

# Civil Engineering and Development Department

EP-344/2009 – New Sewage Pumping Stations Serving KTD and  
EP-337/2009 – New Distributor Roads Serving the Planned KTD


Contract No. KL/2012/03  
Kai Tak Development – Stage 4 Infrastructure at  
Former North Apron Area

Monthly EM&A Report

April 2014

(Version 2.0)

Approved 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

## CINOTECH CONSULTANTS LTD

Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong  
Tel: (852) 2151 2083 Fax: (852) 3107 1388  
Email: [info@cinotech.com.hk](mailto:info@cinotech.com.hk)

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
Introduction.....	1
Environmental Monitoring Works.....	1
Environmental Licenses and Permits.....	2
Key Information in the Reporting Month .....	2
Future Key Issues .....	2
<b>1. INTRODUCTION.....</b>	<b>3</b>
Background.....	3
Project Organizations.....	3
Construction Activities undertaken during the Reporting Month .....	4
Summary of EM&A Requirements .....	5
Status of Compliance with Environmental Permits Conditions .....	6
<b>2. AIR QUALITY .....</b>	<b>8</b>
Monitoring Requirements .....	8
Monitoring Locations .....	8
Monitoring Equipment.....	8
Monitoring Parameters, Frequency and Duration .....	9
Monitoring Methodology and QA/QC Procedure .....	9
Results, Observations and Action/Limit Level Exceedance.....	11
<b>3. NOISE .....</b>	<b>13</b>
Monitoring Requirements .....	13
Monitoring Locations .....	13
Monitoring Equipment.....	13
Monitoring Parameters, Frequency and Duration .....	13
Monitoring Methodology and QA/QC Procedures.....	14
Maintenance and Calibration .....	14
Results, Observations and Action/Limit Level Exceedance.....	14
<b>4. COMPARISON OF EM&amp;A RESULTS WITH EIA PREDICTIONS .....</b>	<b>16</b>
<b>5. LANDSCAPE AND VISUAL.....</b>	<b>18</b>
Monitoring Requirements .....	18
Results and Observations.....	18
<b>6. ENVIRONMENTAL AUDIT.....</b>	<b>19</b>
Site Audits .....	19
Review of Environmental Monitoring Procedures .....	19
Status of Environmental Licensing and Permitting .....	19
Status of Waste Management .....	20
Implementation Status of Environmental Mitigation Measures .....	20
Summary of Mitigation Measures Implemented .....	21
Implementation Status of Event Action Plans .....	21
Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution .....	21

<b>7. FUTURE KEY ISSUES .....</b>	<b>22</b>
Key Issues for the Coming Month .....	22
Monitoring Schedule for the Next Month .....	23
<b>8. CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>24</b>
Conclusions.....	24
Recommendations.....	24
Effectiveness of Environmental Management.....	25

## LIST OF TABLES

Table I	Breaches of Action and Limit Levels for the Project in the Reporting Month
Table II	Summary Table for Key Information in the Reporting Month
Table 1.1	Key Project Contacts
Table 1.2	Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures
Table 1.3	Air Quality and Noise Monitoring Stations for this Project
Table 1.4	Summary Table for Required Submission under EP No. EP-337/2009
Table 1.5	Summary Table for Required Submission under EP No. EP-344/2009
Table 2.1	Locations for Air Quality Monitoring
Table 2.2	Air Quality Monitoring Equipment
Table 2.3	Impact Dust Monitoring Parameters, Frequency and Duration
Table 3.1	Noise Monitoring Stations
Table 3.2	Noise Monitoring Equipment
Table 3.3	Noise Monitoring Parameters, Frequency and Duration
Table 3.4	Major noise source identified at the designated noise monitoring stations
Table 3.5	Baseline Noise Level and Noise Limit Level for Monitoring Stations
Table 4.1	Comparison of 1-hr TSP data with EIA predictions
Table 4.2	Comparison of 24-hr TSP data with EIA predictions
Table 4.3	Comparison of Noise Monitoring Data with EIA predictions
Table 6.1	Summary of Environmental Licensing and Permit Status
Table 6.2	Observations and Recommendations of Site Inspections
Table 7.1	Summary of the tentative program of major site activities, the impact prediction and control measures for April and May 2014
Table 8.1	Examples of Mitigation Measures for Environmental Recommendations

## **LIST OF FIGURES**

Figure 1	Layout Plan of the Project Site
Figure 2	Locations of Air Quality Monitoring Stations
Figure 3	Locations of Construction Noise Monitoring Stations
Figure 4	Locations of Wind Anemometer
Figure 5	Management Structure

## **LIST OF APPENDICES**

A	Action and Limit Levels for Air Quality and Noise
B	Copies of Calibration Certificates
C	Weather Information
D	Environmental Monitoring Schedules
E	1-hour TSP Monitoring Results and Graphical Presentations
F	24-hour TSP Monitoring Results and Graphical Presentations
G	Noise Monitoring Results and Graphical Presentations
H	Summary of Exceedance
I	Site Audit Summary
J	Event Action Plans
K	Environmental Mitigation Implementation Schedule (EMIS)
L	Summaries of Environmental Complaint, Warning, Summon and Notification of Successful Prosecution
M	Summary of Waste Generation and Disposal Records
N	Construction Programme



## EXECUTIVE SUMMARY

### Introduction

1. This is the 5<sup>th</sup> Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Ltd. for “Contract No. KL/2012/03 - Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area” (Hereafter referred to as “the Project”). This contract comprises the construction of Schedule 2 Designated Projects (DP) Road D2 & Sewage Pumping Station PS2 and NPS which forms a part of the works under two Environmental Permits (EP), EP-337/2009 and EP-344/2009. The title of the designated projects under Environmental Permit No.: EP-344/2009 is “New sewage pumping stations serving Kai Tak Development” and under Environmental Permit No.: EP-337/2009 is “New distributor roads serving the planned Kai Tak Development”. This report documents the findings of EM&A Works conducted from 1 – 30 April 2014.
2. The major site activities undertaken in the reporting month included:
  - Daily Clearance;
  - Driving sheet piles and excavation for NPS at portion 4;
  - Construction of Receiving pit at Portion 4;
  - Excavation for Box Culvert B6;
  - Excavation for Jacking pit in Yuk Yat Street;
  - Road widening works for Sun Wong Tai Road;
  - Tree Felling;
  - Drainage work in Road L19 and L2; and
  - Construction of Jacking Pit at portion 1.

### Environmental Monitoring Works

3. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
4. Summary of the breaches of action and limit levels in the reporting month for the Project is tabulated in Table I.

**Table I Breaches of Action and Limit Levels for the Project in the Reporting Month**

Parameter	No. of Project-related Exceedance		Action Taken
	Action Level	Limit Level	
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A

#### *1-hour & 24-hour TSP Monitoring*

5. All 1-hour & 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### *Construction Noise Monitoring*

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

### **Environmental Licenses and Permits**

7. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, Environmental Permits No. EP-344/2009 and EP-337/2009 were issued on 23 April 2009.
8. Registration of Chemical Waste Producer (N/A).
9. Water Discharge License (N/A).
10. Construction Noise Permit (License No.: PP-RE0056-13).

### **Key Information in the Reporting Month**

11. Summary of complaint received, reporting changes and notifications of any summons and successful prosecutions 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	---
Reporting Changes	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

### **Future Key Issues**

12. The future key environmental issues in the coming month include:
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
  - Water spraying for dust generating activity and on haul road;
  - Proper storage of construction materials on site;
  - Storage of chemicals/fuel and chemical waste/waste oil on site;
  - Accumulation of general and construction waste on site;
  - Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site; and
  - Review and implementation of temporary drainage system for the surface runoff.

## 1. INTRODUCTION

### Background

- 1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 4 Infrastructure at Former North Apron Area is one of the construction stages of KTD. It contains various Schedule 2 DPs which require Environmental Permits for the commencement of the Projects. Schedule 2 DPs in this Project include new distributor roads serving the planned KTD and new sewage pumping stations serving the planned KTD. The general layout of the Project is shown in **Figure 1**.
- 1.2 Two Environmental Permits (EPs) No. EP-344/2009 and EP-337/2009 were also issued on 23 April 2009 for new sewage pumping stations serving the planned KTD and new distributor roads serving the planned KTD respectively to Civil Engineering and Development Department as the Permit Holder.
- 1.3 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. The EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 April 2009.
- 1.4 Cinotech Consultants Limited (Cinotech) was commissioned by Kwan On Construction Co., Ltd. (the Contractor) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2012/03 - Stage 4 Infrastructure at Former North Apron Area. The construction work under KL/2012/03 comprises the construction of Road D2 & Sewage Pumping Station PS2 and PS NPS which forms a part of the works under two EPs (EP-337/2009 and EP-344/2009).
- 1.5 The construction commencement of this Contract was on 1<sup>st</sup> December 2013 for Road D2, Sewage Pumping Station PS2 and PS NPS. This is the 5<sup>th</sup> Monthly EM&A report summarizing the EM&A works for the Project from 1 – 30 April 2014.

### Project Organizations

- 1.6 Different parties with different levels of involvement in the project organization include:
  - Project Proponent – Civil Engineering and Development Department (CEDD).
  - The Engineer and the Engineer's Representative (ER) – AECOM.
  - Environmental Team (ET) – Cinotech Consultants Limited (CCL).
  - Independent Environmental Checker (IEC) – Hyder Consultants Ltd. (Hyder).
  - Contractor –Kwan On Construction Co., Ltd. (Kwan On).

1.7 The key contacts of the Project are shown in **Table 1.1** and **Figure 5**.

**Table 1.1 Key Project Contacts**

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. K Y SHIN	Engineer	2301 1461	2301 1277
AECOM	Engineer's Representative	Mr. Vincent Lee	SRE	27980771	3013 8864
		Mr. Mickey Lee	RE		
Cinotech	Environmental Team	Dr. Priscilla Choy	Environmental Team Leader	2151 2089	3107 1388
		Ms. Ivy Tam	Project Coordinator and Audit Team Leader	2151 2090	
Hyder	Independent Environmental Checker	Mr. Wong Fu Nam	Independent Environmental Checker	2911 2744	2805 5028
Kwan On	Contractor	Mr. Terry Yu	Site Agent	3689 7752	/
				6146 6761	(Hotline telephone number)

### Construction Activities undertaken during the Reporting Month

1.8 The site activities undertaken in the reporting month included:

- Daily Clearance;
- Driving sheet piles and excavation for NPS at portion 4;
- Construction of Receiving pit at Portion 4;
- Excavation for Box Culvert B6;
- Excavation for Jacking pit in Yuk Yat Street;
- Road widening works for Sun Wong Tai Road;
- Tree Felling;
- Drainage work in Road L19 and L2; and
- Construction of Jacking Pit at portion 1.

1.9 The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in Table 1.2.

**Table 1.2 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures**

Construction Works	Generated Major Environmental Impact	Control Measures
Daily Clearance	N/A	N/A
Drainage work in Road L19 and L2	Noise, Water Quality	<ul style="list-style-type: none"> <li>• Use of quiet plant and well-maintained construction plant; and</li> <li>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall.</li> </ul>
Road widening works for Sun Wong Tai Road	N/A	N/A
Driving sheet piles at Portion 4	Noise	<ul style="list-style-type: none"> <li>• Use of quiet plant and well-maintained construction plant;</li> <li>• Provide hoarding</li> <li>• Machines and plant (such as trucks) that may be in intermittent use should be shut down between works period or should be throttled down to a minimum.</li> </ul>
Excavation for NPS at portion 4, excavation for Box Culvert B6 and excavation for Jacking pit in Yuk Yat Street	Dust, Water Quality	<ul style="list-style-type: none"> <li>• Sufficient watering of the works site with active dust emitting activities;</li> <li>• Properly cover the stockpiles;</li> <li>• Appropriate desilting/sedimentation devices provided on site for treatment before discharge;</li> <li>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; and</li> <li>• On-site waste sorting and implementation of trip ticket system.</li> </ul>
Construction of Jacking Pit at portion 1; Construction of Receiving pit at Portion 4	Noise	<ul style="list-style-type: none"> <li>• Use of quiet plant and well-maintained construction plant; and</li> <li>• Provide hoarding.</li> </ul>
Tree Felling	N/A	N/A

**Summary of EM&A Requirements**

- 1.10 The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring 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 requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 1.12 This report presents the implementation of the EM&A programme for the Project from 1 – 30 April 2014.

- 1.13 With reference to the same principle of EIA report of the Project, air quality monitoring stations within 500m and noise monitoring stations within 300m from the boundary of this Project are considered as relevant monitoring locations. In such regard, the relevant air quality and noise monitoring locations are tabulated in Table 1.3 (see Figure 2 and 3 for their locations).

**Table 1.3 Air Quality and Noise Monitoring Stations for this Project**

Locations	Monitoring Stations In accordance with EM&A Manual	Alternative Monitoring Stations
Air Quality Monitoring Stations		
AM2 - Lee Kau Yan Memorial School	Yes	N/A
AM3 – Sky Tower	No	AM3(A) – Holy Trinity Bradbury Centre
AM4 – Grand Waterfront	No	AM4(A) – EMSD Workshop
AM5 – CCC Kei To Secondary School	No	AM5(A) – Po Leung Kuk Ngan Po Ling College
AM6 – Site 1B4 (Planned)	N/A	
Noise Monitoring Stations		
M6 – Holy Carpenter Primary School	Yes	N/A
M7 – CCC Kei To Secondary School	Yes	N/A
M8 – Po Leung Kuk Ngan Po Ling College	Yes	N/A
M9 – Tak Long Estate	Yes	N/A
M10 – Site 1B4 (Planned)	N/A	

Remarks:

- “Yes” - Monitoring station is the same as that stated in EM&A Manual
- No - Monitoring station is not the same as that stated in EM&A Manual. Request for carrying monitoring works at the monitoring stations stated in EM&A Manual was rejected by owner of premise. Alternative monitoring stations were proposed by the ET of Schedule 3 EIA and approved by EPD in 2010.
- N/A - No alternative monitoring station is required.

- 1.14 According to the Environmental Monitoring and Audit Manual (EM&A Manual) of the Kai Tak Development (KTD) Schedule 3 Environmental Impact Assessment (EIA) Report, the impact monitoring at the designated monitoring stations as required in KTD EM&A Manual under the EP, have been conducted in Environmental Monitoring Works for Kai Tak Development under Schedule 3 of KTD, which is on-going starting from December 2010. The impact monitoring data under Schedule 3 of KTD will be adopted for the Project. Therefore, this report presents the air quality and noise monitoring works extracted from Schedule 3 of KTD.

**Status of Compliance with Environmental Permits Conditions**

- 1.15 The status of required submission related to this Project under the Environmental Permits No. EP-337/2009 and EP-344/2009 are summarized in the Table 1.4 and Table 1.5 respectively:

**Table 1.4 Summary Table for Required Submission under EP No. EP-337/2009**

EP Conditions	Submission	Submission Date	Remark
1.11	Notification of Commencement Date of Construction of Project	31 October 2013	For Road D2
2.3	Management Organization of Main Construction Companies	31 October 2013	For Contract No. KL/2012/03
2.4	Design Drawing(s) of the Project	28 October 2013	For Road D2
2.11	Landscape Mitigation Plan(s) for distributors road(s)	7 January 2014	For Road D2
2.12	As-built drawing(s) for the distributor road(s)	To be submitted at least one week before the commencement of operation of distributor road(s)	
3.2	Baseline Monitoring Report	26 November 2010 (Part I) 24 December 2010 (Part II)	/
3.3	Four hard copies and one electronic copy of the Monthly EM&A Report No.4 (March 2014)	16 April 2014	Monthly EM&A Report for Contract No. KL/2012/03

**Table 1.5 Summary Table for Required Submission under EP No. EP-344/2009**

EP Conditions	Submission	Submission Date	Remark
1.11	Notification of Commencement Date of Construction of Project	31 October 2013	For Pumping Station PS2 and NPS
2.3	Management Organization of Main Construction Companies	31 October 2013	For Contract No. KL/2012/03
2.4	Design Drawing(s) of the Project	28 October 2013	For Pumping Station PS2 and NPS
2.11	Landscape Mitigation Plan(s) for sewage pumping station(s)	7 January 2014	For Pumping Station PS2 and NPS
2.12	As-built drawing(s) for the sewage pumping station (s)	To be submitted at least one week before the commencement of operation of distributor road(s)	
3.2	Baseline Monitoring Report	26 November 2010 (Part I) 24 December 2010 (Part II)	/
3.3	Four hard copies and one electronic copy of the Monthly EM&A Report No.4 (March 2014)	16 April 2014	Monthly EM&A Report for Contract No. KL/2012/03

## 2. AIR QUALITY

### Monitoring Requirements

- 2.1 According to EM&A Manual under the EPs, 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality for this Project. For regular impact monitoring, a sampling frequency of at least once in every six days at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

### Monitoring Locations

- 2.2 Five designated monitoring stations were selected for air quality monitoring programme. Impact dust monitoring was conducted at four of the air quality monitoring stations (AM2, AM3(A), AM4(A) and AM5(A)). Table 2.1 describes the air quality monitoring locations, which are also depicted in **Figure 2**.

**Table 2.1 Locations for Air Quality Monitoring**

Monitoring Stations	Locations	Location of Measurement
AM2	Lee Kau Yan Memorial School	Rooftop (about 8/F) Area
AM3(A)	Holy Trinity Bradbury Centre	Rooftop (about 8/F) Area
AM4(A)	EMSD Workshops	Rooftop (about 6/F) Area
AM5(A)	Po Leung Kuk Ngan Po Ling College	Rooftop (about 10/F) Area
#AM6	PA 15	Site 1B4 (Planned)

Remarks: # The impact monitoring at these locations will only be carried out until the sensitive receivers at the building are resided.

### Monitoring Equipment

- 2.3 Table 2.2 summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates and laboratory accreditation are attached in **Appendix B**.

**Table 2.2 Air Quality Monitoring Equipment**

Equipment	Model and Make	Quantity
Calibrator	G25A	1
1-hour TSP Dust Meter	Laser Dust Monitor – Model LD-3B	4
HVS Sampler	GMWS 2310 c/w of TSP sampling inlet	4
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	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 schedule for the reporting month is shown in **Appendix D**.

**Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration**

Parameters	Frequency
1-hr TSP	Three times every 6 days
24-hr TSP	Once every 6 days

## Monitoring Methodology and QA/QC Procedure

### *1-hour TSP Monitoring*

#### Measuring Procedures

- 2.5 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

- 2.6 The following maintenance/calibration was required for the direct dust meters:
- Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.

### *24-hour TSP Monitoring*

#### Instrumentation

- 2.7 High volume (HVS) samplers (Model GMWS-2310 Accu-Vol) 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). Moreover, the HVS also met all the requirements in section 2.5 of the updated EM&A Manual.

#### Operating/Analytical Procedures

2.8 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.

2.9 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m<sup>3</sup>/min. and 1.4 m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

2.10 For TSP sampling, fiberglass filters have a collection efficiency of > 99% for particles of 0.3µm diameter were used.

2.11 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.

2.12 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.

2.13 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.

2.14 The shelter lid was closed and secured with the aluminum strip.

2.15 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).

- 2.16 After sampling, the filter was removed and sent to Wellab Ltd., which is accredited under HOKLAS for laboratory analysis. The elapsed time was also recorded.
- 2.17 Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than  $\pm 3^\circ\text{C}$ ; the relative humidity (RH) should be  $< 50\%$  and not vary by more than  $\pm 5\%$ . A convenient working RH is 40%.

#### Maintenance/Calibration

- 2.18 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.
  - High volume samplers were calibrated at bi-monthly intervals using G25A Calibration Kit throughout all stages of the air quality monitoring.
  - Orifice Transfer Standards were calibrated at yearly intervals throughout all stages of the air quality monitoring.

#### **Results, Observations and Action/Limit Level Exceedance**

- 2.19 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 2.20 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 2.21 The air temperature, precipitation and the relative humidity data was obtained from Hong Kong Observatory where the wind speed and wind direction were recorded by the installed Wind Anemometer set at rooftop (about 8/F) Lee Kau Yan Memorial School. The location is shown in **Figure 4**. This weather information for the reporting month is summarized in **Appendix C**.
- 2.22 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F** respectively.
- 2.23 The summary of exceedance record in reporting month is shown in **Appendix H**. No exceedance was recorded for the air quality monitoring.
- 2.24 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

<b>Station</b>	<b>Major Dust Source</b>
AM2 – Lee Kau Yan Memorial School	Road Traffic Dust Exposed site area and open stockpiles Site vehicle movement
AM3(A) – Holy Trinity Bradbury Centre	Road Traffic Dust Exposed site area Excavation works Site vehicle movement
AM4(A) – EMSD Workshops	Recycling Company Site vehicle movement
AM5(A) – Po Leung Kuk Ngan Po Ling College	Road Traffic Dust Excavation works at the site (Contract No.: 1/WSD/08(K)) facing Po Leung Kuk Ngan Po Ling College

### 3. NOISE

#### Monitoring Requirements

- 3.1 According to EM&A Manuals under the EP, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities within KTD. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

#### Monitoring Locations

- 3.2 Five designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at three designated monitoring stations (M6, M7 and M8). **Figure 3** shows the locations of these stations.

**Table 3.1 Noise Monitoring Stations**

Monitoring Stations	Locations	Location of Measurement
M6	Holy Carpenter Primary School	Rooftop (about 7/F) Area
M7	CCC Kei To Secondary School	Rooftop (about 8/F) Area
M8	Po Leung Kuk Ngan Po Ling College	Staircase Area (about 9/F)
M9	Tak Long Estate	Car Park Building (about 2/F)
#M10	Site 1B4 (Planned)	-

Remarks: # The impact monitoring at these locations will only be carried out until existence of the sensitive receiver at the building.

#### Monitoring Equipment

- 3.3 **Table 3.2** summarizes the noise monitoring equipment. Copies of calibration certificates are provided in **Appendix B**.

**Table 3.2 Noise Monitoring Equipment**

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	SVAN 955, 957 & 959	4
Calibrator	SVAN 30A	3
	B&K4231	1

#### Monitoring Parameters, Frequency and Duration

- 3.4 Table 3.3 summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**.

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

Monitoring Stations	Parameter	Period	Frequency	Measurement
M6 M7 M8 M9	L <sub>10</sub> (30 min.) dB(A) L <sub>90</sub> (30 min.) dB(A) L <sub>eq</sub> (30 min.) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade

**Monitoring Methodology and QA/QC Procedures**

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- 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
- 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<sub>eq</sub>, L<sub>90</sub> and L<sub>10</sub> were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused temporarily 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**

- 3.5 The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 3.6 The sound level meter and calibrator were checked and calibrated at yearly intervals.
- 3.7 Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

**Results, Observations and Action/Limit Level Exceedance**

- 3.8 All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 3.9 The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.4**.
- 3.10 Noise monitoring results and graphical presentations are shown in **Appendix G**.

3.11 The major noise source identified at the designated noise monitoring stations are as follows:

**Table 3.4 Major noise source identified at the designated noise monitoring stations**

Monitoring Stations	Locations	Major Noise Source
M6	Holy Carpenter Primary School	Road and marine traffic Noise
M7	CCC Kei To Secondary School	Road and marine traffic Noise
M8	Po Leung Kuk Ngan Po Ling College	Excavation works at the site (Contract No.: 1/WSD/08(K)) facing Po Leung Kuk Ngan Po Ling College
M9	Tak Long Estate	Road paving and asphalt paving works

**Table 3.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations**

Station	Baseline Noise Level, dB (A)	Noise Limit Level, dB (A)
M6	63.9 (at 0700 – 1900 hrs on normal weekdays)	70* (at 0700 – 1900 hrs on normal weekdays)
M7	68.7 (at 0700 – 1900 hrs on normal weekdays)	
M8	61.9 (at 0700 – 1900 hrs on normal weekdays)	
M9	59.0 (at 0700 – 1900 hrs on normal weekdays)	75 (at 0700 – 1900 hrs on normal weekdays)

(\*) Noise Limit Level is 65 dB(A) during school examination periods.

#### 4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

- 4.1 According to Section 16.1.6 (vi) of the EM&A Manual, the EM&A data was compared with the EIA predictions as summarized in **Table 4.1** to **4.3** below.

