



Maeda Corporation

MTRCL Contract C3840-13C Tsim Sha Tsui
Station Carnarvon Road Subway and Entrances
Modification Works

Quarterly EM&A Report (December 2014 to February 2015)

24 March 2015

By Email and PostMTR Corporation Limited
Fo Tan Railway House
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Your Ref.:

Our Ref.: 40032976/440118

Attention: Mr. Kenneth Chow / Environmental Engineer II

Dear Sir,

**Consultancy Agreement A130-13
Independent Environmental Checker for CRS and LTS
CRS - Verification for Fourth Quarterly Environmental Monitoring and Audit (EM&A) Report
(December 2014 to February 2015) (Report No.: EB001340R00182)**

We refer to the Fourth Quarterly EM&A Report (December 2014 to February 2015) received under cover of the email from the Environmental Team, Hyder Consulting Limited (HCL), dated on 19 March 2015.

Further to our comments provided on 23 March 2015 and subsequent revision of the Report by HCL on 23 March 2015, we have no further comment and have verified the captioned report (Report No.: EB001340R00182).

Should you have any queries, please feel free to contact the undersigned at 2410 3750 or our Dr. Alex Cheung at 2410 3796.

Yours faithfully
AECOM Consulting Services LtdRodney Ip
Independent Environmental Checker

ACWH/wwsc

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MAEDA

Maeda Corporation

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Quarterly EM&A Report (December 2014 to February 2015)

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Report No EB001340R0182

Date 23 March 2015

This Quarterly EM&A Report is prepared for Maeda Corporation in accordance with the terms and conditions of appointment dated 30 October 2013. Hyder Consulting Limited (Company Number 126012) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

CONTENTS

EXECUTIVE SUMMARY	1
1. INTRODUCTION	2
1.1 Reporting Period.....	2
1.2 Project Background	2
1.3 Environmental Status	2
1.4 Construction Activities	3
2. EM&A REQUIREMENTS	4
2.1 Air Quality	4
2.2 Construction Noise	5
3. MONITORING RESULTS.....	7
3.1 Air Quality	7
3.2 Construction Noise	8
3.3 Conclusions and Recommendations	9
4. ENVIRONMENTAL AUDIT	10
4.1 Site Inspection	10
4.2 Compliance with Legal/ Contractual Requirements	11
4.3 Environmental Complaints	12
4.4 Notification of Summons/Successful Prosecutions	12
5. WASTE MANAGEMENT	13
5.1 Waste Management	13
5.2 Waste Management Record.....	13
6. FUTURE ENVIRONMENTAL ISSUES.....	13
6.2 Key Environmental Issues	13
6.3 Mitigation Measures	14
7. COMMENTS AND RECOMMENDATIONS	14
7.1 Conclusion	14
7.2 Recommendations.....	15

TABLES

Table 1-3-1	Summary of Status of Environmental Licenses and Permits
Table 1-4-1	Construction Activities Undertaken during the Reporting Period
Table 2-1-1	Derivation of Action and Limit Levels for Air Quality at K11, $\mu\text{g}/\text{m}^3$
Table 2-1-2	Action & Limit Levels for Air Quality at K11, $\mu\text{g}/\text{m}^3$
Table 2-2-1	Noise Monitoring Parameters and Frequency
Table 2-2-2	Action and Limit Levels for Construction Noise
Table 3-1-1	Summary of 24-Hr TSP Monitoring Results, $\mu\text{g}/\text{m}^3$
Table 3-2-1	Summary of Construction Noise Monitoring Results at K11, dB(A)
Table 4-1-1	Summary of Findings and Follow-Up Actions of the Site Inspection
Table 4-2-1	Summary of Breaches of Legal and Contractual Requirements
Table 4-3-1	Summary of Complaint
Table 4-4-1	Summary of Summon and Successful Prosecutions

APPENDICES

Appendix A	Site Location Plan
Appendix B	Management Structure
Appendix C	Construction Programme
Appendix D	Implementation Schedule
Appendix E	Status of Environmental Licenses and Permits
Appendix F	Event and Action Plan
Appendix G	Weather Information Extracted from HK Observatory
Appendix H	Monitoring Results and Plots
Appendix I	Flow Chart for Handling Environmental Complaints
Appendix J	Waste Management Records
Appendix K	Complaint Report

EXECUTIVE SUMMARY

Key Issues (Reporting Period)

Breaches of Action and Limit Levels

- ES01 No Notice of Exceedance (NOE) and the associated investigation and follow-up actions were required as the environmental monitoring results registered no exceedances of Action/ Limit Levels of air quality and construction noise during the Reporting Period.
- ES02 Corrective actions were required as the environmental audit during the Reporting Period observed:
1. Total number of 3 findings and required implementation of environmental mitigation measures;
 2. No non-compliance with the required waste management; and
 3. No adverse environmental impacts on the sensitive receivers environed with the site of the Project.

Environmental Complaints

- ES03 Two environmental complaints on air nuisance were recorded during the Reporting Period.

Notification of Summons and Successful Prosecutions

- ES04 No notification of summons and successful prosecutions were recorded during the Reporting Period.

Reporting Changes

- ES05 No major reporting changes were made during the Reporting Period.

Future Key Issues

General

- ES06 Full implementation of the environmental mitigation measures, which are required in the EM&A Plan and summarized in Implementation Schedule, are recommended. Whenever necessary, proper maintenance and improvement of the implemented mitigation measures are reminded.

Construction Noise

- ES07 Particular attention should be paid to construction noise mitigation measures, especially during piling works during the coming construction period to ensure full compliance with statutory and non-statutory requirements and guidelines. Proactive review of working methods, careful selection and arrangement of the noisy equipment as well as effective noise mitigation measures are strongly recommended.

Water Quality

- ES08 In addition, compliance with water quality mitigation measures remains one of the key environmental issues within the construction period, especially when water usage is high.

Air quality

- ES09 Furthermore, implying of construction dust suppression measures are recommended during dusty activities under dry and windy conditions.
- ES10 Construction dust suppression measures including decking over the excavation areas, watering of exposed site surface and covering of all excavated and stockpiles of dusty material by impervious sheeting or similar materials are reminded.

1. INTRODUCTION

1.1 Reporting Period

- 1.1.1 This is the 4th quarterly EM&A report (hereinafter referred as 'This Report') covering construction period from 1st December 2014 to 28th February 2015 (hereinafter referred as 'the Reporting Period').
- 1.1.2 This Report has been written in accordance with the **Environmental Monitoring and Audit Plan** (hereinafter referred as 'the EM&A Plan') enclosed in the **Project Profile – MTR Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works**, which is registered in the **Environmental Permit No. EP-440/2012** (hereinafter referred as 'the EP') (Register No.: PP-462/2012).

1.2 Project Background

- 1.2.1 In order to improve the appearance of Carnarvon Road Entrance D1 and D2 of Tsim Sha Tsui (hereafter referred as 'TST') Station and to provide a more comfortable walking environment nearby, MTR Corporation Limited (hereafter referred as 'MTRC' or 'the Corporation') has commissioned Maeda Corporation (hereinafter referred as 'MC') the contract **MTR Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works** (hereafter referred as 'the Project'). The Project is proposed to rebuild the existing Entrance D1 and D2 and construct a new Entrance D3 at the basement B2 level of the K11 Art Mall to connect to the TST station by a subway, which extends from the Entrance D1 and D2 and runs approximately 80m along Carnarvon Road and across the Bristol Avenue to the Entrance D3. The tentative programme for the Project is approximately 25 months, and was commenced in March 2014.
- 1.2.2 The existing TST Station had been in operation before the **Environmental Impact Assessment Ordinance** (hereafter referred as 'EIAO') came into effect on 1 April 1998. It constitutes an exempted Designated Project (hereinafter referred as 'DP') according to Section 9(2) (g) of the EIAO (Cap. 499). As the Project involves a material change to an exempted DP which may have potential environmental impacts, an environmental permit is required prior to the commencement of the modification works. The Project Profile has been developed to provide information for direct application of an environmental permit. The EP has been granted since 18 July 2012, where the Project Profile and the associated **EM&A Plan** are registered.
- 1.2.3 Site map, works area and locations of the environmental monitoring under the Project are illustrated in Figure 1.1 Site Location Plan of **Appendix A**.
- 1.2.4 Management structure of the Project, including organization chart, lines of communication and contact names and telephone numbers of key personnel, is demonstrated in **Appendix B**.
- 1.2.5 Construction programme is shown in **Appendix C**, whereas implementation schedule for the recommended environmental mitigation measures (hereinafter referred as 'the Implementation Schedule') is summarized in **Appendix D**, which fine tunes construction activities and shows inter-relationship with environmental protection / mitigation measures for the construction period.

1.3 Environmental Status

- 1.3.1 As required in the EP, AECOM Consulting Services Limited (formerly known as "URS Hong Kong Limited") has been appointed as the Independent Environmental Checker under the Project (hereinafter referred as 'the IEC'), whereas Hyder Consulting Limited has been appointed as the Environmental Team under the Project (hereinafter referred as 'the ET').

- 1.3.2 According to the EP Condition 3.2 (a) under Environmental Monitoring and Audit (EM&A) during the Construction Period, baseline monitoring has been completed and the required Baseline Monitoring Report has been submitted to EPD on 14 February 2014 prior to commencement of the works under the Project.
- 1.3.3 Status of relevant environmental permits, licences, and/or notifications on environmental protection for the Project is summarized in **Table 1-3-1**. They are detailed in **Appendix E**.

Table 1-3-1 Summary of Status of Environmental Licenses and Permits

Item	Description	License/Permit Status
1	Air Pollution Control (Construction Dust)	Notification Ref. 365953 acknowledged on 21 Oct 2013.
2	Water Pollution Control Ordinance (Discharge License)	The discharge license (Ref No. WT0019722-2014) granted on 01 Sep 2014 superseding the previous license (Ref No. WT00018229-2014)
3	Billing Account for Disposal of Construction Waste	A/C Ref. 7018523 granted on 25 Oct 2013
4	Chemical Waste Producer Registration	Registration Ref. 5213-2214-M2446-16 granted on 4 Mar 2014
5	Noise Control Ordinance	The Noise Permit (Ref No. GW-RE1475-14) was granted on 17 Dec 2014 superseding the previous permit (Ref No. GW-RE0876-14).

1.4 Construction Activities

- 1.4.1 Construction activities undertaken during the Reporting Period are summarized in **Table 1-4-1**:

Table 1-4-1 Construction Activities Undertaken during the Reporting Period

Item	Description
<u>Construction Activities Undertaken during the Reporting Period</u>	
1	Pipe piling for the cut and cover tunnel
2	Curtain Grout for the temporary staircase
3	Demobilizing the drill rigs for pipe piling and curtain grout works
4	ELS ground formation and preparation works
5	Excavation (Stage 1) at ELS
6	Horizontal grouting for mined tunnel
7	Installation of shaft wailing
8	Lower the level to expose the utilities at Excavation Lateral Support (ELS)
9	Pipe piling for the temporary staircase

10	Plant and material mobilization to the ELS
11	Pumping test for temporary staircase
12	Re-alignment of site hoarding

2. EM&A REQUIREMENTS

2.1 Air Quality

Monitoring Parameters and Frequency

2.1.1 24-Hour Total Suspended Particulates (hereinafter referred as '24-Hr TSP') is required to be monitored once a week during construction period of the Project.

2.1.2 1-Hour Total Suspended Particulates (hereinafter referred as '1-Hr TSP') is required to be monitored when exceedances of 24-Hr TSP were recorded, following the Event and Action Plan presented in **Appendix F**.

Action and Limit Levels

2.1.3 The Action and Limit levels (hereinafter referred as 'the A/L Levels) at K11 have been established in the Baseline Monitoring Report in accordance with the derivation criteria specified in Section 3.7 of the EM&A Plan, which are summarized in **Table 2-1-1** as follows:

Table 2-1-1 Derivation of Action and Limit Levels for Air Quality at K11, $\mu\text{g}/\text{m}^3$

Parameter	Action Level	Limit Level
24-Hr TSP	For baseline level $\leq 200 \mu\text{g}/\text{m}^3$, Action level = (130% of baseline level + Limit level)/2	260
	For baseline level $> 200 \mu\text{g}/\text{m}^3$, Action level = Limit level	
1-Hr TSP	For baseline level $\leq 384 \mu\text{g}/\text{m}^3$, Action level = (130% of baseline level + Limit level)/2	500
	For baseline level $> 384 \mu\text{g}/\text{m}^3$, Action level = Limit level	

2.1.4 The established A/L Levels for 24-Hr and 1-Hr TSP are summarized in **Table 2-1-2** as follows:

Table 2-1-2 Action & Limit Levels for Air Quality at K11, $\mu\text{g}/\text{m}^3$

Parameter	Action Level	Limit Level
24-Hr TSP	222	260
1-Hr TSP	373	500

Event and Action Plan

2.1.5 In case exceedances of Action and/or Limit levels for air quality occur, **Event and Action Plan** for Air Quality enclosed in **Appendix F** will be implemented.

Environmental Mitigation Measures for Air Quality

2.1.6 Although most of the construction works would be carried out underground, appropriate dust mitigation measures as stipulated in the EP, Project Profile, related environmental regulation including Air Pollution Control (Construction Dust) Regulation as well as those recommended in the Implementation Schedule should be implemented to control fugitive dust emission. The following key dust suppression measures are recommended:

- a) Decking over the excavation areas;

- b) Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;
- c) Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;
- d) Cover all excavated or stockpiles of dusty material by impervious sheeting or spraying with water to maintain the entire surface wet;
- e) Provision of vehicle washing facilities at the exit points of the site; and
- f) Provision of tarpaulin covering for any dusty materials on a vehicle leaving the site.

2.1.7 Details of the implementation schedule for the required environmental mitigation measures are presented in **Appendix D**.

2.2 Construction Noise

Monitoring Parameters and Frequency

2.2.1 **Table 2-2-1** summarizes the monitoring parameters and frequency for construction noise.

Table 2-2-1 Noise Monitoring Parameters and Frequency

Parameters	Frequency
L_{eq} in 30 minutes	Once a week

2.2.2 Monitoring schedules for construction noise for the Reporting Period and the next Reporting Period are prepared and submitted to MTRC, IEC and MC prior to implementation via e-mail and / or facsimile for ease of necessary inspection. Where amendment is necessary under ad hoc conditions, including actual and broadcast adverse weather, accidental instrument failures, etc., advanced notification is given at least 24 hours prior to implementation or as practical as possible.

Action and Limit Levels

2.2.3 The Action and Limit levels (hereinafter referred as 'the A/L Levels) at K11 have been established in the **Baseline Monitoring Report**. They are summarized in **Table 2-2-2** as follows:

Table 2-2-2 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hours on normal weekdays	When one valid documented complaint is received.	75*

*Note: *70 dB(A) for schools and 65 dB(A) during school examination periods. If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.*

Event and Action Plan

2.2.4 In case exceedances of Action and/or Limit levels for construction noise occur, the Event and Action Plan enclosed in **Appendix F** will be implemented.

Mitigation Measures for Construction Noise

2.2.5

Although no residual noise impact would be generated after the proposed mitigation measures are in place, the general construction noise control measures stipulated in the EP, Project Profile as well as those recommended in the Implementation Schedule should be fully implemented in order to minimize noise impacts during the construction phase. They are summarized as follows:

- a) The Code of Practice on Good Management Practice to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD shall be adopted;
- b) The statutory and non-statutory requirements and guidelines shall be complied with;
- c) Approval for the method of working, equipment and noise mitigation measures intended to be used at the site shall be granted from the Project Engineer before commencing any work;
- d) Working methods to minimize the noise impact on the surrounding NSRs shall be formulated and executed, and the implementation of these methods shall be monitored by experienced personnel with suitable training;
- e) Noisy equipment and noisy activities shall be located as far away from the NSRs as is practical;
- f) Unused equipment shall be turned off;
- g) PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided;
- h) All plant and equipment shall be maintained regularly;
- i) Material stockpiles and other structures shall be effectively utilized as noise barriers, whenever practicable; and
- j) Enclosure of Entrance D1 with acoustic mat during demolition.

2.2.6

Details of the implementation schedule for the mitigation measures are presented in **Appendix D**.

3. MONITORING RESULTS

3.1 Air Quality

Monitoring Results

3.1.1 24-Hr TSP monitoring during the Reporting Period was conducted following the agreed monitoring schedule.

3.1.2 24-Hr TSP results of the Reporting Period are summarized in the following **Table 3-1-1**. Graphical plots of the parameter are illustrated in **Appendix H**.

Table 3-1-1 Summary of 24-Hr TSP Monitoring Results, ug/m³

Monitoring Date	24-Hr TSP	A/L Levels	
1-Dec-14	59.0		
8-Dec-14	121.0		
15-Dec-14	114.8		
22-Dec-14	117.3		
29-Dec-14	74.5		
5-Jan-15	80.1		
12-Jan-15	79.1		
19-Jan-15	105.8	Action Level: 222	Limit Level: 260
26-Jan-15	86.1		
2-Feb-15	47.5		
9-Feb-15	60.5		
16-Feb-15	77.1		
23-Feb-15	33.9		
Mean (Min – Max)	81.3 (33.9 – 121.0)		

Discussion

- 3.1.3 Two environmental complaints against air quality were registered during the Reporting Period.
- 3.1.4 **Table 3-1-1** demonstrates that all 24-Hr TSP results of the Reporting Period were fluctuated below the A/L Level, there were no Action Level or Limit Level exceedances recorded during the Reporting Period.
- 3.1.5 No Notice of Exceedances (hereinafter referred as 'NOE') and the associated NOE Investigation and remedial actions were required during the Reporting Period.

3.2 Construction Noise

Monitoring Results

- 3.2.1 Construction noise monitoring during the Reporting Period was conducted following the agreed monitoring schedule.
- 3.2.2 Construction noise monitoring results of the Reporting Period are summarized in the following **Table 3-2-1**. Graphical plots of the parameter are illustrated in **Appendix H**.
- 3.2.3 Weather condition, including wind speeds and directions, during the monitoring period are recorded and shown in **Appendix G**.

Table 3-2-1 Summary of Construction Noise Monitoring Results at K11, dB(A)

Monitoring Date	Leq (30 min)	A/L Levels
2-Dec-14	68.8	Limit Level: 75
9-Dec-14	66.6	Action Level:
16-Dec-14	69.8	Any documented complaint against construction noise.
23-Dec-14	69.8	
30-Dec-14	73.7	
6-Jan-15	68.4	
14-Jan-15	72.4	
20-Jan-15	67.4	
27-Jan-15	74.6	
3-Feb-15	69.2	
10-Feb-15	66.5	
17-Feb-15	67.1	
24-Feb-15	69.8	
Mean (Min – Max)	70.4 (66.5 – 74.6)	

Discussion

- 3.2.4 No environmental complaint against construction noise was registered during the Reporting Period, whereas **Table 3-2-1** demonstrates that all construction noise results of the Reporting Period fell below the Limit Level of the parameter.
- 3.2.5 Neither NOE nor NOE investigation and the associated remedial actions were required during the Reporting Period.
- 3.2.6 The Contractor was reminded to pay extra attention to noisy construction activities within the Reporting Month and the coming month. The ET will liaise closely with the Contractor on any unusual level of noise recorded in the upcoming month.
- 3.2.7 It is re-instated that adequate mitigation measures should be implemented during the noisy construction activities in order to alleviate noise nuisance generated from the Project related construction activities.

Weather Conditions

- 3.2.8 No weather conditions and any other factors were identified to have significant effects on the monitoring results of air quality and construction noise during the Reporting Period.
- 3.2.9 Weather information during the Reporting Period which is extracted from Hong Kong Observatory King's Park Weather Station is enclosed for reference in **Appendix G**.

3.3 Conclusions and Recommendations

Conclusions

- 3.3.1 No exceedances of A/L Levels of air quality and no exceedances of Action Level of construction noise were registered during the Reporting Period.
- 3.3.2 Two air quality related complaints were recorded during the Reporting Period.

Recommendations

- 3.3.3 Full implementation of the environmental mitigation measures, which are required in the EM&A Plan and summarized in Implementation Schedule of **Appendix D**, is recommended. Where necessary, proper maintenance and improvement of the implemented mitigation measures are reminded.
- 3.3.4 Nevertheless, as high noise levels were occasionally recorded during the Reporting Period, adequate mitigation measures should be implemented prior to noisy construction activities, in particular piling work, in order to alleviate noise nuisance generated from noisy construction activities under the Project.
- 3.3.5 In addition, construction dust shall be suppressed during dusty construction activities under dry and windy conditions.

4. ENVIRONMENTAL AUDIT

4.1 Site Inspection

4.1.1 Weekly site inspections during the Reporting Period are conducted by MTRC, MC and ET, whereas monthly site inspections of the Reporting Period were jointly conducted by the IEC, MTRC, MC and ET. The site inspection follows strictly the agreed Site Inspection Checklist, which covers all the site audit requirements stipulated in the EM&A Plan, PS and all relevant environmental laws.

4.1.2 The completed Site Inspection Checklists are distributed to all relevant parties upon completion of the site inspection for agreement and signature of the relevant parties and, where appropriate, for implementation of the recommended corrected actions to promptly rectify the situation.

