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
November 2016

(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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Attn: Mr. Danny Tang

Agreement No. CE 8/2009(EP) Harbour Area Treatment Scheme 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 – Monthly EM&A Report for November 2016 (no. 59) Version 1.0

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13 December 2016
By Post

Dear Sir,

I refer to the captioned Monthly EM&A Report for November 2016 (version 1.0) submitted by ETL on 13 December 2016 via email. In accordance with 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

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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 59th 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 DC/2009/24 HATS Stage 2A with the Environmental Permit (Permit No. EP-322/2008/G) for November 2016.

2. The site activities undertaken for in the reporting month included:
   - Wah Fu PTW –Green roof installation for FSGT, Grit Handling Room and Switch and Control Room, Continuous interim operation and maintenance of new FSGT facilities, Boundary wall construction adjacent to sea side, DOU installation, Installation of multipart covers on flume channel, Installation of doors;
   - Ap Lei Chau PTW – Continuous interim operation and maintenance of the ALC PTW, Construction of Remaining Part of Screening and Degritting Facilities and Effluent Pumping Station, External & Internal finishing works installation for Workshop, External & Internal finishing works installation of Switch and Transformer Room;
   - Aberdeen PTW – Continuous interim operation and maintenance of the ABN PTW, Construction of cable drawpits, Internal finishing works installation inside Admin. & Workshop Building, Erection of bamboo scaffolding, Construction of the remaining middle channels of FSGT structure, Migration of temporary power to permanent power supply for Grit Trap no.2;
   - Sandy Bay PTW – N/A;
   - Cyberport PTW – Excavation of overflow pipe from Effluent Chamber to Manhole-D, Additional valve chamber construction, Installation of multipart cover of Effluent chamber and flume channel.

Environmental Monitoring Works

3. The environmental monitoring works of the Project was conducted by the ET for the Contract DC/2009/24 under HATS 2A with the 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**.

Noise (Sandy Bay PTW)

7. The Proposal for Termination of Construction Phase EM&A Works for Contract No. DC/2007/24 was submitted by its ET to EPD in July 2015. The proposal, including the termination of noise monitoring at Chuk Lam Ming Tong (M5), was approved by the EPD on 27 July 2015. The result of noise monitoring at M5 would not be reported from 27 July 2015 , based on section 15.11 of the EM&A Manual of this Project as below:

   i) Construction activities including the remaining outstanding construction works for Sandy Bay PTW have been completed by the Contractor of this Project, therefore, no major environmental impact from Sandy Bay PTW in anticipated due to the Project.

8. 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)	--	--	--	--	--
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

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

24-hour TSP Monitoring

10. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. 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 – October 2016	Submitted to EPD on 16 November 2016	No comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

15. There was no environmental prosecution, complaint or notification of summons received in the reporting month, while six complaints were already received since the Project commencement. The Complaint Log is presented in **Appendix L**.

Future Key Issues:

16. Major site activities for the coming two months include:
    - Wah Fu PTW: Operation of New Treatment Plant, Green Roof Installation at FSGT Building, Installation of glass blocks, Installation of doors, Construction of boundary wall adjacent to sea sides;
    - Aberdeen PTW: Operation of PTW, Finishing Works of the Workshop and Administration Building, Laying Services Drainage along access road, Construction of Cable Drawpits and Cable Ducts, Water Tightness Test of FSGT structure, Pipe Pile Wall Installation for FC03 chamber;
    - Ap Lei Chau PTW: Operation of PTW, Construction for the Remaining Part of Screening and Degritting Facilities and Effluent Pumping Station, Finishing Works of the Switchroom and LV room at Ap Lei Chau, Finishing Works of the Workshop;
    - Sandy Bay PTW: N/A; and
    - Cyberport PTW: Excavation and Installation of overflow pipe from Effluent Chamber to MH-D.

17. The environmental concerns in coming months are mainly on chemicals storage, surface run off, spillage of wastewater during rainstorm and dust generated from the construction works.

1. INTRODUCTION

Background

1.1 The Project 'HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau' with Contract No: DC/2009/24 mainly comprises the following major works:

- The construction of screens, grit traps, deodourisation rooms, workshop and administration buildings, and modification of existing inlet pumping stations at the preliminary treatment works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau.

1.2 The general location plan of the Project is shown in **Figure 1**.

1.3 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project (Register No. : AEIAR-121/2008). The environmental permit: (Permit No. EP-322/2008/G) which was issued on 9th May 2014 to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.

1.4 Leader and JEC Joint Venture (hereafter called the LJJV) was commissioned by the DSD to undertake the construction of the Contract No. DC/2009/24 "Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau".

1.5 Cinotech Consultants Limited was commissioned by LJJV to undertake the Environmental Monitoring and Audit (EM&A) works for the project and was appointed as the Environmental Team (ET) of the Project under Condition 2.1 of the EP.

1.6 The construction works at Wah Fu PTW and Ap Lei Chau PTW were commenced in the January 2012.

1.7 The construction phase of EM&A programme of the Project commenced in January 2012.

1.8 This is the 59th monthly EM&A report summarizing the EM&A works conducted for the Project in November 2016.

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	2157 3879
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
		Ms. S.P. Ngan	Environmental Officer	9516 9431

Construction Programme

1.10 The site activities undertaken in the reporting month included:

- Wah Fu PTW –Green roof installation for FSGT, Grit Handling Room and Switch and Control Room, Continuous interim operation and maintenance of new FSGT facilities, Boundary wall construction adjacent to sea side, DOU installation, Installation of multipart covers on flume channel, Installation of doors;
- Ap Lei Chau PTW – Continuous interim operation and maintenance of the ALC PTW, Construction of Remaining Part of Screening and Degritting Facilities and Effluent Pumping Station, External & Internal finishing works installation for Workshop, External & Internal finishing works installation of Switch and Transformer Room;
- Aberdeen PTW – Continuous interim operation and maintenance of the ABN PTW, Construction of cable drawpits, Internal finishing works installation inside Admin. & Workshop Building, Erection of bamboo scaffolding, Construction of the remaining middle channels of FSGT structure, Migration of temporary power to permanent power supply for Grit Trap no.2;
- Sandy Bay PTW – N/A;
- Cyberport PTW – Excavation of overflow pipe from Effluent Chamber to Manhole-D, Additional valve chamber construction, Installation of multipart cover of Effluent chamber and flume channel.

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 November 2016. For the methodology and QA/QC procedures of the monitoring

parameters, please refer to the Section 2 and 3 of this report.

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	3
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 C of this report.

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.

(Equipment: Hal Technology; Model no. Hal-HPC300)

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 m^3/min. and 1.4 m^3/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 ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

2.21 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 (Tisch Environmental, Inc.; Model no. TE-5025A) 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	Average	Range	Action Level	Limit Level

Monitoring Station	µg/m³	µg/m³	µg/m³	µg/m³
1 hour TSP				
CM_CB1a	122	56-266	280	500
CM_WF1a	111	42-252	285	
CM_AB1b	118	47-257	283	
24 hours TSP				
CM_CB1a	69	53-93	178	260
CM_WF1a	47	33-61	185	
CM_AB1b	81	46-120	174	

2.24 The detailed monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results could be referred to **Appendix E**.

2.25 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G.**

2.26 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G**.

2.27 The identified dust sources at the monitoring stations were mainly from sea traffic, road traffic.

3 NOISE

Monitoring Requirements

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

Monitoring Locations

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

3.3 Noise monitoring at M5 – Chuk Lam Ming Tong was completed by the end of July 2015.

Table 3.1 Location of Noise Monitoring Stations

Monitoring Station	Monitored By	Location of Measurement
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

3.4 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**.

Table 3.2 Noise Monitoring Equipment

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

Monitoring Parameters, Frequency and Duration

3.5 **Table 3.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedules could be found in **Appendix C** of this report.

3.6 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
M6a M7a M8 M9	L_{eq}(30 min.) dB(A)	0700-1900 hrs. on normal weekdays	Once per week
M6a M7a M8 M9	L_{eq}(5 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.

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 M6a, M7a, M8 and M9 in reporting month.

Table 3.4 Summary of 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.)
M6a	51-56(1)	75.0
M7a	53-67	
M8	60-66	
M9	59-63	

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

3.9 The construction noise monitoring at the designated locations was conducted by the ET of this project as scheduled in the reporting month. The monitoring results and graphical presentation are provided in **Appendix F**.

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 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 4, 11, 18 and 25 November 2016. 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 this project. The monitoring procedures were reviewed by its ET.

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				
WT00011629-2012	N/A	31/1/2017	Location: Sandy Bay PTW	Valid
WT00011633-2012	N/A	31/1/2017	Location: Cyber Port PTW	
WT00011632-2012	N/A	31/1/2017	Location: Ap Lei Chau	
WT00016242-2013	N/A	31/3/2017	Location: Aberdeen PTW	
WT00016837-2013	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				
13029	24/5/2016	23/11/2016	Location: Ap Lei Chau	Valid until 23/11/2016
13030	24/5/2016	23/11/2016	Location: Aberdeen PTW	Valid until 23/11/2016
13028	24/5/2016	23/11/2016	Location: Wah Fu PTW	Valid until 23/11/2016
13434	24/11/2016	23/11/2017	Location: Ap Lei Chau	Valid
13435	24/11/2016	23/11/2017	Location: Aberdeen PTW	Valid
13433	24/11/2016	23/11/2017	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	--	--	--
Air Quality	--	--	--
Waste/ Chemical Management	--	--	--
Noise	--	--	--
Landscape and Visual	161125-R01	The fence should be provided for the existing tree at Cyberport-PTW.	The fence was provided for the existing tree at Cyberport-PTW.
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 six 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 C** of this report.

Construction Program for the Next Month

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

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

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

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise Monitoring

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

Environmental Audit

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

Complaint and Prosecution

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

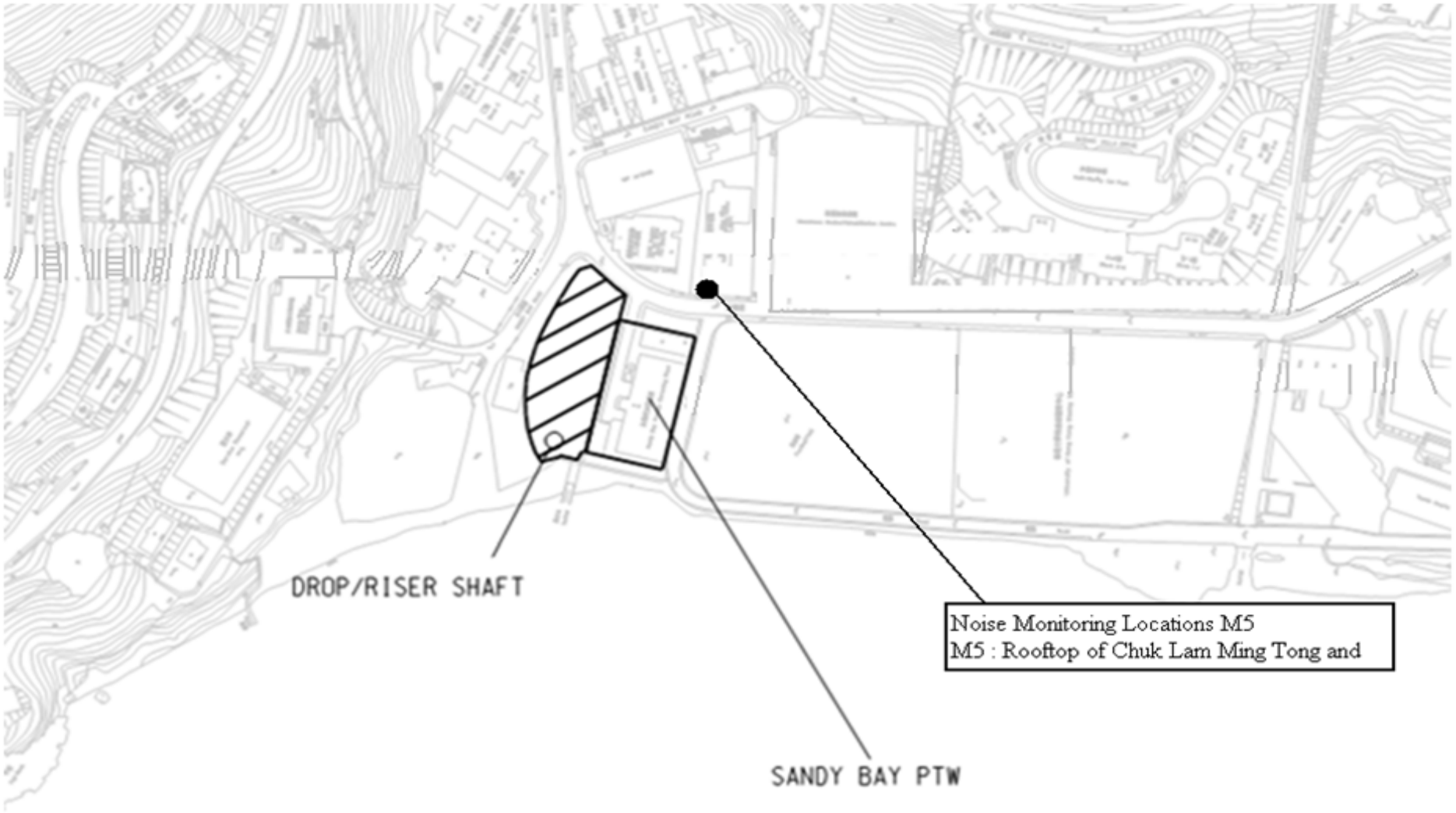
Recommendations

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

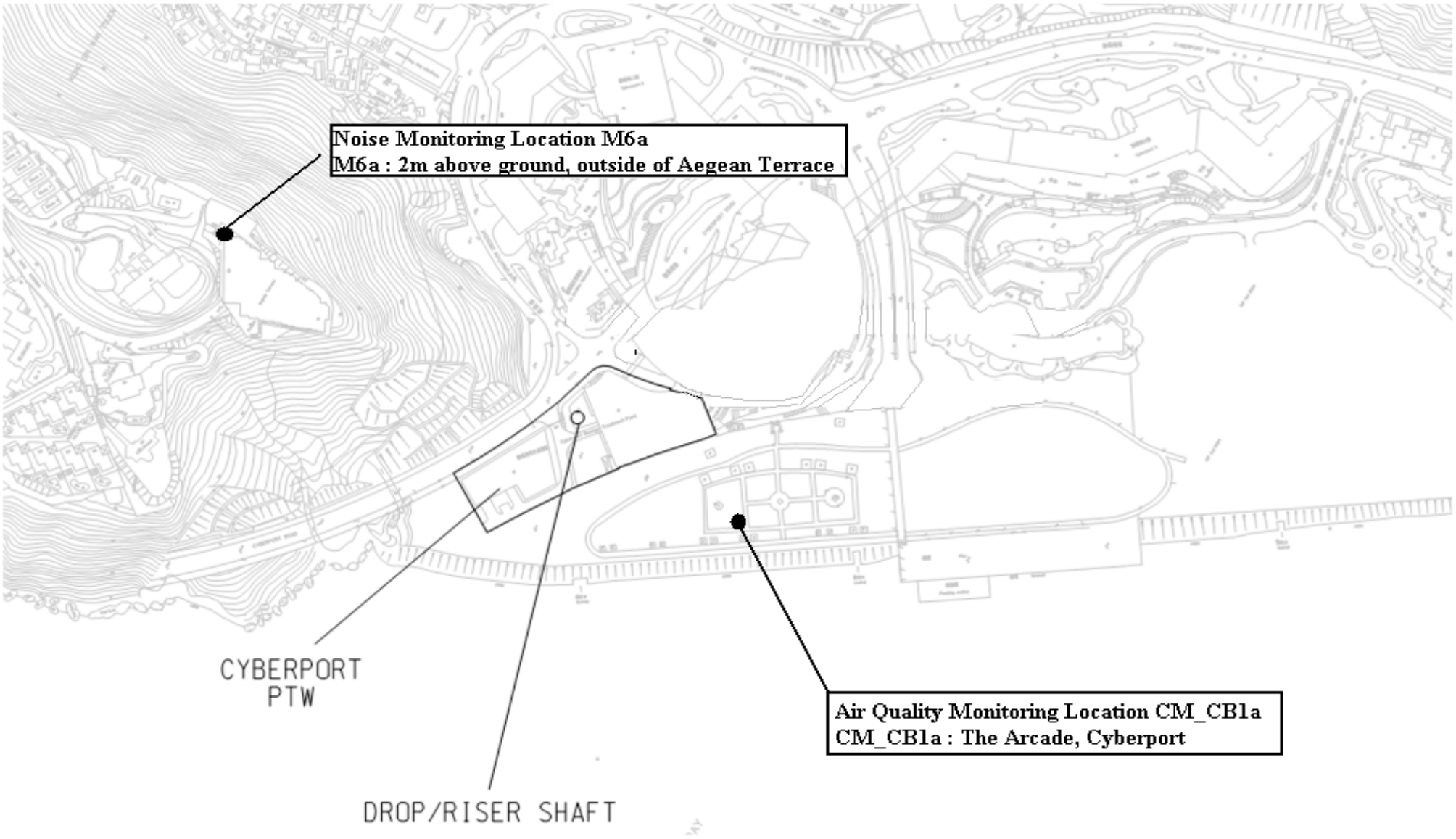
Landscape and Visual

- To provide the fence to well protect the existing tree in the site.

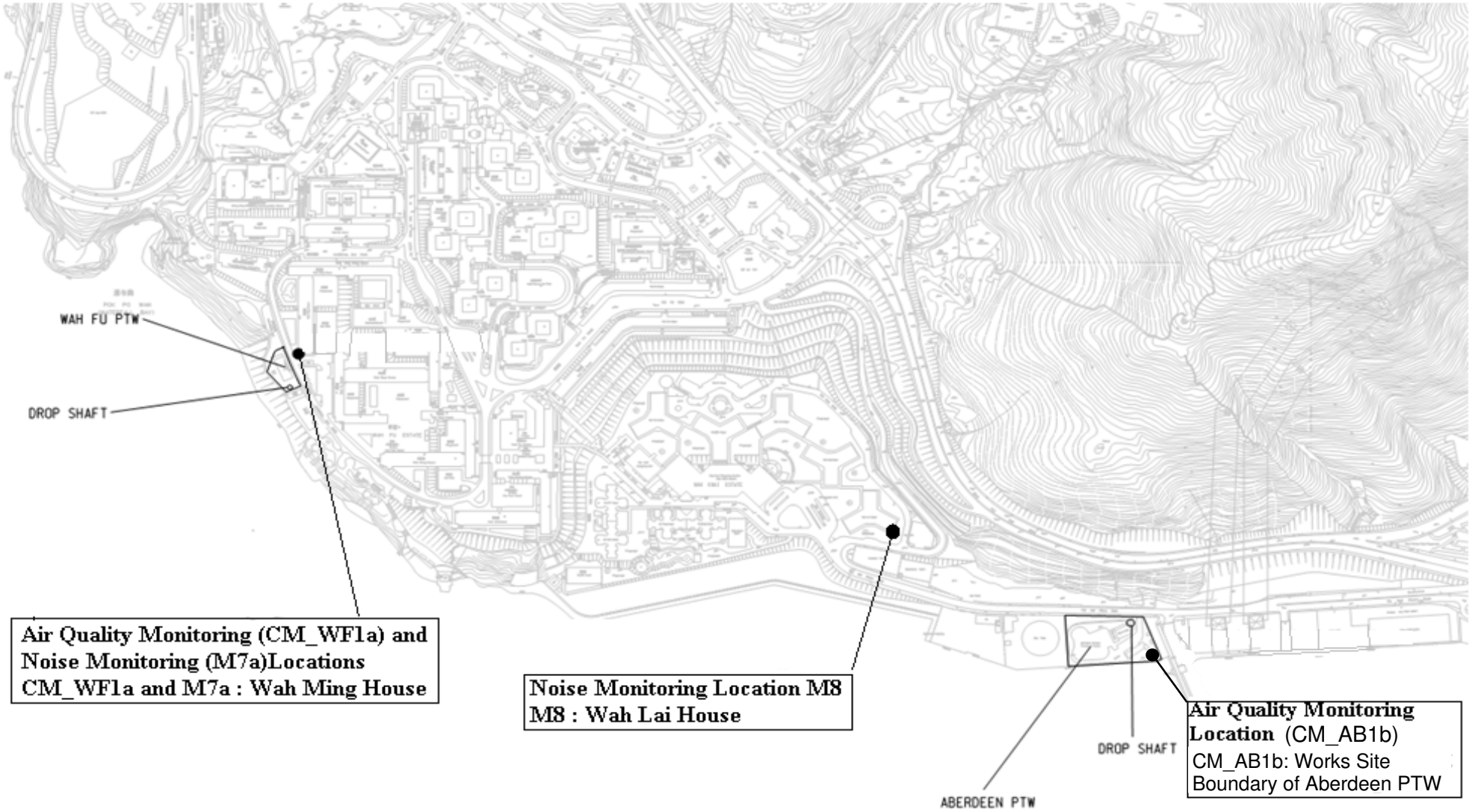
FIGURES



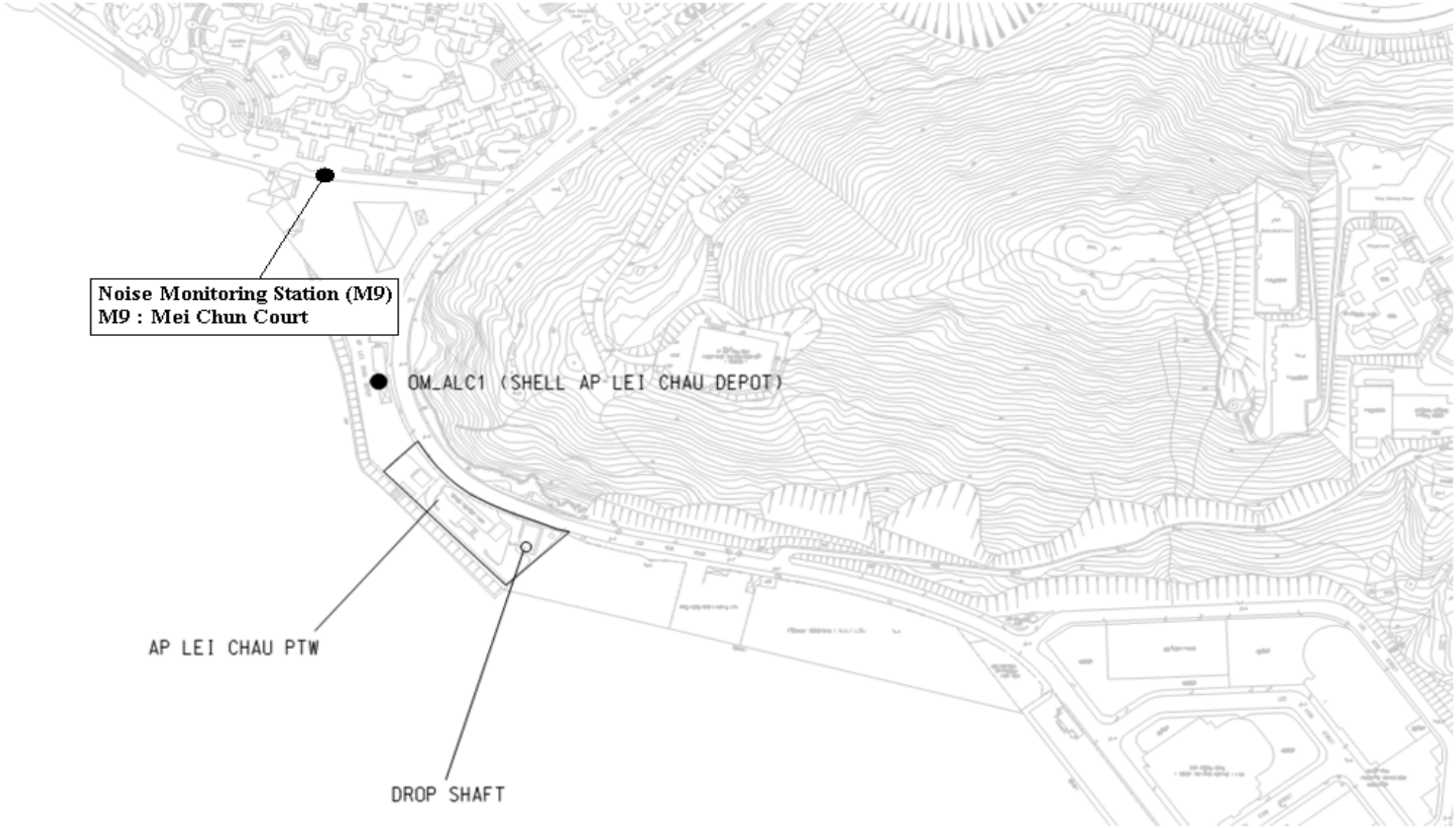
Title	Contract No: DC/2009/24 HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	Scale N.T.S	Project No. MA11060	CINOTECH
	General Location Plan of Sandy Bay PTW and Locations of Noise Monitoring Stations	Date 01/2012	Figure 1a	



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



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



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

Environmental Team Leader
Dr. Priscilla Choy
(Tel: 2151 2089)

Project Coordinator
- coordination of the Project and compile reports
Janet Wai
(Tel: 2151 2078)

Monitoring Team
- perform environmental monitoring works

Team Leader: Tang Wing Kwai
(Tel: 2151 2087)

Team Members: Lee Man Hei, Chau Kin Wa, Ho Yam Chun, Ho Ka Chun, Fong Ka Chun, Ho Chi Wai, Wong Chi Hung

Audit Team
- conduct site inspection, complete the environmental checklist once a week

Team Leader: Ivy Tam
(Tel: 2151 2090)

Team Members:
Johnny Fung, Victor Wong

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 QUALITYAND 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 (μg/m^3)		Limit Level (μg/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. MA11060/69/0015

Station: CM_WF1a - Wah Ming House Operator: WK

Date: 27-Sep-16 Next Due Date: 26-Nov-16

Equipment No.: A-01-69 Serial No. 3222

Ambient Condition			
Temperature, Ta (K)	304.1	Pressure, Pa (mmHg)	755

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	3-Mar-17	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			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	11.4	3.33	56.57	6.9	2.59
2	8.9	2.94	50.08	5.4	2.29
3	7.3	2.67	45.44	4.7	2.14
4	5.1	2.23	38.12	3.3	1.79
5	3.2	1.76	30.37	2.1	1.43

By Linear Regression of Y on X

Slope , mw = 0.0440 **Intercept, bw = 0.1060**

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

mw x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.11**

Remarks:

Conducted by: Wk Tang Signature: Kwan Date: 27/9/16

Checked by: [illegible] Signature: [illegible] Date: 27 September 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/38/0015

Station: CM_AB1b - Works Site Boundary of Aberdeen PTW Operator: WK
Date: 27-Sep-16 Next Due Date: 26-Nov-16
Equipment No.: A-01-38 Serial No. 1402

Ambient Condition			
Temperature, Ta (K)	303.6	Pressure, Pa (mmHg)	754.1

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	3-Mar-17	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			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	11.8	3.39	57.55	6.9	2.59
2	9.7	3.07	52.26	5.8	2.38
3	7.6	2.72	46.35	4.7	2.14
4	5.2	2.25	38.49	3.3	1.79
5	3.4	1.82	31.28	2.2	1.46

By Linear Regression of Y on X

Slope , mw = 0.0429 **Intercept, bw =** 0.1328

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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.02**

Remarks:

Conducted by: WK Tang Signature: [signature] Date: 27/9/16
Checked by: [signature] Signature: [signature] Date: 27 September 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11060/41/0009

Station: CM_CB1a - The Arcade, Cyberport Operator: WK
Date: 27-Sep-16 Next Due Date: 26-Nov-16
Equipment No.: A-01-41 Serial No. 5280

Ambient Condition			
Temperature, Ta (K)	303.8	Pressure, Pa (mmHg)	754.6

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			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	11.9	3.40	57.79	6.9	2.59
2	9.8	3.09	52.52	5.8	2.38
3	7.6	2.72	46.35	4.6	2.12
4	5.2	2.25	38.49	3.3	1.80
5	3.3	1.79	30.83	2.2	1.46

By Linear Regression of Y on X

Slope, mw = 0.0417 **Intercept, bw =** 0.1847

Correlation coefficient* = 0.9999

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.02**

Remarks:

Conducted by: Wk Tang Signature: Kwai Date: 27/9/16
Checked by: [illegible] Signature: [illegible] Date: 27 September 2016

TISCH Environmental

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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 04, 2016 Rootsmeter S/N 0438320 Ta (K) - 295
Operator Tisch Orifice I.D. - 2896 Pa (mm) - 755.65

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4340	3.2	2.00
2	NA	NA	1.00	1.0250	6.4	4.00
3	NA	NA	1.00	0.9150	7.9	5.00
4	NA	NA	1.00	0.8770	8.7	5.50
5	NA	NA	1.00	0.7210	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
1.0001	0.6974	1.4173
0.9959	0.9716	2.0044
0.9938	1.0861	2.2410
0.9928	1.1320	2.3503
0.9875	1.3696	2.8346

Qstd slope (m) = 2.11176
intercept (b) = -0.05079
coefficient (r) = 0.99982

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9957	0.6944	0.8836
0.9915	0.9674	1.2496
0.9894	1.0814	1.3971
0.9885	1.1271	1.4653
0.9831	1.3636	1.7672

Qa slope (m) = 1.32235
intercept (b) = -0.03166
coefficient (r) = 0.99982

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/A/161104
Date of Issue:	2016-11-07
Date Received:	2016-11-04
Date Tested:	2016-11-04
Date Completed:	2016-11-07
Next Due Date:	2017-01-06

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	: 22 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)	0.0034

****

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

PATRICK TSE
Laboratory Manager

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Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/160903/B
Date of Issue:	2016-09-05
Date Received:	2016-09-03
Date Tested:	2016-09-03
Date Completed:	2016-09-05
Next Due Date:	2016-11-04

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 54 %

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)	0.0035

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/A/161104A
Date of Issue:	2016-11-07
Date Received:	2016-11-04
Date Tested:	2016-11-04
Date Completed:	2016-11-07
Next Due Date:	2017-01-06

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 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)	0.0034

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/160903/C
Date of Issue:	2016-09-05
Date Received:	2016-09-03
Date Tested:	2016-09-03
Date Completed:	2016-09-05
Next Due Date:	2016-11-04

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.	: 014750
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 790 CPM
Equipment No.	: A-02-06

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 54 %

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

****

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TEST REPORT

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

Test Report No.:	C/A/161104B
Date of Issue:	2016-11-07
Date Received:	2016-11-04
Date Tested:	2016-11-04
Date Completed:	2016-11-07
Next Due Date:	2017-01-06
Page:	1 of 1

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 014750
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 790 CPM
Equipment No.	: A-02-06

Test Conditions:

Room Temperature	: 22 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)	0.0032

****

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TEST REPORT

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

Test Report No.:	C/A/161104C
Date of Issue:	2016-11-07
Date Received:	2016-11-04
Date Tested:	2016-11-04
Date Completed:	2016-11-07
Next Due Date:	2017-01-06

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 541146
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 625 CPM
Equipment No.	: A-02-07

Test Conditions:

Room Temperature	: 22 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)	0.0031

****

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TEST REPORT

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

Test Report No.:	C/N/151231
Date of Issue:	2016-01-04
Date Received:	2015-12-31
Date Tested:	2015-12-31
Date Completed:	2016-01-04
Next Due Date:	2017-01-03

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.	: 14303
Microphone No.	: 35222
Equipment No.	: N-08-05

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 53%

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

Remark: 1)This report supersedes the one dated 2012/01/21 with certificate number C/N/120120/1.

