


Leader and JEC Joint Venture

**Contract No. DC/2009/24
HATS Stage 2A – Upgrading of
Preliminary Treatment Works at
Sandy Bay, Cyberport,
Wah Fu, Aberdeen and Ap Lei Chau**

**Monthly Environmental
Monitoring and Audit Report
September 2014**

(Version 1.0)

Certified By 
(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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15 October 2014
By Post

Attn: Mr. Danny Tang

Dear Sir,

Agreement No. CE 8/2009(EP)
Harbour Area Treatment Scheme (HATS) Stage 2A
Independent Environmental Checker for Construction Phase – Investigation
Contract No. DC/2009/24
Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau
Condition 4.4 – Submission of Monthly EM&A Report for September 2014 (no. 33)

I refer to the revised Monthly EM&A for September 2014 (version 1.0) submitted by ET on 15 October 2014 via email. Pursuant to Condition 4.4 of Environmental Permit No. EP-322/2008/G, I hereby verify the captioned Monthly EM&A Report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED



Dr. Anne F Kerr
Independent Environmental Checker

c.c. Ove Arup & Partners HK Ltd.
Leader - JEC Joint Venture
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ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
DSD	Drainage Services Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
HATS 2A	Harbour Area Treatment Scheme Stage 2A
HVS	High Volume Sampler
IEC	Independent Environmental Checker
RE	Resident Engineer
RH	Relative Humidity
QA/QC	Quality Assurance / Quality Control
SLM	Sound Level Meter
WMP	Waste Management Plan

EXECUTIVE SUMMARY

Introduction

1. This is the 33rd Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for DSD Contract No. DC/2009/24 “HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau” (The Project) which documents the key information of EM&A of Contract No. DC/2009/24 and environmental monitoring results from Contract DC/2007/24 and DC/2008/09 HATS Stage 2A with same Environmental Permit (Permit No. EP-322/2008/G) for September 2014.
2. The site activities undertaken for in the reporting month included:
 - Wah Fu PTW – Plant operation, Construction for the FSGT structure;
 - Ap Lei Chau PTW – Plant operation, FSGT building construction;
 - Aberdeen PTW – Plant operation, Construction for the FSGT structure, Flume channel and chamber construction;
 - Sandy Bay PTW – Reinstatement works for tiles; and
 - Cyberport PTW– Installation of fine screen, Installation of DO unit.

Environmental Monitoring Works

3. The environmental monitoring works of the Project was conducted by the ET for the Contract: DC/2007/24 and DC/2008/09 under HATS 2A with same Environmental Permit and in accordance with the EM&A Manual. The monitoring results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

Air Quality and Noise

4. Since the monitoring of air quality monitoring station at Wah Ming House, Wah Fu Estate (CM_WF1a) and noise monitoring station at Aegean Terrace (M6a), Wah Ming House (M7a) and Wah Ling House (M8) was handed over to Contract No. DC/2009/24 from Contract No. DC/2007/24 in July 2014. The noise monitoring station at Mei Chun Court, South horizons (M9) was handed over to Contract No. DC/2009/24 from Contract No. DC/2008/09 on 28 July 2014. The air quality and noise monitoring stations was set up by Cinotech Consultants Limited (ET for this project) to monitor the air quality and noise in the vicinity of the sensitive receivers starting from July 2014. The environmental monitoring schedule for the next reporting month is shown in **Appendix C**.
5. Hence, the monitoring of air quality monitoring station at The Arcade, Cyberport (CM_CB1a), The Hong Kong Ice and Cold Storage (CM_AB1a) was handed over to Contract No. DC/2009/24 from Contract No. DC/2007/24 in August 2014. The air quality monitoring stations was set up by Cinotech Consultants Limited (ET for this project) to monitor the air quality and noise in the vicinity of the sensitive receivers starting from August 2014. The environmental monitoring schedule for the next reporting month is shown in **Appendix C**.
6. However, the air quality monitoring at CM_AB1a had been rejected and could not be continued, the proposed location (CM_AB1b – Works Site Boundary of Aberdeen PTW) was approved by

ER on 22 July 2014. The air quality monitoring stations was set up by Cinotech Consultants Limited (ET for this project) to monitor the air quality and noise in the vicinity of the sensitive receivers starting from August 2014. The environmental monitoring schedule for the next reporting month is shown in **Appendix C**. The location of CM_AB1b is shown in **Figure 1c**.

7. Summary of the non-compliance of the reporting month is tabulated in **Table I**.

Table I Summary Table for Non-compliance Recorded in the Reporting Month

Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
		Action Level	Limit Level	Action Level	Limit Level	
CM_CB1a	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
CM_WF1a	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
CM_AB1b	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
M5	Noise (Day Time)	0	0	0	0	N/A
M6a		0	0	0	0	N/A
M7a		0	0	0	0	N/A
M8		0	0	0	0	N/A
M9		0	0	0	0	N/A

1-hour TSP Monitoring

8. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

9. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise

10. All construction noise monitoring was conducted as scheduled in the reporting. No Action/Limit Level exceedance was recorded.

Environmental Licenses and Permits

11. Licenses/Permits granted to the Project include the Environmental Permit (EP), Notification of Works under APCO, Water Discharge Licences and Registered as a Chemical Waste Producer for Sandy Bay, Cyberport, Ap Lei Chau, Aberdeen, Wah Fu PTWs sites.

Environmental Mitigation Implementation Schedule

12. According to the EIA Report Section 3.74, 4.56, 6.384, 9.154 and 13.44, air quality, noise,

water quality, waste management and landscape and visual would be the key environmental issues and mitigation measures shall be implemented during the construction phase. Details of the implementation of mitigation measures are provided in the **Appendix K**.

Key Information in the Reporting Month

13. Summary of key information in the reporting month is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Status of submissions under EP	1	Environmental Monitoring and Audit Monthly Report – August 2014	Submitted to EPD on 15 September 2014	No comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

14. No environmentally related summons, prosecutions or complaints were received for the Project in the reporting month.
15. There was no environmental prosecution or notification of summons received while three complaints were already received since the Project commencement. The Complaint Log is presented in **Appendix K**.

Future Key Issues:

16. Major site activities for the coming two months include:
- Wah Fu PTW: FSGT structure construction, Plant operation;
 - Aberdeen PTW: Construction of FSGT structure, E&M equipment installation, Plant operation, Flume channel and chamber construction;
 - Ap Lei Chau PTW: Plant operation, Construction of FSGT structure, Excavation for wet/dry well;
 - Sandy Bay PTW: Staircase construction, Odour pipe/ drawpit/ ducting construction; and
 - Cyberport PTW: Installation of fine screen, Installation of DO unit, Trial pit excavation.
17. The environmental concerns in coming months are mainly on chemicals storage, surface run off, spillage of wastewater during rainstorm and dust generated from the construction works.

1. INTRODUCTION

Background

- 1.1 The Project ‘HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau’ with Contract No: DC/2009/24 mainly comprises the following major works:
- The construction of screens, grit traps, deodourisation rooms, workshop and administration buildings, and modification of existing inlet pumping stations at the preliminary treatment works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau.
- 1.2 The general location plan of the Project is shown in **Figure 1**.
- 1.3 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project (Register No. : AEIAR-121/2008). The environmental permit: (Permit No. EP-322/2008/G) which was issued on 9th May 2014 to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.
- 1.4 Leader and JEC Joint Venture (hereafter called the LJJV) was commissioned by the DSD to undertake the construction of the Contract No. DC/2009/24 “Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau”.
- 1.5 Cinotech Consultants Limited was commissioned by LJJV to undertake the Environmental Monitoring and Audit (EM&A) works for the project and was appointed as the Environmental Team (ET) of the Project under Condition 2.1 of the EP.
- 1.6 The construction works at Wah Fu PTW and Ap Lei Chau PTW were commenced in the January 2012.
- 1.7 The construction phase of EM&A programme of the Project commenced in January 2012.
- 1.8 This is the 33rd monthly EM&A report summarizing the EM&A works conducted for the Project in September 2014.

Project Organizations

- 1.9 The contacts of the Project are shown in **Table 1.1** and the organization chart of ET for Contract is shown in **Figure 2**.

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.
Drainage Services Department	Project Proponent	Mr. P. K. Kwok	Senior Engineer 2	2159 3403
Ove Arup & Partners Hong Kong Ltd	Engineer’s Representative	Mr. Ted Tang	Principal Resident Engineer	2370-4311
	Coordinator	Ms. Natalie Kwok	Resident Engineer	6794 8844
Cinotech	Environmental	Dr. Priscilla Choy	ET Leader	2151 2089

Party	Role	Name	Position	Phone No.
	Team	Ms. Janet Wai	Project Coordinator & Audit Team Leader	2151 2078
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	2828 5757
Leader and JEC Joint Venture	Contractor	Mr. Kelvin Cheung	Site Agent	9656 8865
		Mr. Patrick Wong	Environmental Officer	9019 7270

Construction Programme

1.10 The site activities undertaken in the reporting month included:

- Wah Fu PTW – Plant operation, Construction for the FSGT structure;
- Ap Lei Chau PTW – Plant operation, FSGT building construction;
- Aberdeen PTW – Plant operation, Construction for the FSGT structure, Flume channel and chamber construction;
- Sandy Bay PTW – Reinstatement works for tiles; and
- Cyberport PTW – Installation of fine screen, Installation of DO unit.

Summary of EM&A Requirements

1.11 The EM&A programme requires construction phase monitoring for air quality and construction noise, landscape and visual and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study final report; and
- Environmental requirements in contract documents.

1.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 4** of this report.

1.13 This report presents the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely dust, noise levels, and audit works conducted for the Project in September 2014. For the methodology and QA/QC procedures of the monitoring parameters, please refer to the monthly report for the Contract DC/2007/24 and DC/2008/09.

2. AIR QUALITY

Monitoring Requirements

- 2.1 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

- 2.2 Three designated monitoring stations, CM_CB1a, CM_WF1a and CM_AB1b were selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring locations and the responsible ET who is carrying out the impact air quality monitoring. The monitoring locations which are also depicted in **Figure 1**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Monitored by	Location of Measurement
CM_CB1a ⁽¹⁾⁽²⁾	DC/2009/24	The Arcade, Cyberport
CM_WF1a ⁽¹⁾	DC/2009/24	Wah Ming House, Wah Fu Estate
CM_AB1b ⁽³⁾	DC/2009/24	Works Site Boundary of Aberdeen PTW

Remarks:

1: Refer to the monthly report of DC/2007/24, revision to the original monitoring location in EM&A Manual was made and was verified by IEC on 19 November 2009 and subsequently approved by EPD on 27 November 2009.

2: The air quality monitoring station was handed over to this project starting from August 2014 and the air quality monitoring was carried out by the ET of this project from August 2014.

3: Relocation of the air quality monitoring station was verified by IEC on 15 July 2014 and approved by ER on 22 July 2014.

Monitoring Equipment

- 2.3 The details of the equipment used in the impact air monitoring programme could be referred to Section 4.2 of the monthly report of Contact No. DC/2007/24.

Monitoring Parameters, Frequency and Duration

- 2.4 **Table 2.2** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedules could be found in Appendix G in the monthly report for the Contract DC/2007/24.

Table 2.2 Impact Dust Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Period	Frequency
All monitoring locations	1-hour TSP	0700-1900 hrs	3 times/ every 6 days
	24-hour TSP	0000-2400 hrs	once in every 6 days

Monitoring Methodology and QA/QC Procedure

- 2.5 Weather data was recorded during the monitoring period and is shown in **Appendix D**. The data was obtained from the Meteorological Observations from Hong Kong Observatory Station. The general weather conditions (i.e. sunny, cloudy or rainy) were recorded by the field staff's observation on the monitoring day.

Monitoring Methodology and QA/QC Procedure

1-hour TSP Monitoring

Measuring Procedures

- 2.6 The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follows:
- Pull up the air sampling inlet cover
 - Change the Mode 0 to BG with once
 - Push Start/Stop switch once
 - Turn the knob to SENSI.ADJ and press it
 - Push Start/Stop switch once
 - Return the knob to the position MEASURE slowly
 - Push the timer set switch to set measuring time
 - Remove the cap and make a measurement

Maintenance/Calibration

- 2.7 The following maintenance/calibration was required for the direct dust meters:
- Check the meter at a 3-month interval and calibrate the meter at a 1-year interval throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

- 2.8 High volume (HVS) samplers (Model no. TE-5170 and GS-2310105-1) completed with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

Operating/Analytical Procedures

- 2.9 Operating/analytical procedures for the operation of HVS were as follows:
- A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
 - No two samplers were placed less than 2 meters apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.

- A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
 - No furnaces or incineration flues were nearby.
 - Airflow around the sampler was unrestricted.
 - The sampler was more than 20 meters from the drip line.
 - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
- 2.10 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 2.11 Fiberglass filters were used which have a collection efficiency of larger than 99% for particles of 0.3 µm diameter.
- 2.12 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.13 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 2.14 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 2.15 The shelter lid was closed and secured with the aluminum strip.
- 2.16 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.17 After sampling, the filter was removed and sent to the laboratory for weighing. The elapsed time was also recorded.
- 2.18 Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

- 2.19 The following maintenance/calibration was required for the HVS:
- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.

- 2.20 High volume samplers were calibrated at bi-monthly intervals using Calibration Kit (Thermo Andersen; Model no. G25A) throughout all stages of the air quality monitoring.
- 2.21 The monitoring methodology and QA/QC procedures of CM_CB1a & CM_AB1a are presented in the Section 4.1 and 4.3 of monthly report for Contract DC/2007/24.

Results and Observations

- 2.22 **Table 2.3** summarizes the monitoring results at CM_CM1a, CM_WF1a and CM_AB1a in the reporting month.

Table 2.3 Summary of 1-hour and 24-hour TSP Monitoring Result in Reporting Month

Air Quality Monitoring Station	Average $\mu\text{g}/\text{m}^3$	Range $\mu\text{g}/\text{m}^3$	Action Level $\mu\text{g}/\text{m}^3$	Limit Level $\mu\text{g}/\text{m}^3$
1 hour TSP				
CM_CB1a	124	43.5-230.8	280	500
CM_WF1a	144	51.9-248.9	285	
CM_AB1b	130	59.9-230.1	283	
24 hours TSP				
CM_CB1a	45	24-91	178	260
CM_WF1a	56	31-125	185	
CM_AB1b	74	36-149	174	

- 2.23 The details of exceedances in the reporting month are presented in the **Section 6**.
- 2.24 The detailed monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results could be referred to **Appendix E**.
- 2.25 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G**.
- 2.26 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G**.
- 2.27 The identified dust sources at the monitoring stations were mainly from operation of mobile crane, excavator, dump truck, hand held breaker, road traffic, sea traffic, welding.

3 NOISE

Monitoring Requirements

3.1 Five noise monitoring stations, namely M5, M6a, M7a, M8 and M9 were designated in the EM&A Manual for impact monitoring. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

3.2 Noise monitoring was conducted at five designated monitoring stations as listed in **Table 3.1**.

Table 3.1 Location of Noise Monitoring Stations

Monitoring Station	Monitored By	Location of Measurement
M5 (Sandy Bay PTW)	DC/2007/24	Chuk Lam Ming Tong
M6a ⁽¹⁾ (Cyberport PTW)	DC/2009/24	Aegean Terrace
M7a ⁽¹⁾ (Wah Fu PTW)		Wah Ming House
M8 (Aberdeen PTW)		Wah Lai House
M9 (Ap Lei Chau PTW)		Mei Chun Court, South Horizons

Remark 1: Refer to the monthly report of DC/2007/24, revision to the original monitoring location in EM&A Manual was made and was verified by IEC on 19 November 2009 and subsequently approved by EPD on 27 November 2009.

Monitoring Equipment

3.3 The details of the equipment used in the impact noise monitoring programme could be referred to Section 4.2 of the monthly report of Contact No. DC/2007/24 and Section 3.5 of the monthly report of this project.

Monitoring Parameters, Frequency and Duration

3.4 **Table 3.2** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedules could be found in Appendix G in the monthly report for the Contract DC/2007/24 and Appendix C in the monthly report for this project.

3.5 As advised by the Contractor, no construction work under this project was conducted during the restricted hours in reporting month.

Table 3.2 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
M5 M6a M7a M8 M9	L _{eq} (30 min.) dB(A)	0700-1900 hrs. on normal weekdays	Once per week

M5 M6a M7a M8 M9	$L_{eq}(5 \text{ min.})$ dB(A)	During restricted hours	Weekly monitoring to be conducted during the construction works
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Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was generally set on a tripod at a height of 1.2 m above the ground, depending to the actual monitoring condition.
- For free field measurement (if any), the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels were adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - time measurement : 30 minutes / 5 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L_{eq} , L_{90} and L_{10} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
 Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

3.6 The monitoring methodology and QA/QC procedure of M5 and M9 could be referring to the monthly reports for Contract DC/2007/24 and DC/2008/09.

Maintenance and Calibration

3.7 The microphone head of the sound level meter and calibrator was cleaned with soft cloth regularly. The meters were sent to the supplier to check and calibrate on a yearly interval.

Results and Observations

3.8 **Table 3.3** summarizes the monitoring results at M5, M6a, M7a, M8 and M9 in reporting month.

Table 3.3 Summary the Noise Monitoring Results in Reporting Month

For the time period 0700-1900 hrs. on weekdays		
Monitoring Station	Range, dB(A) $L_{eq}(30 \text{ min.})$	Limit Level, dB(A) $L_{eq}(30 \text{ min.})$
M5	62-64	75.0
M6a	49-54 ⁽¹⁾	

M7a	52-70	
M8	60-67	
M9	51-55	

Remark: (1) Free-field measurement, +3dB correction.

- 3.9 The construction noise monitoring at the designated locations was conducted by the ET of Contract: DC/2007/24 and this project as scheduled in the reporting month. The monitoring results and graphical presentation are provided in Appendix H and I of the monthly report for Contract DC/2007/24, Appendix E of the monthly report for this project.
- 3.10 No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G**.
- 3.11 The major noise sources identified at the designated noise monitoring stations were from operation of mobile crane, excavator under the shaft, hand held drill and dump truck, lifting, road traffic noise.

4 ENVIRONMENTAL AUDIT**Site Audits**

- 4.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.
- 4.2 Environmental site audits were conducted on 5, 12, 17 and 26 September 2014. No non-compliance was observed during the site audits.
- 4.3 Site inspections were undertaken to ensure and check that the implementation and maintenance of mitigation measures for Air Quality, Noise, Water Quality, Waste Management, Landscape and Visual are being properly carried out in the reporting month in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.
- 4.4 The summaries of site audits are attached in **Appendix H**.

Review of Environmental Monitoring Procedures

- 4.5 The monitoring works conducted by the monitoring team of Contract DC/2007/24 and this project. The monitoring procedures were reviewed by their ETs.

Status of Environmental Licensing and Permitting

- 4.6 All permits/licenses obtained for the Contract DC/2009/24 are summarized in **Table 4.1**.

Table 4.1 Summary of Environmental Licensing and Permit Status for Contract DC/2009/24

Permit Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT000116 29-2012	N/A	31/1/2017	Location: Sandy Bay PTW	Valid
WT000116 33-2012	N/A	31/1/2017	Location: Cyber Port PTW	
WT000116 32-2012	N/A	31/1/2017	Location: Ap Lei Chau	
WT000162 42-2013	N/A	31/3/2017	Location: Aberdeen PTW	
WT000168 37-2013	N/A	31/8/2018	Location: Wah Fu PTW	
WT000116 27-2012	N/A	31/1/2017	Location: Wah Fu PTW	Expiry
Notification of Works Under APCO				
334694	6/9/2011	N/A	All PTWs	N/A
Registered Chemical Waste Producer				
5218-171- L2783-01	14/12/2011	N/A	Location: Sandy Bay PTW	Valid

5218-171-L2783-02	30/12/2011	N/A	Location: Cyber Port PTW	
5218-174-L2783-03	30/12/2011	N/A	Location: Ap Lei Chau	
5218-173-L2783-04	30/12/2011	N/A	Location: Aberdeen PTW	
5218-172-L2783-05	30/12/2011	N/A	Location: Wah Fu PTW	
Special Waste Admission Ticket				
11587	24/8/2014	23/11/2014	Location: Ap Lei Chau	Valid
11588	24/8/2014	23/11/2014	Location: Aberdeen PTW	Valid
11585	24/8/2014	23/11/2014	Location: Wah Fu PTW	Valid

Status of Waste Management

4.7 The amount of wastes generated by the activities of th Project in the reporting month is shown in **Appendix I**.

Implementation Status of Environmental Mitigation Measures

4.8 Details of the implementation of mitigation measures are provided in the **Appendix K**.

4.9 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations and recommendations for the Projects are summarized in **Table 4.2**.

Table 4.2 Observations and Recommendations of Site Audit

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	140905-R02	The bunding should be maintained properly to prevent the muddy water discharging out at ALC-PTW.	The bunding was enhanced by the Contractor at ALC-PTW.
	140905-R03	Properly clear the stagnant water at Abd-PTW.	The stagnant water was cleared at Abd-PTW.
	140905-R07	The wheel washing facility should be enhanced to prevent the mud trail be observed at Abd-PTW.	The wheel washing facility was enhanced by the Contractor at Abd-PTW.
	140912-R01	The bunding should be provided for the drainage to prevent the runoff water discharging out before flowing into the wastewater treatment facility at Cyberport-PTW.	The site boundary at Cyberport-PTW was confirmed by the Contractor that the drainage was not included within the site boundary under this Project.
	140917-R03	The wet sep should be desilted regularly and cleared the stagnant water regularly at Abd-PTW.	The wet sep was desilted regularly and cleared the stagnant water regularly at Abd-PTW.

	140926-001	The muddy water was overflow near the site exit of Wah Fu-PTW. The Contractor was reminded to provide the bunding to prevent the muddy water overflowing to the access road.	The follow up action will be reported during site inspections in October 2014.
	140926-R03	The stagnant water in the wetsep should be cleared regularly at Wah Fu-PTW.	The follow up action will be reported during site inspections in October 2014.
	140926-R06	The bunding should be provided and enhanced to prevent the muddy water runoff to the access road at ALC-PTW and Abd-PTW.	The follow up action will be reported during site inspections in October 2014.
Air Quality	140905-R04	The dusty materials should be sprayed with water regularly to prevent the dust emission at Abd-PTW.	Please refer to 140912-R02.
	140912-R02	The dusty materials and debris should be cleared properly or sprayed with water regularly to prevent the dust emission at ALC-PTW and Abd-PTW.	Please refer to 140917-R02.
	140917-R02	Properly clear the dusty materials at Wah Fu-PTW and ALC-PTW.	Please refer to 140926-R02.
	140926-R02	Properly clear the broken sand bags and dusty materials at Wah Fu-PTW and ALC-PTW.	The follow up action will be reported during site inspections in October 2014.
	140926-R07	The drilling activities should be sprayed with water to prevent the dust emission at ALC-PTW.	No drilling activities was observed at ALC-PTW.
Waste/ Chemical Management	140905-R01	The construction wastes should be sorted out properly at Wah Fu-PTW and Abd-PTW.	The construction wastes were sorted out properly at Wah Fu-PTW and Abd-PTW.
	140905-R06	The chemical containers should be provided with the drip tray and the oil stain should be cleared properly at Abd-PTW.	The chemical containers were provided with the drip tray and the oil stain was cleared properly at Abd-PTW.
	140917-R01	The chemical containers should be provided with the drip tray at Wah Fu-PTW and ALC-PTW.	The chemical containers were cleared and not observed at Wah Fu-PTW and ALC-PTW.
Noise	--	--	--
Landscape and Visual	140829-R03	The heavy materials should be placed far away from the tree protection area at Sandy Bay Storage Area.	Please refer to 140905-R05.
	140905-R05	The heavy materials should be placed far away from the tree protection area at Sandy Bay Storage Area.	Please refer to 140912-R03.

	140912-R03	The heavy materials should be placed far away from the tree protection area at Sandy Bay Storage Area.	The heavy materials were being reduced from the tree protection area at Sandy Bay Storage Area. The moving of the heavy materials is in progress at Sandy Bay Storage Area.
	140926-R04	The fence should be provided for the existing tree at Wan Fu-PTW.	The follow up action will be reported during site inspections in October 2014.
	140926-R05	The maintenance of the existing tree should be provided at Wan Fu-PTW.	The follow up action will be reported during site inspections in October 2014.
Permit/ Licenses	--	--	--

Implementation Status of Event Action Plans

4.10 The Event Action Plans for air quality and noise are presented in **Appendix J**.

1-hr TSP

4.11 No Action/Limit Level exceedance was recorded.

24-hr TSP

4.12 No Action/Limit Level exceedance was recorded.

Construction Noise

4.13 No Action/Limit Level exceedance was recorded.

Landscape and Visual

4.14 No non-compliance was recorded.

Summary of Complaints and Prosecutions

4.15 There was no environmental prosecution or notification of summons received while three complaints were already received since the Project commencement. The Complaint Log is presented in **Appendix L**.

5. FUTURE KEY ISSUES

Key Issues for the Coming Month

5.1 Key environmental issues in the coming month include:

- Generation of dust from stockpiles of excavated and dusty materials, unpaved site area and vehicle movement, roadworks, excavation works and loading and unloading dusty materials on-site;
- Noise nuisance from operation of equipment and machinery on-site;
- Provision well maintenance on the storage facilities of chemicals/fuel and chemical waste/waste oil on-site;
- Maintenance of de-silting facilities and drainage system such as U-channels;
- Blockage of U-channel by accumulated silt;
- Ponding water generated in pre-drillings;
- Dust generation should be mitigated by adequate water spraying, especially in dry days;
- Silty surface runoff generated from the site area; and
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities.

Monitoring Schedule for the Next Month

5.2 The tentative environmental monitoring schedules for the next month could be found in the Appendix G and Appendix C of the monthly report of Contracts DC/2007/24 and this report respectively.

Construction Program for the Next Month

5.3 The tentative construction program is provided in **Appendix M**.

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 6.1 Environmental monitoring and audit works were performed in the reporting month and all monitoring results were checked and reviewed.

1-hour TSP Monitoring

- 6.2 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

- 6.3 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

- 6.4 All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Audit

- 6.5 Environmental site audits were conducted as weekly basis in the reporting month. No non-compliance was recorded.

Complaint and Prosecution

- 6.6 No environmentally related summons, prosecutions or complaints were received in the reporting month.

Recommendations

- 6.7 According to the environmental audit performed in the reporting month, the following recommendations were made:

Water Impact

- To provide the maintenance of the sediment tank and wet sep regularly and make sure the wet sep is desilted regularly;
- To provide the bunding to prevent the muddy/ slurry water overflow;
- To enhance the wheel washing facility; and
- To avoid accumulation of stagnant / ponding water on site.

Air Quality

- To remain good site practice on handling excavated or dusty material for dust suppression (e.g. stockpiles of material shall be covered by tarpaulin); and

- To spray water to prevent the dust emission during dust-generation activities.

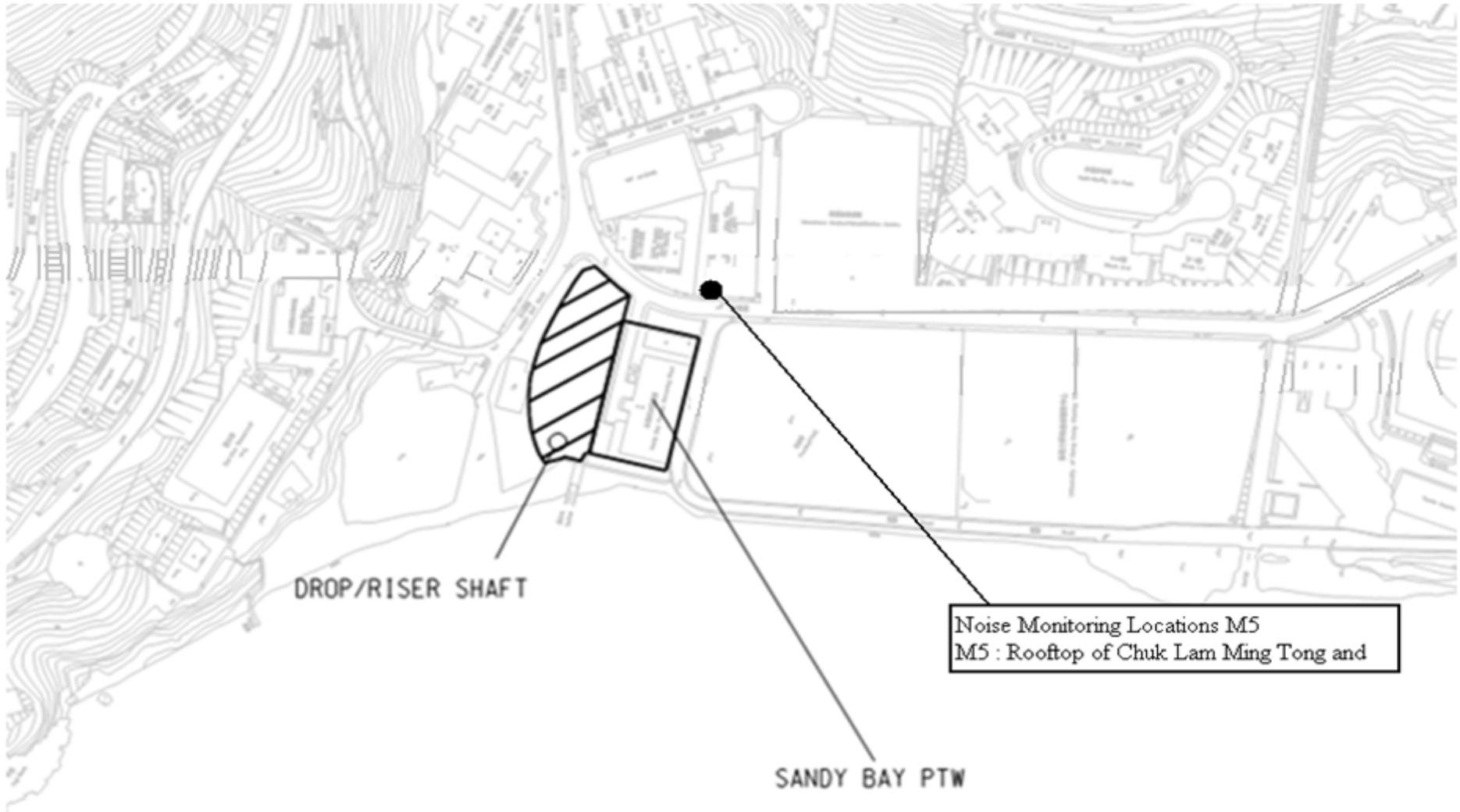
Waste/Chemical Management

- To sort out the construction wastes properly on the site; and
- To provide proper and sufficient storage area or drip trays for oil/ chemical containers on site.