4.1.3 There were 13 site inspections conducted within the Reporting Period. Deficiencies or findings of the site audits and the associated follow up actions are summarized in **Table 4-1-1**:

Table 4-1-1 Summary of Findings and Follow-Up Actions of the Site Inspection

Date	Deficiencies or findings	Follow-Up Action
	No follow-up item.	Not required.
02-Dec-14	Chemical containers were observed without drip tray at site. The Contractor was reminded to store any chemical container with a drip tray or remove it from site.	To be followed-up on next site inspection.
09-Dec-14	Chemical containers were observed without drip tray at site. The Contractor was reminded to store any chemical container with a drip tray or remove it from site.	Closed, the chemical containers were not observed at site.
	No deficiency was observed on site.	Not required.
16-Dec-14	No deficiency was observed on site.	Not required.
	No follow-up item.	Not required.
23-Dec-14	1. Waste water tank was observed overloaded at site. The Contractor was reminded to monitor the drainage system regularly to avoid overflow of waste water from site, or modify the drainage capacity when necessary. 2. Further to the complaint regarding air nuisance received on 17 December 2014, significant odour was not detected at site during the site inspection. Also, the latest purchasing record of ULSD was inspected and no deficiency was observed.	Not required.
	No follow-up item.	Not required.
30-Dec-14	As a general reminder, the Contractor was reminded to store any chemical containers with a drip tray or at a designated chemical storage area at site.	Not required.
06-Jan-15	No deficiency was observed on site.	Not required.

Date	Deficiencies or findings	Follow-Up Action
13-Jan-15	No deficiency was observed on site.	Not required.
20-Jan-15	No deficiency was observed on site.	Not required.
27-Jan-15	No deficiency was observed on site.	Not required.
03-Feb-15	Discharge water at the sedimentation tank was found to have a high pH value. The Contractor was reminded to keep on monitoring the parameters (including pH and SS) of discharge water, and to ensure it meets with the related requirements.	Not required.
	Chemical containers were observed without drip tray at site. The Contractor was reminded to store any chemical with a drip tray or remove from site, whenever possible.	To be followed-up on the next site inspection.
10-Feb-15	Discharge water at the sedimentation tank was found to have a high pH value. The Contractor was reminded to keep on monitoring the parameters (including pH and SS) of discharge water, and to ensure it meets with the related requirements.	Closed. The discharge water from site was tested to meet with the requirements for pH and SS.
	Chemical containers were observed without drip tray at site. The Contractor was reminded to store any chemical with a drip tray or remove from site, whenever possible.	Closed. The Containers were not observed at site.
	No deficiency was observed on site.	Not required.
17-Feb-15	No deficiency was observed on site.	Not required.
24-Feb-15	No deficiency was observed on site.	Not required.

4.1.4 As shown in **Table 4-1-1**, no deficiencies or non-compliance of environmental mitigation measures or adverse environmental impacts were observed during the Reporting Period.

4.2 Compliance with Legal/ Contractual Requirements

4.2.1 Construction activities under the Project must comply with all environmental protection and pollution control laws in Hong Kong, as well as the contractual requirements of the Project. **Table 4-2-1** summarizes breaches of legal and contractual requirements.

Table 4-2-1 Summary of Breaches of Legal and Contractual Requirements

Month	No. of Breaches	Cumulative no. of Breaches
December 2014	0	0
January 2015	0	0
February 2015	0	0

4.3 Environmental Complaints

4.3.1 Environmental complaints are handled following closely the flow chart of complaint response procedure which is enclosed in **Appendix I**.

Complaint on 17 December 2014

4.3.2 One complaint was received on 17 December 2014.

4.3.3 A complaint against air nuisance from the exhaust fumes and odour from the construction plants from the construction site on 17 December 2014 by a complainant at 2.F Mirador Mansion. A joint complaint investigation was carried out by the ET, Contractor, MTRC and EPD on 18 December 2014. During the inspection, no smoke was observed generating from site and odour was considered intermittently detectable at site. Purchase records of ultra-low sulphur diesel (ULSD) provided by the Contractor was also inspected and no deficiency was found. The complaint was considered as project related but the odour detected during the investigation was considered not a nuisance. An investigation report was prepared and submitted on 18 December 2014. Since no further complaint was received, the complaint was considered closed. Details of the complaint investigation and observations can be referred to **Appendix K**.

Complaint on 03 February 2015

4.3.4 One complaint was received on 03 February 2015.

4.3.5 A complaint against air nuisance which was suspected to be exhausted fumes generated from plants operated at the construction site located at Carnarvon Road, Tsim Sha Tsui, was received on 03 February 2015. A joint complaint investigation was carried out by the ET and Contractor on 06 February 2015 to review and audit the dust mitigation measures, presence of any dark smoke and purchase records of low-sulphur diesel of the Contractor, with no deficiency observed. The complaint was considered not a nuisance to surrounding receivers but was considered as project related. An investigation report was prepared and submitted on 10 February 2014. Since no further complaint was received, the complaint was considered closed. Details of the complaint investigation and observations can be referred to **Appendix K**.

4.3.6 Environmental complaints registered during the Reporting Period and cumulative statistics of environmental complaints are summarized in **Table 4-3-1** below:

Table 4-3-1 Summary of Complaint

Month	No. of Complaint	Cumulative no. from December 2014 to February 2015
December 2014	1	1
January 2015	0	1
February 2015	1	2

4.4 Notification of Summons/Successful Prosecutions

4.4.1 Notification of summons and successful prosecutions registered during the Reporting Period are summarized in **Table 4-4-1** below:

Table 4-4-1 Summary of Summon and Successful Prosecutions

Month	Number of Issue	Cumulative no. of Issue
December 2014	0	0
January 2015	0	0
February 2015	0	0

5. WASTE MANAGEMENT

5.1 Waste Management

- 5.1.1 Despite small scale of the Project and the amount of C&D material that needs to be hauled off site and disposed of is anticipated not to be significant, 3-R waste management i.e. Reduce, Reuse and Recycle, is adopted in order to minimize adverse environmental impacts to be generated from construction of the Project.
- 5.1.2 Waste management under the Project is performed in accordance with the Waste Management Plan, which has been prepared for implementation of the construction waste mitigation measures in compliance with the requirements stipulated in the EM&A Plan, PS, Waste Disposal Ordinance and the associated subsidiary regulations.

5.2 Waste Management Record

- 5.2.1 Updated waste management status is detailed in **Appendix J**, where the 3-R status of the construction waste generated from construction of the Project during the Reporting Period is presented.

6. FUTURE ENVIRONMENTAL ISSUES

6.1 Key Environmental Issues

- 6.1.1 Future key environmental issues include:
- 1) Air quality in particular construction dust during dusty construction activities on site, e.g. piling works and excavation works, under dry and windy conditions;
 - 2) Construction noise during noisy activities; and
 - 3) Site surface water run-off and construction wastewater discharge.

6.2 Mitigation Measures

- 6.2.1 To avoid potential adverse environmental impacts of the future key environmental issues stated above, full implementation of the mitigation measures as stipulated in the Implementation Schedule shown in **Appendix D** is required.
- 6.2.2 Mitigation measures for air quality, construction noise and water quality implemented to date shall be properly maintained.
- 6.2.3 Where appropriate, improvement of the implemented mitigation measures is reminded to ensure effectiveness of the mitigation measures.

7. COMMENTS AND RECOMMENDATIONS

7.1 Conclusion

- 7.1.1 Neither NOE & the associated NOE investigation nor follow-up actions were required as the environmental monitoring results registered no exceedances of A/L Levels of air quality and construction noise during the Reporting Period. It is supported by statistical information of the monitored parameters required in EP Condition 5.6 of the EM&A Plan, including result tables and graphical plots, presented in **Appendix H**.
- 7.1.2 Base on the findings listed in **Table 4-1-1** within the Reporting Period, three corrective actions are required:
 - 1) Chemical containers were observed without drip tray at site. The Contractor was reminded to store any chemical container with a drip tray or remove it from site;
 - 2) Discharge water at the sedimentation tank was found to have a high pH value. The Contractor was reminded to keep on monitoring the parameters (including pH and SS) of discharge water, and to ensure it meets with the related requirements; and
 - 3) Chemical containers were observed without drip tray at site. The Contractor was reminded to store any chemical with a drip tray or remove from site, whenever possible.

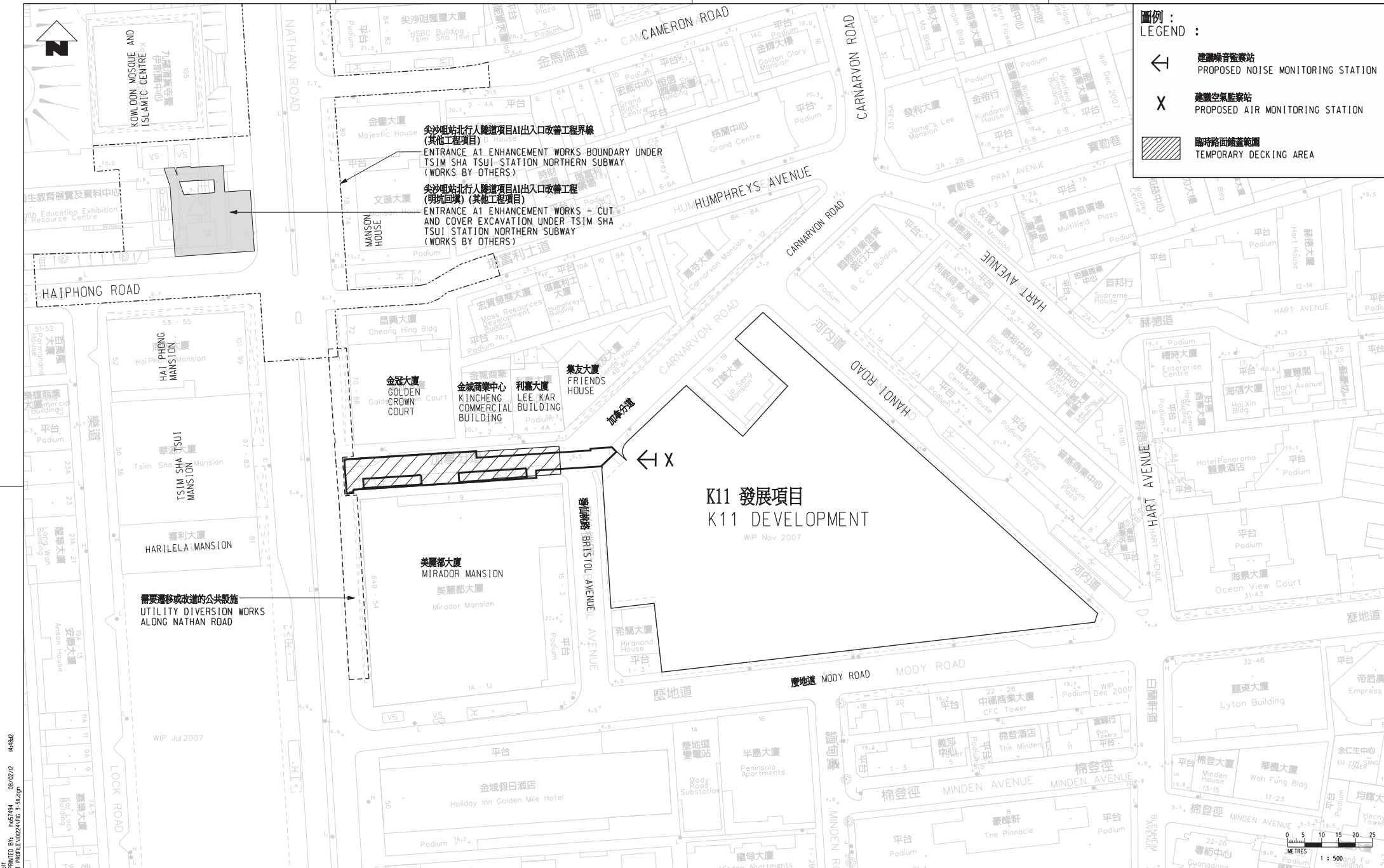
- 7.1.3 It has concluded that the implementation of air quality related mitigation measures and site performance were satisfactory for the complaint received on 17 December 2014 and 03 February 2015, with no further complaint received up to the reported date and the two complaints were closed on December 2014 and February 2015 respectively.
- 7.1.4 In addition, no remedial actions were required as no notification of summons and successful prosecutions were reported during the Reporting Period.

7.2 Recommendations

- 7.2.1 Full implementation of the environmental mitigation measures stipulated in the EM&A Plan and summarized in **Implementation Schedule** of **Appendix D**, are recommended. Where necessary, proper maintenance and improvement of the implemented mitigation measures are reminded.
- 7.2.2 As noisy construction activities such as piling works were being conducted during the Reporting Period, adequate mitigation measures should be implemented in order to alleviate noise nuisance.
- 7.2.3 In addition, suppression of construction dust is required during dusty construction activities, especially under the upcoming dry season.
- 7.2.4 Furthermore, monitoring of site water runoff is reminded to prevent any direct water discharge off site, especially when water usage is high during the construction period. When necessary, the Contractor is reminded to apply additional precautionary measures to prevent any possible environmental deficiency.

Appendix A

Site Location Plan



圖例 :
LEGEND :

- ← 建議噪音監察站
PROPOSED NOISE MONITORING STATION
- X 建議空氣監察站
PROPOSED AIR MONITORING STATION
- ▨ 臨時路面鋪蓋範圍
TEMPORARY DECKING AREA

尖沙咀站北行人隧道項目A1出入口改善工程界線
 (其他工程項目)
 ENTRANCE A1 ENHANCEMENT WORKS BOUNDARY UNDER
 TSM SHA TSUI STATION NORTHERN SUBWAY
 (WORKS BY OTHERS)

尖沙咀站北行人隧道項目A1出入口改善工程
 (明坑回填) (其他工程項目)
 ENTRANCE A1 ENHANCEMENT WORKS - CUT
 AND COVER EXCAVATION UNDER TSM SHA
 TSUI STATION NORTHERN SUBWAY
 (WORKS BY OTHERS)

需要遷移或改道的公共設施
 UTILITY DIVERSION WORKS
 ALONG NATHAN ROAD

K11 發展項目
K11 DEVELOPMENT
 WIP Nov 2007

C:\MTR\A3.BW.COL\PH... 08/02/07 44682
 PLOT 1874E
 FILENAME: A3270884-KV-PROJECT_PROFILE\022A5G3_3-M.dgn

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED
A	PROJECT PROFILE				HO				

DRAWN	HO
DESIGNED	--
CHECKED	--
APPROVED	--
DATE	--

MTR

TST STATION CARNARVON ROAD SUBWAY

ORIGINATOR

Mott MacDonald

30/F The Landmark Hotel
 100 Hong Kong Street
 Hong Kong
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 F: +852 2572 1888
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 www.mottmacdonald.com

In association with
 Hatched Architect Ltd
 8/F 80 Wing Lok Street
 Hong Kong

TITLE

CONSULTANCY AGREEMENT NO. NEX/1049
DETAILED DESIGN FOR CARNARVON ROAD SUBWAY
AIR AND NOISE MONITORING LOCATIONS
 空氣及噪音監察站位置圖

SCALE: 1:500 (A1)

DRAWING NO. **APPENDIX B**

REV. **A**

Appendix B

Management Structure

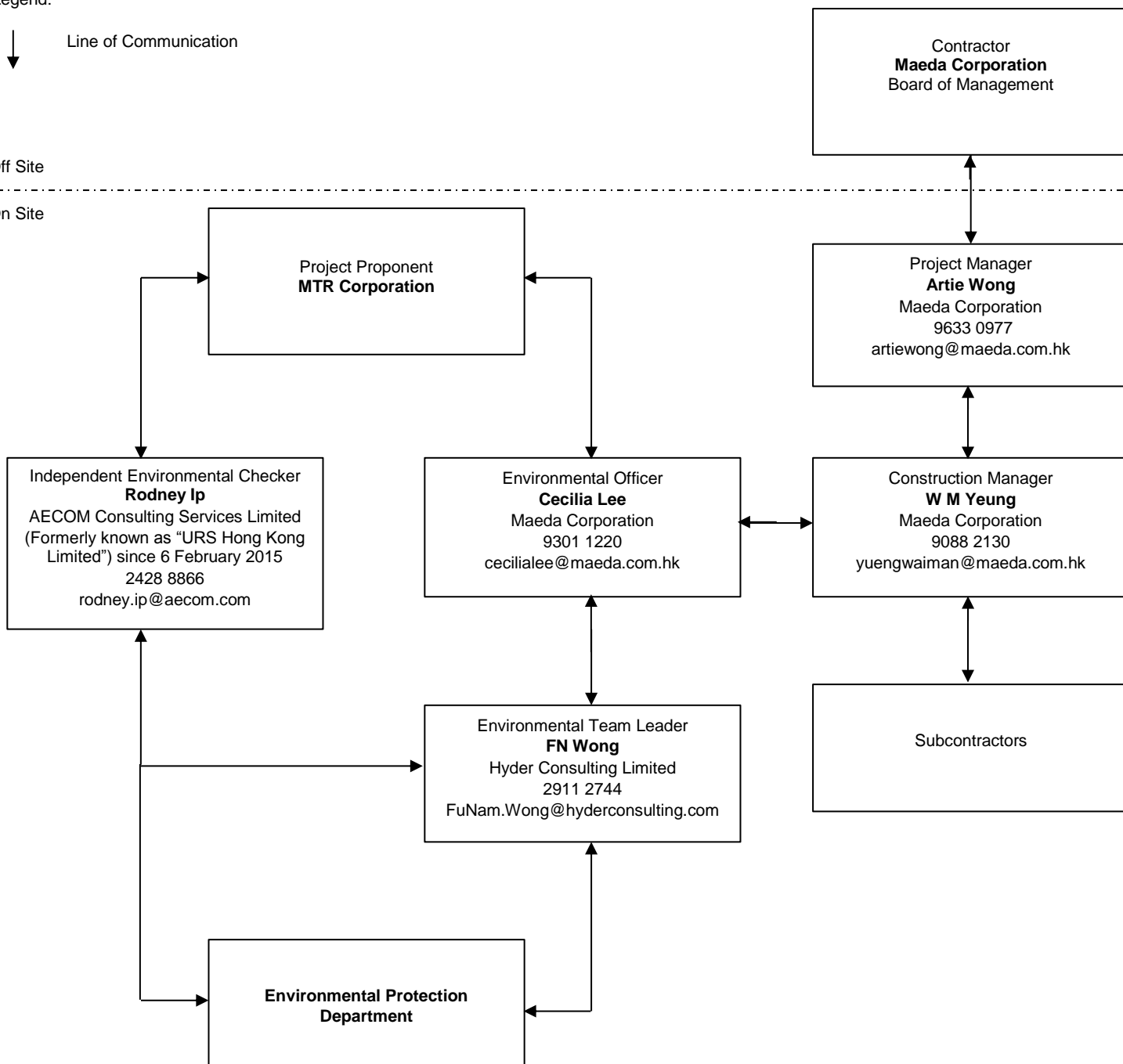
Project Organization Chart in Environmental Management (Rev.02)

Legend:

↓ Line of Communication

Off Site

On Site



Note: In Compliance with

i) Clause.1.3 of Environmental Monitoring and Audit Manual (Appendix VII of Project Profile PP462/2012)

