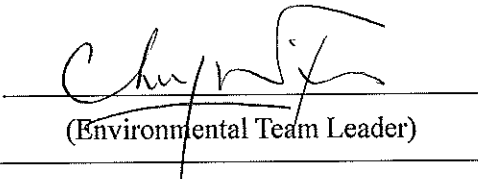


Leader and JEC Joint Venture

**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
June 2015**

(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.

CINOTECH accepts no responsibility for changes made to this report by third parties

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CE/Harbour Area Treatment Scheme
Drainage Services Department
Sewage Services Branch
Harbour Area Treatment Scheme Division
5/F, Western Magistracy
2A Pokfulam Road, Hong Kong

15 July 2015
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 June 2015 (no. 42)**

I refer to the revised Monthly EM&A Report for June 2015 (version 1.0) submitted by ET on 15 July 2015 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
Cinotech Consultants Ltd.

Mr. Ted Y F Tang
Mr. Kelvin Cheung / Mr. Patrick Wong
Dr. Priscilla Choy

Fax: 2370 4377
By email
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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 42nd 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/2009/24 HATS Stage 2A with same Environmental Permit (Permit No. EP-322/2008/G) for June 2015.
2. The site activities undertaken for in the reporting month included:
 - Wah Fu PTW – Inlet Chamber construction, Temporary submersible pump and pumping pipe for early flow turning, Screenings handling equipment installation, Cable tray and cabling works for early flow turning, Installation of the activated carbon filter equipment;
 - Ap Lei Chau PTW – Side wall of wet and dry well construction, DN900 Rising Main No. 1 installation and flowmeter chamber construction, Screenings handling equipment installation, Skip turning chairs installation, Effluent pumps and associated pipework installation, Cable tray and cabling work for early flow turning;
 - Aberdeen PTW – Construction of De-silting Chamber and Sea Water Pumping Station construction, New DOU and associated equipment, Install level sensors at drop shaft area, E&M temporary provision for early flow turning;
 - Sandy Bay PTW – N/A (Works completed); and
 - Cyberport PTW – Sheet piling for DN700 outlet pipe construction, New DOU and associated equipment, Temporary cabling for drop shaft level sensors.

Environmental Monitoring Works

3. The environmental monitoring works of the Project was conducted by the ET for the Contract: DC/2007/24 and DC/2009/24 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. 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 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 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 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. No 24-hour TSP monitoring at CM_CB1a was conducted on 1 June 2015 due to the interruption of power supply of High Volume Sampler at CM_CB1a.
10. Due to the interruption of power supply of High Volume Sampler at CM_AB1b on 11 & 29 June 2015, the 24-hour TSP monitoring was rescheduled and conducted on 12 June & 2 July 2015 respectively. No Action/Limit Level exceedance was recorded.

Construction Noise

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

Environmental Licenses and Permits

12. 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

13. 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

14. 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 – May 2015	Submitted to EPD on 11 June 2015	No comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

15. No environmentally related summons, prosecutions or complaints were received for the Project in the reporting month.

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

Future Key Issues:

17. Major site activities for the coming two months include:

- Wah Fu PTW: Inlet Chamber construction, FRP installation work above the flow channel, Screenings handling equipment installation, Cable tray and cabling works for early flow turning;

-
- Aberdeen PTW: Water proofing application to the De-silting Chamber and Sea Water Pumping Station construction, FRP cover installation to the de-silting chamber and sea water pumping station, New DOU and associated equipment, Install level sensors at drop shaft area, E&M temporary provision for early flow turning, Pre-bored socket H-Pile;
 - Ap Lei Chau PTW: Side wall of wet and dry well construction, Fabrication of the temporary decking above the dry well, DN900 Rising Main No. 1 installation and flowmeter chamber construction, Screenings handling equipment installation, Skip turning chairs installation, Effluent pumps and associated pipework installation, Cable tray and cabling work for early flow turning, Backfilling work to the tie in pit;
 - Sandy Bay PTW: N/A; and
 - Cyberport PTW: Trench-less excavation, Temporary cabling for drop shaft level sensor.
18. 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 42nd monthly EM&A report summarizing the EM&A works conducted for the Project in June 2015.

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. Vincent Y.K. Wong	Senior Engineer 2	2159 3406
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 – Inlet Chamber construction, Temporary submersible pump and pumping pipe for early flow turning, Screenings handling equipment installation, Cable tray and cabling works for early flow turning, Installation of the activated carbon filter equipment;
- Ap Lei Chau PTW – Side wall of wet and dry well construction, DN900 Rising Main No. 1 installation and flowmeter chamber construction, Screenings handling equipment installation, Skip turning chairs installation, Effluent pumps and associated pipework installation, Cable tray and cabling work for early flow turning;
- Aberdeen PTW – Construction of De-silting Chamber and Sea Water Pumping Station construction, New DOU and associated equipment, Install level sensors at drop shaft area, E&M temporary provision for early flow turning;
- Sandy Bay PTW – N/A (Works completed); and
- Cyberport PTW – Sheet piling for DN700 outlet pipe construction, New DOU and associated equipment, Temporary cabling for drop shaft level sensors.

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 June 2015. For the methodology and QA/QC procedures of the monitoring parameters, please refer to the Section 2 and 3 of this report and the monthly report for the Contract DC/2007/24.

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⁾	DC/2009/24	The Arcade, Cyberport
CM_WF1a ⁽¹⁾		Wah Ming House, Wah Fu Estate
CM_AB1b ⁽²⁾		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: Relocation of the air quality monitoring station was verified by IEC on 23 October 2014 and approved by EPD on 5 December 2014.

Monitoring Equipment

- 2.3 Both 1-hour TSP monitoring and continuous 24-hour TSP impact air quality monitoring were performed and complied with the specifications stipulated in the approved EM&A Manual. **Table 2.2** summarizes the equipment used in the impact air quality monitoring programme. Copies of the calibration certificates for the equipment are presented in **Appendix B**.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
HVS Samplers	GMWS 2310 HVS, Model GS-2310-105	2
	Tisch Environmental, Inc.; Model no. TE-5170	1
Laser Dust Meter	Sibata; Model no. LD-3	1
	Sibata; Model no. LD-3B	4
	JDHS; Model no. LD-5C	1
Calibrator	Tisch Environmental, Inc.; Model no. TE-5025A	1

Monitoring Parameters, Frequency and Duration

- 2.4 **Table 2.3** 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 2.3 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

(Equipment: Sibata; Model no. LD-3 & LD-3B)

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.

1-hour TSP Monitoring

(Equipment: Met One; Model no. AEROCET-531)

Measuring Procedures

- 2.8 The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer’s Instruction Manual as follows:
- The 1-hour dust meter is placed at least 1.3 meters above ground.
 - Set POWER to “ON” and make sure that the battery level was not flash or in low level.
 - Allow the instrument to stand for about 3 minutes and then the cap of the air sampling

inlet has been released.

- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

2.9 The following maintenance/calibration was required for the direct dust meters:

- Check and calibrate the meter at 2-month intervals throughout all stages of the air quality monitoring.

24-hour TSP Monitoring Instrumentation

2.10 High volume (HVS) samplers (Model no. TE-5170 and GS-2310-105) 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

2.11 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.

2.12 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.

- 2.13 Fiberglass filters were used which have a collection efficiency of larger than 99% for particles of 0.3 μm diameter.
- 2.14 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.
- 2.15 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.
- 2.16 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.
- 2.17 The shelter lid was closed and secured with the aluminum strip.
- 2.18 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).
- 2.19 After sampling, the filter was removed and sent to the laboratory for weighing. The elapsed time was also recorded.
- 2.20 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 $\pm 3^\circ\text{C}$; the relative humidity (RH) should be $< 50\%$ and not vary by more than $\pm 5\%$. A convenient working RH is 40%.

Maintenance/Calibration

- 2.21 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.
- 2.22 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.

Results and Observations

- 2.23 **Table 2.4** summarizes the monitoring results at CM_CB1a, CM_WF1a and CM_AB1b in the reporting month.

Table 2.4 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	81	59-113	280	500
CM_WF1a	81	64-98	285	
CM_AB1b	84	75-92	283	
24 hours TSP				
CM_CB1a	38 ⁽¹⁾	30-53 ⁽¹⁾	178	260
CM_WF1a	31	24-45	185	
CM_AB1b	55	32-69	174	

Remark (1): 24-hour TSP value recorded on 1 June 2015 was found invalid due to the interruption of power supply of High Volume Sampler at CM_CB1a.

- 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 No 24-hour TSP monitoring at CM_CB1a was conducted on 1 June 2015 due to the interruption of power supply of High Volume Sampler at CM_CB1a.
- 2.27 Due to the interruption of power supply of High Volume Sampler at CM_AB1b on 11 & 29 June 2015, the 24-hour TSP monitoring was rescheduled and conducted on 12 June & 2 July 2015 respectively. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G**.
- 2.28 The identified dust sources at the monitoring stations were mainly from operation of mobile crane, road traffic, sea traffic.

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 Integrating Sound Level Meter was used for noise monitoring. The meter is a Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x) and also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 3.2** summarizes the noise monitoring equipment being used. Copies of the calibration certificates for the sound level meter and calibrator are attached in **Appendix B**. The details of the equipment used in the impact noise monitoring programme of M5 could be referred to Section 4.2 of the monthly report of Contact No. DC/2007/24.

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	SVAN 955	1
	SVAN 957	3
Calibrator	SV30A	2
	B&K 4231	2

Monitoring Parameters, Frequency and Duration

- 3.4 **Table 3.3** 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 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
M5 M6a M7a M8 M9	$L_{eq}(30 \text{ min.})$ 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

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 could be referring to the monthly reports for Contract DC/2007/24.

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

Table 3.4 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 min.)	Limit Level, dB(A) L _{eq} (30 min.)
M5	61-64	75.0
M6a	41-58 ⁽¹⁾	
M7a	53-56	
M8	60-67	
M9	43-56	

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 and **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 excavator, mobile crane, mixer truck, dump truck, road traffic noise, sea traffic.

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, 19 and 26 June 2015. 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 were 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	
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				
12258	24/5/2015	23/8/2015	Location: Ap Lei Chau	Valid
12257	24/5/2015	23/8/2015	Location: Aberdeen PTW	Valid
12259	24/5/2015	23/8/2015	Location: Wah Fu PTW	Valid

Status of Waste Management

4.7 The amount of wastes generated by the activities of the 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	150529-O01	The water quality of the sediment tank at Cyberport-PTW and the water quality of the WetSep at ALC-PTW and Abd-PTW should be fulfilled the requirement of the WPCO’s wastewater discharge license before discharging out. The Contractor was reminded to clear the stagnant water of the Wet Sep at ALC-PTW regularly and ensure the adequate capacity of the wastewater treatment facility is provided properly.	Please refer to 150605-O01.
	150605-O01	The water quality of the sediment tank at Cyberport-PTW and the water quality of the WetSep at Abd-PTW should be fulfilled the requirement of the WPCO’s wastewater discharge license before discharging out. The Contractor was reminded to ensure the adequate capacity of the wastewater treatment facility is provided properly.	Please refer to 150612-O01.

	150612-001	The water quality of the WetSep at Abd-PTW should be fulfilled the requirement of the WPCO’s wastewater discharge license before discharging out. The Contractor was reminded to clear the stagnant water regularly.	The water quality of the WetSep at Abd-PTW was fulfilled the requirement of the WPCO’s wastewater discharge license before discharging out. The stagnant water was cleared.
	150619-001	The mud trail was observed at the site entrance of Abd-PTW. The Contractor was reminded to clear the dust and silt regularly and enhanced the wheel washing facility.	The mud trail was not observed at the site entrance of Abd-PTW. The dust and silt were cleared by the Contractor.
	150626-R01	Properly clear the stagnant water and oil stained water on the access road at ALC-PTW.	The stagnant water and oil stained water on the access road were cleared by the Contractor at ALC-PTW.
Air Quality	150529-R03	Properly clear the broken sand bags at ALC-PTW.	Please refer to 150605-R02.
	150605-R02	Properly clear the broken sand bags and dusty material at ALC-PTW.	The broken sand bags and dusty materials were cleared at ALC-PTW.
	150619-001	The mud trail was observed at the site entrance of Abd-PTW. The Contractor was reminded to clear the dust and silt regularly and enhanced the wheel washing facility.	The mud trail was not observed at the site entrance of Abd-PTW. The dust and silt were cleared by the Contractor.
	150626-R02	Properly clear the broken sand bags at Abd-PTW.	The follow up action will be reported during site inspections in July 2015.
Waste/ Chemical Management	150529-R04	The chemical containers should be provided with the drip trays at ALC-PTW.	Please refer to 150605-R03.
	150605-R03	The chemical containers should be provided with the drip trays at ALC-PTW.	The chemical containers were not observed at ALC-PTW.
	150626-R01	Properly clear the stagnant water and oil stained water on the access road at ALC-PTW.	The stagnant water and oil stained water on the access road were cleared by the Contractor at ALC-PTW.
	150626-R03	The general refuse should be disposed properly at Abd-PTW.	The general refuse was disposed properly at Abd-PTW.
Noise	--	--	--
Landscape and Visual	--	--	--
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 four 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 No 24-hour TSP monitoring at CM_CB1a was conducted on 1 June 2015 due to the interruption of power supply of High Volume Sampler at CM_CB1a.
- 6.4 Due to the interruption of power supply of High Volume Sampler at CM_AB1b on 11 & 29 June 2015, the 24-hour TSP monitoring was rescheduled and conducted on 12 June & 2 July 2015 respectively. No Action/Limit Level exceedance was recorded. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

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

Environmental Audit

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

Complaint and Prosecution

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

Recommendations

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

Water Impact

- To avoid accumulation of stagnant/ oil stained water on site;
- To avoid formation of mud trail near the site entrance; and
- To ensure the water quality of the sediment tank/ WetSep to fulfill the requirement of the WPCO's wastewater discharge license before discharging out.

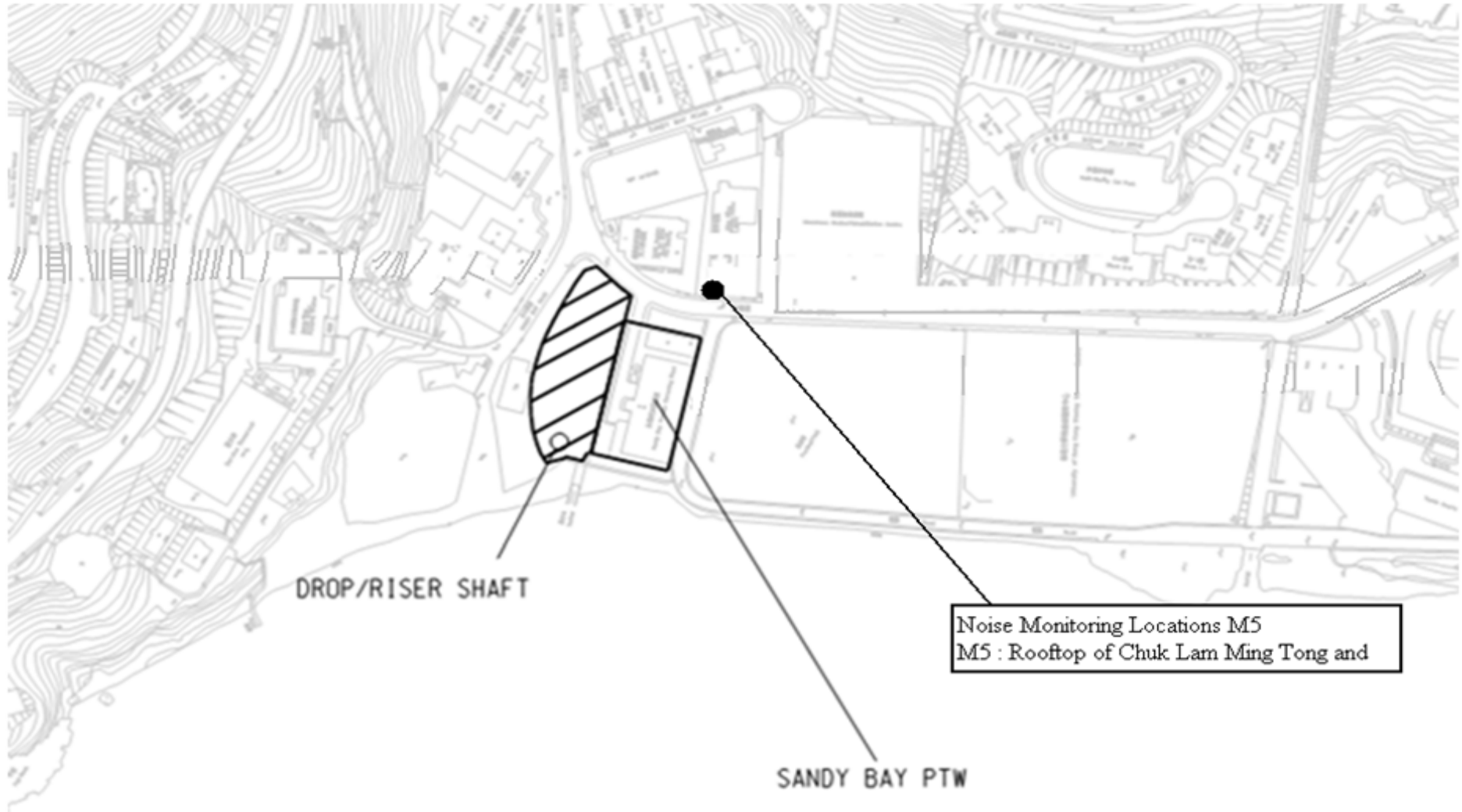
Air Quality

- 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 with water during the main dust-generating activity.

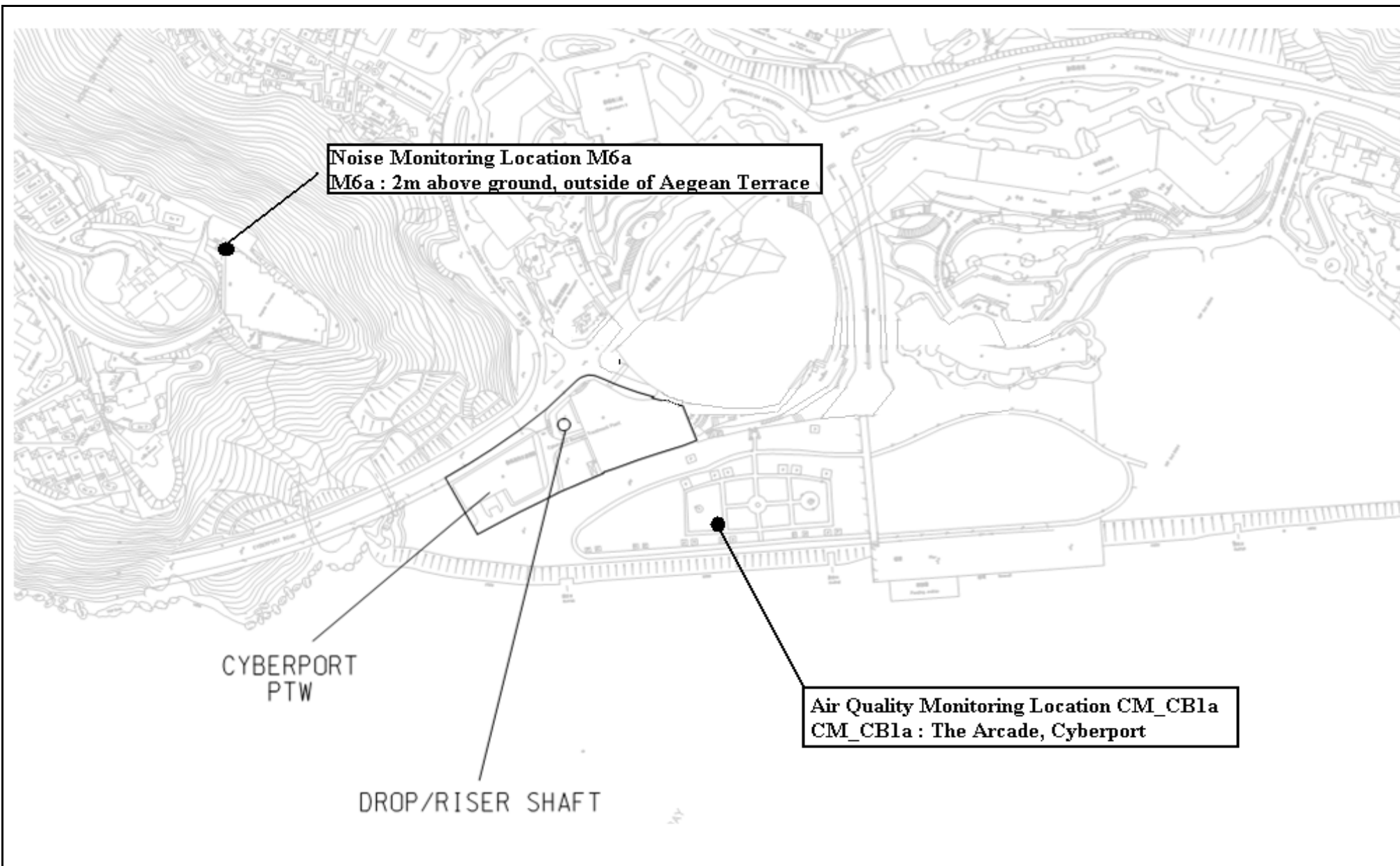
Waste/Chemical Management

- To provide the maintenance of the equipment to prevent the oil leakage; and
- To provide proper and sufficient storage area or drip trays for chemical containers on site

