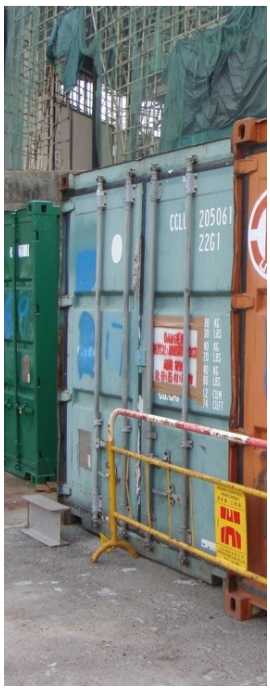

Demolition of Kwai Chung Incineration Plant
Monthly EM&A Report for Nov 2009 (Rev A)

Environmental Permit No. EP-121/2002/A
Report No. 203204/KCIP/EM&A/24/A

December 2009
Civil Engineering and Development Department

CEDD

Mott MacDonald

Demolition of Kwai Chung Incineration Plant
Monthly EM&A Report for Nov 2009 (Rev A)

Environmental Permit No. EP-121/2002/A
Report No. 203204/KCIP/EM&A/24/A

December 2009

Civil Engineering and Development Department

Special Duties (Works) Division, 3/F Civil Engineering and Development Building,
101 Princess Margaret Road, Homantin, Kowloon

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Mott MacDonald

Pursuant to Condition 2.3 and 3.5 of Environmental Permit No. EP-121/2002/A,

this Monthly EM&A Report for November 2009 has been reviewed, certified and verified by the following EM&A members as Conforming to the Information and Recommendations contained in the EIA Report

Certified by:

Joseph Chan
Environmental Team (ET) Leader
Mott MacDonald Hong Kong Limited

Date 14 December 2009

Verified by:

Antony Wong
Independent Environmental Checker (IEC)
Hyder Consulting Limited

Date 14 December 2009

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Executive Summary

The EM&A programme for this Project commenced on 1 December 2007. This report presents a summary of the environmental monitoring and audit works, list of activities, and mitigation measures implemented during the reporting month of November 2009.

This is the 24th Monthly EM&A Report for the works carried out during the reporting month.

The following activities have taken place during the reporting month: -

- Demolition of chimney structure;
- Breaking of chimney concrete segment;
- Sorting and disposal of C&D materials;
- Setting up of land decontamination facilities; and
- Fabrication of catch fans for chimney demolition.

Impact monitoring for air quality (dust) due to the demolition work continued during the reporting month. No exceedance of the Action and Limit Levels for dust was recorded.

No environmental complaint, notification of summons and prosecution was received or made against the Project in the reporting month.

Site inspection was carried out on a weekly basis to monitor proper implementation of environmental pollution control and mitigation measures for the Project. In this reporting month, site inspections were carried out on 5, 12, 19 and 26 November 2009.

No non-compliances with regard to site environmental audits were recorded in this reporting month.

As per the EM&A Manual, baseline 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring was conducted during the period of 31 October 2007 to 13 November 2007. Results were reported in the Baseline Monitoring Report submitted in November 2007.

Future key issues to be considered in the forthcoming month include: -

- Demolition of chimney;
- Breaking & sorting of C&D materials;
- Disposal of C&D materials; and
- Setting up of land decontamination facilities.

1. Introduction

1.1 Background to the Project

This Project – "Demolition of Kwai Chung Incineration Plant" is a Designated Project defined under the EIA Ordinance. An Environmental Permit ("EP") was issued on 1 March 2002 [Permit No. EP-121/2002]. An application for Variation of the Environmental Permit (VEP-284/2009) was submitted on 6 April 2009 and the amended Environmental Permit [Permit No. EP-121/2002/A] was issued on 28 April 2009.

This Contract [No.: CV/2007/06] for the Project was awarded to the Contractor – China International Water & Electric Corporation and contractually commenced on 31 October 2007. The main Contract will last for 45 months excluding 12 months for landscape establishment works. In accordance with Condition 1.11 of the Environmental Permit EP-121/2002/A, the Director of Environmental Protection (DEP) was notified that the commencement date for the Project was on 24 January 2008.

The scope of the Project includes demolition and clearance of the existing chimney, buildings and ancillary structures above the existing concrete ground slab where the former Kwai Chung Incineration Plant ("KCIP") is located. It also includes the removal of asbestos containing materials ("ACM") and dioxin/ furan contaminated materials ("DCM") prior to demolition of structures and subsequent site remediation.

A layout plan of the Project site and the environs are presented in Figure 1.1.

Mott MacDonald Hong Kong Limited (MMHK) has been commissioned by the Project Proponent – Civil Engineering and Development Department ("CEDD") – as the Environmental Team ("ET") to undertake the Environmental Monitoring and Audit (EM&A) programme described in the approved EM&A Manual of the Project.

1.2 Coverage of this EM&A Report

The EM&A programme for this Project commenced on 1 December 2007. This report presents a summary of the environmental monitoring and audit works, list of activities, and mitigation measures implemented during the reporting month of November 2009. This is the 24th Monthly EM&A Report for the project.

1.3 Project Management Organisation

The project organisation chart is presented in Figure 1.2.

1.4 Project Programme

This Contract of the Project commenced on 31 October 2007. The main Contract will last for 45 months.

1.5 Works Undertaken in the Reporting Month

The following activities have taken place during the reporting month: -

- Demolition of chimney structure;
- Breaking of chimney concrete segment;
- Sorting and disposal of C&D materials;
- Setting up Land Decontamination facilities; and
- Fabrication of catch fans for chimney demolition.

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Notes:

Key to symbols

SITE BOUNDARY

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1					

Client

CEDD

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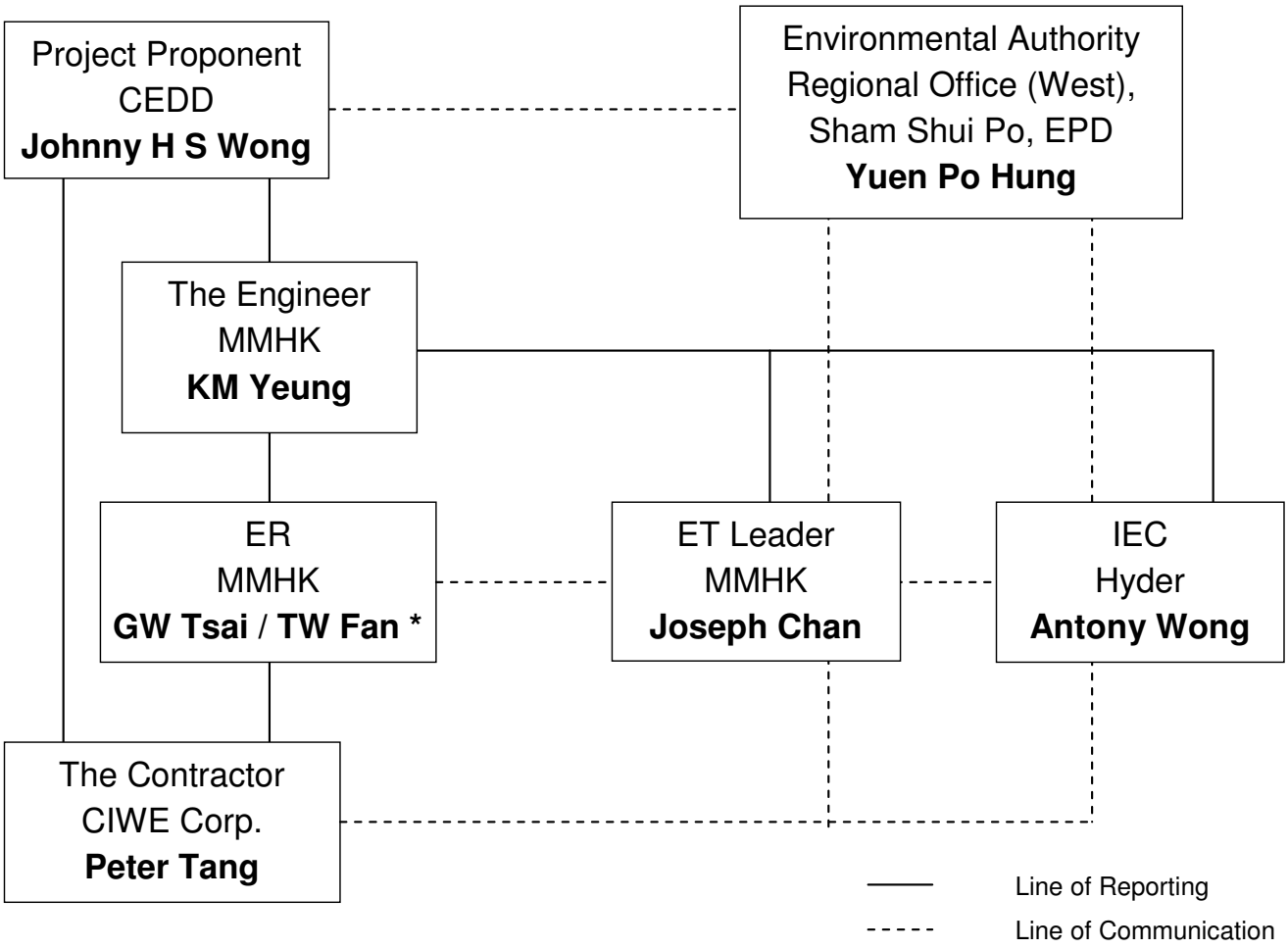
Project

DEMOLITION OF
KWAI CHUNG INCINERATION PLANT

Title

LAYOUT OF WORK SITE

Designed	HN	Eng.Chk.	RL
Drawn	LYK	Coordination	
Dwg.Chk.	HN	Approved	KMY
Scale 1:2000	Project 203204		Status
	CAD File J:\203204\REPORT\ENV\BMR-REPORT(08III4)\FIG		U.dgn
Drawing No. FIGURE 1.1			Rev P1



Key Personnel Contact List

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The Engineer	Mott MacDonald Hong Kong Limited (MMHK)	Mr. KM Yeung	2828 5757
Engineer's Representative (ER)	Mott MacDonald Hong Kong Limited (MMHK)	Mr. GW Tsai * (until 11 Nov 2009)	2408 1799
		Mr. TW Fan * (from 12 Nov 2009)	
Independent Environmental Checker (IEC)	Hyder Consulting Limited (Hyder)	Mr. Antony Wong	2911 2744
Environmental Team (ET) Leader	Mott MacDonald Hong Kong Limited (MMHK)	Mr. Joseph Chan	2828 5920
The Contractor (Site Agent)	China International Water & Electric Corporation (CIWE Corp.)	Mr. Peter Tang	9220 1611

2. EM&A Requirements

2.1 Summary of EM&A Requirements

The EM&A programme requires environmental monitoring of air quality and waste management as specified in the approved EM&A Manual dated September 2001.

1-hour TSP and 24-hour TSP levels at 1 dust monitoring station are to be taken during the course of dusty work in every reporting month. This air quality monitoring station for 24-hour TSP and 1-hour TSP measurements is shown in Figure 2.1 below.

A summary of impact EM&A requirements is presented in Table 2.1.

Table 2.1: Summary of Impact EM&A Requirements

Parameters	Descriptions	Locations	Frequencies	Duration
Air Quality	24-Hour TSP	1 Location - A1	Once every 6 days	During dust generating construction works
	1-Hour TSP	1 Location - A1	3 times every 6 days	During dust generating construction works
Waste	On-Site Waste Audit	Active Work Sites	Weekly	During Construction
	On-Site Waste Inspection			
Wastewater	On-Site Wastewater Audit	Active Work Sites	Weekly	During Construction
General Site Conditions	Environmental Site Inspection	Works areas and areas affected by works	Weekly	During Construction

Note: A1 – Boundary of the site adjacent to the Kwai Chung Primary Treatment Plant.

2.2 Environmental Quality Performance Limits

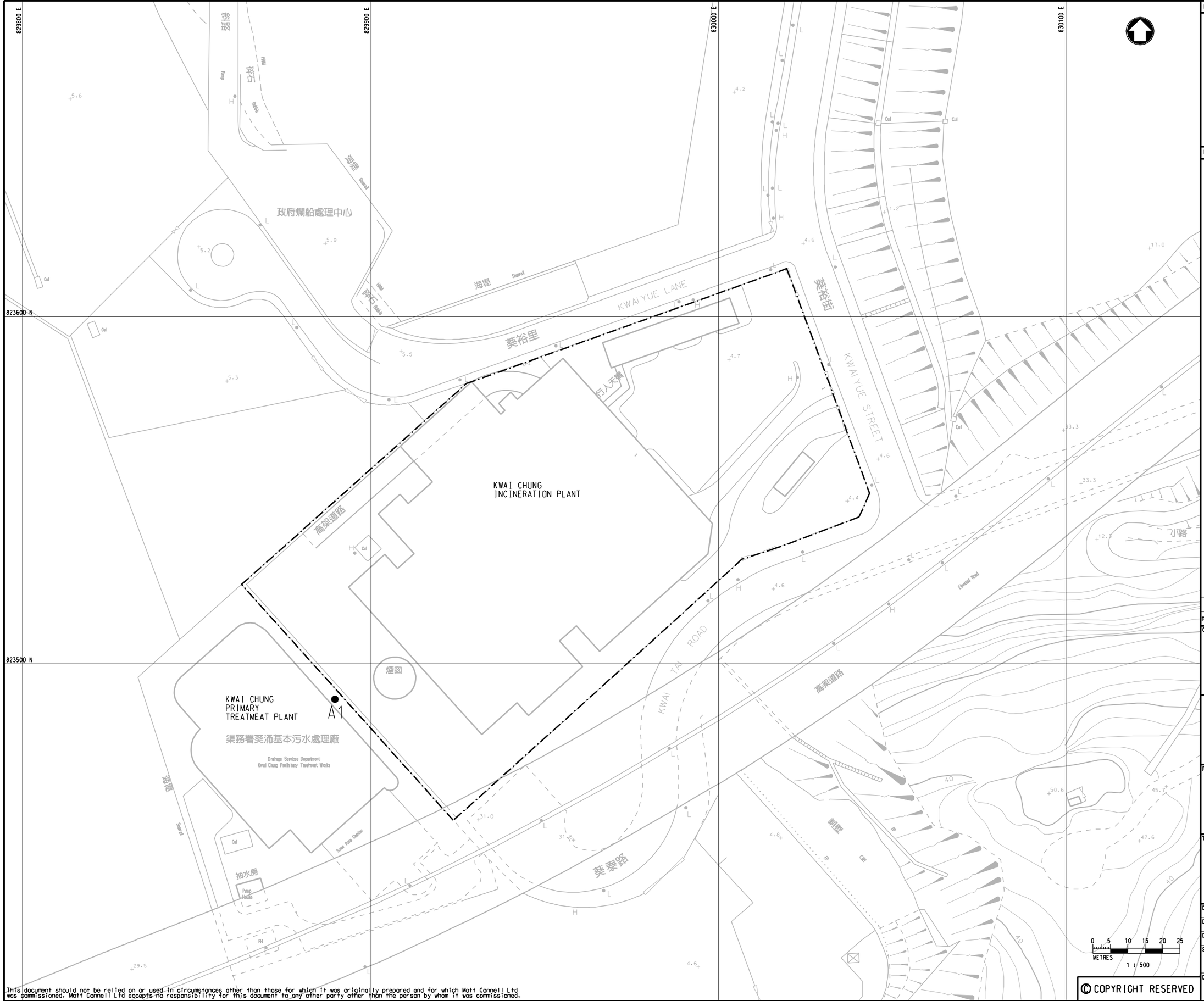
Environmental Quality Performance Limits for air quality are shown in Appendix A.

2.3 Event and Action Plans

The Event and Action Plans for air quality are shown in Appendix B.

2.4 Implementation of Environmental Mitigation Measures

The Contractor is required to implement mitigation measures listed in the latest EP, EIA Report and EM&A Manual. During routine site inspections, the Contractor's implementation of mitigation measures, if any, are to be inspected and reviewed. A schedule of the implementation of mitigation measures identified at the EIA stage is given in Appendix C.



Notes:

Key to symbols

SITE BOUNDARY

DUST MONITORING STATION

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1					

Client

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Project

DEMOLITION OF
KWAI CHUNG INCINERATION PLANT

Title

LOCATION OF DUST
MONITORING STATION

Designed	HN		Eng.Chk.	RL	
Drawn	LYK		Coordination		
Dwg.Chk.	HN		Approved	KMY	
Scale	AS SHOWN	Project 203204		Status	
		CAD File J:\203204\REPORT\ENV\EMR-REPORT\08III4\FIG 2.1.dgn			
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3. Monitoring Results

3.1 Impact Monitoring Schedule

Regular site inspections were carried out on 5, 12, 19 and 26 November 2009in the reporting month to assess the compliance with environmental requirements. The EM&A schedule is given in Appendix D.

Impact monitoring for air quality (dust) due to the demolition work continued during the reporting month.

3.2 Monitoring Methodology

3.2.1 24-hour TSP Monitoring

3.2.1.1 Installation

The HVS has been installed close to representative air sensitive receivers. The following criteria have been considered in the installation of the HVS:

- A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
- The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
- A minimum of 2m separation from walls, parapets and penthouse was required for rooftop sampler.
- No furnace or incinerator flues were nearby.
- Airflow around the sampler was unrestricted.
- Permission was obtained to set up the samplers and to obtain access to the monitoring stations.
- A secured supply of electricity is needed to operate the samplers.

3.2.1.2 Preparation of Filter Papers

- Glass fibre filters, G810 are to be labelled with sufficient filters that are clean and without pinholes.
- All filters are to be equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature is to be around 25 ℃ and not variable by more than ±3℃, the relative humidity (RH) is to be < 50% and not variable by more than ±5 %. A convenient working RH is 40%.

3.2.1.3 Field Monitoring

- The power supply is to be secured to ensure the HVS works properly.
- The filter holder and the area surrounding the filter are to be cleaned.
- The filter holder is to be removed by loosening the 4 bolts and a new filter, with stamped number upward, on a supporting screen to be aligned carefully.
- The filter is to be properly aligned on the screen so that the gasket forms an airtight seal on the outer edges of the filter.
- The swing bolts are to be fastened to hold the filter holder down to the frame. The pressure applied is to sufficient to avoid air leakage at the edges.
- The shelter lid is then closed and is secured with the aluminium strip.
- The HVS shall be warmed-up for about 5 minutes to establish run-temperature conditions.
- A new flow rate record sheet is to be set into the flow recorder.
- The flow rate of the HVS is to be checked and adjusted at around 1.1 m^3/min. The range specified in the updated EM&A Manual is between 0.6-1.7 m^3/min.
- The programmable timer is set for a sampling period of 24 hrs + 1 hr, and the starting time, weather condition and the filter number are to be recorded.

- The initial elapsed time is to be recorded.
- At the end of sampling, the sampled filter is to be removed carefully and folded in half length so that only surfaces with collected particulate matter are in contact.
- It was then placed in a clean plastic envelope and sealed.
- All monitoring information is to be recorded on a standard data sheet.
- Filters are to be sent to a HOKLAS accredited laboratory for analysis.

3.2.1.4 Maintenance and Calibration

- The HVS and its accessories are to be maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVSs are to be calibrated at a bi-monthly intervals using GMW-25 Calibration Kit throughout all stages of the air quality monitoring.

3.2.2 1-hour TSP Mointoring

3.2.2.1 Field Monitoring

The measuring procedures of the 1-hour dust meter are to be in accordance with the Manufacturer's Instruction Manual as follows:

- Set POWER to "ON", push BATTERY button, make sure that the meter's indicator is in the range with a red line and allow the instrument to stand for about 3 minutes (Then, the air sampling inlet has been capped).
- Push the knob at MEASURE position.
- Push "O-ADJ" button. (Then meter's indication is 0).
- Push the knob at SENSI ADJ position and set the meter's indication to S value described on the Test Report using the trimmer for SENSI ADJ.
- Pull out the knob and return it to MEASURE position.
- Push "START" button.

3.2.2.2 Maintenance and Calibration

- The 1-hour TSP meter would be checked at 3-month intervals and calibrated at 1-year intervals throughout all stages of the air quality baseline monitoring.

As per the approved EM&A Manual, dust monitoring stations are located as shown in Figure 2.1 above.

3.3 Monitoring Equipment

The equipment used for air quality (dust) monitoring is listed in Table 3.1.

Table 3.1: TSP Monitoring Equipment

Equipment	Model
HVS Sampler	Greasby GMWS 2310 Accu-vol system
Calibrator	Tisch TE-5025A
1-hour TSP Dust Meter	TSI Model 8520 Dust Trak Aerosol Monitor

3.4 Equipment Calibration

The calibration frequencies of the monitoring equipment are provided in Table 3.2.

Table 3.2: Equipment Calibration Frequencies

Equipment	Calibration Frequency	Calibration Due Date
High Volume Sampler Greasby GMWS 2310 Accu-vol system	Every two months	10 January 2010
1-hour TSP Dust Meter TSI Model 8520 Dust Trak Aerosol Monitor	Every six months	9 January 2010

The calibration certificates are included in Appendix F.

3.5 Result of Impact Monitoring

3.5.1 Air Quality (1-hr TSP)

Results of 1-hour TSP level are summarised in Table 3.3. Detailed results, including weather conditions, and graphical presentations are included in Appendix E.

Table 3.3: Results of 1-Hour TSP Impact Monitoring

Monitoring Station	1-hour TSP Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
A1	147 – 292	345	500

No exceedance of Action / Limit Levels for 1-hr TSP was recorded in the reporting month.

3.5.2 Air Quality (24-hr TSP)

Results of 24-hour TSP level are summarised in Table 3.4. Detailed results, including weather conditions, and graphical presentations are included in Appendix E.

Table 3.4: Results of 24-Hour TSP Impact Monitoring

Monitoring Station	24-hour TSP Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
A1	69 – 124	179	260

No exceedance of Action / Limit Levels for 24-hr TSP was recorded in the reporting month.

Wind data during the reporting month was obtained from the nearest Hong Kong Observatory monitoring station, at Tsing Yi, and is presented in 0.

4. Project Environmental Status

4.1 Environmental Meetings

One environmental meeting was held on the day of the monthly site inspection on 19 November 2009.

4.2 Status of Environmental Submissions, Permits and Licences

A summary of status of all environmental submissions, permits, licenses, and/or notifications to EPD for this Project during the reporting period is presented in Table 4.1 below.

Table 4.1: Status of Environmental Submissions, Permits and Licenses

Item	Description	Date of Application/ Submission	Status
1.	Environmental Permit (EP No. EP-121/2002/A) under Variation of Environmental Permit (VEP-284/2009)	VEP applied on 6 Apr 2009	VEP approved on 28 Apr 2009
2.	Billing Account under Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Ref. No.: 7006285)	Approved on 16 Nov 2007	Valid
3.	Waste Management Plan	v3.3 approved on 9 Apr 2009	v3.3: Valid
4.	Registration as a Chemical Waste Producer under Waste Disposal (Chemical Waste) (General) Regulation (Ref. No.: WPN-5292-320-C3459-01)	2 Nov 2007	Approved by EPD on 26 Nov 2007
5.	Effluent Discharge Licence (Ref. No.: EP760/320/0128821)	Variation of License submitted on 10 Nov 2008	Approved by EPD on 5 Jan 2009 which superseded the previous licence
6.	Notification pursuant to Section 3(1) of the Air Pollution Control (Construction Dust) Regulation (Form NA)	EPD notified on 15 Jan 2008	Valid
7.	Notification of commencement of asbestos abatement work pursuant to Section 73 of the Air Pollution Control Ordinance	EPD notified on 4 Feb 2008	Valid. Approved by EPD on 5 Mar 2008.
New submissions			
	No new submissions		

4.3 Waste Management Status

The C&D material & general refuse generated by the Project in the reporting month are shown in Table 4.2 below.

A trip ticket system has been implemented for all off-site waste disposals.

Table 4.2: Monthly Summary Waste Flow Table for 2009

Month	Actual Quantities of Inert C&D Materials Generated Monthly (in '000 m^3)										Actual Quantities of C&D Wastes Generated Monthly									
	Total Quantity Generated		Broken Concrete		Reused in the Contract		Reused in other Projects		Disposed of at Public Fill		Metals ('000 kg)		Paper/ Cardboard ('000 kg)		Plastics ('000 kg)		Chemical waste ('000 kg)		Others (e.g. refuse) ('000 m^3)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Jan	0.95	0.269	-	0	-	0.269	-	0	0.95	0	213	49.595	0.10	0	0.10	0	0.00	0	0.05	0.018
Feb	0.95	0	-	0	-	0	-	0	0.95	0	213	155.14	0.10	0	0.10	0	0.00	0	0.05	0.009
Mar	0.95	0	-	0	-	0	-	0	0.95	0	213	455.93	0.10	0.082	0.10	0	87.50	0	0.05	0.018
Apr	0.95	0	-	0	-	0	-	0	0.95	0	213	299.97	0.10	0	0.10	0	78.80	0	0.05	0.023
May	0.95	2.271	-	2.271	-	0	-	0	0.95	0	213	544.70	0.10	0.060	0.10	0	48.10	0	0.05	0.045
Jun	0.95	4.988	-	4.988	-	0	-	0	0.95	0	213	133.44	0.10	0	0.10	0	60.00	13.776	0.05	0.023
Sub-total	5.70	**7.528**	-	**7.259**	-	**0.269**	-	**0**	5.97	**0**	1,278	**1638.8**	0.60	**0.142**	0.60	**0**	274.4	**13.776**	0.30	**0.135**
Jul	0.95	0	-	0	-	0	-	0	0.95	0	213	2.02	0.10	0.065	0.10	0	14.10	4.330	0.05	0.014
Aug	0.95	0	-	0	-	0	-	0	0.95	0	213	16.15	0.10	0	0.10	0	14.10	2.336	0.05	0.005
Sep	0.95	0	-	0	-	0	-	0	0.95	0	216	30.84	0.10	0	0.10	0	13.20	0	0.05	0.005
Oct	-	0	-	0	-	0	-	0	-	0	-	37.59	0.10	0	0.10	0	11.90	0	0.05	0.005
Nov	-	0	-	0	-	0	-	0	-	0	-	38.59	0.10	0	0.10	0	1.62	0	0.05	0
Dec	-		-		-		-		-		-		0.10		0.10		1.62		0.05	
Total	8.55	**7.528**	-	**7.259**	-	**0.269**	-	**0**	8.55	**0**	1,920	**1764.0**	1.20	**0.207**	1.20	**0**	330.9	**20.442**	0.60	**0.162**

4.4 Review of Environmental Monitoring Procedures

The monitoring works conducted by the Environmental Team have been reviewed regularly. No changes in the environmental monitoring procedures are considered necessary at this stage.

4.5 Implementation Status of Environmental Mitigation Measures

An Implementation Schedule of Mitigation Measures from the EIA/ EM&A Manual has been given in Appendix C.

5. Audit Findings

5.1 Site Environmental Audit

Site inspection is to be carried out on a weekly basis to monitor proper implementation of environmental pollution control and mitigation measures for the Project. In this reporting month, one monthly site inspection was carried out jointly by the ER, Contractor, ETL and IEC on 19 November 2009, and additional weekly site inspections were carried out by the ER, Contractor and ET on 5, 12, 19 and 26 November 2009.

Major findings provided by ET and those jointly provided by the ET and IEC on 19 November 2009 from the site inspection are summarised in Table 5.1.

Table 5.1: Summary of Environmental Site Inspections

Date of Inspection	Major Observations	Action(s)
29 Oct 2009	The Contractor was reminded to provide sand filter to one of the sedimentation tanks as proposed.	For Contractor's action.
	The Contractor was reminded to provide sufficient dust suppression measures to reduce dust emission.	Water sprays were provided for dust-generating works areas and C&D material stockpiles were covered with tarpaulin.
	Empty bottles for containing chemicals should be stored in the Chemical Waste Store and drip trays should be provided for chemical containing bottles under use.	Empty bottles for containing chemicals were placed in drip trays in the Chemical Waste Store.
	Contaminated soil was still observed at the location last week. The Contractor was reminded to remove the contaminated soil immediately and treat it as chemical waste. A steel tray should be provided for the activities causing contamination to soil.	Contaminated soil was not observed at the location during the subsequent site audit. A steel tray was provided for activities causing contamination to soil.
5 Nov 2009	Some used batteries were observed next to a generator. The Contractor was reminded to dispose of these promptly and properly.	The used batteries next to a generator were removed.
12 Nov 2009	Water ponds at ground level arising from chimney demolition works were observed. The Contractor is reminded to remove the water ponds and ensure that all necessary mitigation measures are implemented.	Water ponds from chimney demolition works had been removed.
19 Nov 2009	The Contractor is reminded to provide water spray or other dust mitigation measures for the site, especially at site entrances frequently used by site vehicles.	Water sprays were provided at site entrances used by site vehicles and for ongoing demolition works. The Contractor is reminded to continue providing necessary dust mitigation measures.
	The Contractor is reminded to provide follow-up mitigation measures for all water ponds observed on site.	For Contractor's action.
26 Nov 2009	It was observed that additional C&D material generated since last week's site audit was left exposed. The Contractor is reminded to provide the necessary mitigation measures as soon as possible.	For Contractor's action.

5.2 Site Effluent Discharge/WPCO Effluent Discharge

A WPCO effluent discharge licence was initially granted by EPD on 10 March 2008 and was subsequently replaced by another one issued on 8 July 2008. In order to cope with the site condition in late 2008, the Contractor has applied for a second variation of WPCO effluent discharge licence on 10 November 2008 and the licence was granted on 5 January 2009.

No effluent discharge sampling was carried out in this reporting month. It will be followed-up and updated in the coming EM&A report.

6. Environmental Complaints and Non-compliance

6.1 Summary of Environmental Complaints, Notifications of Summons and Successful Prosecutions

No environmental complaints have been received during the reporting month. Appendix C presents the environmental complaint event contingency plan of the Project and Table 6.1 presents a statistics of complaints, notification of summons and successful prosecution since the commencement of the Project.

Table 6.1: Summary of Environmental Complaints and Prosecutions

Complaints Logged		Summons Served		Successful Prosecutions	
November 2009	Cumulative	November 2009	Cumulative	November 2009	Cumulative
0	0	0	0	0	0

No environmental complaint, notification of summons and prosecution has been received or made against the Project in this reporting month.

