on all measured noise levels, since corresponding baseline level ≥ measured noise level.

6.2.6 Observations

The major noise sources during the restricted hour monitoring were dominated by the operation of CT9 and local traffic noise (Container Port Road and Tsing Yi Road) and in particular container trucks.

7 AUDIT RESULTS

7.1 Air Quality

7.1.1 For 1-hour TSP monitoring, a total of 54 sets of measurement were carried out during the reporting period and the results of all measurements taken were below the Action/ Limit (AL) Levels.

7.1.2 For 24-hour TSP monitoring, a total of 18 sets of measurement were carried out during the reporting period and the results of all measurements taken were below the Action/ Limit (AL) Levels.

7.2 Noise

7.2.1 A total of 12 sets of $L_{eq(30min)}$ measurement were carried out during daytime (i.e. 0700 to 1900 hours on normal weekdays) at three monitoring locations (NSR1, NSR 2 and NSR5) during the reporting period and no exceedances were recorded.

7.2.2 A total of 12 sets of 6 x $L_{eq\ (5min)}$ measurements were carried out during evening-time (i.e. 1900 to 2300 hours) at three monitoring locations during the reporting period and no exceedances were recorded.

7.2.3 A total of 12 sets of 4 x $L_{eq\ (5min)}$ measurements were carried out during night-time (i.e. 2300 to 0700 hours next day) at three monitoring locations during the reporting period and no exceedances were recorded.

7.2.4 A total of 12 sets of 6 x $L_{eq(5min)}$ measurements were carried out during public holidays (i.e. 0700 to 1900 hours) at three monitoring locations during the reporting period and no exceedances were recorded.

7.3 Water Quality

7.3.1 Two Effluent Discharge Licenses were granted by EPD, one for the Eastern Tower Site (EP760/269/009124I) and the other for the Western Tower Site (EP760/350/008933I) on 20th September 2004 and 21st December 2004 respectively. The variation of the Discharge License (EP760/350/008933I) was granted by EPD on 13th June 2005.

7.3.2 In accordance with the approved licenses' conditions, water sampling is required on a bi-monthly basis. One water sample was taken for CT8 site area by MHYHJV on 31st July 2009. The water sample was subsequently tested by a HOKLAS accredited laboratory and the results indicated that they have fully complied with the Specific Condition as stipulated in the approved license.

7.3.3 One water sample was taken on 31st August 2009 at CT9 site area. The water sample was subsequently tested by a HOKLAS accredited laboratory and the results will be reported in coming EM&A monthly report. The next sampling is scheduled for September 2009 for CT8 site area.

7.4 Waste Management

7.4.1 The Waste Management Plan (WMP–Issue 08) was approved by EPD on 8th December 2006.

7.4.2 Since May 2004, all non-inert C&D material from the Phase 3 Contract had been disposed of at WENT Landfill. A total of 50 m^3 of general refuse were delivered to WENT Landfill during the reporting period.

7.4.3 With effect from 6th February 2005, inert C&D material had been disposed of at Tuen Mun Fill Bank. During the reporting period, a total of 1,344 m^3 of public fill and 159 m^3 of broken concrete were delivered to Tuen Mun Area 38.

7.4.4 On 18th March 2005, approval was granted by PFC, CEDD to deliver a maximum of 4,000m^3 of surplus filling material to "Route 9 Section between Shek Wai Kok and Chai Wan Kok (TW/98/02)" for re-usage purposes. From March 2005 onwards, a total of 4,512m^3 (752 dump trucks) were delivered to TW/98/02.

7.4.5 On 7th December 2005, approval was granted by PFC, CEDD to deliver a maximum of 3,000 m^3 of surplus filling material to "Route 8 - Ngong Shuen Chau Viaduct (HY/2000/21)" for re-usage purposes. From December 2005 onwards, a total of 2,004m^3 (334 dump trucks) filling material were delivered to HY/2000/21.

7.4.6 On 23rd January 2006, approval was granted by PFC, CEDD to deliver a maximum of 3,000 m^3 of surplus filling material to "Drainage Improvement in East Kowloon (DC/2004/03)" for re-usage purposes. From January 2006 onwards, a total of 138m^3 (23 dump trucks) filling material were delivered to DC/2004/03.

7.4.7 CEDD was notified that a total of 1,600 m^3 of broken concrete and broken asphalt had been delivered to "Ampliacao Do Novo Terminal Maritimo Da Taipa" Project in Macau by a derrick barge for the formation of internal haul roads in November 2007.

7.4.8 With the Marine Department Notice, a total of 1,345 nos. of concrete blocks were delivered and laid on the designated seabed as artificial reefs since 7th July 2008.

7.4.9 The quantities of different waste and their handling are summarized in ***Table 7.1***.

Table 7.1 Summary of Waste Disposal during the Reporting Period

Material Type		**Handling Method**	**Handling Quantities in the reporting period**	**Temporary Storage Locations On-site (if applicable)**
C&D material	Public Fill	Tuen Mun Fill Bank	1,344 m^3	N/A
	Broken Concrete	Tuen Mun Fill Bank	159 m^3	N/A
	C&D Waste	To be recycled (paper& plastic)	130 kg (paper) 4 kg (plastic)	P3-SA2 and P3-SA5 Contractor's Office
		To be recycled (metal)	80,000 kg	N/A
General Refuse		Collected by licensed collector for disposal to WENT	50 m^3	N/A
Chemical waste		Collected by licensed chemical waste collector	N/A	Western Tower & Eastern Tower Site

7.5 Site Audits / Inspections

Photographic records provided by MHYHJV for their mitigation measures taken to rectify the deficiencies identified on site are presented in ***Appendix Q***.

7.5.1 Environmental Team Site Inspections

Weekly site inspections were conducted by the ET during the reporting period and the major findings and MHYHJV's proposed / implemented corrective and preventive measures are summarized as follows:

i. MHYHJV was reminded to replace geo-textile for the existing gullies at the site entrance at area P3-SA6.

Corrective and Preventive Actions – The existing gullies had been protected properly by geo-textile. Completed and closed. (Please refer ***Appendix Q*** Photo 01).

ii. C&D waste was found scattering around at area P3-SA6.

Corrective and Preventive Actions – All general refuse was collected and temporarily stored in waste skip on site. The frequency of removal of C&D waste from site has been increased. Completed and closed. (Please refer ***Appendix Q*** Photo 02).

iii. Asphalt breaking without water spraying was observed during the site inspection.

Corrective and Preventive Actions – Remedial action was carried out by MHYHJV immediately during site inspection. Labors have been allocated to carry out water

spraying for all dust emissive mechanical breaking operation. Completed and closed. (Please refer ***Appendix Q*** Photo 03).

iv. The sandbag barrier along the u-channel at area P3-SA4 was damaged. MHYHJV was also reminded to protect the u-channel at area P3-SA3 properly in order to avoid loose material entering into the drainage system.

Corrective and Preventive Actions – The damaged sandbags had been replaced. The channel at area P3-SA3 had been covered by tarpaulin sheet and plywood in order to avoid loose material entering into the drainage system. Completed and closed. (Please refer ***Appendix Q*** Photo 04 and 05).

7.5.2 Independent Environmental Checker (IEC) Site Audits

The monthly IEC audit was carried out on 27th August 2009, two general reminders were recorded by IEC and they are presented as follows.

i. MHYHJV was reminded to replace geo-textile for the existing gullies at the site entrance at area P3-SA6.

Corrective and Preventive Actions – The existing gullies had been protected properly by geo-textile. Completed and closed. (Please refer ***Appendix Q*** Photo 01).

ii. C&D waste was found scattering around at area P3-SA6.

Corrective and Preventive Actions – All general refuse was collected and temporarily stored in waste skip on site. The frequency of removal of C&D waste from site has been increased. Completed and closed. (Please refer ***Appendix Q*** Photo 02).

7.5.3 Environmental Protection Department (EPD) Site Inspections

No joint site inspections were carried out with EPD during the reporting period.

8 ENVIRONMENTAL NON-COMPLIANCE, COMPLAINTS, NOTIFICATIONS OF SUMMONSES AND PROSECUTIONS

8.1 Summary of Environmental Non-Compliance

8.1.1 No Action / Limit Level exceedances were recorded in this reporting period and they are

8.1.2 Table 8.1 Summary of Non-Compliance for the Reporting Period

Media/ Nature	No. of Exceedance		Action Taken	Results of Action Taken	Remarks
	Action Level	Limit Level			
Air Quality	0	0	-	-	-
Noise	0	0	-	-	-

8.2 Summary of Complaints

8.2.1 No environmental related complaints were received during the reporting month. The summary for all the complaints received since the commencement of the Phase 3 Contract is presented in ***Table 8.2***. The details of previous complaints and statistics are attached in ***Appendices O1*** and ***O2*** respectively.

Table 8.2 Summary of Total Complaint Received

Total No. of Complaint Received	No. of complaint received within reporting period	No. of Active Complaint	No. of Inactive/Closed Complaint
1	0	0	1

8.3 Summary of Notifications of Summonses and Prosecutions

8.3.1 No notifications of summonses or prosecutions were received on the environmental performance for Phase 3 Contract since the commencement of construction.

9 ROUTE 8 – TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS)

9.1 Key issues for the Construction Works of TCSS

9.1.1 The construction of the "Route 8 – Traffic Control and Surveillance System Contract (HY/2003/05)" (TCSS) Contract was awarded to Delcan-Imtech-GECS-Joint Venture (DIGJV) and the construction work of TCSS within Phase 1 Contract (Route 8 – Ngong Shuen Chau Viaduct) site area was commenced on 4th April 2007.

9.1.2 The construction work of TCSS within Phase 1 Contract (Route 8 - Ngong Shuen Chau Viaduct) and Phase 2a Contract (Route 8 Nam Wan Tunnel and West Tsing Yi Viaduct) site area was commenced on 4th April 2007 and 25th October 2006 respectively. Since the no further EM&A during construction phase would be carried out for both Phase 1 and Phase 2a Contracts and therefore, all future TCSS works within Phase 1 and Phase 2a would be reported in this monthly EM&A report.

9.2 Audit Results

9.2.1 A joint site audit was carried out amongst IEC/ET/RSS/DIGJV on 27th August 2009. No adverse comments were raised by any parties.

9.2.2 DIGJV reported that no C&D materials were disposed off site to designated public filling area during the reporting period.

10 FUTURE KEY ISSUES

10.1 Key Issues for the Coming Month

10.1.1 Works to be taken for the coming monitoring period will be similar to the previous month as follows:

i. Assess to Tower
ii. Steel decks finishing work
iii. Road and utilities construction

10.1.2 Potential environmental impacts arising from the above construction activities are mainly associated with dust, noise, site run-off and waste. However, with the implementation of the

following mitigation measures, potential impacts to the surrounding sensitive receivers could be minimized.

10.1.3 Construction Dust

i. frequently watering of haul road and unpaved areas;
ii. prohibition of open burning on site;
iii. investigation of other dust sources near air sensitive receivers;
iv. regularly watering or covering of open areas and stockpiles with tarpaulin;
v. hydro-seeding or covering inactive sand fill areas with impervious sheeting if necessary;
vi. frequently watering during concrete breaking operation;
vii. switching off vehicles and equipment while not in use; and
viii. regular maintenance of onsite machinery and vehicles.

10.1.4 Construction Noise

i. identification of noise sources arising within and outside work site; and
ii. provision of noise barriers when necessary.

10.1.5 Construction Run-off

i. identification of sources of run-off from site;
ii. provision of sandbags/bunds/channels to direct run-off to silt/sand removal facilities;
iii. avoidance of direct discharge of wastewater into storm water drainage; and
iv. provision of treatment of wastewater and run-off prior to discharge.

10.1.6 Construction Waste Management

i. avoidance of accumulation of construction waste materials and/or general refuse on site;
ii. segregation of C&D waste;
iii. collection of chemical waste or oil and disposal of chemical waste in accordance with relevant regulations;
iv. regularly removing of waste materials on site; and
v. every dump truck should be properly covered before leaving site.

10.2 Monitoring Schedule for the Coming Three Months

The tentative schedules for dust and noise monitoring for the next three months are attached in ***Appendix P***.

11 RECOMMENDATIONS AND CONCLUSIONS

11.1 Conclusions

11.1.1 This Environmental Monitoring and Audit (EM&A) report presents the EM&A works undertaken during the period from 29th July 2009 to 28th August 2009 in accordance with EM&A Manual which forms part of the EIA Report (Register No. AEIAR-018/1999).

11.1.2 A total of 54 sets of 1 hour TSP and 18 sets of 24-hours TSP measurements were carried out at all monitoring locations during the reporting period and the results of all measurements taken were below the Action/Limit (AL) Levels.

11.1.3 A total of 12 sets of $L_{eq(30min)}$ measurement during daytime (i.e. 0700 to 1900 hours) were carried out at three monitoring locations during the reporting period and no exceedances were recorded.

11.1.4 A total of 12 sets of 6 x $L_{eq(5min)}$ measurements during evening-time (i.e. 1900 to 2300 hours) were carried out at three monitoring locations during the reporting period and no exceedances were recorded.

11.1.5 A total of 12 sets of 4 x $L_{eq(5min)}$ measurement during night time (i.e. 2300 to 0700 hours next day) were carried out at three monitoring locations during the reporting period and no exceedances were recorded.

11.1.6 A total of 12 sets of 6 x $L_{eq(5min)}$ measurements during public-holidays (i.e. 0700 to 1900 hours) were carried out at three monitoring locations during the reporting period and no exceedances were recorded.

11.1.7 No environmental complaints were received during the reporting period.

11.1.8 No notifications of summonses or prosecutions were received on the environmental performance for Phase 3 Contract since the commencement of construction works.

11.1.9 ET and IEC audits were carried out in accordance with the Phase 3 Contract's EM&A Manual and deficiencies identified were mainly related to removal of general refuse, maintenance and protection of drainage system. MHYHJV had carried out immediate corrective / mitigation measures to rectify these issues.

11.1.10 No joint site inspections were carried out with EPD during the reporting period.

11.1.11 A joint site audit was carried out amongst IEC/ET/RSS/DIGJV on 27th August 2009. No adverse comments were raised by any parties.

11.2 Recommendations

According to the environmental audits undertaken during the reporting period, the following recommendations have been made:

11.2.1 Construction Dust

i. Site access road and exposed areas should be watered regularly to ensure the soil surface is moist;
ii. Dusty areas should be watered frequently;
iii. Open stockpiles should be covered properly by tarpaulin or similar fabric;
iv. Concrete breaking works should be watered frequently; and
v. Watering for any earth moving activities.

11.2.2 Construction Noise

i. The numbers of powered mechanical plant operating should not exceed the allowable plant number for each construction activity stated in the Construction Noise Permits;
ii. Regular maintenance of machinery; and
iii. Noisy equipment should be located as far as possible from the NSRs.

11.2.3 Water Quality

i. All surface run-off/wastewater should be diverted to appropriate water treatment facilities before discharge;
ii. Sedimentation tanks/basins should have adequate capacity for settling surface runoff;
iii. The condition of u-channel, catch pits and wheel washing facilities should be regularly maintained.
iv. Vehicle and plant servicing area, wheel washing bay should be connected to storm drains via a petrol interceptor;
v. Site hoarding should be tightly sealed at the bottom to prevent seepage of surface runoff from the site; and
vi. Accumulation of water in drip trays and at chemical/fuel storage area should be avoided.

11.2.4 Waste/Chemical Management

i. Contaminated soil should be collected and disposed of as chemical waste;
ii. All types of waste should be separated on site prior disposal;
iii. All types of waste should be collected by licensed waste collectors; and
iv. Good housekeeping should be implemented throughout the whole construction period.

Appendix A

Site Location Plan

N

CONTAINER TERMINAL 9
(CT9)

RAMBLER CHANNEL

Terminal 6

Container Terminal

Terminal 7

CONTAINER PORT ROAD SOUTH

Lai Chi Kok Park

P3-SA2A
(05 AUG 2009)

P3-SA2
(08 JUL 2010)

P3-SA3F
(05 AUG 2009)

P3-SA3A
(05 AUG 2009)

P3-SA3E
(05 AUG 2009)

P3-SA3
(05 AUG 2009)

WESTERN TOWER

P3-SA3D
(05 AUG 2009)

P3-SA3B
(05 AUG 2009)

P3-SA3C
(05 AUG 2009)

P3-SA3G
(05 AUG 2009)

P3-SA4
(14 DEC 2008)

P3-SA4A
(05 AUG 2009)

STONECUTTERS BRIDGE

200m

P3-SA5A
(05 AUG 2009)

EASTERN TOWER

Container Terminal

CONTAINER TERMINAL 8
(CT8)

P1-SA1(N)
(05 AUG 2009)

P3-SA5
(05 AUG 2009)

P1-SA1 (PARTIAL)
(05 AUG 2009)

P3-SA6A
20 DEC 2005

P3-SA6
(05 AUG 2009)

STONECUTTERS

Barracks

Navy Base

P3-SA1A
(05 AUG 2009)

P3-SA1
(31 MAR 2009)

PART PLAN

0 50 100 150 200 250
METRES

1 : 5000 A1
1 : 10000 A3

PART PLAN

LOCATION PLAN

NOTE:

CURRENT EXTENDED COMPLETION DATE OF WORKS: 29/12/2008

LEGEND

	AREA NOT YET HANDED OVER TO GOVERNMENT
(05 AUG 2009)	TARGET HANDOVER DATE TO GOVERNMENT
	AREA HANDED OVER TO GOVERNMENT
20 DEC 2005	ACTUAL HANDOVER DATE TO GOVERNMENT

ARUP
Ove Arup & Partners HK Ltd

Job Title
Stonecutters Bridge
Contract No. HY/2002/26

Sketch Title
GENERAL AND ALIGNMENT
LAND RETURN PLAN
HANDING BACK DATES

Sketch No. ZK441		Rev. 3
Issue Date	Scale 1:10000 A3	
Drawn KHC	Checked WL	Approved RDML
Related Ref.:	Working Dwg. No. N/A	
Others	N/A	

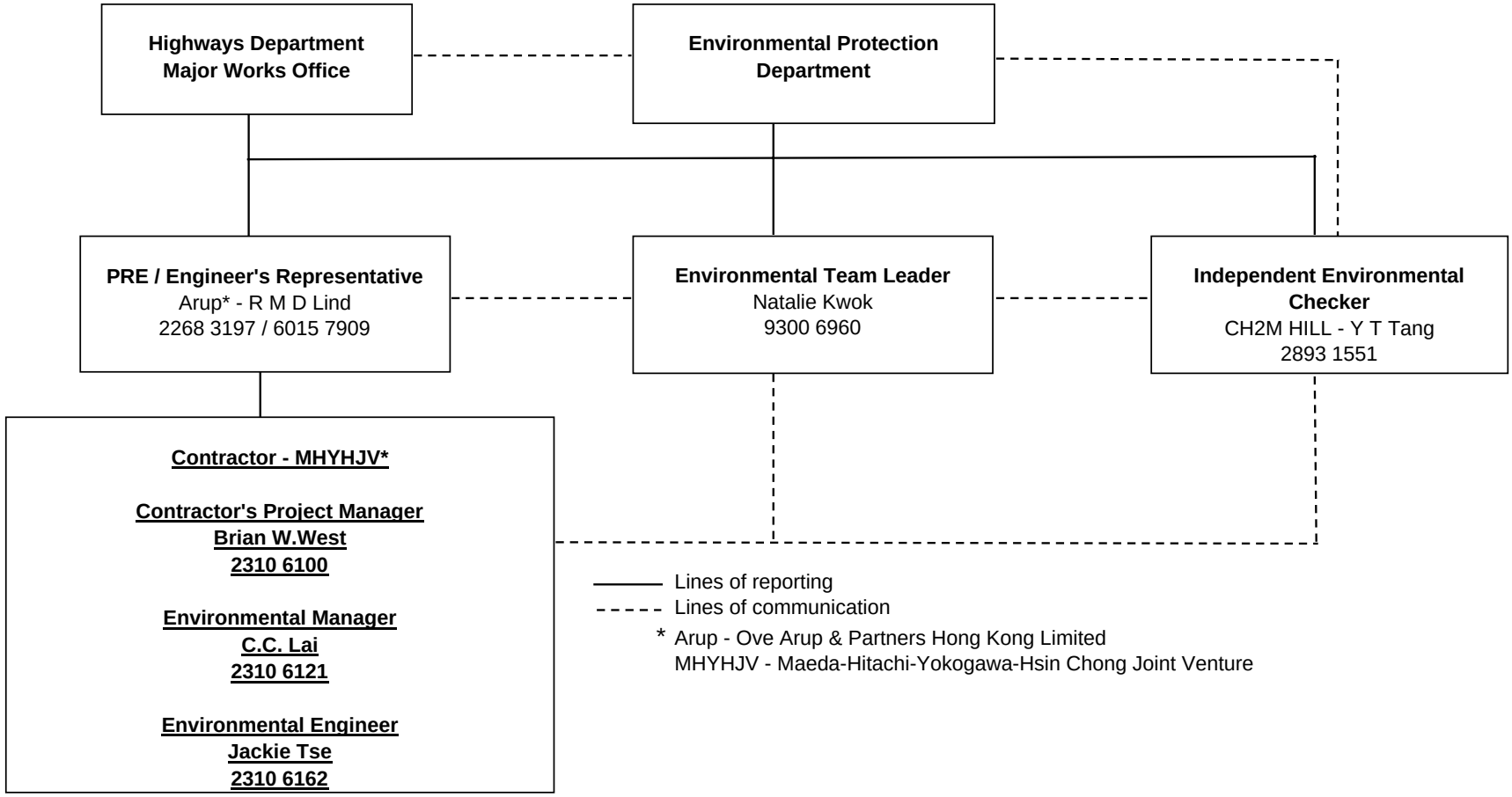
6/1/2009
Printer by : SCB
Filename : Z:\Drafting\Draft Sketch\zk441\zk441-3.dgn

Appendix B

Project's Environmental Organization Chart and Contact Details

Contract No. HY/2002/26
Route 8 Phase 3 Stonecutters Bridge

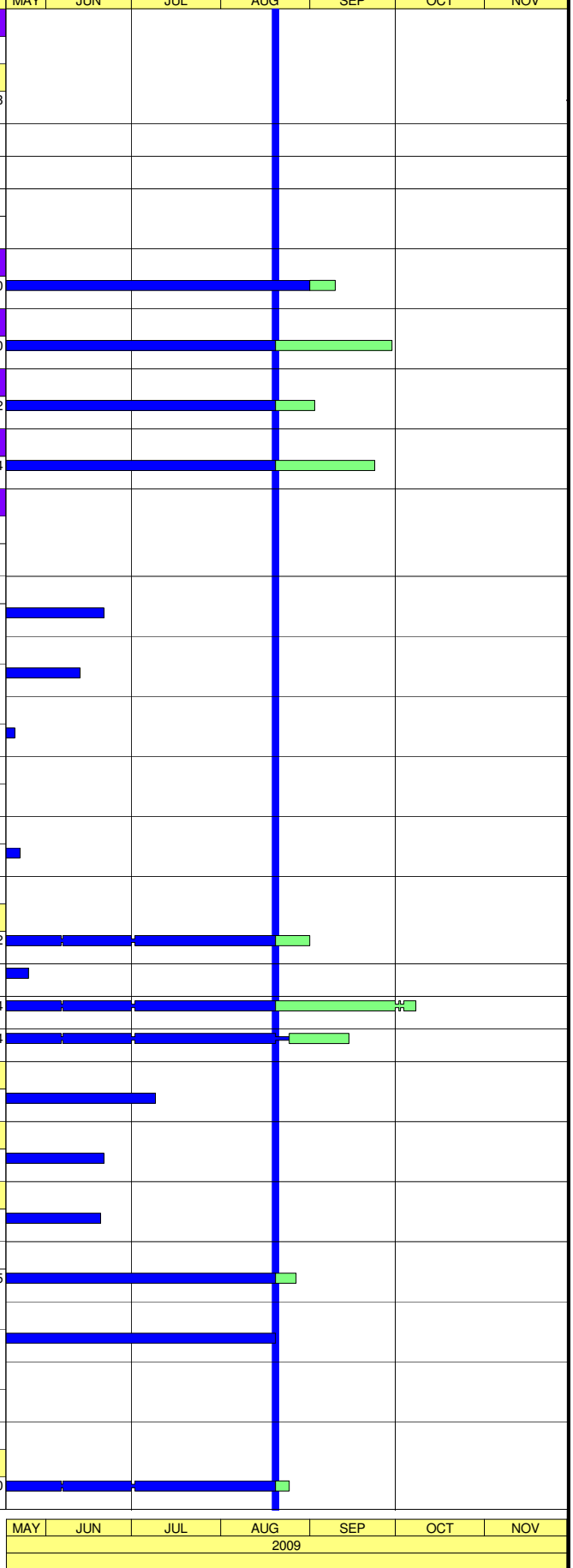
Appendix B: Project's Environmental Organisational Chart and Contact Details



Appendix C

Three-Month Rolling Programme

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float
PRELIMINARIES						
Project Dates & Key Dates						
Key Dates						
SC_KD09	KD-9 Completion of ALL Works	0		01 DEC 09	0	-3
SC_KD06	KD-6 Achievement of Stage 6	0		24 APR 09A	100	
TCSS01	TCSS Access to all containment in Deck	0		24 APR 09A	100	
+ Contractor's Submission & Engineer's Approval						
		2	02 APR 09A	03 APR 09A	100	
+ EAST BACKSPAN						
		218	19 DEC 08A	09 SEP 09	98	60
+ EAST TOWER						
		410	23 MAY 08A	29 SEP 09	95	30
+ WEST BACK SPAN						
		182	29 JAN 09A	02 SEP 09	94	72
+ WEST TOWER						
		327	25 AUG 08A	23 SEP 09	93	54
STEEL DECKS						
+ Steel Deck Fabrication Works						
		4	23 FEB 09A	25 FEB 09A	100	
+ CT8 Gravity Jetty						
		12	04 MAY 09A	20 JUN 09A	100	
+ CT9 Gravity Jetty						
		63	28 MAR 09A	12 JUN 09A	100	
+ Steel Deck & Stay Cable - East Deck						
		85	09 FEB 09A	20 MAY 09A	100	
+ Steel Deck & Stay Cable - West Deck						
		102	06 JAN 09A	09 MAY 09A	100	
+ SD Surveys, Adjustment & Anti Vibration						
		45	30 MAR 09A	22 MAY 09A	100	
Steel Deck Finishing Works						
Parapet						
SC010677	Fabricate Parapet & Deliver to Site (Outside)	200	20 SEP 08A	31 AUG 09	95	32
NSC01079	Fabricate Parapets (Inside) Delivery 1 & 2	94	08 DEC 08A	25 MAY 09A	100	
SC010787	Static Tests (Off Site)	60	02 MAY 09A	07 OCT 09	40	44
SC046800	Inside Parapets Seg 28 - 1	77	11 MAY 09A	14 SEP 09	65	44
+ Road Surfacing & Waterproofing						
		75	09 APR 09A	08 JUL 09A	100	
+ Soffit Painting						
		363	08 APR 08A	20 JUN 09A	100	
+ Girder Painting						
		81	14 MAR 09A	19 JUN 09A	100	
+ Steel Deck Miscellaneous Works						
		188	12 JAN 09A	26 AUG 09	99	45
+ Dehumidification Systems						
		107	14 APR 09A	19 AUG 09A	100	
+ Access Facilities in Steel Deck						
		96	10 DEC 08A	24 APR 09A	100	
Deck Shuttle						
Installation Works						
SC048280	DS Install/T&C Deck Shuttle	90	09 FEB 09A	24 AUG 09	95	50



Current
Progress Bar
Critical Activity

?Primavera Systems, Inc.