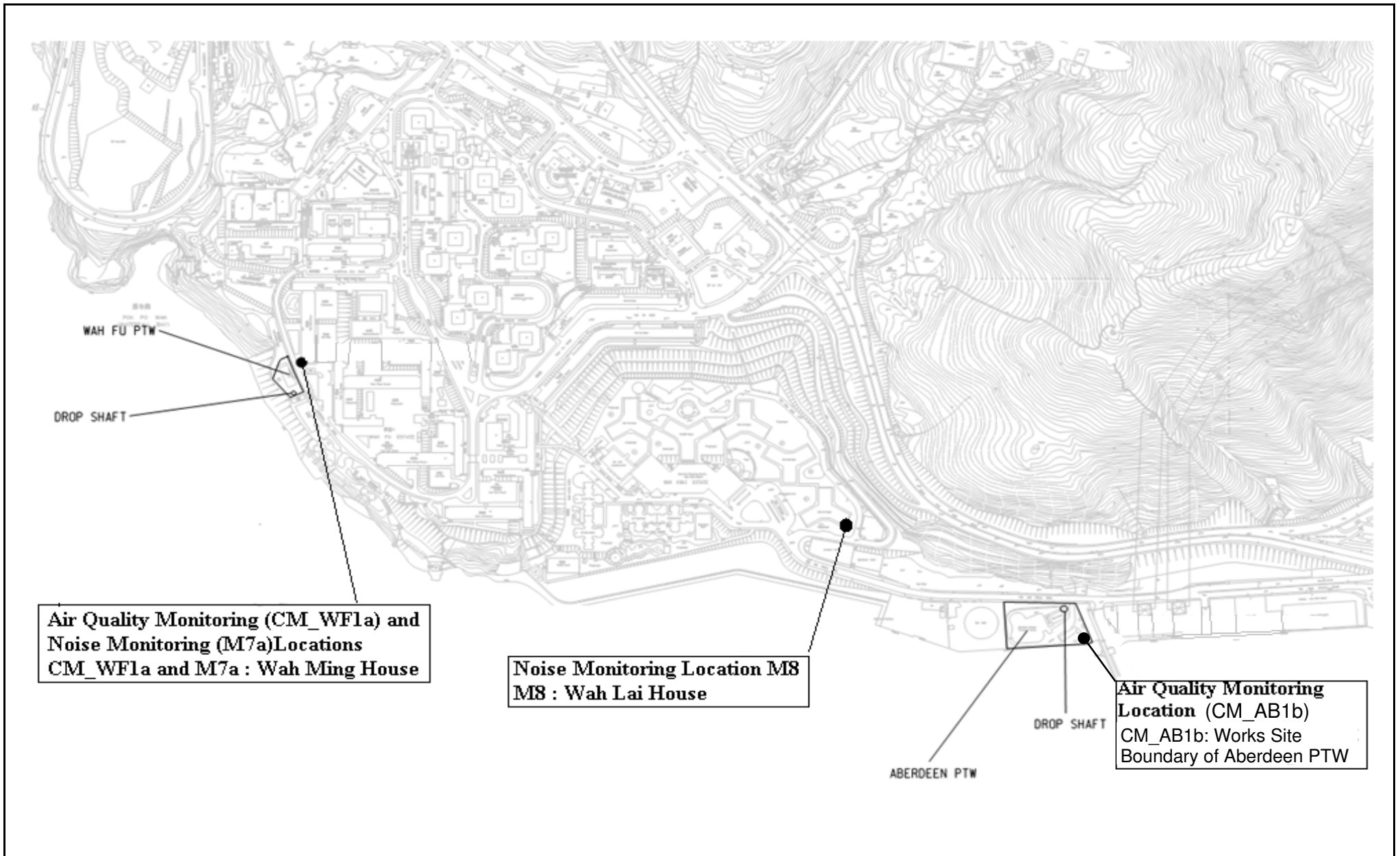
FIGURES



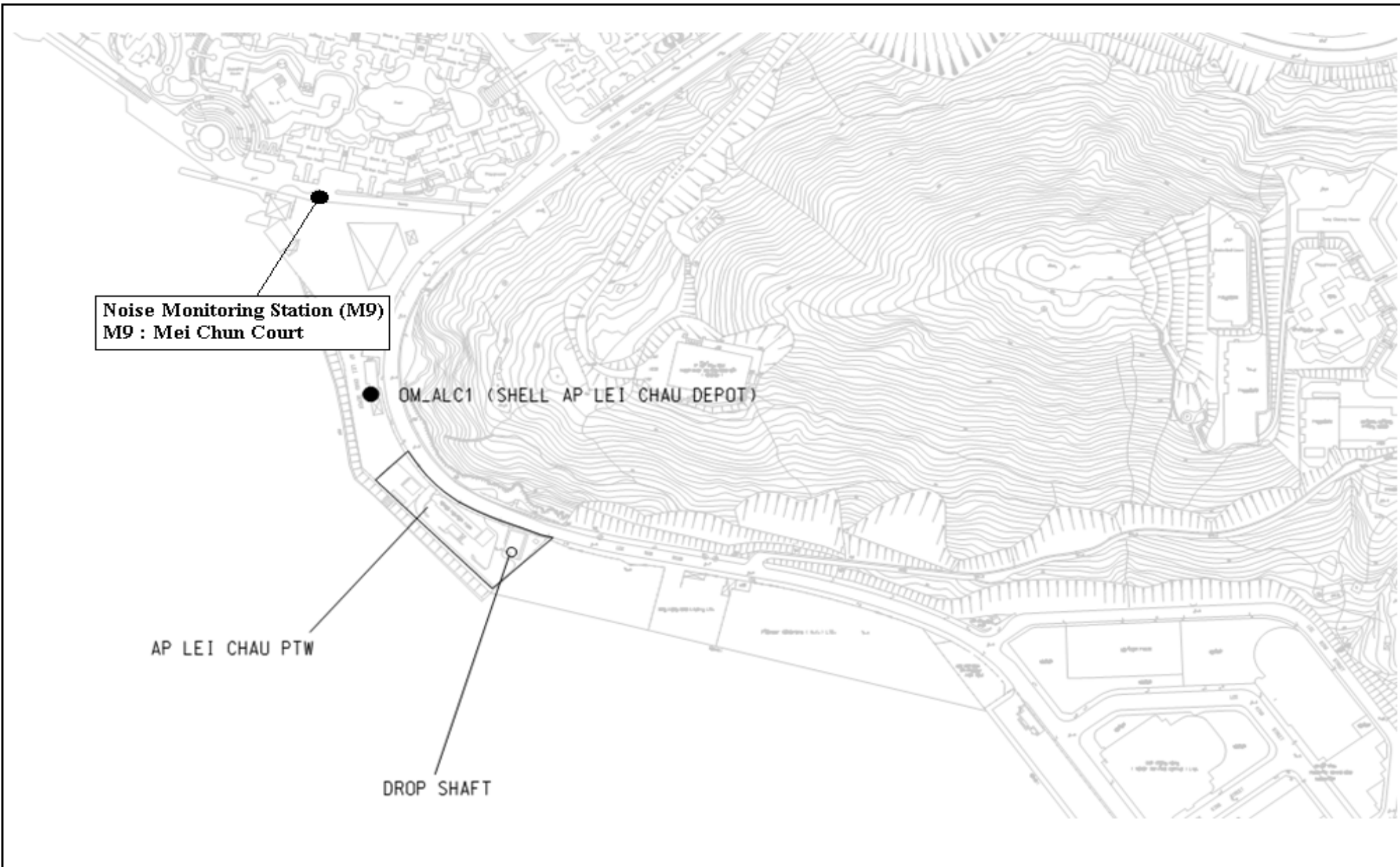
Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	General Location Plan of Sandy Bay PTW and Locations of Noise Monitoring Stations	Date	Figure	
		01/2012	1a	



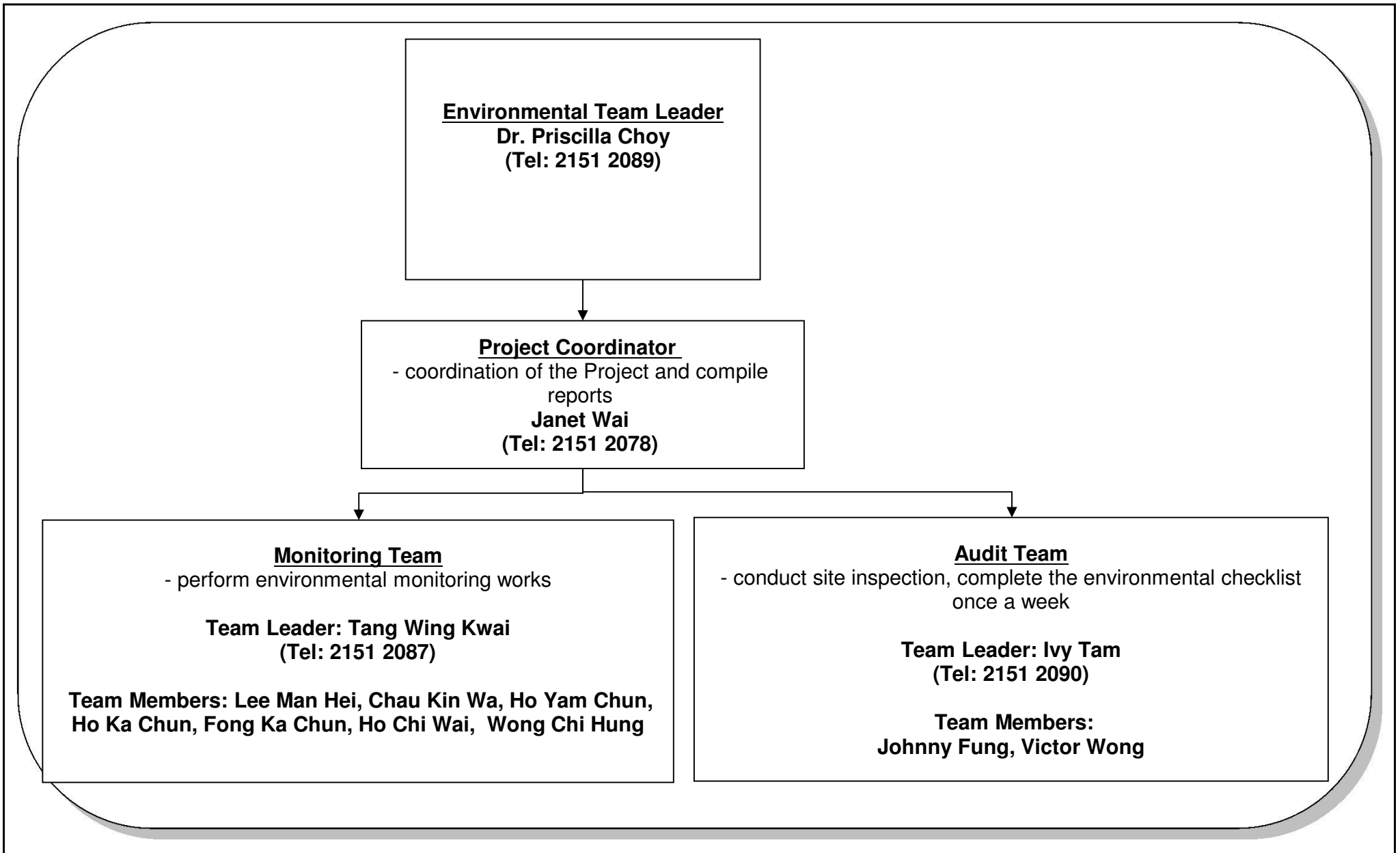
Title	Contract No: DC/2009/24	Scale	Project	CINOTECH
	HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	N.T.S	No. MA11060	
	General Location Plan of Cyberport PTW and Locations of Air Quality and Noise Monitoring Stations	Date	Figure	
		01/2012	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	Mar-15	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. MA11060/69/0006

Station CM_WF1a - Wah Ming House Operator: WK
 Date: 23-Apr-15 Next Due Date: 22-Jun-15
 Equipment No.: A-01-69 Serial No. 3222

Ambient Condition			
Temperature, Ta (K)	298.6	Pressure, Pa (mmHg)	765.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	10.7	3.28	55.70	6.8	2.61
2	8.8	2.97	50.55	5.5	2.35
3	7.0	2.65	45.12	4.4	2.10
4	5.1	2.26	38.57	3.1	1.76
5	3.3	1.82	31.10	2.0	1.42

By Linear Regression of Y on X

Slope, $m_w =$ 0.0487 Intercept, $b_w =$ -0.1013
 Correlation coefficient* = 0.9998

*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
$m_w \times Qstd + b_w = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$
Therefore, Set Point; $W = (m_w \times Qstd + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ <u>3.95</u>

Remarks: _____

Conducted by: Wk Tang Signature: _____ Date: 23/4/15
 Checked by: Ar Signature: _____ Date: 23 April 2015

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/69/0007

Station CM_WF1a - Wah Ming House Operator: WK
 Date: 18-Jun-15 Next Due Date: 17-Aug-15
 Equipment No.: A-01-69 Serial No. 3222

Ambient Condition			
Temperature, Ta (K)	303.6	Pressure, Pa (mmHg)	756.7

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	10.8	3.25	55.19	6.9	2.60
2	8.7	2.92	49.57	5.4	2.30
3	7.5	2.71	46.05	4.7	2.14
4	5.2	2.25	38.41	3.2	1.77
5	3.3	1.80	30.67	1.9	1.36

By Linear Regression of Y on X

Slope, $m_w =$ 0.0499 Intercept, $b_w =$ -0.1597

Correlation coefficient* = 0.9997

*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

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

Therefore, Set Point; $W = (m_w \times Qstd + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.03

Remarks: _____

Conducted by: Wky Tang Signature: [Signature]
 Checked by: [Signature] Signature: [Signature]

Date: 18/6/15
 Date: 18 June 2015

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/38/0006

Station CM_AB1b - Works Site Boundary of Aberdeen PTW Operator: WK
 Date: 27-May-15 Next Due Date: 26-Jul-15
 Equipment No.: A-01-38 Serial No. 1402

Ambient Condition			
Temperature, Ta (K)	299.9	Pressure, Pa (mmHg)	758.6

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.9	3.44	58.34	6.9	2.62
2	9.1	3.00	51.06	5.5	2.34
3	7.6	2.75	46.70	4.6	2.14
4	5.3	2.29	39.06	3.2	1.78
5	3.2	1.78	30.43	2.0	1.41

By Linear Regression of Y on X

Slope, mw = 0.0438 Intercept, bw : 0.0797
 Correlation coefficient* = 0.9995

*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.88

Remarks: _____

Conducted by: Wka Tang Signature: _____
 Checked by: EA Signature: _____

Date: 27/5/15
 Date: 27 May 2015

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/36/0006

Station CM CB1a - The Arcade, Cyberport Operator: WK
 Date: 5-Jun-15 Next Due Date: 4-Aug-15
 Equipment No.: A-01-36 Serial No. 1224

Ambient Condition			
Temperature, Ta (K)	303.8	Pressure, Pa (mmHg)	758.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.6	3.37	57.22	6.9	2.60
2	9.7	3.08	52.36	5.8	2.38
3	7.6	2.73	46.39	4.5	2.10
4	5.1	2.23	38.07	3.2	1.77
5	3.2	1.77	30.23	2.0	1.40

By Linear Regression of Y on X

Slope, mw = 0.0441 Intercept, bw = 0.0734
 Correlation coefficient* = 0.9996

*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) = 3.96

Remarks: _____

Conducted by: Wk. Tang Signature: _____ Date: 5/16/15
 Checked by: Hu Signature: _____ Date: 5 June 2015



Equipment No A.04.06

TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE
 VILLAGE OF CLEVELS, OH
 45002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 04, 2015 Rootmeter S/N 0438320 Ta (K) - 293
 Operator Tisch Orifice I.D. - 2896 Pa (mm) - 756.92

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER	ORFICE
					DIFF Hg (mm)	DIFF H2O (in.)
1	NA	NA	1.00	1.4590	3.2	2.00
2	NA	NA	1.00	1.0330	6.4	4.00
3	NA	NA	1.00	0.9250	7.9	5.00
4	NA	NA	1.00	0.8800	8.8	5.50
5	NA	NA	1.00	0.7260	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0086	0.6913	1.4233	0.9958	0.6825	0.8799
1.0044	0.9723	2.0129	0.9916	0.9599	1.2443
1.0023	1.0835	2.2505	0.9895	1.0697	1.3912
1.0011	1.1377	2.3603	0.9884	1.1231	1.4591
0.9959	1.3718	2.8467	0.9832	1.3542	1.7598
Qstd slope (m) = 2.09317			Qa slope (m) = 1.31071		
intercept (b) = -0.02195			intercept (b) = -0.01357		
coefficient (r) = 0.99997			coefficient (r) = 0.99997		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

$$Vstd = \text{Diff. Vol} [(Pa - \text{Diff. Hg}) / 760] (298 / Ta)$$

$$Qstd = Vstd / \text{Time}$$

$$Va = \text{Diff Vol} [(Pa - \text{Diff Hg}) / Pa]$$

$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

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

$$Qa = 1/m \{ [\text{SQRT} H2O(Ta/Pa)] - b \}$$

TEST REPORT

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

Test Report No.:	C/150502/1
Date of Issue:	2015-05-04
Date Received:	2015-05-02
Date Tested:	2015-05-02
Date Completed:	2015-05-04
Next Due Date:	2015-07-03

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/m ³
Sen. Adjustment Scale Setting	: 550 CPM
Equipment No.	: A-02-01

Test Conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 62 %

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)	0.0033
-------------------------	--------

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/150622/1
Date of Issue:	2015-06-22
Date Received:	2015-06-19
Date Tested:	2015-06-19
Date Completed:	2015-06-22
Next Due Date:	2015-08-21

ATTN: Mr. WK Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Laser Dust Monitor
 Manufacturer : Sibata
 Model No. : LD-3B
 Serial No. : 954253
 Sensitivity (K) 1 CPM : 0.001 mg/m³
 Sen. Adjustment Scale Setting : 772 CPM
 Equipment No. : A-02-05

Test Conditions:

Room Temperature : 24 degree Celsius
 Relative Humidity : 61 %

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)	0.0030
-------------------------	--------

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/150430/1
Date of Issue:	2015-05-02
Date Received:	2015-04-30
Date Tested:	2015-04-30
Date Completed:	2015-05-02
Next Due Date:	2015-07-01

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 : 23 degree Celsius
 Relative Humidity : 62 %

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/150430/2
Date of Issue:	2015-05-02
Date Received:	2015-04-30
Date Tested:	2015-04-30
Date Completed:	2015-05-02
Next Due Date:	2015-07-01

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.	: 095050
Sensitivity (K) 1 CPM	: 0.001 mg/m ³
Sen. Adjustment Scale Setting	: 577 CPM
Equipment No.	: A-02-09

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 62 %

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/150430/3
Date of Issue:	2015-05-02
Date Received:	2015-04-30
Date Tested:	2015-04-30
Date Completed:	2015-05-02
Next Due Date:	2015-07-01

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/m ³
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 62 %

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/150502/5
Date of Issue:	2015-05-04
Date Received:	2015-05-02
Date Tested:	2015-05-02
Date Completed:	2015-05-04
Next Due Date:	2015-07-03

ATTN: Mr. WK Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Laser Dust Monitor
 Manufacturer : JDHS
 Model No. : LD-5C
 Serial No. : 5L210035
 Mass concentration conversion factor : 0.001 mg/m³
 Equipment No. : A-25-01

Test Conditions:

Room Temperature : 24 degree Celsius
 Relative Humidity : 62 %

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)	0.006
-------------------------	-------

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/140919/1
Date of Issue:	2014-09-21
Date Received:	2014-09-19
Date Tested:	2014-09-21
Date Completed:	2014-09-21
Next Due Date:	2015-09-20

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 955
Serial No.	: 12553
Microphone No.	: 35222
Equipment No.	: N-08-02

Test conditions:

Room Temperature	: 23 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/140822/3
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/141129/3
Date of Issue:	2014-12-01
Date Received:	2014-11-29
Date Tested:	2014-11-29
Date Completed:	2014-12-01
Next Due Date:	2015-11-30

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.	: 23851
Microphone No.	: 48532
Equipment No.	: N-08-12

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

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/141003/1
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 56%

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/141003/3
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 56%

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/141107/1
Date of Issue:	2014-11-08
Date Received:	2014-11-07
Date Tested:	2014-11-07
Date Completed:	2014-11-08
Next Due Date:	2015-11-07

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

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

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 53 %

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

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

**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 June 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Jun	2-Jun	3-Jun	4-Jun	5-Jun	6-Jun
	24 hrs TSP (CM_AB1b & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)			24 hrs TSP (CM_AB1b, CB1a & WF1a)	
7-Jun	8-Jun	9-Jun	10-Jun	11-Jun	12-Jun	13-Jun
	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)			24 hrs TSP (CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) 24 hrs TSP (CM_AB1b)	
14-Jun	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun
			24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)		
21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun
		24 hrs TSP (CM_AB1b, CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)			
28-Jun	29-Jun	30-Jun	1-Jul	2-Jul	3-Jul	4-Jul
	24 hrs TSP (CM_CB1a & WF1a)	1 hr TSP (CM_AB1b, CB1a & WF1a) Noise (M6a, M7a, M8 & M9)		24 hrs TSP (CM_AB1b)		

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

Remark : No 24-hour TSP monitoring at CM_CB1a was conducted on 1 June 2015 due to the interruption of power supply of High Volume Sampler at CM_CB1a.

Remark : 24-hour TSP monitoring at CM_AB1b was rescheduled on 12 June 2015 due to the interruption of power supply of High Volume Sampler at CM_AB1b on 11 June 2015.

Remark : 24-hour TSP monitoring at CM_AB1b was rescheduled on 2 July 2015 due to the interruption of power supply of High Volume Sampler at CM_AB1b on 29 June 2015.

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 July 2015**

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

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

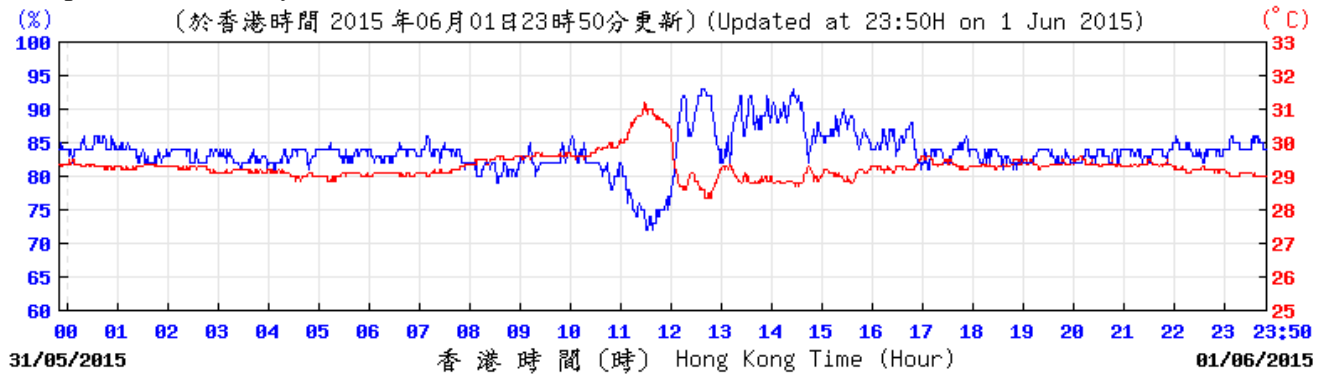
Noise Monitoring Station

M6a - Aegean Terrace
 M7a - Wah Ming House
 M8 - Wah Lai House
 M9 - Mei Chun Court

**APPENDIX D
METEOROLOGICAL DATA ON
MONITORING DATES**

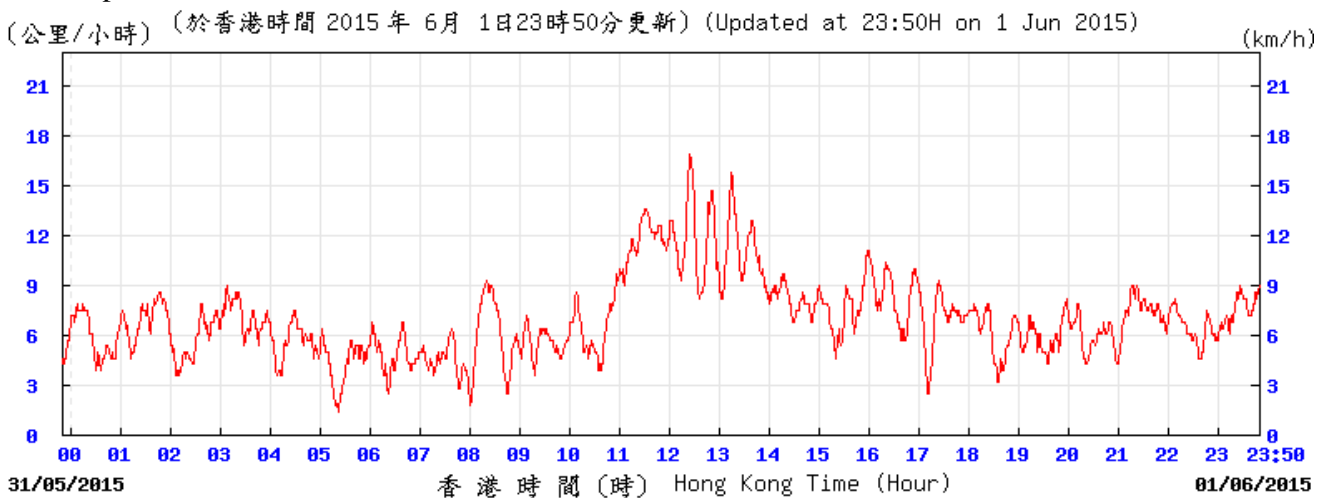
Appendix D Meteorological Data Recorded from HKO Station (1 June 2015) (Source: www.hko.gov.hk)

Temperature/Humidity:

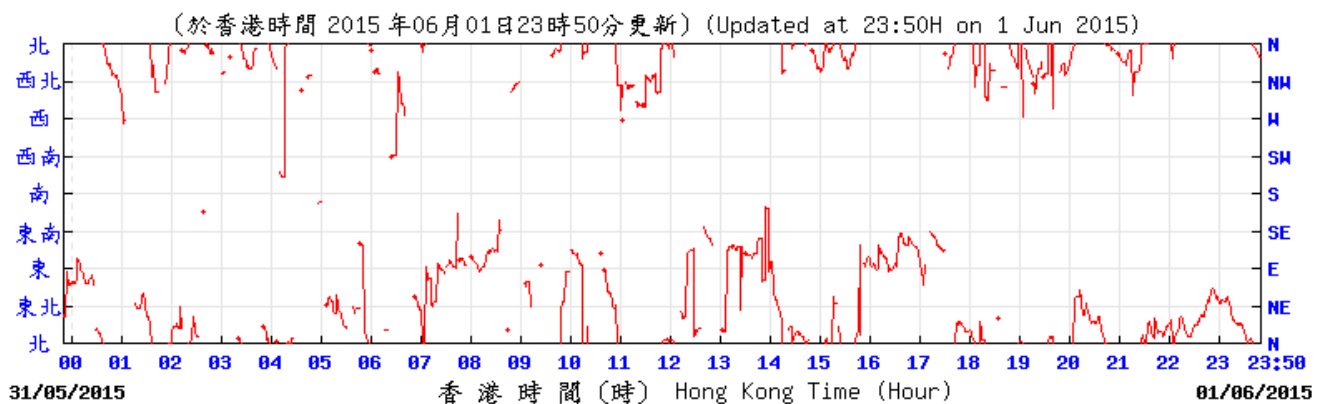


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Wind Speed and Direction:



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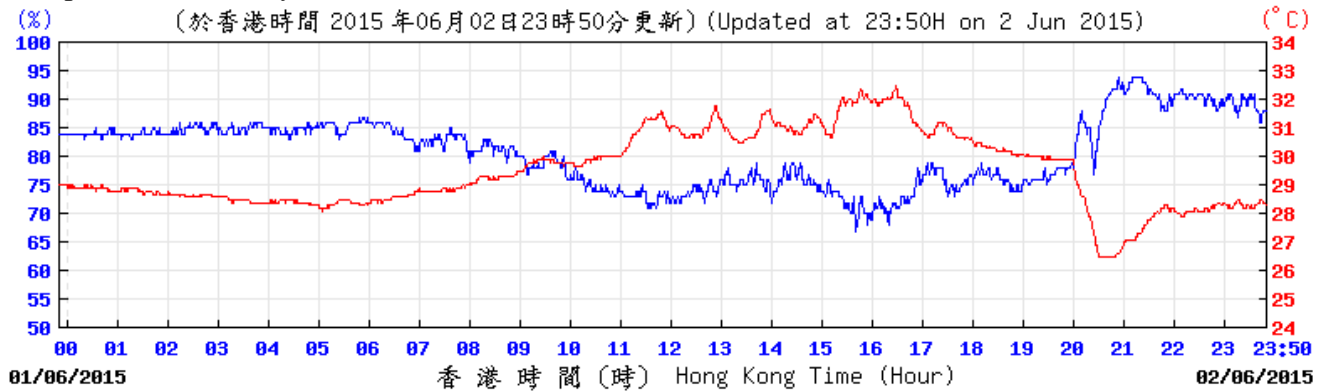


