Issue No.	:	1
Issue Date	:	December 2010
Project No.	:	768 (2)

JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN

BASELINE ENVIRONMENTAL MONITORING REPORT FOR OPERATIONAL PHASE

Prepared By:

ALLIED ENVIRONMENTAL CONSULTANTS LTD.

COMMERCIAL-IN-CONFIDENCE

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AEC 沛然環境評估工程顧問有限公司

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AIM

To provide a summary of the results from the baseline environmental monitoring conducted at the Joint User Complex and Wholesale Fish Market at Area 44, Tuen Mun and to derive Action and Limit Levels for noise and air quality monitoring during the operational phase.

EXECUTIVE SUMMARY

In accordance with Section 9.3 of the EM&A Manual of the Project and Section 5.2 of the approved Environmental Permit, baseline environmental monitoring for the Joint User Complex and Wholesale Fish Market at Area 44, Tuen Mun has been carried out from 26th November 2010 to 9th December at Block 15, Yuet Wu Villa . Baseline noise monitoring was conducted within the period of 0300-0630 hours. No major construction work was carried during the monitoring period.

Noise monitoring results at the monitoring location ranged from 48.3dB(A) to 66.9dB(A) with an average of 58.0dB(A).

Action and Limit levels for air quality and noise impact monitoring were derived from the baseline monitoring results.The action level for noise impact monitoring is predefined as when any documented compliant is received.

Since the prevailing night-time background noise level was higher than the ANL-5dB(A), the prevailing night-time background noise level of Leq of 58dB(A) is adopted as the noise assessment criterion for fixed noise impact assessment.

In the event of non-compliance with environmental regulations or contractual requirements, a recommended Event/Action Plan is given to be implemented.

1. INTRODUCTION

Baseline environmental monitoring was conducted for the Joint User Complex and Wholesale Fish Market at Area 44, Tuen Mun. Results serve as a basis to evaluate the environmental performance of operation at the subject site.

2. PROJECT BACKGROUND

A Joint User Complex and Wholesale Fish Market (WFM) at Area 44 in Tuen Mun is designed and built by Architectural Services Department on behalf of Agriculture, Fisheries and Conservation Department, Marine Department, and Food and Environmental Hygiene Department of the Hong Kong SAR. The WFM is to provide a permanent site for the relocation of the existing temporary wholesale fish market at Tuen Mun Area 27 and to accommodate a community hall and dragon boat racing spectator stand for public use. The development is a 3-storey complex to accommodate the wholesale fish market at the ground floor, a community hall on the first and second floors, and an extensive landscaped deck on roof level. The Wholesale Fish Market is categorised as a designated project under the Environmental Impact Assessment Ordinance (EIAO) and therefore a detailed Environmental Impact Assessment (EIA-085/2002) has been conducted in year 2002 and an Environmental Permit (EP-296/2007) was issued by Environmental Protection Department in December 2007.

The subject site is located at Castle Peak Bay of Tuen Mun given in Figure 1. The subject site is bounded to the north by a future local open space presently used as a temporary car park, to the east by Castle Peak Bay typhoon shelter, to the south by a future lorry park and to the west by Wu Shan Road. Yuet Wu Villa being the nearest residential establishment is located at around 85m from the site boundary.

3. MONITORING LOCATION

As agreed with EPD, baseline Monitoring was conducted at Block 15 of Yuet Wu Villa. Noise monitoring was conducted at 1.2m above ground level at the junction of Wu Sau Street and Wu On Street as given in Figure 2. Figure 3 shows photos taken during monitoring at the monitoring location.

4. OPERATION PROGRAMME

The operation of the WFM is anticipated to begin on 23rd December 2010. The peak hours for fish trading purposes of the WFM are from 3:00 to 6:30 a.m., all environmental mitigation measures for operational stage stated in approved EIA Report, EM&A Manual and Environmental Permit shall be carried out throughout the operation period as shown in Appendix A.

5. ENVIRONMENTAL REGULATIONS

The principal legislation for the control of noise from the WFM is given in the Noise Control Ordinance (NCO). Technical Memorandum, which stipulate the control approaches and criteria for noise impact has been issued under the NCO. The following TM is applicable to the control of noise from activities of the WFM:

- Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (TMNP).

TMNP details the procedures that should be adopted by the Authority for the measurement and assessment of noise emanating from places other than domestic premises, public places or construction sites. The Acceptable Noise Levels (ANLs) depend on the ASR of the assessment area. Table 1 illustrates the ASRs of different types of area containing the NSR. The ANLs are shown in Table 2.

Table 1 Area Sensitivity Ratings (ASRs)

Type of area containing the NSR	Not Affected [1]	Indirectly Affected [2]	Directly Affected [3]
(i) Rural area, including country parks or village type developments	A	B	B
(ii) Low density residential area consisting of low-rise or isolated high-rise developments	A	B	C
(iii) Urban area	B	C	C
(iv) Area other than those above	B	B	C

[1] Not Affected - NSR is located such that the noise generated by the influencing factors (IF) [4] is not noticeable.
[2] Indirectly Affected - NSR is located such that the noise generated by the influencing factors while noticeable, is not a dominant feature of the noise environment.
[3] Directly Affected - NSR is located such that the noise generated by the IF is readily noticeable and is a dominant feature of the noise environment.
[4] IFs are defined as industrial areas, major roads, or the area within the boundary of Hong Kong International Airport.

Table 2 Acceptable Noise Levels (ANLs)

Time Period	Area Sensitivity Rating		
	A	B	C
Day (0700 to 1900 hours)	60	65	70
Evening (1900 to 2300 hours)			
Night (2300 to 0700 hours)	50	55	60

ASR of "B" has been proposed for the NSRs in accordance with the TM in view of the fact that they are located in "area other than above" and being unaffected or indirectly affected by influencing factors. The ASR adopted in this EIA Report was determined based on the current situation.

6. MONITORING METHODOLOGY

6.1 Baseline Monitoring Programme

Baseline noise monitoring was conducted at Block 15, Yuet Wu Villa following completion of the construction but prior to the operation of the WFM from 26th November to 9th December 2010 between 0300-0630 hours.

6.2 Noise Monitoring

Baseline noise monitoring was conducted at the designated noise monitoring location between 0700-1900 hours using a sound level meter which complies with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). Noise instrumentation details are given in Table 3 and the Calibration Certificate for the sound level meter and calibrator is given in Appendix B.

Table 3 Noise Monitoring Equipment

Manufacturer	Type/Model No.	Equipment
Svantek	Svan 959	Precision Integrating Sound Level Meter with windshield
Svantek	SV 30A	Sound Level Calibrator

Baseline operational noise levels measurements were recorded in terms of A-weighted equivalent continuous sound pressure level on a daily basis. Leq(5min) was used as the monitoring parameter and three consecutive Leq(5min) results were recorded daily. The sound level meter was calibrated immediately prior to and following each noise measurement. The meter was mounted on a tripod at a height of 1.2m and the microphone was positioned at 1m away the building façade of the noise monitoring station facing the WFM.

Noise measurements were not made in the presence of fog, rain, and wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed was checked with a portable anemometer capable of measuring the wind speed in m/s.

7. RESULTS

7.1. Noise

Noise monitoring results in terms of $L_{eq(5min)}$, $L_{10(5min)}$ $L_{90(5min)}$ measured at the designated noise monitoring location are summarized in Table 4. L_{10} and L_{90} represent sound levels that are exceeded 10% and 90% of the time respectively. Normally, L_{10} measurements can be considered as the average peak levels, whilst L_{90} levels can be considered as the average background noise levels.

Noise monitoring results are summarized in Table 4 serve as a basis for determining the action and limit levels. Baseline noise monitoring results also represent the background noise climate of the area and may be used to carry out background noise corrections to determine the actual noise impact caused by operation of the WFM. The minimum and maximum baseline noise level measured at Yuet Wu Villa was 48.3dB(A) $L_{eq(5min)}$ and 66.9dB(A) $L_{eq(5min)}$ respectively with an average of 58.0dB(A) $L_{eq(5min)}$.

Table 4 Noise Monitoring Results

Day	Time Period (5-min)	Measured Noise Level, dB(A)			Wind Speed (m/s)
		L_{eq}	L_{10}	L_{90}	
1 (26-11-2010) Friday	05:20 - 05:25	54.4	57.3	46.7	< 5 m/s
	05:25 - 05:30	53.2	56.4	46.1	
	05:30 - 05:35	55.4	59.4	47.1	
2 (27-11-2010) Saturday	05:40 - 05:45	53.8	56.2	46.3	< 5 m/s
	05:45 - 05:50	54.7	58.2	45.4	
	05:50 - 05:55	53.2	56.6	46.3	
3 (28-11-2010) Sunday	05:40 - 05:45	52.2	55.1	44.3	< 5 m/s
	05:45 - 05:50	55.7	60.0	45.2	
	05:50 - 05:55	53.2	56.4	46.0	
4 (29-11-2010) Monday	04:45 - 04:50	53.8	55.7	44.7	< 5 m/s
	04:50 - 04:55	53.0	56.9	46.6	
	04:55 - 05:00	50.8	54.2	44.5	
5 (30-11-2010) Tuesday	05:05 - 05:10	51.0	53.9	44.4	< 5 m/s
	05:10 - 05:15	53.0	56.7	44.2	
	05:15 - 05:20	57.7	59.5	44.5	