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Laboratory Manager

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TEST REPORT

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

Test Report No.:	C/N/160819B
Date of Issue:	2016-08-22
Date Received:	2016-08-19
Date Tested:	2016-08-19
Date Completed:	2016-08-22
Next Due Date:	2017-08-21

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 Temperatre	: 24 degree Celsius
Relative Humidity	: 58%

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

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Laboratory Manager

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TEST REPORT

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

Test Report No.:	C/N/160930B
Date of Issue:	2016-10-03
Date Received:	2016-09-30
Date Tested:	2016-09-30
Date Completed:	2016-10-03
Next Due Date:	2017-10-02
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24791
Equipment No.	: N-09-04

Test conditions:

Room Temperatre	: 25 degree Celsius
Relative Humidity	: 60%

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

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Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/N/160819D
Date of Issue:	2016-08-22
Date Received:	2016-08-19
Date Tested:	2016-08-19
Date Completed:	2016-08-22
Next Due Date:	2017-08-21
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

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 Temperatre	: 24 degree Celsius
Relative Humidity	: 58%

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:
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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 November 2016

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

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

Air Quality Monitoring Station (1 hr TSP & 24 hr TSP)
CM_CB1a - The Arcade, Cyberport
CM_WF1a - Wah Ming House
CM_AB1b - Works Site Boundary of Aberdeen PTW

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

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 December 2016

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

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

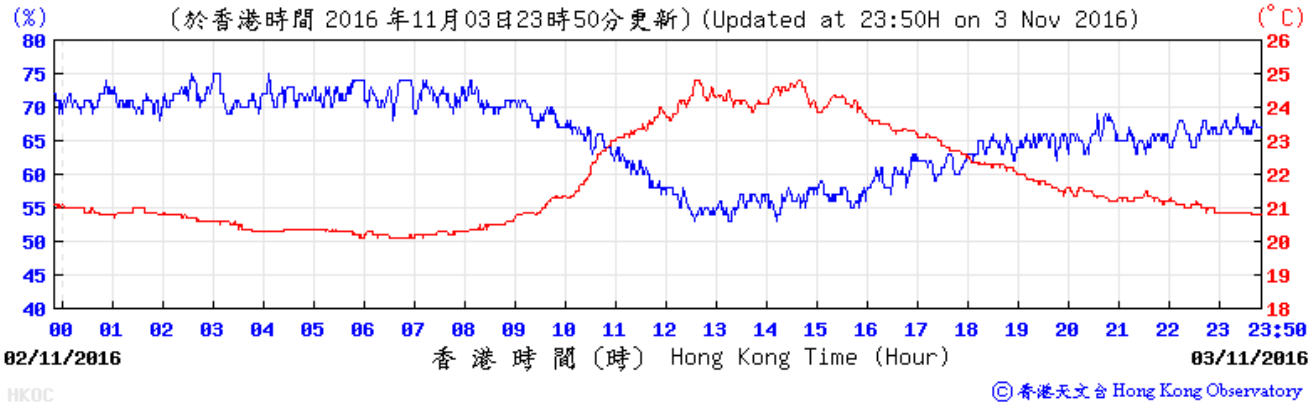
Air Quality Monitoring Station (1 hr TSP & 24 hr TSP)
CM_CB1a - The Arcade, Cyberport
CM_WF1a - Wah Ming House
CM_AB1b - Works Site Boundary of Aberdeen PTW

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

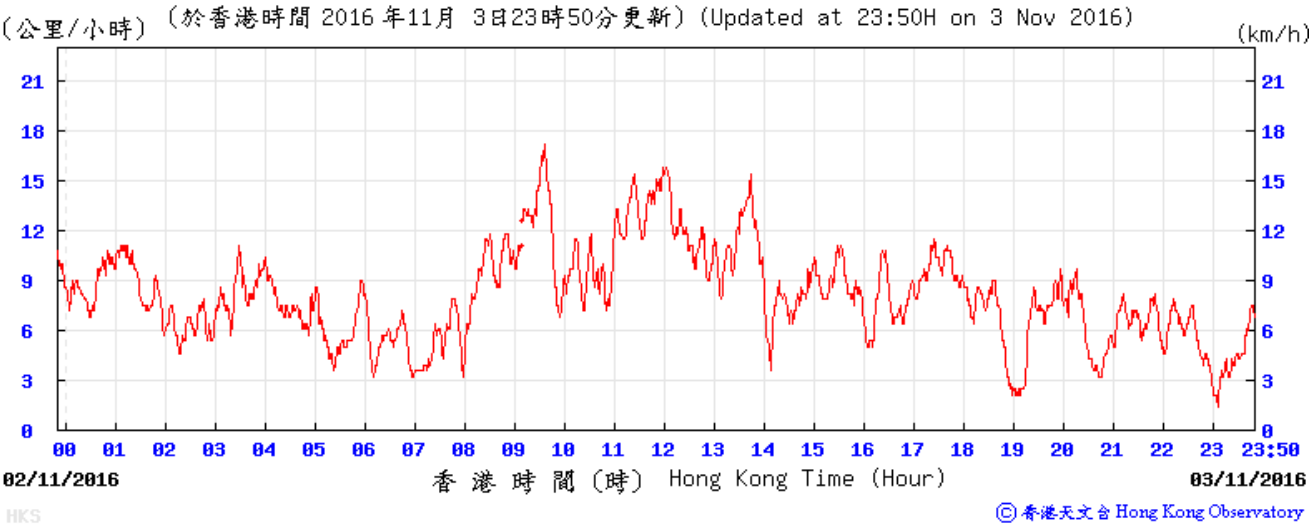
APPENDIX D
METEOROLOGICAL DATA ON MONITORING DATES

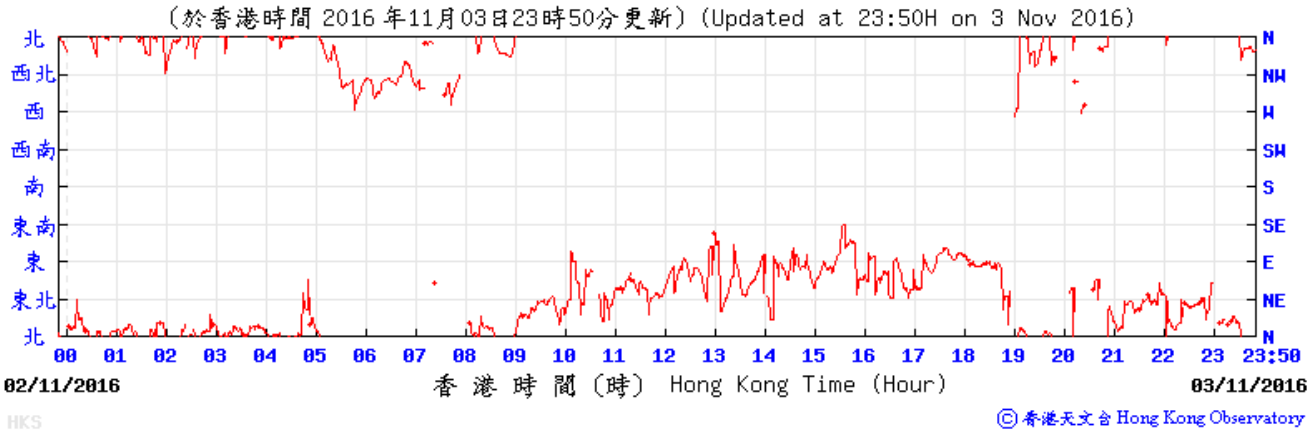
Appendix D
Meteorological Data Recorded from HKO Station (3 November 2016)
(Source: www.hko.gov.hk)

Temperature/Humidity:



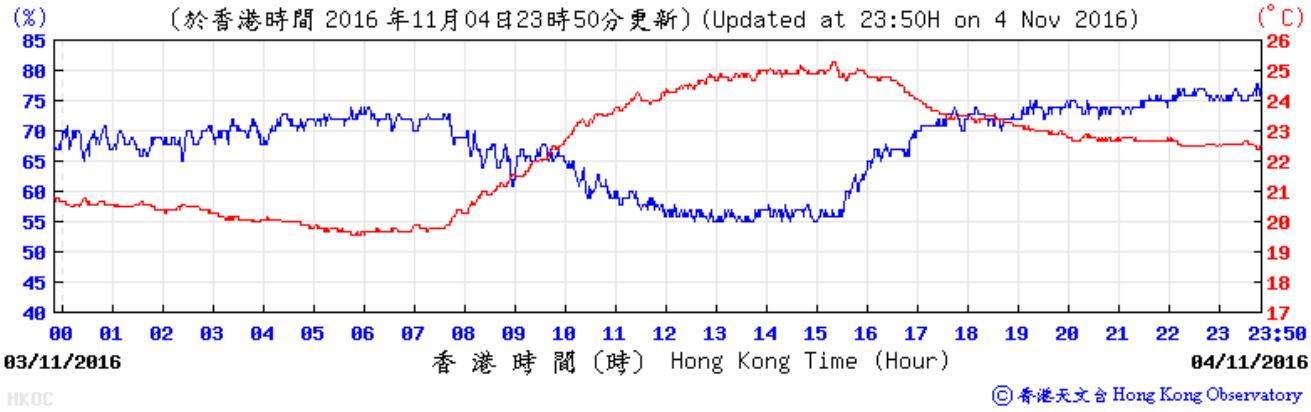
Wind Speed and Direction:



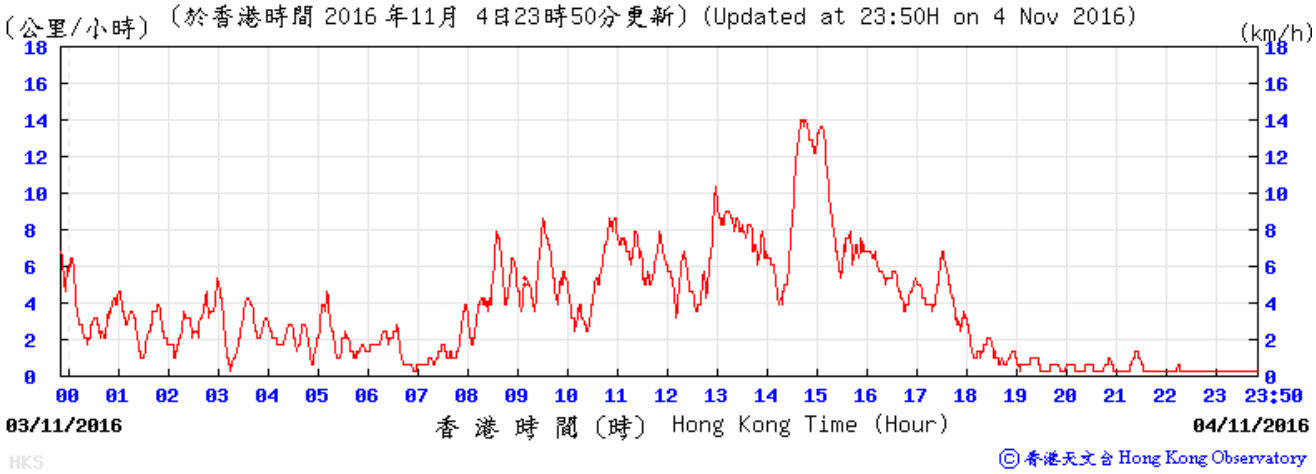


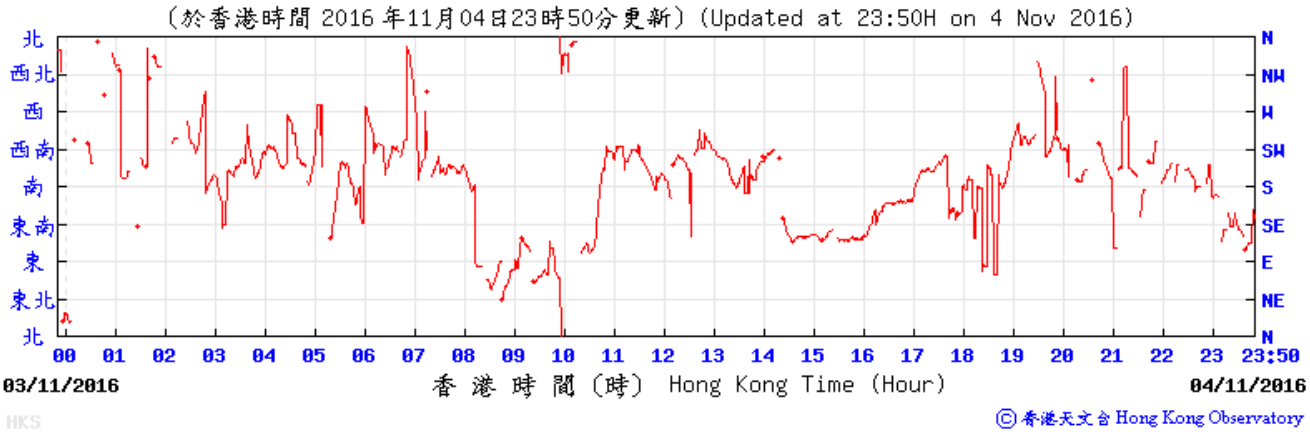
Meteorological Data Recorded from HKO Station (4 November 2016) (Source: www.hko.gov.hk)

Temperature/Humidity:



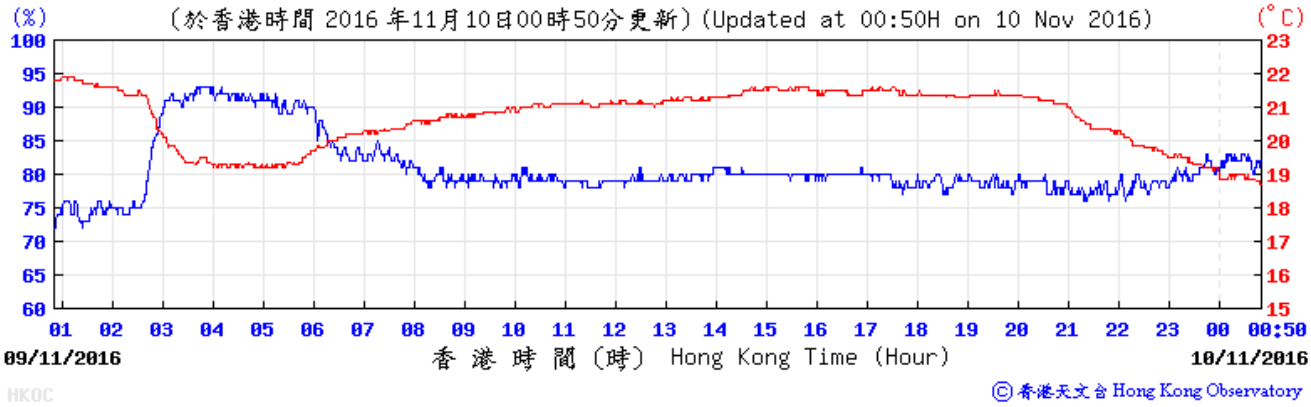
Wind Speed and Direction:



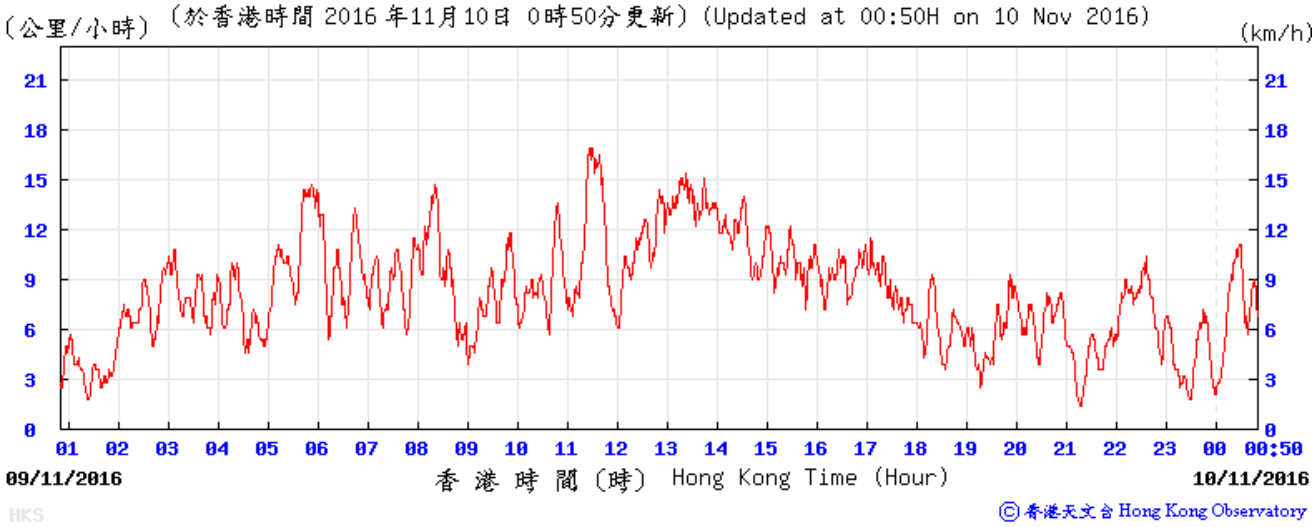


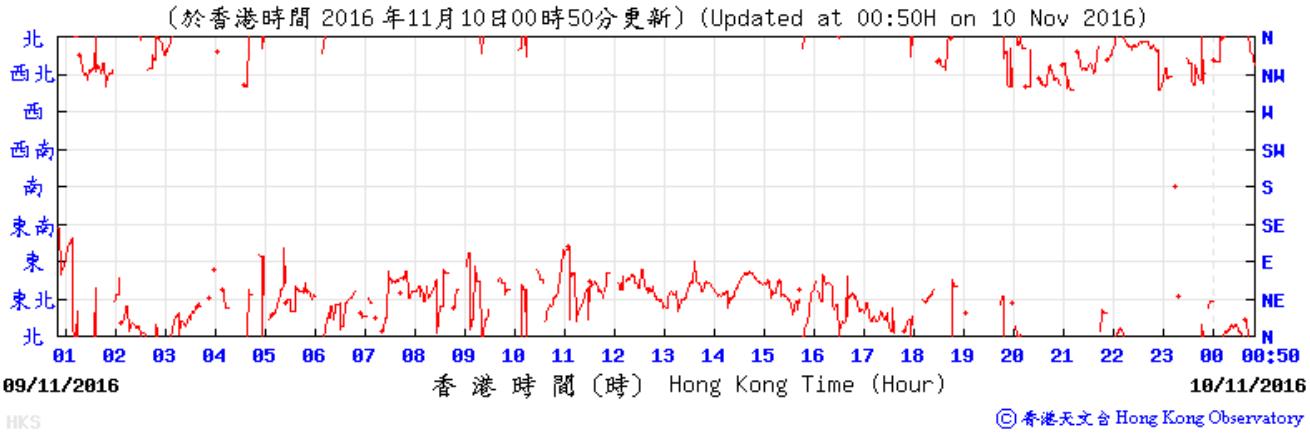
Meteorological Data Recorded from HKO Station (9 November 2016) (Source: www.hko.gov.hk)

Temperature/Humidity:



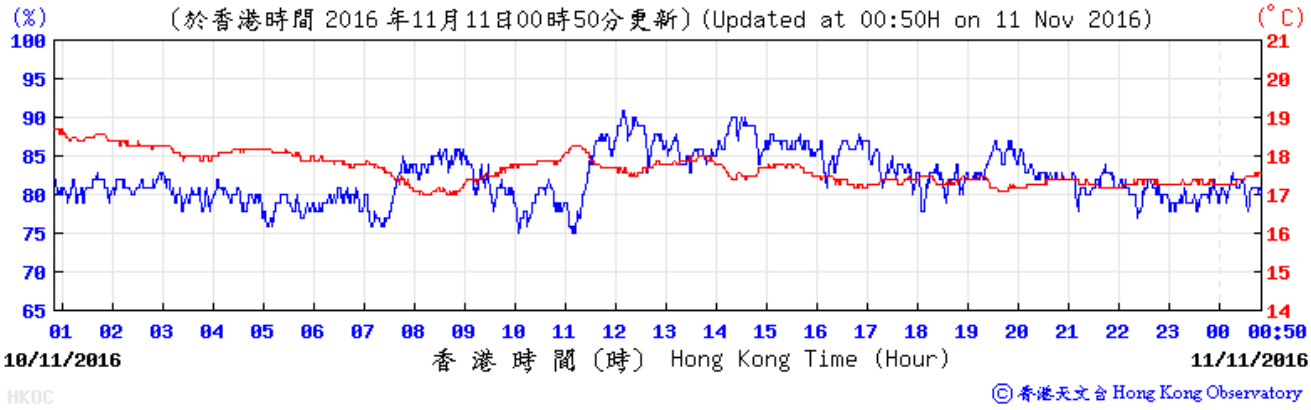
Wind Speed and Direction:



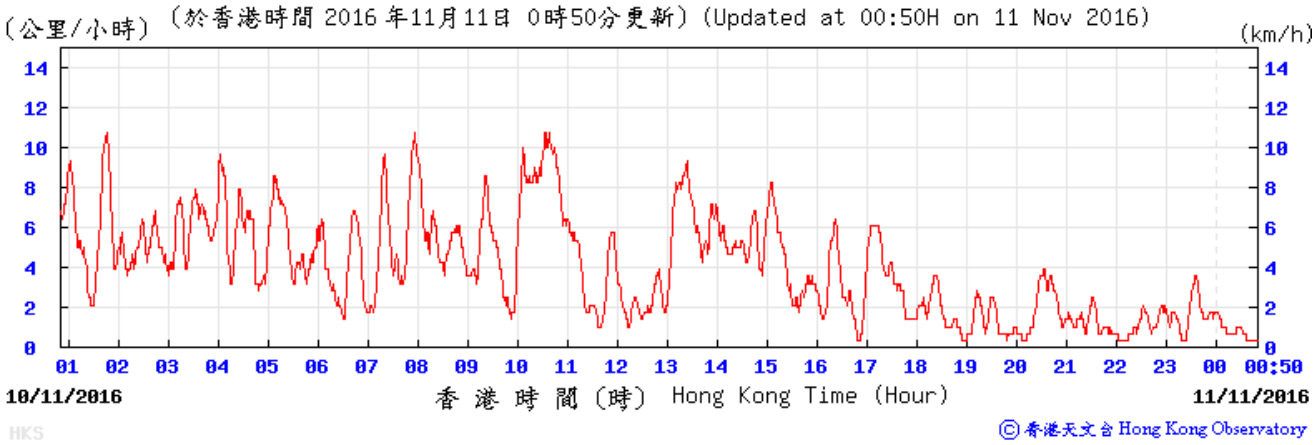


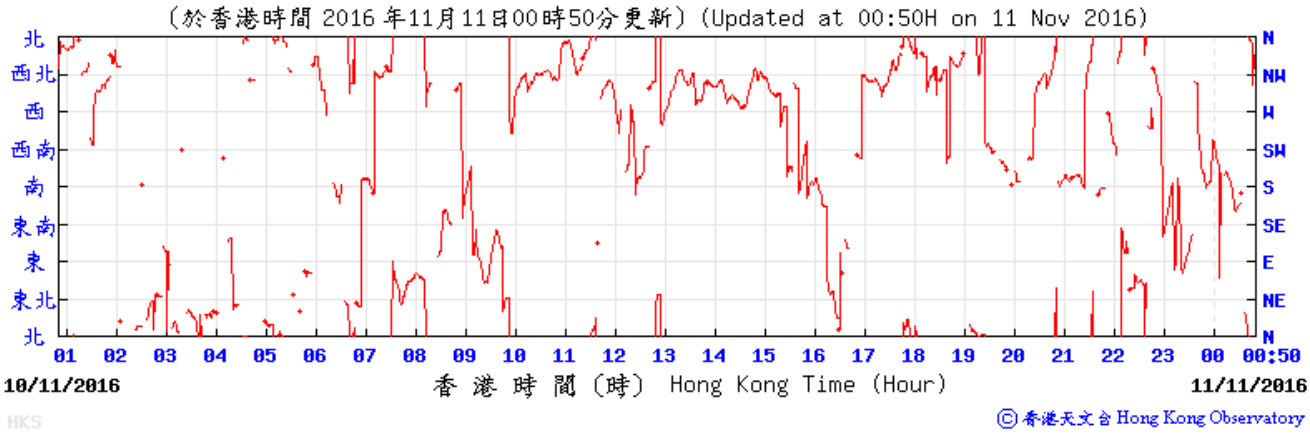
Meteorological Data Recorded from HKO Station (10 November 2016) (Source: www.hko.gov.hk)

Temperature/Humidity:



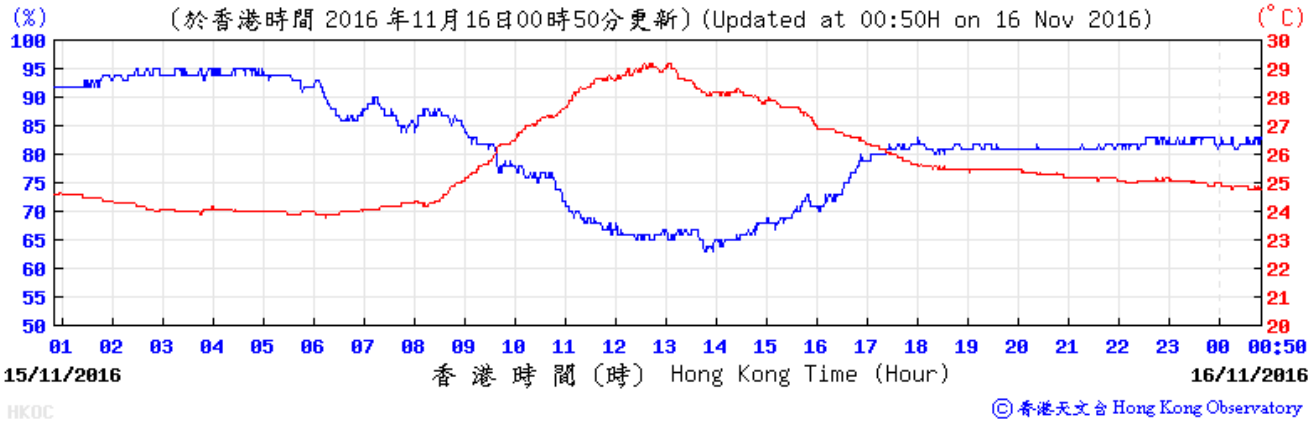
Wind Speed and Direction:



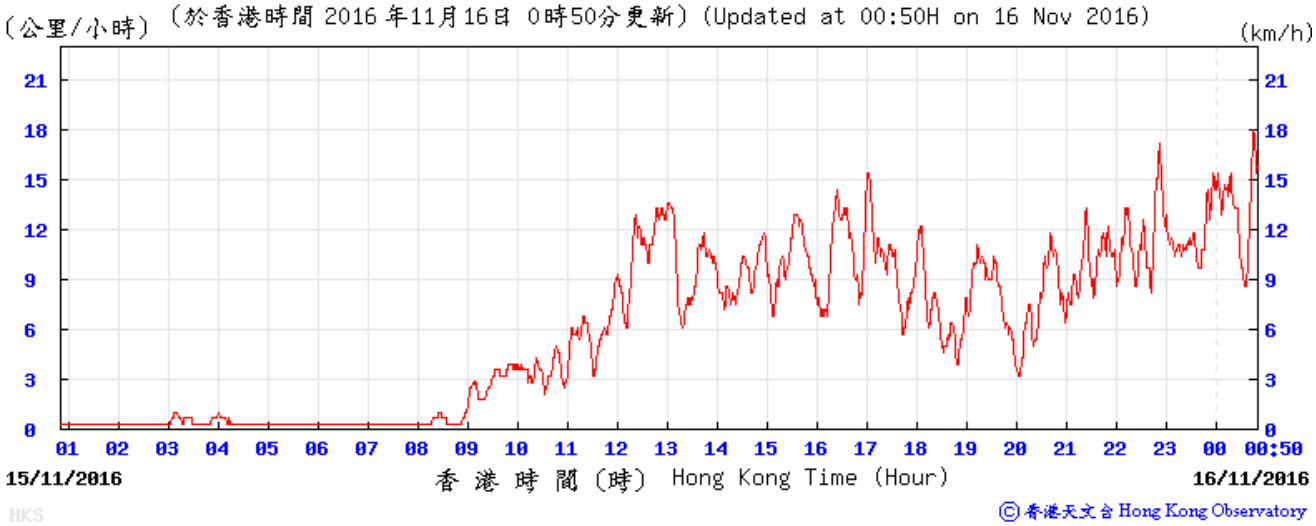


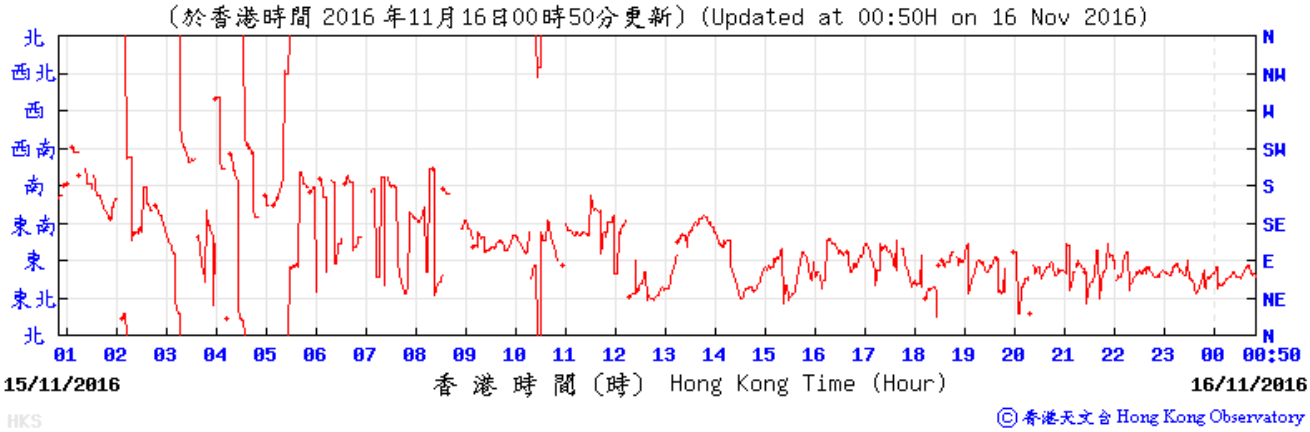
Meteorological Data Recorded from HKO Station (15 November 2016) (Source: www.hko.gov.hk)

Temperature/Humidity:



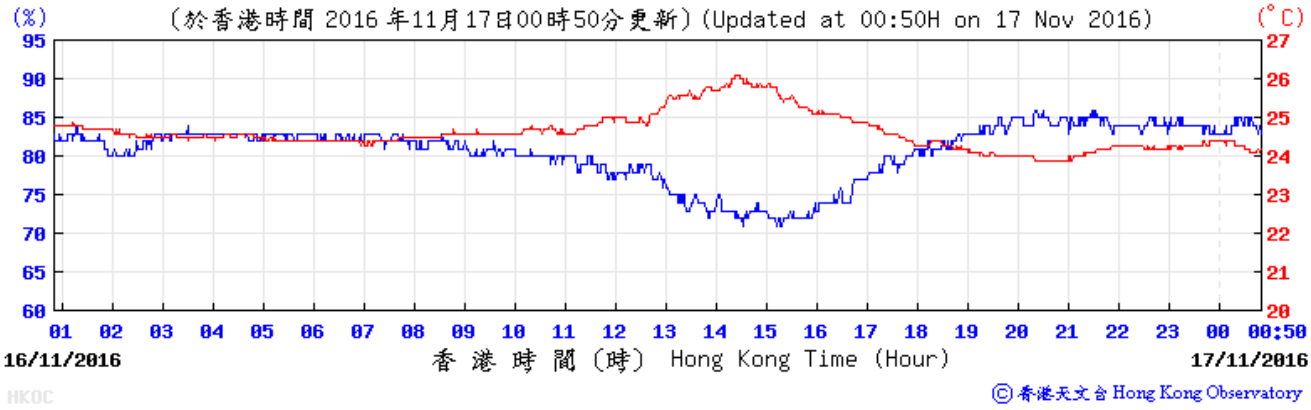
Wind Speed and Direction:



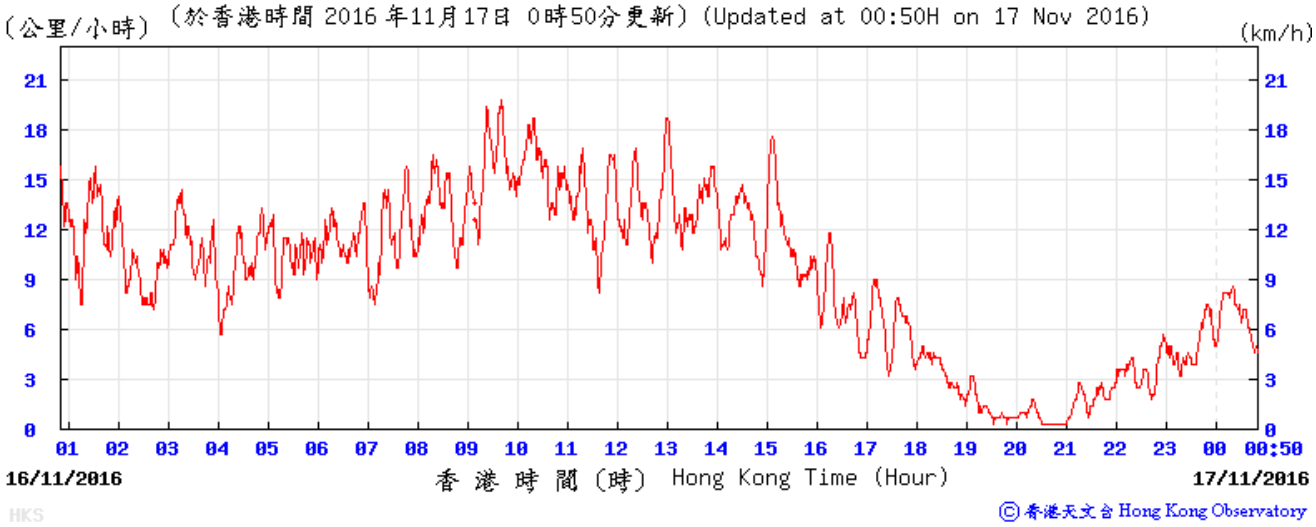


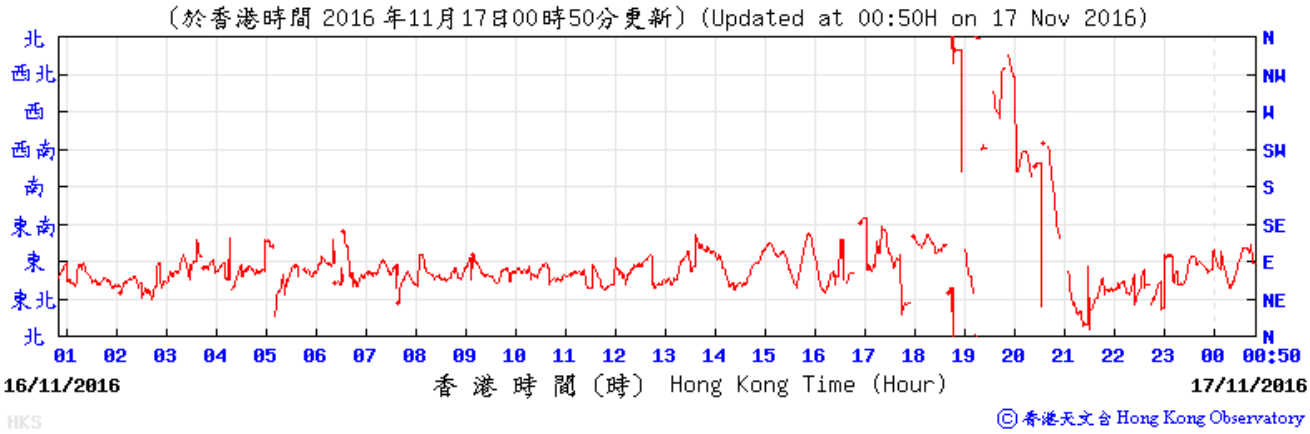
Meteorological Data Recorded from HKO Station (16 November 2016) (Source: www.hko.gov.hk)

Temperature/Humidity:



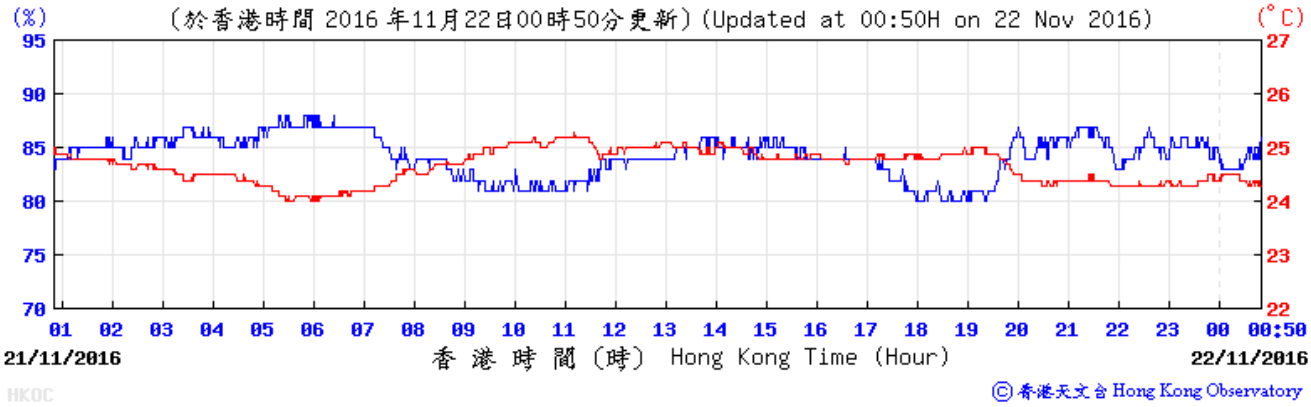
Wind Speed and Direction:



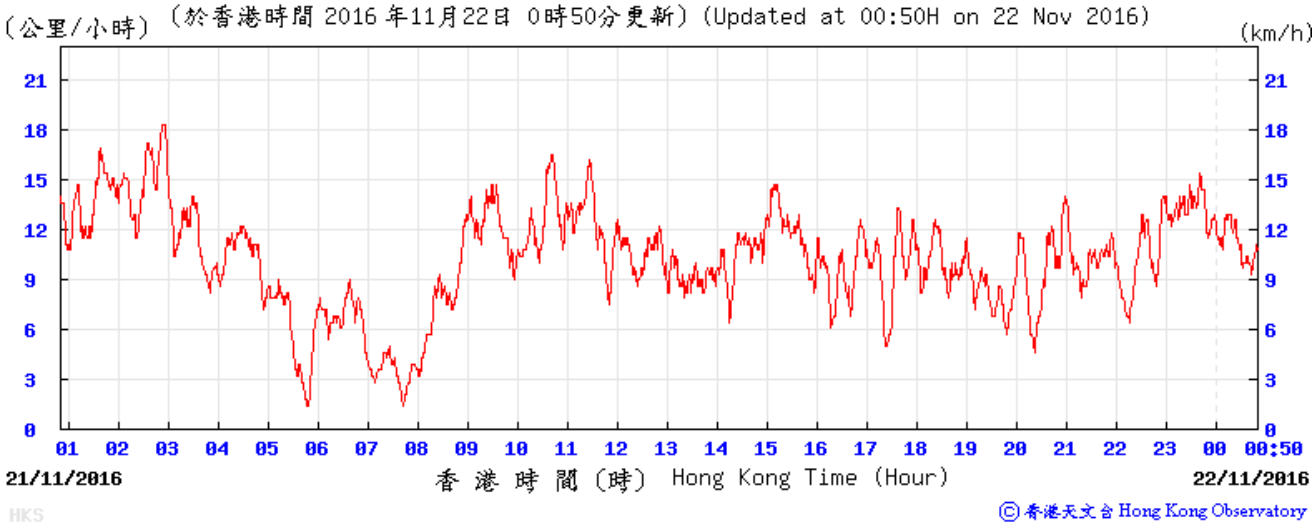


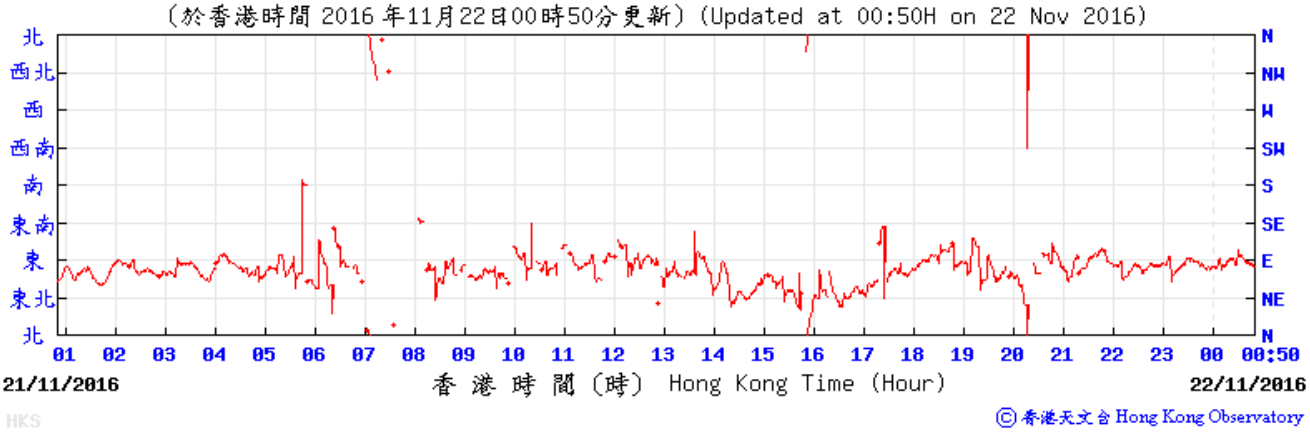
Meteorological Data Recorded from HKO Station (21 November 2016) (Source: www.hko.gov.hk)

Temperature/Humidity:



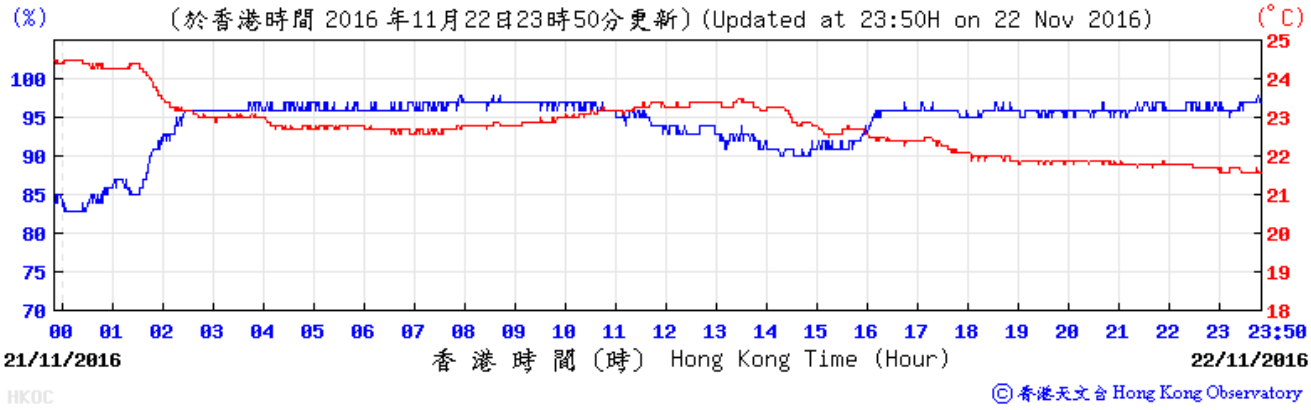
Wind Speed and Direction:





Meteorological Data Recorded from HKO Station (22 November 2016) (Source: www.hko.gov.hk)

Temperature/Humidity:



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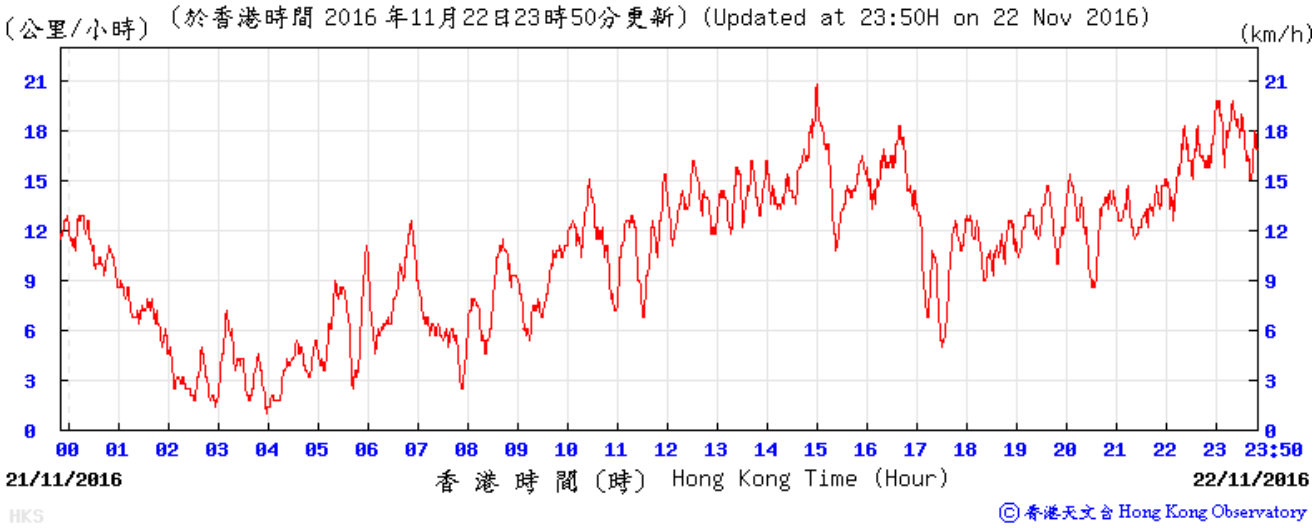
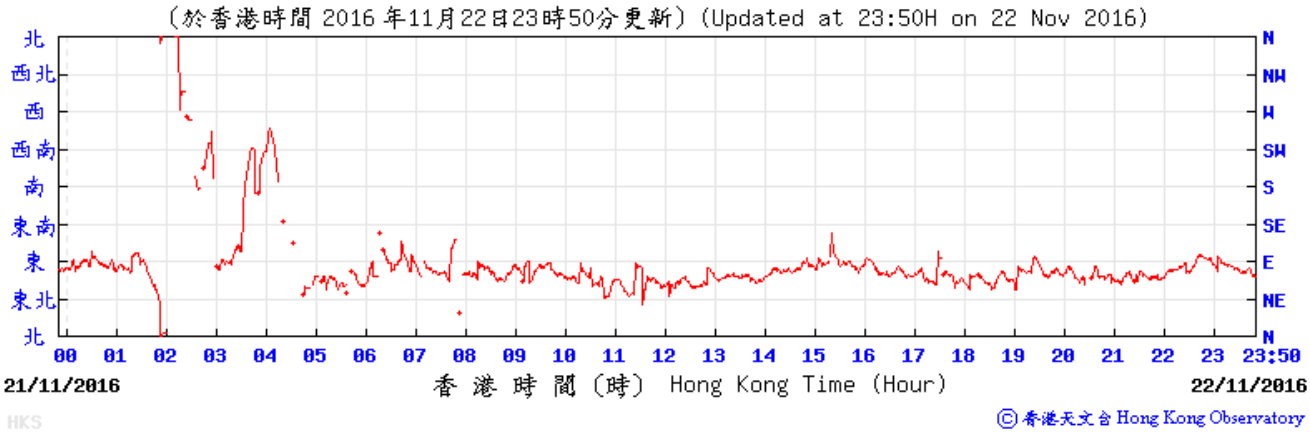
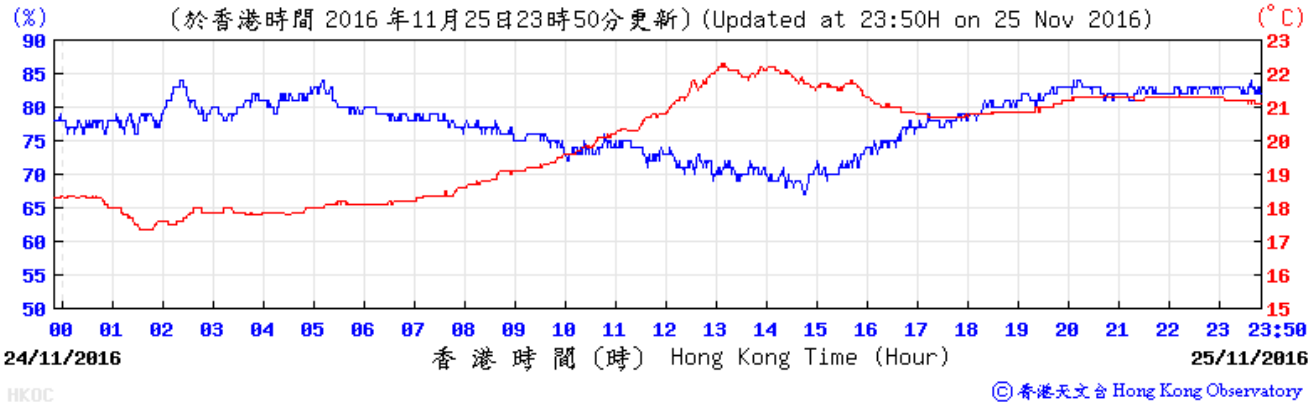


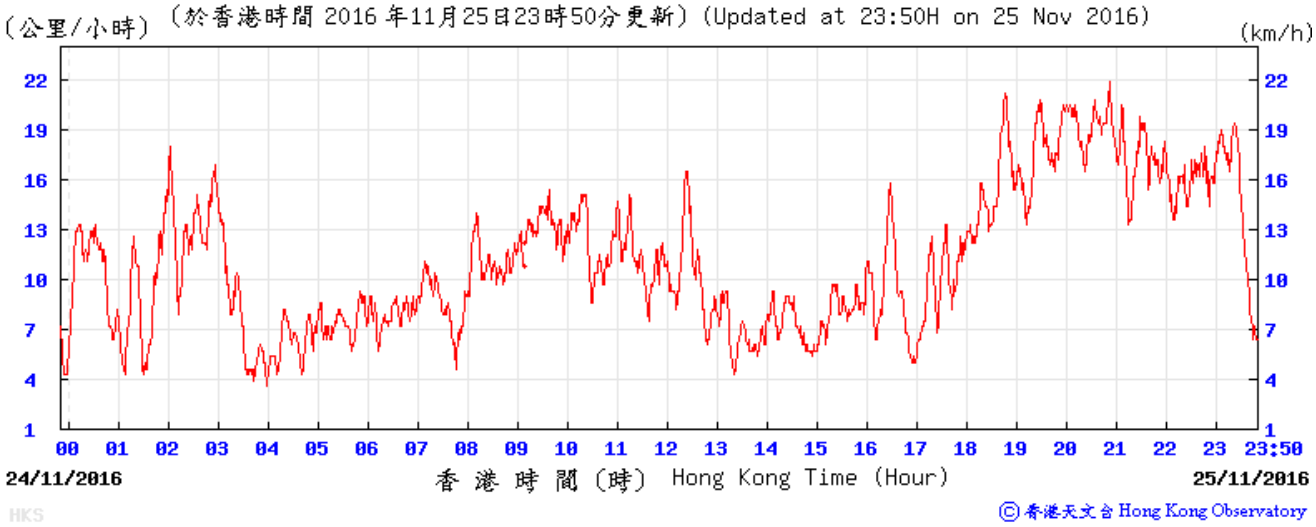


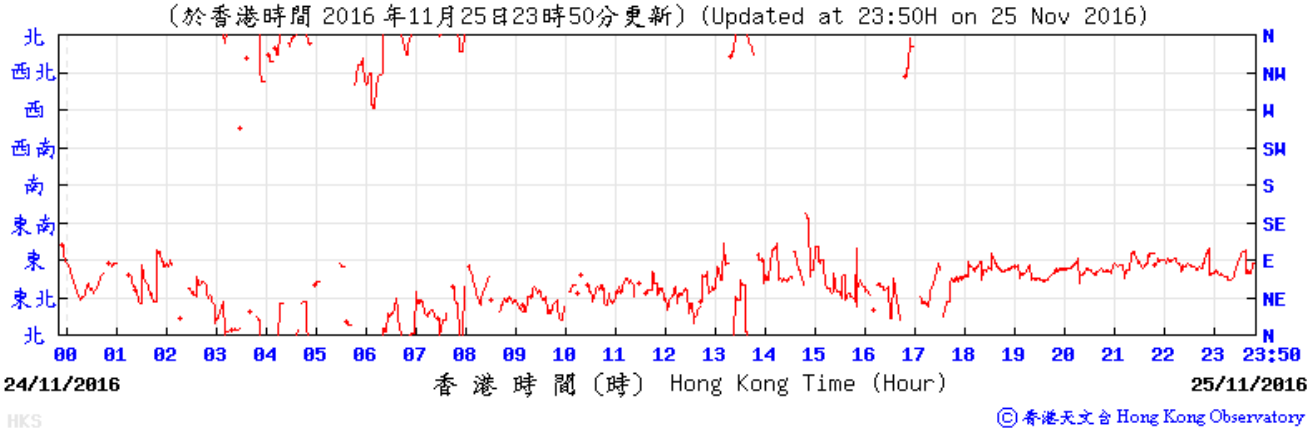
Meteorological Data Recorded from HKO Station (25 November 2016) (Source: www.hko.gov.hk)

Temperature/Humidity:



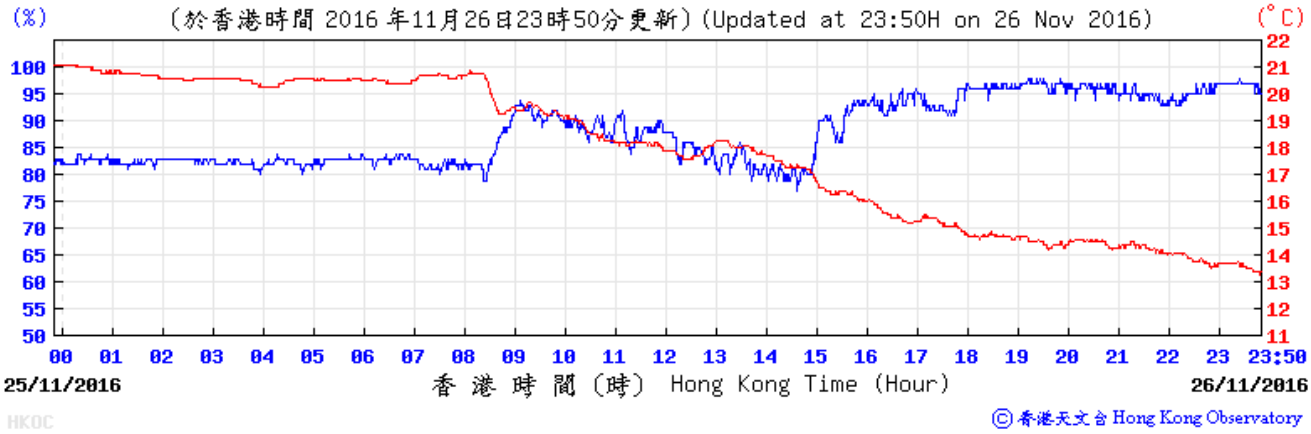
Wind Speed and Direction:



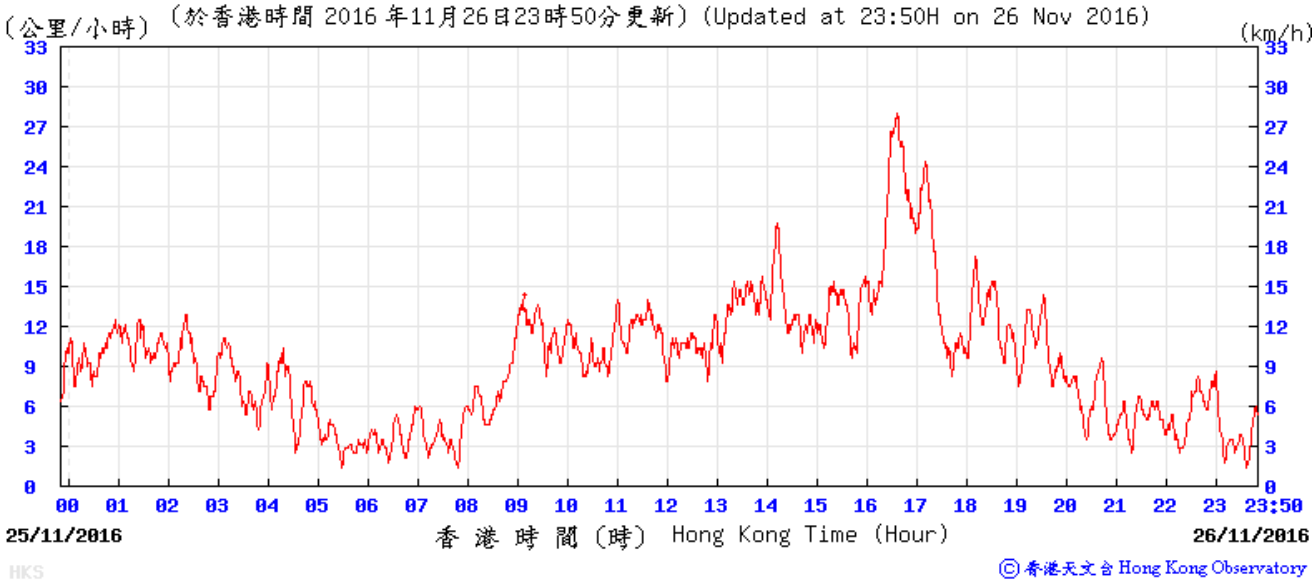


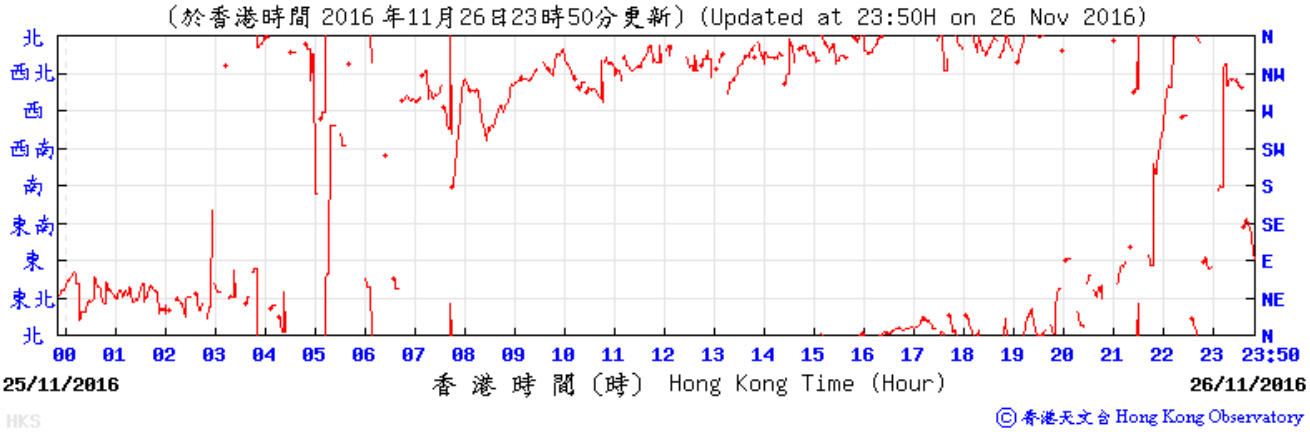
Meteorological Data Recorded from HKO Station (26 November 2016) (Source: www.hko.gov.hk)

Temperature/Humidity:



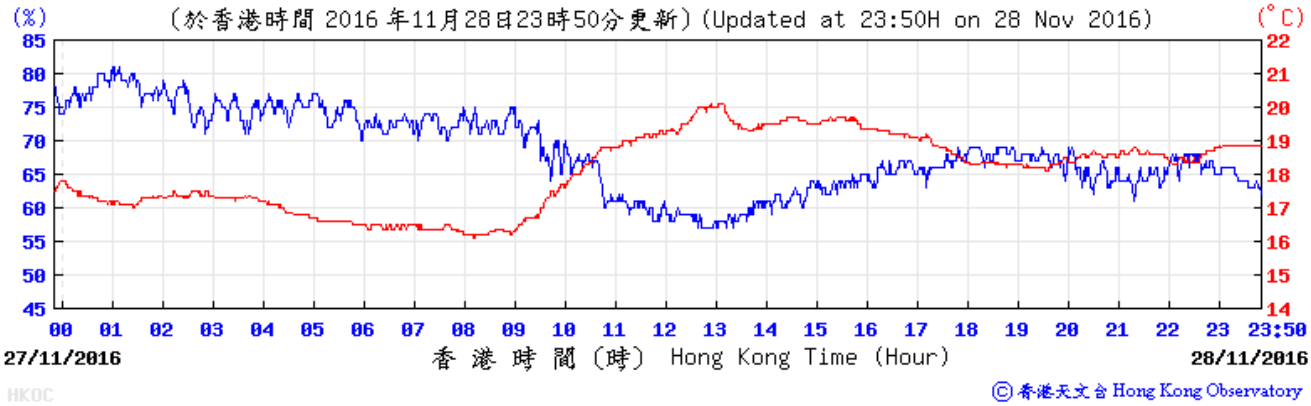
Wind Speed and Direction:



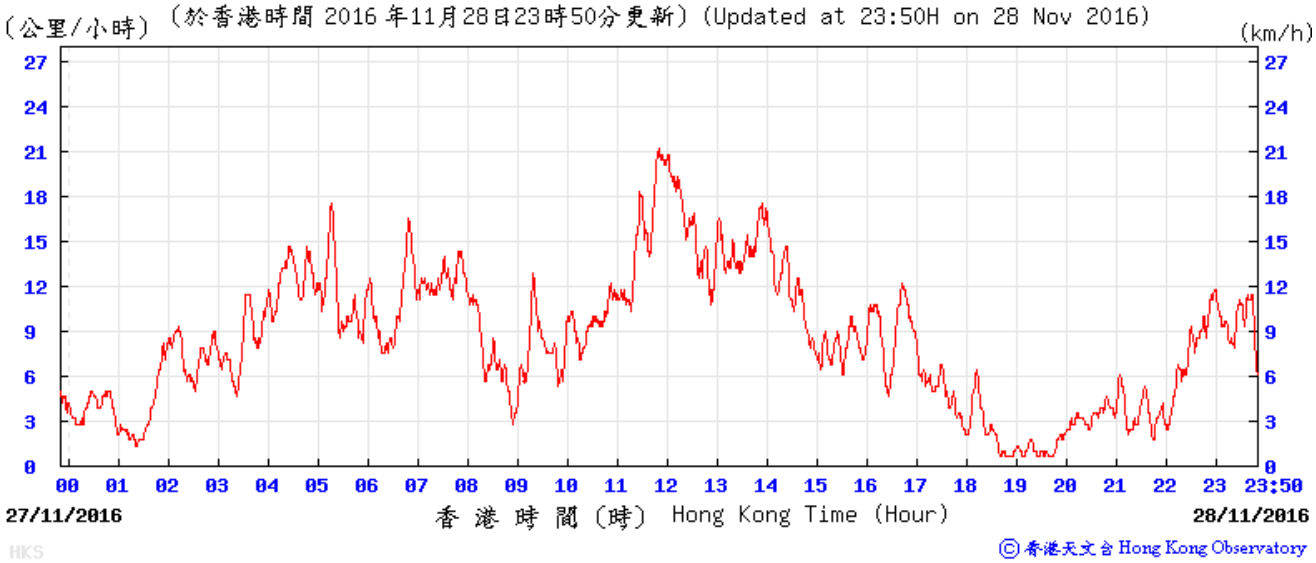


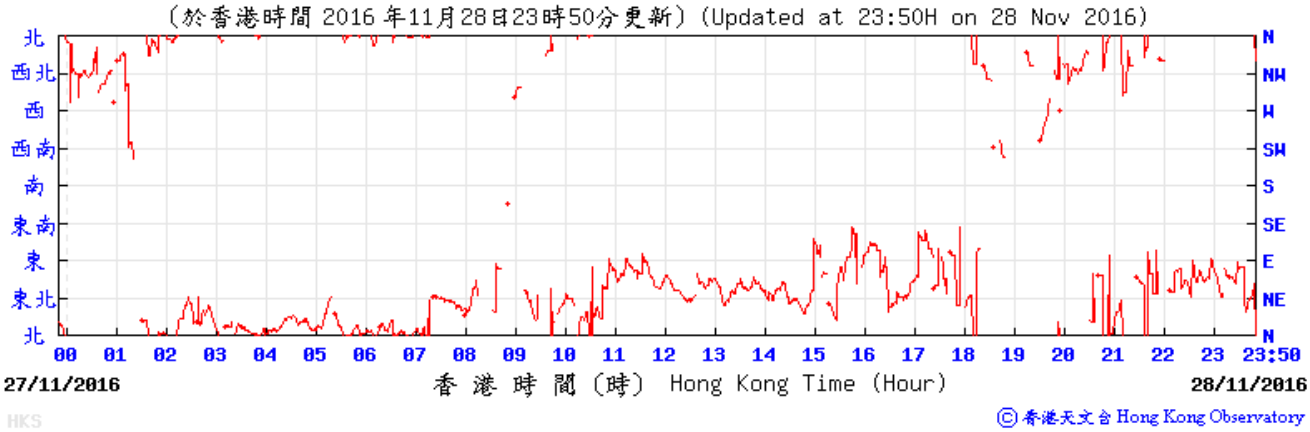
Meteorological Data Recorded from HKO Station (28 November 2016) (Source: www.hko.gov.hk)