**Table 4.1 Comparison of 1-hr TSP data with EIA predictions**

Station	Predicted 1-hr TSP conc.			
	Scenario1 (Mid 2009 to Mid 2013), µg/m3	Scenario2 (Mid 2013 to Late 2016), µg/m3	Reporting Month (April 2014), µg/m3	
			Average	Range
AM2 – Lee Kau Yan Memorial School	290	312	189.4	99.6 – 274.6
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	217	247	171.3	102.0 – 256.9
AM4(A) – EMSD Workshops (Alternative station for Grand Waterfront)	246	258	188.3	97.6 – 270.7
AM5(A) – Po Leung Kuk Ngan Po Ling College (Alternative station for CCC Kei To Secondary School)	159	221	170.3	85.4 – 252.3

**Table 4.2 Comparison of 24-hr TSP data with EIA predictions**

Station	Predicted 24-hr TSP conc.			
	Scenario1 (Mid 2009 to Mid 2013), µg/m3	Scenario2 (Mid 2013 to Late 2016), µg/m3	Reporting Month (April 2014), µg/m3	
			Average	Range
AM2 – Lee Kau Yan Memorial School	145	169	83.9	48.3 – 122.1
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	106	138	74.8	47.0 – 124.7
AM4(A) – EMSD Workshops (Alternative station for Grand Waterfront)	143	152	101.0	42.6 – 160.3
AM5(A) – Po Leung Kuk Ngan Po Ling College (Alternative station for CCC Kei To Secondary School)	103	128	43.3	28.0 – 56.5



**Table 4.3 Comparison of Noise Monitoring Data with EIA predictions**

<b>Stations</b>	<b>Predicted Mitigated Construction Noise Levels during Normal Working Hour (<math>L_{eq(30min)}</math> dB(A))</b>	<b>Reporting Month (April 2014), <math>L_{eq(30min)}</math> dB(A)</b>
M6 - Holy Carpenter Primary School	47 – 86	59.7 – 65.0
M7 - CCC Kei To Secondary School	45 – 68	58.5 – 65.6
M8 - Po Leung Kuk Ngan Po Ling College	44 – 70	55.5 – 66.5
M9 – Tak Long Estate	Not predicted in EIA Report	60.3 – 68.2

- 4.2 The averages of 1-hour TSP concentrations in all stations in the reporting month were below to the prediction in the approved Environmental Impact Assessment (EIA) Report.
- 4.3 The averages of 24-hour TSP concentrations in all stations in the reporting month were below to the prediction in the approved Environmental Impact Assessment (EIA) Report.
- 4.4 The noise monitoring results in the reporting month was also within the range of predicted mitigated construction noise levels in the EIA report

## **5. LANDSCAPE AND VISUAL**

### **Monitoring Requirements**

- 5.1 According to EM&A Manual of the Kai Tak Development EIA Study, ET shall monitor and audit the contractor's activities during the construction period on a weekly basis, and to report on the contractor's performance.

### **Results and Observations**

- 5.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix I**.
- 5.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 5.4 Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in **Appendix J** shall be performed.

## 6. ENVIRONMENTAL AUDIT

### Site Audits

- 6.1 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. The summaries of site audits are attached in **Appendix I**.
- 6.2 Site audits were conducted on 4<sup>th</sup>, 10<sup>th</sup>, 16<sup>th</sup> and 25<sup>th</sup> April 2014 in the reporting month. IEC site inspections were conducted on 16<sup>th</sup> April 2014. No non-compliance was observed during the site audits.

### Review of Environmental Monitoring Procedures

- 6.3 The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

#### *Air Quality Monitoring*

- The monitoring team recorded all observations around the monitoring stations within and outside the construction site.
- The monitoring team recorded the temperature and weather conditions on the monitoring days.

#### *Noise Monitoring*

1. The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
2. Major noise sources were identified and recorded. Other intrusive noise attributing to the result was trimmed off by pausing the monitoring temporarily.

### Status of Environmental Licensing and Permitting

- 6.4 All permits/licenses obtained for the Project are summarized in Table 6.1.

**Table 6.1 Summary of Environmental Licensing and Permit Status**

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-337/2009	23/04/09	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
EP-344/2009	23/04/09	N/A	Construction of a new sewage pumping station serving the planned Kai Tak development with installed capacity of more than 2,000 m <sup>3</sup> per day and a boundary of which is less than 150m from an existing or planned residential area or educational institution.	Valid

Permit No.	Valid Period		Details	Status
	From	To		
Effluent Discharge License				
--	--	--	--	--
Registration of Chemical Waste Producer				
--	--	--	--	--
Construction Noise Permit (CNP)				
PP-RE0056-13	10/12/13	08/03/14	Construction Noise Permit for the carrying out of percussive piling.	Expired

### Status of Waste Management

- 6.5 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix M**.
- 6.6 In respect of the dump truck cover, the Contractor is advised to take record photos and inspection to ensure that all dump trucks have fully covered the skip before leaving the site.

### Implementation Status of Environmental Mitigation Measures

- 6.7 During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in Table 6.2.

**Table 6.2 Observations and Recommendations of Site Inspections**

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	--	--	--
<i>Air Quality</i>	--	--	--
<i>Noise</i>	--	--	--
<i>Waste/Chemical Management</i>	10 Apr 2014	Properly remove the oil stain on the ground near Pumping Station PS2.	Rectification/improvement was observed during the follow-up audit session.
	25 Apr 2014	Properly clear the oil stain on the ground at Pumping Stations PS2 and PS NPS.	Follow up action will be reported in next reporting month.
<i>Landscape and Visual</i>	4 Apr 2014	Construction material observed near the retained trees at Portion 4. The Contractor is reminded to remove the construction material and set up tree protection area.	Follow up action will be reported in next reporting month.
	10 Apr 2014	Construction material observed stored near the tree. The Contractor is reminded to remove the construction material and set up tree protection area.	Follow up action will be reported in next reporting month.
	16 Apr 2014	Construction material observed stored near the tree. The Contractor is reminded to remove the construction material and set up tree protection area.	Follow up action will be reported in next reporting month.
	25 Apr 2014	Construction material observed stored near the tree. The Contractor is reminded to remove the construction material and set up tree protection area.	Follow up action will be reported in next reporting month.

Parameters	Date	Observations and Recommendations	Follow-up
<i>Permits /Licences</i>	--	--	--

### Summary of Mitigation Measures Implemented

- 6.8 The monthly IEC audit was carried out on 16<sup>th</sup> April 2014, the observations were recorded and they are presented as follows:

#### Follow up of last observation:

- No hoarding was found on site (proposed Road L19) between Po Leung Kuk Ngan Po Ling College and Chi Kiang Street.
  - Hoarding was found established on site (Case Closed)
- An open container of some larvacidal oil was found at the site of Road D2. The Contractor was reminded to store the container properly.
  - Container not observed on site (Case Closed)

#### Observations:

- Construction materials were found near trees within the fencing area, Contractor was reminded to remove any construction materials within the fencing area. (near PS-NPS)

- 6.9 An updated summary of the EMIS is provided in **Appendix K**.

### Implementation Status of Event Action Plans

- 6.10 The Event Action Plans for air quality, noise and landscape and visual are presented in **Appendix J**.

#### 1-hr TSP Monitoring

- 6.11 No Action/Limit Level exceedance was recorded in the reporting month.

#### 24-hr TSP Monitoring

- 6.12 No Action/Limit Level exceedance was recorded in the reporting month.

#### Construction Noise

- 6.13 No Action/Limit Level exceedance was recorded in the reporting month.

#### Landscape and visual

- 6.14 No non-compliance was recorded in the reporting month.

### Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution

- 6.15 The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project are presented in **Appendix L**.

## 7. FUTURE KEY ISSUES

7.1 Major site activities undertaken for the coming two months include:

- Daily Clearance;
- Excavation of ELS for NPS at portion 4
- Consturction of receiving pit at Portion 4;
- Excavation for Box Culvert B6;
- Excavation for Jacking pit in Yuk Yat Street and San Ma Tau Stret;
- Road widening works for Sun Wong Toi Road;
- Trees felling;
- Drainage work in Road L19 and Road D2;
- Construction of Jacking pit at Portion 1;
- Box Culvert B5 construct Wall and Top Slab; and
- PS2 ELS of construction base slab.

7.2 The tentative construction program for the Project is provided in **Appendix N**.

### **Key Issues for the Coming Month**

7.3 Key environmental issues in the coming month include:

- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Water spraying for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site;
- Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site; and
- Review and implementation of temporary drainage system for the surface runoff.

7.4 The tentative program of major site activities and the impact prediction and environmental mitigation measures for the coming two months, i.e. May and June 2014 are summarized as follows:

**Table 7.1 Summary of the tentative program of major site activities, the impact prediction and control measures for April and May 2014**

Construction Works	Major Impact Prediction	Control Measures
As mentioned in Section 7.1	Air quality impact (dust)	a) Frequent watering of haul road and unpaved/exposed areas; b) Frequent watering or covering stockpiles with tarpaulin or similar means; and c) Watering of any earth moving activities.
	Water quality impact (surface run-off)	d) Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; e) Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; f) Provision of site boundary bund such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and g) Provision of measures to prevent discharge into the stream.
	Noise Impact	h) Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; i) Controlling the number of plants use on site; j) Regular maintenance of machines; and k) Use of acoustic barriers if necessary.

**Monitoring Schedule for the Next Month**

7.5 The tentative environmental monitoring schedules for the next month are shown in **Appendix D**.

## 8. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

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

#### 1-hr TSP Monitoring

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

#### 24-hr TSP Monitoring

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

#### Construction Noise Monitoring

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

#### Complaints, Notification of any Summons and Prosecution Received

- 8.5 No environmental complaints and environmental prosecution were received in the reporting month.

### Recommendations

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

#### *Air Quality Impact*

- To implement dust suppression measures on all haul roads, stockpiles, dry surfaces and excavation works.
- To mitigate the dust generation by adequate water spraying in dry days.

#### *Noise Impact*

- To inspect the noise sources inside the site.
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers.
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.

#### *Water Impact*

- To prevent any surface runoff discharge into any stream course.
- To review and implement temporary drainage system.
- To identify any wastewater discharges from site.



- To ensure properly maintenance for de-silting facilities.
- To clear the silt and sediment in the sedimentation tanks.
- To review the capacity of de-silting facilities for discharge.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.

#### *Waste/Chemical Management*

- To check for any accumulation of waste materials or rubbish on site.
- To ensure the performance of sorting of C&D materials at source (during generation);
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To provide proper storage area or drip trays for oil containers/ equipment on site.
- To avoid improper handling or storage of oil drum on site.

#### *Landscape and Visual*

- To protect the existing trees to be retained.
- To transplant the trees unavoidably affected by the works.
- To control of night-time lighting.
- To provide decorative screen hoarding.
- To complete landscape works at site area as early as possible.

### **Effectiveness of Environmental Management**

- 8.7 The above recommendations and the recommended mitigation measures in the EM&A Manual were carried out by the Contractor during construction. No non-compliance was recorded during the environmental site inspections as shown in **Appendix I**.
- 8.8 The effectiveness of environmental management is satisfactory given that the above recommendations are met. The recommendations include but not limited to the following,
- Surface runoff discharge into any stream course is prevented;
  - Provision of sedimentation facilities after identification of wastewater discharges from site;
  - Discharge or accidental spillage of chemical waste or oil directly from the site is avoided;
  - Improper handling or storage of oil drum on site is avoided;
  - The existing trees to be retained are protected; and
  - Night-time lighting is controlled.

The implementations of the above are given in **Table 8.1** below

**Table 8.1 Examples of Mitigation Measures for Environmental Recommendations**

	
<p>To prevent any surface runoff discharge into any stream course.</p>	<p>Follow-up measure(s) after identification of wastewater discharges from site.</p>
	
<p>To avoid any discharge or accidental spillage of chemical waste or oil directly from the site</p>	<p>To avoid improper handling or storage of oil drum on site</p>
	
<p>To protect the existing trees to be retained</p>	<p>To control of night-time lighting</p>

---

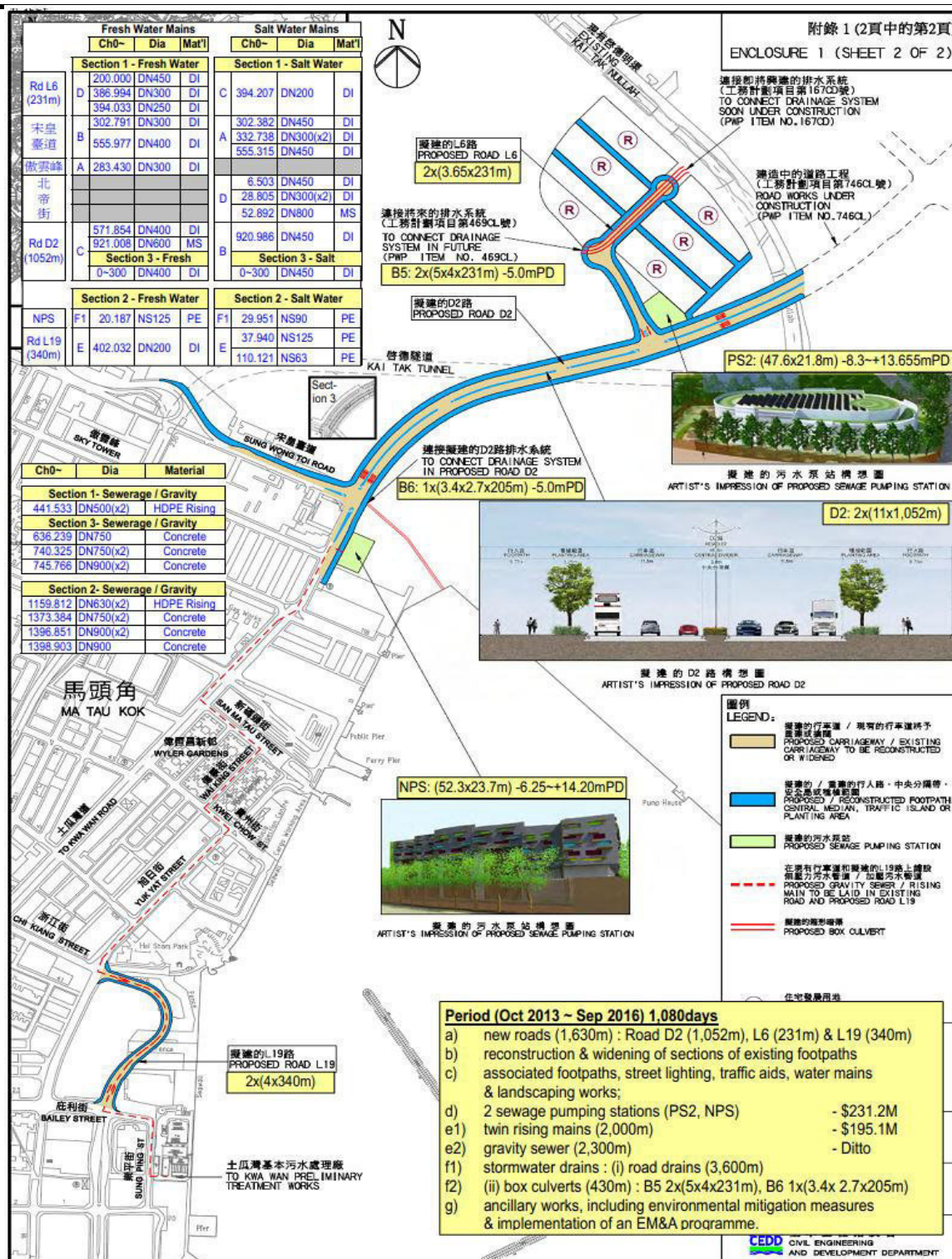
---

## FIGURES

---

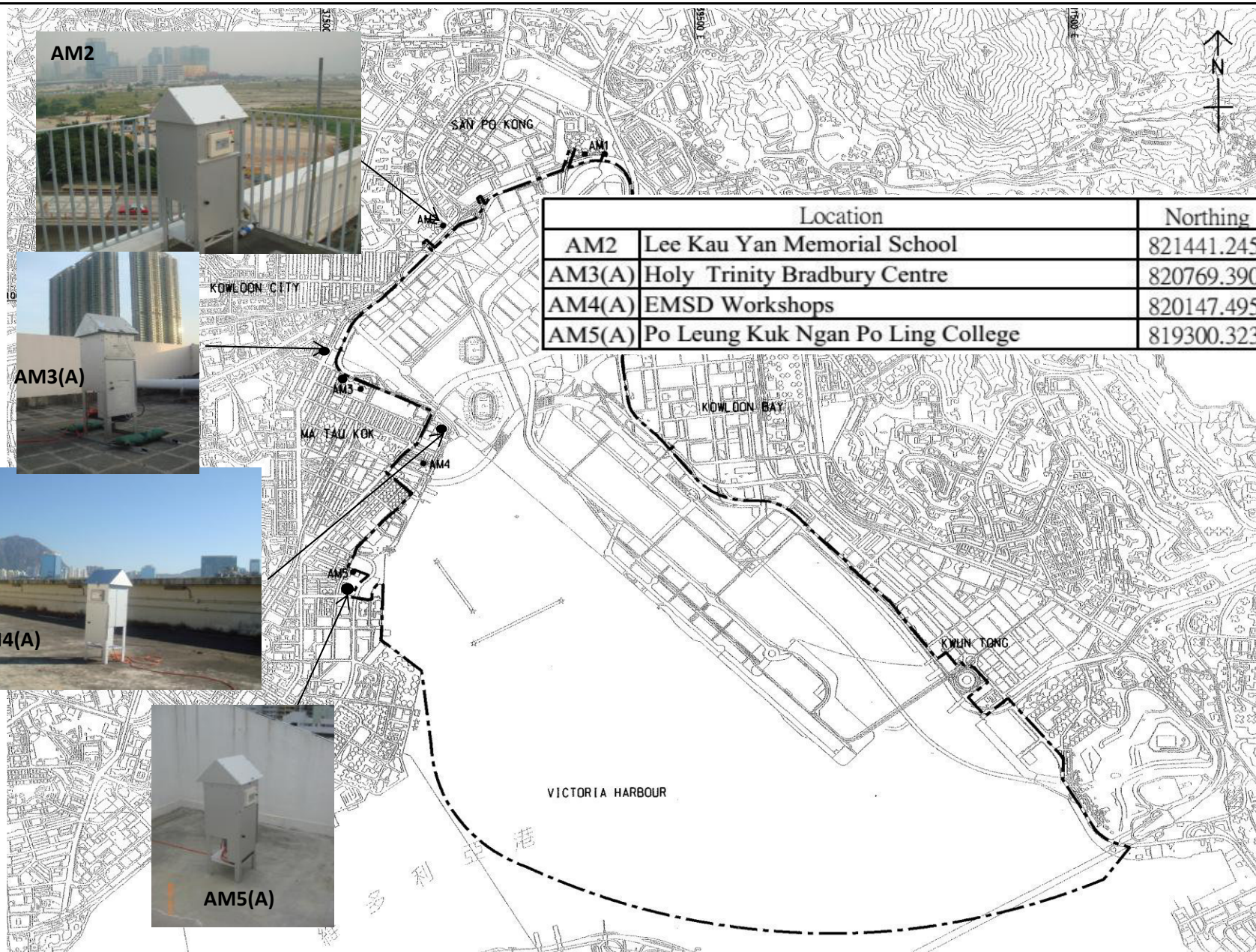
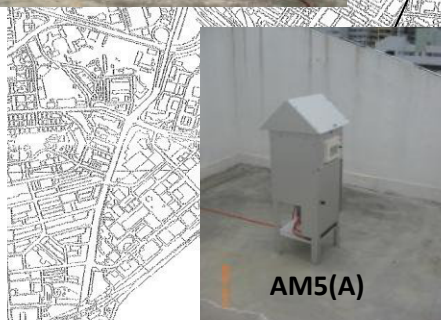
---





Title	KL/2012/03 - Kai Tak Development -Stage 4 Infrastructure at Former North Apron Area	Scale	N.T.S	Project No.	MA13056	CINOTECH
	Site Layout Plan	Date	Sep-13	Figure	1	





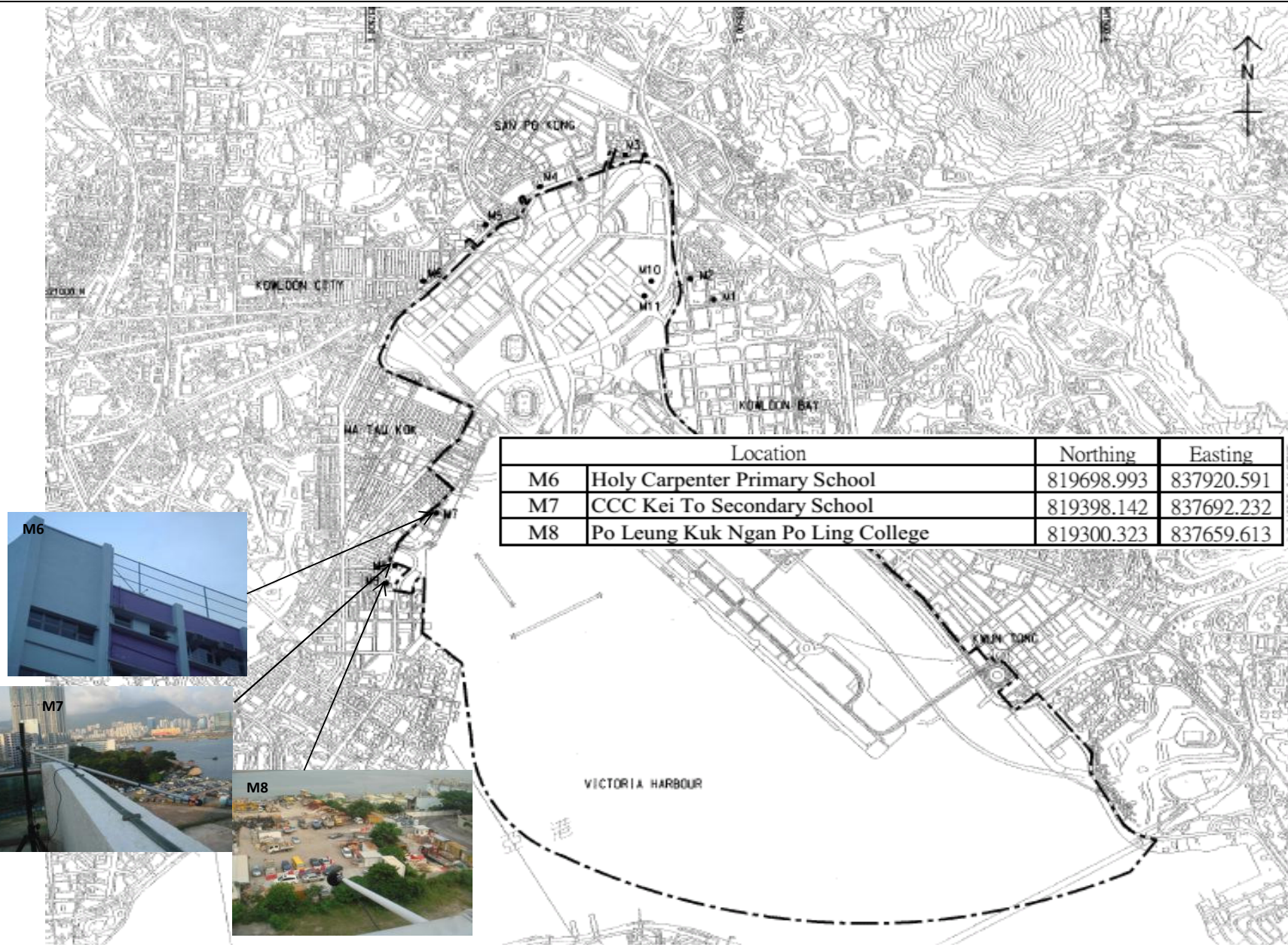
Location		Northing	Easting
AM2	Lee Kau Yan Memorial School	821441.245	838153.917
AM3(A)	Holy Trinity Bradbury Centre	820769.390	837522.115
AM4(A)	EMSD Workshops	820147.495	838155.791
AM5(A)	Po Leung Kuk Ngan Po Ling College	819300.323	837659.613

Title Contract No. KL/2012/03  
 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area  
 Air Quality Monitoring Stations under this Project