Day	Time Period (5-min)	Measured Noise Level, dB(A)			Wind Speed (m/s)
		L_{eq}	L_{10}	L_{90}	
6 (01-12-2010) Wednesday	04:45 - 04:50	52.5	55.6	44.8	< 5 m/s
	04:50 - 04:55	52.7	56.6	45.1	
	04:55 - 05:00	49.6	52.8	45.3	
7 (02-12-2010) Thursday	04:20 - 04:25	50.5	53.5	44.3	< 5 m/s
	04:25 - 04:30	48.4	49.9	44.2	
	04:30 - 04:35	50.3	53.9	44.3	
8 (03-12-2010) Friday	05:10 - 05:15	52.8	56.2	46.0	< 5 m/s
	05:15 - 05:20	58.6	61.5	46.9	
	05:20 - 05:25	53.8	56.2	47.3	
9 (04-12-2010) Saturday	06:10 - 06:15	64.0	63.0	51.4	< 5 m/s
	06:15 - 06:20	55.4	59.0	48.4	
	06:20 - 06:25	62.7	63.7	48.4	
10 (05-12-2010) Sunday	05:45 - 05:50	51.6	55.4	46.6	< 5 m/s
	05:50 - 05:55	53.0	56.5	46.0	
	05:55 - 06:00	52.6	55.4	45.1	
11 (06-12-2010) Monday	06:15 - 06:20	63.3	60.5	49.2	< 5 m/s
	06:20 - 06:25	62.4	64.1	49.3	
	06:25 - 06:30	65.2	64.2	49.6	
12 (07-12-2010) Tuesday	06:15 - 06:20	58.1	61.0	50.8	< 5 m/s
	06:20 - 06:25	63.8	65.0	51.3	
	06:25 - 06:30	66.9	64.8	53.2	
13 (08-12-2010) Wednesday	04:05 - 04:10	50.9	54.4	45.5	< 5 m/s
	04:10 - 04:15	50.1	53.2	44.4	
	04:15 - 04:20	53.5	56.4	44.6	
14 (09-12-2010) Thursday	03:45 - 03:50	48.6	50.6	45.9	< 5 m/s
	03:50 - 03:55	48.3	51.1	44.8	
	03:55 - 04:00	49.3	52.6	44.4	

7.2. Wind data

Wind data of the monitoring station were obtained from the nearest Hong Kong Observatory (HKO) Tuen Mun automatic weather station located at Tuen Mun Town Park (63 mPD), which shall satisfy the above requirements. Table 5 summarises the wind data during the baseline monitoring period. Wind record from HKO will be shown in Appendix C.

Table 5 Summary of Weather Conditions during the Baseline Monitoring Period

Date	*Weather*	*Prevailing Wind direction*	*Daily Average Wind speed (m/s)*
26th November 2010	Sunny	N	2.0
27th November 2010	Sunny	SSE	1.8
28th November 2010	Sunny	S	2.0
29th November 2010	Sunny	SSE	1.5
30th November 2010	Sunny	N	1.7
1st December 2010	Sunny	NNE	1.9
2nd December 2010	Sunny	N	1.6
3rd December 2010	Sunny	NNE	2.9
4th December 2010	Sunny	S	1.9
5th December 2010	Sunny	N	1.0
6th December 2010	Sunny	NNE	1.8
7th December 2010	Sunny	NNE	4.1
8th December 2010	Sunny	NNE	2.3
9th December 2010	Sunny	N	2.2

8. MAJOR INFLUENCING FACTORS

Since no site activities were undertaken on-site, the weather condition and the noise from the road traffic are the major influencing factors affecting the monitoring results.

9. ACTION AND LIMIT LEVELS

Baseline monitoring results form the basis for determining the noise and air quality criteria for impact monitoring assessment during the operational phase of the project. The criteria shall be referred to as the Action and Limit Levels.

The ANL during the hours between 23:00 and 07:00 of the next day for ASR "B" is 55dB(A). According to Section 7, the prevailing background noise level was recorded as Leq of 58.0dB(A) near Yuet Wu Villa. Since the prevailing night-time background noise level was higher than the ANL-5dB(A), which accords to guidelines from Section 4.2.13 of Chapter 9 of Hong Kong Planning Standards and Guidelines, the latter is adopted as the noise assessment criterion for fixed noise impact assessment.

Should non-compliance of the above Action and Limit levels occurs, the contractor shall undertake corresponding in accordance with the Event and Action Plan given in Table 6 and the Event and Action Plans given in EM&A Manual.

Table 6 Event And Action Plan

EVENT	ACTION		
	WFM Management	AFCD	ASD
Action Level	1. Notify AFCD 2. Identify source 3. Discuss with AFCD and formulate remedial measures 4. Increase monitoring frequency to check mitigation effectiveness	1. Identify the source 2. Rectify any unacceptable practice 3. Amend working method if appropriate 4. Inform ASD if cause of complaint or exceedance is considered to be caused by civil or E&M design problems 5. Implement amended working methods 6. Ensure remedial measures are properly implemented	1. Assist AFCD to find the cause of the exceedance 2. Modify or improve design as appropriate
Limit Level	1. Notify AFCD 2. Identify source 3. Repeat measurement to confirm finding 4. Increase monitoring frequency 5. Discuss with AFCD and formulate remedial measures 6. Assess effectiveness of the remedial actions 7. If exceedance stops, cease additional monitoring	1. Carry out investigation to identify the source 2. Rectify any unacceptable practice 3. Amend working method if appropriate 4. Inform ASD if cause of complaint or exceedance is considered to be caused by civil or E&M design problems 5. Implement amended working methods 6. Ensure remedial measures are properly implemented 7. If exceedance continues, consider what portion of the work is responsible and stop that portion of work until the exceedance is abated	1. Assist AFCD to find the cause of the exceedance 2. Modify or improve design as appropriate 3. Assist AFCD to formulate remedial actions

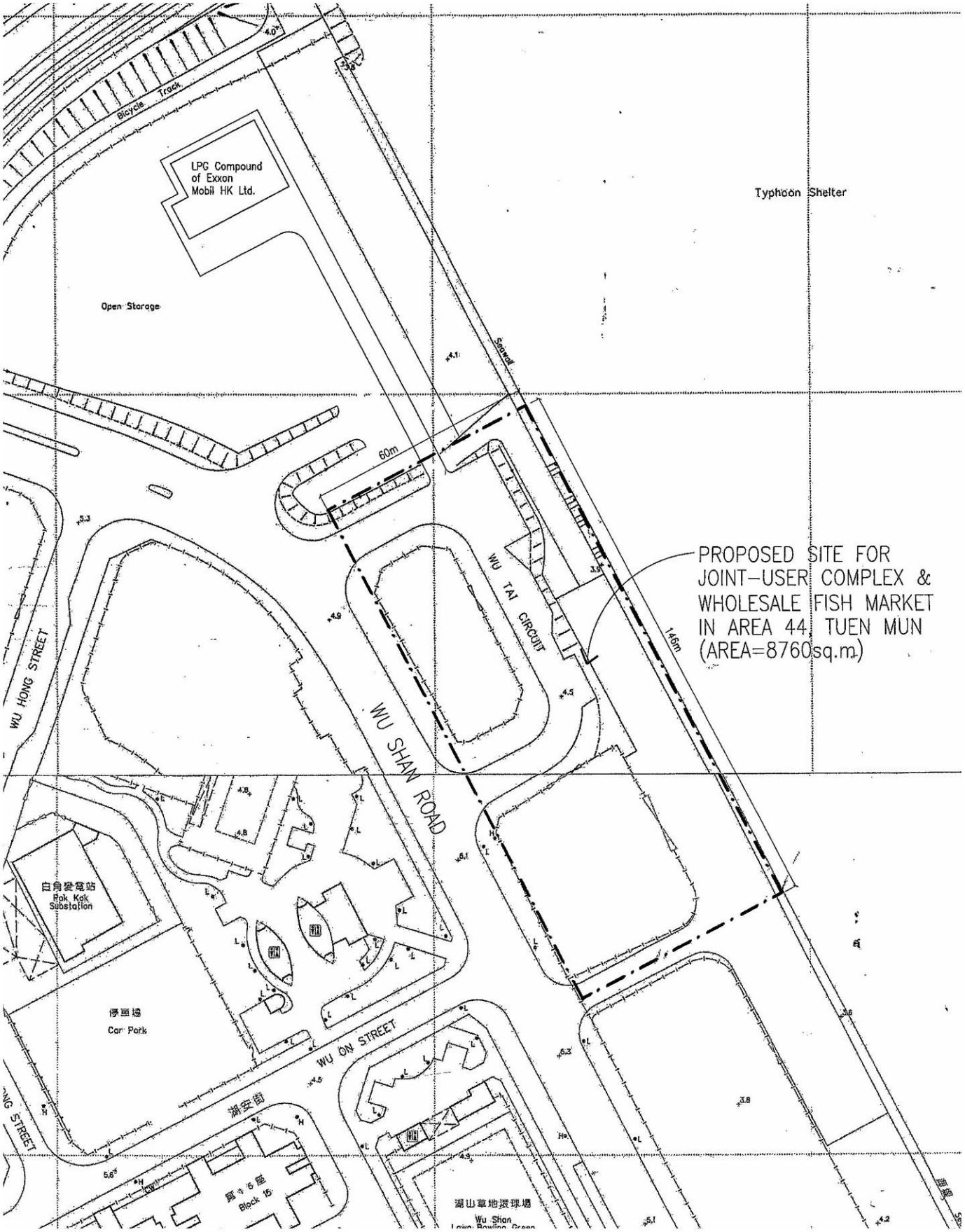
10. CONCLUSIONS

Baseline environmental monitoring has been carried out for the Joint User Complex and WFM at Area 44, Tuen Mun.

Baseline noise monitoring was conducted at Block 15, Yuet Wu Villa from 26th November 2010 to 9th December 2010.

For impact noise monitoring, the action level is predefined as when one documented complaint is received. Since the prevailing night-time background noise level was higher than the ANL-5dB(A), the prevailing night-time background noise level of Leq of 58dB(A) is adopted as the noise assessment criterion for fixed noise impact assessment.