T200

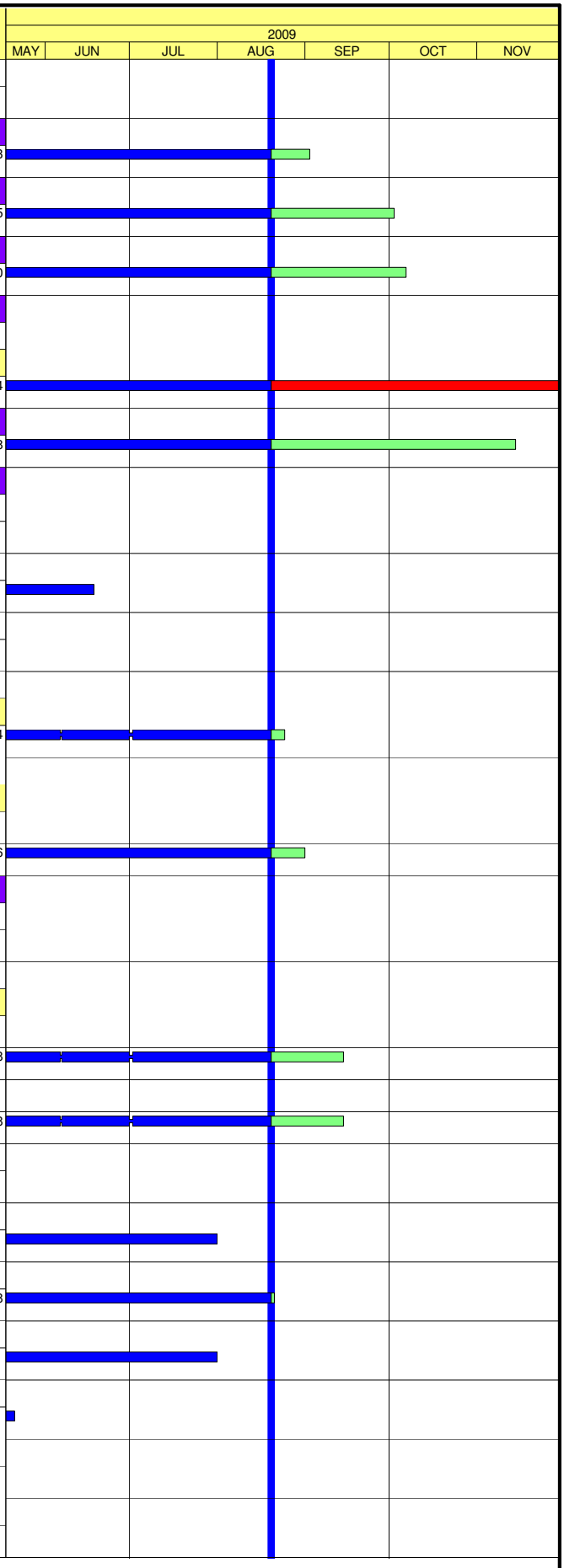
Contract No. HY/2002/26 - Stonecutters Bridge
MHYH JV

3 Month Rolling Programme

Sheet 1 of 2

Date	Revision	Checked	Approved
27 DEC 07	Comments Incorporated into Programme P3 - SC		
16 FEB 08	Comments of DWP7a into Programme P3-SC7B		
10 NOV 08	DWP9		
02 JAN 09	DWP9b		
05 FEB 09	DWP9c		
06 MAR 09	DWP9c incorporating 17/2 comments		

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float
+ Sign Gantry						
		138	17 NOV 08A	04 MAY 09A	100	
+ ACCESS TO WEST TOWER						
		236	21 NOV 08A	02 SEP 09	95	23
+ ACCESS TO EAST TOWER						
		428	05 MAY 08A	02 OCT 09	94	45
+ Temporary Lookout Point						
		1,132	24 APR 06A	06 OCT 09	79	30
Wind Turbulence Intensity Field Measurement						
WTIFM Structure						
CT9 Side						
SC102950	CT9 Operation & Maintenance of WTIFM	1,207	27 JAN 06A	13 DEC 09	77	4
+ Wind & Structural Health Monitoring System						
		1,494	29 NOV 04A	14 NOV 09	89	68
E&M Works						
+ Environmental Control System						
		24	15 DEC 08A	28 FEB 09A	100	
+ Supervisory Control & Data Acquisition System						
		128	13 JAN 09A	17 JUN 09A	100	
+ Architectural Lighting						
		318	10 APR 08A	29 APR 09A	100	
Security System						
Procurement & Delivery to Site						
SC123050	Sec. System Material/Equipment Delivery to Site	72	03 OCT 07A	24 AUG 09	95	394
Overall Submission for E & M Works						
Over-all Submissions						
SC123220	Submission of Spare Parts list for E&M	30	20 AUG 08A	17 MAR 09A	100	
SC123230	Approval for E&M Spare Parts	30	21 AUG 08A	31 AUG 09	75	336
CONTRACTOR'S DESIGN (Design & Procurement)						
+ Tower Top Maintenance Unit						
		136	30 SEP 08A	14 MAR 09A	100	
Windscreens						
Procurement/Fabrication/Delivery						
SC134110	ET - Site Measurement & Trial	12	20 APR 09A	20 APR 09A	100	
SC134100	ET - Manufacture Windscreens	100	04 MAY 09A	14 SEP 09	80	38
SC134180	WT - Site Measure & Trial	1	20 APR 09A	20 APR 09A	100	
SC134160	WT - Manufacture Windscreens	100	04 MAY 09A	14 SEP 09	80	38
+ Dehumidification Systems						
		20	17 FEB 09A	09 APR 09A	100	
+ Highway Lighting						
		581	27 AUG 07A	31 JUL 09A	100	
+ Steel Deck Gantry						
		312	03 JAN 08A	20 AUG 09	95	18
+ Concrete Deck Gantry						
		539	18 OCT 07A	31 JUL 09A	100	
+ Stay Cable Gantry						
		200	05 JAN 09A	20 MAY 09A	100	
+ Rack and Pinion Lift						
		190	04 AUG 08A	21 MAR 09A	100	
+ Booms & Masts for WASHMS						
		100	15 OCT 08A	03 APR 09A	100	



MAY JUN JUL AUG SEP OCT NOV
2009

Appendix D1

Action/Limit Levels for Air Quality

Appendix D1: Action /Limit Levels for Air Quality

ACTION AND LIMIT LEVELS FOR 24-HOUR TSP

Location	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
ASR1	174.0	260
ASR2	185.5	260
ASR3	200.0	260
ASR4	192.0	260
ASR5	178.0	260

ACTION AND LIMIT LEVELS FOR 1-HOUR TSP

Location	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
ASR1	350.0	500
ASR2	350.0	500
ASR3	350.0	500
ASR4	350.0	500
ASR5	324.0	500

Appendix D2

Action/Limit Levels for Noise

Appendix D2: Action/Limit Levels for Noise

Action and Limit Levels for Construction Noise

Time Period	Action	Limit
0700-1900 hrs on normal weekdays	When one documented complaint is received	75dB(A)*
0700-2300 hrs on holidays; and 1900-2300 hrs on all other days	When one documented complaint is received	70 dB(A)
2300-0700 hrs of next day	When one documented complaint is received	55 dB(A)

* Reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

Appendix E

Environmental Monitoring Schedule for the Reported Period

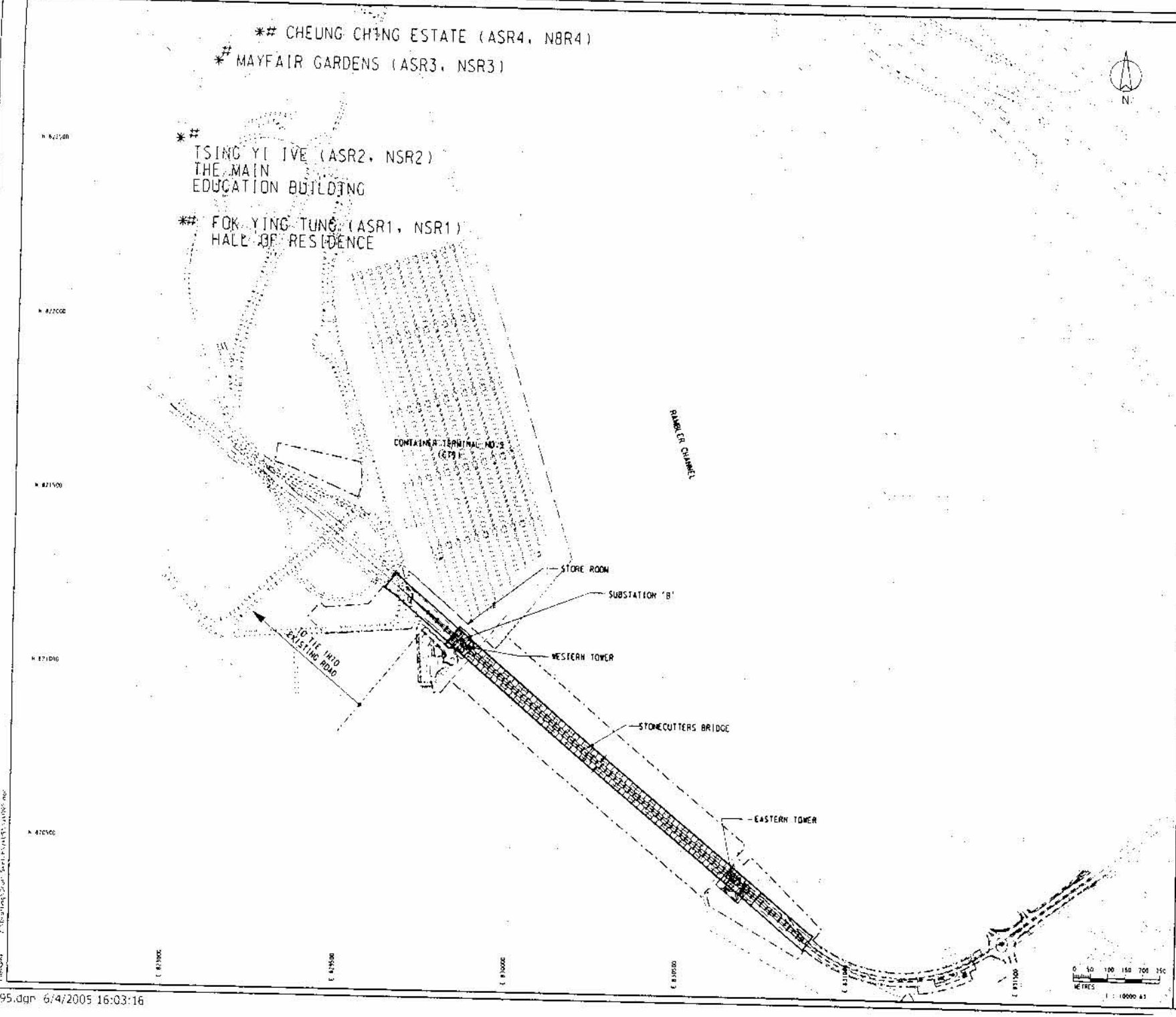
Environmental Monitoring Schedule between 29 July 2009 and 28 August 2009 for NSR1, NSR2 & NSR5 and ASR1, ASR2 & ASR5

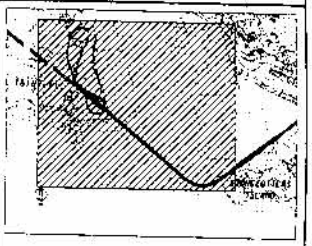
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			29-Jul 24hrs-TSP	30-Jul 1hr-TSP	31-Jul	1-Aug
2-Aug $Noise_{P.H.}$	3-Aug Noise $Noise_{evening}$ $Noise_{night}$	4-Aug 24hrs-TSP	5-Aug 1hr-TSP	6-Aug	7-Aug	8-Aug
9-Aug $Noise_{P.H.}$	10-Aug 24hrs-TSP	11-Aug 1hr-TSP	12-Aug Noise $Noise_{evening}$ $Noise_{night}$	13-Aug	14-Aug	15-Aug 24hrs-TSP
16-Aug $Noise_{P.H.}$	17-Aug 1hr-TSP	18-Aug	19-Aug	20-Aug Noise $Noise_{evening}$ $Noise_{night}$	21-Aug 24hrs-TSP	22-Aug 1hr-TSP
23-Aug $Noise_{P.H.}$	24-Aug	25-Aug	26-Aug Noise $Noise_{evening}$ $Noise_{night}$	27-Aug 24hrs-TSP	28-Aug 1hr-TSP	

1hr-TSP	3 x 1 hour TSP monitoring at ASR1, ASR2 and ASR5 during 0900~1800.
24hrs-TSP	24 hours TSP monitoring at ASR1, ASR2 and ASR5
Noise	Leq30 measurement at NSR1, NSR2 and NSR5 during 0700~1900.
NoiseEvening	6 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 1900~2300 (if construction activities are undertaken).
NoiseNight	4 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 2300~0700 next day (if construction activities are undertaken).
NoiseP.H.	6 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 0700~1900 (if construction activities are undertaken).

Appendix F

Locations of Monitoring Locations





LOCATION PLAN

NOTES:

1. CO-ORDINATES ARE RELATED TO HONG KONG METRIC GRID 1980.

LEGEND:

* AIR MONITORING STATION

NOISE MONITORING STATION

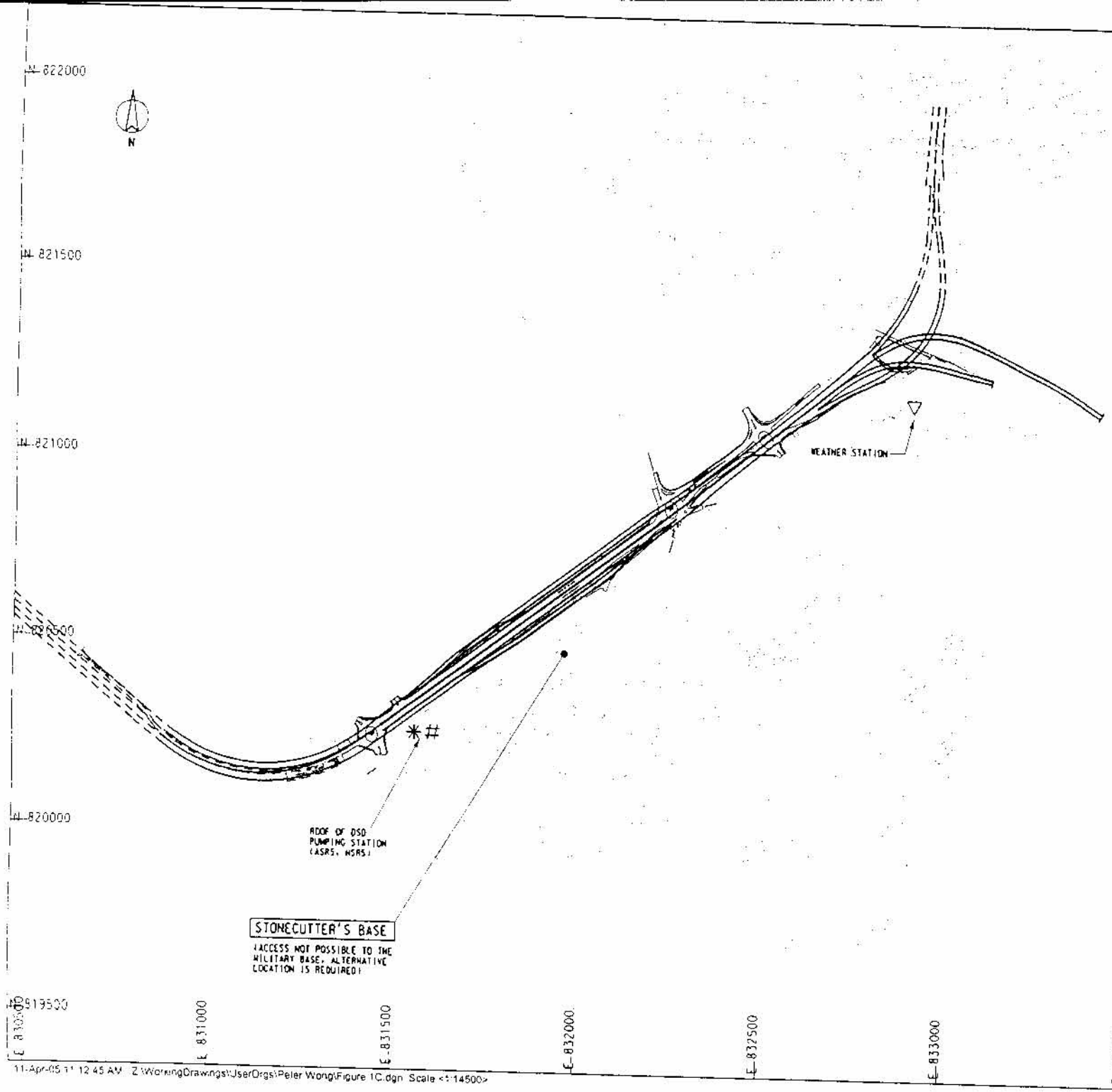
ARUP

Stonecutters Bridge
Contract No. HY/2002/26

AIR AND NOISE MONITORING LOCATIONS

Issue Date	21/12/04
Scale	1:10000 @A3
Drawn	KLW
Checked	KWL
Approved	
Related Ref.	N/A
Working Dwg No.	
Others	N/A

zk095.dgn 6/4/2005 16:03:16



LOCATION PLAN

LEGEND

- SENSITIVE RECEIVER IDENTIFIED IN EM&A MANUAL
- AIR MONITORING STATION
- NOISE MONITORING STATION
- WEATHER STATION

Rev	Description	By	Date

Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Supported By:
- Charles Haswell & Partners
- CKM Hong Kong Ltd
- COWI Consulting Engineers
- Ek Group
- Chris Wilkinson Architects
- Urbis Ltd.
- Rust Hong Kong Ltd
- Wilf Asia Pacific Ltd.

Project title:
HY/2002/06
Route 8 - Stonecutters Bridge

Drawing title:
AIR AND NOISE MONITORING LOCATIONS AND WEATHER STATIONS

Drawing no. — Rev —

Drawn	Date	Checked	Approved
-	12/02	-	-

Scale: 1:10000 Status: -

HIGHWAYS DEPARTMENT 路政署
Major Works Project Management Office 主要工程管理處

Appendix G1

Calibration Certificates for HVS

ARUP

TSP - Total Suspended Particulates High Volume Sampler
In-situ Calibration Report (ASR1)

Calibration Date	1-Jun-09	**Next Calibration Date**	1-Aug-09
Station	H.K. Institute of Vocational Education-Tsing Yi (IVE) Fok Ying Tung Hall of Residence (ASR1)	Equipment no.	P2.HVS.04

Ambient Condition			
Temperature, Ta (K)	300.05	Pressure, Pa (mmHg)	754.94

Orifice Transfer Standard Information			
Equipment no.	P2.CAL.04		
Slope, mo	1.57672	Intercept, co	-0.00705
Last Calibration Date	4-Nov-08	Next Calibration Date	4-Nov-09

$$mo \times Q_{std} + co = [\Delta O \times (Pa/760) \times (298/Ta)]^{1/2}$$

$$Q_{std} = \{[\Delta O \times (Pa/760) \times (298/Ta)]^{1/2} - co\} / mo$$

Calibration Point	Orifice Manometer Reading, ΔO (inch)	Orifice Q_{std} (CMM) x-axis	HVS Manometer Reading, ΔH (inch)	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ y-axis
1	7.9	1.78	8.1	2.83
2	6.6	1.62	6.5	2.53
3	5.4	1.47	5.6	2.35
4	4.4	1.33	4.6	2.13
5	3.5	1.18	3.7	1.91

By Liner Regression of y on x

Slope, mh = 1.5089 Intercept, ch = 0.1245

*Correction Coefficient, R = 0.9976

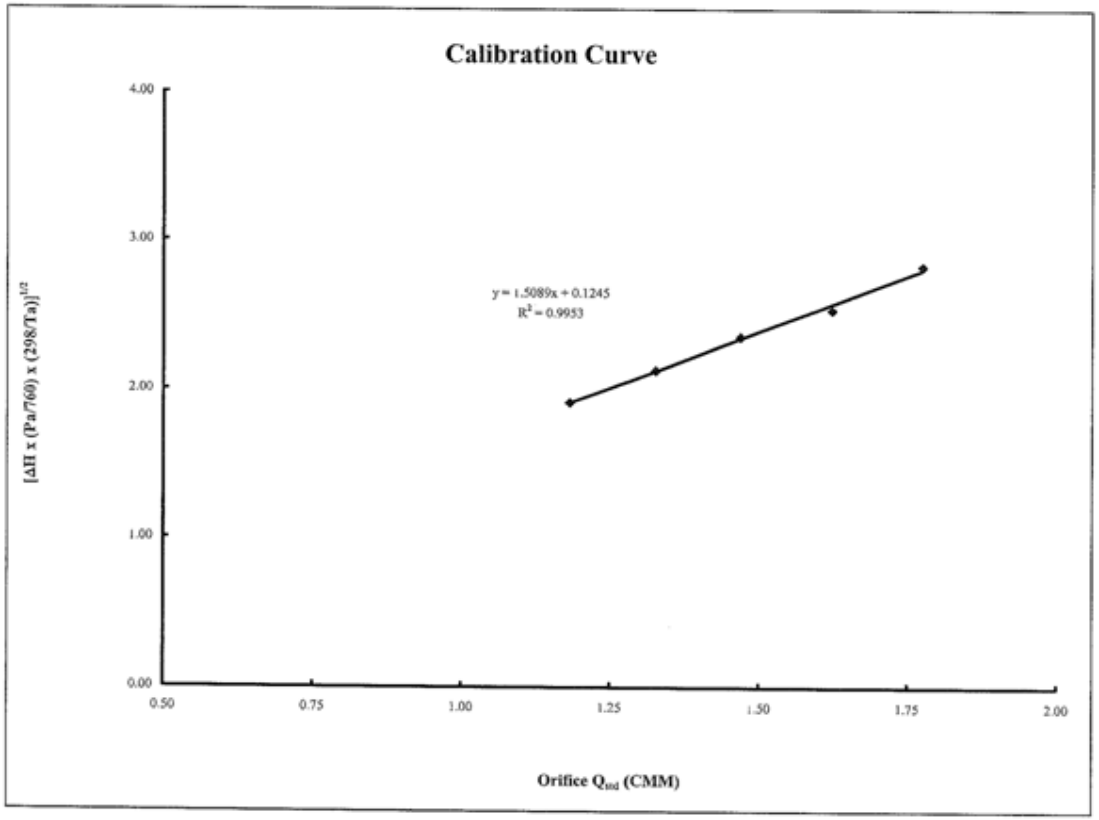
Calibration Result: **ACCEPT**

* If the Correlation Coefficient, R is < 0.9900. Checking and Recalibration are require.

Remark: Bi-monthly Calibration

Calibrated By: CM Giang Date: 1 / June / 09

Checked By: Date: 1 / June / 09


Calibration Curve
4.00
3.00
2.00
1.00
0.00
y = 1.5089x + 0.1245
R² = 0.9953
[ΔH x (Pa/760) x (298/Ta)]^1/2
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Orifice Q_std (CMM)

ARUP

TSP - Total Suspended Particulates High Volume Sampler
In-situ Calibration Report (ASR1)

Calibration Date	1-Aug-09	**Next Calibration Date**	1-Oct-09
Station	H.K. Institute of Vocational Education-Tsing Yi (IVE) Fok Ying Tung Hall of Residence (ASR1)	Equipment no.	P2.HVS.04

Ambient Condition			
Temperature, Ta (K)	303.45	Pressure, Pa (mmHg)	751.86

Orifice Transfer Standard Information			
Equipment no.	P2.CAL.04		
Slope, mo	1.57672	Intercept, co	-0.00705
Last Calibration Date	4-Nov-08	Next Calibration Date	4-Nov-09

$$mo \times Q_{std} + co = [\Delta O \times (Pa/760) \times (298/Ta)]^{1/2}$$

$$Q_{std} = \{[\Delta O \times (Pa/760) \times (298/Ta)]^{1/2} - co\} / mo$$

Calibration Point	Orifice Manometer Reading, ΔO (inch)	Orifice Q_{std} (CMM) x-axis	HVS Manometer Reading, ΔH (inch)	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ y-axis
1	8.0	1.77	8.3	2.84
2	6.6	1.61	6.5	2.51
3	5.5	1.47	5.7	2.35
4	4.5	1.33	4.7	2.14
5	3.4	1.16	3.7	1.90

By Liner Regression of y on x

Slope, mh = 1.4996 Intercept, ch = 0.1459

*Correction Coefficient, R = 0.9963

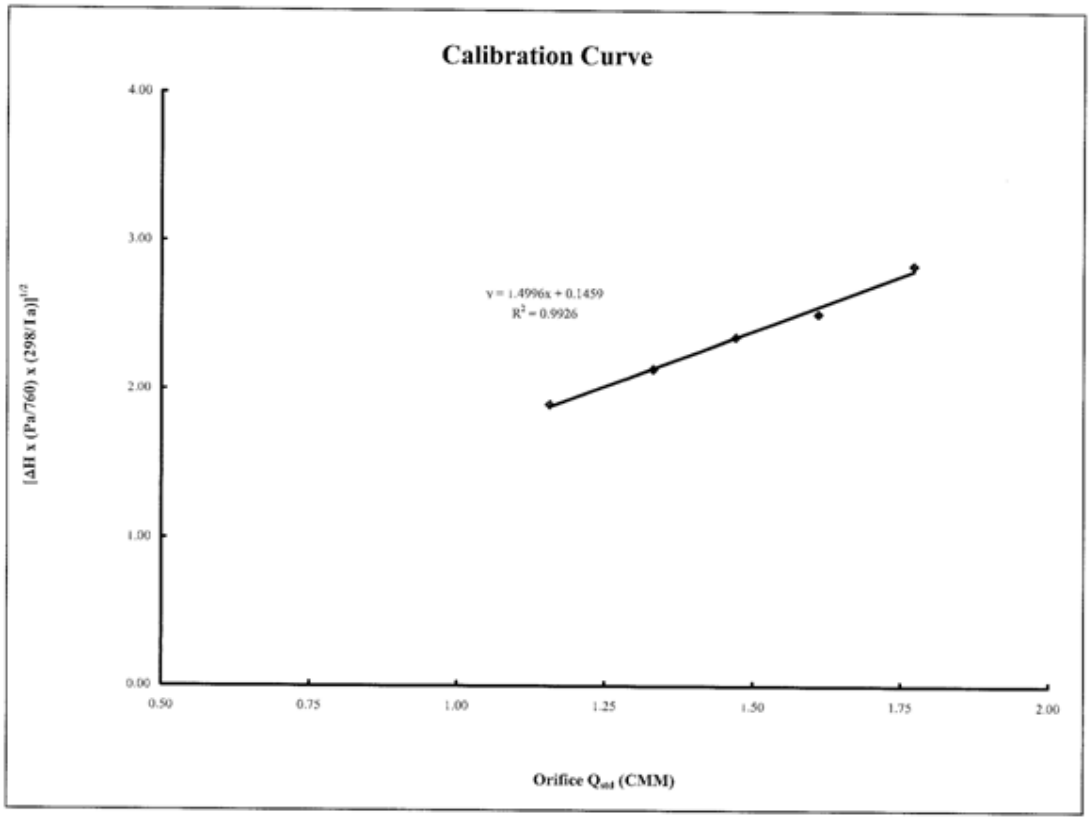
Calibration Result: **ACCEPT**

* If the Correlation Coefficient, R is < 0.9900. Checking and Recalibration are require.