Appendix C

Construction Programme



CONTRACT C3840-13C Tsim Sha Tsui Station, Carnarvon Road Subway



Activity ID	Activity Name	Orig Dur	Planned Start	Planned Finish	Total Float	2014												2015												2016												2017												2018
						Oct	N	D	Jan	F	M	Apr	M	J	Jul	A	S	Oct	N	D	Jan	F	M	Apr	M	J	Jul	A	S	Oct	N	D	Jan	F	M	Apr	M	J	Jul	A	S	Oct	N	D	Jan	F	M	Apr	M	J	Jul	A	S	Oct
Preliminary Master Programme Revision 2																																																						
Preliminaries																																																						
Contract Key Dates																																																						
C3840-CD-20	Date of Commencement	0d	14-Oct-13		0d	▶ Date of Commencement																																																
Specified Degrees of Completion																																																						
C3840-CD-2A	Complete to Deg. 1 status for all civil engineering works and ABWF in Subway outside K11 Lot Boundary (31 Jul 16)	0d		31-Jul-16	0d	◆ Complete to Deg. 1 status for all civil engineering works and ABWF in Subway																																																
Possession of Works Area As PS Clause P8 & PS Appendix G																																																						
C3840-AD-20	Access Date for Works Area 3840.W1 (subject to SLG/TMLG Approval)	0d	31-Oct-13		0d	▶ Access Date for Works Area:3840.W1 (subject to SLG/TMLG Approval)																																																
Initial Site Survey																																																						
C3840-SS-20	Validate the survey record and carry out any necessary additional survey at Works Areas 3840.W1 & W2	35d	31-Oct-13	10-Dec-13	0d	▶ Validate the survey record and carry out any necessary additional survey at Works Areas 3840.W1 & W2																																																
Temporary Works Design & Approval Process (Incl. Demolition)																																																						
Temporary Traffic Mangement Scheme (TTM)																																																						
C3840-TTM-100	Appoint Traffic Consultant	0d		16-Oct-13	0d	▶ Appoint Traffic Consultant																																																
C3840-TTM-110	Prepare & submit review by Eng Outline TTM Schemes as per PS P20.4	6d	17-Oct-13	23-Oct-13	0d	▶ Prepare & submit review by Eng Outline TTM Schemes as per PS P20.4																																																
C3840-TTM-120	Eng review Outline TTM Schemes	4d	24-Oct-13	28-Oct-13	0d	▶ Eng review Outline TTM Schemes																																																
C3840-TTM-130	Prepare Detailed TTMS	5d	24-Oct-13	29-Oct-13	0d	▶ Prepare Detailed TTMS																																																
C3840-TTM-140	Discussion and agree in principle at TMLG Meeting	1d	30-Oct-13	30-Oct-13	0d	▶ Discussion and agree in principle,at TMLG Meeting																																																
Carnarvon Road Subway and Entrances																																																						
Open Cut Sequence 1 (Advance Ground Works & Piling Works)																																																						
Advance Ground Works																																																						
C3840-AGW-020	Trial Pit/trench excavation	69d	14-Nov-13	08-Feb-14	0d	▶ Trial Pit/trench excavation																																																
C3840-AGW-040	Pre-drilling works	24d	27-Dec-13	24-Jan-14	0d	▶ Pre-drilling works																																																
Piles & Grouting for Vertical Shaft																																																						
C3840-EVS-010	Mobilization for Piling Rig and Setup	4d	27-Feb-14	03-Mar-14	0d	▶ Mobilization for Piling Rig and Setup																																																
C3840-EVS-020	52 nos. pipe piles with 1m. to 2.2m. minimum rock socket	35d	04-Mar-14	14-Apr-14	0d	▶ 52 nos. pipe piles with 1m. to 2.2m. minimum rock socket																																																
C3840-EVS-030	Grouting for Vertical Shaft Bulk Head	18d	17-Mar-14	07-Apr-14	8d	▶ Grouting for Vertical Shaft Bulk Head																																																
C3840-EVS-040	Curtain Grouting vertical shaft	18d	08-Apr-14	02-May-14	8d	▶ Curtain Grouting vertical shaft																																																
Tunnel (Vertical Shaft Excavation)																																																						
C3840-SH-100	Pump Test	24d	03-May-14	31-May-14	8d	▶ Pump Test																																																
C3840-SH-110	Excavation for 1st layer 140m3 50m3/day	3d	03-Jun-14	05-Jun-14	8d	▶ Excavation for 1st layer 140m3 50m3/day																																																
C3840-SH-120	Install 1st waling, strut & legging wall	4d	06-Jun-14	10-Jun-14	8d	▶ Install 1st waling, strut & legging wall																																																
C3840-SH-130	Shotcrete 1st layer	2d	11-Jun-14	12-Jun-14	8d	▶ Shotcrete 1st layer																																																

Actual Work ◆ Milestone
 Remaining Work
 Critical Remaining Work

Data Date: 11-Oct-13

Page 1 of 3

Preliminary Master Programme

Extract Critical Path 1

Maeda/P/PMP/2

Date	Revision	Checked	Approved
27-Feb-14	REV 2	BG	AW

Appendix D

Implementation Schedule

Appendix VIII

Implementation Schedule

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
	Noise Impact					
S.3.1	Use of quieter plant	To minimise construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control Ordinance
S.3.1	Use of noise enclosure and movable barrier <ul style="list-style-type: none"> • movable barrier can achieve a 5 dB(A) reduction for movable PME and 10 dB(A) reduction for stationary PME; • noise enclosure can achieve 15dB(A) reduction for PME; • A typical design barrier with a steel frame of vertical / cantilever type would be adopted and located close to the noise generating part of PME; • Barrier material of surface mass in excess of 7kg/m² shall be required to achieve the maximum screening effect (and minimum 10kg/m² for noise enclosure); • The length of barrier should generally be at least five times greater than its height and the minimum height of a barrier should be such that no part of the noise source will be visible from the noise sensitive receiver being protected. 	To minimize construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93, Noise Control Ordinance and EIAO Guidance Note NO. 9/2010
S.3.1	General Construction Noise Control Measures <ul style="list-style-type: none"> • The Code of Practice on Good Management Practice 	To minimize construction noise	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
	<p>to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD shall be adopted;</p> <ul style="list-style-type: none"> • The statutory and non-statutory requirements and guidelines shall be complied with; • Approval for the method of working, equipment and noise mitigation measures intended to be used at the site shall be granted from the Project Engineer before commencing any work; • Working methods to minimize the noise impact on the surrounding NSRs shall be formulated and executed, and the implementation of these methods shall be monitored by experienced personnel with suitable training; • Noisy equipment and noisy activities shall be located as far away from the NSRs as is practical; • Unused equipment shall be turned off; • PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided; • All plant and equipment shall be maintained regularly; and • Material stockpiles and other structures shall be effectively utilized as noise barriers, whenever practicable. 	emissions				Ordinance
	Air Quality Impact					
S.3.2	<p>Construction Dust Control Measures</p> <ul style="list-style-type: none"> • Decking will be provided subsequent to the completion of surface excavation works. The duration 	To minimise the dust impacts arising from the	Contractor	Work site	Construction Stage	Air Pollution Control (Construction

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
	<p>of decking is around 13 months after surface excavation works;</p> <ul style="list-style-type: none"> • Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather; • Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers; • Cover all excavated or stockpile of dusty material by impervious sheeting or spraying with water to maintain the entire surface wet; • Provision of vehicle washing facilities at the exit points of the site; and • Provision of tarpaulin covering of any dusty materials on a vehicle leaving the site. 	construction works				Dust) Regulation
	Water Quality Impact					
S.3.3	<p>Construction Water Quality Impact Measures</p> <ul style="list-style-type: none"> • The Contractor should design and implement all the mitigation measures and practices specified in the ProPECC PN 1/94 “Construction Site Drainage” and “Recommended Pollution Control Clauses for Construction Contracts” issued by EPD. • All runoffs arising from the construction site should be properly collected and treated to ensure the discharge standards as stipulated in WPCO are met. Silt trap and oil interceptor should be provided to remove the oil, lubricants, grease, silt, grit and debris from the wastewater before being pumped to the public stormwater drainage system. The silt traps and oil interceptors should be cleaned and maintained regularly. 	To reduce water quality impact induced by the construction work	Contractor	Work Site	Construction Stage	ProPECC PN1/94; Water Pollution Control Ordinance

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
	<ul style="list-style-type: none"> Any foul effluent should not be discharged into any public sewer and stormwater drain, unless an effluent discharge permit is obtained under the WPCO by the Contractor. Site toilet facilities, if needed, should be chemical toilets or should have the foul water effluent directed to a foul sewer. 					
	Waste Management					
S.3.4	<p>Construction Waste Management Measures</p> <ul style="list-style-type: none"> Excavated material should be reused on site as far as possible to minimise off-site disposal. Scrap metals or abandoned equipment should be recycled if possible. Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner. The Contractor should adopt a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill. Independent audits of the Contractor and resident site staff will be undertaken to ensure that the correct procedures are being followed. Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes. All general refuse should be segregated and stored in enclosed bins or compaction units and waste separation facilities for paper, aluminium cans, plastic bottles etc. should be provided to facilitate reuse or 	To adopt waste management measures in the way of avoiding, minimising, reusing and recycling so as to reduce waste generation	Contractor	Work Site	Construction Stage	Waste Disposal Ordinance (Cap. 54); Waste Disposal (Chemical Waste) (General) Regulation; ETWB TCW No. 31/2004; ETWB TCW No. 19/2005.

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
	recycling of materials and their proper disposal.					
	Landscape and Visual Impact					
S.3.5	Landscape and Visual Measures <ul style="list-style-type: none"> Screening of construction works by hoardings/noise barriers around works area with visually unobtrusive colours 	To reduce visual impact by construction works.	Contractor	Temporary Storage Area at Salisbury Road	Construction Stage	EIAO
S.3.5	<ul style="list-style-type: none"> Reinstating the affected amenity planting area at Salisbury Road after the completion of works 	To prevent loss of planter after construction	Contractor	Temporary Storage Area at Salisbury Road	Operation Stage	ETWB TCW No. 2/2004

Appendix E

Status of Environmental Licenses and Permits



Maeda Corporation

Contract No. C3840-13C

Tsim Sha Tsui Station Carnarvon Road Subway

Last Update: 31-December-2014

Licence Summary

Item No.	Our Ref.	Govt. Ord.	Type? (License / Permit / Account / Notification / Registration & etc.)	Description	Submission	Ref. No	Date of Submission (to EPD) (DD-MM-YYYY)	Date of Approval / Receipt (from EPD) (DD-MM-YYYY)	Date of Activation (DD-MM-YYYY)	Date of Expiry (DD-MM-YYYY) Green = expire next mth; Yellow = expire this wk; Red = Expired	Description	Remarks
000	000	EIAO	Permit	Environmental Permit	N/A	AEP-440/2012	N/A	N/A	18 - 07 - 2012	N/A	Baseline, Air & Noise Impact Monitoring	
001	001	APCO	Notification	Construction Dust Notification	Form NA – Notification S3(1) of APCO (Construction Dust)	365953	18 - 10 - 2013	21 - 10 - 2013	01 - 11 - 2013	01 - 12 - 2014	Site Formation	
001	001	APCO	Notification	Construction Dust Notification	Form NA – Notification S3(1) of APCO (Construction Dust)	365953	18 - 10 - 2013	21 - 10 - 2013	01 - 02 - 2014	01 - 10 - 2016	Demolition of a Building	
001	001	APCO	Notification	Construction Dust Notification	Form NA – Notification S3(1) of APCO (Construction Dust)	365953	18 - 10 - 2013	21 - 10 - 2013	01 - 08 - 2014	01 - 08 - 2016	Work carried out in any part of a tunnel that is within 100m of any exit to the open air	
001	001	APCO	Notification	Construction Dust Notification	Form NA – Notification S3(1) of APCO (Construction Dust)	365953	18 - 10 - 2013	21 - 10 - 2013	01 - 01 - 2016	01 - 03 - 2017	Construction of the Superstructure of a Building	
001	001	APCO	Notification	Construction Dust Notification	Form NA – Notification S3(1) of APCO (Construction Dust)	365953	18 - 10 - 2013	21 - 10 - 2013	01 - 11 - 2016	10 - 09 - 2017	Road Construction Work	
002	002	WDO	Account	Construction Waste Billing Account	EPD-211 (Form 1) Application for a Billing Account for Disposal of Construction Waste	7018523	18 - 10 - 2013	25 - 10 - 2013	25 - 10 - 2013	N/A	Disposal of C&D Waste	Application No. WFG12765
003	003 WPCO #001	WPCO	Licence	Water Discharge Licence	EPD-117 (Form A) Application for a Licence of Water Discharge	WT00018229-2014	09 - 01 - 2014	04 - 03 - 2014	04 - 03 - 2014	31 - 08 - 2014	Self Monitoring Only FlowRate 9m3/d, pH 6-9, SS 50mg/L, COD 100mg/L	Superseded by WT00019722-2014
003	003 WPCO #002	WPCO	Licence	Water Discharge Licence	EPD-117 (Form A) Application for a Licence of Water Discharge	WT00019722-2014	24 - 07 - 2014	01 - 09 - 2014	01 - 09 - 2014	31 - 03 - 2019	Quarterly Report FlowRate 25m3/d, pH 6-9, SS 30mg/L, COD 80mg/L	
004	004 CWP#00 1	WDO	Registration	Chemical Waste Producer	EPD-129 Application for Registration as a Chemical Waste Producer	5213-2214-M2446-16	15 - 01 - 2014	04 - 03 - 2014	04 - 03 - 2014	N/A	Surplus paint, spent lubricating oil, spent battery	
005	005 CNP#001	NCO	Permit	Construction Noise Permit	EPD74A(s) Form 1 - Application for a Construction Noise Permit	Application: 377352 Permit: GW-RE0876-14	29 - 07 - 2014	07 - 08 - 2014	11 - 08 - 2014	24 - 12 - 2014	Apply for 4nos Submersible Water pump (Electric)	Superseded by GW-RE1475-14
005	005 CNP#002	NCO	Permit	Construction Noise Permit	EPD74A(s) Form 1 - Application for a Construction Noise Permit	Application: 383025 Permit: GW-RE1475-14	15 - 12 - 2014	17 - 12 - 2014	24 - 12 - 2014	23 - 06 - 2015	Apply for 4nos Submersible Water pump (Electric) w/ new area to be included	

Appendix F

Event and Action Plan

Event and Action Plan for Air Quality

In case the Action and Limit Levels are not complied during construction stage, the Event and Action Plan shown below should be followed.

Event / Action	ET	IEC	ER	Contractor
Action Level				
Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source; 2. If valid, inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC and EPD; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. Discuss with IEC and Contractor on remedial action required; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measure properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial action to IEC within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
Limit Level				
Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source; 2. Inform ER and EPD; 3. Repeat measurement to confirm finding; 4. Increase 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC

Event / Action	ET	IEC	ER	Contractor
	<p>monitoring frequency to daily;</p> <p>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.</p>	<p>method;</p> <p>4. Discuss with ET and the Contractor on possible remedial measures;</p> <p>5. Advise the ER on the effectiveness of the proposed remedial measures;</p> <p>6. Supervise implementation of remedial measures.</p>	<p>measures properly implemented.</p>	<p>within 3 working days of notification;</p> <p>3. Implement the agreed proposals;</p> <p>4. Amend proposal if appropriate.</p>
Exceedance for two or more consecutive samples	<p>1. Notify IEC, ER, Contractor and EPD;</p> <p>2. Identify sources;</p> <p>3. Repeat measurement to confirm findings;</p> <p>4. Increase monitoring frequency to daily;</p> <p>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</p> <p>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</p> <p>7. Assess the effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the</p>	<p>1. Discuss amongst ER, ET and Contractor on the potential remedial actions;</p> <p>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ET accordingly.</p> <p>3. Supervise the implementation of remedial measures.</p>	<p>1. Confirm receipt of notification of failure in writing;</p> <p>2. Notify Contractor;</p> <p>3. In consultation with IEC, agree with the Contractor on the remedial measures to be implemented;</p> <p>4. Ensure remedial measures properly implemented;</p> <p>5. 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.</p>	<p>1. Take immediate action to avoid further exceedance;</p> <p>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</p> <p>3. Implement the agreed proposals;</p> <p>4. Resubmit proposals if problem still not under control;</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</p>

Event / Action	ET	IEC	ER	Contractor
	results; 8. If exceedance stops, cease additional monitoring.			

Event and Action Plan for Construction Noise

In case the Action and Limit Levels are not complied during the construction stage, the Event and Action Plan shown below should be followed.

Event / Action	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and Contractor. 2. Carry out investigation. 3. Report the results of investigation to the IEC and Contractor. 4. Discuss with the Contractor and formulate remedial measures 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the analyzed result submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed noise problem 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC 2. Implement noise mitigation proposals
Limit Level	<ol style="list-style-type: none"> 1. Notify IEC, ER, EPD and Contractor, and follow other actions 2. Identify source 3. Repeat measurement to confirm findings 4. Increase monitoring frequency 5. Check Contractor's working procedures to determine possible mitigation to be implemented 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess effectiveness of Contractor's 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET and Contractor on the potential remedial actions 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ET accordingly 3. Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedances 2. Notify Contractor 3. Require Contractor to propose remedial measures 4. Ensure remedial measures are properly implemented 5. 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. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IEC within 3 working days of notifications 3. Implement the agreed proposals 4. Revise and 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

Event / Action	ET	IEC	ER	Contractor
	remedial actions and keep IEC, EPD, ER informed of the results 8. If exceedance stops, cease additional monitoring			

Appendix G

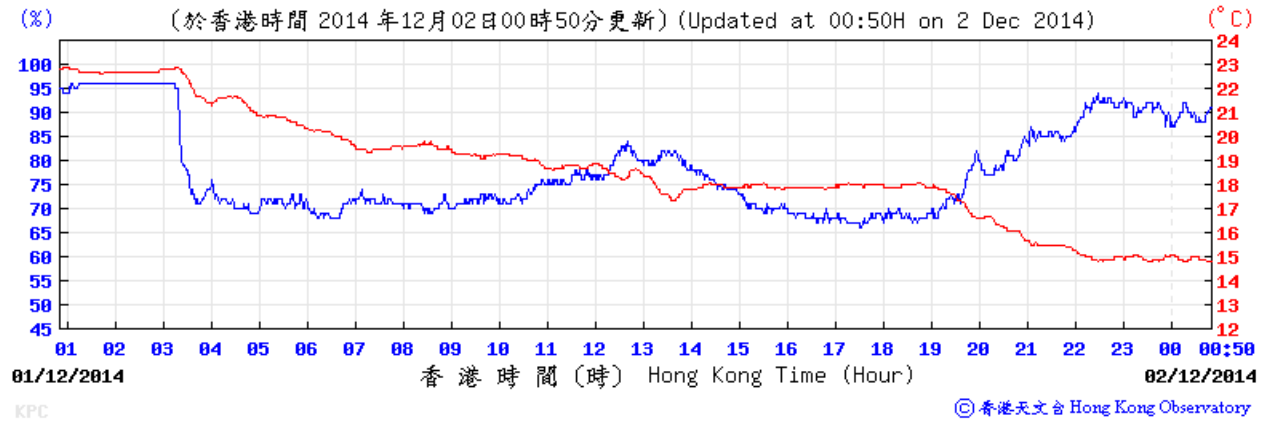
Weather Information Extracted from HK Observatory

**Daily Total Rainfall (mm) at King's Park HKO Weather Monitoring Station in
December 2014**

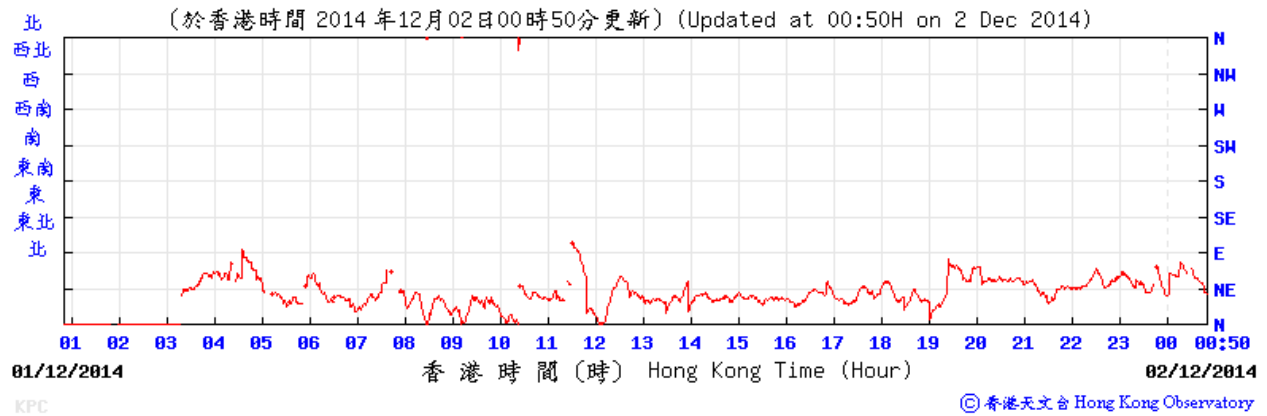
Day	Dec	24-hr TSP	Noise	Remarks
1	3.6	✓		
2	3.5		✓	No rainfall recorded on site during Noise Monitoring
3	2.6			
4	2.6			
5	5.8			
6	0.6			
7	-			
8	-	✓		
9	0.3		✓	No rainfall recorded on site during Noise Monitoring
10	-			
11	2.7			
12	-			
13	-			
14	-			
15	-	✓		
16	-		✓	No rainfall recorded on site during Noise Monitoring
17	-			
18	0.2			
19	14.2			
20	0.1			
21	-			
22	-	✓		
23	-		✓	No rainfall recorded on site during Noise Monitoring
24	-			
25	7.5			
26	1.9			
27	0.8			
28	3.3			
29	-	✓		
30	-		✓	No rainfall recorded on site during Noise Monitoring
31	-			
Total	47.1			