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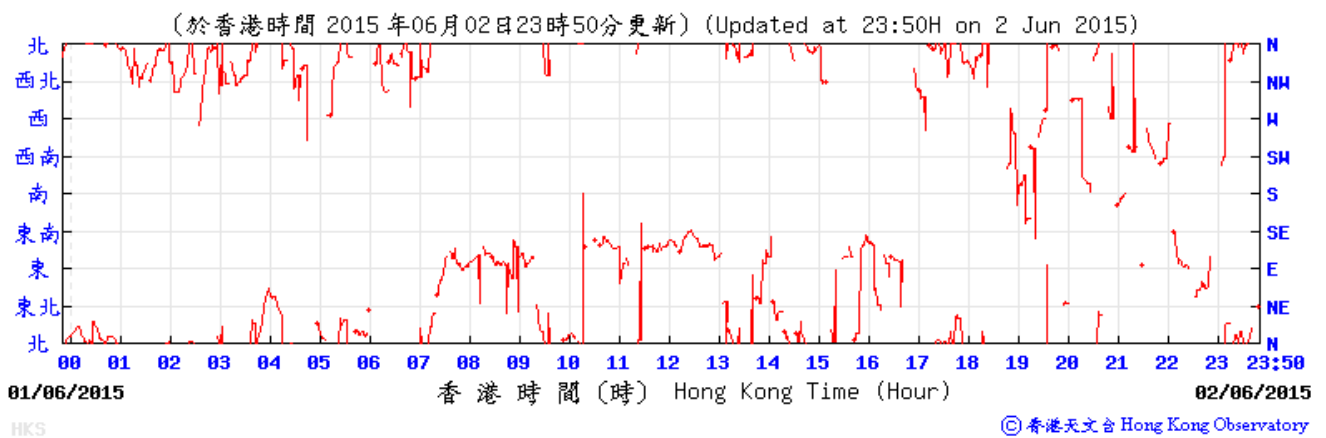
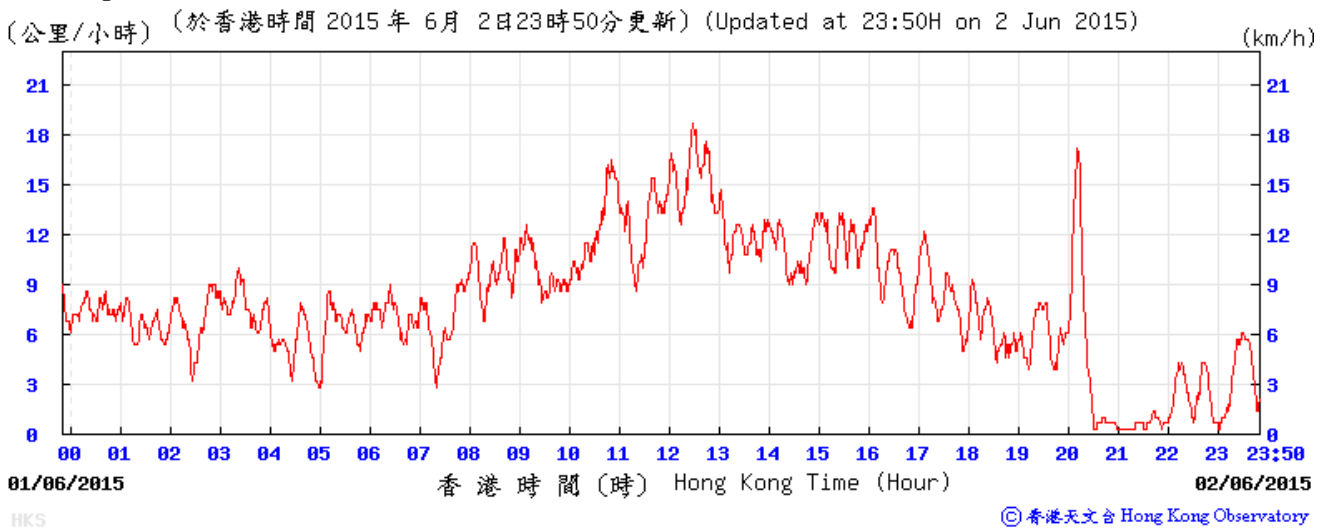
Meteorological Data Recorded from HKO Station (2 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



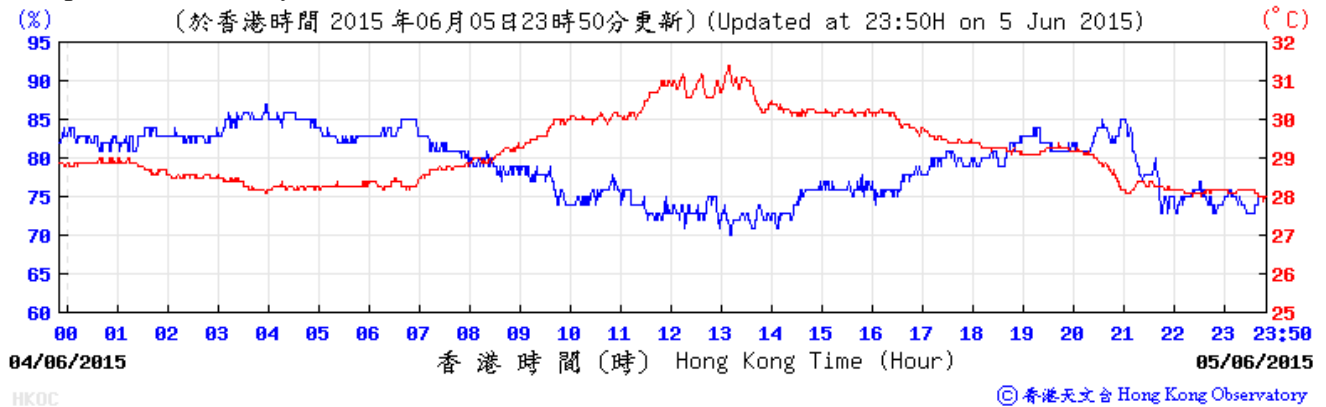
Wind Speed and Direction:



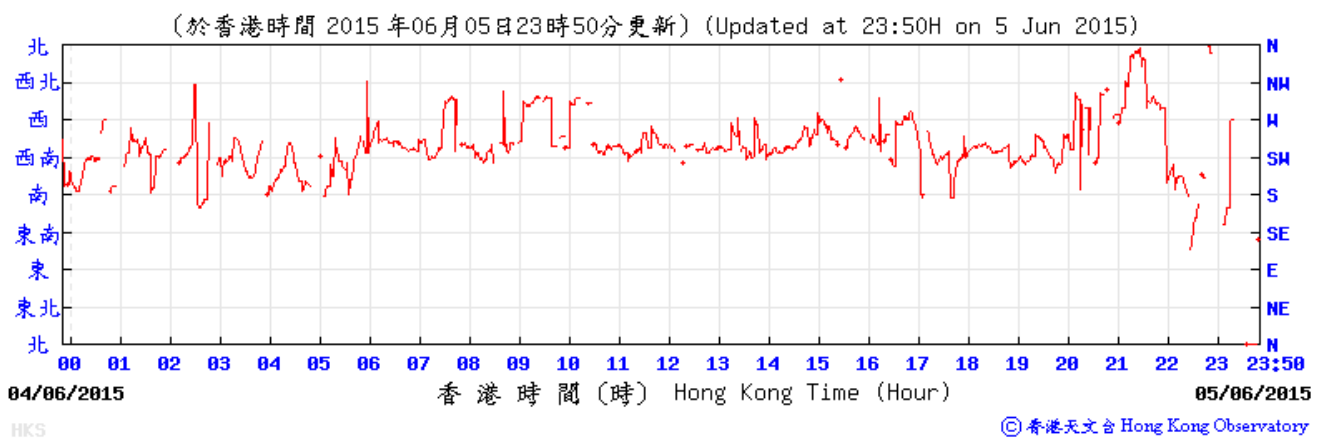
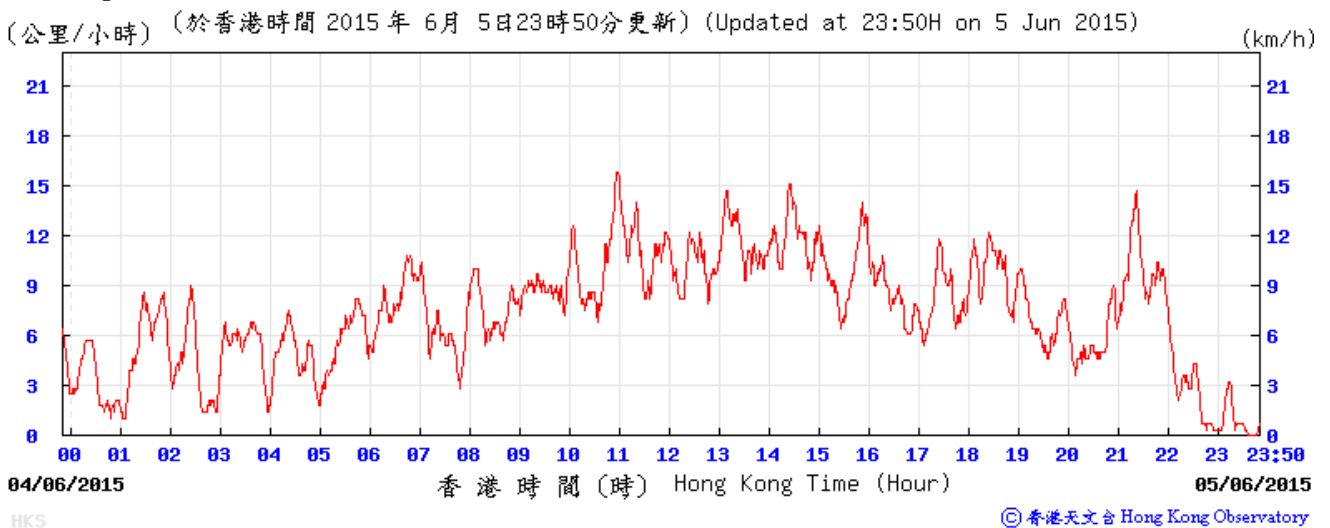
Meteorological Data Recorded from HKO Station (5 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



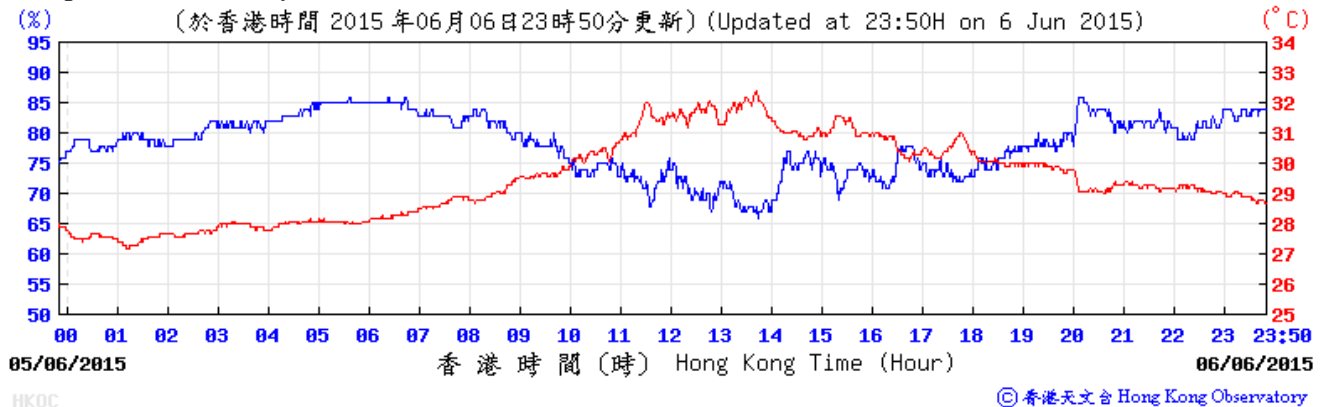
Wind Speed and Direction:



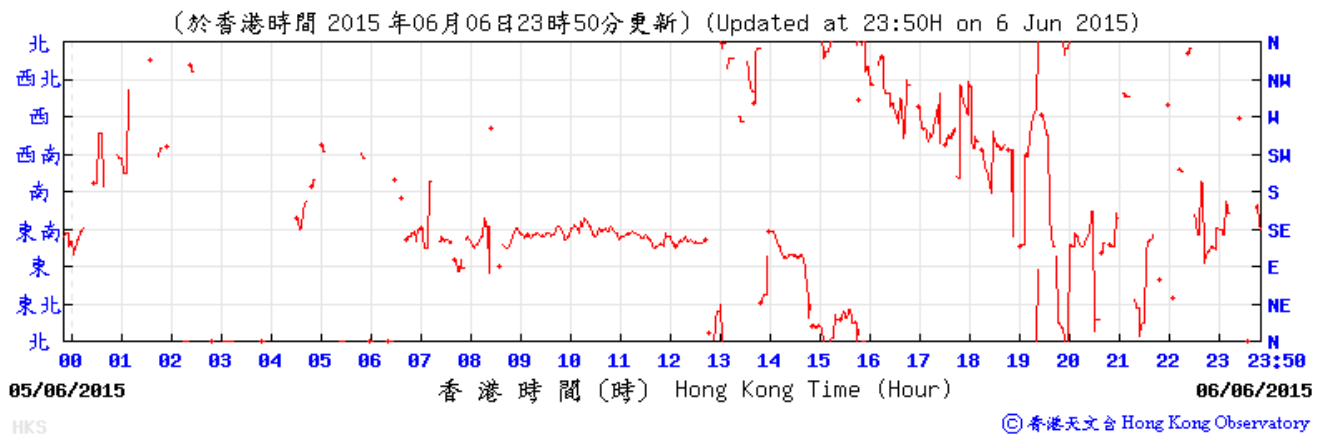
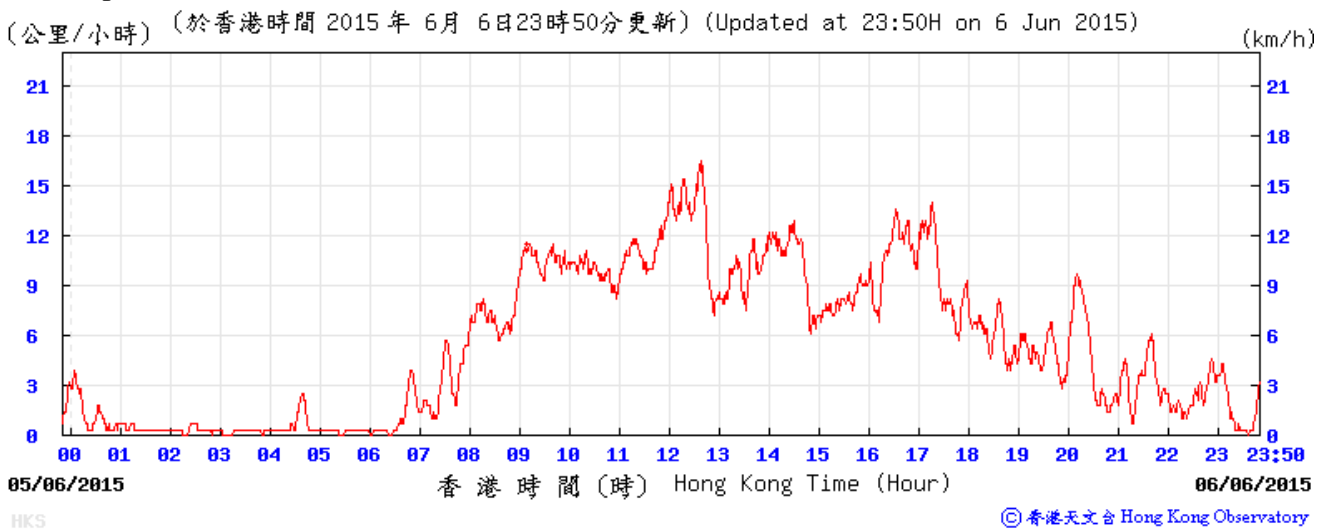
Meteorological Data Recorded from HKO Station (6 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



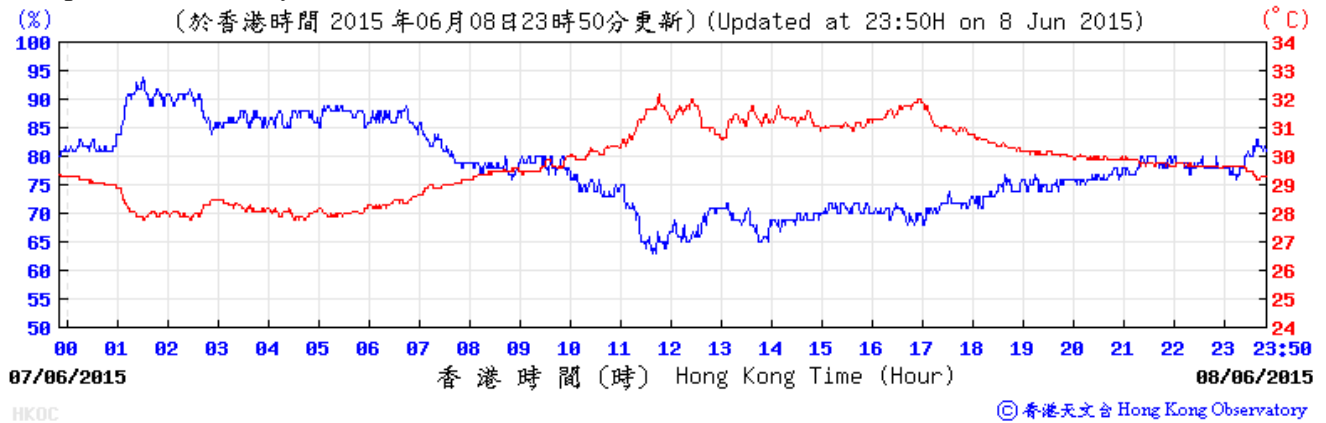
Wind Speed and Direction:



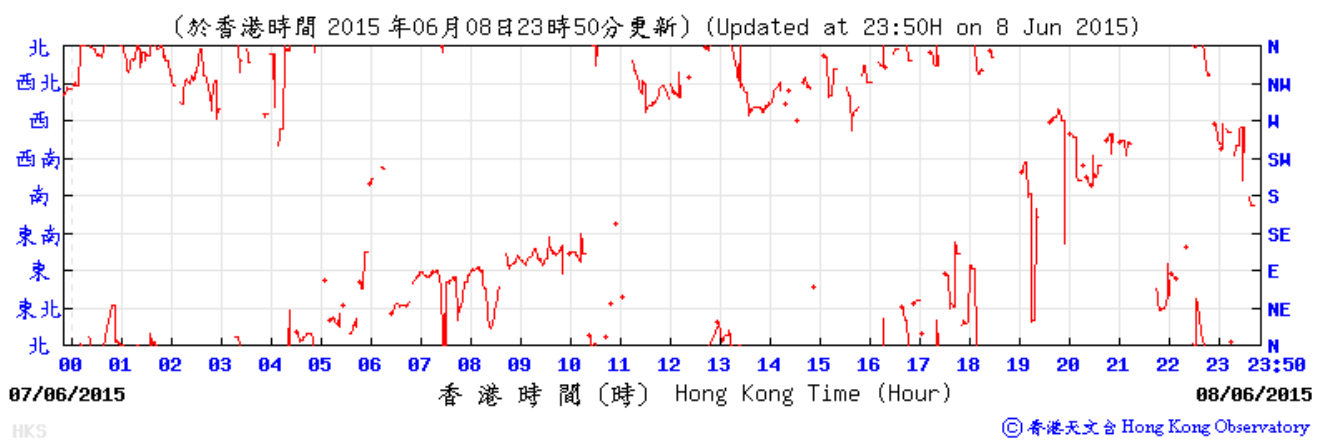
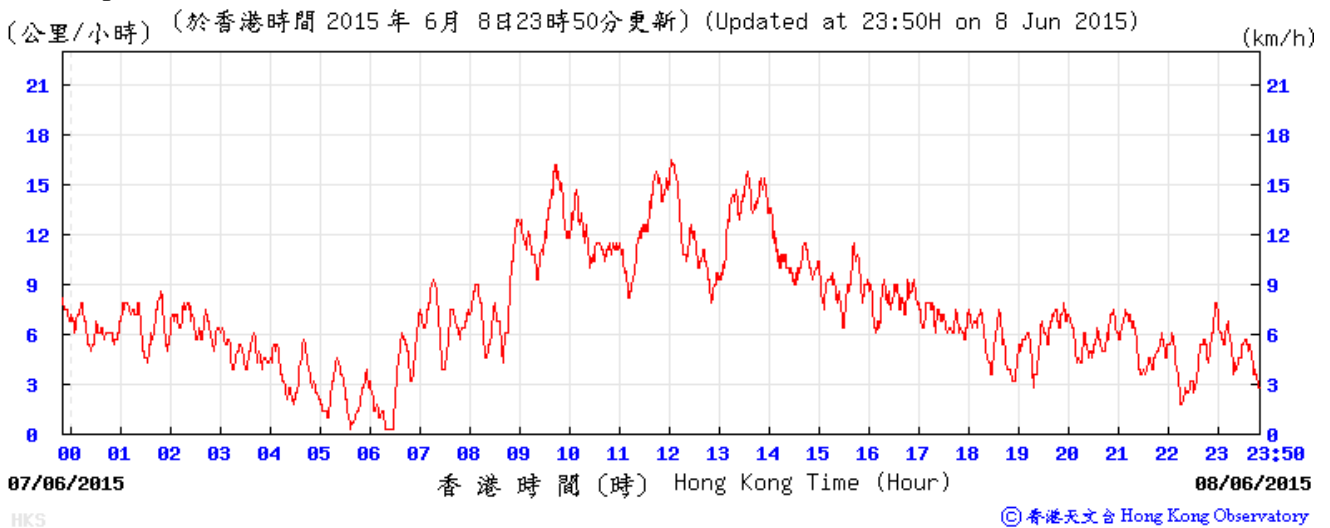
Meteorological Data Recorded from HKO Station (8 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



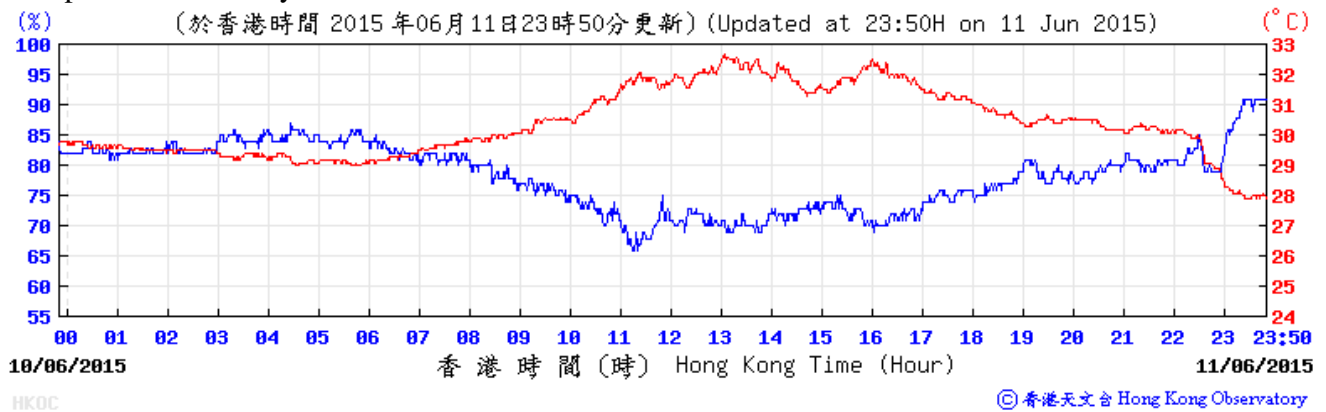
Wind Speed and Direction:



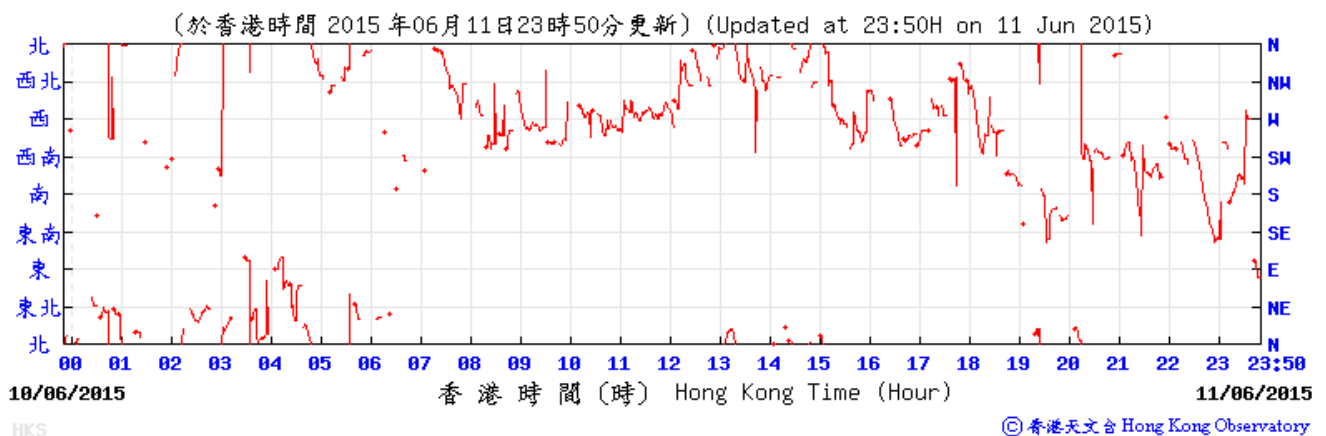
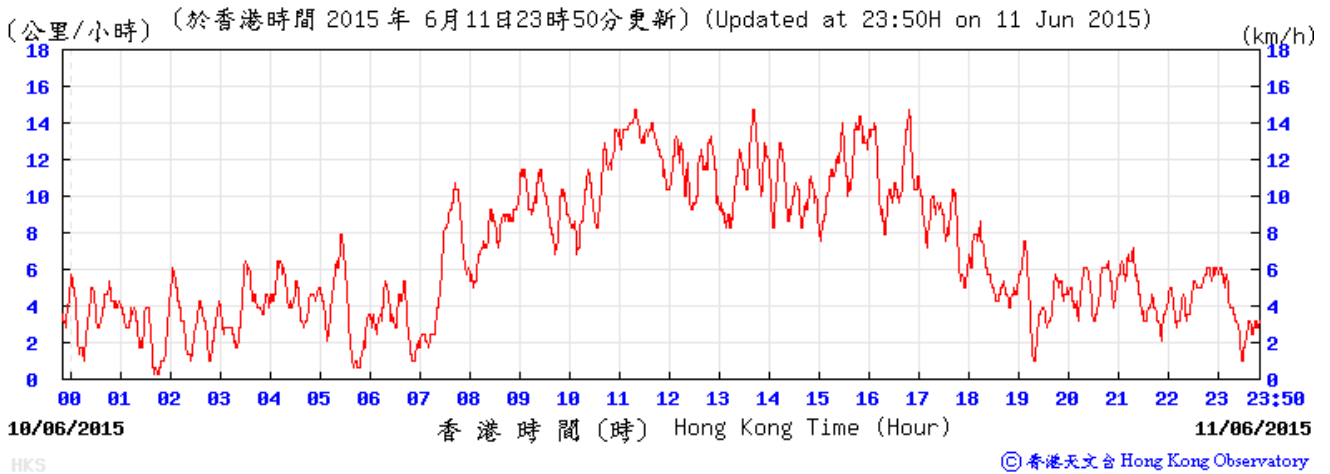
Meteorological Data Recorded from HKO Station (11 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



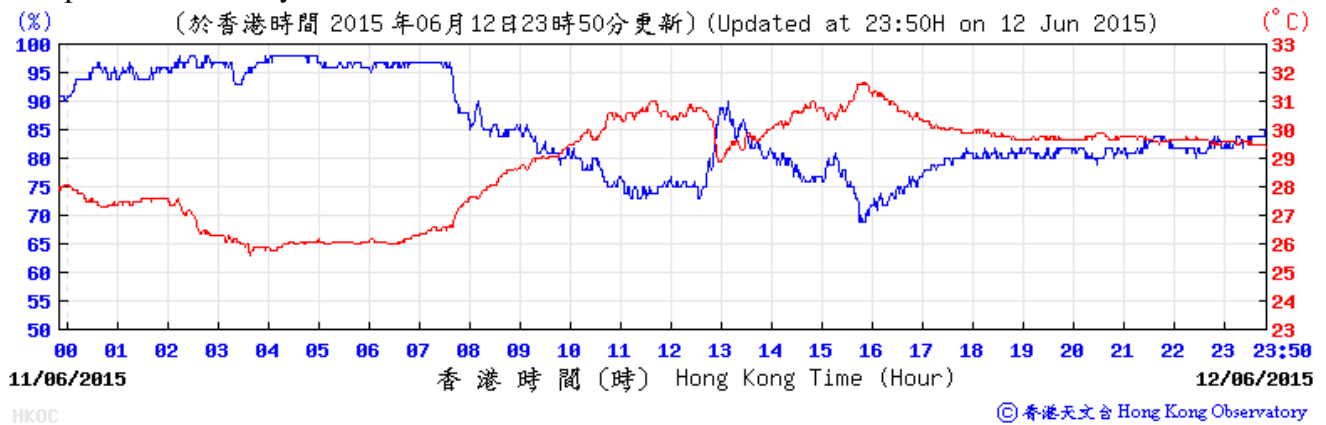
Wind Speed and Direction:



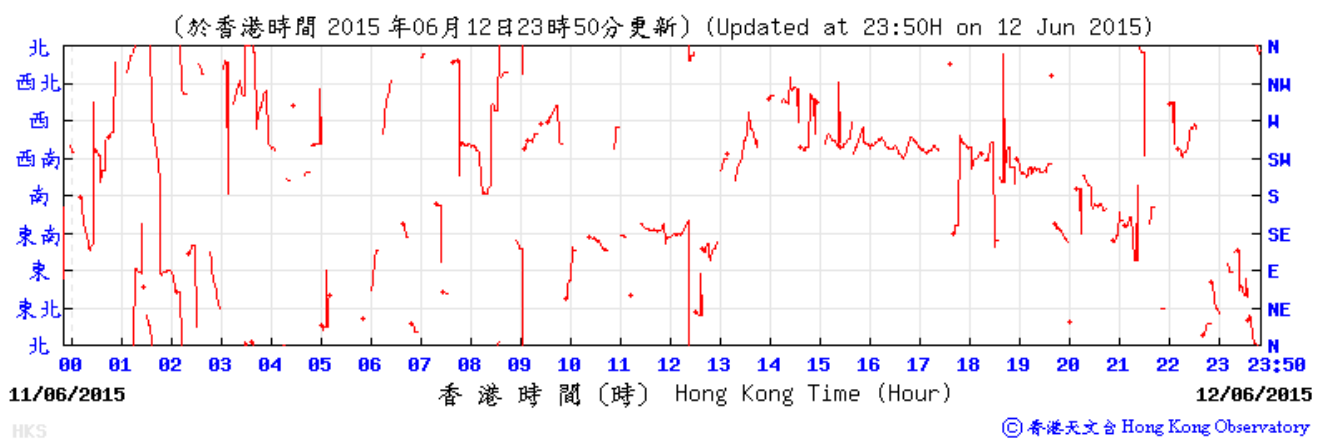
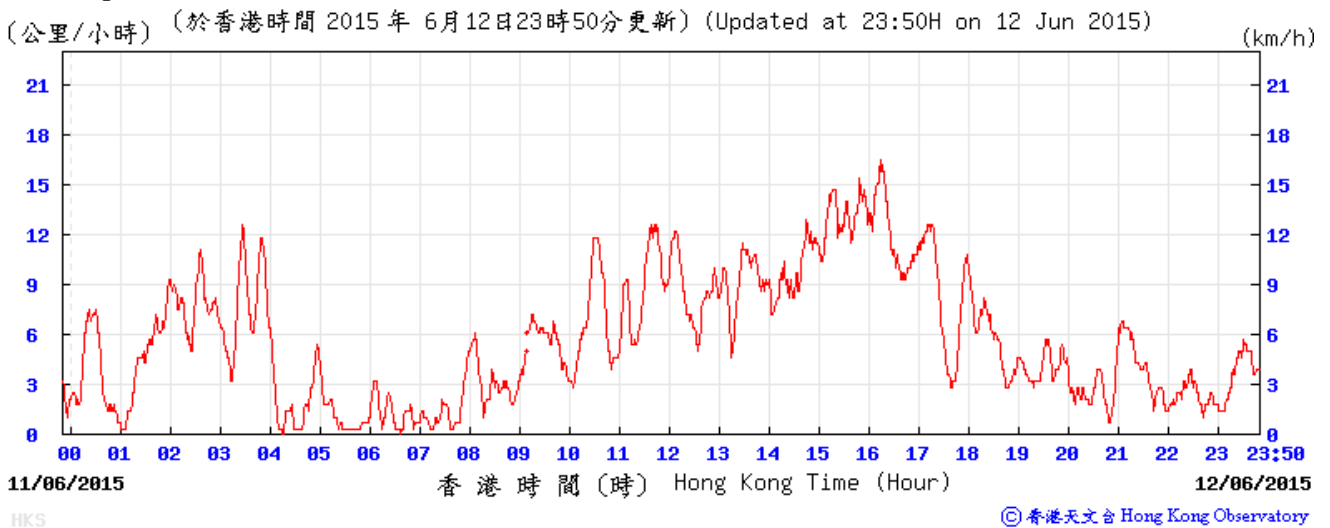
Meteorological Data Recorded from HKO Station (12 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



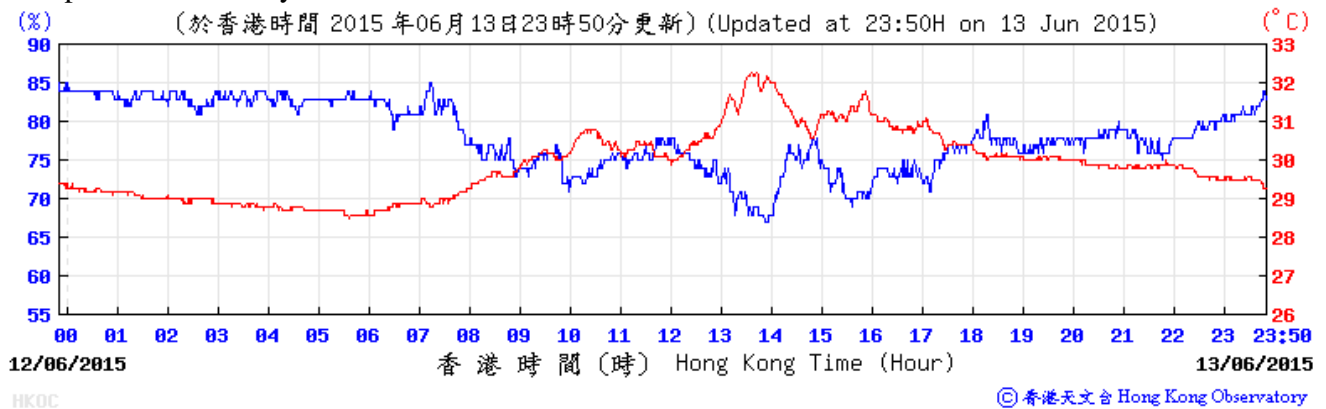
Wind Speed and Direction:



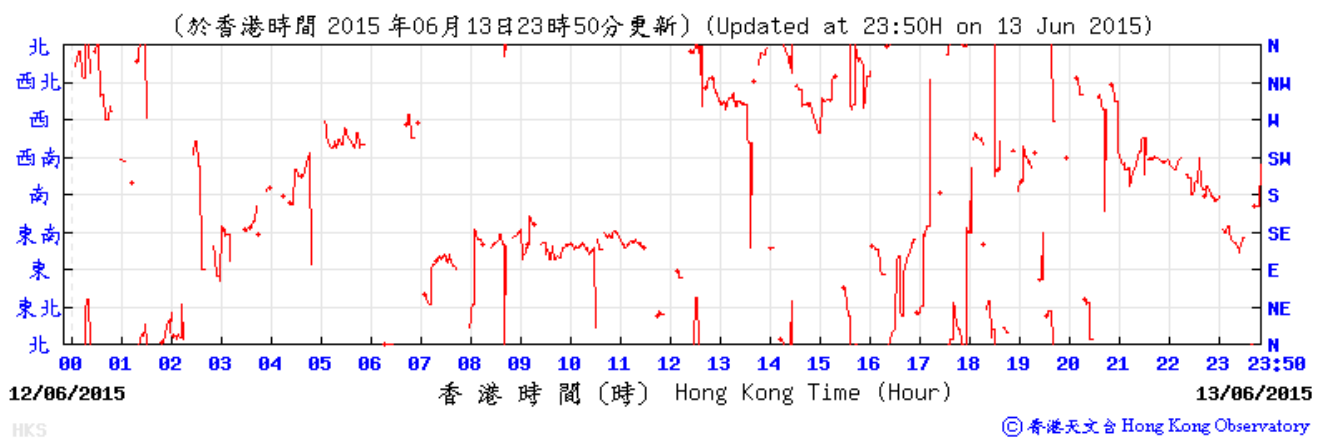
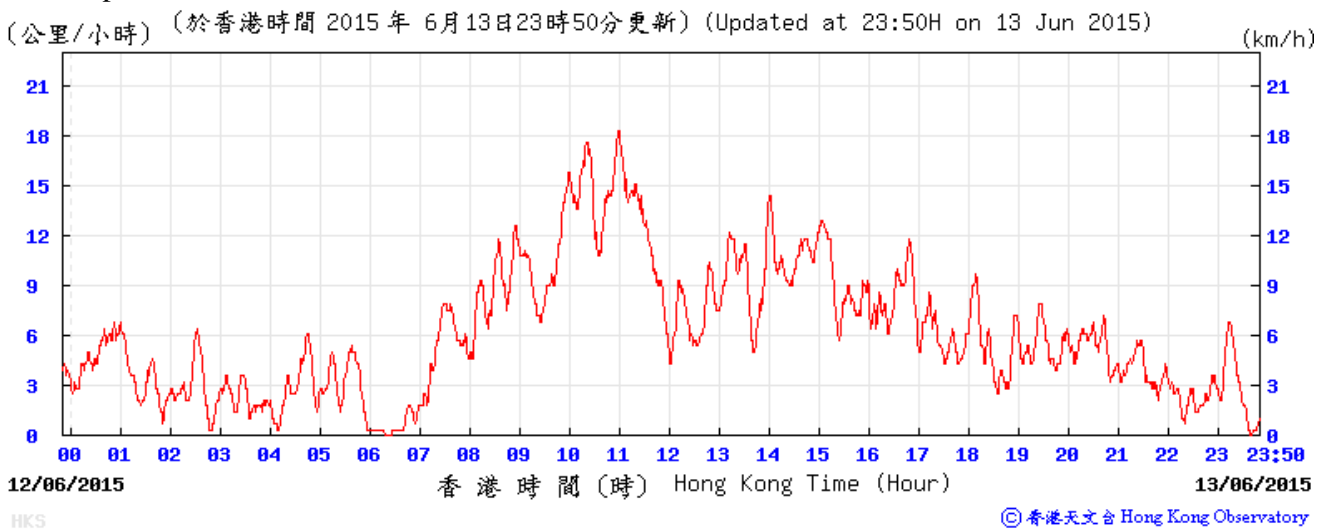
Meteorological Data Recorded from HKO Station (13 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



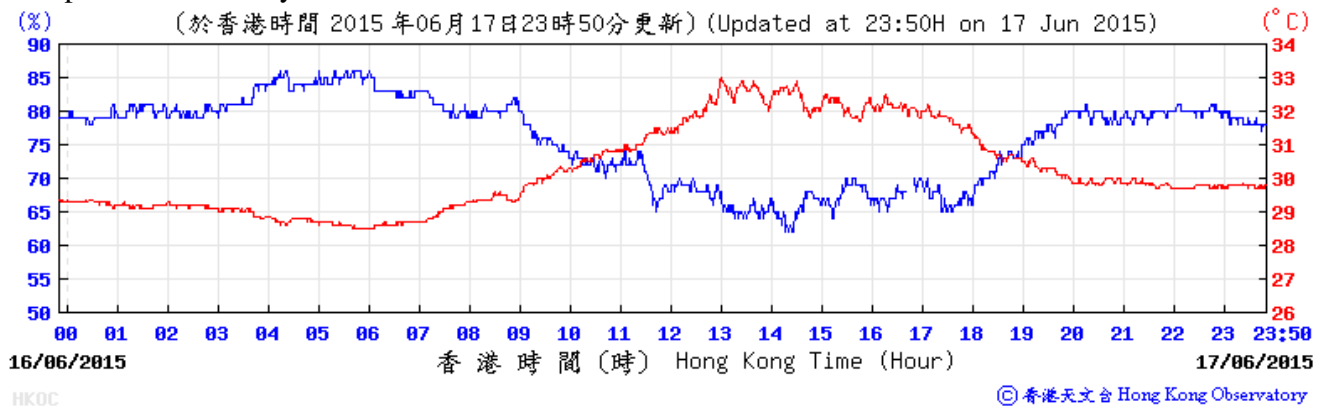
Wind Speed and Direction:



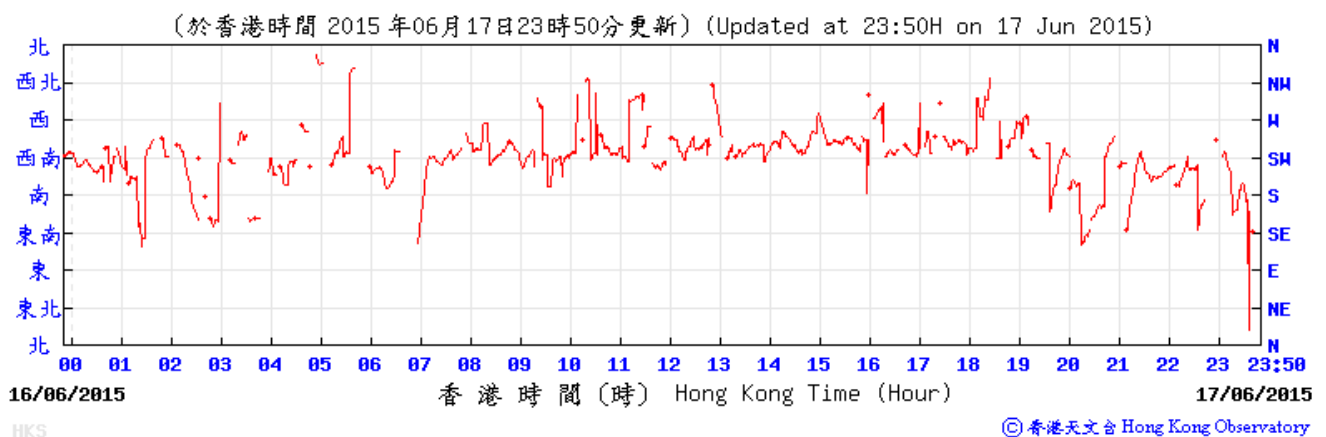
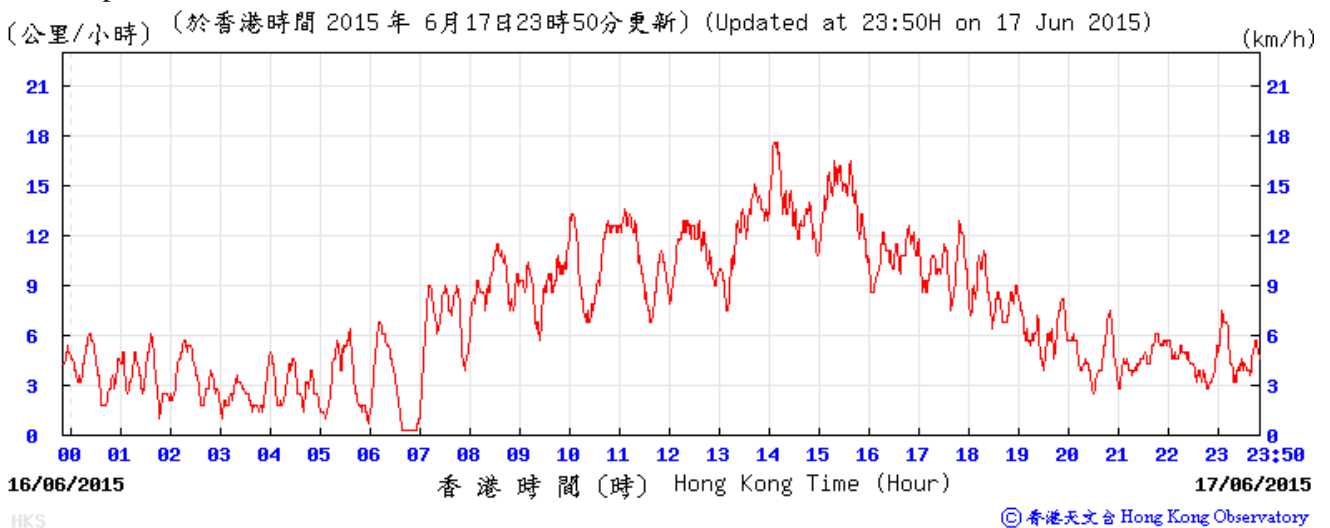
Meteorological Data Recorded from HKO Station (17 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



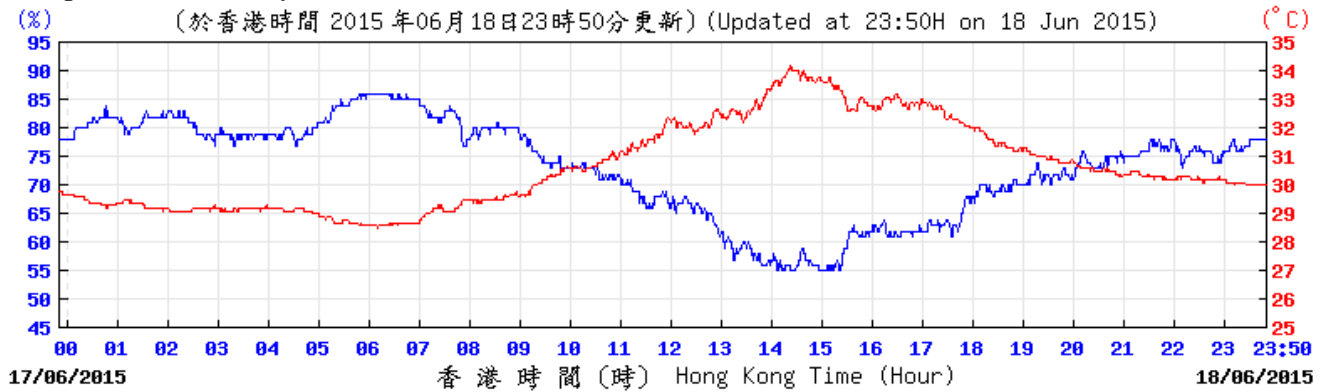
Wind Speed and Direction:



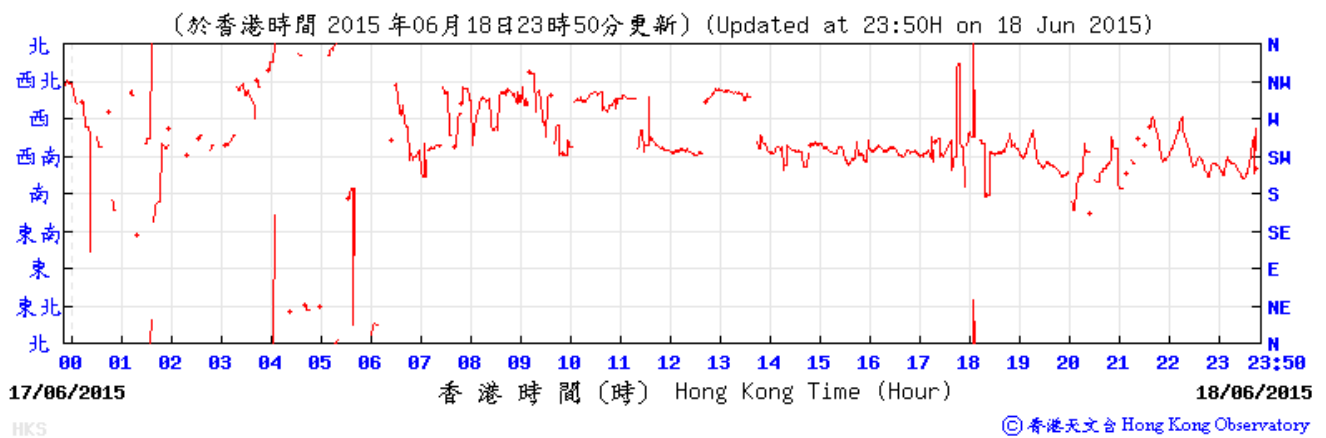
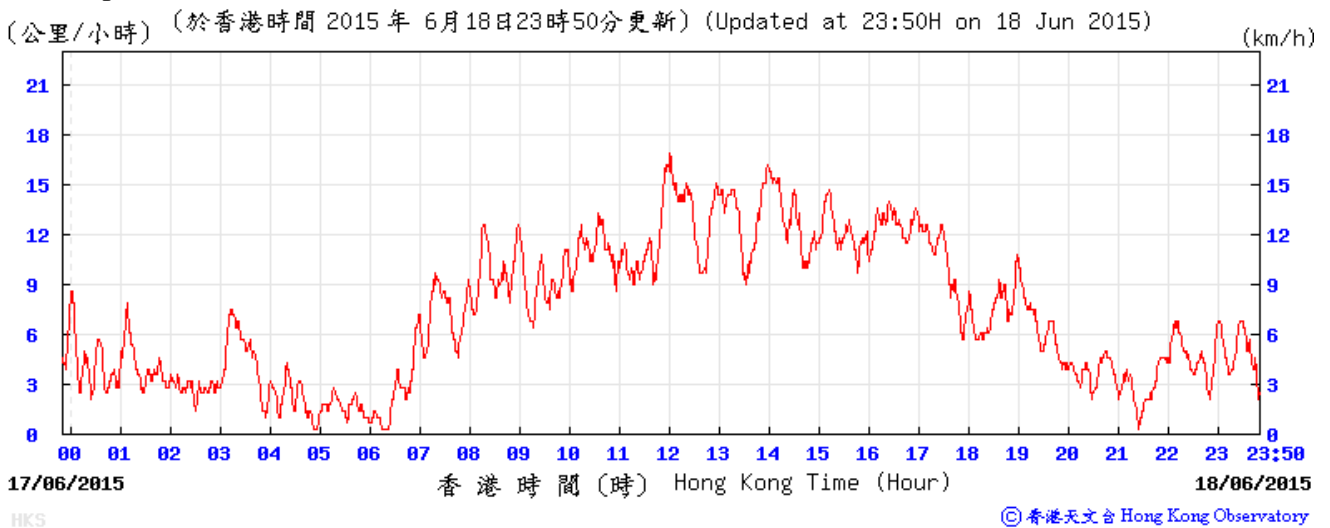
Meteorological Data Recorded from HKO Station (18 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