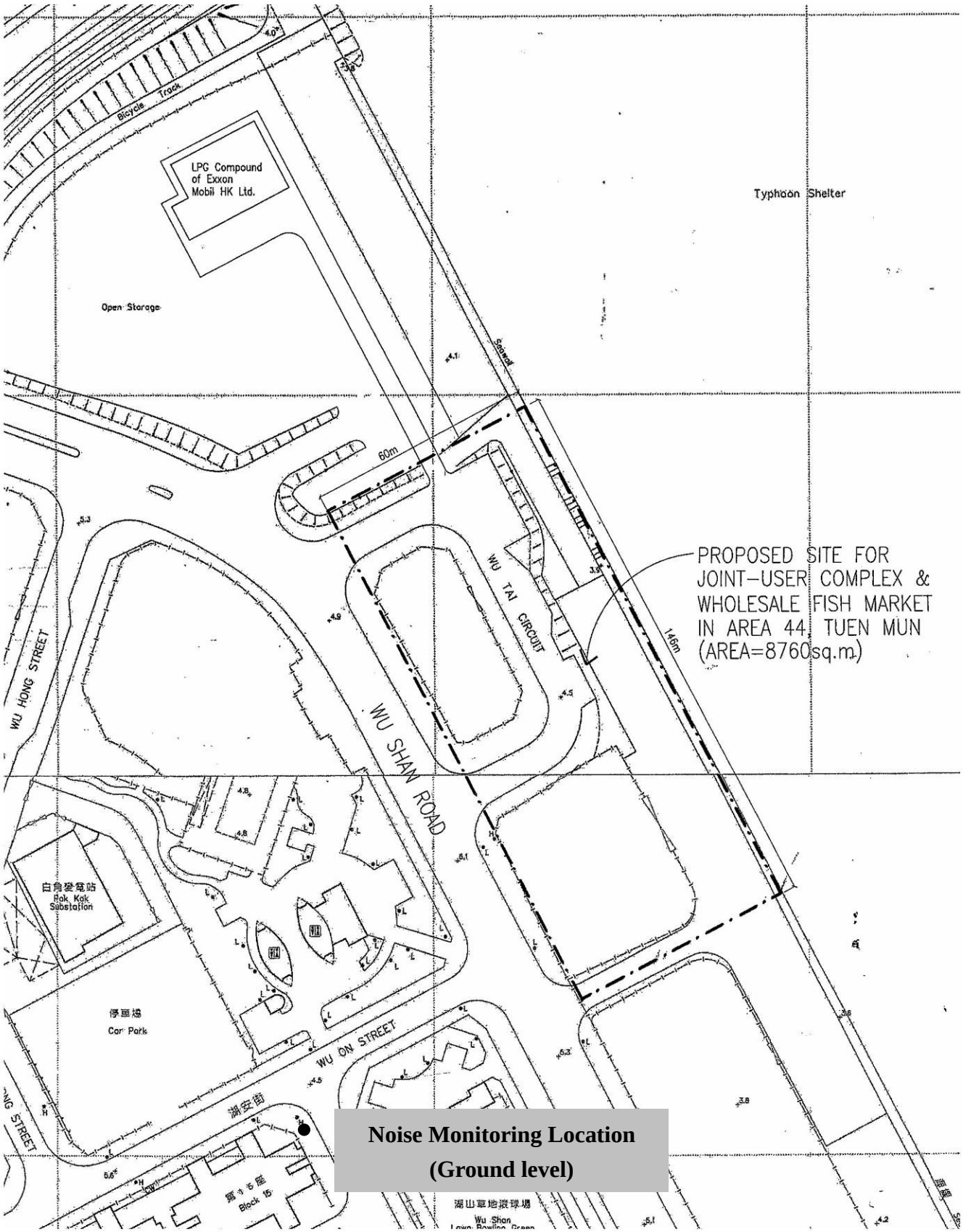
Baseline noise monitoring results also represent the background noise climate of the area and may be used to carry out background noise corrections to determine the actual noise impact caused by the activities of the WFM. In the event of non-compliance with environmental regulations or contractual requirements, a recommended Event and Action Plan is given to be implemented.



JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN

SITE LOCATION PLAN

Figure No.	Rev.:
1	0
Scale	Date
NTS	12/10



JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN

LOCATION OF NOISE MONITORING STATION

Figure No.	Rev.:
2	0
Scale	Date
NTS	12/10

JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN **PHOTOS OF NOISE MONITORING STATION**	Figure No. 3	Rev.: 0
	Scale NTS	Date 12/10

Appendix A

Mitigation Measures Implementation Schedule for Operational Stage

MITIGATION MEASURES IMPLEMENTATION SCHEDULE FOR OPERATIONAL STAGE

EIA Ref. Section	EM&A Ref. Section	Environmental Protection Measures	Location/Duration of Measures/ Timing of completion measures
4.7	2.8	Air Quality • The WFM (including parking area) shall be enclosed with no unprotected openings facing Wu Shan Road to reduce the potential odour nuisance posed to the nearby residents • Exhaust air from the WFM (including parking area) shall be discharged on the eastern elevation facing the typhoon shelter • Contingency provision of future addition of odour removal system for the WFM, if required, will be allowed in the current design • All fresh air intakes for the Community Hall and Other Possible Community Uses shall be sited at levels above 15mPD and 18.5mPD, respectively, and fitted with appropriate filters to remove odour • Exhaust air from the RCP and Marine RCP shall be treated with appropriate deodorisation system prior to discharge to outdoors • Good hygiene and effective operational and waste management practices • Daily washing down of fish market areas and the storage and daily removal of organic wastes • Drains and channels shall be easy to clean and construction materials for the WFM shall be impervious, durable and easy to clean • Measures should be taken to further minimize the potential odour impact during the transportation of fish or other odorous materials, including the use of properly covered containers • Deodourisation systems shall be installed for the public toilets	WFM Complex Throughout the operational phase
5.7	3.7	Noise • To avoid a potential night time nuisance to nearby residents a right-turn only junction (northern access road/Wu Shan Road) is provided for vehicles leaving the WFM • Arrangement will be made with drivers to reduce lorry queuing; assistance will be sought from WFM users and vessel operators to avoid loudhailer operation and reduce horn tooting along the seafront • MD and WFM management to encourage vessels to use the eastern harbour entrance • MD and WFM management to encourage the use of silencers at fishing vessels' exhaust • MD to monitor and maintain practical and safe movement within the harbour, and to assist MARPOL and EPD in minimizing where possible noise impact to nearby residents • To request vessel owners to avoid horning except in emergency and to use other means such as phones to notify their presence • The WFM (including parking area) shall be enclosed with no unprotected openings facing Wu Shan Road to reduce potential noise nuisance posed to the nearby residents • A canopy is to be provided to cover all the fish unloading areas on the quay to increase noise screening to NSRs • Mechanical plant exhausts shall be directed towards the typhoon shelter and appropriately screened from Wu Shan Road	WFM entrance and waterfront Throughout the operational phase WFM Complex

EIA Ref. Section	EM&A Ref. Section	Environmental Protection Measures	Location/Duration of Measures/ Timing of completion measures
		and nearby NSRs • Suitable noise control measures will be included in building services system design, such as provision of silencers and acoustic louvers to mechanical plant and plantroom	
6.7	4.1	Water Quality • Surface drainage channels of operational areas shall be easily cleaned and connected to foul sewerage • Wastewater from toilets, kitchen, and other users of the WFM market shall be discharged into a foul sewer or a sewage treatment facility. No effluent discharge into the nullah will be allowed • The flushing water storage tank shall be properly designed so as to minimize the amount of water for each flush • Wastewater resulting from cleansing of floors of the fish market and the refuse collection units (RCP) should be discharged into a foul sewer to avoid direct discharge of wastewater to the nullah • Chemical toilets shall be provided to cope with the additional sewage generated on the day of Dragon Boat Festival	WFM Complex, RCPs and public toilets Throughout the operation phase
7.2	5.1	Waste Management • In order to minimize the amount of waste disposal, durable and reusable containers should be used, where practicable, instead of plastic bags • Organic matter shall be collected and sealed in plastic bags after each operation and removed daily • The design shall allow for separation and suitable storage of broken polyfoam casings prior to collection • Municipal solid waste generated from community hall, library and offices will be segregated	WFM Complex Throughout the operational phase
8.7	6.1	Hazard to Life • Manually operated warning siren shall be installed to instruct people to take timely shelter • Fire drill exercises shall be organized for the workers at the site and users of the WFM • Pedestrian access to the area of podium within the 150m consultation zone should be minimized by design • LPG deliveries shall be avoided during the hours when the spectator stand is fully occupied on the day of Dragon Boat Festival • Reference shall be made to the Code of Practice for the Provision of Means of Escape in Case of Fire (Hong Kong Buildings Department [1997]) and the Code of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment (Hong Kong Fire Services Department [1997])	Within WFM At all time

Appendix B

Calibration Certification of the Sound Level Meter and Calibrator

Calibration Certificates

聲學測試服務有限公司
Acoustic Testing Services Limited
Unit E, 2/F., Century Industrial Centre, 33 –35 Au Pui Wan Street, Fo Tan, Shatin, New Territories, Hong Kong
Tel: (852) 2690 9126 Fax: (852) 2690 9125 E-mail: info@ATSL.com.hk http://www.ATSL.com.hk

Certificate of Calibration

Certificate No. ATS09-060-CC002

Customer:	**Aeolian View Consultants** Room 1907 Tung Che Commercial Centre, 246 Des Voeux Road West, Hong Kong	
Item Tested		
Description:	Sound Analyzer	, Microphone
Manufacturer:	Svantek	
Type No.:	Svan-959	, 40AE
Serial No.:	11238	, 69242
Test Conditions		
Temperature:	23°C	
Relative Humidity:	62%	
Test Specifications:	Calibration Check	
Date of calibration:	27 January 2010	
Test Results:	All calibration points are within manufacturer's specification.	