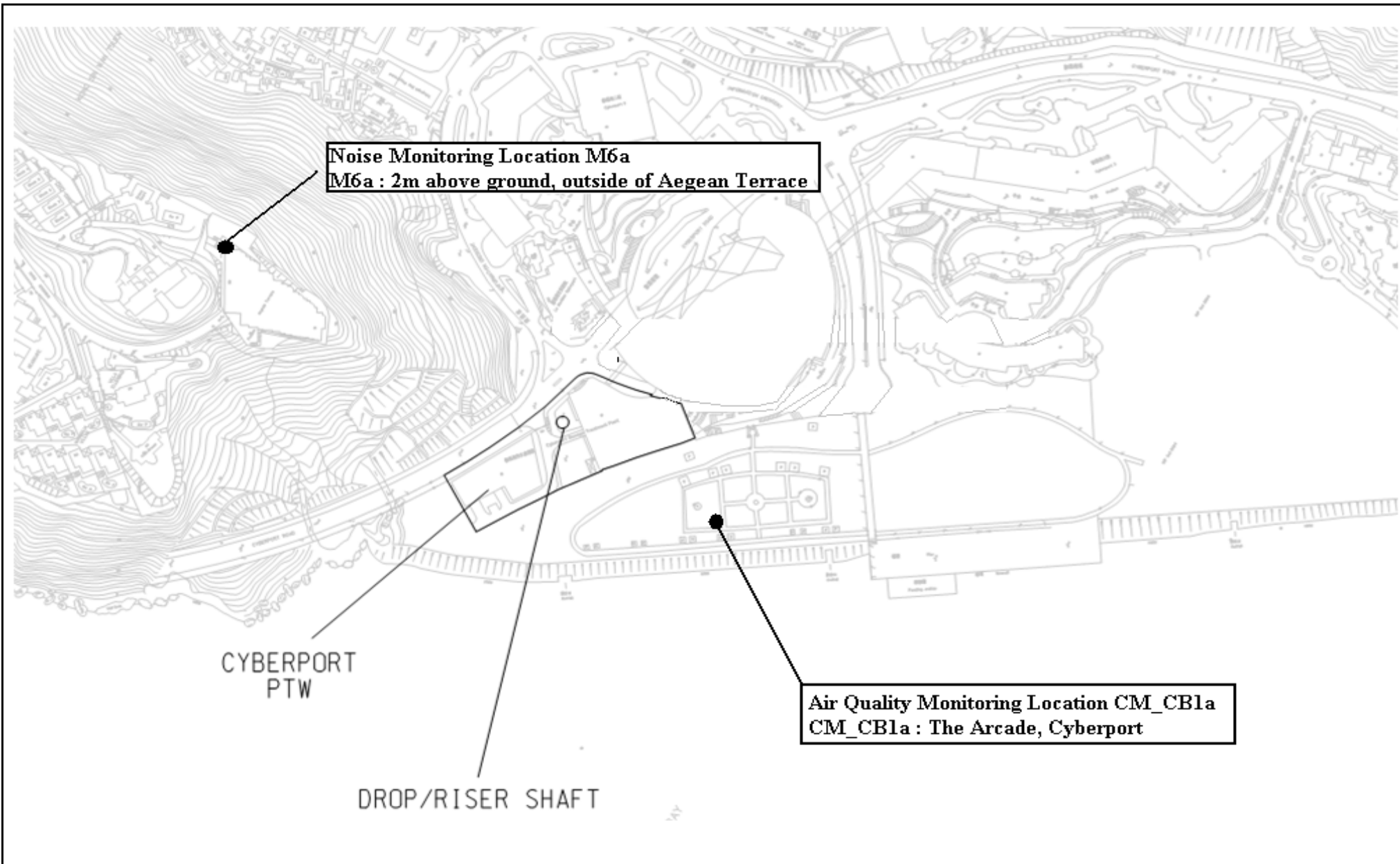
Landscape and Visual

- To avoid any heavy materials placed into tree protection zone;
- To provide the fence for protection of the existing tree; and
- To provide the maintenance of the existing tree.

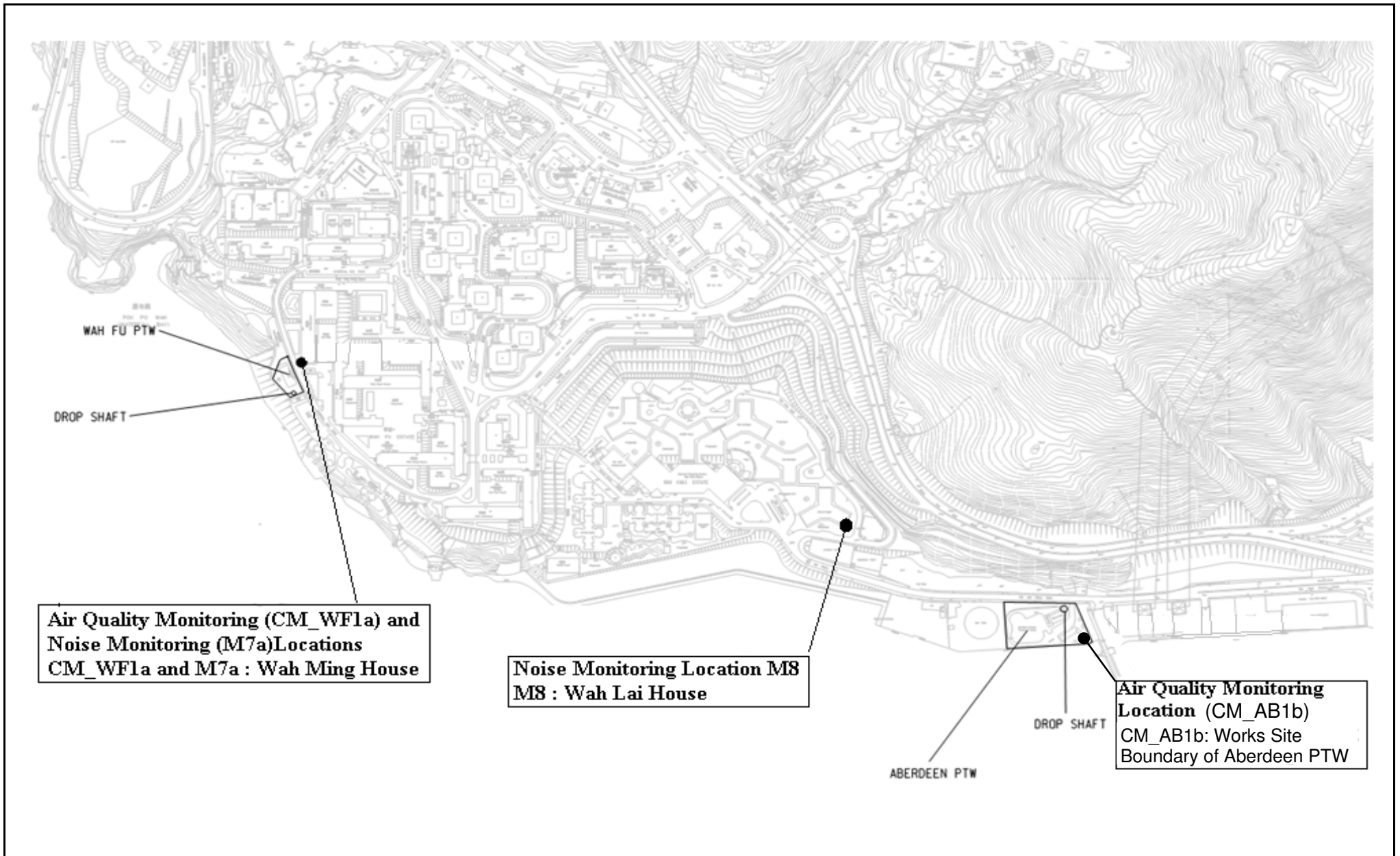
FIGURES



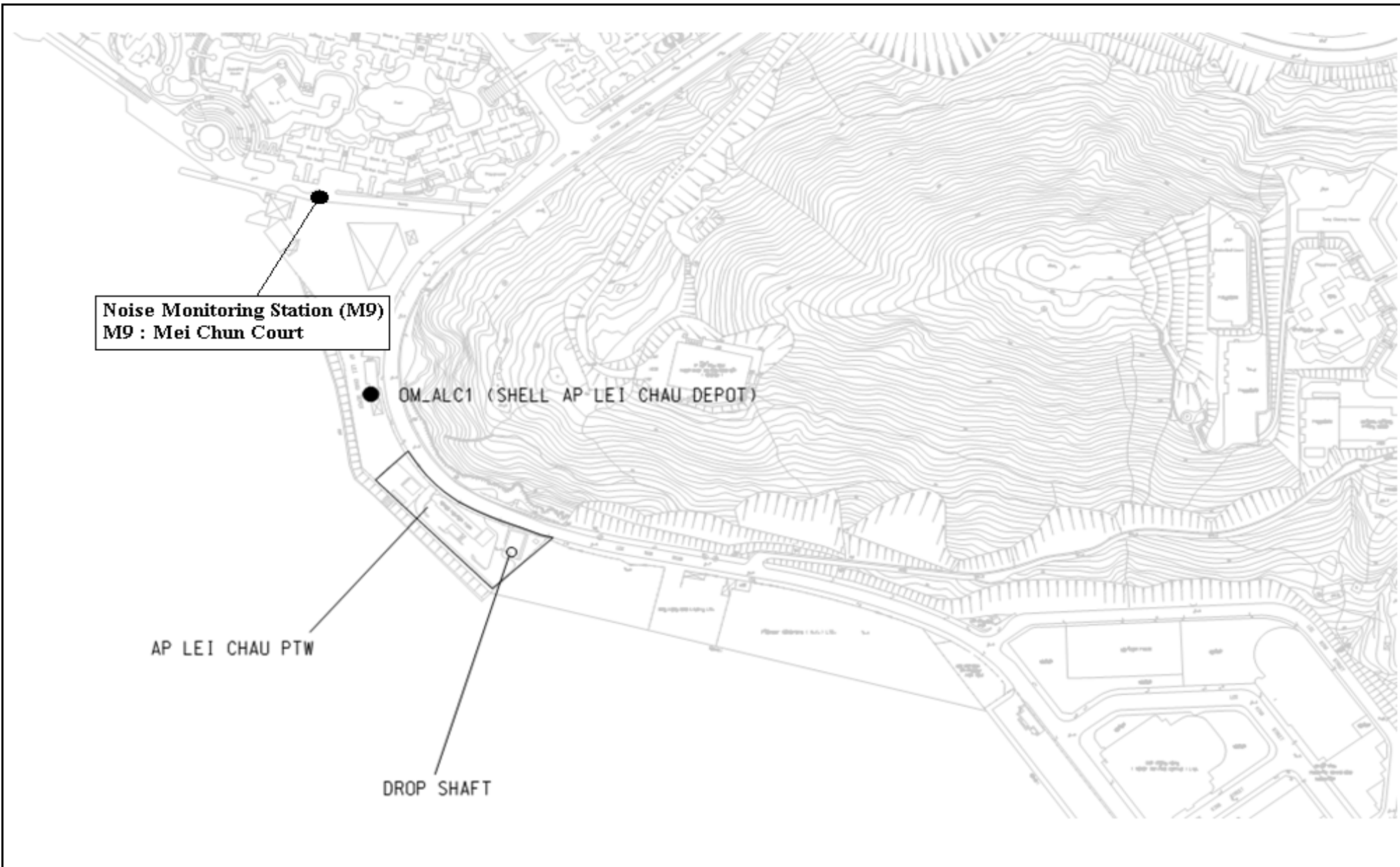
Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	General Location Plan of Sandy Bay PTW and Locations of Noise Monitoring Stations	Date	Figure	
		01/2012	1a	



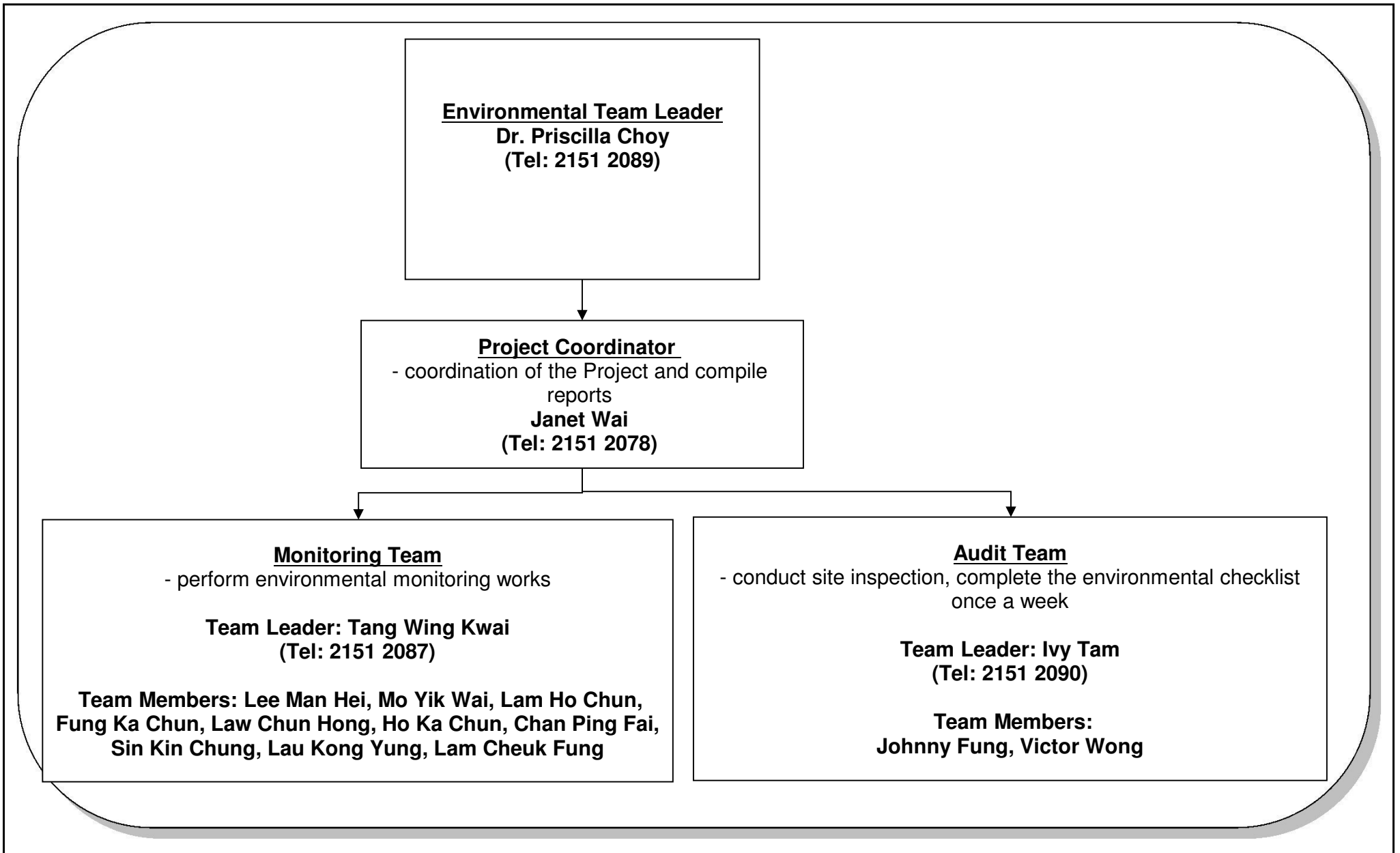
Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	General Location Plan of Cyberport PTW and Locations of Air Quality and Noise Monitoring Stations	Date	Figure	
		01/2012	1B	



Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	Location of Wah Fu and Aberdeen PTW and Locations of Air Quality and Noise Monitoring Locations	Date	Figure	
		07/2014	1C	



Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	Locations of AP LEI CHAU PTW and the Noise Monitoring Location	Date	Figure	
		1/2012	1D	



Title	Contract No. DC/2009/24 HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau ET's Organization Chart	Scale	N.T.S	Project No.	MA11060	CINOTECH
		Date	Jul-13	Figure	2	

**APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR
QUALITY AND NOISE**

Appendix A Action and Limit Levels

Table A-1 Action and Limit Levels for 1-Hour TSP and 24-Hour TSP

Monitoring Stations	Action Level ($\mu\text{g}/\text{m}^3$)		Limit Level ($\mu\text{g}/\text{m}^3$)	
	1-hour	24-hour	1-hour	24-hour
CM_CB1a	280	178	500	260
CM_WF1a	285	185		
CM_AB1b	283	174		

Table A-2 Action and Limit Level for Construction Noise

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
M5 M6a M7a M8 M9	0700-1900 hours on normal weekdays	When one documented complaint is received	75 ⁽¹⁾

Remark: 1: 70dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.

**APPENDIX B
COPIES OF CALIBRATION
CERTIFICATES**

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/69/0002

Station CM_WF1a - Wah Ming House Operator: WK
 Date: 2-Sep-14 Next Due Date: 1-Nov-14
 Equipment No.: A-01-69 Serial No. 3222

Ambient Condition			
Temperature, Ta (K)	303.3	Pressure, Pa (mmHg)	761.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	9.8	3.11	53.61	6.5	2.53
2	8.3	2.86	49.39	5.4	2.31
3	6.7	2.57	44.46	4.4	2.08
4	4.5	2.10	36.58	3.1	1.75
5	2.9	1.69	29.52	1.8	1.33

By Linear Regression of Y on X

Slope, mw = 0.0485 Intercept, bw = -0.0718

Correlation coefficient* = 0.9982

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

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

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

Therefore, Set Point; W = (mw x Qstd + bw)² x (760 / Pa) x (Ta / 298) = 4.12

Remarks: _____

Conducted by: WK Tang Signature: [Signature] Date: 21/9/14
 Checked by: Az Signature: [Signature] Date: 2 September 2014

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/38/0001

Station CM AB1b - Works Site Boundary of Aberdeen PTW Operator: WK
 Date: 5-Aug-14 Next Due Date: 4-Oct-14
 Equipment No.: A-01-38 Serial No. 1402

Ambient Condition			
Temperature, Ta (K)	302	Pressure, Pa (mmHg)	754.6

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.0	3.28	56.61	5.9	2.40
2	9.1	2.99	51.56	4.9	2.19
3	7.2	2.66	45.95	3.8	1.93
4	4.2	2.03	35.28	2.4	1.53
5	2.6	1.60	27.93	1.5	1.21

By Linear Regression of Y on X

Slope, mw = 0.0411 Intercept, bw = 0.0663

Correlation coefficient* = 0.9994

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

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

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.44

Remarks: _____

Conducted by: Wk Tang Signature: _____
 Checked by: WV Signature: _____

Date: 5 Aug 2014
 Date: 5 August 2014

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/36/0001

Station CM CB1a - The Arcade, Cyberport Operator: WK
 Date: 5-Aug-14 Next Due Date: 4-Oct-14
 Equipment No.: A-01-36 Serial No. 1224

Ambient Condition			
Temperature, Ta (K)	302.8	Pressure, Pa (mmHg)	754.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.8	3.39	58.51	6.6	2.54
2	9.2	3.00	51.76	5.4	2.30
3	7.0	2.61	45.25	4.0	1.98
4	4.5	2.10	36.43	2.6	1.59
5	2.9	1.68	29.40	1.6	1.25

By Linear Regression of Y on X

Slope, mw = 0.0446 Intercept, bw = -0.0450
 Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation
From the TSP Field Calibration Curve, take Qstd = 43 CFM
From the Regression Equation, the "Y" value according to
$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$
Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ <u>3.60</u>

Remarks: _____

Conducted by: Wk Tang Signature: Kwai Date: 5 Aug 2014
 Checked by: [Signature] Signature: _____ Date: 5 August 2014

TEST REPORT

Description	Calibration Orifice	Manufacturer	TISCH
Serial No.	0993	Temperature, Ta (K)	300.8
Model No.	TE-5025A	Pressure, Pa (mmHg)	759.3
Date	30 September 2013	Equipment No.:	A-04-04

Plate	Diff.Vol (m ³)	Diff.Time (min)	Diff.Hg (mm)	Diff.H ₂ O (in.)
1	1.00	1.4103	3.4	2.00
2	1.00	0.9980	6.8	4.00
3	1.00	0.8970	8.5	5.00
4	1.00	0.8540	9.4	5.50
5	1.00	0.7060	13.6	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9853	0.6986	1.4069
0.9808	0.9828	1.9897
0.9786	1.0910	2.2245
0.9775	1.1446	2.3331
0.9720	1.3768	2.8138

Y axis= SQRT[H₂O(Pa/760)(298/Ta)]

Qstd Slope (m) = 2.07768

Intercept (b) = -0.04613

Coefficient (r) = 0.99997

Va	(X axis) Qa	(Y axis)
0.9955	0.7059	0.8901
0.9910	0.9930	1.2589
0.9888	1.1023	1.4074
0.9876	1.1565	1.4761
0.9821	1.3911	1.7803

Y axis= SQRT[H₂O(Ta/Pa)]

Qa Slope (m) = 1.30101

Intercept (b) = -0.02919

Coefficient (r) = 0.99997

CALCULATIONS

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

Qstd=Vstd/Time

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

Qa=Va/Time

For subsequent flow rate calculations:

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

Qa=1/m{[SQRT H₂O(Ta/Pa)]-b}

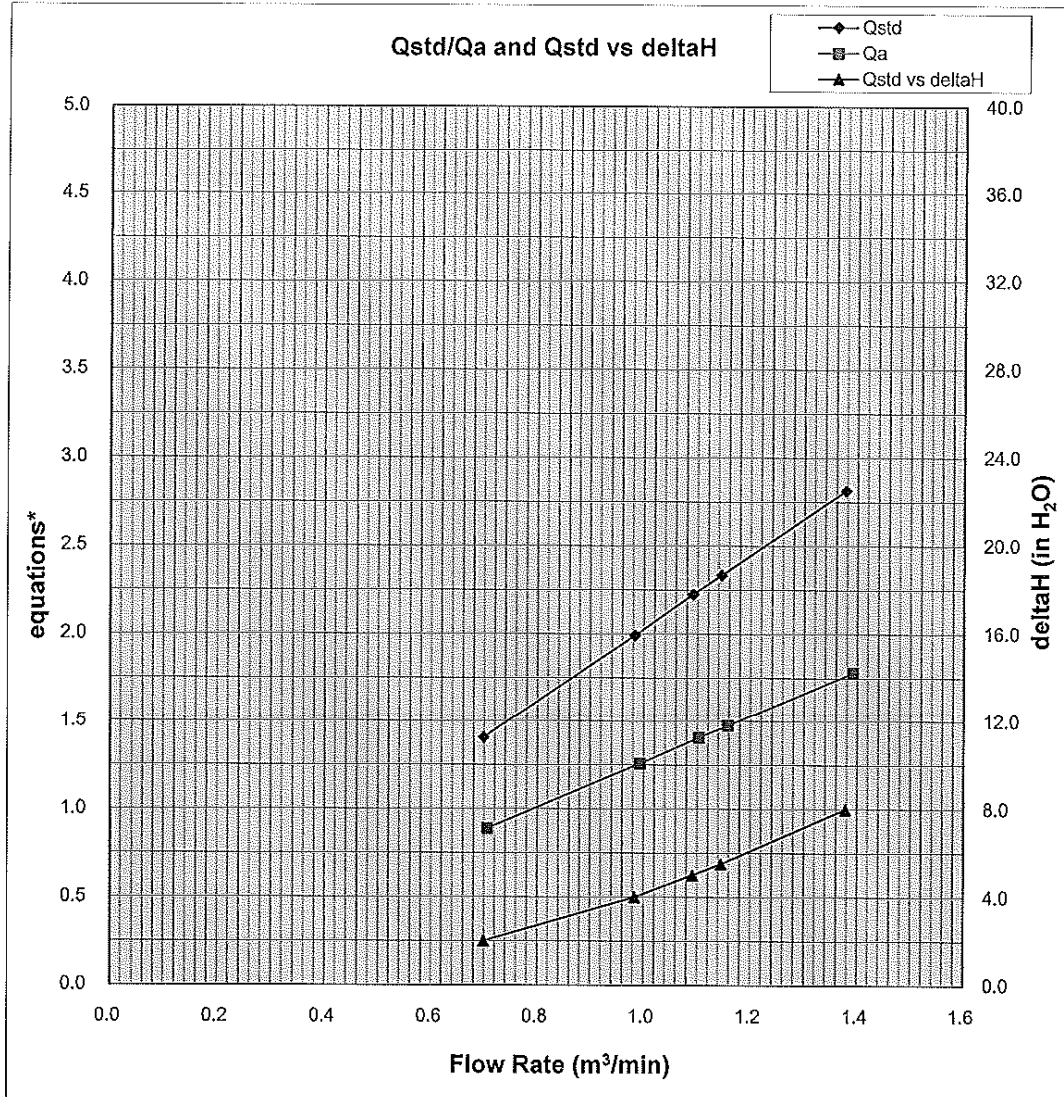
PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT



Y-axis equations:

Qstd series: $\text{SQRT}[\Delta H(\text{Pa}/\text{Pstd})(\text{Tstd}/\text{Ta})]$

Qa series: $\text{SQRT}[\Delta H(\text{Ta}/\text{Pa})]$

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/140905/1
Date of Issue:	2014-09-08
Date Received:	2014-09-05
Date Tested:	2014-09-05
Date Completed:	2014-09-08
Next Due Date:	2014-11-07

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Laser Dust Monitor
 Manufacturer : Sibata
 Model No. : LD-3
 Serial No. : 251634
 Sensitivity (K) 1 CPM : 0.001 mg/m³
 Sen. Adjustment Scale Setting : 550 CPM
 Equipment No. : A-02-01

Test Conditions:

Room Temperature : 23 degree Celsius
 Relative Humidity : 63%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0031
-------------------------	--------

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
 Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/140905/2
Date of Issue:	2014-09-08
Date Received:	2014-09-05
Date Tested:	2014-09-05
Date Completed:	2014-09-08
Next Due Date:	2014-11-07

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 853944
Sensitivity (K) 1 CPM	: 0.001 mg/m ³
Sen. Adjustment Scale Setting	: 685 CPM
Equipment No.	: A-02-04

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 63%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0031
-------------------------	--------

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/140630/1
Date of Issue:	2014-09-01
Date Received:	2014-08-29
Date Tested:	2014-08-29
Date Completed:	2014-09-01
Next Due Date:	2014-10-31

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Laser Dust Monitor
 Manufacturer : Sibata
 Model No. : LD-3B
 Serial No. : 095039
 Sensitivity (K) 1 CPM : 0.001 mg/m³
 Sen. Adjustment Scale Setting : 764 CPM
 Equipment No. : A-02-08

Test Conditions:

Room Temperature : 22 degree Celsius
 Relative Humidity : 65%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0032
-------------------------	--------

PREPARED AND CHECKED BY:
 For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
 Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/140630/3
Date of Issue:	2014-09-01
Date Received:	2014-08-29
Date Tested:	2014-08-29
Date Completed:	2014-09-01
Next Due Date:	2014-10-31

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Laser Dust Monitor
 Manufacturer : Sibata
 Model No. : LD-3B
 Serial No. : 095029
 Sensitivity (K) 1 CPM : 0.001 mg/m³
 Sen. Adjustment Scale Setting : 551 CPM
 Equipment No. : A-02-10

Test Conditions:

Room Temperature : 22 degree Celsius
 Relative Humidity : 65%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0031
-------------------------	--------

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140822/3
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21459
Microphone No.	: 43676
Equipment No.	: N-08-08

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140822/1
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
Manufacturer : SVANTEK
Model No. : SVAN 957
Serial No. : 21460
Microphone No. : 43679
Equipment No. : N-08-09

Test conditions:

Room Temperature : 22 degree Celsius
Relative Humidity : 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140822/2
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2412367
Equipment No.	: N-02-03

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/131108/1
Date of Issue:	2013-11-09
Date Received:	2013-11-08
Date Tested:	2013-11-08
Date Completed:	2013-11-09
Next Due Date:	2014-11-08

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2326353
Project No.	: C13
Equipment No.	: N-02-01

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 52 %

Methodology:

The sound calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Laboratory Manager

**APPENDIX C
ENVIRONMENTAL MONITORING
SCHEDULE**

Contract No. DC/2009/24

**HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau
Impact Air Quality and Noise Monitoring for September 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep
		1 hr TSP (CM_AB1b & CB1a) 24 hrs TSP(CM_WF1a)	24 hrs TSP(CM_AB1b & CB1a)	1 hr TSP (CM_WF1a) Noise (M6a, M7a, M8 & M9)		
7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep
	1 hr TSP (CM_AB1b & CB1a) 24 hrs TSP(CM_AB1b & CB1a) 24 hrs TSP(CM_WF1a)		1 hr TSP (CM_WF1a) Noise (M6a, M7a, M8 & M9)		1 hr TSP (CM_AB1b & CB1a)	24 hrs TSP(CM_AB1b & CB1a) 24 hrs TSP(CM_WF1a)
14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep
		1 hr TSP (CM_WF1a) Noise (M6a, M7a, M8 & M9)		1 hr TSP (CM_AB1b & CB1a)	24 hrs TSP(CM_AB1b & CB1a) 24 hrs TSP(CM_WF1a)	
21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep
	1 hr TSP (CM_WF1a) Noise (M6a, M7a, M8 & M9)		1 hr TSP (CM_AB1b & CB1a)	24 hrs TSP(CM_AB1b & CB1a) 24 hrs TSP(CM_WF1a)	1 hr TSP (CM_WF1a)	
28-Sep	29-Sep	30-Sep				
	24 hrs TSP(CM_AB1b & CB1a) 24 hrs TSP(CM_WF1a)	1 hr TSP (CM_AB1b & CB1a) 1 hr TSP (CM_WF1a) Noise (M6a, M7a, M8 & M9)				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station (1 hr TSP & 24 hr TSP)

CM_CB1a - The Arcade, Cyberport

CM_WF1a - Wah Ming House

CM_AB1b - Works Site Boundary of Aberdeen PTW

Noise Monitoring Station

M6a - Aegean Terrace

M7a - Wah Ming House

M8 - Wah Lai House

M9 - Mei Chun Court

Contract No. DC/2009/24

**HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau
Tentative Impact Air Quality and Noise Monitoring for October 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Oct	2-Oct	3-Oct	4-Oct
					24 hrs TSP (CM_AB1b, CB1a & WF1a)	
5-Oct	6-Oct	7-Oct	8-Oct	9-Oct	10-Oct	11-Oct
	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)			24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)	
12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct
			24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)		
19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct
		24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)			
26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	
	24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station (1 hr TSP & 24 hr TSP)