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 (μg/m^3)
4-Nov-16	9:00	Sunny	93.6
4-Nov-16	10:00	Sunny	84.2
4-Nov-16	11:00	Sunny	80.6
10-Nov-16	9:00	Cloudy	137.0
10-Nov-16	10:00	Cloudy	135.1
10-Nov-16	11:00	Cloudy	123.5
16-Nov-16	9:00	Cloudy	252.4
16-Nov-16	10:00	Cloudy	245.4
16-Nov-16	11:00	Cloudy	242.3
22-Nov-16	8:30	Rainy	48.3
22-Nov-16	9:30	Rainy	45.5
22-Nov-16	10:30	Rainy	52.2
28-Nov-16	13:00	Sunny	42.0
28-Nov-16	14:00	Sunny	44.6
28-Nov-16	15:00	Sunny	43.6
		Average	111.4
		Maximum	252.4
		Minimum	42.0

Location CM_AB1b - Works Site Boundary of Aberdeen PTW			
Date	Time	Weather	Particulate Concentration (μg/m^3)
4-Nov-16	9:00	Sunny	86.6
4-Nov-16	10:00	Sunny	79.5
4-Nov-16	11:00	Sunny	88.0
10-Nov-16	13:00	Cloudy	149.0
10-Nov-16	14:00	Cloudy	144.6
10-Nov-16	15:00	Cloudy	154.3
16-Nov-16	13:00	Cloudy	255.7
16-Nov-16	14:00	Cloudy	251.8
16-Nov-16	15:00	Cloudy	257.1
22-Nov-16	9:00	Rainy	50.5
22-Nov-16	10:00	Rainy	49.6
22-Nov-16	11:00	Rainy	51.4
28-Nov-16	9:00	Sunny	51.7
28-Nov-16	10:00	Sunny	47.1
28-Nov-16	11:00	Sunny	49.2
		Average	117.7
		Maximum	257.1
		Minimum	47.1

Appendix E - 1-hour TSP Monitoring Results

Location CM_CB1a - The Arcade, Cyberport			
Date	Time	Weather	Particulate Concentration (μg/m^3)
4-Nov-16	9:00	Sunny	60.7
4-Nov-16	10:00	Sunny	59.3
4-Nov-16	11:00	Sunny	67.1
10-Nov-16	8:45	Cloudy	169.7
10-Nov-16	9:45	Cloudy	163.5
10-Nov-16	10:45	Cloudy	165.0
16-Nov-16	9:00	Cloudy	260.2
16-Nov-16	10:00	Cloudy	266.4
16-Nov-16	11:00	Cloudy	257.8
22-Nov-16	13:00	Rainy	55.6
22-Nov-16	14:00	Rainy	59.4
22-Nov-16	15:00	Rainy	61.9
28-Nov-16	9:00	Sunny	60.0
28-Nov-16	10:00	Sunny	59.1
28-Nov-16	11:00	Sunny	61.2
		Average	121.8
		Maximum	266.4
		Minimum	55.6

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. ($\mu g/m^3$)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
3-Nov-16	9:00	Sunny	292.9	3.3049	3.3986	0.0937	5133.9	5157.9	24.0	1.25	1.25	1.25	1804.1	51.9	161004/037
9-Nov-16	9:00	Cloudy	293.8	3.2646	3.3559	0.0913	5157.9	5181.9	24.0	1.25	1.25	1.25	1799.6	50.7	161004/047
15-Nov-16	9:00	Sunny	300.5	3.5747	3.6821	0.1074	5181.9	5205.9	24.0	1.23	1.23	1.23	1775.1	60.5	161101/041
21-Nov-16	9:00	Cloudy	297.6	3.3068	3.3660	0.0592	5205.9	5229.9	24.0	1.24	1.24	1.24	1782.8	33.2	161003/036
25-Nov-16	9:00	Cloudy	288.4	3.6145	3.6841	0.0696	5229.9	5253.9	24.0	1.26	1.26	1.26	1816.2	38.3	161101/043
													Min	33.2	
													Max	60.5	
													Average	46.9	

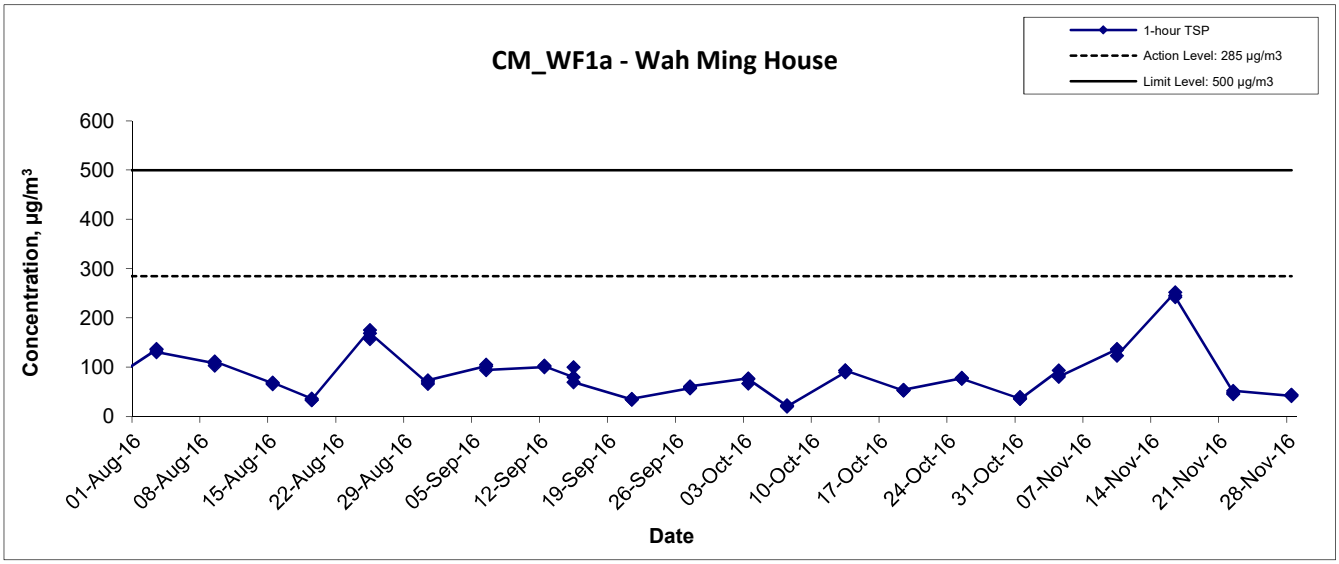
Location CM_AB1b - Works Site Boundary of Aberdeen PTW

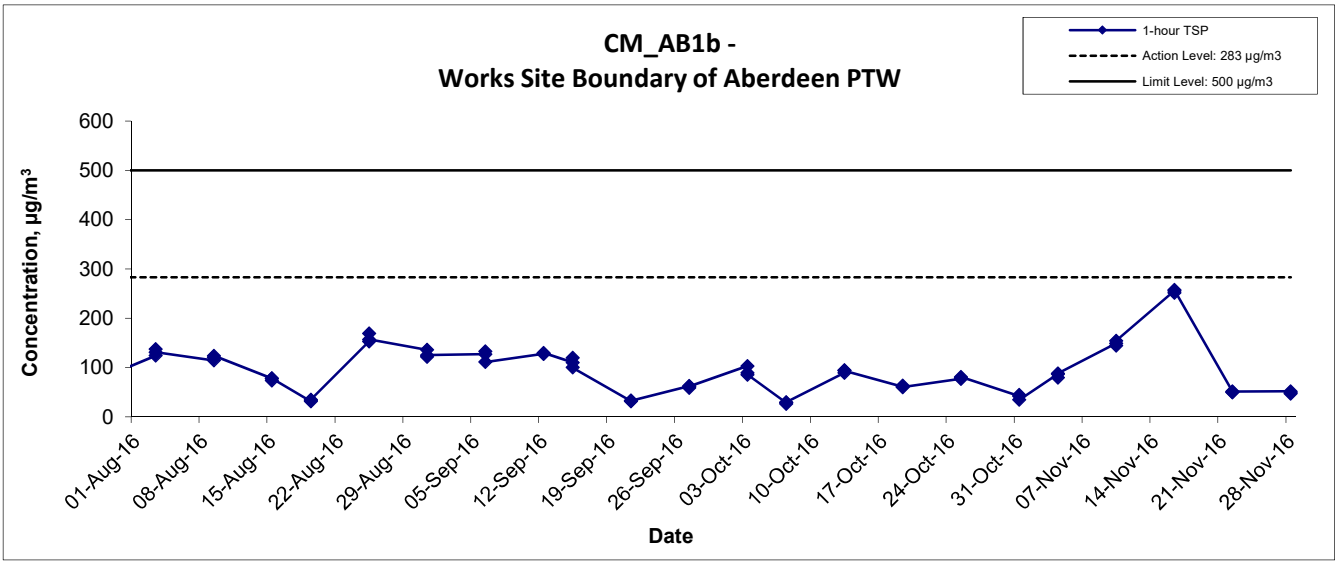
Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
3-Nov-16	9:00	Sunny	293.6	3.3091	3.4634	0.1543	6107.4	6131.4	24.0	1.25	1.25	1.25	1798.1	85.8	161004/038
9-Nov-16	9:00	Cloudy	293.2	3.2712	3.4248	0.1536	6131.4	6155.4	24.0	1.25	1.25	1.25	1797.7	85.4	161004/046
15-Nov-16	9:00	Sunny	300.9	3.5803	3.7933	0.2130	6155.4	6179.4	24.0	1.23	1.23	1.23	1769.6	120.4	161101/040
21-Nov-16	9:00	Cloudy	298.3	3.2720	3.3530	0.0810	6179.4	6203.4	24.0	1.23	1.23	1.23	1776.5	45.6	161004/78
25-Nov-16	9:00	Cloudy	288.7	3.2861	3.4074	0.1213	6203.4	6227.4	24.0	1.26	1.26	1.26	1813.1	66.9	161102/060
													Min	45.6	
													Max	120.4	
													Average	80.8	

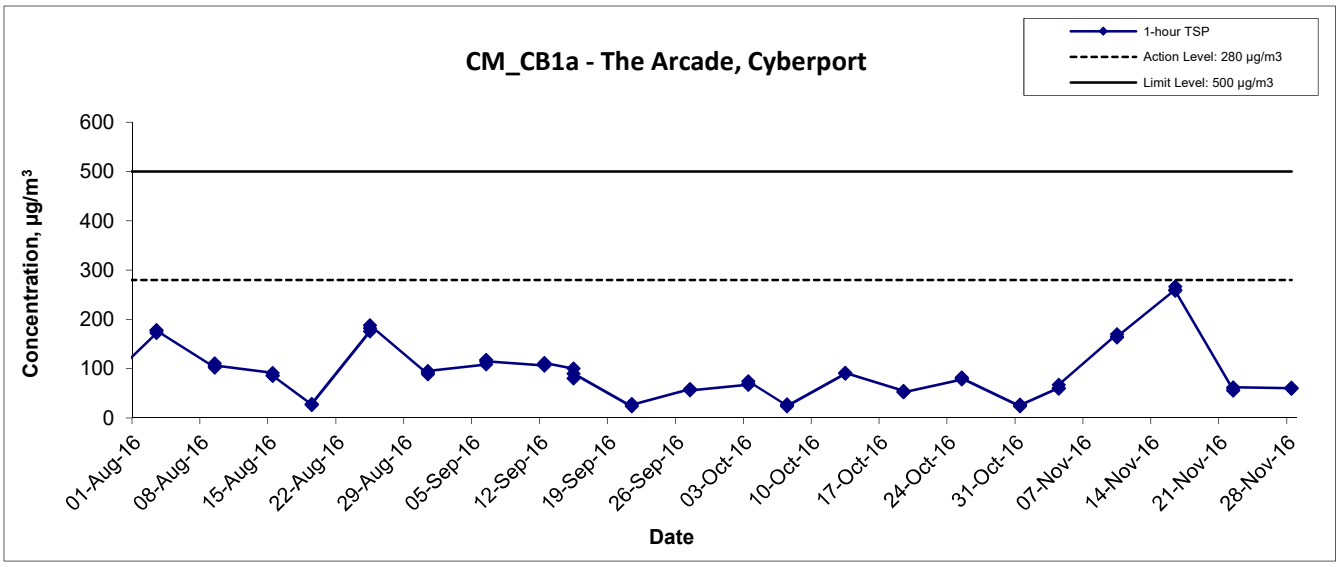
Location CM_CB1a - The Arcade, Cyberport

Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
3-Nov-16	9:00	Sunny	293.5	3.2824	3.4020	0.1196	10431.8	10455.8	24.0	1.25	1.25	1.25	1800.3	66.4	161004/036
9-Nov-16	9:00	Cloudy	294.6	3.2729	3.3973	0.1244	10455.8	10479.8	24.0	1.25	1.25	1.25	1794.6	69.3	161004/045
15-Nov-16	9:00	Sunny	301.3	3.5979	3.7625	0.1646	10479.8	10503.8	24.0	1.23	1.23	1.23	1769.2	93.0	161101/042
21-Nov-16	9:00	Cloudy	297.5	3.2916	3.3993	0.1077	10503.8	10527.8	24.0	1.24	1.24	1.24	1779.7	60.5	161003/037
25-Nov-16	9:00	Cloudy	287.7	3.6492	3.7457	0.0965	10527.8	10551.8	24.0	1.26	1.26	1.26	1816.8	53.1	161101/044
													Min	53.1	
													Max	93.0	
													Average	68.5	

1-hr TSP Concentration Levels

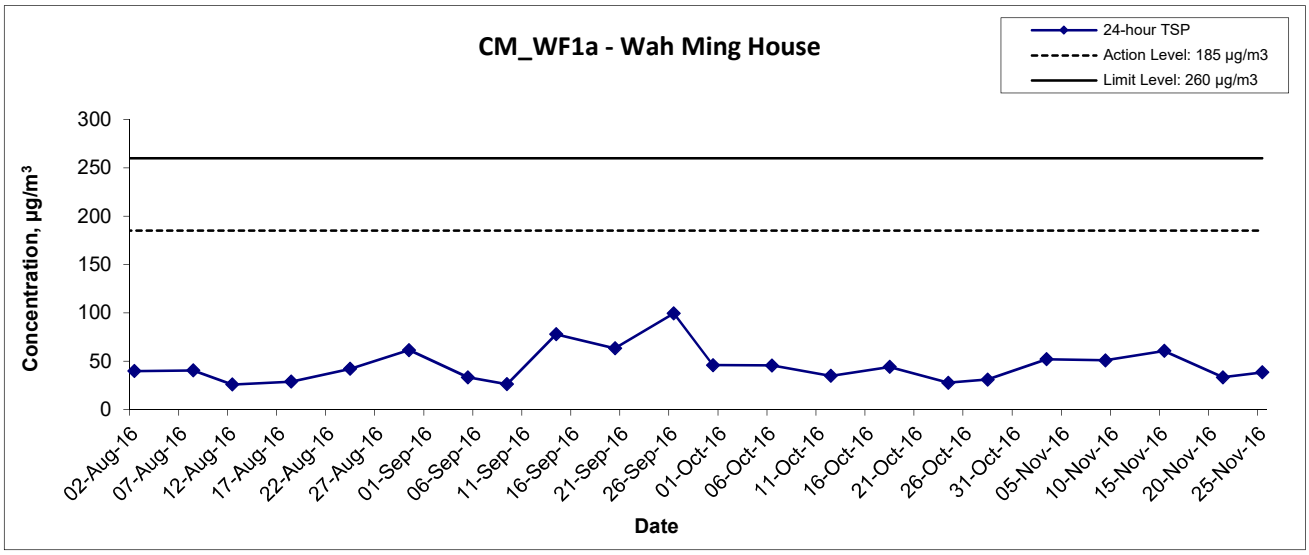


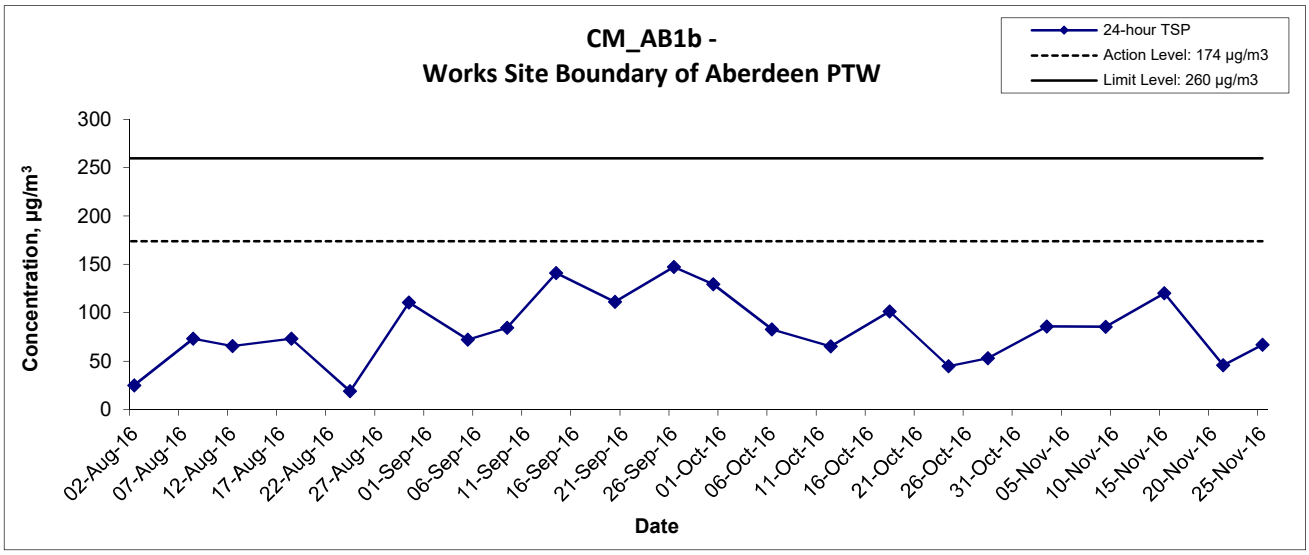


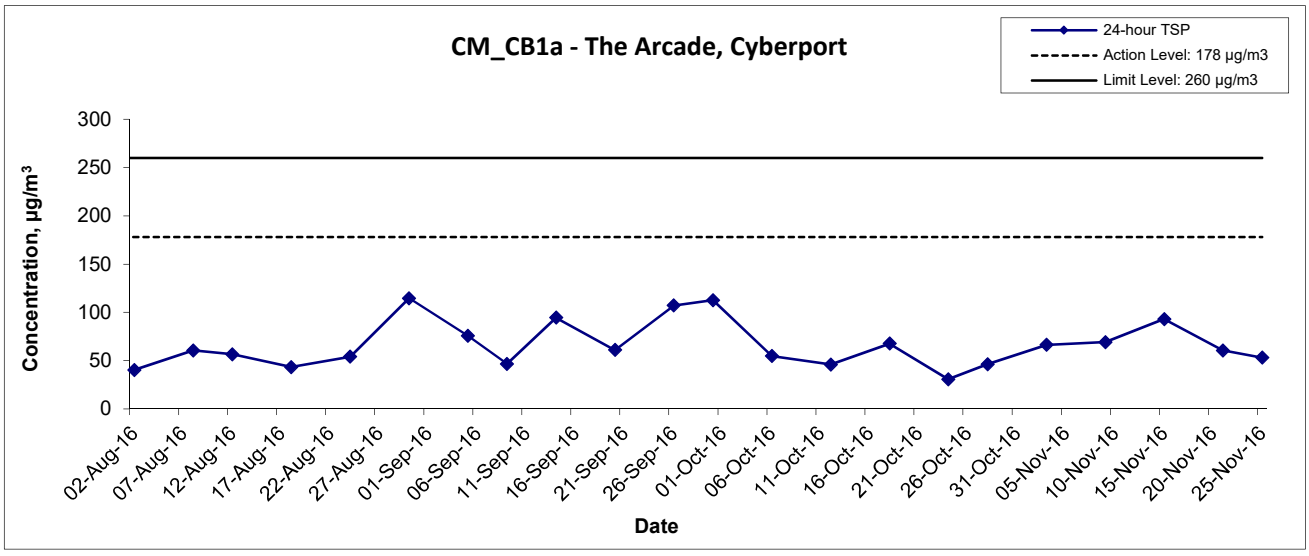


Title	Scale	Project No.	
Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau Graphical Presentation of 1-hour TSP Monitoring Results	N.T.S	MA11060	CINOTECH
	Date Nov 16	Appendix E	

24-hr TSP Concentration Levels







Title	Scale	Project No.	
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	N.T.S	MA11060	CINOTECH
	Date Nov 16	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}
10-Nov-16	13:30	Cloudy	56.4	57.8	52.3	57.3	56.4 Measured ≦ Baseline
16-Nov-16	13:00	Cloudy	50.6	53.1	46.2		50.6 Measured ≦ Baseline
22-Nov-16	13:00	Cloudy	51.8	54.1	47.3		51.8 Measured ≦ Baseline
28-Nov-16	10:00	Sunny	53.1	54.1	46.6		53.1 Measured ≦ Baseline

Location M7a (Wah Fu PTW)
The rooftop of Wah Ming House

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
10-Nov-16	11:00	Cloudy	60.2	61.9	55.7	59.2	53.3
16-Nov-16	14:15	Cloudy	67.9	69.4	65.8		67.3
22-Nov-16	10:30	Cloudy	60.9	63.0	57.3		56.0
28-Nov-16	13:00	Sunny	53.6	55.7	50.2		53.6 Measured ≦ Baseline

Location M8 (Aberdeen PTW)
The rooftop of Wah Lai House

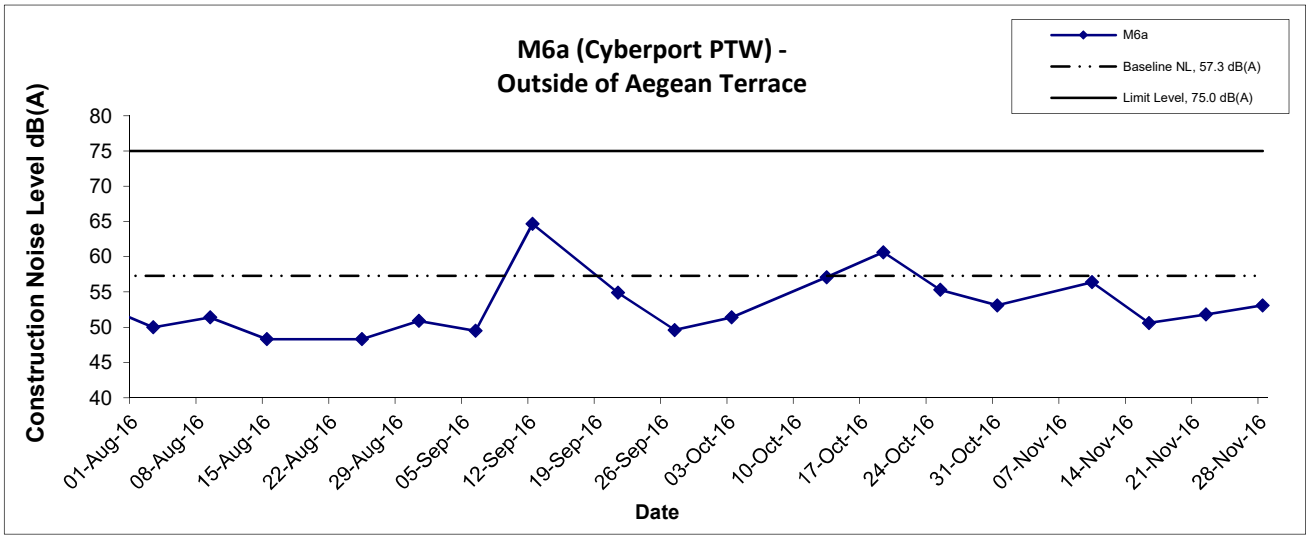
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
10-Nov-16	10:00	Cloudy	68.1	70.3	64.5	64.0	66.0
16-Nov-16	9:15	Cloudy	60.2	62.4	56.5		60.2 Measured ≦ Baseline
22-Nov-16	9:00	Cloudy	67.3	69.0	64.9		64.6
28-Nov-16	14:00	Sunny	68.3	70.0	66.0		66.3

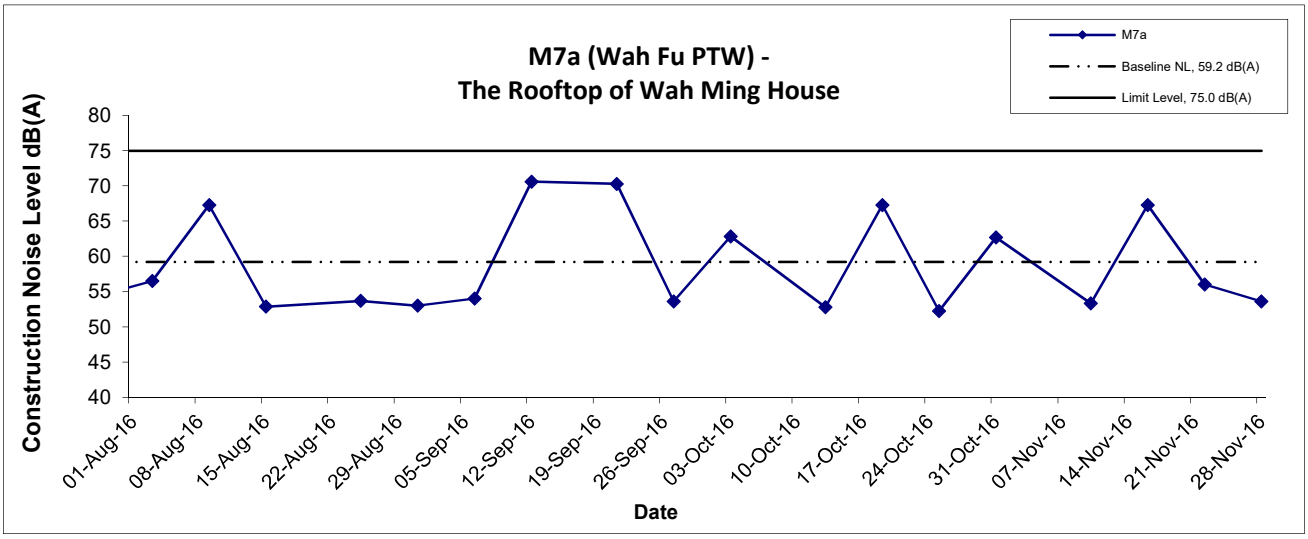
Location M9 (Ap Lei Chau PTW)
The Podium of Mei Chun Court, South Horizons

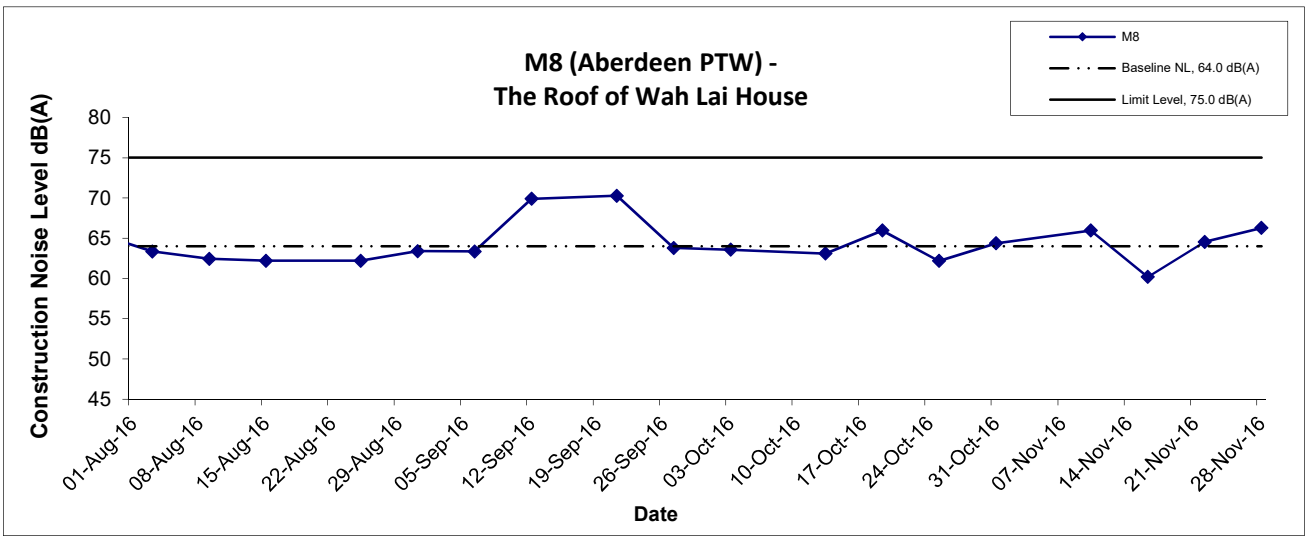
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
10-Nov-16	14:30	Cloudy	60.8	62.7	57.1	56.5	58.8
16-Nov-16	15:30	Cloudy	63.7	65.0	60.4		62.8
22-Nov-16	16:30	Cloudy	62.4	64.6	58.7		61.1
28-Nov-16	15:00	Sunny	62.7	64.2	60.5		61.5

Noise Levels

(0700-1900 hrs on Normal Weekdays)



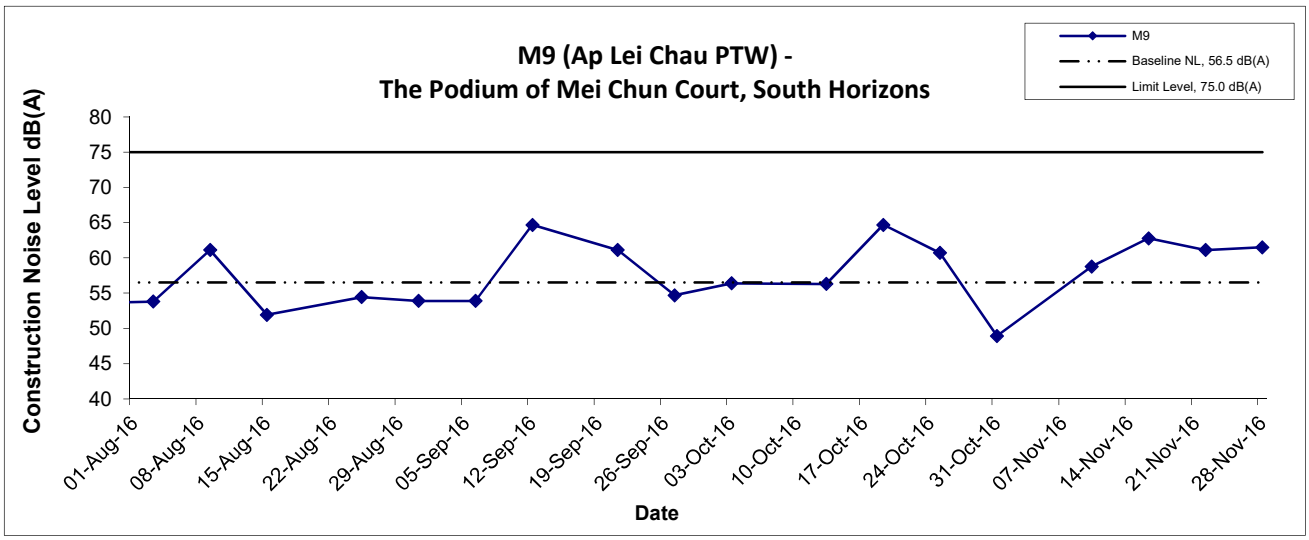




Title	Scale	Project No.	
Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Abredeen and Ap Lei Chau Graphical Presentation of Noise Monitoring Result	N.T.S	MA11060	CINOTECH
	Date Nov 16	Appendix F	

Noise Levels

(0700-1900 hrs on Normal Weekdays)



Title	Scale	Project No.	
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	N.T.S	MA11060	CINOTECH
	Date Nov 16	Appendix F	

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENDIX G – SUMMARY OF EXCEEDANCE

Reporting Month: November 2016

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

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161104
Date	4 November 2016 (Friday)
Time	10:00 – 11:45

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions: On previous audit session (Ref. No. 161028), all environmental deficiencies were improved by the Contractor. ***Remark:*** • N/A	

	Name	Signature	Date
Recorded by	Janet Wai		4 November 2016
Checked by	Dr. Priscilla Choy		4 November 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161111
Date	11 November 2016 (Friday)
Time	9:50 – 11:40

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions: On previous audit session (Ref. No. 161104), all environmental deficiencies were improved by the Contractor. ***Remark:*** • N/A	

	Name	Signature	Date
Recorded by	Janet Wai		11 November 2016
Checked by	Dr. Priscilla Choy		11 November 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161118
Date	18 November 2016 (Friday)
Time	14:00 – 16:00

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions: On previous audit session (Ref. No. 161111), all environmental deficiencies were improved by the Contractor. ***Remark:*** • N/A	

	Name	Signature	Date
Recorded by	Janet Wai		18 November 2016
Checked by	Dr. Priscilla Choy		18 November 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161125
Date	25 November 2016 (Friday)
Time	10:05 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
161125-R01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • The fence should be provided for the existing tree at Cyberport-PTW. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions: On previous audit session (Ref. No. 161118), all environmental deficiencies were improved by the Contractor. ***Remark:*** • N/A	B 2

	Name	Signature	Date
Recorded by	Janet Wai		25 November 2016
Checked by	Dr. Priscilla Choy		25 November 2016

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 2016 (YEAR)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity [in '000m^3]	Hard Rock [in '000m^3]	Reused in the [in '000m^3]	Reused in [in '000m^3]	Disposal as [in '000m^3]	Import Fill [in '000m^3]	Metals [in '000kg]	Paper / [in '000kg]	Plastics (3) [in '000kg]	Chemical [in '000kg]	Other, e.g. [in '000m^3]	Special Waste [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
Year2015	5.361825	0.000000	0.000000	0.000000	5.361825	0.000000	0.000000	0.000000	0.031000	0.050000	0.461870	1.082870
JAN	0.424315	0	0	0	0.424315	0	0	0	0	0	0.04	0.08594
FEB	0.14298	0	0	0	0.14298	0	0	0	0	0	0.02396	0.07137
MAR	0.70206	0	0	0	0.70206	0	0	0	0	0	0.03116	0.07887
APR	1.62817	0	0	0	1.62817	0	0	0	0	0	0.06202	0.08025
MAY	0.74288	0	0	0	0.74288	0	0	0	0	0	0.05818	0.08125
JUNE	0	0	0	0	0	0	0	0	0	0	0.04512	0.08059
SUB-TOTAL	18.908905	0.000000	0.000000	0.000000	18.908905	0.000000	17.430000	0.070000	0.101000	0.950000	0.946570	8.032766
JULY	0.181225	0	0	0	0.181225	0	0	0	0	0	0.0495	0.07441
AUG	0.041515	0	0	0	0.041515	0	0	0	0	0	0.0565	0.07826
SEPT	0.46595	0	0	0	0.46595	0	0	0	0	0	0.09984	0.070538
OCT	0.38916	0	0	0	0.38916	0	0	0	0	0	0.1033	0.08825
NOV	0.03919	0	0	0	0.03919	0	0	0	0	0	0.0719	0.10005
DEC	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	20.025945	0.000000	0.000000	0.000000	20.025945	0.000000	17.430000	0.070000	0.101000	0.950000	1.327610	8.444274

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]
20.654	1.544	1.73	0	17.38	0	30	1	1	4	1.65	9.6

Notes :

(1) The performance targets are given in PS Clause 6(14).