The test equipment used for calibration is traceable to National Standards via:
- Standards and Calibration Laboratory, the Government of the HKSAR

Certified by: _____
Y. T. Leung
MIOA, MHKIOA
Issue Date: 27 January 2010

Certificate No.: ATS09-060-CC002 *Page 1 of 2*

聲學測試服務有限公司
Acoustic Testing Services Limited
Unit E, 2/F., Century Industrial Centre, 33 –35 Au Pui Wan Street, Fo Tan, Shatin, New Territories, Hong Kong
Tel: (852) 2690 9126 Fax: (852) 2690 9125 E-mail: info@ATSL.com.hk http://www.ATSL.com.hk

1. The instrument under test was allowed to stabilize in the laboratory for over 24 hours.

2. Calibration equipment:

Description:	Acoustical Calibrator
Manufacturer:	Brüel & Kjær
Type No.:	4231
Serial No.:	2478237
Last Calibration Date:	17 July 2009
Certificate No.:	DC090126

3. The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. Acoustic Testing Services Limited shall not be liable for any loss or damage resulting from the use of the equipment.

4. Calibration Results

Setting of unit-under-test (UUT)				Applied value		UUT Reading, dB
Range, dB	Parameter	Frequency Weighting	Response	Level, dB	Frequency, Hz	
20-120	SPL	A	F	94.03	1000	94.0
			S			94.0
			I			94.0
		C	F			94.0
			S			94.0
			I			94.0
		L	F			94.0
			S			94.0
			I			94.0
		A	F	114.04	1000	114.0
			S			114.0
			I			114.0

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

聲學測試服務有限公司
Acoustic Testing Services Limited
Unit E, 2/F., Century Industrial Centre, 33 –35 Au Pui Wan Street, Fo Tan, Shatin, New Territories, Hong Kong
Tel: (852) 2690 9126 Fax: (852) 2690 9125 E-mail: info@ATSL.com.hk http://www.ATSL.com.hk

Certificate of Calibration

Certificate No. ATS09-060-CC003

Customer:	**Aeolian View Consultants** Room 1907 Tung Che Commercial Centre, 246 Des Voeux Road West, Hong Kong
Item Tested	
Description:	Sound Level Calibrator
Manufacturer:	Svantek
Type No.:	SV-30A
Serial No.:	7441
Test Conditions	
Temperature:	23°C
Relative Humidity:	62%
Test Specifications:	Calibration Check
Date of calibration:	27 January 2010
Test Results:	All calibration points are within manufacturer's specification.

The test equipment used for calibration is traceable to National Standards via:
- Standards and Calibration Laboratory, the Government of the HKSAR,
- The Calibration Laboratory, DANAK

Certified by: _____
Y. T. LEUNG
MIOA, MHKIOA

Issue Date: 27 January 2010

聲學測試服務有限公司
Acoustic Testing Services Limited
Unit E, 2/F., Century Industrial Centre, 33 –35 Au Pui Wan Street, Fo Tan, Shatin, New Territories, Hong Kong
Tel: (852) 2690 9126 Fax: (852) 2690 9125 E-mail: info@ATSL.com.hk http://www.ATSL.com.hk

1. The instrument under test was allowed to stabilize in the laboratory for over 24 hours.

2. Calibration equipment:

	Type	Serial No.	Last Calibration Date	Calibration Report Number	Traceable to
PULSE Frequency Analyzer	3560-B	2454296	15-Aug-2005	CA052169	DANAK
Reference Microphone*	B&K 4942	2497997	19-Mar-2009	LF090028	SCL, HKSAR

3. Calibration Results

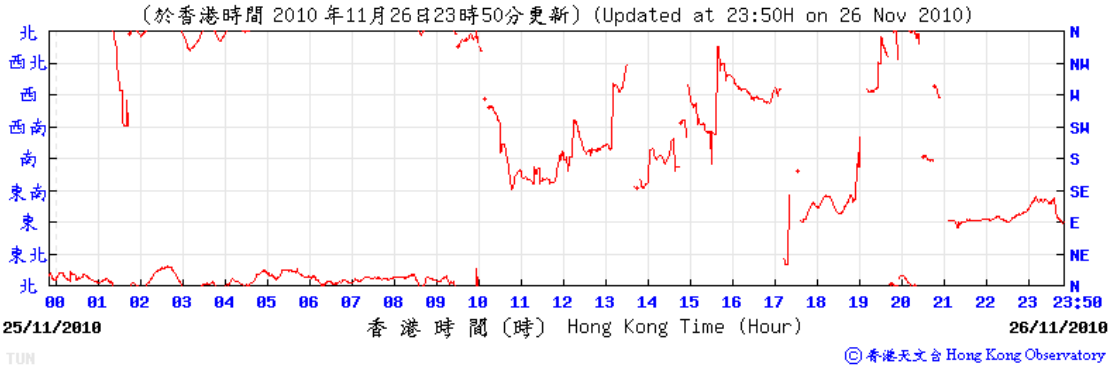
Nominal value dB	Measured value dB	Expanded Measurement Uncertainty of Reference Microphone B&K 4942 at 1000 Hz	
		dB	mV/Pa
94.00	94.00	0.08	0.40

Appendix C

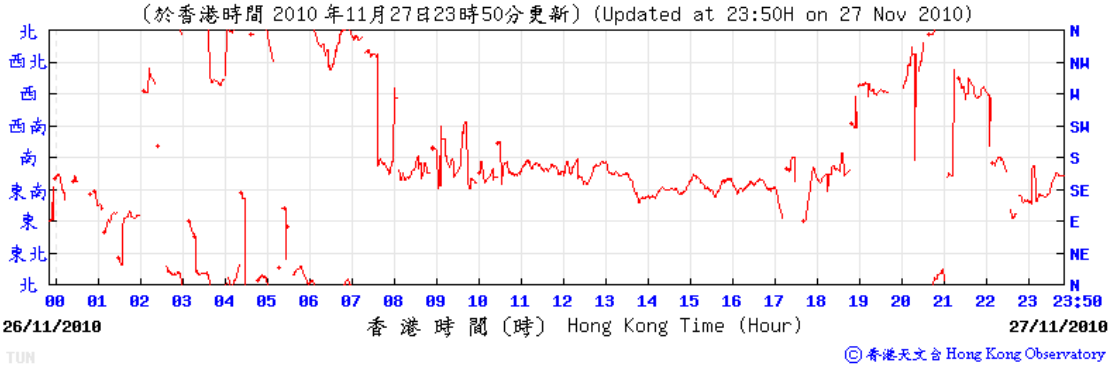
Wind Record from Hong Kong Observatory

Wind Direction at Tuen Mun Station

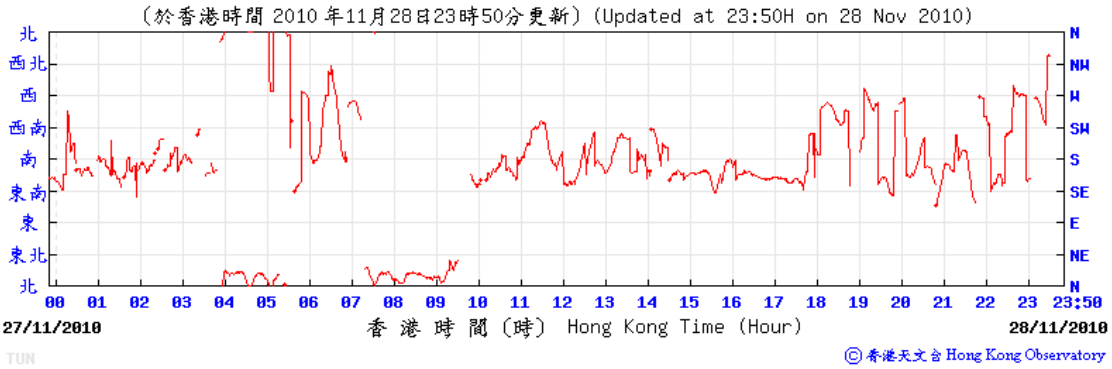
26/11/2010



27/11/2010



28/11/2010



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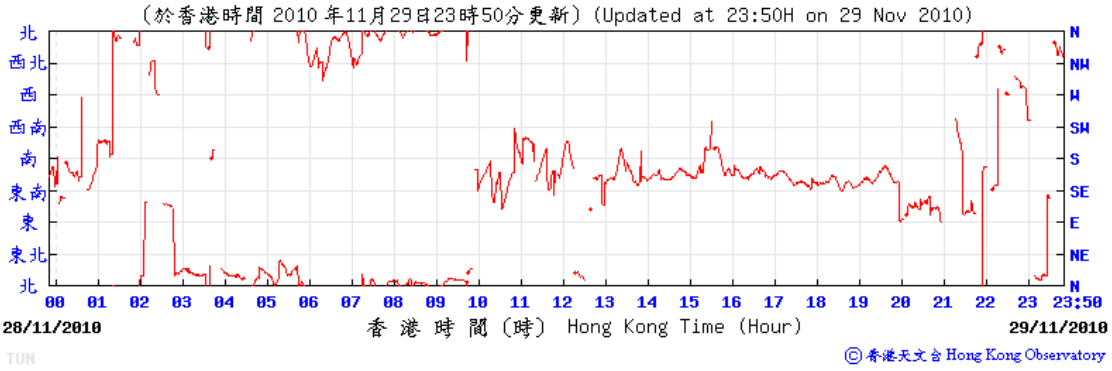