CM_CB1a - The Arcade, Cyberport

CM_WF1a - Wah Ming House

CM_AB1b - Works Site Boundary of Aberdeen PTW

Noise Monitoring Station

M6a - Aegean Terrace

M7a - Wah Ming House

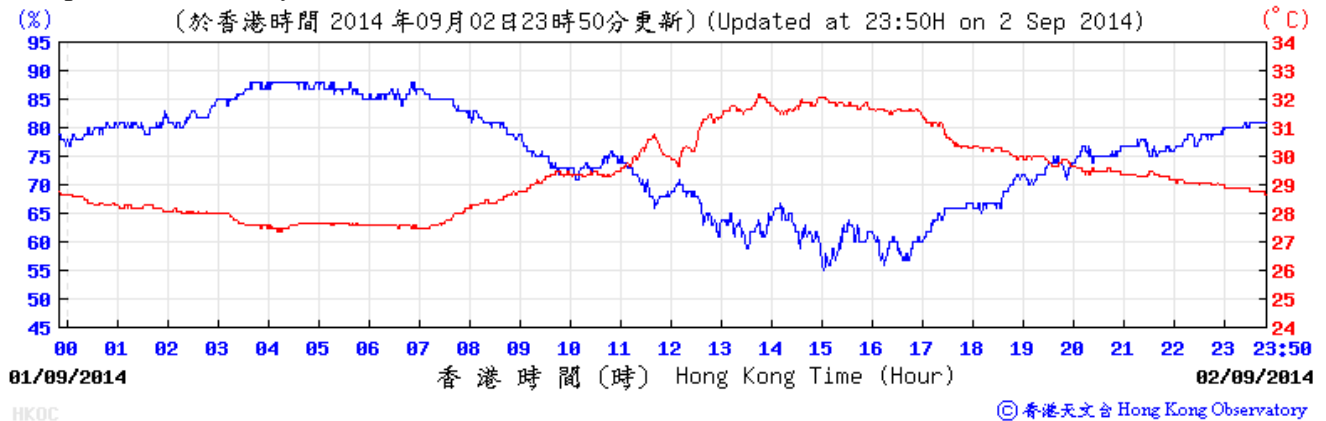
M8 - Wah Lai House

M9 - Mei Chun Court

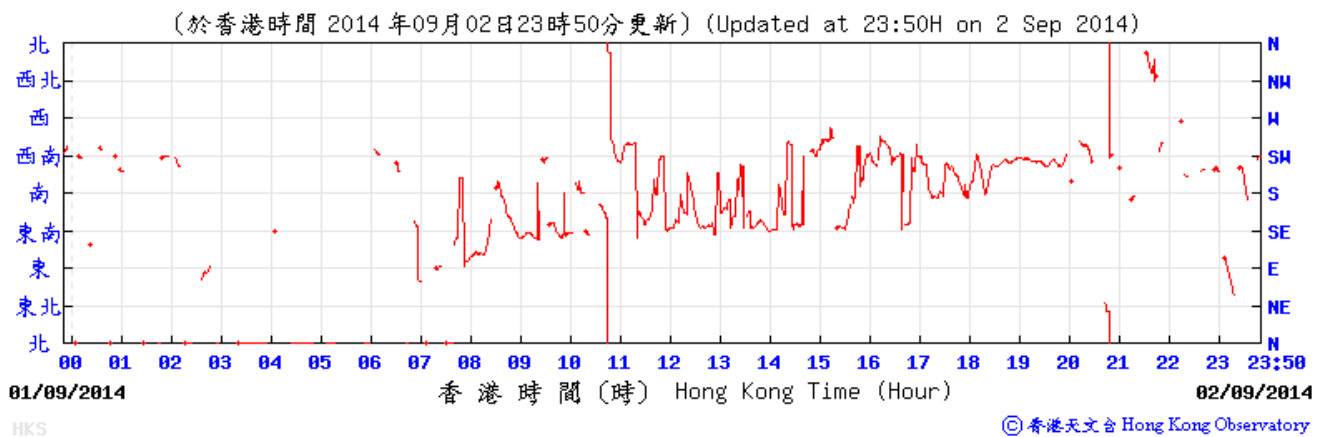
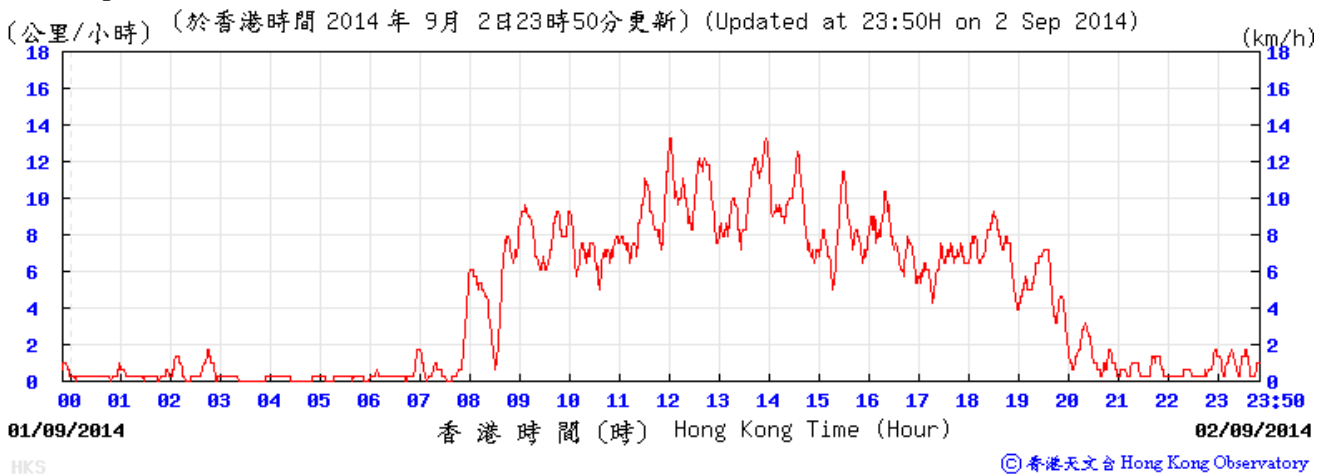
**APPENDIX D
METEOROLOGICAL DATA ON
MONITORING DATES**

Appendix D
Meteorological Data Recorded from HKO Station (2 September 2014)
 (Source: www.hko.gov.hk)

Temperature/Humidity:



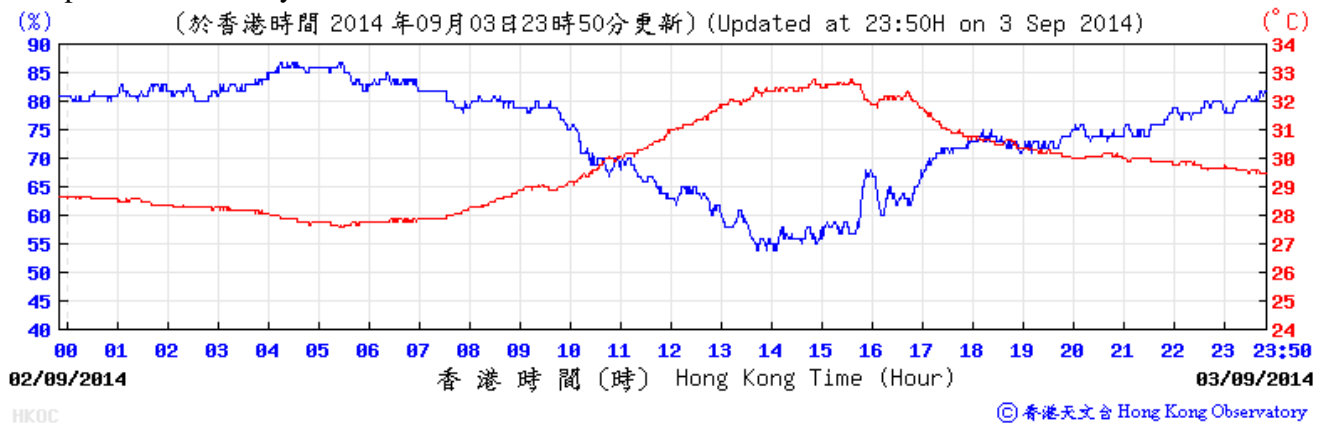
Wind Speed and Direction:



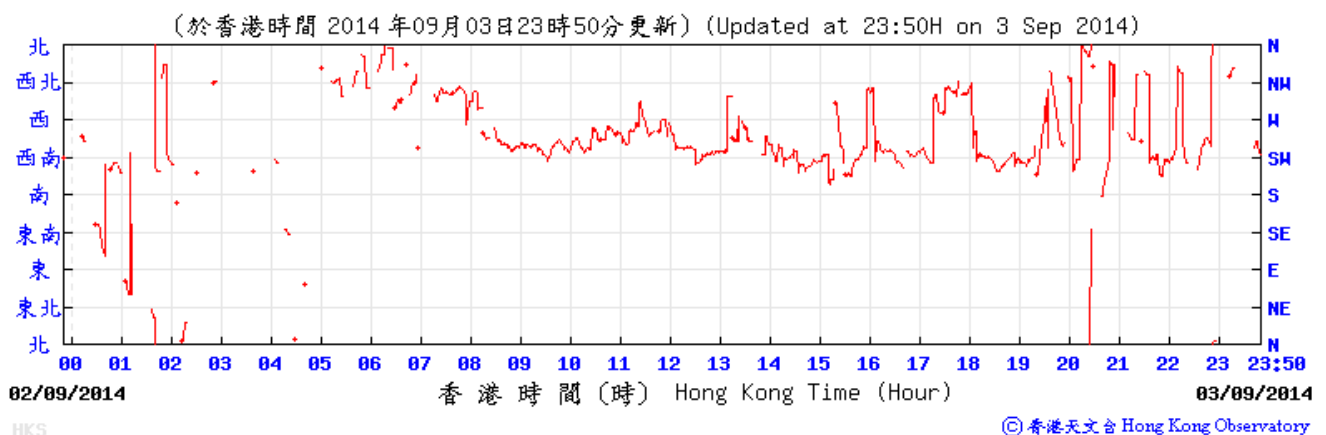
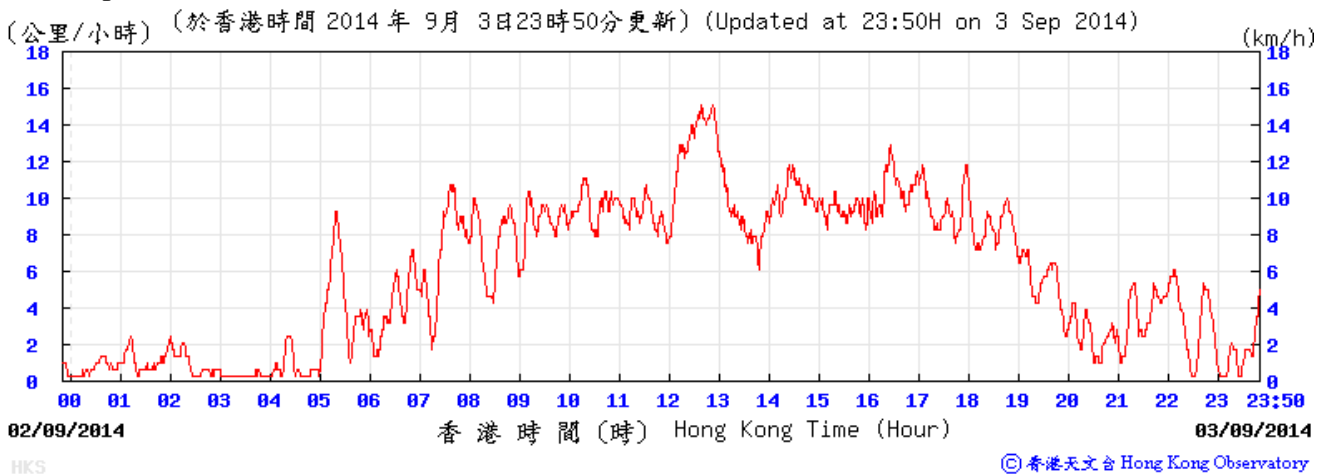
Meteorological Data Recorded from HKO Station (3 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



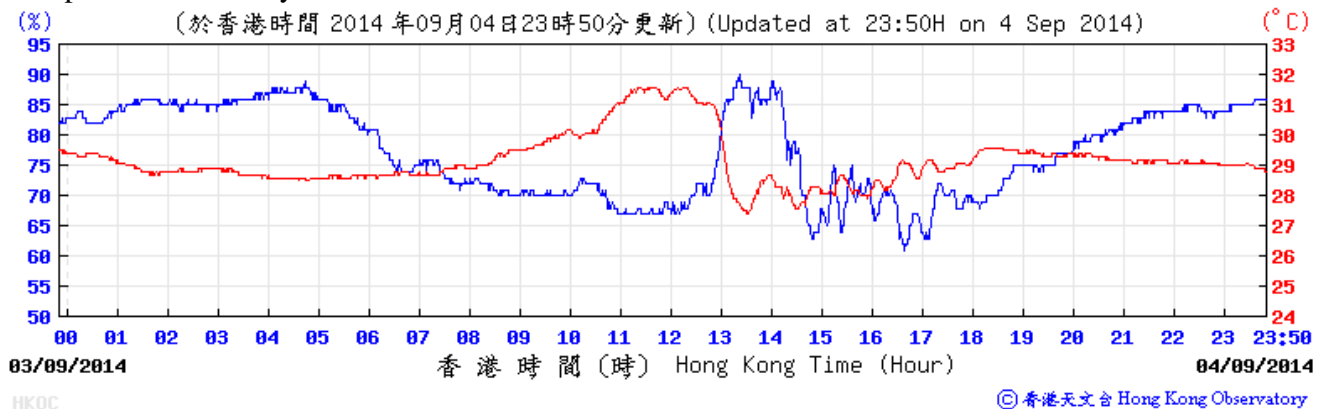
Wind Speed and Direction:



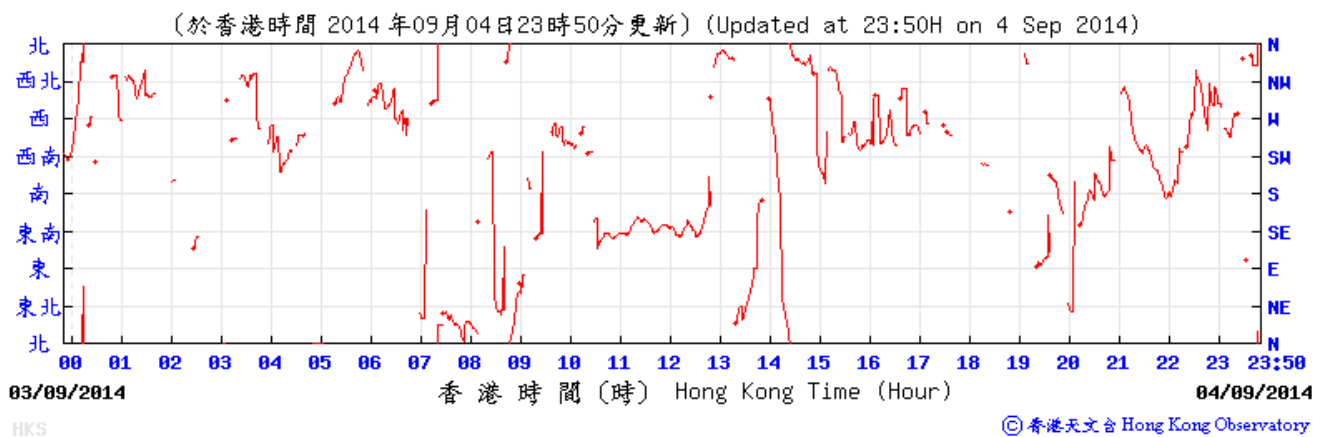
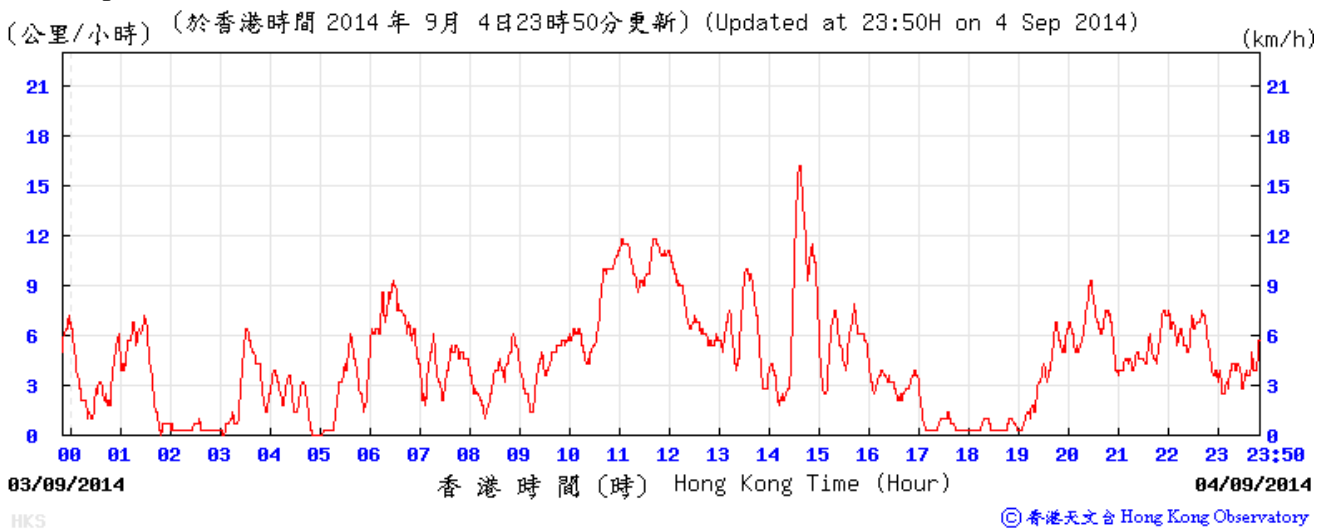
Meteorological Data Recorded from HKO Station (4 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



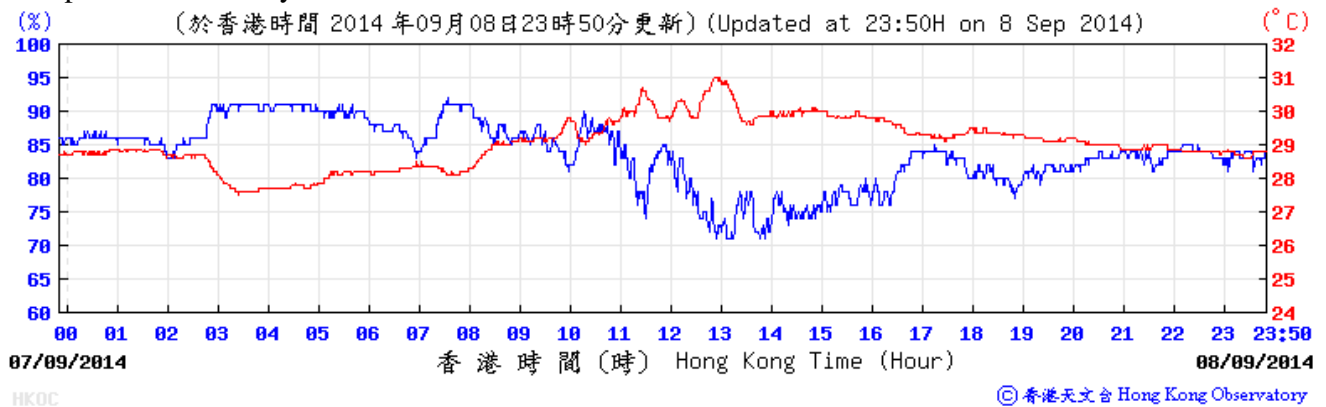
Wind Speed and Direction:



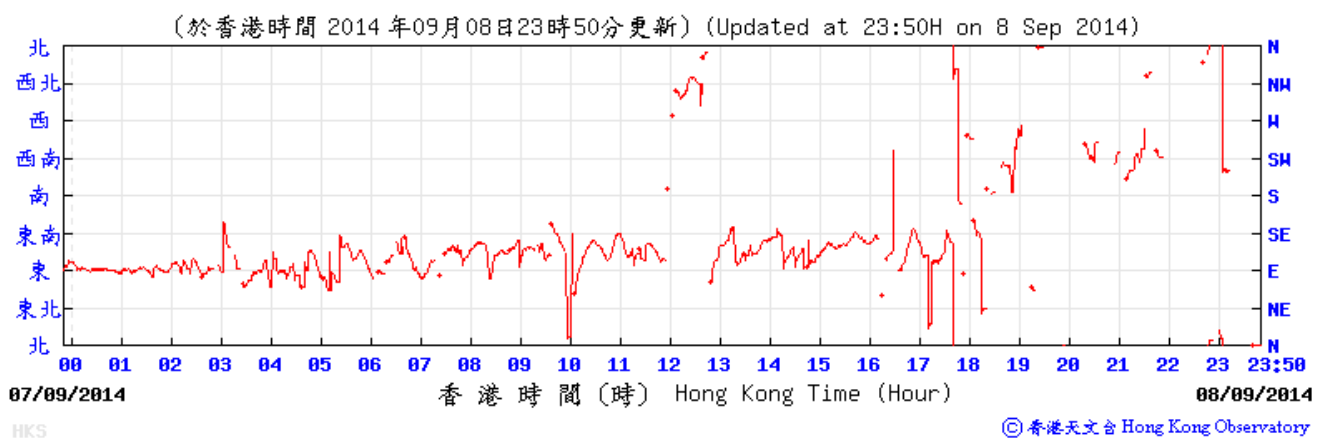
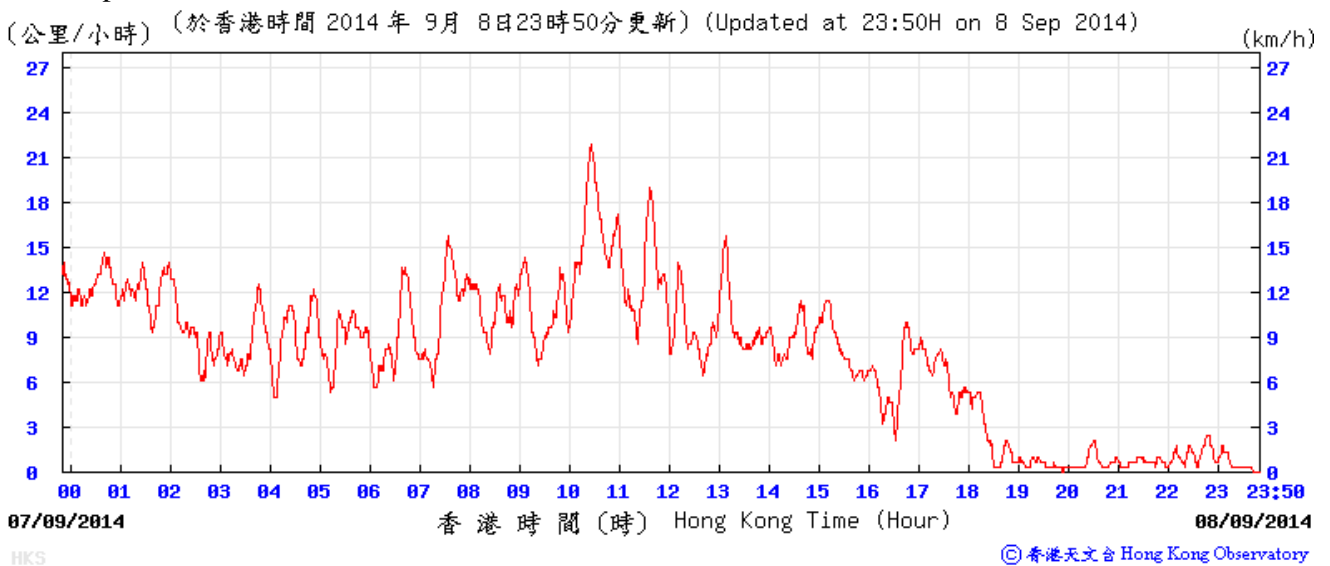
Meteorological Data Recorded from HKO Station (8 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



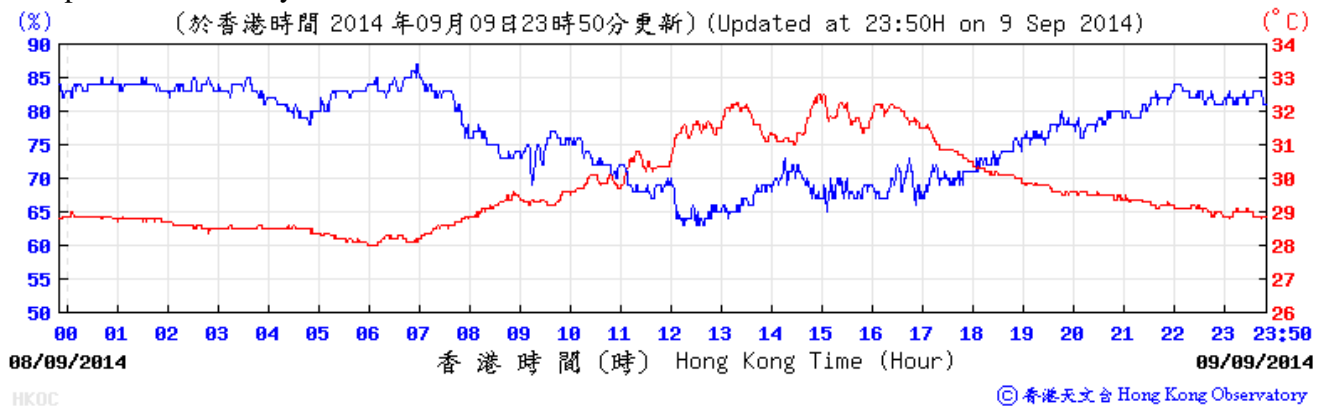
Wind Speed and Direction:



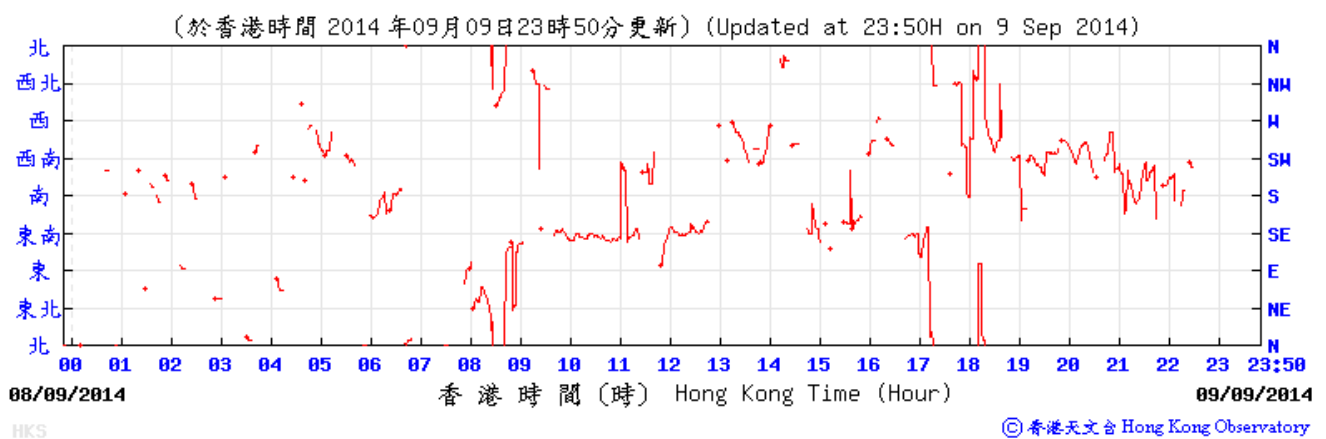
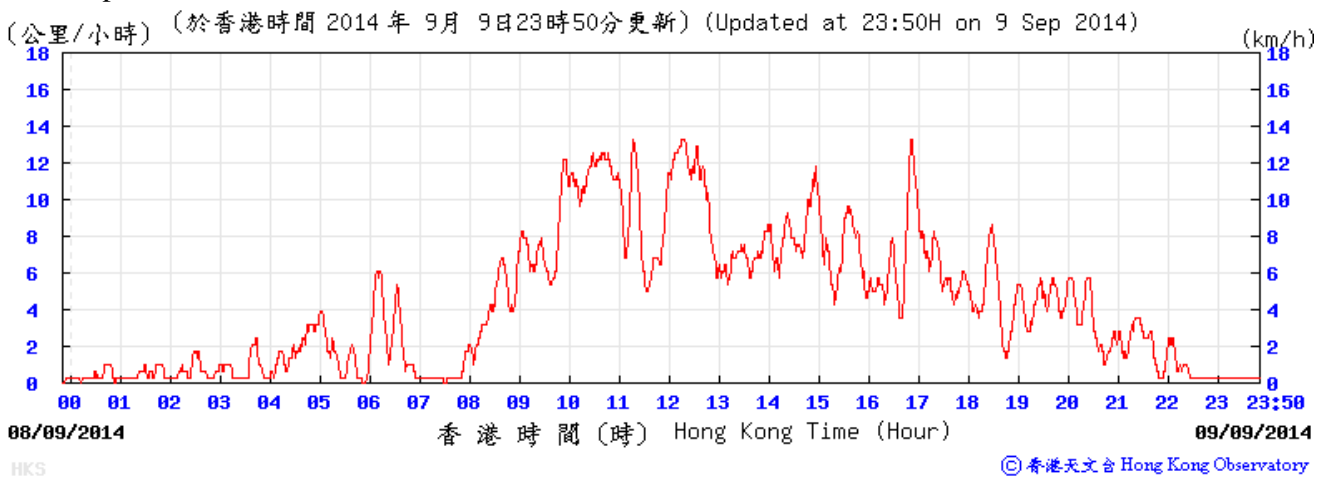
Meteorological Data Recorded from HKO Station (9 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



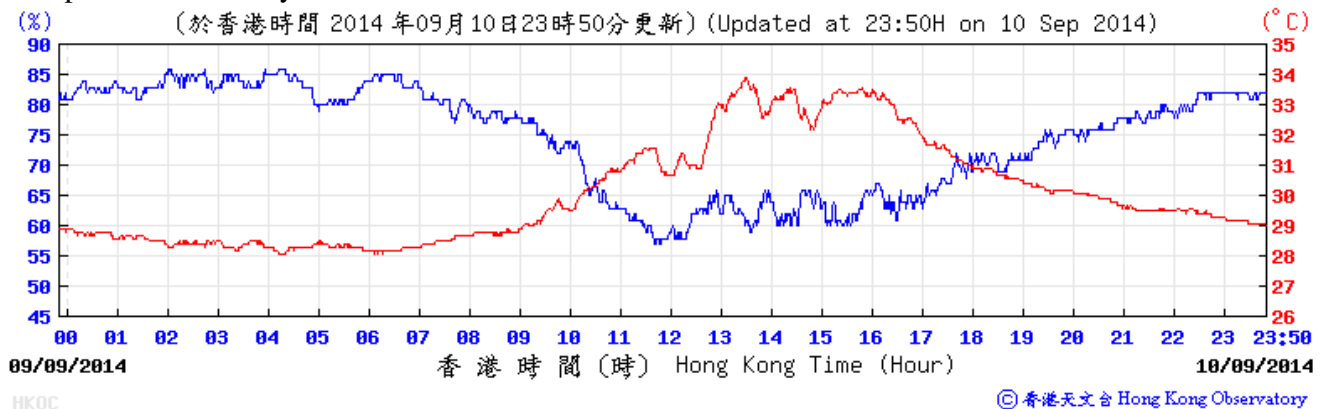
Wind Speed and Direction:



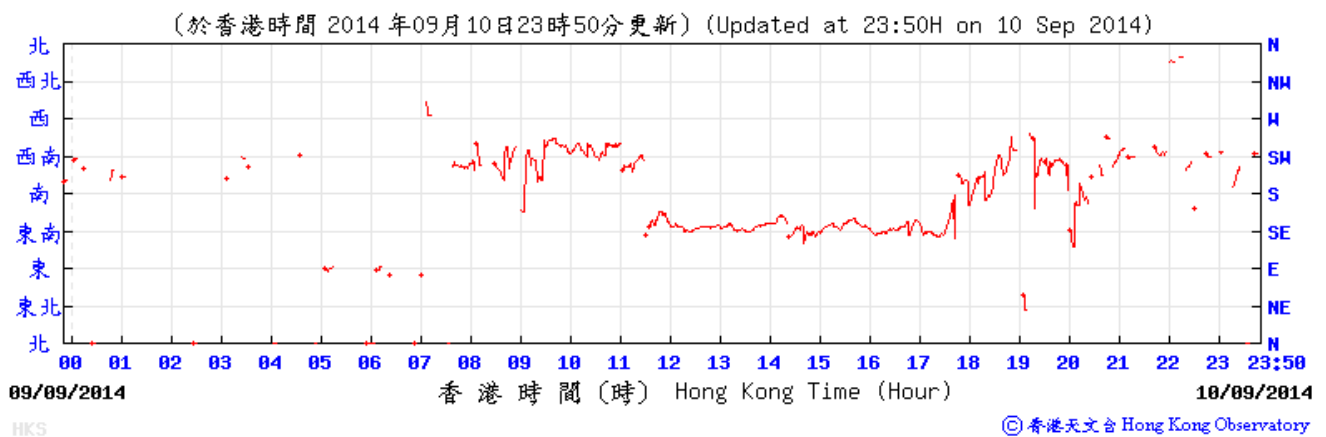
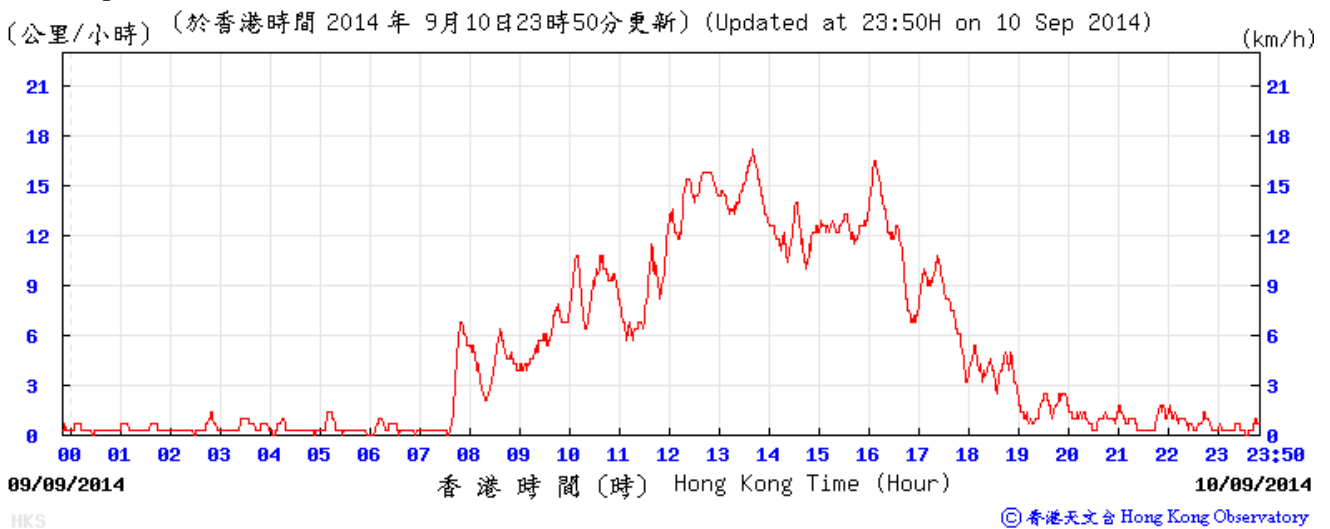
Meteorological Data Recorded from HKO Station (10 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