(2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.

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

* (4) The assumed density (kg/m^3) 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 failurein writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring			
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate

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

Table J-2 Event / Action Plan For Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	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	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	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	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	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	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.	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	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	Skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	N/A
	Vehicle washing facilities should be provided at every vehicle exit point.		^
	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.		^
	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.		^
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.		^
	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.		^
	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.		^
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.		^
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.		^
	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.		^
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.		^
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	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: • 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	Construction Works in Close Proximity of Storm Drains or Seafront: 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. • 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: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	All construction sites	^
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals.		^
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.		^
	Encourage collection of aluminum cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.		^
	Any unused chemicals or those with remaining functional capacity shall be recycled.		^
	Proper storage and site practices to minimize the potential for damage or contamination of construction materials.		^
9.115	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.		^
	Training of site personnel in proper waste management and chemical waste handling procedures.		^
9.115	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.		^
	Provision of sufficient waste disposal points and regular collection of waste.		^

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

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

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

APPENDIX L
COMPLAINT LOG

APPENDIX L – COMPLAINT LOG

Reporting Month: November 2016

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	28th December 2012	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.	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: • Adopting a relatively low-noise construction method – small drilling rig to install the pipe piles; • Equipping noise reducing jacket on the small drilling rig. The Contractor was recommended to continue the following mitigation measures in order to minimize the potential construction noise nuisance to the nearby community: • 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	9th August 2013	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. 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.	There was no exceedance report received from Contract DC/2007/24 at noise monitoring stations M7a for Wah Fu PTW in August 2013. After complaint received, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures as below: • 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. 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.	Closed
CIR#3_131119	DSD's Preliminary Treatment Work (PTW) at Wah Fu	19th November 2013	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. According to the information provided by the Contractor, major construction activities that contributed to the noise at Wah Fu	There was no exceedance report received from Contract DC/2007/24 at noise monitoring stations M7a for Wah Fu PTW in November 2013. After complaint received, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures as below: • 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). 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	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	30th 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 30th 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: • 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

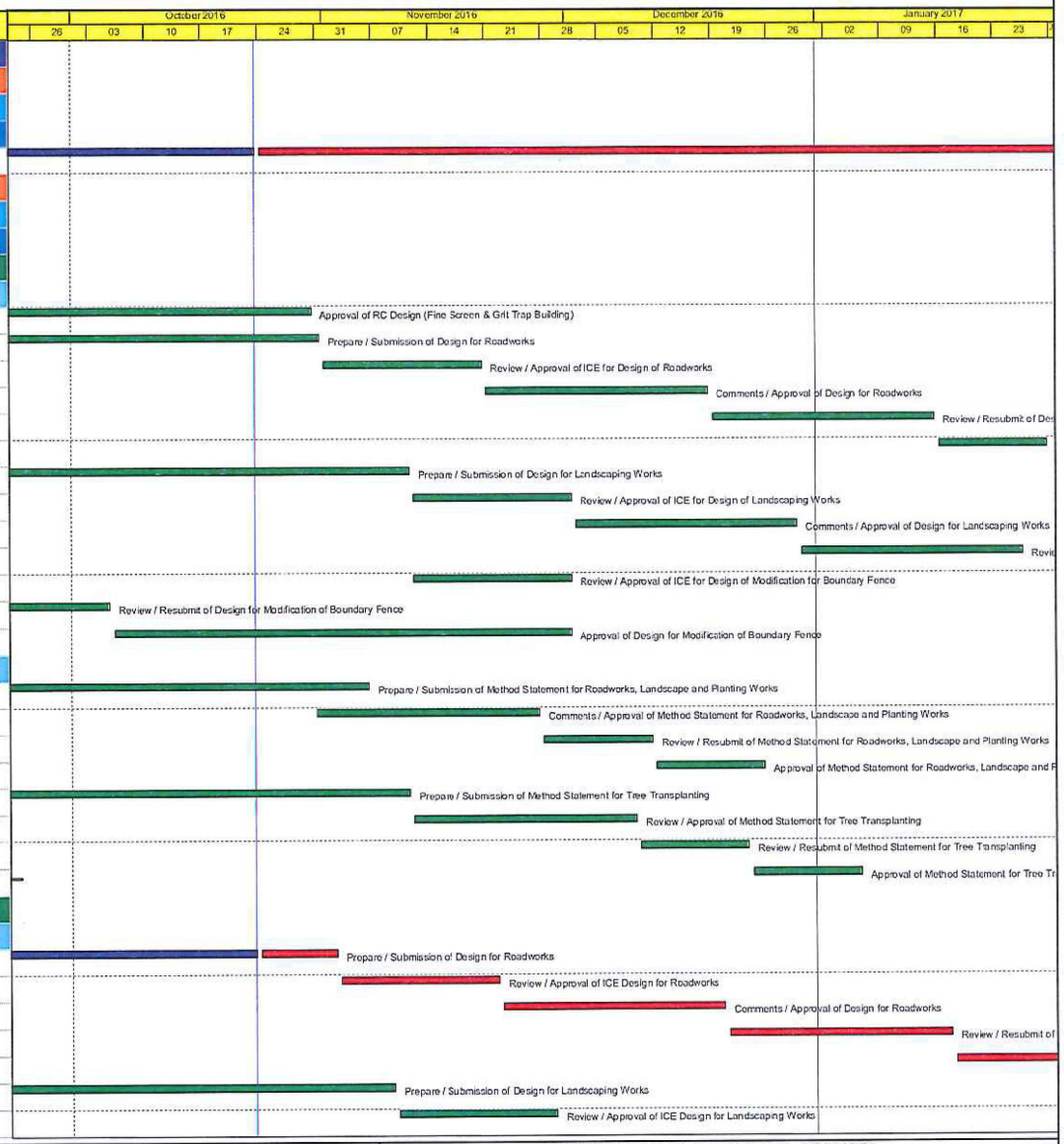
Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
CIR#5_151026	DSD's Preliminary Treatment Work (PTW) at Wah Fu	26th October 2015	One anonymous complainant complained about the noise generated from Contract DC/2009/24 construction site at Wah Fu PTW. The ETL of the Contract was informed of the complaint through the e-mail on 27th October 2015 and initiated the complaint investigation procedures. According to the information provided by the Contractor, major construction activity that contributed to the noise at Wah Fu PTW during the time of complaint was breaking works	There was no exceedance recorded at noise monitoring stations M7a for Wah Fu PTW in October 2015. After complaint received, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures as below: • Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced); • To install the erected noise absorption screen on top of the FSGT building's roof located close to the operating PME/noisy works (noise sources). 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 construction works in Wah Fu PTW.	Closed
CIR#6_151209	DSD's Preliminary Treatment Work (PTW) at Wah Fu	9th December 2015	One anonymous complainant complained about the noise generated from Contract DC/2009/24 construction site at Wah Fu PTW. According to the complainant, site works had commenced at about 8 am and was considered to be too early. The ETL of the Contract was informed of the complaint through the e-mail on 9th December 2015 and initiated the complaint investigation procedures. According to the information provided by the Contractor, major construction activity that contributed to the noise at Wah Fu PTW during the time of complaint	There was no exceedance recorded at noise monitoring stations M7a for Wah Fu PTW in December 2015. After complaint received, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures as below: • Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced); • Operated the machines and plant in intermittent use and shut down between works periods. As reported by the Contractor of Contract DC/2009/24 during the site inspection on 11th December 2015, the Contractor agreed to reschedule the site works and noisy activities would only be started from 9 a.m. at Wah Fu PTW in order to minimize the impact to the nearby noise sensitive receiver.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			were breaking and excavation works of flume channel on the pavement, and breaking and excavation works for construction of cable shaft which were conducted and started around 8:20 a.m. and around 1 p.m. respectively on 9th December 2015.		

Remarks: No environmental complaint was received in November 2016.

APPENDIX M
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
DSD - HATSS2 Upgrading of PTW (DC/2009/24)							
Particulars							
Key Dates							
Commencement / Completion							
24CEN00020	Time for Completion of Project	0%	1309	31-Aug-11 A	15-May-17	24-Mar-16	28-Feb-17
Civil & Geo. Submission							
Contractor's Design, Submission / Approval & Procurement							
Technical Information & Drawings							
Wah Fu							
Major Technical Data / Civil Works Design							
24DWFU00190	Approval of RC Design (Fine Screen & Grit Trap Building)	50%	14	19-Jul-12 A	30-Oct-16	26-Mar-16	01-Apr-16
24DWFU00300	Prepare / Submission of Design for Roadworks	0%	40	03-May-16 A	31-Oct-16	02-Apr-16	11-May-16
24DWFU00310	Review / Approval of ICE for Design of Roadworks	0%	20	01-Nov-16	20-Nov-16	12-May-16	31-May-16
24DWFU00320	Comments / Approval of Design for Roadworks	0%	28	21-Nov-16	18-Dec-16	01-Jun-16	28-Jun-16
24DWFU00330	Review / Resubmit of Design for Roadworks	0%	28	19-Dec-16	15-Jan-17	29-Jun-16	26-Jul-16
24DWFU00340	Approval of Design for Roadworks	0%	14	16-Jan-17	29-Jan-17	27-Jul-16	09-Aug-16
24DWFU00350	Prepare / Submission of Design for Landscaping Works	0%	40	04-Jul-16 A	11-Nov-16	02-Apr-16	11-May-16
24DWFU00360	Review / Approval of ICE for Design of Landscaping Works	0%	20	12-Nov-16	01-Dec-16	12-May-16	31-May-16
24DWFU00370	Comments / Approval of Design for Landscaping Works	0%	28	02-Dec-16	29-Dec-16	01-Jun-16	28-Jun-16
24DWFU00380	Review / Resubmit of Design for Landscaping Works	0%	28	30-Dec-16	26-Jan-17	29-Jun-16	26-Jul-16
24DWFU00460	Review / Approval of ICE for Design of Modification for Boundary Fence	0%	20	12-Nov-16	01-Dec-16	21-Jun-16	10-Jul-16
24DWFU00480	Review / Resubmit of Design for Modification of Boundary Fence	100%	28	15-Mar-16 A	05-Oct-16 A	08-Aug-16	04-Sep-16
24DWFU00490	Approval of Design for Modification of Boundary Fence	0%	14	06-Oct-16 A	01-Dec-16	05-Sep-16	18-Sep-16
Method Statement for Major Works							
24DWFU02200	Prepare / Submission of Method Statement for Roadworks, Landscape and Planting Works	0%	60	03-May-16 A	06-Nov-16	02-Apr-16	31-May-16
24DWFU02210	Comments / Approval of Method Statement for Roadworks, Landscape and Planting Works	0%	28	31-Oct-16	27-Nov-16	01-Jun-16	28-Jun-16
24DWFU02220	Review / Resubmit of Method Statement for Roadworks, Landscape and Planting Works	0%	14	28-Nov-16	11-Dec-16	29-Jun-16	12-Jul-16
24DWFU02230	Approval of Method Statement for Roadworks, Landscape and Planting Works	0%	14	12-Dec-16	25-Dec-16	13-Jul-16	26-Jul-16
24DWFU02240	Prepare / Submission of Method Statement for Tree Transplanting	0%	60	24-Jun-16 A	11-Nov-16	01-Jun-16	30-Jul-16
24DWFU02250	Review / Approval of Method Statement for Tree Transplanting	0%	28	12-Nov-16	09-Dec-16	31-Jul-16	27-Aug-16
24DWFU02260	Review / Resubmit of Method Statement for Tree Transplanting	0%	14	10-Dec-16	23-Dec-16	28-Aug-16	10-Sep-16
24DWFU02270	Approval of Method Statement for Tree Transplanting	0%	14	24-Dec-16	06-Jan-17	11-Sep-16	24-Sep-16
Aberdeen							
Major Technical Data / Civil Works Design							
24DABN00450	Prepare / Submission of Design for Roadworks	0%	40	24-Apr-16 A	02-Nov-16	24-Mar-16	02-May-16
24DABN00460	Review / Approval of ICE Design for Roadworks	0%	20	03-Nov-16	22-Nov-16	03-May-16	22-May-16
24DABN00470	Comments / Approval of Design for Roadworks	0%	28	23-Nov-16	20-Dec-16	23-May-16	19-Jun-16
24DABN00480	Review / Resubmit of Design for Roadworks	0%	28	21-Dec-16	17-Jan-17	20-Jun-16	17-Jul-16
24DABN00490	Approval of Design for Roadworks	0%	14	18-Jan-17	31-Jan-17	18-Jul-16	31-Jul-16
24DABN00500	Prepare / Submission of Design for Landscaping Works	0%	40	04-Jul-16 A	09-Nov-16	03-May-16	11-Jun-16
24DABN00510	Review / Approval of ICE Design for Landscaping Works	0%	20	10-Nov-16	29-Nov-16	12-Jun-16	01-Jul-16



Start Date: 25-Jun-11

Finish Date: 15-May-18

Date Date: 23-Oct-16

Run Date: 28-Oct-16

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

HATSS2A Contract No. DC/2009/24

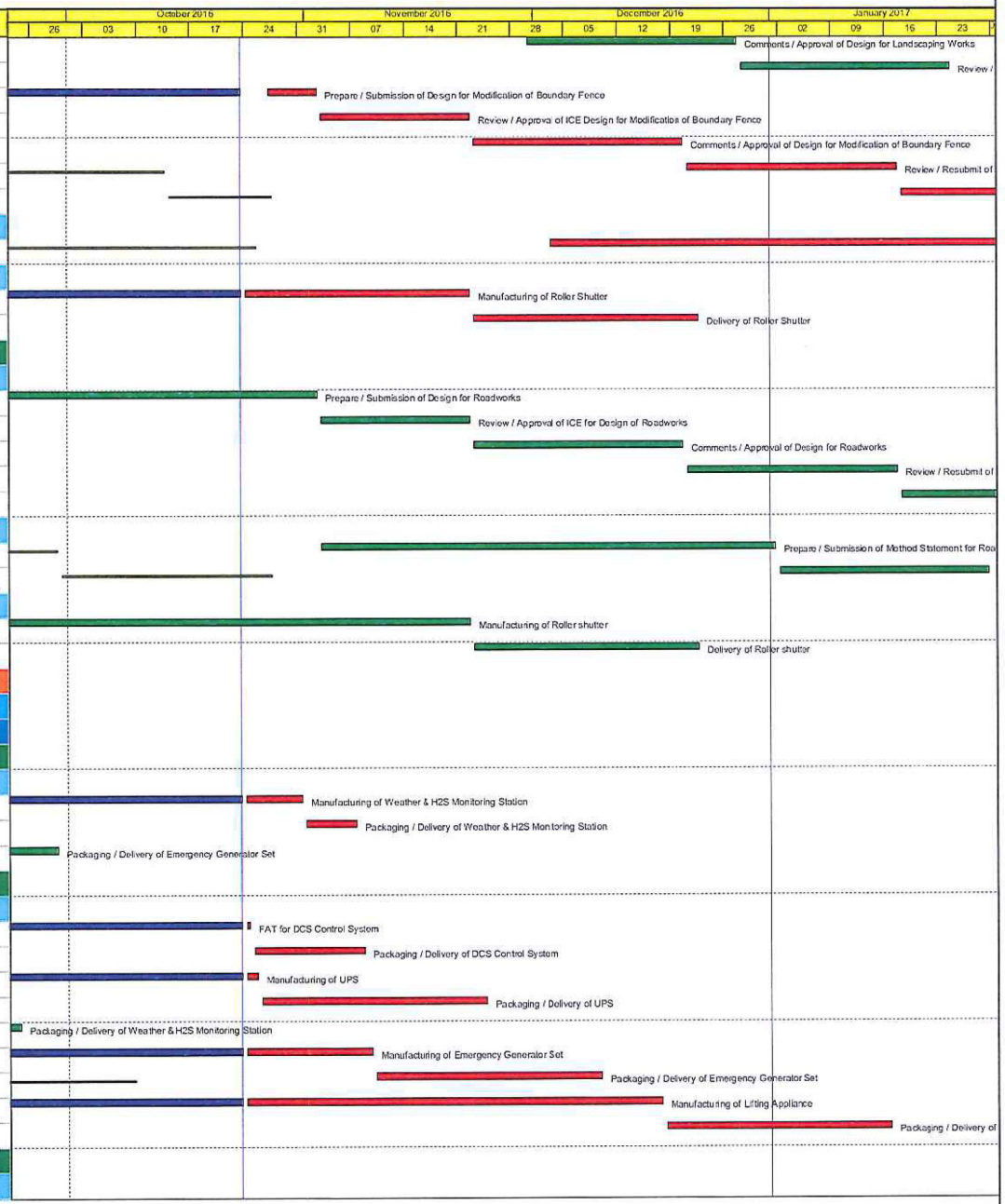
3 MONTHS ROLLING PROGRAMME

OCTOBER 2016

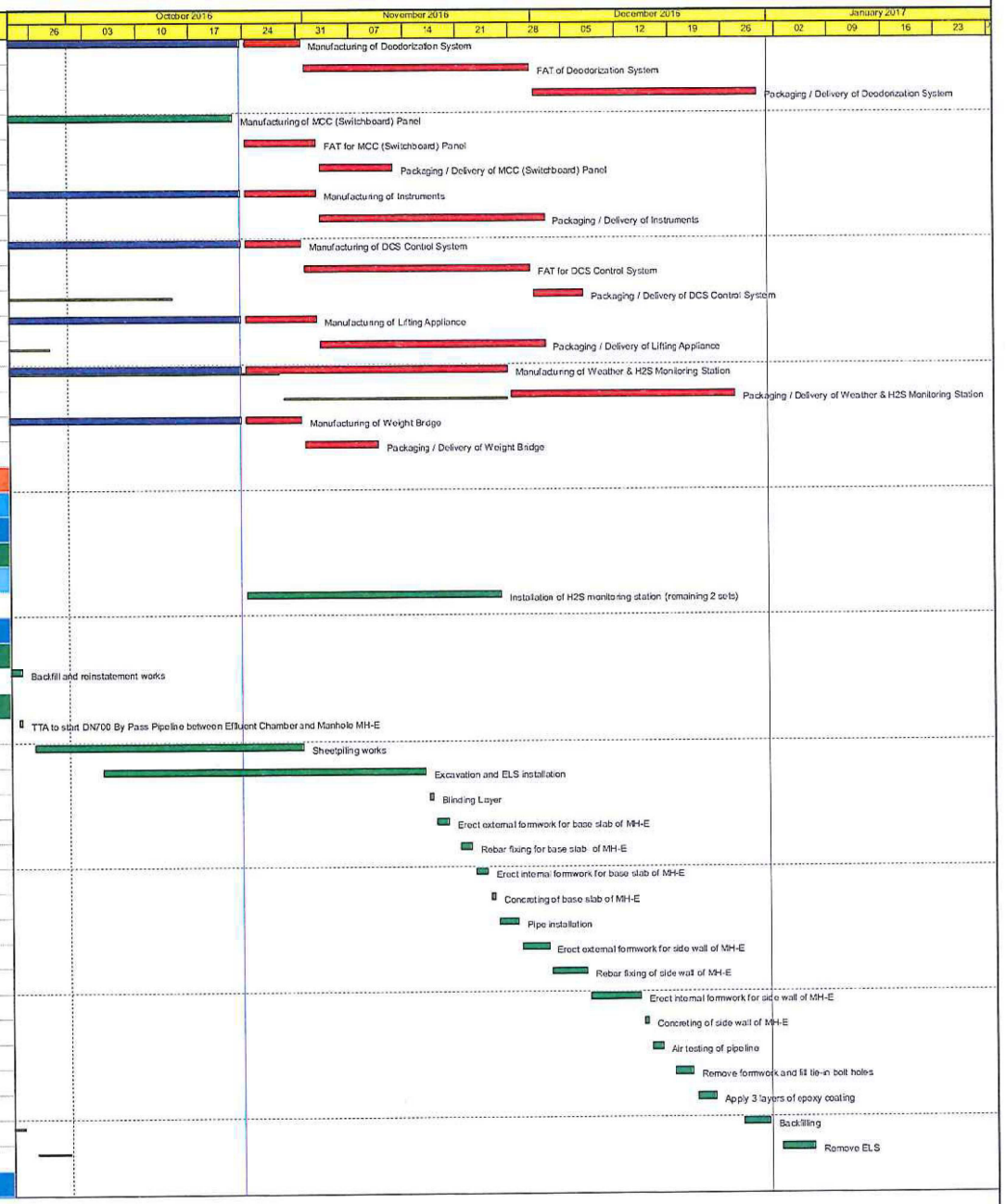
DETAILED WORKS PROGRAMME - DC/2009/24

Date	Revision	Checked	Approved
14-Dec-12	DWP - REVISION 2		
17-Jun-14	DWP - REVISION 3 (S5, 6 & 7)		
06-Apr-16	DWP - REVISION 4		
23-Oct-16	UDWP - REVISION 4		

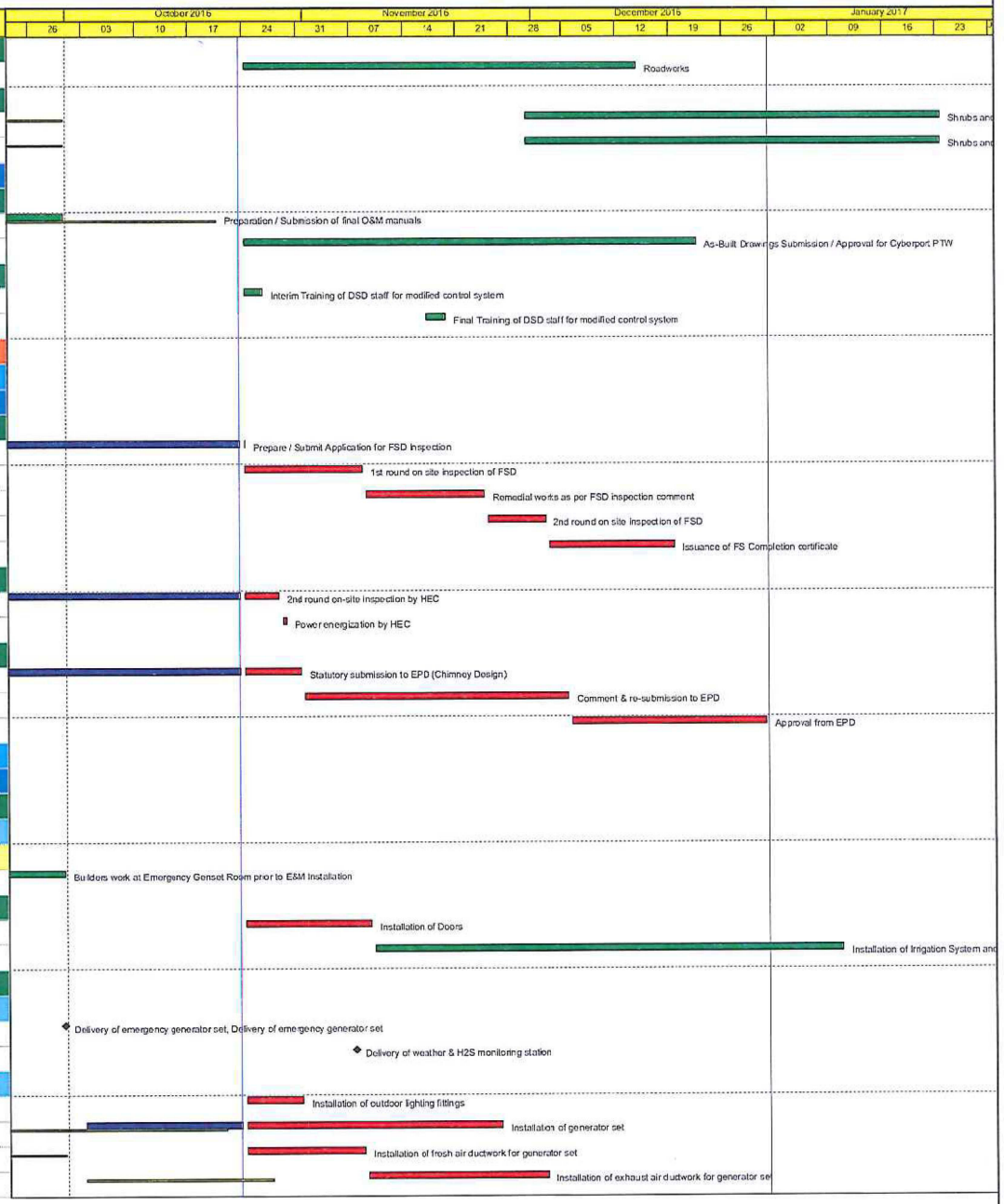
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
24DABN00520	Comments / Approval of Design for Landscaping Works	0%	28	30-Nov-16	27-Dec-16	02-Jul-16	29-Jul-16
24DABN00530	Review / Resubmit of Design for Landscaping Works	0%	28	28-Dec-16	24-Jan-17	30-Jul-16	26-Aug-16
24DABN00550	Prepare / Submission of Design for Modification of Boundary Fence	0%	40	12-Jul-16 A	02-Nov-16	20-Jun-16	29-Jul-16
24DABN00560	Review / Approval of ICE Design for Modification of Boundary Fence	0%	20	03-Nov-16	22-Nov-16	30-Jul-16	18-Aug-16
24DABN00570	Comments / Approval of Design for Modification of Boundary Fence	0%	28	23-Nov-16	20-Dec-16	19-Aug-16	15-Sep-16
24DABN00580	Review / Resubmit of Design for Modification of Boundary Fence	0%	28	21-Dec-16	17-Jan-17	16-Sep-16	13-Oct-16
24DABN00590	Approval of Design for Modification of Boundary Fence	0%	14	18-Jan-17	31-Jan-17	14-Oct-16	27-Oct-16
Method Statement for Major Works							
24DABN02290	Prepare / Submission of Method Statement for Roadworks, Landscape and Planting Works	0%	60	03-Dec-16	31-Jan-17	27-Aug-16	25-Oct-16
Order / Manufacturing / Shipment / Delivery							
24DABN02560	Manufacturing of Roller Shutter	0%	90	16-May-16 A	22-Nov-16	09-May-16	08-Aug-16
24DABN02570	Delivery of Roller Shutter	0%	30	23-Nov-16	22-Dec-16	07-Aug-16	05-Sep-16
Ap Lei Chau							
Major Tech. Data / Civil Works Design							
24DALC00450	Prepare / Submission of Design for Roadworks	0%	40	24-Jun-16 A	02-Nov-16	24-Mar-16	02-May-16
24DALC00460	Review / Approval of ICE for Design of Roadworks	0%	20	03-Nov-16	22-Nov-16	03-May-16	22-May-16
24DALC00470	Comments / Approval of Design for Roadworks	0%	28	23-Nov-16	20-Dec-16	23-May-16	19-Jun-16
24DALC00480	Review / Resubmit of Design for Roadworks	0%	28	21-Dec-16	17-Jan-17	20-Jun-16	17-Jul-16
24DALC00490	Approval of Design for Roadworks	0%	14	18-Jan-17	31-Jan-17	18-Jul-16	31-Jul-16
Method Statement for Major Works							
24DALC02200	Prepare / Submission of Method Statement for Roadworks, Landscape and Planting Works	0%	60	03-Nov-16	01-Jan-17	01-Aug-16	29-Sep-16
24DALC02210	Comments / Approval of Method Statement for Roadworks, Landscape and Planting Works	0%	28	02-Jan-17	29-Jan-17	30-Sep-16	27-Oct-16
Order / Manufacturing / Shipment / Delivery							
24DALC02640	Manufacturing of Roller shutter	0%	90	16-May-16 A	22-Nov-16	09-May-16	08-Aug-16
24DALC02650	Delivery of Roller shutter	0%	30	23-Nov-16	22-Dec-16	07-Aug-16	05-Sep-16
Electrical and Mechanical Submission							
Contractor's Design, Submission / Approval and Procurement							
Technical Information & Drawings							
Wah Fu							
Order / Manufacturing / Shipment / Delivery							
24PWFU01600	Manufacturing of Weather & H2S Monitoring Station	0%	140	11-Sep-15 A	31-Oct-16	24-Mar-16	31-Mar-16
24PWFU01610	Packaging / Delivery of Weather & H2S Monitoring Station	0%	7	01-Nov-16	07-Nov-16	01-Apr-16	30-Apr-16
24PWFU01640	Packaging / Delivery of Emergency Generator Set	100%	30	31-Aug-16 A	29-Sep-16 A	23-Jun-16	22-Jul-16
Aberdeen							
Order / Manufacturing / Shipment / Delivery							
24PABN01400	FAT for DCS Control System	0%	90	21-May-16 A	24-Oct-16	20-Apr-16	18-Jul-16
24PABN01410	Packaging / Delivery of DCS Control System	0%	15	25-Oct-16	08-Nov-16	19-Jul-16	17-Aug-16
24PABN01412	Manufacturing of UPS	0%	80	30-Apr-16 A	25-Oct-16	30-Apr-16	18-Jul-16
24PABN01413	Packaging / Delivery of UPS	0%	30	26-Oct-16	24-Nov-16	19-Jul-16	17-Aug-16
24PABN01440	Packaging / Delivery of Weather & H2S Monitoring Station	100%	7	20-Sep-16 A	24-Sep-16 A	24-Apr-16	23-May-16
24PABN01460	Manufacturing of Emergency Generator Set	0%	160	03-Apr-16 A	09-Nov-16	03-Apr-16	09-Sep-16
24PABN01470	Packaging / Delivery of Emergency Generator Set	0%	30	10-Nov-16	09-Dec-16	10-Sep-16	09-Oct-16
24PABN01490	Manufacturing of Lifting Appliance	0%	80	30-May-16 A	17-Dec-16	30-Apr-16	18-Jul-16
24PABN01500	Packaging / Delivery of Lifting Appliance	0%	30	18-Dec-16	16-Jan-17	19-Jul-16	17-Aug-16
Ap Lei Chau							
Order / Manufacturing / Shipment / Delivery							