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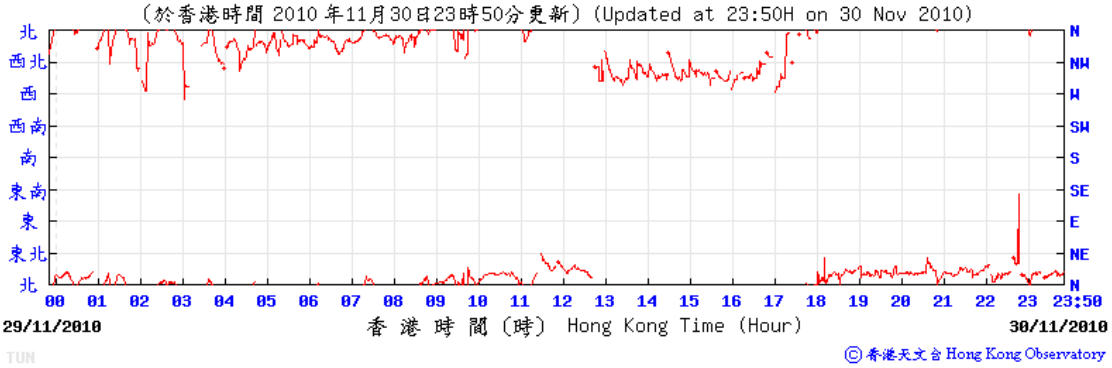
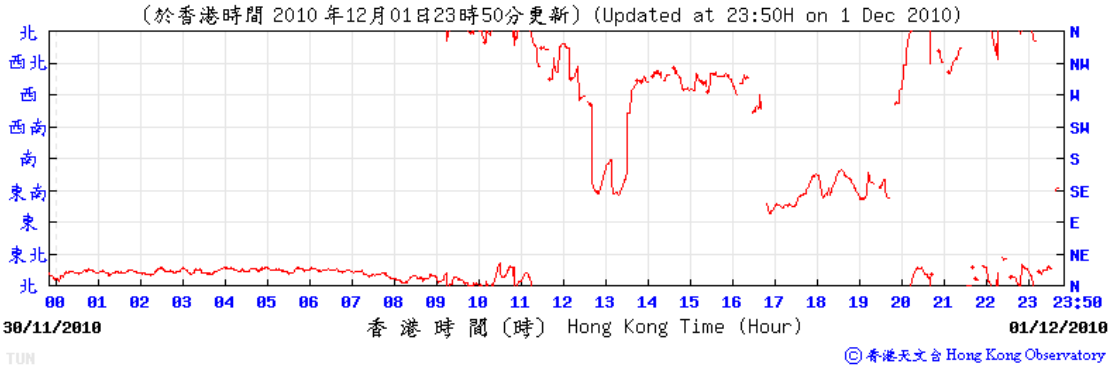


1/12/2010



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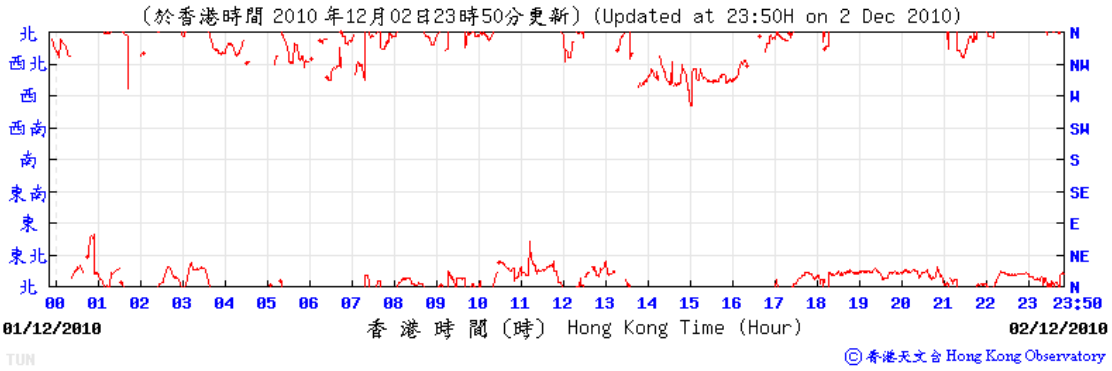

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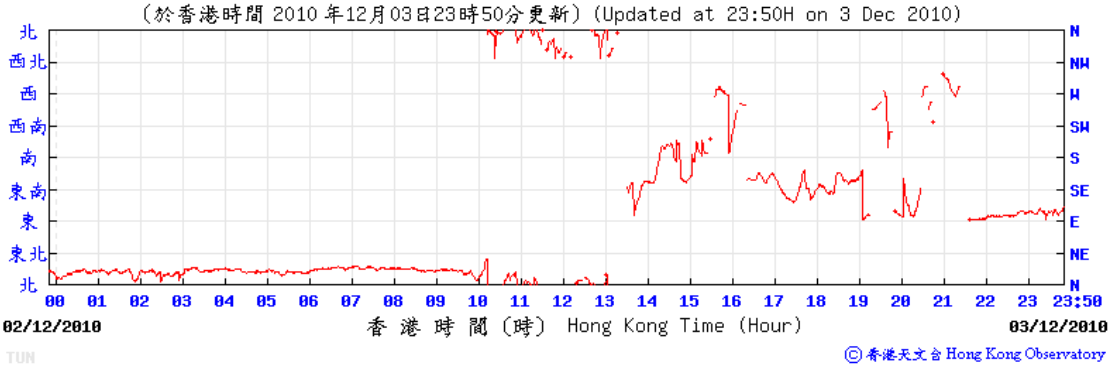
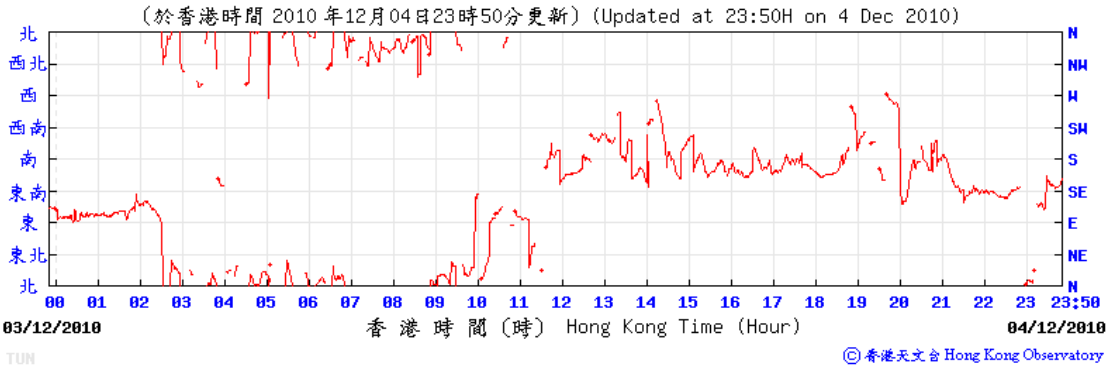
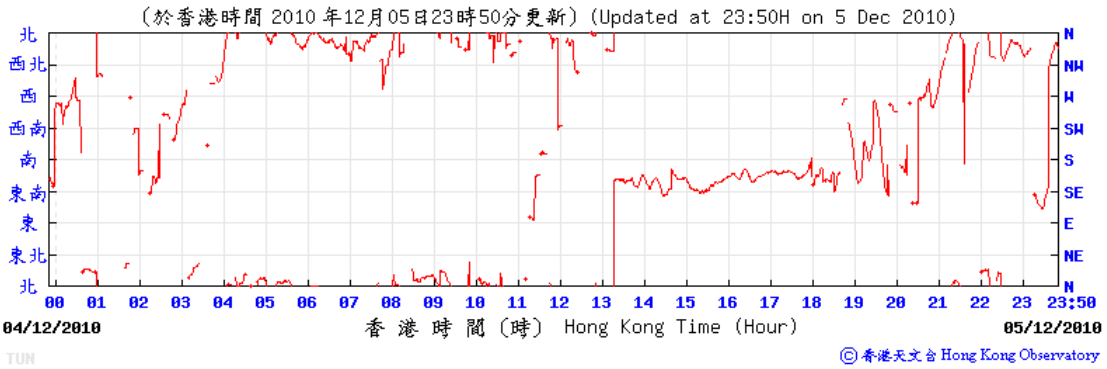