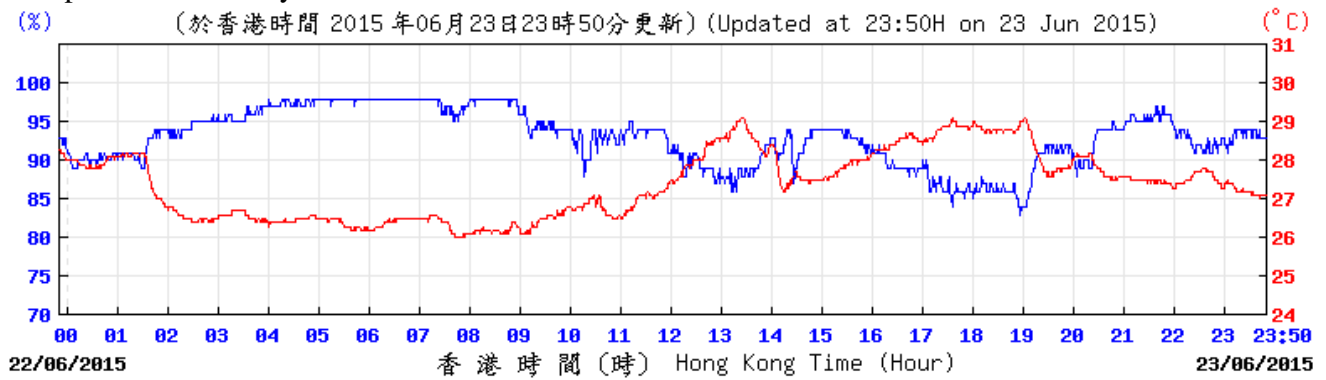
Wind Speed and Direction:



Meteorological Data Recorded from HKO Station (23 June 2015)

(Source: www.hko.gov.hk)

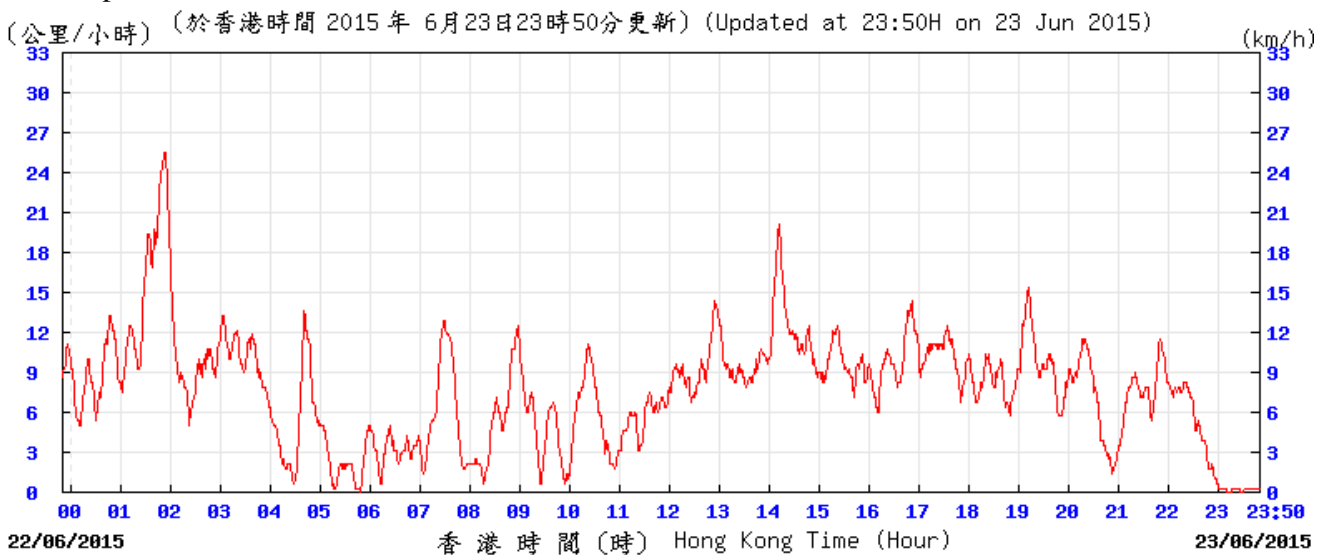
Temperature/Humidity:



HK0C

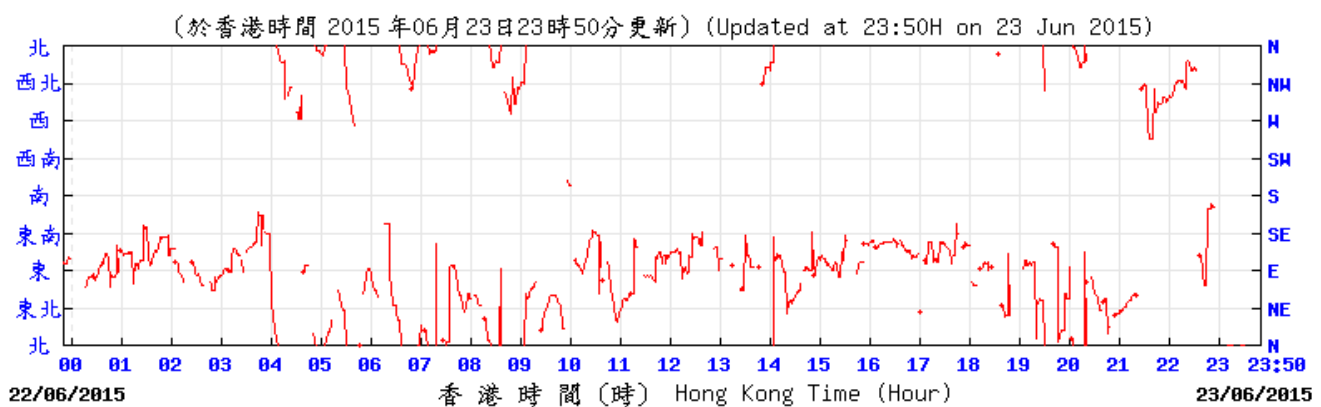
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Wind Speed and Direction:



HKS

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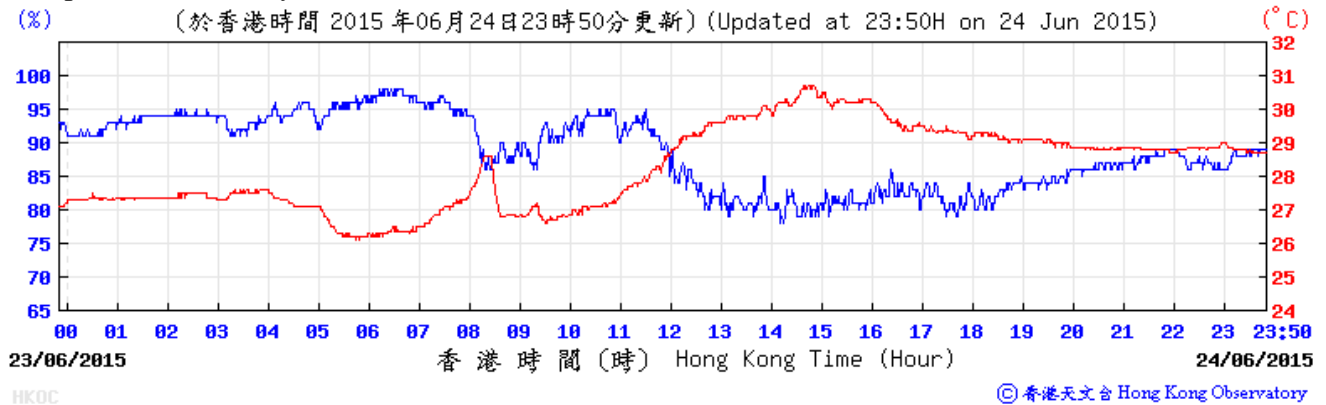
HKS

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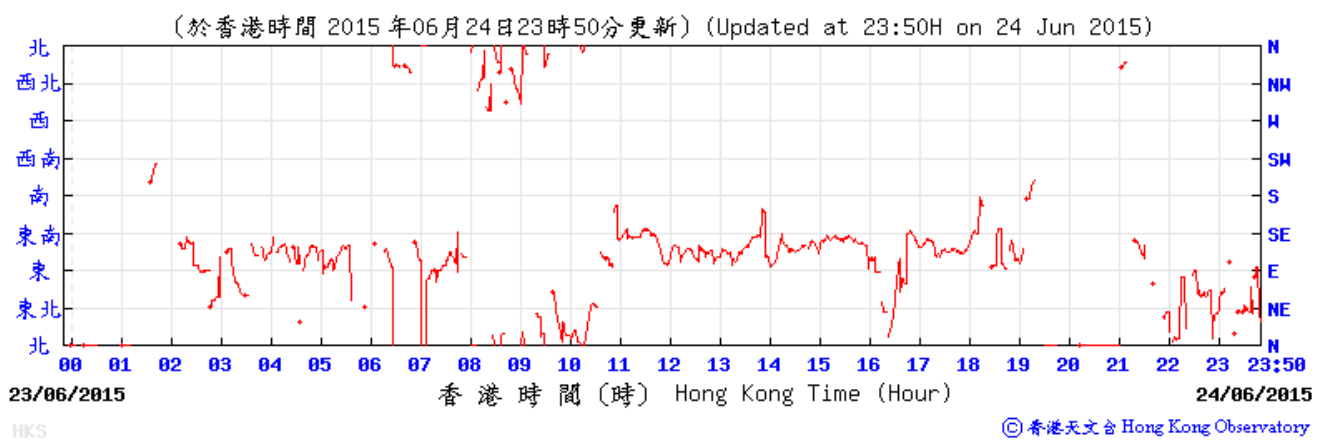
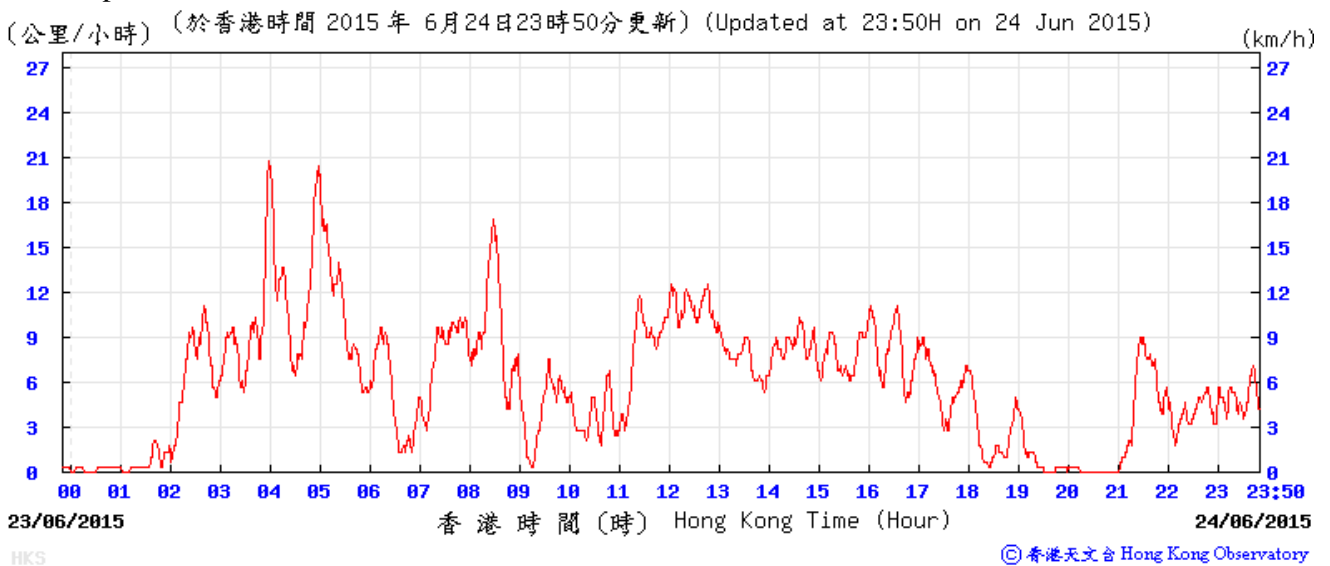
Meteorological Data Recorded from HKO Station (24 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



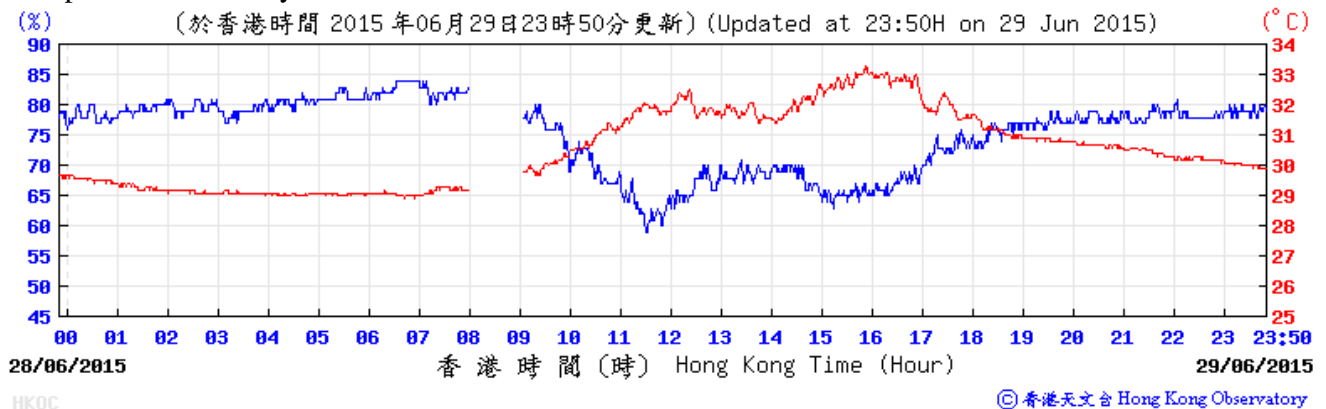
Wind Speed and Direction:



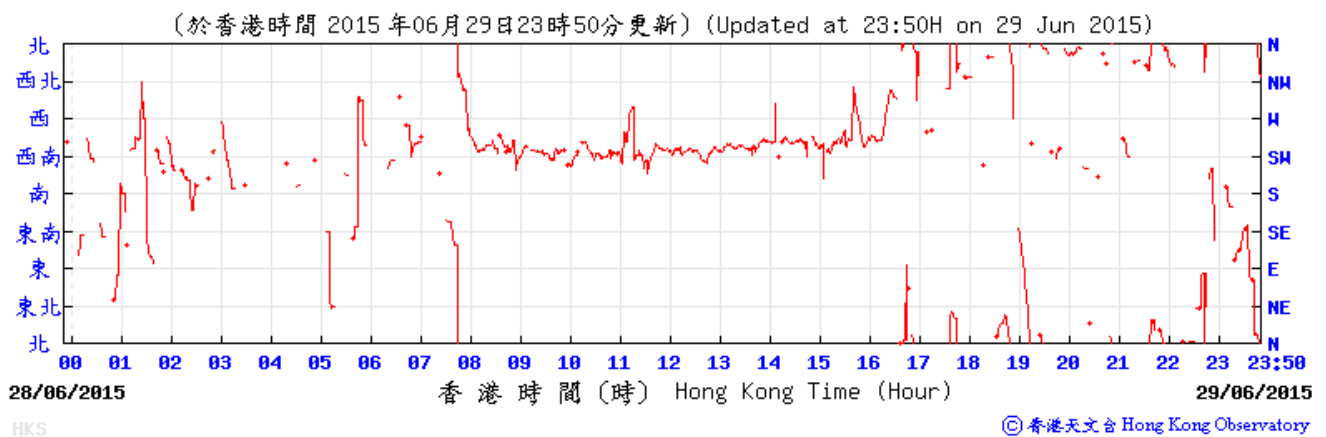
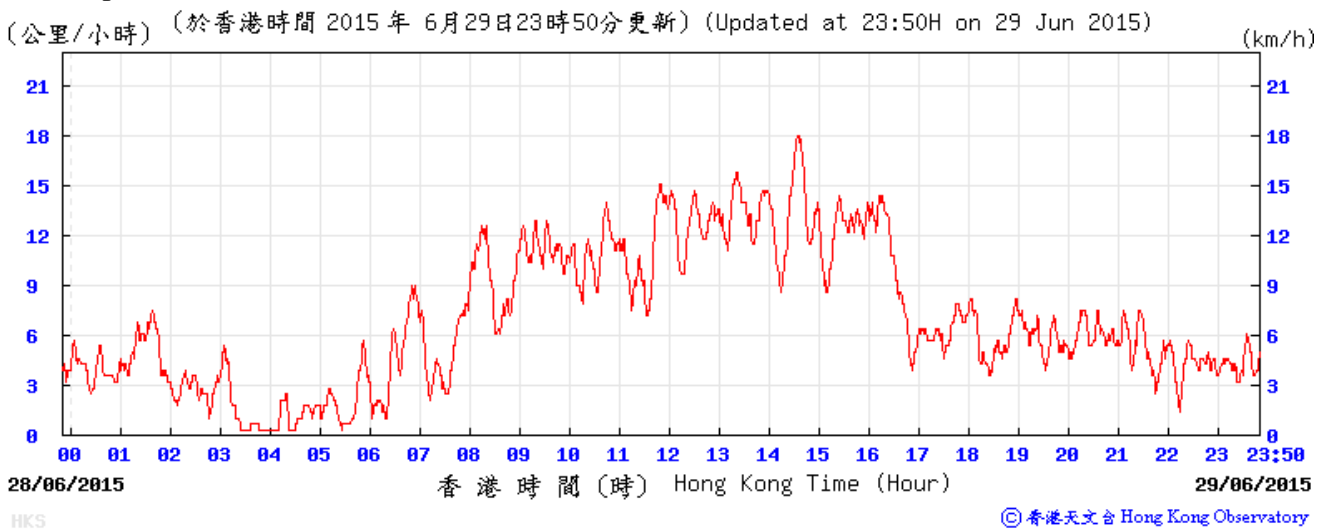
Meteorological Data Recorded from HKO Station (29 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



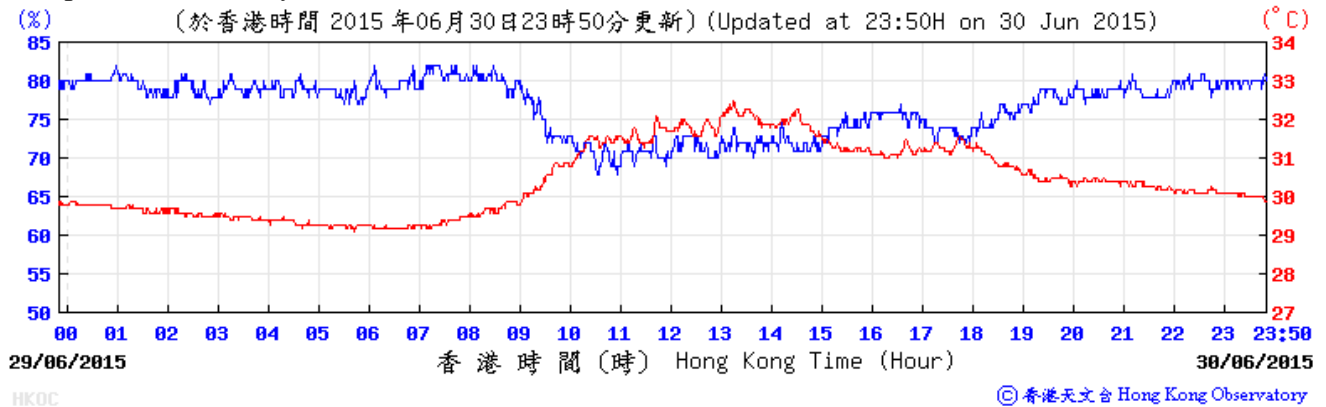
Wind Speed and Direction:



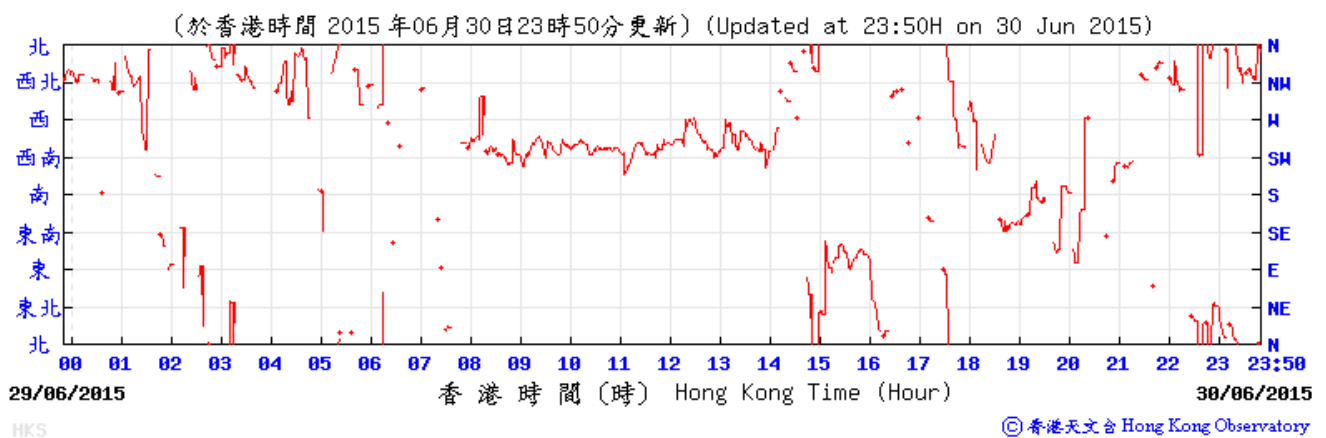
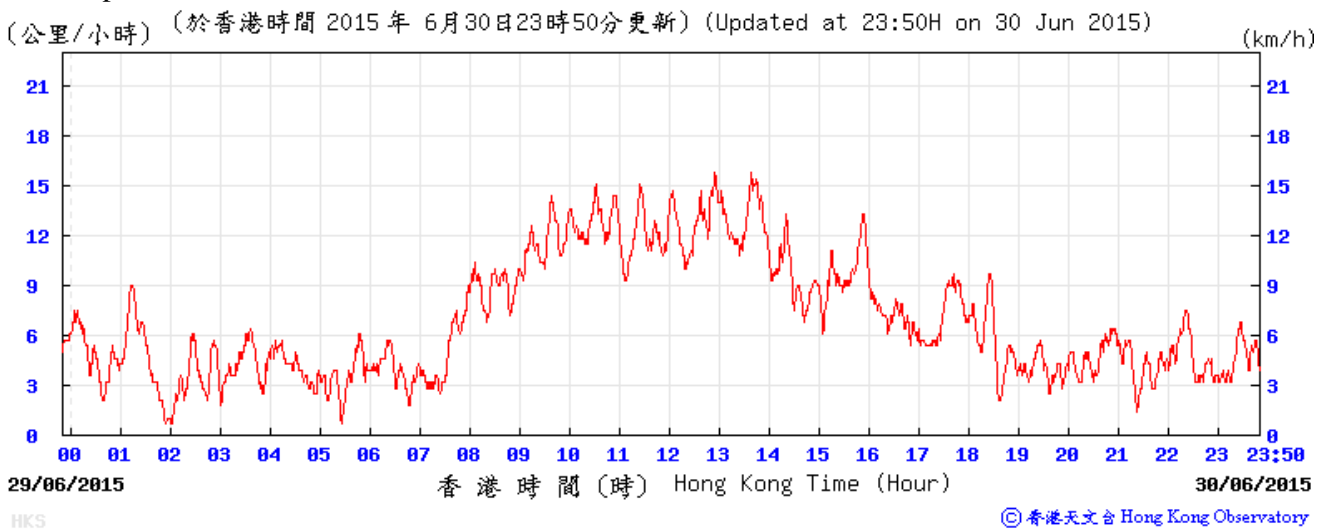
Meteorological Data Recorded from HKO Station (30 June 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