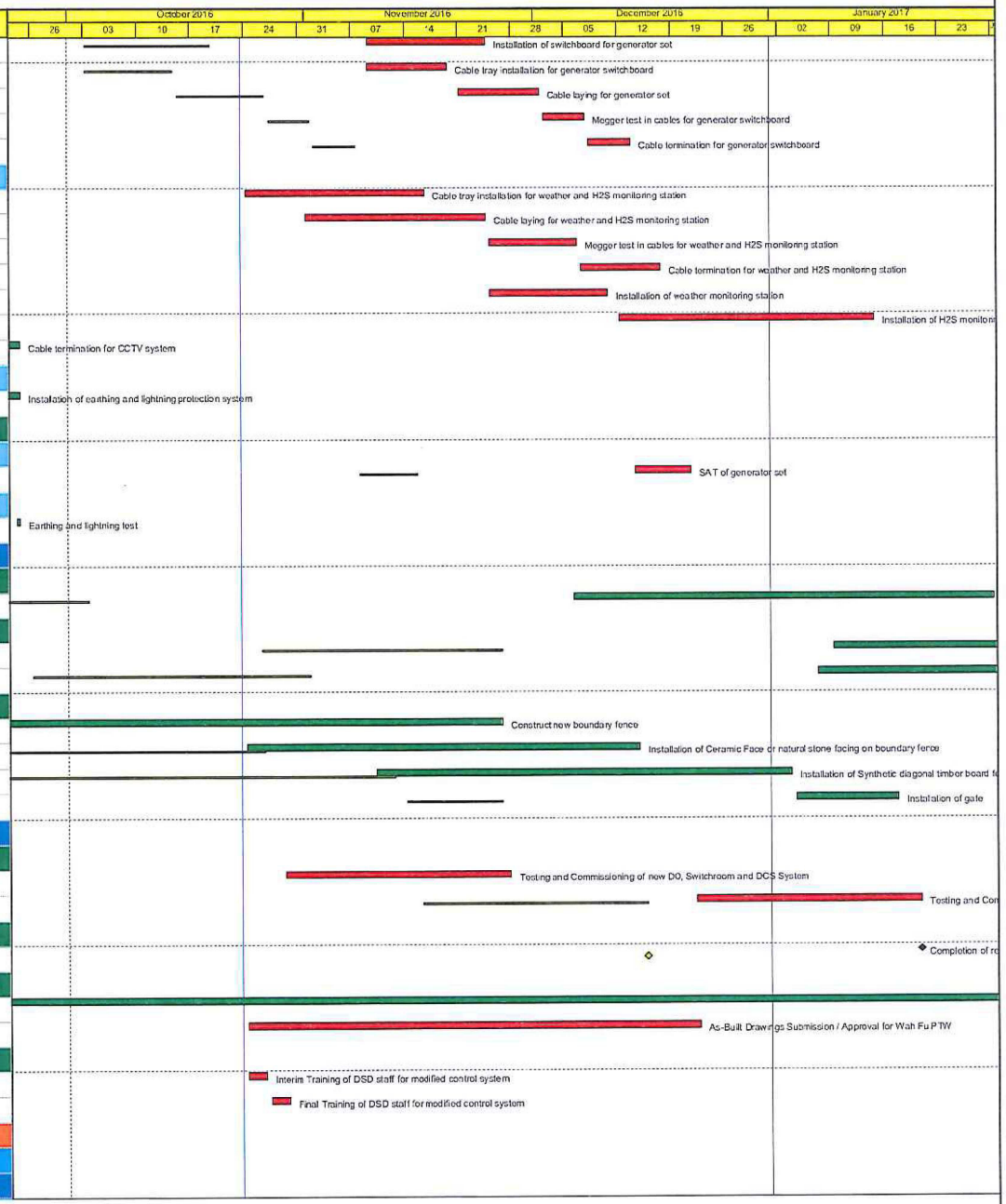
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
24PALC01260	Manufacturing of Deodorization System	0%	160	12-Oct-15 A	31-Oct-16	24-Mar-16	19-Apr-16
24PALC01265	FAT of Deodorization System	0%	30	01-Nov-16	30-Nov-16	20-Apr-16	18-Jul-16
24PALC01270	Packaging / Delivery of Deodorization System	0%	30	01-Dec-16	30-Dec-16	19-Jul-16	17-Aug-16
24PALC01290	Manufacturing of MCC (Switchboard) Panel	100%	190	11-Sep-15 A	22-Oct-16 A	24-Mar-16	31-Mar-16
24PALC01300	FAT for MCC (Switchboard) Panel	0%	10	24-Oct-16	02-Nov-16	01-Apr-16	10-Apr-16
24PALC01310	Packaging / Delivery of MCC (Switchboard) Panel	0%	10	03-Nov-16	12-Nov-16	11-Apr-16	10-May-16
24PALC01360	Manufacturing of Instruments	0%	110	04-Apr-16 A	02-Nov-16	03-Apr-16	21-Jul-16
24PALC01370	Packaging / Delivery of Instruments	0%	30	03-Nov-16	02-Dec-16	22-Jul-16	20-Aug-16
24PALC01380	Manufacturing of DCS Control System	0%	75	03-Apr-16 A	31-Oct-16	03-Apr-16	16-Jun-16
24PALC01400	FAT for DCS Control System	0%	30	01-Nov-16	30-Nov-16	17-Jun-16	14-Sep-16
24PALC01410	Packaging / Delivery of DCS Control System	0%	7	01-Dec-16	07-Dec-16	15-Sep-16	14-Oct-16
24PALC01430	Manufacturing of Lifting Appliance	0%	80	11-Jun-16 A	02-Nov-16	11-Jun-16	29-Aug-16
24PALC01440	Packaging / Delivery of Lifting Appliance	0%	30	03-Nov-16	02-Dec-16	30-Aug-16	28-Sep-16
24PALC01460	Manufacturing of Weather & H2S Monitoring Station	0%	140	11-Jun-16 A	27-Nov-16	11-Jun-16	28-Oct-16
24PALC01470	Packaging / Delivery of Weather & H2S Monitoring Station	0%	30	28-Nov-16	27-Dec-16	29-Oct-16	27-Nov-16
24PALC01490	Manufacturing of Weight Bridge	0%	80	11-Sep-15 A	31-Oct-16	24-Mar-16	31-Mar-16
24PALC01500	Packaging / Delivery of Weight Bridge	0%	10	01-Nov-16	10-Nov-16	01-Apr-16	10-Apr-16
Cyberport PTW							
Works for Section 2							
Modification Inside Cyberport PTW Complex incl. Deodorization Room							
Electrical and Mechanical Works							
Control and Monitoring Services incl. Instrumentation							
24CPT02577	Installation of H2S monitoring station (remaining 2 sets)	0%	30	24-Oct-16	26-Nov-16	24-Mar-16	03-May-16
External Works including Temporary Works for Flow Turning to Drop Shaft							
Flume Channel (Outstanding Part due to Existing Cable and Ducts - VO)							
24CPTEX01750	Backfill and reinstatement works	100%	13	09-Sep-16 A	24-Sep-16 A	19-Jul-16	02-Aug-16
DN 700 By-Pass Pipeline between Effluent Chamber and Manhole MH-E							
24CPTEX01890	TTA to start DN700 By Pass Pipeline between Effluent Chamber and Manhole MH-E	100%	1	24-Sep-16 A	24-Sep-16 A	18-Jul-16	18-Jul-16
24CPTEX01900	Sheetpiling works	0%	7	26-Sep-16 A	31-Oct-16	19-Jul-16	26-Jul-16
24CPTEX01910	Excavation and ELS installation	0%	14	05-Oct-16 A	16-Nov-16	27-Jul-16	11-Aug-16
24CPTEX01920	Blinding Layer	0%	1	17-Nov-16	17-Nov-16	12-Aug-16	12-Aug-16
24CPTEX01930	Erect external formwork for base slab of MH-E	0%	2	18-Nov-16	19-Nov-16	13-Aug-16	15-Aug-16
24CPTEX01940	Rebar fixing for base slab of MH-E	0%	2	21-Nov-16	22-Nov-16	16-Aug-16	17-Aug-16
24CPTEX01950	Erect internal formwork for base slab of MH-E	0%	2	23-Nov-16	24-Nov-16	18-Aug-16	19-Aug-16
24CPTEX01960	Concreting of base slab of MH-E	0%	1	25-Nov-16	25-Nov-16	20-Aug-16	20-Aug-16
24CPTEX01970	Pipe installation	0%	2	26-Nov-16	28-Nov-16	22-Aug-16	23-Aug-16
24CPTEX01980	Erect external formwork for side wall of MH-E	0%	4	29-Nov-16	02-Dec-16	24-Aug-16	27-Aug-16
24CPTEX01990	Rebar fixing of side wall of MH-E	0%	4	03-Dec-16	07-Dec-16	29-Aug-16	01-Sep-16
24CPTEX02000	Erect internal formwork for side wall of MH-E	0%	6	08-Dec-16	14-Dec-16	02-Sep-16	08-Sep-16
24CPTEX02010	Concreting of side wall of MH-E	0%	1	15-Dec-16	15-Dec-16	09-Sep-16	09-Sep-16
24CPTEX02020	Air testing of pipeline	0%	2	16-Dec-16	17-Dec-16	10-Sep-16	12-Sep-16
24CPTEX02030	Remove formwork and fill tie-in bolt holes	0%	3	19-Dec-16	21-Dec-16	13-Sep-16	15-Sep-16
24CPTEX02040	Apply 3 layers of epoxy coating	0%	3	22-Dec-16	24-Dec-16	17-Sep-16	20-Sep-16
24CPTEX02050	Backfilling	0%	4	28-Dec-16	31-Dec-16	21-Sep-16	24-Sep-16
24CPTEX02060	Remove ELS	0%	5	02-Jan-17	06-Jan-17	26-Sep-16	30-Sep-16
Roadworks and Landscaping Works							



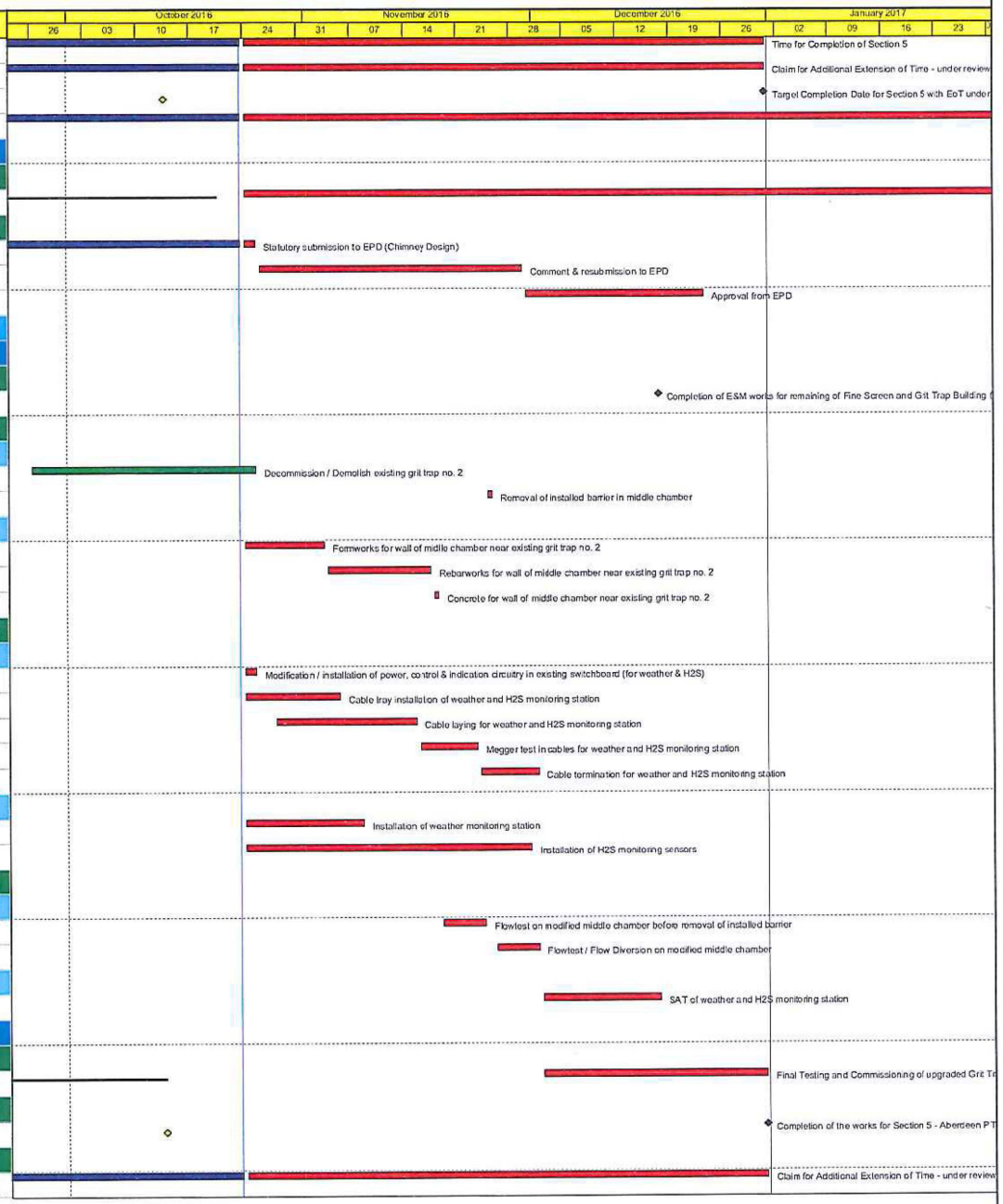
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
Roadworks							
24CPT04020	Roadworks	0%	45	24-Oct-16	14-Dec-16	02-Jul-16	23-Aug-16
Landscaping Works							
24CPT04000	Shrubs and Tree planting at CP-3	0%	45	30-Nov-16	23-Jan-17	09-Aug-16	30-Sep-16
24CPT04010	Shrubs and Tree planting at CP-1	0%	45	30-Nov-16	23-Jan-17	09-Aug-16	30-Sep-16
Completion of Works in Section 2							
Submission of Manuals							
24CPT05050	Preparation / Submission of final O&M manuals	100%	90	24-Jun-16 A	30-Sep-16 A	23-Jul-16	20-Oct-16
24CPT05060	As-Built Drawings Submission / Approval for Cyberport PTW	0%	60	24-Oct-16	22-Dec-16	01-Jun-16	30-Jul-16
Training for DSD Staff							
24CPT05070	Interim Training of DSD staff for modified control system	0%	3	24-Oct-16	26-Oct-16	24-Mar-16	26-Mar-16
24CPT05080	Final Training of DSD staff for modified control system	0%	3	17-Nov-16	19-Nov-16	17-Apr-16	19-Apr-16
Wah Fu PTW							
Key Dates							
Statutory and Utility Applications and Approvals							
Fire Services Department (FSD)							
24WFU1100	Prepare / Submit Application for FSD inspection	100%	90	01-Dec-15 A	24-Oct-16	24-Mar-16	13-Apr-16
24WFU1110	1st round on site inspection of FSD	0%	14	24-Oct-16	08-Nov-16	14-Apr-16	29-Apr-16
24WFU1111	Remedial works as per FSD inspection comment	0%	14	09-Nov-16	24-Nov-16	30-Apr-16	18-May-16
24WFU1112	2nd round on site inspection of FSD	0%	7	25-Nov-16	02-Dec-16	19-May-16	26-May-16
24WFU1113	Issuance of FS Completion certificate	0%	14	03-Dec-16	19-Dec-16	27-May-16	13-Jun-16
Hong Kong Electric (HEC)							
24WFU1117	2nd round on-site inspection by HEC	0%	6	23-Sep-16 A	28-Oct-16	30-Apr-16	07-May-16
24WFU1118	Power energization by HEC	0%	1	29-Oct-16	29-Oct-16	09-May-16	16-May-16
Enviromental Protection Department (EPD)							
24WFU1119	Statutory submission to EPD (Chimney Design)	0%	60	24-Feb-16 A	31-Oct-16	24-Mar-16	09-May-16
24WFU1120	Comment & re-submission to EPD	0%	30	01-Nov-16	05-Dec-16	10-May-16	15-Jun-16
24WFU1121	Approval from EPD	0%	21	06-Dec-16	31-Dec-16	16-Jun-16	11-Jul-16
Works for Section 4							
Remaining Works After Early Flow Turning							
Civil Works							
Emergency Generator Room - GL 4-5 / A-C							
Removal of Pumps and Valves used in Early Flow Turning							
24WFUGR01170	Builders work at Emergency Genset Room prior to E&M Installation	100%	25	29-Sep-16 A	30-Sep-16 A	15-Aug-16	13-Sep-16
Finishing Works							
24WFU02250A80	Installation of Doors	0%	15	24-Oct-16	09-Nov-16	24-May-16	10-Jun-16
24WFU02270A30	Installation of Irrigation System and Green Roof	0%	51	10-Nov-16*	10-Jan-17	09-Aug-16	10-Sep-16
Electrical and Mechanical Works							
Material / Equipment Delivery on Site							
24WFU03330	Delivery of emergency generator set	100%	0		30-Sep-16 A		22-Jul-16
24WFU03340	Delivery of weather & H2S monitoring station	0%	0		07-Nov-16		30-Apr-16
Electrical Works							
24WFU03569	Installation of outdoor lighting fittings	0%	7	24-Oct-16	31-Oct-16	26-Apr-16	04-May-16
24WFU03575	Installation of generator set	0%	30	03-Oct-16 A	26-Nov-16	14-Sep-16	21-Oct-16
24WFU03576	Installation of fresh air ductwork for generator set	0%	14	24-Oct-16	08-Nov-16	14-Sep-16	30-Sep-16
24WFU03577	Installation of exhaust air ductwork for generator set	0%	21	09-Nov-16	02-Dec-16	03-Oct-16	27-Oct-16



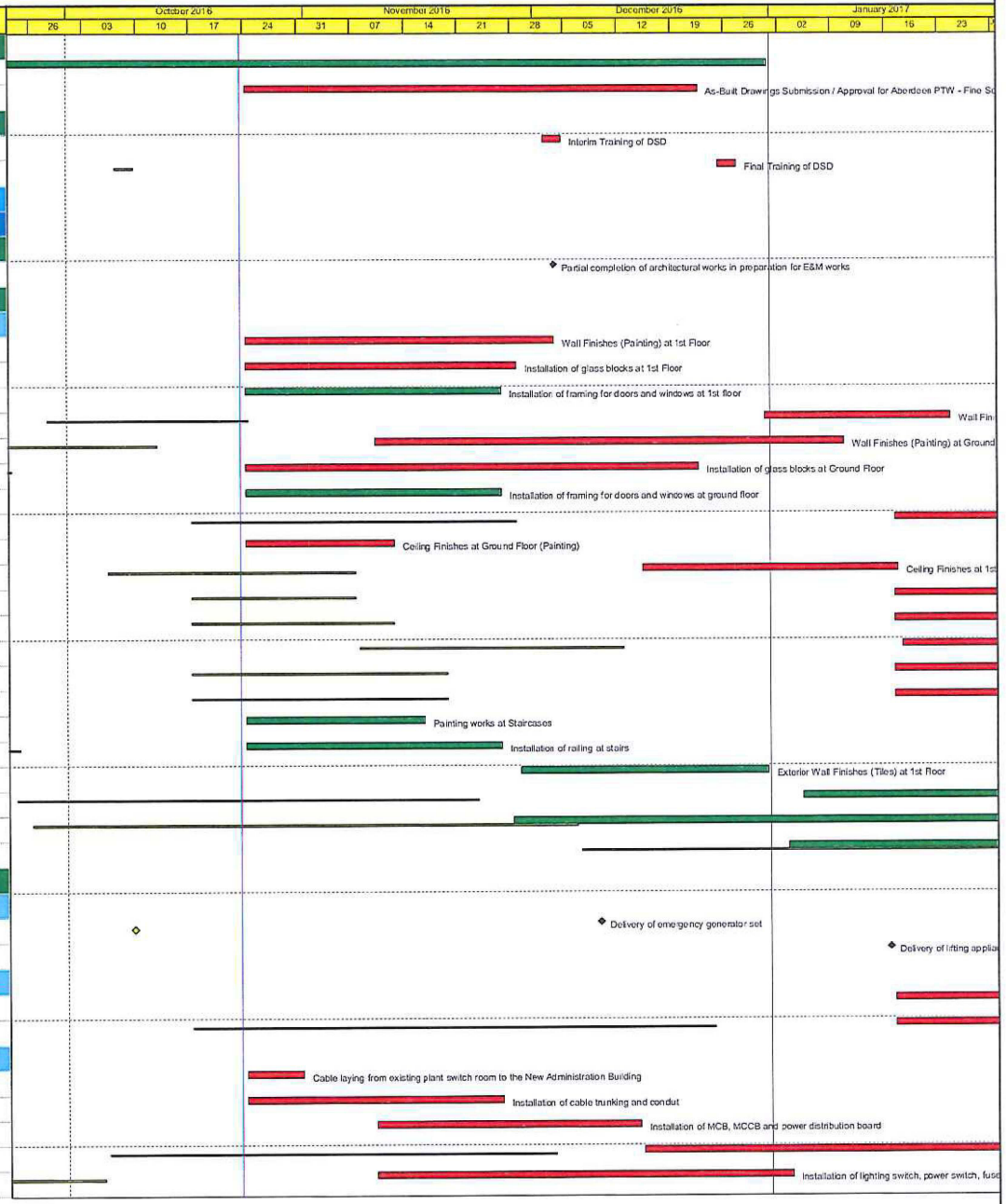
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
24WFU03578	Installation of switchboard for generator set	0%	14	09-Nov-16	24-Nov-16	03-Oct-16	19-Oct-16
24WFU03579	Cable tray installation for generator switchboard	0%	10	09-Nov-16	19-Nov-16	03-Oct-16	14-Oct-16
24WFU03580	Cable laying for generator set	0%	10	21-Nov-16	01-Dec-16	15-Oct-16	26-Oct-16
24WFU03581	Megger test in cables for generator switchboard	0%	5	02-Dec-16	07-Dec-16	27-Oct-16	01-Nov-16
24WFU03582	Cable termination for generator switchboard	0%	5	08-Dec-16	13-Dec-16	02-Nov-16	07-Nov-16
Control and Monitoring Services incl. Instrumentation							
24WFU02829	Cable tray installation for weather and H2S monitoring station	0%	21	24-Oct-16	16-Nov-16	03-May-16	27-May-16
24WFU02830	Cable laying for weather and H2S monitoring station	0%	21	01-Nov-16	24-Nov-16	28-May-16	22-Jun-16
24WFU02831	Megger test in cables for weather and H2S monitoring station	0%	10	25-Nov-16	06-Dec-16	23-Jun-16	05-Jul-16
24WFU02832	Cable termination for weather and H2S monitoring station	0%	10	07-Dec-16	17-Dec-16	06-Jul-16	16-Jul-16
24WFU02833	Installation of weather monitoring station	0%	14	25-Nov-16	10-Dec-16	23-Jun-16	09-Jul-16
24WFU02834	Installation of H2S monitoring station	0%	28	12-Dec-16	14-Jan-17	11-Jul-16	11-Aug-16
24WFU02838	Cable termination for CCTV system	100%	7	23-Sep-16 A	24-Sep-16 A	27-Apr-16	05-May-16
Earthing and Lightning System							
24WFU02740	Installation of earthing and lightning protection system	100%	36	24-Jun-16 A	24-Sep-16 A	24-Mar-16	10-May-16
Preliminary Testing and Commissioning							
Electrical Works							
24WFU03394	SAT of generator set	0%	7	14-Dec-16	21-Dec-16	08-Nov-16	15-Nov-16
Earthing and Lightning System							
24WFU3770	Earthing and lightning test	100%	7	24-Sep-16 A	24-Sep-16 A	11-May-16	19-May-16
Roadworks, Landscape and Modification of Fence							
Roadworks							
24WFU02300A40	Roadworks (footpath around FS & GT Bldg)	0%	45	06-Dec-16	30-Jan-17	10-Aug-16	03-Oct-16
Landscaping Works							
24WFU02300A50	Grasscrete and Soft landscaping works	0%	28	09-Jan-17	09-Feb-17	26-Oct-16	26-Nov-16
24WFU02310A10	Tree Transplantation from off-site to site (1 tree)	0%	30	07-Jan-17	10-Feb-17	26-Sep-16	01-Nov-16
Modification of Fence							
24WFU02320A20	Construct new boundary fence	0%	30	19-Sep-16 A	26-Nov-16	15-Aug-16	19-Sep-16
24WFU02320A30	Installation of Ceramic Face or natural stone facing on boundary fence	0%	45	24-Oct-16	14-Dec-16	01-Sep-16	26-Oct-16
24WFU02320A40	Installation of Synthetic diagonal timber board fencing	0%	45	10-Nov-16	03-Jan-17	20-Sep-16	12-Nov-16
24WFU02320A50	Installation of gate	0%	12	04-Jan-17	17-Jan-17	14-Nov-16	26-Nov-16
Completion of Works in Section 4							
Final Testing and Commissioning							
24WFU03205	Testing and Commissioning of new DO, Switchroom and DCS System	0%	30	29-Oct-16	27-Nov-16	01-Jul-16	30-Jul-16
24WFU03220	Testing and Commissioning of Generator Set at Wah Fu PTW	0%	30	22-Dec-16	20-Jan-17	16-Nov-16	15-Dec-16
Hand Over Date							
24WFU03253	Completion of remaining works for Section 4 - Wah Fu PTW (Flume Channel, Genset)	0%	0		20-Jan-17*		15-Dec-16
Submission of Manuals							
24WFU4080	Preparation / Submission of final O&M manual	0%	90	04-Jan-16 A	25-Feb-17	26-Feb-17	26-May-17
24WFU4085	As-Built Drawings Submission / Approval for Wah Fu PTW	0%	60	24-Oct-16	22-Dec-16	29-Jun-16	27-Aug-16
Trainings for DSD Staff							
24WFU4090	Interim Training of DSD staff for modified control system	0%	3	24-Oct-16	26-Oct-16	24-Mar-16	26-Mar-16
24WFU4100	Final Training of DSD staff for modified control system	0%	3	27-Oct-16	29-Oct-16	27-Aug-16	29-Aug-16
Aberdeen PTW							
Key Dates							
Time of Completion							