6.2 Environmental Enquiries

No environmental enquiries were received during the reporting month.

6.3 Environmental Events

No unusual events were recorded during the reporting month.

6.4 Environmental Exceedance/Non-compliance

6.4.1 Air Quality – Dust

No exceedance of Action and Limit Levels for 1-hour TSP and 24-hour TSP was recorded in the reporting month.

6.4.2 Waste Management

Not applicable.

6.4.3 Summary of Exceedances

Table 6.2 summarises the total number of exceedances for air quality recorded during the reporting period. No exceedance was recorded in the reporting period.

Table 6.2: Summary of Exceedances

Parameters	Total no. of Measurements	Action Level Exceedance	% of Action Level Exceedance	Limit Level Exceedance	% of Limit Level Exceedance
Air Quality	20	0	0%	0	0%

7. Future Key Issues

7.1 Key Issues and Recommendations for Coming Month

Key issues to be considered in the coming month include: -

- Demolition of chimney;
- Breaking & sorting of C&D materials;
- Disposal of C&D materials; and
- Setting up of land decontamination facilities.

Based on the above key issues, the recommended mitigation measures to be implemented include the following: -

7.1.1 Air

- Water spraying during demolition works;
- Covers for dusty stockpiles;
- Haul road watering and vehicle wheel wash prior to exit;
- All plant to be maintained to prevent any undue air emissions; and
- Cover all generated C&D materials as soon as they are formed or moved.

7.1.2 Noise

- All plant shall be maintained to prevent any undue noise nuisance;
- Use quiet plants during breaking of concrete segments whenever possible; and
- No construction activities during holidays.

7.1.3 Water

- All wheel wash water shall be diverted to a sediment pit before discharge;
- All fuel cans, generators shall be placed within a bunded area; and any fuel spills shall be mopped up or excavated and disposed of as necessary; and
- All ponding water shall be cleared as soon as possible.

7.1.4 Waste

- Different types of waste should be segregated, stored, transported and disposed of in accordance with the relevant legislative requirements and guidelines; and
- Records of quantities of wastes generated, recycled and disposal (with locations) shall be kept.

8. Conclusions and Recommendations

8.1 Conclusions

EM&A was performed in November 2009 during which site works have continued. All monitoring and audit results in the reporting month were checked and reviewed.

With respect to audit observations, the Contractor was reminded to provide sufficient dust suppression measures during demolition works, including spraying of water. All mitigation measures in anti-mosquito, including clearing of stagnant water and application of mosquito larvicide, should be implemented. Proper working procedures should be undertaken to prevent fuel spillage and land contamination.

Airborne dust monitoring continued due to the demolition work during the reporting month. In general, the Contractor has been reasonably responsive to all required mitigation measures and ET's recommendations made during weekly environmental site inspections in this reporting month.

No environmental complaints, notification summons or successful prosecutions have been received or made against this Project in this reporting month

8.2 Recommendations

No further recommendations made at this stage pending more site progress achieved.

Appendices

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Appendix A. Environmental Quality Performance Limits

Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level (µg/m^3)	Limit Level (µg/m^3)
A1	179	260

Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level (µg/m^3)	Limit Level (µg/m^3)
A1	345	500

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Appendix B. Event and Action Plans

Table B.1: Event and Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source 2. Inform IEC and ER 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily	1. Check monitoring data submitted by ET 2. Check Contractor's working method	1. Notify Contractor 2. Check monitoring data and Contractor's working methods	1. Rectify any unacceptable practice 2. Amend working methods if appropriate
2. Exceedance for two or more consecutive samples	1. Identify source 2. Inform IEC and ER 3. Repeat measurements to confirm findings 4. Increase monitoring frequency to daily 5. Discuss with Contractor , IEC and ER for remedial actions required 6. If exceedance continues, arrange meeting with IEC and ER 7. If exceedance stops, cease additional monitoring	1. Checking 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	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Check monitoring data and Contractor's working methods 4. Discuss with IEC and Contractor on potential remedial actions 5. Ensure remedial actions properly implemented	1. Submit proposals for remedial actions to ER within 3 working days of notification 2. Implement the agreed proposals 3. Amend proposal if appropriate
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source 2. Inform ER and EPD 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results	1. Checking 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	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Check monitoring data and Contractor's working methods 4. Discuss with ET Leader and Contractor potential remedial actions 5. Ensure remedial actions properly implemented	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to ER within 3 working days of notification 3. Implement the agreed proposals 4. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
2. Exceedance for two or more consecutive samples	1. Identify source 2. Inform IEC, ER and EPD the causes & actions taken for the exceedances 3. Repeat measurement to confirm findings 4. Increase monitoring frequency to daily 5. Investigate the causes of exceedance, Contractor's working procedures to identify possible mitigation 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results 8. If exceedance stops, cease additional monitoring	1. Discuss amongst ER, ET and Contractor as the potential remedial actions 2. Review Contractor's remedial actions whenever necessary to ensure their effectiveness and advise the ER accordingly 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Carry out analysis of Contractor's working procedures with IEC to determine possible mitigation to be implemented 4. Discuss amongst Environmental Team Leader and the Contractor potential remedial actions 5. Review Contractor's remedial actions whenever necessary to assure their effectiveness 6. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to ER within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Appendix C. Schedule of Mitigation Measures from the EIA/ EM&A Manual and Event Contingency Plan for Environmental Complaints

Table C.1: Implementation Schedule of Recommended Mitigation Measures From the EIA

No.	Activity	Mitigation/EIA Recommendations	Responsibility for Implementation	Location/ Duration completion of measures	Implementation Stage	Relevant Guidelines/ Legislation	Implementation Status ^
1	**Ash Disposal**						
I	Treatment	Reconfirm extent of contaminated ash deposits by sampling for dioxins and furans. Handling, transportation and disposal of the ash waste in line with relevant regulations. Collection, immobilisation and testing of waste for disposal to landfill shall be carried out according to the relevant regulations and recommendations of the EIA including immobilisation by collection and mixing the ash material with cement. Pilot mixing and TCLP tests should establish the ratio of cement to ash to the satisfaction of EPD. Ash waste to be treated and placed into steel drums lined with plastic sheeting. The drums should be adequately sealed and in new or good condition. Prior agreement of the disposal criteria from EPD and agreement to disposal from the landfill operator must be obtained.	CEDD's Contractor	KCIP work areas. Duration of the ash removal	A@	1, 10, EIA	✓
II	Disposal	To monitor the disposal of waste at landfills, a "trip-ticket" system (WBTC No. 5/99) for all solid waste transfer/disposal operations should be implemented. The system should be included as a contractual requirement, and monitored by the Environmental Team and audited by the Independent Checker (Environment).	CEDD's Contractor	As above	A	1, 5, 9	✓
III	Asbestos Removal	An asbestos abatement programme should be submitted to EPD for approval prior to the commencement of the asbestos abatement work.	CEDD and Contractor	As above	A	4	✓
2	**Demolition**						
A1	Non-blasting Methodology	Demolition by Non-Blasting Methodology Only. All structures and buildings should be demolished and removed prior to demolition of chimneys	CEDD	KCIP work areas. Duration of the demolition	C#	8	✓

No.	Activity	Mitigation/EIA Recommendations	Responsibility for Implementation	Location/ Duration completion of measures	Implementation Stage	Relevant Guidelines/ Legislation	Implementation Status ^
A2	Waste Management Plan.	A Waste Management Plan shall be submitted to EPD for approval. The Waste Management Plan shall include, but not be limited to, the findings of the Waste Management Paper of the EIA, the types, quantities, disposal methods, timing, and locations of final disposition, responsibilities for implementation and the possible recycling and reuse of wastes generated.	CEDD and Contractor	Prior to commencement of the demolition works	Prior to C#	1	✓
B	Material Storage	Covers for dusty stockpiles and control of dust emissions from construction (demolition) works requires appropriate dust control measures to be implemented in accordance with the requirements in the Air Pollution Control (Construction Dust) Regulation.	CEDD's Contractor	KCIP work areas. Duration of the demolition	C	4	P
C	Vehicle movement	Haul road watering, vehicle wheel wash prior to exit. Where practical, access roads should be protected with crushed gravel.	CEDD's Contractor	As above	C	4	⦸
D	Plant maintenance	All plant shall be maintained to prevent any undue air emissions.	CEDD's Contractor	As above	Prior to start of works	4	✓
E	Demolition Techniques	Selection of non-blasting demolition techniques to minimise noise and vibration.	CEDD's Contractor	As above	C	8	✓
F	Plant maintenance	All plant shall be maintained to prevent any undue noise nuisance.	CEDD's Contractor	As above	C	2, 3	✓
G	Wheel wash	All wheel wash water shall be diverted to a sediment pit.	CEDD's Contractor	As above	C	5	✓
H	Sediment control	Sediment removal facilities shall provided and be maintained and excavated as necessary to prevent sedimentation of channels. Perimeter channels should be provided. Works should be programmed for the dry season where feasible. Environmental guidelines for the handling and disposal of discharges from construction sites, as stipulated in the Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94) to be followed.	CEDD's Contractor	As above	C	5, 12	✓
I	Surface water diversion	All clean surface water shall be diverted around the site.	CEDD's Contractor	As above	C	5, 12	P
J	Fuel can storage	All fuel cans shall be placed within a bunded area. Any fuel spills shall be mopped up as necessary.	CEDD's Contractor	As above	C	5,6	✓
K	Material, plant movement & fuel can filling.	Any fuel or oil spills shall be excavated and disposed of.	CEDD's Contractor	As above	C	6,7	✓

No.	Activity	Mitigation/EIA Recommendations	Responsibility for Implementation	Location/ Duration completion of measures	Implementation Stage	Relevant Guidelines/ Legislation	Implementation Status ^
L	Generators	All generators shall be placed within a bunded area. Any fuel spills shall be mopped up as necessary.	CEDD's Contractor	As above	C	5,6,7	⊘
M	Material containers	All empty bags and containers shall be collected for disposal.	CEDD's Contractor	As above	C	6,7	✓
N	Worker generated litter and Waste	Litter receptacles shall be placed around the site. Litter shall be taken regularly to the refuse collection points. Chemical toilets (or suitable equivalent) should be provided for workers. Any canteens should have grease traps.	CEDD's Contractor	As above	C	6	✓
O	Neighbourhood nuisance	All complaints regarding construction works shall be relayed to the environmental team.	CEDD's Contractor	As above	C	1, 6	✓
P	Legal requirements	Different types of waste should be segregated, stored, transported and disposed of in accordance with the relevant legislative requirements and guidelines	CEDD's Contractor	As above	C	1,6	✓
Q	On-site separation	On-site separation of municipal solid waste and construction/demolition wastes shall be conducted in order to minimise the amount of solid waste to be disposed to landfill.	CEDD's Contractor	As above	C	1, 11	✓
R	Temporary storage area	Separated wastes should be stored in different containers, skips, or stockpiles to enhance reuse or recycling of materials and encourage their proper disposal.	CEDD's Contractor	As above	C	1, 11	✓
S	Record of wastes	Records of quantities of wastes generated, recycled and disposed (with locations) shall be kept.	CEDD's Contractor	As above	C	1, 9	✓
T	Trip-ticket system	To monitor the disposal of waste at landfills and control fly-tipping, a "trip-ticket" system under WBTC N0.5/99 for all solid waste transfer/disposal operations should be implemented. The system should be included as a contractual requirement, and monitored by the Environmental Team and audited by the Independent Checker (Environment).	CEDD's Contractor	As above	C	1, 9	✓
3	**Soil Remediation Phase**						
U	B, C, D, F, G, I, J, K, L, M, N, O, P, Q, R, S and T as above	As above (see W for soil remediation).	As above	As above	R	As above	N/A

No.	Activity	Mitigation/EIA Recommendations	Responsibility for Implementation	Location/ Duration completion of measures	Implementation Stage	Relevant Guidelines/ Legislation	Implementation Status ^
V	De-watering	Collect and recycle extracted groundwater and leachate by mixing with cement for soil remediation. Environmental guidelines for the handling and disposal of discharges from construction sites, as stipulated in the Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94) to be followed. Any surplus groundwater and leachate requiring disposal to be disposed of under the relevant legislation or treated to meet the standards given in Table 9a of the WPCO TM.	CEDD's Contractor	KCIP work areas. Duration of the soil remediation	R	5	N/A
W	Immobilisation	Immobilisation and testing of waste soil shall be carried out according to the relevant regulations and recommendations of the EIA including immobilisation by collection and mixing the contaminated soil material with cement. Pilot mixing and TCLP tests should verify the effectiveness and establish the ratio of cement to soil to the satisfaction of EPD. Reassurance confirmatory sampling shall be carried out to confirm the extent of contamination. Soil waste to be cast in blocks and replaced in the ground. Extracted soils and materials and stabilisation/solidification to be conducted in bunded area to prevent surface run-off. See also item 2(H) above. Final soil decontamination report to be submitted to EPD.	CEDD's Contractor	As above	R	1, 10	N/A
4	**Monitoring and Audit**	To be carried out in accordance with the Schedule in the EM&A Manual.	CEDD*/ Contractor/ RSS	KCIP works areas During demolition and at end of demolition throughout execution of Remediation Action Plan	C	1	✓

Notes: * Normally undertaken by a specialist monitoring team employed directly by the proponent and audited by the Independent Checker (Environment).

@ A = during ash removal (before demolition)

C = during construction (i.e. demolition phase).

* R = during soil remediation phase (after demolition)

^ Implementation Status:

✓ implemented × not implemented P partially implemented
⦸ rectified by Contractor N/A not applicable

Relevant Guidelines/Legislation:

Relevant Guidelines / Legislation references:

1. Environmental Impact Assessment Ordinance Technical Memorandum (EIAO)
2. Noise Control Ordinance
3. The ProPECC Note PN2/93 (Construction Noise daytime limits)
4. Air Pollution Control Ordinance (APCO)
5. Water Pollution Control Ordinance (WPCO)(Cap. 358)
6. Waste Disposal Ordinance (Cap 354)
7. Waste Disposal (Chemical Waste)(General) Regulation (Cap 354)
8. Draft Code of Practice on Demolition of Buildings (BD, 1998)
9. Works Bureau Technical Circular No. 5/99, Trip-ticket System for Disposal of Construction and Demolition Material
10. Guidance Notes for Investigation and Remediation of Contaminated Sites
11. Works Bureau Technical Circular No. 5/98, On Site Sorting of Construction Waste on Demolition Sites
12. ProPECC Note PN 1/94Construction Site Drainage

Table C.2: Event Contingency Plan for Environmental Complaints

Step	Day	Action	Contractor	ER	ET	IEC
1	1	Party receiving complaint shall create a new complaint record. If the Contractor receives a complaint, he shall pass the information to the ER.	♦	♦	♦	
2	1	ER to ensure details of complaint provided to Contractor (if complaint not originally received by the Contractor), ET and IEC		♦		
3	2	Within 1 working day after the receipt of the Notification of Complaint, provide ER relevant works site information, e.g. types and locations of construction works.	♦			◊
4	2	Investigate the complaint to determine its validity, and to assess whether the source of the problem is due to the works activities. Report the validity of the complaint to ER.				♦◊
5	2	If complaint is valid and due to works, ER shall notify the Contractor. If complaint is invalid or not due to works, Go to Step 12.		♦		
6	2	Propose mitigation measures to ER within 1 working day of the receipt of the Notification.	♦			◊
7	2	Review and agree with the proposed mitigation measures and make recommendations where necessary.		♦◊		♦◊
8	2	Implement the mitigation measures once they have been agreed.	♦			
9	4	Audit the implementation of the proposed mitigation measures on site within 2 working days after measures have been agreed.		♦◊		♦◊
10	-	Undertake additional monitoring to verify the situation where necessary.			♦	
11	4	Report the investigation results and subsequent actions taken to ER within 2 working days after the implementation of mitigation measures.	♦		♦	
12	5	Respond to the complainant within 1 working day after receiving the investigation report.		♦		
13	25	If no further comments or complaints are received from the complainant within 20 working days after responding to the complainant, close the complaint record. If the complainant has further comments or complaints on the same issue, notify other parties on the same day and go to step 2.		♦		♦◊

Notes: ♦ Action Party

◊ Enter comments/ proposals into appropriate complaint record where applicable

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Appendix D. EM&A Schedule

Impact Monitoring and Audit Schedule for Nov 2009

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2 *1-hr TSP (x 1)*	3 *1-hr TSP (x 1)* *24-hr TSP*	4 *1-hr TSP (x 1)*	5 **site inspection**	6 *1-hr TSP (x 1)*	7
8	9 *1-hr TSP (x 1)* *24-hr TSP*	10	11 *1-hr TSP (x 1)*	12 **site inspection**	13 *1-hr TSP (x 1)*	14 *1-hr TSP (x 1)* *24-hr TSP*
15	16 *1-hr TSP (x 1)*	17	18 *1-hr TSP (x 1)*	19 **site inspection**	20 *1-hr TSP (x 1)* *24-hr TSP*	21
22	23 *1-hr TSP (x 1)*	24	25 *1-hr TSP (x 1)*	26 *1-hr TSP (x 1)* *24-hr TSP* **site inspection**	27 *1-hr TSP (x 1)*	28
29	30 *1-hr TSP (x 1)*					

Tentative Impact Monitoring and Audit Schedule for Dec 2009

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2 *1-hr TSP (x 1)* *24-hr TSP*	3	4 *1-hr TSP (x 1)*	5
6	7 *1-hr TSP (x 1)*	8 *1-hr TSP (x 1)* *24-hr TSP*	9 *1-hr TSP (x 1)*	10 **site inspection**	11 *1-hr TSP (x 1)*	12
13	14 *1-hr TSP (x 1)* *24-hr TSP*	15	16 *1-hr TSP (x 1)*	17 **site inspection**	18 *1-hr TSP (x 1)*	19 *1-hr TSP (x 1)* *24-hr TSP*
20	21 *1-hr TSP (x 1)*	22	23 *1-hr TSP (x 1)*	24 *1-hr TSP (x 1)* *24-hr TSP* **site inspection**	25 *Holiday*	26 *Holiday*
27	28 *1-hr TSP (x 1)*	29 *1-hr TSP (x 1)*	30 *1-hr TSP (x 1)* *24-hr TSP*	31 **site inspection**		

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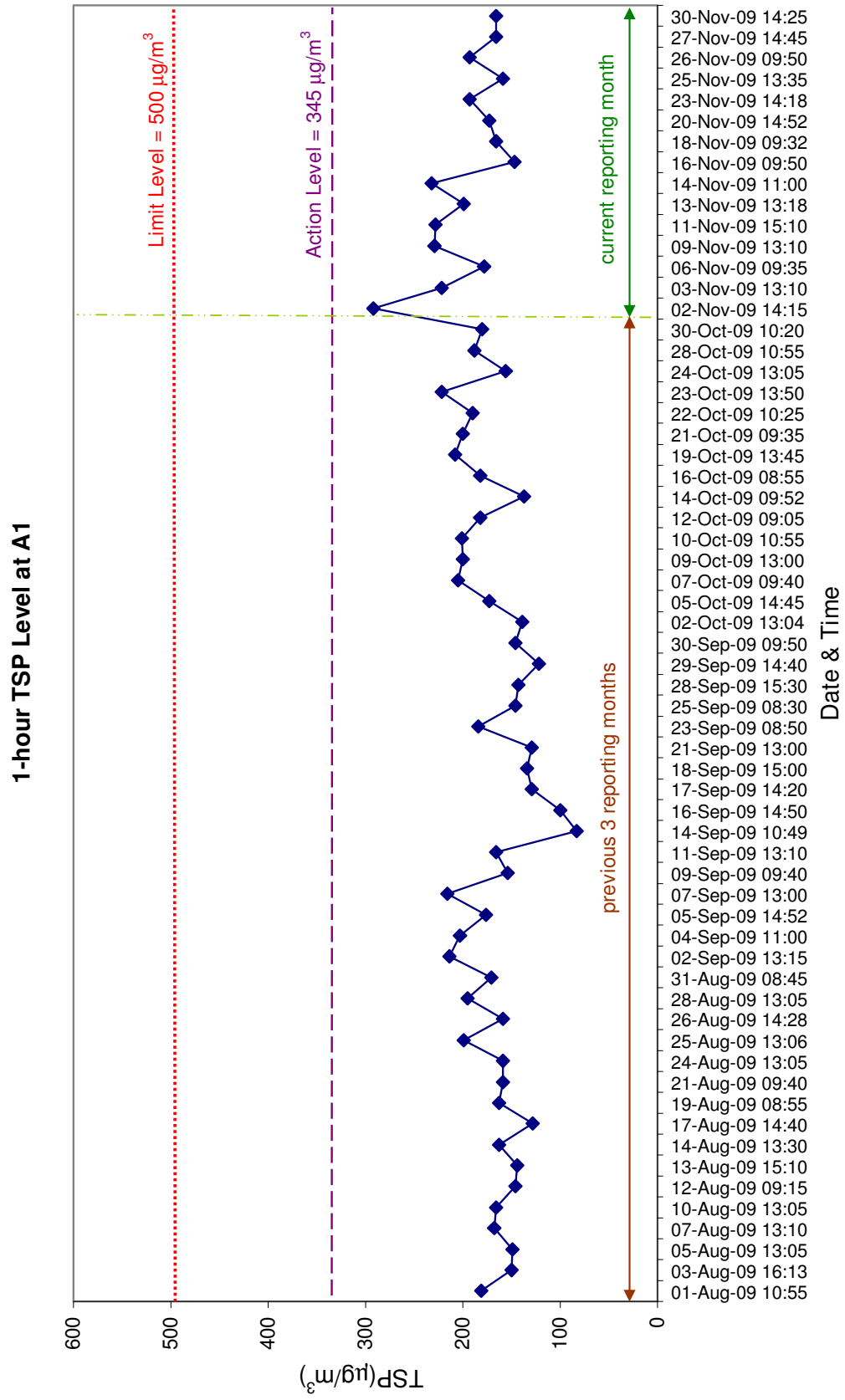
Appendix E. Air Quality Monitoring Results and Graphical Presentation

1-hour TSP Monitoring Results

Station A1

Date	Start Time	Finish Time	TSP Concentration (µg/m^3)	Weather Condition	Action Level (µg/m^3)	Limit Level (µg/m^3)
02-Nov-09	14:15	15:15	292	Fine	345	500
03-Nov-09	13:10	14:10	222	Fine	345	500
06-Nov-09	09:35	10:35	178	Sunny	345	500
09-Nov-09	13:10	14:10	229	Fine	345	500
11-Nov-09	15:10	16:10	228	Sunny	345	500
13-Nov-09	13:18	14:18	199	Fine	345	500
14-Nov-09	11:00	12:00	232	Cloudy	345	500
16-Nov-09	09:50	10:50	147	Cloudy	345	500
18-Nov-09	09:32	10:32	166	Cloudy	345	500
20-Nov-09	14:52	15:52	173	Fine	345	500
23-Nov-09	14:18	15:18	193	Fine	345	500
25-Nov-09	13:35	14:35	159	Sunny	345	500
26-Nov-09	09:50	10:50	193	Sunny	345	500
27-Nov-09	14:45	15:45	166	Cloudy	345	500
30-Nov-09	14:25	15:25	166	Sunny	345	500
		Min.	147			
		Max.	292			
		Average	196			


1-hour TSP Level at A1
Limit Level = 500 µg/m3
Action Level = 345 µg/m3
current reporting month
previous 3 reporting months
Date & Time
30-Nov-09 14:25
27-Nov-09 14:45
26-Nov-09 09:50
25-Nov-09 13:35
23-Nov-09 14:18
20-Nov-09 14:52
18-Nov-09 09:32
16-Nov-09 09:50
14-Nov-09 11:00
13-Nov-09 13:18
11-Nov-09 15:10
09-Nov-09 13:10
06-Nov-09 09:35
03-Nov-09 13:10
02-Nov-09 14:15
30-Oct-09 10:20
28-Oct-09 10:55
24-Oct-09 13:05
23-Oct-09 13:50
22-Oct-09 10:25
21-Oct-09 09:35
19-Oct-09 13:45
16-Oct-09 08:55
14-Oct-09 09:52
12-Oct-09 09:05
10-Oct-09 10:55
09-Oct-09 13:00
07-Oct-09 09:40
05-Oct-09 14:45
02-Oct-09 13:04
30-Sep-09 09:50
29-Sep-09 14:40
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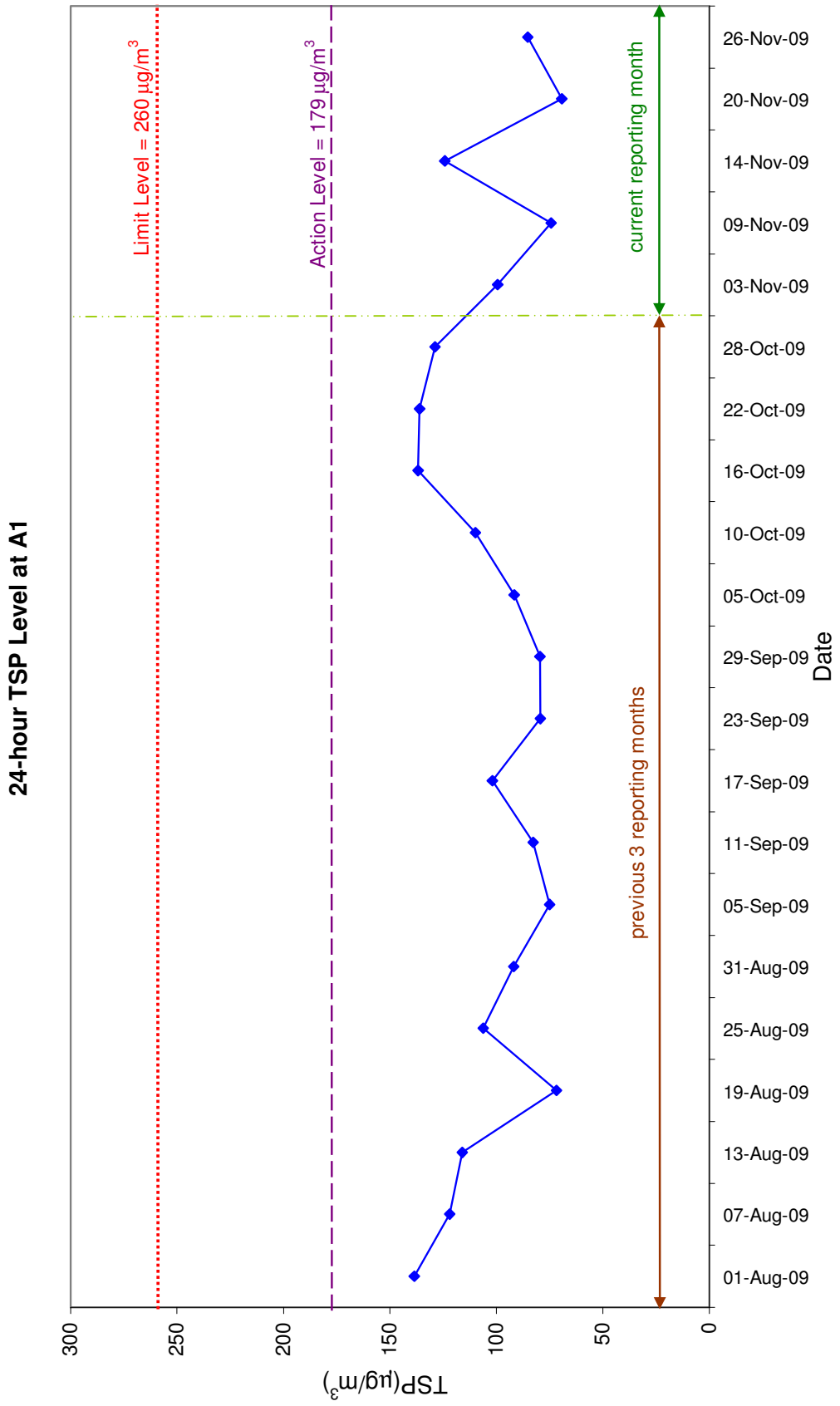
25-Sep-09 08:30
23-Sep-09 08:50
21-Sep-09 13:00
18-Sep-09 15:00
17-Sep-09 14:20
16-Sep-09 14:50
14-Sep-09 10:49
11-Sep-09 13:10
09-Sep-09 09:40
07-Sep-09 13:00
05-Sep-09 14:52
04-Sep-09 11:00
02-Sep-09 13:15
31-Aug-09 08:45
28-Aug-09 13:05
26-Aug-09 14:28
25-Aug-09 13:06
24-Aug-09 13:05
21-Aug-09 09:40
19-Aug-09 08:55
17-Aug-09 14:40
14-Aug-09 13:30
13-Aug-09 15:10
12-Aug-09 09:15
10-Aug-09 13:05
07-Aug-09 13:10
05-Aug-09 13:05
03-Aug-09 16:13
01-Aug-09 10:55
TSP(µg/m3)
600
500
400
300
200
100
0

24-hour TSP Monitoring Results

Station A1

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			Conc. ($\mu g/m^3$)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
03-Nov-09	14:10	04-Nov-09	14:10	2.8359	2.9924	17573.86	17597.86	24.00	1.0945	1.0945	1.0945	99	Fine	179	260
09-Nov-09	12:22	10-Nov-09	12:22	2.8756	2.9815	17597.86	17621.86	24.00	0.9910	0.9910	0.9910	74	Fine	179	260
14-Nov-09	10:30	15-Nov-09	10:30	2.8108	2.9938	17621.86	17645.86	24.00	1.0232	1.0232	1.0232	124	Cloudy	179	260
20-Nov-09	14:15	21-Nov-09	14:15	2.8205	2.9561	17645.86	17669.86	24.00	1.3601	1.3601	1.3601	69	Fine	179	260
26-Nov-09	11:15	27-Nov-09	11:15	2.8543	3.0087	17669.86	17693.86	24.00	1.2565	1.2565	1.2565	85	Sunny	179	260

Min	69
Max	124
Average	90


24-hour TSP Level at A1
Limit Level = 260 µg/m3
Action Level = 179 µg/m3
current reporting month
previous 3 reporting months
TSP(µg/m3)
300
250
200
150
100
50
0
Date
26-Nov-09
20-Nov-09
14-Nov-09
09-Nov-09
03-Nov-09
28-Oct-09
22-Oct-09
16-Oct-09
10-Oct-09
05-Oct-09
29-Sep-09
23-Sep-09
17-Sep-09
11-Sep-09
05-Sep-09
31-Aug-09
25-Aug-09
19-Aug-09
13-Aug-09
07-Aug-09
01-Aug-09

Appendix F. Calibration Certificates

This Appendix begins on the next page.