Scale	N.T.S	Project No.	MA13056
Date	Jan-14	Figure	2

**CINOTECH**



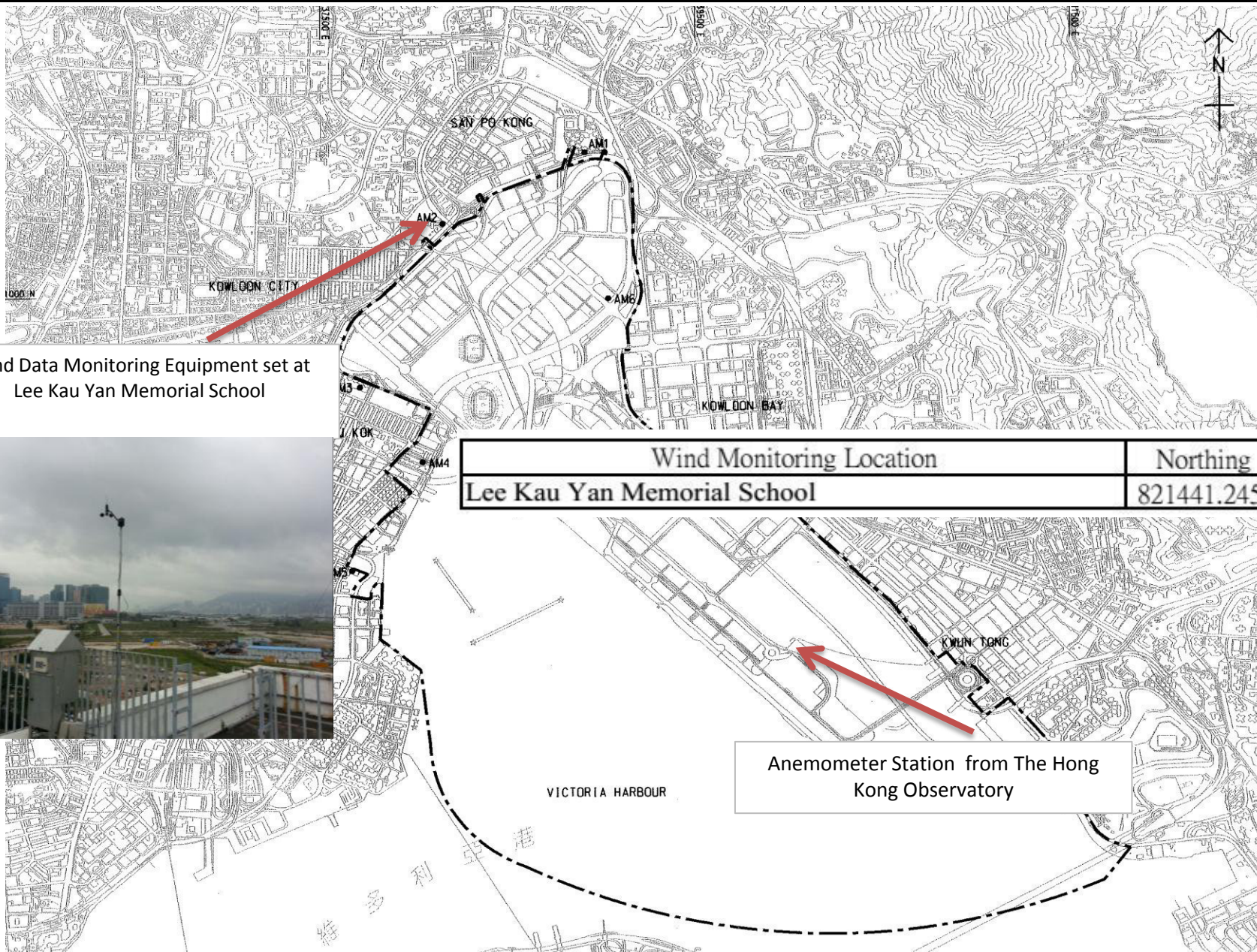


Title Contract No. KL/2012/03  
 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area  
 Noise Monitoring Stations under this Project

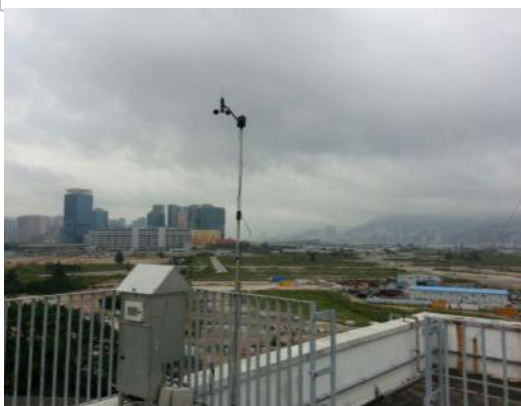
Scale	N.T.S	Project No.	MA13056
Date	Dec-13	Figure	3

CINOTECH





Wind Data Monitoring Equipment set at  
Lee Kau Yan Memorial School



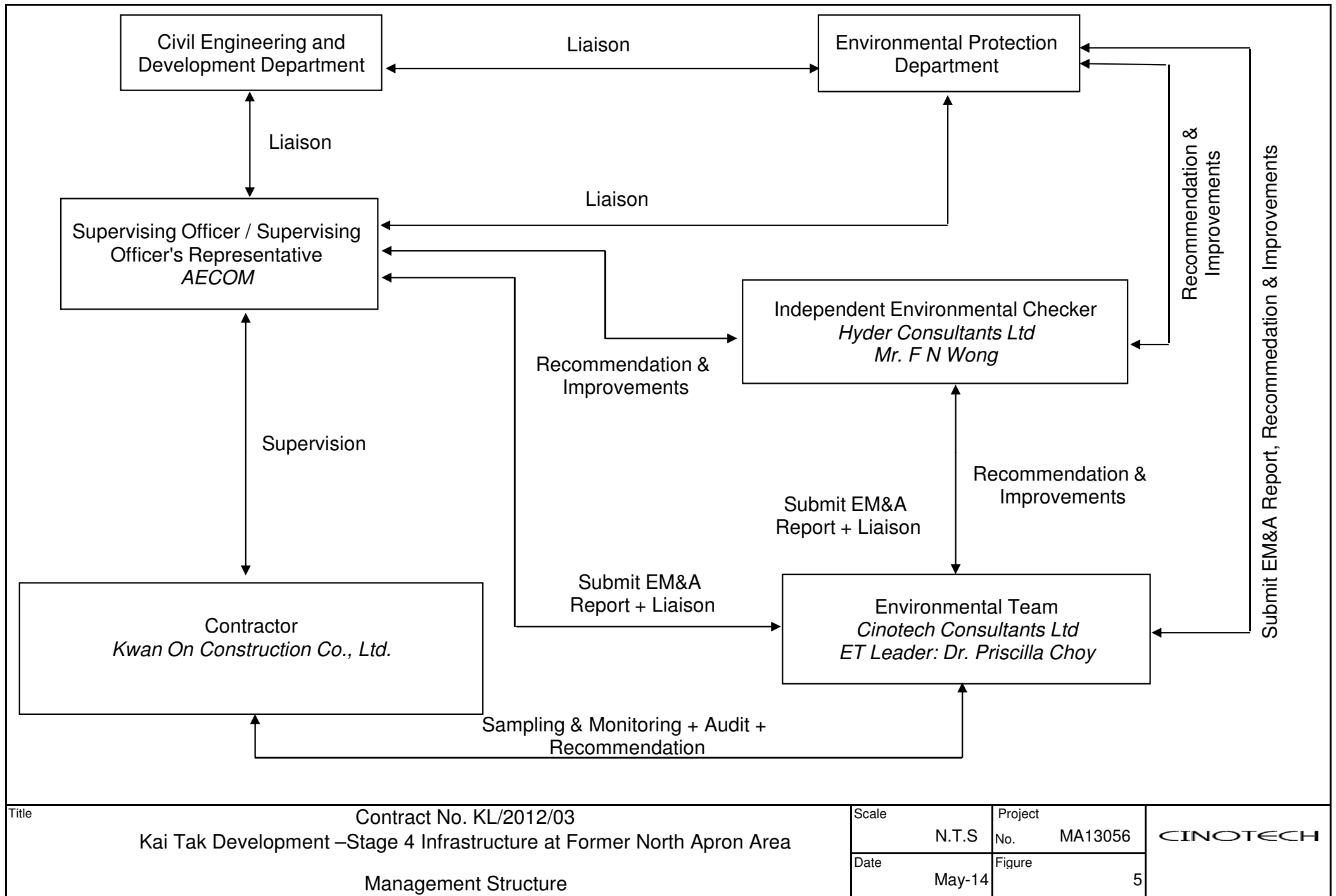
Wind Monitoring Location	Northing	Easting
Lee Kau Yan Memorial School	821441.245	838153.917

Anemometer Station from The Hong  
Kong Observatory

Title Contract No. KL/2012/03  
Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area  
Location of Wind Data Monitoring Equipment

Scale	N.T.S	Project No.	MA13056
Date	Dec-13	Figure	4

CINOTECH





---

---

**APPENDIX A**  
**ACTION AND LIMIT LEVELS**

---

---

## Appendix A - Action and Limit Levels

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

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2	346	500
AM3(A)	351	
AM4(A)	371	
AM5(A)	345	

**Table A-2 Action and Limit Levels for 24-Hour TSP**

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2	157	260
AM3(A)	167	
AM4(A)	187	
AM5(A)	156	

**Table A-3 Action and Limit Levels for Construction Noise**

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed. \*70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods, respectively.

---

---

**APPENDIX B  
COPIES OF CALIBRATION  
CERTIFCATES**

---

---



Hong Kong Accreditation Service  
香港認可處

**Certificate of Accreditation**  
**認可證書**

*This is to certify that*  
特此證明

**WELLAB LIMITED**

匯力實驗室有限公司

**Room 816 and 1516, Technology Park, 18 On Lai Street, Shatin, New Territories, Hong Kong**  
香港新界沙田安麗街18號達利廣場816及1516室

*has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a*  
為香港認可處執行機關根據認可諮詢委員會建議而接受的

**HOKLAS Accredited Laboratory**  
「香港實驗所認可計劃」認可實驗所

*This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as listed in the HOKLAS Directory of Accredited Laboratories within the test category of*  
此實驗所符合ISO / IEC 17025 : 2005 - 《測試及校正實驗所能力的通用規定》所訂的要求，  
獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定  
測試或校正工作

**Environmental Testing**  
環境測試

*This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.*  
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。

*This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).*  
這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作  
(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

*The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive*  
香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator  
執行幹事 陳成城  
Issue Date : 5 May 2009  
簽發日期：二零零九年五月五日

Registration Number : **HOKLAS** 083  
註冊號碼：

Date of First Registration : 29 May 1998  
首次註冊日期：一九九八年五月二十九日

# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/59/0022

Station AM2 - Lee Kau Yan Memorial School Operator: WK  
 Date: 3-Mar-14 Next Due Date: 2-May-14  
 Equipment No.: A-01-59 Serial No. 2354

Ambient Condition			
Temperature, Ta (K)	288.2	Pressure, Pa (mmHg)	764.9

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.1	3.55	61.13	8.0	2.89
2	9.7	3.18	54.82	6.5	2.60
3	7.6	2.81	48.61	4.9	2.26
4	5.3	2.35	40.72	3.2	1.82
5	3.2	1.82	31.82	2.0	1.44

By Linear Regression of Y on X

Slope, mw = 0.0503 Intercept, bw = -0.1811

Correlation coefficient\* = 0.9989

\*If Correlation Coefficient < 0.990, check and recalibrate.

## Set Point Calculation

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

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

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

Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.77

Remarks: \_\_\_\_\_

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

Date: 31/3/14  
 Date: 3 March 2014

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/49/0021

Station AM3(A) - Holy Trinity Bradbury Centre Operator: WK  
 Date: 3-Mar-14 Next Due Date: 2-May-14  
 Equipment No.: A-01-49 Serial No. 1793

Ambient Condition			
Temperature, Ta (K)	288.1	Pressure, Pa (mmHg)	765.1

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.3	3.58	61.65	8.4	2.96
2	9.8	3.19	55.11	6.5	2.60
3	7.5	2.79	48.31	5.2	2.33
4	5.3	2.35	40.74	3.4	1.88
5	3.2	1.83	31.83	2.0	1.44

### By Linear Regression of Y on X

Slope, mw = 0.0507 Intercept, bw : -0.1672

Correlation coefficient\* = 0.9990

\*If Correlation Coefficient < 0.990, check and recalibrate.

### Set Point Calculation

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

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

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

Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.89

Remarks: \_\_\_\_\_

Conducted by: Wk. Tang Signature: [Signature]  
 Checked by: [Signature] Signature: [Signature]

Date: 3/3/14  
 Date: 3 March 2014

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

File No. MA14008/62/0021

Station AM4(A) - EMSD Workshops Operator: WK  
 Date: 3-Mar-14 Next Due Date: 2-May-14  
 Equipment No.: A-01-62 Serial No. 2351

Ambient Condition			
Temperature, Ta (K)	288.8	Pressure, Pa (mmHg)	764.5

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.2	3.56	61.30	8.6	2.99
2	9.8	3.19	55.02	6.7	2.64
3	7.7	2.83	48.86	5.1	2.30
4	5.3	2.35	40.67	3.4	1.88
5	3.2	1.82	31.78	2.1	1.48

### By Linear Regression of Y on X

Slope, mw = 0.0513 Intercept, bw : -0.1837

Correlation coefficient\* = 0.9991

\*If Correlation Coefficient < 0.990, check and recalibrate.

### Set Point Calculation

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

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

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

Therefore, Set Point;  $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.95

Remarks: \_\_\_\_\_

Conducted by: Wk Tang Signature: Kwai  
 Checked by: Av Signature: \_\_\_\_\_

Date: 3/3/14  
 Date: 3 March 2014

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/60/0022

Station AM5(A) - Po Leung Kuk Ngan Po Ling College Operator: WK  
 Date: 3-Mar-14 Next Due Date: 2-May-14  
 Equipment No.: A-01-60 Serial No. 2358

Ambient Condition			
Temperature, Ta (K)	288.4	Pressure, Pa (mmHg)	764.7

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.3	3.58	61.60	8.0	2.88
2	9.7	3.18	54.79	6.2	2.54
3	7.5	2.79	48.27	5.0	2.28
4	5.3	2.35	40.71	3.2	1.82
5	3.0	1.77	30.82	1.8	1.37

By Linear Regression of Y on X

Slope, mw = 0.0496 Intercept, bw = -0.1625

Correlation coefficient\* = 0.9987

\*If Correlation Coefficient < 0.990, check and recalibrate.

### Set Point Calculation

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

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

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

Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.73

Remarks: \_\_\_\_\_

Conducted by: Wk Tang Signature: Wk Tang  
 Checked by: HL Signature: HL

Date: 3/3/14  
 Date: 3 March 2014



## TEST REPORT

**Description** Calibration Orifice  
**Serial No.** 0993  
**Model No.** TE-5025A  
**Date** 30 September 2013

**Manufacturer** TISCH  
**Temperature, Ta (K)** 300.8  
**Pressure, Pa (mmHg)** 759.3  
**Equipment No.:** A-04-04

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

## DATA TABULATION

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

Y axis=  $\text{SQRT}[\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta})]$

Qstd Slope ( m ) = 2.07768

Intercept ( b ) = -0.04613

Coefficient ( r ) = 0.99997

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

Y axis=  $\text{SQRT}[\text{H}_2\text{O}(\text{Ta}/\text{Pa})]$

Qa Slope ( m ) = 1.30101

Intercept ( b ) = -0.02919

Coefficient ( r ) = 0.99997

## CALCULATIONS

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

$Q_{\text{std}} = V_{\text{std}}/\text{Time}$

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

$Q_{\text{a}} = V_{\text{a}}/\text{Time}$

**For subsequent flow rate calculations:**

$Q_{\text{std}} = 1/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta}))]-b\}$

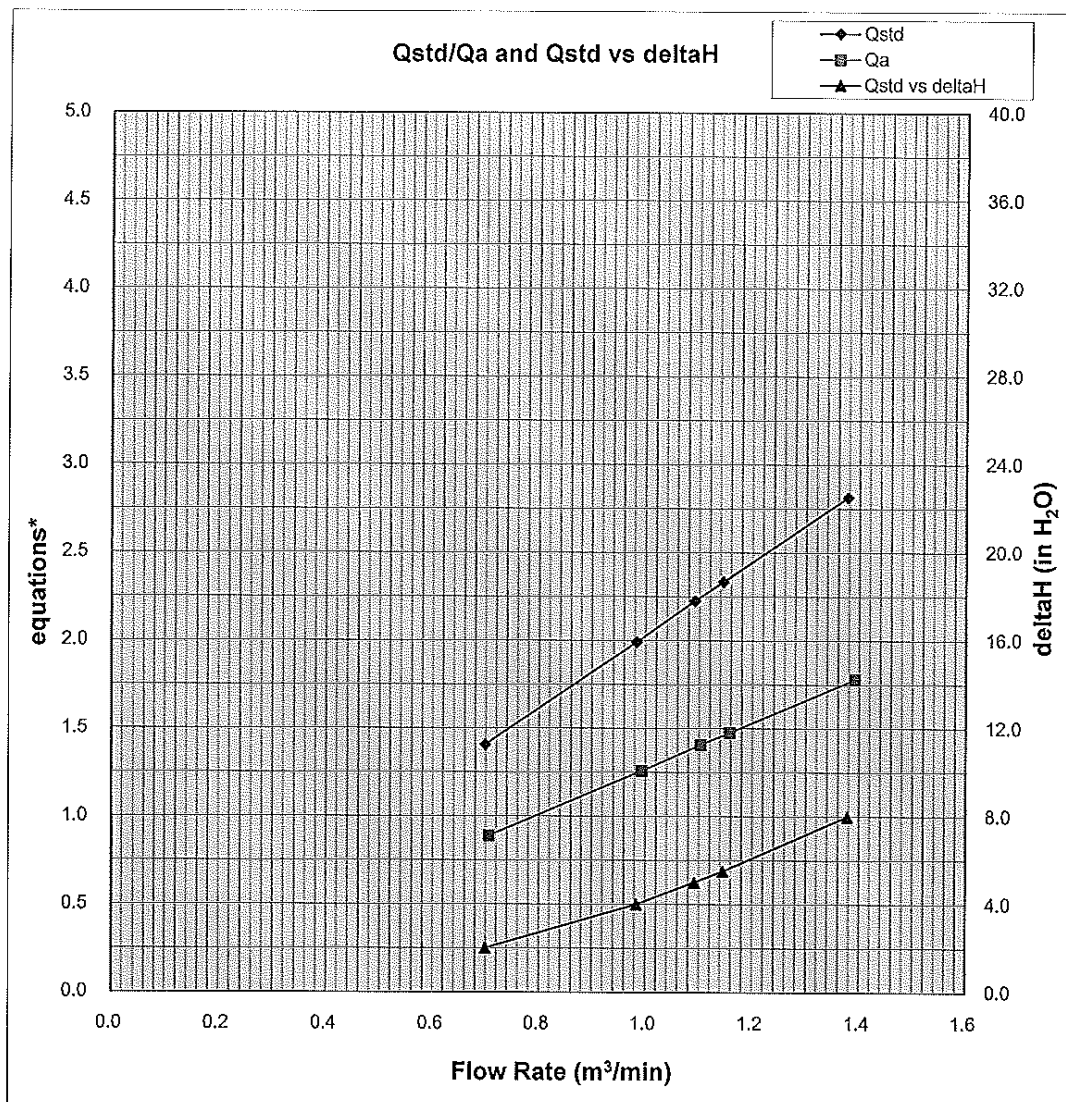
$Q_{\text{a}} = 1/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Ta}/\text{Pa}))]-b\}$

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

*Patrick Tse*

**PATRICK TSE**  
Laboratory Manager

## TEST REPORT



Y-axis equations:

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

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

## TEST REPORT

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

Test Report No.:	C/131019A
Date of Issue:	2013-10-19
Date Received:	2013-10-19
Date Tested:	2013-10-19
Date Completed:	2013-10-19
Next Due Date:	2014-04-18

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

Page: 1 of 2

### Certificate of Calibration

**Item for calibration:**

Description	: Weather Monitor II
Manufacturer	: Davis Instruments
Model No.	: 7440
Serial No.	: MC20813A11

**Test conditions:**

Room Temperature	: 20 degree Celsius
Relative Humidity	: 53%

**Test Specifications:**

1. Performance check of anemometer
2. Performance check of wind direction sensor

**Methodology:**

In-house method with reference anemometer (RS232 Integral Vane Digital Anemometer)

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

Test Report No.:	C/131019A
Date of Issue:	2013-10-19
Date Received:	2013-10-19
Date Tested:	2013-10-19
Date Completed:	2013-10-19
Next Due Date:	2014-04-18

Page: 2 of 2

### Results:

#### 1. Performance check of anemometer

Air Velocity, m/s		Difference D (m/s)
Instrument Reading (V1)	Reference Value (V1)	D = V1 - V2
2.00	2.00	0.00

#### 2. Performance check of wind direction sensor

Wind Direction (°)		Difference D (°)
Instrument Reading (W1)	Reference Value (W2)	D = W1 - W2
0	0	0
45.1	45	0.1
90.3	90.5	-0.2
134.8	135	-0.2
180.1	180	0.1
224.8	225	-0.2
270	270	0
315.3	315	0.3
359.9	360	-0.1

\*\*\*\*\*END OF REPORT\*\*\*\*\*

## TEST REPORT

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

Test Report No.:	C/140411A
Date of Issue:	2014-04-11
Date Received:	2014-04-11
Date Tested:	2014-04-11
Date Completed:	2014-04-11
Next Due Date:	2014-10-12

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

Page: 1 of 2

### Certificate of Calibration

**Item for calibration:**

Description	: Weather Monitor II
Manufacturer	: Davis Instruments
Model No.	: 7440
Serial No.	: MC20813A11

**Test conditions:**

Room Temperature	: 21 degree Celsius
Relative Humidity	: 56%

**Test Specifications:**

1. Performance check of anemometer
2. Performance check of wind direction sensor

**Methodology:**

In-house method with reference anemometer (RS232 Integral Vane Digital Anemometer)

*PREPARED AND CHECKED BY:*

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



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

Test Report No.:	C/140411A
Date of Issue:	2014-04-11
Date Received:	2014-04-11
Date Tested:	2014-04-11
Date Completed:	2014-04-11
Next Due Date:	2014-10-12

Page: 2 of 2

### Results:

#### 1. Performance check of anemometer

Air Velocity, m/s		Difference D (m/s)
Instrument Reading (V1)	Reference Value (V1)	D = V1 - V2
2.00	2.00	0.00

#### 2. Performance check of wind direction sensor

Wind Direction (°)		Difference D (°)
Instrument Reading (W1)	Reference Value (W2)	D = W1 - W2
0	0	0
45.2	45	0.2
90.5	90.5	0
134.9	135	-0.1
180.2	180	0.2
225.3	225	0.3
270.2	270	0.2
315.1	315	0.1
359.7	360	-0.3

\*\*\*\*\*END OF REPORT\*\*\*\*\*

## TEST REPORT

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

Test Report No.:	C/140301/1
Date of Issue:	2014-03-03
Date Received:	2014-03-01
Date Tested:	2014-03-01
Date Completed:	2014-03-03
Next Due Date:	2014-05-02

**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 <sup>3</sup>
Sen. Adjustment Scale Setting	: 685 CPM
Equipment No.	: A-02-04

**Test Conditions:**

Room Temperature	: 18 degree Celsius
Relative Humidity	: 69%

**Test Specifications & Methodology:**

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

**Results:**

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

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/140221/1
Date of Issue:	2014-02-24
Date Received:	2014-02-21
Date Tested:	2014-02-21
Date Completed:	2014-02-24
Next Due Date:	2014-04-23

**ATTN:** Mr. WK Tang

Page: 1 of 1

### Certificate of Calibration

**Item for Calibration:**

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

**Test Conditions:**

Room Temperature	: 19 degree Celsius
Relative Humidity	: 67%

**Test Specifications & Methodology:**

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

**Results:**

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

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager



## TEST REPORT

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

Test Report No.:	C/140417/1
Date of Issue:	2014-04-19
Date Received:	2014-04-17
Date Tested:	2014-04-17
Date Completed:	2014-04-19
Next Due Date:	2014-06-18

**ATTN:** Mr. WK Tang

Page: 1 of 1

### Certificate of Calibration

**Item for Calibration:**

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

**Test Conditions:**

Room Temperature	: 19 degree Celsius
Relative Humidity	: 65%

**Test Specifications & Methodology:**

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

**Results:**

Correlation Factor (CF)	0.0029
-------------------------	--------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/140301/3
Date of Issue:	2014-03-03
Date Received:	2014-03-01
Date Tested:	2014-03-01
Date Completed:	2014-03-03
Next Due Date:	2014-05-02