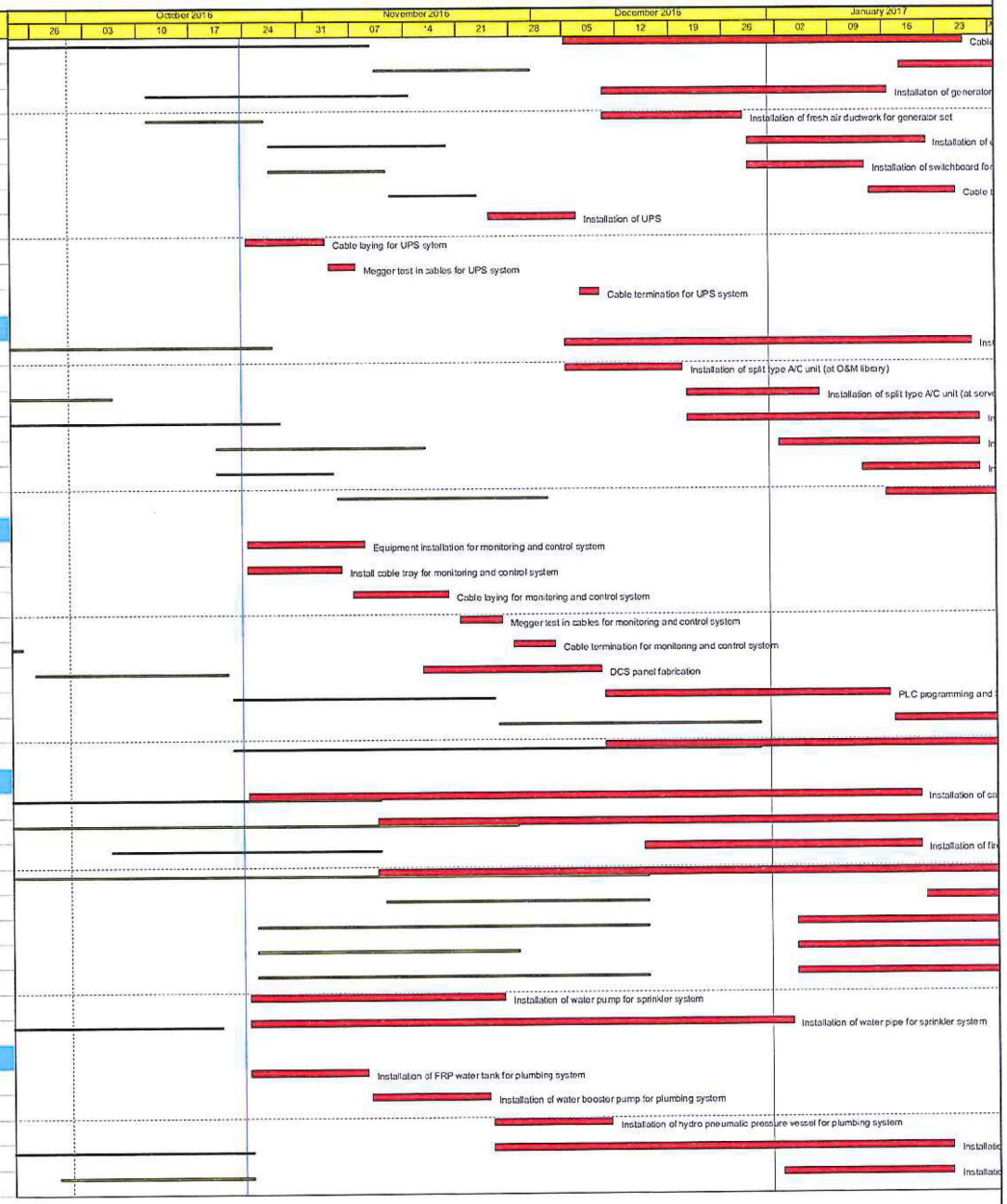
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
24ABN00300	Time for Completion of Section 5	0%	1179	31-Aug-11 A	31-Dec-16*	25-Mar-16	13-Oct-16
24ABN00302	Claim for Additional Extension of Time - under review	0%	394	15-Jan-15 A	31-Dec-16	24-Mar-16	13-Oct-16
24ABN00303	Target Completion Date for Section 5 with EoT under review	0%	0		31-Dec-16		13-Oct-16
24ABN00310	Time for Completion of Section 6	0%	1309	31-Aug-11 A	29-Apr-17	24-Mar-16	28-Feb-17
Statutory and Utility Applications and Approvals							
Fire Services Department (FSD)							
24ABN00420	Prepare / Submit Application for FSD Inspection	0%	90	24-Oct-16	07-Feb-17	05-Jul-16	20-Oct-16
Enviromental Protection Department (EPD)							
24ABN00434	Statutory submission to EPD (Chimney Design)	0%	21	02-Jul-16 A	25-Oct-16	24-Mar-16	21-Apr-16
24ABN00435	Comment & resubmission to EPD	0%	30	26-Oct-16	29-Nov-16	22-Apr-16	28-May-16
24ABN00436	Approval from EPD	0%	21	30-Nov-16	23-Dec-16	30-May-16	23-Jun-16
Works for Section 5							
FS & GT Bldg - Grit Trap No. 2 incl. Middle Chamber (Stage 3)							
Interface between Civil / ABWF / E&M Works							
24MABN00380	Completion of E&M works for remaining of Fine Screen and Grit Trap Building (stage 4)	0%	0		17-Dec-16		19-Jul-16
Civil Works							
Temporary Works / Demolition Works							
24ABN00795A90	Decommission / Demolish existing grit trap no. 2	100%	25	26-Sep-16 A	25-Oct-16 A	06-Aug-16	16-Aug-16
24ABN00795B10	Removal of installed barrier in middle chamber	0%	1	25-Nov-16	25-Nov-16	07-Sep-16	07-Sep-16
RC Structural Works for Middle Chamber							
24ABN00795A60	Formworks for wall of midle chamber near existing grit trap no. 2	0%	10	24-Oct-16	03-Nov-16	17-Aug-16	23-Aug-16
24ABN00795A70	Rebarworks for wall of middle chamber near existing grit trap no. 2	0%	12	04-Nov-16	17-Nov-16	24-Aug-16	30-Aug-16
24ABN00795A80	Concrete for wall of middle chamber near existing grit trap no. 2	0%	1	18-Nov-16	18-Nov-16	31-Aug-16	31-Aug-16
Electrical and Mechanical Works							
Electrical Works							
24ABN03936	Modification / installation of power, control & indication circuitry in existing switchboard (for weather & H2S)	0%	2	24-Oct-16	25-Oct-16	06-Apr-16	07-Apr-16
24ABN03937	Cable tray installation of weather and H2S monitoring station	0%	12	24-Oct-16	05-Nov-16	10-May-16	24-May-16
24ABN03938	Cable laying for weather and H2S monitoring station	0%	16	28-Oct-16	15-Nov-16	13-May-16	01-Jun-16
24ABN03939	Megger test in cables for weather and H2S monitoring station	0%	7	16-Nov-16	23-Nov-16	02-Jun-16	10-Jun-16
24ABN03940	Cable termination for weather and H2S monitoring station	0%	7	24-Nov-16	01-Dec-16	11-Jun-16	18-Jun-16
Control and Monitoring Services incl. Instrumentation							
24ABN03917	Installation of weather monitoring station	0%	14	24-Oct-16	08-Nov-16	24-May-16	08-Jun-16
24ABN03918	Installation of H2S monitoring sensors	0%	33	24-Oct-16	30-Nov-16	24-May-16	02-Jul-16
Preliminary Testing and Commissioning							
Mechanical Works							
24ABN00795A42	Flowtest on modified middle chamber before removal of installed barrier	0%	6	19-Nov-16	24-Nov-16	01-Sep-16	06-Sep-16
24ABN00795A43	Flowtest / Flow Diversion on modified middle chamber	0%	6	26-Nov-16	01-Dec-16	08-Sep-16	13-Sep-16
Control and Monitoring Services incl. Instrumentation							
24ABN03952	SAT of weather and H2S monitoring station	0%	14	02-Dec-16	17-Dec-16	04-Jul-16	19-Jul-16
Completion of Works in Section 5							
Final Testing and Commissioning							
24ABN01730	Final Testing and Commissioning of upgraded Grit Traps and Fine Screen	0%	30	02-Dec-16	31-Dec-16	14-Sep-16	13-Oct-16
Hand Over Date							
24ABN03215	Completion of the works for Section 5 - Aberdeen PTW	0%	0		31-Dec-16*		13-Oct-16
EoT Claim							
24ABN03216	Claim for Additional Extension of Time - under review	0%	393	16-Jan-15 A	31-Dec-16	24-Mar-16	13-Oct-16



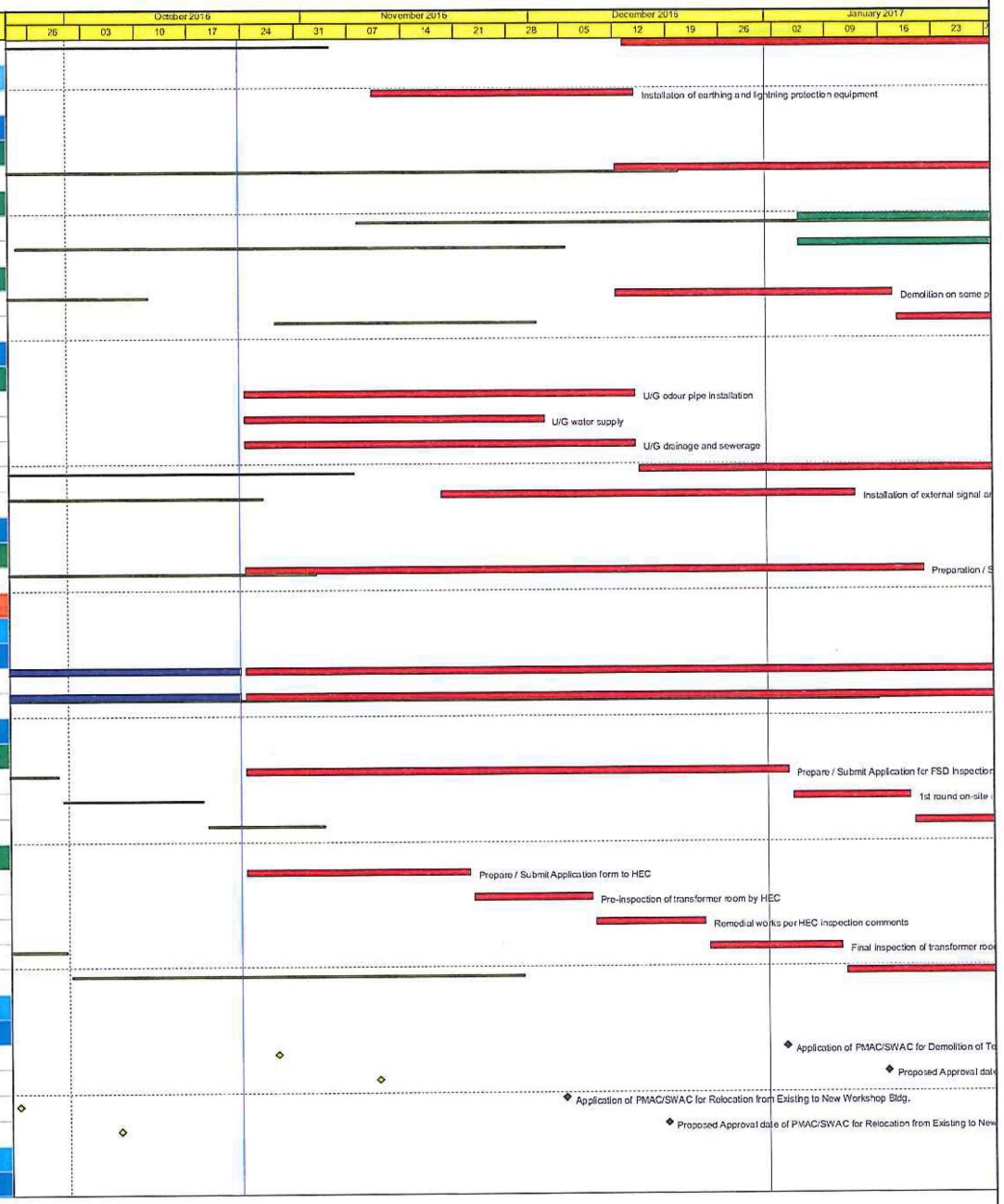
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
Submission of Manuals							
24ABN4010	Preparation / Submission of final manuals for O&M manual	0%	90	04-Jan-16 A	31-Dec-16	11-Feb-17	11-May-17
24ABN4020	As-Built Drawings Submission / Approval for Aberdeen PTW - Fine Screen and Grit Trap Building	0%	60	24-Oct-16	22-Dec-16	08-Jun-16	06-Aug-16
Trainings for DSD Staff							
24ABN4030	Interim Training of DSD	0%	3	02-Dec-16	04-Dec-16	14-Sep-16	16-Sep-16
24ABN4040	Final Training of DSD	0%	3	25-Dec-16	27-Dec-16	07-Oct-16	09-Oct-16
Works for Section 6							
Workshop and Administration Building							
Interface between Civil / ABWF / E&M Works							
24MABN00540	Partial completion of architectural works in preparation for E&M works	0%	0		03-Dec-16		01-Sep-16
Civil Works							
Finishing Works (Internal and External)							
24ABN02230A10	Wall Finishes (Painting) at 1st Floor	0%	36	24-Oct-16	03-Dec-16	22-Jul-16	01-Sep-16
24ABN02230A20	Installation of glass blocks at 1st Floor	0%	31	24-Oct-16	28-Nov-16	07-Jul-16	11-Aug-16
24ABN02230A30	Installation of framing for doors and windows at 1st floor	0%	30	24-Oct-16	26-Nov-16	15-Jul-16	18-Aug-16
24ABN02230A40	Wall Finishes (Tiles) at 1st Floor - Toilet Area	0%	21	31-Dec-16	24-Jan-17	28-Sep-16	24-Oct-16
24ABN02230A50	Wall Finishes (Painting) at Ground Floor	0%	51	10-Nov-16	10-Jan-17	11-Aug-16	12-Oct-16
24ABN02230A60	Installation of glass blocks at Ground Floor	0%	52	24-Oct-16	22-Dec-16	25-Jul-16	23-Sep-16
24ABN02230A70	Installation of framing for doors and windows at ground floor	0%	30	24-Oct-16	26-Nov-16	25-Jul-16	27-Aug-16
24ABN02230A80	Wall Finishes (Tiles) at Ground Floor - DG Store Area	0%	37	17-Jan-17	28-Feb-17	17-Oct-16	28-Nov-16
24ABN02230A90	Ceiling Finishes at Ground Floor (Painting)	0%	18	24-Oct-16	12-Nov-16	22-Jul-16	11-Aug-16
24ABN02230B10	Ceiling Finishes at 1st Floor (Suspended Board) after E&M	0%	27	15-Dec-16	17-Jan-17	06-Oct-16	07-Nov-16
24ABN02230B20	Floor Finishes at Ground Floor (Tiles) after E&M	0%	19	17-Jan-17	07-Feb-17	17-Oct-16	07-Nov-16
24ABN02230B30	Floor Finishes at Ground Floor (Painting) after E&M	0%	24	17-Jan-17	13-Feb-17	17-Oct-16	12-Nov-16
24ABN02230B40	Floor Finishes at 1st Floor (Tiles) after E&M	0%	30	18-Jan-17	21-Feb-17	08-Nov-16	12-Dec-16
24ABN02230B50	Installation of Roller Shutter at Ground Floor	0%	30	17-Jan-17	20-Feb-17	17-Oct-16	19-Nov-16
24ABN02230B60	Installation of Doors, Windows and Louver at Ground Floor	0%	30	17-Jan-17	20-Feb-17	17-Oct-16	19-Nov-16
24ABN02230B80	Painting works at Staircases	0%	21	24-Oct-16	16-Nov-16	20-Aug-16	13-Sep-16
24ABN02230B90	Installation of railing at stairs	0%	30	24-Oct-16	26-Nov-16	20-Aug-16	24-Sep-16
24ABN02240A10	Exterior Wall Finishes (Tiles) at 1st Floor	0%	27	29-Nov-16	31-Dec-16	19-Aug-16	20-Sep-16
24ABN02240A20	Exterior Wall Finishes (Tiles) at Ground Floor	0%	50	05-Jan-17	03-Mar-17	24-Sep-16	23-Nov-16
24ABN02240A30	Guard rail at roof floor	0%	60	28-Nov-16	07-Feb-17	26-Sep-16	06-Dec-16
24ABN02240A40	Installation of Irrigation System and Green Roof	0%	76	03-Jan-17*	31-Mar-17	07-Dec-16	08-Feb-17
Electrical and Mechanical Works							
Material / Equipment Delivery on Site							
24ABN02030	Delivery of emergency generator set	0%	0		09-Dec-16		09-Oct-16
24ABN02040	Delivery of lifting appliance	0%	0		16-Jan-17		17-Aug-16
Mechanical Works							
24ABN04300	Installation of monorail no. 1 (workshop G/F)	0%	14	17-Jan-17	01-Feb-17	18-Aug-16	02-Sep-16
24ABN04730	Set-up of workshop equipment	0%	60	17-Jan-17	27-Mar-17	17-Oct-16	24-Dec-16
Electrical Works							
24ABN04331	Cable laying from existing plant switch room to the New Administration Building	0%	7	24-Oct-16	31-Oct-16	05-Aug-16	12-Aug-16
24ABN04332	Installation of cable trunking and conduit	0%	30	24-Oct-16	26-Nov-16	12-Aug-16	15-Sep-16
24ABN04333	Installation of MCB, MCCB and power distribution board	0%	30	10-Nov-16	14-Dec-16	12-Aug-16	15-Sep-16
24ABN04334	Installation of lighting fittings	0%	50	15-Dec-16	13-Feb-17	06-Oct-16	03-Dec-16
24ABN04335	Installation of lighting switch, power switch, fuse switch, power socket & electrical accessories	0%	45	10-Nov-16	03-Jan-17	12-Aug-16	05-Oct-16



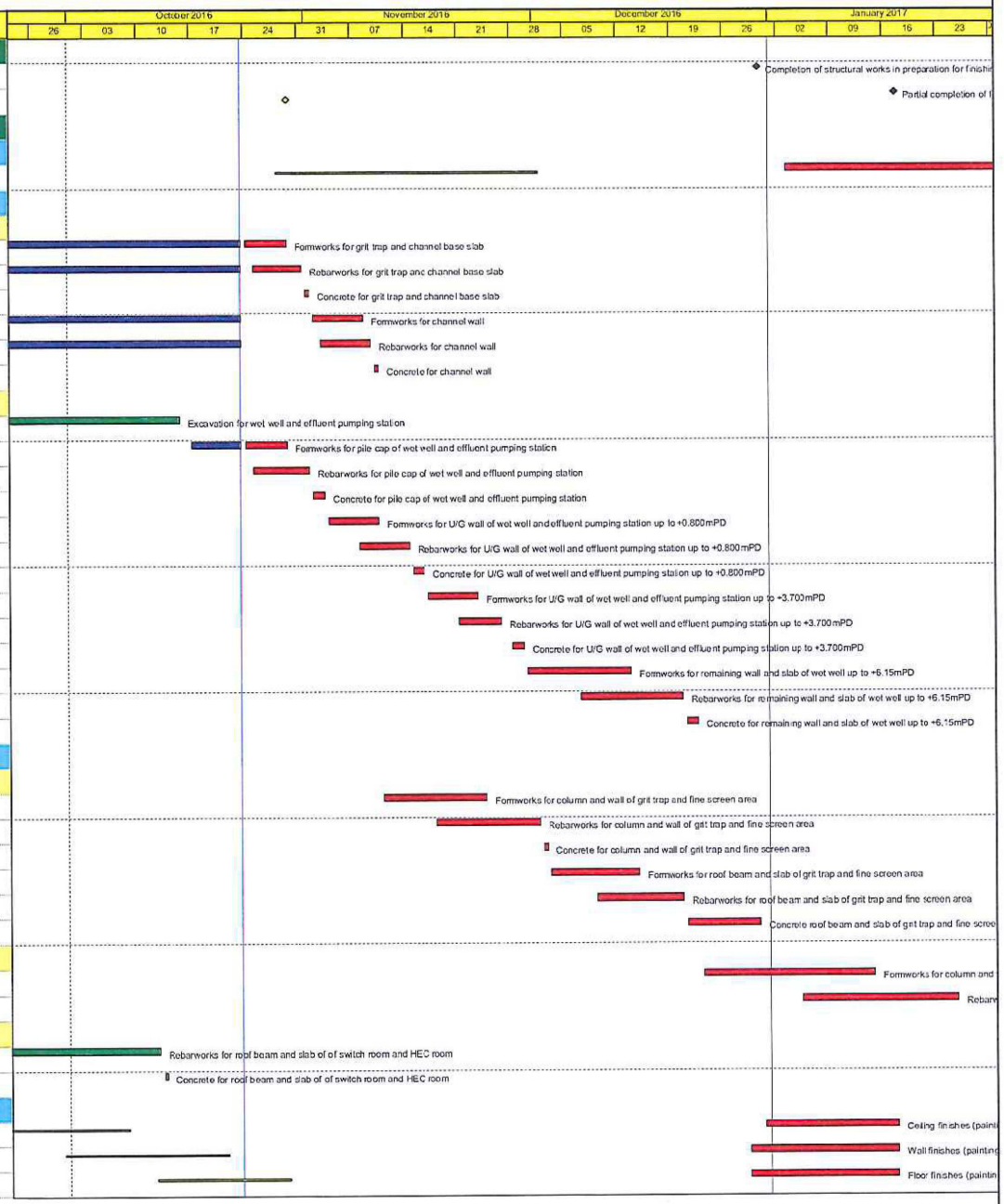
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
24ABN04336	Cable laying for electrical services	0%	44	05-Dec-16	26-Jan-17	17-Sep-16	09-Nov-16
24ABN04337	Megger test for electrical services	0%	18	18-Jan-17	07-Feb-17	10-Nov-16	30-Nov-16
24ABN04339	Installation of generator set	0%	30	10-Dec-16	16-Jan-17	11-Oct-16	14-Nov-16
24ABN04340	Installation of fresh air ductwork for generator set	0%	14	10-Dec-16	28-Dec-16	11-Oct-16	26-Oct-16
24ABN04341	Installation of exhaust air ductwork for generator set	0%	21	29-Dec-16	21-Jan-17	27-Oct-16	19-Nov-16
24ABN04342	Installation of switchboard for generator set	0%	14	29-Dec-16	13-Jan-17	27-Oct-16	11-Nov-16
24ABN04343	Cable tray installation for generator switchboard	0%	10	14-Jan-17	25-Jan-17	12-Nov-16	23-Nov-16
24ABN04347	Installation of UPS	0%	10	25-Nov-16	06-Dec-16	18-Aug-16	29-Aug-16
24ABN04348	Cable laying for UPS sytem	0%	10	24-Oct-16	03-Nov-16	12-Aug-16	23-Aug-16
24ABN04349	Megger test in cables for UPS system	0%	3	04-Nov-16	07-Nov-16	24-Aug-16	26-Aug-16
24ABN04350	Cable termination for UPS system	0%	3	07-Dec-16	09-Dec-16	30-Aug-16	01-Sep-16
HVAC System (Deodorization / Air Conditioning / Ventilation)							
24ABN4410	Installation of ventilation fan c/w air duct (control room at 1/F)	0%	45	05-Dec-16	27-Jan-17	02-Sep-16	27-Oct-16
24ABN4420	Installation of split type A/C unit (at O&M library)	0%	14	05-Dec-16	20-Dec-16	02-Sep-16	19-Sep-16
24ABN4430	Installation of split type A/C unit (at server room)	0%	14	21-Dec-16	07-Jan-17	20-Sep-16	06-Oct-16
24ABN4440	Installation of split type A/C unit (at general office)	0%	32	21-Dec-16	28-Jan-17	20-Sep-16	28-Oct-16
24ABN4450	Installation of split type A/C unit (at electronic store room)	0%	24	02-Jan-17	28-Jan-17	20-Oct-16	16-Nov-16
24ABN4460	Installation of split type A/C unit (at plant manager room)	0%	14	13-Jan-17	28-Jan-17	20-Oct-16	04-Nov-16
24ABN4470	Installation of split type A/C unit (at control room)	0%	24	16-Jan-17	11-Feb-17	05-Nov-16	02-Dec-16
Control and Monitoring Services incl. Instrumentation							
24ABN4800	Equipment installation for monitoring and control system	0%	14	24-Oct-16	08-Nov-16	13-Aug-16	29-Aug-16
24ABN4810	Install cable tray for monitoring and control system	0%	12	24-Oct-16	05-Nov-16	13-Aug-16	26-Aug-16
24ABN4820	Cable laying for monitoring and control system	0%	12	07-Nov-16	19-Nov-16	27-Aug-16	09-Sep-16
24ABN4830	Megger test in cables for monitoring and control system	0%	6	21-Nov-16	26-Nov-16	10-Sep-16	17-Sep-16
24ABN4840	Cable termination for monitoring and control system	0%	6	28-Nov-16	03-Dec-16	19-Sep-16	24-Sep-16
24ABN4850	DCS panel fabrication	0%	21	16-Nov-16	09-Dec-16	26-Sep-16	21-Oct-16
24ABN4860	PLC programming and SCADA editing	0%	30	10-Dec-16	16-Jan-17	22-Oct-16	25-Nov-16
24ABN4870	Migration of existing DCS system to newly installed DCS system	0%	28	17-Jan-17	17-Feb-17	26-Nov-16	30-Dec-16
24ABN4880	DCS interface with contract DC/2009/10	0%	58	10-Dec-16	17-Feb-17	22-Oct-16	30-Dec-16
Fire Protection / Detection System							
24ABN04541	Installation of cable conduit / trunking	0%	75	24-Oct-16	20-Jan-17	12-Aug-16	10-Nov-16
24ABN04542	Cabling works	0%	75	10-Nov-16	07-Feb-17	30-Aug-16	28-Nov-16
24ABN04543	Installation of fire alarm panel	0%	30	15-Dec-16	20-Jan-17	06-Oct-16	10-Nov-16
24ABN04544	Installation of fire detector	0%	90	10-Nov-16	24-Feb-17	30-Aug-16	15-Dec-16
24ABN04545	Installation of fire alarm bell	0%	30	21-Jan-17	24-Feb-17	11-Nov-16	15-Dec-16
24ABN04547	Installation of fire exit sign	0%	45	04-Jan-17	24-Feb-17	25-Oct-16	15-Dec-16
24ABN04549	Installation of water pump for hose reel system	0%	30	04-Jan-17	07-Feb-17	25-Oct-16	28-Nov-16
24ABN04550	Installation of water pipe for hose reel system	0%	45	04-Jan-17	24-Feb-17	25-Oct-16	15-Dec-16
24ABN04552	Installation of water pump for sprinkler system	0%	30	24-Oct-16	26-Nov-16	09-Aug-16	12-Sep-16
24ABN04553	Installation of water pipe for sprinkler system	0%	60	24-Oct-16	03-Jan-17	09-Aug-16	20-Oct-16
P&D Services							
24ABN04491	Installation of FRP water tank for plumbing system	0%	14	24-Oct-16	08-Nov-16	22-Jul-16	06-Aug-16
24ABN04492	Installation of water booster pump for plumbing system	0%	14	09-Nov-16	24-Nov-16	08-Aug-16	23-Aug-16
24ABN04493	Installation of hydro pneumatic pressure vessel for plumbing system	0%	14	25-Nov-16	10-Dec-16	24-Aug-16	08-Sep-16
24ABN04494	Installation of water supply pipe for plumbing system (small size pipe)	0%	50	25-Nov-16	24-Jan-17	24-Aug-16	24-Oct-16
24ABN04495	Installation of water supply pipe for plumbing system at toilet room	0%	20	02-Jan-17	24-Jan-17	29-Sep-16	24-Oct-16



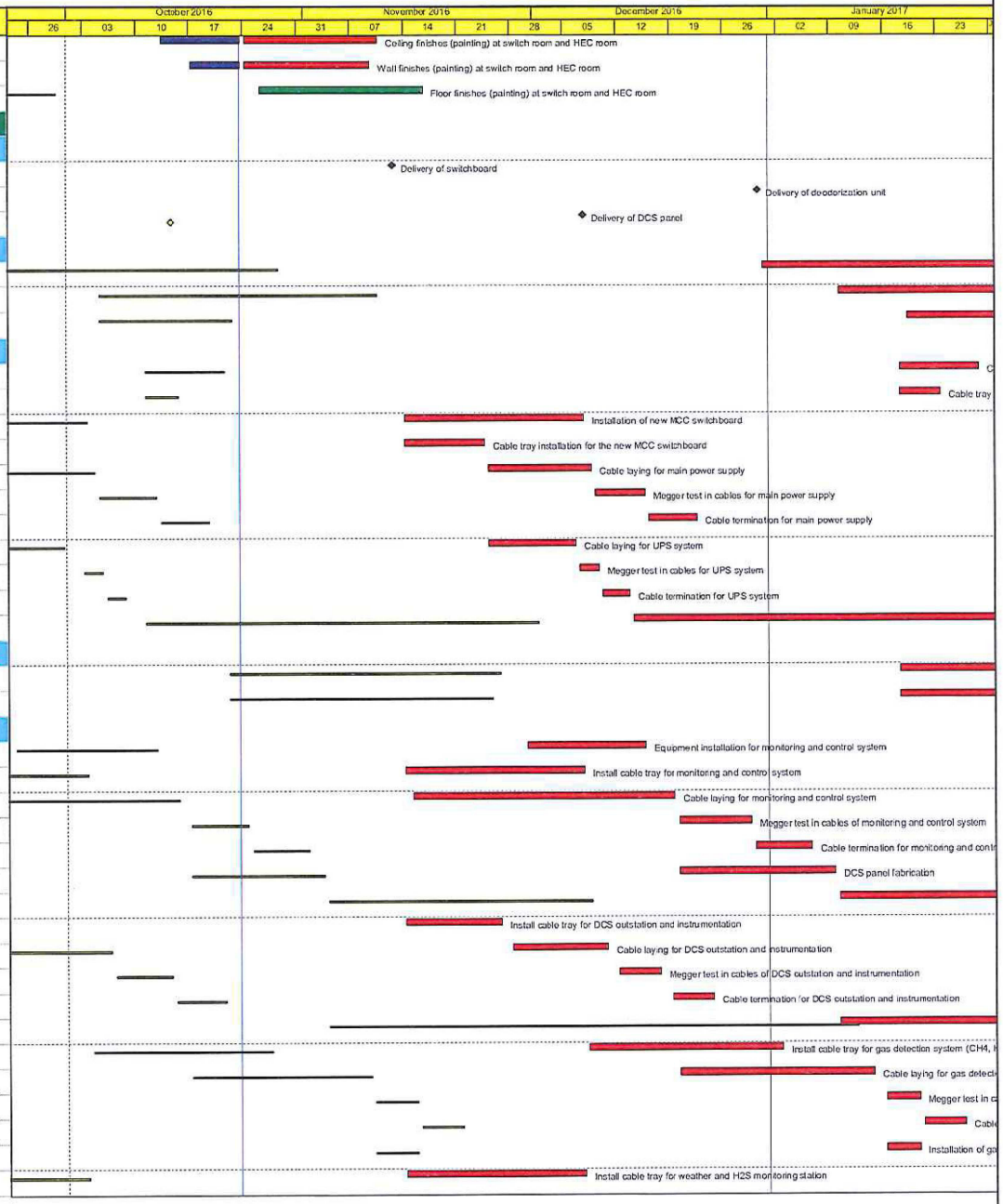
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
24ABN04496	Installation of sanitary ware drainage services at toilet room	0%	45	13-Dec-16	04-Feb-17	10-Sep-16	04-Nov-16
Earthing and Lightning System							
24ABN4380	Installation of earthing and lightning protection equipment	0%	30	10-Nov-16	14-Dec-16	12-Aug-16	15-Sep-16
Roadworks, Landscape and Modification of Fence							
Roadworks							
24ABN02320A10	Roadworks	0%	90	12-Dec-16	28-Mar-17	03-Sep-16	20-Dec-16
Landscaping Works							
24ABN02320A20	Landscaping (Shurbs planting)	0%	78	05-Jan-17*	05-Apr-17	08-Nov-16	08-Feb-17
24ABN02330A10	Tree Transplantation from off site to site area	0%	60	05-Jan-17*	15-Mar-17	24-Sep-16	05-Dec-16
Modification of Fence							
24ABN02325A10	Demolition on some part of existing boundary fence	0%	30	12-Dec-16	17-Jan-17	03-Sep-16	11-Oct-16
24ABN02325A20	Construct new boundary fence	0%	30	18-Jan-17	21-Feb-17	28-Oct-16	01-Dec-16
U/G Utility Works							
U/G Utility Works							
24ABN02821A10	U/G odour pipe installation	0%	45	24-Oct-16	14-Dec-16	24-Mar-16	21-May-16
24ABN02821A20	U/G water supply	0%	35	24-Oct-16	02-Dec-16	22-Jul-16	31-Aug-16
24ABN02821A30	U/G drainage and sewerage	0%	45	24-Oct-16	14-Dec-16	22-Jul-16	12-Sep-16
24ABN02821A40	Abandoned and filled of existing drainage and sewerage	0%	45	15-Dec-16	07-Feb-17	13-Sep-16	07-Nov-16
24ABN02821A50	Installation of external signal and power cable including ducting works and drawpit	0%	45	19-Nov-16	12-Jan-17	01-Sep-16	26-Oct-16
Completion of Works for Section 6							
Submission of Manuals							
24ABN4740	Preparation / Submission of draft O&M manuals	0%	90	24-Oct-16	21-Jan-17	05-Aug-16	02-Nov-16
Ap Lei Chau PTW							
Key Dates							
Time of Completion							
24ALC00300	Time for Completion of Section 7	0%	1264	31-Aug-11 A	15-May-17	25-Mar-16	13-Feb-17
24ALC00302	Claim for Additional Extension of Time - under review	0%	657	31-Mar-15 A	15-May-17	24-Mar-16	13-Feb-17
Statutory and Utility Applications and Approvals							
Fire Services Department (FSD)							
24ALC00410	Prepare / Submit Application for FSD Inspection	0%	60	24-Oct-16	03-Jan-17	21-Jul-16	29-Sep-16
24ALC00420	1st round on-site inspection by FSD	0%	14	04-Jan-17	19-Jan-17	30-Sep-16	18-Oct-16
24ALC00421	Remedial works as per FSD inpection comment	0%	14	20-Jan-17	04-Feb-17	19-Oct-16	03-Nov-16
Hong Kong Electric (HEC)							
24ALC00424	Prepare / Submit Application form to HEC	0%	26	24-Oct-16	22-Nov-16	15-Jul-16	13-Aug-16
24ALC00425	Pre-inspection of transformer room by HEC	0%	14	23-Nov-16	08-Dec-16	15-Aug-16	30-Aug-16
24ALC00426	Remedial works per HEC inspection comments	0%	13	09-Dec-16	23-Dec-16	31-Aug-16	14-Sep-16
24ALC00427	Final inspection of transformer room by HEC	0%	13	24-Dec-16	10-Jan-17	15-Sep-16	30-Sep-16
24ALC00428	Transformer installation by HEC	0%	60	11-Jan-17	11-Mar-17	01-Oct-16	29-Nov-16
Interface and Liaison							
Interface with ST2/DSD							
24MALC00130	Application of PMAC/SWAC for Demolition of Temp. Control Room	0%	0	03-Jan-17		28-Oct-16	
24MALC00140	Proposed Approval date of PMAC/SWAC for Demolition of Temp. Control Room	0%	0		16-Jan-17		10-Nov-16
24MALC00150	Application of PMAC/SWAC for Relocation from Existing to New Workshop Bldg.	0%	0	05-Dec-16		24-Sep-16	
24MALC00160	Proposed Approval date of PMAC/SWAC for Relocation from Existing to New Workshop Bldg.	0%	0		18-Dec-16		07-Oct-16
Works for Section 7							
Stage 2 of ALC Upgrade (Completion of Remaining Works)							