Remark: Bi-monthly Calibration

Calibrated By: _____ Date: 3/Aug/09

Checked By: _____ Date: 3 Aug 09


Calibration Curve
4.00
3.00
2.00
1.00
0.00
0.50
0.75
1.00
1.25
1.50
1.75
2.00
y = 1.4996x + 0.1459
R² = 0.9926
[ΔH x (Pa/760) x (298/Ta)]^1/2
Orifice Q_std (CMM)

ARUP

TSP - Total Suspended Particulates High Volume Sampler
In-situ Calibration Report (ASR2)

Calibration Date	1-Jun-09	**Next Calibration Date**	1-Aug-09
Station	H.K. Institute of Vocational Education-Tsing Yi (IVE) 5th Floor Block D of the main Education Building (ASR2)	Equipment no.	P2.HVS.03

Ambient Condition			
Temperature, Ta (K)	300.05	Pressure, Pa (mmHg)	754.94

Orifice Transfer Standard Information			
Equipment no.	P2.CAL.04		
Slope, mo	1.57672	Intercept, co	-0.00705
Last Calibration Date	4-Nov-08	Next Calibration Date	4-Nov-09

$$mo \times Q_{std} + co = [\Delta O \times (Pa/760) \times (298/Ta)]^{1/2}$$

$$Q_{std} = \{[\Delta O \times (Pa/760) \times (298/Ta)]^{1/2} - co\} / mo$$

Calibration Point	Orifice Manometer Reading, ΔO (inch)	Orifice Q_{std} (CMM) x-axis	HVS Manometer Reading, ΔH (inch)	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ y-axis
1	8.0	1.79	7.9	2.79
2	6.6	1.62	6.7	2.57
3	5.4	1.47	5.7	2.37
4	3.9	1.25	4.6	2.13
5	3.5	1.18	3.8	1.94

By Liner Regression of y on x

Slope, mh = 1.3412 Intercept, ch = 0.3996

*Correction Coefficient, R = 0.9938

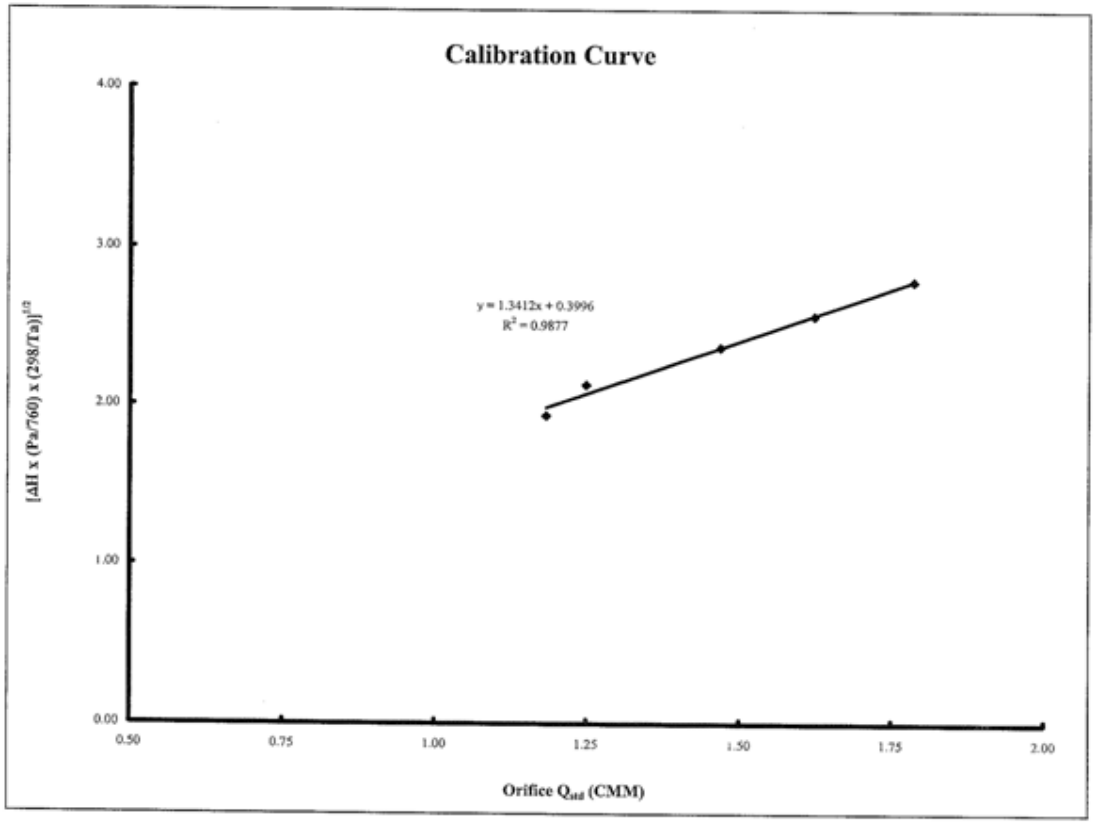
Calibration Result: **ACCEPT**

* If the Correlation Coefficient, R is < 0.9900. Checking and Recalibration are require.

Remark: Bi-monthly Calibration

Calibrated By: _____ Date: 1 / June / 09

Checked By: _____ Date: 1 / June / 09


Calibration Curve
y = 1.3412x + 0.3996
R² = 0.9877
[ΔH x (Pa/760) x (298/Ta)]^1/2
4.00
3.00
2.00
1.00
0.00
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Orifice Q_std (CMM)

ARUP

TSP - Total Suspended Particulates High Volume Sampler
In-situ Calibration Report (ASR2)

Calibration Date	1-Aug-09	**Next Calibration Date**	1-Oct-09
Station	H.K. Institute of Vocational Education-Tsing Yi (IVE) 5th Floor Block D of the main Education Building (ASR2)	Equipment no.	P2.HVS.03

Ambient Condition			
Temperature, Ta (K)	303.45	Pressure, Pa (mmHg)	751.86

Orifice Transfer Standard Information			
Equipment no.	P2.CAL.04		
Slope, mo	1.57672	Intercept, co	-0.00705
Last Calibration Date	4-Nov-08	Next Calibration Date	4-Nov-09

$$mo \times Q_{std} + co = [\Delta O \times (Pa/760) \times (298/Ta)]^{1/2}$$

$$Q_{std} = \{[\Delta O \times (Pa/760) \times (298/Ta)]^{1/2} - co\} / mo$$

Calibration Point	Orifice Manometer Reading, ΔO (inch)	Orifice Q_{std} (CMM) x-axis	HVS Manometer Reading, ΔH (inch)	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ y-axis
1	7.9	1.76	8.1	2.81
2	6.5	1.60	6.7	2.55
3	5.5	1.47	5.6	2.33
4	4.0	1.25	4.5	2.09
5	3.6	1.19	3.7	1.90

By Liner Regression of y on x

Slope, mh = 1.5131 Intercept, ch = 0.1334

*Correction Coefficient, R = 0.9945

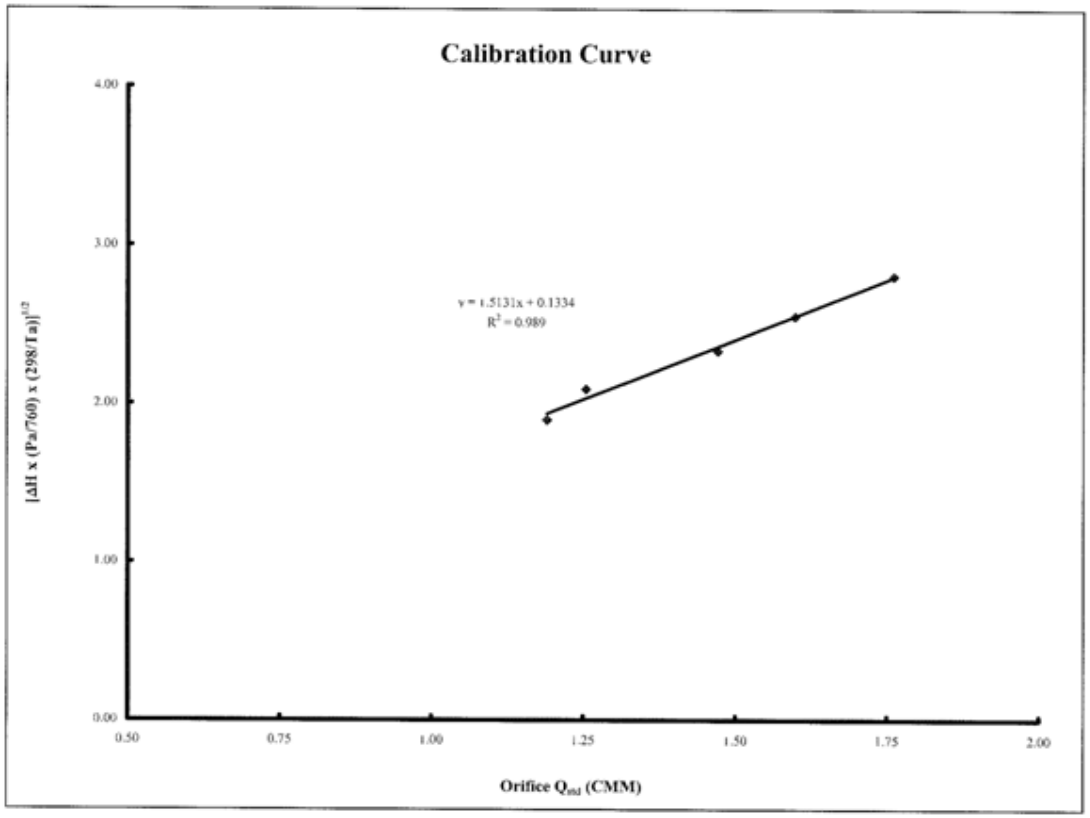
Calibration Result: **ACCEPT**

* If the Correlation Coefficient, R is < 0.9900. Checking and Recalibration are require.

Remark: Bi-monthly Calibration

Calibrated By: _____ Date: 3/Aug/09

Checked By: _____ Date: 3 Aug 09


Calibration Curve
y = 1.5131x + 0.1334
R² = 0.989
[ΔH x (Pa/760) x (298/Ta)]^1/2
Orifice Q_std (CMM)
4.00
3.00
2.00
1.00
0.00
0.50
0.75
1.00
1.25
1.50
1.75
2.00

ARUP

TSP - Total Suspended Particulates High Volume Sampler
In-situ Calibration Report (ASR5)

Calibration Date	1-Jun-09	**Next Calibration Date**	**1-Aug-09**
Station	ASR5	Equipment no.	E.HVS.02

Ambient Condition			
Temperature, Ta (K)	300.1	Pressure, Pa (mmHg)	754.9

Orifice Transfer Standard Information			
Equipment no.	P2.CAL.04		
Slope, mo	1.57672	Intercept, co	-0.00705
Last Calibration Date	4-Nov-08	Next Calibration Date	4-Nov-09

$$mo \times Q_{std} + co = [\Delta O \times (Pa/760) \times (298/Ta)]^{1/2}$$

$$Q_{std} = \{[\Delta O \times (Pa/760) \times (298/Ta)]^{1/2} - co\} / mo$$

Calibration Point	Orifice Manometer Reading, ΔO (inch)	Orifice Q_{std} (CMM) x-axis	HVS Manometer Reading, ΔH (inch)	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ y-axis
1	7.6	1.74	7.9	2.79
2	6.4	1.60	6.7	2.57
3	5.5	1.48	5.6	2.35
4	4.4	1.33	4.5	2.11
5	3.5	1.18	3.4	1.83

By Liner Regression of y on x

Slope, mh =	1.7166	Intercept, ch =	-0.1862
*Correction Coefficient, R =	0.9993		

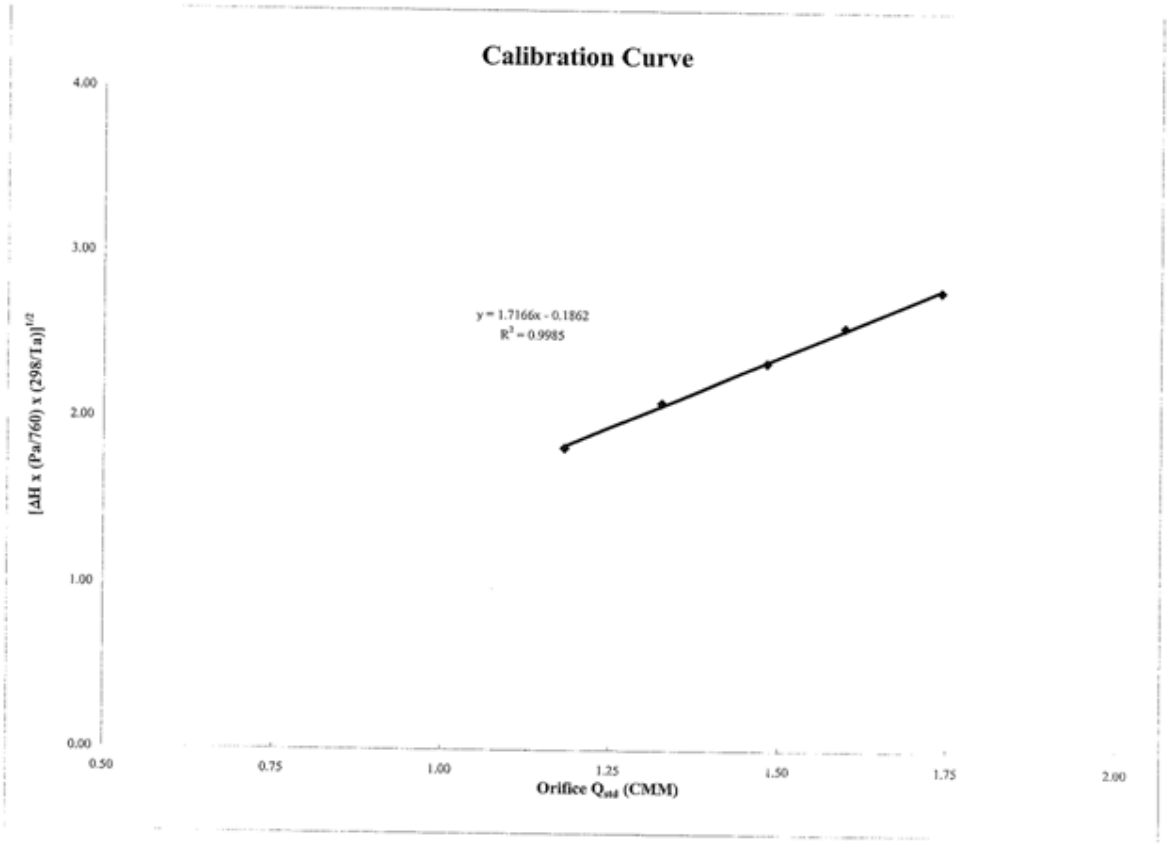
Calibration Result: **ACCEPT**

* If the Correlation Coefficient, R is < 0.9900. Checking and Recalibration are require.

Remark: _____

Calibrated By: cm Wong Date: 1/ June 09

Checked By: _____ Date: 1/2 June 09


Calibration Curve
y = 1.7166x - 0.1862
R² = 0.9985
[ΔH x (Pa/760) x (298/Ta)]^1/2
Orifice Qstd (CMM)
4.00
3.00
2.00
1.00
0.00
0.50
0.75
1.00
1.25
1.50
1.75
2.00

ARUP

TSP - Total Suspended Particulates High Volume Sampler
In-situ Calibration Report (ASR5)

Calibration Date	1-Aug-09	**Next Calibration Date**	**1-Oct-09**
Station	ASR5	Equipment no.	E.HVS.02

Ambient Condition			
Temperature, Ta (K)	303.5	Pressure, Pa (mmHg)	751.9

Orifice Transfer Standard Information			
Equipment no.	P2.CAL.04		
Slope, mo	1.57672	Intercept, co	-0.00705
Last Calibration Date	4-Nov-08	Next Calibration Date	4-Nov-09

$$mo \times Q_{std} + co = [\Delta O \times (Pa/760) \times (298/Ta)]^{1/2}$$

$$Q_{std} = \{[\Delta O \times (Pa/760) \times (298/Ta)]^{1/2} - co\} / mo$$

Calibration Point	Orifice Manometer Reading, ΔO (inch)	Orifice Q_{std} (CMM) x-axis	HVS Manometer Reading, ΔH (inch)	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ y-axis
1	7.5	1.72	7.8	2.75
2	6.5	1.60	6.6	2.53
3	5.4	1.46	5.7	2.35
4	4.4	1.32	4.6	2.11
5	3.5	1.17	3.5	1.84

By Liner Regression of y on x

Slope, mh =	1.6349	Intercept, ch =	-0.0551
*Correction Coefficient, R =	0.9979		
Calibration Result:	**ACCEPT**		

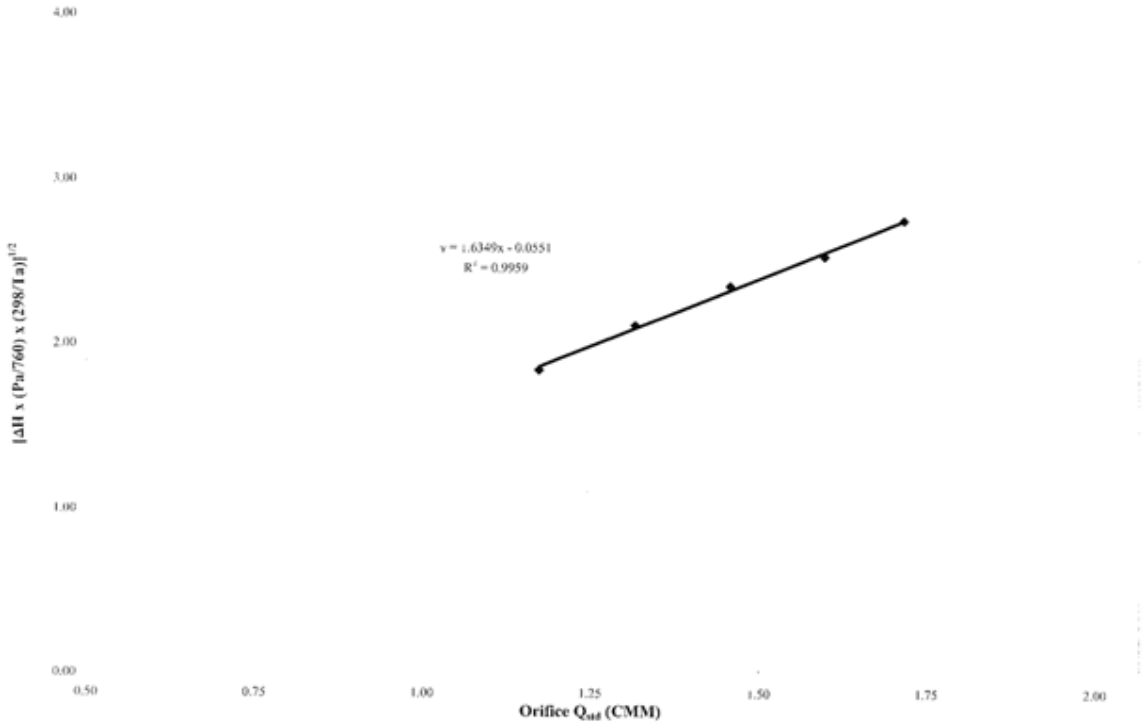
* If the Correlation Coefficient, R is < 0.9900. Checking and Recalibration are require.

Remark: _____

Calibrated By: _____ Date: 3 /Aug 09

Checked By: _____ Date: 3 Aug 09

Calibration Curve



Rev 0
14th May 2002

Appendix G2

Calibration Certificates for Weather Station

Appendix G2: Calibration Certificates for Weather Station

The Weather Station was removed and meteorological data was obtained from Hong Kong Observatory.

Appendix G3

Calibration Certificates for High Volume Orifice Calibrator

TISCH ENVIROMENTAL, INC.
145 SOUTH MIAMI AVE.
VILLAGE OF CLEVES, 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-5028A

Date - Nov 04, 2008 Rootsmeter S/N 9833620 Ta (K) - 295
Operator Tisch Orifice I.D. - 1274 Pa (mm) - 758.19

PLATE OR VDC #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.2760	4.2	1.50
2	NA	NA	1.00	0.9840	7.1	2.50
3	NA	NA	1.00	0.9030	8.4	3.00
4	NA	NA	1.00	0.8340	9.9	3.50
5	NA	NA	1.00	0.6290	17.1	6.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0021	0.7854	1.2295		0.9944	0.7793	0.7640
0.9983	1.0145	1.5873		0.9906	1.0067	0.9863
0.9965	1.1036	1.7388		0.9889	1.0951	1.0804
0.9946	1.1925	1.8781		0.9869	1.1833	1.1670
0.9850	1.5660	2.4590		0.9774	1.5539	1.5279
Qstd slope (m) =		1.57672		Qa slope (m) =		0.98732
intercept (b) =		-0.00705		intercept (b) =		-0.00438
coefficient (r) =		0.99988		coefficient (r) =		0.99988
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

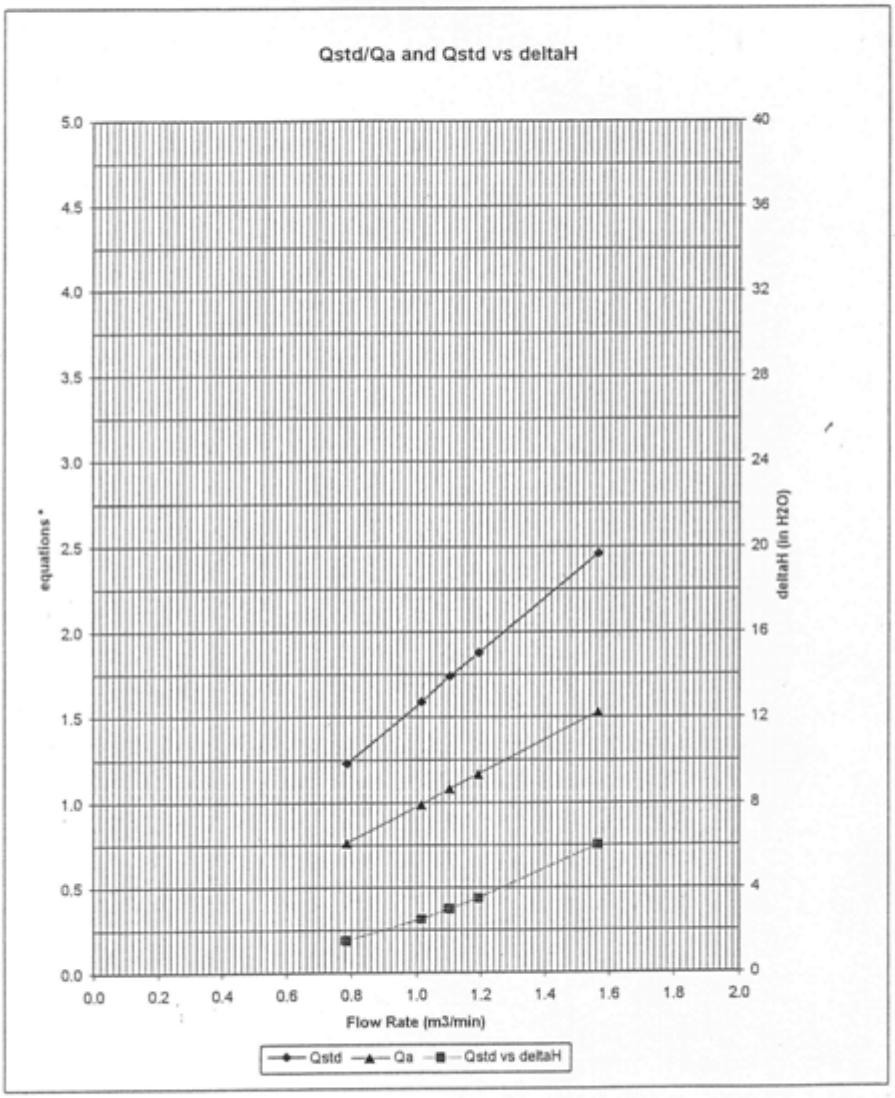
Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

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

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

AIR POLLUTION MONITORING EQUIPMENT



#1274

* y-axis equations:

Qstd series: $\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$

Qa series: $\sqrt{(\Delta H\ (Ta\ /\ Pa))}$

Appendix G4

Calibration Certificates for Sound Level Meter and Calibrator

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.: 08CA0904 01-01B Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	Pulsar, England	Pulsar, England
Type/Model No.:	Model 30	MK226
Serial/Equipment No.:	T220553	110453
Adaptors used:	-	-

Item submitted by

Customer Name:	Meada-Hitachi-Yokogawa-Hsin Chong Joint Venture
Address of Customer:	-
Request No.:	PO/HY26/7192
Date of request:	01-09-2008

Date of test: 04-09-2008

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	11-01-2009	CIGISMEC
Signal generator	DS 360	33873	12-06-2009	CEPREI
Signal generator	DS 360	61227	18-07-2009	CEPREI

Ambient conditions

Temperature:	23 ± 2 °C
Relative humidity:	50 ± 15 %
Air pressure:	1000 ± 15 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 responsess 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:** 24-09-2008 **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

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 Tel : (852) 2873 6869
香港黃竹坑道37號利達中心地下、9樓 12樓 13樓及20樓 Fax : (852) 2555 7533
E-mail: smec@cigismec.com Website: www.cigismec.com

CERTIFICATE OF CALIBRATION

Certificate No : 08CA0917 02A Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	Pulsar, England		Pulsar, England
Type/Model No.:	Model 30		MK226
Serial/Equipment No.:	T220551		110452
Adaptors used:	-		-

Item submitted by

Customer Name:	Maeda-Hitachi-Yokogawa-Hsin Chong Joint Venture
Address of Customer:	-
Request No.:	PO/HY26/7192
Date of request:	12-09-2008

Date of test: 17-09-2008

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	11-01-2009	CIGISMEC
Signal generator	DS 360	33873	12-06-2009	CEPREI
Signal generator	DS 360	61227	18-07-2009	CEPREI

Ambient conditions

Temperature:	23 ± 2 °C
Relative humidity:	50 ± 15 %
Air pressure:	1000 ± 10 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 responseas of the Sound Level Meter.