King's Park Weather Station – 1 December 2014

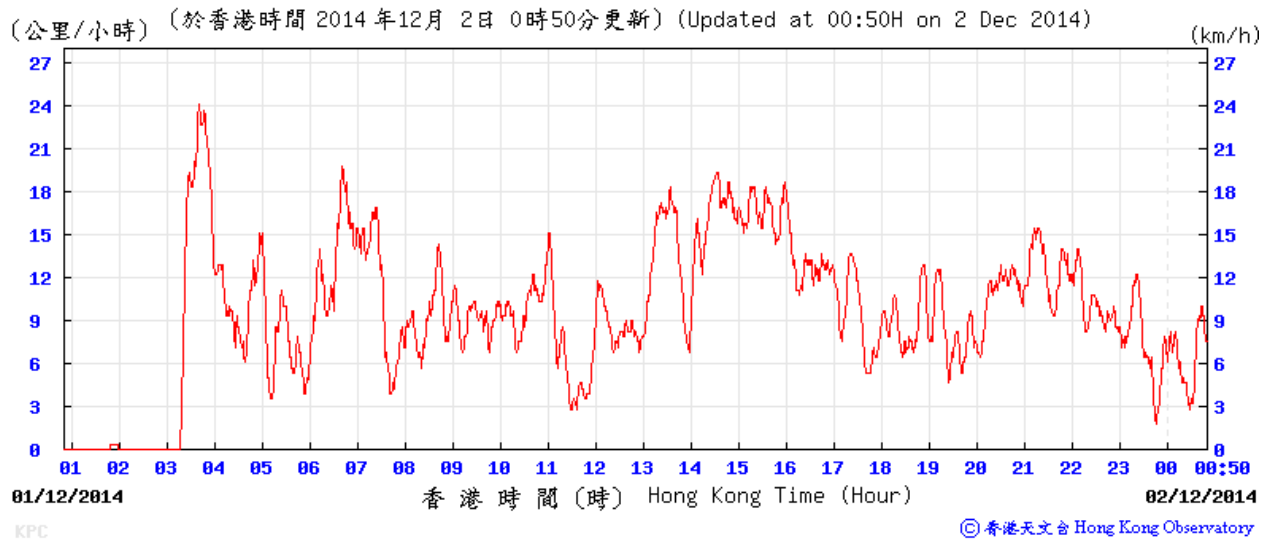
Temperature and Humidity:



Wind Direction:

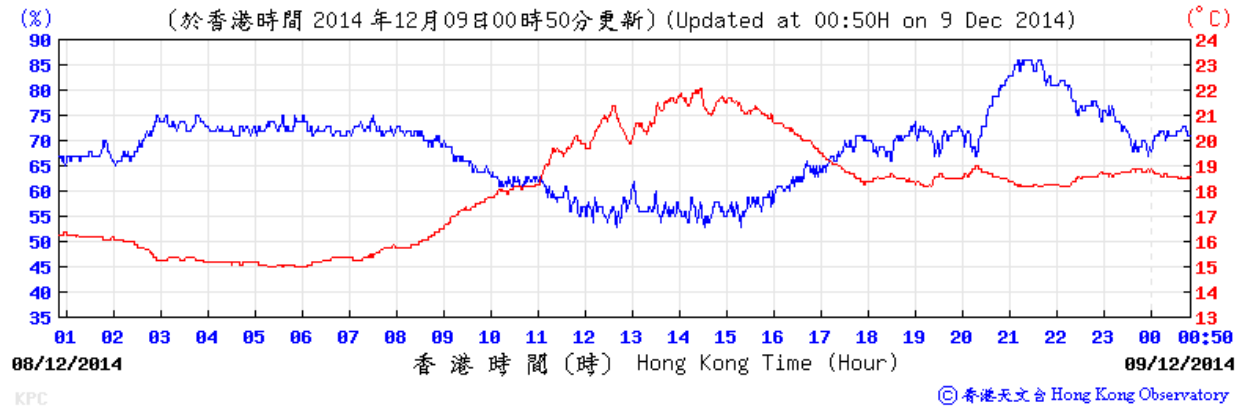


Wind Speed:

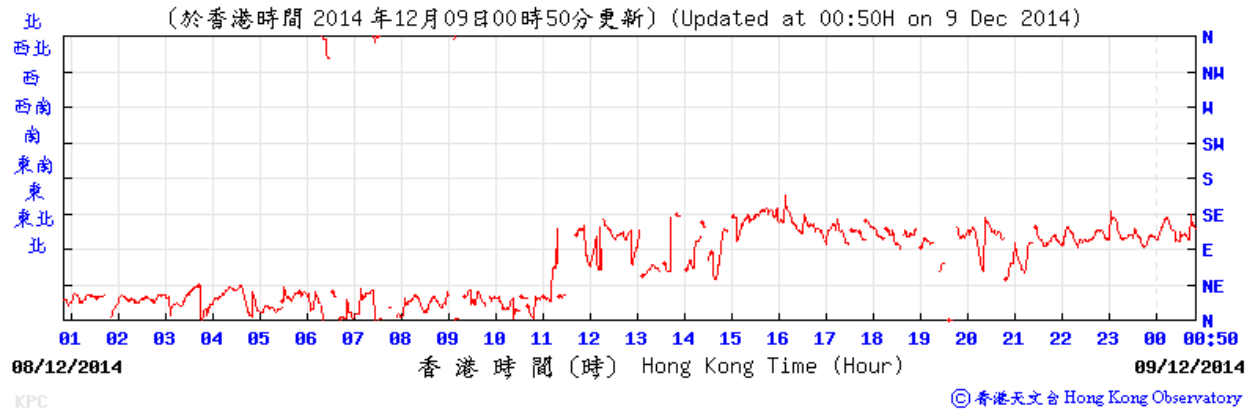


King's Park Weather Station – 8 December 2014

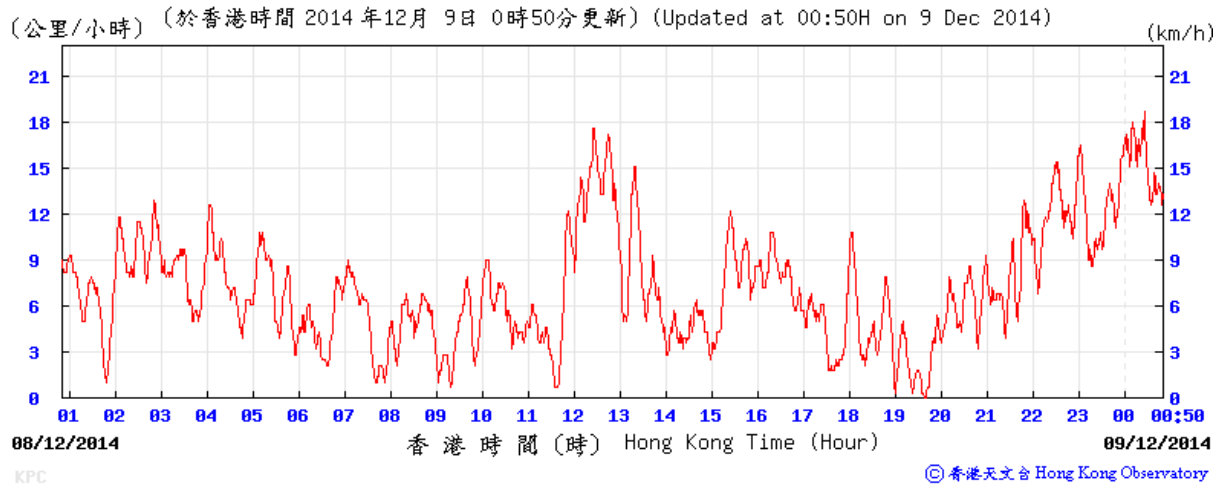
Temperature and Humidity:



Wind Direction:

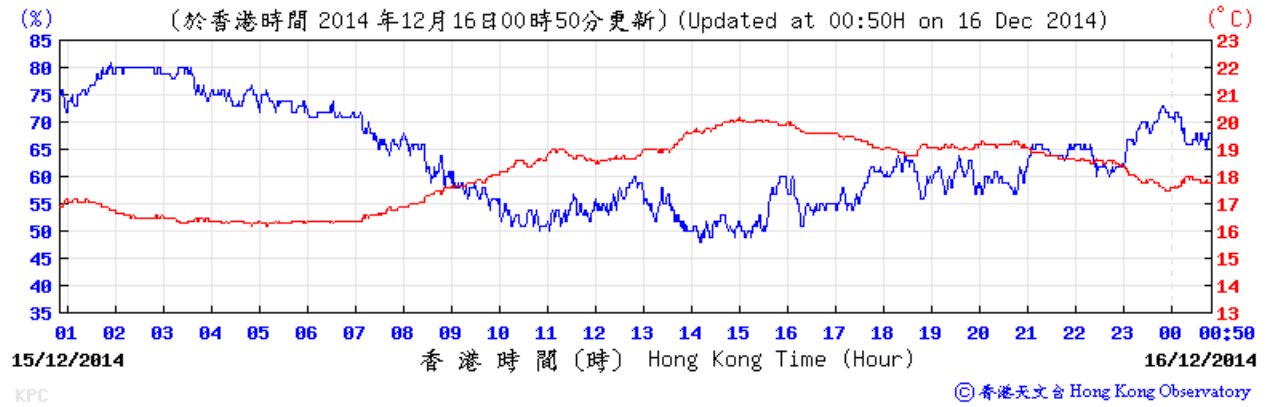


Wind Speed:

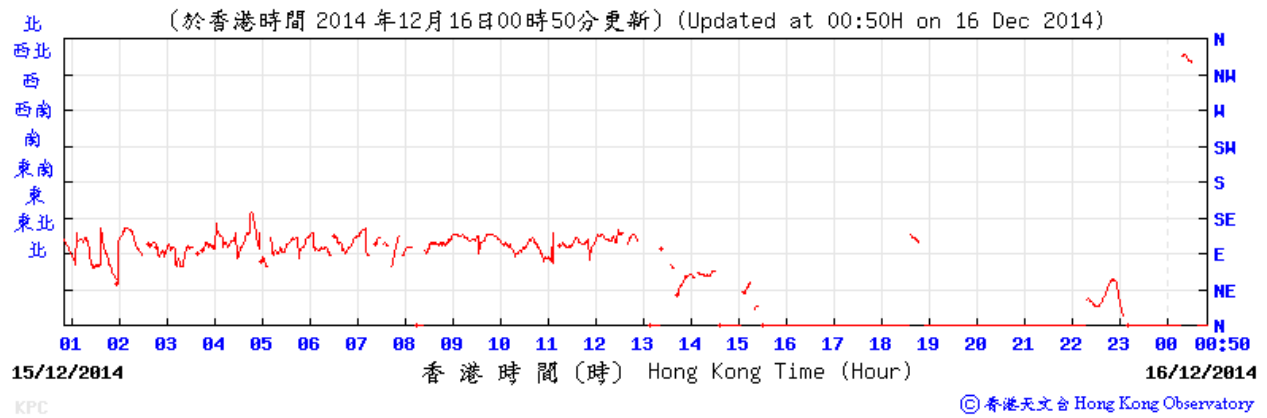


King's Park Weather Station – 15 December 2014

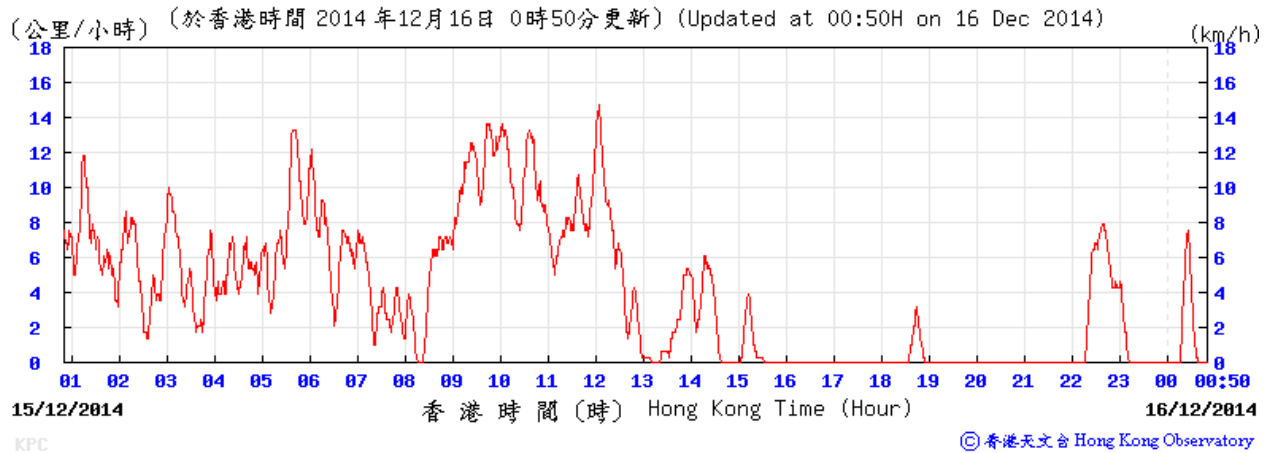
Temperature and Humidity:



Wind Direction:

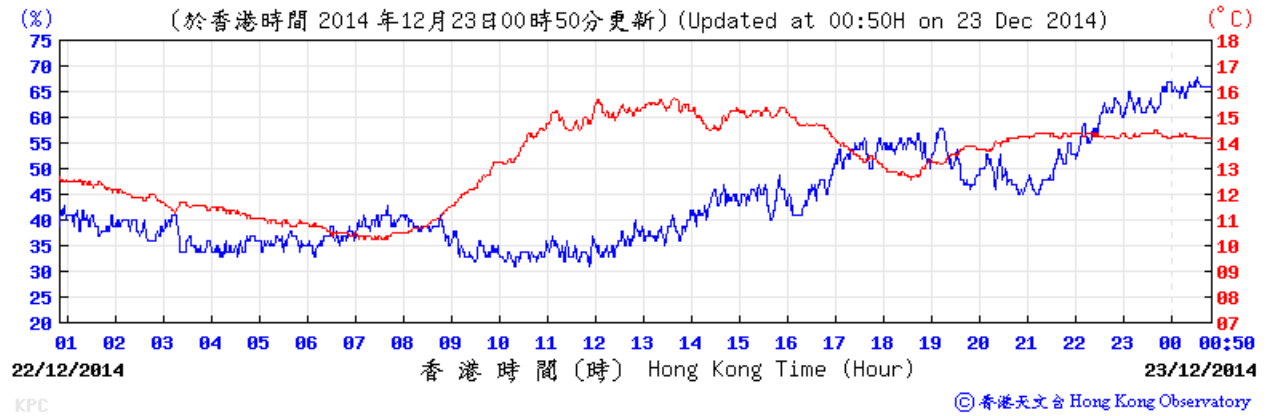


Wind Speed:

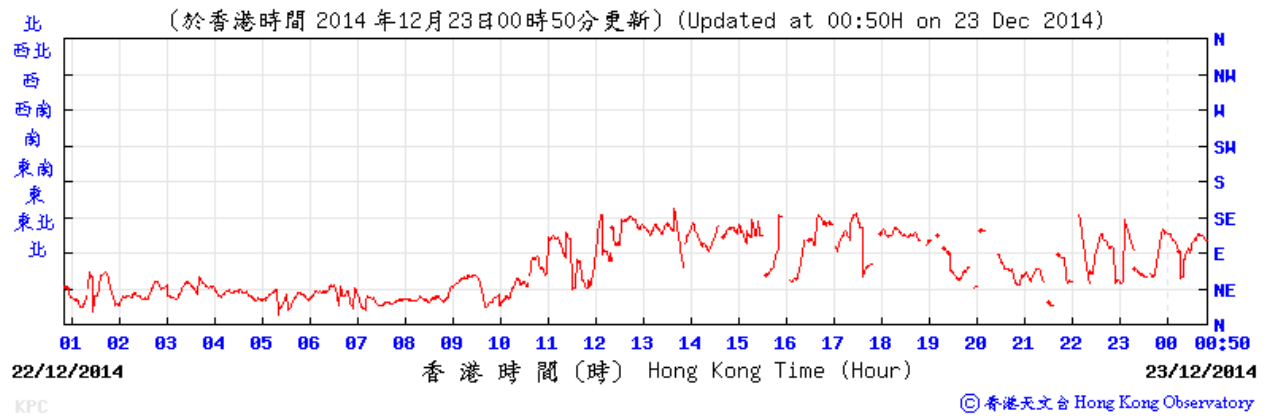


King's Park Weather Station – 22 December 2014

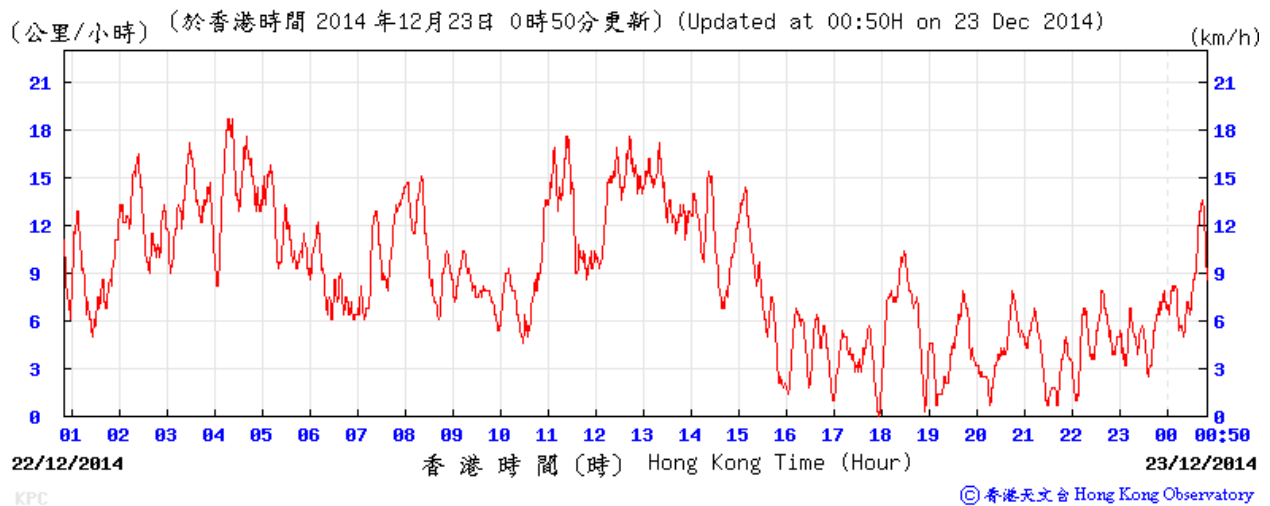
Temperature and Humidity:



Wind Direction:

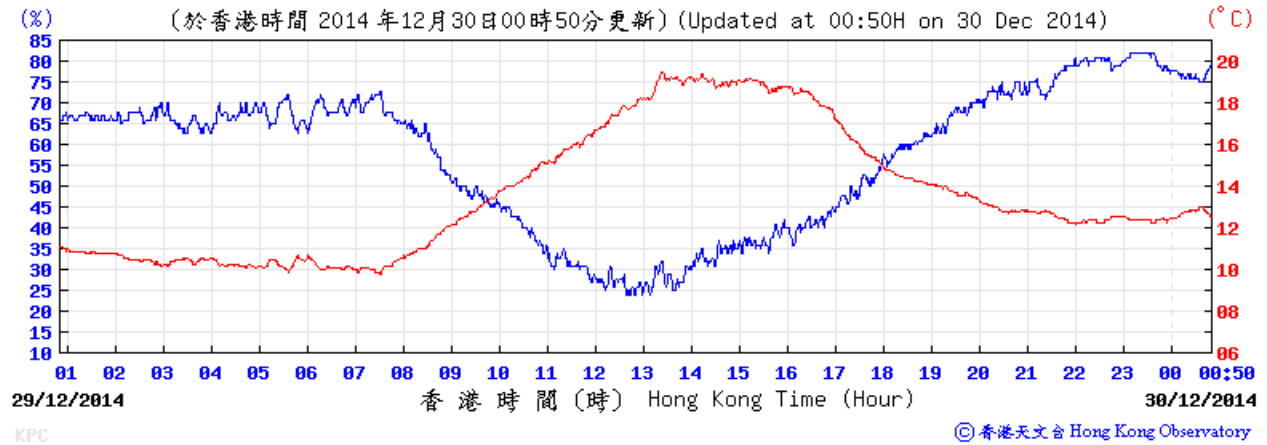


Wind Speed:

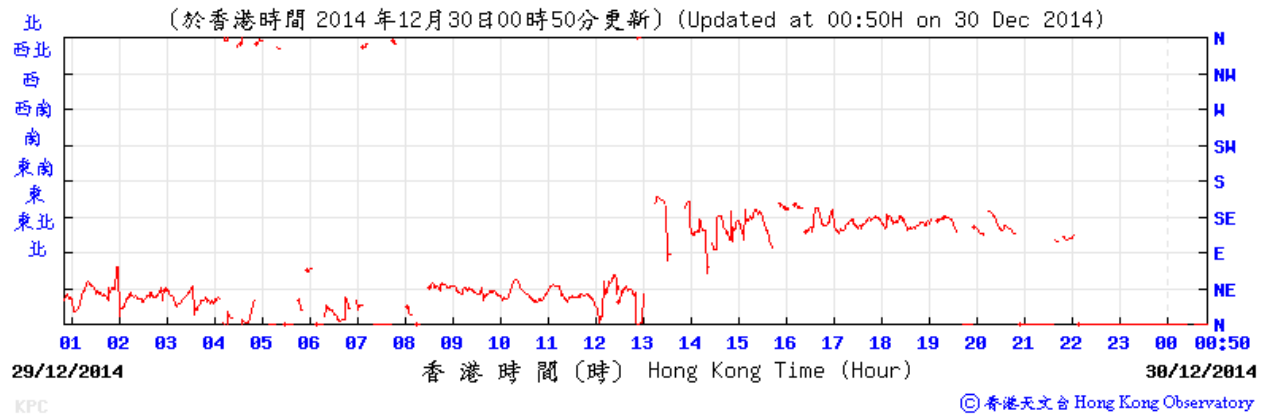


King's Park Weather Station – 29 December 2014

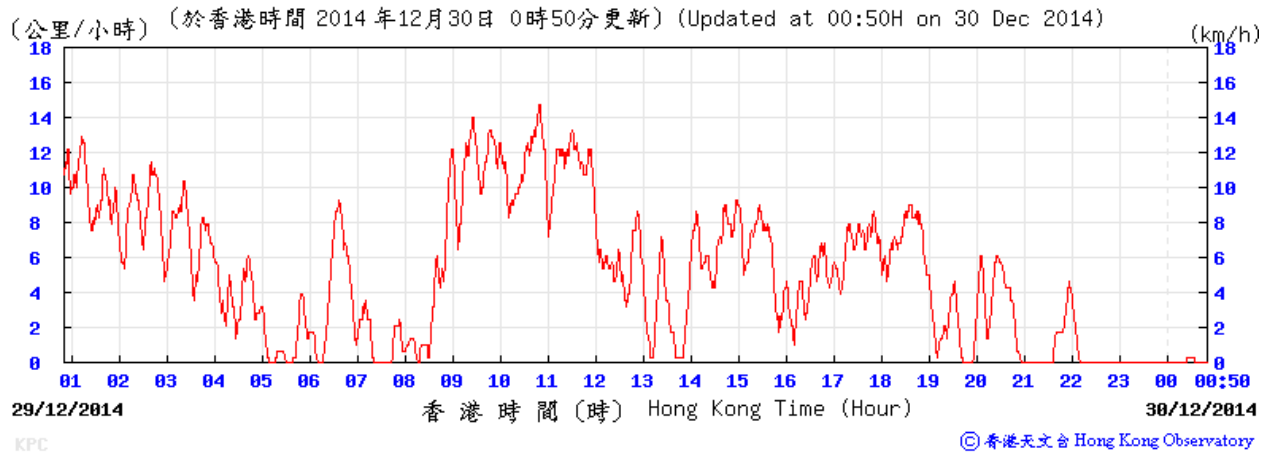
Temperature and Humidity:



Wind Direction:



Wind Speed:

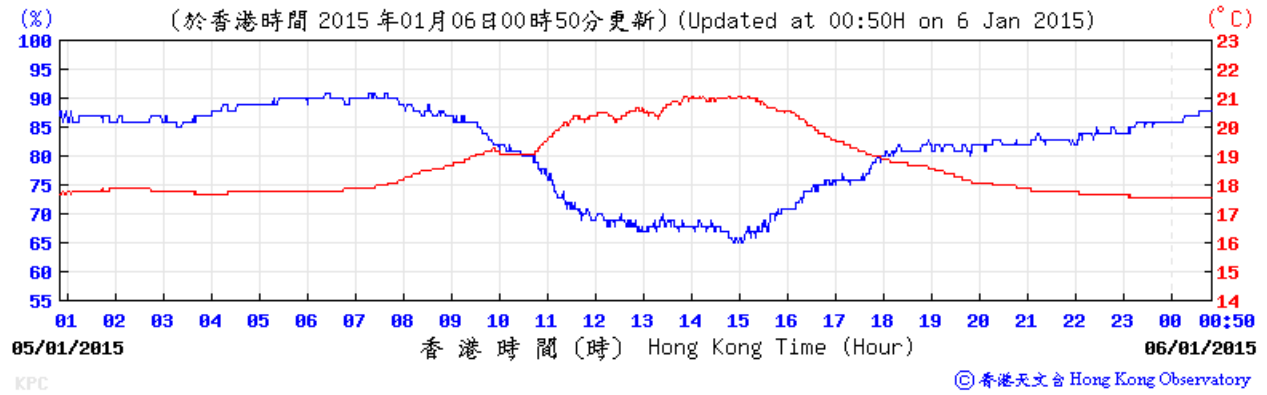


**Daily Total Rainfall (mm) at King's Park HKO Weather Monitoring Station in
January 2015**

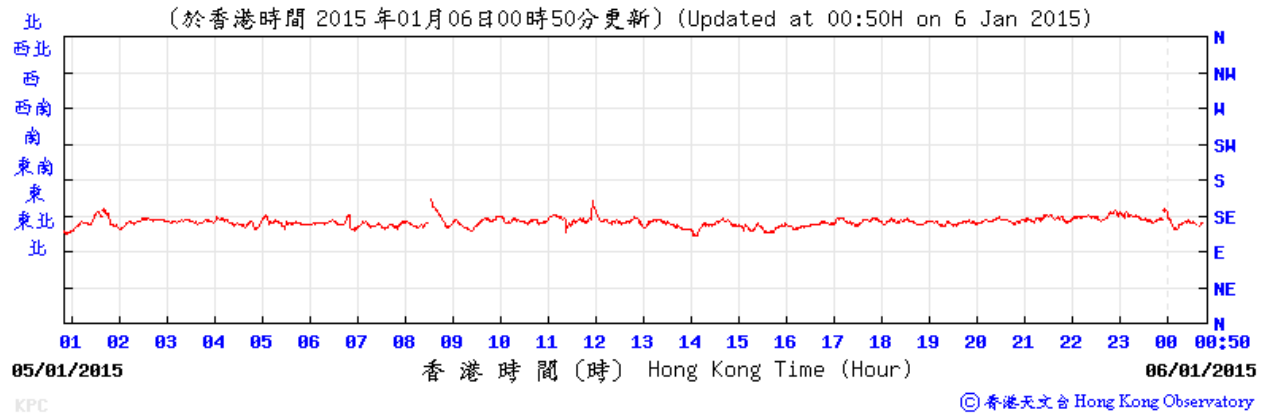
Day	Jan	24-hr TSP	Noise	Remarks
1	-			
2	-			
3	-			
3	-			
4	-			
5	-	✓		
6	-		✓	No rainfall recorded on site during Noise Monitoring
7	0.2			
8	-			
9	-			
10	-			
11	-			
11	-			
12	16.0	✓		
13	27.0			
14	-		✓	No rainfall recorded on site during Noise Monitoring
15	-			
16	-			
17	-			
18	-			
18	-			
19	-	✓		
20	-		✓	No rainfall recorded on site during Noise Monitoring
21	-			
22	-			
23	-			
24	0.3			
25	0.1			
25	-			
26	-	✓		
27	-		✓	No rainfall recorded on site during Noise Monitoring
28	-			
29	-			
30	-			
31	-			
Total	43.6			

King's Park Weather Station – 5 January 2015

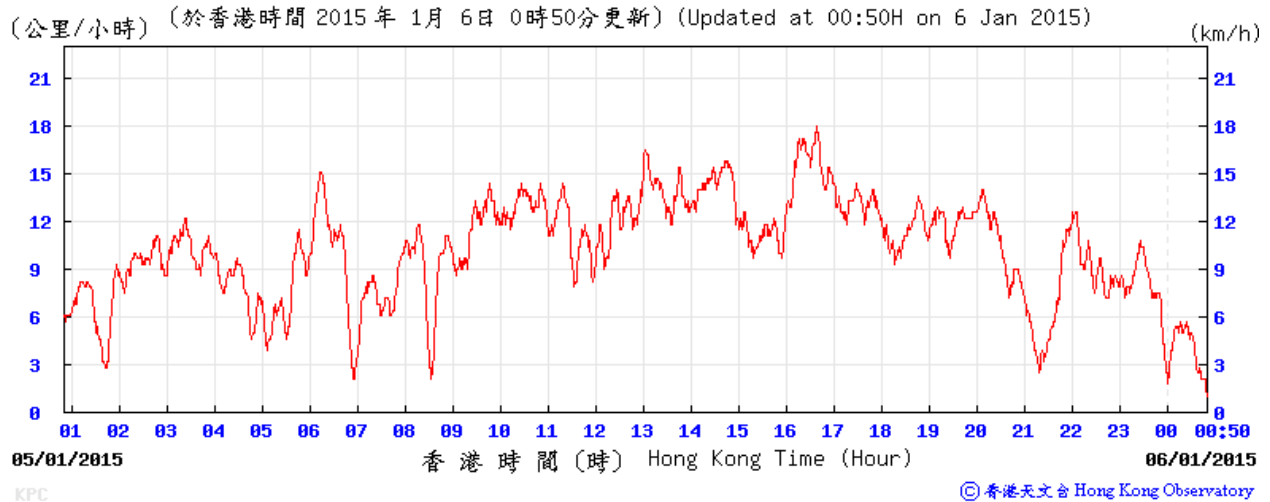
Temperature and Humidity:



Wind Direction:

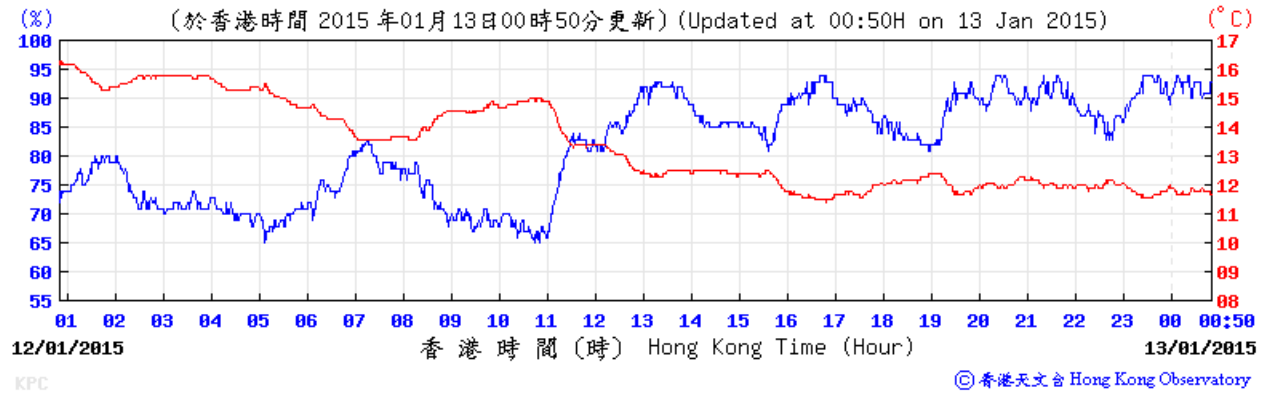


Wind Speed:

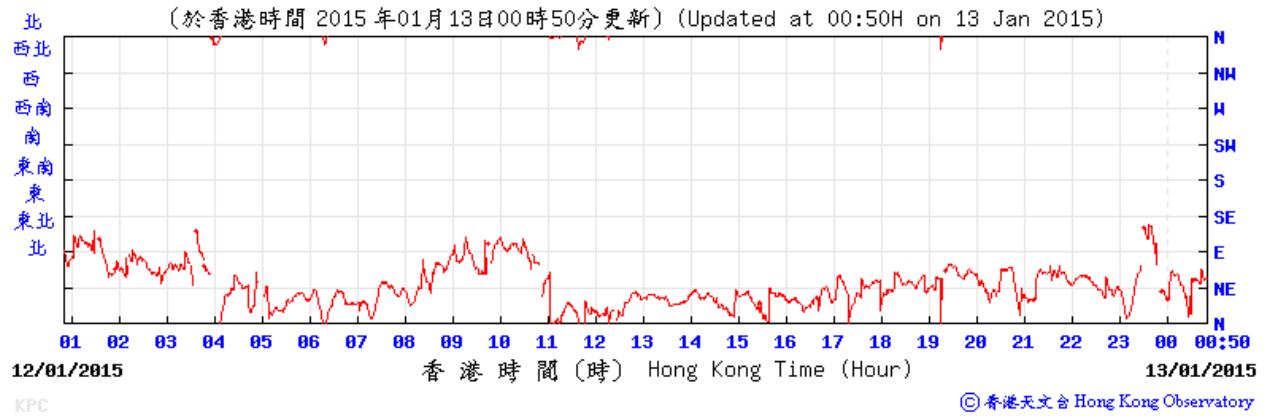


King's Park Weather Station – 12 January 2015

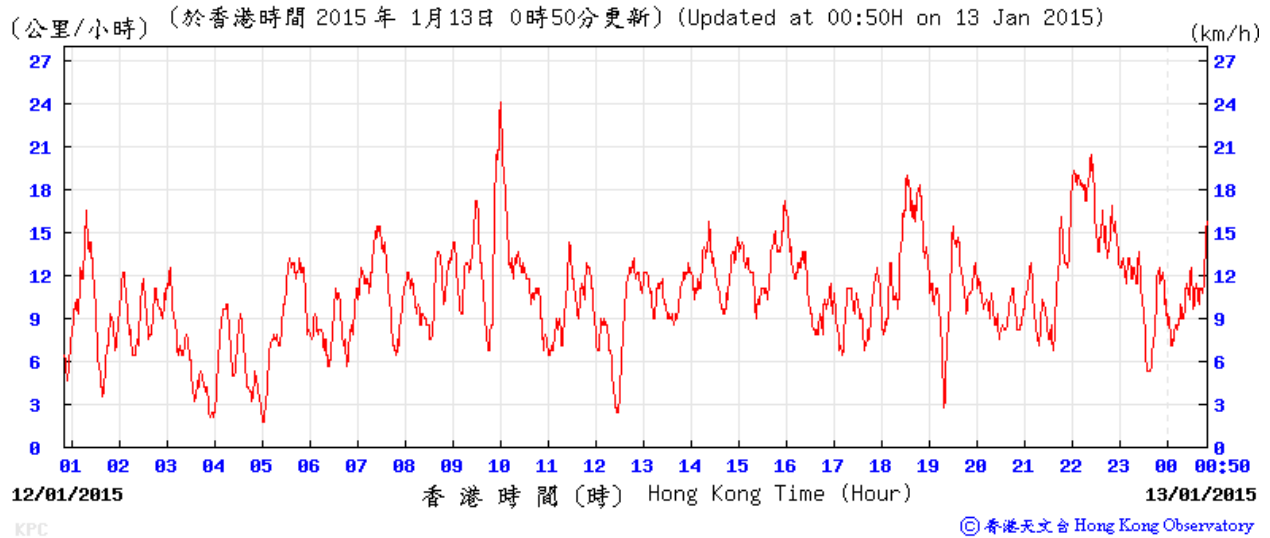
Temperature and Humidity:



Wind Direction:

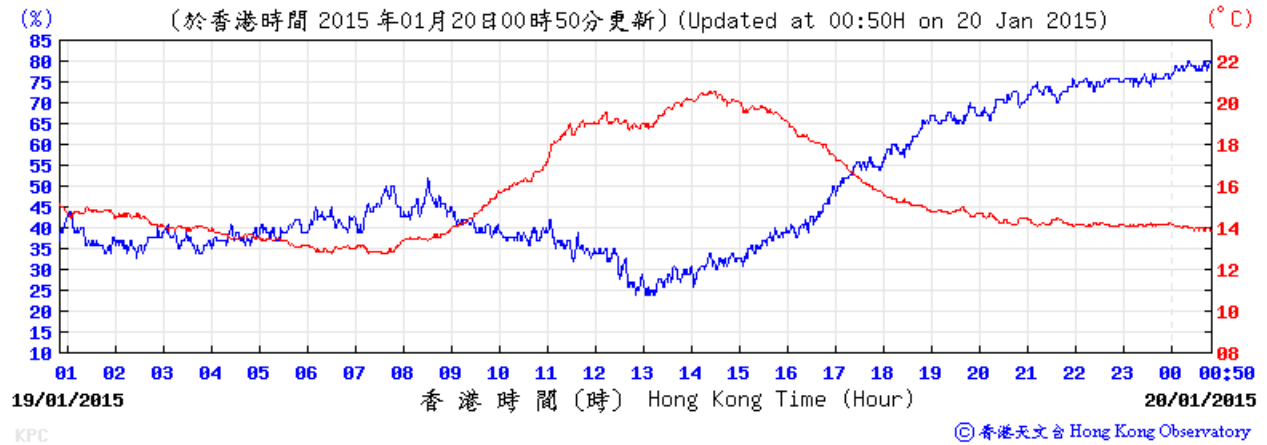


Wind Speed:

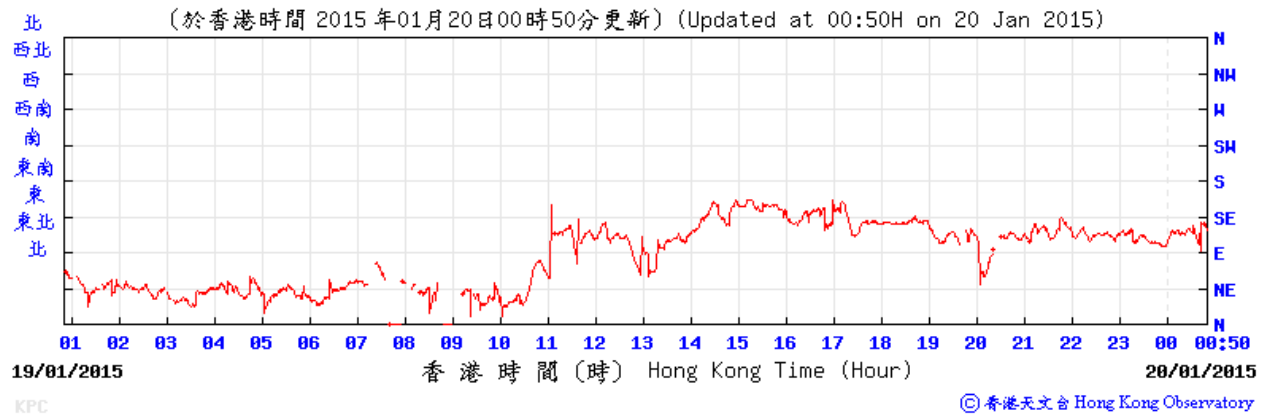


King's Park Weather Station – 19 January 2015

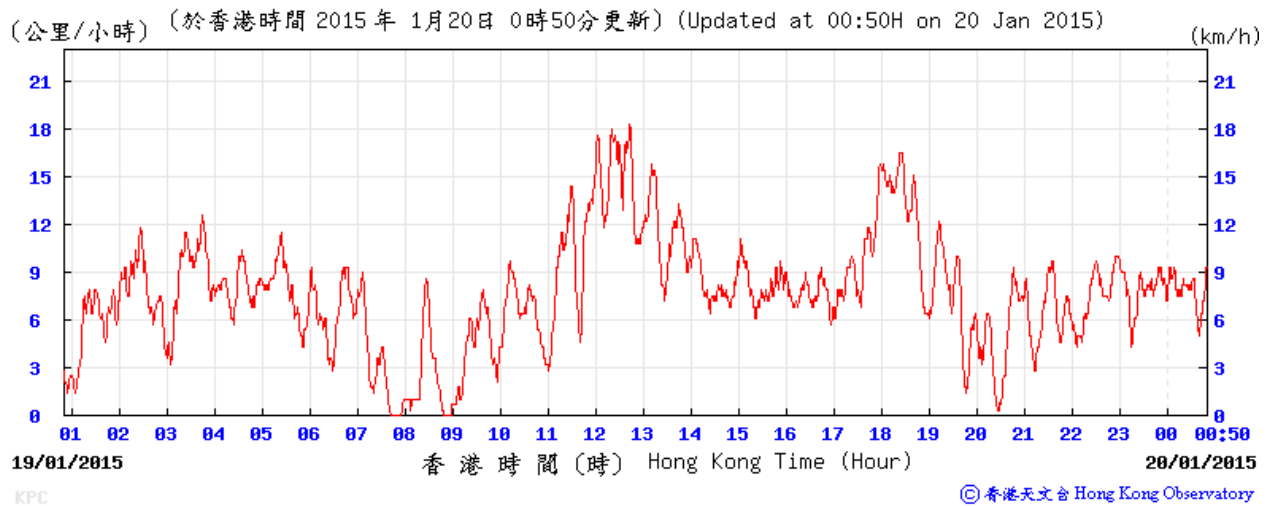
Temperature and Humidity:



Wind Direction:

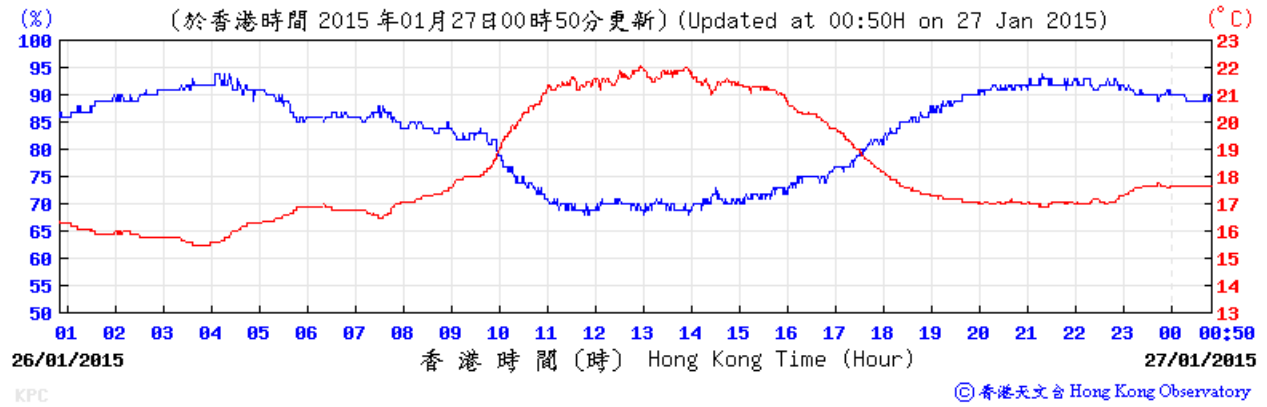


Wind Speed:

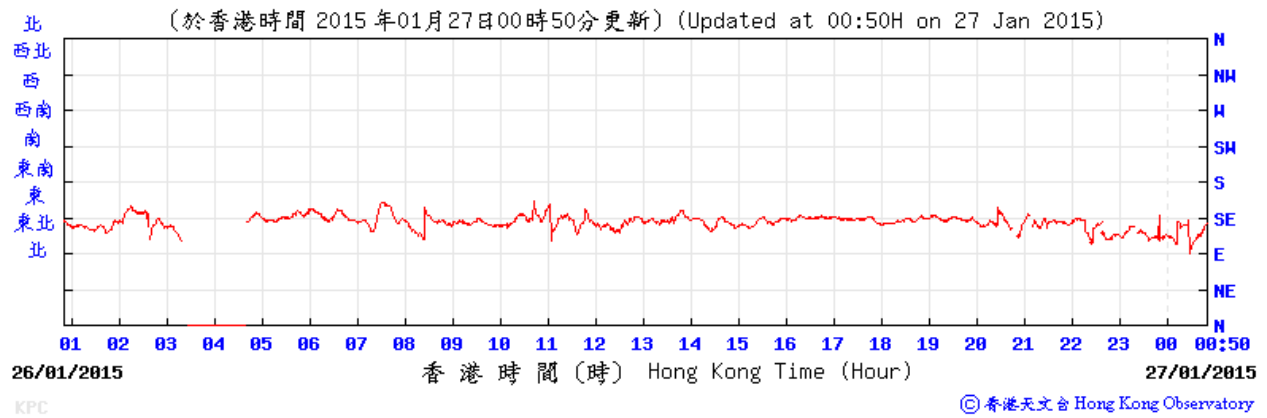


King's Park Weather Station – 26 January 2015

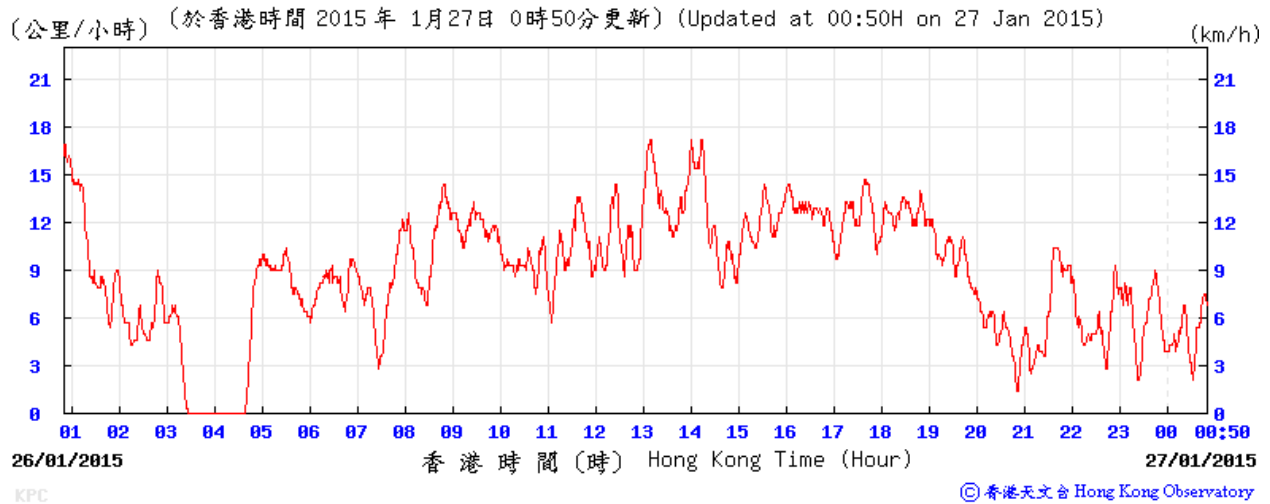
Temperature and Humidity:



Wind Direction:



Wind Speed:

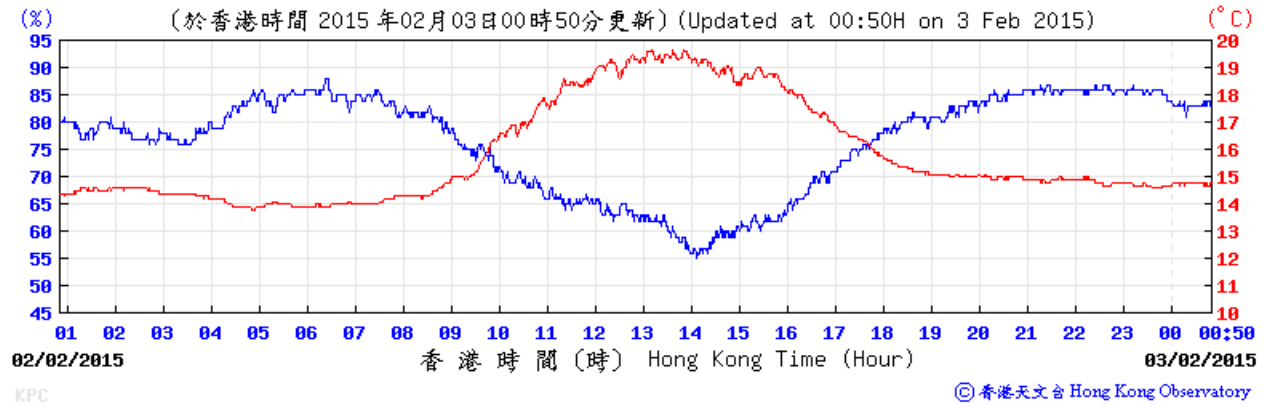


Daily Total Rainfall (mm) at King's Park HKO Weather Monitoring Station in February 2015

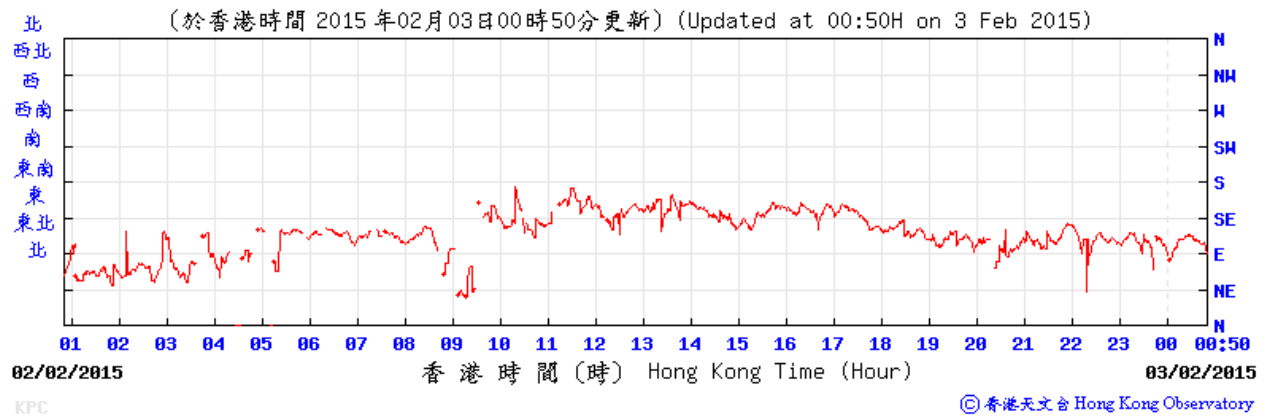
Day	Feb	24-hr TSP	Noise	Remarks
1	-			
2	-	✓		
3	-		✓	No rainfall recorded on site during Noise Monitoring
4	-			
5	0.2			
6	0.3			
7	-			
8	-			
9	-	✓		
10	-		✓	No rainfall recorded on site during Noise Monitoring
11	-			
12	-			
13	-			
14	-			
15	3.7			
16	-	✓		
17	-		✓	No rainfall recorded on site during Noise Monitoring
18	-			
19	-			
20	-			
21	0.3			
22	16.4			
23	9.1	✓		
24	0.1		✓	No rainfall recorded on site during Noise Monitoring
25	1.5			
26	-			
27	1.0			
28	0.2			
29	-			
30	-			
31	-			
Total	32.8			

King's Park Weather Station – 02 February 2015

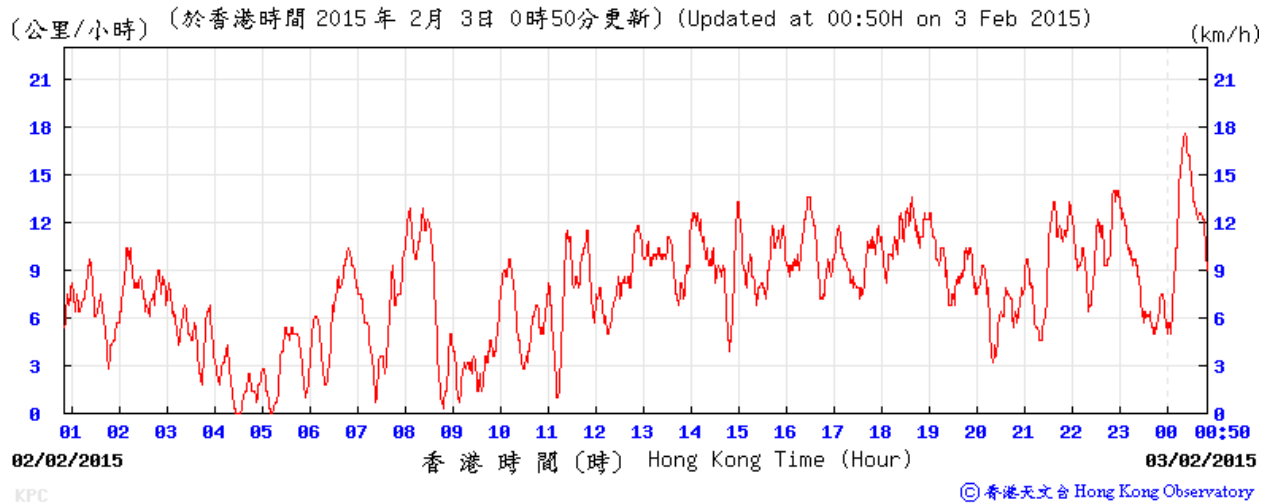
Temperature and Humidity:



Wind Direction:

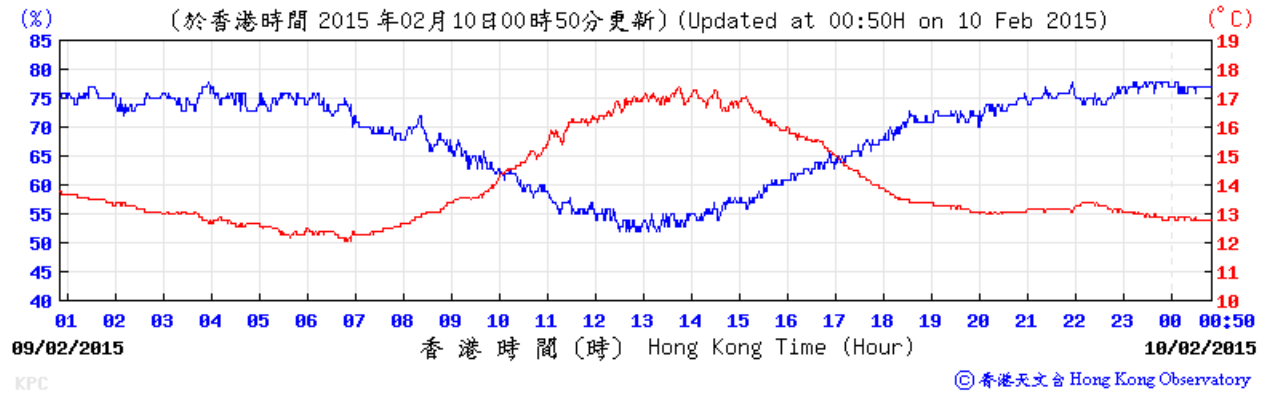


Wind Speed:

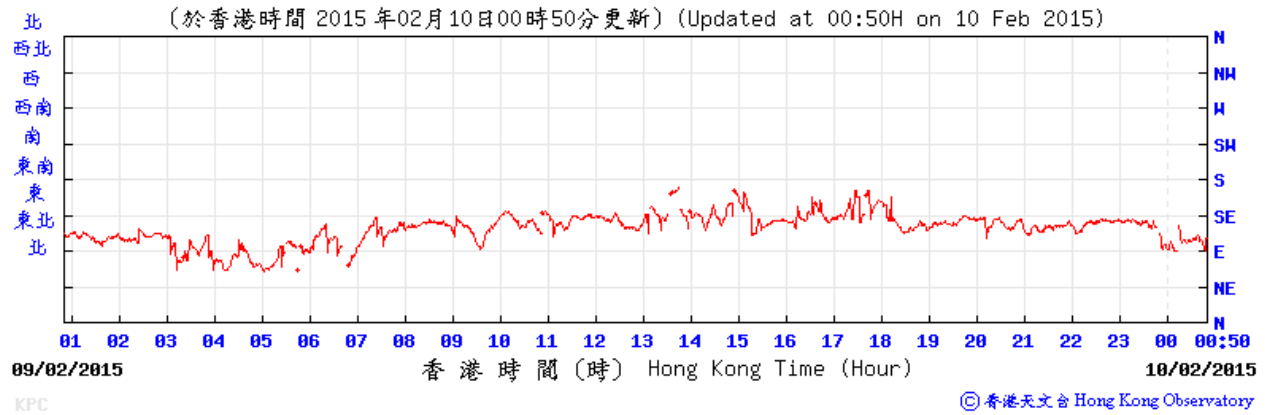


King's Park Weather Station – 09 February 2015

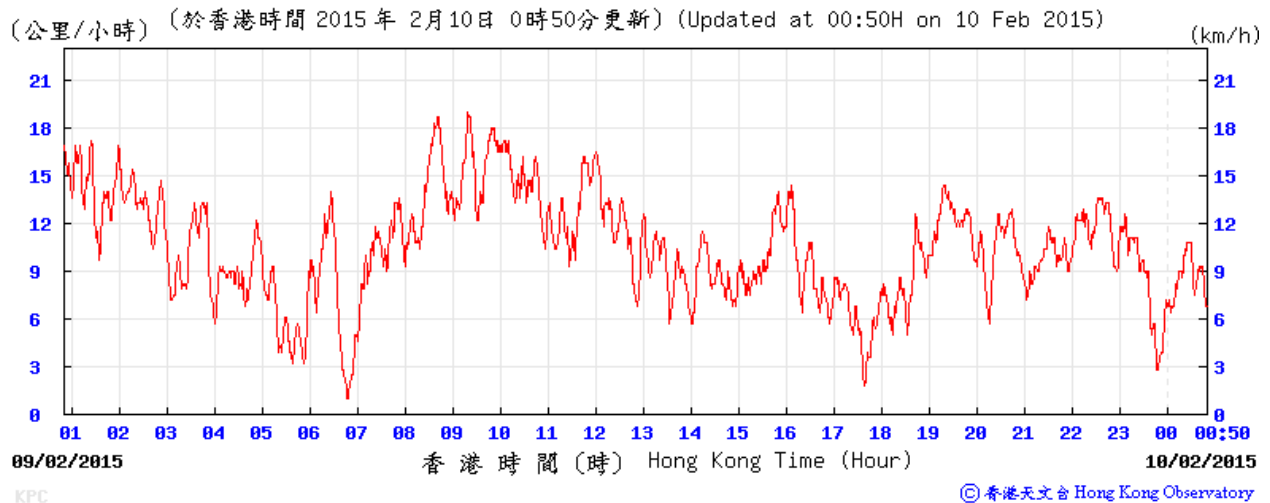
Temperature and Humidity:



Wind Direction:

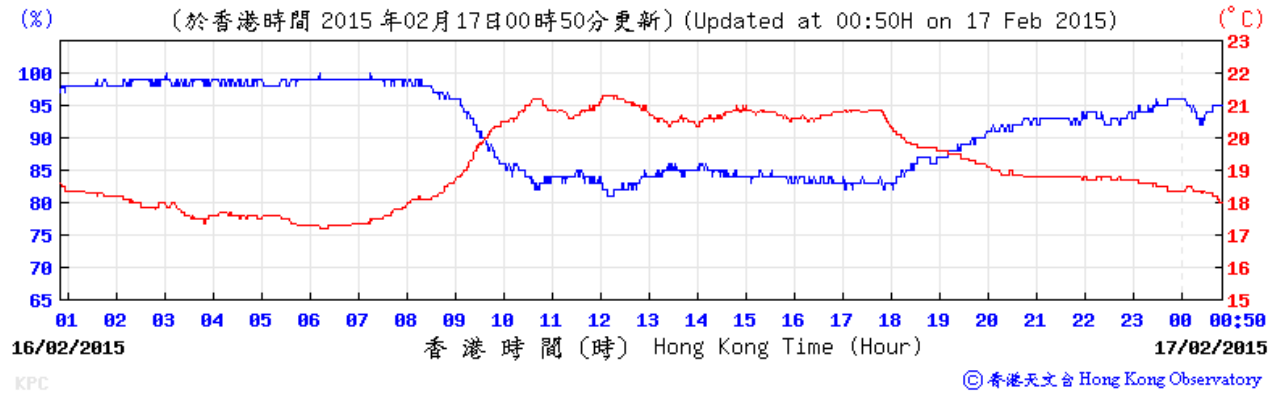


Wind Speed:

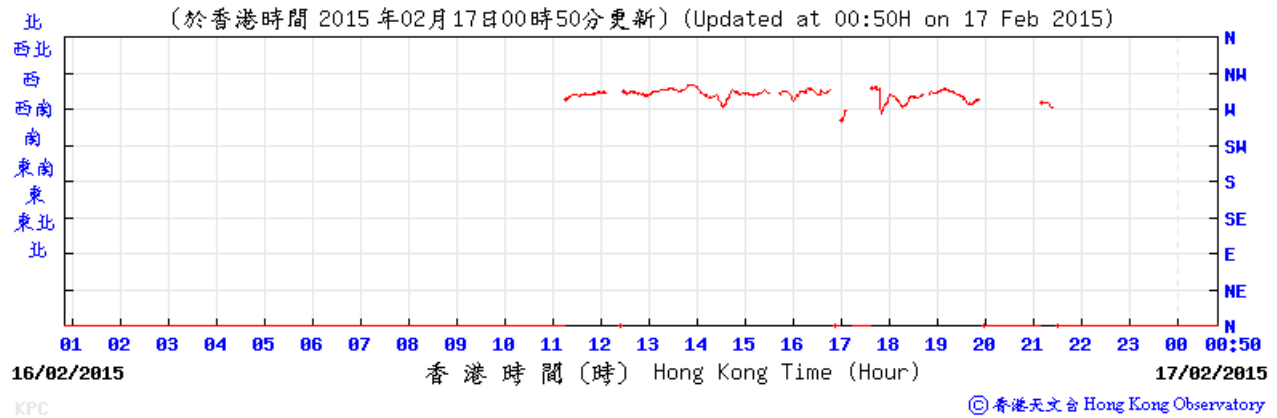


King's Park Weather Station – 16 February 2015

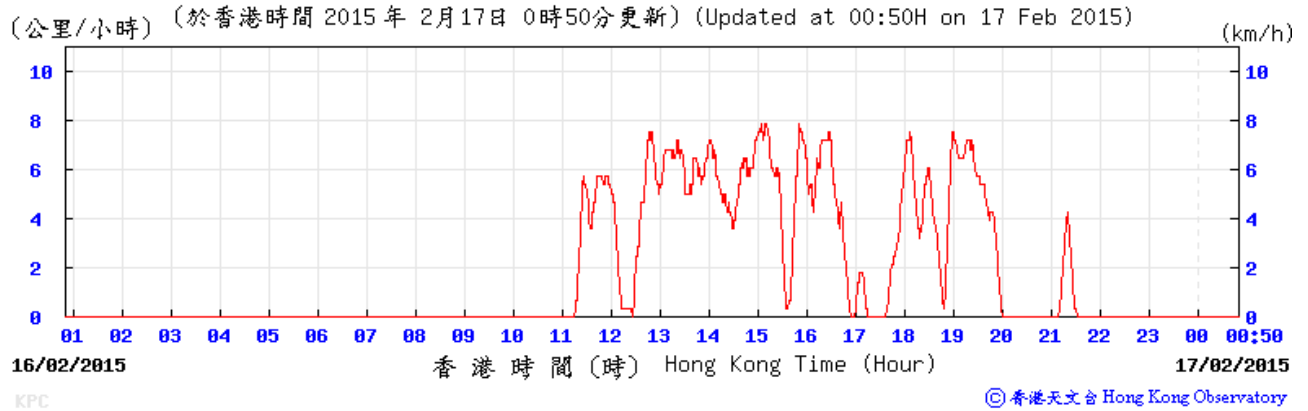
Temperature and Humidity:



Wind Direction:

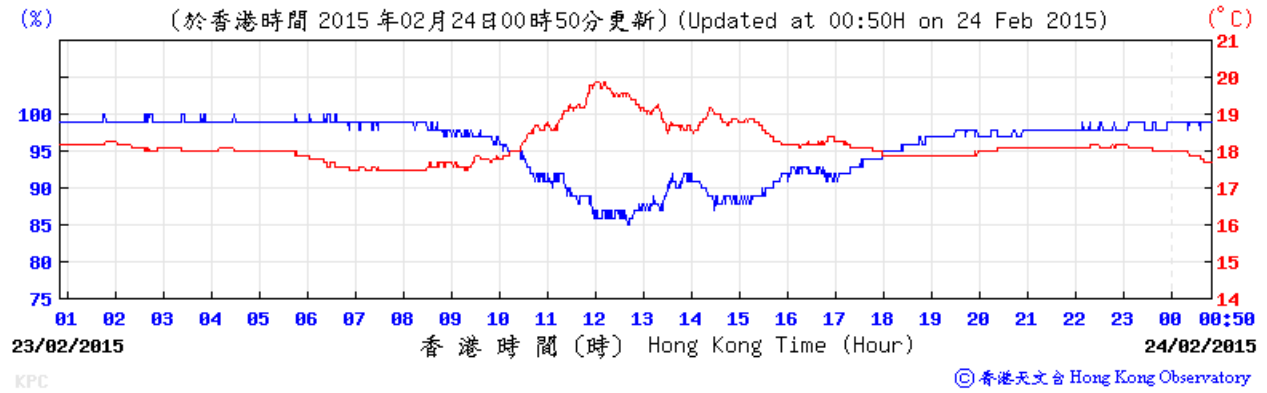


Wind Speed:

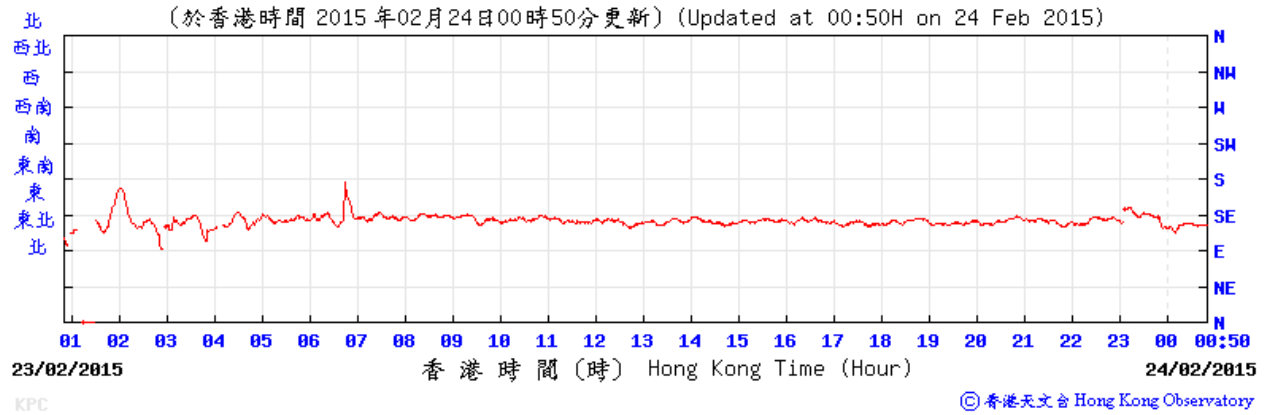


King's Park Weather Station – 23 February 2015

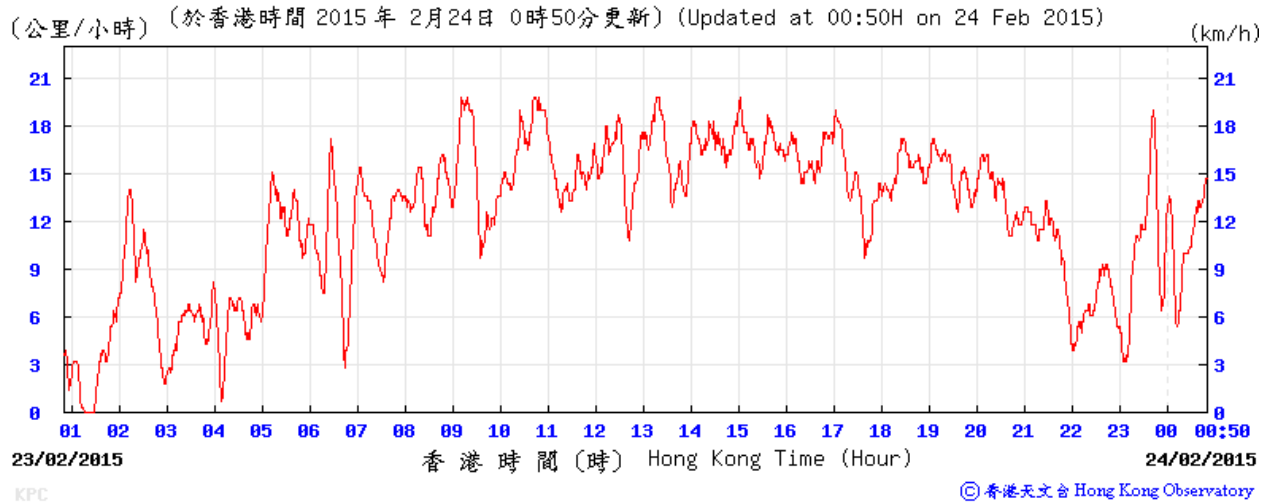
Temperature and Humidity:



Wind Direction:



Wind Speed:

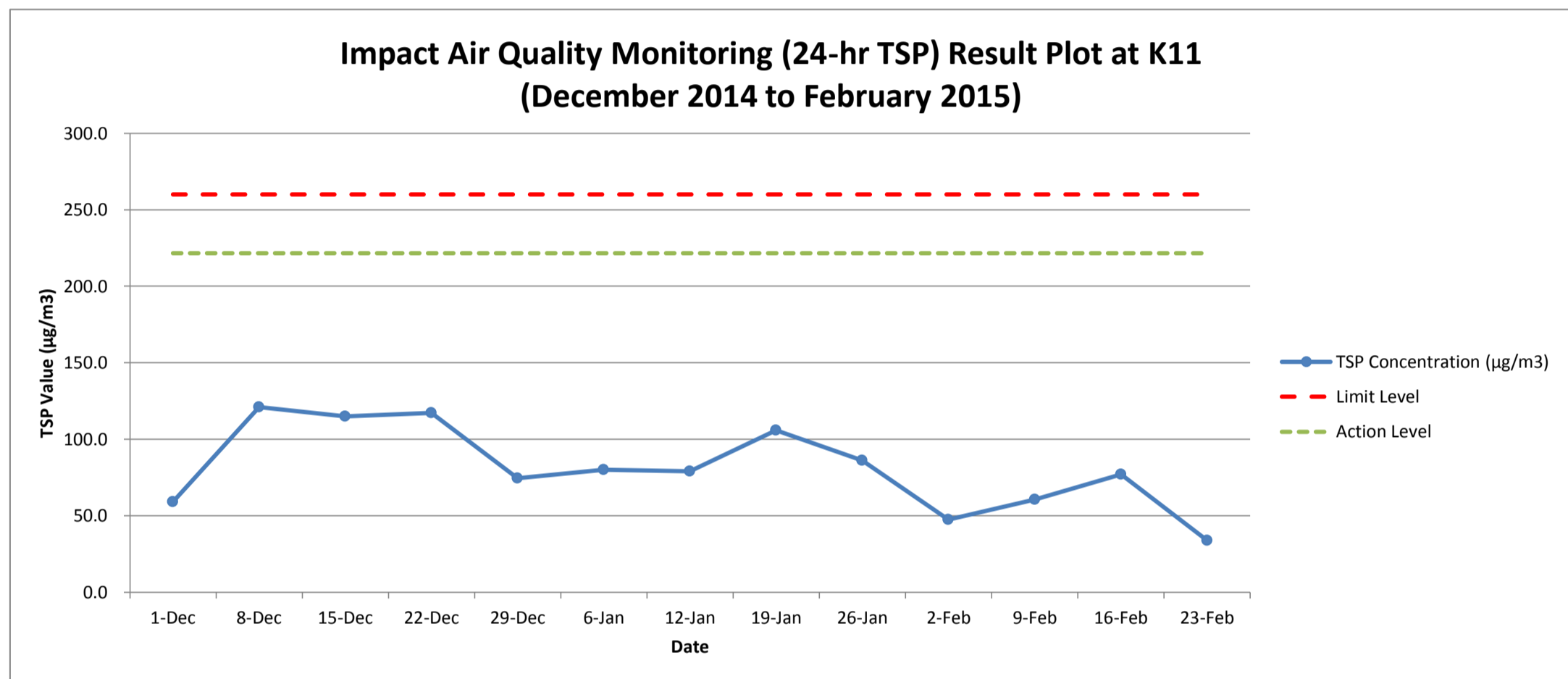


Appendix H

Monitoring Results and Plots

C3840-13C MTRCL Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works
 Impact Air Quality Monitoring (24-hr TSP) Results at K11 (December 2014 to February 2015)

Location	Monitoring Date	Start Time	Weather Conditions	Temperature	Elapse Time			Flow Rate (CFM)			TSP Concentration (µg/m ³)	Action/Limit Levels
					Initial	Final	Sampling Hours	Initial	Final	Average Flow Rate		
K11	1-Dec-14	0:00	Cloudy	23	766094	768494	24	41	42	42	59.0	221.6/260
	8-Dec-14	0:00	Cloudy	16.4	768494	770895	24	41	42	42	121.0	221.6/260
	15-Dec-14	0:00	Cloudy	16.9	770895	773295	24	42	42	42	114.8	221.6/260
	22-Dec-14	0:00	Sunny	12.8	773295	775695	24	41	43	42	117.3	221.6/260
	29-Dec-14	0:00	Sunny	11.6	775695	778095	24	41	43	42	74.5	221.6/260
	6-Jan-15	0:00	Cloudy	17.7	778095	780495	24	42	42	42	80.1	221.6/260
	12-Jan-15	0:00	Rainy	16.4	780495	782895	24	42	43	43	79.1	221.6/260
	19-Jan-15	0:00	Sunny	15.5	782895	785296	24	41	43	42	105.8	221.6/260
	26-Jan-15	0:00	Sunny	16.5	785296	787696	24	41	42	42	86.1	221.6/260
	2-Feb-15	0:00	Sunny	14.3	787696	790096	24	41	42	42	47.5	221.6/260
	9-Feb-15	0:00	Overcast	14.1	790096	792496	24	37	42	40	60.5	221.6/260
	16-Feb-15	0:00	Cloudy	18.8	792496	794897	24	34	37	36	77.1	221.6/260
	23-Feb-15	0:00	Overcast	18.5	794897	797297	24	40	41	41	33.9	221.6/260



C3840-13C MTRCL Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works
 Noise Impact Monitoring Results at K11 (December 2014 to February 2015)

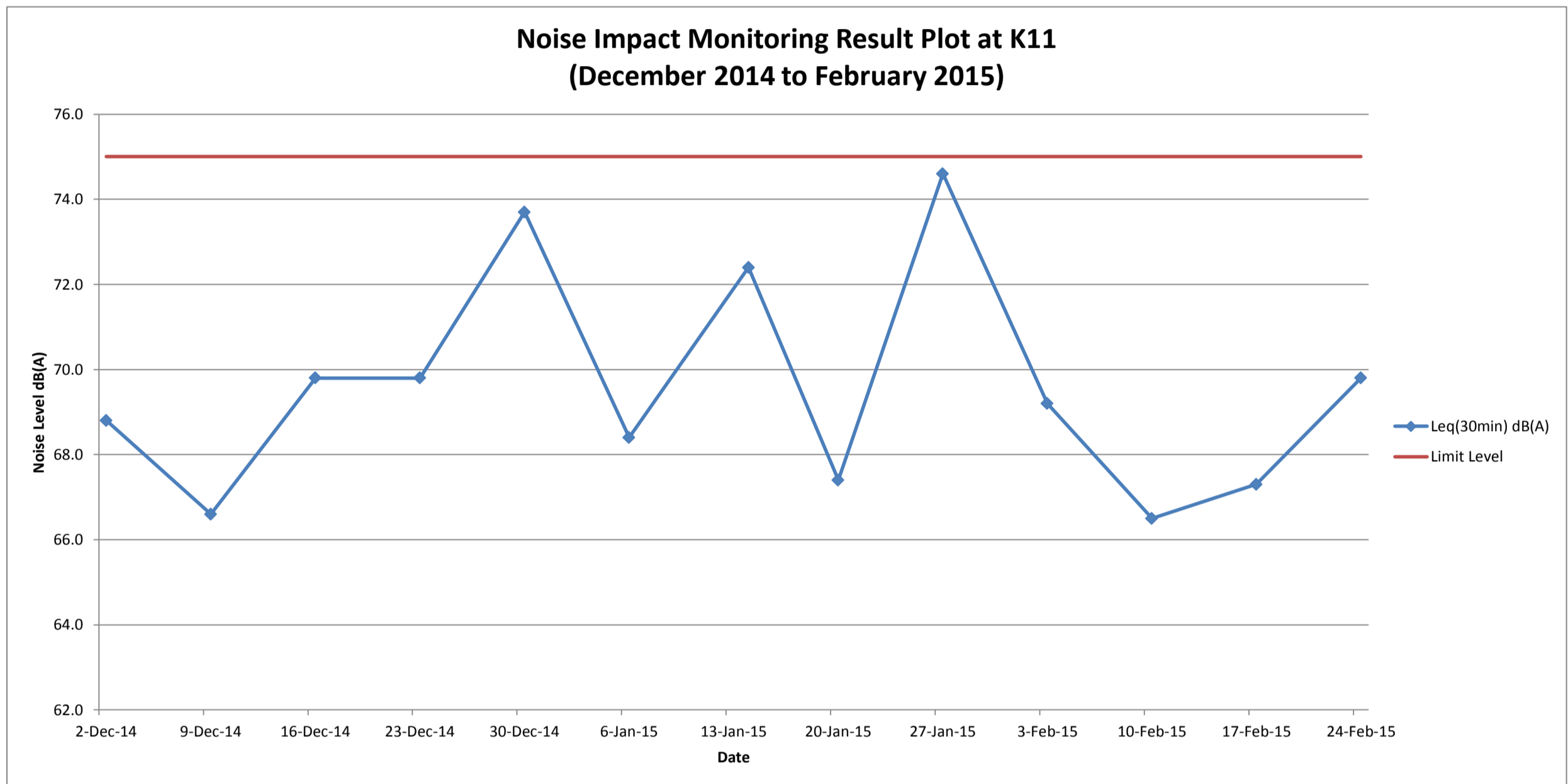
Monitoring Locations	Date	Weather Conditions	Temperature	Wind Speed (m/s)	Start Time	End Time	Background Level dB(A)	Limit Level dB(A)	Leq(30min) dB(A)	L10(30min) dB(A)	L90(30min) dB(A)
K11 Art Mall	2-Dec-14	Cloudy	16.5	2.5	11:02	11:32	65.3	75	68.8	70.0	66.5
	9-Dec-14	Cloudy	21.0	0.7	10:56	11:26	65.3	75	66.6	68.0	64.5
	16-Dec-14	Sunny	17.0	2.4	11:03	11:33	65.3	75	69.8	72.5	66.0
	23-Dec-14	Cloudy	14.9	1.3	11:00	11:30	65.3	75	69.8	71.0	66.0
	30-Dec-14	Sunny	19.0	0.8	13:08	13:38	65.3	75	73.7	77.5	69.0
	6-Jan-15	Sunny	23.0	0.5	10:58	11:28	65.3	75	68.4	70.0	66.5
	14-Jan-15	Sunny	13.0	1.2	10:00	10:30	65.3	75	72.4	73.5	63.5
	20-Jan-15	Sunny	18.0	0.8	14:11	14:41	65.3	75	67.4	68.5	65.0
	27-Jan-15	Sunny	19.0	1.2	11:21	11:51	65.3	75	74.6	76.5	69.5
	3-Feb-15	Sunny	19.6	0.5	11:11	11:41	65.3	75	69.2	70.5	67.0
	10-Feb-15	Sunny	14.8	1.2	11:01	11:31	65.3	75	66.5	67.5	63.0
	17-Feb-15	Cloudy	18.5	0.8	11:08	11:38	65.3	75	67.3	70.0	63.0
	24-Feb-15	Cloudy	19.5	1.2	11:21	11:51	65.3	75	69.8	72.5	64.5

* Not collected

Note:

The limit level of NSR1 is 65dB(A) during school examination period.

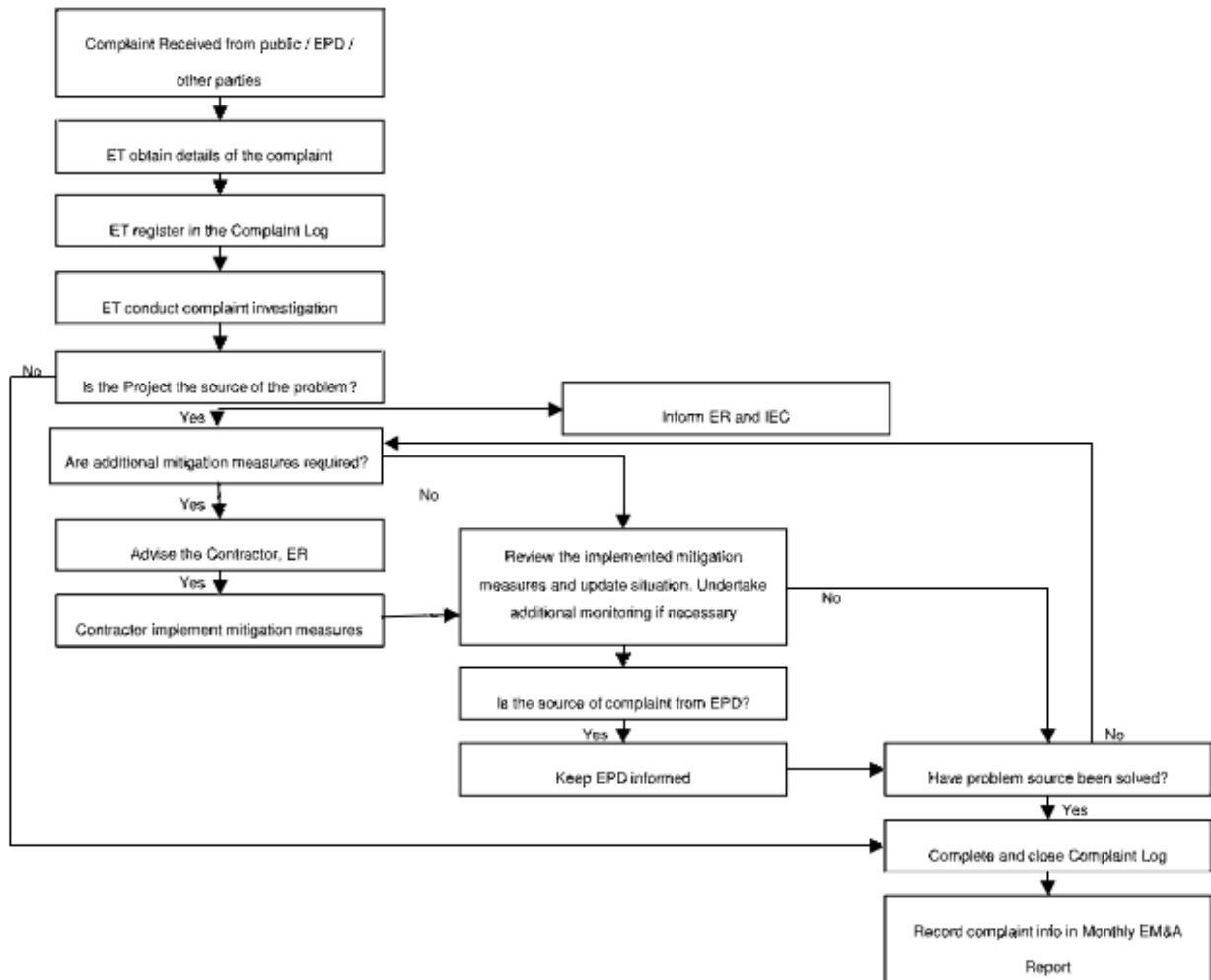
Red Bold indicates an exceedance of Limit Level



Appendix I

Flow Chart for Handling Environmental Complaints

Complaint Response Procedure



Appendix J

Waste Management Records

Monthly Summary Waste Flow Table for 2014 (year)

Contract No: C3840-13C Tsim Sha Tsui Station Carnarvon Road Subway
Date Reported: 3-January-2015