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 11 September 2009

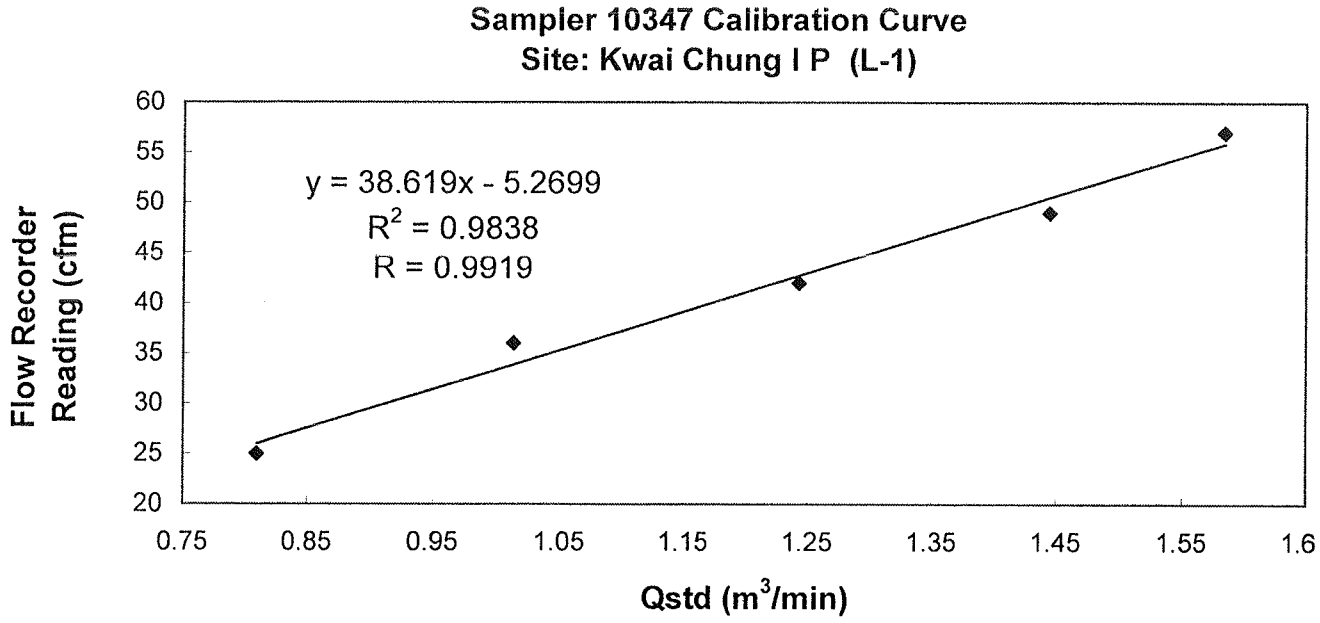
Serial No. : 9035 (ET / EA / 003 / 09)

Calibration Due Date : 10 November 2009

Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	57	49	42	36	25
Qstd (Actual flow rate, m^3/min)	1.58	1.45	1.24	1.01	0.81
Pressure : 758.31 mm Hg		Temp. : 301 K			



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies* / ~~does not comply~~* with the specified requirements and is deemed acceptable*/ ~~unacceptable~~* for use.

Calibrated by : Mak Kei Wai
MAK, Kei Wai
(Senior Technician)

Approved by :
CHOW, Hoi Tat
(Asst. Environmental Officer)

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 11 November 2009

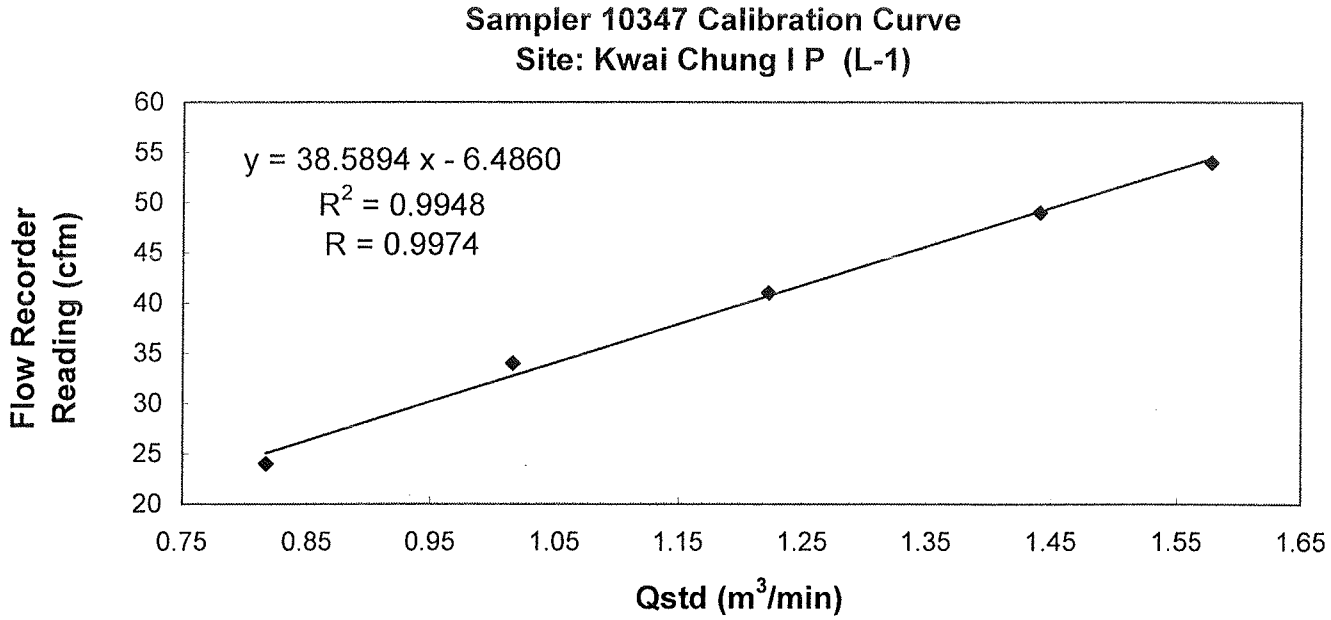
Serial No. : 9035 (ET / EA / 003 / 09)

Calibration Due Date : 10 January 2010

Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	54	49	41	34	24
Qstd (Actual flow rate, m^3/min)	1.58	1.44	1.22	1.02	0.82
Pressure : 757.56 mm Hg		Temp. : 306 K			



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies* / ~~does not comply~~* with the specified requirements and is deemed acceptable*/ ~~unacceptable~~* for use.

Calibrated by : _____
LI, Chi Kwan
(Technician)

Approved by : _____
LAW, Sau Yee
(Senior Environmental Officer)

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Internal Calibration Report of Dust Trak Monitor

Manufacturer : TSI - 8520 Dust Trak

Date of Calibration : 10 July 2009

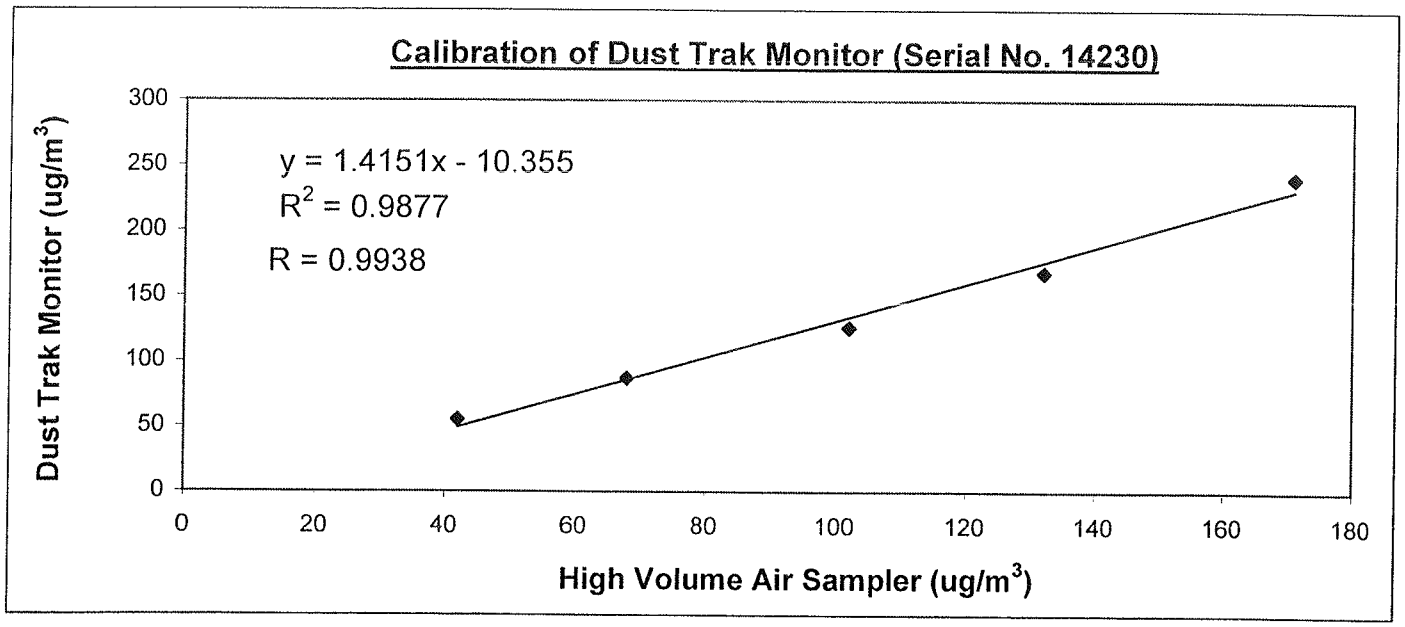
Serial No. : 14230 (ET/EA/001/04)

Due Date : 09 January 2010

Method : Parallel measurement (five-point calibration) by placing the Dust Trak Monitor and High Volume Air Samper together under the same environmental condition

Results :

Dust Trak Monitor (ug/m^3)	55	87	126	168	241
High Volume Air Sampler (ug/m^3)	42	68	102	132	171
High Volume Air Sampler Serail No.: 1178		Calibration Due Date: 29 August 2009			



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a five point calibration

The Dust Trak Monitor complies * / ~~does not comply~~ * with the internal calibration procedures and is deemed acceptable */ ~~unacceptable~~ * for use.

Calibrated by : CHOW, Hoi Tat (Assistant Environmental Officer)

Approved by : LAW, Sau Yee (Senior Environmental Officer)

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Internal Calibration Report of Dust Trak Monitor

Manufacturer : TSI - 8520 Dust Trak

Date of Calibration : 10 July 2009

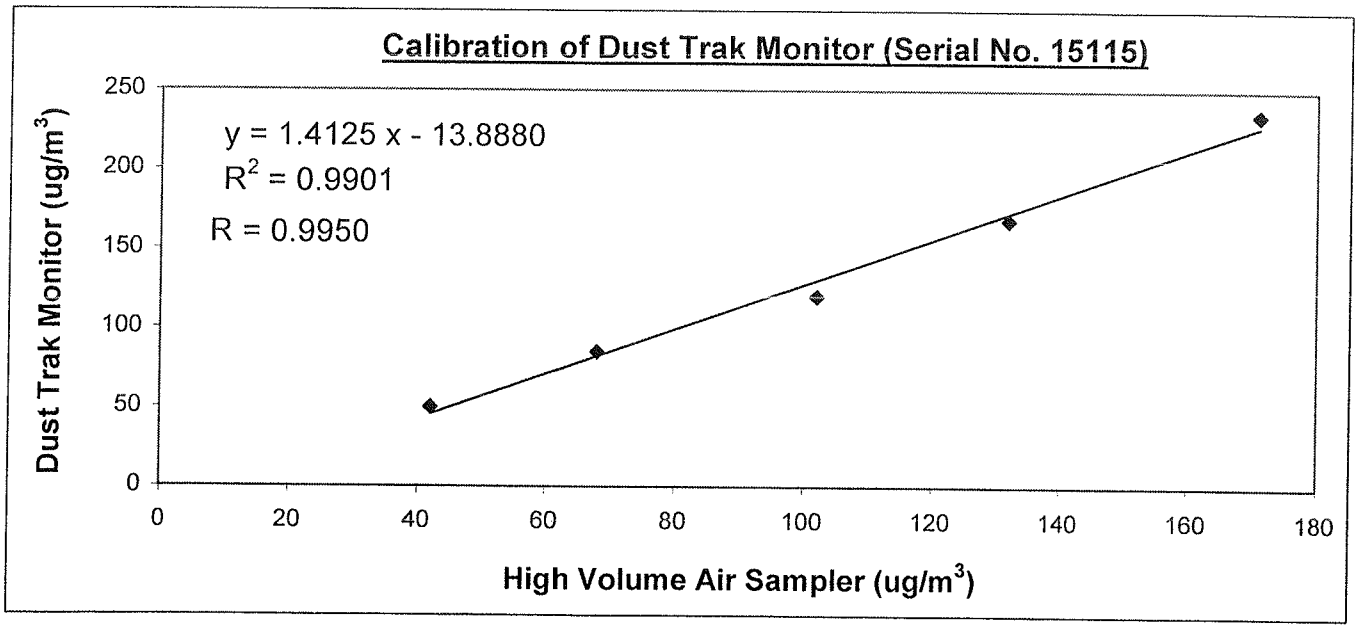
Serial No. : 15115 (ET/EA/001/02)

Calibration Due Date : 09 January 2010

Method : Parallel measurement (five-point calibration) by placing the Dust Trak Monitor and High Volume Air Samper together under the same environmental condition

Results :

Dust Trak Monitor (ug/m^3)	50	85	120	168	235
High Volume Air Sampler (ug/m^3)	42	68	102	132	171
Serail No of High Volume Air Sampler : 1178		Calibration Due Date: 29 August 2009			



Acceptance Criteria :
Correlation coefficient (r) of the calibration curve greater than 0.990 after a five point calibration

The Dust Trak Monitor complies * / ~~does not comply~~ * with the internal calibration procedures and is deemed acceptable */ ~~unacceptable~~ * for use.

Calibrated by : _____
CHOW, Hoi Tat
(Assistant Environmental Officer)

Approved by : _____
LAW, Sau Yee
(Senior Environmental Officer)

Appendix G. Works Programme

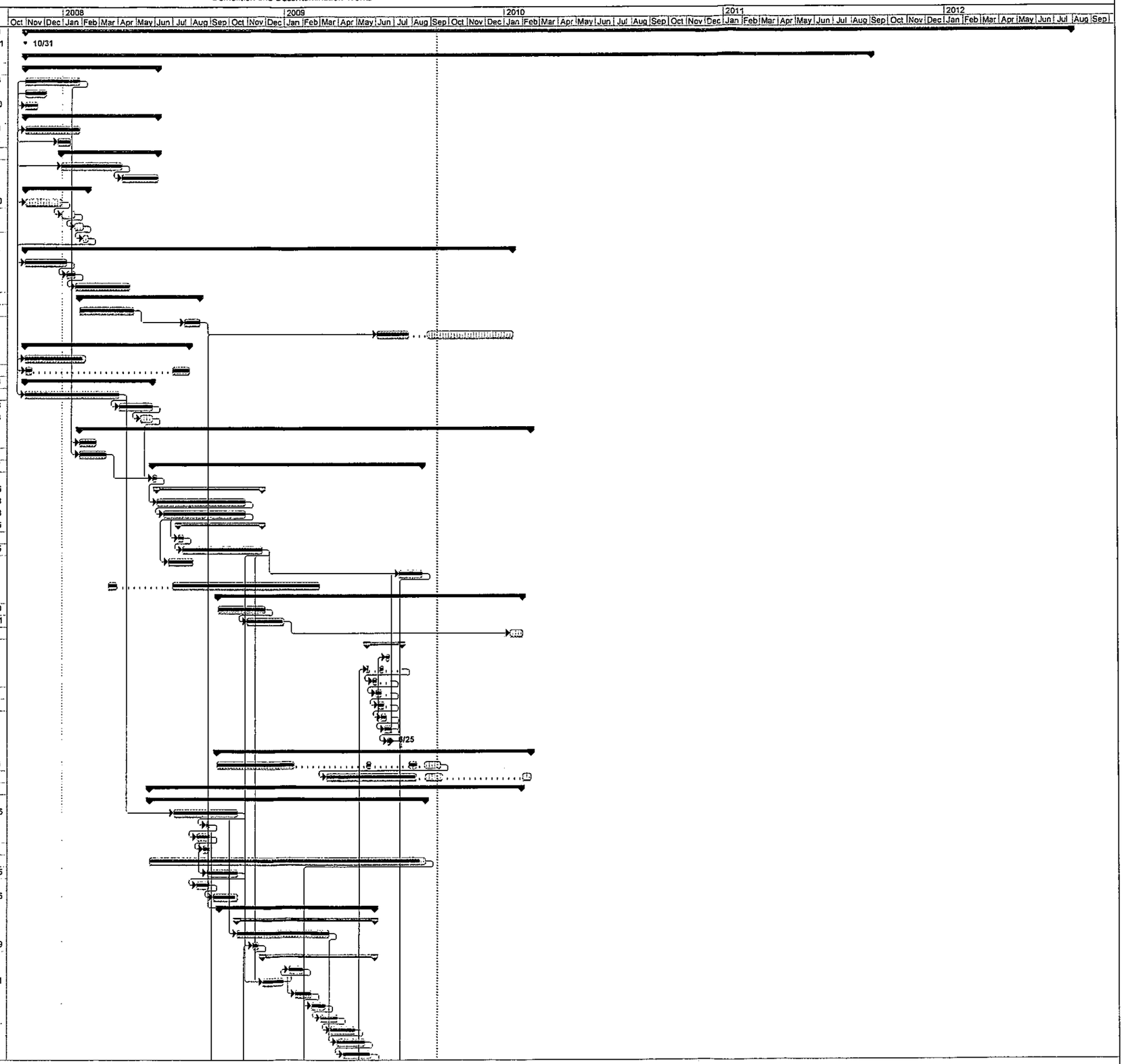
This Appendix begins on the next page.

Contract No. CV/2007/06

Master Works Programme
for
Kwai Chung Incineration Plant
Demolition and Decontamination Works

Commencement Date : 31 October 2007
Section 1 Completion Date : 3 Sept 2011
Section 2 Completon Date : 29 July 2012

ID	Task Name	Duration	Start	Finish
1	Working Programme Section 1 & 2 (1734 days)	1734 days	Wed 07/10/31	Sun 12/7/29
2	Possession of site	0 days	Wed 07/10/31	Wed 07/10/31
3	Section 1 (1404 days)	1403 days	Wed 07/10/31	Fri 11/9/2
4	A : Preparation and Submission	220 days	Wed 07/10/31	Fri 08/6/6
5	A1 Waste Management Plan	90 days	Wed 07/10/31	Mon 08/1/28
6	A2 Safety Plan	35 days	Wed 07/10/31	Tue 07/12/4
7	A3 EMP & TTS	21 days	Wed 07/10/31	Tue 07/11/20
8	A4. Initial, Condition Survey & Baseline Test	220 days	Wed 07/10/31	Fri 08/6/6
9	A4.1 Initial Survey for Portion A & B	90 days	Wed 07/10/31	Mon 08/1/28
10	A4.2 Baseline Test (Submission, Set Up & Report)	21 days	Mon 07/12/24	Sun 08/1/13
11	A4.2 Condition Survey for existing structure building	160 days	Sun 07/12/30	Fri 08/6/6
12	A4.2.1 Structure Building	100 days	Sun 07/12/30	Mon 08/4/7
13	A4.2.1 Chimney	60 days	Tue 08/4/8	Fri 08/6/6
14	A5 Excavation Permit	103 days	Thu 07/11/1	Mon 08/2/11
15	A5.1 TTM Submission	60 days	Thu 07/11/1	Sun 07/12/30
16	A5.2 Transport Department and Police Consent for TTM	21 days	Mon 07/12/31	Sun 08/1/20
17	A5.3 Apply Excavation Permit (XP) form Highways Department	14 days	Mon 08/1/21	Sun 08/2/3
18	A5.4 XP Approval	8 days	Mon 08/2/4	Mon 08/2/11
19	B. Preliminaries works	807 days	Wed 07/10/31	Thu 10/1/14
20	B1 Site Clearance & Tree Survey and Felling	69 days	Wed 07/10/31	Mon 08/1/7
21	B2 Repair of Existing Paving	14 days	Tue 08/1/8	Mon 08/1/21
22	B3 Locating, Protecting and Sealing off Existing Utilities	90 days	Tue 08/1/22	Sun 08/4/20
23	B4 Barging Point at portion B	200 days	Tue 08/1/29	Fri 08/8/15
24	B4.1 Submission to Marine Department for Approval	90 days	Tue 08/1/29	Sun 08/4/27
25	B4.2 Erection of Barging Point	26 days	Mon 08/7/21	Fri 08/8/15
26	B5 Disposal of C&D Materials	195 days	Wed 09/6/3	Thu 10/1/14
27	B6 Site Offices for The Engineer/Contractor Setting up	273 days	Wed 07/10/31	Tue 08/7/29
28	B6.1 Erection of RE's Office	100 days	Wed 07/10/31	Thu 08/2/7
29	B6.2 Erection of Contractor Offices	40 days	Thu 07/11/1	Tue 08/7/29
30	C: Submit Design , Erection of Hoarding Type C & F	211 days	Wed 07/10/31	Wed 08/5/28
31	C.1 Hoarding and Covered Walkway (Include Re-submission)	156 days	Wed 07/10/31	Thu 08/4/3
32	C.2 Erection of Hoarding type F	55 days	Fri 08/4/4	Wed 08/5/28
33	C.3 Erection of Hoarding type C	20 days	Fri 08/5/9	Wed 08/5/28
34	D: Removal DCM & ACM	747 days	Tue 08/1/29	Sat 10/2/13
35	D.1 28 days Notice to Labour Department and EPD	28 days	Tue 08/1/29	Mon 08/2/25
36	D.2 Method Statement of Removal of ACM to EPD for Approval	45 days	Tue 08/1/29	Thu 08/3/13
37	D.3 Asbestos Removal Works	446 days	Wed 08/5/28	Mon 09/8/17
38	D3.1 Preliminary Decontamination	7 days	Wed 08/5/28	Wed 08/6/4
39	D3.2 Main Building	174 days	Thu 08/6/5	Tue 08/11/25
40	1. Erection of scaffolding and working platform	146 days	Thu 08/6/5	Tue 08/10/28
41	2. Setting up the Hygiene Unit for Asbestos removal	135 days	Mon 08/6/16	Tue 08/10/28
42	3. Removal of ACM Cladding	138 days	Fri 08/7/11	Tue 08/11/25
43	3.1 Roof of Refuse Reception Bay	9 days	Fri 08/7/11	Sat 08/7/19
44	3.2 External walls	131 days	Fri 08/7/18	Tue 08/11/25
45	D3.3 Office blocks	42 days	Tue 08/6/24	Mon 08/8/4
46	D3.4 Chimney - G/F to Platform 7 and Louvers	39 days	Fri 09/7/10	Mon 09/8/17
47	D.4 Method Statement of Removal of DCM to EPD for Approval	257 days	Mon 08/3/17	Sat 09/2/28
48	D.5 Removal of DCM	504 days	Sun 08/9/14	Sat 10/1/30
49	D.5.1 Preliminary Decontamination & Pilot Test	78 days	Sun 08/9/14	Sun 08/11/30
50	D.5.2 Ashing Bay	62 days	Fri 08/10/31	Wed 08/12/31
51	D.5.3 Ash Bunker at -5m	21 days	Sun 10/1/10	Sat 10/1/30
52	D.5.4 Chimney - DCM	58 days	Mon 09/5/18	Tue 09/7/14
53	1. Platform No. 7 (+146.4 to +149.8 Top)	6 days	Thu 09/6/18	Tue 09/6/23
54	2. Platform No. 6 (+125.9 to +146.4)	8 days	Mon 09/5/18	Tue 09/7/14
55	3. Platform No. 5 (+101.4 to 125.9)	7 days	Wed 09/5/27	Thu 09/6/25
56	4. Platform No. 4 (+78.9 to 101.4)	10 days	Mon 09/6/1	Thu 09/6/25
57	5. Platform No. 3 (+50.4 to 78.9)	10 days	Fri 09/6/5	Thu 09/6/25
58	6. Platform No. 2 (+33.9 to 50.4)	9 days	Wed 09/6/10	Fri 09/6/26
59	7. Platform No. 1 (+11.4 to 33.9)	11 days	Tue 09/6/16	Fri 09/6/26
60	8. Base of Chimney to +11.4	5 days	Sun 09/6/21	Thu 09/6/25
61	D.6 Disposal of Chemical Contaminated Wastes	520 days	Fri 08/9/12	Sat 10/2/13
62	D.6.1 Disposal of Asbestos Wastes	175.4 days	Fri 08/9/12	Wed 09/9/16
63	D.6.2 Disposal of Dioxin Wastes	190 days	Fri 09/3/13	Sat 10/2/13
64	E : Demolition Works	615 days	Sat 08/5/24	Thu 10/1/28
65	E1 Demolition Plans and Method Statements	456 days	Sat 08/5/24	Sat 09/8/22
66	E1.1 Main Plant	105 days	Thu 08/7/3	Wed 08/10/15
67	E1.2 Weighbridge Office	5 days	Tue 08/8/26	Sat 08/8/30
68	E1.3 Site Office and Store Building	20 days	Mon 08/8/11	Sat 08/8/30
69	E1.4 Link Footbridge	10 days	Thu 08/8/21	Sat 08/8/30
70	E1.5 Chimney	456 days	Sat 08/5/24	Sat 09/8/22
71	E1.6 Up Ramp	50 days	Wed 08/8/27	Wed 08/10/15
72	E1.7 Down Ramp	20 days	Mon 08/8/11	Sat 08/8/30
73	E1.8 Boundary Walls	40 days	Sat 08/9/6	Wed 08/10/15
74	E2 Buildings and Other Structures	257 days	Tue 08/9/16	Sat 09/5/30
75	E2.1 Main Plant	228 days	Wed 08/10/15	Sat 09/5/30
76	1. Installation of Temporary Platform	153 days	Wed 08/10/15	Mon 09/3/16
77	2. Demolition of Down Ramp	10 days	Mon 08/11/10	Wed 08/11/19
78	3. Demolition	185 days	Thu 08/11/27	Sat 09/5/30
79	1. Demolition of Ashing Bay	24 days	Fri 09/1/9	Sun 09/2/1
80	2. Demolition of Refuse Reception Bay	35 days	Thu 08/11/27	Wed 08/12/31
81	3. Removal of the precast concrete units at Roof Level	27 days	Tue 09/1/20	Sun 09/2/15
82	4. Removal of steel structure at Roof Level	23 days	Mon 09/2/16	Tue 09/3/10
83	5. Demolition of Brickwall & External RC Wall	29 days	Tue 09/3/3	Tue 09/3/31
84	6. Removal of the Steel Structure from Roof to 1/F	41 days	Thu 09/3/19	Tue 09/4/28
85	7. Demolition of Charge Hopper Floor & Bulky Shear Floor	46 days	Mon 09/3/30	Thu 09/5/14
86	8. Demolition of Bunker Walls	46 days	Fri 09/4/10	Mon 09/5/25



Version 6
Date: 2009/9/8

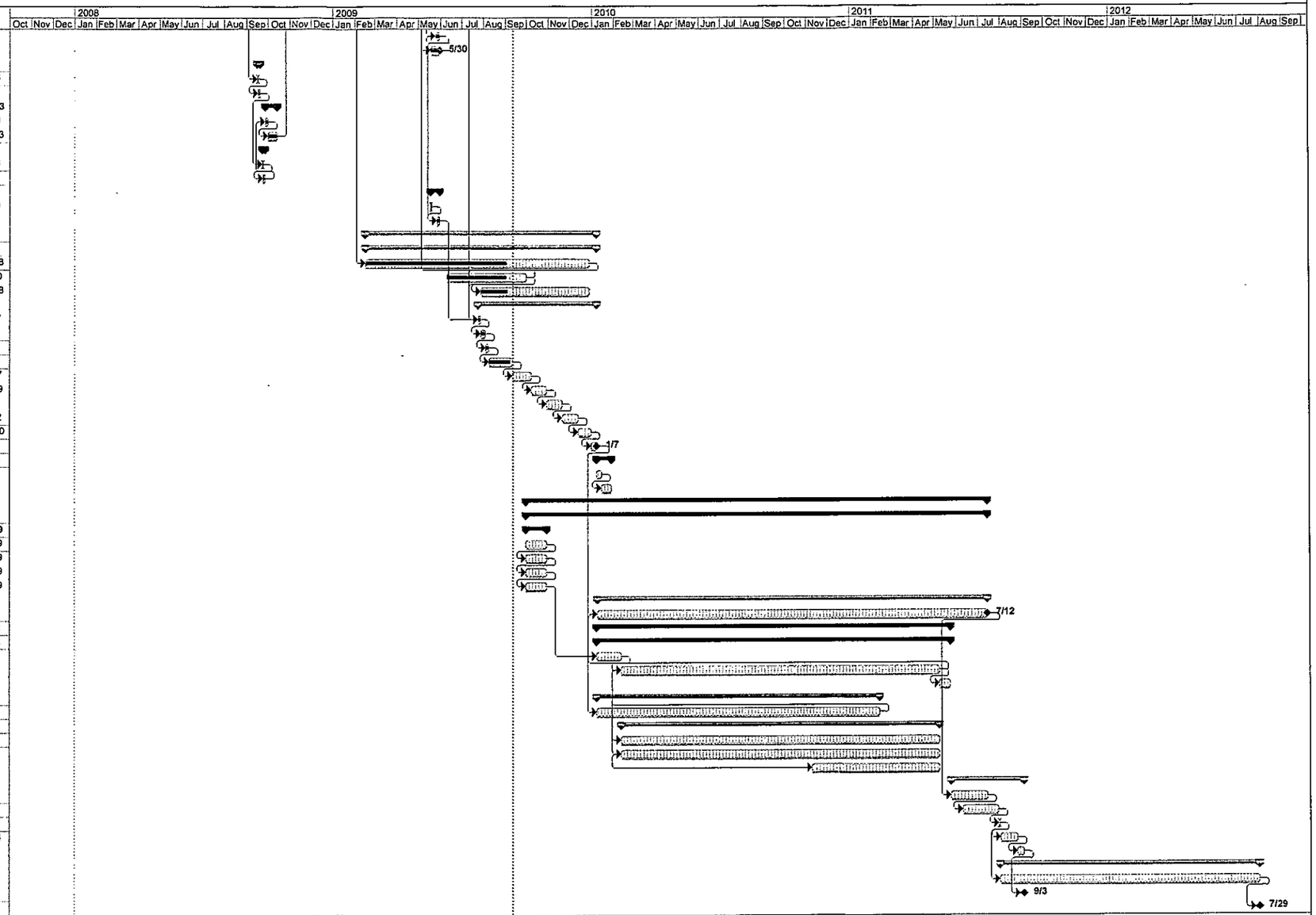
Task Split Progress Milestone Summary Project Summary