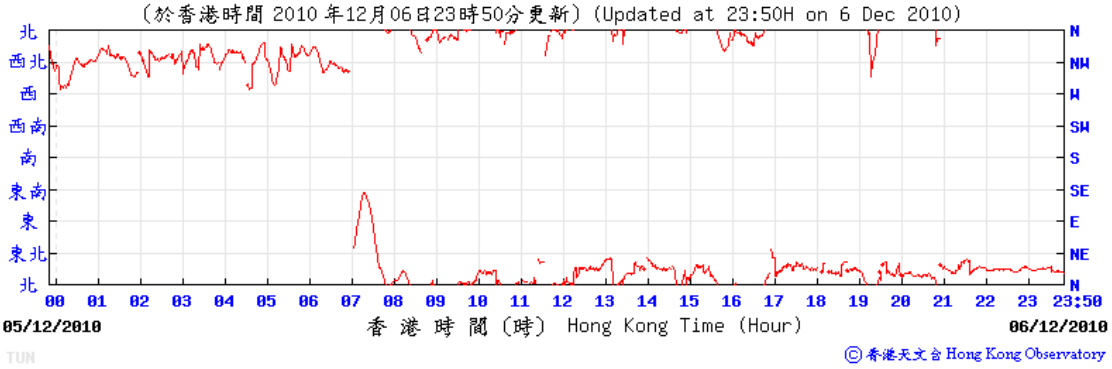
4/12/2010



5/12/2010



6/12/2010



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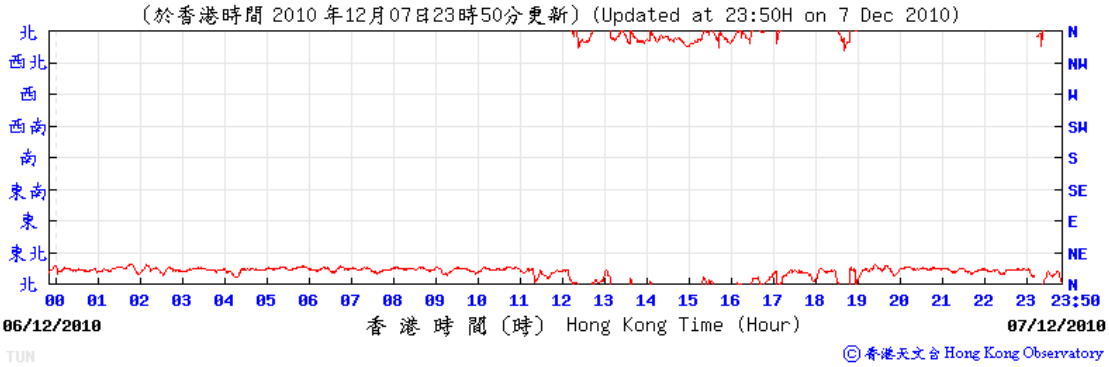
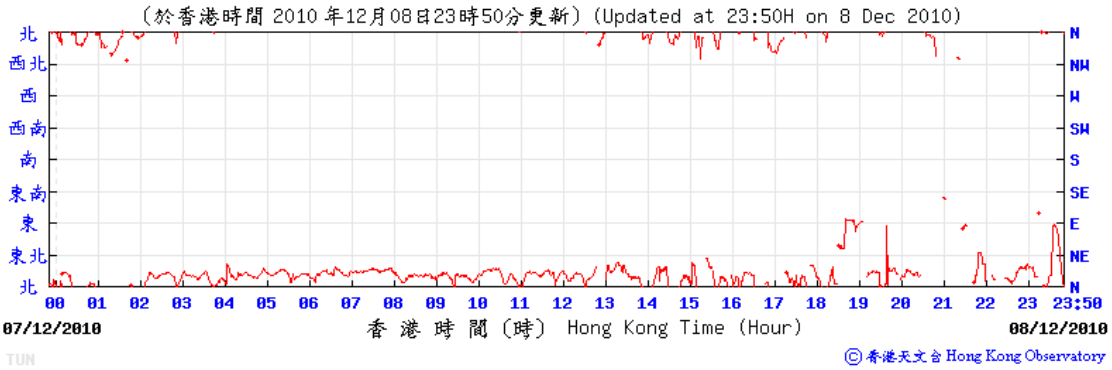
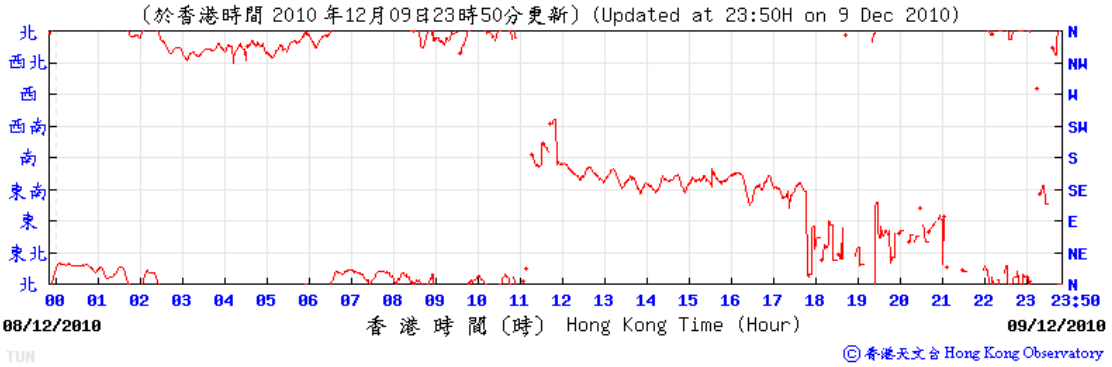


8/12/2010

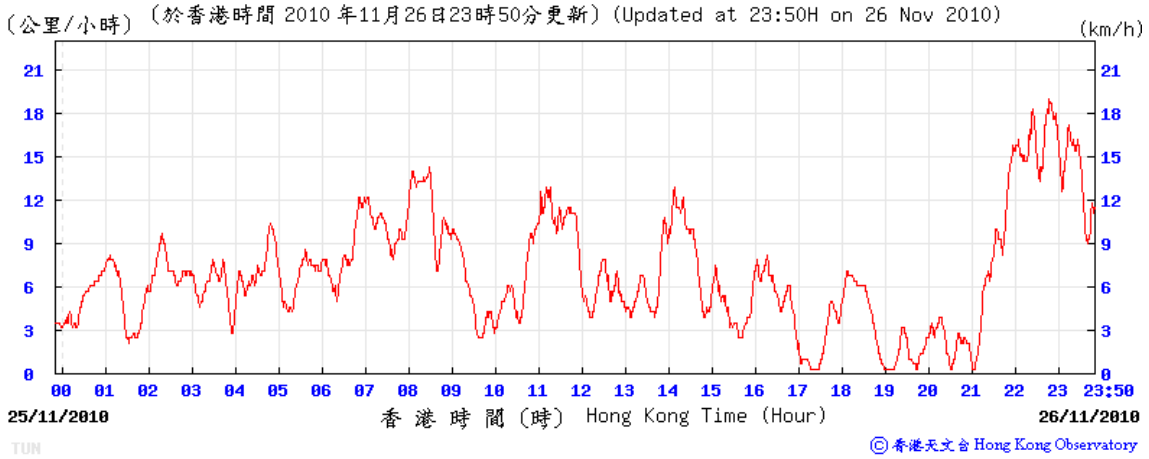


9/12/2010

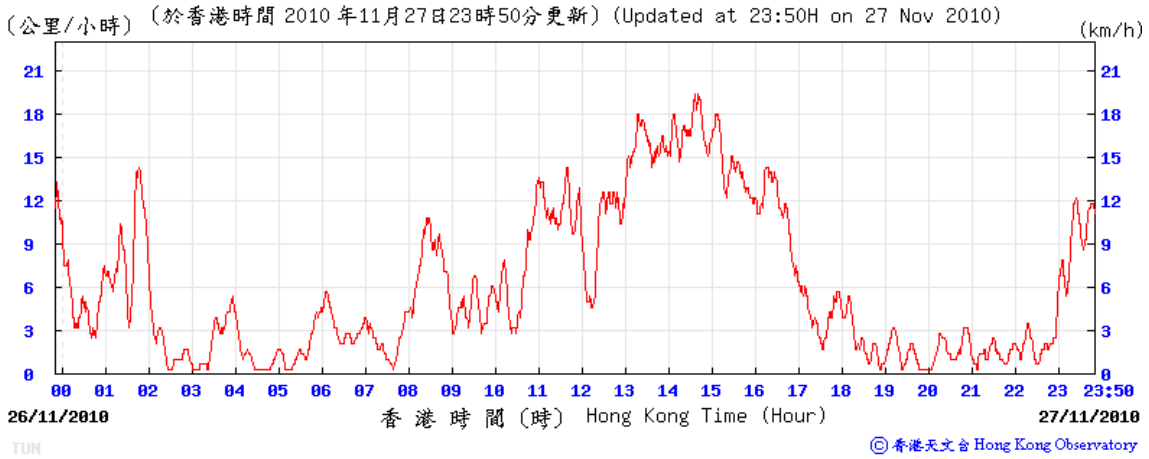


Wind Speed at Tuen Mun Station

26/11/2010



27/11/2010



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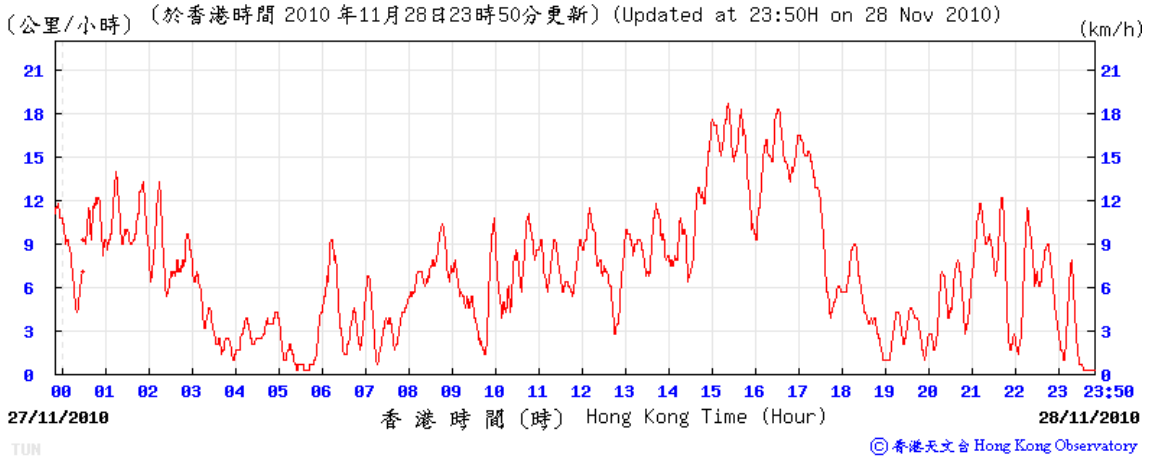