**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 <sup>3</sup>
Sen. Adjustment Scale Setting	: 790 CPM
Equipment No.	: A-02-06

**Test Conditions:**

Room Temperature	: 18 degree Celsius
Relative Humidity	: 69%

**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)	0.0029
-------------------------	--------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/140227/1
Date of Issue:	2014-03-01
Date Received:	2014-02-27
Date Tested:	2014-02-27
Date Completed:	2014-03-01
Next Due Date:	2014-04-30

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

Page: 1 of 1

### Certificate of Calibration

**Item for Calibration:**

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

**Test Conditions:**

Room Temperature	: 20 degree Celsius
Relative Humidity	: 65%

**Test Specifications & Methodology:**

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

**Results:**

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

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/140227/2
Date of Issue:	2014-03-01
Date Received:	2014-02-27
Date Tested:	2014-02-27
Date Completed:	2014-03-01
Next Due Date:	2014-04-30

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

Page: 1 of 1

### Certificate of Calibration

**Item for Calibration:**

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095050
Sensitivity (K) 1 CPM	: 0.001 mg/m <sup>3</sup>
Sen. Adjustment Scale Setting	: 577 CPM
Equipment No.	: A-02-09

**Test Conditions:**

Room Temperature	: 20 degree Celsius
Relative Humidity	: 65%

**Test Specifications & Methodology:**

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

**Results:**

Correlation Factor (CF)	0.0033
-------------------------	--------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/140227/3
Date of Issue:	2014-03-01
Date Received:	2014-02-27
Date Tested:	2014-02-27
Date Completed:	2014-03-01
Next Due Date:	2014-04-30

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

Page: 1 of 1

### Certificate of Calibration

**Item for Calibration:**

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

**Test Conditions:**

Room Temperature	: 20 degree Celsius
Relative Humidity	: 65%

**Test Specifications & Methodology:**

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

**Results:**

Correlation Factor (CF)	0.0033
-------------------------	--------

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/130921/1
Date of Issue:	2013-09-23
Date Received:	2013-09-21
Date Tested:	2013-09-21
Date Completed:	2013-09-23
Next Due Date:	2014-09-22

**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 959
Serial No.	: 11275
Microphone No.	: 86553
Equipment No.	: N-08-01

### Test conditions:

Room Temperature	: 29 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

*PREPARED AND CHECKED BY:*

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



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/140104
Date of Issue:	2014-01-05
Date Received:	2014-01-04
Date Tested:	2014-01-04
Date Completed:	2014-01-05
Next Due Date:	2015-01-04

**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	: 19 degree Celsius
Relative Humidity	: 52%

**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.

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/130830/2
Date of Issue:	2013-08-31
Date Received:	2013-08-30
Date Tested:	2013-08-30
Date Completed:	2013-08-31
Next Due Date:	2014-08-30

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

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

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

**Test conditions:**

Room Temperature	: 21 degree Celsius
Relative Humidity	: 69%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

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

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager



## TEST REPORT

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

Test Report No.:	C/N/130830/3
Date of Issue:	2013-08-31
Date Received:	2013-08-30
Date Tested:	2013-08-30
Date Completed:	2013-08-31
Next Due Date:	2014-08-30

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

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

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

**Test conditions:**

Room Temperature	: 21 degree Celsius
Relative Humidity	: 69%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

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

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/130919/3
Date of Issue:	2013-09-21
Date Received:	2013-09-19
Date Tested:	2013-09-21
Date Completed:	2013-09-21
Next Due Date:	2014-09-20

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

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 10929
Equipment No.	: N-09-01

### Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 57%

### Methodology:


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

### Results:

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

*PREPARED AND CHECKED BY:*

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

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/131004/1
Date of Issue:	2013-10-05
Date Received:	2013-10-04
Date Tested:	2013-10-04
Date Completed:	2013-10-05
Next Due Date:	2014-10-04

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

Page: 1 of 1

### Item for calibration:

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

### Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 57%

### Methodology:

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

### Results:

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

*PREPARED AND CHECKED BY:*

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



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/131004/2
Date of Issue:	2013-10-05
Date Received:	2013-10-04
Date Tested:	2013-10-04
Date Completed:	2013-10-05
Next Due Date:	2014-10-04

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

Page: 1 of 1

### Item for calibration:

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

### Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 57%

### Methodology:

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

### Results:

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

*PREPARED AND CHECKED BY:*

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



**PATRICK TSE**

Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/130830/4-v1
Date of Issue:	2014-03-07
Date Received:	2013-08-30
Date Tested:	2013-08-30
Date Completed:	2013-08-31
Next Due Date:	2014-08-30

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

### Item for calibration:

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

### Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

### Methodology:

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

### Results:

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

*PREPARED AND CHECKED BY:*

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



**PATRICK TSE**

Laboratory Manager

---

---

**APPENDIX C**  
**WEATHER INFORMATION**

---

---

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**I. General Information**

<b>Date</b>	<b>Mean Air Temperature (°C)</b>	<b>Mean Relative Humidity (%)</b>	<b>Precipitation (mm)</b>
1 April 2014	19.5 – 20.9	94 – 100	0.8
2 April 2014	18.6 – 20.3	95 – 99	24.4
3 April 2014	18.5 – 20.7	92 – 100	42.3
4 April 2014	19.2 – 22.9	68 – 96	0
5 April 2014	18.2 – 24.7	46 – 86	0
6 April 2014	17.5 – 21.0	72 – 98	9.3
7 April 2014	17.9 – 20.1	81 – 91	Trace
8 April 2014	18.8 – 21.2	89 – 99	27.5
9 April 2014	19.8 – 26.5	73 – 98	Trace
10 April 2014	21.1 – 24.4	73 – 94	Trace
11 April 2014	20.7 – 25.8	75 – 93	Trace
12 April 2014	21.8 – 27.8	67 – 91	0
13 April 2014	22.1 – 28.7	67 – 96	0
14 April 2014	21.7 – 24.5	75 – 91	0.4
15 April 2014	20.5 – 24.4	68 – 87	0
16 April 2014	21.0 – 23.6	77 – 91	0
17 April 2014	22.1 – 27.5	73 – 94	0
18 April 2014	22.4 – 28.6	70 – 95	0
19 April 2014	23.1 – 27.8	74 – 93	0

## APPENDIX C – WEATHER CONDITIONS DURING THE MONITORING PERIOD

### I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 April 2014	23.5 – 28.1	70 – 91	0
21 April 2014	22.9 – 24.9	86 – 95	0.6
22 April 2014	22.9 – 27.5	75 – 94	Trace
23 April 2014	21.4 – 24.9	89 – 98	13.3
24 April 2014	21.3 – 22.3	92 – 97	1.5
25 April 2014	21.6 – 23.7	91 – 99	1.7
26 April 2014	22.0 – 24.9	78 – 99	2.7
27 April 2014	22.1 – 29.0	61 – 85	0
28 April 2014	23.6 – 28.6	52 – 86	0
29 April 2014	22.9 – 25.7	72 – 89	0
30 April 2014	22.3 – 25.0	76 – 96	0.7

\* The above information was extracted from the daily weather summary by Hong Kong Observatory.



**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Speed m/s</b>	<b>Direction</b>
1-Apr-2014	00:00	2.3	WSW
1-Apr-2014	01:00	2.3	SW
1-Apr-2014	02:00	2.5	WSW
1-Apr-2014	03:00	2.9	W
1-Apr-2014	04:00	2	W
1-Apr-2014	05:00	1.7	W
1-Apr-2014	06:00	1.5	W
1-Apr-2014	07:00	2.2	N
1-Apr-2014	08:00	1.5	SSE
1-Apr-2014	09:00	1.8	SSE
1-Apr-2014	10:00	1.8	SW
1-Apr-2014	11:00	3.1	WSW
1-Apr-2014	12:00	3.1	SW
1-Apr-2014	13:00	2.8	WNW
1-Apr-2014	14:00	2.5	W
1-Apr-2014	15:00	2.4	W
1-Apr-2014	16:00	1.8	W
1-Apr-2014	17:00	1.5	W
1-Apr-2014	18:00	1.5	WNW
1-Apr-2014	19:00	1.4	SSW
1-Apr-2014	20:00	1.4	SSW
1-Apr-2014	21:00	1.5	SSW
1-Apr-2014	22:00	1.2	SW
1-Apr-2014	23:00	1.4	WSW
2-Apr-2014	00:00	1.8	W
2-Apr-2014	01:00	2	WSW
2-Apr-2014	02:00	2.3	WSW
2-Apr-2014	03:00	2.1	WSW
2-Apr-2014	04:00	2.3	W
2-Apr-2014	05:00	2.3	W
2-Apr-2014	06:00	2.3	N
2-Apr-2014	07:00	2.6	NNE
2-Apr-2014	08:00	2.6	NNE
2-Apr-2014	09:00	2.6	W
2-Apr-2014	10:00	3.1	W
2-Apr-2014	11:00	4.2	W

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

2-Apr-2014	12:00	4	W
2-Apr-2014	13:00	3.4	W
2-Apr-2014	14:00	3.5	W
2-Apr-2014	15:00	3.1	W
2-Apr-2014	16:00	2.9	NE
2-Apr-2014	17:00	2.9	NNE
2-Apr-2014	18:00	2.5	ENE
2-Apr-2014	19:00	2	NE
2-Apr-2014	20:00	1.7	NE
2-Apr-2014	21:00	2	NE
2-Apr-2014	22:00	2.3	NE
2-Apr-2014	23:00	2	ENE
3-Apr-2014	00:00	1.4	ENE
3-Apr-2014	01:00	1.7	NE
3-Apr-2014	02:00	1.7	ENE
3-Apr-2014	03:00	1.9	ENE
3-Apr-2014	04:00	1.9	NE
3-Apr-2014	05:00	1.5	NE
3-Apr-2014	06:00	1.4	NNE
3-Apr-2014	07:00	1.5	NNE
3-Apr-2014	08:00	1.5	NNE
3-Apr-2014	09:00	1.8	NNE
3-Apr-2014	10:00	1.7	N
3-Apr-2014	11:00	2.4	NNE
3-Apr-2014	12:00	2.9	NNE
3-Apr-2014	13:00	3.4	E
3-Apr-2014	14:00	3.2	W
3-Apr-2014	15:00	2.6	W
3-Apr-2014	16:00	2.8	W
3-Apr-2014	17:00	2.9	W
3-Apr-2014	18:00	2.3	WNW
3-Apr-2014	19:00	2.4	W
3-Apr-2014	20:00	1.2	SW
3-Apr-2014	21:00	0.8	WNW
3-Apr-2014	22:00	0.6	W
3-Apr-2014	23:00	0.4	WSW
4-Apr-2014	00:00	0.4	WSW

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

4-Apr-2014	01:00	0.8	WNW
4-Apr-2014	02:00	0.6	WNW
4-Apr-2014	03:00	1.1	SW
4-Apr-2014	04:00	1.1	WSW
4-Apr-2014	05:00	1.2	SW
4-Apr-2014	06:00	1.4	WNW
4-Apr-2014	07:00	2	WNW
4-Apr-2014	08:00	2.6	W
4-Apr-2014	09:00	3.1	WSW
4-Apr-2014	10:00	3.9	SW
4-Apr-2014	11:00	3.4	WSW
4-Apr-2014	12:00	4.5	WSW
4-Apr-2014	13:00	4.6	W
4-Apr-2014	14:00	4.2	WSW
4-Apr-2014	15:00	4.3	W
4-Apr-2014	16:00	3.7	W
4-Apr-2014	17:00	3.5	WSW
4-Apr-2014	18:00	3.9	WSW
4-Apr-2014	19:00	3.5	WSW
4-Apr-2014	20:00	3.1	WNW
4-Apr-2014	21:00	3.5	W
4-Apr-2014	22:00	3.2	WNW
4-Apr-2014	23:00	3.1	NE
5-Apr-2014	00:00	3.4	NE
5-Apr-2014	01:00	3.4	ENE
5-Apr-2014	02:00	3.4	NE
5-Apr-2014	03:00	3.7	NE
5-Apr-2014	04:00	3.2	NE
5-Apr-2014	05:00	2.8	NE
5-Apr-2014	06:00	2.9	NE
5-Apr-2014	07:00	2.9	NE
5-Apr-2014	08:00	2.9	NE
5-Apr-2014	09:00	3.4	NE
5-Apr-2014	10:00	4	NE
5-Apr-2014	11:00	4	N
5-Apr-2014	12:00	4.2	NE
5-Apr-2014	13:00	4.2	NE

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

5-Apr-2014	14:00	4.4	ENE
5-Apr-2014	15:00	4.5	NE
5-Apr-2014	16:00	4.3	NE
5-Apr-2014	17:00	4.2	NE
5-Apr-2014	18:00	3.2	NE
5-Apr-2014	19:00	3.2	NE
5-Apr-2014	20:00	3.5	NE
5-Apr-2014	21:00	3.1	NE
5-Apr-2014	22:00	3.1	NE
5-Apr-2014	23:00	3.2	NE
6-Apr-2014	00:00	3.1	NW
6-Apr-2014	01:00	3.2	NE
6-Apr-2014	02:00	2.9	NE
6-Apr-2014	03:00	2.3	NNE
6-Apr-2014	04:00	2.8	NE
6-Apr-2014	05:00	3.7	NE
6-Apr-2014	06:00	3.4	ENE
6-Apr-2014	07:00	3.1	ENE
6-Apr-2014	08:00	3.1	WSW
6-Apr-2014	09:00	3.9	W
6-Apr-2014	10:00	3.7	WSW
6-Apr-2014	11:00	3.8	SSW
6-Apr-2014	12:00	4.2	WSW
6-Apr-2014	13:00	3.9	W
6-Apr-2014	14:00	3.7	W
6-Apr-2014	15:00	3.5	W
6-Apr-2014	16:00	3.5	WSW
6-Apr-2014	17:00	2.8	NW
6-Apr-2014	18:00	2.3	W
6-Apr-2014	19:00	2.6	W
6-Apr-2014	20:00	2.9	WSW
6-Apr-2014	21:00	3.2	W
6-Apr-2014	22:00	3.5	W
6-Apr-2014	23:00	3.2	W
7-Apr-2014	00:00	3.2	W
7-Apr-2014	01:00	3.5	WNW
7-Apr-2014	02:00	2.9	WNW

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

7-Apr-2014	03:00	2.8	NW
7-Apr-2014	04:00	2.6	WNW
7-Apr-2014	05:00	2.8	WNW
7-Apr-2014	06:00	2.6	W
7-Apr-2014	07:00	2.5	WNW
7-Apr-2014	08:00	2.9	WNW
7-Apr-2014	09:00	3.2	W
7-Apr-2014	10:00	2.9	W
7-Apr-2014	11:00	2.8	W
7-Apr-2014	12:00	3.1	W
7-Apr-2014	13:00	3.1	W
7-Apr-2014	14:00	3.5	W
7-Apr-2014	15:00	3.5	WNW
7-Apr-2014	16:00	3.5	W
7-Apr-2014	17:00	2.9	W
7-Apr-2014	18:00	3.5	SW
7-Apr-2014	19:00	3.5	WSW
7-Apr-2014	20:00	3.1	W
7-Apr-2014	21:00	2.8	WSW
7-Apr-2014	22:00	3.4	W
7-Apr-2014	23:00	3.7	WNW
8-Apr-2014	00:00	3.1	WNW
8-Apr-2014	01:00	3.2	WSW
8-Apr-2014	02:00	3.5	W
8-Apr-2014	03:00	2.9	W
8-Apr-2014	04:00	3.4	W
8-Apr-2014	05:00	3.5	W
8-Apr-2014	06:00	2.8	W
8-Apr-2014	07:00	2.5	W
8-Apr-2014	08:00	2.6	W
8-Apr-2014	09:00	2.8	W
8-Apr-2014	10:00	2.8	W
8-Apr-2014	11:00	2.8	WSW
8-Apr-2014	12:00	2.1	W
8-Apr-2014	13:00	2.9	WNW
8-Apr-2014	14:00	2.9	NNE
8-Apr-2014	15:00	2.9	NE

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

8-Apr-2014	16:00	3.1	NE
8-Apr-2014	17:00	2.1	NE
8-Apr-2014	18:00	1.7	W
8-Apr-2014	19:00	1.2	WNW
8-Apr-2014	20:00	0.8	WNW
8-Apr-2014	21:00	1.2	SW
8-Apr-2014	22:00	1.5	W
8-Apr-2014	23:00	1.1	WNW
9-Apr-2014	00:00	0.9	WSW
9-Apr-2014	01:00	1.2	N
9-Apr-2014	02:00	1.2	NNE
9-Apr-2014	03:00	1.2	NNE
9-Apr-2014	04:00	1.7	W
9-Apr-2014	05:00	1.8	W
9-Apr-2014	06:00	1.8	WSW
9-Apr-2014	07:00	1.7	WSW
9-Apr-2014	08:00	1.8	WSW
9-Apr-2014	09:00	2.5	W
9-Apr-2014	10:00	2.8	W
9-Apr-2014	11:00	2.9	WSW
9-Apr-2014	12:00	2.8	WSW
9-Apr-2014	13:00	3.1	WSW
9-Apr-2014	14:00	2.4	WSW
9-Apr-2014	15:00	2.4	WSW
9-Apr-2014	16:00	2.8	WSW
9-Apr-2014	17:00	3.2	SW
9-Apr-2014	18:00	2.1	SSW
9-Apr-2014	19:00	1.1	SW
9-Apr-2014	20:00	0.8	WSW
9-Apr-2014	21:00	0.6	SSW
9-Apr-2014	22:00	0.8	SSW
9-Apr-2014	23:00	0.8	WNW
10-Apr-2014	00:00	2	WNW
10-Apr-2014	01:00	2.2	W
10-Apr-2014	02:00	2	S
10-Apr-2014	03:00	2.6	SW
10-Apr-2014	04:00	2.3	W

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

10-Apr-2014	05:00	2	W
10-Apr-2014	06:00	1.8	WNW
10-Apr-2014	07:00	1.5	WNW
10-Apr-2014	08:00	2.1	SSW
10-Apr-2014	09:00	2.6	WSW
10-Apr-2014	10:00	3.4	W
10-Apr-2014	11:00	4.3	W
10-Apr-2014	12:00	4.3	WSW
10-Apr-2014	13:00	4.3	WSW
10-Apr-2014	14:00	4	WNW
10-Apr-2014	15:00	3.9	WNW
10-Apr-2014	16:00	4.1	E
10-Apr-2014	17:00	3.5	E
10-Apr-2014	18:00	3.5	E
10-Apr-2014	19:00	2.6	ENE
10-Apr-2014	20:00	2.9	NE
10-Apr-2014	21:00	2.8	ENE
10-Apr-2014	22:00	2.5	NE
10-Apr-2014	23:00	2.5	ENE
11-Apr-2014	00:00	3.1	ENE
11-Apr-2014	01:00	2.9	ENE
11-Apr-2014	02:00	3.1	WNW
11-Apr-2014	03:00	2.5	E
11-Apr-2014	04:00	2.3	NNE
11-Apr-2014	05:00	1.2	NNE
11-Apr-2014	06:00	1.1	N
11-Apr-2014	07:00	0.8	N
11-Apr-2014	08:00	1.2	SSE
11-Apr-2014	09:00	1.5	SSE
11-Apr-2014	10:00	1.7	SSW
11-Apr-2014	11:00	2.1	E
11-Apr-2014	12:00	2	E
11-Apr-2014	13:00	2.4	W
11-Apr-2014	14:00	2.1	W
11-Apr-2014	15:00	2	WSW
11-Apr-2014	16:00	2	S
11-Apr-2014	17:00	2	WSW

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

11-Apr-2014	18:00	1.5	WSW
11-Apr-2014	19:00	1.2	WSW
11-Apr-2014	20:00	1.2	W
11-Apr-2014	21:00	1.7	W
11-Apr-2014	22:00	1.7	W
11-Apr-2014	23:00	1.9	WSW
12-Apr-2014	00:00	1.9	W
12-Apr-2014	01:00	1.8	W
12-Apr-2014	02:00	1.5	NW
12-Apr-2014	03:00	1.2	NNE
12-Apr-2014	04:00	0.9	NNE
12-Apr-2014	05:00	0.4	NNE
12-Apr-2014	06:00	0.3	ENE
12-Apr-2014	07:00	0.6	ENE
12-Apr-2014	08:00	0.4	ENE
12-Apr-2014	09:00	0.6	ENE
12-Apr-2014	10:00	1.5	ENE
12-Apr-2014	11:00	1.9	ENE
12-Apr-2014	12:00	2.8	ENE
12-Apr-2014	13:00	2.9	NNE
12-Apr-2014	14:00	2	N
12-Apr-2014	15:00	2.4	N
12-Apr-2014	16:00	2.8	NE
12-Apr-2014	17:00	2.3	ENE
12-Apr-2014	18:00	1.8	ENE
12-Apr-2014	19:00	1	ENE
12-Apr-2014	20:00	0.9	ENE
12-Apr-2014	21:00	0.8	ENE
12-Apr-2014	22:00	0.9	ENE
12-Apr-2014	23:00	0.8	ENE
13-Apr-2014	00:00	0.3	ENE
13-Apr-2014	01:00	0.8	ENE
13-Apr-2014	02:00	0.9	NNE
13-Apr-2014	03:00	1.1	E
13-Apr-2014	04:00	0.1	SSW
13-Apr-2014	05:00	0.1	SSW
13-Apr-2014	06:00	1.3	ESE



**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

13-Apr-2014	07:00	1.5	ESE
13-Apr-2014	08:00	1.5	W
13-Apr-2014	09:00	0.3	W
13-Apr-2014	10:00	0.6	SSW
13-Apr-2014	11:00	1.2	SSW
13-Apr-2014	12:00	0.8	SW
13-Apr-2014	13:00	1.4	SSW
13-Apr-2014	14:00	1.5	WSW
13-Apr-2014	15:00	1.7	W
13-Apr-2014	16:00	1.5	E
13-Apr-2014	17:00	1.3	ENE
13-Apr-2014	18:00	1.2	S
13-Apr-2014	19:00	1.4	W
13-Apr-2014	20:00	0.7	W
13-Apr-2014	21:00	0.4	W
13-Apr-2014	22:00	0.6	W
13-Apr-2014	23:00	0.9	SSW
14-Apr-2014	00:00	0.9	SW
14-Apr-2014	01:00	0.9	SSE
14-Apr-2014	02:00	0.9	S
14-Apr-2014	03:00	1.1	WSW
14-Apr-2014	04:00	0.9	NE
14-Apr-2014	05:00	0.9	WNW
14-Apr-2014	06:00	1.2	WNW
14-Apr-2014	07:00	1.1	W
14-Apr-2014	08:00	1.8	N
14-Apr-2014	09:00	2.3	ENE
14-Apr-2014	10:00	2	N
14-Apr-2014	11:00	2.1	N
14-Apr-2014	12:00	2.9	ENE
14-Apr-2014	13:00	3.1	N
14-Apr-2014	14:00	2.1	NE
14-Apr-2014	15:00	1.4	N
14-Apr-2014	16:00	1.7	NE
14-Apr-2014	17:00	1.8	NE
14-Apr-2014	18:00	1.8	NE
14-Apr-2014	19:00	1.2	NE

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

14-Apr-2014	20:00	0.8	ENE
14-Apr-2014	21:00	0.4	S
14-Apr-2014	22:00	0.4	SW
14-Apr-2014	23:00	0.8	NNE
15-Apr-2014	00:00	0.4	E
15-Apr-2014	01:00	0.3	E
15-Apr-2014	02:00	0.3	E
15-Apr-2014	03:00	0.3	SSW
15-Apr-2014	04:00	0.3	N
15-Apr-2014	05:00	0.1	ENE
15-Apr-2014	06:00	0.1	SSW
15-Apr-2014	07:00	0.3	NNE
15-Apr-2014	08:00	0.1	WSW
15-Apr-2014	09:00	0.8	SW
15-Apr-2014	10:00	1.5	ENE
15-Apr-2014	11:00	1.8	E
15-Apr-2014	12:00	1.2	E
15-Apr-2014	13:00	1.8	SSW
15-Apr-2014	14:00	2.4	E
15-Apr-2014	15:00	2.3	E
15-Apr-2014	16:00	2.4	NNE
15-Apr-2014	17:00	2.3	NNE
15-Apr-2014	18:00	2.1	NNE
15-Apr-2014	19:00	1.5	NE
15-Apr-2014	20:00	1.3	NE
15-Apr-2014	21:00	1.2	ENE
15-Apr-2014	22:00	0.9	ENE
15-Apr-2014	23:00	0.9	ENE
16-Apr-2014	00:00	1.1	N
16-Apr-2014	01:00	0.9	N
16-Apr-2014	02:00	0.9	NNE
16-Apr-2014	03:00	0.9	N
16-Apr-2014	04:00	0.8	ENE
16-Apr-2014	05:00	0.8	ENE
16-Apr-2014	06:00	0.8	ENE
16-Apr-2014	07:00	0.8	ENE
16-Apr-2014	08:00	0.8	ENE