Contract No. CV/2007/06

Master Works Programme
for
Kwai Chung Incineration Plant
Demolition and Decontamination Works

Commencement Date : 31 October 2007
Section 1 Completion Date : 3 Sept 2011
Section 2 Completon Date : 29 July 2012

ID	Task Name	Duration	Start	Finish
87	9. Demolition of Ancillary Block	6 days	Mon 09/5/25	Sat 09/5/30
88	10. Demolition of G/F & remaining R.C. Structures	13 days	Mon 09/5/18	Sat 09/5/30
89	E2.2 Weighbridge Office	4 days	Tue 08/9/16	Fri 08/9/19
90	1. Installation of precautionary measures	1 day	Tue 08/9/16	Tue 08/9/16
91	2. Demolition	3 days	Wed 08/9/17	Fri 08/9/19
92	E2.3 Site Office and Store Building	17 days	Sat 08/9/27	Mon 08/10/13
93	1. Installation of precautionary measures	4 days	Sat 08/9/27	Tue 08/9/30
94	2. Demolition	13 days	Wed 08/10/1	Mon 08/10/13
95	E2.4 Link Footbridge	4 days	Tue 08/9/23	Fri 08/9/26
96	1. Installation of precautionary measures	1 day	Tue 08/9/23	Tue 08/9/23
97	2. Demolition	3 days	Wed 08/9/24	Fri 08/9/26
98	E2.5 Up Ramp	13 days	Mon 09/5/18	Sat 09/5/30
99	1. Installation of precautionary measures	2 days	Mon 09/5/18	Tue 09/5/19
100	2. Demolition	4 days	Wed 09/5/27	Sat 09/5/30
101	E3 Chimney	326 days	Mon 09/2/16	Thu 10/1/7
102	E3.1 Installation of precautionary measures	326 days	Mon 09/2/16	Thu 10/1/7
103	1. Erection of Internal Working Platforms	316 days	Mon 09/2/16	Mon 09/12/28
104	2. Fabrication of Catch Fans	113 days	Wed 09/6/10	Wed 09/9/30
105	3. Modification & Erection of Catch Fan	154 days	Tue 09/7/28	Mon 09/12/28
106	5. Demolition	168 days	Fri 09/7/24	Thu 10/1/7
107	1. Roof Slab	4 days	Fri 09/7/24	Mon 09/7/27
108	2. Roof Parapet + Remaining Slab	7 days	Tue 09/7/28	Mon 09/8/3
109	3. Wall Segment + Louvers	5 days	Tue 09/8/4	Sat 09/8/8
110	4. Wall Segment (+120.8 to 143.3)	33 days	Sun 09/8/9	Thu 09/9/10
111	5. Wall Segment (+100.7 to 120.8)	27 days	Fri 09/9/11	Wed 09/10/7
112	6. Wall Segment (+75.7 to 100.7)	22 days	Thu 09/10/8	Thu 09/10/29
113	7. Wall Segment (+51.7 to 75.7)	22 days	Fri 09/10/30	Fri 09/11/20
114	8. Wall Segment (+27.0 to 51.7)	22 days	Sat 09/11/21	Sat 09/12/12
115	9. Wall Segment (+10.3 to 27.0)	18 days	Sun 09/12/13	Wed 09/12/30
116	10. Wall Segment (Ground to +10.3)	6 days	Thu 09/12/31	Thu 10/1/7
117	E4 Boundary Walls	21 days	Fri 10/1/8	Thu 10/1/28
118	1. Installation of precautionary measures	7 days	Fri 10/1/8	Thu 10/1/14
119	2. Demolition	14 days	Fri 10/1/15	Thu 10/1/28
120	F: Ground Decontamination Works	651 days	Wed 09/9/30	Tue 11/7/12
121	F1. Submission, Backfilling & Disposal of Treated Materials	651 days	Wed 09/9/30	Tue 11/7/12
122	F1.1 Submission	30 days	Wed 09/9/30	Thu 09/10/29
123	1.Remediation Plan	30 days	Wed 09/9/30	Thu 09/10/29
124	2.Excavation and Excavated Material Management Plan	30 days	Wed 09/9/30	Thu 09/10/29
125	3.Health and Safety Plan for Ground Decontamination	30 days	Wed 09/9/30	Thu 09/10/29
126	4. Submission for Cement Solidification/Stabilization	30 days	Wed 09/9/30	Thu 09/10/29
127	F1.2 Backfilling & Disposal	550 days	Sat 10/1/9	Tue 11/7/12
128	1. Backfilling & Disposal of Treated Materials	550 days	Sat 10/1/9	Tue 11/7/12
129	F2. Setting up, Operation, Excavation & Treatment	500 days	Fri 10/1/8	Sun 11/5/22
130	F2.1 Cement solidification/stabilization	500 days	Fri 10/1/8	Sun 11/5/22
131	1. Setting up of plant and associated facilities	35 days	Fri 10/1/8	Thu 10/2/11
132	2. Operation and maintenance of plant	450 days	Fri 10/2/12	Sat 11/5/7
133	3. Decommissioning of plant	15 days	Sun 11/5/8	Sun 11/5/22
134	F2.2 Ground Excavation	400 days	Fri 10/1/8	Fri 11/2/11
135	1. Excavation & Demolition of Foundation	400 days	Fri 10/1/8	Fri 11/2/11
136	F2.3 Treatment	450 days	Fri 10/2/12	Sat 11/5/7
137	1. Heavy metals contaminated material (52400 cu.m)	450 days	Fri 10/2/12	Sat 11/5/7
138	2. Heavy metals & Hydrocarbons contamination material (3980 cu.m.	450 days	Fri 10/2/12	Sat 11/5/7
139	3. Hydrocarbons contaminated material (1440 cu.m.)	180 days	Tue 10/11/9	Sat 11/5/7
140	G : Others works	102 days	Tue 11/5/24	Fri 11/9/2
141	G.1. Leveling	50 days	Tue 11/5/24	Tue 11/7/12
142	G.2. Drainage Works	50 days	Thu 11/6/9	Thu 11/7/28
143	G.3. Hydroseeding Works	2 days	Fri 11/7/29	Sat 11/7/30
144	G.4. Reinstatement Works	24 days	Mon 11/8/1	Wed 11/8/24
145	G.5. Site Clearance	9 days	Thu 11/8/25	Fri 11/9/2
146	Section 2 - Establishment Works	365 days	Sun 11/7/31	Sun 12/7/29
147	1. General Establishment Works and Post-planting Fertilization	365 days	Sun 11/7/31	Sun 12/7/29
148	Completion of Section 1	0 days	Sat 11/9/3	Sat 11/9/3
149	Completion of Section 2	0 days	Sun 12/7/29	Sun 12/7/29



Version 6
Date: 2009/9/8

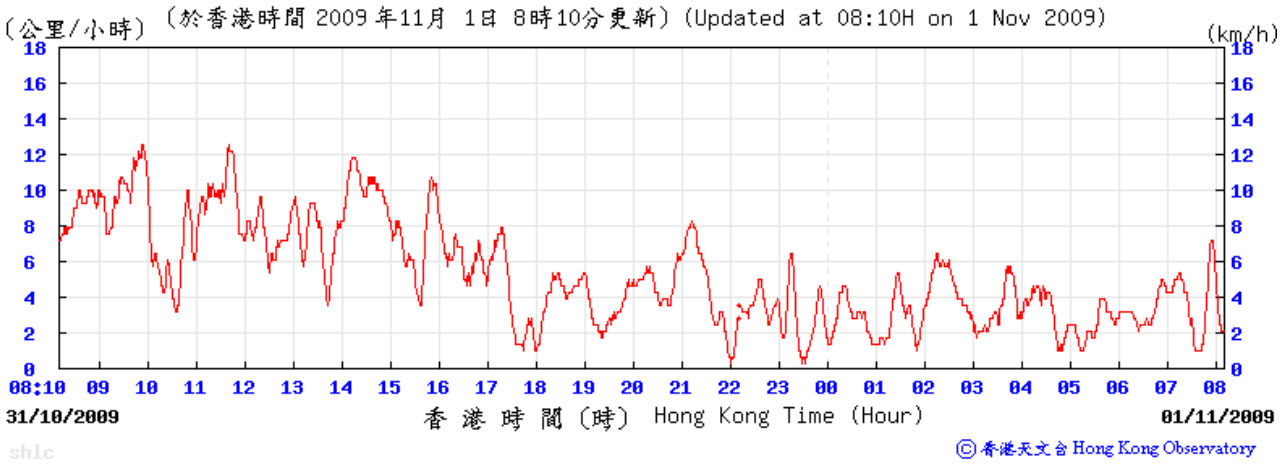
Task Split Progress Milestone Summary Project Summary

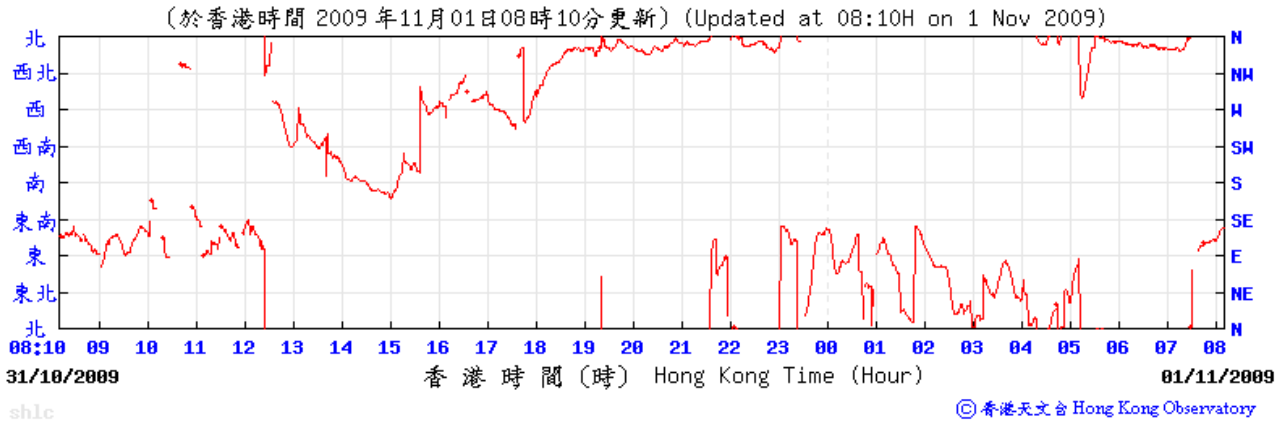
Appendix H. Weather Information from HKO

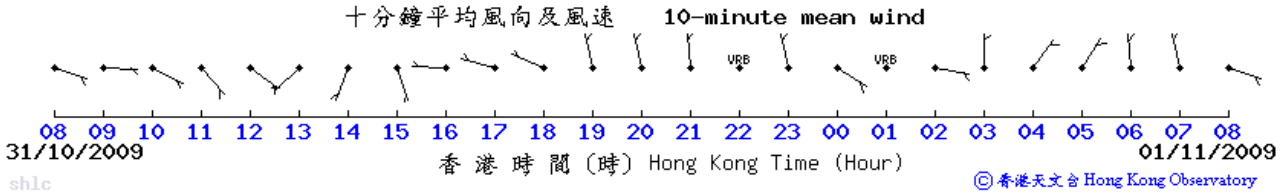
This Appendix begins on the next page.