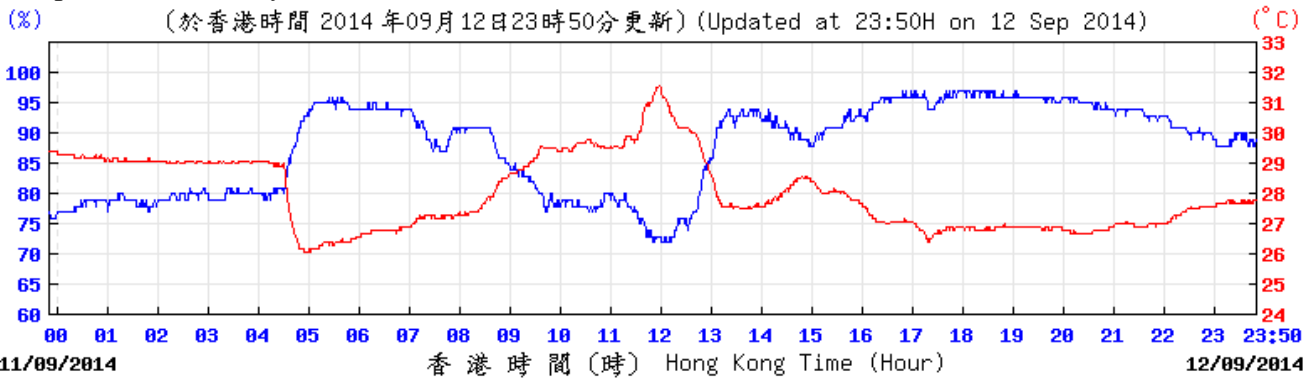
Wind Speed and Direction:



Meteorological Data Recorded from HKO Station (12 September 2014)

(Source: www.hko.gov.hk)

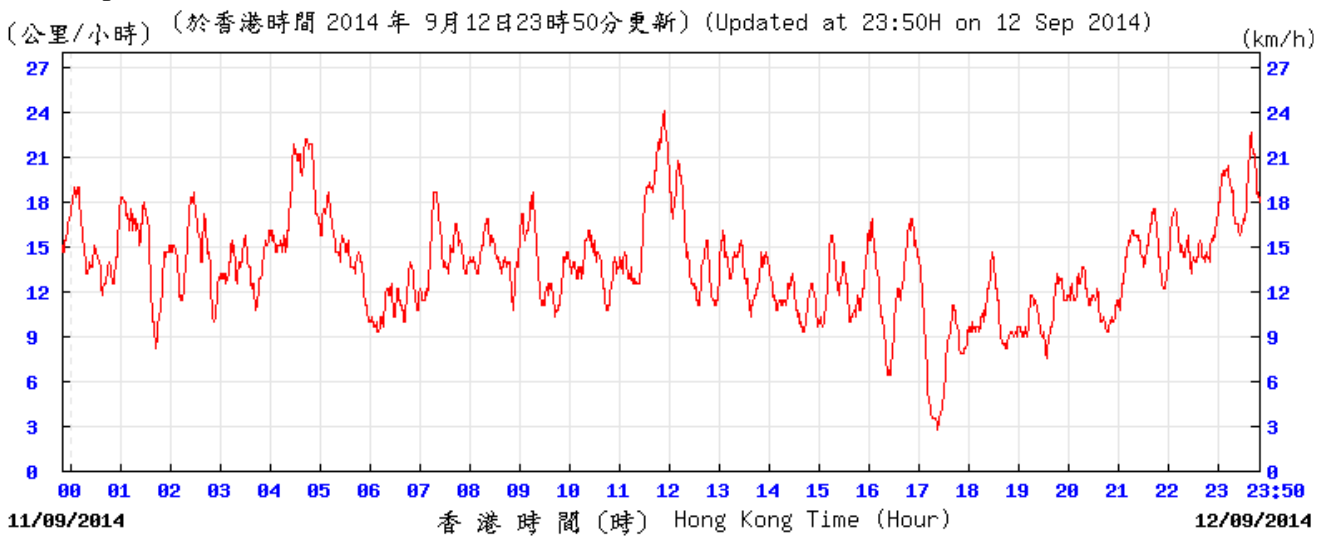
Temperature/Humidity:



HK0C

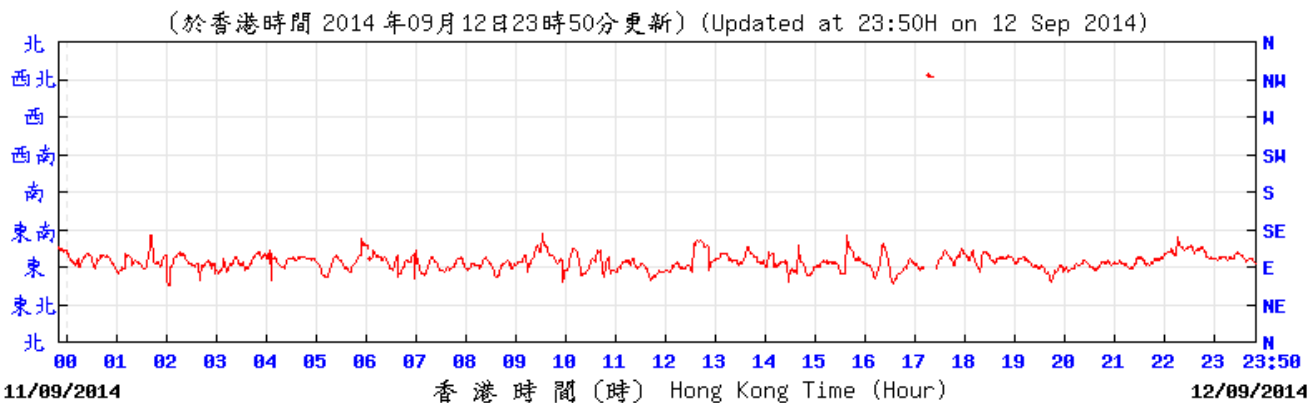
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Wind Speed and Direction:



HKS

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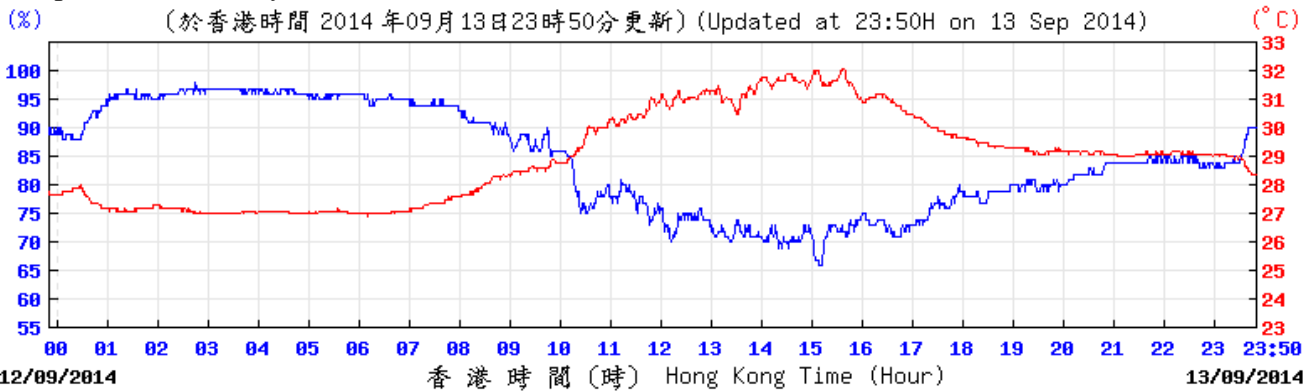
HKS

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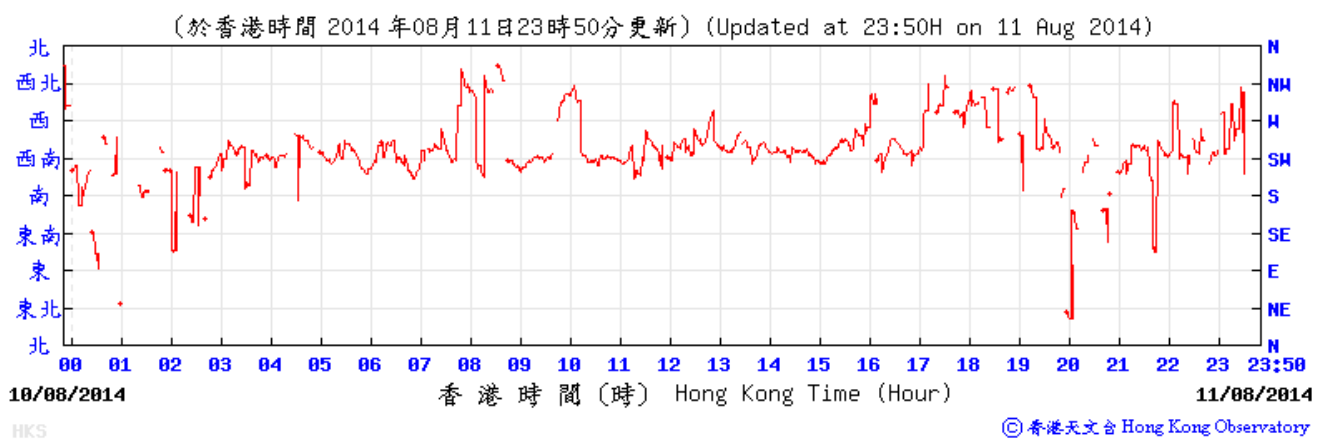
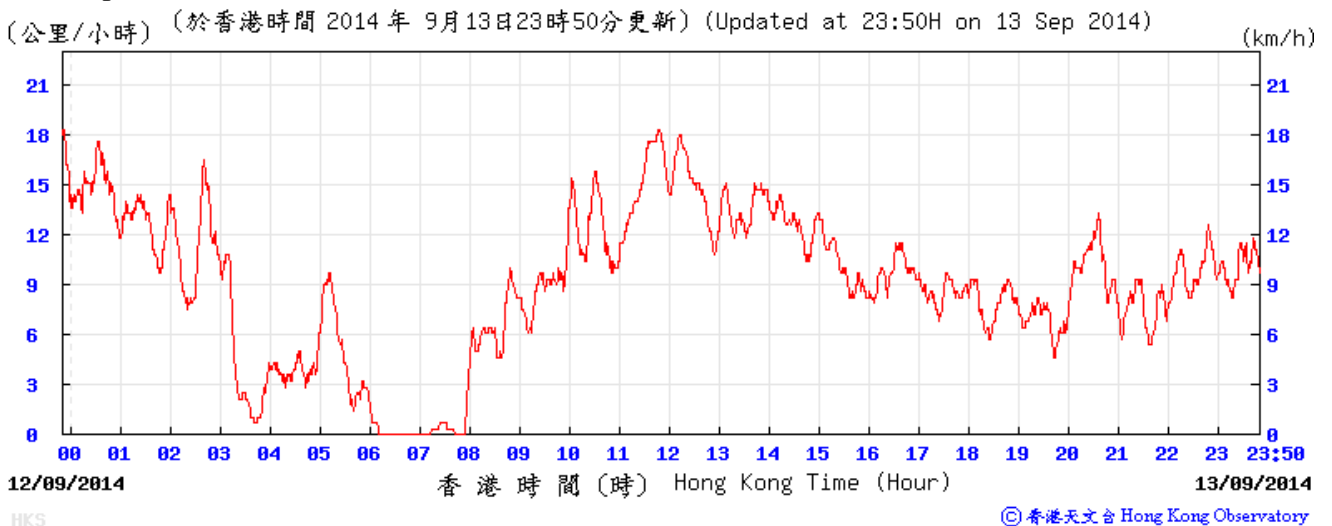
Meteorological Data Recorded from HKO Station (13 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



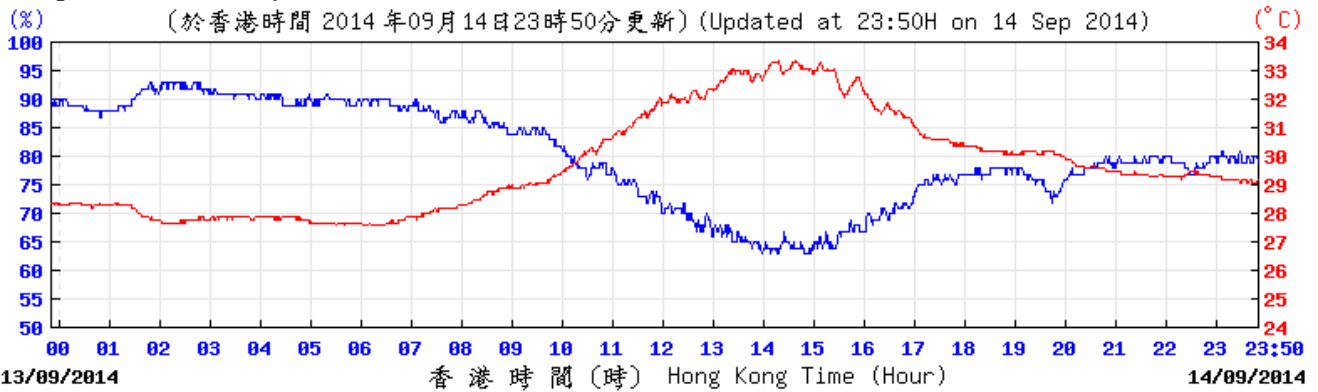
Wind Speed and Direction:



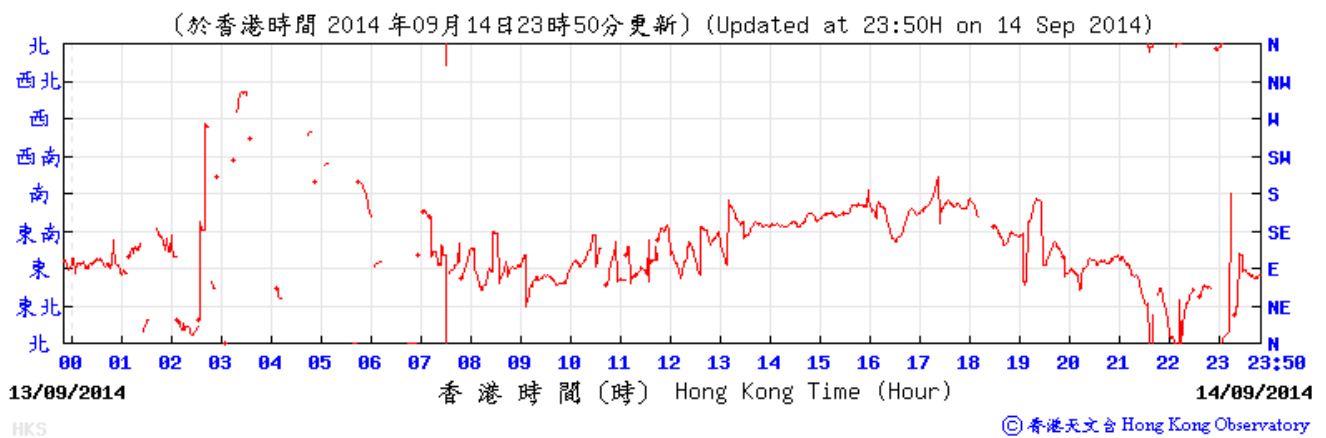
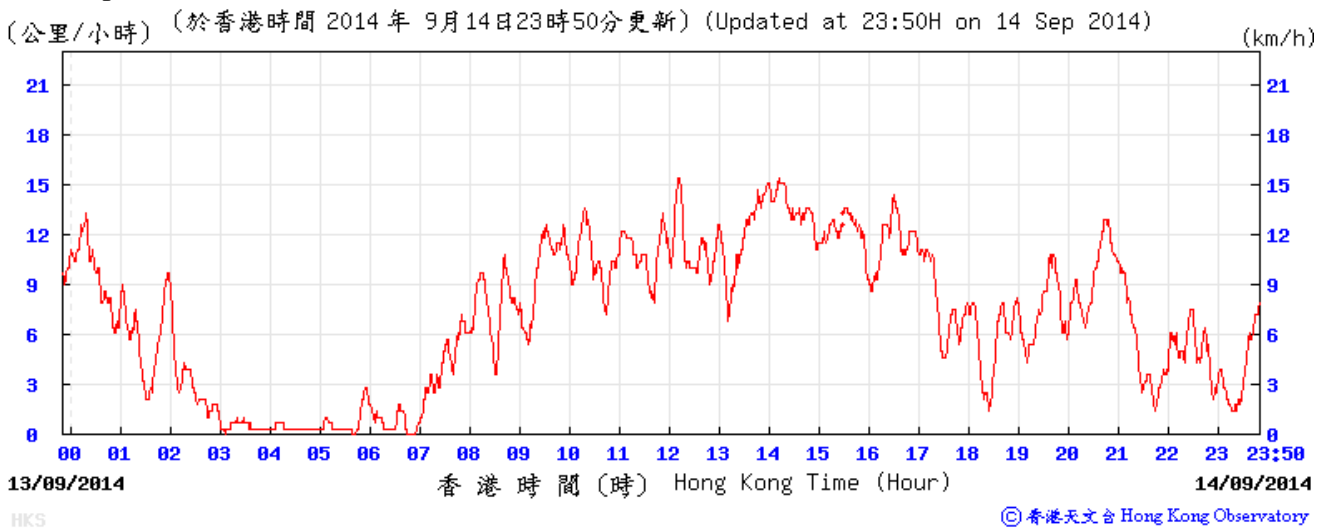
Meteorological Data Recorded from HKO Station (14 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



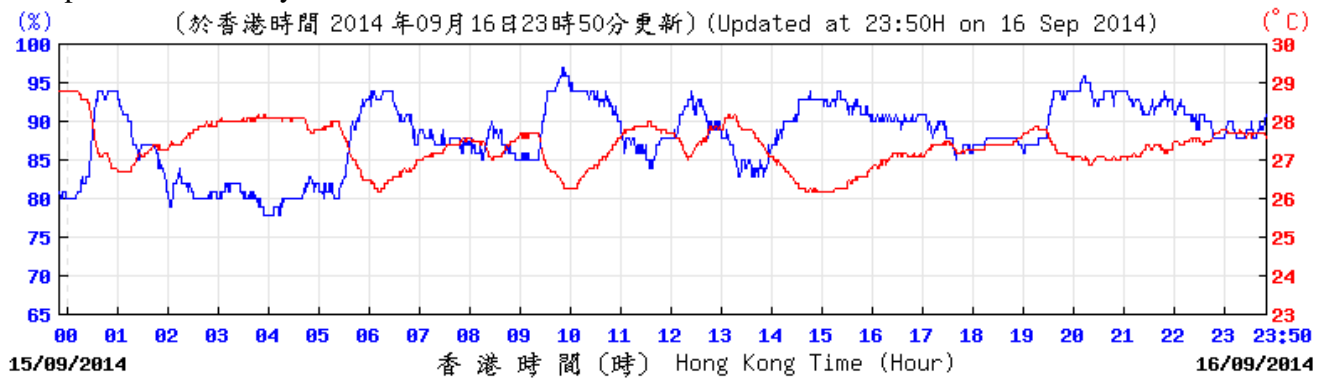
Wind Speed and Direction:



Meteorological Data Recorded from HKO Station (16 September 2014)

(Source: www.hko.gov.hk)

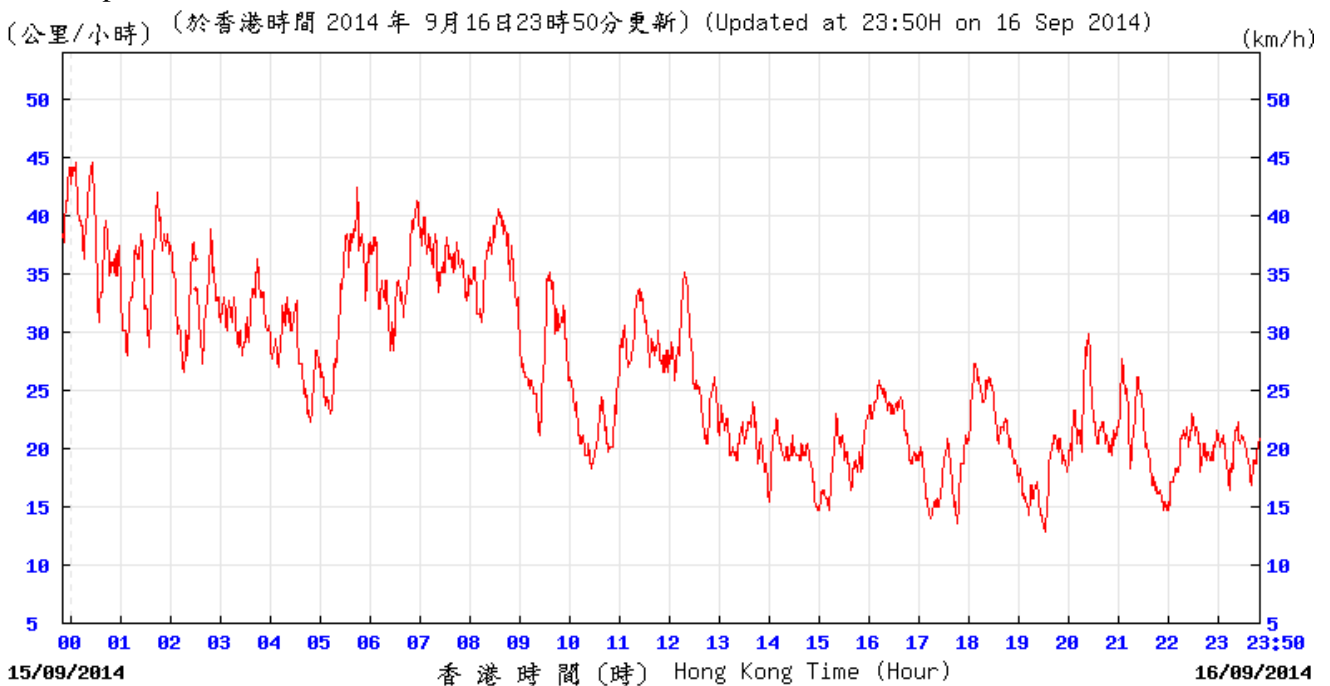
Temperature/Humidity:



HK0C

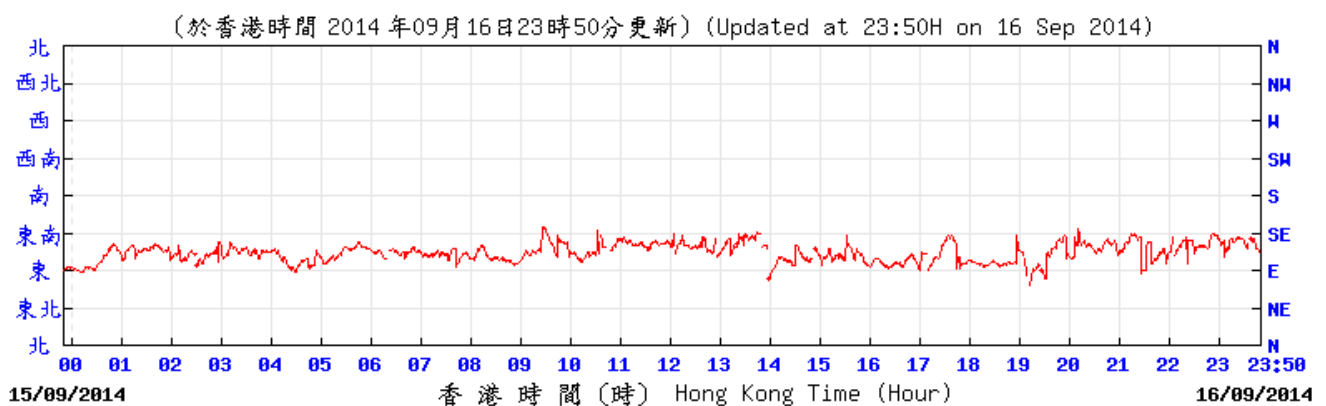
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Wind Speed and Direction:



HKS

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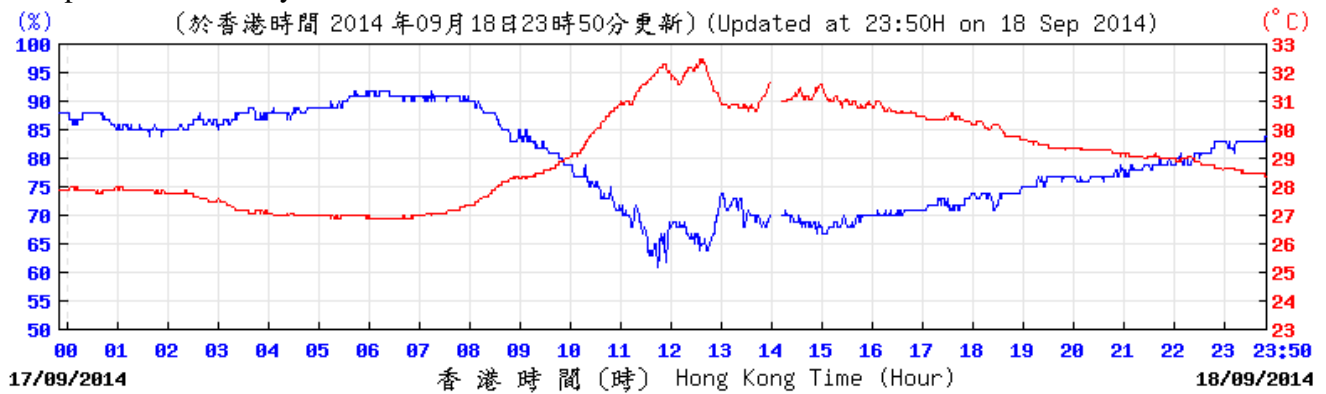
HKS

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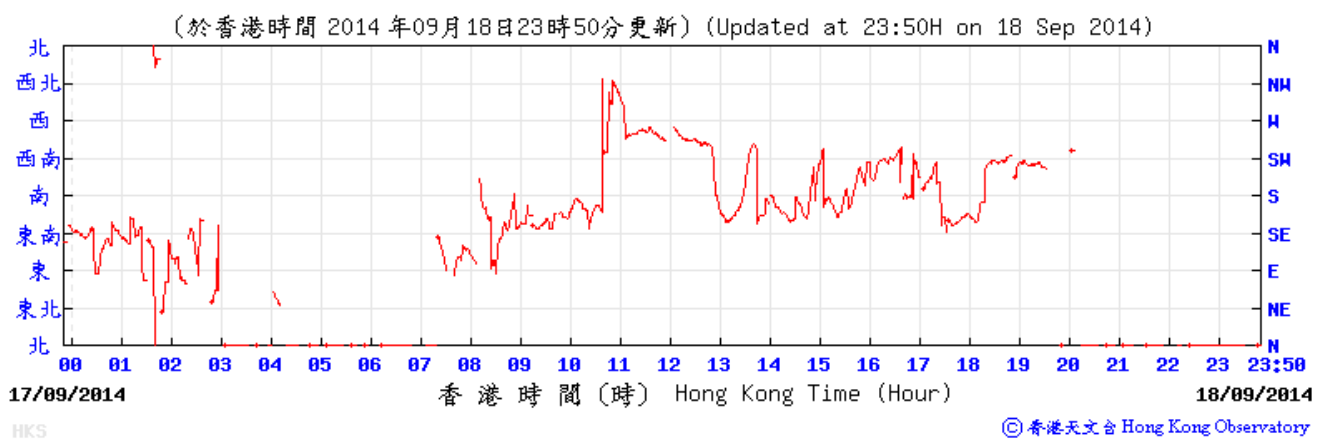
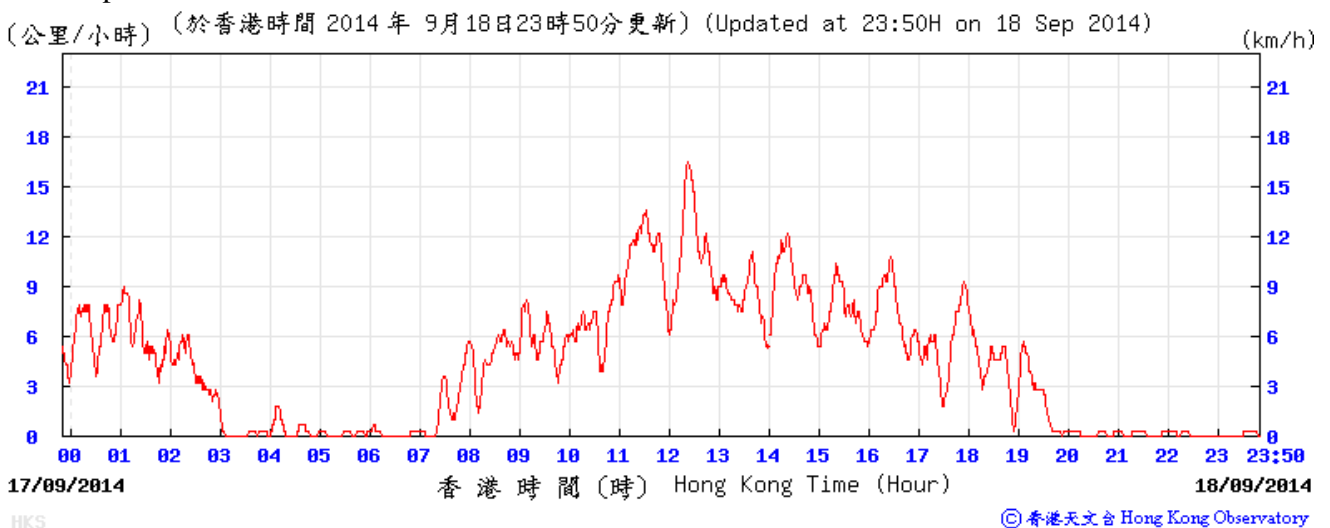
Meteorological Data Recorded from HKO Station (18 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



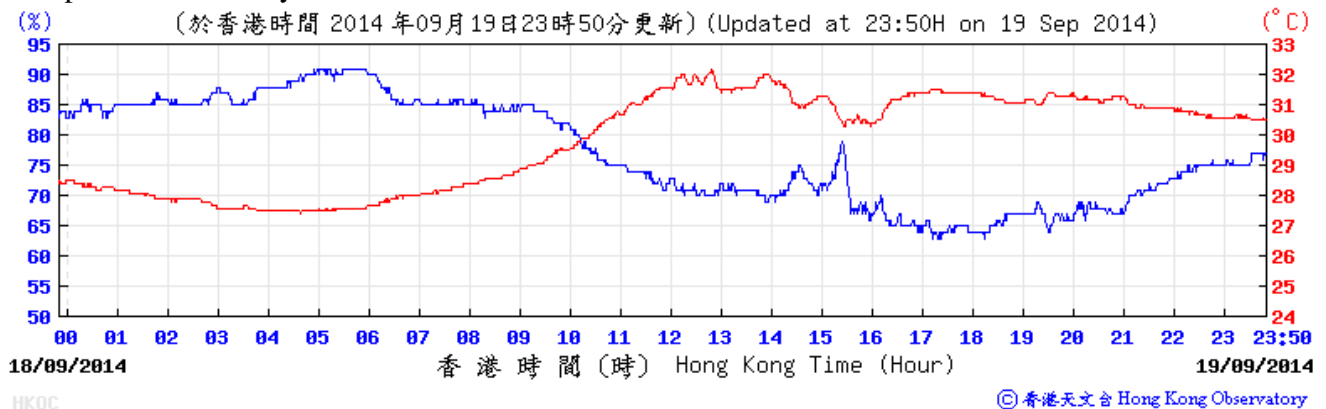
Wind Speed and Direction:



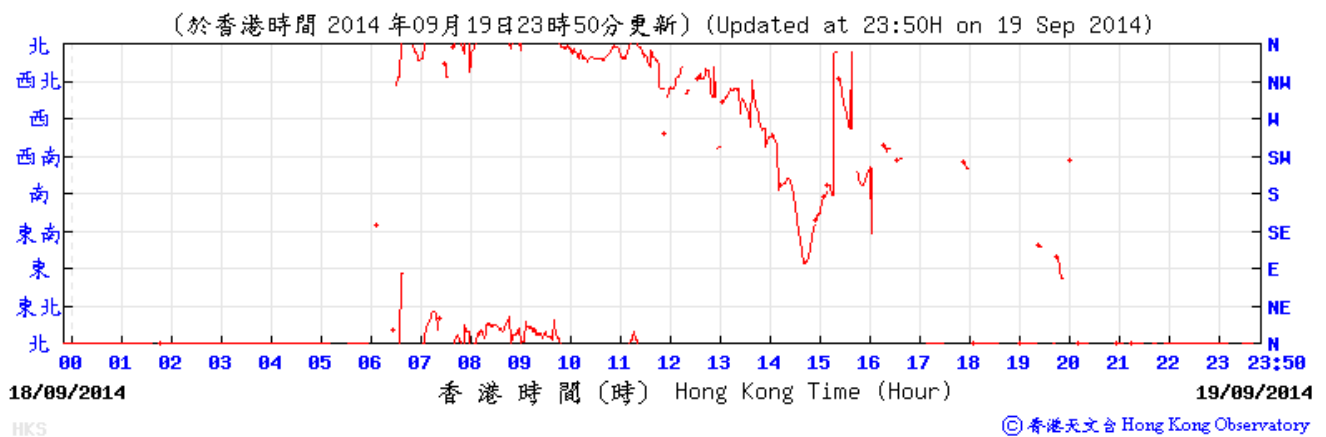
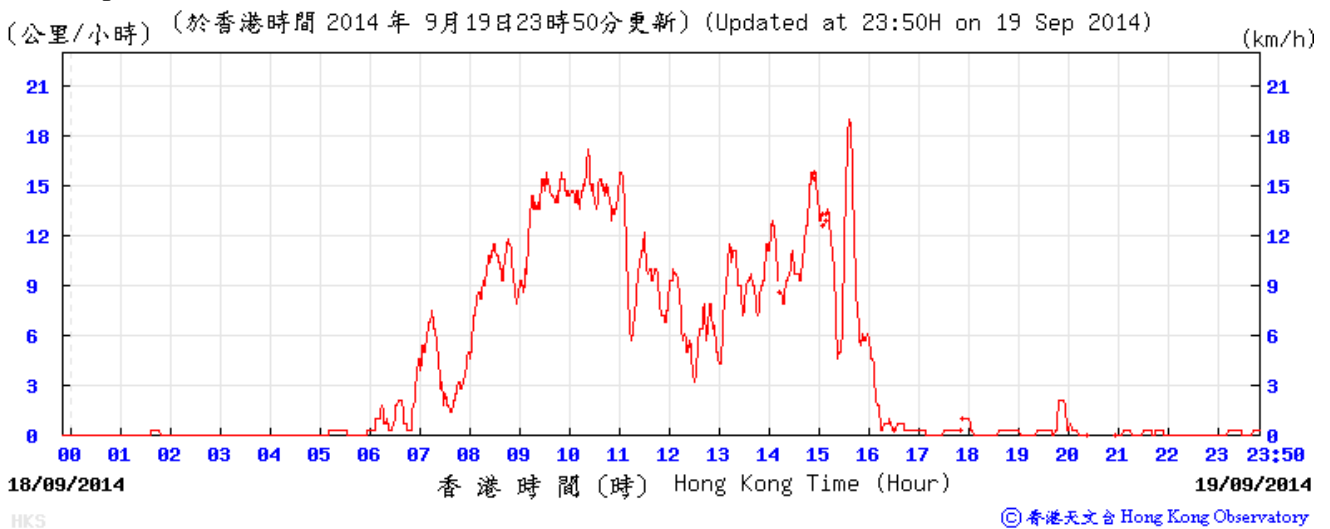
Meteorological Data Recorded from HKO Station (19 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



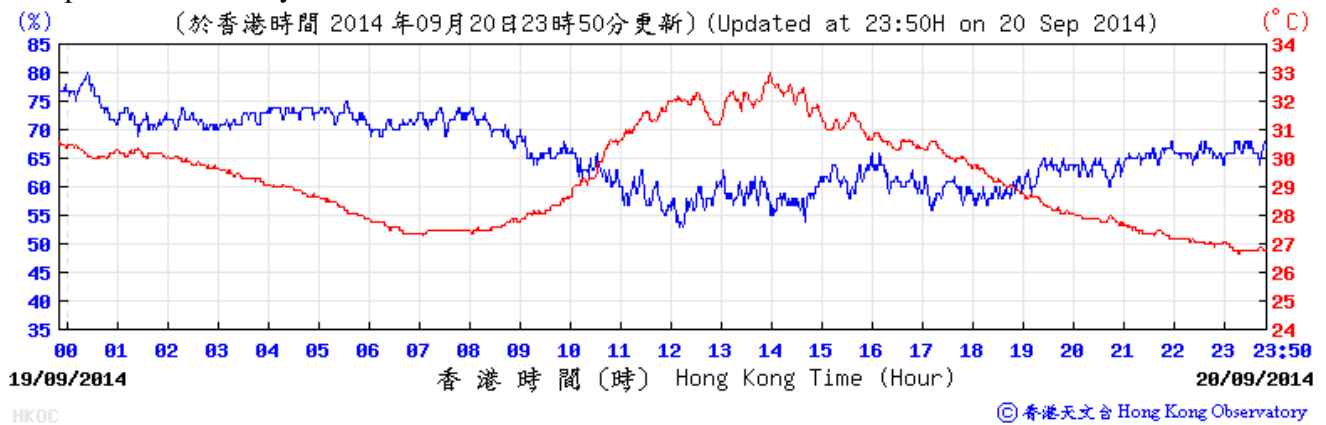
Wind Speed and Direction:



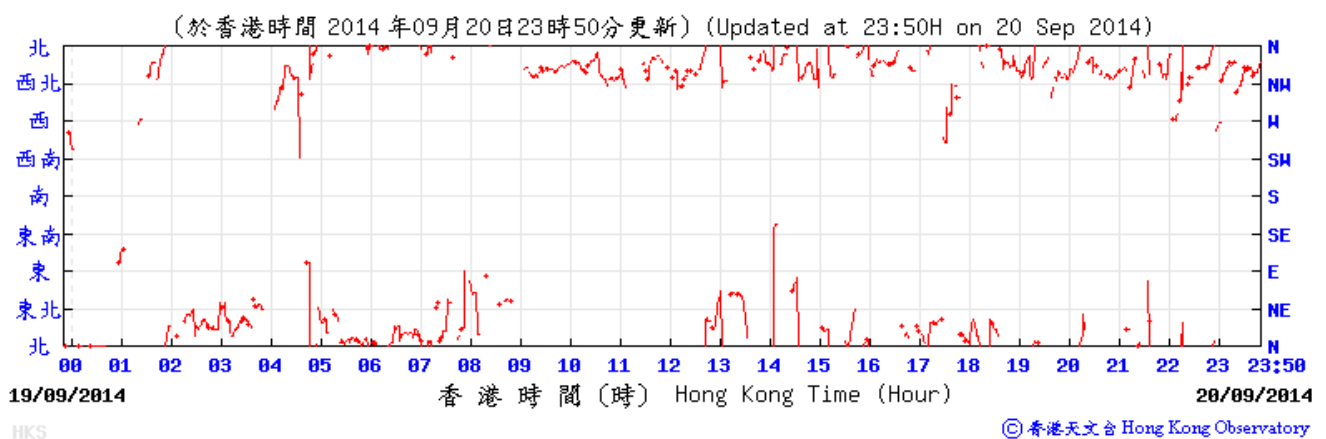
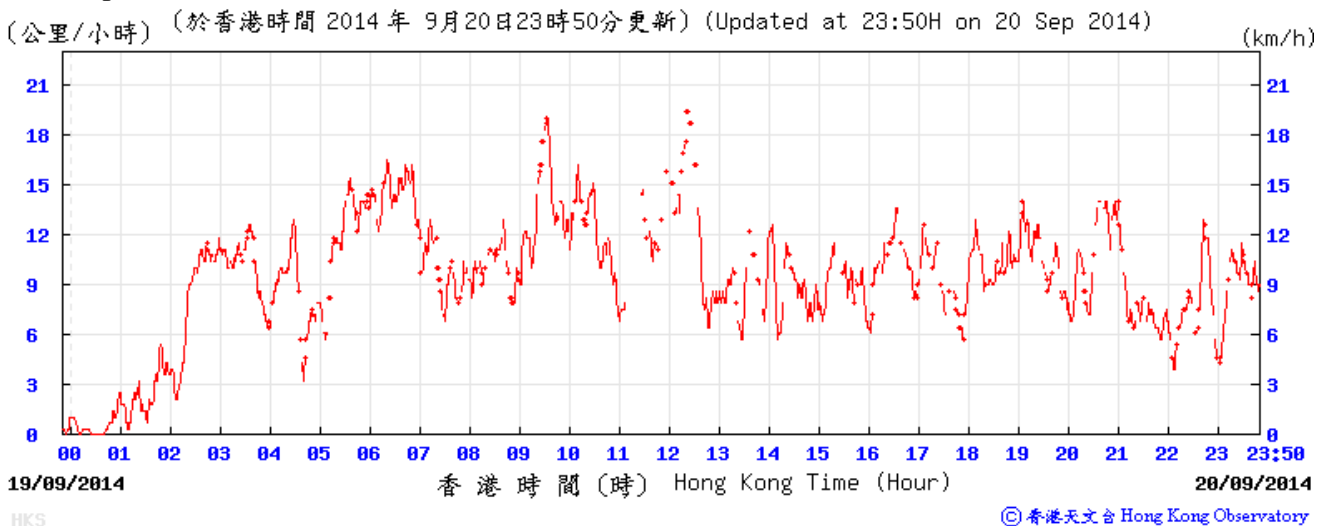
Meteorological Data Recorded from HKO Station (20 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



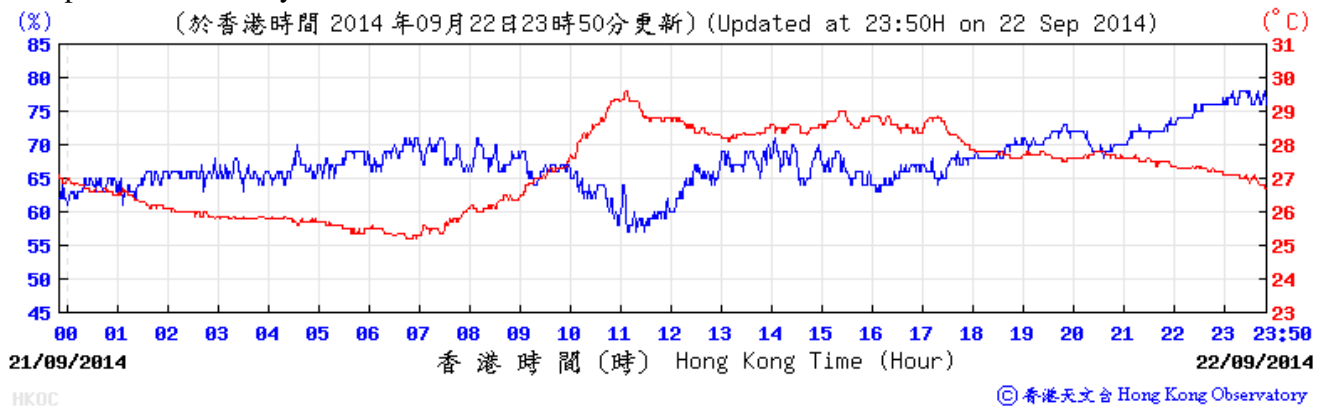
Wind Speed and Direction:



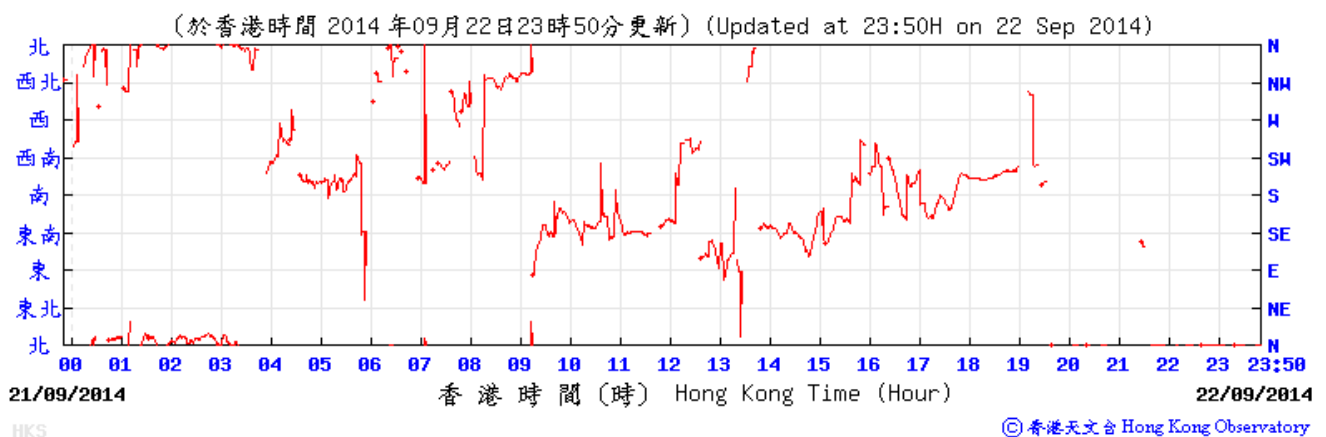
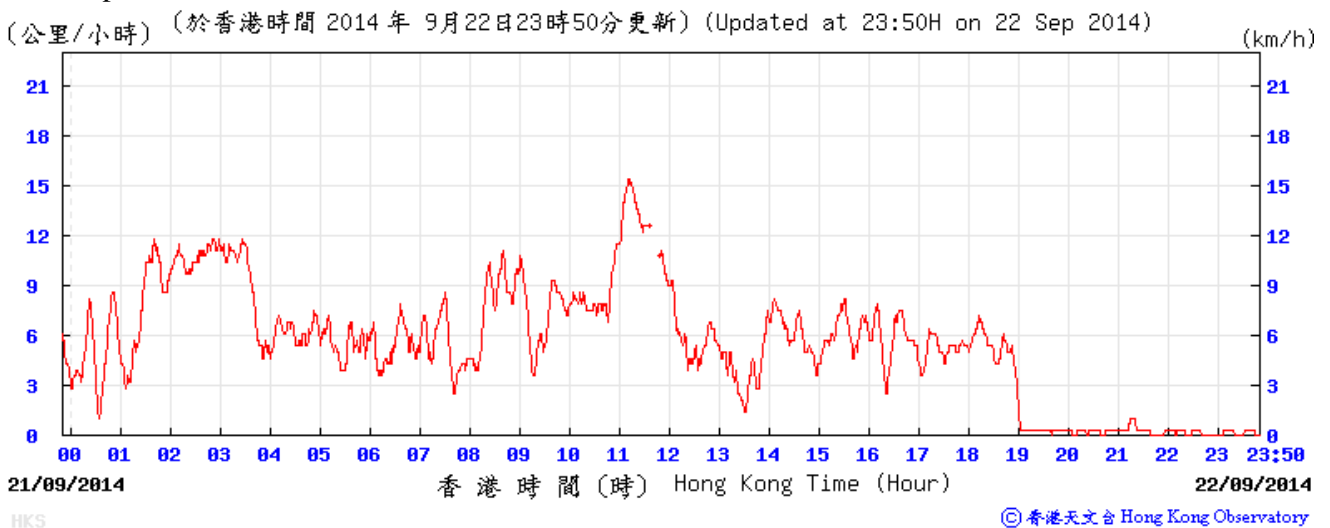
Meteorological Data Recorded from HKO Station (22 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



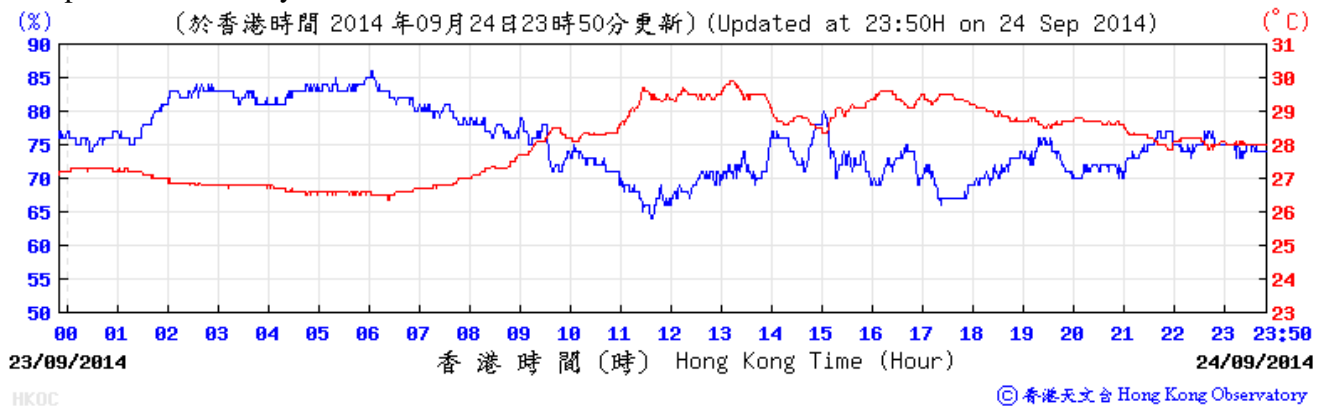
Wind Speed and Direction:



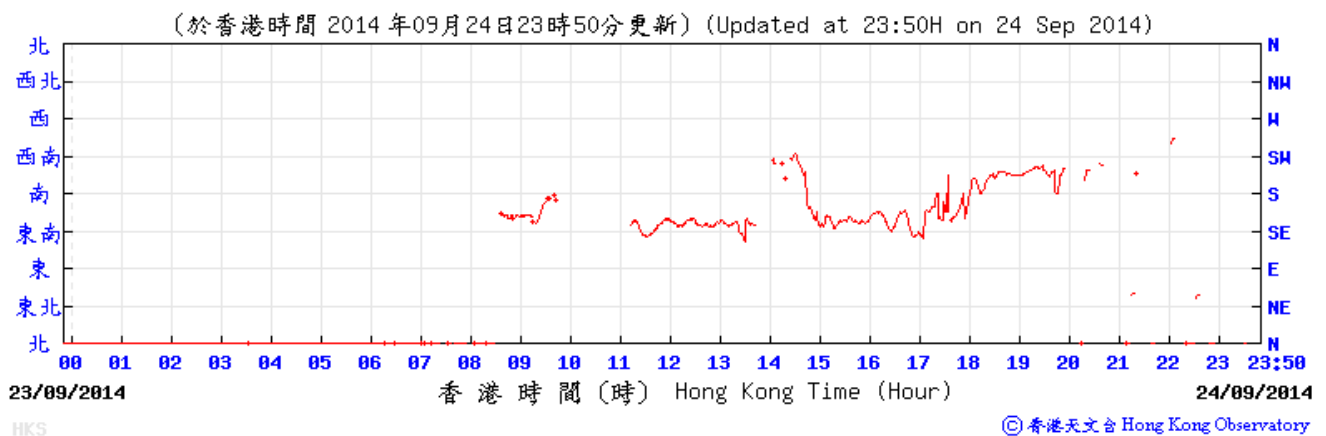
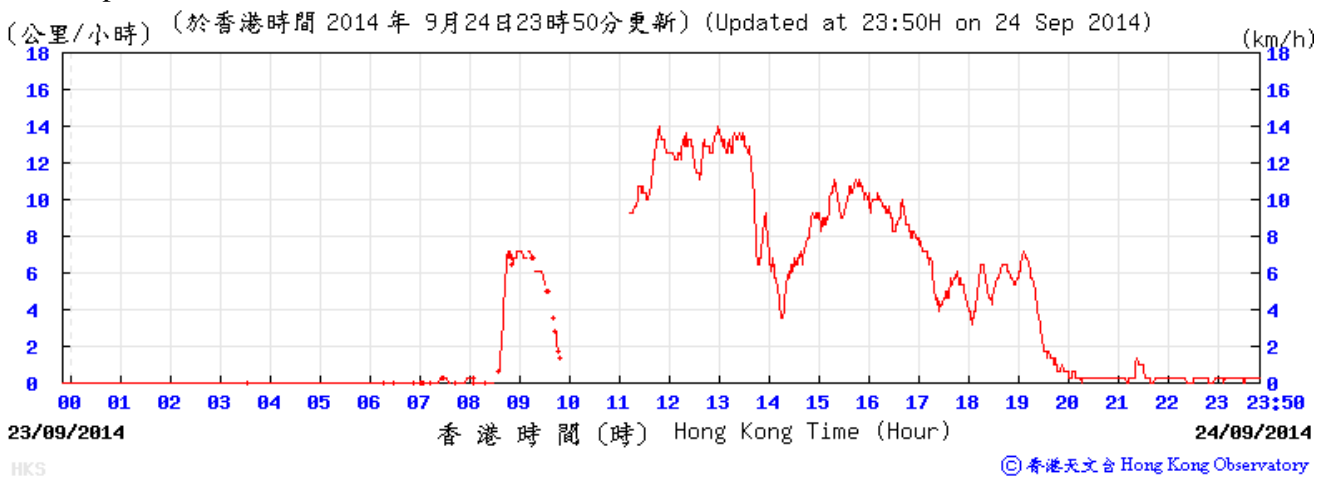
Meteorological Data Recorded from HKO Station (24 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



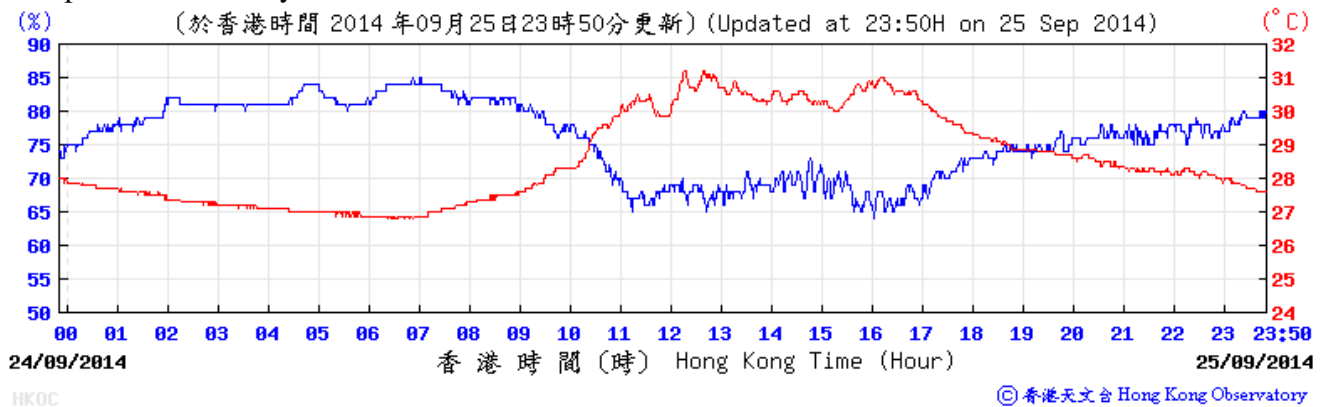
Wind Speed and Direction:



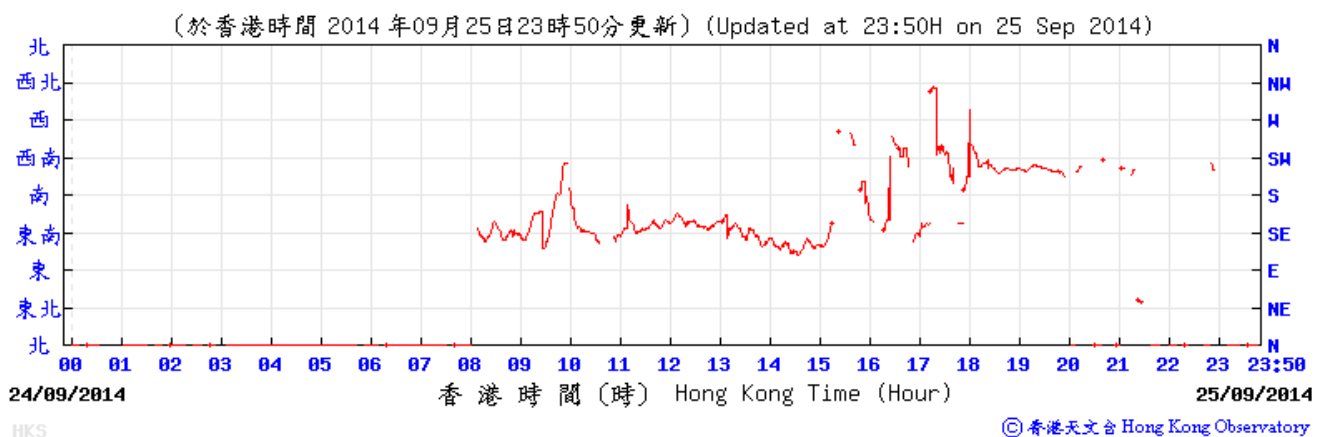
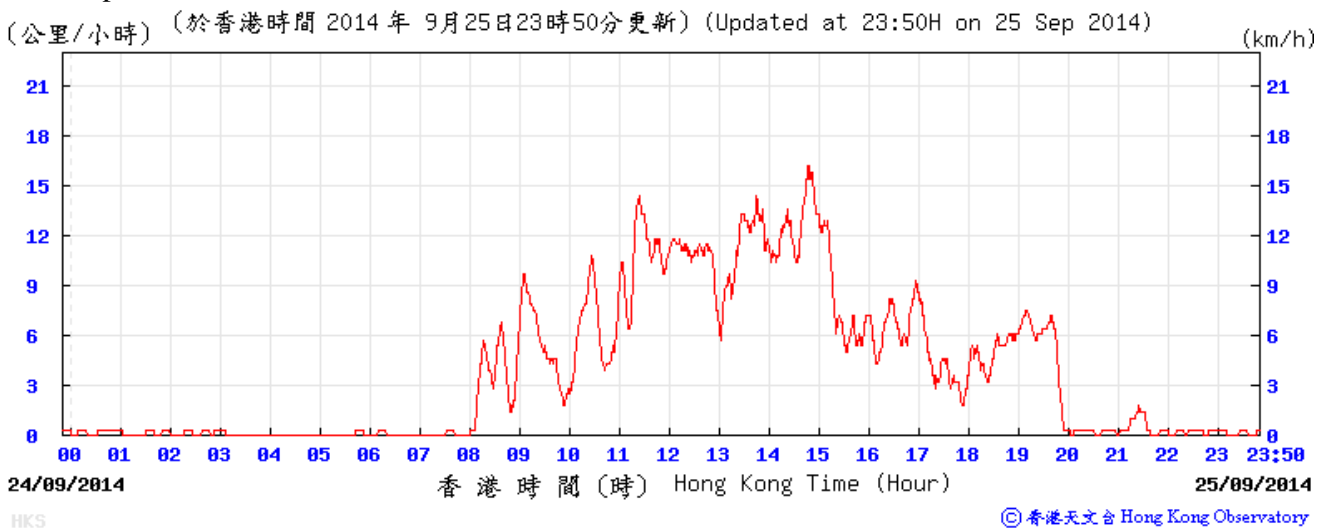
Meteorological Data Recorded from HKO Station (25 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



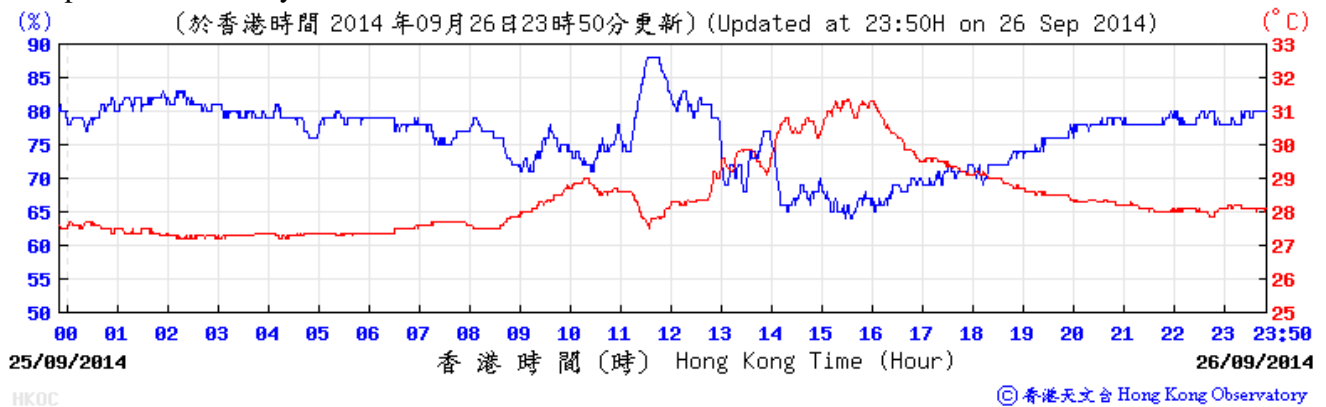
Wind Speed and Direction:



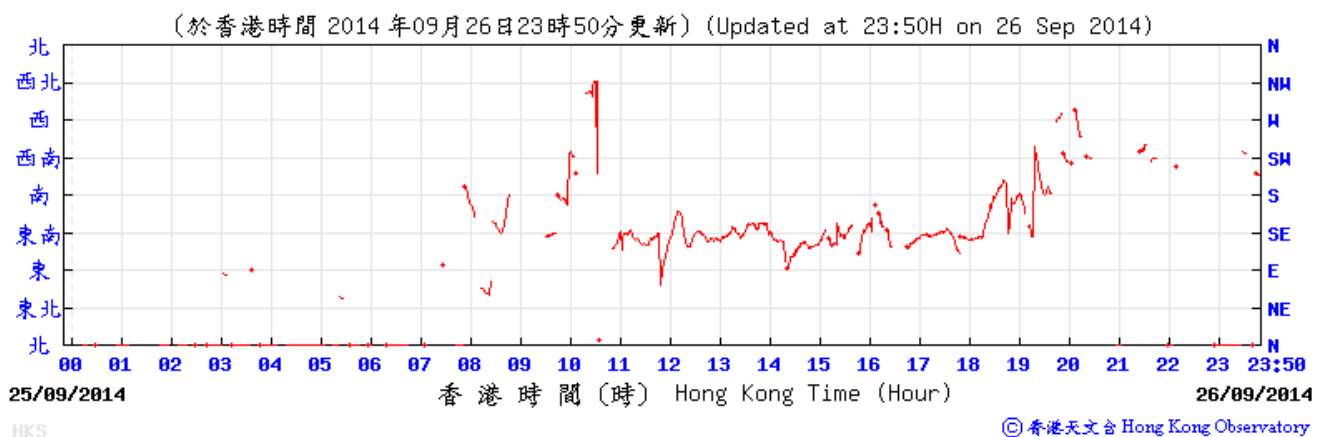
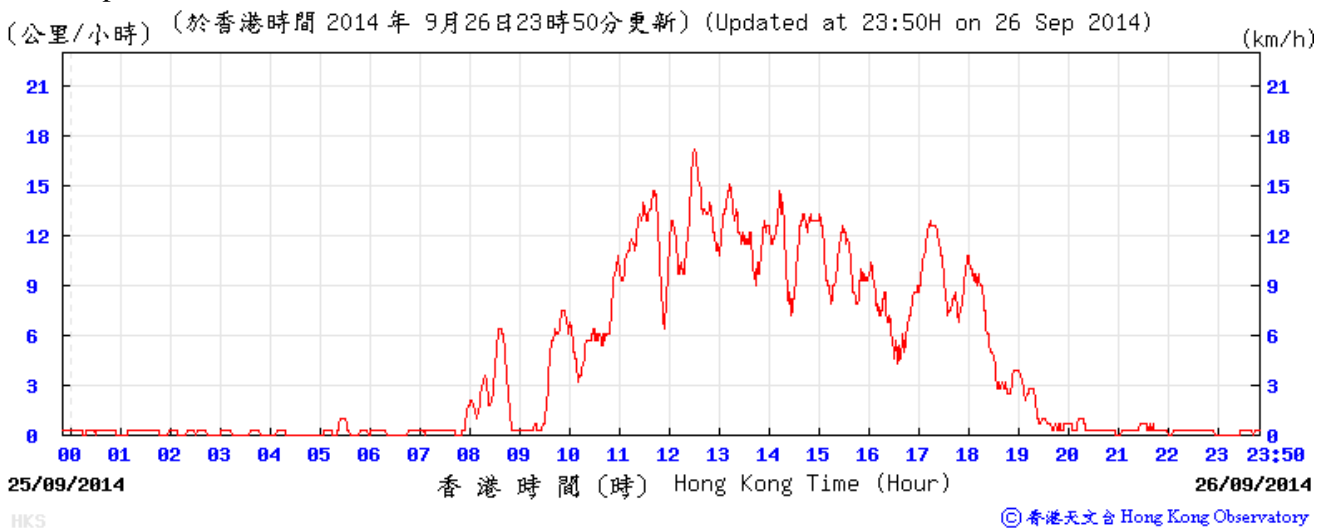
Meteorological Data Recorded from HKO Station (26 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