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

16-Apr-2014	09:00	0.9	ENE
16-Apr-2014	10:00	1.2	ENE
16-Apr-2014	11:00	1.7	ENE
16-Apr-2014	12:00	1.8	N
16-Apr-2014	13:00	2.6	N
16-Apr-2014	14:00	2.9	WNW
16-Apr-2014	15:00	2.9	N
16-Apr-2014	16:00	2.9	W
16-Apr-2014	17:00	2.3	SW
16-Apr-2014	18:00	1.2	SW
16-Apr-2014	19:00	1.3	SW
16-Apr-2014	20:00	0.9	SW
16-Apr-2014	21:00	1.2	NNE
16-Apr-2014	22:00	0.9	ENE
16-Apr-2014	23:00	0.6	ESE
17-Apr-2014	00:00	0.3	N
17-Apr-2014	01:00	0.6	N
17-Apr-2014	02:00	0.6	E
17-Apr-2014	03:00	0.9	ENE
17-Apr-2014	04:00	0.9	E
17-Apr-2014	05:00	0.9	N
17-Apr-2014	06:00	1.1	NNE
17-Apr-2014	07:00	1.2	NE
17-Apr-2014	08:00	1.1	N
17-Apr-2014	09:00	1.4	ENE
17-Apr-2014	10:00	1.1	N
17-Apr-2014	11:00	1.8	NE
17-Apr-2014	12:00	2.1	ENE
17-Apr-2014	13:00	2.1	ENE
17-Apr-2014	14:00	2.6	ENE
17-Apr-2014	15:00	2.8	ENE
17-Apr-2014	16:00	2.9	E
17-Apr-2014	17:00	2.4	W
17-Apr-2014	18:00	2.1	WSW
17-Apr-2014	19:00	1.7	ESE
17-Apr-2014	20:00	1.2	S
17-Apr-2014	21:00	0.9	S

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

17-Apr-2014	22:00	1.1	W
17-Apr-2014	23:00	0.6	W
18-Apr-2014	00:00	0.8	ENE
18-Apr-2014	01:00	1.2	E
18-Apr-2014	02:00	1.7	WNW
18-Apr-2014	03:00	2	W
18-Apr-2014	04:00	1.5	WSW
18-Apr-2014	05:00	1.4	SSW
18-Apr-2014	06:00	0.9	SSW
18-Apr-2014	07:00	1.1	S
18-Apr-2014	08:00	1.4	S
18-Apr-2014	09:00	1.5	ENE
18-Apr-2014	10:00	3.1	W
18-Apr-2014	11:00	3.1	W
18-Apr-2014	12:00	3.5	W
18-Apr-2014	13:00	3.4	SSW
18-Apr-2014	14:00	3.4	SSW
18-Apr-2014	15:00	3.4	SSW
18-Apr-2014	16:00	3.2	W
18-Apr-2014	17:00	2.6	SSW
18-Apr-2014	18:00	2.8	SSW
18-Apr-2014	19:00	2.8	SSW
18-Apr-2014	20:00	2	SSW
18-Apr-2014	21:00	2.6	W
18-Apr-2014	22:00	2.5	S
18-Apr-2014	23:00	2	SW
19-Apr-2014	00:00	2.2	SSW
19-Apr-2014	01:00	2.5	ENE
19-Apr-2014	02:00	2.3	NE
19-Apr-2014	03:00	2.3	NE
19-Apr-2014	04:00	2.9	NE
19-Apr-2014	05:00	2.6	SW
19-Apr-2014	06:00	3.1	SSW
19-Apr-2014	07:00	2.1	SW
19-Apr-2014	08:00	2.3	WNW
19-Apr-2014	09:00	2.8	NW
19-Apr-2014	10:00	2.6	W

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

19-Apr-2014	11:00	3.1	WSW
19-Apr-2014	12:00	3.9	SW
19-Apr-2014	13:00	4.2	N
19-Apr-2014	14:00	3.9	N
19-Apr-2014	15:00	3.5	N
19-Apr-2014	16:00	3.1	N
19-Apr-2014	17:00	2.9	N
19-Apr-2014	18:00	2.9	NE
19-Apr-2014	19:00	2.6	NE
19-Apr-2014	20:00	2.3	NE
19-Apr-2014	21:00	1.9	NE
19-Apr-2014	22:00	1.5	W
19-Apr-2014	23:00	1.8	W
20-Apr-2014	00:00	1.7	NE
20-Apr-2014	01:00	1.9	ENE
20-Apr-2014	02:00	2.4	W
20-Apr-2014	03:00	2.2	WSW
20-Apr-2014	04:00	2.1	W
20-Apr-2014	05:00	2.1	SW
20-Apr-2014	06:00	2.1	W
20-Apr-2014	07:00	2	W
20-Apr-2014	08:00	1.8	WSW
20-Apr-2014	09:00	2.3	WSW
20-Apr-2014	10:00	2.6	W
20-Apr-2014	11:00	2.8	W
20-Apr-2014	12:00	2.4	WSW
20-Apr-2014	13:00	2.9	WSW
20-Apr-2014	14:00	3.1	WSW
20-Apr-2014	15:00	3.7	WSW
20-Apr-2014	16:00	3.1	WSW
20-Apr-2014	17:00	2.9	WSW
20-Apr-2014	18:00	2.4	W
20-Apr-2014	19:00	1.8	W
20-Apr-2014	20:00	2.1	W
20-Apr-2014	21:00	2.3	W
20-Apr-2014	22:00	2.3	SSW
20-Apr-2014	23:00	2.3	S

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

21-Apr-2014	00:00	2.4	SSW
21-Apr-2014	01:00	2.6	ESE
21-Apr-2014	02:00	2.4	W
21-Apr-2014	03:00	2.1	N
21-Apr-2014	04:00	1.2	ENE
21-Apr-2014	05:00	1.1	E
21-Apr-2014	06:00	0.8	E
21-Apr-2014	07:00	0.8	NE
21-Apr-2014	08:00	0.8	E
21-Apr-2014	09:00	0.8	ENE
21-Apr-2014	10:00	1.7	ENE
21-Apr-2014	11:00	3.1	S
21-Apr-2014	12:00	3.2	S
21-Apr-2014	13:00	3.2	S
21-Apr-2014	14:00	3.5	NW
21-Apr-2014	15:00	2.9	N
21-Apr-2014	16:00	3.1	N
21-Apr-2014	17:00	2.9	N
21-Apr-2014	18:00	2.9	WNW
21-Apr-2014	19:00	3.2	S
21-Apr-2014	20:00	2.1	ENE
21-Apr-2014	21:00	2	ENE
21-Apr-2014	22:00	1.8	N
21-Apr-2014	23:00	2	N
22-Apr-2014	00:00	2.3	NE
22-Apr-2014	01:00	2.4	ENE
22-Apr-2014	02:00	1.7	ENE
22-Apr-2014	03:00	2.5	NNE
22-Apr-2014	04:00	2.8	E
22-Apr-2014	05:00	2.6	ENE
22-Apr-2014	06:00	2	ENE
22-Apr-2014	07:00	2.1	ENE
22-Apr-2014	08:00	2.4	N
22-Apr-2014	09:00	2.8	NNE
22-Apr-2014	10:00	3.2	NE
22-Apr-2014	11:00	3.7	ENE
22-Apr-2014	12:00	3.9	W

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

22-Apr-2014	13:00	3.4	W
22-Apr-2014	14:00	3.2	WSW
22-Apr-2014	15:00	2.9	W
22-Apr-2014	16:00	2.9	WNW
22-Apr-2014	17:00	2.9	WNW
22-Apr-2014	18:00	2.9	W
22-Apr-2014	19:00	2.8	W
22-Apr-2014	20:00	2.6	W
22-Apr-2014	21:00	3.1	S
22-Apr-2014	22:00	3.1	S
22-Apr-2014	23:00	2.9	S
23-Apr-2014	00:00	3.1	S
23-Apr-2014	01:00	3.1	SSW
23-Apr-2014	02:00	3.4	W
23-Apr-2014	03:00	3.5	WNW
23-Apr-2014	04:00	3.2	W
23-Apr-2014	05:00	3.1	W
23-Apr-2014	06:00	2	WSW
23-Apr-2014	07:00	2.1	WSW
23-Apr-2014	08:00	3.4	W
23-Apr-2014	09:00	3.9	WNW
23-Apr-2014	10:00	3.5	W
23-Apr-2014	11:00	3.1	W
23-Apr-2014	12:00	3.1	W
23-Apr-2014	13:00	2.6	WNW
23-Apr-2014	14:00	2.8	WNW
23-Apr-2014	15:00	2.9	WSW
23-Apr-2014	16:00	2.8	W
23-Apr-2014	17:00	2.8	WSW
23-Apr-2014	18:00	1.8	W
23-Apr-2014	19:00	0.9	WSW
23-Apr-2014	20:00	1.5	NE
23-Apr-2014	21:00	1.7	N
23-Apr-2014	22:00	2.4	ESE
23-Apr-2014	23:00	2.6	E
24-Apr-2014	00:00	2.4	N
24-Apr-2014	01:00	1.7	ENE

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

24-Apr-2014	02:00	2.2	ENE
24-Apr-2014	03:00	2.1	ENE
24-Apr-2014	04:00	2	ENE
24-Apr-2014	05:00	1.5	WNW
24-Apr-2014	06:00	1.5	N
24-Apr-2014	07:00	1.4	NNE
24-Apr-2014	08:00	2.4	NNE
24-Apr-2014	09:00	2.6	ENE
24-Apr-2014	10:00	2.9	N
24-Apr-2014	11:00	2.4	NNE
24-Apr-2014	12:00	2.3	NE
24-Apr-2014	13:00	2.6	NNE
24-Apr-2014	14:00	2.5	N
24-Apr-2014	15:00	3.1	N
24-Apr-2014	16:00	2.9	N
24-Apr-2014	17:00	2	N
24-Apr-2014	18:00	1.8	WNW
24-Apr-2014	19:00	2.1	N
24-Apr-2014	20:00	2.3	N
24-Apr-2014	21:00	2.3	N
24-Apr-2014	22:00	2	N
24-Apr-2014	23:00	2.3	NNE
25-Apr-2014	00:00	2.6	NE
25-Apr-2014	01:00	2.8	NNE
25-Apr-2014	02:00	2.8	NNE
25-Apr-2014	03:00	2.6	NE
25-Apr-2014	04:00	2.8	N
25-Apr-2014	05:00	2.6	NE
25-Apr-2014	06:00	2.9	NE
25-Apr-2014	07:00	2	NNE
25-Apr-2014	08:00	2.3	NE
25-Apr-2014	09:00	2.8	NE
25-Apr-2014	10:00	2.8	W
25-Apr-2014	11:00	3.1	NE
25-Apr-2014	12:00	3.5	N
25-Apr-2014	13:00	2.9	N
25-Apr-2014	14:00	2.9	ENE



**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

25-Apr-2014	15:00	2.3	WSW
25-Apr-2014	16:00	2.9	W
25-Apr-2014	17:00	2.4	W
25-Apr-2014	18:00	1.9	W
25-Apr-2014	19:00	1	W
25-Apr-2014	20:00	1.1	W
25-Apr-2014	21:00	0.8	W
25-Apr-2014	22:00	0.9	WSW
25-Apr-2014	23:00	1.4	NNE
26-Apr-2014	00:00	2.2	NNE
26-Apr-2014	01:00	2	ESE
26-Apr-2014	02:00	2.4	ESE
26-Apr-2014	03:00	1.4	W
26-Apr-2014	04:00	1.5	NNE
26-Apr-2014	05:00	1.8	NNE
26-Apr-2014	06:00	1.4	NE
26-Apr-2014	07:00	1.4	ENE
26-Apr-2014	08:00	1.7	ENE
26-Apr-2014	09:00	2.3	ENE
26-Apr-2014	10:00	3.7	SSW
26-Apr-2014	11:00	3.5	SSW
26-Apr-2014	12:00	3.9	W
26-Apr-2014	13:00	3.7	W
26-Apr-2014	14:00	3.1	W
26-Apr-2014	15:00	2.9	W
26-Apr-2014	16:00	1.8	W
26-Apr-2014	17:00	1.4	W
26-Apr-2014	18:00	1.5	W
26-Apr-2014	19:00	1.7	SSW
26-Apr-2014	20:00	1.1	W
26-Apr-2014	21:00	1.7	W
26-Apr-2014	22:00	2	WNW
26-Apr-2014	23:00	1.7	SW
27-Apr-2014	00:00	2	SW
27-Apr-2014	01:00	2	W
27-Apr-2014	02:00	1.9	W
27-Apr-2014	03:00	2	NNE

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

27-Apr-2014	04:00	1.7	N
27-Apr-2014	05:00	1.5	NNE
27-Apr-2014	06:00	1.4	E
27-Apr-2014	07:00	1.7	ENE
27-Apr-2014	08:00	2.4	ENE
27-Apr-2014	09:00	3.1	ENE
27-Apr-2014	10:00	3.5	E
27-Apr-2014	11:00	4.5	ENE
27-Apr-2014	12:00	4.3	ENE
27-Apr-2014	13:00	4.2	ENE
27-Apr-2014	14:00	4.3	NE
27-Apr-2014	15:00	3.9	NE
27-Apr-2014	16:00	4	NNE
27-Apr-2014	17:00	3.4	NNE
27-Apr-2014	18:00	3.1	ESE
27-Apr-2014	19:00	2.3	ESE
27-Apr-2014	20:00	2.3	NNE
27-Apr-2014	21:00	2.2	N
27-Apr-2014	22:00	1.5	NNE
27-Apr-2014	23:00	1.7	W
28-Apr-2014	00:00	1.4	SE
28-Apr-2014	01:00	2	SE
28-Apr-2014	02:00	1.5	E
28-Apr-2014	03:00	1.8	E
28-Apr-2014	04:00	2.2	WSW
28-Apr-2014	05:00	2.2	N
28-Apr-2014	06:00	1.7	SW
28-Apr-2014	07:00	3.1	SW
28-Apr-2014	08:00	2.6	W
28-Apr-2014	09:00	2.3	SSW
28-Apr-2014	10:00	2.6	SW
28-Apr-2014	11:00	2.9	W
28-Apr-2014	12:00	3.1	SW
28-Apr-2014	13:00	3.2	SSW
28-Apr-2014	14:00	3.2	SW
28-Apr-2014	15:00	2.8	SW
28-Apr-2014	16:00	3.1	SW

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

28-Apr-2014	17:00	2.6	SW
28-Apr-2014	18:00	1.7	WNW
28-Apr-2014	19:00	1.7	W
28-Apr-2014	20:00	1.5	SW
28-Apr-2014	21:00	1.5	SW
28-Apr-2014	22:00	1.4	WNW
28-Apr-2014	23:00	1.5	WNW
29-Apr-2014	00:00	1.1	W
29-Apr-2014	01:00	1.1	WNW
29-Apr-2014	02:00	1.1	WNW
29-Apr-2014	03:00	1.1	N
29-Apr-2014	04:00	1.2	NNE
29-Apr-2014	05:00	2.4	NNE
29-Apr-2014	06:00	1.4	N
29-Apr-2014	07:00	1.2	N
29-Apr-2014	08:00	1	S
29-Apr-2014	09:00	1.8	SSW
29-Apr-2014	10:00	1.8	SSW
29-Apr-2014	11:00	2.3	SSE
29-Apr-2014	12:00	2.6	W
29-Apr-2014	13:00	2	WSW
29-Apr-2014	14:00	2	WSW
29-Apr-2014	15:00	2.3	WNW
29-Apr-2014	16:00	2.1	W
29-Apr-2014	17:00	1.4	W
29-Apr-2014	18:00	1.2	WNW
29-Apr-2014	19:00	0.8	SW
29-Apr-2014	20:00	0.6	SW
29-Apr-2014	21:00	0.6	WSW
29-Apr-2014	22:00	0.6	W
29-Apr-2014	23:00	0.6	W
30-Apr-2014	00:00	0.6	W
30-Apr-2014	01:00	0.4	W
30-Apr-2014	02:00	0.2	NE
30-Apr-2014	03:00	0.3	NE
30-Apr-2014	04:00	0.5	NNE
30-Apr-2014	05:00	0.9	NNE

**APPENDIX C –  
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

**II. Mean Wind Speed and Wind Direction**

30-Apr-2014	06:00	0.7	N
30-Apr-2014	07:00	0.9	N
30-Apr-2014	08:00	0.7	NE
30-Apr-2014	09:00	2.8	NE
30-Apr-2014	10:00	3.5	NE
30-Apr-2014	11:00	3.5	NE
30-Apr-2014	12:00	3	N
30-Apr-2014	13:00	3.3	NNE
30-Apr-2014	14:00	2.8	NNE
30-Apr-2014	15:00	2.3	NE
30-Apr-2014	16:00	1.9	ENE
30-Apr-2014	17:00	2.1	E
30-Apr-2014	18:00	1.6	ENE
30-Apr-2014	19:00	1.6	ENE
30-Apr-2014	20:00	1.3	ENE
30-Apr-2014	21:00	0.9	NW
30-Apr-2014	22:00	0.9	N
30-Apr-2014	23:00	0.9	SE

---

---

**APPENDIX D  
ENVIRONMENTAL MONITORING  
SCHEDULES**

---

---

**Contract No. KL/2012/03**  
**Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area**  
**Impact Air and Noise Monitoring Schedule for April 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Apr	2-Apr	3-Apr	4-Apr	5-Apr
			Noise (M6, M7 and M9)	24 hr TSP	1 hr TSP X3	
6-Apr	7-Apr	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr
			Noise (M6, M7 and M9) 24 hr TSP	1 hr TSP X3 Noise (M8)		
13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr
		Noise (M6, M7 and M9) 24 hr TSP	1 hr TSP X3 Noise (M8)	24 hr TSP		
20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr
		1 hr TSP X3 Noise (M8)	24 hr TSP	Noise (M6, M7 and M9)		
27-Apr	28-Apr	29-Apr	30-Apr			
	1 hr TSP X3 Noise (M8)	24 hr TSP				

**Air Quality Monitoring Station**

AM2 - Lee Kau Yan Memorial School  
AM3(A) - Holy Trinity Bradbury Centre  
AM4(A) - EMSD Workshops  
AM5(A) - Po Leung Kuk Ngan Po Ling College

**Noise Monitoring Station**

M6 - Holy Carpenter Primary School  
M7 - CCC Kei To Secondary School  
M8 - Po Leung Kuk Ngan Po Ling College  
M9 - Tak Long Estate

**Contract No. KL/2012/03**  
**Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area**  
**Tentative Impact Air and Noise Monitoring Schedule for May 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-May	2-May	3-May
					1 hr TSP X3 Noise (M6, M7 and M9)	
4-May	5-May	6-May	7-May	8-May	9-May	10-May
	24 hr TSP		1 hr TSP X3 Noise (M8)	Noise (M6, M7 and M9)	24 hr TSP	
11-May	12-May	13-May	14-May	15-May	16-May	17-May
	1 hr TSP X3 Noise (M8)			Noise (M6, M7 and M9) 24 hr TSP	1 hr TSP X3	
18-May	19-May	20-May	21-May	22-May	23-May	24-May
		Noise (M6, M7 and M9)	24 hr TSP	1 hr TSP X3 Noise (M8)		
25-May	26-May	27-May	28-May	29-May	30-May	31-May
		Noise (M6, M7 and M9) 24 hr TSP	1 hr TSP X3 Noise (M8)		24 hr TSP	

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

**Air Quality Monitoring Station**

AM2 - Lee Kau Yan Memorial School  
AM3(A) - Holy Trinity Bradbury Centre  
AM4(A) - EMSD Workshops  
AM5(A) - Po Leung Kuk Ngan Po Ling College

**Noise Monitoring Station**

M6 - Holy Carpenter Primary School  
M7 - CCC Kei To Secondary School  
M8 - Po Leung Kuk Ngan Po Ling College  
M9 - Tak Long Estate

---

---

**APPENDIX E**  
**1-HOUR TSP MONITORING RESULTS**  
**AND GRAPHICAL PRESENTATION**

---

---



## Appendix E - 1-hour TSP Monitoring Results

Location AM2 - Lee Kau Yan Memorial School			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
4-Apr-14	8:57	Cloudy	270.7
4-Apr-14	9:57	Cloudy	272.9
4-Apr-14	10:57	Cloudy	274.6
10-Apr-14	13:00	Sunny	174.8
10-Apr-14	14:00	Sunny	183.9
10-Apr-14	15:00	Sunny	187.0
16-Apr-14	13:05	Sunny	196.2
16-Apr-14	14:05	Sunny	153.5
16-Apr-14	15:05	Sunny	166.3
22-Apr-14	13:10	Cloudy	207.8
22-Apr-14	14:10	Cloudy	205.9
22-Apr-14	15:10	Cloudy	209.0
28-Apr-14	9:00	Sunny	125.1
28-Apr-14	10:00	Sunny	99.6
28-Apr-14	11:00	Sunny	114.2
Average			189.4
Maximum			274.6
Minimum			99.6