Wind Data for Tsing Yi

1 Nov 2009

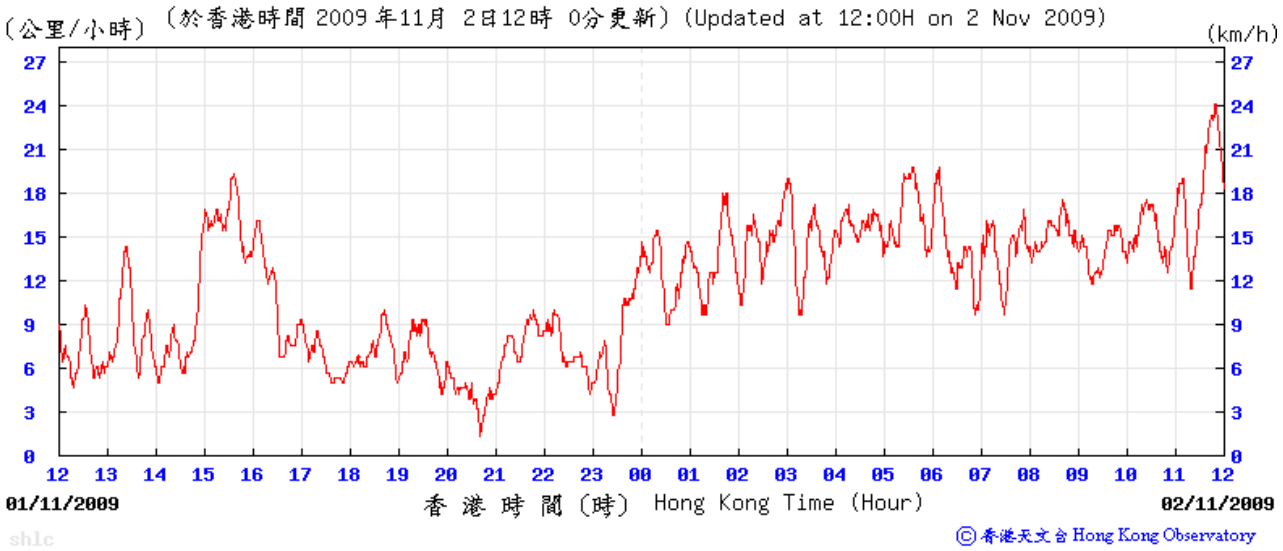


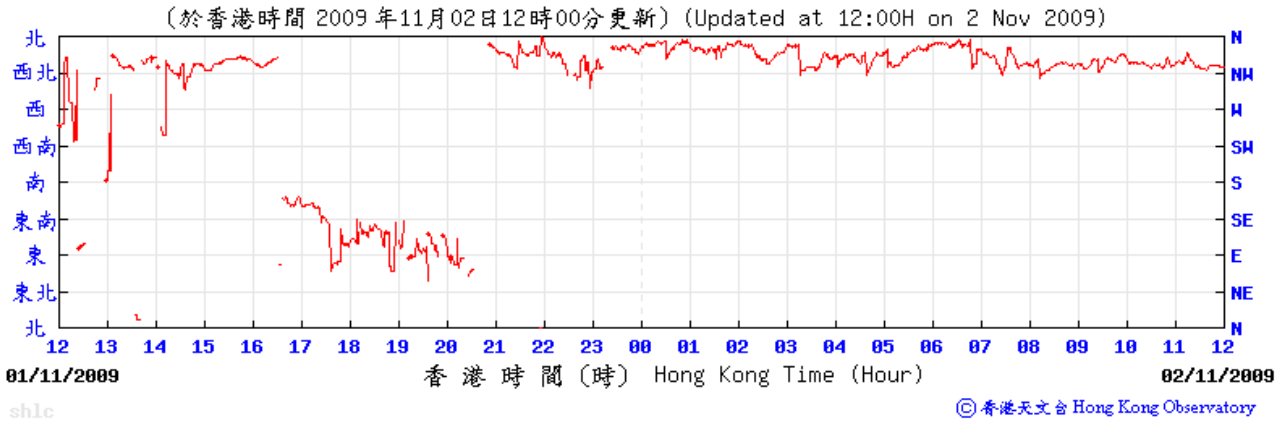


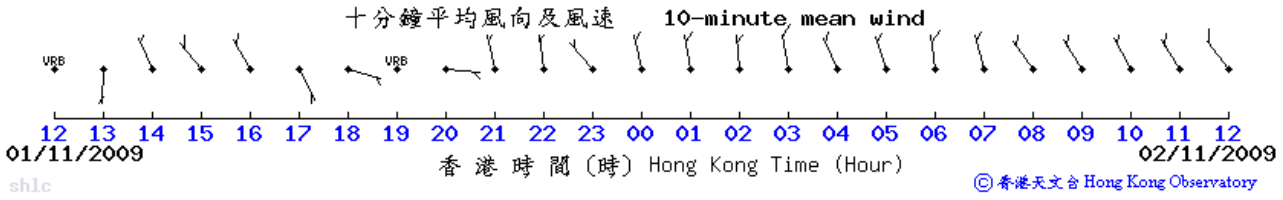


Wind Data for Tsing Yi

2 Nov 2009

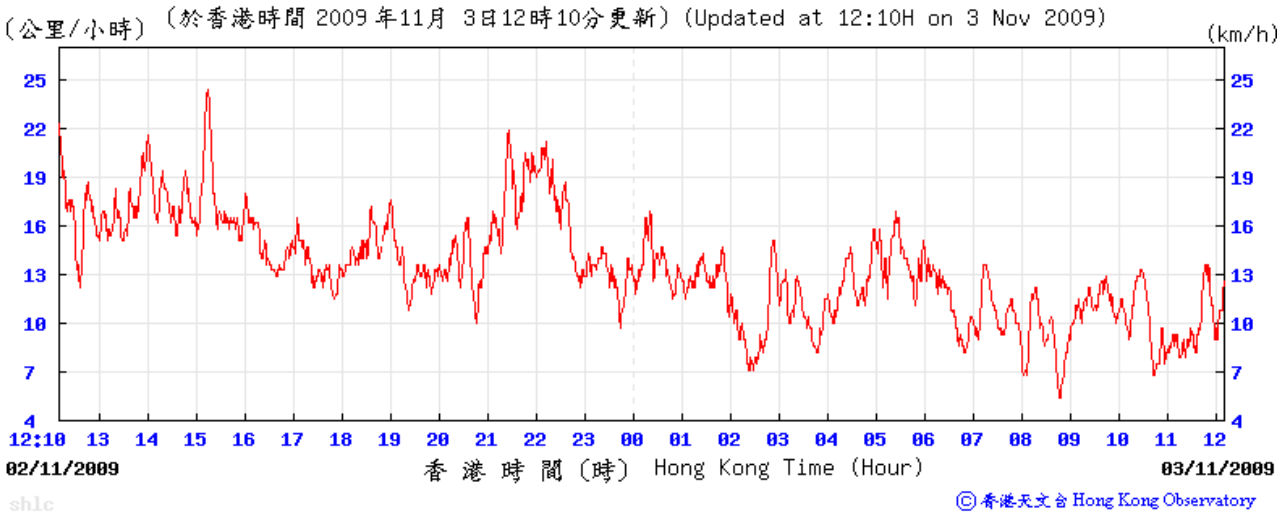


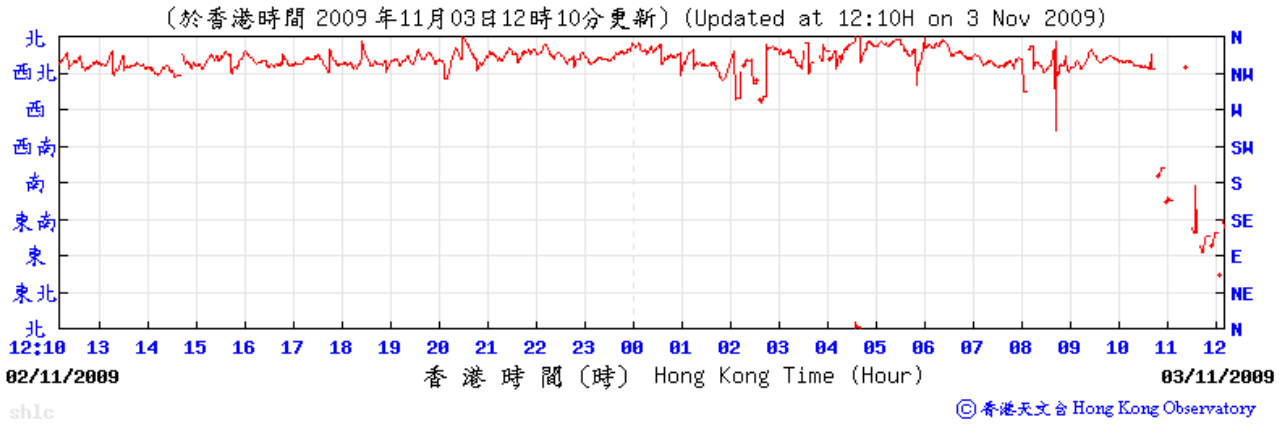


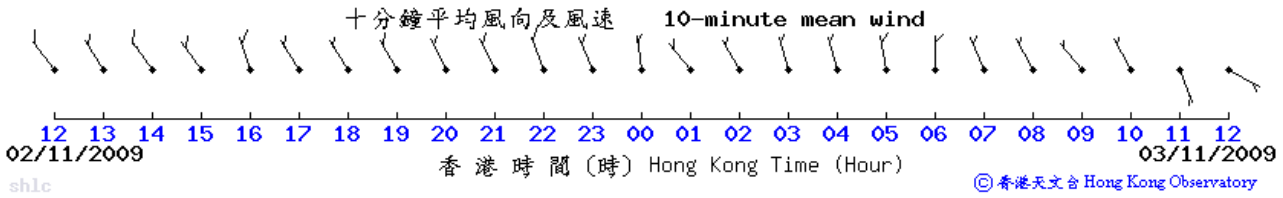


Wind Data for Tsing Yi

3 Nov 2009

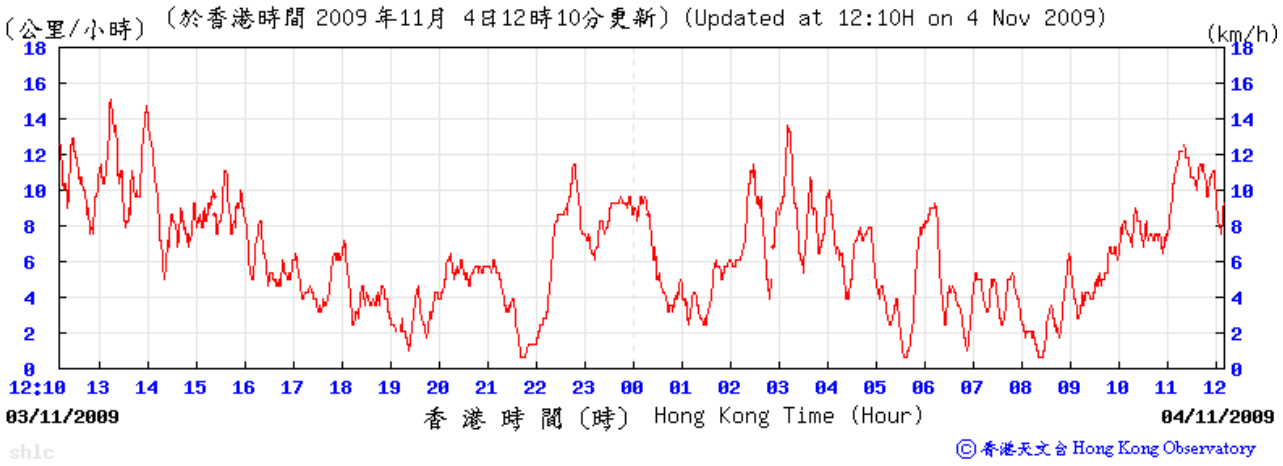


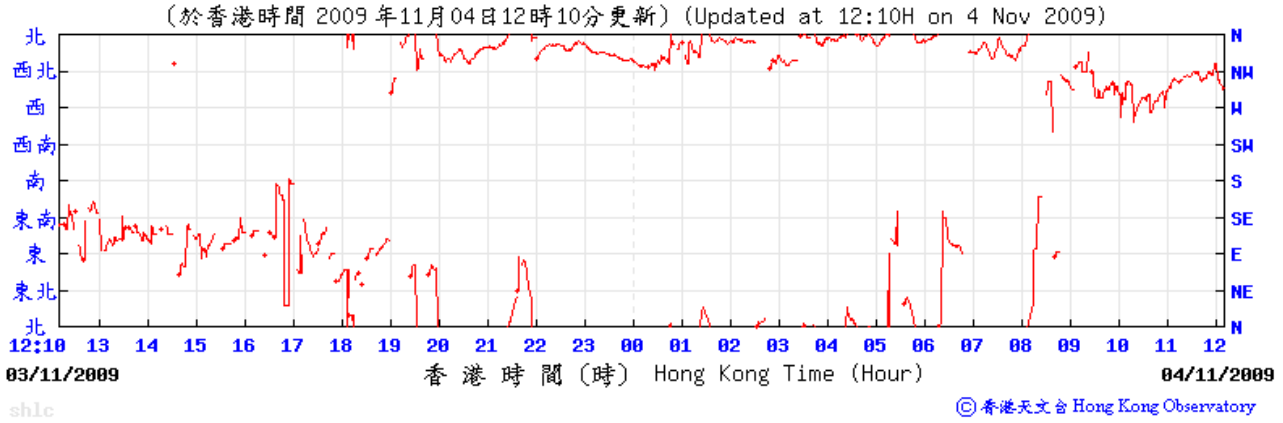


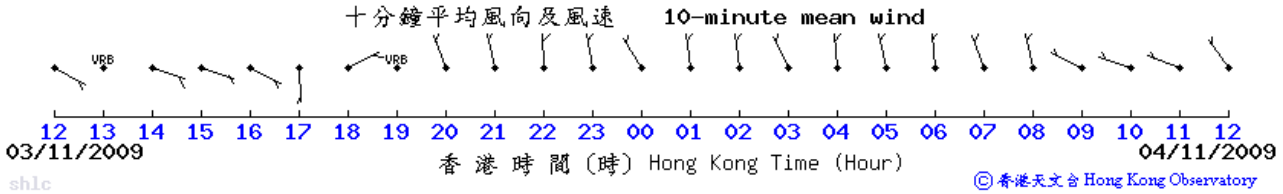


Wind Data for Tsing Yi

4 Nov 2009

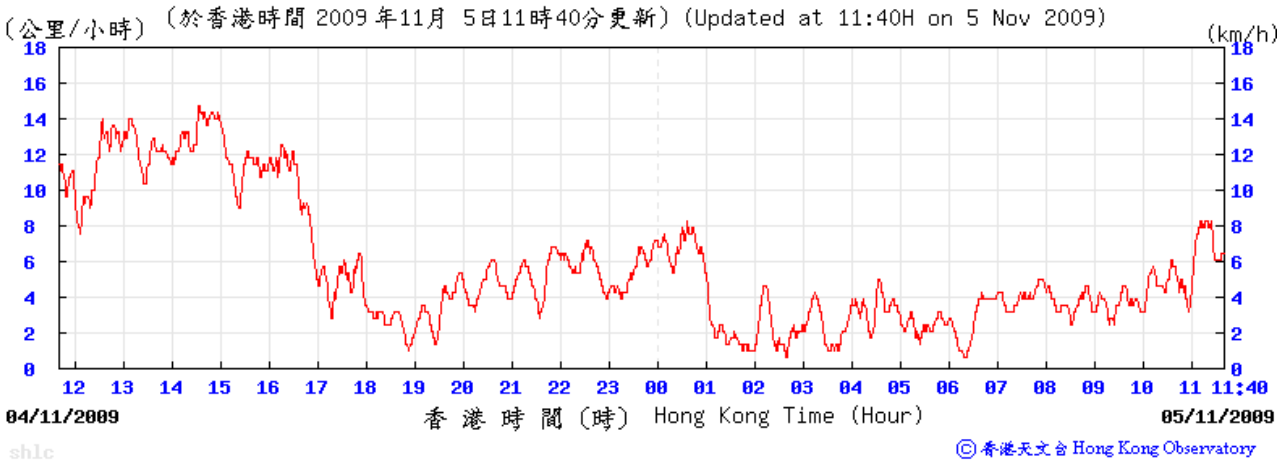


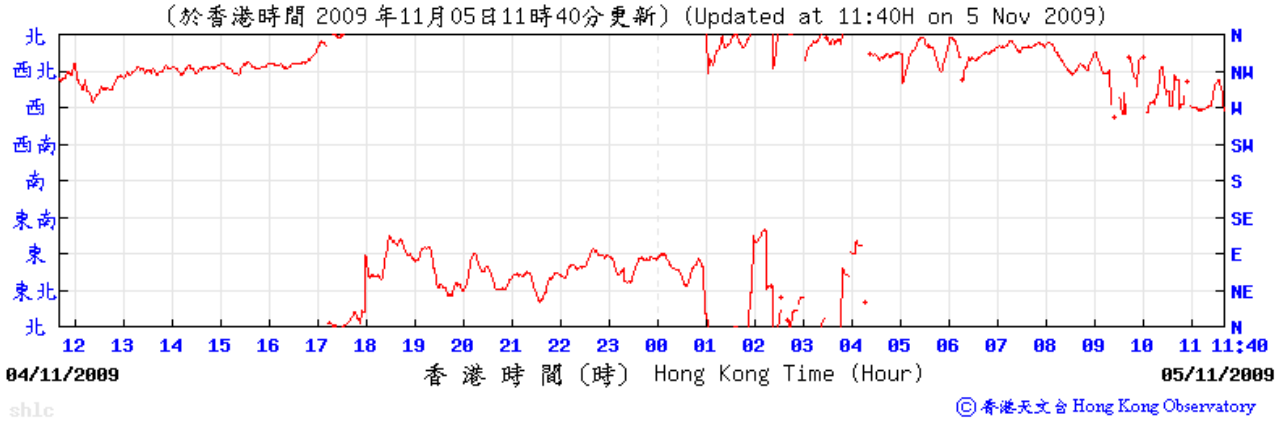


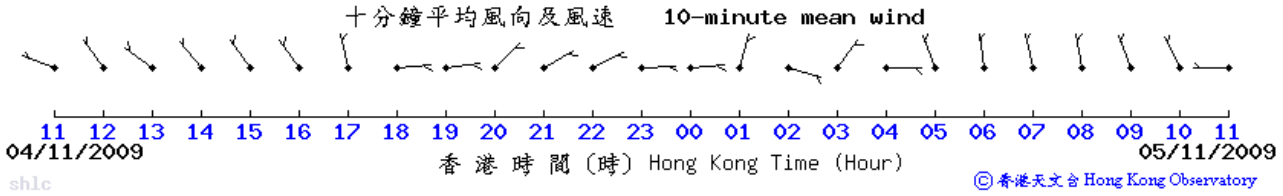


Wind Data for Tsing Yi

5 Nov 2009

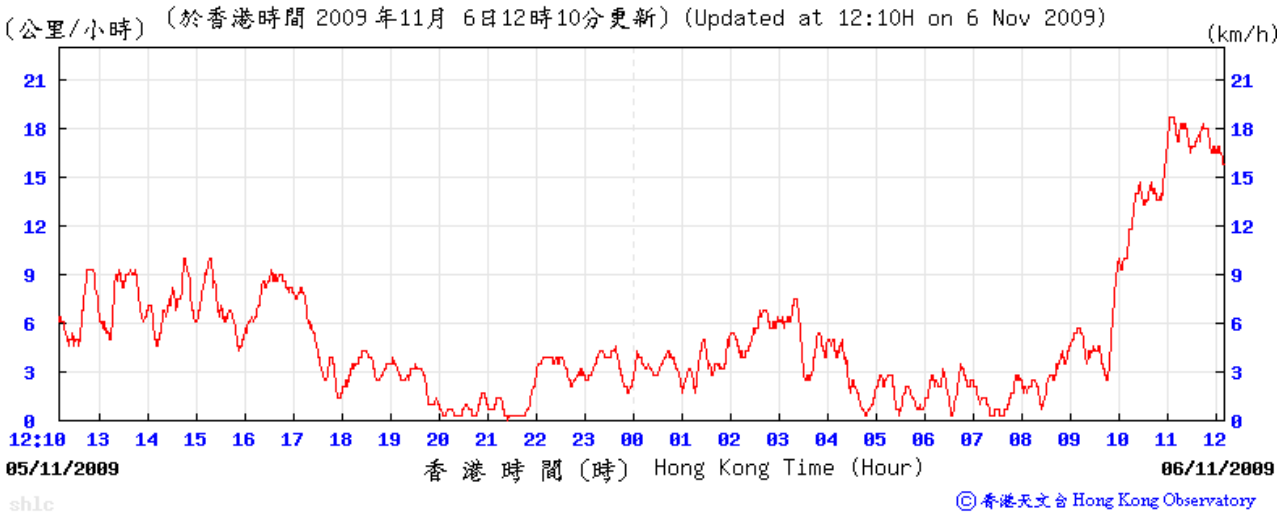


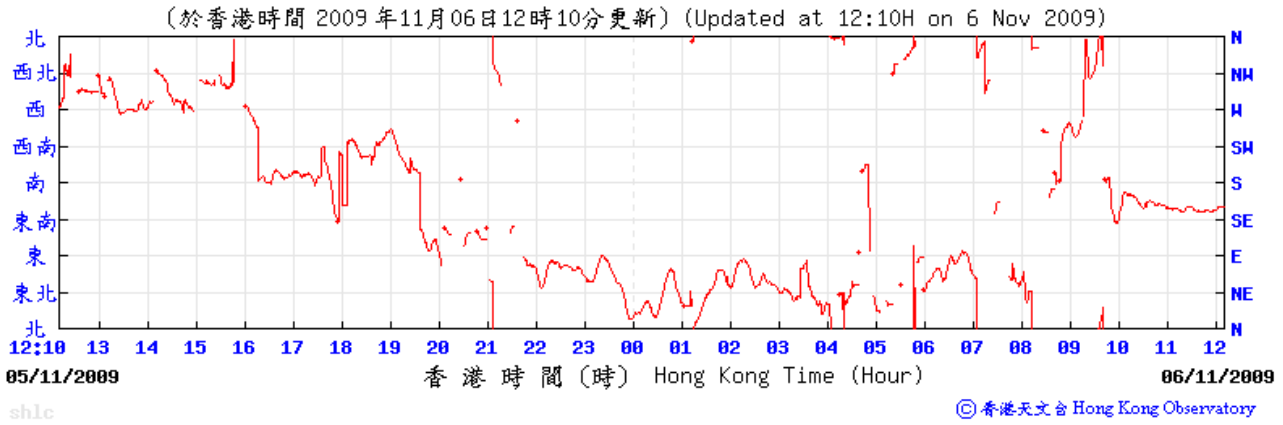


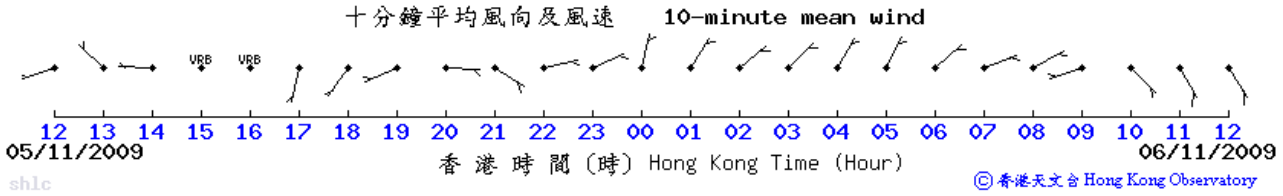


Wind Data for Tsing Yi

6 Nov 2009

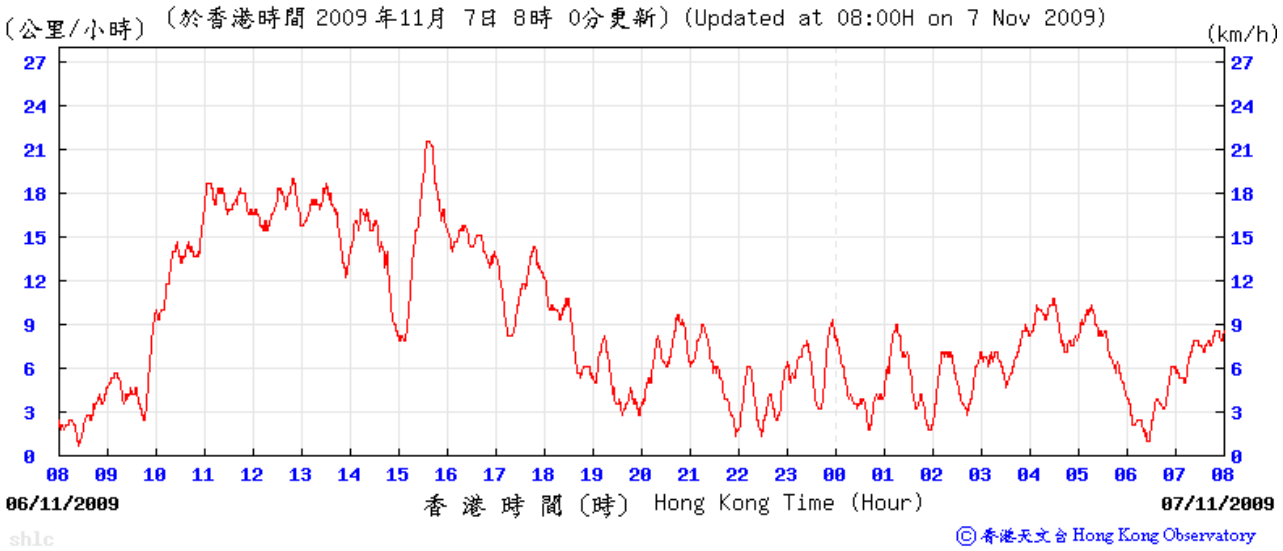


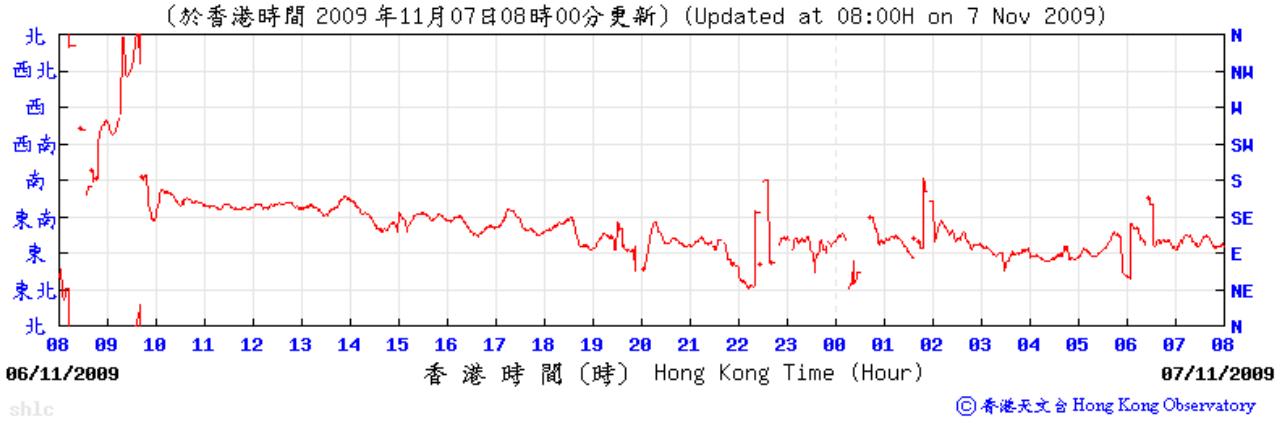


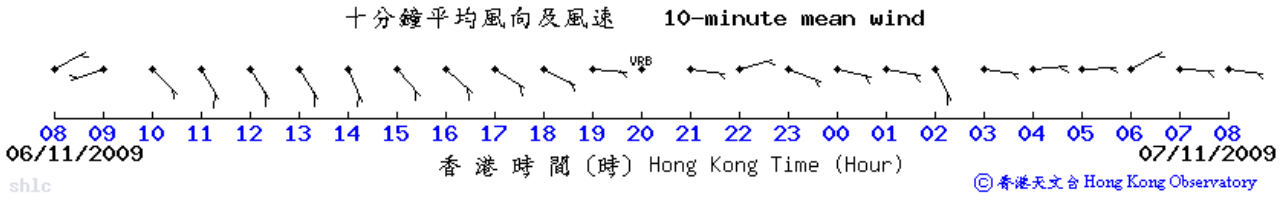


Wind Data for Tsing Yi

7 Nov 2009

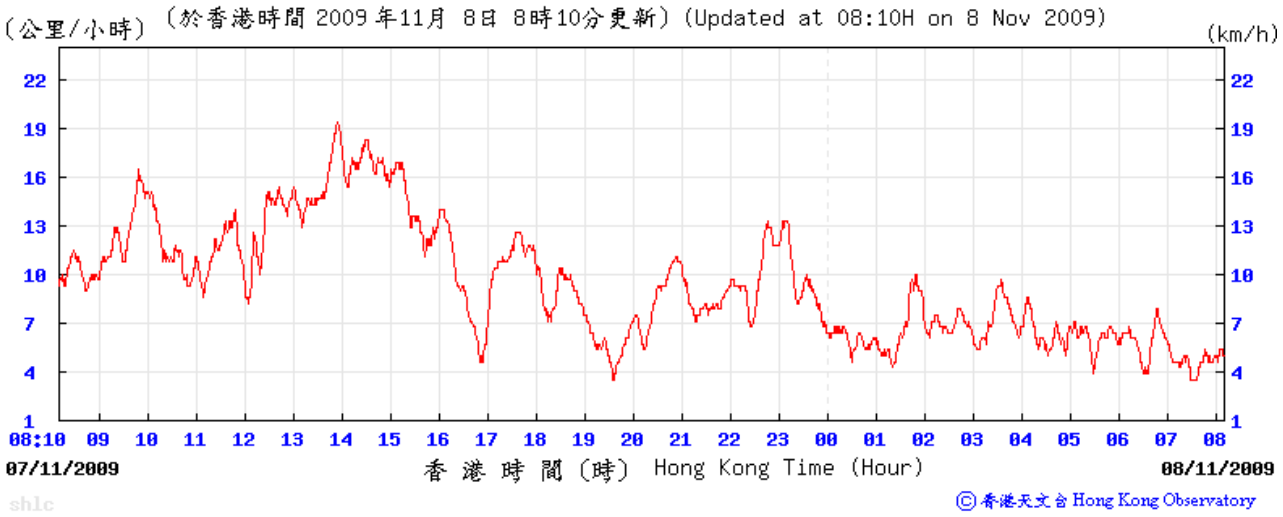


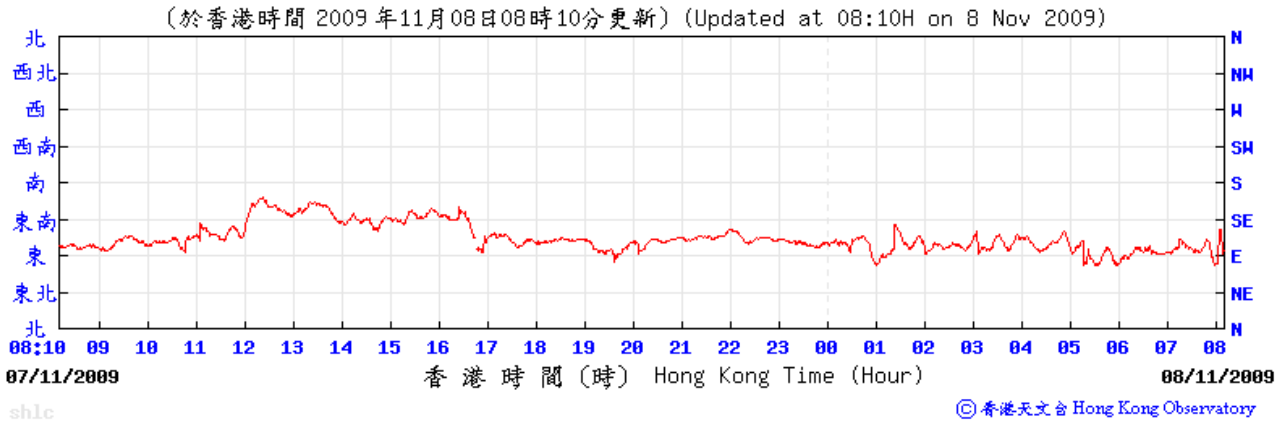


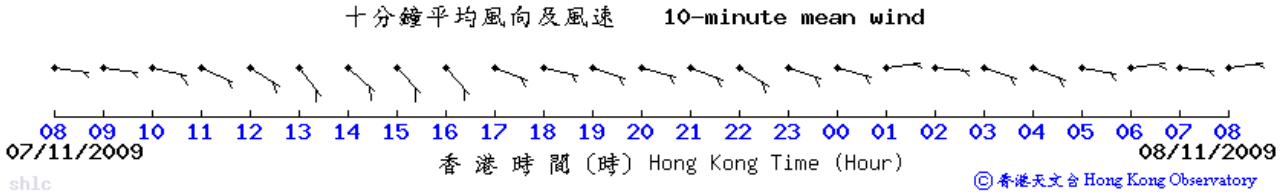


Wind Data for Tsing Yi

8 Nov 2009

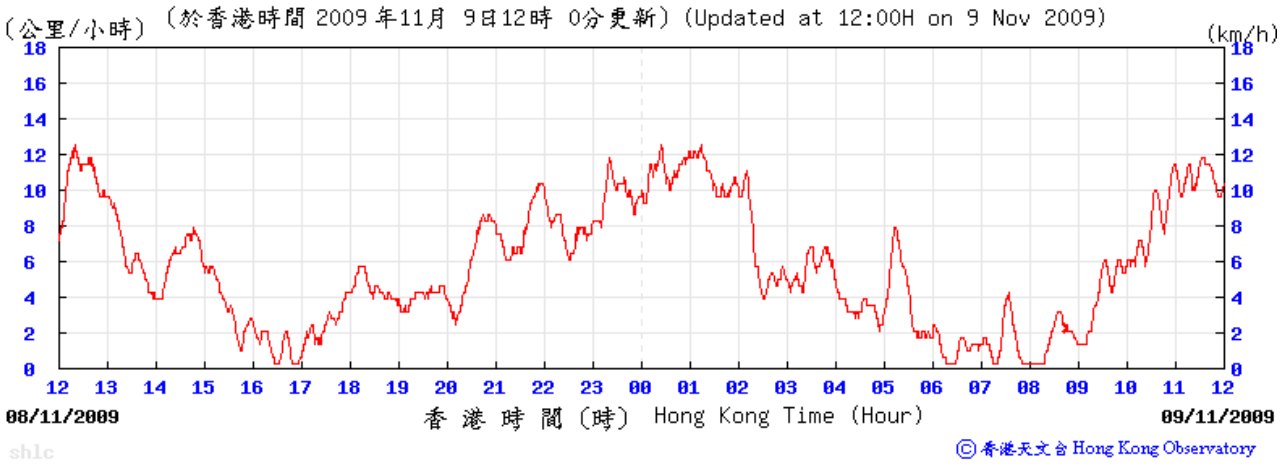


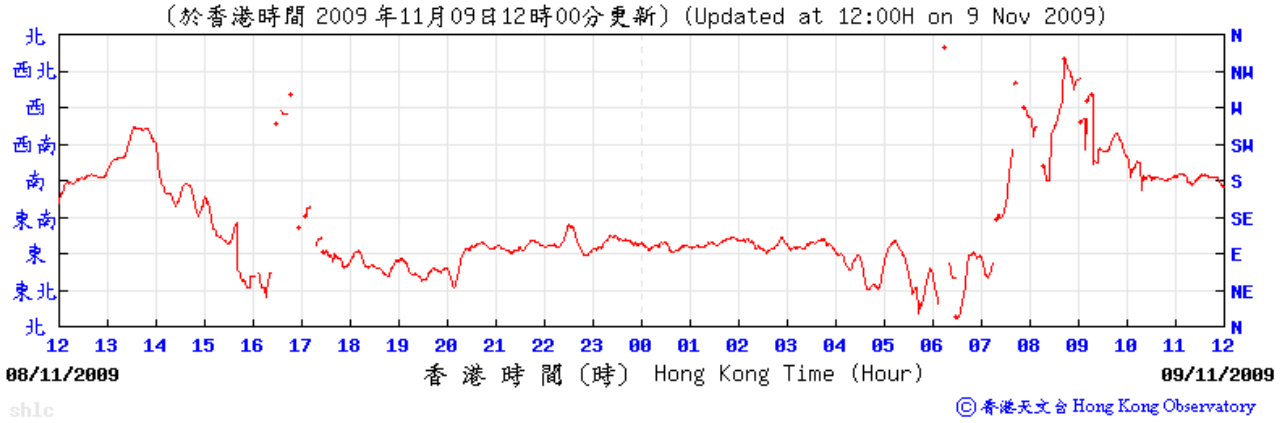


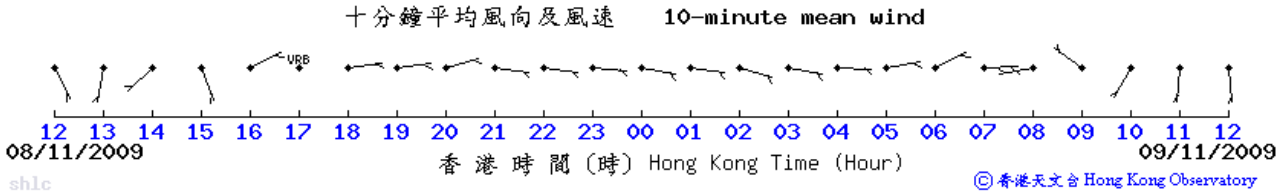


Wind Data for Tsing Yi

9 Nov 2009

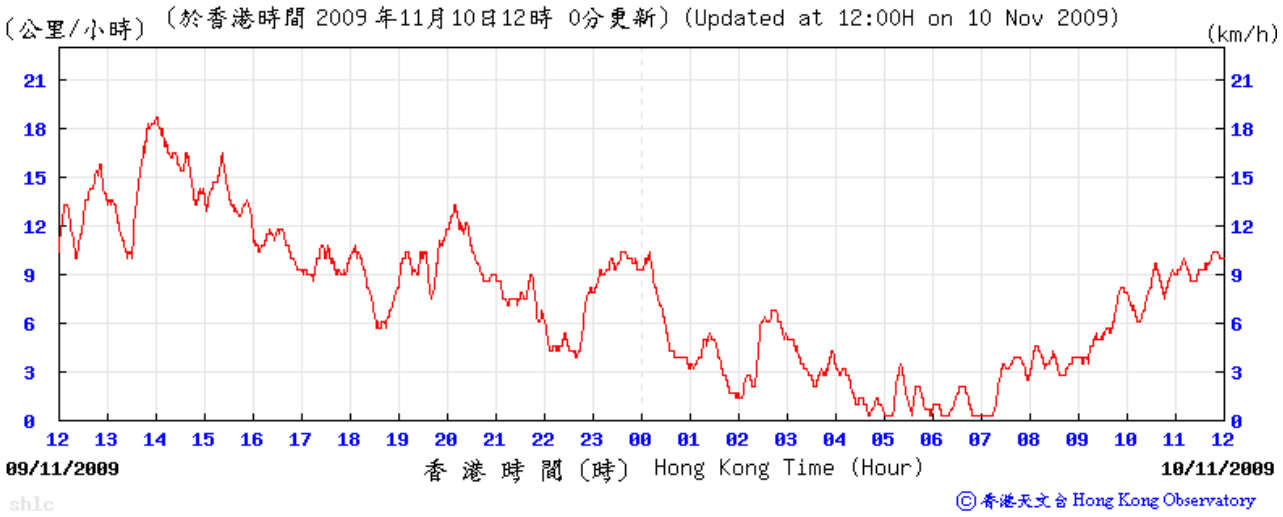


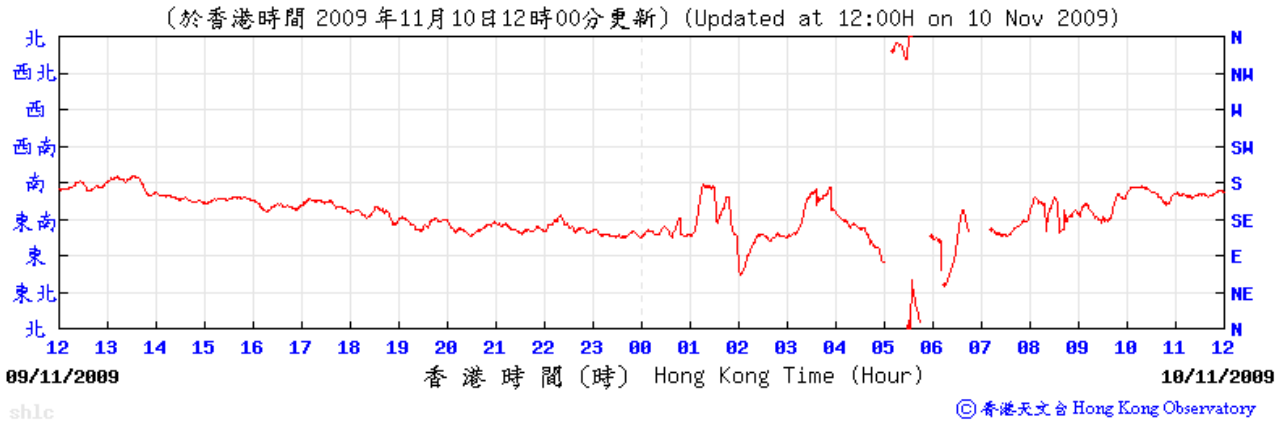


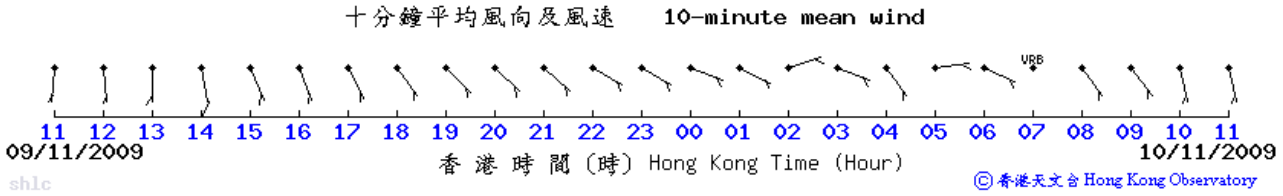


Wind Data for Tsing Yi

10 Nov 2009

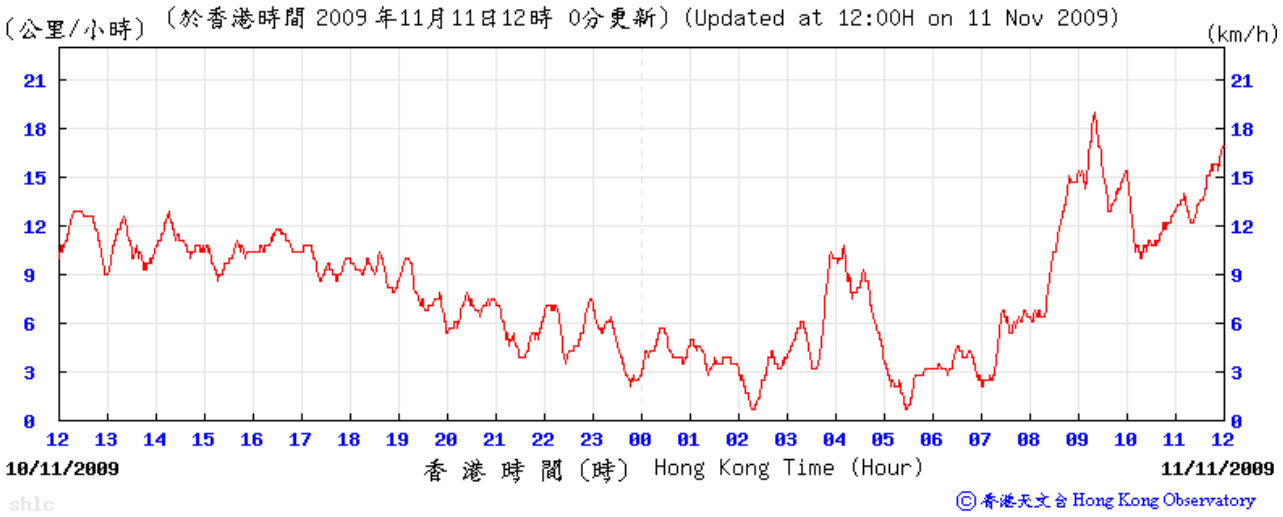


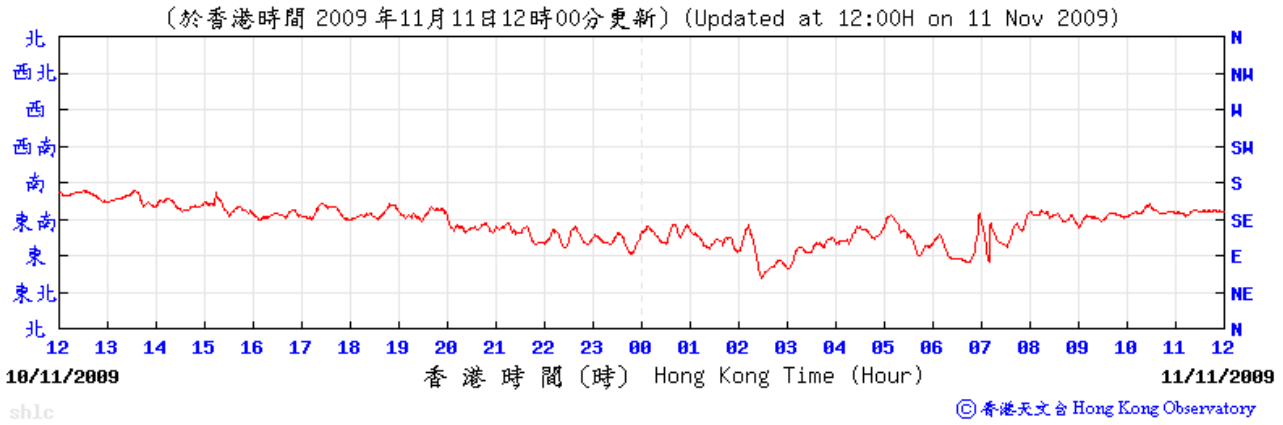


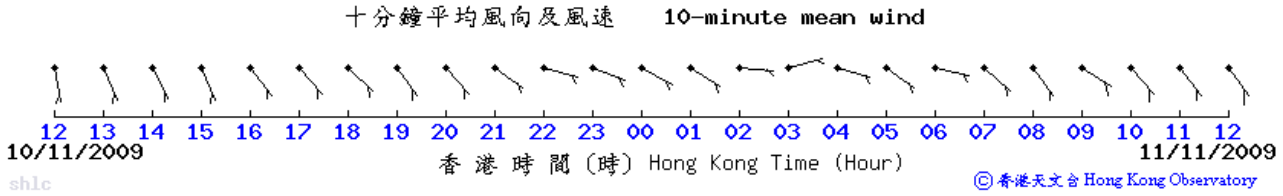


Wind Data for Tsing Yi

11 Nov 2009

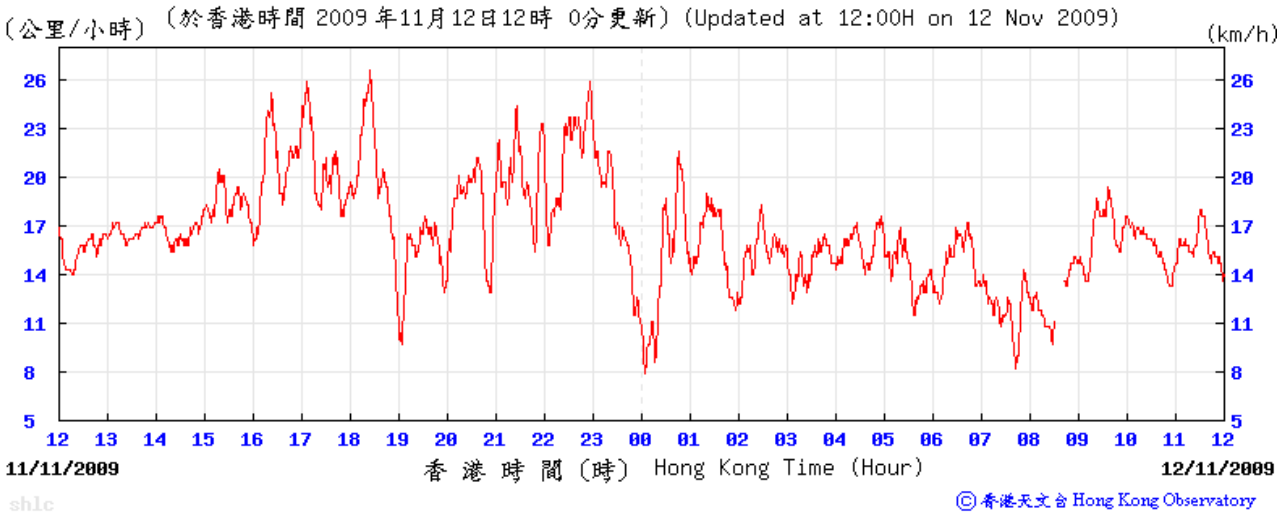


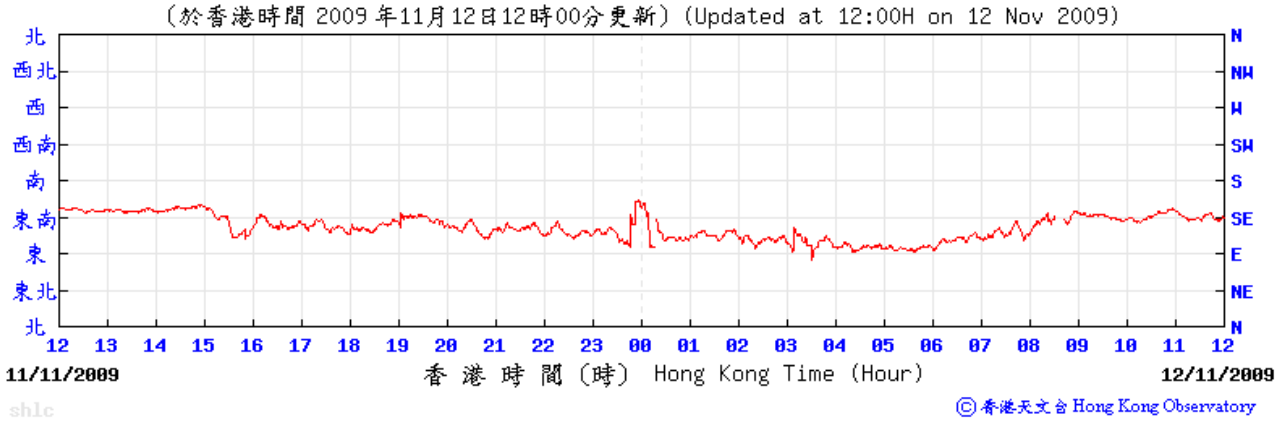


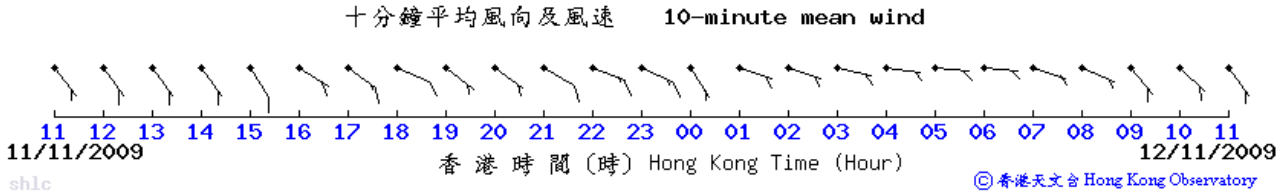


Wind Data for Tsing Yi

12 Nov 2009

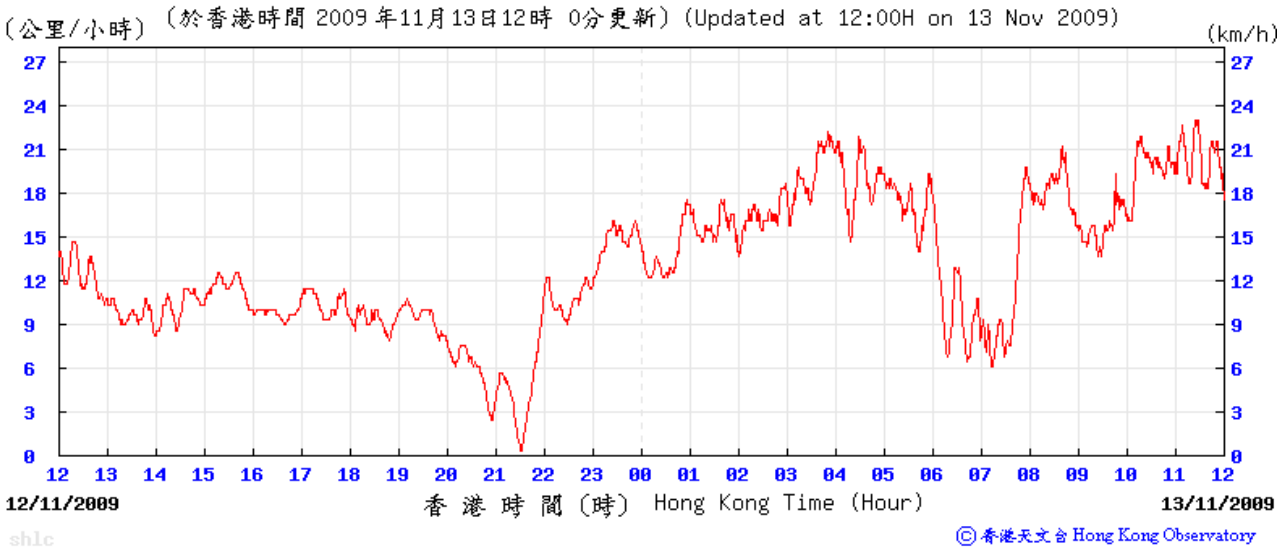


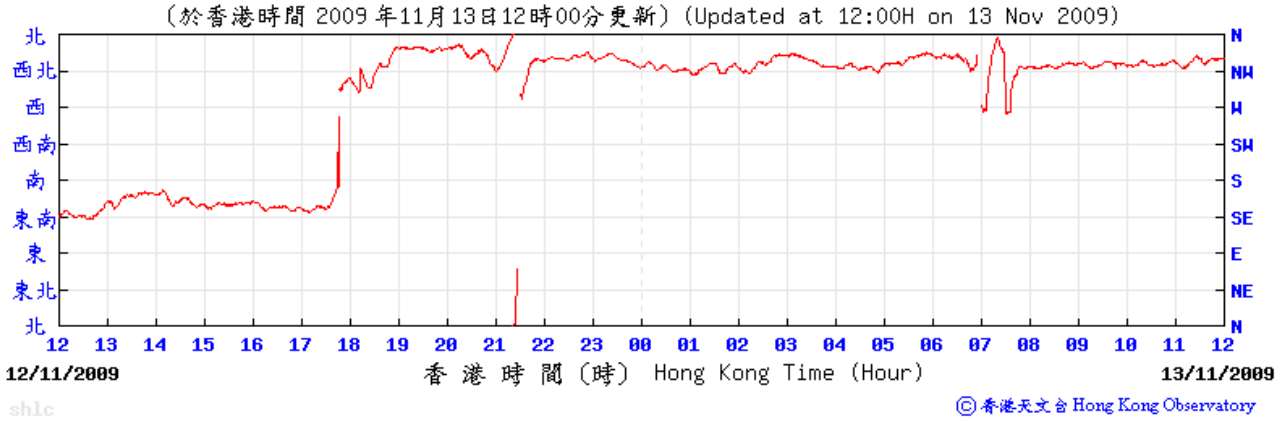


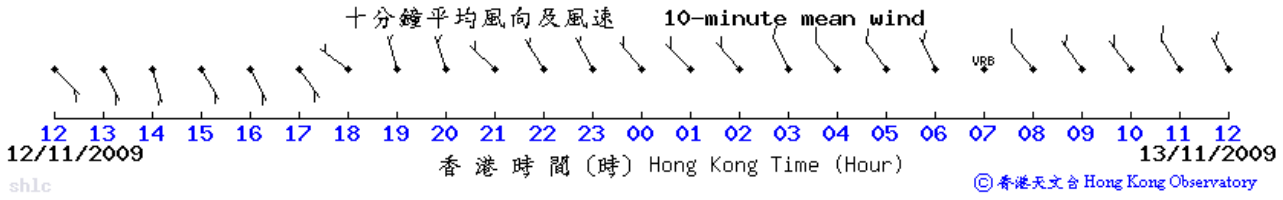


Wind Data for Tsing Yi

13 Nov 2009

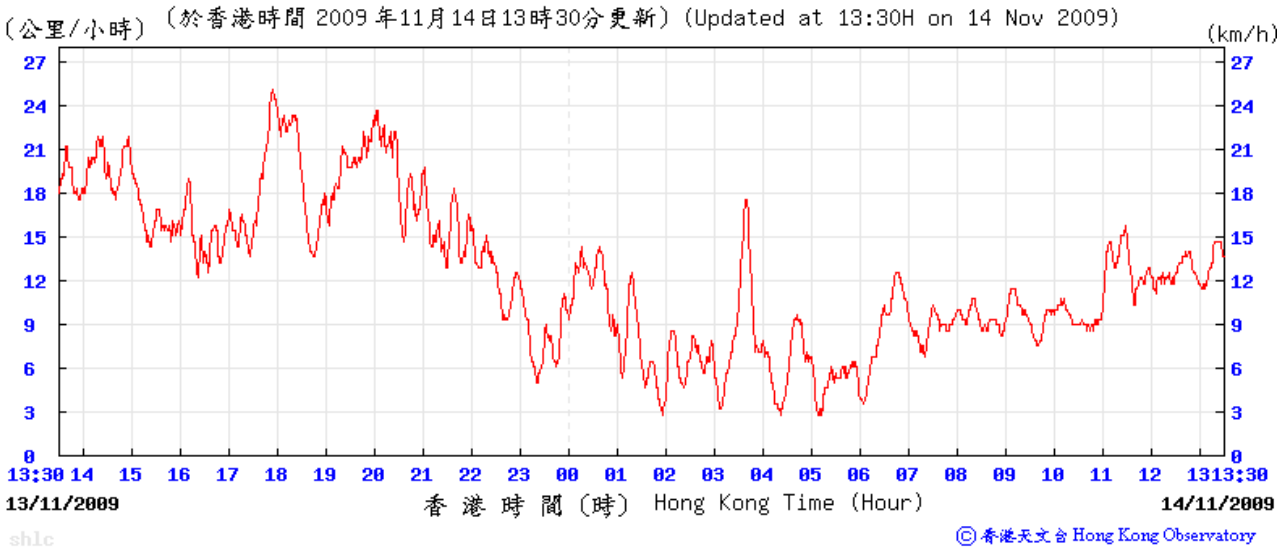


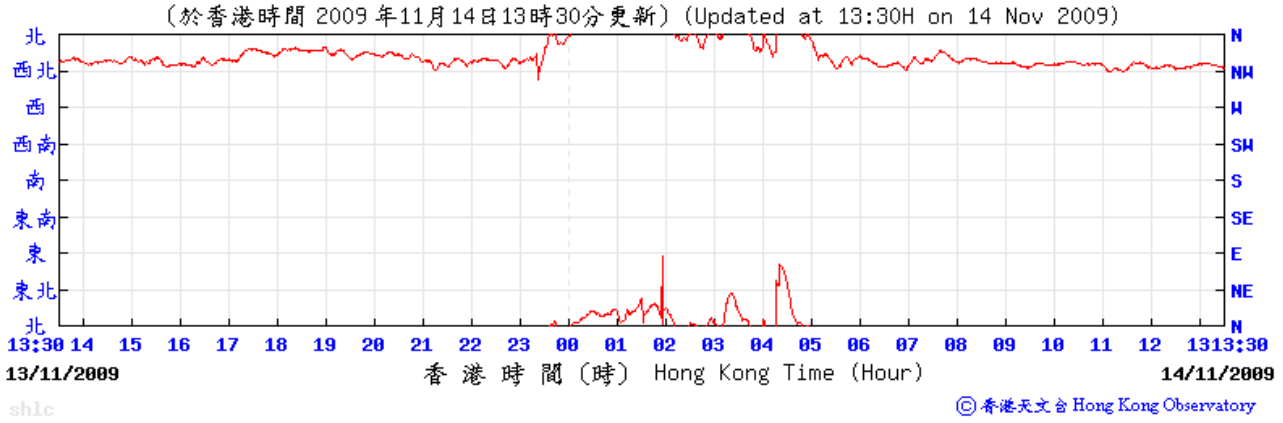


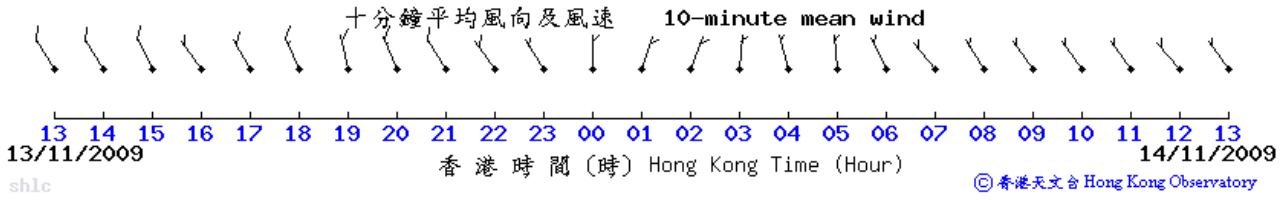


Wind Data for Tsing Yi

14 Nov 2009

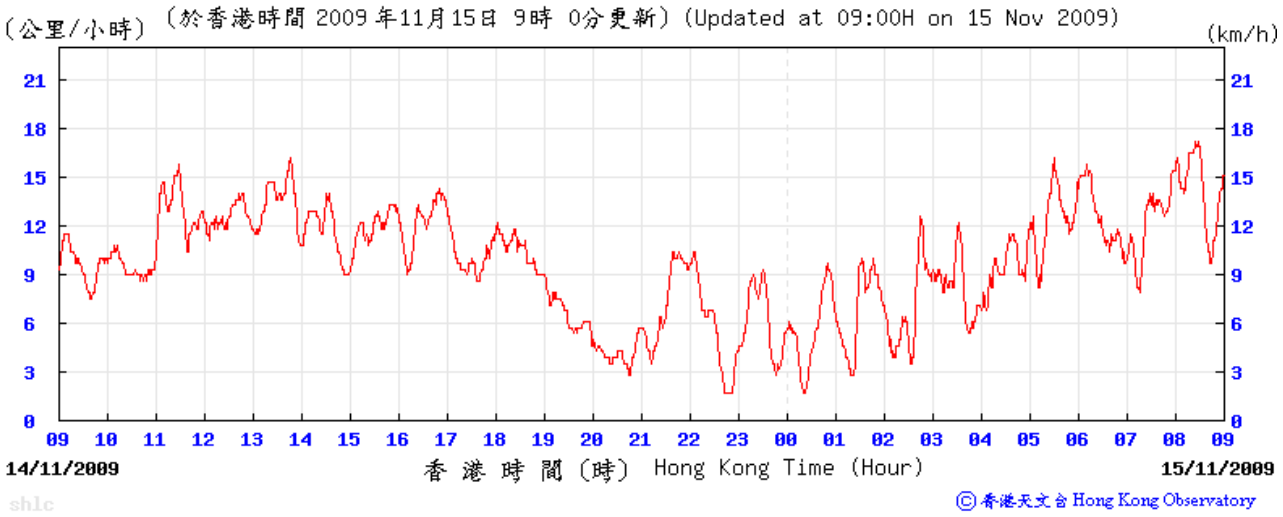


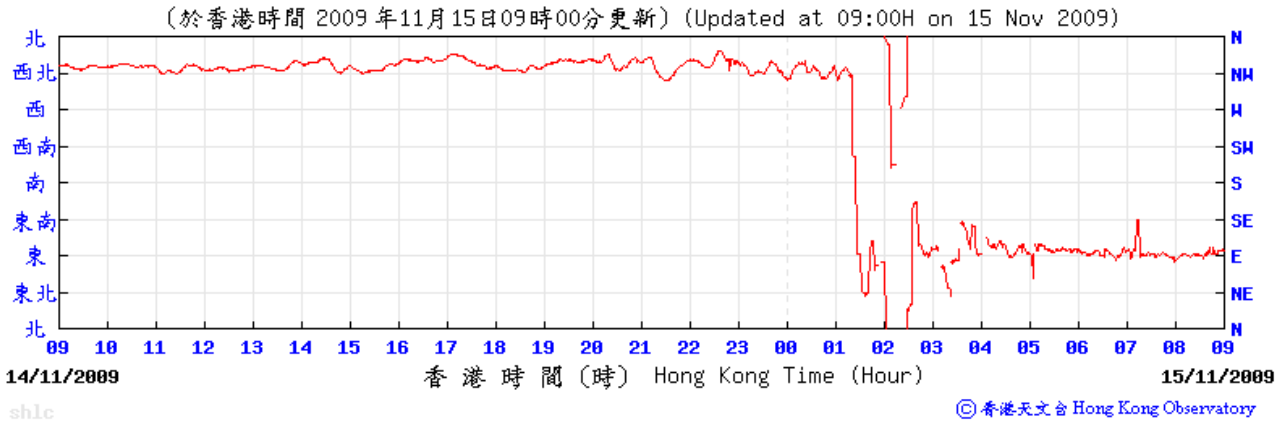


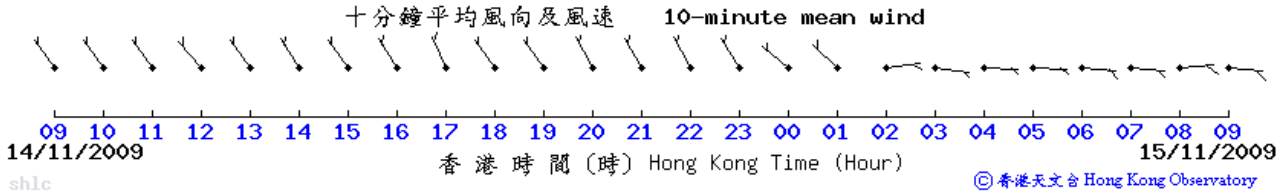


Wind Data for Tsing Yi

15 Nov 2009

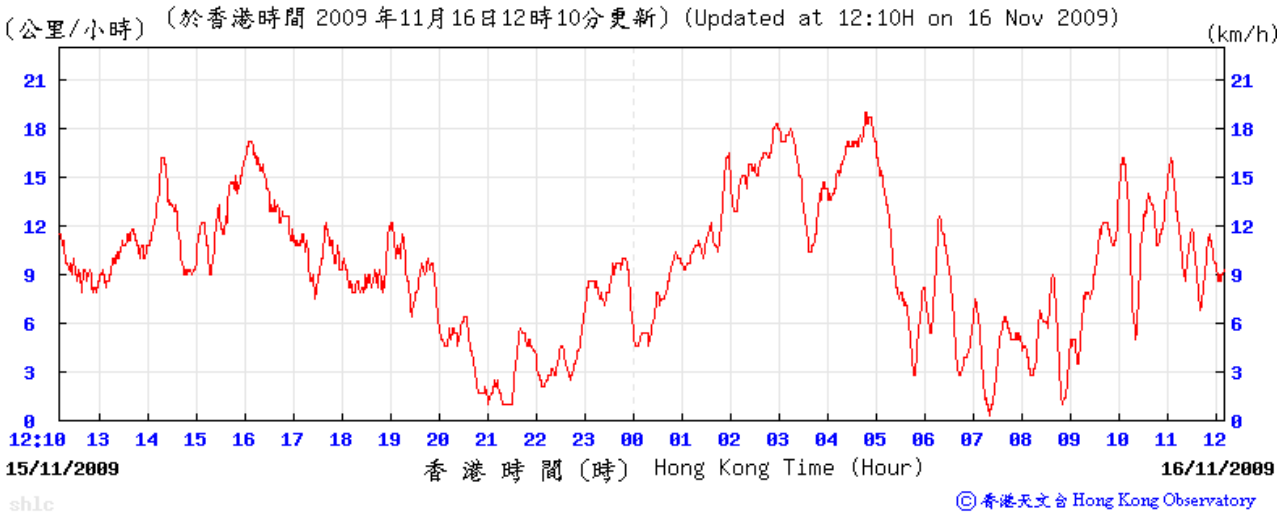


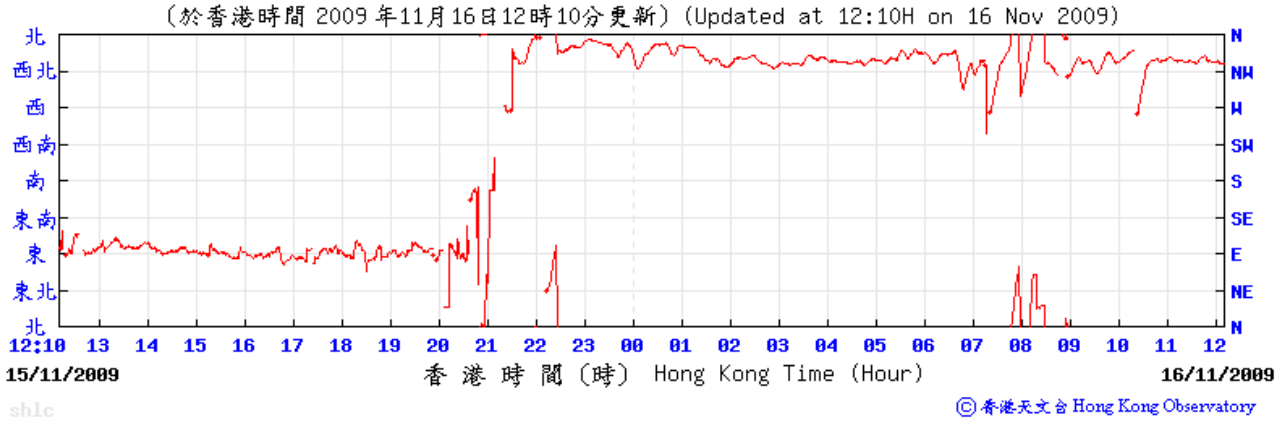


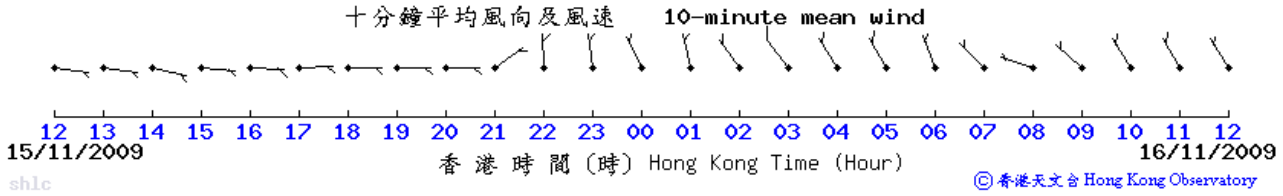


Wind Data for Tsing Yi

16 Nov 2009

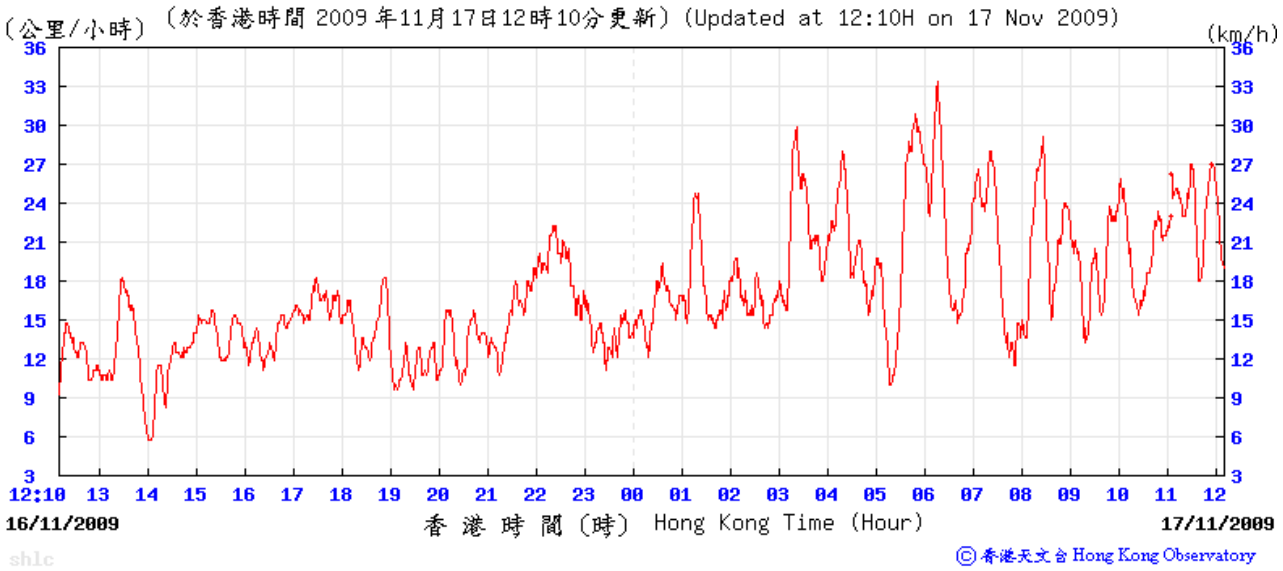