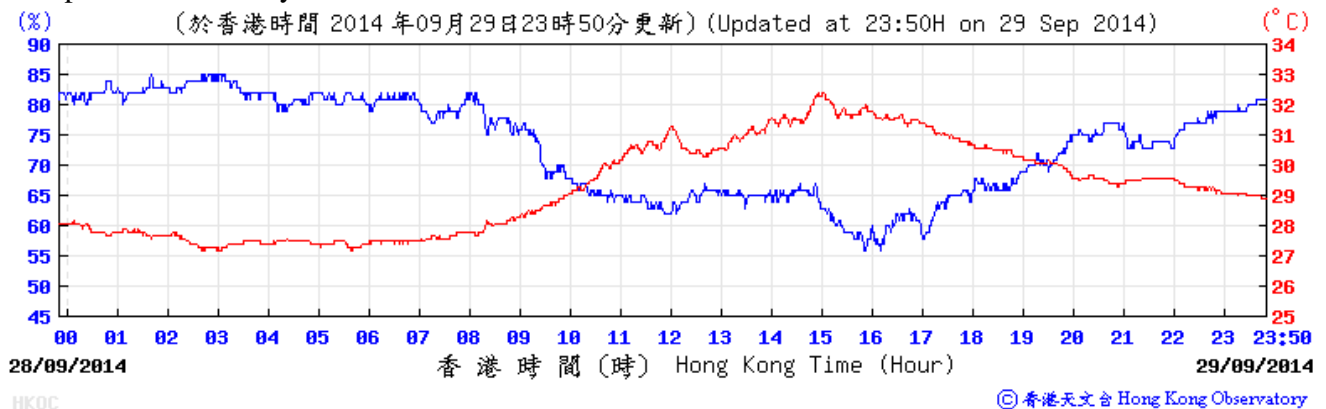
Wind Speed and Direction:



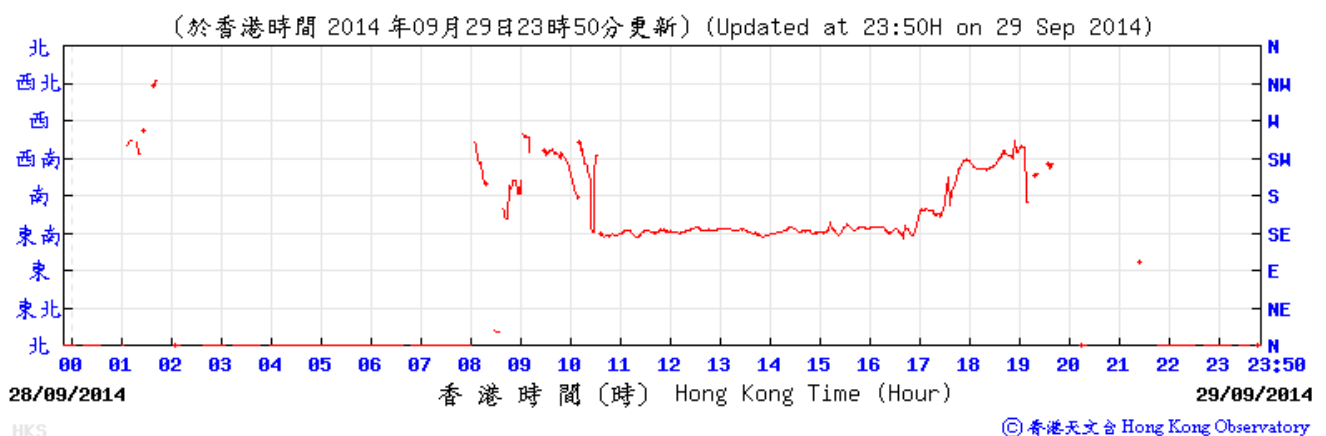
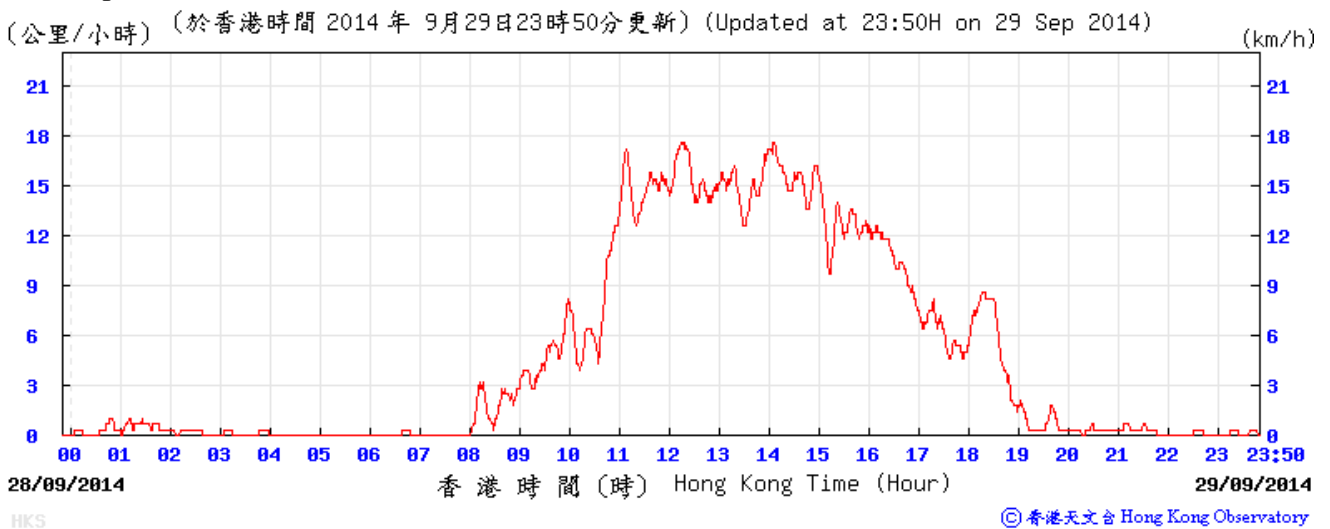
Meteorological Data Recorded from HKO Station (29 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



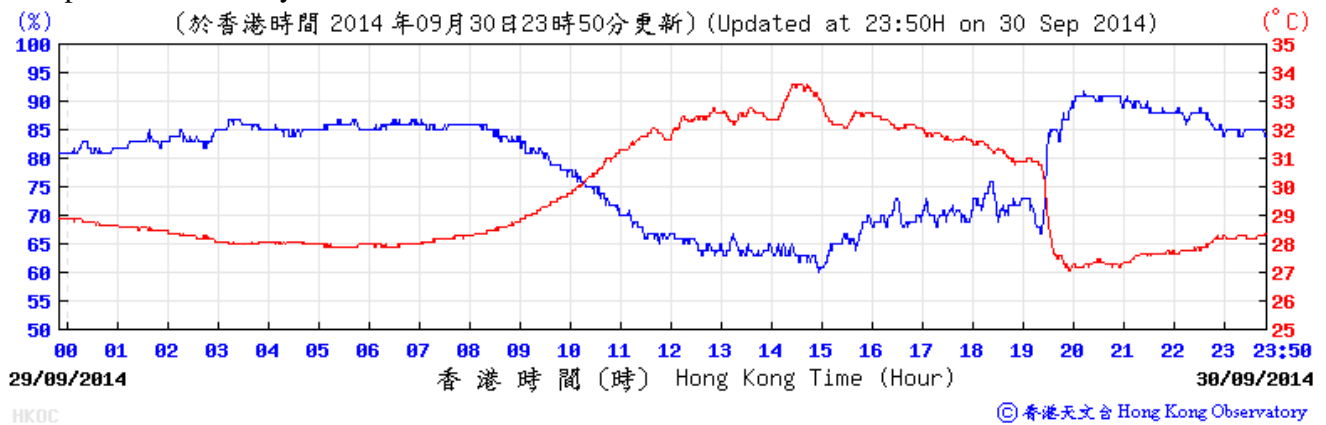
Wind Speed and Direction:



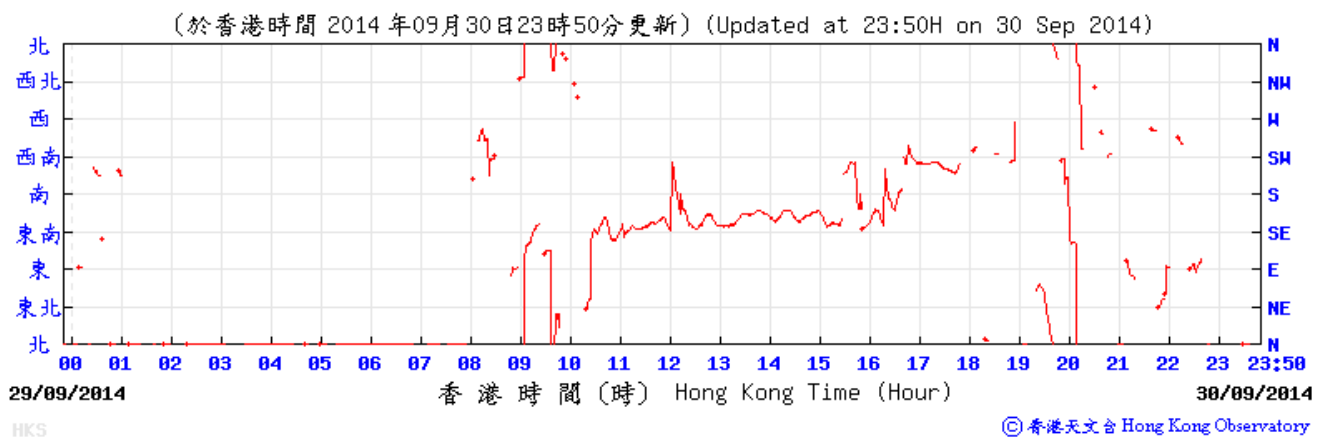
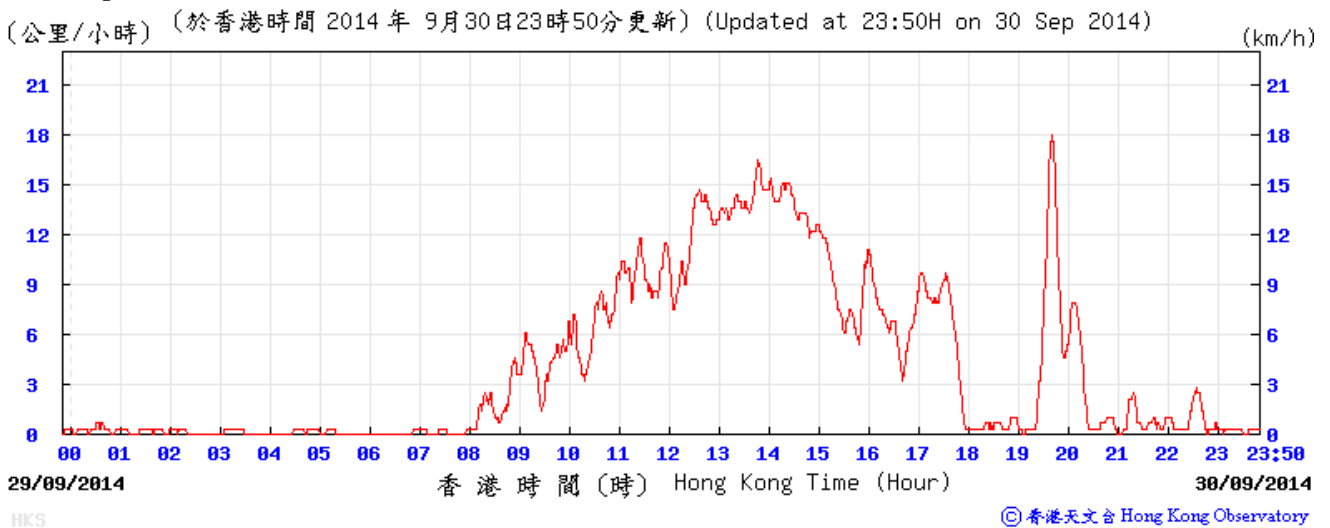
Meteorological Data Recorded from HKO Station (30 September 2014)

(Source: www.hko.gov.hk)

Temperature/Humidity:



Wind Speed and Direction:



**APPENDIX E
AIR QUALITY MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS**

Appendix E - 1-hour TSP Monitoring Results

Location CM_WF1a - Wah Ming House (Roof)			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-Sep-14	8:57	Sunny	149.2
4-Sep-14	9:57	Sunny	162.9
4-Sep-14	10:57	Sunny	153.8
10-Sep-14	13:00	Sunny	51.9
10-Sep-14	14:00	Sunny	61.1
10-Sep-14	15:00	Sunny	64.2
16-Sep-14	13:00	Cloudy	121.5
16-Sep-14	14:00	Cloudy	117.2
16-Sep-14	15:00	Cloudy	119.2
22-Sep-14	13:00	Cloudy	208.9
22-Sep-14	14:00	Cloudy	213.0
22-Sep-14	15:00	Cloudy	217.9
26-Sep-14	14:05	Sunny	73.5
26-Sep-14	15:05	Sunny	70.6
26-Sep-14	16:05	Sunny	80.0
30-Sep-14	13:20	Cloudy	248.9
30-Sep-14	14:20	Cloudy	240.6
30-Sep-14	15:20	Cloudy	244.0
Average			144.4
Maximum			248.9
Minimum			51.9

Location CM_AB1b - Works Site Boundary of Aberdeen PTW			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
2-Sep-14	13:20	Sunny	65.4
2-Sep-14	14:20	Sunny	65.8
2-Sep-14	15:20	Sunny	59.9
8-Sep-14	13:06	Cloudy	146.5
8-Sep-14	14:06	Cloudy	137.3
8-Sep-14	15:06	Cloudy	151.2
12-Sep-14	13:00	Cloudy	65.1
12-Sep-14	14:00	Cloudy	61.1
12-Sep-14	15:00	Cloudy	81.1
18-Sep-14	13:00	Sunny	108.9
18-Sep-14	14:00	Sunny	113.4
18-Sep-14	15:00	Sunny	98.2
24-Sep-14	8:52	Sunny	217.5
24-Sep-14	9:52	Sunny	230.1
24-Sep-14	10:52	Sunny	206.8
30-Sep-14	8:55	Cloudy	176.1
30-Sep-14	9:55	Cloudy	184.3
30-Sep-14	10:55	Cloudy	171.6
Average			130.0
Maximum			230.1
Minimum			59.9

Appendix E - 1-hour TSP Monitoring Results

Location CM_CB1a - The Arcade, Cyberport			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
2-Sep-14	9:00	Sunny	56.7
2-Sep-14	10:00	Sunny	58.6
2-Sep-14	11:00	Sunny	60.3
8-Sep-14	13:00	Cloudy	120.5
8-Sep-14	14:00	Cloudy	124.4
8-Sep-14	15:00	Cloudy	116.3
12-Sep-14	13:00	Cloudy	52.5
12-Sep-14	14:00	Cloudy	58.1
12-Sep-14	15:00	Cloudy	43.5
18-Sep-14	13:00	Sunny	76.5
18-Sep-14	14:00	Sunny	85.4
18-Sep-14	15:00	Sunny	82.7
24-Sep-14	13:05	Sunny	198.7
24-Sep-14	14:05	Sunny	213.4
24-Sep-14	15:05	Sunny	218.1
30-Sep-14	9:00	Cloudy	223.5
30-Sep-14	10:00	Cloudy	230.8
30-Sep-14	11:00	Cloudy	217.8
		Average	124.3
		Maximum	230.8
		Minimum	43.5

Appendix E - 24-hour TSP Monitoring Results

Location CM_WF1a - Wah Ming House

Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
2-Sep-14	9:50	Sunny	304.9	3.1877	3.2458	0.0581	1392.2	1416.2	24.0	1.21	1.21	1.21	1742.3	33.3	1408011035
8-Sep-14	9:00	Sunny	301.9	3.2028	3.2569	0.0541	1416.2	1440.2	24.0	1.21	1.21	1.21	1748.1	30.9	1407011100
13-Sep-14	9:00	Cloudy	302.7	3.1670	3.2205	0.0535	1440.2	1464.2	24.0	1.21	1.21	1.21	1744.6	30.7	1408021086
19-Sep-14	9:00	Cloudy	303.1	3.2442	3.4617	0.2175	1464.2	1488.2	24.0	1.21	1.21	1.21	1745.6	124.6	1406031012
25-Sep-14	9:00	Sunny	301.1	3.2141	3.3239	0.1098	1488.2	1512.2	24.0	1.22	1.22	1.22	1755.0	62.6	1408021099
29-Sep-14	9:00	Cloudy	302.1	3.1738	3.2628	0.0890	1512.2	1536.2	24.0	1.22	1.22	1.22	1751.9	50.8	1409011055
												Min	30.7		
												Max	124.6		
												Average	55.5		

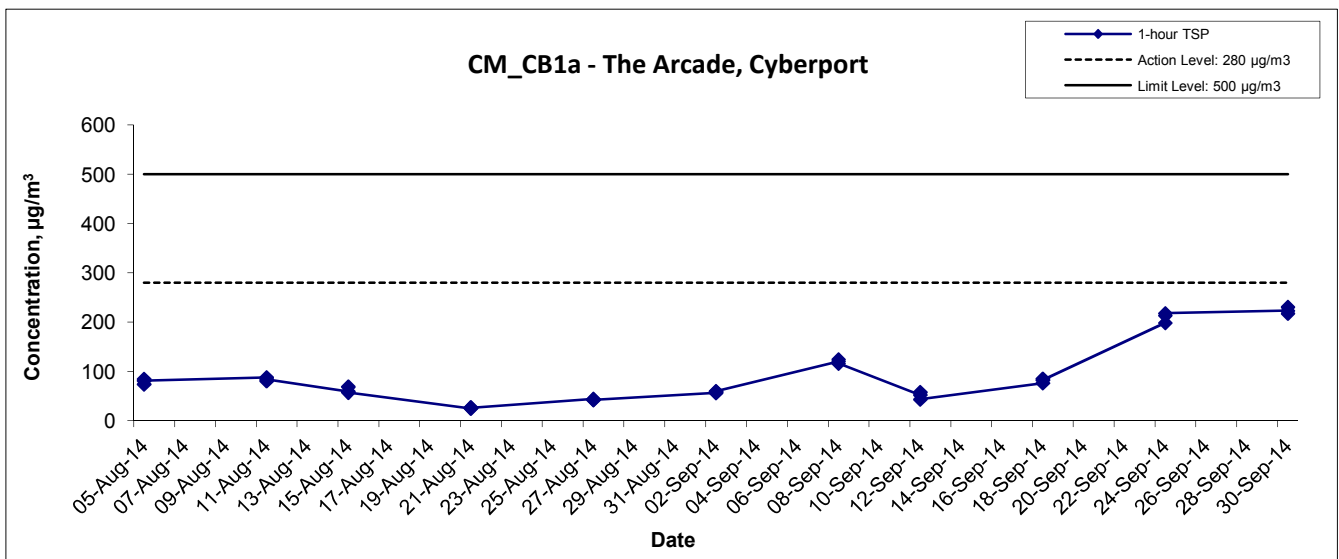
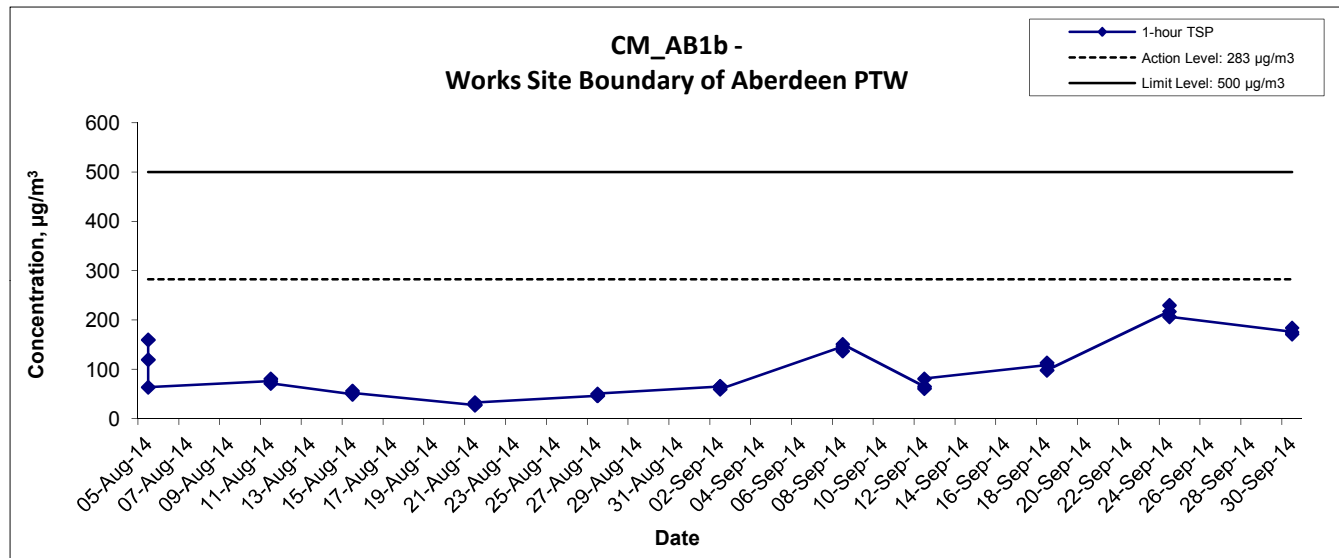
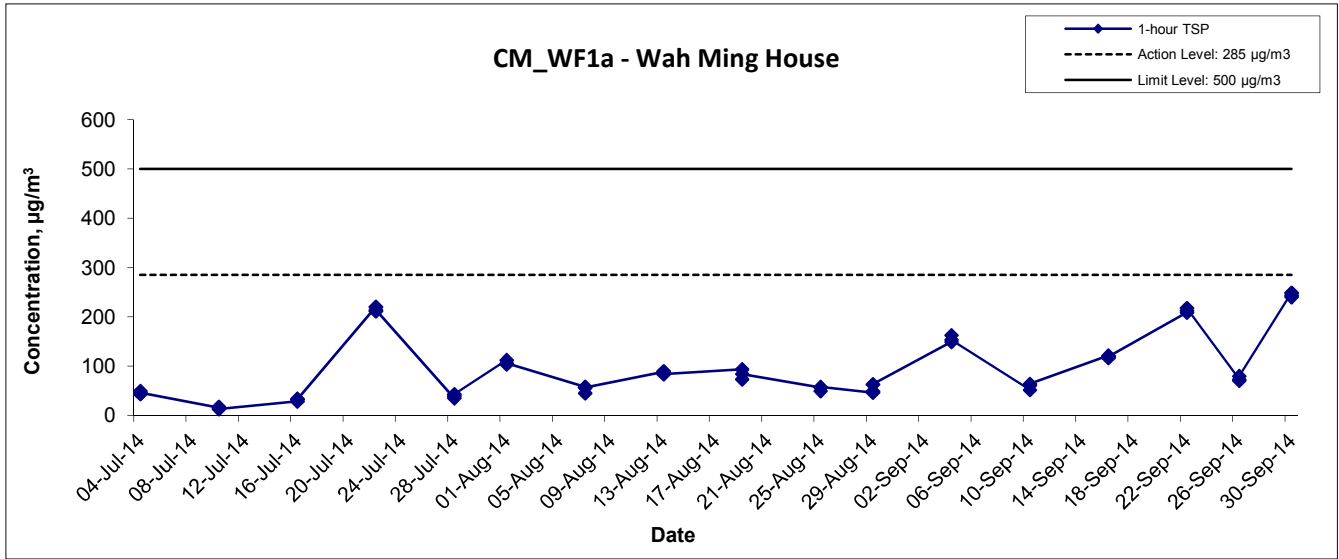
Location CM_AB1b - Works Site Boundary of Aberdeen PTW

Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
3-Sep-14	9:00	Sunny	303.1	3.2043	3.3221	0.1178	2627.1	2651.1	24.0	1.21	1.21	1.21	1747.0	67.4	1408011034
8-Sep-14	9:00	Sunny	302.2	3.1607	3.2240	0.0633	2651.1	2675.1	24.0	1.21	1.21	1.21	1746.6	36.2	1407011099
13-Sep-14	9:00	Cloudy	302.8	3.1422	3.2129	0.0707	2675.1	2699.1	24.0	1.21	1.21	1.21	1744.1	40.5	1408021084
19-Sep-14	9:00	Cloudy	303.3	3.3052	3.5645	0.2593	2699.1	2723.1	24.0	1.21	1.21	1.21	1745.0	148.6	1406031010
25-Sep-14	9:00	Sunny	301.5	3.1853	3.3229	0.1376	2723.1	2747.1	24.0	1.22	1.22	1.22	1754.0	78.4	1408021100
29-Sep-14	9:00	Cloudy	302.6	3.1481	3.2729	0.1248	2747.1	2771.1	24.0	1.22	1.22	1.22	1750.6	71.3	1409011056
												Min	36.2		
												Max	148.6		
												Average	73.8		

Location CM_CB1a - The Arcade, Cyberport

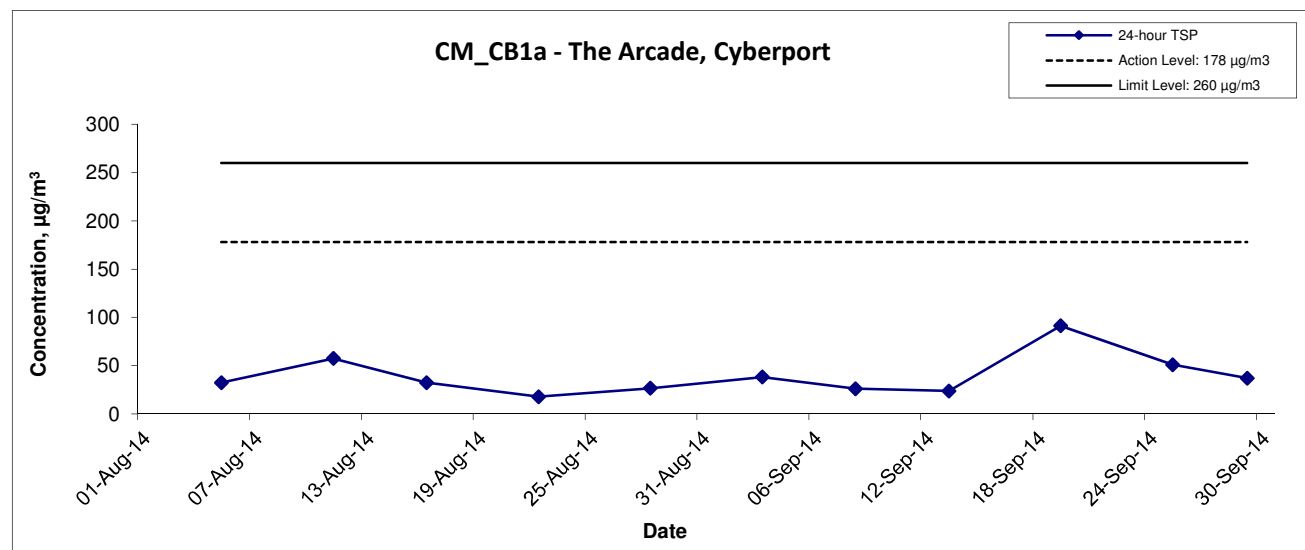
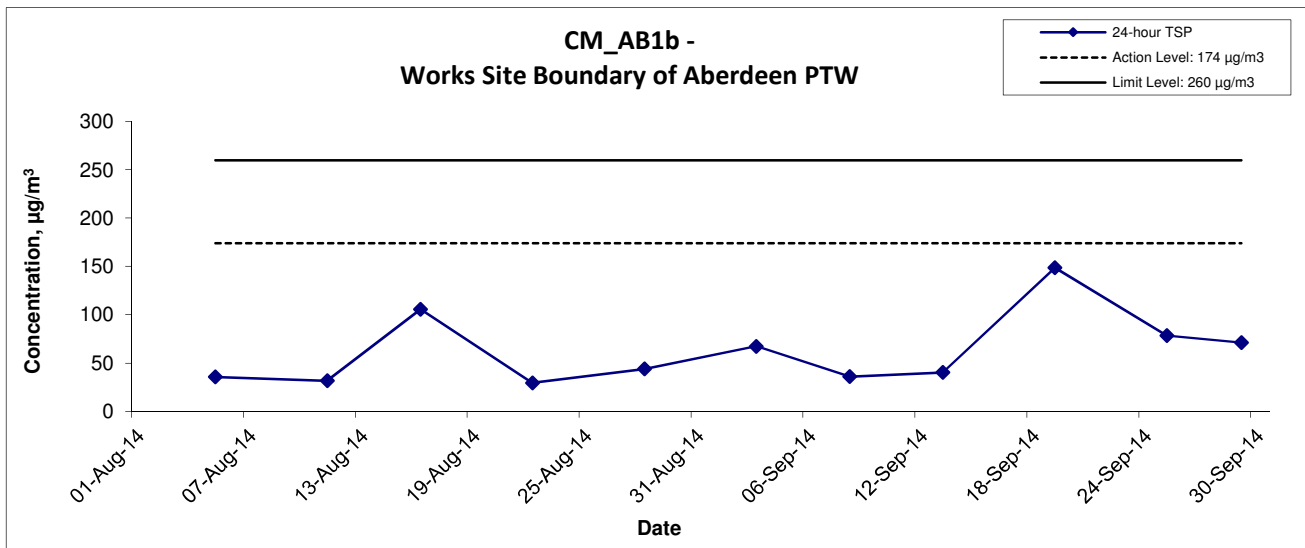
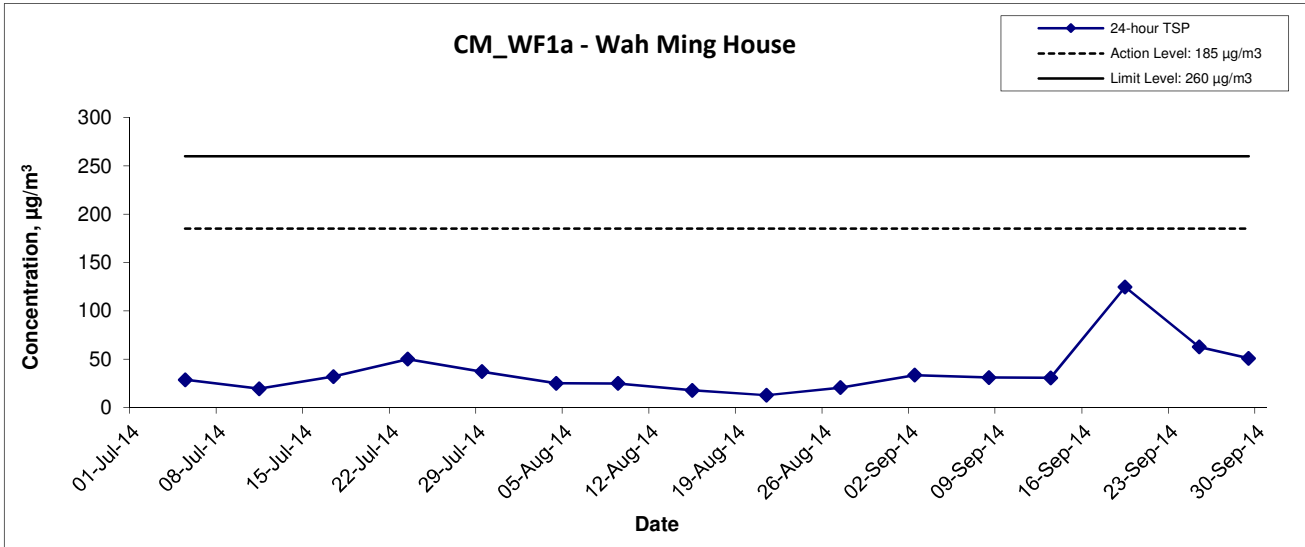
Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
3-Sep-14	9:00	Sunny	303.2	3.1739	3.2411	0.0672	793.9	817.9	24.0	1.22	1.22	1.22	1755.7	38.3	1408011036
8-Sep-14	9:00	Sunny	302.7	3.2363	3.2822	0.0459	817.9	841.9	24.0	1.22	1.22	1.22	1758.0	26.1	1406031002
13-Sep-14	9:00	Cloudy	303.4	3.2203	3.2620	0.0417	841.9	865.9	24.0	1.22	1.22	1.22	1755.1	23.8	1408021085
19-Sep-14	9:00	Cloudy	303.4	3.2671	3.4275	0.1604	865.9	889.9	24.0	1.22	1.22	1.22	1757.4	91.3	1406031011
25-Sep-14	9:00	Sunny	301.6	3.2252	3.3151	0.0899	889.9	913.9	24.0	1.23	1.23	1.23	1766.0	50.9	1408021098
29-Sep-14	9:00	Cloudy	303.3	3.2112	3.2765	0.0653	913.9	937.9	24.0	1.22	1.22	1.22	1761.8	37.1	1409011054
												Min	23.8		
												Max	91.3		
												Average	44.6		