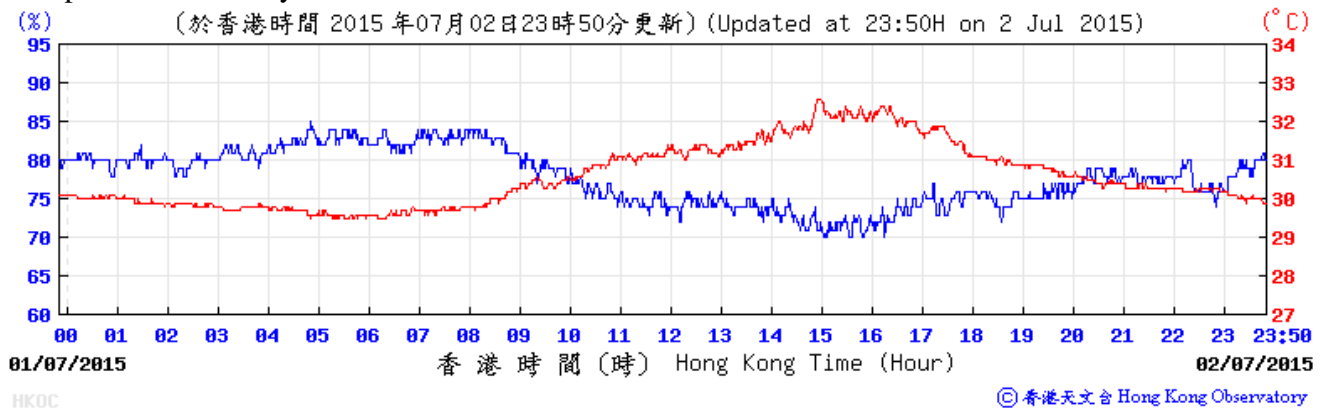
Wind Speed and Direction:



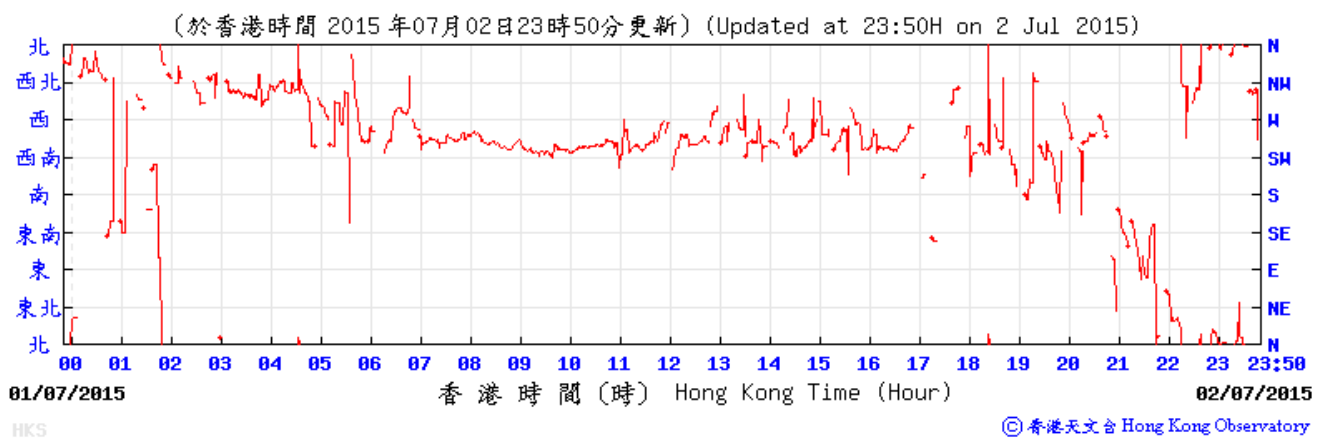
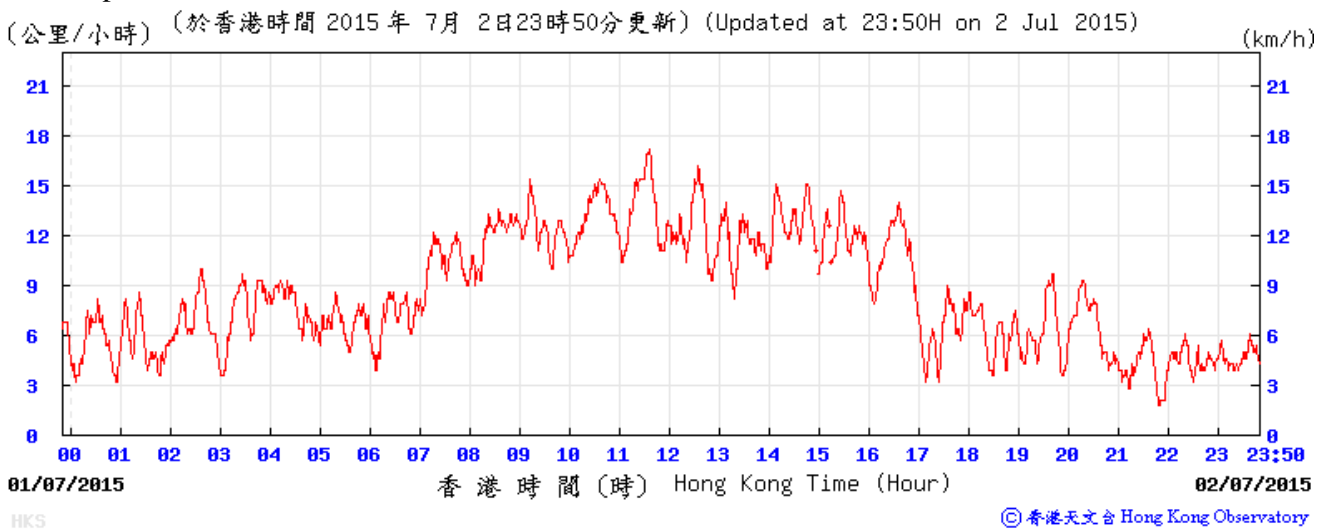
Meteorological Data Recorded from HKO Station (2 July 2015)

(Source: www.hko.gov.hk)

Temperature/Humidity:



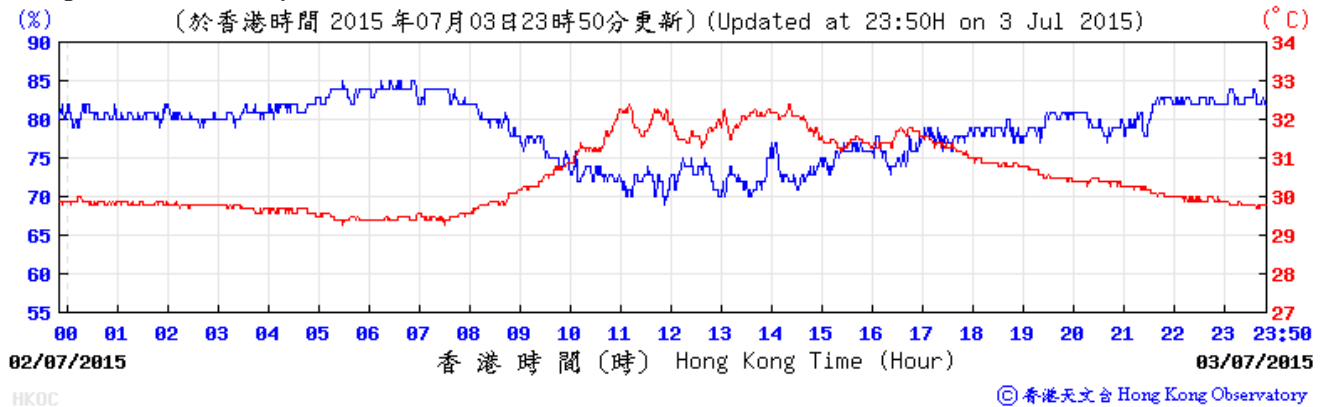
Wind Speed and Direction:



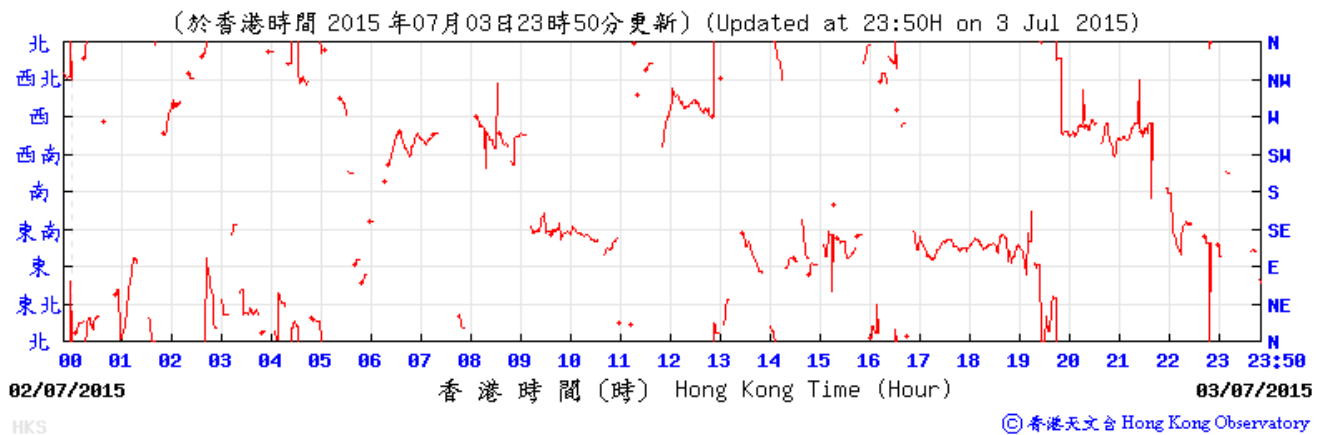
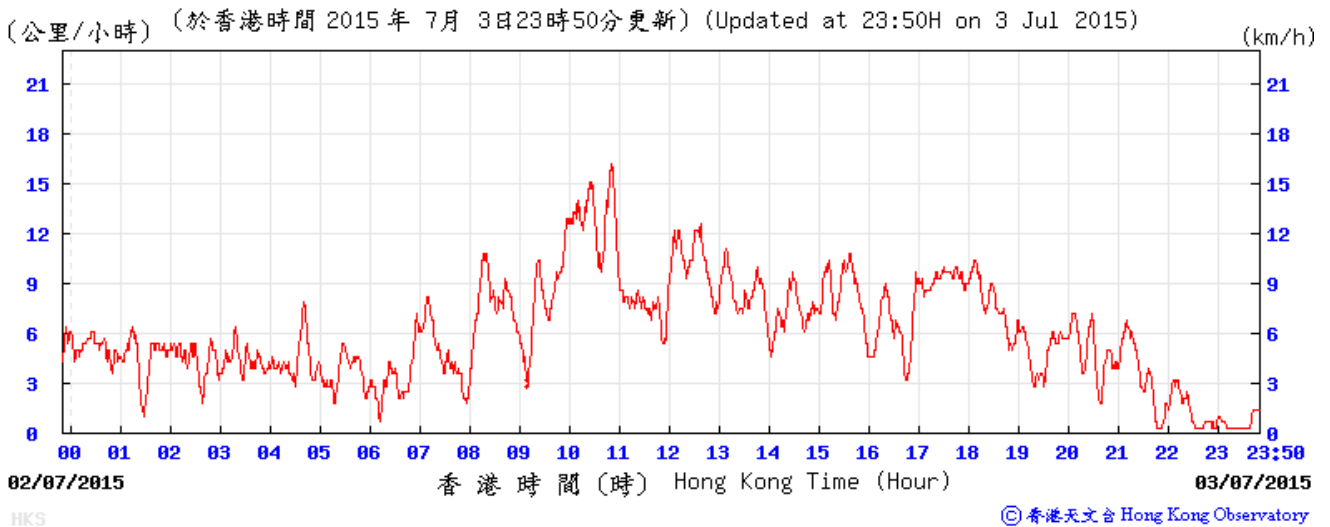
Meteorological Data Recorded from HKO Station (3 July 2015)

(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 ($\mu\text{g}/\text{m}^3$)
2-Jun-15	13:20	Sunny	77.7
2-Jun-15	14:20	Sunny	78.8
2-Jun-15	15:20	Sunny	75.8
8-Jun-15	13:20	Sunny	76.7
8-Jun-15	14:20	Sunny	86.0
8-Jun-15	15:20	Sunny	84.3
12-Jun-15	13:00	Sunny	92.3
12-Jun-15	14:00	Sunny	96.7
12-Jun-15	15:00	Sunny	98.2
18-Jun-15	13:20	Sunny	92.0
18-Jun-15	14:20	Sunny	93.3
18-Jun-15	15:20	Sunny	90.4
24-Jun-15	9:00	Cloudy	70.0
24-Jun-15	10:00	Cloudy	68.3
24-Jun-15	11:00	Cloudy	72.2
30-Jun-15	9:00	Sunny	66.8
30-Jun-15	10:00	Sunny	63.8
30-Jun-15	11:00	Sunny	68.0
		Average	80.6
		Maximum	98.2
		Minimum	63.8

Location CM_AB1b - Works Site Boundary of Aberdeen PTW			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
2-Jun-15	9:00	Sunny	78.2
2-Jun-15	10:00	Sunny	86.2
2-Jun-15	11:00	Sunny	83.2
8-Jun-15	8:30	Sunny	78.5
8-Jun-15	9:30	Sunny	81.2
8-Jun-15	10:30	Sunny	76.9
12-Jun-15	8:43	Sunny	74.6
12-Jun-15	9:43	Sunny	79.1
12-Jun-15	10:43	Sunny	81.3
18-Jun-15	9:00	Sunny	86.5
18-Jun-15	10:00	Sunny	87.7
18-Jun-15	11:00	Sunny	92.3
24-Jun-15	9:00	Cloudy	85.8
24-Jun-15	10:00	Cloudy	87.4
24-Jun-15	11:00	Cloudy	89.3
30-Jun-15	9:35	Sunny	92.2
30-Jun-15	10:35	Sunny	79.1
30-Jun-15	11:35	Sunny	82.8
		Average	83.5
		Maximum	92.3
		Minimum	74.6

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-Jun-15	9:00	Cloudy	82.4
2-Jun-15	10:00	Cloudy	74.2
2-Jun-15	11:00	Cloudy	81.7
8-Jun-15	9:00	Sunny	69.0
8-Jun-15	10:00	Sunny	76.7
8-Jun-15	11:00	Sunny	73.4
12-Jun-15	13:10	Sunny	65.0
12-Jun-15	14:10	Sunny	59.8
12-Jun-15	15:10	Sunny	59.0
18-Jun-15	13:30	Sunny	92.0
18-Jun-15	14:30	Sunny	85.0
18-Jun-15	15:30	Sunny	88.5
24-Jun-15	14:00	Cloudy	111.8
24-Jun-15	15:00	Cloudy	113.0
24-Jun-15	16:00	Cloudy	108.9
30-Jun-15	14:17	Sunny	66.8
30-Jun-15	15:17	Sunny	74.8
30-Jun-15	16:17	Sunny	81.0
		Average	81.3
		Maximum	113.0
		Minimum	59.0

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				
1-Jun-15	09:00	Cloudy	302.1	3.3138	3.3636	0.0498	2563.8	2587.8	24.0	1.21	1.21	1.21	1745.2	28.5	150405/035
5-Jun-15	09:00	Sunny	304.8	3.2347	3.2768	0.0421	2587.8	2611.8	24.0	1.21	1.21	1.21	1737.3	24.2	150501/097
11-Jun-15	09:00	Sunny	302.8	3.2573	3.3024	0.0451	2611.8	2635.8	24.0	1.21	1.21	1.21	1744.1	25.9	150502/059
17-Jun-15	14:00	Sunny	305.3	3.2488	3.3263	0.0775	2635.8	2659.8	24.0	1.20	1.20	1.20	1734.0	44.7	150503/027
23-Jun-15	09:00	Sunny	302.5	3.3235	3.3806	0.0571	2659.8	2683.8	24.0	1.21	1.21	1.21	1747.1	32.7	150504/077
29-Jun-15	09:00	Sunny	304.2	3.3047	3.3545	0.0498	2683.8	2707.8	24.0	1.21	1.21	1.21	1746.2	28.5	150505/013
													Min	24.2	
													Max	44.7	
													Average	30.8	

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				
1-Jun-15	09:00	Cloudy	302.8	3.2679	3.3602	0.0923	3827.1	3851.1	24.0	1.21	1.21	1.21	1747.1	52.8	150405/037
5-Jun-15	09:00	Sunny	304.3	3.2449	3.3555	0.1106	3851.1	3875.1	24.0	1.21	1.21	1.21	1741.1	63.5	150501/099
12-Jun-15	16:00	Sunny	305.5	3.2284	3.2843	0.0559	3875.1	3899.1	24.0	1.21	1.21	1.21	1737.5	32.2	150502/042
17-Jun-15	09:00	Sunny	303.5	3.2709	3.3906	0.1197	3899.1	3923.1	24.0	1.21	1.21	1.21	1743.5	68.7	150502/051
23-Jun-15	09:00	Sunny	302.4	3.2916	3.3816	0.0900	3923.1	3947.1	24.0	1.21	1.21	1.21	1744.7	51.6	150504/075
2-Jul-15	16:30	Sunny	306.7	3.2794	3.3869	0.1075	3947.4	3971.4	24.0	1.20	1.20	1.20	1729.9	62.1	150505/071
													Min	32.2	
													Max	68.7	
													Average	55.2	

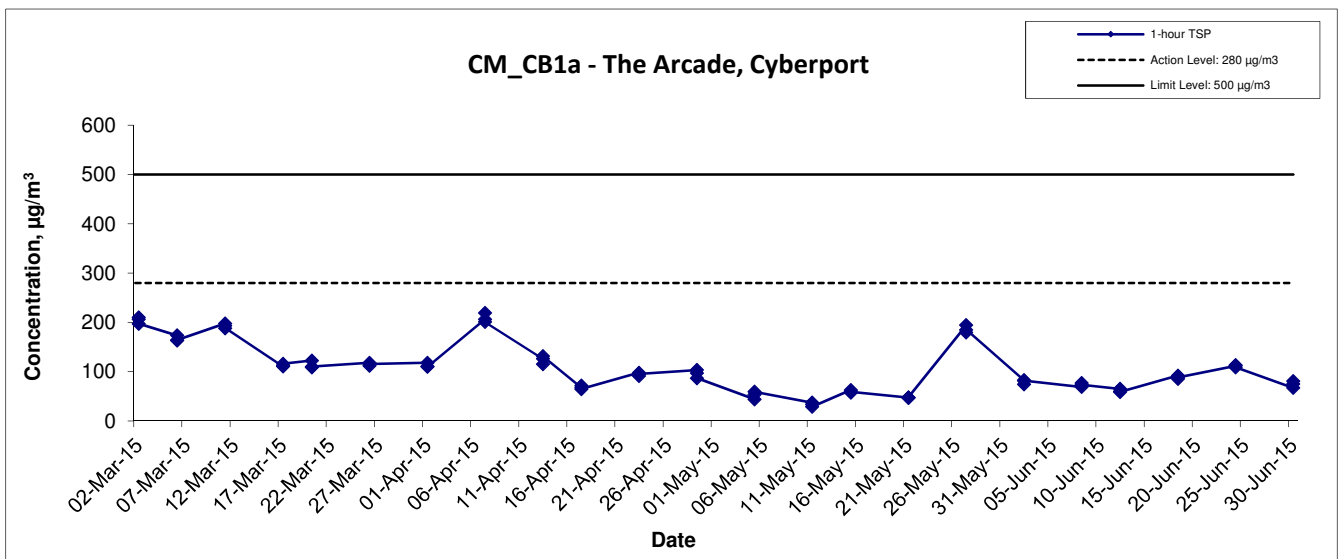
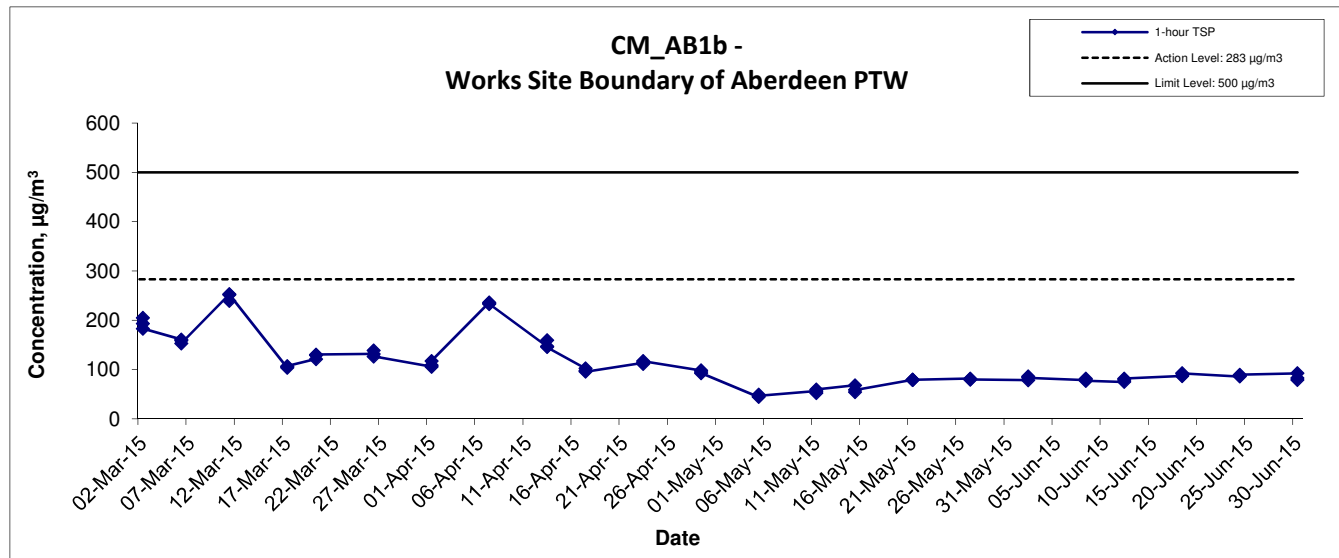
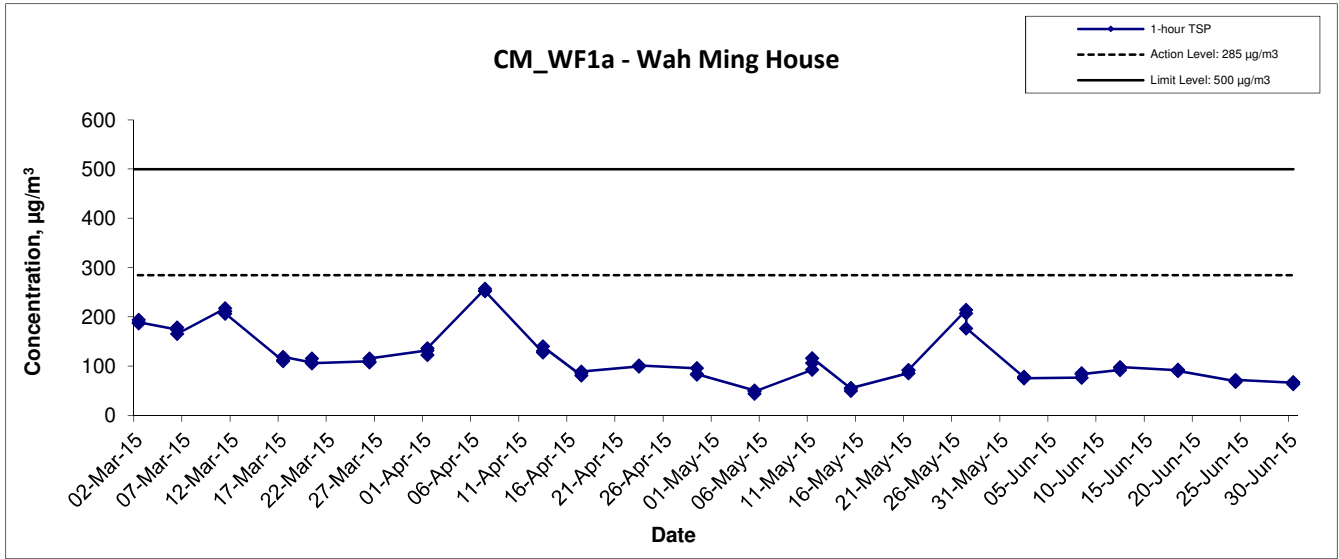
Location CM_CB1a - The Arcade, Cyberport