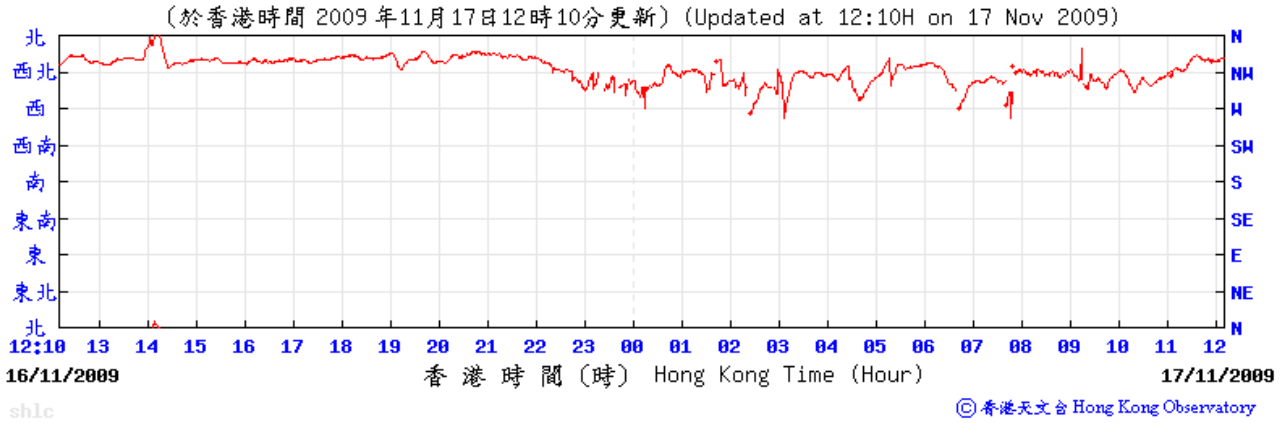


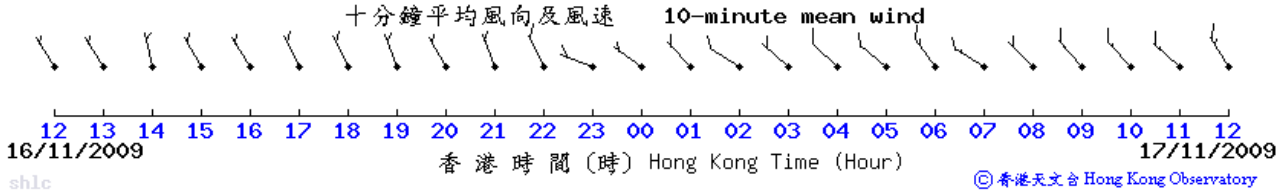


Wind Data for Tsing Yi

17 Nov 2009

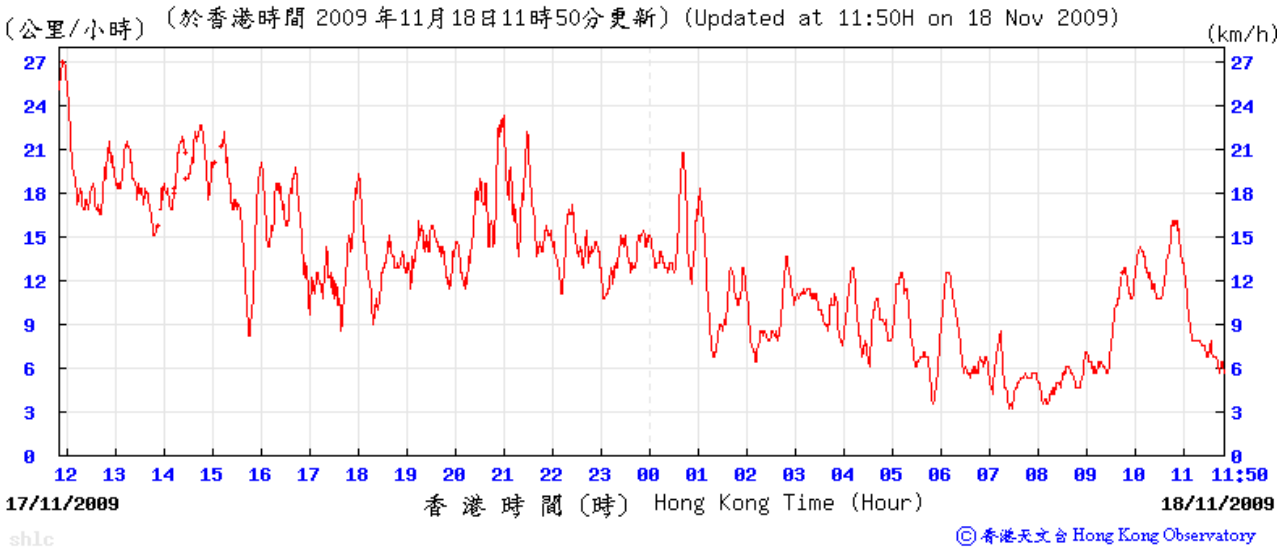


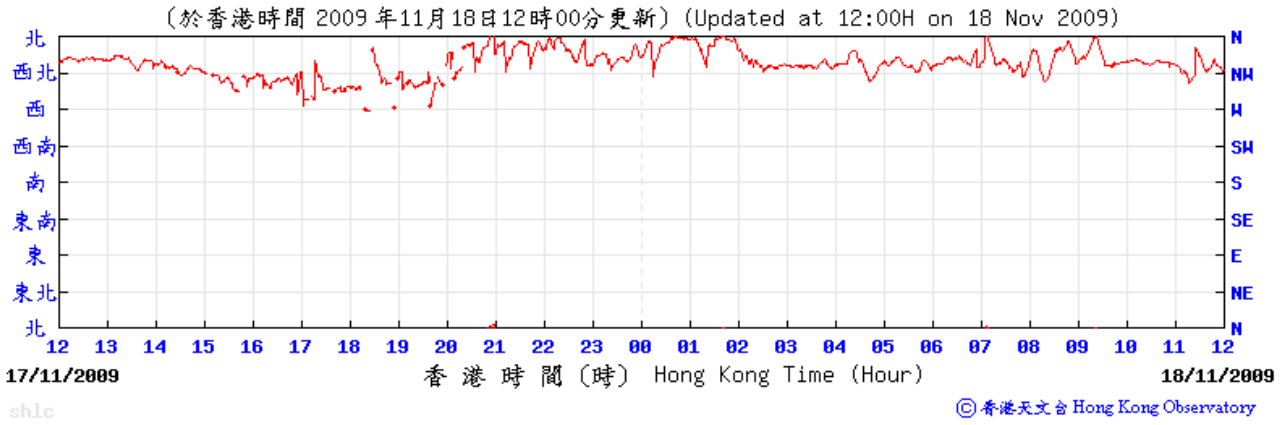


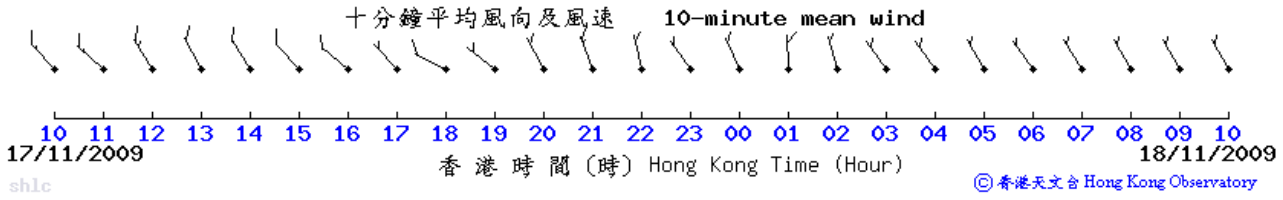


Wind Data for Tsing Yi

18 Nov 2009

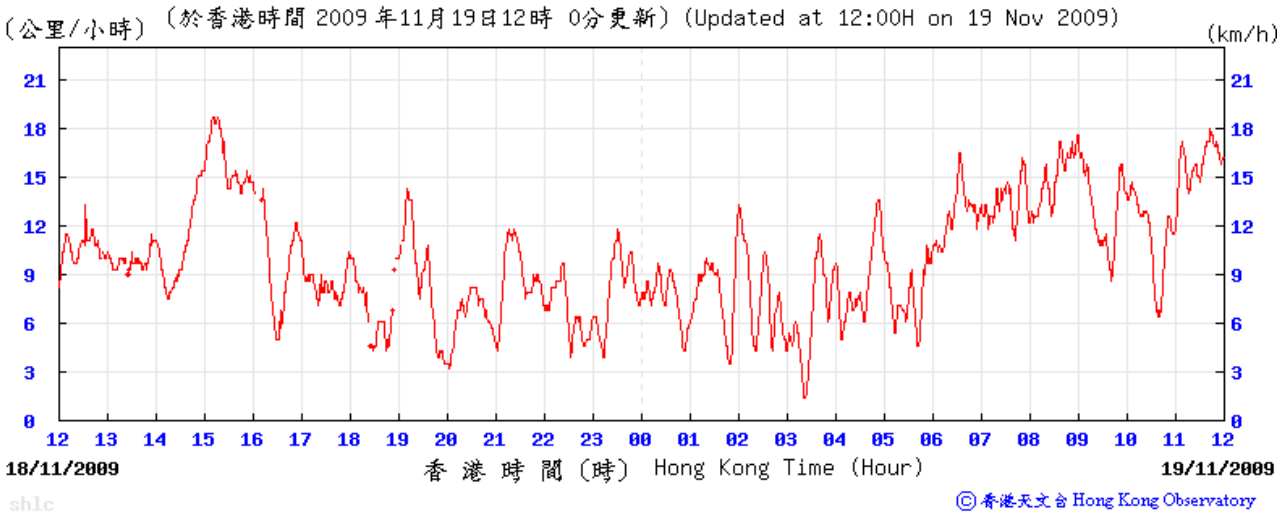


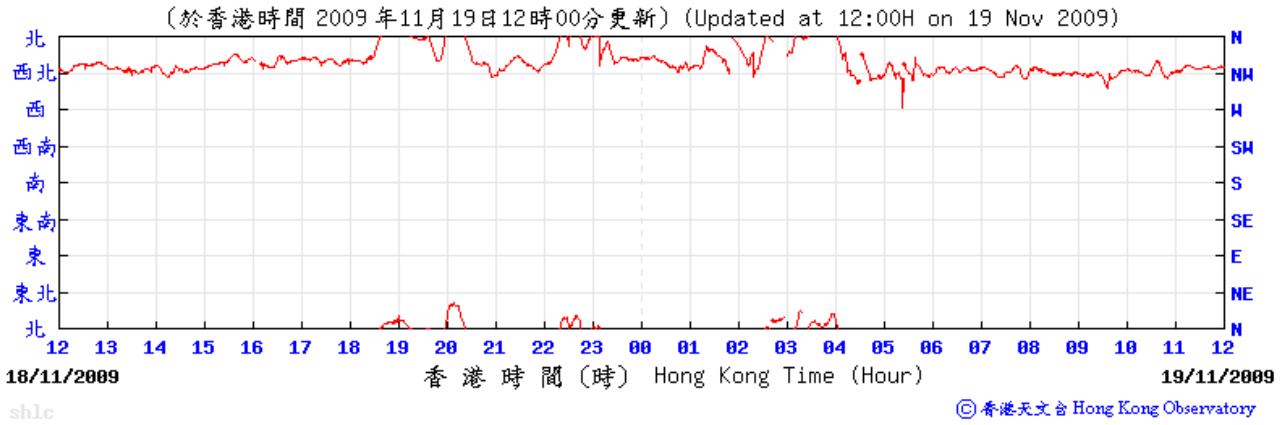


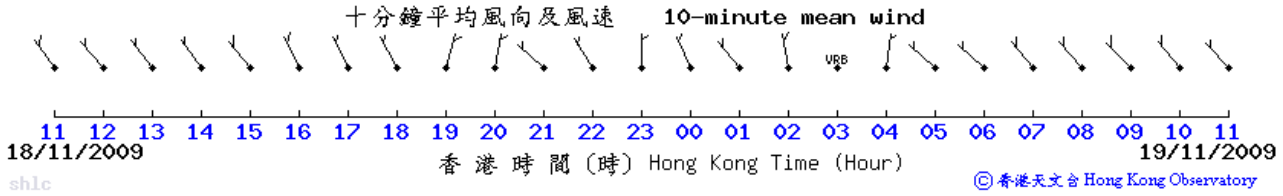


Wind Data for Tsing Yi

19 Nov 2009

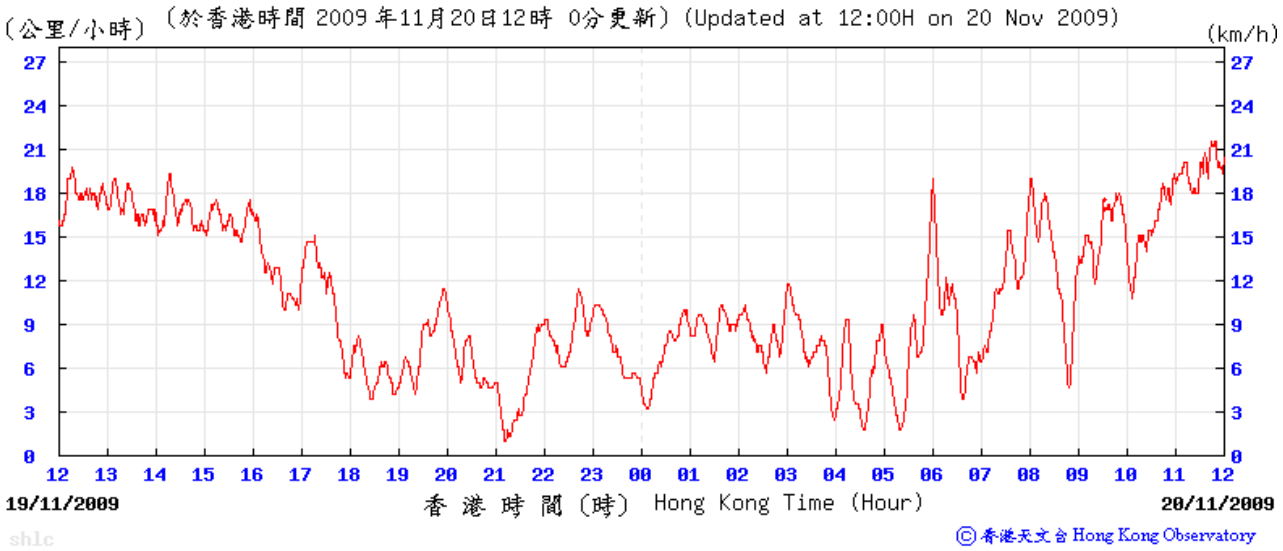


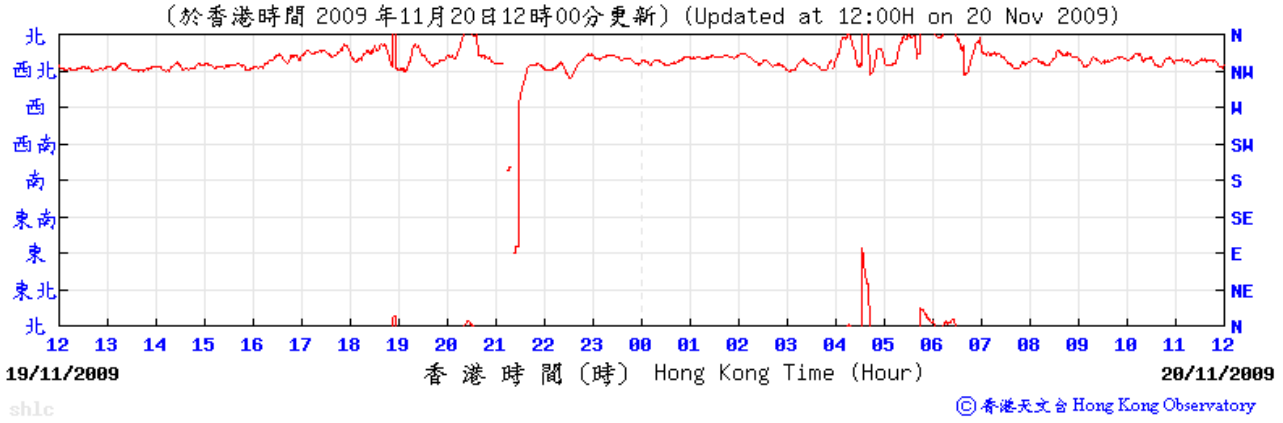


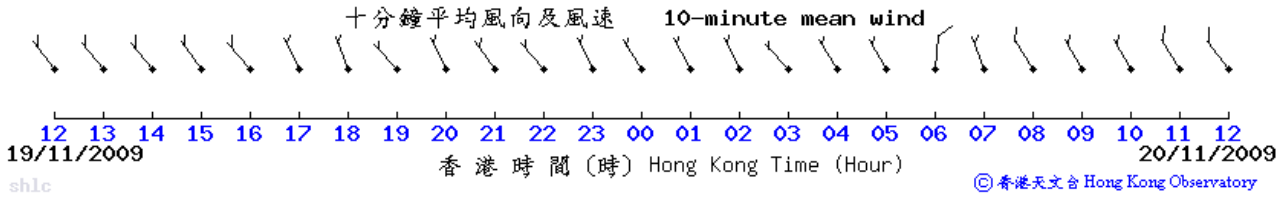


Wind Data for Tsing Yi

20 Nov 2009







Wind Data for Tsing Yi

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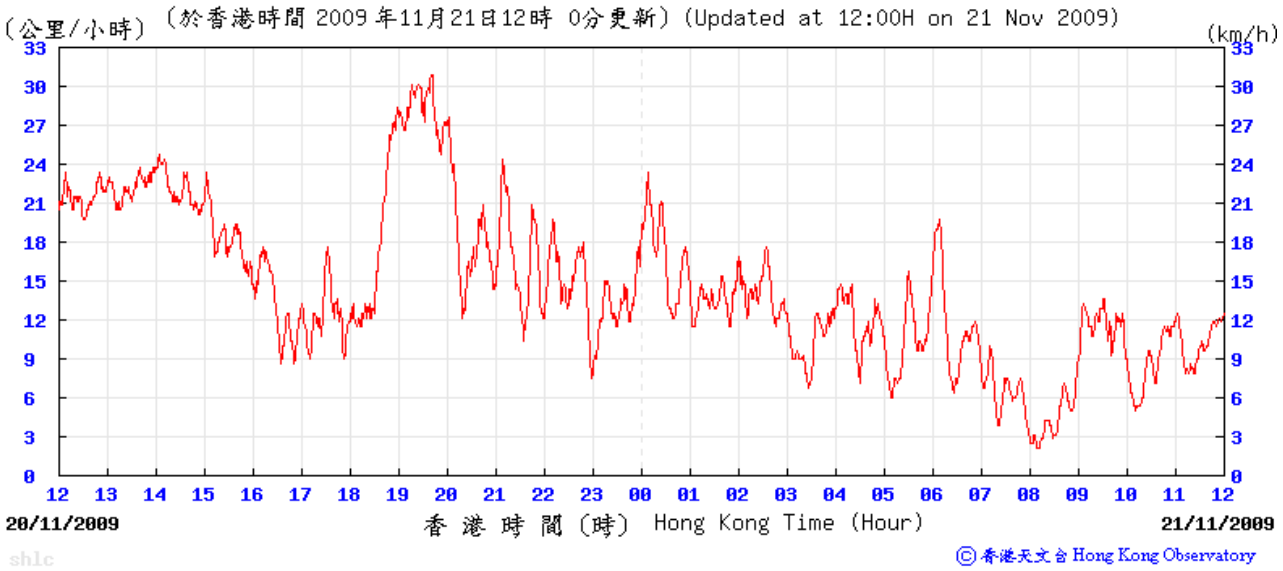
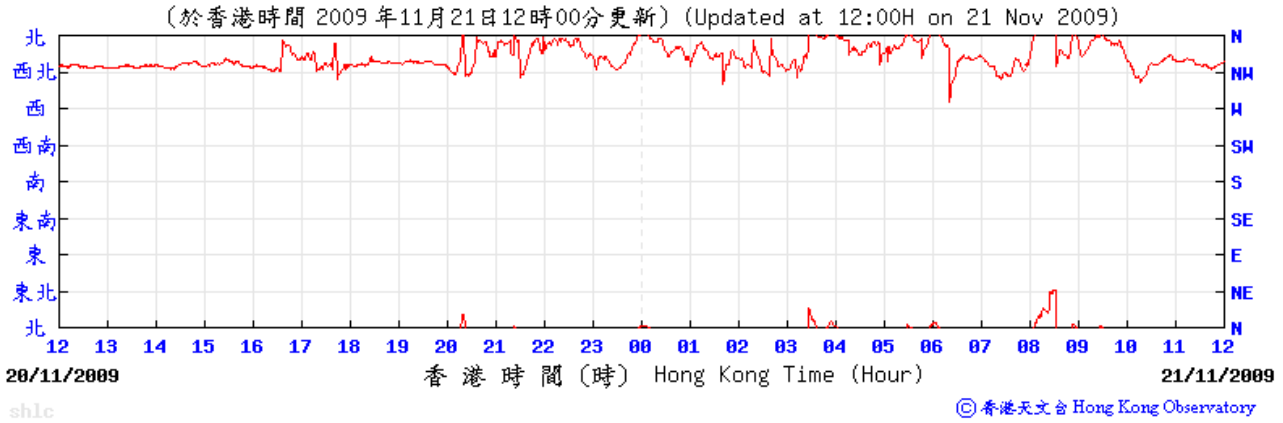
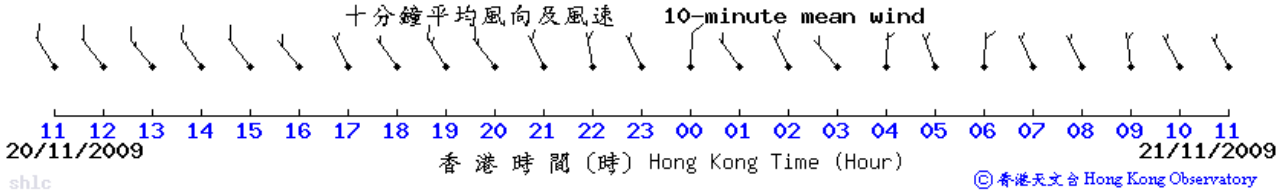
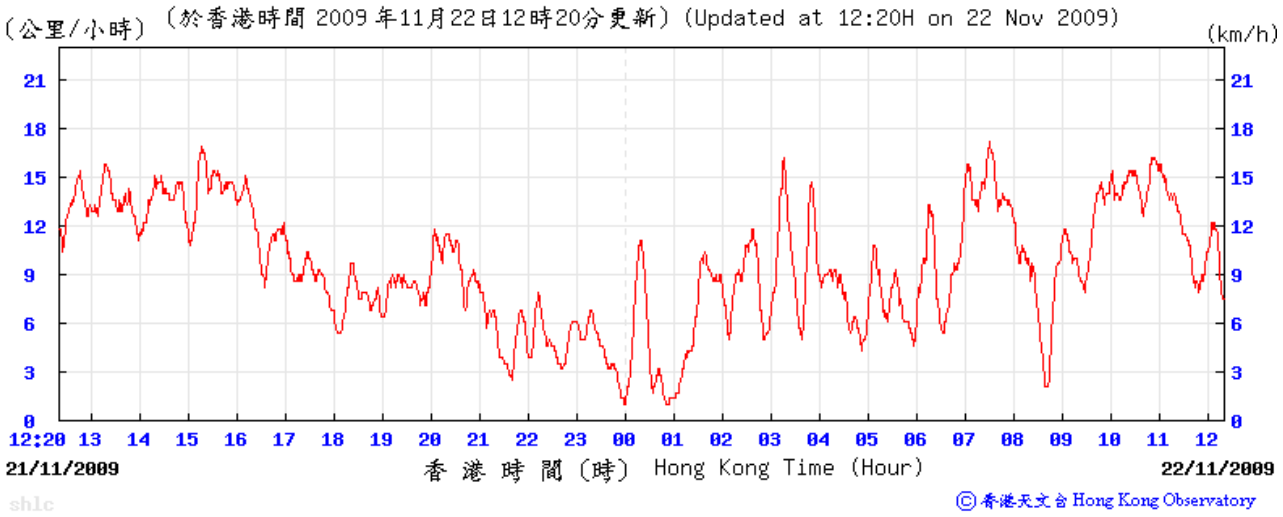


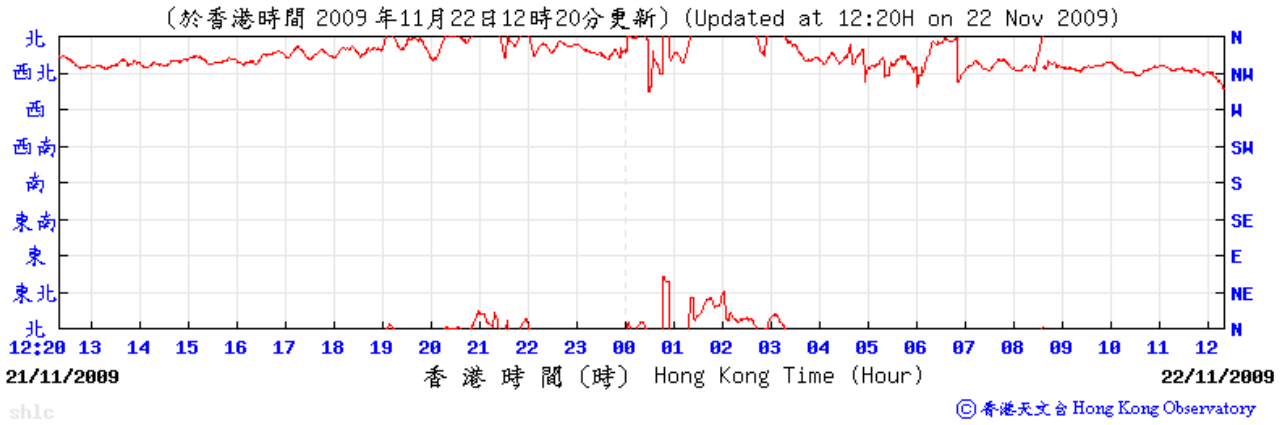


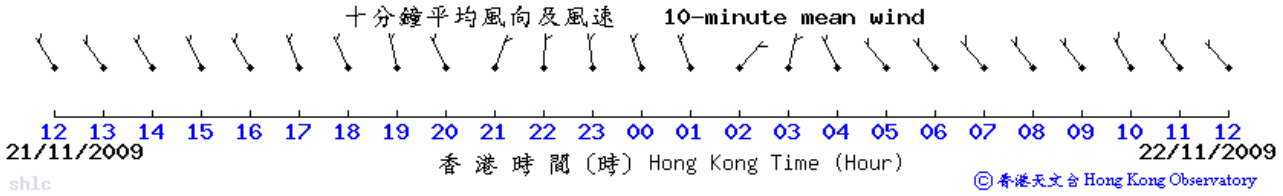


Wind Data for Tsing Yi

22 Nov 2009

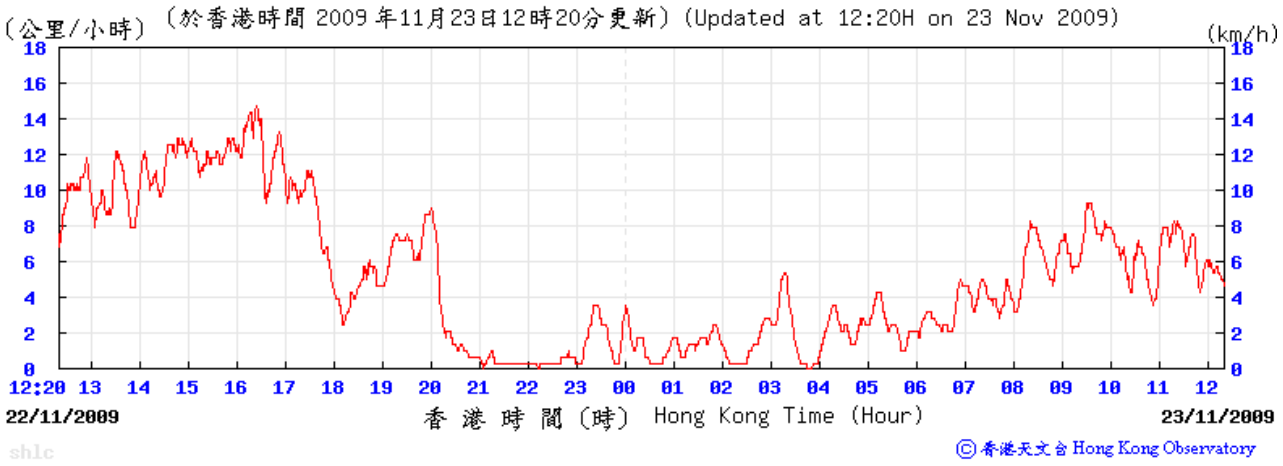


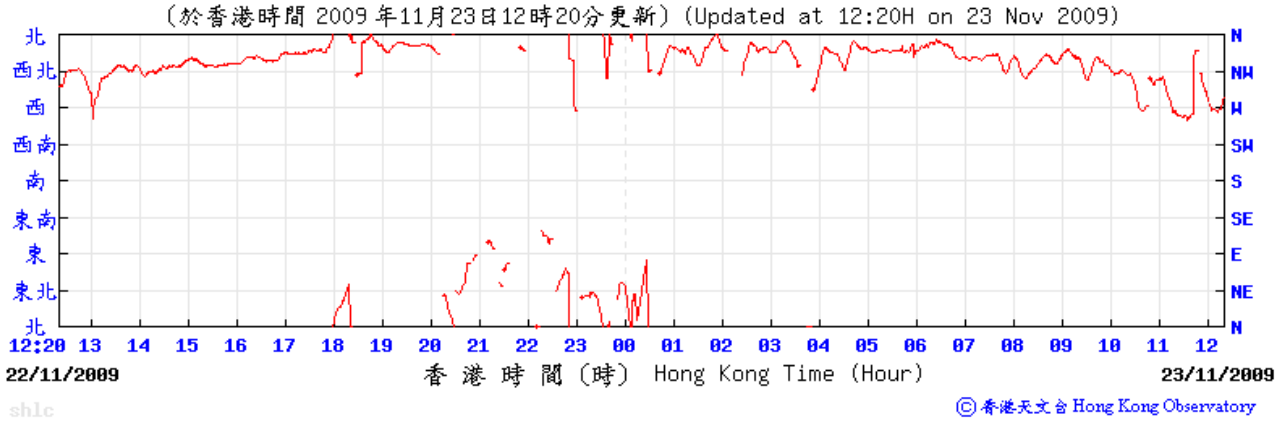


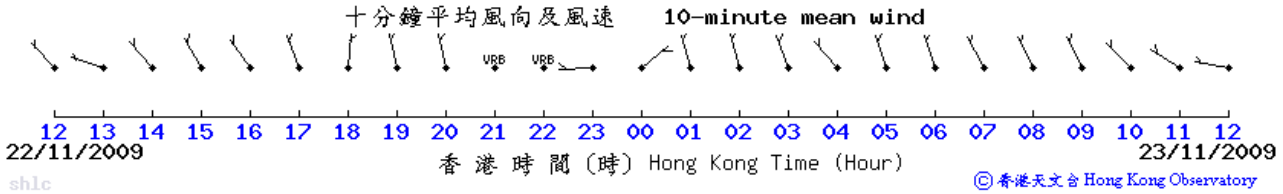


Wind Data for Tsing Yi

23 Nov 2009







Wind Data for Tsing Yi

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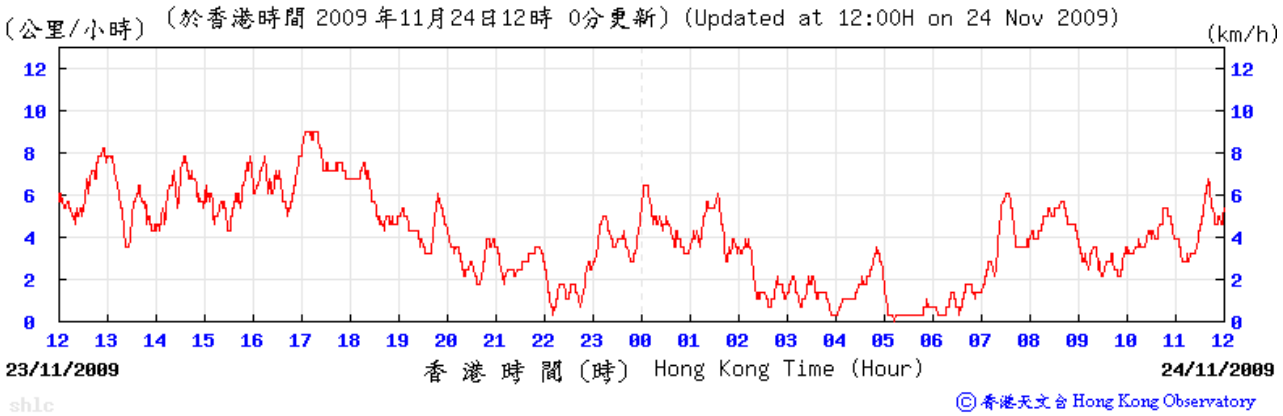