Test results

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/Peng Jun Qi Date: 24-09-2008 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

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 Tel : (852) 2873 6869
香港黃竹坑道37號利達中心地下、9樓、12樓、13樓及20樓 Fax : (852) 2555 7533
E-mail: smec@cigismec.com Website: www.cigismec.com

CERTIFICATE OF CALIBRATION

Certificate No.: 08CA0904 01-02B **Page:** 1 of 2

Item tested

Description:	Sound Calibrator (Class 1L)
Manufacturer:	Pulsar England
Type/Model No :	MODEL 100B
Serial/Equipment No :	035213
Adaptors used:	Yes

Item submitted by

Customer:	Meada-Hitachi-Yokogawa-Hsin Chong Joint Venture
Address of Customer:	-
Request No :	PO/HY26/7192
Date of request:	01-09-2008

Date of test: 04-09-2008

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	29-06-2009	SCL
Preamplifier	B&K 2673	2230857	12-12-2008	CEPREI
Measuring amplifier	B&K 2610	2346941	15-12-2008	CEPREI
Signal generator	DS 360	61227	18-07-2009	CEPREI
Digital multi-meter	34401A	US36067050	30-11-2008	CIGISMEC
Audio analyzer	8903B	GB41300350	06-12-2008	CEPREI
Universal counter	53132A	MY40003662	11-07-2009	CEPREI

Ambient conditions

Temperature:	24 ± 1 °C
Relative humidity:	55 ± 10 %
Air pressure:	1000 ± 10 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 Ming Ing Jun Qi **Date:** 24-09-2008 **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

FUGRO TECHNICAL SERVICES LIMITED
MaterialLab Division,
Fugro Development Centre,
5 Lok Yi Street, 17 M.S. Castle Peak Road,
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Fax : +852-2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk / www.fugro.com

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client Supplied Information

Client : Maeda-Hitachi-Yokogawa-Hsin Chong JV
Address : PO Box No. 80330, Cheung Sha Wan Post Office
Project : Calibration Services
Calibration Item -
Description : Sound level meter
Model No : Bruel & Kjaer (Type 2238)
Serial No : 2565848 (Microphone), 2562752 (Sound level meter)
Next Calibration Due Date : 16/Dec/2009

Laboratory Information

Calibrating Equipment -
Description : B & K Acoustic Multifunction Calibrator 4226
Serial No. : 2546175
Date of Calibration : 16/Dec/2008
Ambient Temperature : 20±2 °C
Specification Limit : EN 60651: 1994 Type 1

Calibration Results :

(1) Frequency response
(Reference SPL: 94dB & Range setting: 50 - 130dB at traditional free field)

Table 1: Summary of frequency response (A - weighting)

Frequency (Hz)	Measured Value (dB)	Specification Limit (dB)		
31.5	-38.6	-40.9	to	-37.9
63	-25.8	-27.7	to	-24.7
125	-16.0	-17.1	to	-15.1
250	-8.6	-9.6	to	-7.6
500	-3.3	-4.2	to	-2.2
1000(ref.)	0.0	-1.0	to	1.0
2000	1.2	0.2	to	2.2
4000	0.9	-2.0	to	2.5
8000	-2.0	-4.1	to	0.4
12500	-6.3	-10.3	to	-1.3
16000	-9.8	$-\infty$	to	-3.6

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Fax : +852-2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk / www.fugro.com

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

(2) Level range control
(Reference SPL: 94dB, Reference frequency: 1kHz & Reference range setting : 50 - 130dB)

Table 2: Summary of level range control accuracy

Level range (dB)	Measured deviation (dB)	Specification limit (dB)
50-130 (Ref.)	NA	NA
20-100	0.0	± 0.5
30-110	0.0	± 0.5
40-120	0.0	± 0.5
60-140	0.0	± 0.5

(3) Differential level linearity
(Reference SPL: 94dB, Reference frequency: 1kHz & Primary indicator range: 50 - 130dB)

Table 3: Summary of differential level linearity

Sound pressure level (dB)	Measured deviation (dB)	Specification limit (dB)
94	NA	NA
104	0.0	± 0.4
114	0.0	± 0.4

(4) Crest factor
(C.F. : 3, Test frequency: 2kHz, Test range: 50 - 130dB & Test SPL: 106dB)

Table 4: Crest factor

Sound pressure level (dB)	Measured deviation (dB)	Specification limit (dB)
106	0.3	± 0.5

Remarks :
1. The equipment used in this calibration is traceable to recognized National Standards.
2. The above calibration results does comply with the Type 1 specification requirement

Checked by : _____ Date : 18-12-08 Certified by : _____ Date : 18 Dec, 2008
C.K. So (Engineer)

FUGRO TECHNICAL SERVICES LIMITED
MaterialLab Division,
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5 Lok Yi Street, 17 M.S. Castle Peak Road
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Website : www.materialab.com.hk / www.fugro.com

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client Supplied Information

Client : Maeda-Hitachi-Yokogawa-Hsin Chong JV
Address : PO Box No. 80330, Cheung Sha Wan Post Office
Project : Calibration Services
Calibration Item -
Description : Sound level meter
Model No. : Bruel & Kjaer (Type 2238)
Serial No. : 2565853 (Microphone), 2562757 (Sound level meter)
Next Calibration Due Date : 16/Dec/2009

Laboratory Information

Calibrating Equipment -
Description : B & K Acoustic Multifunction Calibrator 4226
Serial No. : 2546175
Date of Calibration : 16/Dec/2008
Ambient Temperature : 20±2 °C
Specification Limit : EN 60651: 1994 Type 1

Calibration Results :

(1) Frequency response
(Reference SPL: 94dB & Range setting: 50 - 130dB at traditional free field)

Table 1 Summary of frequency response (A - weighting)

Frequency (Hz)	Measured Value (dB)	Specification Limit (dB)		
31.5	-38.8	-40.9	to	-37.9
63	-26.0	-27.7	to	-24.7
125	-16.1	-17.1	to	-15.1
250	-8.7	-9.6	to	-7.6
500	-3.4	-4.2	to	-2.2
1000(ref.)	-0.1	-1.0	to	1.0
2000	1.1	0.2	to	2.2
4000	0.7	-2.0	to	2.5
8000	-2.4	-4.1	to	0.4
12500	-6.3	-10.3	to	-1.3
16000	-9.2	-∞	to	-3.6

FUGRO TECHNICAL SERVICES LIMITED
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E-mail : matlab@fugro com hk
Website : www materialab com hk / www fugro com

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

(2) Level range control
(Reference SPL: 94dB, Reference frequency: 1kHz & Reference range setting : 50 - 130dB)

Table 2: Summary of level range control accuracy

Level range (dB)	Measured deviation (dB)	Specification limit (dB)
50-130 (Ref.)	NA	NA
20-100	0.0	± 0.5
30-110	0.0	± 0.5
40-120	0.0	± 0.5
60-140	0.0	± 0.5

(3) Differential level linearity
(Reference SPL: 94dB, Reference frequency: 1kHz & Primary indicator range: 50 - 130dB)

Table 3: Summary of differential level linearity

Sound pressure level (dB)	Measured deviation (dB)	Specification limit (dB)
94	NA	NA
104	0.0	± 0.4
114	0.0	± 0.4

(4) Crest factor
(C F : 3, Test frequency: 2kHz, Test range: 50 - 130dB & Test SPL: 106dB)

Table 4: Crest factor

Sound pressure level (dB)	Measured deviation (dB)	Specification limit (dB)
106	0.2	± 0.5

Remarks :
1. The equipment used in this calibration is traceable to recognized National Standards.
2. The above calibration results does comply with the Type 1 specification requirement

Checked by : _____ Date : 18-12-08 Certified by : _____ Date : 18 Dec 2008
C K So (Engineer)

FUGRO TECHNICAL SERVICES LIMITED
MaterialLab Division
Fugro Development Centre,
5 Lok Yi Street, 17 M.S. Castle Peak Road,
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Website : www.materialab.com.hk / www.fugro.com

MaterialLab

Report No : 041333CA82714(5)

CALIBRATION CERTIFICATE OF SOUND LEVEL CALIBRATOR

Client Supplied Information

Client : Maeda-Hitachi-Yokogawa-Hsin Chong JV
Address : PO Box No. 80330, Cheung Sha Wan Post Office
Project : Calibration Services
Calibration Item -

Description	:	Bruel & Kjaer Sound Level Calibrator
Model No	:	Type 4231
Serial No.	:	2605971
Next Calibration Due Date	:	16-Dec-2009

Laboratory Information

Calibrating Equipment -

Description	:	B & K Acoustic Multifunction Calibrator 4226
Serial No.	:	2546175
Date of Calibration	:	16-Dec-2008
Ambient Temperature	:	20±2 °C
Specification Limit	:	±0.5dB

Calibration Result :

(1) At 94dB reading
Correction of UUT (at 94dB & 1kHz) : +0.0dB

(2) At 114dB reading
Correction of UUT (at 114dB & 1kHz) : +0.0dB

Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The above calibration results does comply with the specification requirement.
3. Serial number of sound level meter (microphone) used is 2562752 (2565848). Settings of SLM are 50-130dB range, A weighting and F response

Checked by : _____ Date : 18-12-08 Certified by : _____ Date : 19 Dec 2008
C K So (Engineer)

Appendix G5

Certificate HOKLAS Accredited Laboratory

Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

FUGRO TECHNICAL SERVICES LIMITED
輝固土力工程及檢測有限公司

Fugro Development Centre, 5 Lok Yi Street, Tai Lam, Tuen Mun, New Territories, Hong Kong
香港新界屯門大欖樂怡街五號輝固發展中心

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a
為香港認可處執行機關根據認可諮詢委員會建議而接受的

HOKLAS Accredited Laboratory
「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence
此實驗所符合ISO / IEC 17025 : 2005 –《測試及校正實驗所能力的通用規定》所訂的要求，
of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as
獲認可進行載於香港實驗所認可計劃（認可實驗所名冊）內下述測試類別中的指定
listed in the HOKLAS Directory of Accredited Laboratories within the test category of
測試或校正工作

Environmental Testing
環境測試

This laboratory is accredited in accordance with the recognized International Standard ISO / IEC 17025 : 2005.
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
這項認可資格證示在指定範疇所需的技術能力及實驗所質量管理體系的運作
quality management system (refer joint ISO-ILAC-IAF Communiqué dated 18 June 2005).
（見國際標準化組織、國際實驗所認可合作組織及國際認可論壇於二零零五年六月十八日的聯合公報）。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive
香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator
執行幹事 陳成城
Issue Date : 17 April 2007
首發日期：二零零七年四月十七日

Registration Number : HOKLAS 015
註冊號碼：

Date of First Registration : 23 March 1989
首次註冊日期：一九八九年三月二十三日

L 000260

This certificate is issued subject to the terms and conditions laid down by HKAS
本證書按所載香港認可處訂立的條款及條件發出

Hong Kong Accreditation Service

香港認可處

This is to certify that

ALS TECHNICHEM (HK) PTY LIMITED

at the address of 11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong.

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a

HOKLAS Accredited Laboratory

This laboratory meets the requirements of ISO/IEC 17025:1999 – General Requirements for the Competence of Testing and Calibration Laboratories and it has been accredited for performing specific tests or calibrations as listed in the HOKLAS Directory of Accredited Laboratories within the Test Category of

ENVIRONMENTAL TESTING

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive.

(DR. L.H. NG)
Executive Administrator

Issue Date :
30 JANUARY 2002

Registration Number
HOKLAS 066

Date of First Registration :
15 SEPTEMBER 1995

This Certificate is issued subject to the terms and conditions laid down by HKAS.

F 000101

Appendix H1

Event/Action Plan for Air Quality

Appendix H1: Event/Action Plan for Air Quality

Event Level	Action		
	ET	**ER**	**CONTRACTOR**
Action Level			
Exceedance for one sample	• Identify source • Inform ER • Repeat Measurement to confirm finding • Increase monitoring frequency to daily	• Notify Contractor • Check mortaring data and Contractor's working methods	• Rectify any unacceptable practice • Amend working methods if appropriate
Exceedance for two or more consecutive samples	1. Identify source 2. Inform ER 3. Repeat measurements to confirm findings 4. Increase monitoring frequency to daily 5. Discuss with ER for remedial actions required 6. If exceedance continues arrange meeting with ER 7. If exceedance stops, cease additional monitoring	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Check monitoring data and Contractor's working methods 4. Discuss with Environmental Team and Contractor on potential remedial actions 5. Ensure remedial actions properly implemented	1. Submit proposals for remedial actions to ER within 3 working days of notification 2. Implement the agreed proposals 3. Amend proposal if appropriate
Limit Level			
Exceedance for one sample	1. Identify source 2. Inform ER and EPD 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily 5. Assess effectiveness of Contractor's remedial actions and keep EPD and ER informed of the results	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Check monitoring data and Contractor's working methods 4. Discuss with Environmental Team Leader and Contractor potential remedial actions 5. Ensure remedial actions properly implemented	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to ER within 3 working days of notification 3. Implements the agreed proposals 4. Amend proposal if appropriate
Exceedance for two or more consecutive samples	1. Identify source 2. Inform ER and EPD the causes & actions taken for the exceedances 3. Repeat measurement to confirm findings 4. Increase monitoring frequency to daily 5. Investigate the causes of exceedance 6. Arrange meeting with EPD and ER to discuss the remedial actions to be taken 7. Assess effectiveness of Contractor's remedial actions and keep EPD and ER informed of the results & if exceedance stops, cease additional monitoring	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 4. Discuss amongst Environmental Team Leader and the Contractor potential remedial actions 5. Review Contractor's remedial actions whenever necessary to assure their effectiveness 6. If exceedance continues consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Take immediate action avoid further exceedance 2. Submit proposals for remedial actions to ER within 3 working days of notification 3. Implements the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Appendix H2

Event/Action Plan for Noise

Appendix H2: Event/Action Plan for Construction Noise

Event	Action		
	ET Leader	ER	Contractor
Action Level	1. Notify ER 2. Analyse investigation 3. Increase monitoring frequency to check mitigation effectiveness	1. Notify Contractor 2. Require Contractor to propose measures* for the analysed noise problem	1. Submit noise mitigation proposals to Environmental Team 2. Implement noise mitigation proposals*
Limit Level	1. Notify ER 2. Notify EPD	1. Notify Contractor 2. Require contractor to implement mitigation measures* Increase monitoring frequency to check mitigation effectiveness	1. Implement mitigation measures 2. Prove to Environmental Team Leader ER effectiveness of measures applied
*	*Mitigation Measures may include:* • *Relocation of noise emitting plant* • *Use of silenced or super-silenced equipment* • *Use of acoustic sheds or screens* • *Limit quantity of plant operating* • *Change working technique*		

Appendix I

Implementation Status of Environmental Protection Requirements

Appendix I: Implementation Status of Environmental Protection Requirement

Environmental Protection Measures		Timing	Implementation Stages*			
Activities			29/04/09 to 28/05/09	29/05/09 to 28/06/09	29/06/09 to 28/07/09	29/07/09 to 28/08/09
Landscape and visual	Erection, painting and maintenance of site hoardings around works and storage areas.	Throughout the construction period	√	√	√	√
	Restrictions on the height of material/spoil stockpiles.		√	√	√	√
	Prompt hydro-seeding of disturbed areas and cut/fill slopes prior to the permanent landscaping works.		N/A	N/A	N/A	N/A
	Avoidance of chunam or shotcreting slope treatments.		N/A	N/A	N/A	N/A
	Conservation of topsoil where practical.		N/A	N/A	N/A	N/A
	Site litter patrols and regular site waste collection.		√	√	√	√
	Maintenance of planting.		N/A	N/A	N/A	N/A
Ecological Impact	Minimise damage outside works areas		√	√	√	√
Construction:						
Material Storage	Covers for dusty stockpiles	Throughout the construction period	√	√	√	√
Vehicle movement	Haul road watering, vehicle wheel wash prior to exit. Where practical, access roads should be protected with crushed gravel.		√	√	√	√
Plant maintenance	All plant shall be maintained to prevent any undue air emissions.		√	√	√	√
All plant activity	Reference should be made the EM&A Manual Action Plan for measures for consideration when Noise Limit Levels are not met.		√	√	√	√
Plant maintenance	All plant shall be maintained to prevent any undue noise nuisance.		√	√	√	√

* N/A = Not Applicable
✓ = Implemented
▲ = Rectified
= Not Implemented

Environmental Protection Measures		Timing	Implementation Stages*			
Activities			29/04/09 to 28/05/09	29/05/09 to 28/06/09	29/06/09 to 28/07/09	29/07/09 to 28/08/09
Wheel wash	All wheel wash water shall be diverted to a sediment pit.	Throughout the construction period	√	√	√	√
Concrete Truck Washout	All concrete trucks shall wash out into a lined pit.		√	√	√	√
Surface water diversion	All clean surface water shall be diverted around the site.		√	√	√	√
Sediment control	Sediment removal facilities shall be provided and be maintained and excavated as necessary to prevent sedimentation of the channel. Perimeter channels shall be provided. Works shall be programmed for the dry season where feasible.		√	√	√	√
Fuel can storage	All fuel cans shall be placed within a bundled area. Any fuel spills shall be mopped up as necessary.		▲	√	√	√
Slope covers	Finished slopes and other slopes near drainage areas shall be covered prior to rains to reduce sedimentation of runoff. Slopes should be hydroseeded or shotcreted as early as possible to prevent erosion.		N/A	N/A	N/A	N/A
Excavation works	Excavation works shall avoid sensitive areas.	Throughout the excavation work period	√	√	√	√
Material, plant movement & fuel can refilling.	Any fuel or oil spills shall be excavated and disposed.	Throughout the construction period	√	√	√	√
Generators	All generators shall be placed within a bundled area. Any fuel spills shall be mopped up as necessary.		√	√	√	√
Material containers	All empty bags and containers shall be collected for disposal.		√	√	√	√

* N/A = Not Applicable
✓ = Implemented
▲ = Rectified
= Not Implemented

Environmental Protection Measures		Timing	Implementation Stages*			
Activities			29/04/09 to 28/05/09	29/05/09 to 28/06/09	29/06/09 to 28/07/09	29/07/09 to 28/08/09
Worker generated litter and Waste	Litter receptacles shall be placed around the site. Litter shall be taken regularly to the refuse collection points. Chemical toilets (or suitable equivalent) should be provided for workers. Any canteens should have grease-traps.	Throughout the construction period	√	√	√	√
Neighbourhood nuisance	All complaints regarding construction works shall be relayed to the Environmental Team.		N/A	N/A	N/A	N/A
Legal requirements	Different types of waste should be segregated, stored, transported and disposed of in accordance with the relevant legislative requirements and guidelines		√	√	√	√
On-site separation	On-site separation of municipal solid waste and construction/demolition wastes should be conducted as far as possible in order to minimize the amount of solid waste to be disposed to landfill.		√	√	√	√
Temporary storage area	Separated wastes should be stored in different containers, skips, or stockpiles to enhance reuse or recycling of materials and encourage their proper disposal.		√	√	√	√
Record of wastes	Records of quantities of wastes generated, recycled and disposed (with locations) should be properly kept.		√	√	√	√
Trip-ticket system	To monitor the disposal of waste at landfills and control fly-tipping, a "trip-ticket" system for all solid waste transfer/disposal operations should be implemented. The system should be included as a contractual requirement, and monitored by the Environmental Team and audited by the Independent Environmental Checker.		√	√	√	√

* N/A = Not Applicable
✓ = Implemented
▲ = Rectified
= Not Implemented

Appendix J

1-hour and 24-hour TSP Monitoring Results

The Summary of 1-hr TSP Concentration (μg/m^3) at HKIVE Fok Ying Tung Hall of Residence (ASR 1)

Date	Sampling Time	Elapsed Time (min)	Initial Standard Flow Rate (m^3/min)	Final Standard Flow Rate (m^3/min)	Averaged Standard Flow Rate (m^3/min)	Total Standard Volume (m^3)	Initial Filter Weight (g)	Final Filter Weight (g)	TSP Concentration μg/m^3
30-Jul-09	12:05	60.00	1.31	1.31	1.31	78.74	2.7913	2.7991	99.1
30-Jul-09	13:10	60.00	1.31	1.31	1.31	78.74	2.7727	2.7842	146.1
30-Jul-09	15:30	60.00	1.31	1.31	1.31	78.74	2.7874	2.8046	218.4
5-Aug-09	12:27	60.00	1.31	1.31	1.31	78.55	2.7895	2.8005	140.0
5-Aug-09	14:40	60.00	1.31	1.31	1.31	78.55	2.7889	2.7996	136.2
5-Aug-09	17:17	60.00	1.31	1.31	1.31	78.55	2.7849	2.7931	104.4
11-Aug-09	10:26	60.00	1.31	1.31	1.31	78.48	2.7962	2.8078	147.8
11-Aug-09	11:32	60.00	1.31	1.31	1.31	78.48	2.7794	2.7872	99.4
11-Aug-09	15:46	60.00	1.31	1.31	1.31	78.48	2.7903	2.7974	90.5
17-Aug-09	12:40	60.00	1.31	1.31	1.31	78.34	2.8319	2.8392	93.2
17-Aug-09	13:45	60.00	1.31	1.31	1.31	78.34	2.8259	2.8330	90.6
17-Aug-09	14:51	60.00	1.31	1.31	1.31	78.34	2.8181	2.8243	79.1
22-Aug-09	10:46	60.00	1.30	1.30	1.30	78.22	2.8249	2.8349	127.8
22-Aug-09	13:32	60.00	1.30	1.30	1.30	78.22	2.8408	2.8500	117.6
22-Aug-09	14:40	60.00	1.30	1.30	1.30	78.22	2.8296	2.8387	116.3
28-Aug-09	11:47	60.00	1.30	1.30	1.30	78.16	2.8418	2.8524	135.6
28-Aug-09	12:52	60.00	1.30	1.30	1.30	78.16	2.7991	2.8111	153.5
28-Aug-09	15:16	60.00	1.30	1.30	1.30	78.16	2.8055	2.8166	142.0

The Summary of 24-hrs TSP Concentration (μg/m^3) at HKIVE Fok Ying Tung Hall of Residence (ASR1)

Date	Sampling Time	Elapsed Time (min)	Initial Standard Flow Rate (m^3/min)	Final Standard Flow Rate (m^3/min)	Averaged Standard Flow Rate (m^3/min)	Total Standard Volume (m^3)	Initial Filter Weight (g)	Final Filter Weight (g)	TSP Concentration μg/m^3
29-Jul-09	0:00	1440.00	1.31	1.31	1.31	1887.88	2.6458	2.7189	38.7
4-Aug-09	0:00	1440.00	1.31	1.31	1.31	1884.40	2.7958	2.8688	38.7
10-Aug-09	0:00	1440.00	1.31	1.31	1.31	1881.55	2.7835	2.8290	24.2
15-Aug-09	0:00	1440.00	1.30	1.31	1.31	1879.71	2.8184	2.8863	36.1
21-Aug-09	0:00	1440.00	1.30	1.30	1.30	1876.87	2.8336	2.8857	27.8
27-Aug-09	0:00	1440.00	1.30	1.30	1.30	1876.37	2.8292	2.8841	29.3

The Summary of 1-hr TSP Concentration (μg/m^3) at HKIVE 5th floor Block D of the Main Building (ASR 2)

Date	Sampling Time	Elapsed Time (min)	Initial Standard Flow Rate (m^3/min)	Final Standard Flow Rate (m^3/min)	Averaged Standard Flow Rate (m^3/min)	Total Standard Volume (m^3)	Initial Filter Weight (g)	Final Filter Weight (g)	TSP Concentration μg/m^3
30-Jul-09	11:00	60.00	1.27	1.27	1.27	76.28	2.7978	2.8056	102.3
30-Jul-09	12:10	60.00	1.27	1.27	1.27	76.28	2.7824	2.7900	99.6
30-Jul-09	16:12	60.00	1.27	1.27	1.27	76.28	2.8039	2.8160	158.6
5-Aug-09	11:30	60.00	1.31	1.31	1.31	78.35	2.7818	2.7901	105.9
5-Aug-09	14:00	60.00	1.31	1.31	1.31	78.35	2.7872	2.7960	112.3
5-Aug-09	16:23	60.00	1.31	1.31	1.31	78.35	2.7769	2.7850	103.4
11-Aug-09	9:47	60.00	1.30	1.30	1.30	78.28	2.7907	2.8006	126.5
11-Aug-09	10:51	60.00	1.30	1.30	1.30	78.28	2.7890	2.7969	100.9
11-Aug-09	15:09	60.00	1.30	1.30	1.30	78.28	2.7959	2.8038	100.9
17-Aug-09	11:50	60.00	1.30	1.30	1.30	78.14	2.8204	2.8276	92.1
17-Aug-09	12:59	60.00	1.30	1.30	1.30	78.14	2.8302	2.8365	80.6
17-Aug-09	14:06	60.00	1.30	1.30	1.30	78.14	2.8217	2.8258	52.5
22-Aug-09	10:33	60.00	1.30	1.30	1.30	78.02	2.8236	2.8311	96.1
22-Aug-09	13:19	60.00	1.30	1.30	1.30	78.02	2.8397	2.8471	94.9
22-Aug-09	14:26	60.00	1.30	1.30	1.30	78.02	2.8245	2.8327	105.1
28-Aug-09	11:33	60.00	1.30	1.30	1.30	77.96	2.8205	2.8291	110.3
28-Aug-09	13:09	60.00	1.30	1.30	1.30	77.96	2.8133	2.8188	70.5
28-Aug-09	16:00	60.00	1.30	1.30	1.30	77.96	2.8152	2.8260	138.5

The Summary of 24-hr TSP Concentration (μg/m^3) at HKIVE 5th floor Block D of the Main Building (ASR 2)

Date	Sampling Time	Elapsed Time (min)	Initial Standard Flow Rate (m^3/min)	Final Standard Flow Rate (m^3/min)	Averaged Standard Flow Rate (m^3/min)	Total Standard Volume (m^3)	Initial Filter Weight (g)	Final Filter Weight (g)	TSP Concentration μg/m^3
29-Jul-09	0:00	1440.00	1.27	1.27	1.27	1828.57	2.7904	2.8830	50.6
4-Aug-09	0:00	1443.60	1.30	1.31	1.31	1884.19	2.7794	2.8439	34.2
10-Aug-09	0:00	1440.00	1.30	1.30	1.30	1876.66	2.7774	2.8177	21.5
15-Aug-09	0:00	1440.00	1.30	1.30	1.30	1874.83	2.8120	2.8729	32.5
21-Aug-09	0:00	1440.00	1.30	1.30	1.30	1872.02	2.8307	2.8880	30.6
27-Aug-09	0:00	1444.80	1.30	1.30	1.30	1877.77	2.8433	2.8911	25.5

The Summary of 1-hr TSP Concentration (μg/m^3) at Stonecutters Base (ASR5)

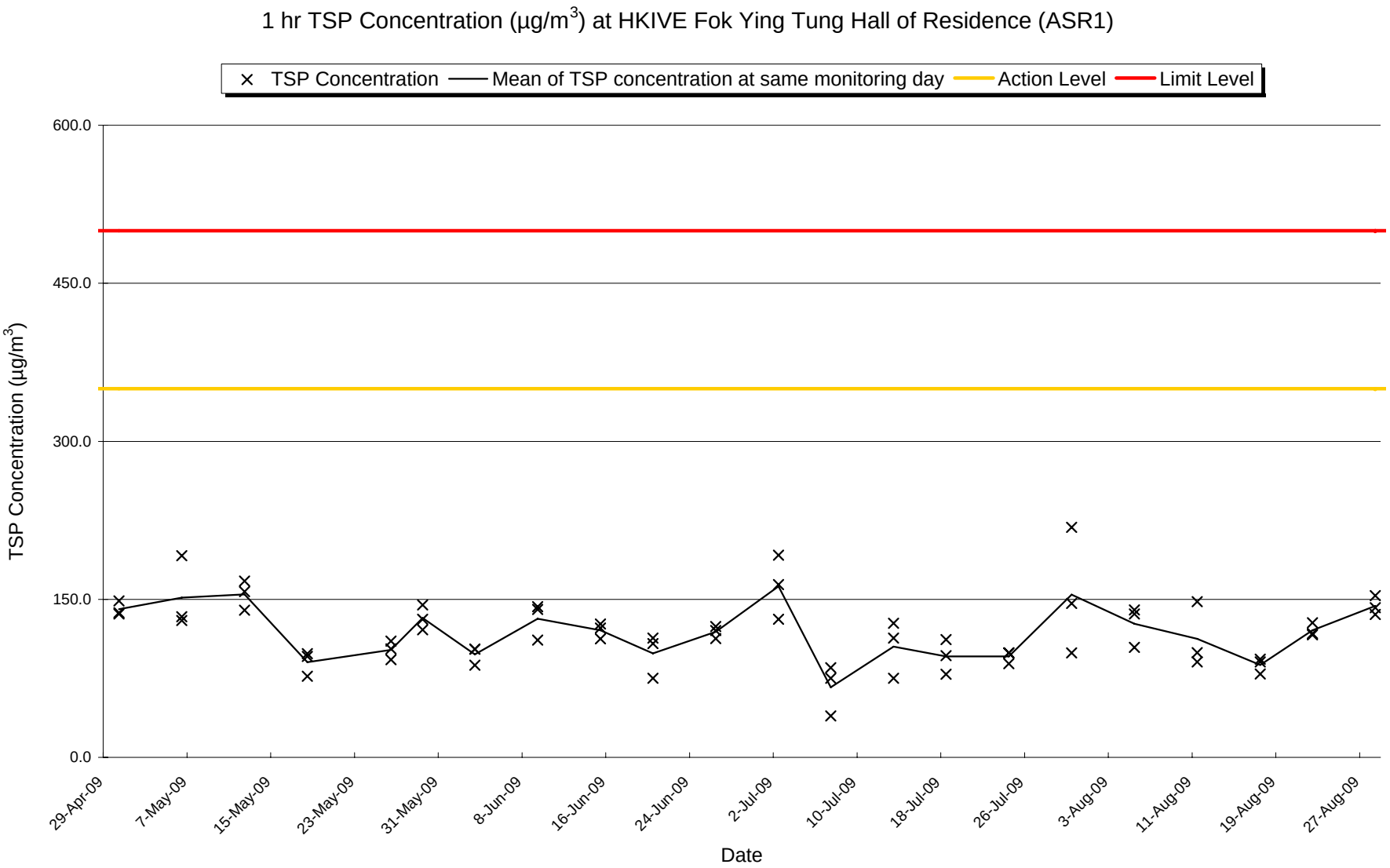
Date	Sampling Time	Elapsed Time (min)	Initial Standard Flow Rate (m^3/min)	Final Standard Flow Rate (m^3/min)	Averaged Standard Flow Rate (m^3/min)	Total Standard Volume (m^3)	Initial Filter Weight (g)	Final Filter Weight (g)	TSP Concentration μg/m^3
30-Jul-09	9:45	60.00	1.33	1.33	1.33	79.81	2.7804	2.7824	25.1
30-Jul-09	12:50	60.00	1.33	1.33	1.33	79.81	2.8076	2.8120	55.1
30-Jul-09	17:00	60.00	1.33	1.33	1.33	79.81	2.8014	2.8169	194.2
5-Aug-09	11:08	60.00	1.34	1.34	1.34	80.61	2.7919	2.8076	194.8
5-Aug-09	13:50	60.00	1.34	1.34	1.34	80.61	2.7785	2.7991	255.5
5-Aug-09	15:00	60.00	1.36	1.36	1.36	81.44	2.7761	2.8024	322.9
11-Aug-09	14:07	60.00	1.32	1.32	1.32	79.10	2.7842	2.8002	202.3
11-Aug-09	15:14	60.00	1.32	1.32	1.32	79.10	2.7891	2.8049	199.8
11-Aug-09	18:00	60.00	1.32	1.32	1.32	79.10	2.7948	2.8133	233.9
17-Aug-09	10:02	60.00	1.32	1.32	1.32	79.26	2.7809	2.7894	107.2
17-Aug-09	11:09	60.00	1.32	1.32	1.32	79.26	2.8467	2.8695	287.7
17-Aug-09	14:00	60.00	1.32	1.32	1.32	79.26	2.8473	2.8634	203.1
22-Aug-09	10:04	60.00	1.33	1.33	1.33	79.85	2.8426	2.8524	122.7
22-Aug-09	11:07	60.00	1.33	1.33	1.33	79.85	2.8304	2.8560	320.6
22-Aug-09	14:00	60.00	1.33	1.33	1.33	79.85	2.8317	2.8459	177.8
28-Aug-09	10:04	60.00	1.33	1.33	1.33	79.82	2.8434	2.8584	187.9
28-Aug-09	11:07	60.00	1.33	1.33	1.33	79.82	2.8350	2.8500	187.9
28-Aug-09	14:00	60.00	1.33	1.33	1.33	79.82	2.8203	2.8312	136.6