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				
1-Jun-15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5-Jun-15	09:00	Sunny	304.7	3.2533	3.3302	0.0769	1969.9	1993.9	24.0	1.22	1.22	1.22	1757.3	43.8	150502/035
11-Jun-15	09:00	Sunny	302.7	3.2260	3.2862	0.0602	8199.2	8223.2	24.0	1.23	1.23	1.23	1765.3	34.1	150502/001
17-Jun-15	09:00	Sunny	303.8	3.2462	3.2989	0.0527	8223.2	8247.2	24.0	1.22	1.22	1.22	1759.6	30.0	150502/041
23-Jun-15	09:00	Sunny	302.2	3.2662	3.3593	0.0931	8247.2	8271.2	24.0	1.22	1.22	1.22	1762.1	52.8	150502/046
29-Jun-15	09:00	Sunny	304.6	3.3032	3.3571	0.0539	8271.2	8295.2	24.0	1.22	1.22	1.22	1759.4	30.6	150505/012
													Min	30.0	
													Max	52.8	
													Average	38.3	

Remarks:

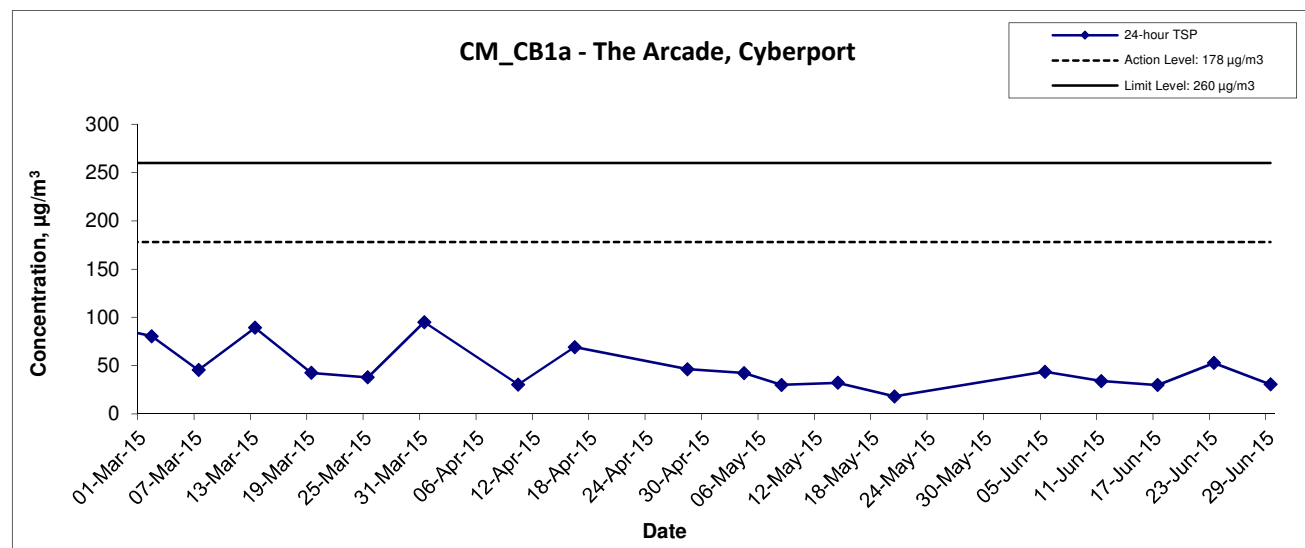
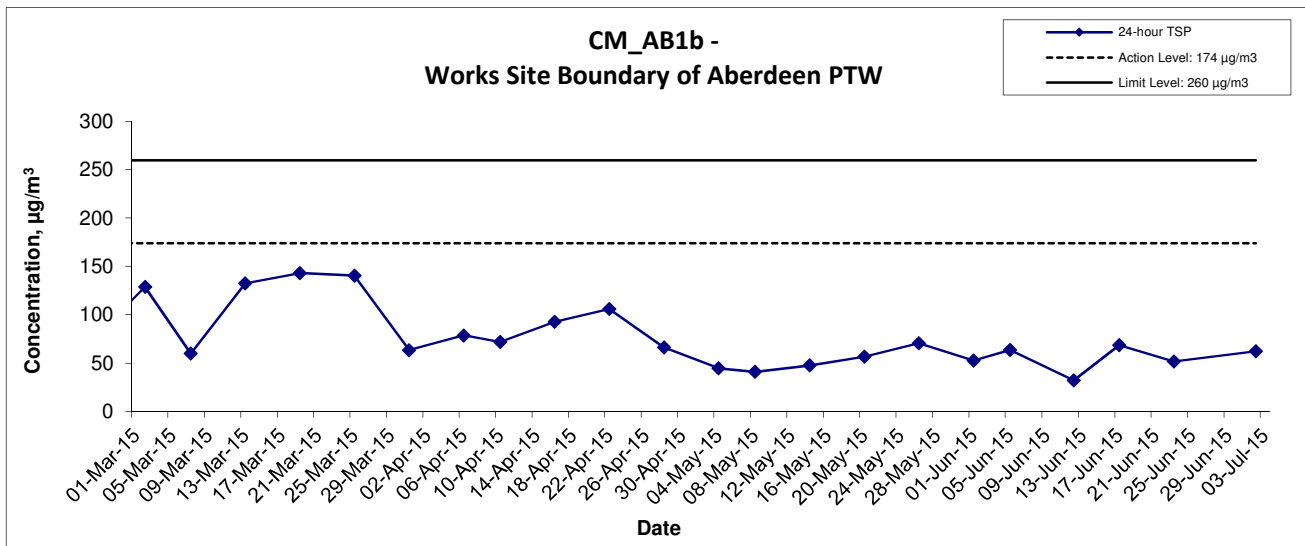
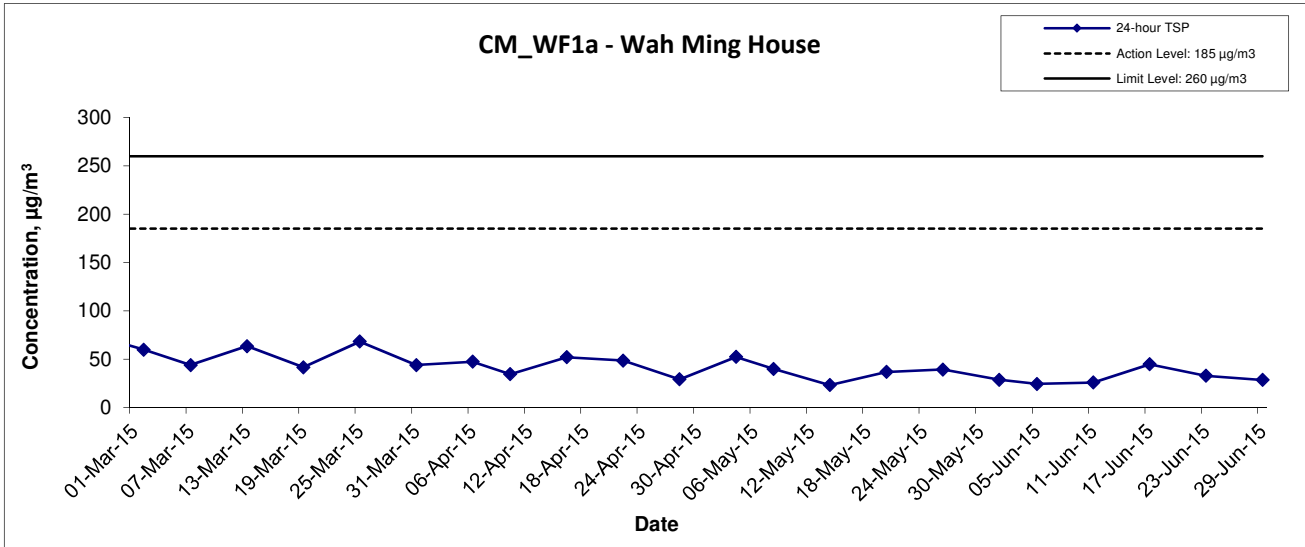
- 24-hour TSP value recorded on 1 June 2015 was found invalid due to the interruption of power supply of High Volume Sampler at CM_CB1a.
- 24-hour TSP monitoring at CM_AB1b was rescheduled on 12 June 2015 due to the interruption of power supply of High Volume Sampler at CM_AB1b on 11 June 2015.
- 24-hour TSP monitoring at CM_AB1b was rescheduled on 2 July 2015 due to the interruption of power supply of High Volume Sampler at CM_AB1b on 29 June 2015.

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 Jun 15	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 Jun 15	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}
2-Jun-15	14:50	Sunny	62.1	64.3	58.3	57.3	60.4
8-Jun-15	9:25	Sunny	60.3	62.7	54.8		57.3
18-Jun-15	11:30	Sunny	51.8	53.7	45.4		51.8 Measured ≤ Baseline
24-Jun-15	13:00	Cloudy	60.9	62.3	57.8		58.4
30-Jun-15	11:20	Sunny	57.4	59.8	53.4		41.0

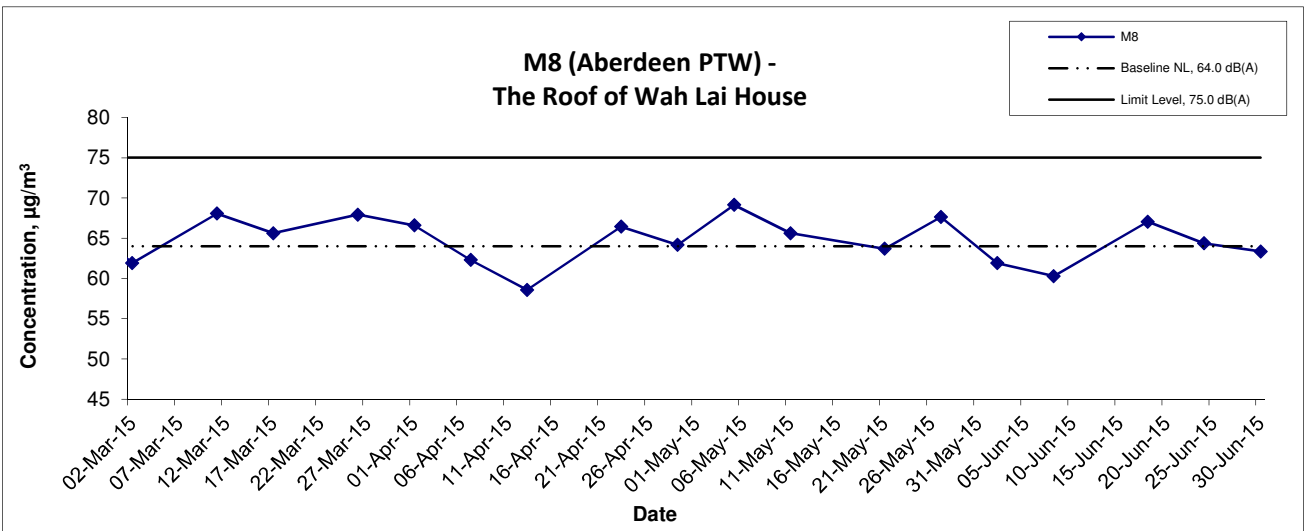
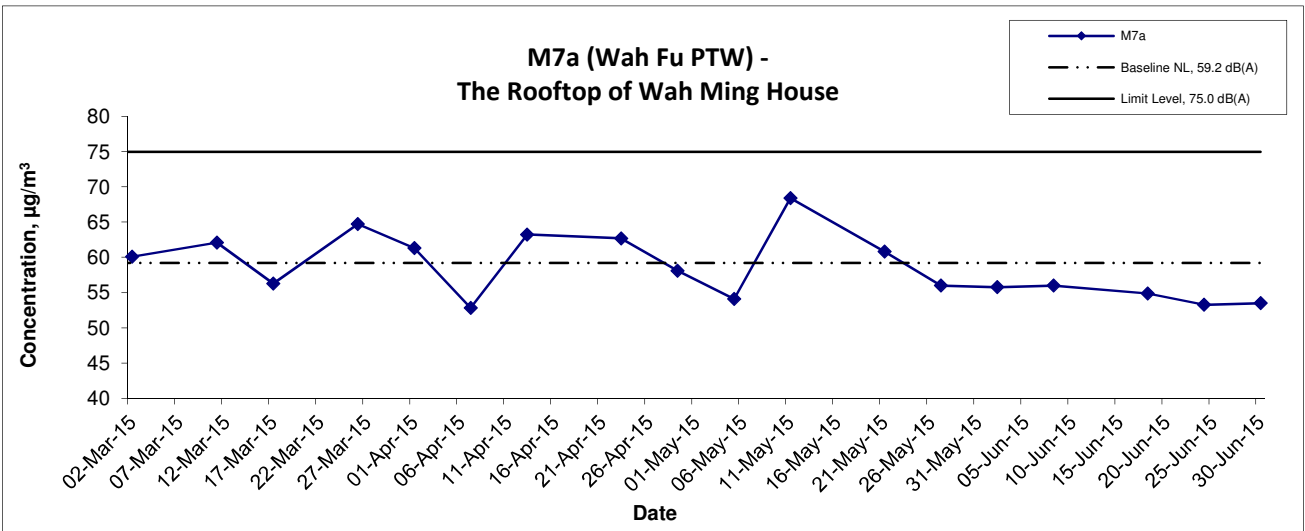
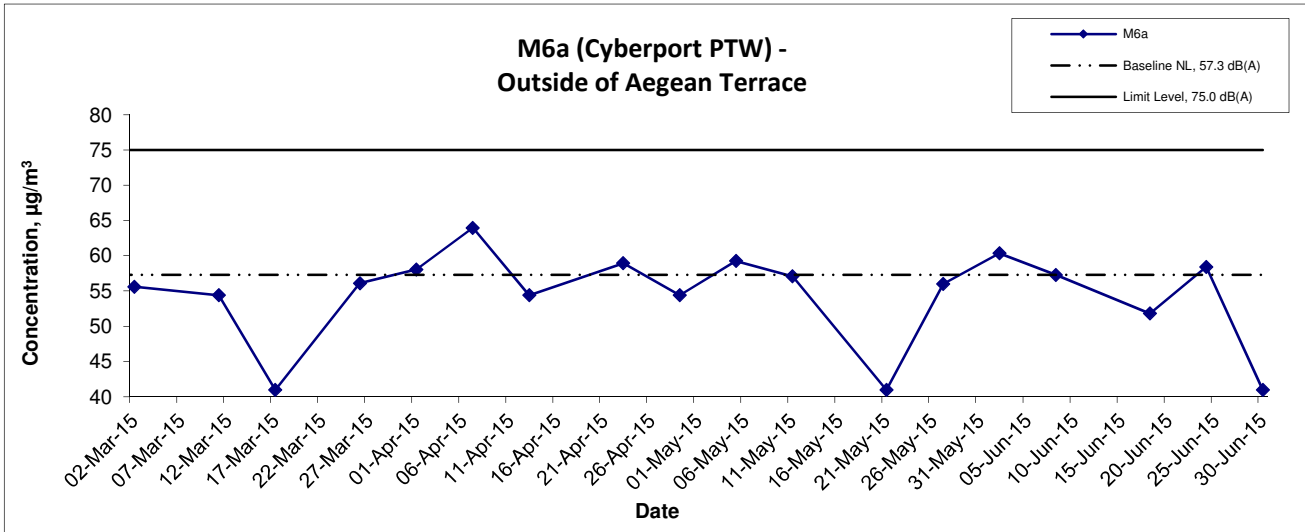
Location M7a (Wah Fu PTW) The rooftop of Wah Ming House							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
2-Jun-15	13:15	Sunny	55.8	58.6	51.3	59.2	55.8 Measured ≤ Baseline
8-Jun-15	13:25	Sunny	56.0	57.3	52.6		56.0 Measured ≤ Baseline
18-Jun-15	13:25	Sunny	54.9	56.0	52.3		54.9 Measured ≤ Baseline
24-Jun-15	10:15	Cloudy	53.3	54.7	51.9		53.3 Measured ≤ Baseline
30-Jun-15	9:10	Sunny	53.5	55.2	51.1		53.5 Measured ≤ Baseline

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}
2-Jun-15	13:00	Sunny	61.9	64.7	57.4	64.0	61.9 Measured ≤ Baseline
8-Jun-15	14:30	Sunny	60.3	63.7	59.4		60.3 Measured ≤ Baseline
18-Jun-15	9:35	Sunny	68.8	70.4	66.3		67.1
24-Jun-15	11:10	Cloudy	67.2	68.6	64.9		64.4
30-Jun-15	9:00	Sunny	66.7	69.4	63.3		63.4

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}
2-Jun-15	14:00	Sunny	58.8	59.7	53.4	56.5	54.9
8-Jun-15	13:10	Sunny	59.1	63.0	54.9		55.6
18-Jun-15	10:40	Sunny	56.7	58.7	53.4		43.2
24-Jun-15	13:00	Cloudy	56.1	58.6	50.6		56.1 Measured ≤ Baseline
30-Jun-15	10:05	Sunny	58.7	60.4	51.2		54.7

Noise Levels

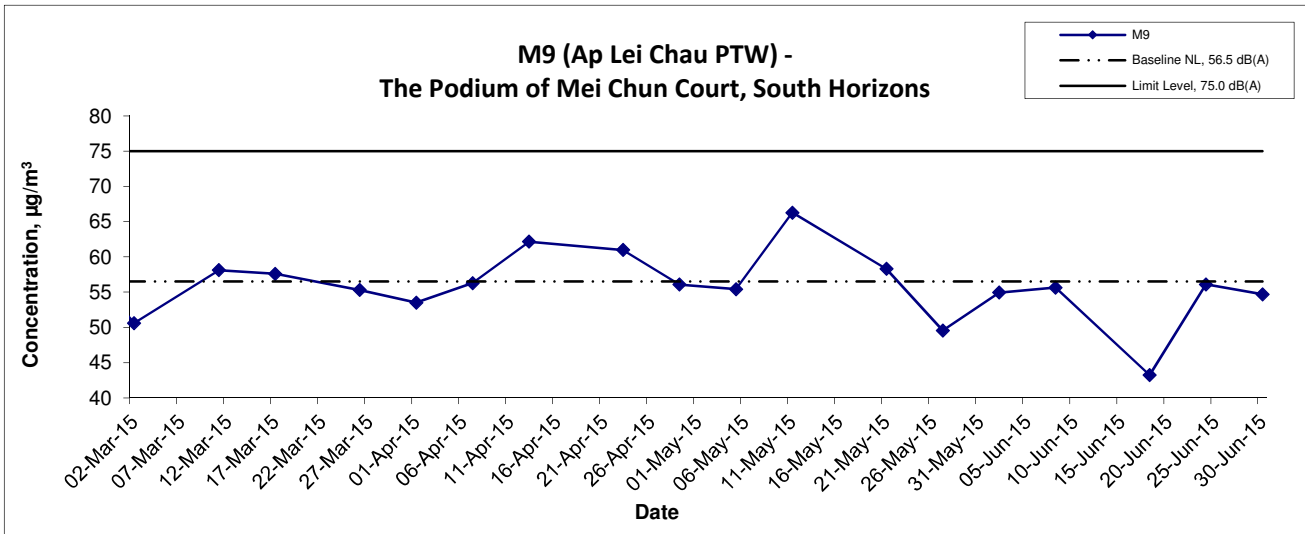
(0700-1900 hrs on Normal Weekdays)



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	Jun 15	Appendix	F	

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	Jun 15	Appendix	F	

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENDIX G – SUMMARY OF EXCEEDANCE

Reporting Month: June 2015

- 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	150605
Date	5 June 2015 (Friday)
Time	09:00 – 10:30

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

Ref. No.	Remarks/Observations	Related Item No.
150605-O01	<p>Part A - Water Quality</p> <ul style="list-style-type: none">The water quality of the sediment tank at Cyberport-PTW and the water quality of the WetSep at Abd-PTW should be fulfilled the requirement of the WPCO's wastewater discharge license before discharging out. The Contractor was reminded to ensure the adequate capacity of the wastewater treatment facility is provided properly.	A 5iii& 5iv
150605-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 broken sand bags and dusty material at ALC-PTW. <p>Part D – Noise</p> <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection.	C 6
150605-R03	<p>Part E –Waste / Chemical Management</p> <ul style="list-style-type: none">The chemical containers should be provided with the drip trays at 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. 150529), outstanding item 150529-O01, 150529-R03 & 150529-R04 are required to be followed up and remarked as 150605-O01, 150605-R02 & 150605-R03 which will be reviewed in the next weekly site inspection (Ref. No. 150612). <p>Remark:</p> <ul style="list-style-type: none">N/A	E 7ii

	Name	Signature	Date
Recorded by	Janet Wai		5 June 2015
Checked by	Dr. Priscilla Choy		5 June 2015

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	150612
Date	12 June 2015 (Friday)
Time	09:00 – 11:50

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

Ref. No.	Remarks/Observations	Related Item No.
150612-O01	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> The water quality of the WetSep at Abd-PTW should be fulfilled the requirement of the WPCO's wastewater discharge license before discharging out. The Contractor was reminded to clear the stagnant water regularly. <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"> No environmental deficiency was identified during the site inspection. <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. 150605), outstanding item 150605-O01, is required to be followed up and remarked as 150612-O01 which will be reviewed in the next weekly site inspection (Ref. No. 150619). <p>Remark:</p> <ul style="list-style-type: none"> N/A 	A 5iv

	Name	Signature	Date
Recorded by	Janet Wai		12 June 2015
Checked by	Dr. Priscilla Choy		12 June 2015

Contract No: DC/2009/24

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

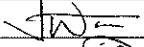
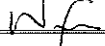
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150619
Date	19 June 2015 (Friday)
Time	09:30 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
150619-001	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> The mud trail was observed at the site entrance of Abd-PTW. The Contractor was reminded to clear the dust and silt regularly and enhanced the wheel washing facility. 	A 13
150619-001	<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"> The mud trail was observed at the site entrance of Abd-PTW. The Contractor was reminded to clear the dust and silt regularly and enhanced the wheel washing facility. <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. 150612), all environmental deficiencies were improved by the Contractor. <p>Remark:</p> <ul style="list-style-type: none"> N/A 	C 3

	Name	Signature	Date
Recorded by	Janet Wai		19 June 2015
Checked by	Dr. Priscilla Choy		19 June 2015

Contract No: DC/2009/24

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

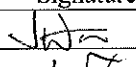

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150626
Date	26 June 2015 (Friday)
Time	09:30 – 11:15

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

Ref. No.	Remarks/Observations	Related Item No.
150626-R01	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> Properly clear the stagnant water and oil stained water on the access road at ALC-PTW. 	A 11
150626-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 broken sand bags at Abd-PTW. <p>Part D – Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	C 6
150626-R01	<p>Part E –Waste / Chemical Management</p> <ul style="list-style-type: none"> Properly clear the stagnant water and oil stained water on the access road at ALC-PTW. 	E 7i
150626-R03	<ul style="list-style-type: none"> The general refuse should be disposed properly at Abd-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. 150619), all environmental deficiencies were improved by the Contractor. <p>Remark:</p> <ul style="list-style-type: none"> N/A 	E 1iii

	Name	Signature	Date
Recorded by	Janet Wai		26 June 2015
Checked by	Dr. Priscilla Choy		26 June 2015

**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 2015 (YEAR)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					
	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	Special Waste
	[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]	[in '000ton]
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
Year2014	4.639730	0.000000	0.000000	0.000000	4.639730	0.000000	0.000000	0.000000	0.000000	0.450000	0.145370	1.832460
JAN	0.921395	0	0	0	0.921395	0	0	0	0	0	0.0112	0.12827
FEB	0.145405	0	0	0	0.145405	0	0	0	0.031	0	0.01901	0.10553
MAR	0.51156	0	0	0	0.51156	0	0	0	0	0	0.01676	0.10203
APR	0.69157	0	0	0	0.69157	0	0	0	0	0	0.02722	0.07945
MAY	0.318355	0	0	0	0.318355	0	0	0	0	0	0.03746	0.08964
JUNE	0.119775	0	0	0	0.119775	0	0	0	0	0	0.0421	0.08198
SUB-TOTAL	2.708060	0.000000	0.000000	0.000000	2.708060	0.000000	0.000000	0.000000	0.031000	0.000000	0.153750	0.586900
JULY	0	0	0	0	0	0	0	0	0	0	0	0
AUG	0	0	0	0	0	0	0	0	0	0	0	0
SEPT	0	0	0	0	0	0	0	0	0	0	0	0
OCT	0	0	0	0	0	0	0	0	0	0	0	0
NOV	0	0	0	0	0	0	0	0	0	0	0	0
DEC	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	12.614735	0.000000	0.000000	0.000000	12.614735	0.000000	17.430000	0.070000	0.101000	0.900000	0.378010	7.058526

Forecast of Total Quantities of C&D materials to be Generated from the Contracts *											
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	Special Waste
[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]	[in '000ton]
19.77	1.544	1.73	0	16.496	0	30	1	1	4	0.967	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

Special waste = 0.6m³ / container

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	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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. 	<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. 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. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of 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.	All construction sites	^
	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.	All construction sites	^
	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: June 2015

Cumulative complaints received:

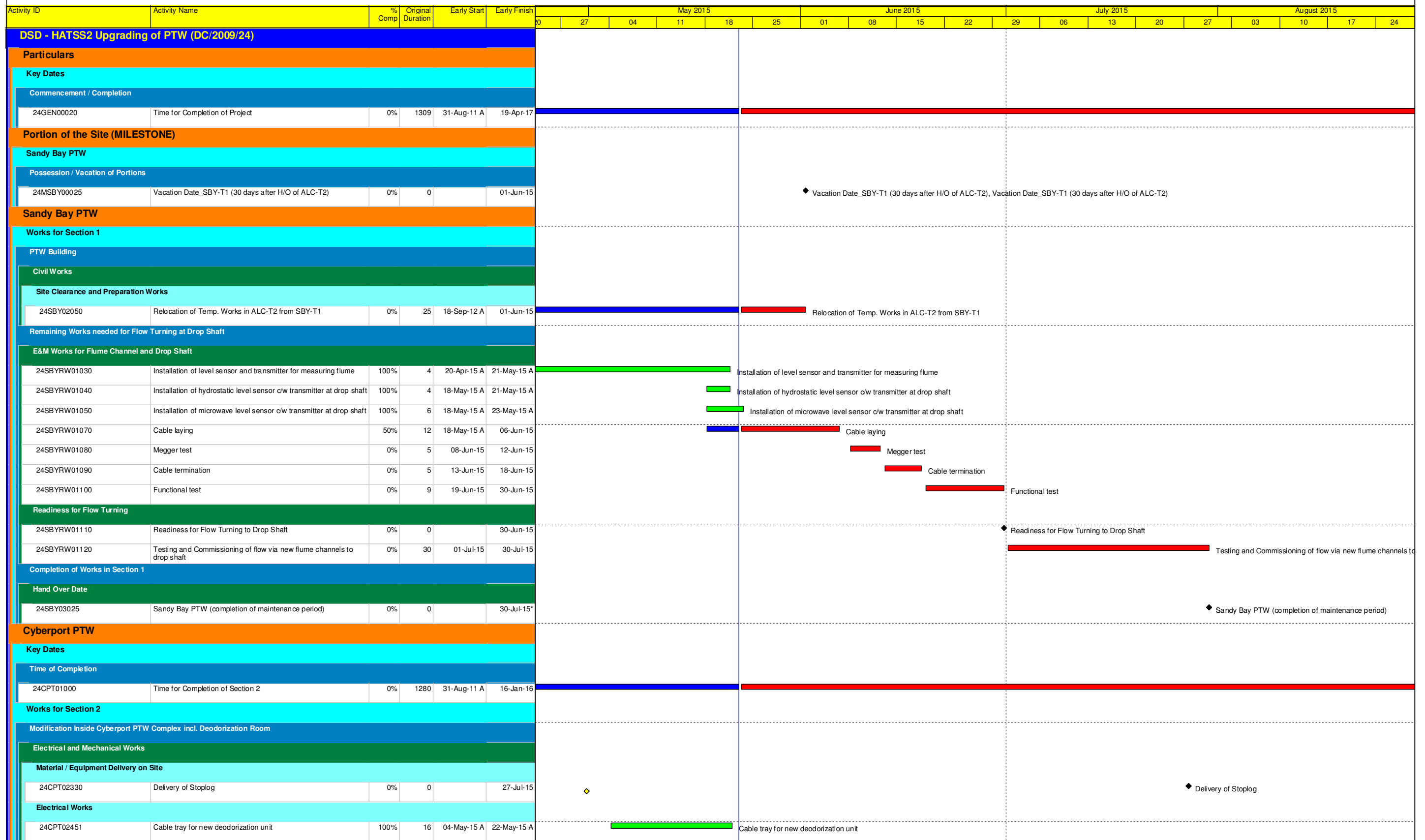
Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
CIR#1_121228	DSD’s Preliminary Treatment Work (PTW) at Ap Lei Chau	28 th December 2012	<p>The residents of South Horizons and Ap Lei Chau Estate complained about the noise generated from our construction site 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.	
CIR#4_150330	DSD's Preliminary Treatment Work (PTW) at Wah Fu	30 th March 2015	One anonymous complainant complained about the dark smoke emission 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 30 th March 2015 and initiated the complaint investigation procedures. According to the information provided by the Contractor, the sheet pile machine was deployed at Wah Fu PTW for sheet piling installation on the day of complaint. However, no dark smoke emission was observed at Wah Fu PTW during the routine inspection by the Contractor such as the Environmental Officer on the day of complaint. The machine was removed off site after finishing the works.	After complaint received, the Contractor has taken initiative to prevent dark smoke emission to the nearby residents by implementation of mitigation measures as below: <ul style="list-style-type: none"> • Remove the sheet pile machine after finishing the works on 31st March 2015; • Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced). The Contractor was reminded to consider to increase the frequency of checking the darkness of smoke generated from mechanical equipment. With comparison to the shade of smoke to the shades on a Ringelmann Chart or other approved devices to ensure the emitting smoke is lighter than shade 1 on the Ringelmann Chart. The Contractor was also reminded to avoid any dark smoke emission generated from mechanical equipment for more than 6 minutes in any period of 4 hours or for more than 3 minutes continuously at any one time; and remove the carbon deposits from the muffler and keep the mesh at the inlet of the air blower clear frequently which could further prevent the dark smoke emission generated from construction machines of construction works in Wah Fu PTW.	Closed

Remarks: No environmental complaint was received in June 2015.

APPENDIX M
CONSTRUCTION PROGRAMME



Start Date: 25-Jun-11
 Finish Date: 19-Apr-18
 Date Date: 23-May-15
 Run Date: 29-May-15

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

HATSS2A Contract No. DC/2009/24

3 MONTHS ROLLING PROGRAMME

MAY 2015

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-May-15	UDWP - REVISION 3		

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	May 2015					June 2015				July 2015				August 2015						
						20	27	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24	
24WFU02250A05	Initial Finishes prior to installation of major E&M Equipment	100%	9	16-Apr-15 A	25-Apr-15 A	Initial Finishes prior to installation of major E&M Equipment																			
Electrical and Mechanical Works																									
Material / Equipment Delivery on Site																									
24WFU02011	Delivery of fine screen conveyor	100%	0		25-Apr-15 A	Delivery of fine screen conveyor, Delivery of fine screen conveyor																			
24WFU02030	Delivery of grit trap	100%	0		23-Apr-15 A	Delivery of grit trap, Delivery of grit trap																			
24WFU3250	Delivery of penstock	100%	0		23-Apr-15 A	Delivery of penstock, Delivery of penstock																			
24WFU3260	Delivery of stoplog	100%	0		29-Apr-15 A	Delivery of stoplog, Delivery of stoplog																			
24WFU3320	Delivery of lifting appliance	100%	0		27-Apr-15 A	Delivery of lifting appliance, Delivery of lifting appliance																			
Major E&M Works prior to Flow Turning																									
24WFU2290B60	Hydrostatic pressure level transmitter at drop shaft	0%	4	30-May-15	03-Jun-15																				
24WFU2290B70	Microwave level sensor at drop shaft	0%	4	04-Jun-15	08-Jun-15																				
24WFU3360	Installation of monorail no. 3 (grit & screening handling area)	100%	7	04-May-15 A	11-May-15 A	Installation of monorail no. 3 (grit & screening handling area)																			
24WFU3400	Installation of penstock 3 & 4 (coarse screen outlet)	100%	14	04-May-15 A	19-May-15 A	Installation of penstock 3 & 4 (coarse screen outlet)																			
24WFU3410	Installation of penstock 5 & 6 (fine screen inlet)	100%	14	04-May-15 A	19-May-15 A	Installation of penstock 5 & 6 (fine screen inlet)																			
24WFU3430	Installation of penstock 1 & 2 (coarse screen inlet)	100%	14	04-May-15 A	19-May-15 A	Installation of penstock 1 & 2 (coarse screen inlet)																			
24WFU3440	Installation of penstock 7 & 8 (fine screen outlet)	100%	14	04-May-15 A	19-May-15 A	Installation of penstock 7 & 8 (fine screen outlet)																			
24WFU3450	Installation of penstock 9 & 10 (grit trap inlet)	100%	14	04-May-15 A	19-May-15 A	Installation of penstock 9 & 10 (grit trap inlet)																			
24WFU3460	Installation of penstock 13 (flow chamber outlet)	100%	7	04-May-15 A	11-May-15 A	Installation of penstock 13 (flow chamber outlet)																			
24WFU3470	Installation of stoplog 5 (flow chamber outlet)	100%	7	04-May-15 A	11-May-15 A	Installation of stoplog 5 (flow chamber outlet)																			
24WFU3480	Installation of screening conveyor 1 & 2	100%	18	30-Apr-15 A	21-May-15 A	Installation of screening conveyor 1 & 2																			
24WFU3490	Installation of screening compactor 1 & 2	100%	12	04-May-15 A	16-May-15 A	Installation of screening compactor 1 & 2																			
24WFU3510	Installation of grit classifier 1 & 2	100%	12	11-May-15 A	23-May-15 A	Installation of grit classifier 1 & 2																			
24WFU3520	Installation of interconnection pipe for grit classifier	0%	14	30-May-15	15-Jun-15	Installation of interconnection pipe for grit classifier																			
24WFU3530	Installation of penstock 11 & 12 (grit trap outlet)	100%	14	04-May-15 A	19-May-15 A	Installation of penstock 11 & 12 (grit trap outlet)																			
Other Works prior to Early Flow Turning																									
Inlet Chamber																									
24WFUIC01100	Erect formwork for wall (internal)	0%	4	06-May-15 A	05-Jun-15	Erect formwork for wall (internal)																			
24WFUIC01110	Rebar fixing for wall	0%	7	11-May-15 A	05-Jun-15	Rebar fixing for wall																			
24WFUIC01120	Erect formwork for wall (external)	0%	4	19-May-15 A	09-Jun-15	Erect formwork for wall (external)																			
24WFUIC01130	Concreting for wall	0%	1	10-Jun-15	10-Jun-15	Concreting for wall																			
24WFUIC01140	Remove formworks for wall	0%	2	11-Jun-15	12-Jun-15	Remove formworks for wall																			
24WFUIC01150	Fill the tie-in bolt hole & apply bituminous paint	0%	3	13-Jun-15	16-Jun-15	Fill the tie-in bolt hole & apply bituminous paint																			
Temporary Works																									
24WFUTE01000	Temporary valve, pumps (3 nos) and pipe installation for flow turning	100%	45	23-Mar-15 A	15-Jun-15	Temporary valve, pumps (3 nos) and pipe installation for flow turning																			
24WFUTE01010	Installation of temporary pipe to be used as diversion of flow to drop shaft	50%	36	23-Mar-15 A	05-Jun-15	Installation of temporary pipe to be used as diversion of flow to drop shaft																			
24WFUTE01020	Installation of temporary stoplog for flow diversion	100%	14	11-May-15 A	23-May-15 A	Installation of temporary stoplog for flow diversion																			
24WFUTE01030	Installation of temporary Switchboard including cabling and termination works	20%	39	30-Apr-15 A	19-Jun-15	Installation of temporary Switchboard including cabling and termination works																			
24WFUTE01032	Functional Test of equipment at new FSGT Bldg.	0%	11	20-Jun-15	30-Jun-15	Functional Test of equipment at new FSGT Bldg.																			
24WFUTE01035	Installation of activated carbon filter (with temp. provision to drop shaft)	0%	26	30-May-15*	30-Jun-15	Installation of activated carbon filter (with temp. provision to drop shaft)																			
24WFUTE01040	Completion of works prior to Early Flow Turning to Drop Shaft	0%	0		30-Jun-15	Completion of works prior to Early Flow Turning to Drop Shaft																			
Remaining Works After Early Flow Turning																									
Demolition of Temporary Treatment Plant																									
24WFU02280A10	Decommissioning of temporary treatment facilities and temporary store	0%	11	15-Jul-15	27-Jul-15	Decommissioning of temporary treatment facilities and temporary store																			
24WFU02280A20	Demolition of temporary treatment facilities and temporary store	0%	7	28-Jul-15	04-Aug-15	Demolition of temporary treatment facilities and temporary store																			
Civil Works																									
Up to Roof Slab Construction of Grit Trap Area (+0.320mPD)																									

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	May 2015					June 2015				July 2015				August 2015					
						20	27	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Electrical Works																								
24AL003140	Installation of temporary switchboard	0%	7	23-May-15	01-Jun-15																			
24AL003150	Cable tray installation for fine screen no. 2 and inlet / outlet penstock	0%	4	23-May-15	28-May-15																			
24AL003160	Cable tray installation for grit trap no. 2	0%	2	23-May-15	26-May-15																			
24AL003170	Cable tray installation for coarse screen no. 2 and inlet / outlet penstock	0%	2	23-May-15	26-May-15																			
24AL003180	Cable tray installation for screening conveyors no. 1 & no. 2	0%	1	27-May-15	27-May-15																			
24AL003190	Cable tray installation for screening compactors no. 1 & no. 2	0%	1	28-May-15	28-May-15																			
24AL003200	Cable tray installation for grit classifier no. 2	0%	2	29-May-15	30-May-15																			
24AL003210	Cable laying for the initial treatment facilities	0%	6	29-May-15	04-Jun-15																			
24AL003220	Megger test in cables for the initial treatment facilities	0%	2	05-Jun-15	06-Jun-15																			
24AL003230	Cable termination for the initial treatment facilities	0%	2	08-Jun-15	09-Jun-15																			
HVAC System (Deodorization / Air Conditioning / Ventilation)																								
24AL003240	Installation of activated carbon filter (for grit and screening handling equipment)	0%	14	23-May-15	09-Jun-15																			
24AL003250	Installation of air ductwork for activated carbon filter system	0%	14	10-Jun-15	26-Jun-15																			
24AL003260	Cable tray installation for activated carbon filter system	0%	5	10-Jun-15	15-Jun-15																			
24AL003270	Cable laying for activated carbon filter system	0%	14	10-Jun-15	26-Jun-15																			
24AL003280	Megger test in cables for activated carbon filter system	0%	7	27-Jun-15	06-Jul-15																			
24AL003290	Cable termination for activated carbon filter system	0%	5	07-Jul-15	11-Jul-15																			
Control and Monitoring Services incl. Instrumentation																								
24AL003300	Installation of local manual control (coarse screen no. 2)	0%	2	23-May-15	26-May-15																			
24AL003310	Installation of local manual control (fine screen no. 2)	0%	2	27-May-15	28-May-15																			
24AL003320	Installation of local manual control (grit trap no. 2)	0%	2	29-May-15	30-May-15																			
24AL003330	Installation of local manual control (screening conveyor no. 1 & 2)	0%	2	01-Jun-15	02-Jun-15																			
24AL003340	Installation of local manual control (screening compactor no. 1 & 2)	0%	2	03-Jun-15	04-Jun-15																			
24AL003350	Installation of local manual control (grit classifier no. 1 & 2)	0%	2	05-Jun-15	06-Jun-15																			
24AL003360	Installation of level sensor c/w transmitter (fine screen no. 2)	0%	3	08-Jun-15	10-Jun-15																			
24AL003370	Installation of level sensor for level limit sensing (screening conveyor no. 1 & 2)	0%	3	11-Jun-15	13-Jun-15																			
Earthing and Lightning System																								
24AL003390	Installation of earthing protection	0%	7	08-Jun-15	15-Jun-15																			
Preliminary Testing and Commissioning																								
Mechanical Works																								
24AL003400	Water test of penstock and stoplog	0%	7	23-Jun-15	29-Jun-15																			
24AL003410	SAT of coarse screen no. 2	0%	6	10-Jun-15	16-Jun-15																			
24AL003420	SAT of fine screen no. 2	0%	6	10-Jun-15	16-Jun-15																			
24AL003430	SAT of screenings conveyor no. 1 & no. 2	0%	6	10-Jun-15	16-Jun-15																			
24AL003440	SAT of screenings compactor no. 1 & no. 2	0%	6	10-Jun-15	16-Jun-15																			
24AL003450	SAT of grit trap no. 2	0%	6	10-Jun-15	15-Jun-15																			
24AL003460	SAT of grit classifier no. 2	0%	6	10-Jun-15	15-Jun-15																			
24AL003461	Performance test / Functional Test of equipment	0%	14	17-Jun-15	30-Jun-15																			
Electrical Works																								
24AL003470	SAT of temporary switchboard	0%	21	10-Jun-15	06-Jul-15																			
HVAC System (Deodorization / Air Conditioning / Ventilation)																								
24AL003480	SAT of activated carbon filter system	0%	14	13-Jul-15	28-Jul-15																			
Earthing and Lightning System																								
24AL003490	Earthing and lighting test	0%	10	16-Jun-15	27-Jun-15																			

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	May 2015					June 2015				July 2015				August 2015			
						20	27	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10
Civil Works																						
Initial Wet well and Effluent Pumping Station (GL 4-7 / G-I)																						
24ALC00730C18	Preparation works prior to E&M Works	100%	12	20-Apr-15 A	07-May-15 A	Preparation works prior to E&M Works																
24ALC00730C19	Installation of temporary enclosure for Dry Well	0%	36	08-May-15 A	19-Jun-15	Installation of temporary enclosure for Dry Well																
Permanent Flume Channels																						
24ALC00852A20	Backfilling works up to level for base slab of flume channel	100%	30	20-Apr-15 A	02-May-15 A	Backfilling works up to level for base slab of flume channel																
24ALC05510	Formworks for base slab of permanent flume channels	100%	4	04-May-15 A	07-May-15 A	Formworks for base slab of permanent flume channels																
24ALC05520	Rebarworks for base slab of permanent flume channels	100%	4	05-May-15 A	08-May-15 A	Rebarworks for base slab of permanent flume channels																
24ALC05530	Concrete for base slab of permanent flume channels	100%	1	09-May-15 A	09-May-15 A	Concrete for base slab of permanent flume channels																
24ALC05540	Formworks for wall of permanent flume channels	0%	4	11-May-15 A	29-May-15	Formworks for wall of permanent flume channels																
24ALC05550	Rebarworks for wall of permanent flume channels	0%	4	18-May-15 A	29-May-15	Rebarworks for wall of permanent flume channels																
24ALC05560	Concrete for wall of temporary permanent channels	0%	1	30-May-15	30-May-15	Concrete for wall of temporary permanent channels																
24ALC05570	Formworks for top slab/cover of permanent flume channels	0%	4	01-Jun-15	04-Jun-15	Formworks for top slab/cover of permanent flume channels																
24ALC05580	Rebarworks for top slab/cover of permanent flume channels	0%	4	05-Jun-15	09-Jun-15	Rebarworks for top slab/cover of permanent flume channels																
24ALC05590	Concrete for top slab/cover of permanent flume channels	0%	1	10-Jun-15	10-Jun-15	Concrete for top slab/cover of permanent flume channels																
24ALC05600	Waterproofing works on permanent flume channels	0%	3	11-Jun-15	13-Jun-15	Waterproofing works on permanent flume channels																
24ALC05610	Backfilling on permanent flume channels	0%	4	15-Jun-15	18-Jun-15	Backfilling on permanent flume channels																
24ALC05611	Flowtest from Initial fine screen and grit trap building to modified outlet chamber	0%	6	11-Jun-15	17-Jun-15	Flowtest from Initial fine screen and grit trap building to modified outlet chamber																
Tie-Ins, Rising Main and Flow Meter Chamber																						
Installation of Rising Main																						
24ALC4310	Installation of 900mmØ DI rising main pipe	0%	24	23-Apr-15 A	08-Jun-15	Installation of 900mmØ DI rising main pipe																
24ALC4326	Connection of Pipe from Effluent Pumping station to newly installed 900mmØ DI Pipe	0%	8	16-Jun-15	25-Jun-15	Connection of Pipe from Effluent Pumping station to newly installed 900mmØ DI Pipe																
24ALC4330	Installation of electromagnetic flowmeter (2 set for HDD pipe)	0%	16	09-Jun-15	27-Jun-15	Installation of electromagnetic flowmeter (2 set for HDD pipe)																
24ALC4340	Backfilling works to rising main	0%	12	29-Jun-15	13-Jul-15	Backfilling works to rising main																
Construction of Flow Meter Chamber																						
24ALC4190	Formworks for base slab of flow meter chamber	0%	6	23-Apr-15 A	28-May-15	Formworks for base slab of flow meter chamber																
24ALC4200	Rebarworks for base slab of flow meter chamber	0%	4	04-May-15 A	28-May-15	Rebarworks for base slab of flow meter chamber																
24ALC4210	Concrete for base slab of flow meter chamber	0%	4	29-May-15	02-Jun-15	Concrete for base slab of flow meter chamber																
24ALC4220	Formworks for wall of flow meter chamber	0%	6	03-Jun-15	09-Jun-15	Formworks for wall of flow meter chamber																
24ALC4230	Rebarworks for wall of flow meter chamber	0%	5	06-Jun-15	11-Jun-15	Rebarworks for wall of flow meter chamber																
24ALC4240	Concrete for wall of flow meter chamber	0%	1	12-Jun-15	12-Jun-15	Concrete for wall of flow meter chamber																
24ALC4250	Formworks for top slab/cover of flow meter chamber	0%	2	13-Jun-15	15-Jun-15	Formworks for top slab/cover of flow meter chamber																
24ALC4260	Rebarworks for top slab/cover of flow meter chamber	0%	2	16-Jun-15	17-Jun-15	Rebarworks for top slab/cover of flow meter chamber																
24ALC4270	Concrete for top slab/cover of flow meter chamber	0%	2	18-Jun-15	19-Jun-15	Concrete for top slab/cover of flow meter chamber																
24ALC4280	Waterproofing works on flow meter chamber	0%	8	22-Jun-15	30-Jun-15	Waterproofing works on flow meter chamber																
24ALC4290	Backfilling on flow meter chamber	0%	8	02-Jul-15	10-Jul-15	Backfilling on flow meter chamber																
Electrical and Mechanical Works																						
Mechanical Works																						
24ALC04150	Installation of effluent pump no. 3 c/w associated pipework (no dry season limitation in the PS for Pump Replacement)	0%	12	08-May-15 A	13-Jun-15	Installation of effluent pump no. 3 c/w associated pipework (no dry season limitation in the PS for Pump Replacement)																
24ALC04160	Installation of effluent pump no. 4 c/w associated pipework (incl. connection to installed 900Ø pipe to HDD tunnel)	0%	12	22-May-15 A	15-Jun-15	Installation of effluent pump no. 4 c/w associated pipework (incl. connection to installed 900Ø pipe to HDD tunnel)																
Electrical Works																						
24ALC04161	Cable tray installation for power supply on effluent pump no. 3 and 4	0%	8	23-May-15	02-Jun-15	Cable tray installation for power supply on effluent pump no. 3 and 4																
24ALC04162	Cable laying for power supply on effluent pump no. 3 and 4	0%	12	03-Jun-15	16-Jun-15	Cable laying for power supply on effluent pump no. 3 and 4																
24ALC04163	Megger test in cables for power supply on effluent pump no. 3 and 4	0%	2	17-Jun-15	18-Jun-15	Megger test in cables for power supply on effluent pump no. 3 and 4																
24ALC04164	Cable termination for power supply on effluent pump no. 3 and 4	0%	2	19-Jun-15	22-Jun-15	Cable termination for power supply on effluent pump no. 3 and 4																
Control and Monitoring Services incl. Instrumentation																						

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	May 2015					June 2015				July 2015				August 2015						
						20	27	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24	
24ALC03380	Installation of level sensor c/w transmitter (1 set at flume channel measuring flume)	0%	6	15-Jun-15	22-Jun-15																				
24ALC04165	Installation of local manual control (effluent pumps 3 and 4)	0%	7	23-May-15	01-Jun-15																				
24ALC04166	Installation of level sensor for wet well	0%	10	02-Jun-15	12-Jun-15																				
24ALC04167	Install cable tray for monitoring and control system	0%	6	23-May-15	30-May-15																				
24ALC04168	Cable laying for monitoring and control system	0%	12	01-Jun-15	13-Jun-15																				
24ALC04169	Megger test in cables of monitoring and control system	0%	2	15-Jun-15	16-Jun-15																				
24ALC04171	Cable termination for monitoring and control system	0%	2	17-Jun-15	18-Jun-15																				
Preliminary Testing and Commissioning																									
Mechanical Works																									
24ALC05341	Functional Test of effluent pump 1 and 2	0%	7	23-Jun-15	30-Jun-15																				
Control and Monitoring Services incl. Instrumentation																									
24ALC03485	Testing of Level Sensor at Flume Channel	0%	7	23-Jun-15	30-Jun-15																				
Flow Diversion from Initial Treatment Plant to Drop Shaft / Outfall Chamber																									
24ALC05342	Diversion of flow from Initial fine screen and grit trap building to Tie-In Pit / Outfall Chamber	0%	30	01-Jul-15	30-Jul-15																				
Stage 2 of ALC Upgrade (Completion of Remaining Works)																									
Civil Works																									
Decommission / Demolition of Existing Treatment Plant																									
24ALC00770A10	Decommissioning of existing treatment facilities	0%	21	31-Jul-15	24-Aug-15																				
Completion of Inlet Chamber																									
24ALC00859	Installation of pipe from existing sewer to partial inlet chamber to divert the flow to partial inlet chamber	0%	12	02-Jul-15	15-Jul-15																				
24ALC00860	Excavation and demolition of remaining structure of existing inlet chamber	0%	18	02-Jul-15	22-Jul-15																				
24ALC00861	Construct the remaining of new inlet chamber	0%	30	23-Jul-15	26-Aug-15																				
Completion of Works in Section 7																									
EoT Claim																									
24ALC01781	Claim for Additional Extension of Time - under review	0%	656	01-Apr-15 A	06-Dec-16																				