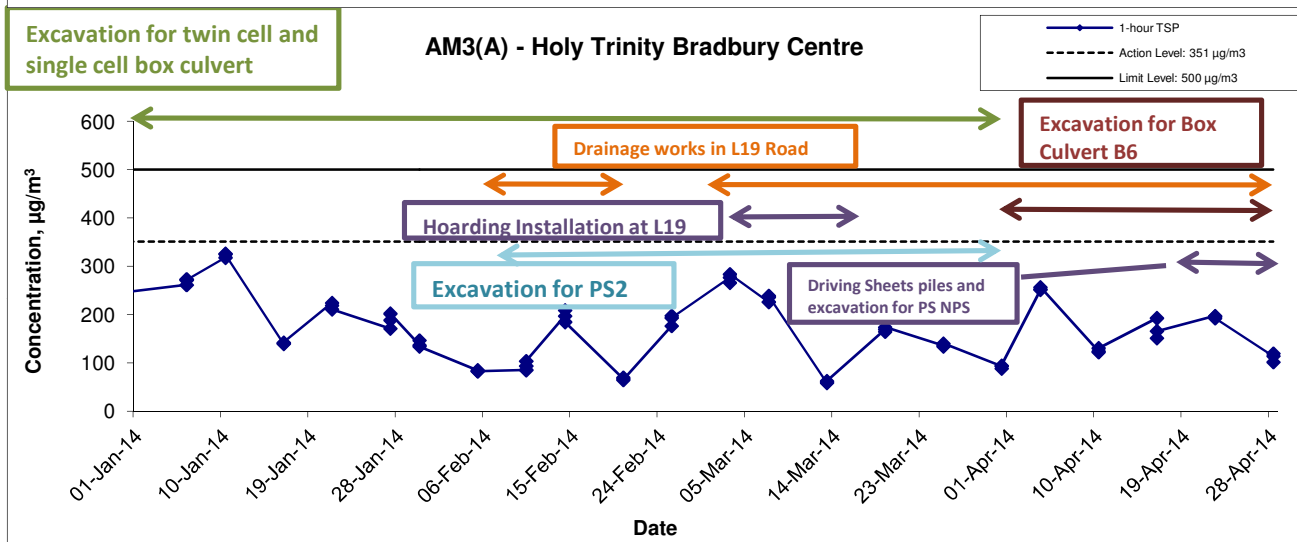
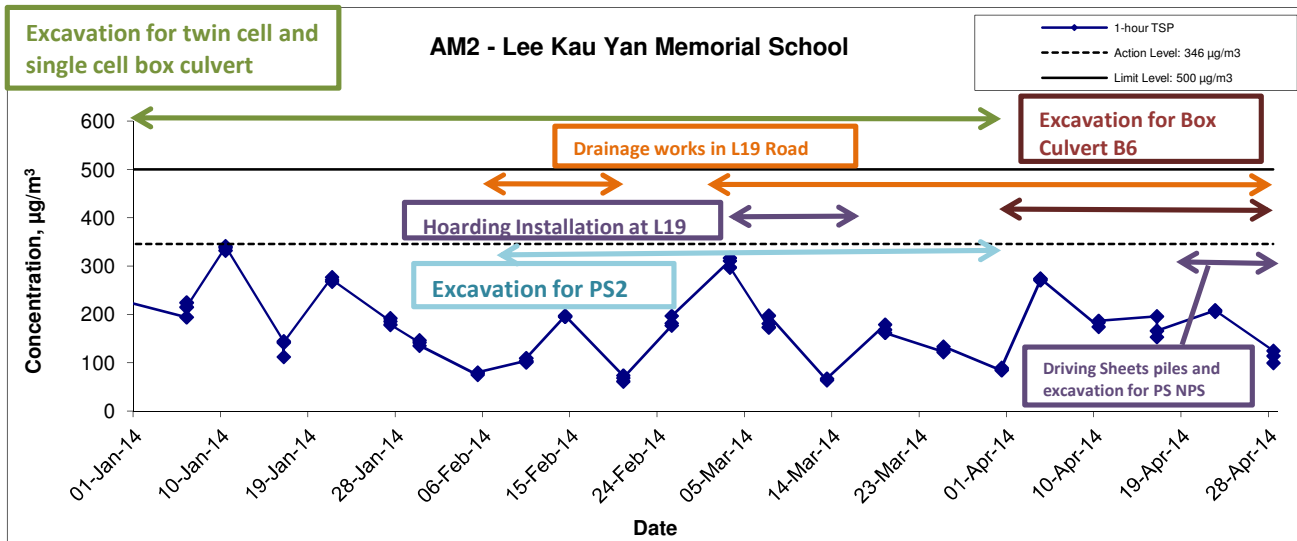
Location AM3(A) - Holy Trinity Bradbury Centre			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
4-Apr-14	8:55	Cloudy	251.2
4-Apr-14	9:55	Cloudy	253.0
4-Apr-14	10:55	Cloudy	256.9
10-Apr-14	8:02	Cloudy	124.1
10-Apr-14	9:02	Cloudy	122.5
10-Apr-14	10:02	Cloudy	130.6
16-Apr-14	8:15	Cloudy	192.9
16-Apr-14	9:15	Cloudy	151.2
16-Apr-14	10:15	Cloudy	165.9
22-Apr-14	13:00	Cloudy	197.3
22-Apr-14	14:00	Cloudy	196.1
22-Apr-14	15:00	Cloudy	192.7
28-Apr-14	13:00	Sunny	114.2
28-Apr-14	14:00	Sunny	119.6
28-Apr-14	15:00	Sunny	102.0
Average			171.3
Maximum			256.9
Minimum			102.0

## Appendix E - 1-hour TSP Monitoring Results

Location AM4(A) - EMSD Workshops			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
4-Apr-14	13:20	Cloudy	265.7
4-Apr-14	14:20	Cloudy	270.7
4-Apr-14	15:20	Cloudy	268.0
10-Apr-14	9:00	Sunny	172.0
10-Apr-14	10:00	Sunny	172.9
10-Apr-14	11:00	Sunny	170.3
16-Apr-14	8:45	Cloudy	192.3
16-Apr-14	9:45	Cloudy	151.1
16-Apr-14	10:45	Cloudy	183.5
22-Apr-14	9:00	Cloudy	220.4
22-Apr-14	10:00	Cloudy	219.0
22-Apr-14	11:00	Cloudy	219.7
28-Apr-14	13:02	Sunny	97.6
28-Apr-14	14:02	Sunny	104.8
28-Apr-14	15:02	Sunny	116.5
Average			188.3
Maximum			270.7
Minimum			97.6

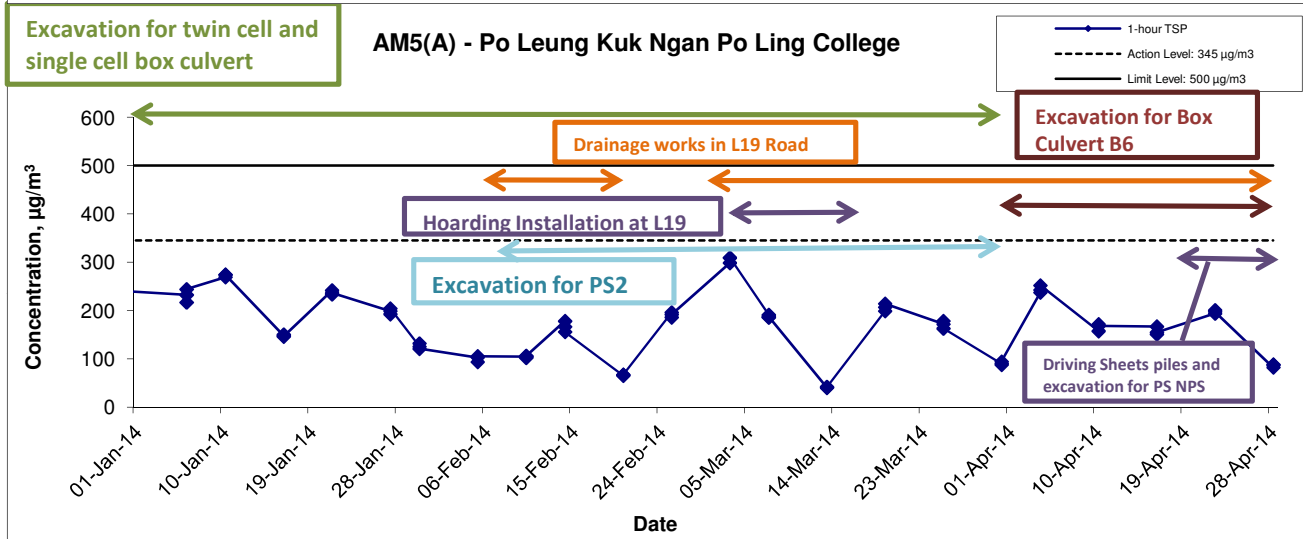
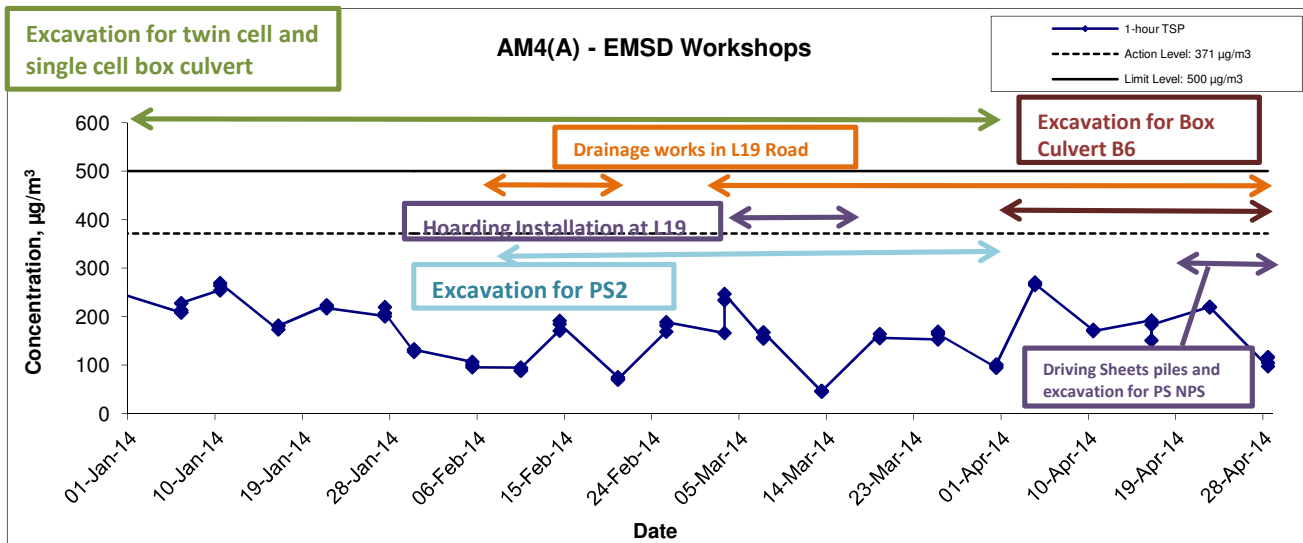
Location AM5(A) - Po Leung Kuk Ngan Po Ling College			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
4-Apr-14	8:45	Cloudy	237.3
4-Apr-14	9:45	Cloudy	243.0
4-Apr-14	10:45	Cloudy	252.3
10-Apr-14	9:00	Sunny	157.7
10-Apr-14	10:00	Sunny	171.8
10-Apr-14	11:00	Sunny	168.3
16-Apr-14	8:15	Cloudy	167.0
16-Apr-14	9:15	Cloudy	151.1
16-Apr-14	10:15	Cloudy	155.1
22-Apr-14	8:55	Cloudy	193.9
22-Apr-14	9:55	Cloudy	200.7
22-Apr-14	10:55	Cloudy	197.8
28-Apr-14	8:50	Sunny	82.4
28-Apr-14	9:50	Sunny	87.5
28-Apr-14	10:50	Sunny	88.7
Average			170.3
Maximum			252.3
Minimum			82.4

### 1-hr TSP Concentration Levels



Title	Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area	Scale N.T.S	Project No. MA13056	CINOTECH
	Graphical Presentation of 1-hour TSP Monitoring Results	Date May 14	Appendix E	

### 1-hr TSP Concentration Levels



Title	Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area	Scale N.T.S	Project No. MA13056	CINOTECH
	Graphical Presentation of 1-hour TSP Monitoring Results	Date May 14	Appendix E	

---

**APPENDIX F**  
**24-HOUR TSP MONITORING RESULTS**  
**AND GRAPHICAL PRESENTATION**

---

## Appendix F - 24-hour TSP Monitoring Results

### Location AM2 - Lee Kau Yan Memorial School

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
3-Apr-14	Cloudy	289.1	766.0	3.6833	3.7682	0.0849	13060.7	13084.7	24.0	1.22	1.22	1.22	1756.4	48.3
9-Apr-14	Sunny	293.1	764.5	3.7520	3.8570	0.1050	13084.7	13108.7	24.0	1.21	1.21	1.21	1743.9	60.2
15-Apr-14	Sunny	295.3	765.6	3.7490	3.9613	0.2123	13108.7	13132.7	24.0	1.21	1.21	1.21	1739.0	122.1
17-Apr-14	Sunny	296.3	762.2	3.2237	3.3961	0.1724	13132.7	13156.7	24.0	1.20	1.20	1.20	1732.9	99.5
23-Apr-14	Sunny	295.9	762.7	3.2332	3.4025	0.1693	13156.7	13180.7	24.0	1.20	1.20	1.20	1734.4	97.6
29-Apr-14	Sunny	297.6	763.1	3.1951	3.3258	0.1307	13180.7	13204.7	24.0	1.20	1.20	1.20	1730.5	75.5
													Min	48.3
													Max	122.1
													Average	83.9

### Location AM3(A) - Holy Trinity Bradbury Centre

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
3-Apr-14	Cloudy	289.1	766.0	3.6664	3.7488	0.0824	7690.8	7714.8	24.0	1.22	1.22	1.22	1752.3	47.0
9-Apr-14	Sunny	293.1	764.5	3.7505	3.8610	0.1105	7714.8	7738.8	24.0	1.21	1.21	1.21	1739.6	63.5
15-Apr-14	Sunny	295.3	765.6	3.7285	3.9449	0.2164	7738.8	7762.8	24.0	1.20	1.20	1.20	1734.8	124.7
17-Apr-14	Cloudy	296.3	762.2	3.2262	3.3099	0.0837	7762.8	7786.8	24.0	1.20	1.20	1.20	1728.6	48.4
23-Apr-14	Sunny	295.9	762.7	3.2385	3.3448	0.1063	7786.8	7810.8	24.0	1.20	1.20	1.20	1730.1	61.4
29-Apr-14	Sunny	297.6	763.1	3.2302	3.4091	0.1789	7810.8	7834.8	24.0	1.20	1.20	1.20	1726.2	103.6
													Min	47.0
													Max	124.7
													Average	74.8

## Appendix F - 24-hour TSP Monitoring Results

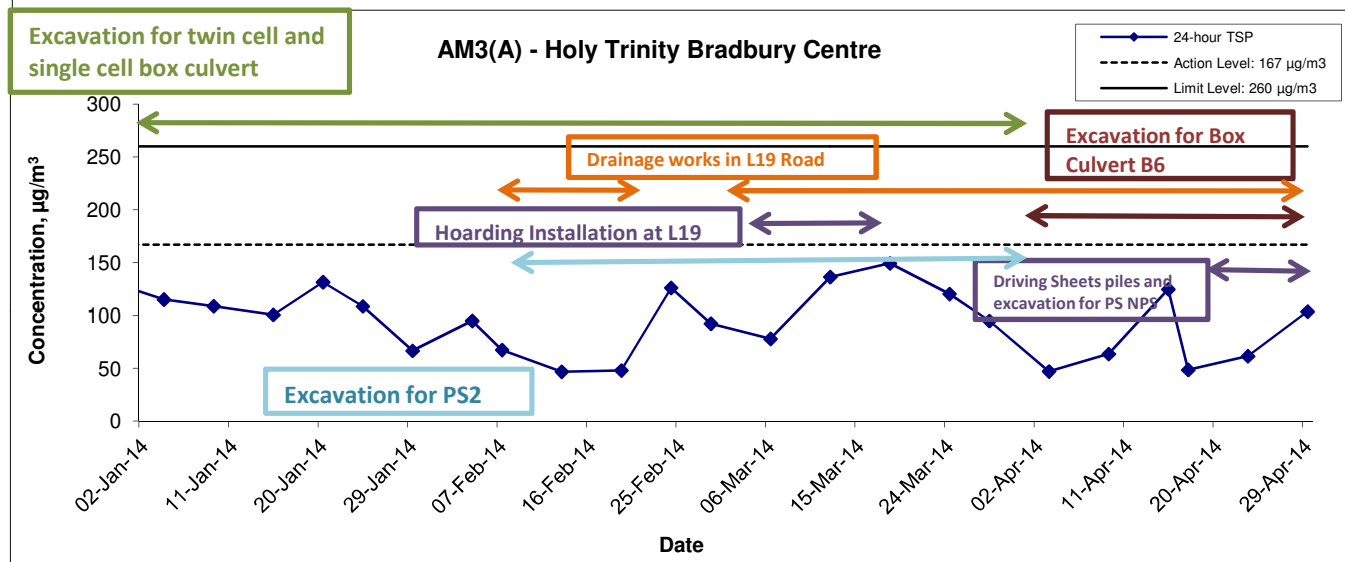
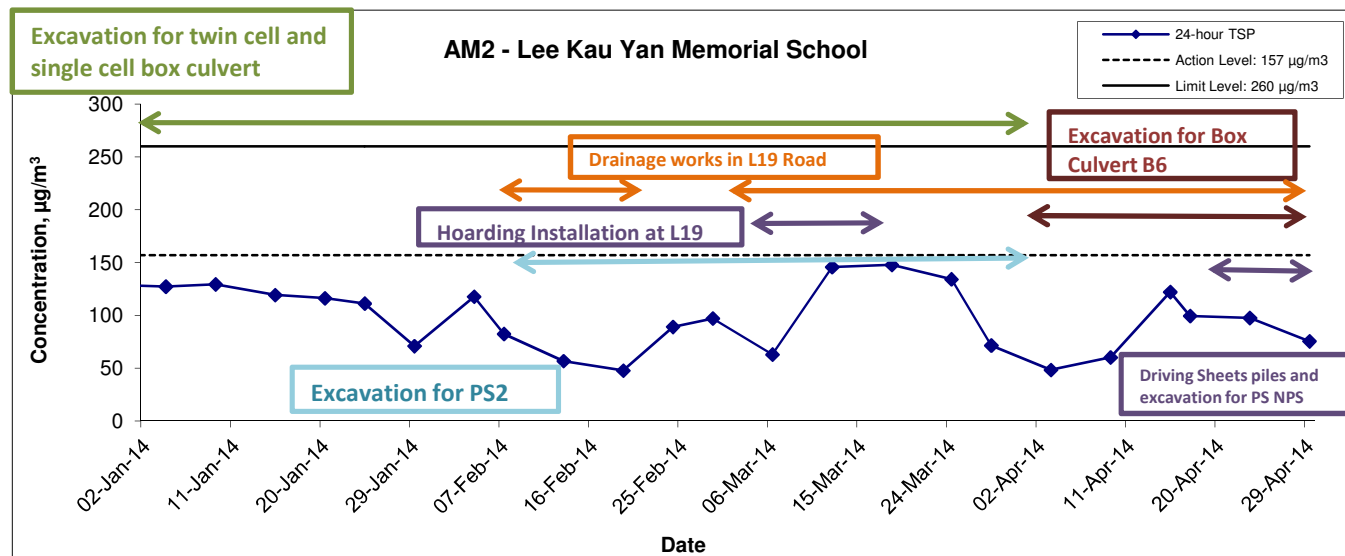
### Location AM4(A) - EMSD Workshops

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
3-Apr-14	Cloudy	289.1	766.0	3.6661	3.7827	0.1166	3933.6	3957.6	24.0	1.23	1.23	1.23	1765.3	66.1
9-Apr-14	Sunny	293.1	764.5	3.7170	3.8738	0.1568	3957.6	3981.6	24.0	1.22	1.22	1.22	1752.6	89.5
15-Apr-14	Sunny	295.3	765.6	3.7234	4.0035	0.2801	3981.6	4005.6	24.0	1.21	1.21	1.21	1747.8	160.3
17-Apr-14	Cloudy	296.3	762.2	3.7237	3.8979	0.1742	4005.6	4029.6	24.0	1.21	1.21	1.21	1741.6	100.0
23-Apr-14	Sunny	295.9	762.7	3.2431	3.3173	0.0742	4029.6	4053.6	24.0	1.21	1.21	1.21	1743.1	42.6
29-Apr-14	Sunny	297.6	763.1	3.6272	3.8836	0.2564	4053.6	4077.6	24.0	1.21	1.21	1.21	1739.1	147.4
													Min	42.6
													Max	160.3
													Average	101.0

### Location AM5(A) - Po Leung Kuk Ngan Po Ling College

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
3-Apr-14	Cloudy	289.1	766.0	3.6897	3.7385	0.0488	2966.5	2990.5	24.0	1.21	1.21	1.21	1744.3	28.0
9-Apr-14	Sunny	293.1	764.5	3.7121	3.7905	0.0784	2990.5	3014.5	24.0	1.20	1.20	1.20	1731.7	45.3
15-Apr-14	Sunny	295.3	765.6	3.7417	3.8393	0.0976	3014.5	3038.5	24.0	1.20	1.20	1.20	1726.9	56.5
22-Apr-14	Cloudy	297.9	762.8	3.2528	3.3099	0.0571	3038.5	3062.5	24.0	1.19	1.19	1.19	1717.1	33.3
23-Apr-14	Sunny	295.9	762.7	3.2701	3.3443	0.0742	3062.5	3086.5	24.0	1.20	1.20	1.20	1722.3	43.1
29-Apr-14	Sunny	297.6	763.1	3.6254	3.7181	0.0927	3086.5	3110.5	24.0	1.19	1.19	1.19	1718.3	53.9
													Min	28.0
													Max	56.5
													Average	43.3

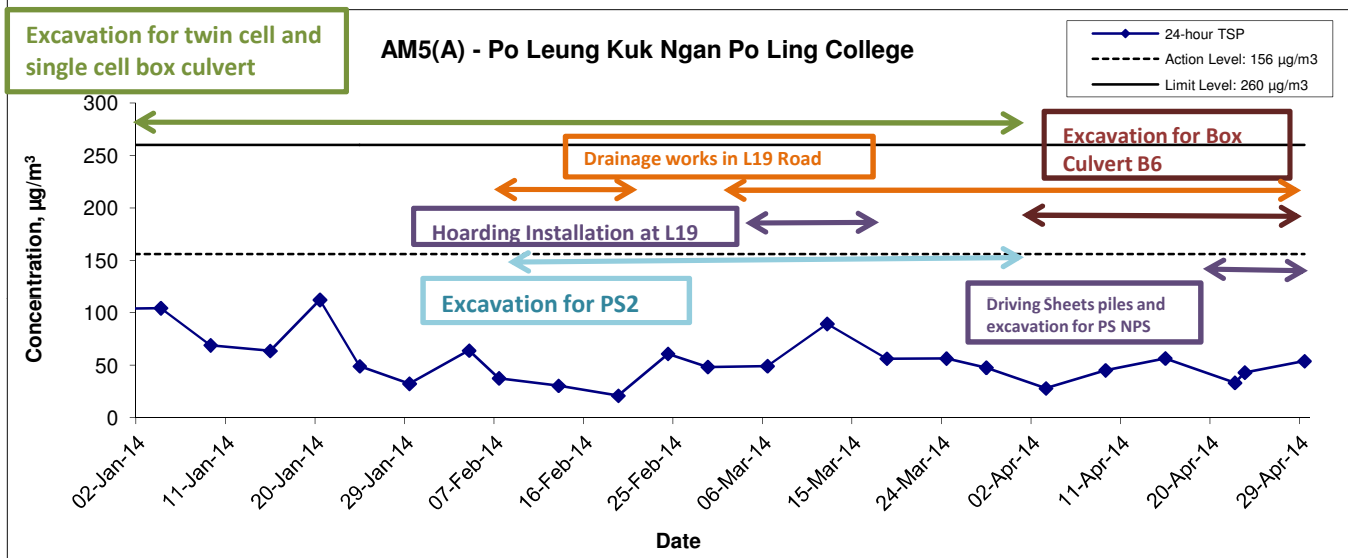
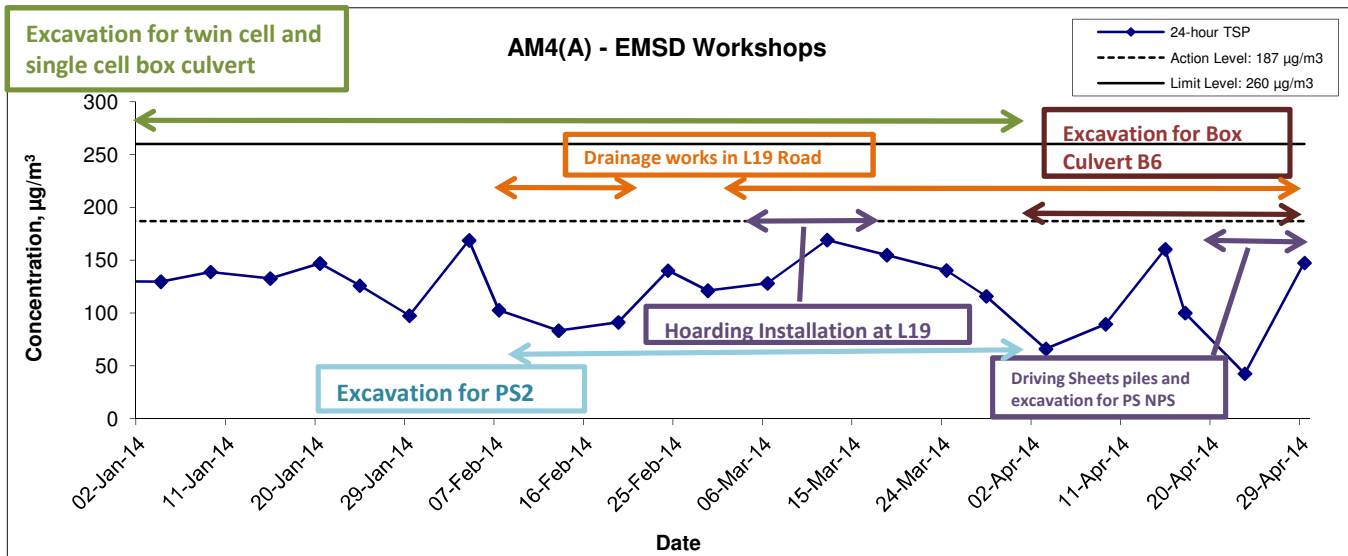
## 24-hr TSP Concentration Levels



Title	Contract No. KL/2012/03	Scale	Project No.	CINOTECH
	Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area	N.T.S	MA13056	
	Graphical Presentation of 24-hour TSP Monitoring Results	Date	Appendix	
		May 14	F	