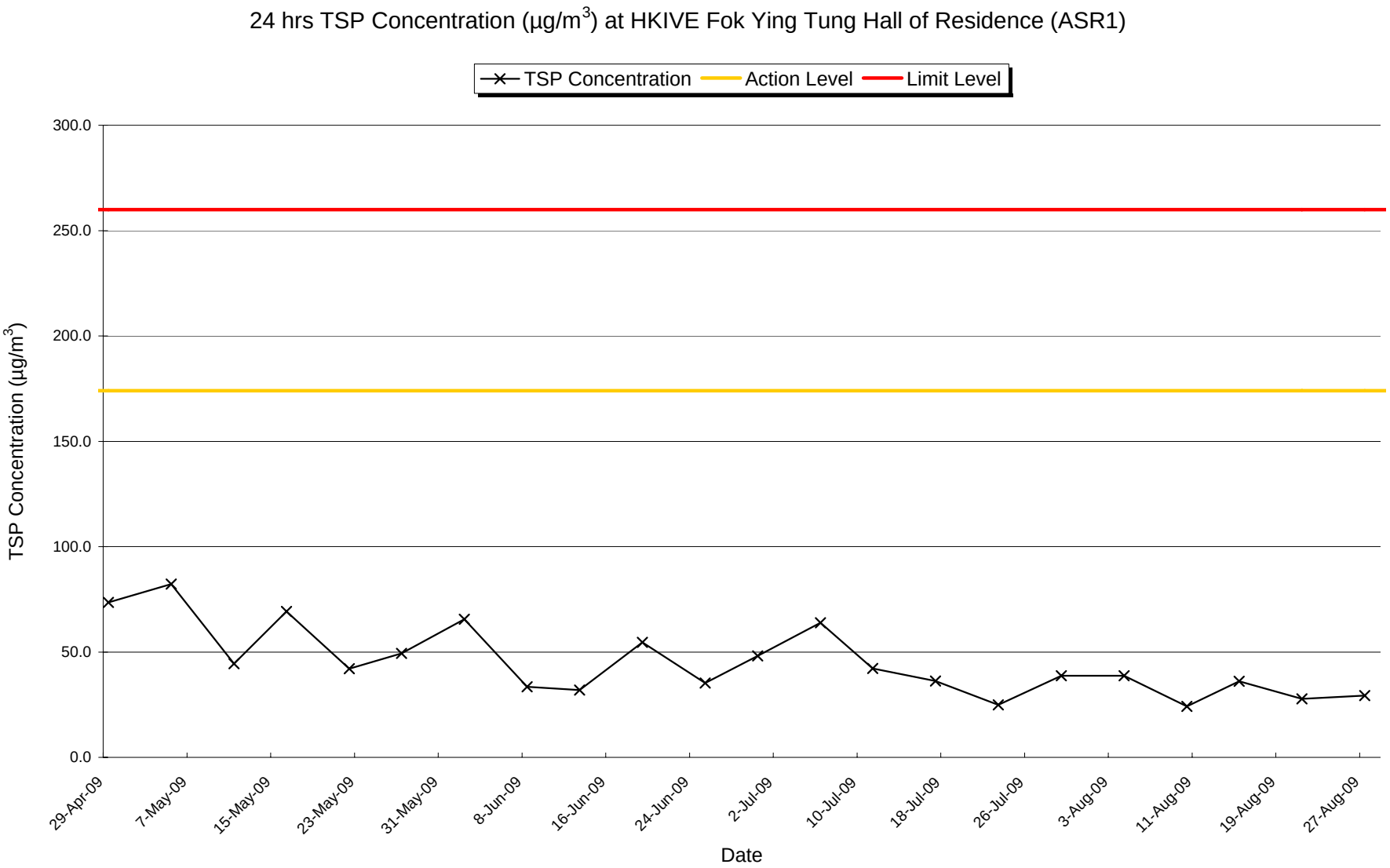
The Summary of 24-hrs TSP Concentration (μg/m^3) at Stonecutters Base (ASR5)

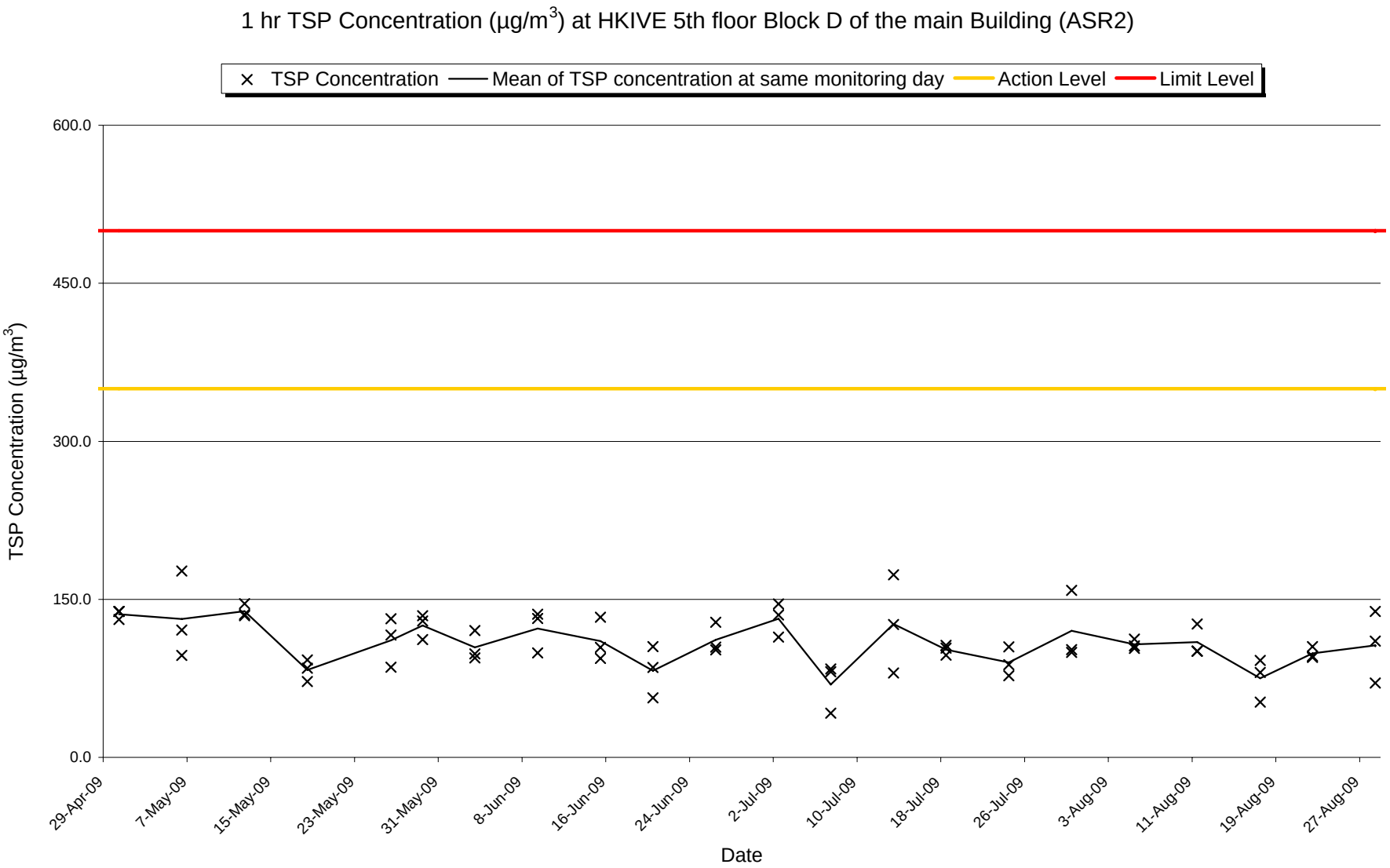
Date	Sampling Time	Elapsed Time (min)	Initial Standard Flow Rate (m^3/min)	Final Standard Flow Rate (m^3/min)	Averaged Standard Flow Rate (m^3/min)	Total Standard Volume (m^3)	Initial Filter Weight (g)	Final Filter Weight (g)	TSP Concentration μg/m^3
29-Jul-09	0:00	1440.00	1.33	1.33	1.33	1914.21	2.7776	2.8490	37.3
4-Aug-09	0:00	1440.00	1.34	1.34	1.34	1933.37	2.7981	3.0436	127.0
10-Aug-09	0:00	1440.00	1.31	1.32	1.32	1894.54	2.7934	2.8479	28.8
15-Aug-09	0:00	1440.00	1.32	1.32	1.32	1901.55	2.7968	2.9662	89.1
21-Aug-09	0:00	1440.00	1.33	1.33	1.33	1916.19	2.8614	3.0705	109.1
27-Aug-09	0:00	1440.00	1.33	1.33	1.33	1916.59	2.8246	2.9246	52.2

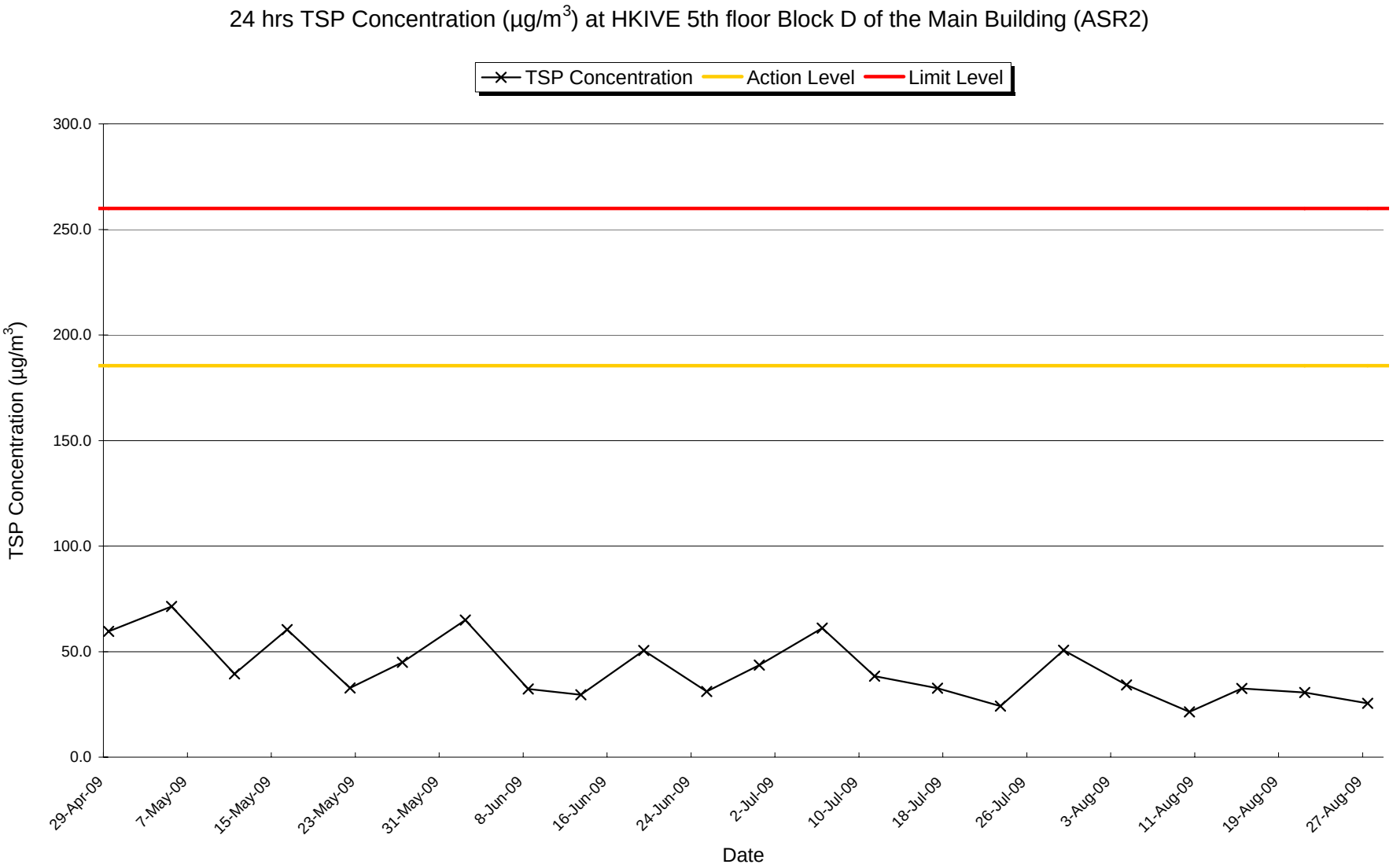
Appendix K

Graphical Presentation of 1-hour and 24-hour TSP Monitoring Result


1 hr TSP Concentration (µg/m3) at HKIVE Fok Ying Tung Hall of Residence (ASR1)
TSP Concentration
Mean of TSP concentration at same monitoring day
Action Level
Limit Level
600.0
450.0
300.0
150.0
0.0
TSP Concentration (µg/m3)
29-Apr-09
7-May-09
15-May-09
23-May-09
31-May-09
8-Jun-09
16-Jun-09
24-Jun-09
2-Jul-09
10-Jul-09
18-Jul-09
26-Jul-09
3-Aug-09
11-Aug-09
19-Aug-09
27-Aug-09
Date


24 hrs TSP Concentration (µg/m3) at HKIVE Fok Ying Tung Hall of Residence (ASR1)
TSP Concentration
Action Level
Limit Level
300.0
250.0
200.0
150.0
100.0
50.0
0.0
TSP Concentration (µg/m3)
29-Apr-09
7-May-09
15-May-09
23-May-09
31-May-09
8-Jun-09
16-Jun-09
24-Jun-09
2-Jul-09
10-Jul-09
18-Jul-09
26-Jul-09
3-Aug-09
11-Aug-09
19-Aug-09
27-Aug-09
Date


1 hr TSP Concentration (µg/m3) at HKIVE 5th floor Block D of the main Building (ASR2)
TSP Concentration
Mean of TSP concentration at same monitoring day
Action Level
Limit Level
600.0
450.0
300.0
150.0
0.0
TSP Concentration (µg/m3)
29-Apr-09
7-May-09
15-May-09
23-May-09
31-May-09
8-Jun-09
16-Jun-09
24-Jun-09
2-Jul-09
10-Jul-09
18-Jul-09
26-Jul-09
3-Aug-09
11-Aug-09
19-Aug-09
27-Aug-09
Date


24 hrs TSP Concentration (µg/m3) at HKIVE 5th floor Block D of the Main Building (ASR2)
TSP Concentration
Action Level
Limit Level
300.0
250.0
200.0
150.0
100.0
50.0
0.0
TSP Concentration (µg/m3)
29-Apr-09
7-May-09
15-May-09
23-May-09
31-May-09
8-Jun-09
16-Jun-09
24-Jun-09
2-Jul-09
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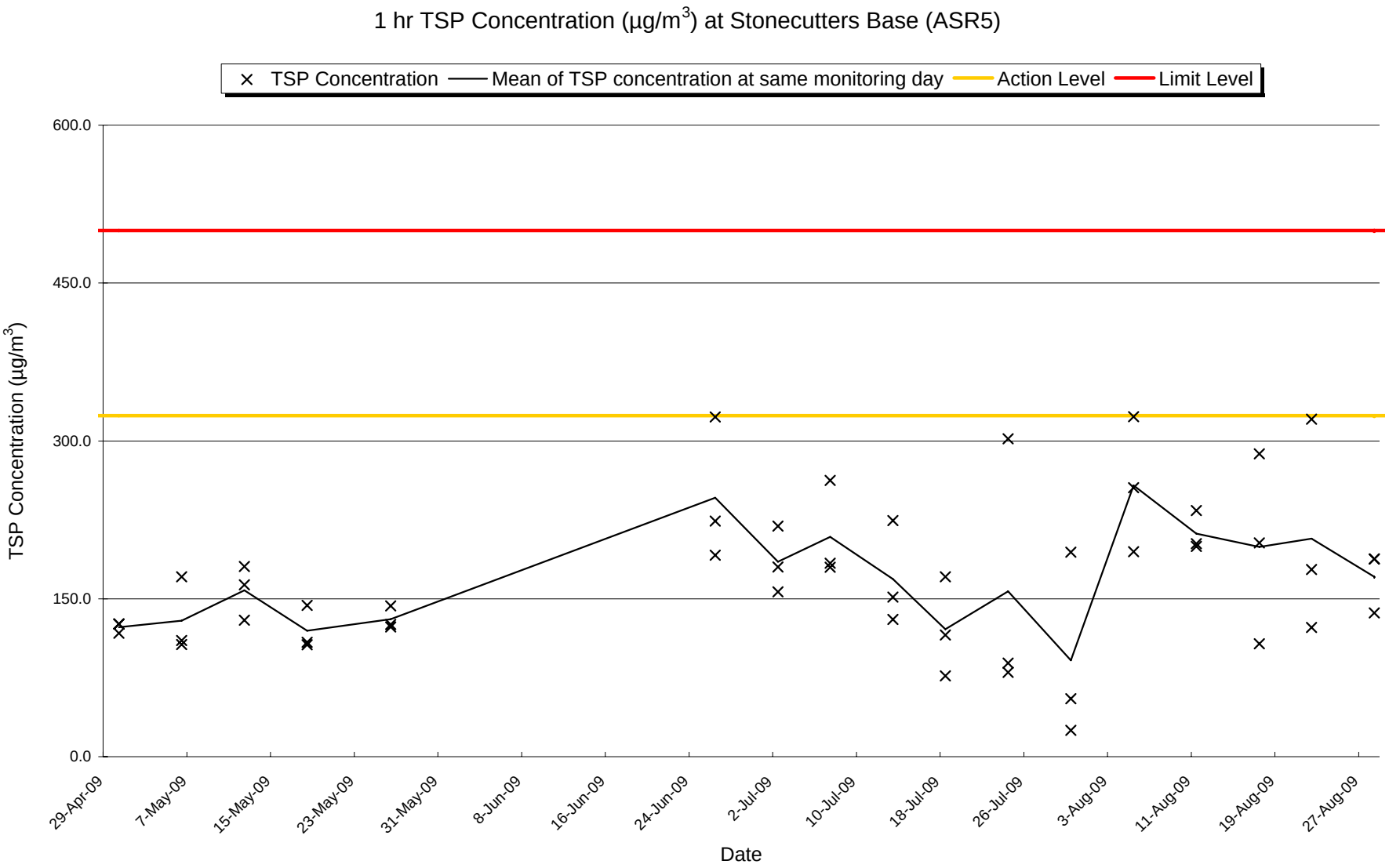
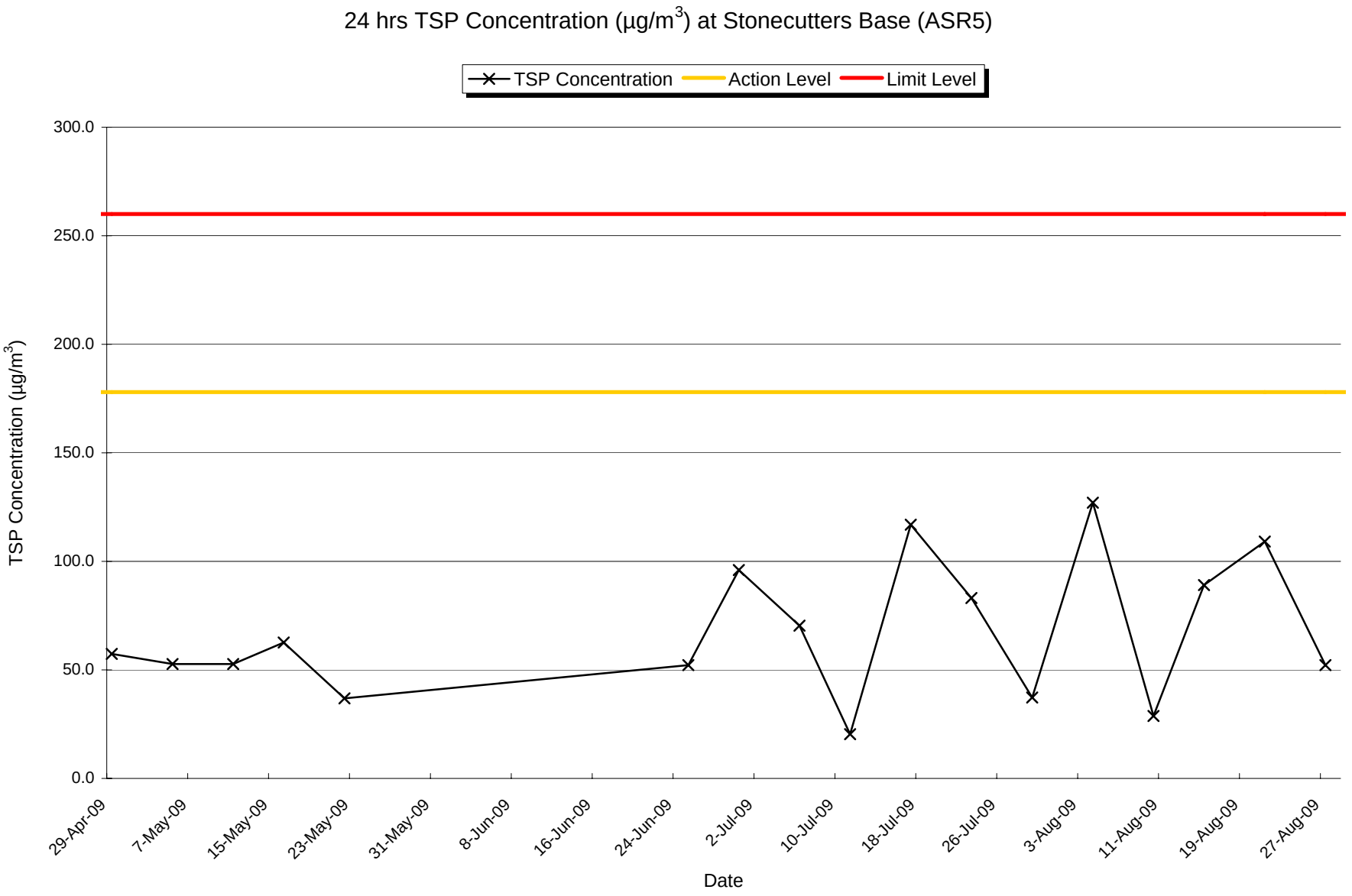
19-Aug-09
27-Aug-09
Date


1 hr TSP Concentration (µg/m3) at Stonecutters Base (ASR5)
TSP Concentration
Mean of TSP concentration at same monitoring day
Action Level
Limit Level
600.0
450.0
300.0
150.0
0.0
TSP Concentration (µg/m3)
29-Apr-09
7-May-09
15-May-09
23-May-09
31-May-09
8-Jun-09
16-Jun-09
24-Jun-09
2-Jul-09
10-Jul-09
18-Jul-09
26-Jul-09
3-Aug-09
11-Aug-09
19-Aug-09
27-Aug-09
Date


24 hrs TSP Concentration (µg/m3) at Stonecutters Base (ASR5)
TSP Concentration
Action Level
Limit Level
300.0
250.0
200.0
150.0
100.0
50.0
0.0
TSP Concentration (µg/m3)
29-Apr-09
7-May-09
15-May-09
23-May-09
31-May-09
8-Jun-09
16-Jun-09
24-Jun-09
2-Jul-09
10-Jul-09
18-Jul-09
26-Jul-09
3-Aug-09
11-Aug-09
19-Aug-09
27-Aug-09
Date

Appendix L

Weather Condition during Impact Monitoring

Appendix L: Weather Condition during Impact Monitoring (ASR1, ASR2 & ASR5)

Date	Time	Weather Condition	Ambient Pressure	Average Ambient Temperature		Relative Humidity	Wind Direction	Wind Speed m/s
			P (mmHg)	oC	K	%		
29-Jul-09	00:00~24:00	Fine	752.84	29.9	303.05	66~90	SE	5.6
30-Jul-09	09:30~17:30	Fine	752.61	28.9	302.05	79~96	E	6.9
4-Aug-09	00:00~24:00	Cloudy	746.91	28.0	301.15	83~95	ENE	13.9
5-Aug-09	11:00~18:00	Cloudy	747.96	27.6	300.75	83~95	SE	11.3
10-Aug-09	00:00~24:00	Cloudy	749.16	29.2	302.35	74~95	SE	2.8
11-Aug-09	09:30~18:30	Cloudy	752.69	28.1	301.25	85~97	E	2.9
15-Aug-09	00:00~24:00	Sunny	757.71	29.3	302.45	67~90	SSW	2.9
17-Aug-09	09:45~16:15	Fine	758.39	29.1	302.25	69~85	E	0.9
21-Aug-09	00:00~24:00	Sunny	755.39	30.1	303.25	52~84	SW	4.3
22-Aug-09	09:45~17:00	Sunny	755.46	30.0	303.15	61~83	WSW	4.2
27-Aug-09	00:00~24:00	Fine	756.36	30.0	303.15	70~84	SE	1.9
28-Aug-09	09:30~18:00	Sunny	755.91	30.4	303.55	52~84	WSW	4.3

Meteorological data such as atmospheric pressure and temperature used for the calculation of TSP values was obtained from the Hong Kong Observatory

Appendix M1

Noise Monitoring Results for Normal Hour

The Summary of Day-time Leq_{30} Level at HKIVE Fok Ying Tung Hall of Residence (NSR 1)