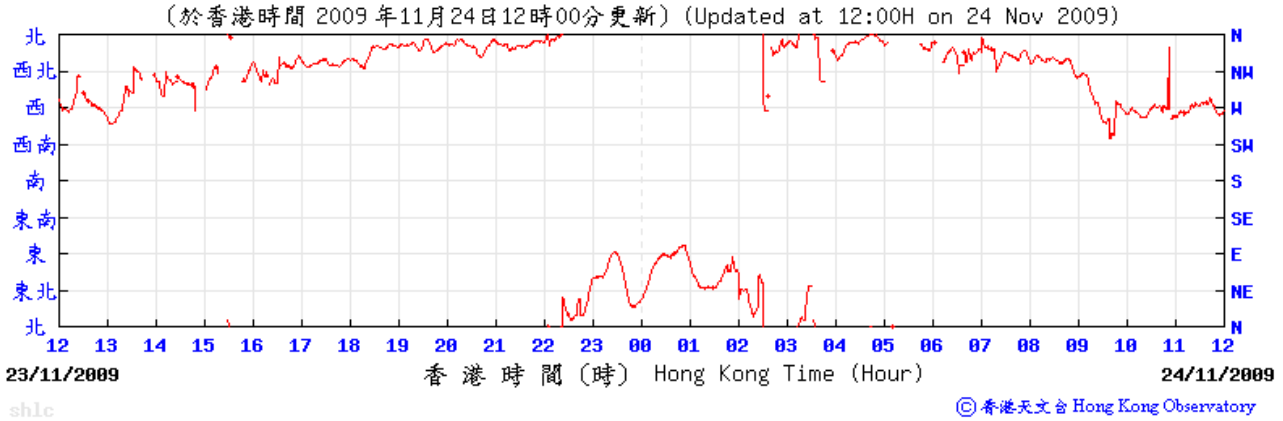

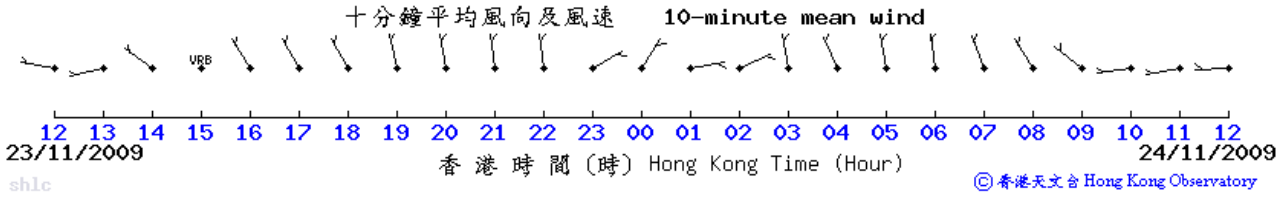

Wind Data for Tsing Yi

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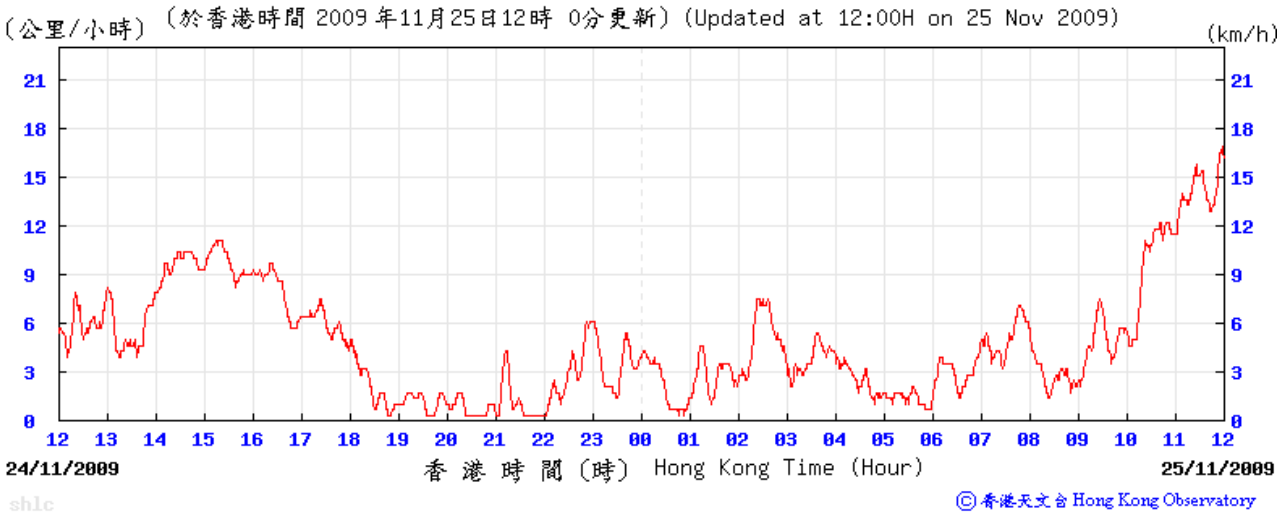
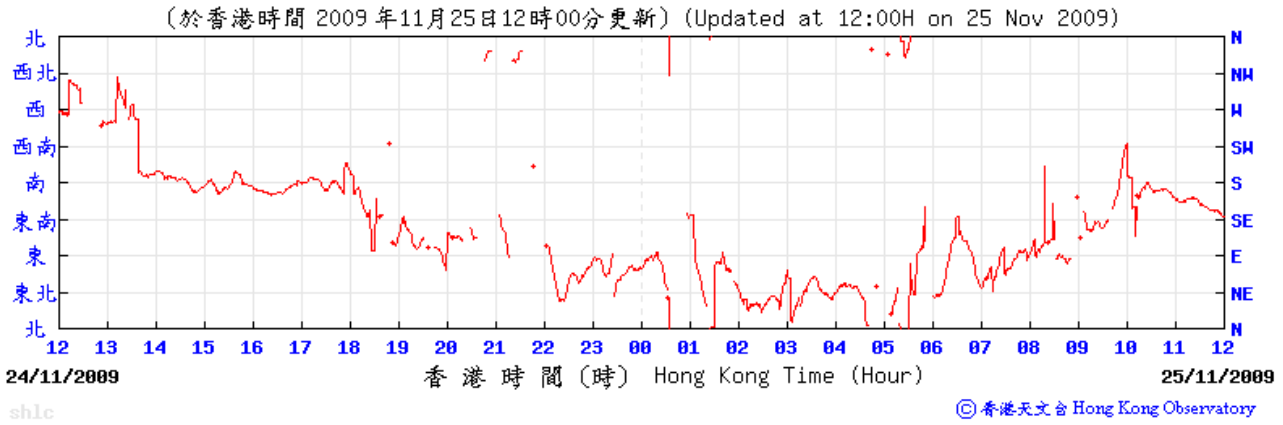
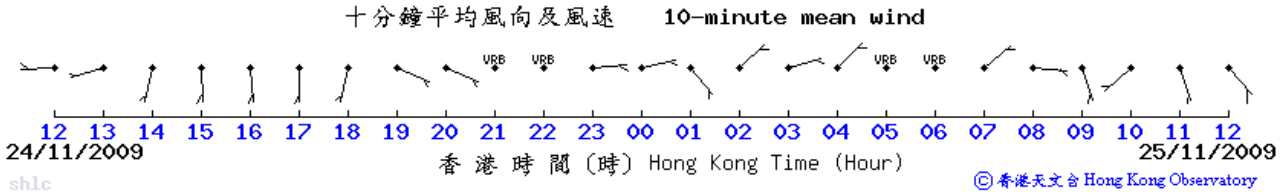
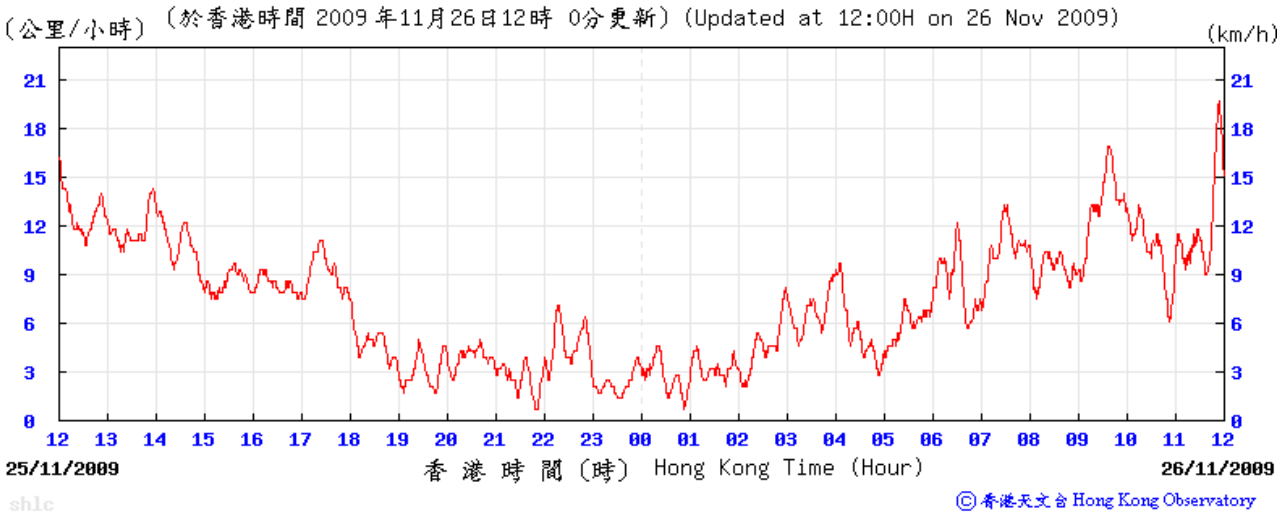


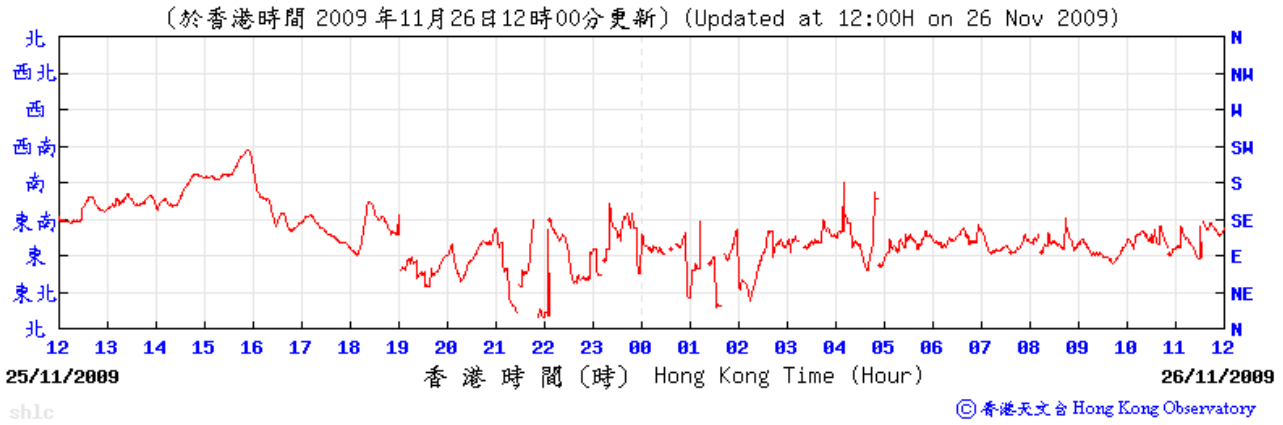


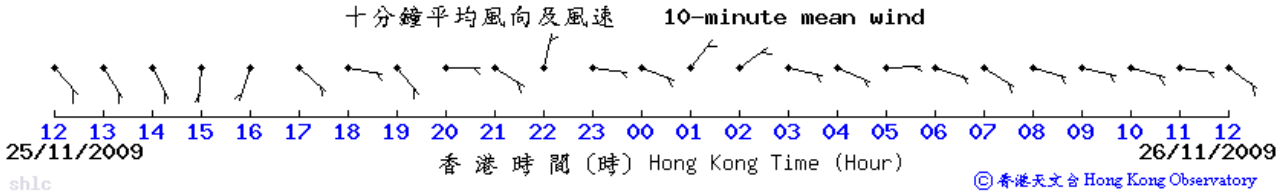


Wind Data for Tsing Yi

26 Nov 2009

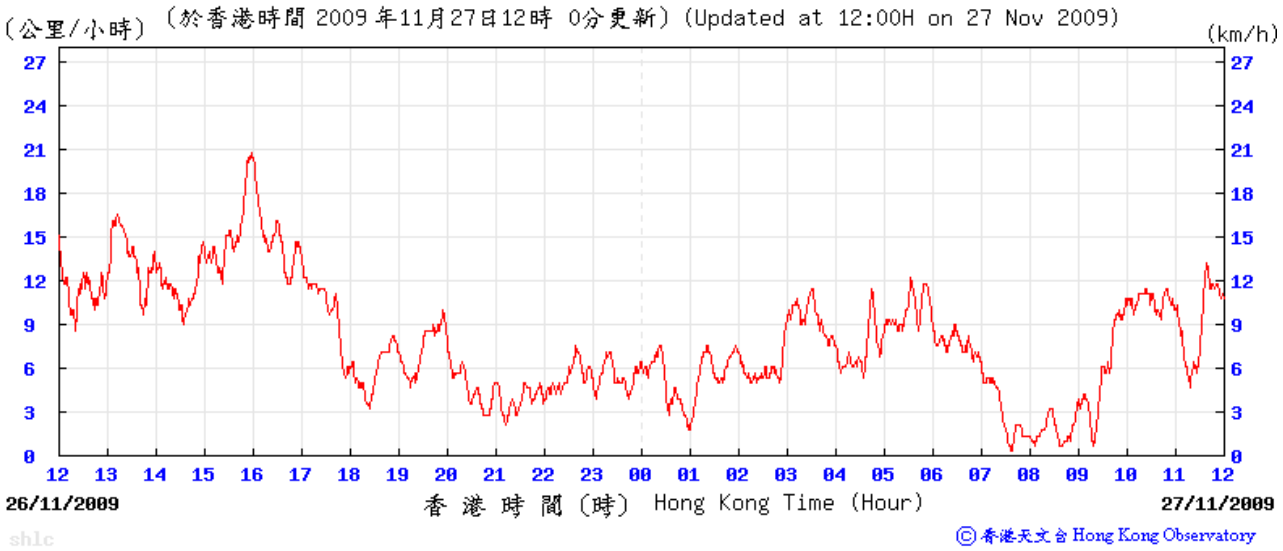


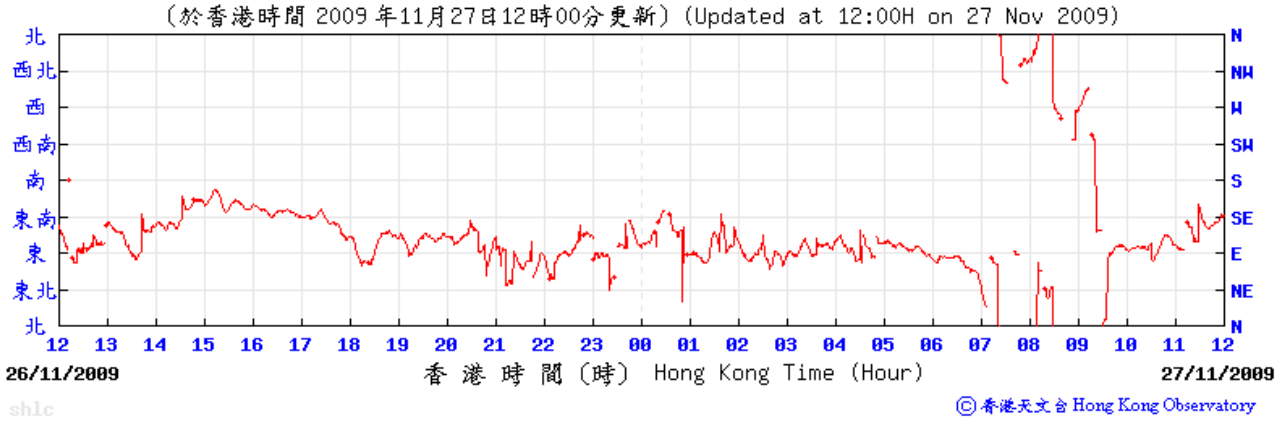


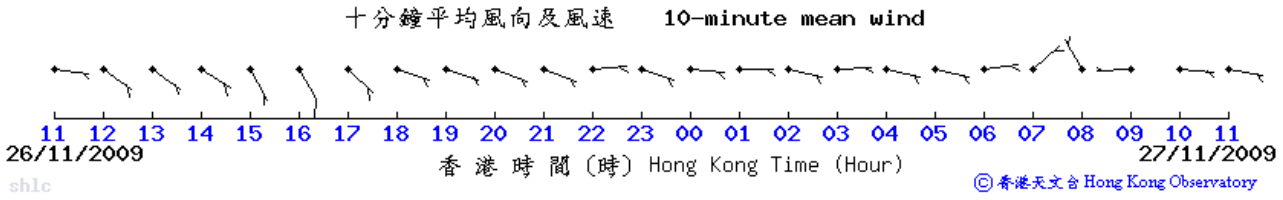


Wind Data for Tsing Yi

27 Nov 2009

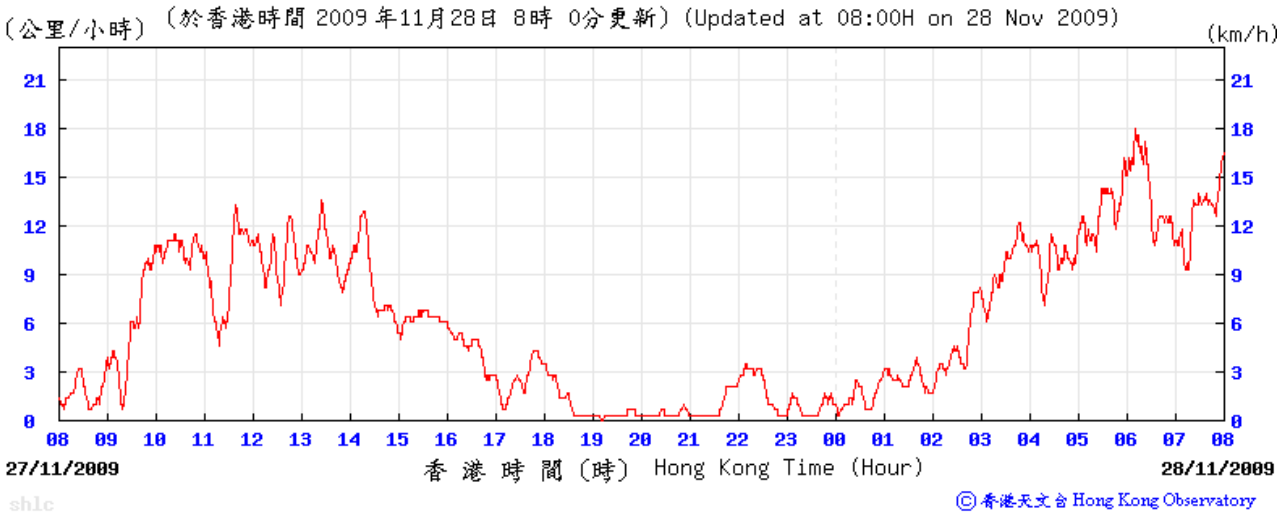


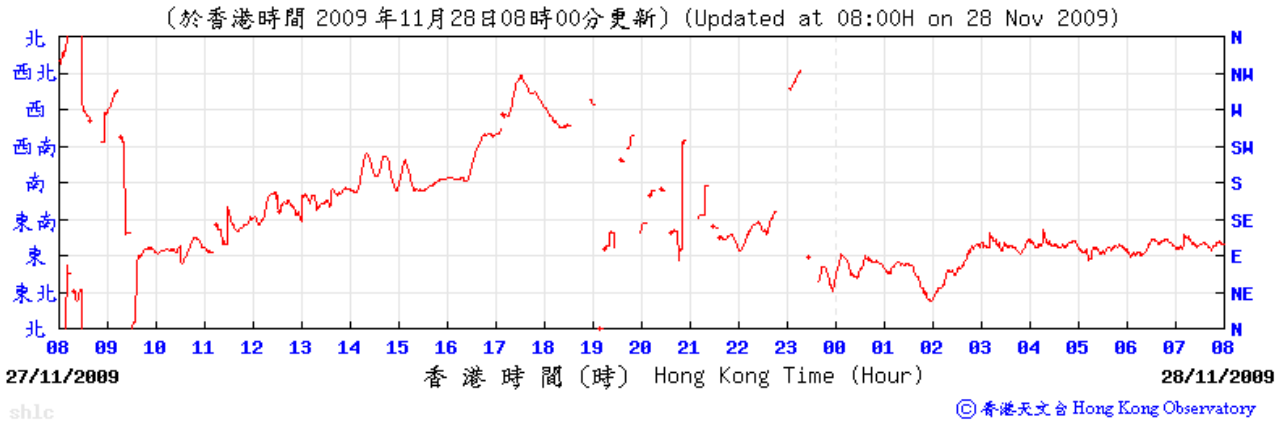


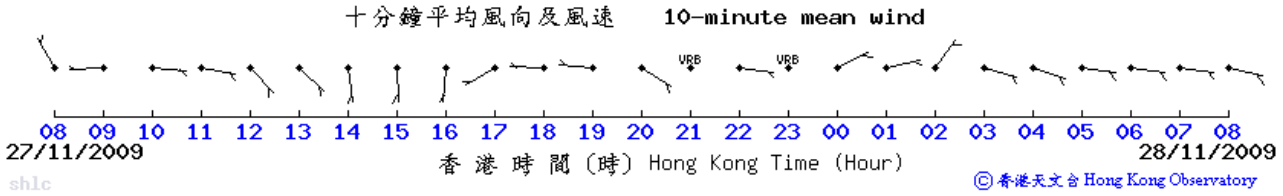


Wind Data for Tsing Yi

28 Nov 2009

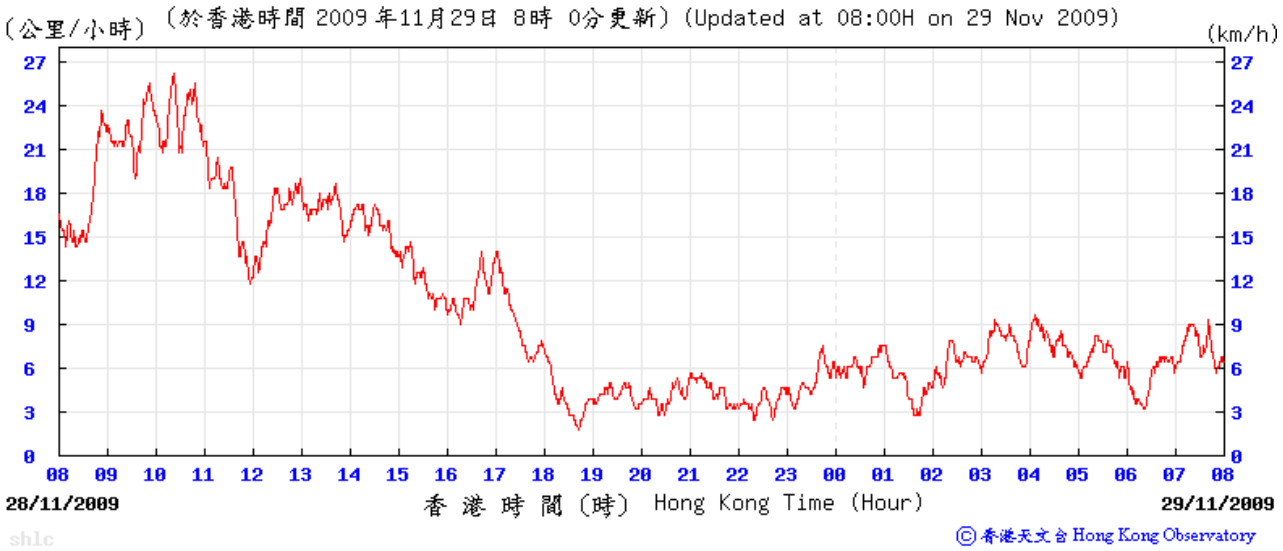


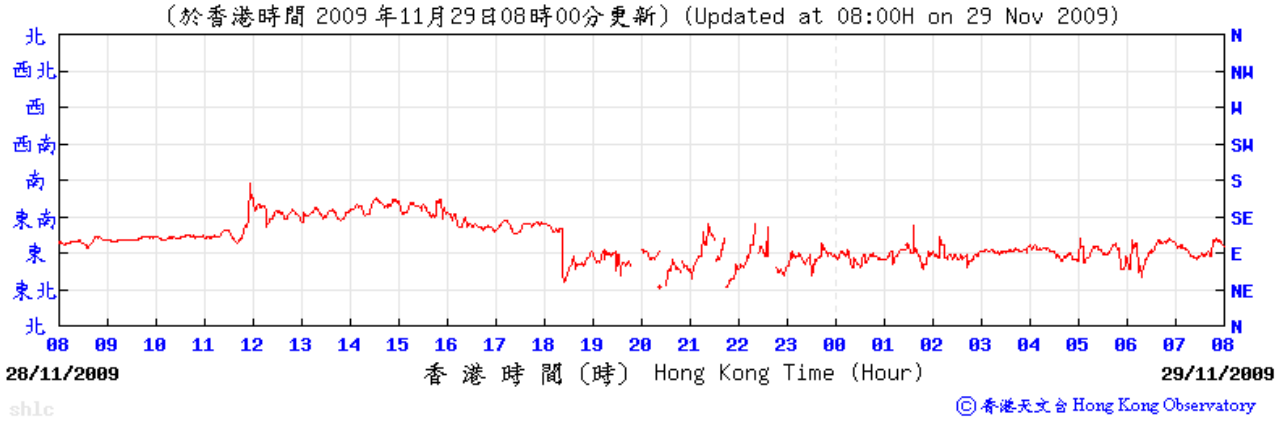


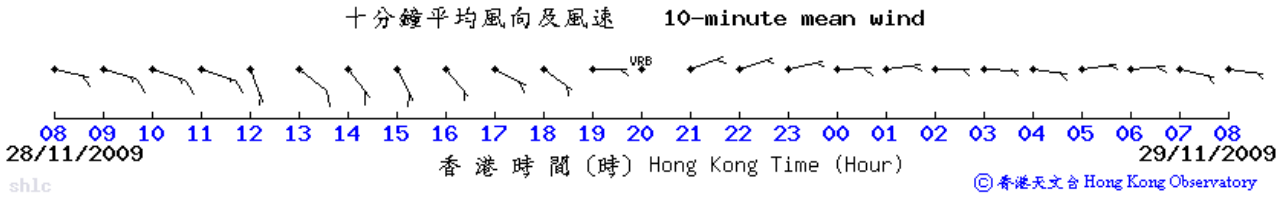


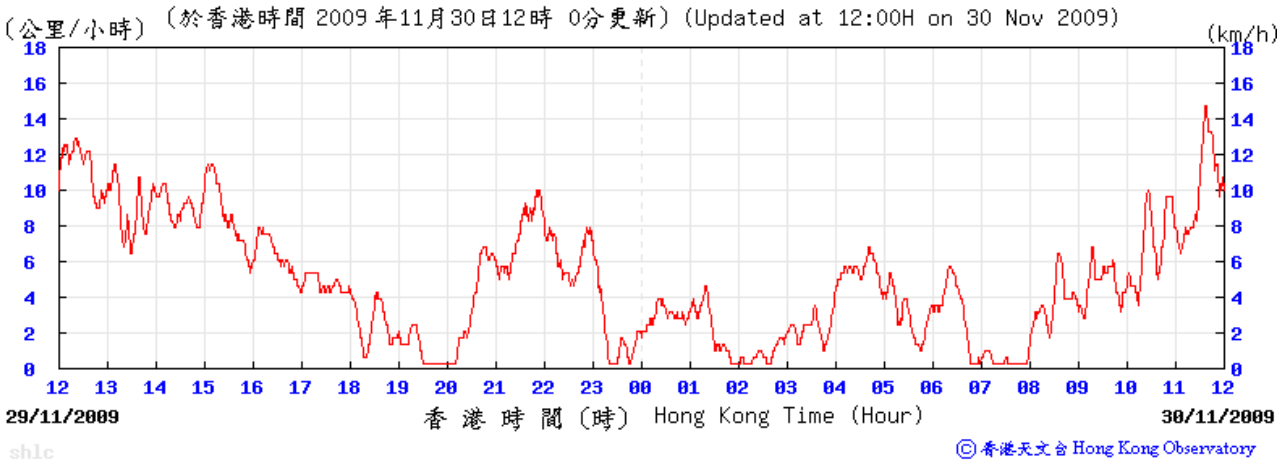
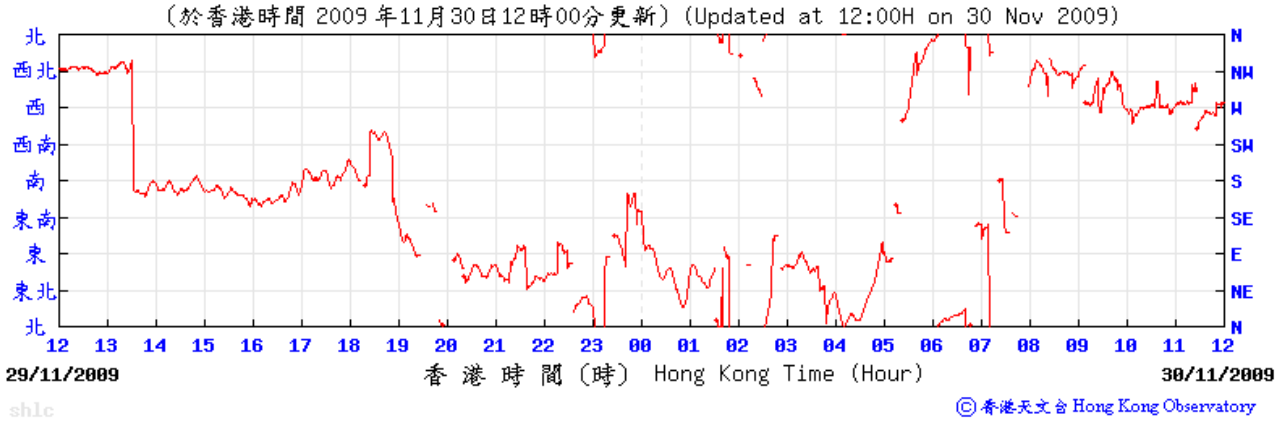
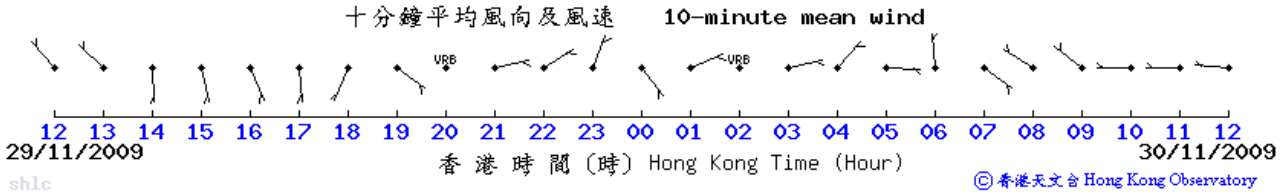
Wind Data for Tsing Yi

29 Nov 2009







Wind Data for Tsing Yi

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