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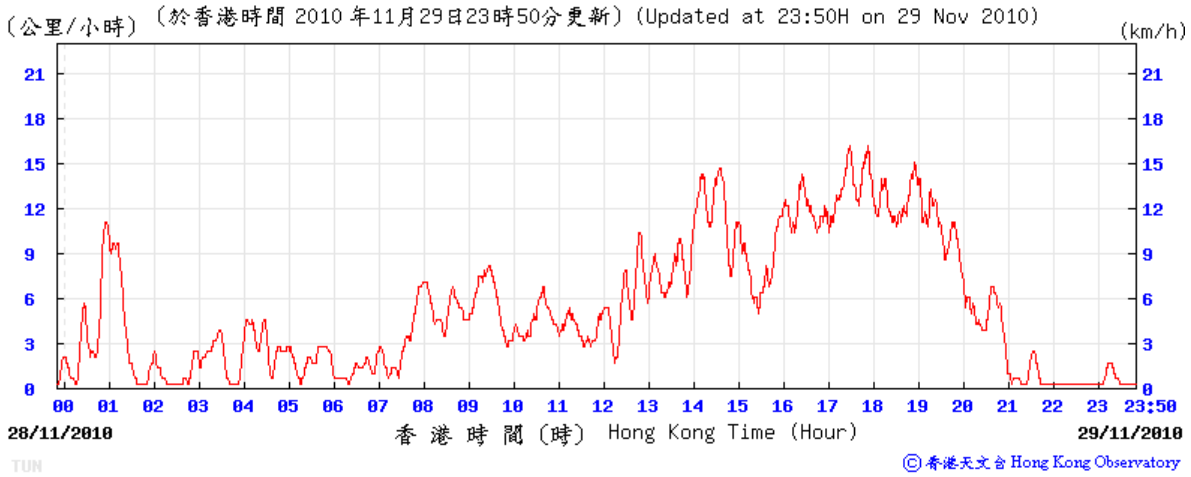

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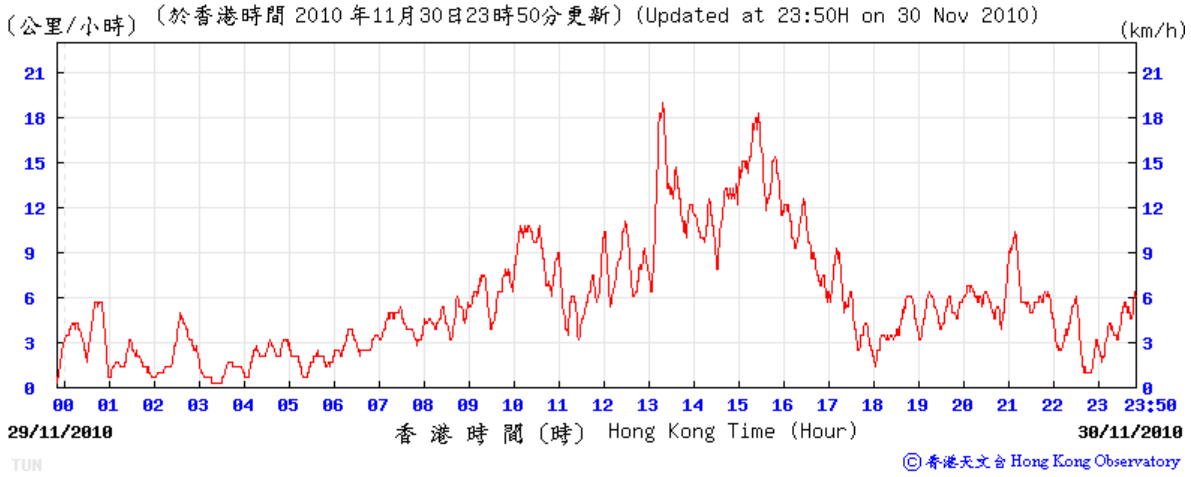

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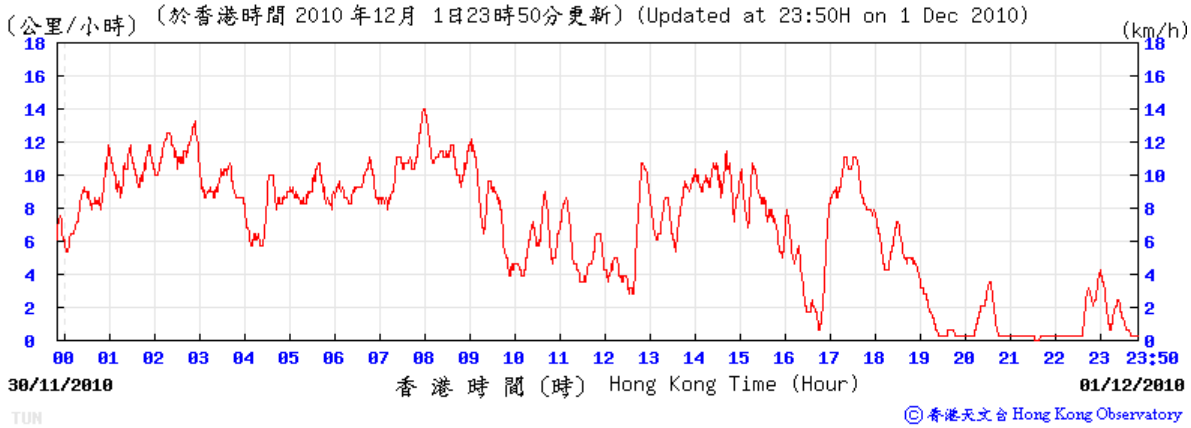
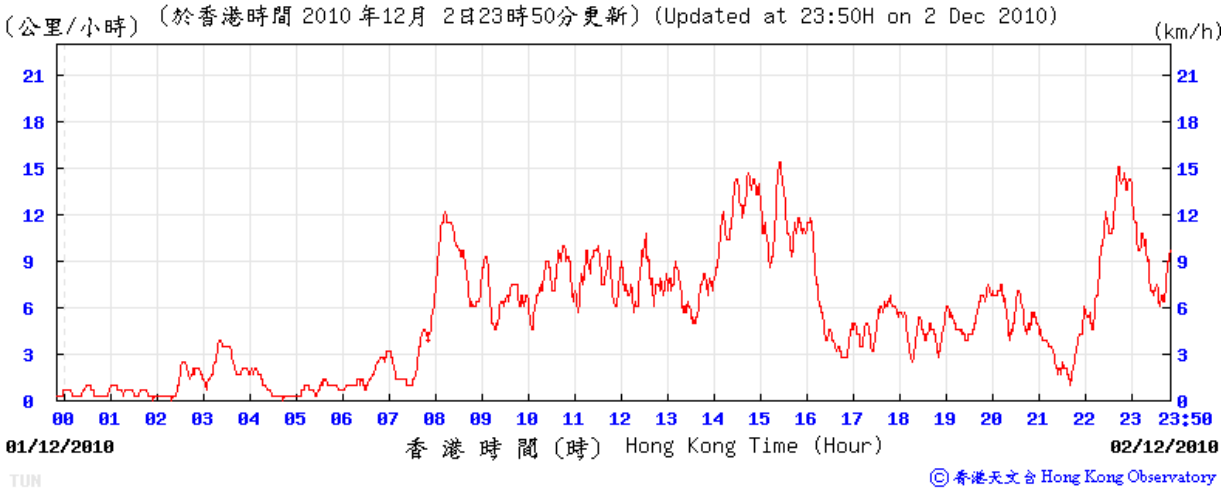


2/12/2010



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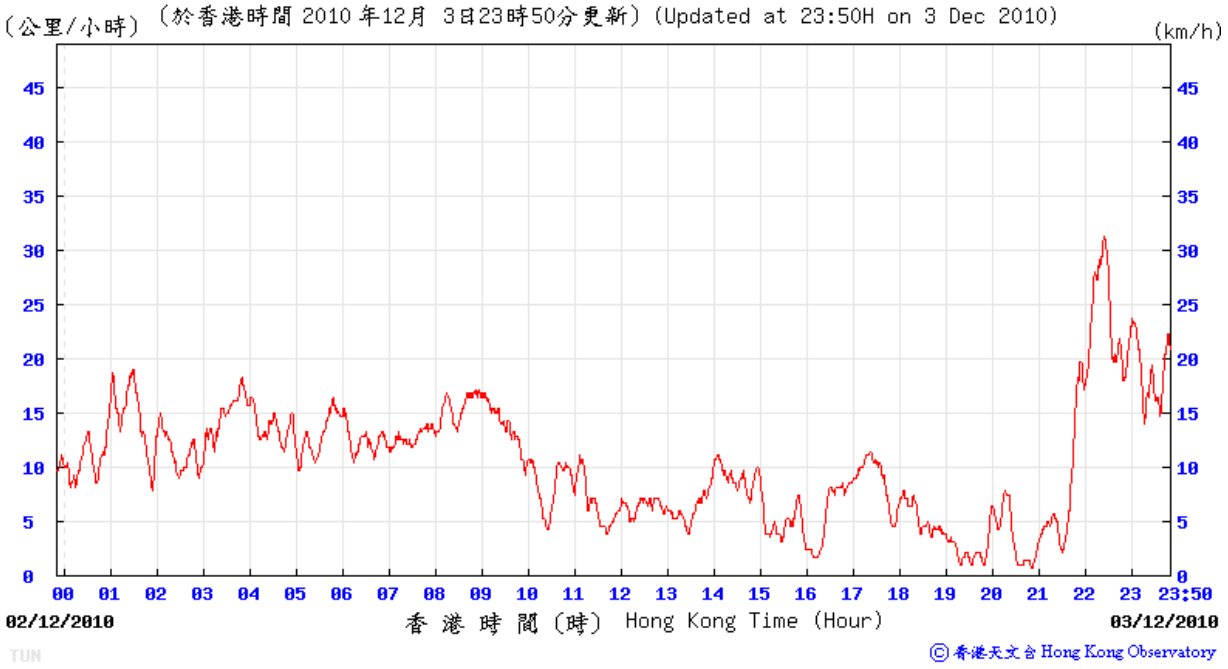

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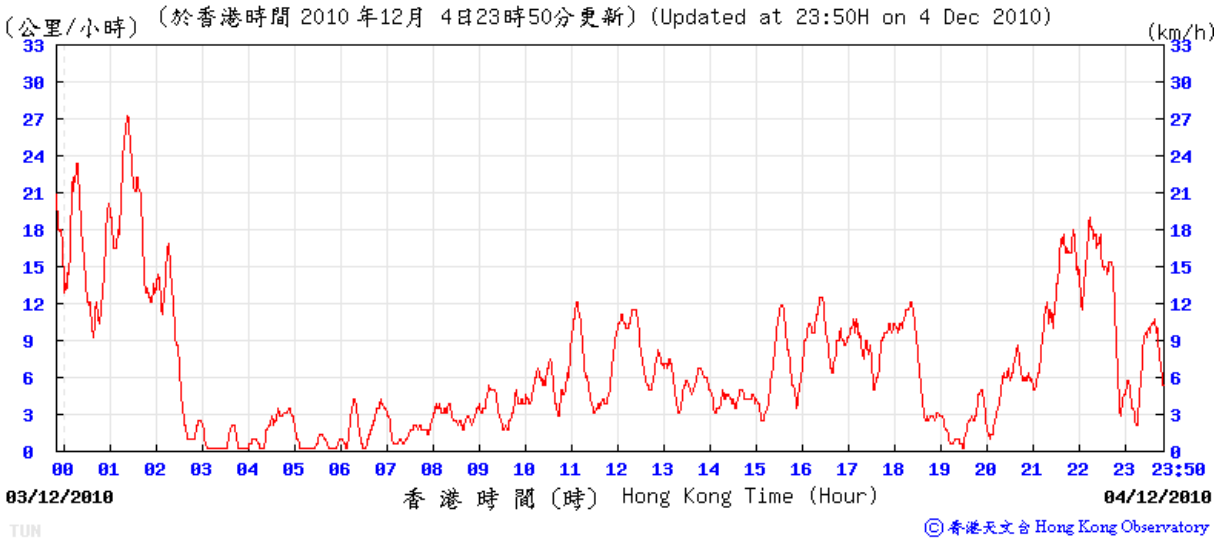

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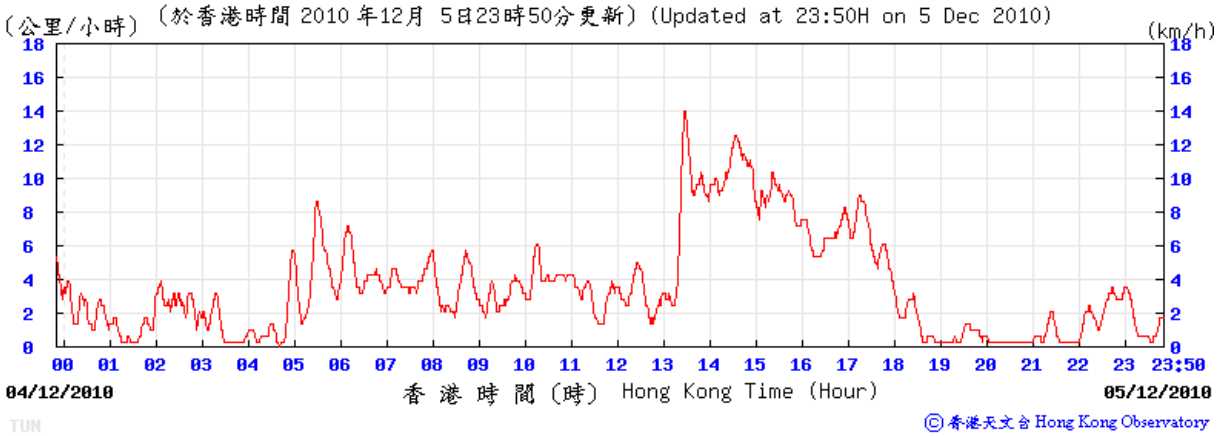

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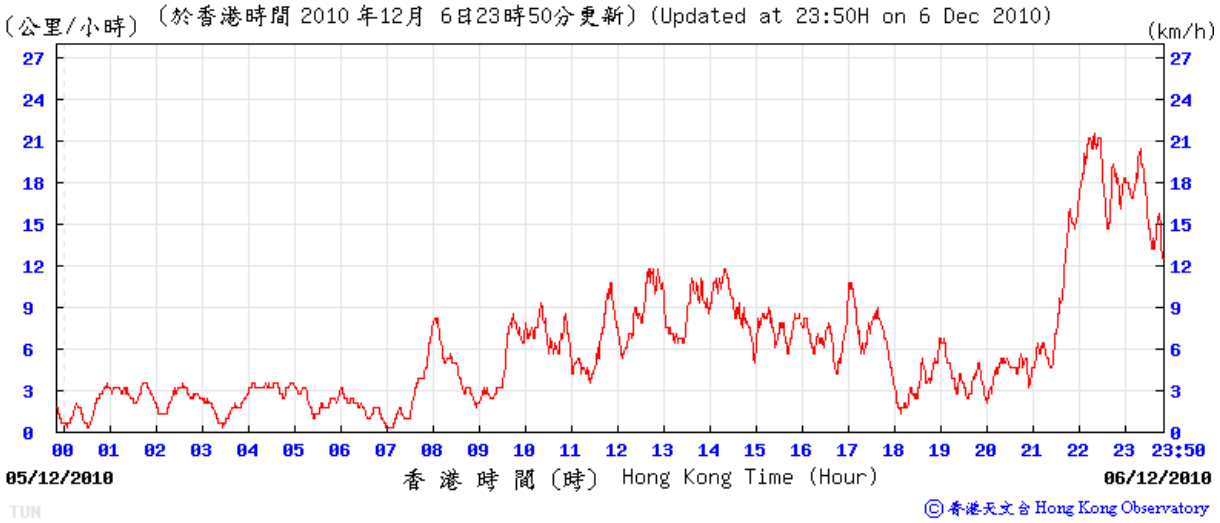

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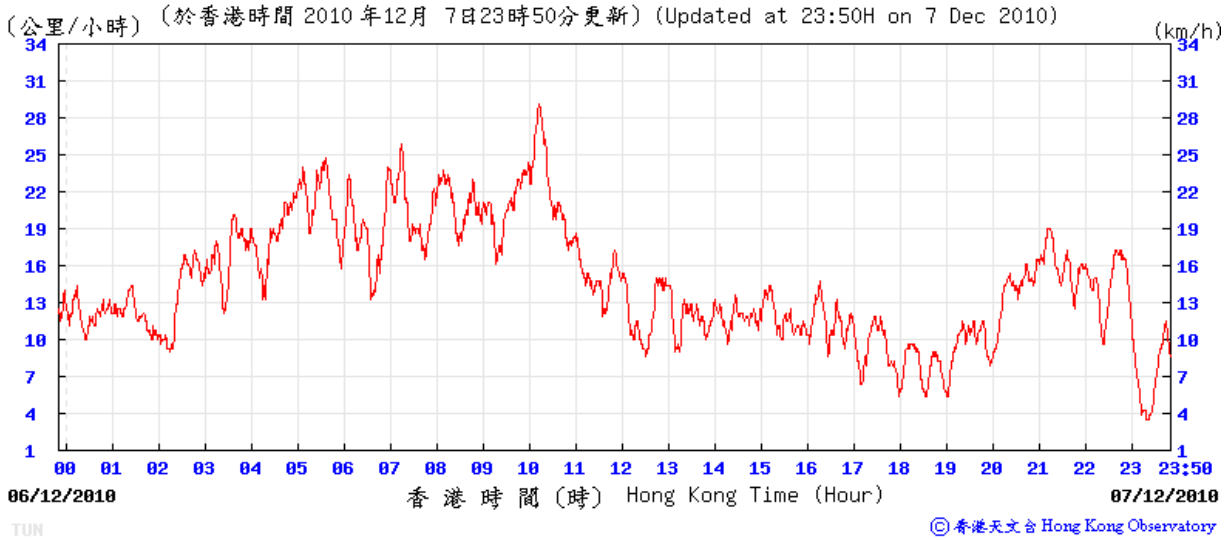

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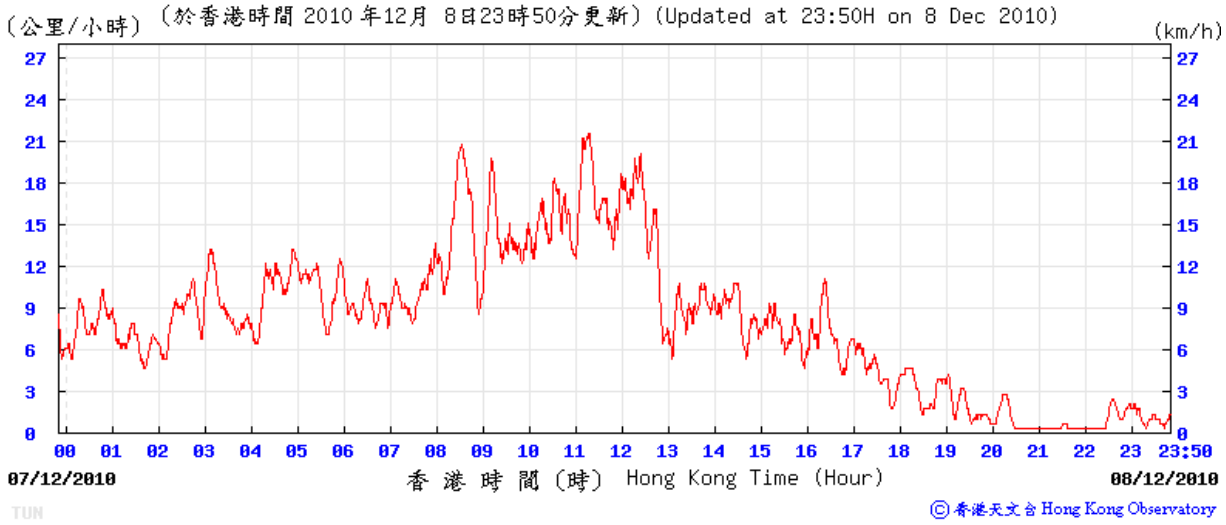

9/12/2010