Date	Monitoring Time	Duration min	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
			Leq dB(A)	L10 dB(A)	L90 dB(A)	Leq dB(A)	Leq dB(A)	dB(A)
3-Aug-09	9:54	30	65.4	66.5	63.8	66.9	65.4*	75.0
12-Aug-09	10:50	30	64.8	65.9	63.4	66.9	64.8*	75.0
20-Aug-09	11:10	30	64.1	65.3	62.2	67.0	64.1*	75.0
26-Aug-09	14:14	30	66.6	68.1	64.7	66.8	66.6*	75.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

The Summary of Day-time Leq_{30} Level at HKIVE 5th Floor Block D of the Main Education Building (NSR 2)

Date	Monitoring Time	Duration min	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
			Leq dB(A)	L10 dB(A)	L90 dB(A)	Leq dB(A)	Leq dB(A)	dB(A)
3-Aug-09	10:28	30	64.5	65.3	63.4	71.5	64.5*	70.0
12-Aug-09	9:53	30	63.7	64.7	62.3	71.8	63.7*	70.0
20-Aug-09	10:11	30	63.4	64.1	62.3	71.7	63.4*	70.0
26-Aug-09	11:06	30	65.8	67.1	63.9	71.5	65.8*	70.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

*** Limit Level is reduced to 70dB(A) for schools and 65dB(A) during examination periods. Examinations were carried out from 16-Jul-09 to 24-Jul-09

The Summary of Day-time Leq_{30} Level at Stonecutters Base (NSR 5)

Date	Monitoring Time	Duration min	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
			Leq dB(A)	L10 dB(A)	L90 dB(A)	Leq dB(A)	Leq dB(A)	dB(A)
3-Aug-09	8:55	30	69.0	72.0	64.7	75.1	69.0*	75.0
12-Aug-09	11:15	30	69.4	72.5	64.6	75.0	69.4*	75.0
20-Aug-09	9:43	30	69.2	71.8	65.3	75.2	69.2*	75.0
26-Aug-09	13:56	30	70.1	73.3	65.2	75.0	70.1*	75.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

Appendix M2

Noise Monitoring Results for Restricted Hour

The Summary of Evening-time Leq_5 Level at HKIVE Fok Ying Tung Hall of Residence (NSR 1)

Date	Monitoring Time	Duration	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
		min	Leq	L10	L90	Leq	Leq	
			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3-Aug-09	20:44	5	63.1	64.0	62.0	61.3	58.4	70.0
3-Aug-09	20:49	5	63.3	64.0	62.0	62.8	53.7	70.0
3-Aug-09	20:54	5	63.5	64.5	62.0	62.0	58.2	70.0
3-Aug-09	20:59	5	62.9	63.5	62.0	61.1	58.2	70.0
3-Aug-09	21:04	5	62.8	63.5	61.5	60.8	58.5	70.0
3-Aug-09	21:09	5	63.4	65.0	62.0	61.2	59.4	70.0
12-Aug-09	19:19	5	64.0	65.0	62.5	65.1	64.0*	70.0
12-Aug-09	19:24	5	64.1	65.5	62.5	64.6	64.1*	70.0
12-Aug-09	19:29	5	63.7	64.5	62.5	63.7	63.7*	70.0
12-Aug-09	19:34	5	64.6	66.0	62.5	63.8	56.9	70.0
12-Aug-09	19:39	5	63.7	64.5	62.5	63.8	63.7*	70.0
12-Aug-09	19:44	5	64.2	65.5	62.5	63.4	56.5	70.0
20-Aug-09	21:13	5	63.0	63.5	62.0	60.6	59.3	70.0
20-Aug-09	21:18	5	62.6	63.5	61.5	60.6	58.3	70.0
20-Aug-09	21:23	5	62.6	63.0	61.5	60.9	57.7	70.0
20-Aug-09	21:28	5	62.4	63.0	61.5	61.1	56.5	70.0
20-Aug-09	21:33	5	62.3	63.0	61.0	60.7	57.2	70.0
20-Aug-09	21:38	5	62.8	64.0	61.5	60.5	58.9	70.0
26-Aug-09	19:54	5	63.3	65.0	60.5	63.0	51.5	70.0
26-Aug-09	19:59	5	62.5	63.5	61.0	62.5	62.5*	70.0
26-Aug-09	20:04	5	62.3	63.0	61.0	62.9	62.3*	70.0
26-Aug-09	20:09	5	62.6	63.5	61.5	62.7	62.6*	70.0
26-Aug-09	20:14	5	62.9	64.0	61.5	62.6	51.1	70.0
26-Aug-09	20:19	5	62.3	63.0	61.0	62.6	62.3*	70.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level ≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

No monitoring was undertaken due to bad weather

The Summary of Night-time Leq_5 Level at HKIVE Fok Ying Tung Hall of Residence (NSR 1)

Date	Monitoring Time	Duration min	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
			Leq dB(A)	L10 dB(A)	L90 dB(A)	Leq dB(A)	Leq dB(A)	dB(A)
3-Aug-09	23:04	5	59.5	62.0	58.0	58.7	51.8	55.0
3-Aug-09	23:09	5	59.4	63.0	58.0	59.2	45.9	55.0
3-Aug-09	23:14	5	59.5	62.0	58.0	58.5	52.6	55.0
3-Aug-09	23:19	5	59.1	62.5	58.0	58.3	51.4	55.0
12-Aug-09	23:09	5	59.5	62.5	58.0	59.2	47.7	55.0
12-Aug-09	23:14	5	59.0	61.5	58.0	58.5	49.4	55.0
12-Aug-09	23:19	5	59.3	62.0	58.5	58.3	52.4	55.0
12-Aug-09	23:24	5	59.5	61.5	58.0	58.1	53.9	55.0
20-Aug-09	23:03	5	59.5	63.0	58.0	58.7	51.8	55.0
20-Aug-09	23:08	5	59.4	62.5	58.0	59.2	45.9	55.0
20-Aug-09	23:13	5	59.5	62.5	58.5	58.5	52.6	55.0
20-Aug-09	23:18	5	59.2	62.5	58.5	58.3	51.9	55.0
26-Aug-09	23:04	5	59.9	61.5	58.5	58.7	53.7	55.0
26-Aug-09	23:09	5	59.8	61.0	58.5	59.2	50.9	55.0
26-Aug-09	23:14	5	59.7	61.0	58.5	58.5	53.5	55.0
26-Aug-09	23:19	5	59.5	60.5	58.5	58.3	53.3	55.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level ≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

No monitoring was undertaken due to bad weather

The Summary of Public Holiday Leq_5 Level at HKIVE Fok Ying Tung Hall of Residence (NSR 1)

Date	Monitoring Time	Duration min	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
			Leq dB(A)	L10 dB(A)	L90 dB(A)	Leq dB(A)	Leq dB(A)	dB(A)
2-Aug-09	13:50	5	62.7	63.5	61.5	63.3	62.7*	70.0
2-Aug-09	13:55	5	63.0	63.5	61.5	63.5	63.0*	70.0
2-Aug-09	14:00	5	62.7	63.5	61.5	63.0	62.7*	70.0
2-Aug-09	14:05	5	61.9	62.5	60.5	62.4	61.9*	70.0
2-Aug-09	14:10	5	62.4	63.5	61.0	61.1	56.5	70.0
2-Aug-09	14:15	5	62.8	63.5	61.0	64.5	62.8*	70.0
9-Aug-09	8:53	5	62.1	63.0	61.0	64.7	62.1*	70.0
9-Aug-09	8:58	5	61.6	62.5	60.5	63.2	61.6*	70.0
9-Aug-09	9:03	5	62.5	63.5	61.0	63.2	62.5*	70.0
9-Aug-09	9:08	5	62.6	63.5	61.0	64.7	62.6*	70.0
9-Aug-09	9:13	5	62.8	64.0	61.0	64.6	62.8*	70.0
9-Aug-09	9:18	5	61.9	63.0	60.5	64.8	61.9*	70.0
16-Aug-09	16:15	5	61.7	62.5	60.5	62.7	61.7*	70.0
16-Aug-09	16:20	5	61.6	62.5	60.5	62.6	61.6*	70.0
16-Aug-09	16:25	5	61.5	62.0	60.5	63.4	61.5*	70.0
16-Aug-09	16:30	5	61.5	62.0	60.5	64.6	61.5*	70.0
16-Aug-09	16:35	5	61.9	62.5	60.5	64.8	61.9*	70.0
16-Aug-09	16:40	5	61.3	62.0	60.5	63.3	61.3*	70.0
23-Aug-09	10:48	5	63.1	64.0	61.0	66.2	63.1*	70.0
23-Aug-09	10:53	5	62.0	63.0	61.0	64.5	62.0*	70.0
23-Aug-09	10:58	5	62.8	64.0	61.5	64.2	62.8*	70.0
23-Aug-09	11:03	5	62.8	63.5	61.5	63.7	62.8*	70.0
23-Aug-09	11:08	5	62.1	62.5	61.0	65.3	62.1*	70.0
23-Aug-09	11:13	5	62.5	63.5	61.0	64.4	62.5*	70.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level ≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

No monitoring was undertaken due to bad weather

The Summary of Evening-time Leq_5 Level at HKIVE 5th Floor Block D of the Main Building (NSR 2)

Date	Monitoring Time	Duration	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
		min	Leq	L10	L90	Leq	Leq	
			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3-Aug-09	20:43	5	60.6	61.5	59.5	64.6	60.6*	70.0
3-Aug-09	20:48	5	62.0	63.0	60.5	64.3	62.0*	70.0
3-Aug-09	20:53	5	61.3	62.0	60.0	64.7	61.3*	70.0
3-Aug-09	20:58	5	63.0	65.0	60.5	64.4	63.0*	70.0
3-Aug-09	21:03	5	61.6	63.0	60.0	64.4	61.6*	70.0
3-Aug-09	21:08	5	61.0	62.5	59.5	64.6	61.0*	70.0
12-Aug-09	19:28	5	62.9	63.5	61.5	65.7	62.9*	70.0
12-Aug-09	19:33	5	62.3	63.0	61.5	66.0	62.3*	70.0
12-Aug-09	19:38	5	62.1	62.5	61.0	66.1	62.1*	70.0
12-Aug-09	19:43	5	62.8	64.5	61.0	66.3	62.8*	70.0
12-Aug-09	19:48	5	62.9	64.5	61.0	65.7	62.9*	70.0
12-Aug-09	19:53	5	62.7	64.0	61.0	66.3	62.7*	70.0
20-Aug-09	19:46	5	62.2	62.5	61.0	66.3	62.2*	70.0
20-Aug-09	19:51	5	62.2	63.0	61.0	65.7	62.2*	70.0
20-Aug-09	19:56	5	62.3	63.0	61.5	66.3	62.3*	70.0
20-Aug-09	20:01	5	62.3	63.0	61.5	65.2	62.3*	70.0
20-Aug-09	20:06	5	63.1	64.0	61.0	66.4	63.1*	70.0
20-Aug-09	20:11	5	62.6	63.0	61.5	65.3	62.6*	70.0
26-Aug-09	21:08	5	63.1	64.0	62.0	64.6	63.1*	70.0
26-Aug-09	21:13	5	63.3	64.5	62.0	63.4	63.3*	70.0
26-Aug-09	21:18	5	63.8	65.5	62.0	63.6	50.3	70.0
26-Aug-09	21:23	5	62.7	63.0	62.0	64.0	62.7*	70.0
26-Aug-09	21:28	5	62.9	63.5	62.0	63.1	62.9*	70.0
26-Aug-09	21:33	5	63.5	64.5	62.5	64.2	63.5*	70.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level ≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

No monitoring was undertaken due to bad weather

The Summary of Night-time Leq_5 Level at HKIVE 5th Floor Block D of the Main Building (NSR 2)

Date	Monitoring Time	Duration	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
		min	Leq	L10	L90	Leq	Leq	
			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3-Aug-09	23:08	5	59.3	60.0	58.5	60.3	59.3*	55.0
3-Aug-09	23:13	5	59.2	60.5	58.0	61.0	59.2*	55.0
3-Aug-09	23:18	5	60.1	61.0	58.5	60.2	60.1*	55.0
3-Aug-09	23:23	5	60.3	61.0	59.0	59.5	52.6	55.0
12-Aug-09	23:03	5	61.0	61.5	60.0	60.7	49.2	55.0
12-Aug-09	23:08	5	61.1	61.5	60.5	60.3	53.4	55.0
12-Aug-09	23:13	5	61.0	61.5	60.0	61.0	61.0*	55.0
12-Aug-09	23:18	5	60.9	61.5	60.0	60.2	52.6	55.0
20-Aug-09	23:01	5	60.8	62.0	59.5	60.3	51.2	55.0
20-Aug-09	23:06	5	61.1	62.5	60.0	60.7	50.5	55.0
20-Aug-09	23:11	5	61.3	61.5	60.0	60.3	54.4	55.0
20-Aug-09	23:16	5	61.3	62.0	60.0	61.0	49.5	55.0
26-Aug-09	23:03	5	61.7	62.0	60.5	60.7	54.8	55.0
26-Aug-09	23:08	5	61.2	62.0	60.5	60.3	53.9	55.0
26-Aug-09	23:13	5	61.5	62.0	60.5	61.0	51.9	55.0
26-Aug-09	23:18	5	61.3	61.5	60.5	60.2	54.8	55.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level ≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

No monitoring was undertaken due to bad weather

The Summary of Public Holiday Leq_5 Level at HKIVE 5th Floor Block D of the Main Building (NSR 2)

Date	Monitoring Time	Duration	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
		min	Leq	L10	L90	Leq	Leq	
			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
2-Aug-09	8:54	5	62.0	63.0	59.5	67.8	62.0*	70.0
2-Aug-09	8:59	5	61.6	63.0	59.0	66.7	61.6*	70.0
2-Aug-09	9:04	5	60.7	61.5	59.5	67.4	60.7*	70.0
2-Aug-09	9:09	5	61.4	62.5	60.0	67.4	61.4*	70.0
2-Aug-09	9:14	5	61.0	62.0	59.5	66.7	61.0*	70.0
2-Aug-09	9:19	5	60.4	61.0	59.0	67.6	60.4*	70.0
9-Aug-09	11:19	5	61.1	62.5	59.0	67.9	61.1*	70.0
9-Aug-09	11:24	5	60.4	61.5	59.0	66.0	60.4*	70.0
9-Aug-09	11:29	5	60.1	61.0	59.0	66.4	60.1*	70.0
9-Aug-09	11:34	5	59.9	61.0	58.5	66.7	59.9*	70.0
9-Aug-09	11:39	5	61.0	62.0	59.0	68.5	61.0*	70.0
9-Aug-09	11:44	5	60.1	61.0	58.5	65.8	60.1*	70.0
16-Aug-09	14:53	5	60.2	61.0	59.0	64.1	60.2*	70.0
16-Aug-09	14:58	5	60.5	61.5	59.0	66.4	60.5*	70.0
16-Aug-09	15:03	5	60.1	61.0	59.0	66.5	60.1*	70.0
16-Aug-09	15:08	5	60.9	62.0	59.5	65.2	60.9*	70.0
16-Aug-09	15:13	5	62.2	63.5	60.0	66.3	62.2*	70.0
16-Aug-09	15:18	5	64.2	63.0	59.5	65.5	64.2*	70.0
23-Aug-09	9:26	5	61.1	62.0	59.5	67.5	61.1*	70.0
23-Aug-09	9:31	5	61.0	62.0	60.0	66.8	61.0*	70.0
23-Aug-09	9:36	5	60.9	61.5	60.0	67.8	60.9*	70.0
23-Aug-09	9:41	5	61.3	62.0	60.0	67.7	61.3*	70.0
23-Aug-09	9:46	5	62.1	63.0	60.5	68.3	62.1*	70.0
23-Aug-09	9:51	5	61.2	62.0	60.0	68.3	61.2*	70.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level ≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

No monitoring was undertaken due to bad weather

The Summary of Evening-time Leq_5 Level at Stonecutters Base (NSR 5)

Date	Monitoring Time	Duration	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
		min	Leq	L10	L90	Leq	Leq	
			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3-Aug-09	19:45	5	68.9	72.9	63.0	73.3	68.9*	70.0
3-Aug-09	19:50	5	68.6	72.2	63.4	72.5	68.6*	70.0
3-Aug-09	19:55	5	68.4	72.4	64.6	72.6	68.4*	70.0
3-Aug-09	20:00	5	68.3	72.0	63.3	73.0	68.3*	70.0
3-Aug-09	20:05	5	68.4	72.4	64.0	72.4	68.4*	70.0
3-Aug-09	20:10	5	68.7	71.6	63.8	72.5	68.7*	70.0
12-Aug-09	20:41	5	68.6	71.6	64.5	72.5	68.6*	70.0
12-Aug-09	20:46	5	68.2	71.2	64.9	72.1	68.2*	70.0
12-Aug-09	20:51	5	68.8	72.3	65.6	72.0	68.8*	70.0
12-Aug-09	20:56	5	68.4	71.6	65.3	71.6	68.4*	70.0
12-Aug-09	21:01	5	67.6	70.4	64.5	71.7	67.6*	70.0
12-Aug-09	21:06	5	68.9	71.3	64.9	71.7	68.9*	70.0
20-Aug-09	21:22	5	68.3	71.4	63.2	72.0	68.3*	70.0
20-Aug-09	21:27	5	68.4	71.8	63.2	71.0	68.4*	70.0
20-Aug-09	21:32	5	68.8	72.4	63.4	71.0	68.8*	70.0
20-Aug-09	21:37	5	68.0	71.1	63.5	70.9	68.0*	70.0
20-Aug-09	21:42	5	68.6	72.2	63.5	70.9	68.6*	70.0
20-Aug-09	21:47	5	68.6	71.8	63.2	70.8	68.6*	70.0
26-Aug-09	19:23	5	67.9	71.2	61.9	72.5	67.9*	70.0
26-Aug-09	19:28	5	69.0	71.8	63.2	73.1	69.0*	70.0
26-Aug-09	19:33	5	69.0	73.4	64.1	72.6	69.0*	70.0
26-Aug-09	19:38	5	68.9	72.3	62.2	73.1	68.9*	70.0
26-Aug-09	19:43	5	68.5	71.7	63.5	73.3	68.5*	70.0
26-Aug-09	19:48	5	69.1	72.1	63.9	72.5	69.1*	70.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level ≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

No monitoring was undertaken due to bad weather

The Summary of Night-time Leq_5 Level at Stonecutters Base (NSR 5)

Date	Monitoring Time	Duration min	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
			Leq dB(A)	L10 dB(A)	L90 dB(A)	Leq dB(A)	Leq dB(A)	dB(A)
3-Aug-09	23:02	5	64.6	68.7	61.2	70.0	64.6*	55.0
3-Aug-09	23:07	5	65.4	69.7	61.2	69.1	65.4*	55.0
3-Aug-09	23:12	5	65.4	69.8	61.6	69.6	65.4*	55.0
3-Aug-09	23:17	5	65.9	70.0	60.4	69.2	65.9*	55.0
12-Aug-09	23:27	5	65.5	69.4	60.4	68.5	65.5*	55.0
12-Aug-09	23:32	5	64.3	68.4	60.0	68.2	64.3*	55.0
12-Aug-09	23:37	5	65.1	70.2	58.8	69.0	65.1*	55.0
12-Aug-09	23:42	5	65.3	69.7	60.5	68.7	65.3*	55.0
20-Aug-09	23:12	5	65.4	67.8	60.5	69.6	65.4*	55.0
20-Aug-09	23:17	5	66.5	70.0	60.2	69.2	66.5*	55.0
20-Aug-09	23:22	5	66.4	69.2	61.2	69.0	66.4*	55.0
20-Aug-09	23:27	5	66.2	69.5	60.6	68.5	66.2*	55.0
26-Aug-09	23:41	5	65.9	70.5	60.9	68.7	65.9*	55.0
26-Aug-09	23:46	5	64.7	68.8	60.8	68.9	64.7*	55.0
26-Aug-09	23:51	5	65.7	68.8	60.6	67.5	65.7*	55.0
26-Aug-09	23:56	5	65.5	70.5	60.7	68.7	65.5*	55.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level ≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

** No Construction works was carried out during the reporting period

No monitoring was undertaken due to bad weather

The Summary of Public Holiday Leq_5 Level at Stonecutters Base (NSR 5)

Date	Monitoring Time	Duration	Measured Noise Level[1]			Baseline Level[1]	Construction Noise Level	Limit Level
		min	Leq	L10	L90	Leq	Leq	
			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
2-Aug-09	9:52	5	69.7	72.8	65.2	73.8	69.7*	70.0
2-Aug-09	9:57	5	71.0	73.5	65.5	74.4	71.0*	70.0
2-Aug-09	10:02	5	70.3	73.3	65.6	74.6	70.3*	70.0
2-Aug-09	10:07	5	69.4	72.8	63.8	74.6	69.4*	70.0
2-Aug-09	10:12	5	70.7	74.1	64.8	75.9	70.7*	70.0
2-Aug-09	10:17	5	69.5	72.3	64.1	74.6	69.5*	70.0
9-Aug-09	11:13	5	69.8	72.3	63.6	74.2	69.8*	70.0
9-Aug-09	11:18	5	69.6	72.0	66.5	74.2	69.6*	70.0
9-Aug-09	11:23	5	70.3	73.3	66.6	72.9	70.3*	70.0
9-Aug-09	11:28	5	70.5	72.9	66.6	73.5	70.5*	70.0
9-Aug-09	11:33	5	68.8	71.1	65.8	74.4	68.8*	70.0
9-Aug-09	11:38	5	69.4	72.0	66.0	72.6	69.4*	70.0
16-Aug-09	14:27	5	69.4	71.6	66.4	74.1	69.4*	70.0
16-Aug-09	14:32	5	68.6	70.7	65.8	74.6	68.6*	70.0
16-Aug-09	14:37	5	69.9	72.4	66.2	72.8	69.9*	70.0
16-Aug-09	14:42	5	69.4	72.3	65.7	74.6	69.4*	70.0
16-Aug-09	14:47	5	69.8	72.3	65.7	73.2	69.8*	70.0
16-Aug-09	14:52	5	69.3	71.9	66.0	74.2	69.3*	70.0
23-Aug-09	9:33	5	69.6	73.8	62.0	74.8	69.6*	70.0
23-Aug-09	9:38	5	69.6	72.9	63.8	74.8	69.6*	70.0
23-Aug-09	9:43	5	70.6	74.8	64.3	74.2	70.6*	70.0
23-Aug-09	9:48	5	70.0	73.4	64.2	73.8	70.0*	70.0
23-Aug-09	9:53	5	69.3	72.3	63.5	74.4	69.3*	70.0
23-Aug-09	9:58	5	69.8	73.1	64.5	74.6	69.8*	70.0

NB: Bold - exceedance

[1] Additional 3dB (A) façade correction was made to the Free-field measurements

* No adjustment was made on the measured noise level, since corresponding baseline level ≥ measured noise level. The measured noise level was mainly dominated by local traffic noise and the construction noise generated from the Project was not noticeable at NSR according to the field study record.

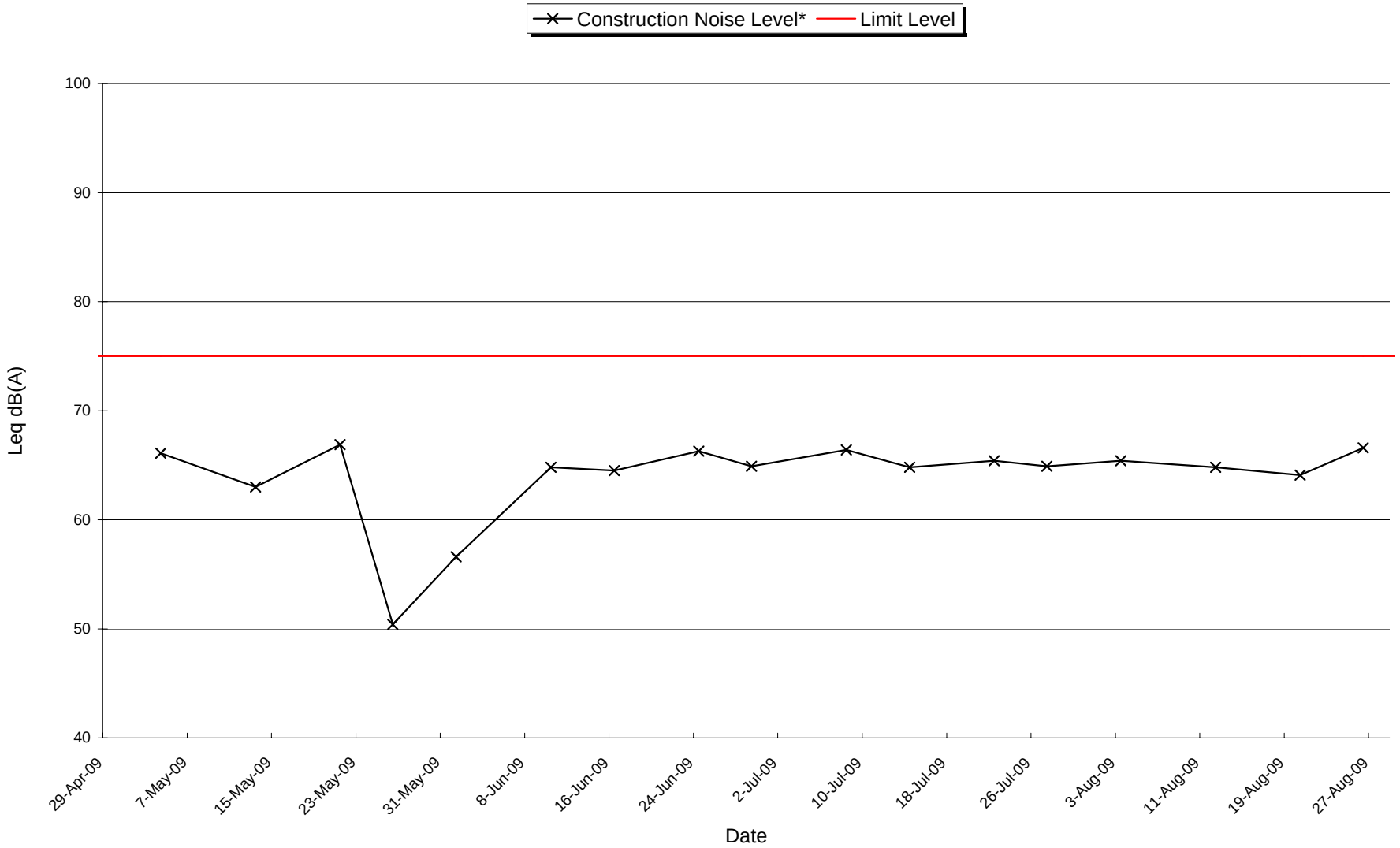
** No Construction works was carried out during the reporting period