1-hr TSP Concentration Levels



Title Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11060	
	Date Sep 14	Appendix E	

24-hr TSP Concentration Levels



Title Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11060	
	Date Sep 14	Appendix E	

**APPENDIX F
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Appendix F - Noise Monitoring Results

(0700-1900 hrs on Normal Weekdays)

Location M6a (Cyberport PTW) Outside of Aegean Terrace							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
4-Sep-14	13:07	Sunny	49.3	51.8	45.6	57.3	49.3 Measured \leq Baseline
10-Sep-14	15:30	Sunny	51.7	53.0	45.4		51.7 Measured \leq Baseline
16-Sep-14	15:18	Cloudy	50.2	52.5	47.3		50.2 Measured \leq Baseline
22-Sep-14	11:30	Cloudy	53.8	56.1	49.1		53.8 Measured \leq Baseline
30-Sep-14	14:25	Cloudy	52.9	55.0	48.9		52.9 Measured \leq Baseline

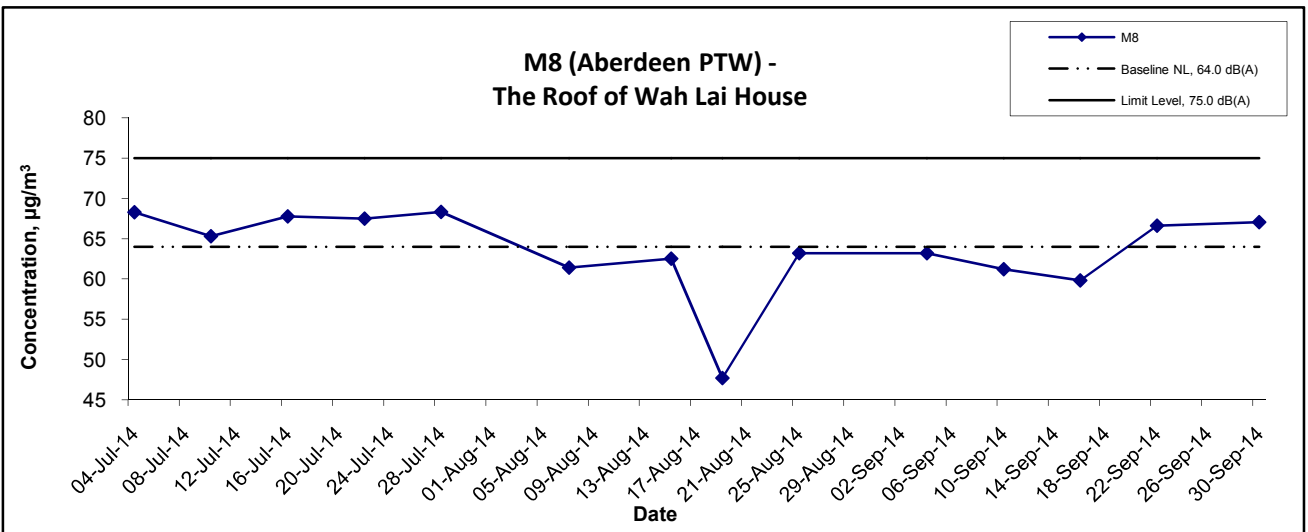
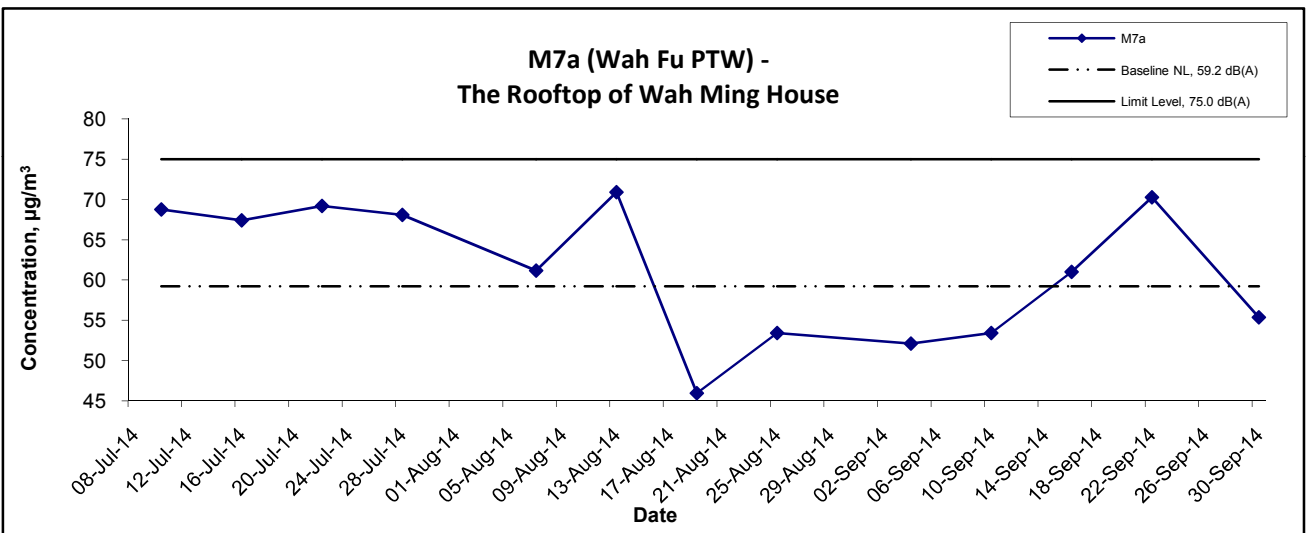
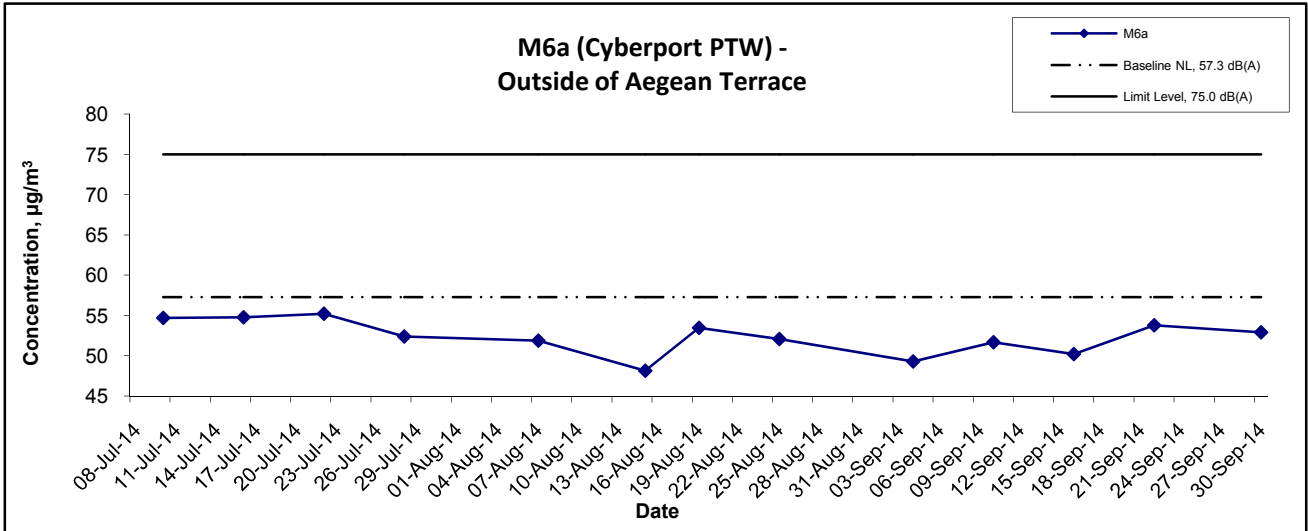
Location M7a (Wah Fu PTW) The rooftop of Wah Ming House							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
4-Sep-14	09:14	Sunny	52.1	54.3	49.6	59.2	52.1 Measured \leq Baseline
10-Sep-14	13:00	Sunny	53.4	55.6	50.7		53.4 Measured \leq Baseline
16-Sep-14	13:00	Cloudy	63.2	65.5	58.1		61.0
22-Sep-14	13:50	Cloudy	70.6	74.8	60.0		70.3
30-Sep-14	13:20	Cloudy	60.7	61.6	60.0		55.4

Location M8 (Aberdeen PTW) The rooftop of Wah Lai House							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
4-Sep-14	10:03	Sunny	63.2	65.5	61.7	64.0	63.2 Measured \leq Baseline
10-Sep-14	16:10	Sunny	61.2	62.9	59.2		61.2 Measured \leq Baseline
16-Sep-14	14:20	Cloudy	65.4	67.8	64.2		59.8
22-Sep-14	09:30	Cloudy	68.5	69.7	67.1		66.6
30-Sep-14	10:20	Cloudy	68.8	69.8	67.6		67.1

Location M9 (Ap Lei Chau PTW) The Podium of Mei Chun Court, South Horizons							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
4-Sep-14	10:53	Sunny	55.4	57.8	51.5	56.5	55.4 Measured \leq Baseline
10-Sep-14	11:30	Sunny	54.7	57.3	51.8		54.7 Measured \leq Baseline
16-Sep-14	11:00	Cloudy	51.3	54.5	48.4		51.3 Measured \leq Baseline
22-Sep-14	10:20	Cloudy	51.3	51.8	48.8		51.3 Measured \leq Baseline
30-Sep-14	09:25	Cloudy	53.8	55.9	50.4		53.8 Measured \leq Baseline

Noise Levels

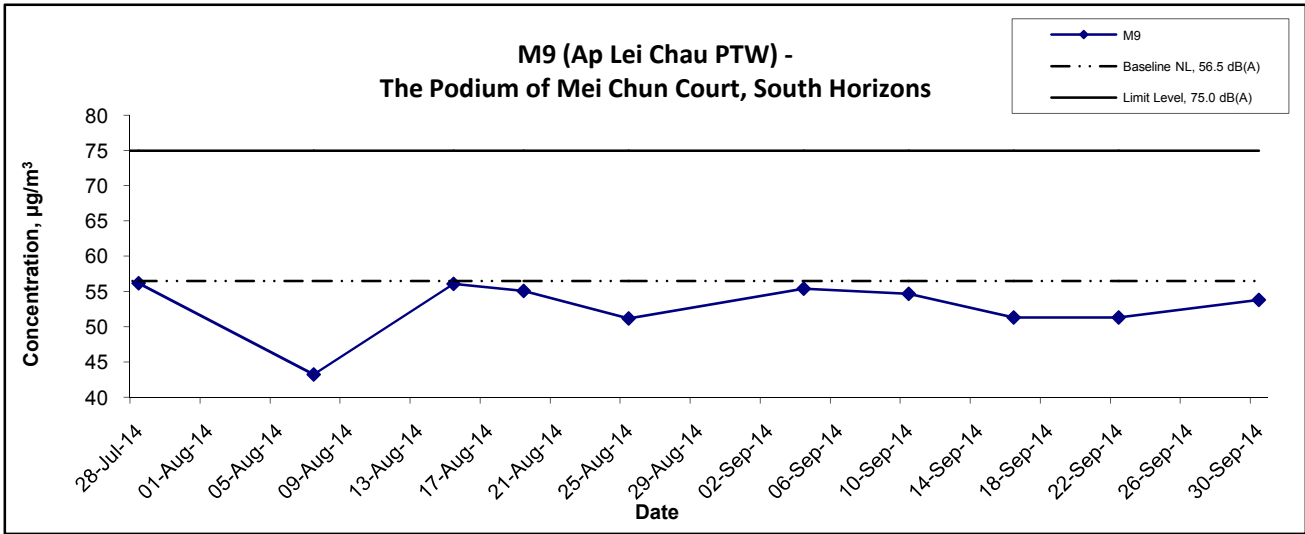
(0700-1900 hrs on Normal Weekdays)



Title Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Abredeen and Ap Lei Chau Graphical Presentation of Noise Monitoring Result	Scale N.T.S Date Sep 14	Project No. MA11060 Appendix F	<h1 style="font-size: 2em; margin: 0;">CINOTECH</h1>
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Noise Levels

(0700-1900 hrs on Normal Weekdays)



Title Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Abredeen and Ap Lei Chau Graphical Presentation of Noise Monitoring Result	Scale N.T.S	Project No. MA11060	CINOTECH
	Date Sep 14	Appendix F	

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENDIX G – SUMMARY OF EXCEEDANCE

Reporting Month: September 2014

- a) Exceedance Report for 1-hr TSP (0)**
- b) Exceedance Report for 24-hr TSP (0)**
- c) Exceedance Report for Construction Noise on normal week days (0)**

**APPENDIX H
SITE AUDIT SUMMARY**

Contract No: DC/2009/24

HATS 2A - Upgrading of PTWs at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau

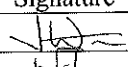
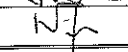
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140905
Date	5 September 2014 (Friday)
Time	09:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
140905-R02	Part A - Water Quality <ul style="list-style-type: none"> The bunding should be maintained properly to prevent the muddy water discharging out at ALC-PTW. 	A 5iv
140905-R03	<ul style="list-style-type: none"> Properly clear the stagnant water at Abd-PTW. 	A 11
140905-R07	<ul style="list-style-type: none"> The wheel washing facility should be enhanced to prevent the mud trail be observed at Abd-PTW. 	A 13
140905-R05	Part B – Landscape and Visual <ul style="list-style-type: none"> The heavy materials should be placed far away from the tree protection area at Sandy Bay Storage Area. 	B 1
140905-R04	Part C - Air Quality <ul style="list-style-type: none"> The dusty materials should be sprayed with water regularly to prevent the dust emission at Abd-PTW. 	C 6
140905-R01	Part D – Noise <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
140905-R06	Part E –Waste / Chemical Management <ul style="list-style-type: none"> The construction wastes should be sorted out properly at Wah Fu-PTW and Abd-PTW. The chemical containers should be provided with the drip tray and the oil stain should be cleared properly at Abd-PTW. 	E 4ii E 7i & 7ii
	Part F - Permit / Licenses <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Others <ul style="list-style-type: none"> Follow-up on previous audit sessions: On previous audit session (Ref. No. 140829), outstanding items 140829-R03 is required to be followed up and remarked as 140905-R05 which will be reviewed in the next weekly site inspection (Ref. no. 140912). 	
	Remark: <ul style="list-style-type: none"> N/A 	

	Name	Signature	Date
Recorded by	Janet Wai		5 September 2014
Checked by	Dr. Priscilla Choy		5 September 2014

Contract No: DC/2009/24

HATS 2A - Upgrading of PTWs at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau

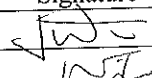
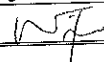
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140912
Date	12 September 2014 (Friday)
Time	09:30 - 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
140912-R01	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> The bunding should be provided for the drainage to prevent the runoff water discharging out before flowing into the wastewater treatment facility at Cyberport-PTW. 	A 1
140912-R03	<p>Part B - Landscape and Visual</p> <ul style="list-style-type: none"> The heavy materials should be placed far away from the tree protection area at Sandy Bay Storage Area. 	B 1
140912-R02	<p>Part C - Air Quality</p> <ul style="list-style-type: none"> The dusty materials and debris should be cleared properly or sprayed with water regularly to prevent the dust emission at ALC-PTW and Abd-PTW. <p>Part D - Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E - Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Others</p> <ul style="list-style-type: none"> Follow-up on previous audit sessions: On previous audit session (Ref. No. 140912), outstanding items 140905-R04 & 140905-R05 are required to be followed up and remarked as 140912-R02 & 140912-R03 which will be reviewed in the next weekly site inspection (Ref. no. 140917). <p>Remark:</p> <ul style="list-style-type: none"> N/A 	C 6

	Name	Signature	Date
Recorded by	Janet Wai		12 September 2014
Checked by	Dr. Priscilla Choy		12 September 2014

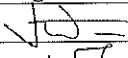

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140917
Date	17 September 2014 (Wednesday)
Time	09:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
140917-R03	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> The wet sep should be desilted regularly and cleared the stagnant water regularly at Abd-PTW. 	A 5iv & 11
140917-R02	<p>Part B – Landscape and Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C - Air Quality</p> <ul style="list-style-type: none"> Properly clear the dusty materials at Wah Fu-PTW and ALC-PTW. <p>Part D – Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	C 6
140917-R01	<p>Part E –Waste / Chemical Management</p> <ul style="list-style-type: none"> The chemical containers should be provided with the drip tray at Wah Fu-PTW and ALC-PTW. <p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Others</p> <ul style="list-style-type: none"> Follow-up on previous audit sessions: On previous audit session (Ref. No. 140912), outstanding items 140912-R02 is required to be followed up and remarked as 140917-R02 which will be reviewed in the next weekly site inspection (Ref. no. 140926). <p>Remark:</p> <ul style="list-style-type: none"> N/A 	E 7ii

	Name	Signature	Date
Recorded by	Janet Wai		17 September 2014
Checked by	Dr. Priscilla Choy		17 September 2014

Contract No: DC/2009/24

HATS 2A - Upgrading of PTWs at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140926
Date	26 September 2014 (Friday)
Time	09:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
140926-O01	• The muddy water was overflowed near the site exit of Wah Fu-PTW. The Contractor was reminded to provide the bunding to prevent the muddy water overflowing to the access road.	A 2
140926-R03	• The stagnant water in the wetsep should be cleared regularly at Wah Fu-PTW.	A 11
140926-R06	• The bunding should be provided and enhanced to prevent the muddy water runoff to the access road at ALC-PTW and Abd-PTW.	A 2
	Part B – Landscape and Visual	
140926-R04	• The fence should be provided for the existing tree at Wan Fu-PTW.	B 1
140926-R05	• The maintenance of the existing tree should be provided at Wan Fu-PTW.	B 1
	Part C - Air Quality	
140926-R02	• Properly clear the broken sand bags and dusty materials at Wah Fu-PTW and ALC-PTW.	C 6
140926-R07	• The drilling activities should be sprayed with water to prevent the dust emission at ALC-PTW.	C 10
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E –Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others	
	• Follow-up on previous audit sessions: On previous audit session (Ref. No. 140917), outstanding items 140917-R02 is required to be followed up and remarked as 140926-R02 which will be reviewed in the next weekly site inspection (Ref. no. 141003).	
	Remark:	
	• N/A	

	Name	Signature	Date
Recorded by	Janet Wai		26 September 2014
Checked by	Dr. Priscilla Choy		26 September 2014

**APPENDIX I
SUMMARY OF AMOUNT OF WASTE
GENERATED**

Name of Department: DSD

Name of Contract : Harbour Area Treatment Scheme Stage 2A – Upgrading of Preliminary Treatment Works
at Sandy Bay, Cyberport, Wah Fu, Ap Lei Chau and Aberdeen

Contract No. :DC/2009/24

APPENDIX I MONTHLY SUMMARY WASTE FLOW TABLE FOR 2014 (YEAR)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly						Special Waste
	Total Quantity Generated	Hard Rock and Broken Concrete (4)	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse		
	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]		
Year2012	1.002910	0.000000	0.000000	0.000000	1.002910	0.000000	6.680000	0.070000	0.070000	0.100000	0.014000	2.406456	
Year2013	4.264035	0.000000	0.000000	0.000000	4.264035	0.000000	10.750000	0.000000	0.000000	0.350000	0.064890	2.232710	
JAN	0.433305	0	0	0	0.433305	0	0	0	0	0.06	0.00796	0.2032	
FEB	0.040615	0	0	0	0.040615	0	0	0	0	0	0.00334	0.16182	
MAR	1.061525	0	0	0	1.061525	0	0	0	0	0	0.00929	0.17807	
APR	0.368995	0	0	0	0.368995	0	0	0	0	0	0.00434	0.15738	
MAY	0.31617	0	0	0	0.316170	0	0	0	0	0	0.00862	0.15547	
JUNE	0.07655	0	0	0	0.07655	0	0	0	0	0.39	0.01304	0.14019	
SUB-TOTAL	2.297160	0.000000	0.000000	0.000000	2.297160	0.000000	0.000000	0.000000	0.000000	0.450000	0.046590	0.996130	
JULY	0.039665	0	0	0	0.039665	0	0	0	0	0	0.01133	0.15237	
AUG	0.3106	0	0	0	0.3106	0	0	0	0	0	0.01921	0.13892	
SEPT	1.07455	0	0	0	1.07455	0	0	0	0	0	0.00943	0.1656	
OCT	0												
NOV	0												
DEC	0												
TOTAL	8.988920	0.000000	0.000000	0.000000	8.988920	0.000000	17.430000	0.070000	0.070000	0.900000	0.165450	6.092186	

Forecast of Total Quantities of C&D materials to be Generated from the Contracts *												Special Waste
Total Quantity Generated	Hard Rock and Broken	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse		
[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]		
19.77	1.544	1.73	0	16.496	0	30	1	1	4	0.956	9.6	

- Notes :
- The performance targets are given in PS Clause 6(14).
 - Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.
 - The contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where to total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m³. (PS Clause 5(4)(b) refers).

[Delete Note (4) and the table above on the forecast, where inapplicable].

- * (4) The assumed density (kg/m³) for both C&D material and general refuse.
C&D material 2000kg/m³
General refuse 1.0 tonnes/m³
- (5) Conversion factors for reporting purpose:
in-situ: rock = 2.5 tonnes/m³ ; soil = 2.0 tonnes/m³
excavated: rock = 2.0 tonnes/m³ ; soil = 1.8 tonnes/m³
broken concrete and bitumen = 2.5 tonnes/m³
C&D Waste = 1.0 tonnes/m³
bentonite slurry = 2.8 tonnes/m³
Paper = 800kg/m³
Chemical = 800kg/m³

**APPENDIX J
EVENT ACTION PLANS**

APPENDIX J – Event / Action Plans

Table J-1 Event / Action Plan For Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 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.	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. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET 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. Ensure remedial measures properly implemented	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring			
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor 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. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC 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. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 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. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 5. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC 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

Table J-2 Event / Action Plan For Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring		until the exceedance is abated	the ER until the exceedance is abated

**APPENDIX K
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

APPENDIX K IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
A	Air Quality		
3.74	<p>Skip hoist for material transport should be totally enclosed by impervious sheeting.</p> <p>Vehicle washing facilities should be provided at every vehicle exit point.</p> <p>The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.</p> <p>Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit.</p> <p>Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.</p> <p>Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.</p> <p>Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</p> <p>Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</p> <p>Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.</p> <p>Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides.</p> <p>Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</p>	All construction sites	<p>N/A</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>#</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>*</p>
3.74	Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All construction sites	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
B	Airborne Noise		
4.56– 4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^
4.67	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.		^
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.		^
	Mobile plant, if any, shall be sited as far away from NSRs as possible.		^
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.		^
4.67	Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.		^
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.		^
C	Water Quality		
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	*
6.376	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.		^
6.377	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General)		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	Regulation should be observed and complied with for control of chemical wastes.		
6.378	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.		*
6.379	<p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 		*
6.380	<p>Construction Works in Close Proximity of Storm Drains or Seafront:</p> <p>To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable.</p> <ul style="list-style-type: none"> • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea. 	All construction sites	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
D	Waste Management		
9.107	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimize wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.	All construction sites	^
9.109	All waste materials should be segregated into categories covering: <ul style="list-style-type: none"> • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill. 	All construction sites	^
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals.		^
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.		^
	Encourage collection of aluminum cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.		^
	Any unused chemicals or those with remaining functional capacity shall be recycled.		^
	Proper storage and site practices to minimize the potential for damage or contamination of construction materials.		*
9.115	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.		^
	Training of site personnel in proper waste management and chemical waste handling procedures.		^
9.115	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.		^
	Provision of sufficient waste disposal points and regular collection of waste.		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.		^
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage".	All construction sites	N/A
9.131	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.		^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		*
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		*
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.		N/A

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
E	Terrestrial Ecology		
10.94	To implement effective noise mitigation measures as recommended in Section 4 of EIA.	All construction sites	N/A
10.95	Dust control practices such as regular watering, complete coverage of any aggregate or dusty material storage piles, and re-schedule of dusty activities during high-wind conditions as well as other measures recommended in Section 3 of EIA, should be implemented.		^
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		N/A
10.98	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.		^
F	Landscape and Visual		
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	^
	Existing trees to be retained on site should be carefully protected during construction.		#
	Trees unavoidably affected by the works should be transplanted where practical.		^
	Compensatory tree planting should be provided to compensate for felled trees.		^
	Control of night-time lighting.		^
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.	All construction sites	N/A
G	Marine Ecology		
11.137	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	All construction sites	^
H	Hazard to Life		
14A.201	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	Exact location will be determined on construction site by the engineer	^

Remarks:	^ Compliance of mitigation measure;
	N/A Not Applicable;
	* Recommendation was made during site audit but improved/rectified by the contractor.
	# Recommendation was made during site audit and to be improved / rectified by the contractor.
	X Non-compliance of mitigation measure;
	● Non-compliance but rectified by the contractor;

**APPENDIX L
COMPLAINT LOG**

APPENDIX L – COMPLAINT LOG

Reporting Month: September 2014

Cumulative complaints received:

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
CIR#1_121228	DSD’s Preliminary Treatment Work (PTW) at Ap Lei Chau	28 th December 2012	<p>The residents of South Horizons and Ap Lei Chau Estate complained about the noise generated from our construction site at Ap Lei Chau PTW. The ETL of the Project was informed of the complaint through the e-mail on 31st December 2012 and initiated the complaint investigation procedures. According to the information provided by the Contractor, major construction activities that contributed to the noise at Ap Lei Chau during the time of complaint include: general site works and safety works; maintenance and handling of plants; and drilling works for pipe pile wall.</p>	<p>There was no exceedance report received from Contract DC/2008/09 at noise monitoring stations M9 for Ap Lei Chau PTW in December 2012. Resident site staff also revealed that rock excavation works and other construction activities were being carried out at nearby construction sites on 29 & 31 December 2012. After complaint received, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures as below:</p> <ul style="list-style-type: none"> • Adopting a relatively low-noise construction method – small drilling rig to install the pipe piles; • Equipping noise reducing jacket on the small drilling rig. <p>The Contractor was recommended to continue the following mitigation measures in order to minimize the potential construction noise nuisance to the nearby community:</p> <ul style="list-style-type: none"> • To adopt movable noise barrier; • To use silenced equipment where practicable; • To avoid concurrent uses of noisy equipment near the sensitive area; • To ensure the equipment are maintaining in good operation condition; and • To turned off any idle equipment on site. 	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
CIR#2_130809	DSD's Preliminary Treatment Work (PTW) at Wah Fu	9 th August 2013	<p>One anonymous complainant complained about the noise generated from Contract DC/2009/24 construction site at Wah Fu PTW. The ETL of the Contract was informed of the complaint through the e-mail on 12th August 2013 and initiated the complaint investigation procedures.</p> <p>According to the information provided by the Contractor, major construction activities that contributed to the noise at Wah Fu during the time of complaint include: pipe pile wall construction.</p>	<p>There was no exceedance report received from Contract DC/2007/24 at noise monitoring stations M7a for Wah Fu PTW in August 2013.</p> <p>After complaint received, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures as below:</p> <ul style="list-style-type: none"> • Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced); • To install movable noise absorption screen located close to the operating PME/noisy works (noise sources); • To enclose or wrap the breaking tip with sound insulating materials to reduce the noise. <p>According to the complaint, the Contractor had enhanced the movable noise barrier by increasing the height of the noise barrier and adding the upper sloped section which could further reduce the noise generated from construction works in Wah Fu PTW.</p>	Closed
CIR#3_131119	DSD's Preliminary Treatment Work (PTW) at Wah Fu	19 th November 2013	<p>One anonymous complainant complained about the noise generated from Contract DC/2009/24 construction site at Wah Fu PTW. The ETL of the Contract was informed of the complaint through the e-mail on 29th November 2013 and initiated the complaint investigation procedures.</p> <p>According to the information provided by the Contractor, major construction activities that contributed to the noise at Wah Fu</p>	<p>There was no exceedance report received from Contract DC/2007/24 at noise monitoring stations M7a for Wah Fu PTW in November 2013.</p> <p>After complaint received, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures as below:</p> <ul style="list-style-type: none"> • Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced); • To install the erected noise absorption screen located close to the operating PME/noisy works (noise sources). <p>According to the site diary, the Contractor had provided the sound insulating materials to enclose and wrap the breaking tip which could further reduce the noise generated from</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			during the time of complaint include: pipe pile wall construction, grout curtain construction and ELS in progress.	construction works in Wah Fu PTW.	

Remarks: No environmental complaint was received in September 2014.