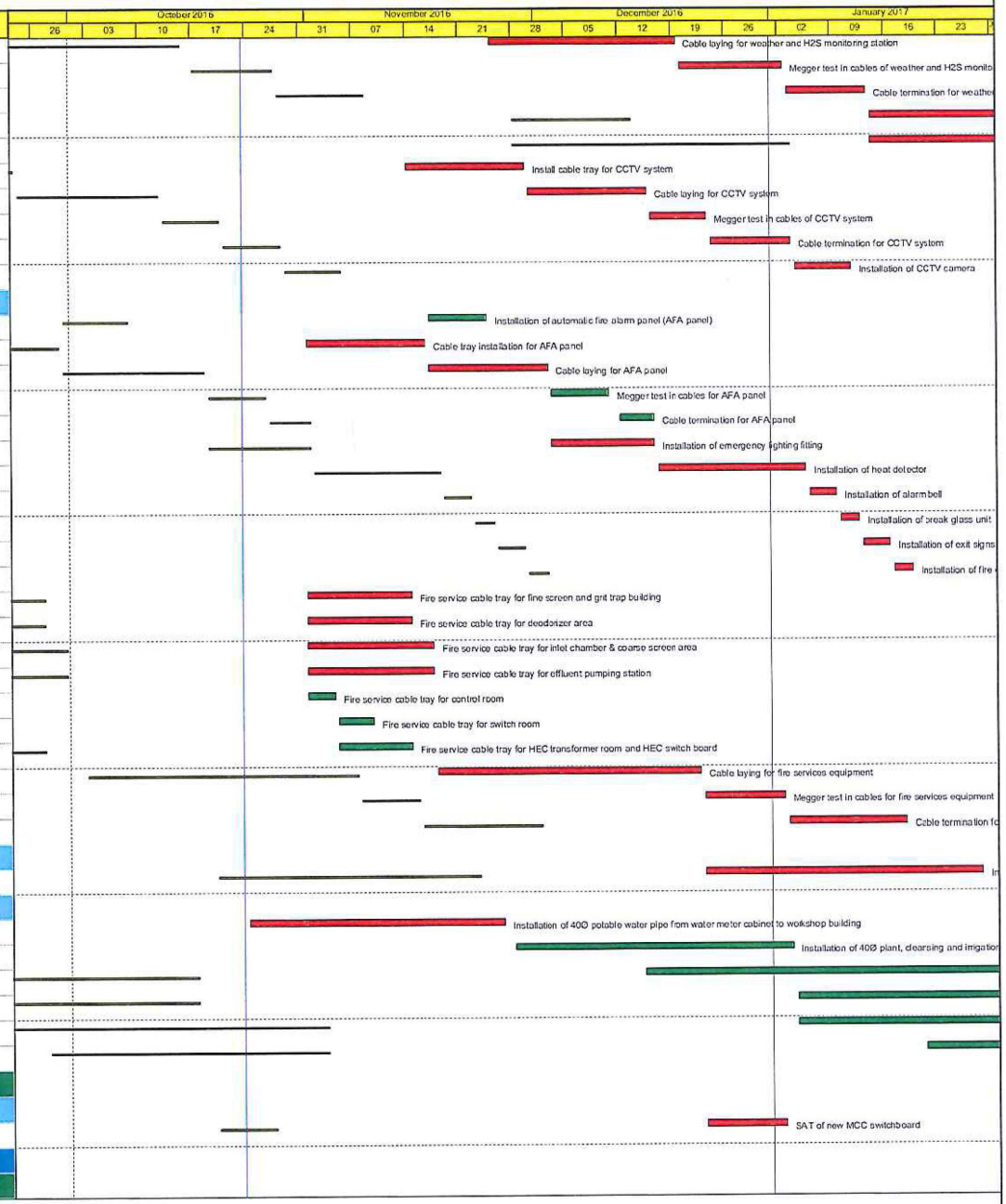
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
Interface between Civil / ABWF / E&M Works							
24MALC00250	Completion of structural works in preparation for finishing works	0%	0		30-Dec-16		20-Sep-16
24MALC00260	Partial completion of finishing works in preparation for E&M works	0%	0		17-Jan-17		29-Oct-16
Civil Works							
Relocation of Temp. Control Room to New Control Room (incl. Demolition)							
24ALC00810A05	Relocation of temporary to new control room	0%	30	03-Jan-17	06-Feb-17	28-Oct-16	01-Dec-16
Foundation Works							
Fine Screen and Grit Trap Area (GL 1-4)							
24ALC00780A57	Formworks for grit trap and channel base slab	0%	6	11-Aug-16 A	29-Oct-16	15-Jun-16	21-Jun-16
24ALC00780A58	Rebarworks for grit trap and channel base slab	0%	6	12-Aug-16 A	31-Oct-16	22-Jun-16	28-Jun-16
24ALC00780A59	Concrete for grit trap and channel base slab	0%	1	01-Nov-16	01-Nov-16	29-Jun-16	30-Jun-16
24ALC00780A60	Formworks for channel wall	0%	6	02-Sep-16 A	08-Nov-16	02-Jul-16	08-Jul-16
24ALC00780A61	Rebarworks for channel wall	0%	6	03-Sep-16 A	09-Nov-16	09-Jul-16	15-Jul-16
24ALC00780A62	Concrete for channel wall	0%	1	10-Nov-16	10-Nov-16	16-Jul-16	18-Jul-16
Wet Well and Effluent Pumping Station (GL 4-7)							
24ALC00780A90	Excavation for wet well and effluent pumping station	100%	30	08-Apr-16 A	15-Oct-16 A	01-Apr-16	07-May-16
24ALC00780B10	Formworks for pile cap of wet well and effluent pumping station	0%	6	17-Oct-16 A	29-Oct-16	09-May-16	16-May-16
24ALC00780B20	Rebarworks for pile cap of wet well and effluent pumping station	0%	7	25-Oct-16	01-Nov-16	17-May-16	24-May-16
24ALC00780B30	Concrete for pile cap of wet well and effluent pumping station	0%	2	02-Nov-16	03-Nov-16	25-May-16	26-May-16
24ALC00780B40	Formworks for U/G wall of wet well and effluent pumping station up to +0.800mPD	0%	6	04-Nov-16	10-Nov-16	27-May-16	02-Jun-16
24ALC00780B50	Rebarworks for U/G wall of wet well and effluent pumping station up to +0.800mPD	0%	6	08-Nov-16	14-Nov-16	03-Jun-16	10-Jun-16
24ALC00780B60	Concrete for U/G wall of wet well and effluent pumping station up to +0.800mPD	0%	2	15-Nov-16	16-Nov-16	11-Jun-16	13-Jun-16
24ALC00780B61	Formworks for U/G wall of wet well and effluent pumping station up to +3.700mPD	0%	6	17-Nov-16	23-Nov-16	14-Jun-16	20-Jun-16
24ALC00780B62	Rebarworks for U/G wall of wet well and effluent pumping station up to +3.700mPD	0%	6	21-Nov-16	28-Nov-16	21-Jun-16	27-Jun-16
24ALC00780B63	Concrete for U/G wall of wet well and effluent pumping station up to +3.700mPD	0%	2	28-Nov-16	29-Nov-16	28-Jun-16	29-Jun-16
24ALC00820B20	Formworks for remaining wall and slab of wet well up to +6.15mPD	0%	12	30-Nov-16	13-Dec-16	30-Jun-16	14-Jul-16
24ALC00820B30	Rebarworks for remaining wall and slab of wet well up to +6.15mPD	0%	12	07-Dec-16	20-Dec-16	15-Jul-16	28-Jul-16
24ALC00820B40	Concrete for remaining wall and slab of wet well up to +6.15mPD	0%	2	21-Dec-16	22-Dec-16	29-Jul-16	30-Jul-16
RC Structural Works							
Fine Screen and Grit Trap Area (GL 1-4)							
24ALC00790A10	Formworks for column and wall of grit trap and fine screen area	0%	12	11-Nov-16	24-Nov-16	19-Jul-16	01-Aug-16
24ALC00790A20	Rebarworks for column and wall of grit trap and fine screen area	0%	12	18-Nov-16	01-Dec-16	02-Aug-16	15-Aug-16
24ALC00790A30	Concrete for column and wall of grit trap and fine screen area	0%	1	02-Dec-16	02-Dec-16	16-Aug-16	18-Aug-16
24ALC00790A40	Formworks for roof beam and slab of grit trap and fine screen area	0%	10	03-Dec-16	14-Dec-16	19-Aug-16	30-Aug-16
24ALC00790A50	Rebarworks for roof beam and slab of grit trap and fine screen area	0%	10	09-Dec-16	20-Dec-16	31-Aug-16	10-Sep-16
24ALC00790A60	Concrete roof beam and slab of grit trap and fine screen area	0%	7	21-Dec-16	30-Dec-16	12-Sep-16	20-Sep-16
Deodorization Room and Effluent Pumping Station (GL 4-7)							
24ALC00830A10	Formworks for column and wall of deodorization room and effluent pumping station up to +11.034mPD	0%	18	23-Dec-16	14-Jan-17	01-Aug-16	20-Aug-16
24ALC00830A20	Rebarworks for column and wall of deodorization room and effluent pumping station up to +11.034mPD	0%	18	05-Jan-17	25-Jan-17	22-Aug-16	10-Sep-16
Transformer Room and Switchgear Room							
24ALC00830B50	Rebarworks for roof beam and slab of of switch room and HEC room	100%	12	19-Sep-16 A	12-Oct-16 A	01-Aug-16	16-Aug-16
24ALC00830B60	Concrete for roof beam and slab of of switch room and HEC room	100%	2	13-Oct-16 A	13-Oct-16 A	17-Aug-16	18-Aug-16
Finishing Works (Internal and External)							
24ALC00800A10	Ceiling finishes (painting) at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / C-G	0%	15	31-Dec-16	17-Jan-17	21-Sep-16	08-Oct-16
24ALC00800A20	Wall finishes (painting) at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / C-G	0%	17	29-Dec-16	17-Jan-17	30-Sep-16	21-Oct-16
24ALC00800A30	Floor finishes (painting) at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / C-G	0%	17	29-Dec-16	17-Jan-17	12-Oct-16	29-Oct-16



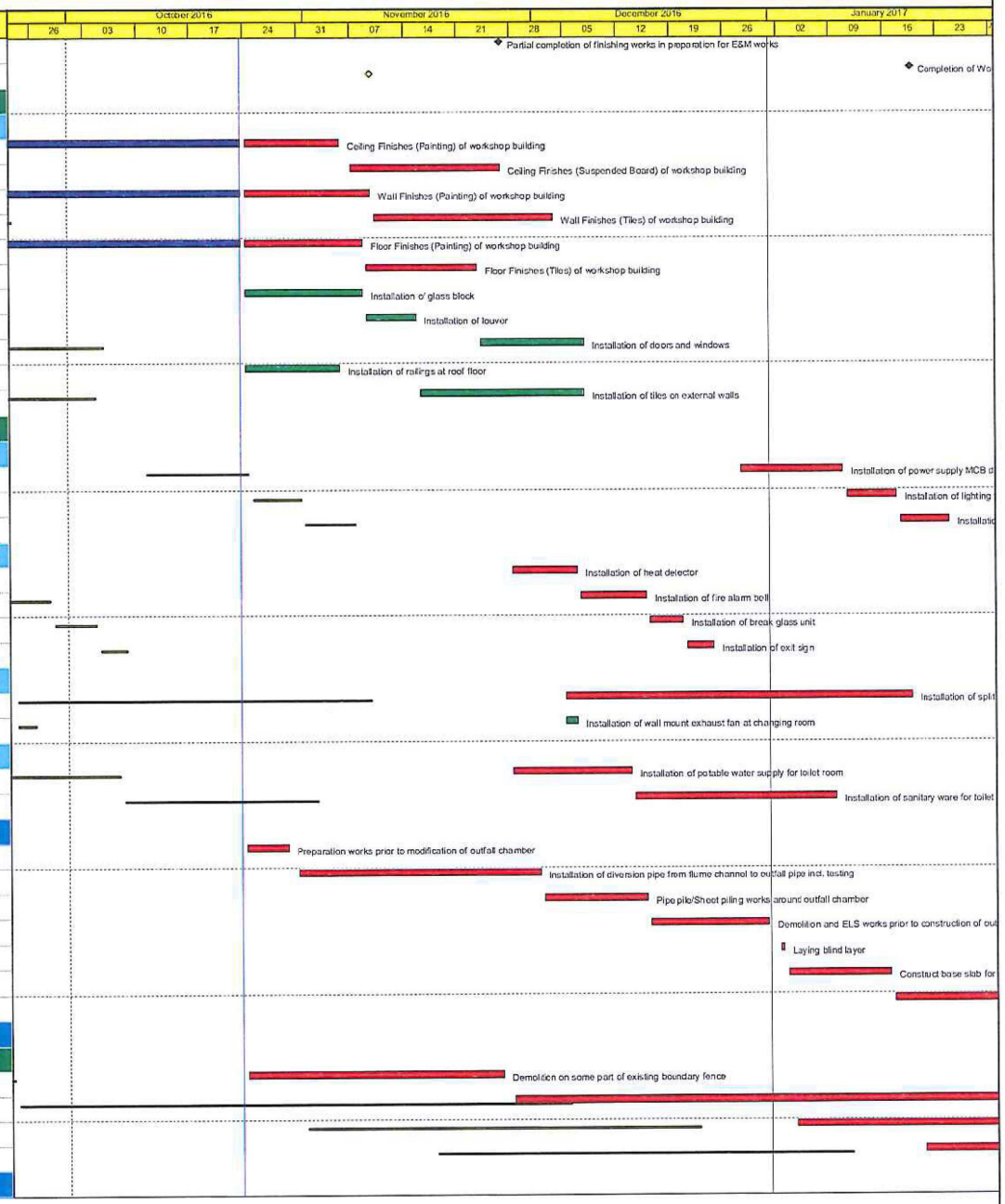
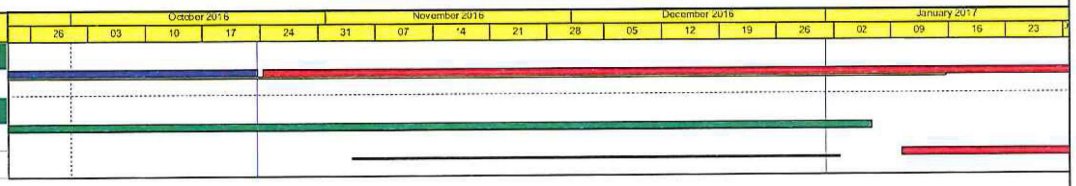
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
24ALC00840A40	Ceiling finishes (painting) at switch room and HEC room	0%	16	13-Oct-16 A	10-Nov-16	19-Aug-16	06-Sep-16
24ALC00840A50	Wall finishes (painting) at switch room and HEC room	0%	15	17-Oct-16 A	09-Nov-16	29-Aug-16	14-Sep-16
24ALC00840A60	Floor finishes (painting) at switch room and HEC room	0%	19	26-Oct-16	16-Nov-16	07-Sep-16	29-Sep-16
Electrical and Mechanical Works							
Material / Equipment Delivery on Site							
24ALC00996	Delivery of switchboard	0%	0		12-Nov-16		10-May-16
24ALC00997	Delivery of deodorization unit	0%	0		30-Dec-16		17-Aug-16
24ALC00998	Delivery of DCS panel	0%	0		07-Dec-16		14-Oct-16
Mechanical Works							
24ALC04000	Installation of penstock no. 1 & 3 (coarse screen no. 1 inlet / outlet)	0%	30	31-Dec-16	03-Feb-17	21-Sep-16	28-Oct-16
24ALC04010	Installation of penstock no. 5 & 8 (fine screen no. 1 inlet / outlet)	0%	30	10-Jan-17	13-Feb-17	05-Oct-16	10-Nov-16
24ALC04090	Installation of monorail (for fine screen area)	0%	14	19-Jan-17	03-Feb-17	05-Oct-16	22-Oct-16
Electrical Works							
24ALC04180	Cable tray installation for fine screen no. 1 and inlet / outlet penstock	0%	10	18-Jan-17	28-Jan-17	11-Oct-16	21-Oct-16
24ALC04190	Cable tray installation for grit trap no. 1	0%	5	18-Jan-17	23-Jan-17	11-Oct-16	15-Oct-16
24ALC04250	Installation of new MCC switchboard	0%	21	14-Nov-16	07-Dec-16	07-Sep-16	03-Oct-16
24ALC04260	Cable tray installation for the new MCC switchboard	0%	10	14-Nov-16	24-Nov-16	07-Sep-16	19-Sep-16
24ALC04270	Cable laying for main power supply	0%	12	25-Nov-16	08-Dec-16	20-Sep-16	04-Oct-16
24ALC04280	Megger test in cables for main power supply	0%	6	09-Dec-16	15-Dec-16	05-Oct-16	12-Oct-16
24ALC04290	Cable termination for main power supply	0%	6	16-Dec-16	22-Dec-16	13-Oct-16	19-Oct-16
24ALC04300	Cable laying for UPS system	0%	10	25-Nov-16	06-Dec-16	20-Sep-16	30-Sep-16
24ALC04310	Megger test in cables for UPS system	0%	3	07-Dec-16	09-Dec-16	03-Oct-16	05-Oct-16
24ALC04320	Cable termination for UPS system	0%	3	10-Dec-16	13-Dec-16	06-Oct-16	08-Oct-16
24ALC04330	Diversion of cables from temporary switchboard to new MCC room / switchboard c/w megger test	0%	45	14-Dec-16	06-Feb-17	11-Oct-16	01-Dec-16
HVAC System (Deodorization / Air Conditioning / Ventilation)							
24ALC04490	Installation of ventilation fan c/w air duct (grit traps and screen room)	0%	31	18-Jan-17	22-Feb-17	22-Oct-16	26-Nov-16
24ALC04570	Installation of split type A/C unit (2 set at control room)	0%	30	18-Jan-17	21-Feb-17	22-Oct-16	25-Nov-16
Control and Monitoring Services incl. Instrumentation							
24ALC04710	Equipment installation for monitoring and control system	0%	14	30-Nov-16	15-Dec-16	24-Sep-16	12-Oct-16
24ALC04720	Install cable tray for monitoring and control system	0%	21	14-Nov-16	07-Dec-16	07-Sep-16	03-Oct-16
24ALC04730	Cable laying for monitoring and control system	0%	30	15-Nov-16	19-Dec-16	08-Sep-16	15-Oct-16
24ALC04740	Megger test in cables of monitoring and control system	0%	7	20-Dec-16	29-Dec-16	17-Oct-16	24-Oct-16
24ALC04750	Cable termination for monitoring and control system	0%	7	30-Dec-16	06-Jan-17	25-Oct-16	01-Nov-16
24ALC04760	DCS panel fabrication	0%	16	20-Dec-16	09-Jan-17	17-Oct-16	03-Nov-16
24ALC04780	PLC programming and SCADA editing	0%	30	10-Jan-17	13-Feb-17	04-Nov-16	08-Dec-16
24ALC04790	Install cable tray for DCS outstation and instrumentation	0%	12	14-Nov-16	26-Nov-16	07-Sep-16	21-Sep-16
24ALC04800	Cable laying for DCS outstation and instrumentation	0%	12	28-Nov-16	10-Dec-16	22-Sep-16	06-Oct-16
24ALC04810	Megger test in cables of DCS outstation and instrumentation	0%	6	12-Dec-16	17-Dec-16	07-Oct-16	14-Oct-16
24ALC04820	Cable termination for DCS outstation and instrumentation	0%	6	19-Dec-16	24-Dec-16	15-Oct-16	21-Oct-16
24ALC04840	DCS interface with contract DC/2009/10	0%	58	10-Jan-17	17-Mar-17	04-Nov-16	12-Jan-17
24ALC04850	Install cable tray for gas detection system (CH4, H2S & O2 detector)	0%	20	08-Dec-16	02-Jan-17	04-Oct-16	27-Oct-16
24ALC04860	Cable laying for gas detection system	0%	21	20-Dec-16	14-Jan-17	17-Oct-16	09-Nov-16
24ALC04870	Megger test in cables of gas detection system	0%	5	16-Jan-17	20-Jan-17	10-Nov-16	15-Nov-16
24ALC04880	Cable termination for gas detection system	0%	5	21-Jan-17	26-Jan-17	16-Nov-16	21-Nov-16
24ALC04890	Installation of gas detector (CH4, H2S & O2 detector)	0%	5	16-Jan-17	20-Jan-17	10-Nov-16	15-Nov-16
24ALC04900	Install cable tray for weather and H2S monitoring station	0%	21	14-Nov-16	07-Dec-16	07-Sep-16	03-Oct-16



Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
24ALC04910	Cable laying for weather and H2S monitoring station	0%	21	25-Nov-16	19-Dec-16	20-Sep-16	15-Oct-16
24ALC04920	Megger test in cables of weather and H2S monitoring station	0%	10	20-Dec-16	02-Jan-17	17-Oct-16	27-Oct-16
24ALC04930	Cable termination for weather and H2S monitoring station	0%	10	03-Jan-17	13-Jan-17	28-Oct-16	08-Nov-16
24ALC04940	Installation of weather monitoring station	0%	14	14-Jan-17	30-Jan-17	28-Nov-16	13-Dec-16
24ALC04950	Installation of H2S monitoring station	0%	30	14-Jan-17	17-Feb-17	28-Nov-16	03-Jan-17
24ALC04960	Install cable tray for CCTV system	0%	14	14-Nov-16	29-Nov-16	07-Sep-16	23-Sep-16
24ALC04970	Cable laying for CCTV system	0%	14	30-Nov-16	15-Dec-16	24-Sep-16	12-Oct-16
24ALC04980	Megger test in cables of CCTV system	0%	7	16-Dec-16	23-Dec-16	13-Oct-16	20-Oct-16
24ALC04990	Cable termination for CCTV system	0%	7	24-Dec-16	03-Jan-17	21-Oct-16	28-Oct-16
24ALC05000	Installation of CCTV camera	0%	7	04-Jan-17	11-Jan-17	29-Oct-16	05-Nov-16
Fire Protection / Detection System							
24ALC05010	Installation of automatic fire alarm panel (AFA panel)	0%	7	17-Nov-16	24-Nov-16	30-Sep-16	08-Oct-16
24ALC05020	Cable tray installation for AFA panel	0%	14	01-Nov-16	16-Nov-16	13-Sep-16	29-Sep-16
24ALC05030	Cable laying for AFA panel	0%	14	17-Nov-16	02-Dec-16	30-Sep-16	18-Oct-16
24ALC05040	Megger test in cables for AFA panel	0%	7	03-Dec-16	10-Dec-16	19-Oct-16	26-Oct-16
24ALC05050	Cable termination for AFA panel	0%	5	12-Dec-16	16-Dec-16	27-Oct-16	01-Nov-16
24ALC05060	Installation of emergency lighting fitting	0%	12	03-Dec-16	16-Dec-16	19-Oct-16	01-Nov-16
24ALC05070	Installation of heat detector	0%	15	17-Dec-16	05-Jan-17	02-Nov-16	18-Nov-16
24ALC05080	Installation of alarm bell	0%	3	06-Jan-17	09-Jan-17	19-Nov-16	22-Nov-16
24ALC05090	Installation of break glass unit	0%	3	10-Jan-17	12-Jan-17	23-Nov-16	25-Nov-16
24ALC05100	Installation of exit signs	0%	3	13-Jan-17	16-Jan-17	26-Nov-16	29-Nov-16
24ALC05110	Installation of fire extinguisher	0%	3	17-Jan-17	19-Jan-17	30-Nov-16	02-Dec-16
24ALC05120	Fire service cable tray for fine screen and grit trap building	0%	12	01-Nov-16	14-Nov-16	13-Sep-16	27-Sep-16
24ALC05130	Fire service cable tray for deodorizer area	0%	12	01-Nov-16	14-Nov-16	13-Sep-16	27-Sep-16
24ALC05140	Fire service cable tray for inlet chamber & coarse screen area	0%	15	01-Nov-16	17-Nov-16	13-Sep-16	30-Sep-16
24ALC05150	Fire service cable tray for effluent pumping station	0%	15	01-Nov-16	17-Nov-16	13-Sep-16	30-Sep-16
24ALC05160	Fire service cable tray for control room	0%	4	01-Nov-16	04-Nov-16	13-Sep-16	17-Sep-16
24ALC05170	Fire service cable tray for switch room	0%	4	05-Nov-16	09-Nov-16	19-Sep-16	22-Sep-16
24ALC05180	Fire service cable tray for HEC transformer room and HEC switch board	0%	8	05-Nov-16	14-Nov-16	19-Sep-16	27-Sep-16
24ALC05190	Cable laying for fire services equipment	0%	30	18-Nov-16	22-Dec-16	03-Oct-16	07-Nov-16
24ALC05200	Megger test in cables for fire services equipment	0%	7	23-Dec-16	02-Jan-17	08-Nov-16	15-Nov-16
24ALC05210	Cable termination for fire services equipment	0%	14	03-Jan-17	18-Jan-17	16-Nov-16	01-Dec-16
Earthing and Lightning System							
24ALC05270	Installation of earthing and lightning protection equipment	0%	30	23-Dec-16	28-Jan-17	20-Oct-16	23-Nov-16
U/G Utility Works							
24ALC00851A10	Installation of 40Ø potable water pipe from water meter cabinet to workshop building	0%	30	24-Oct-16	26-Nov-16	30-Jun-16	04-Aug-16
24ALC00851A20	Installation of 40Ø plant, deansing and irrigation pipe from water meter cabinet to deodorization room	0%	30	28-Nov-16	03-Jan-17	05-Aug-16	08-Sep-16
24ALC00851A30	Installation of drainage pipe with size of 100, 150, 225 and 250Ø from new buildings to inlet chamber	0%	45	15-Dec-16	07-Feb-17	23-Aug-16	17-Oct-16
24ALC00851A40	Installation of foul manhole for drainage system	0%	30	04-Jan-17	07-Feb-17	09-Sep-16	17-Oct-16
24ALC00851A50	Installation of sewer and stormwater pipe (150, 225 and 300Ø)	0%	45	04-Jan-17	24-Feb-17	09-Sep-16	03-Nov-16
24ALC00851A60	Installation of sewer and stormwater manholes	0%	30	21-Jan-17	24-Feb-17	28-Sep-16	03-Nov-16
Preliminary Testing and Commissioning							
Electrical Works							
24ALC05350	SAT of new MCC switchboard	0%	7	23-Dec-16	02-Jan-17	20-Oct-16	27-Oct-16
Workshop Building							
Interface between Civil / ABWF / E&M Works							



Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
24MALC00290	Partial completion of finishing works in preparation for E&M works	0%	0		26-Nov-16		08-Sep-16
24MALC00300	Completion of Workshop building	0%	0		19-Jan-17		09-Nov-16
Civil Works							
Finishing Works (Internal and External)							
24ALC00890A10	Ceiling Finishes (Painting) of workshop building	0%	12	24-Aug-16 A	05-Nov-16	05-Aug-16	18-Aug-16
24ALC00890A20	Ceiling Finishes (Suspended Board) of workshop building	0%	18	07-Nov-16	26-Nov-16	19-Aug-16	08-Sep-16
24ALC00890A30	Wall Finishes (Painting) of workshop building	0%	15	31-Aug-16 A	09-Nov-16	12-Aug-16	29-Aug-16
24ALC00890A40	Wall Finishes (Tiles) of workshop building	0%	21	10-Nov-16	03-Dec-16	30-Aug-16	23-Sep-16
24ALC00890A50	Floor Finishes (Painting) of workshop building	0%	14	07-Sep-16 A	08-Nov-16	19-Aug-16	03-Sep-16
24ALC00890A60	Floor Finishes (Tiles) of workshop building	0%	13	09-Nov-16	23-Nov-16	05-Sep-16	20-Sep-16
24ALC00890A70	Installation of glass block	0%	14	24-Oct-16	08-Nov-16	05-Aug-16	20-Aug-16
24ALC00890A80	Installation of louver	0%	6	09-Nov-16	15-Nov-16	22-Aug-16	27-Aug-16
24ALC00890A90	Installation of doors and windows	0%	12	24-Nov-16	07-Dec-16	21-Sep-16	05-Oct-16
24ALC00910A10	Installation of railings at roof floor	0%	12	24-Oct-16	05-Nov-16	05-Aug-16	18-Aug-16
24ALC00910A30	Installation of tiles on external walls	0%	19	16-Nov-16	07-Dec-16	10-Sep-16	04-Oct-16
Electrical and Mechanical Works							
Electrical Works							
24ALC05400	Installation of power supply MCB distribution board	0%	12	28-Dec-16	10-Jan-17	11-Oct-16	24-Oct-16
24ALC05410	Installation of lighting fittings	0%	6	11-Jan-17	17-Jan-17	25-Oct-16	31-Oct-16
24ALC05420	Installation of lighting switch, fuse switch, power sockets, etc.	0%	6	18-Jan-17	24-Jan-17	01-Nov-16	07-Nov-16
Fire Protection / Detection System							
24ALC05450	Installation of heat detector	0%	8	28-Nov-16	06-Dec-16	09-Sep-16	19-Sep-16
24ALC05460	Installation of fire alarm bell	0%	8	07-Dec-16	15-Dec-16	20-Sep-16	28-Sep-16
24ALC05470	Installation of break glass unit	0%	4	16-Dec-16	20-Dec-16	29-Sep-16	04-Oct-16
24ALC05480	Installation of exit sign	0%	4	21-Dec-16	24-Dec-16	05-Oct-16	08-Oct-16
HVAC System (Deodorization / Air Conditioning / Ventilation)							
24ALC05430	Installation of split type A/C unit (2 sets at workshop)	0%	38	05-Dec-16	19-Jan-17	24-Sep-16	09-Nov-16
24ALC05440	Installation of wall mount exhaust fan at changing room	0%	2	05-Dec-16	06-Dec-16	24-Sep-16	26-Sep-16
Plumbing System							
24ALC05490	Installation of potable water supply for toilet room	0%	14	28-Nov-16	13-Dec-16	21-Sep-16	07-Oct-16
24ALC05500	Installation of sanitary ware for toilet room	0%	21	14-Dec-16	09-Jan-17	08-Oct-16	02-Nov-16
Modification of Outfall Chamber							
24ALC00901	Preparation works prior to modification of outfall chamber	0%	6	24-Oct-16	29-Oct-16	31-May-16	06-Jun-16
24ALC00902	Installation of diversion pipe from flume channel to outfall pipe incl. testing	0%	28	31-Oct-16	01-Dec-16	07-Jun-16	11-Jul-16
24ALC00904	Pipe pile/Sheet piling works around outfall chamber	0%	12	02-Dec-16	15-Dec-16	12-Jul-16	25-Jul-16
24ALC00905	Demolition and ELS works prior to construction of outfall chamber	0%	12	16-Dec-16	31-Dec-16	26-Jul-16	08-Aug-16
24ALC00910	Laying blind layer	0%	1	02-Jan-17	02-Jan-17	09-Aug-16	09-Aug-16
24ALC00911	Construct base slab for remaining flume channel and outfall chamber	0%	12	03-Jan-17	16-Jan-17	10-Aug-16	23-Aug-16
24ALC00914	Construct wall for remaining flume channel and outfall chamber	0%	18	17-Jan-17	06-Feb-17	24-Aug-16	13-Sep-16
Roadworks, Landscaping Works and Modification of Fence							
Modification of Fence							
24ALC00930A10	Demolition on some part of existing boundary fence	0%	30	24-Oct-16	26-Nov-16	19-Aug-16	23-Sep-16
24ALC00930A20	Construct new boundary fence	0%	60	28-Nov-16	07-Feb-17	24-Sep-16	05-Dec-16
24ALC00930A30	Installation of Ceramic Face or natural stone facing on boundary fence	0%	45	04-Jan-17	24-Feb-17	01-Nov-16	22-Dec-16
24ALC00930A40	Installation of Synthetic diagonal timber board fencing	0%	45	21-Jan-17	14-Mar-17	18-Nov-16	11-Jan-17
Completion of Works in Section 7							



Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish	BL Project Early Start	BL Project Early Finish
EoT Claim							
24ALC01791	Claim for Additional Extension of Time - under review	0%	656	01-Apr-15 A	15-May-17	24-Mar-16	13-Feb-17
Submission of Manuals							
24ALC01810	Preparation / Submission of final O&M manuals	0%	90	04-Jan-16 A	06-Jan-17	12-Jun-17	09-Sep-17
24ALC01820	As-Built Drawings Submission / Approval for Ap Lei Chau PTW	0%	60	10-Jan-17	10-Mar-17	04-Nov-16	02-Jan-17