No monitoring was undertaken due to bad weather

Appendix N1

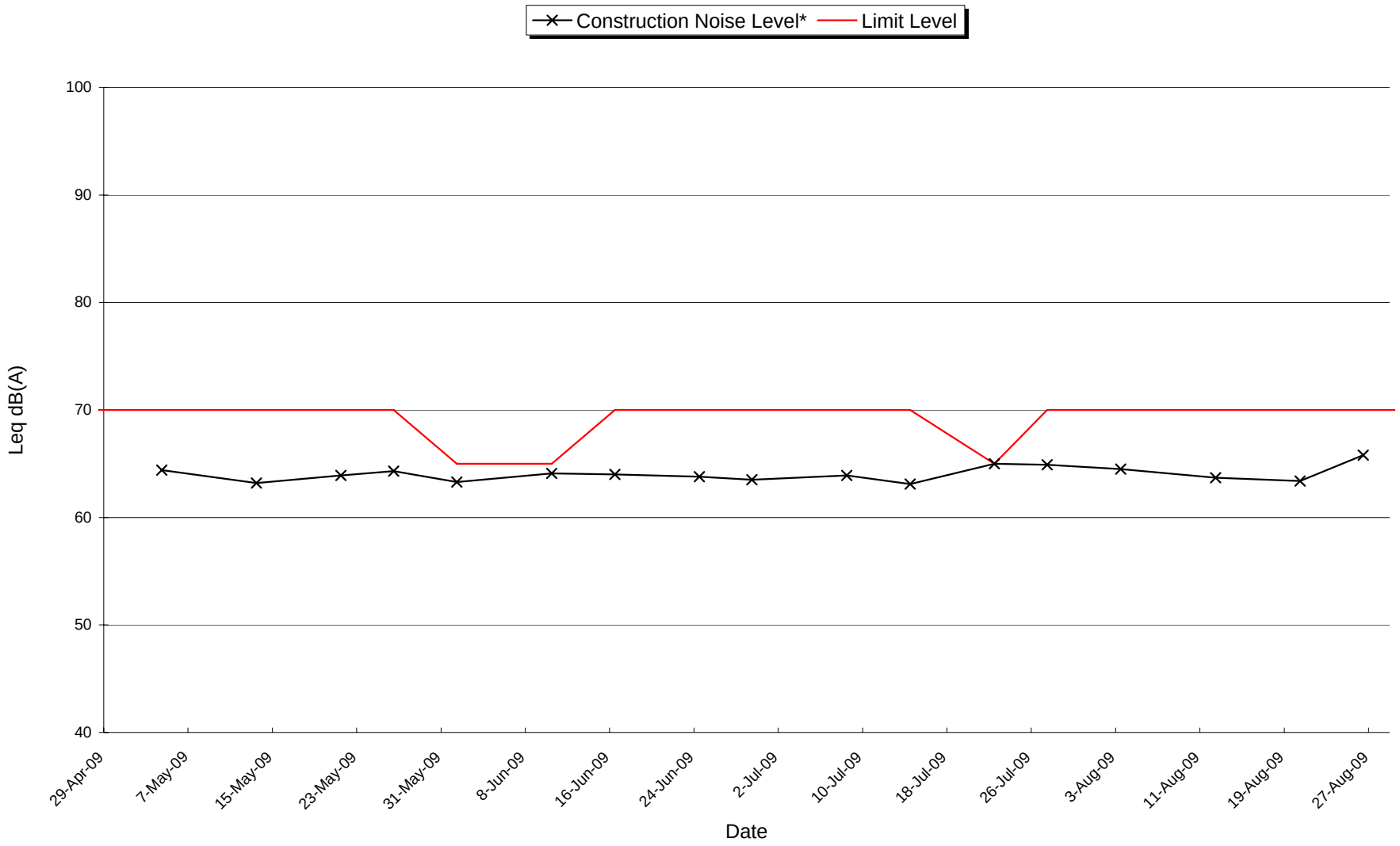
Graphical Presentation of Noise Monitoring Results for Normal Hour

Day-time Leq_{30} (Construction Noise Level) at HKIVE Fok Ying Tung Hall of Residence (NSR1)



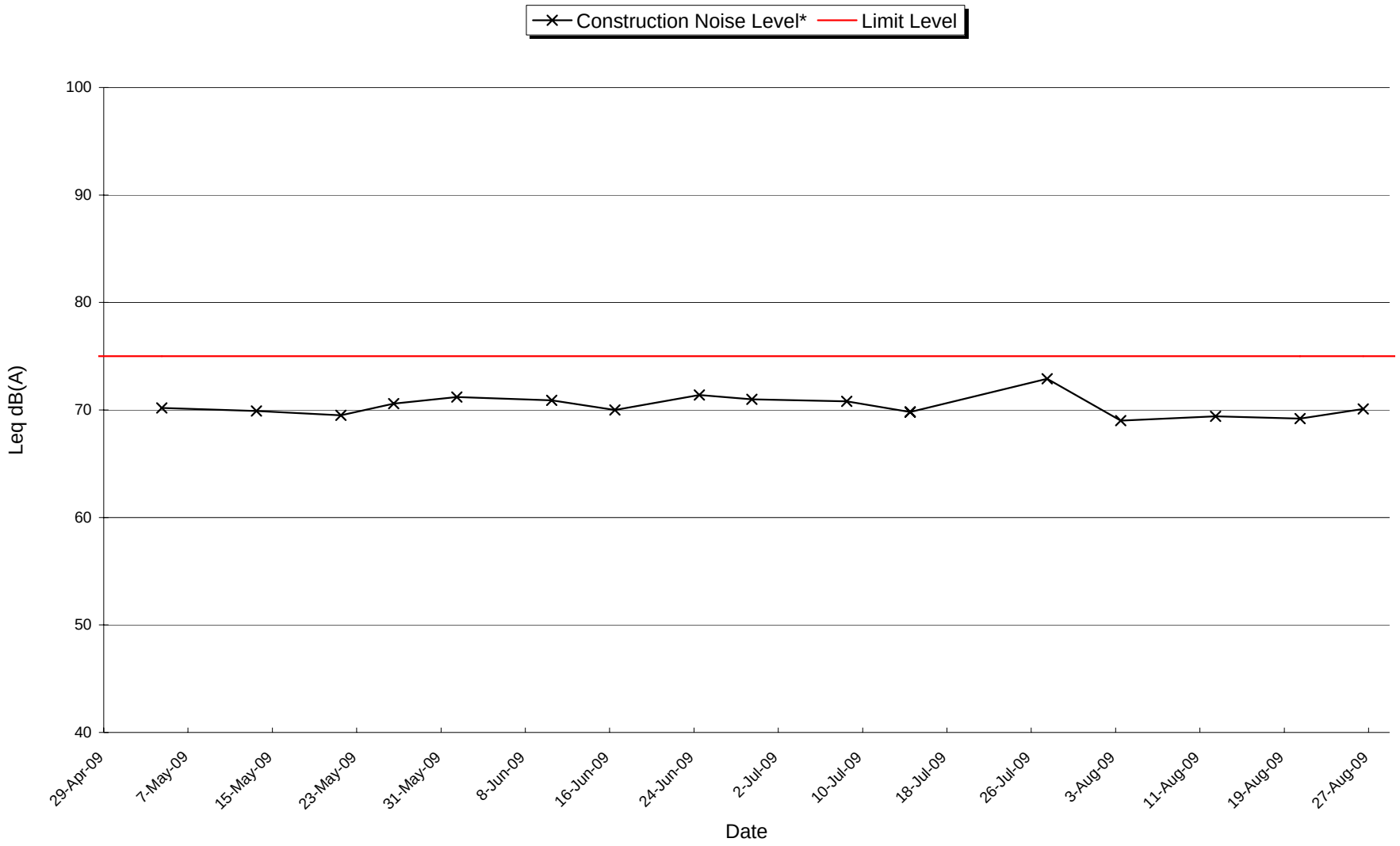
* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M1 for more details.

Day-time Leq_{30} (Construction Noise Level) at HKIVE 5th Floor Block D of the Main Education Building (NSR2)



* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M1 for more details.

Day-time Leq_{30} (Construction Noise Level) at Stonecutters Base (NSR5)

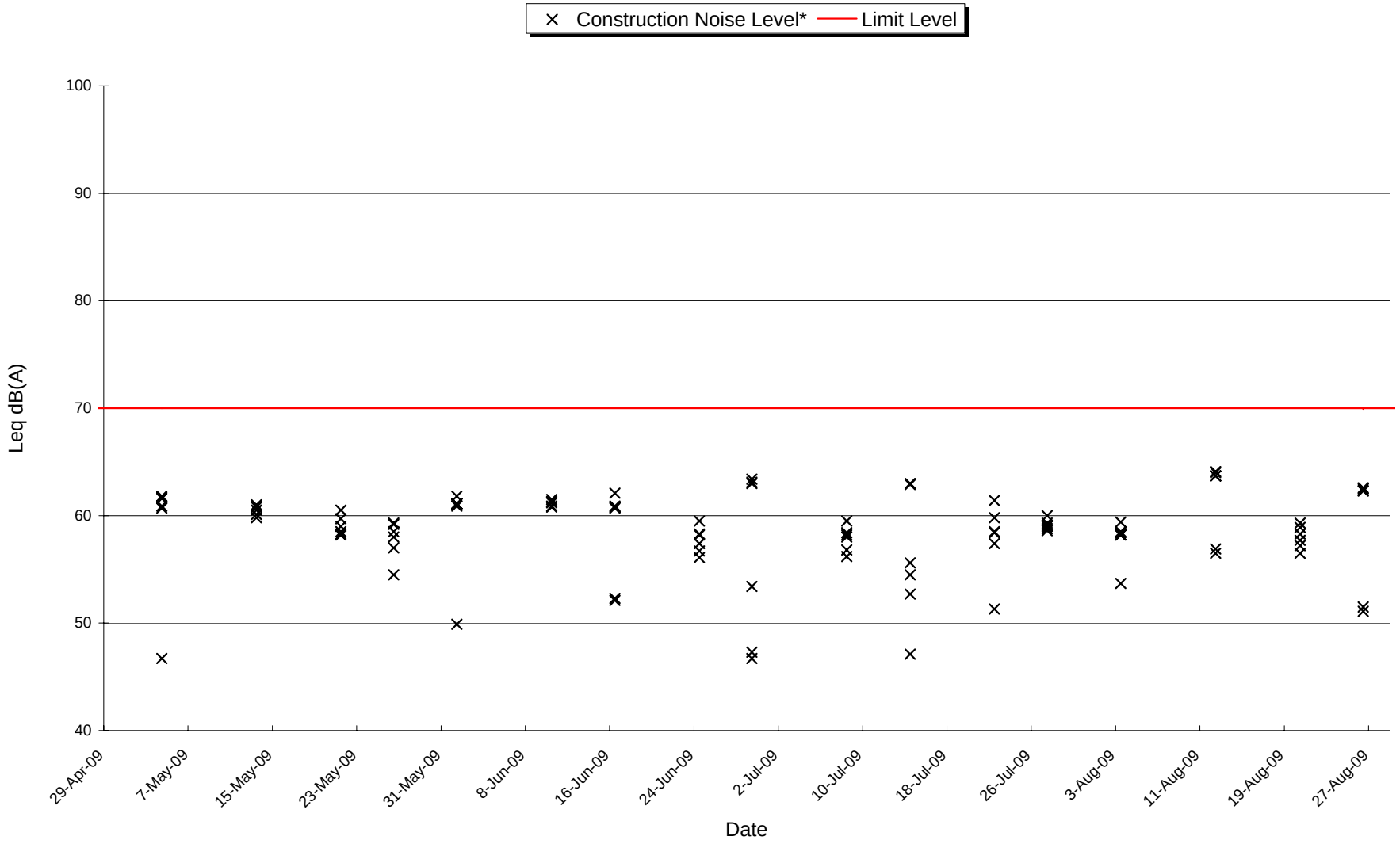


* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M1 for more details.

Appendix N2

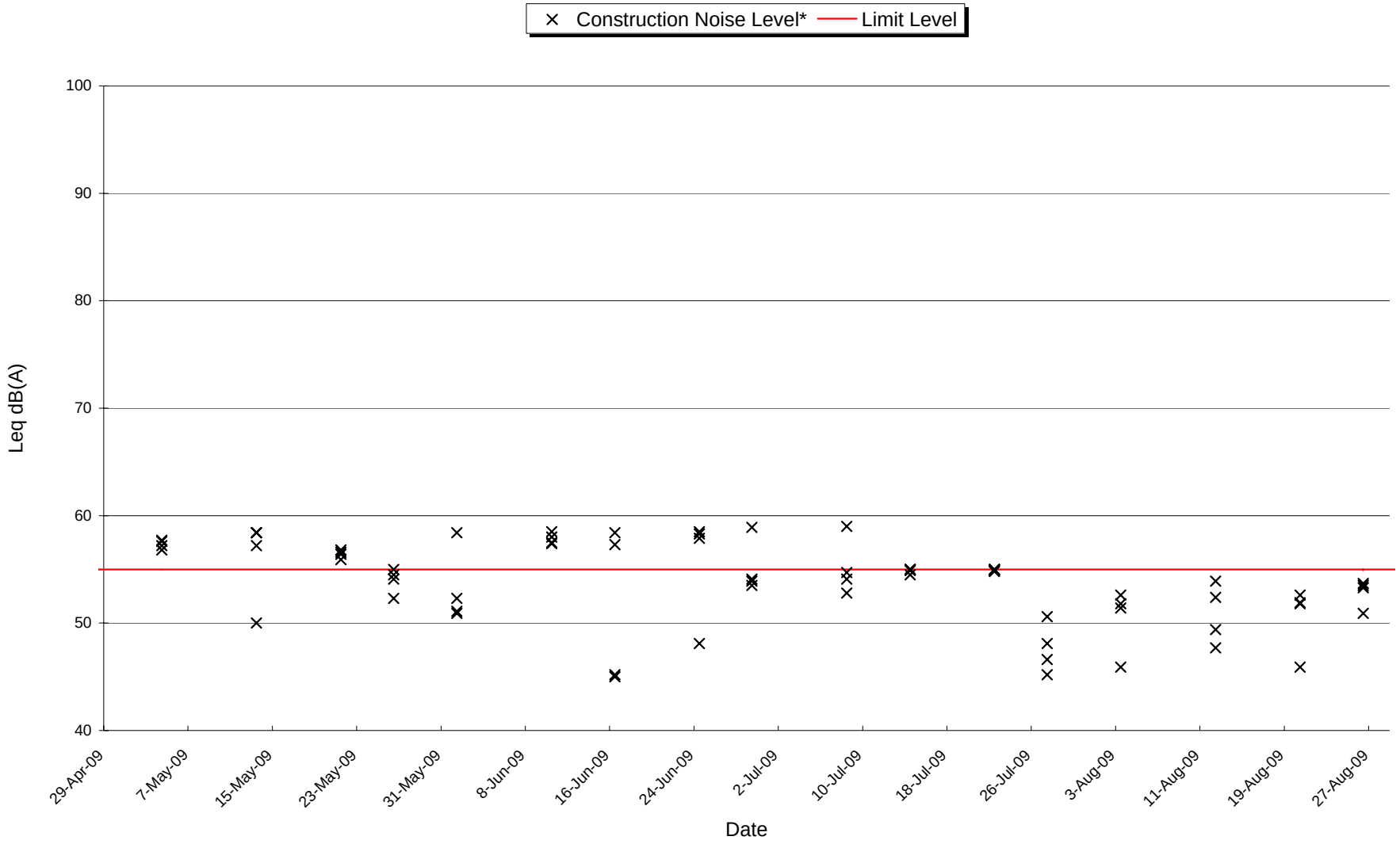
Graphical Presentation of Noise Monitoring Results for Restricted Hour

Evening-time Leq_5 (Construction Noise Level) at HKIVE Fok Ying Tung Hall of Residence (NSR1)



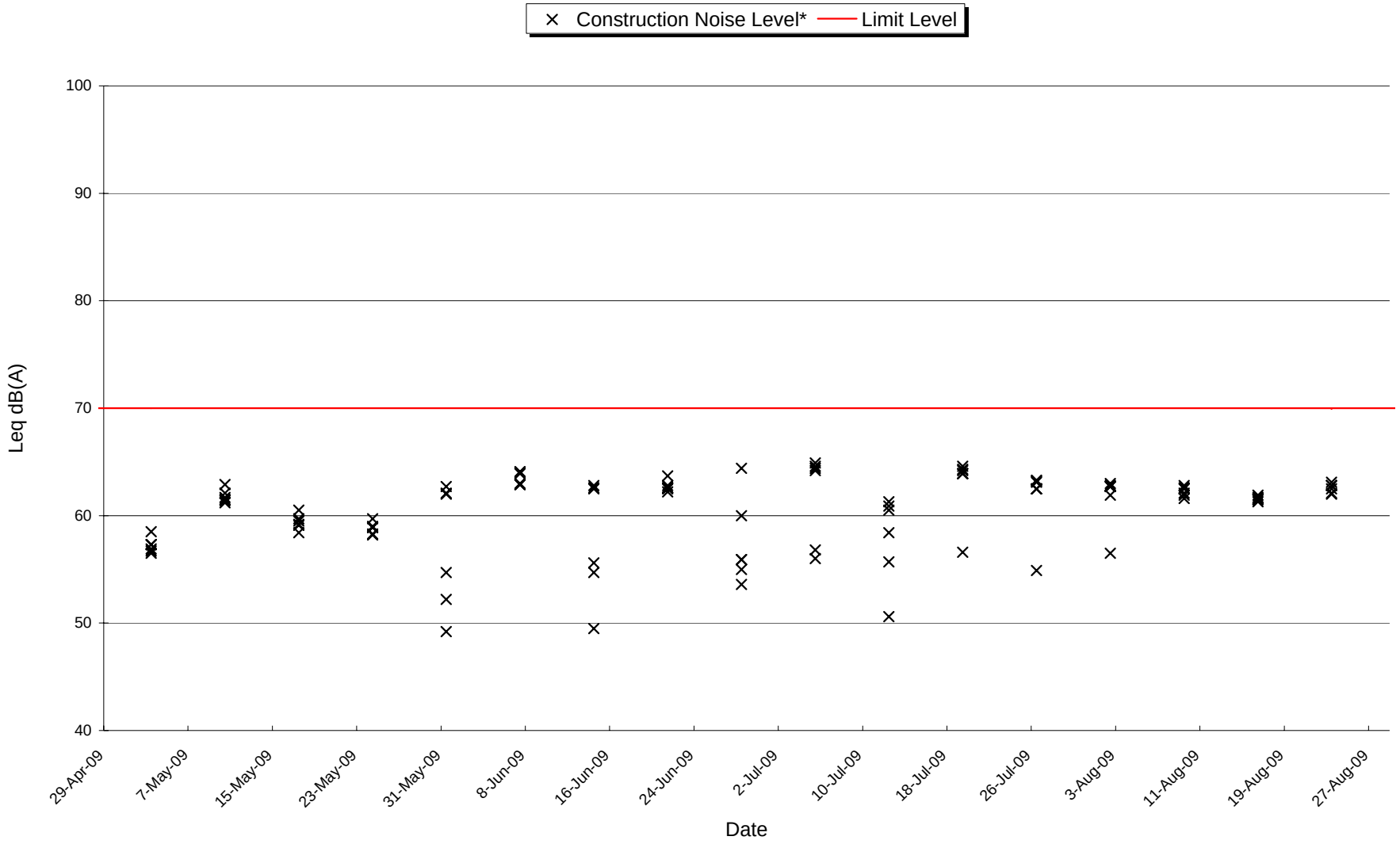
* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M2 for more details.

Night-time Leq_5 (Construction Noise Level) at HKIVE Fok Ying Tung Hall of Residence (NSR1)



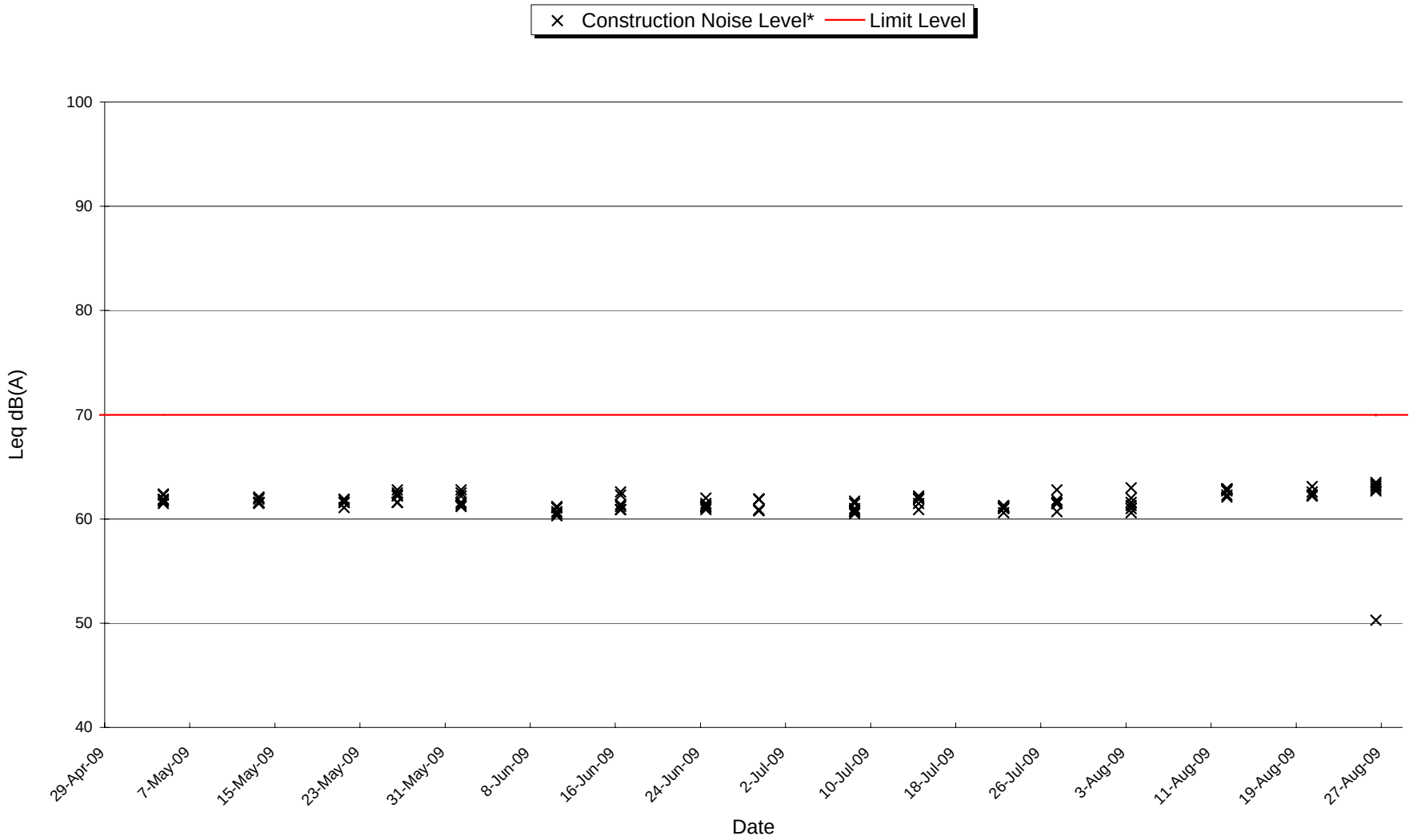
* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M2 for more details.

Public Holiday Leq_5 (Construction Noise Level) at HKIVE Fok Ying Tung Hall of Residence (NSR1)



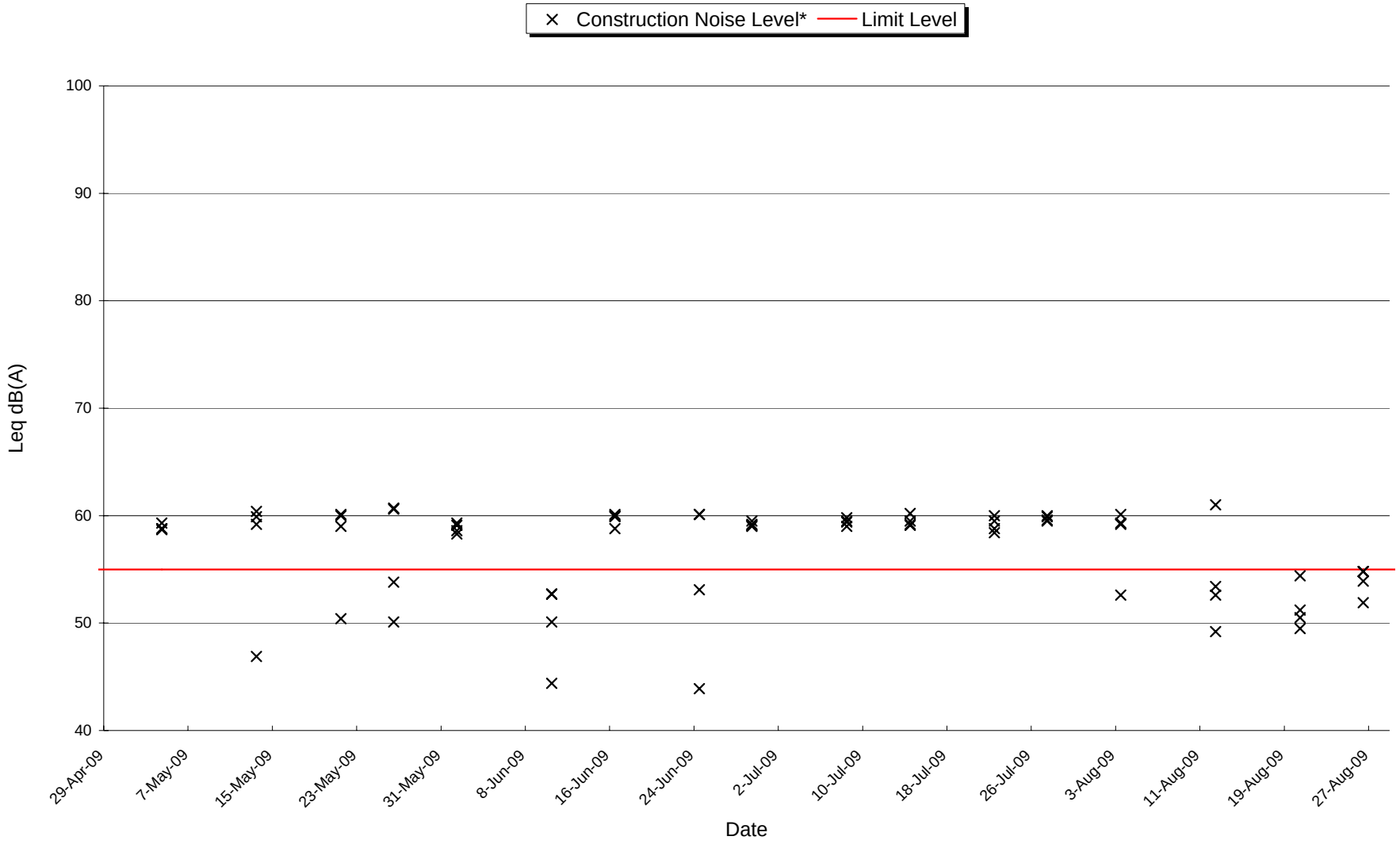
* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M2 for more details.

Evening-time Leq_5 (Construction Noise Level) at HKIVE 5th Floor Block D of the Main Education Building (NSR2)



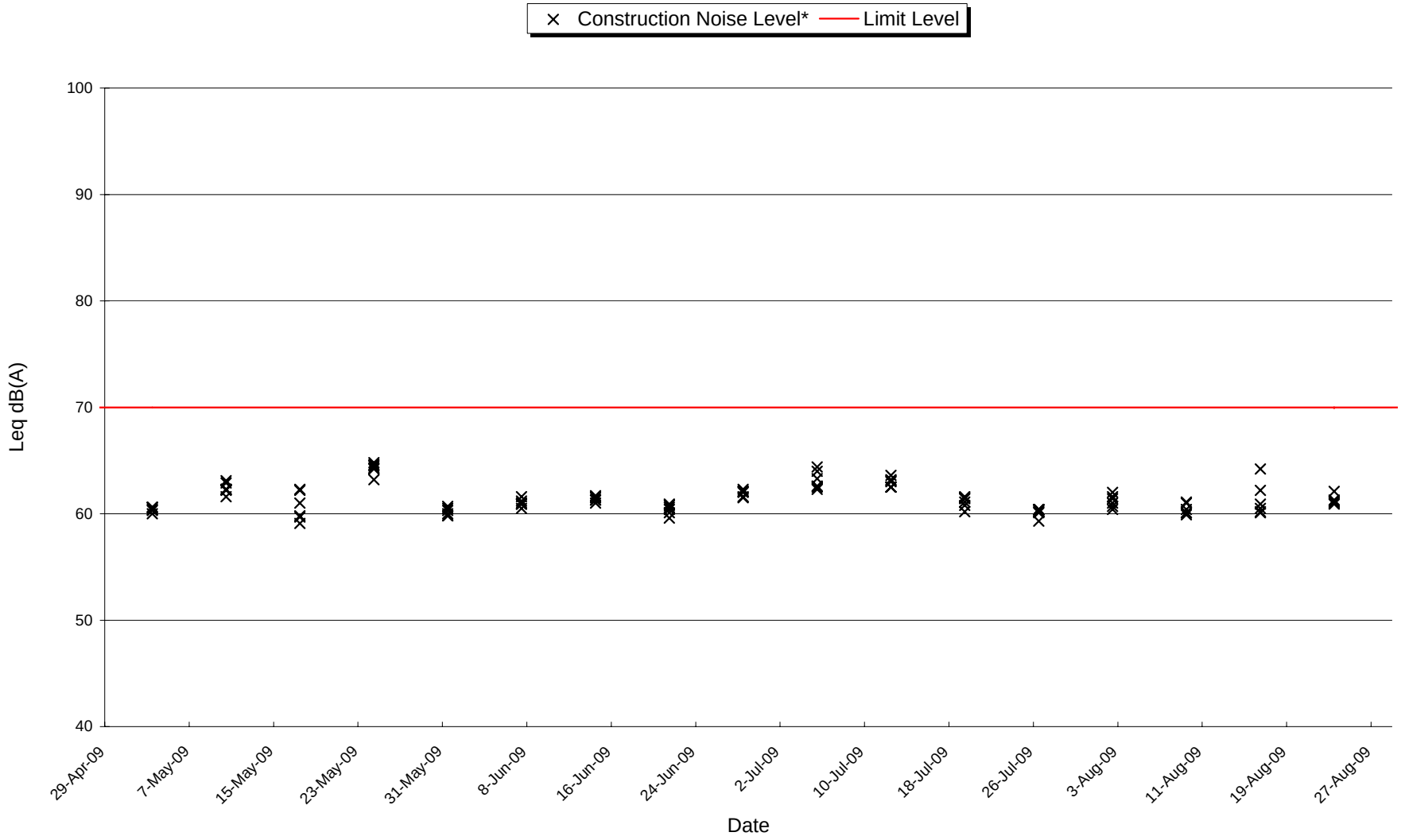
* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M2 for more details.