## 24-hr TSP Concentration Levels



Title	Contract No. KL/2012/03	Scale	Project No.	CINOTECH
	Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area	N.T.S	MA13056	
	Graphical Presentation of 24-hour TSP Monitoring Results	Date	Appendix	
		May 14	F	

---

---

**APPENDIX G**  
**NOISE MONITORING RESULTS AND**  
**GRAPHICAL PRESENTATION**

---

---

## Appendix G - Noise Monitoring Results

Location M6 - Holy Carpenter Primary School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
2-Apr-14	10:45	Cloudy	65.3	67.4	62.1	63.9	59.7
9-Apr-14	10:45	Sunny	67.5	68.9	64.7		65.0
15-Apr-14	15:00	Sunny	67.1	68.7	64.5		64.3
25-Apr-14	14:00	Cloudy	63.5	65.9	60.1		63.5 Measured ≤ Baseline

Location M7 - CCC Kei To Secondary School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
2-Apr-14	11:25	Cloudy	69.1	71.3	65.8	68.7	58.5
9-Apr-14	11:30	Sunny	60.2	62.3	58.6		60.2 Measured ≤ Baseline
15-Apr-14	15:55	Sunny	61.1	63.5	59.9		61.1 Measured ≤ Baseline
25-Apr-14	15:00	Cloudy	65.6	67.2	63.7		65.6 Measured ≤ Baseline

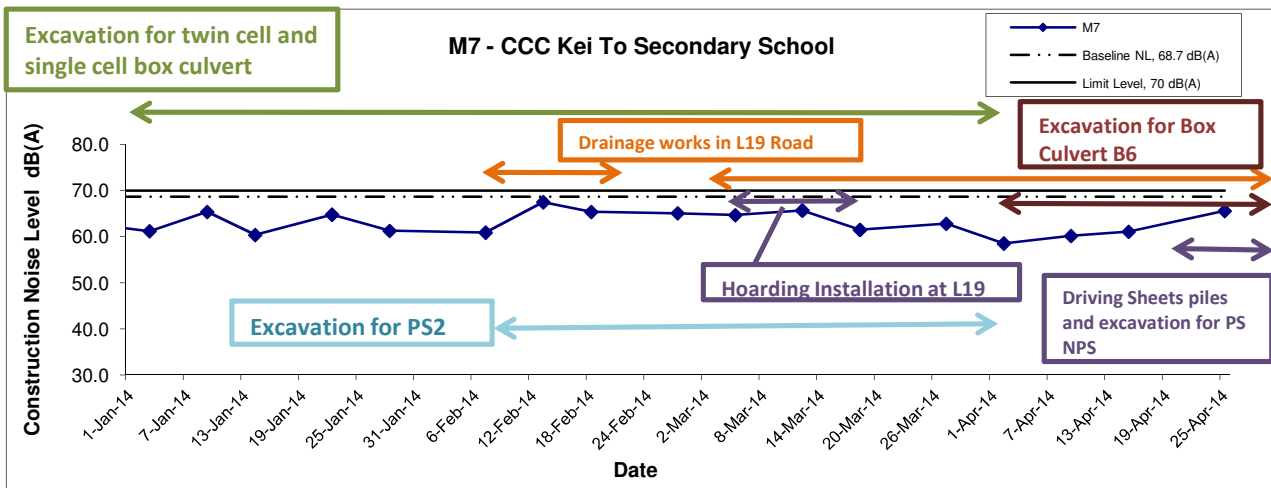
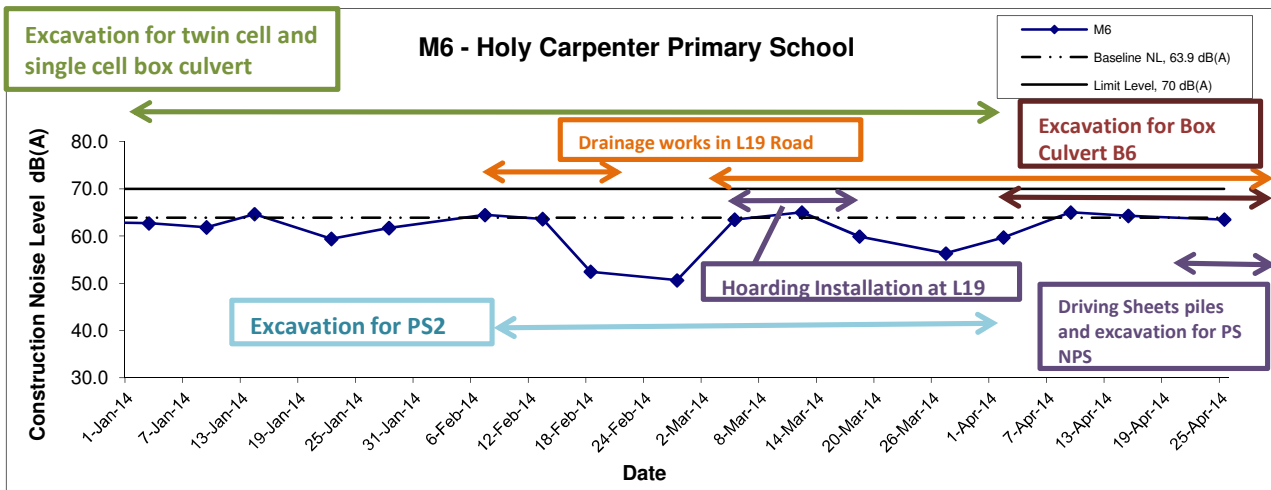
  

Location M8 - Po Leung Kuk Ngan Po Ling College							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
10-Apr-14	09:30	Sunny	66.5	68.7	63.5	61.9	64.7
16-Apr-14	08:30	Sunny	67.8	69.2	60.1		66.5
22-Apr-14	09:05	Cloudy	62.8	64.0	60.1		55.5
25-Apr-14	08:57	Sunny	64.2	65.7	62.9		60.3

Location M9 - Tak Long Estate							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
2-Apr-14	09:15	Cloudy	68.2	69.6	61.7	59.0	67.6
9-Apr-14	15:35	Sunny	61.8	63.5	59.3		58.6
15-Apr-14	14:05	Sunny	60.3	62.1	58.0		54.4
25-Apr-14	13:00	Cloudy	66.2	68.9	62.5		65.3

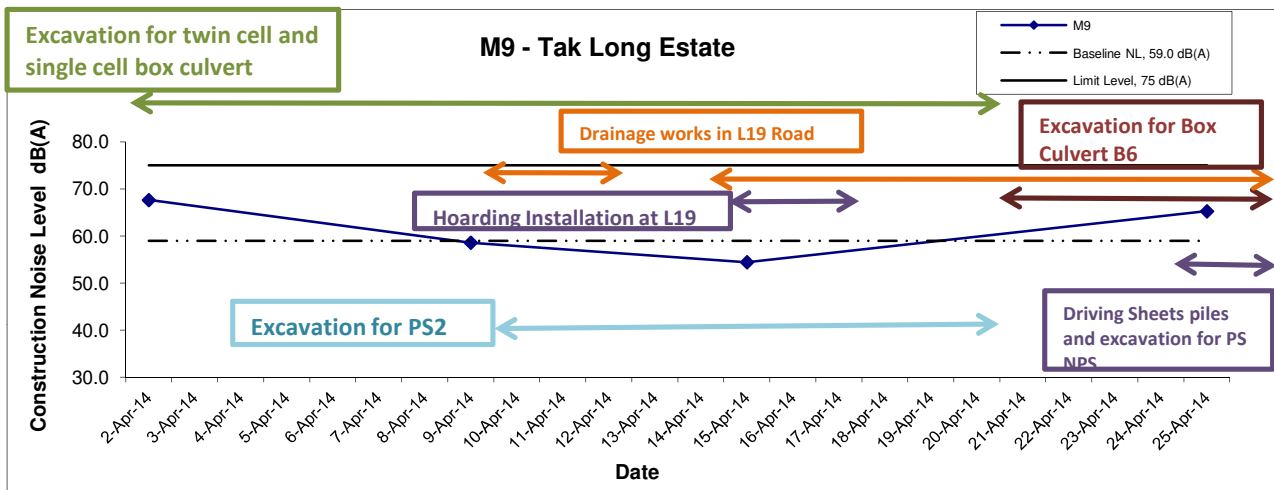
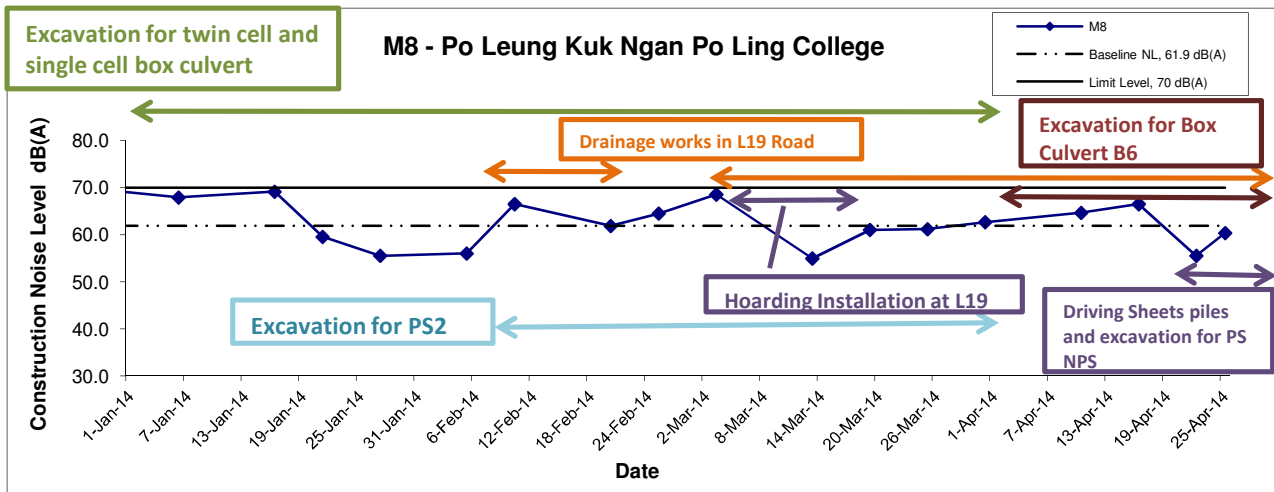
## Noise Levels



Remarks: The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

Title Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of Construction Noise Monitoring Results	Scale	Project No.	
	N.T.S	MA13056	
	Date	Appendix	
	May 14	G	

## Noise Levels



Remarks: The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

Title Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of Construction Noise Monitoring Results	Scale	Project No.	
	N.T.S	MA13056	
	Date	Appendix	
	May 14	G	

---

**APPENDIX H**  
**SUMMARY OF EXCEEDANCE**

---

**Contract No. KL/2012/03**

**Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area**

**Appendix H – Summary of Exceedance**

**Exceedance Report for Contract No. KL/2012/03**

**(A) Exceedance Report for Air Quality  
(NIL in the reporting month)**

**(B) Exceedance Report for Construction Noise  
(NIL in the reporting month)**

**(C) Exceedance Report for Landscape and Visual  
(NIL in the reporting month)**

---

**APPENDIX I**  
**SITE AUDIT SUMMARY**

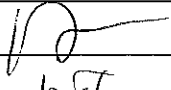

---



Weekly Site Inspection Record Summary  
Inspection Information

Checklist Reference Number	140404
Date	4 April 2014
Time	16:00 – 17:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>F. Visual and Landscape</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Permits /Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	• Follow-up on previous audit section (Ref. No.:140328), all identified environmental deficiency was observed improved/rectified by the Contractor.	



	Name	Signature	Date
Recorded by	Johnny Fung		4 April 2014
Checked by	Dr. Priscilla Choy		4 April 2014

## Weekly Site Inspection Record Summary

## Inspection Information

Checklist Reference Number	140410
Date	10 April 2014
Time	16:00 – 17:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>F. Visual and Landscape</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Permits / Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	• Follow-up on previous audit section (Ref. No.:140404), no environmental deficiency was identified during site inspection.	

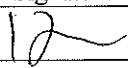

	Name	Signature	Date
Recorded by	Johnny Fung		10 April 2014
Checked by	Dr. Priscilla Choy		10 April 2014

## Weekly Site Inspection Record Summary

## Inspection Information

Checklist Reference Number	140416
Date	16 April 2014
Time	13:30 – 14:15

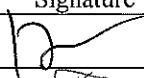

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>F. Visual and Landscape</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Permits / Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	• Follow-up on previous audit section (Ref. No.:140410), no environmental deficiency was identified during site inspection.	

	Name	Signature	Date
Recorded by	Johnny Fung		16 April 2014
Checked by	Dr. Priscilla Choy		16 April 2014

Weekly Site Inspection Record Summary  
Inspection Information

Checklist Reference Number	140425
Date	25 April 2014
Time	11:00 – 12:00

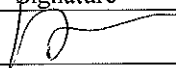

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>F. Visual and Landscape</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Permits /Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	• Follow-up on previous audit section (Ref. No.:140416), no environmental deficiency was identified during site inspection.	

	Name	Signature	Date
Recorded by	Johnny Fung		25 April 2014
Checked by	Dr. Priscilla Choy		25 April 2014

Weekly Site Inspection Record Summary  
Inspection Information

Checklist Reference Number	140404
Date	4 April 2014
Time	16:00 – 17:00



Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>F. Visual and Landscape</b>	
140404-001	• Construction material observed stored near the tree. The Contractor is reminded to remove the construction material and set up tree protection area.	F1
	<b>G. Permits /Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	• Follow-up on previous audit section (Ref. No.:140328), follow up actions are needed to be reviewed for items 140328-001.	

	Name	Signature	Date
Recorded by	Johnny Fung		4 April 2014
Checked by	Dr. Priscilla Choy		4 April 2014

Weekly Site Inspection Record Summary  
Inspection Information

Checklist Reference Number	140410
Date	10 April 2014
Time	16:00 – 17:00

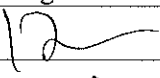
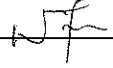
Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
140410-R02	• Properly remove the oil stain on the ground near Pumping Station PS2.	E8
	<b>F. Visual and Landscape</b>	
140410-O01	• Construction material observed stored near the tree. The Contractor is reminded to remove the construction material and set up tree protection area.	F1
	<b>G. Permits / Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	• Follow-up on previous audit section (Ref. No.:140404), follow up actions are needed to be reviewed for items 140404-O01.	

	Name	Signature	Date
Recorded by	Johnny Fung		10 April 2014
Checked by	Dr. Priscilla Choy		10 April 2014

Weekly Site Inspection Record Summary  
Inspection Information

Checklist Reference Number	140416
Date	16 April 2014
Time	13:30 – 14:15

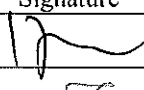

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>F. Visual and Landscape</b>	
140410-001	• Construction material observed near the tree at Pumping Station PS NPS. The Contractor is reminded to remove the construction material and set up tree protection zone.	F1
	<b>G. Permits /Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	• Follow-up on previous audit section (Ref. No.:140410), follow up actions are needed to be reviewed for items 140410-001.	

	Name	Signature	Date
Recorded by	Johnny Fung		16 April 2014
Checked by	Dr. Priscilla Choy		16 April 2014

Weekly Site Inspection Record Summary  
Inspection Information

Checklist Reference Number	140425
Date	25 April 2014
Time	11:00 – 12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
140425-R02	• Properly clear the oil stain on the ground at Pumping Stations PS2 and PS NPS.	E8
	<b>F. Visual and Landscape</b>	
140425-O01	• Construction material observed near the tree at Pumping Station PS NPS. The Contractor is reminded to remove the construction material.	F1
	<b>G. Permits /Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	• Follow-up on previous audit section (Ref. No.:140416), follow up actions are needed to be reviewed for items 140416-O01.	

	Name	Signature	Date
Recorded by	Johnny Fung		25 April 2014
Checked by	Dr. Priscilla Choy		25 April 2014



---

**APPENDIX J**  
**EVENT ACTION PLANS**

---

## Appendix J - Event Action Plans

### Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contactor, IEC and ER; 3. Repeat measurement to confirm finding.	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.
Action Level being exceeded by two or more consecutive sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and ER; 3. Increase monitoring frequency to daily; 4. Discuss with IEC and Contractor on remedial actions required; 5. Assess the effectiveness of Contractor's remedial actions; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring.	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.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to ER and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Assess effectiveness of Contractor's remedial actions and keep	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures;	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be	1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposals for remedial actions to ER and IEC within three

## Appendix J - Event Action Plans

	EPD, IEC and ER informed of the results.	4. Advise the ER on the effectiveness of the proposed remedial measures.	implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	working days of notification; 4. Implement the agreed proposals.
Limit Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Repeat measurement to confirm findings;</li> <li>3. Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Arrange meeting with IEC, ER and Contractor to discuss the remedial actions to be taken;</li> <li>6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and ER informed of the results;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise implementation of remedial measures;</li> <li>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Discuss with ET, ER and IEC on proper remedial actions;</li> <li>3. Submit proposals for remedial actions to IEC within three working days of notification;</li> <li>4. Implement the agreed proposals;</li> <li>5. Submit further remedial actions if problem still not under control;</li> <li>6. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</li> </ol>

## Appendix J - Event Action Plans

### 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. (The above actions should be taken within 2 working days after the exceedance is identified)	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. (The above actions should be taken within 2 working days after the exceedance is identified)	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. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified)
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;	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	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;

## Appendix J - Event Action Plans

	<p>5. Carry out analysis of Contractor's working procedures;</p> <p>6. Discuss with the IEC, Contractor and ER on remedial measures required;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<p>measures to be implemented;</p> <p>4. Supervise the implementation of remedial measures;</p> <p>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<p>4. Submit further proposal if problem still not under control;</p> <p>5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>
--	---	---	---	--

## Appendix J - Event Action Plans

### Event/Action Plan for Landscape and Visual

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	CONTRACTOR
Design Check	1. Check final design conforms to the requirements of EP and prepare report.	1. Check report. 2. Recommend remedial design if necessary	1. Undertake remedial design if necessary	
Non-conformity on one occasion	1. Identify Source 2. Inform IEC and ER 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source Inform IEC and	1. Check monitoring report	1. Notify Contractor 2. Ensure remedial measures are properly	1. Amend working methods 2. Rectify damage and

## Appendix J - Event Action Plans

	ER 2. Increase monitoring frequency 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed 5. If non-conformity stops, cease additional monitoring	2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures.	implemented	undertake any necessary replacement
--	--	---	-------------	-------------------------------------

---

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

---



## Appendix K - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

Types of Impacts	Mitigation Measures	Status
<b>Construction Dust</b>	8 times daily watering of the work site with active dust emitting activities.	^
	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.	
	<ul style="list-style-type: none"> <li>• Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</li> </ul>	^
	<ul style="list-style-type: none"> <li>• Misting for the dusty material should be carried out before being loaded into the vehicle.</li> </ul>	^
	<ul style="list-style-type: none"> <li>• Any vehicle with an open load carrying area should have properly fitted side and tail boards.</li> </ul>	^
	<ul style="list-style-type: none"> <li>• Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.</li> </ul>	^
	<ul style="list-style-type: none"> <li>• The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.</li> </ul>	^
	<ul style="list-style-type: none"> <li>• The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. On-site unpaved roads should be compacted and kept free of lose materials.</li> </ul>	^
	<ul style="list-style-type: none"> <li>• Vehicle washing facilities should be provided at every</li> </ul>	^

	<p>vehicle exit point.</p> <ul style="list-style-type: none"> <li>• 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 hardcores.</li> <li>• Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.</li> <li>• 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 three sides.</li> <li>• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
--	---	-------------------------------------

Construction Noise	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump	^
	Good Site Practice:	^
	<ul style="list-style-type: none"> <li>Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.</li> <li>Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.</li> <li>Mobile plant, if any, should be sited as far away from NSRs as possible.</li> <li>Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.</li> <li>Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.</li> <li>Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.</li> </ul>	N/A(1)
	Scheduling of Construction Works during School Examination Period	^
	(i) Provision of low noise surfacing in a section of Road L2; and	N/A
	(ii) Provision of structural fins	N/A

	(i) Avoid the sensitive façade of class room facing Road L2 and L4; and	N/A
	(ii) Provision of low noise surfacing in a section of Road L2 & L4	N/A
	(i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 1I1; and	N/A
	(ii) Setback of building about 5m from site boundary.	N/A
	Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A
	(i) avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and	N/A
	(ii) for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not provide the facades with openable window.	N/A
	(i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or	N/A
	(ii) provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height of the residential block(s) located at less than 55m away from To Kwa Wan Road to no more than 25m above ground.	N/A
	(i) avoid any sensitive facades with openable window facing the slip road connecting Prince Edward Road East and San Po Kong or other alternative mitigation measures and at-source mitigation measures for the surrounding new local roads to minimise the potential traffic noise impacts from the slip road	N/A



	<p>All the ventilation fans installed in the below will be provided with silencers or acoustics treatment.</p> <ul style="list-style-type: none"> <li>(i) SPS</li> <li>(ii) ESS</li> <li>(iii) Tunnel Ventilation Shaft</li> <li>(iv) EFTS depot</li> </ul> <p>Installation of retractable roof or other equivalent measures</p>	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>
--	--	--

<p><b>Construction Water Quality</b></p>	<p>The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including:</p> <ul style="list-style-type: none"> <li>• Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply;</li> <li>• Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps;</li> <li>• An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and</li> <li>• For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided so that swift actions could be taken in case of malfunction of unmanned facilities.</li> </ul>	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>^</p>
--	--	--

	<p><u>Land-based Construction</u></p> <p><i>Construction Runoff</i></p> <p>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:</p> <ul style="list-style-type: none"> <li>• use of sediment traps</li> <li>• adequate maintenance of drainage systems to prevent flooding and overflow</li> </ul> <p>Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.</p>	<p>^</p> <p>^</p> <p>^</p>
--	---	----------------------------

	<p>Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.</p>	^
	<p>Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m<sup>3</sup> capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.</p>	^
	<p>Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m<sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.</p>	^
	<p>Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.</p>	^



	<p>Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.</p> <p>Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.</p> <p>All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.</p> <p><i>Drainage</i></p> <p>It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
--	--	-------------------------------------

	<p>All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.</p> <p>All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.</p> <p><i>Sewage Effluent</i></p> <p>Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.</p> <p><i>Stormwater Discharges</i></p> <p>Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes</p>	<p>^</p> <p>^</p> <p>^</p> <p>N/A</p>
--	---	---------------------------------------

	<p><i>Debris and Litter</i></p> <p>In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur</p> <p><i>Construction Works at or in Close Proximity of Storm Culvert or Seafront</i></p> <p>The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.</p> <p>The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.</p> <p>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.</p> <p>Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.</p> <p>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.</p> <hr/> <p>Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
--	--	--



	<p>Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.</p> <p>Construction effluent, site run-off and sewage should be properly collected and/or treated.</p> <p>Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.</p> <p>Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.</p> <p>Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.</p> <p>Supervisory staff should be assigned to station on site to closely supervise and monitor the works</p> <p>Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
--	---	--

	<p>Good Site Practices</p> <p>It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include:</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Training of site personnel in proper waste management and chemical waste handling procedures</li> <li>• Provision of sufficient waste disposal points and regular collection for disposal</li> <li>• Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers</li> <li>• A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
--	---	--

	<p><b>Waste Reduction Measures</b></p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>• Sort C&amp;D waste from demolition of the remaining structures to recover recyclable portions such as metals</li> <li>• 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</li> <li>• Encourage collection of aluminium 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</li> <li>• Any unused chemicals or those with remaining functional capacity should be recycled</li> <li>• Proper storage and site practices to minimise the potential for damage or contamination of construction materials</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
--	--	--

	<p><b>Construction and Demolition Material</b></p> <p>Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&amp;D material. The mitigation measures include:</p> <ul style="list-style-type: none"> <li>• Where it is unavoidable to have transient stockpiles of C&amp;D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible</li> <li>• Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric</li> <li>• Skip hoist for material transport should be totally enclosed by impervious sheeting</li> <li>• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site</li> <li>• 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 hardcores</li> <li>• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle</li> <li>• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet</li> <li>• The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
--	--	---



	<p>When delivering inert C&amp;D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&amp;D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.</p> <p>Chemical Waste</p> <p>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i></p> <p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem</p>	<p>^</p> <p>^</p> <p>^</p>
--	---	----------------------------



<b>Landscape and Visual</b>	CM1 All existing trees should be carefully protected during construction.	*
	CM2 Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.	N/A
	CM3 Control of night-time lighting.	^
	CM4 Erection of decorative screen hoarding.	^

Remarks:	^ Compliance of mitigation measure;	X Non-compliance of mitigation measure;
	N/A Not Applicable at this stage; N/A(1) Not observed;	•Non-compliance but rectified by the contractor;
	* Recommendation was made during site audit but improved/rectified by the contractor.	

---

---

**APPENDIX L  
SUMMARIES OF ENVIRONMENTAL  
COMPLAINT, WARNING, SUMMON  
AND NOTIFICATION OF SUCCESSFUL  
PROSECUTION**

---

---

**Contract No. KL/2012/03**

**Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area**

**Appendix L – Summary of environmental complaint, warning, summon and notification of successful prosecution**

**Reporting Month:** April 2014

**Contract No. KL/2012/03**

<b>Log Ref.</b>	<b>Location</b>	<b>Received Date</b>	<b>Details of Complaint/warning/summon and prosecution</b>	<b>Investigation/Mitigation Action</b>	<b>Status</b>
N/A	N/A	N/A	N/A	N/A	N/A

**Remarks:** No environmental complaint/warning/summon and prosecution were received in the reporting period.

---

---

**APPENDIX M**  
**WASTE GENERATED QUANTITY**

---

---

### Monthly Summary Waste Flow Table

(PS Clause 1.86)

Name of Department: CEDD

Contract No. : KL/2012/03

### Monthly Summary Waste Flow Table for April 2014(year)

Month	Total Quantity Generated	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of C&D Wastes Generated Monthly				
		Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
Sep	0	0	0	0	0	0	0	0	0	0	0
Oct	0.011	0	0	0	0	0	0	0	0	0	0.011
Nov	0.177	0	0	0	0	0	0	0	0	0	0.177
Dec	0.176	0	0	0	0	0	0	0	0	0	0.176
Sub-Total	0.364	0	0	0	0	0	0	0	0	0	0.364
Jan	0	0	0	0	0	0.302	0	0	0	0	0
Feb	0	0	0	0	0	0.238	0	0	0	0	0
Mar	0	0	0	0	0	0.180	0	0	0	0	0
Apr	0.002	0	0	0	0	0	0	0	0	0	0.002
May											
Jun											
Total	0.366	0	0	0	0	0.72	0	0	0	0	0.366

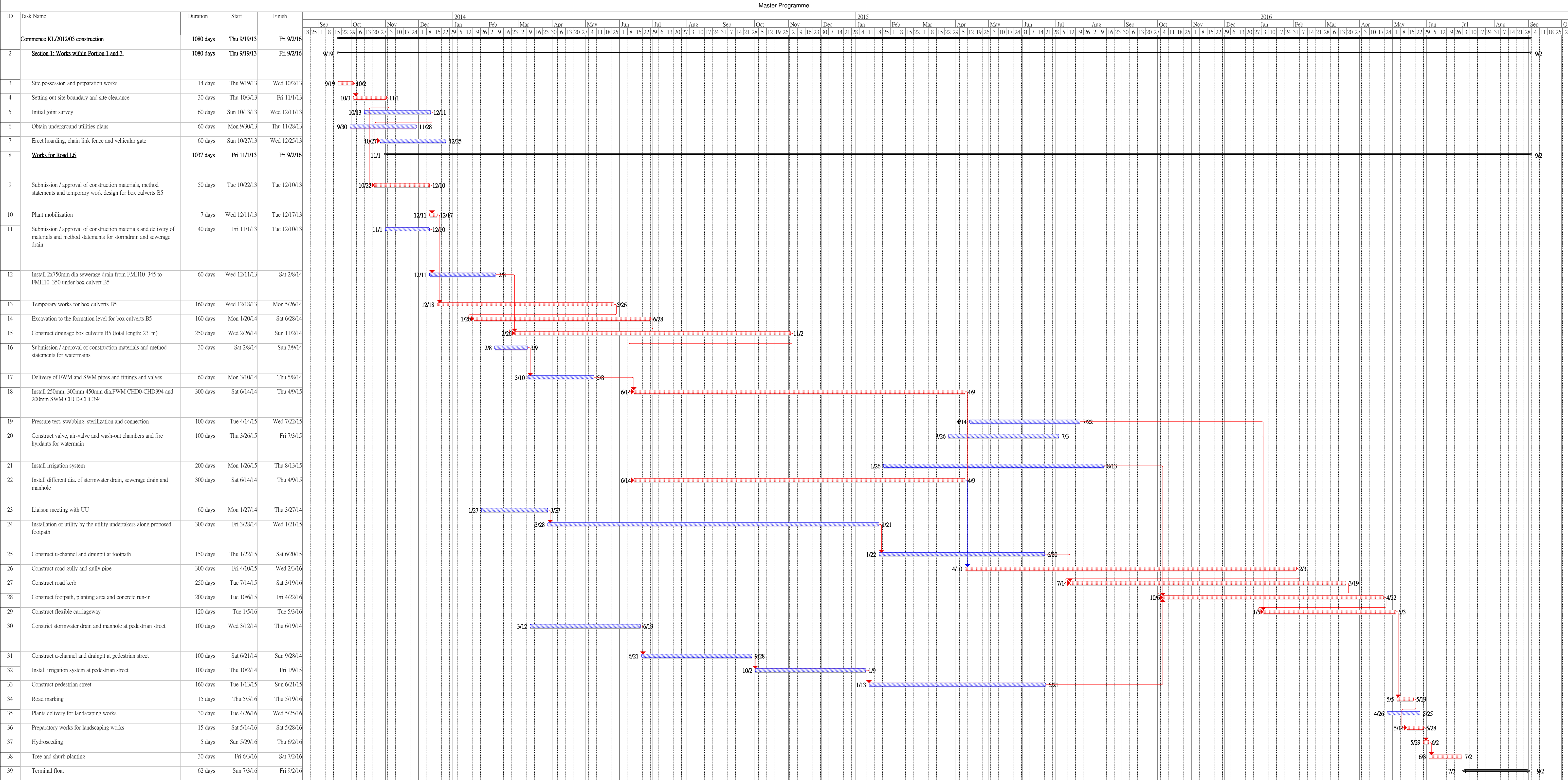
---

---

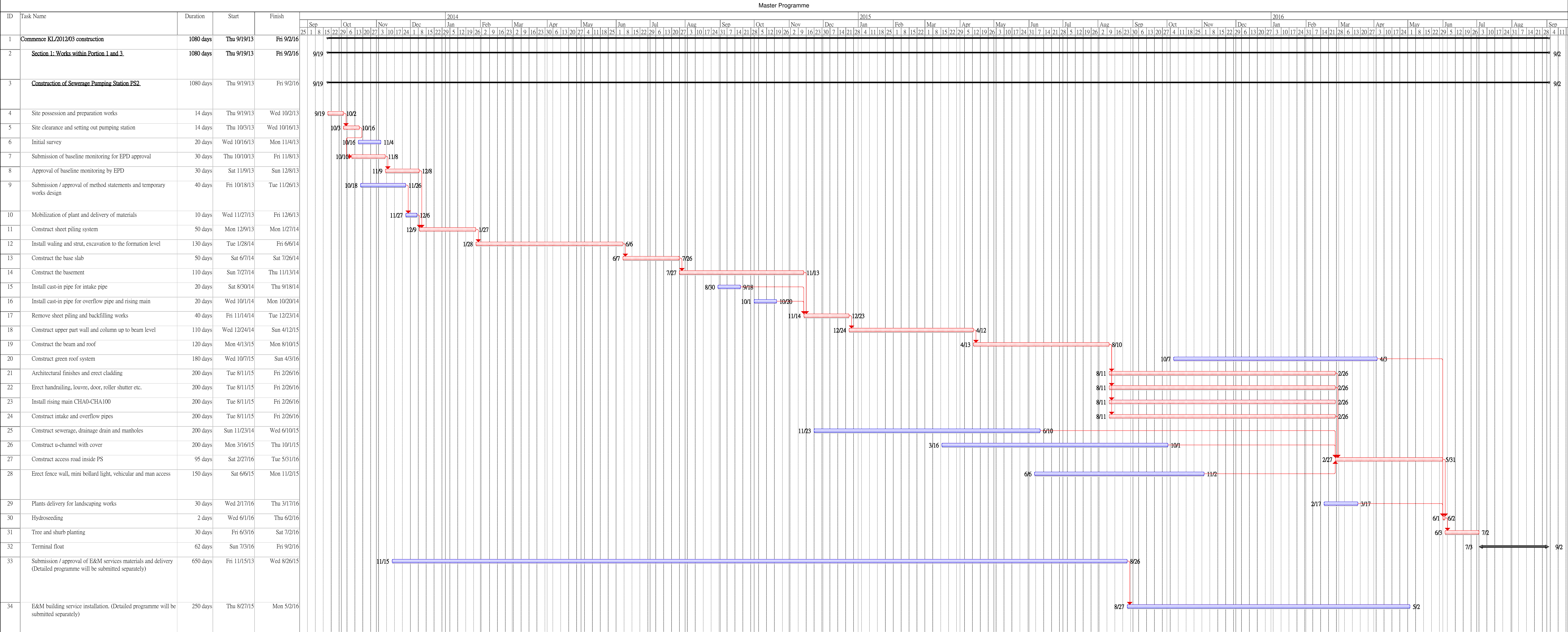
**APPENDIX N**  
**CONSTRUCTION PROGRAMME**

---

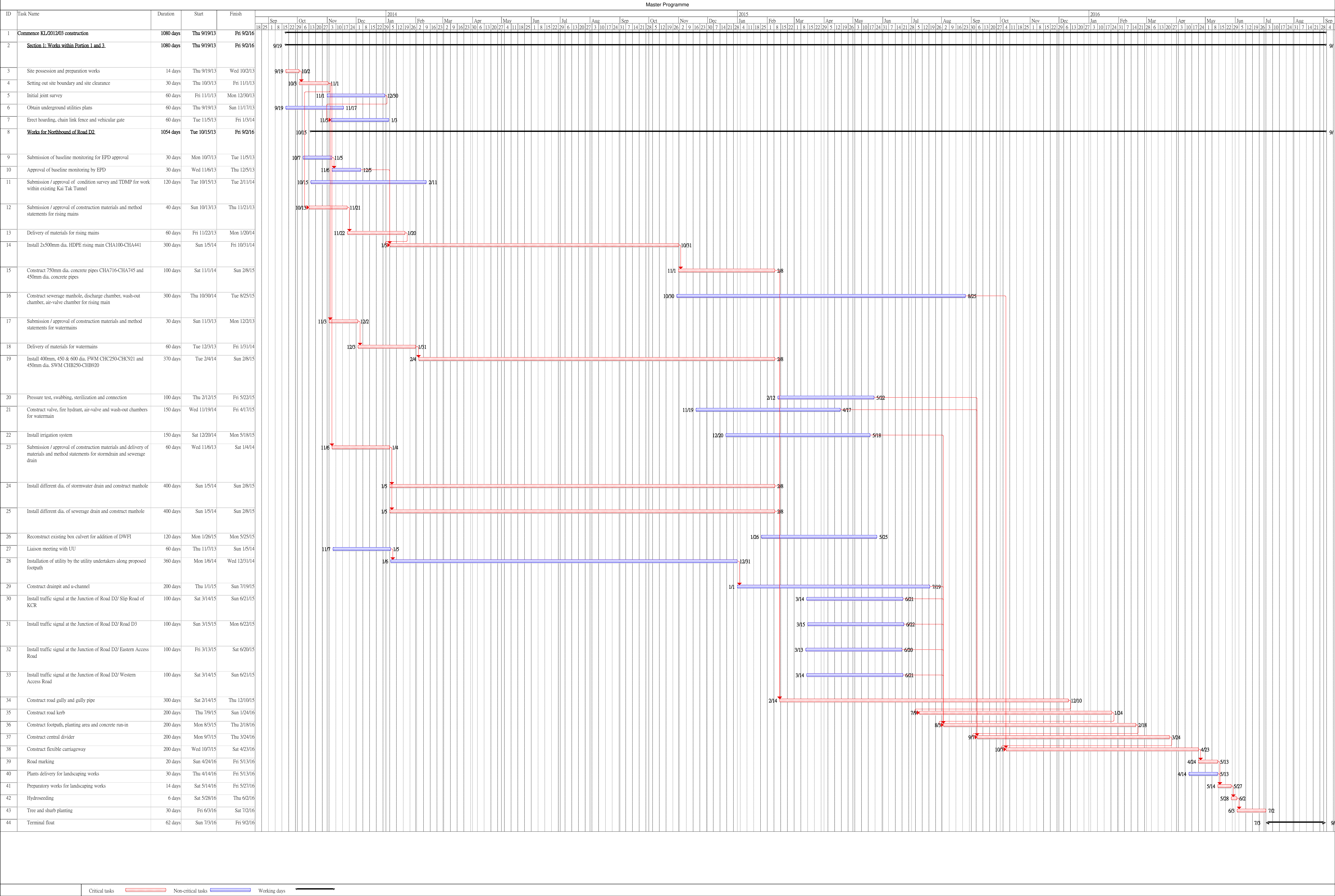
---



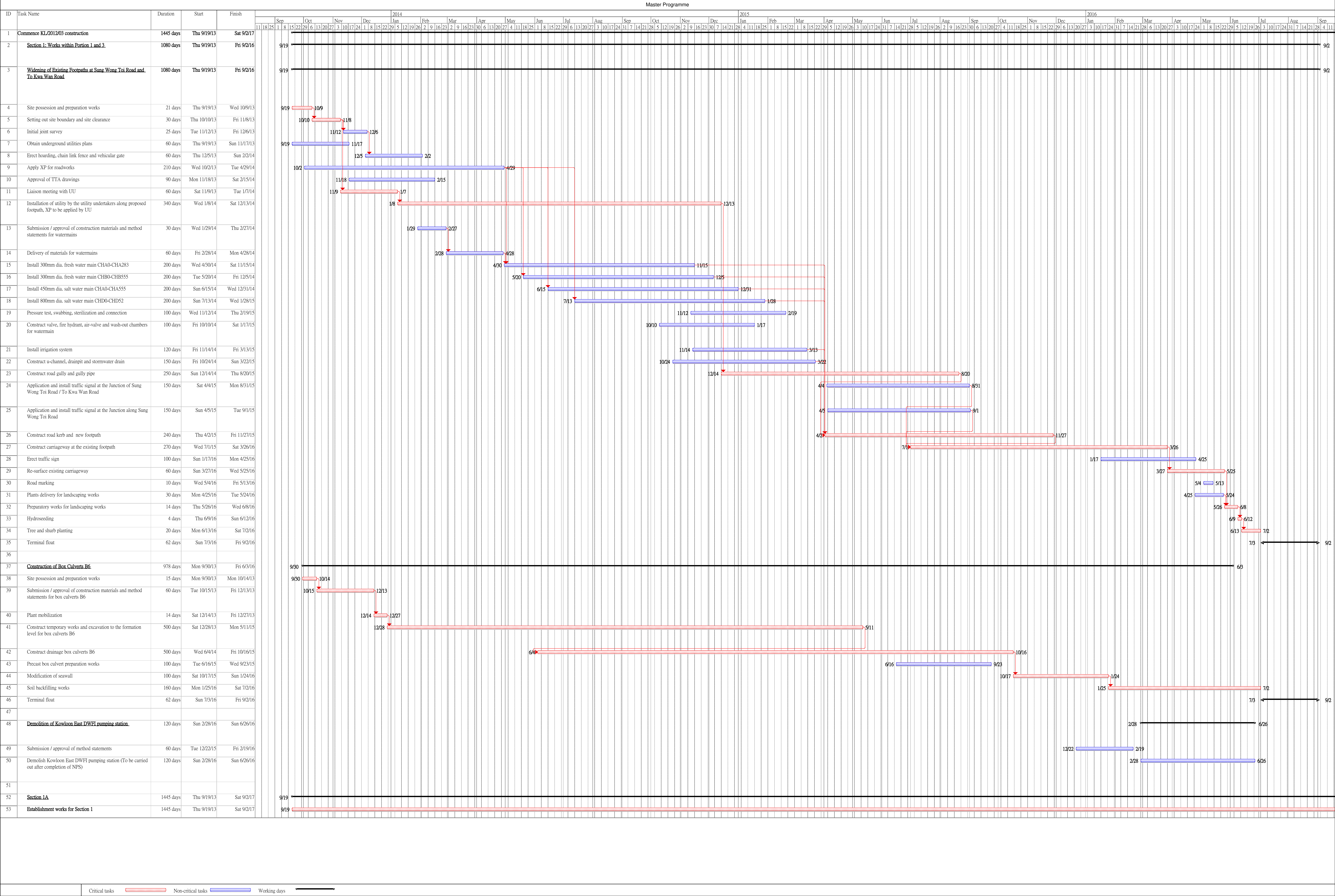




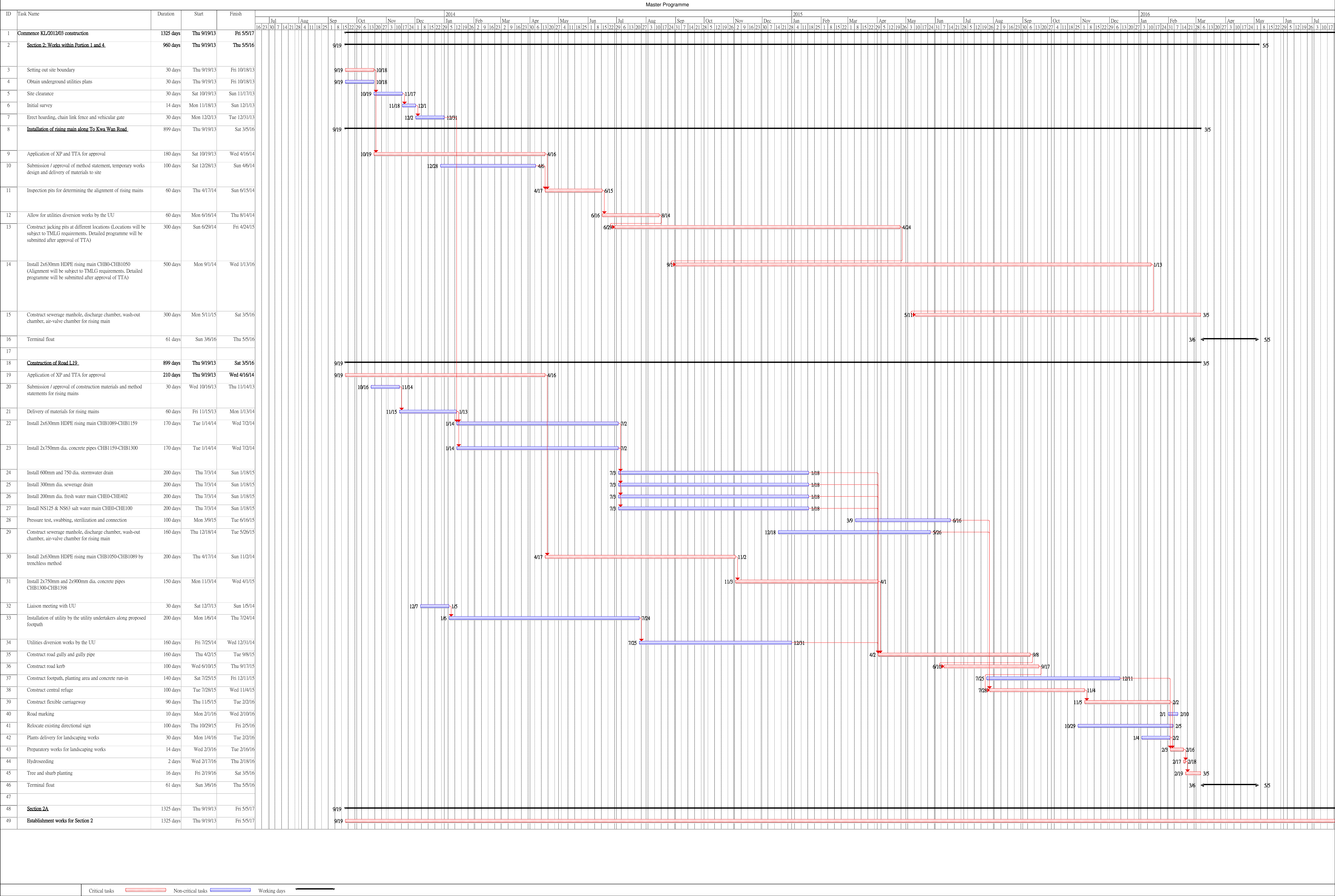






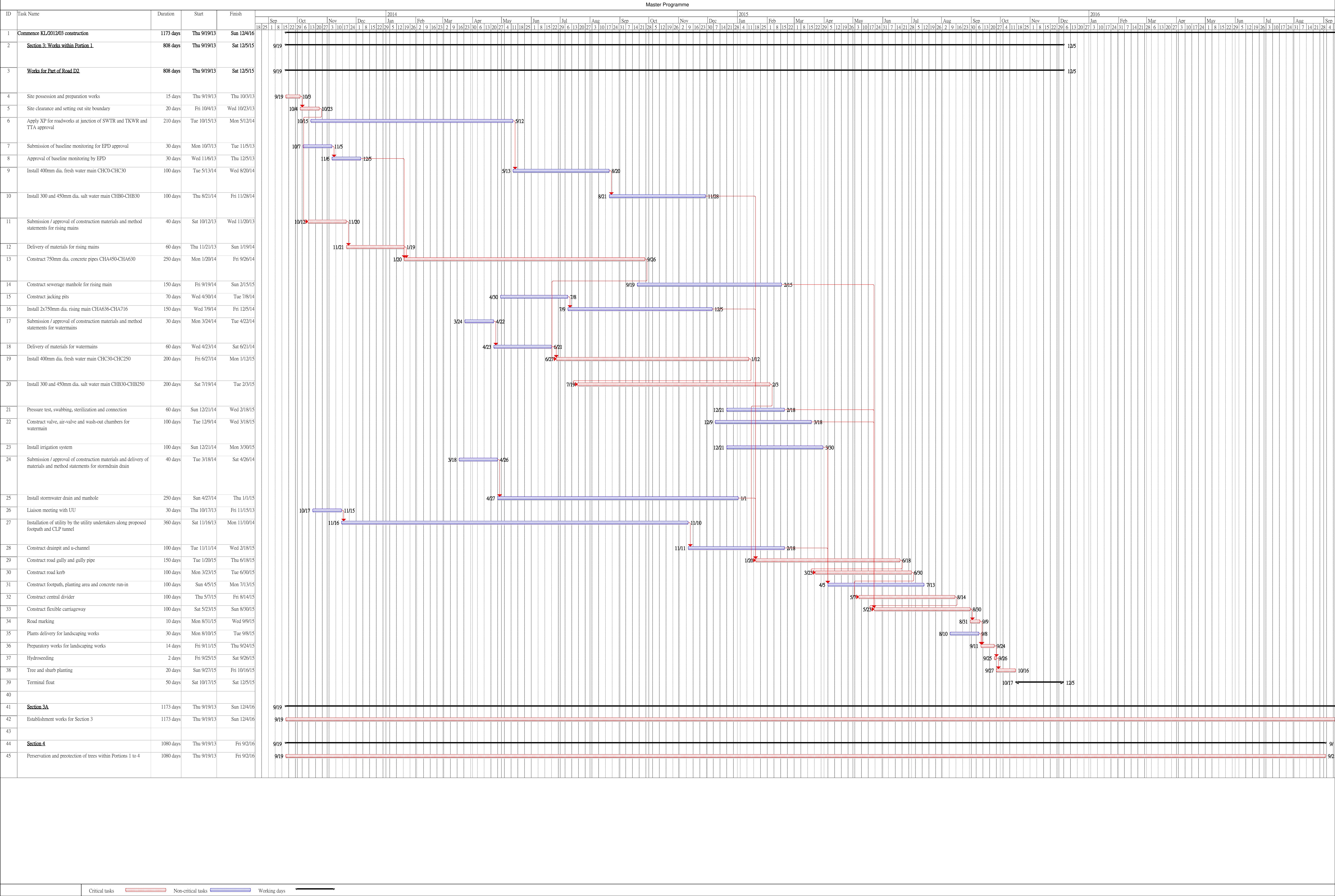














	Critical tasks		Working days	
Commencement Date: Completion Date:				