APPENDIX M
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	September 2014					October 2014					November 2014				December 2014			
						25	01	08	15	22	29	06	13	20	27	03	10	17	24	01	08	15	22
DSD - HATSS2 Upgrading of PTW (DC/2009/24)																							
Particulars																							
Key Dates																							
Commencement / Completion																							
24GEN00020	Time for Completion of Project	0%	1309	31-Aug-11 A	29-Mar-17																		
Portion of the Site (MILESTONE)																							
Sandy Bay PTW																							
Possession / Vacation of Portions																							
24MSBY00025	Vacation Date_SBY-T1 (30 days after H/O of ALC-T2)	0%	0		03-Oct-14	◆ Vacation Date_SBY-T1 (30 days after H/O of ALC-T2), Vacation Date_SBY-T1 (30 days after H/O of ALC-T2)																	
Cyberport PTW																							
Possession / Vacation of Portions																							
24MCPT00010	H/O Date_CP-1 (1035 days after start)	0%	0	24-Sep-14		◆ H/O Date_CP-1 (1035 days after start)																	
Wah Fu PTW																							
Possession / Vacation of Portions																							
24MWFU00030	H/O Date_WF-2 (914 days after start)	0%	0	24-Sep-14		◆ H/O Date_WF-2 (914 days after start)																	
Civil & Geo. Submission																							
Contractor's Design, Submission / Approval & Procurement																							
Technical Information & Drawings																							
Cyberport																							
Major Technical Data / Civil Works Design																							
24DCPT00294	Review / Resubmit of Design for Flume Channels	0%	28	28-Jul-13 A	03-Oct-14	Review / Resubmit of Design for Flume Channels																	
24DCPT00295	Approval of Design for Flume Channels	0%	14	04-Oct-14	17-Oct-14	Approval of Design for Flume Channels																	
24DCPT00300	Prepare / Submission of Design for pipe trench from drop shaft to existing CPT PTW for odour pipe installation	0%	40	24-Apr-14 A	24-Sep-14	Prepare / Submission of Design for pipe trench from drop shaft to existing CPT PTW for odour pipe installation																	
24DCPT00310	Review / Approval of ICE Design for pipe trench from drop shaft to existing CPT PTW for odour pipe installation	0%	20	25-Sep-14	14-Oct-14	Review / Approval of ICE Design for pipe trench from drop shaft to existing CPT PTW for odour pipe installation																	
24DCPT00320	Comments / Approval of Design for pipe trench from drop shaft to existing CPT PTW for odour pipe installation	0%	28	15-Oct-14	11-Nov-14	Comments / Approval of Design for pipe trench from drop shaft to existing CPT PTW for odour pipe installation																	
24DCPT00330	Review / Resubmit of Design for pipe trench from drop shaft to existing CPT PTW for odour pipe installation	0%	28	12-Nov-14	09-Dec-14	Review / Resubmit of Design for pipe trench from drop shaft to existing CPT PTW for odour pipe installation																	
24DCPT00340	Approval of Design for pipe trench from drop shaft to existing CPT PTW for odour pipe installation	0%	14	10-Dec-14	23-Dec-14	Approval of Design for pipe trench from drop shaft to existing CPT PTW for odour pipe installation																	
24DCPT00346	Prepare / Submission of Design for permanent concrete plinth for new deodorization unit	0%	30	01-Mar-14 A	25-Sep-14	Prepare / Submission of Design for permanent concrete plinth for new deodorization unit																	
24DCPT00347	Review / Approval of ICE Design for permanent concrete plinth for new deodorization unit	0%	14	26-Sep-14	09-Oct-14	Review / Approval of ICE Design for permanent concrete plinth for new deodorization unit																	
24DCPT00348	Comments / Approval of Design for permanent concrete plinth for new deodorization unit	0%	14	10-Oct-14	23-Oct-14	Comments / Approval of Design for permanent concrete plinth for new deodorization unit																	
24DCPT00349	Review / Resubmit of Design for permanent concrete plinth for new deodorization unit	0%	14	24-Oct-14	06-Nov-14	Review / Resubmit of Design for permanent concrete plinth for new deodorization unit																	
24DCPT00350	Approval of Design for permanent concrete plinth for new deodorization unit	0%	7	07-Nov-14	13-Nov-14	Approval of Design for permanent concrete plinth for new deodorization unit																	
Method Statement																							
24DCPT02160	Prepare / Submission of Method Statement for Trench, Chambers and Channels	0%	60	23-Feb-14 A	01-Oct-14	Prepare / Submission of Method Statement for Trench, Chambers and Channels																	
24DCPT02170	Comments / Approval of Method Statement for Trench, Chambers and Channels	0%	28	24-Sep-14	21-Oct-14	Comments / Approval of Method Statement for Trench, Chambers and Channels																	
24DCPT02180	Review / Resubmit of Method Statement for Trench, Chambers and Channels	0%	14	22-Oct-14	04-Nov-14	Review / Resubmit of Method Statement for Trench, Chambers and Channels																	
24DCPT02190	Approval of Method Statement for Trench, Chambers and Channels	0%	14	05-Nov-14	18-Nov-14	Approval of Method Statement for Trench, Chambers and Channels																	
24DCPT02200	Prepare / Submission of Method Statement for pipe trench for odour pipe installation	0%	60	24-May-14 A	22-Oct-14	Prepare / Submission of Method Statement for pipe trench for odour pipe installation																	
24DCPT02210	Comments / Approval of Method Statement for pipe trench for odour pipe installation	0%	28	24-Sep-14	21-Oct-14	Comments / Approval of Method Statement for pipe trench for odour pipe installation																	
24DCPT02220	Review / Resubmit of Method Statement for pipe trench for odour pipe installation	0%	14	22-Oct-14	04-Nov-14	Review / Resubmit of Method Statement for pipe trench for odour pipe installation																	
24DCPT02230	Approval of Method Statement for pipe trench for odour pipe installation	0%	14	05-Nov-14	18-Nov-14	Approval of Method Statement for pipe trench for odour pipe installation																	

Start Date: 25-Jun-11
 Finish Date: 29-Mar-18
 Date Date: 23-Sep-14
 Run Date: 26-Sep-14

- Primary Baseline
- Actual Work
- Critical Remaining Work
- Baseline Milestone
- Current Bar Labels
- Milestone

HATSS2A Contract No. DC/2009/24

3 MONTHS ROLLING PROGRAMME

SEPTEMBER 2014

DETAILED WORKS PROGRAMME - DC/2009/24			
Date	Revision	Checked	Approved
30-Mar-12	DWP - REVISION 0		
14-Dec-12	DWP - REVISION 2		
17-Jun-14	DWP - REVISION 3 (S5, 6 & 7)		
23-Sep-14	UDWP - REVISION 3		

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	September 2014					October 2014				November 2014				December 2014					
						25	01	08	15	22	29	06	13	20	27	03	10	17	24	01	08	15	22	
Major Technical Data / Civil Works Design																								
24DABN00180	Review / Resubmit of Piling Works Design for Workshop & Admin Building	0%	28	22-Dec-11 A	25-Sep-14						Review / Resubmit of Piling Works Design for Workshop & Admin Building													
24DABN00190	Approval of Piling Works Design for Workshop & Admin Building	0%	14	24-Mar-12 A	02-Oct-14						Approval of Piling Works Design for Workshop & Admin Building													
24DABN00230	Review / Resubmit of RC Design (Workshop & Admin Building)	0%	28	07-Feb-12 A	14-Oct-14						Review / Resubmit of RC Design (Workshop & Admin Building)													
24DABN00240	Approval of RC Design (Workshop & Admin Building)	0%	14	18-Jul-12 A	21-Oct-14						Approval of RC Design (Workshop & Admin Building)													
24DABN00250	Prepare / Submission of Design for Finishing Works (Workshop & Admin Building)	0%	40	22-Oct-14	30-Nov-14						Prepare / Submission of Design for Finishing Works (Workshop & Admin Building)													
24DABN00260	Review / Approval of ICE Design for Finishing Works (Workshop & Admin Building)	0%	20	01-Dec-14	20-Dec-14						Review / Approval of ICE Design for Finishing Works (Workshop & Admin Building)													
24DABN00270	Comments / Approval of Design for Finishing Works (Workshop & Admin Building)	0%	28	21-Dec-14	17-Jan-15						Comments / Approval of Design for Finishing Works (Workshop & Admin Building)													
24DABN00300	Prepare / Submission of RC Design (Seawater Pumping Station)	0%	40	03-Jun-14 A	29-Sep-14						Prepare / Submission of RC Design (Seawater Pumping Station)													
24DABN00310	Review / Approval of ICE RC Design (Seawater Pumping Station)	0%	20	30-Sep-14	19-Oct-14						Review / Approval of ICE RC Design (Seawater Pumping Station)													
24DABN00320	Comments / Approval of RC Design (Seawater Pumping Station)	0%	28	20-Oct-14	16-Nov-14						Comments / Approval of RC Design (Seawater Pumping Station)													
24DABN00330	Review / Resubmit of RC Design (Seawater Pumping Station)	0%	28	17-Nov-14	14-Dec-14						Review / Resubmit of RC Design (Seawater Pumping Station)													
24DABN00340	Approval of RC Design (Seawater Pumping Station)	0%	14	15-Dec-14	28-Dec-14						Approval of RC Design (Seawater Pumping Station)													
24DABN00380	Review / Resubmit of RC Design of Flume Channels & Chambers	0%	28	13-Jul-13 A	25-Sep-14						Review / Resubmit of RC Design of Flume Channels & Chambers													
24DABN00390	Approval of RC Design of Flume Channels & Chambers	0%	14	26-Sep-14	09-Oct-14						Approval of RC Design of Flume Channels & Chambers													
24DABN00450	Prepare / Submission of Design for Roadworks	0%	40	24-Sep-14	02-Nov-14						Prepare / Submission of Design for Roadworks													
24DABN00460	Review / Approval of ICE Design for Roadworks	0%	20	03-Nov-14	22-Nov-14						Review / Approval of ICE Design for Roadworks													
24DABN00470	Comments / Approval of Design for Roadworks	0%	28	23-Nov-14	20-Dec-14						Comments / Approval of Design for Roadworks													
24DABN00480	Review / Resubmit of Design for Roadworks	0%	28	21-Dec-14	17-Jan-15						Review / Resubmit of Design for Roadworks													
Method Statement for Major Works																								
24DABN02180	Review / Resubmit of Method Statement for Trench, Chambers and Channels	0%	14	15-May-14 A	07-Oct-14						Review / Resubmit of Method Statement for Trench, Chambers and Channels													
24DABN02190	Approval of Method Statement for Trench, Chambers and Channels	0%	14	08-Oct-14	21-Oct-14						Approval of Method Statement for Trench, Chambers and Channels													
Material Submission / Approval																								
24DABN02360	Prepare / Submission of Material approval for Roller Shutter	0%	60	03-Dec-14	31-Jan-15						Prepare / Submission of Material approval for Roller Shutter													
Ap Lei Chau																								
Major Tech. Data / Civil Works Design																								
24DALC00130	Review / Resubmit of RC Design (Screening & Degritting Facilities and Effluent Pumping Station)	0%	28	01-Mar-14 A	21-Oct-14						Review / Resubmit of RC Design (Screening & Degritting Facilities and Effluent Pumping Station)													
24DALC00140	Approval of RC Design (Screening & Degritting Facilities and Effluent Pumping Station)	0%	14	22-Oct-14	04-Nov-14						Approval of RC Design (Screening & Degritting Facilities and Effluent Pumping Station)													
24DALC00150	Prepare / Submission of Finishing Works (Screening & Degritting Facilities and Effluent Pumping Station)	0%	40	24-Sep-14	02-Nov-14						Prepare / Submission of Finishing Works (Screening & Degritting Facilities and Effluent Pumping Station)													
24DALC00160	Review / Approval of ICE for Finishing Works (Screening & Degritting Facilities and Effluent Pumping Station)	0%	20	03-Nov-14	22-Nov-14						Review / Approval of ICE for Finishing Works (Screening & Degritting Facilities and Effluent Pumping Station)													
24DALC00170	Comments / Approval of Finishing Works (Screening & Degritting Facilities and Effluent Pumping Station)	0%	28	23-Nov-14	20-Dec-14						Comments / Approval of Finishing Works (Screening & Degritting Facilities and Effluent Pumping Station)													
24DALC00180	Review / Resubmit of Finishing Works (Screening & Degritting Facilities and Effluent Pumping Station)	0%	28	21-Dec-14	17-Jan-15						Review / Resubmit of Finishing Works (Screening & Degritting Facilities and Effluent Pumping Station)													
24DALC00200	Prepare / Submission of Design for Flume Channels & Chamber	0%	40	24-Sep-14	02-Nov-14						Prepare / Submission of Design for Flume Channels & Chamber													
24DALC00210	Review / Approval of ICE for Design of Flume Channels & Chamber	0%	20	03-Nov-14	22-Nov-14						Review / Approval of ICE for Design of Flume Channels & Chamber													
24DALC00220	Comments / Approval of Design for Flume Channels & Chamber	0%	28	23-Nov-14	20-Dec-14						Comments / Approval of Design for Flume Channels & Chamber													
24DALC00230	Review / Resubmit of Design for Flume Channels & Chamber	0%	28	21-Dec-14	17-Jan-15						Review / Resubmit of Design for Flume Channels & Chamber													
Method Statement for Major Works																								
24DALC02110	Approval of Method Statement for Structural Works	0%	14	15-Feb-14 A	30-Sep-14						Approval of Method Statement for Structural Works													
24DALC02120	Prepare / Submission of Method Statement for Finishing works	0%	60	24-Sep-14	22-Nov-14						Prepare / Submission of Method Statement for Finishing works													
24DALC02130	Comments / Approval of Method Statement for Finishing works	0%	28	23-Nov-14	20-Dec-14						Comments / Approval of Method Statement for Finishing works													
24DALC02140	Review / Resubmit of Method Statement for Finishing works	0%	14	21-Dec-14	03-Jan-15						Review / Resubmit of Method Statement for Finishing works													
24DALC02160	Prepare / Submission of Method Statement for Flume Channel	0%	60	24-Sep-14	22-Nov-14						Prepare / Submission of Method Statement for Flume Channel													
24DALC02170	Comments / Approval of Method Statement for Flume Channel	0%	28	23-Nov-14	20-Dec-14						Comments / Approval of Method Statement for Flume Channel													
24DALC02180	Review / Resubmit of Method Statement for Flume Channel	0%	14	21-Dec-14	03-Jan-15						Review / Resubmit of Method Statement for Flume Channel													
Order / Manufacturing / Shipment / Delivery																								
24DALC02610	Manufacturing of FRP covers/ flooring	0%	90	06-May-13 A	22-Nov-14						Manufacturing of FRP covers/ flooring													

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	September 2014					October 2014				November 2014				December 2014					
						25	01	08	15	22	29	06	13	20	27	03	10	17	24	01	08	15	22	
24PWFU01190	Manufacturing of Coarse Screen	100%	145	08-May-13 A	02-Nov-14	Manufacturing of Coarse Screen																		
24PWFU01200	Packaging / Delivery of Coarse Screen	0%	30	03-Nov-14	02-Dec-14	Packaging / Delivery of Coarse Screen																		
24PWFU01220	Manufacturing of Fine Screen	0%	145	08-May-13 A	10-Oct-14	Manufacturing of Fine Screen																		
24PWFU01225	FAT of Fine Screen	0%	90	11-Oct-14	08-Jan-15	FAT of Fine Screen																		
24PWFU01232	Manufacturing of Fine Screen Conveyor	0%	145	13-Jun-14 A	05-Jan-15	Manufacturing of Fine Screen Conveyor																		
24PWFU01280	Manufacturing of Grit Removal Facilities	0%	175	22-Jul-13 A	11-Nov-14	Manufacturing of Grit Removal Facilities																		
24PWFU01290	Packaging / Delivery of Grit Removal Facilities	0%	30	12-Nov-14	11-Dec-14	Packaging / Delivery of Grit Removal Facilities																		
24PWFU01340	Manufacturing of Penstock	0%	140	13-May-14 A	30-Nov-14	Manufacturing of Penstock																		
24PWFU01350	Packaging / Delivery of Penstock	0%	30	01-Dec-14	30-Dec-14	Packaging / Delivery of Penstock																		
24PWFU01370	Manufacturing of Stoplog	0%	140	13-Jun-14 A	31-Dec-14	Manufacturing of Stoplog																		
24PWFU01405	FAT of Deodorization System	0%	90	23-Jun-14 A	21-Nov-14	FAT of Deodorization System																		
24PWFU01410	Packaging / Delivery of Deodorization System	0%	30	22-Nov-14	21-Dec-14	Packaging / Delivery of Deodorization System																		
24PWFU01430	Manufacturing of MCC (Switchboard) Panel	0%	190	21-Jun-13 A	16-Oct-14	Manufacturing of MCC (Switchboard) Panel																		
24PWFU01440	FAT for MCC (Switchboard) Panel	0%	10	17-Oct-14	26-Oct-14	FAT for MCC (Switchboard) Panel																		
24PWFU01450	Packaging / Delivery of MCC (Switchboard) Panel	0%	30	27-Oct-14	25-Nov-14	Packaging / Delivery of MCC (Switchboard) Panel																		
24PWFU01460	Placing of Order on Control Panel	0%	10	24-Sep-14*	03-Oct-14	Placing of Order on Control Panel																		
24PWFU01470	Manufacturing of Control Panel	0%	50	04-Oct-14	22-Nov-14	Manufacturing of Control Panel																		
24PWFU01480	Packaging / Delivery of Control Panel	0%	15	23-Nov-14	07-Dec-14	Packaging / Delivery of Control Panel																		
24PWFU01490	Placing of Order on Instruments	0%	10	24-Sep-14*	03-Oct-14	Placing of Order on Instruments																		
24PWFU01500	Manufacturing of Instruments	0%	110	04-Oct-14	21-Jan-15	Manufacturing of Instruments																		
24PWFU01530	Manufacturing of DCS Control System	0%	75	03-Jun-14 A	17-Oct-14	Manufacturing of DCS Control System																		
24PWFU01540	FAT for DCS Control System	0%	30	18-Oct-14	16-Nov-14	FAT for DCS Control System																		
24PWFU01550	Packaging / Delivery of DCS Control System	0%	30	17-Nov-14	16-Dec-14	Packaging / Delivery of DCS Control System																		
24PWFU01570	Manufacturing of Lifting Appliance	0%	80	13-Jun-14 A	01-Nov-14	Manufacturing of Lifting Appliance																		
24PWFU01580	Packaging / Delivery of Lifting Appliance	0%	30	02-Nov-14	01-Dec-14	Packaging / Delivery of Lifting Appliance																		
24PWFU01630	Manufacturing of Emergency Generator Set	20%	200	07-Apr-13 A	21-Nov-14	Manufacturing of Emergency Generator Set																		
24PWFU01640	Packaging / Delivery of Emergency Generator Set	0%	30	22-Nov-14	21-Dec-14	Packaging / Delivery of Emergency Generator Set																		
Aberdeen																								
Major Technical Data / E&M Works Design																								
24DABN03790	Review / Approval of ICE and Submitted to Client the Electrical Protection Equipment Calculation	0%	12	24-Sep-14	05-Oct-14	Review / Approval of ICE and Submitted to Client the Electrical Protection Equipment Calculation																		
24DABN03810	Review / Resubmit of Electrical Protection Equipment Calculation	0%	15	11-Mar-14 A	08-Oct-14	Review / Resubmit of Electrical Protection Equipment Calculation																		
24DABN03820	Approval of Electrical Protection Equipment Calculation	0%	15	09-Oct-14	23-Oct-14	Approval of Electrical Protection Equipment Calculation																		
24DABN03860	Review / Resubmit of Control Philosophy	0%	15	06-Jun-12 A	30-Sep-14	Review / Resubmit of Control Philosophy																		
24DABN03870	Approval of Control Philosophy	0%	15	05-Apr-14 A	15-Oct-14	Approval of Control Philosophy																		
24DABN03880	Prepare / Submit to ICE the DCS Detail Design	0%	20	16-Oct-14	04-Nov-14	Prepare / Submit to ICE the DCS Detail Design																		
24DABN03890	Review / Approval of ICE and Submitted to Client the DCS Detail Design	0%	12	05-Nov-14	16-Nov-14	Review / Approval of ICE and Submitted to Client the DCS Detail Design																		
24DABN03900	Comments / Approval of DCS Detail Design	0%	28	17-Nov-14	14-Dec-14	Comments / Approval of DCS Detail Design																		
24DABN03910	Review / Resubmit of DCS Detail Design	0%	15	15-Dec-14	29-Dec-14	Review / Resubmit of DCS Detail Design																		
24DABN03931	Comments / Approval of Design Drawing for Miscellaneous E&M Items	100%	30	25-Jul-14 A	23-Aug-14 A	Comments / Approval of Design Drawing for Miscellaneous E&M Items																		
24DABN03932	Review / Resubmit of Design Drawing for Miscellaneous E&M Items	0%	30	24-Sep-14	23-Oct-14	Review / Resubmit of Design Drawing for Miscellaneous E&M Items																		
24DABN03933	Approval of Design Drawing for Miscellaneous E&M Items	0%	30	24-Oct-14	22-Nov-14	Approval of Design Drawing for Miscellaneous E&M Items																		
Order / Manufacturing / Shipment / Delivery																								
24PABN01170	Manufacturing of Seawater Pump	0%	335	13-May-13 A	22-Nov-14	Manufacturing of Seawater Pump																		
24PABN01180	FAT for Seawater Pump	0%	30	23-Nov-14	22-Dec-14	FAT for Seawater Pump																		
24PABN01370	Packaging / Delivery of Instruments	0%	30	25-Jun-13 A	25-Sep-14	Packaging / Delivery of Instruments																		
Ap Lei Chau																								

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	September 2014					October 2014					November 2014				December 2014					
						25	01	08	15	22	29	06	13	20	27	03	10	17	24	01	08	15	22		
24CPT03260	Installation of water supply pipe to CEPT Complex	0%	12	04-Oct-14	17-Oct-14																				
24CPT03270	Abandonment and Backfilling works on existing water pipe	0%	12	18-Oct-14	31-Oct-14																				
24CPT03280	Excavation for installation of U/G Odour Pipe from drop shaft	0%	7	19-Nov-14	26-Nov-14																				
24CPT03285	Construction of pipe trench from drop shaft to existing CPT PTW for odour pipe installation	0%	24	27-Nov-14	24-Dec-14																				
Roadworks and Landscaping Works																									
Landscaping Works																									
24CPT04000	Shrubs and Tree planting at CP-3	0%	60	24-Sep-14	04-Dec-14																				
Completion of Works in Section 2																									
Submission of Manuals																									
24CPT05030	Preparation / Submission of draft O&M manuals	0%	90	03-Oct-14	31-Dec-14																				
Wah Fu PTW																									
Key Dates																									
Time of Completion																									
24WFU1010	Time for Completion of Section 4	0%	1255	31-Aug-11 A	22-Nov-15																				
Statutory and Utility Applications and Approvals																									
Environmental Protection Department (EPD)																									
24WFU1119	Statutory submission to EPD (Chimney Design)	0%	60	24-Sep-14*	04-Dec-14																				
24WFU1120	Comment & re-submission to EPD	0%	30	05-Dec-14	12-Jan-15																				
Works for Section 4																									
Screen and Grit Trap Building																									
Interface between Civil / ABWF / E&M Works																									
24MWFU00205	Site possession of WF-2	0%	0	23-Sep-14*																					
24MWFU00210	Partial completion of structural works in preparation to start architectural works	0%	0		09-Dec-14																				
24MWFU00220	Partial completion of architectural works in preparation to start E&M works	0%	0		16-Dec-14																				
Civil Works																									
Foundation Works																									
24WFU02230A52	Formworks for Pile Cap (GL 3-4)	100%	30	24-May-14 A	05-Sep-14 A																				
24WFU02230A53	Rebarworks for Pile Cap (GL 3-4)	100%	25	25-Jun-14 A	05-Sep-14 A																				
24WFU02230A54	Concrete Works for Pile Cap (GL 3-4)	100%	1	06-Sep-14 A	06-Sep-14 A																				
RC Structural Works																									
24WFU02235	Removal of temporary platforms	100%	15	20-Aug-14 A	02-Sep-14 A																				
24WFU02240A40	Formworks for Column and Wall at Elev. +20.32	0%	30	04-Aug-14 A	26-Sep-14																				
24WFU02240A50	Rebarworks for Column and Wall at Elev. +20.32	0%	8	04-Aug-14 A	08-Oct-14																				
24WFU02240A60	Concrete for Column and Wall at Elev. +20.32	0%	1	09-Oct-14	09-Oct-14																				
24WFU02240A61	Formworks for Column, Wall and Roof Slab at Elev. +21.80	0%	6	25-Nov-14	01-Dec-14																				
24WFU02240A62	Rebarworks for Column, Wall and Roof Slab at Elev. +21.80	0%	6	02-Dec-14	08-Dec-14																				
24WFU02240A63	Concrete for Column, Wall and Roof Slab at Elev. +21.80	0%	1	09-Dec-14	09-Dec-14																				
24WFU02240A70	Formworks for chambers (GL 3-5)	0%	28	08-Sep-14 A	04-Oct-14																				
24WFU02240A80	Rebarworks for chambers (GL 3-5)	0%	18	15-Sep-14 A	06-Oct-14																				
24WFU02240A90	Concrete Works for chambers (GL 3-5)	0%	1	07-Oct-14	07-Oct-14																				
24WFU02240B11	Formworks for Column, Wall and Roof Slab at Elev. +20.32	0%	28	08-Oct-14	08-Nov-14																				
24WFU02240B12	Rebarworks for Column, Wall and Roof Slab at Elev. +20.32	0%	12	10-Nov-14	22-Nov-14																				
24WFU02240B13	Concrete for Column, Wall and Roof Slab at Elev. +20.32	0%	1	24-Nov-14	24-Nov-14																				
24WFU02240B30	Waterproofing works on Wall	0%	17	25-Nov-14	13-Dec-14																				
24WFU02240B40	Backfilling on FS & GT bldg.	0%	7	09-Dec-14	16-Dec-14																				
24WFU02240B90	Formworks for Stairs	0%	29	10-Dec-14	15-Jan-15																				

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	September 2014					October 2014					November 2014				December 2014				
						25	01	08	15	22	29	06	13	20	27	03	10	17	24	01	08	15	22	
24ABN00745A60	Rebarworks for wall of chamber FC-1	80%	15	14-Jul-14 A	15-Oct-14	Rebarworks for wall of chamber FC-1																		
24ABN00745A70	Concrete for wall of chamber FC-1	0%	6	16-Oct-14	22-Oct-14	Concrete for wall of chamber FC-1																		
24ABN00745C42	Modification of works on FC-3 chamber (connection of 1800Ø pipe)	0%	30	18-Nov-14	22-Dec-14	Modification of works on FC-3 chamber (connection of 1800Ø pipe)																		
Electrical and Mechanical Works																								
Mechanical Works																								
24ABN03370	Installation of stoplog no. 3 (fine screen outlet chamber)	0%	10	01-Dec-14	11-Dec-14	Installation of stoplog no. 3 (fine screen outlet chamber)																		
24ABN03400	Installation of penstock no. 15 (grit trap no. 1 outlet)	0%	10	12-Dec-14	23-Dec-14	Installation of penstock no. 15 (grit trap no. 1 outlet)																		
24ABN03720	Installation of grit trap no. 1	0%	30	01-Dec-14	07-Jan-15	Installation of grit trap no. 1																		
24ABN03851	Installation of penstock no. 17 (flow chamber outlet)	0%	15	23-Oct-14	08-Nov-14	Installation of penstock no. 17 (flow chamber outlet)																		
Electrical Works																								
24ABN03478	Replacement / upgrading of motor starter and panel cover in existing switchboard (grit trap 1 & classifier 1)	0%	6	01-Dec-14	06-Dec-14	Replacement / upgrading of motor starter and panel cover in existing switchboard (grit trap 1 & classifier 1)																		
24ABN03479	Replacement / upgrading the power, control & indication circuitry in existing switchboard (for penstock)	0%	9	08-Dec-14	17-Dec-14	Replacement / upgrading the power, control & indication circuitry in existing switchboard (for penstock)																		
24ABN03480	Removal of existing aged cables	0%	7	18-Dec-14	27-Dec-14	Removal of existing aged cables																		
24ABN03481	Installation of additional cable tray	0%	14	18-Dec-14	06-Jan-15	Installation of additional cable tray																		
FS & GT Bldg - Flume Channels and Chambers (Stage 4)																								
Interface between Civil / ABWF / E&M Works																								
24MABN00310	Completion of flume channel wall in preparation for the installation of stoplog and penstock (stage 2)	0%	0		23-Sep-14	Completion of flume channel wall in preparation for the installation of stoplog and penstock (stage 2)																		
24MABN00320	Completion of E&M works at flume channel and chambers (stage 2)	0%	0		20-Dec-14	Completion of E&M works at flume channel and chambers (stage 2)																		
Civil Works																								
RC Works for FC-2 Chamber																								
24ABN02270A30	Formworks for base slab of FC-2 chamber	0%	4	24-Sep-14	27-Sep-14	Formworks for base slab of FC-2 chamber																		
24ABN02270A40	Rebarworks for base slab of FC-2 chamber	0%	6	29-Sep-14	07-Oct-14	Rebarworks for base slab of FC-2 chamber																		
24ABN02270A50	Concrete for base slab of FC-2 chamber	0%	1	08-Oct-14	08-Oct-14	Concrete for base slab of FC-2 chamber																		
24ABN02270A55	Installation of 1800Ø pipe from FC-2 to FC-1 including connections	0%	15	09-Oct-14	25-Oct-14	Installation of 1800Ø pipe from FC-2 to FC-1 including connections																		
24ABN02270A60	Formworks for wall of FC-2 chamber	0%	9	27-Oct-14	05-Nov-14	Formworks for wall of FC-2 chamber																		
24ABN02270A70	Rebarworks for wall of FC-2 chamber	0%	4	06-Nov-14	10-Nov-14	Rebarworks for wall of FC-2 chamber																		
24ABN02270A80	Concrete for wall of FC-2 chamber	0%	1	11-Nov-14	11-Nov-14	Concrete for wall of FC-2 chamber																		
24ABN02270A90	Installation of air tight multi-part cover	0%	4	12-Nov-14	15-Nov-14	Installation of air tight multi-part cover																		
RC Works for Flume Channel (1st stage)																								
24ABN02260A50	Formworks for wall of flume channels	100%	24	05-Jul-14 A	30-Aug-14 A	Formworks for wall of flume channels																		
24ABN02260A60	Rebarworks for wall of flume channels	100%	24	14-Jul-14 A	03-Sep-14 A	Rebarworks for wall of flume channels																		
24ABN02260A70	Concrete for wall of flume channels	100%	1	04-Sep-14 A	04-Sep-14 A	Concrete for wall of flume channels																		
24ABN02260A80	Formworks for top slab of flume channels	100%	14	05-Sep-14 A	22-Sep-14 A	Formworks for top slab of flume channels																		
24ABN02260A90	Rebarworks for top slab of flume channels	100%	14	05-Sep-14 A	22-Sep-14 A	Rebarworks for top slab of flume channels																		
24ABN02260B10	Concrete for top slab of flume channels	100%	1	23-Sep-14 A	23-Sep-14 A	Concrete for top slab of flume channels																		
24ABN02260B20	Waterproofing on flume channels	0%	3	24-Sep-14	26-Sep-14	Waterproofing on flume channels																		
24ABN02260B30	Backfilling works on flume channels	0%	3	27-Sep-14	30-Sep-14	Backfilling works on flume channels																		
RC Works for Flume Channel (2nd stage)																								
24ABN02260C05	ELS / Excavation for the construction of Flume Channels	100%	40	11-Aug-14 A	06-Sep-14 A	ELS / Excavation for the construction of Flume Channels																		
24ABN02260C10	Formworks for base slab of flume channels	100%	12	03-Sep-14 A	17-Sep-14 A	Formworks for base slab of flume channels																		
24ABN02260C20	Rebarworks for base slab of flume channels	100%	12	08-Sep-14 A	22-Sep-14 A	Rebarworks for base slab of flume channels																		
24ABN02260C30	Concrete for base slab of flume channels	100%	1	23-Sep-14 A	23-Sep-14 A	Concrete for base slab of flume channels																		
24ABN02260C40	Formworks for wall of flume channels	0%	8	24-Sep-14	04-Oct-14	Formworks for wall of flume channels																		
24ABN02260C50	Rebarworks for wall of flume channels	0%	8	26-Sep-14	07-Oct-14	Rebarworks for wall of flume channels																		
24ABN02260C60	Concrete for wall of flume channels	0%	5	08-Oct-14	13-Oct-14	Concrete for wall of flume channels																		
24ABN02260C70	Formworks for top slab of flume channels	0%	7	14-Oct-14	21-Oct-14	Formworks for top slab of flume channels																		