Night-time Leq_5 (Construction Noise Level) at HKIVE 5th Floor Block D of the Main Education Building (NSR2)



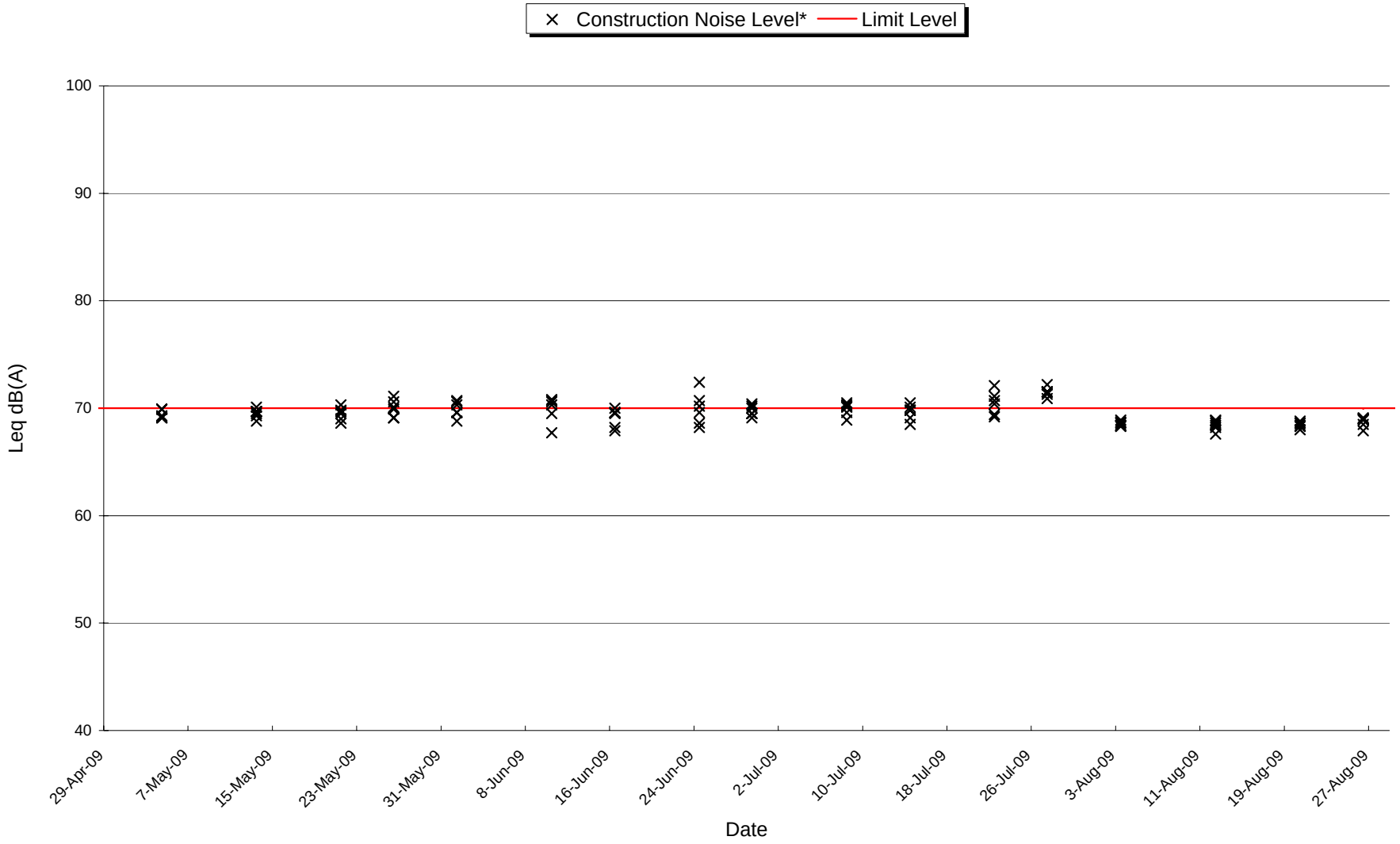
* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M2 for more details.

Public Holiday Leq_5 (Construction Noise Level) at HKIVE 5th Floor Block D of Main Education Building (NSR2)



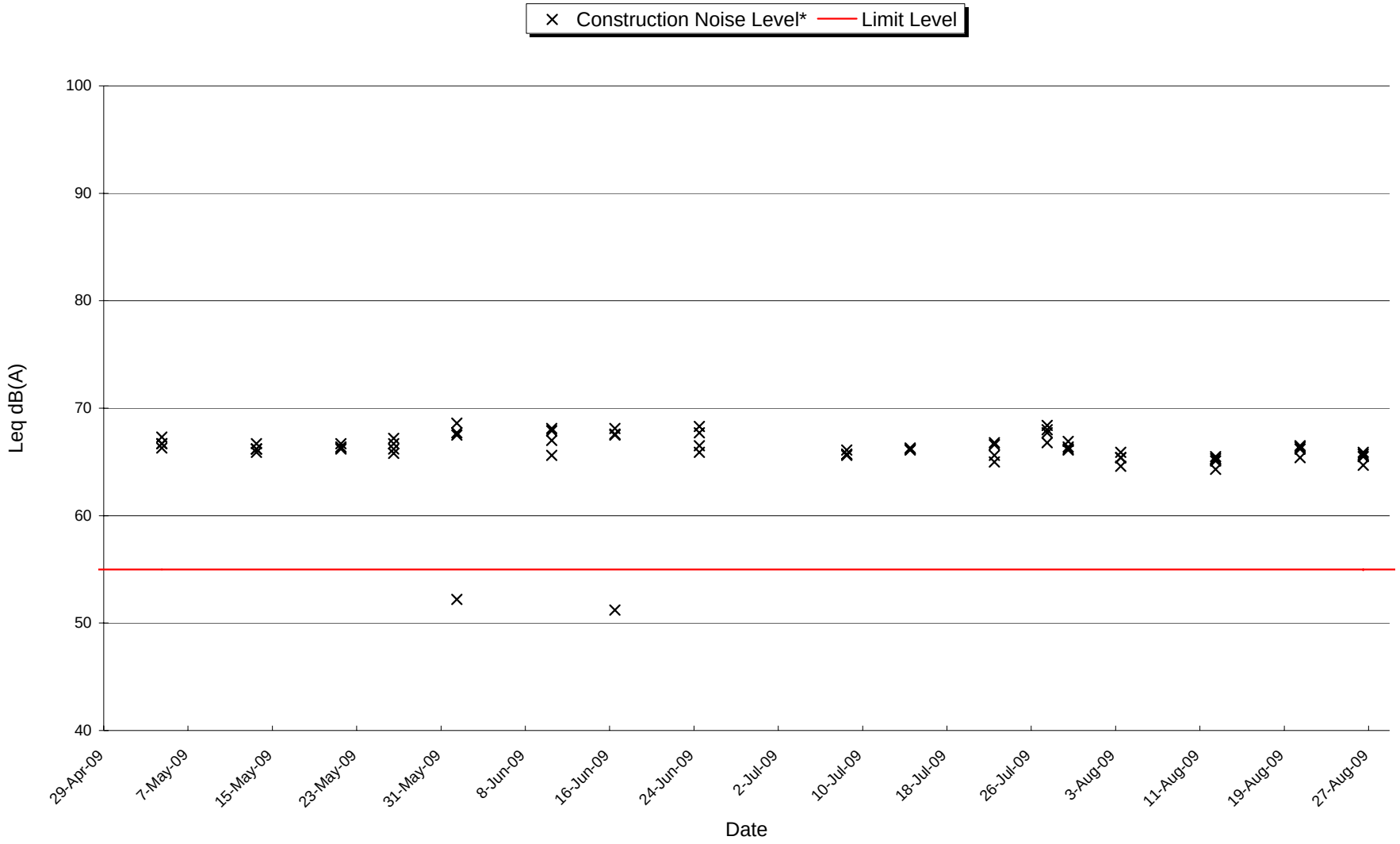
* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M2 for more details.

Evening-time Leq_5 (Construction Noise Level) at Stonecutters Base (NSR5)



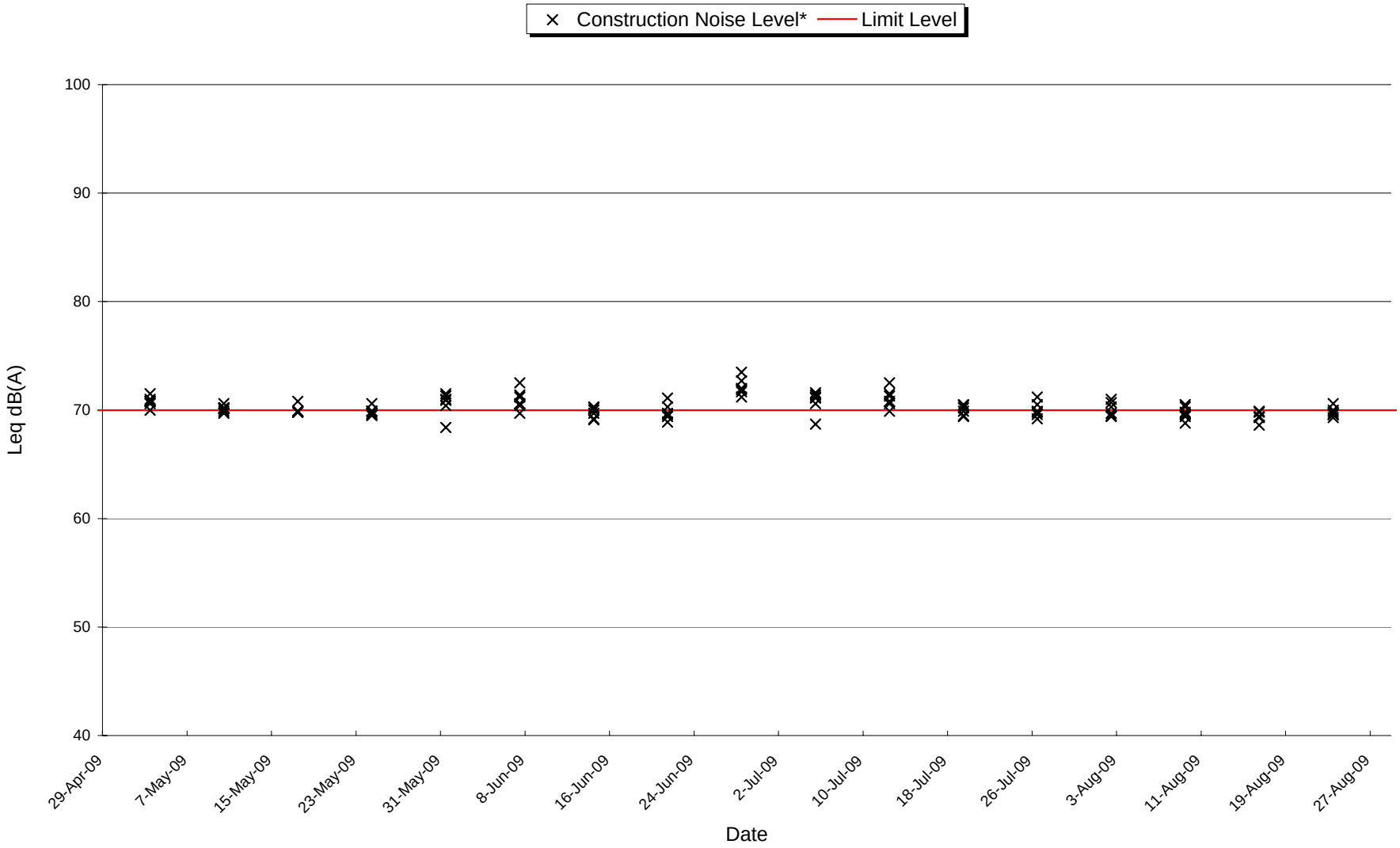
* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M2 for more details.

Night-time Leq_5 (Construction Noise Level) at Stonecutters Base (NSR5)



* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M2 for more details.

Public Holiday Leq_5 (Construction Noise Level) at Stonecutters Base (NSR5)



* Construction Noise Level (CNL) = Measured Noise Level - Corresponding Baseline Level
Please refer to Section 6.2 and Appendix M2 for more details.

Appendix O1

Environmental Complaint Log Book

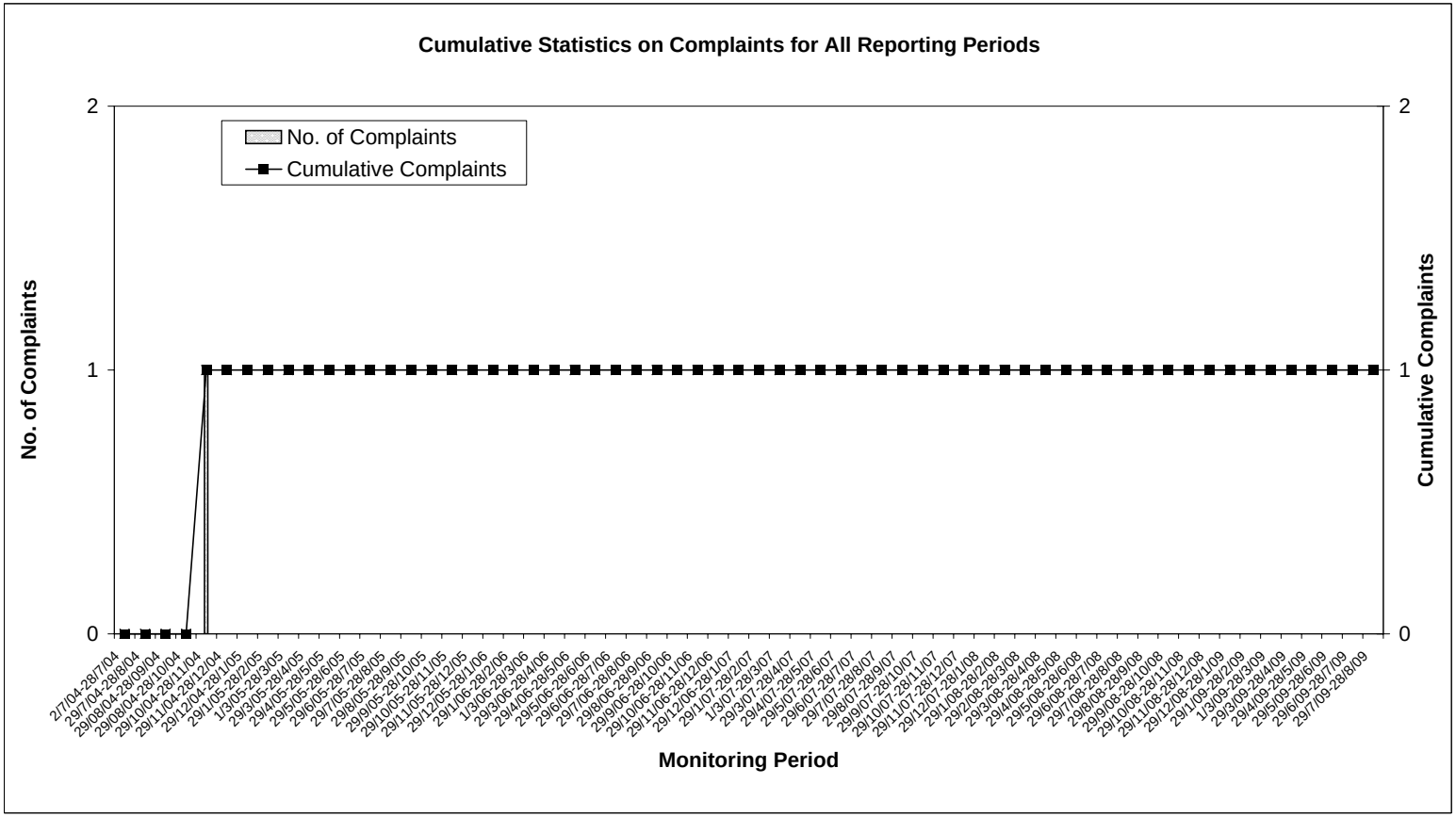
Appendix O1 - Environmental Complain Log							
Case No	**Date of Received**	**Date of Complaint**	**Complainant's information**	**Detail's of complaint**	**Recommended Mitigation Measures**	**Follow-up Action**	**Status/Remarks**
EC01	25-Nov-04 by e-mail from HyD	23-Nov-04 to HyD Enquiry e-mail and EPD Hotline e-mail.	The complainant claimed to be a resident of Rambler Crest, east Tsing Yi.	The complainant mainly enquired about why impact monitoring at Rambler Crest is not being carried out as part of the routine EM&A Programme currently being implemented for the Route 8 Stonecutter's Bridge Project during the construction stage. In addition, the complainant also enquired why monitoring at the 4 sensitive receivers are not being done for the same Project.	N/A	Both HyD and EPD have formally replied to the complainant by e-mail on 10 December 2004. Further enquiries were made by the complainant and a joint meeting was held between HyD, EPD and the ET and a second formal reply was issued by HyD on 23 December 2004 via e-mail. No further enquiries were received since and therefore the complaint is considered closed.	Closed.

Appendix O2

Cumulative Statistics for Environmental Complaint

Appendix O2 - Cumulative Statistics of Complaints

Route 8 Phase 3 - Stonecutters Bridge



Appendix P

Tentative Environmental Monitoring Schedule for the Next Three Months

Tentative Environmental Monitoring Schedule between 29 August 2009 and 28 September 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						29-Aug
30-Aug $Noise_{P.H.}$	31-Aug	1-Sep Noise $Noise_{evening}$ $Noise_{night}$	2-Sep 24hrs-TSP	3-Sep 1hr-TSP	4-Sep	5-Sep
6-Sep $Noise_{P.H.}$	7-Sep Noise $Noise_{evening}$ $Noise_{night}$	8-Sep 24hrs-TSP	9-Sep 1hr-TSP	10-Sep	11-Sep	12-Sep
13-Sep $Noise_{P.H.}$	14-Sep 24hrs-TSP	15-Sep 1hr-TSP	16-Sep Noise $Noise_{evening}$ $Noise_{night}$	17-Sep	18-Sep	19-Sep 24hrs-TSP
20-Sep $Noise_{P.H.}$	21-Sep 1hr-TSP	22-Sep Noise $Noise_{evening}$ $Noise_{night}$	23-Sep	24-Sep	25-Sep 24hrs-TSP	26-Sep 1hr-TSP
27-Sep $Noise_{P.H.}$	28-Sep Noise $Noise_{evening}$ $Noise_{night}$					

1hr-TSP	3 x 1 hour TSP monitoring at ASR1, ASR2 and ASR5 during 0900~1800.
24hrs-TSP	24 hours TSP monitoring at ASR1, ASR2 and ASR5
Noise	Leq30 measurement at NSR1, NSR2 and NSR5 during 0700~1900.
$Noise_{Evening}$	6 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 1900~2300 (if construction activities are undertaken).
$Noise_{Night}$	4 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 2300~0700 next day (if construction activities are undertaken).
$Noise_{P.H.}$	6 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 0700~1900 (if construction activities are undertaken).

Tentative Environmental Monitoring Schedule between 29 September 2009 and 28 October 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		29-Sep	30-Sep 24hrs-TSP	1-Oct	2-Oct 1hr-TSP	3-Oct
4-Oct $Noise_{P.H.}$	5-Oct	6-Oct 24hrs-TSP	7-Oct 1hr-TSP	8-Oct Noise $Noise_{evening}$ $Noise_{night}$	9-Oct	10-Oct
11-Oct $Noise_{P.H.}$	12-Oct 24hrs-TSP	13-Oct 1hr-TSP	14-Oct	15-Oct	16-Oct Noise $Noise_{evening}$ $Noise_{night}$	17-Oct 24hrs-TSP
18-Oct $Noise_{P.H.}$	19-Oct 1hr-TSP	20-Oct Noise $Noise_{evening}$ $Noise_{night}$	21-Oct	22-Oct	23-Oct 24hrs-TSP	24-Oct 1hr-TSP
25-Oct $Noise_{P.H.}$	26-Oct	27-Oct Noise $Noise_{evening}$ $Noise_{night}$	28-Oct			

1hr-TSP	3 x 1 hour TSP monitoring at ASR1, ASR2 and ASR5 during 0900~1800.
24hrs-TSP	24 hours TSP monitoring at ASR1, ASR2 and ASR5
Noise	Leq30 measurement at NSR1, NSR2 and NSR5 during 0700~1900.
$Noise_{Evening}$	6 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 1900~2300 (if construction activities are undertaken).
$Noise_{Night}$	4 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 2300~0700 next day (if construction activities are undertaken).
$Noise_{P.H.}$	6 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 0700~1900 (if construction activities are undertaken).

Tentative Environmental Monitoring Schedule between 29 October 2009 and 28 November 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				29-Oct 24hrs-TSP	30-Oct 1hr-TSP	31-Oct
1-Nov $Noise_{P.H.}$	2-Nov	3-Nov	4-Nov 24hrs-TSP	5-Nov 1hr-TSP	6-Nov Noise $Noise_{evening}$ $Noise_{night}$	7-Nov
8-Nov $Noise_{P.H.}$	9-Nov	10-Nov 24hrs-TSP	11-Nov 1hr-TSP	12-Nov Noise $Noise_{evening}$ $Noise_{night}$	13-Nov	14-Nov
15-Nov $Noise_{P.H.}$	16-Nov 24hrs-TSP	17-Nov 1hr-TSP	18-Nov Noise $Noise_{evening}$ $Noise_{night}$	19-Nov	20-Nov	21-Nov 24hrs-TSP
22-Nov $Noise_{P.H.}$	23-Nov 1hr-TSP	24-Nov Noise $Noise_{evening}$ $Noise_{night}$	25-Nov	26-Nov	27-Nov 24hrs-TSP	28-Nov 1hr-TSP

1hr-TSP	3 x 1 hour TSP monitoring at ASR1, ASR2 and ASR5 during 0900~1800.
24hrs-TSP	24 hours TSP monitoring at ASR1, ASR2 and ASR5
Noise	Leq30 measurement at NSR1, NSR2 and NSR5 during 0700~1900.
$Noise_{Evening}$	6 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 1900~2300 (if construction activities are undertaken).
$Noise_{Night}$	4 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 2300~0700 next day (if construction activities are undertaken).
$Noise_{P.H.}$	6 x Leq5 will be measured at NSR1, NSR2 and NSR5 during 0700~1900 (if construction activities are undertaken).

Appendix Q

Photographic Records of Implemented Measures

Appendix Q
Photographical Records of Implemented Measures

Photo 01 (P3-SA6)

Photo 02 (P3-SA6)

Photo 03 (P3-SA3)

Photo 04 (P3-SA4)

Photo 05 (P3-SA3)

Appendix R

Summary of Environmental Licensing, Notification and Permit Status

Contract No. H/2002/26 – Stonecutters Bridge
Summary of Licensing, Notification and Permit Status

Item	Nature of Permits/License	Date of Application	Date of issue of Permits/License	Permit/License No.	Remark
1	Environmental Permit	6/9/2002 (HyD, VEP-073/2002)	01/12/2008	EP-085/2000/E	Valid
2	Registration as a Waste Producer	05/05/2004 (M45/100/000773)	06/08/2004 (EP760/350/0089331)	WPN 5213-350-M2640-01	Valid
3	Effluent Discharge License	06/09/2004 (M45/100/001766)	20/09/2004 (EP760/269/009124I)	EP760/269/009124I (surrendered)	For Eastern Tower Site Works Area
		/	30/07/2009 (EP/RW/0000004254)	WT00004483-2009 (until 30/09/2014)	For Eastern Tower Site Works Area
		09/09/2004 (M45/400/002475)	21/12/2004 (EP760/350/008933I)	EP760/350/008933I (until 31/12/2009)	For Western Tower Site Works Area
4	Construction Noise Permit	22/01/2009 (received by EPD)	12/02/2009 (EP731/N31/RW0055-09)	GW-RW0055-09 (until 11/08/2009) (superseded)	For Western Site area P3-SA2, SA2A: 00:00 to 24:00 (General Holiday, including Sunday), 00:00 to 07:00 and 19:00 to 24:00 (Any day not being a general holiday)
		24/03/2009 (received by EPD)	21/04/2009 (EP731/N31/RW0115-09)	GW-RW0115-09 (until 20/10/2009)	For Western Tower Site area P3-SA3: 00:00 to 24:00 (General Holiday, including Sunday), 00:00 to 07:00 and 19:00 to 24:00 (Any day not being a general holiday)
		09/04/09 (received by EPD)	30/04/2009 (EP731/N31/RW0132-09)	GW-RW0132-09 (until 29/10/2009)	For Western Tower Site area P3-SA3: 00:00 to 24:00 (General Holiday, including Sunday), 00:00 to 07:00 and 19:00 to 24:00 (Any day not being a general holiday)
		15/05/09 (received by EPD)	20/06/2009 (EP731/N31/RW0215-09)	GW-RW0215-09 (until 19/12/2009)	For Western Tower Site area P3-SA5, SA5A & SA6: 00:00 to 24:00 (General Holiday, including Sunday), 00:00 to 07:00 and 19:00 to 24:00 (Any day not being a general holiday)
		12/06/09 (received by EPD)	15/07/2009 (EP731/N31/RW0260-09)	GW-RW0260-09 (until 14/01/2010)	For Western Tower Site area P3-SA5, SA5A and SA6: 00:00 to 24:00 (General Holiday, including Sunday), 00:00 to 07:00 and 19:00 to 24:00 (Any day not being a general holiday)

Item	Nature of Permits/License	Date of Application	Date of issue of Permits/License	Permit/License No.	Remark
4	Construction Noise Permit	19/06/09 (received by EPD)	29/06/2009 (EP731/N31/RW0264-09)	GW-RW0264-09 (until 28/12/2009)	For ETYV access to SCB bridge 00:00 to 24:00 (General Holiday, including Sunday), 00:00 to 07:00 and 19:00 to 24:00 (Any day not being a general holiday)
		13/07/09 (received by EPD)	12/08/2009 (EP731/N31/RW0308-09)	GW-RW0308-09 (until 11/02/2010)	For Western Site area P3-SA2, SA2A: 00:00 to 24:00 (General Holiday, including Sunday), 00:00 to 07:00 and 19:00 to 24:00 (Any day not being a general holiday)