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
		(See Note 3)							(see Note 2)		
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg)	(in '000m ³ /tonne)
Jan	0.0206	-	-	-	0.0206	-	-	-	-	-	-
Feb	0.0233	-	-	-	0.0233	-	-	-	-	-	-
Mar	0.0120	-	-	-	0.0120	-	-	-	-	-	-
Apr	0.0281	-	-	-	0.0281	-	-	-	-	-	0.0035
May	0.0059	-	-	-	0.0059	-	-	-	-	-	-
June	0.0322	-	-	-	0.0322	-	-	-	-	-	-
Sub-total	0.1221	-	-	-	0.1221	-	-	-	-	-	0.0035
July	0.0250	-	-	-	0.0250	-	-	-	-	-	-
Aug	0.0515	-	-	-	0.0515	-	-	-	-	-	-
Sept	0.0708	-	-	-	0.0708	-	-	-	-	-	-
Oct	0.0775	-	-	-	0.0775	-	-	-	-	-	-
Nov	0.2396	-	-	-	0.2396	-	-	-	-	-	-
Dec	0.3477	-	-	-	0.3477	-	-	-	-	-	-
Total	0.9342	-	-	-	0.9342	-	-	-	-	-	0.0035

Notes:

- (1) The performance targets are given below:
 - All excavated materials to be sorted for recovering the inert portion of C&D materials, e.g. hard rocks, soil and broken concrete, for reuse on the Site or disposal to designated outlets;
 - All metallic waste to be recovered for collection by recycling contractors;
 - All cardboard and paper packaging (for plant, equipment and materials) to be recovered, properly stockpiled in dry and covered condition to prevent cross contamination;
 - All chemical wastes to be collected and properly disposed of by specialist contractors; and
 - All demolition debris to be stored to recover broken concrete, reinforcement bars, mechanical and electrical fittings, hardware as well as other fitting / materials that have established recycling outlets.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) Broken concrete for recycling into aggregates.
- (4) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

Monthly Summary Waste Flow Table for 2015 (year)

Contract No: C3840-13C Tsim Sha Tsui Station Carnarvon Road Subway
Date Reported: 4-March-2015

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse	
		(See Note 3)							(see Note 2)			
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³ /tonne)	
Carried from 2014	0.9342	-	-	-	0.9342	-	-	-	-	-	0.0035	
Jan	0.0682	-	-	-	0.0682	-	-	-	-	-	-	
Feb	0.0418	-	-	-	0.0418	-	-	-	-	-	-	
Mar	-	-	-	-	-	-	-	-	-	-	-	
Apr	-	-	-	-	-	-	-	-	-	-	-	
May	-	-	-	-	-	-	-	-	-	-	-	
June	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	0.1100	-	-	-	0.1100	-	-	-	-	-	-	
July	-	-	-	-	-	-	-	-	-	-	-	
Aug	-	-	-	-	-	-	-	-	-	-	-	
Sept	-	-	-	-	-	-	-	-	-	-	-	
Oct	-	-	-	-	-	-	-	-	-	-	-	
Nov	-	-	-	-	-	-	-	-	-	-	-	
Dec	-	-	-	-	-	-	-	-	-	-	-	
Total	0.1100	-	-	-	-	-	-	-	-	-	-	
Acc. Total	1.0442	(accumulated quantity of the project = carried amount + this year amount)										

Notes:

- (1) The performance targets are given below:
 - All excavated materials to be sorted for recovering the inert portion of C&D materials, e.g. hard rocks, soil and broken concrete, for reuse on the Site or disposal to designated outlets;
 - All metallic waste to be recovered for collection by recycling contractors;
 - All cardboard and paper packaging (for plant, equipment and materials) to be recovered, properly stockpiled in dry and covered condition to prevent cross contamination;
 - All chemical wastes to be collected and properly disposed of by specialist contractors; and
 - All demolition debris to be stored to recover broken concrete, reinforcement bars, mechanical and electrical fittings, hardware as well as other fitting / materials that have established recycling outlets.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) Broken concrete for recycling into aggregates.
- (4) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

Appendix K

Complaint Investigation Reports

Complaint Investigation Report

Contractor: Maeda Corporation	Complaint Received Date: 17 December 2014	Ref: CIR – 03
Project: C3840-13C MTRCL Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works		
COMPLAINANT		
Name: Unknown	Address: 2/F of Mirador Manson	
Tel: Unknown		
Fax: Unknown		
COMPLAINT INVESTIGATION		
Description (cause of impact, type of impact and location, etc.)		
<p>Details of the Complaint</p> <p>A complaint was forwarded to the Environmental Team (ET) via e-mail dated 18 December 2014 by the Contractor, who received by e-mail on 18 December 2014 regarding the complaint against air nuisance from the exhaust fumes and odour from the construction plants at the junction of Carnarvon Road and Nathan Road, Tsim Sha Tsui on 17 December 2014 at 1819hr received by the Environmental Protection Department (EPD).</p> <p>Construction Activities during the Complaint Period</p> <p>According to the Contractor, the major site construction activities on the date of complaint (17 December 2014) were pipe piling works for cut and cover tunnel, pipe installation by drill rig for curtain grout of the temporary entrance and welding works inside ELS. A total number of 7 major plants were operating for those major activities at site, including: 1 crawler crane, 2 drill rigs, 1 air compressor, 1 generator and 3 electricity welding machines (in which 2 of them were for ELS steelworks installation and the other one was for piling & H-beam).</p> <p>With reference to the information provided by the Contractor, the following dust and odour mitigation measures were implemented on the date of complaint:</p> <ul style="list-style-type: none">- The air compressor and generator were fully enclosed;- The air compressor and generator were at site corner near Nathan Road where having the best ventilation;- Welding at ELS were under decking;- Welding for piping and H-beam inside the enclosure made by tarpaulin;- Regular cleaning of the oil filter of drill rigs and crawler crane to avoid dark smoke;- Replacement of crawler crane with same model for offsite maintenance where necessary; and- The crawler crane and drill rigs will be switched off when idle or not in use. <p>EM&A Findings and Observations</p> <p>A joint complaint investigation was carried out by the ET, Contractor, MTRC and EPD at 14:00 on 18 December 2014. During the investigation, dust mitigation measures was observed fully implemented at site including provision of three side enclosures for the grout mixing area and other fixed plant, provision of decking for excavation works and tarpaulin for drill rigs. Moreover, the equipment at site was observed placing as close to Nathan Road as possible, in maximizing the ventilation performance and enhancing the gas dispersion of exhaustion emitted from site. Smoke was not observed generating from site during the investigation. Odour was intermittently detectable at site during the investigation and was considered non-nuisance to the surrounding receivers. Photos of the inspection are attached in this report for reference.</p> <p>Purchase records of ultra-low sulphur diesel (ULSD), fully complied with the Air Pollution Control (Fuel Restriction) Regulations (Cap. 311), was provided by the Contractor and to certify that only ULSD is used for all diesel powered equipment at site. Details of the purchase records are as shown in the attachment.</p> <p>Conclusion / Recommendation</p> <p>Although the odour detected during the investigation was not a nuisance, the complaint on odour nuisance was considered as project related. The odour nuisance on 17 December 2014 was considered to be contributed by the combustion emissions of equipment at site and possible vehicle emissions from Nathan Road. In view of the conclusion drawn, the Contractor was recommended to keep track on the implementation status of the following mitigation measures at site:</p> <ol style="list-style-type: none">1) Ensure the implementation of dust mitigation measures during all construction and dusty activities to minimize dust and odour generation;2) Machines used at site are inspected and maintained regularly to ensure they are operating efficiently and the exhaust emissions are not causing nuisance;3) Only ULSD is used for diesel powered equipment at site and they are fully complied with the Air Pollution		

Control Regulation in Hong Kong; and

- 4) Foster better public relations with the sensitive receivers or complainants nearby.

FOLLOW UP ACTION(S)

No further action is considered necessary. Nevertheless, the ET will keep a close eye on the condition of the site during the routine site inspections and audit to ensure proper function of the dust/ odour mitigation measures implemented on site, and where appropriate advise the Contractor to be vigilant and tailor mitigation measures in advance of future planned site work activities. This complaint case will be registered in the complaint log in the monthly EM&A Report (December 2014).

Prepared & Confirmed by:

Name: Fu Nam Wong (ET Leader)

Signature:



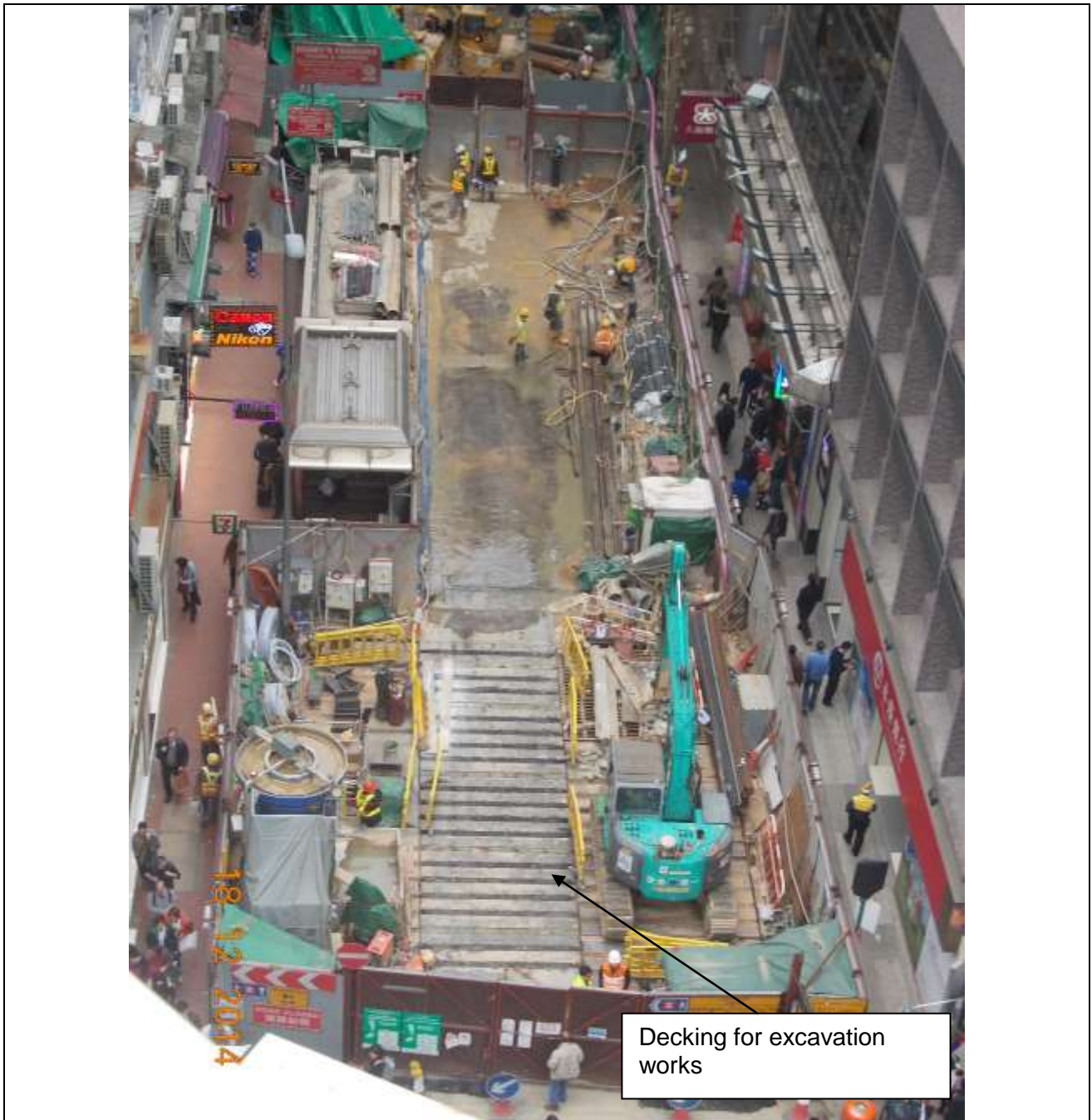
Date: 18 December 2014

ATTACHMENT(S):

- 1) Photos taken at the construction site on 18 December 2014.
- 2) Delivery Order of ULSD on 17 December 2014 provided by the Contractor.
- 3) Quotation of ULSD on 16 December 2014 provided by the Contractor.

Photo(s) taken at the monitoring station at Rooftop 4/F K11 Art Mall on 18 December 2014





Mitigation implementation status of the project site at Carnarvon Road near Bristol Ave. (Photo taken by the ET on 18 December 2014).

公司: 前田建設
 交貨地點: 加拿大道

訂貨編號(P.O.):
 聯絡人:
 電話:

中東石化(香港)有限公司
 Middle East Petroleum (HK) Co., Ltd.

荃灣德士古道120-124號安泰國際中心501室
 Rm.501, EW International Tower,
 120-124 Texaco Rd., Tsuen Wan, N.T.
 Tel: 2409 6780, 2409 8556 Fax: 2412 3521

No. **122251**

日期: 17.12.2014
 車牌: pw 3949

交貨單
DELIVERY ORDER

進地盤油錶讀數(RI):
 出地盤油錶讀數(RO):

貨品名稱	機型及編號	油錶讀數			機油
		始	終	入油數量(公升)	
超低硫工業柴油	<u>前田雜貨</u>			<u>137</u>	

入油數量(公升) = RO - RI = 合計: 137

簽收人
 Signature

4

請照單收貨如有錯誤或損破當面更正
 一經簽收不退不換特此聲明
 Please receive the above Merchandise in good condition.

假期訂貨聯絡人電話: **96436194**

IN-0745

中東石化(香港)有限公司
Middle East Petroleum (HK) Company Limited

To : **Maeda Corporation**

Attn. : **Mr. Fung**

Date : 16-12-2014

Email : kayfung@maeda.com.hk

Dear Mr. Fung

We would like to inform you that the price of the oil supplied by our company is to be adjusted as follows:-

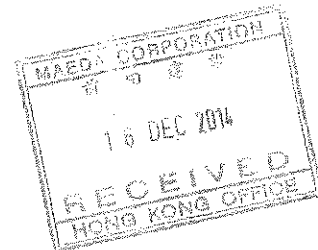
Product	Period	Unit Price HK\$ per Litre
ULSD 0.005%	24/10/2014 -15/12/2014	
ULSD 0.005%	16/12/2014 onwards	

For further information, please do not hesitate to contact us at 24096780 or 24098556.

Yours faithfully,



Tai Yu On



香港新界荃灣德士古道120-124號安泰國際中心501室
Room 501, EW International Tower, 120-124 Texaco Road, Tsuen Wan, N.T., Hong Kong.
Tel.: (852)24096780, 24098556 Fax: (852)24123521

Complaint Investigation Report

Contractor: Maeda Corporation	Complaint Received Date: 03 February 2015	Ref: CIR – 04
Project: C3840-13C MTRCL Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works		
COMPLAINANT		
Name: Unknown	Address: Golden Crown Commercial Building	
Tel: Unknown		
Fax: Unknown		
COMPLAINT INVESTIGATION		
Description (cause of impact, type of impact and location, etc.)		
<u>Details of the Complaint</u> A complaint was received by the Environmental Team (ET) regarding the complaint against air nuisance which was suspected to be exhausted fumes generated from plants operated at the construction site located at Carnarvon Road, Tsim Sha Tsui. The complaint was received on 03 February 2015, which was first transferred to the Food and Environmental Hygiene Department (FEHD) and later referred to the Environmental Protection Department (EPD). EPD has then informed the MTRC, Contractor and IEC on 04 February 2015, and afterwards the ET received the complaint from the Contractor via e-mail on the same date.		
<u>Construction Activities during the Complaint Period</u> According to the Contractor, the major site construction activities on the date of complaint (03 February 2015) were pipe piling and grout pipe installation. A total number of 3 major plants were operating for those major activities at site near the Golden Crown Commercial Building, including: 1 crawler crane and 2 drill rigs. With reference to the information provided by the Contractor, the following dust and odour mitigation measures were implemented on the date of complaint: <ul style="list-style-type: none">- The air compressor were fully enclosed;- Drill rigs were fully enclosed with tarpaulin;- Regular cleaning of the oil filter of drill rigs and crawler crane to avoid dark smoke;- The crawler crane and drill rigs will be switched off when idle or not in use;- Decking for excavation works; and- Blower was used for ventilation purpose during engine start-up. (Please refer to the attached photo)		
<u>EM&A Findings and Observations</u> Prior to the complaint, the electricity generator located next to the site exit at Nathan Road have been removed and the air compressor nearby was relocated further away from the Golden Crown Commercial Building (see attached photo for reference). Major exhaustions from downstairs at Golden Crown Commercial Building were minimised to 2 drill rigs and 1 crawler crane. (Please refer to the attached photo) A joint complaint investigation was carried out by the ET and Contractor at 14:30 on 06 February 2015. During the investigation, dust mitigation measures was observed fully implemented at site including provision of three side and top enclosed for the grout mixing area and other fixed plant, provision of decking for excavation works and tarpaulin for drill rigs. Dark smoke was not observed generating from site during the investigation. Odour was intermittently detectable at site during the investigation and was considered non-nuisance to the surrounding receivers. Photos of the inspection are attached in this report for reference. Purchase records of ultra-low sulphur diesel (ULSD), fully complied with the Air Pollution Control (Fuel Restriction) Regulations (Cap. 311), was provided by the Contractor and to certify that only ULSD is used for all diesel powered equipment at site. Details of the purchase records are as shown in the attachment.		
<u>Conclusion / Recommendation</u> Although the odour detected during the investigation was not a nuisance, the complaint on odour nuisance was considered as project related. The odour nuisance on 03 February 2015 was considered to be contributed by the combustion emissions of equipment at the construction site. In view of the conclusion drawn, the Contractor was recommended to keep track on the implementation status of the following mitigation measures at site:		

- 1) Ensure the implementation of dust mitigation measures during all construction and dusty activities to minimize dust and odour generation;
- 2) Machines used at site are provided with air blower during engine start-up, in order to ensure sufficient ventilation at site and provide dilution of the exhausted fumes generated from on-site activities;
- 3) Only ULSD is used for diesel powered equipment at site and they are fully complied with the Air Pollution Control Regulation in Hong Kong; and
- 4) Foster better public relations with the sensitive receivers or complainants nearby.

In addition, according to the Contractor, the piling work and grout pipe installation are targeted to be completed within 2 weeks' time. The odour nuisance is expected to be eased after the completion of those works.

FOLLOW UP ACTION(S)

No further action is considered necessary. Nevertheless, the ET will keep a close eye on the condition of the site during the routine site inspections and audit to ensure proper function of the dust/ odour mitigation measures implemented on site, and where appropriate advise the Contractor to be vigilant and tailor mitigation measures in advance of future planned site work activities. This complaint case will be registered in the complaint log in the monthly EM&A Report (February 2015).

Prepared & Confirmed by:

Name: Fu Nam Wong (ET Leader)

Signature:

Date: 10 February 2015



ATTACHMENT(S):

- 1) Photos taken at the construction site and monitoring station at K11 Art Mall.
- 2) Delivery Note of ULSD on 14 Jan 2015 and 09 Feb 2015 provided by the Contractor.

Photo(s) taken at the monitoring station at Rooftop 4/F K11 Art Mall and construction site



1) The electricity generator was located near the Nathan Road entrance before January 2015.

2) The air compressor was located near the Nathan Road entrance before January 2015.

(Photo provided by the Contractor on 07 February 2015)



2 Drill Rigs (Fully enclosed with tarpaulin)

1 Grout Mixing Area (Fully enclosed with 3 side shelters and top enclosure)

- 1) The electricity generator has been removed from site.
- 2) The air compressor has been relocated from Nathan Road site entrance to outside Tai Sang Bank.
- 3) Mitigation implementation status of the project site at Carnarvon Road near Nathan Road.

(Photo taken by the ET on 06 February 2015).





Blower was used for ventilation purpose during engine start-up at site. (Photo provided by the Contractor on 07 February 2015).

Delivery Note (14 Jan 2015 and 09 Feb 2015) of ULSD Provided by the Contractor

公司: 前建設(香港) Middle East Petroleum (HK) Co., Ltd. No **122582**
 交貨地點: 沙拿道 多灣德士古道120-124號安泰國際中心501室
 日期: 14-1-2015
 訂貨編號(P.O.): 120-124 Texaco Rd., Tsuen Wan, N.T. 車牌: HW3949
 聯絡人: 電話: 2409 6780, 2409 8556 Fax: 2412 3521
交貨單 DELIVERY ORDER 進地盤油錶讀數(RI):
 出地盤油錶讀數(RO):

貨品名稱	機型及編號	油錶讀數			機油
		始	終	入油數量(公升)	
超低硫工業柴油					
入油數量(公升) = RO - RI = 合計:				<u>509</u>	

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 假期訂貨聯絡人電話: 96436194

簽收人: 丁
 Signature:

公司: 前建設(香港) Middle East Petroleum (HK) Co., Ltd. No **122515**
 交貨地點: 沙拿道 多灣德士古道120-124號安泰國際中心501室
 日期: 9-2-2015
 訂貨編號(P.O.): 120-124 Texaco Rd., Tsuen Wan, N.T. 車牌: HW3949
 聯絡人: 電話: 2409 6780, 2409 8556 Fax: 2412 3521
交貨單 DELIVERY ORDER 進地盤油錶讀數(RI):
 出地盤油錶讀數(RO):

貨品名稱	機型及編號	油錶讀數			機油
		始	終	入油數量(公升)	
超低硫工業柴油					
入油數量(公升) = RO - RI = 合計:				<u>898</u>	

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 假期訂貨聯絡人電話: 96436194

簽收人: Lo
 Signature: