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

November 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

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EXECUTIVE SUMMARY

Introduction

- 1. This is the 12th 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 PS 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 November 2014.
- 2. The major site activities undertaken in the reporting month included:
 - Daily Clearance;
 - Base slab, wall, roof construction of Box culvert B5;
 - Backfilling of box culvert B5
 - Excavation of trench for sewers;
 - Excavation for NPS for Portion 4 and Box culvert B6;
 - Strut and waling of NPS;
 - Installation of DN750 drainage pipe and sewer at L19;
 - Installation of precast box culvert B6;
 - Installation of DCS;
 - Fixing of reinforcement and concreting to walls and slab of pumping station for PS2;
 - Laying concrete pipes DN750 from FMH10 345 to FHH10 350;
 - Construction of jacking pits 10, 11, 3 & 4; and
 - Widening works of Sung Wong Toi Road.

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-rela	Action Taken	
1 al ametei	Action Level	Limit Level	Action Taken
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	1	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 other construction noise monitoring was conducted as scheduled in the reporting month. One Limit Level exceedance was recorded at monitoring station M8 - Po Leung Kok Ngan Po Ling College on 13 November 2014. Investigation was carried out according to the Event Action Plan. Based on the investigation and on-site observations, the exceedance is concluded to be non-Project related as the major noise source was located outside the area of this Project. No further mitigation measures would be required.

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 (Waste Producer Number: 5213-286-K2958-05).
- 9. Water Discharge License (N/A).
- 10. Construction Noise Permit (License No.: GW-RE0646-14).

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. 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 to the Permit Holder Civil Engineering and Development Department on 23 April 2009 for new sewage pumping stations serving the planned KTD and new distributor roads serving the planned KTD respectively.
- 1.3 A study of environmental impact assessment (EIA) was undertaken to identify the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and recommend 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) is 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 1st December 2013 for Road D2, Sewage Pumping Station PS2 and PS NPS. This is the 12th Monthly EM&A report summarizing the EM&A works for the Project from 1 30 November 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 Consulting Limited. (Hyder).
 - Contractor –Kwan On Construction Co., Ltd. (Kwan On).

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

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	Mr. Vincent Lee	SRE	27980771	3013 8864
ALCOM	Representative	Mr. Mickey Lee	RE		
	D :	Dr. Priscilla Choy	Environmental Team Leader	2151 2089	
Cinotech	Environmental Team	Ms. Ivy Tam	Project Coordinator and Audit Team Leader	2151 2090	3107 1388
Hyder	Independent Environmental Checker	Mr. Wong Fu Nam	Independent Environmental Checker	2911 2744	2805 5028
		Mr. Terry Yu	Site Agent	3689 7752	3689 7726
Kwan On	Contractor			6146 6763 telephone nur	`

Construction Activities undertaken during the Reporting Month

- 1.8 The site activities undertaken in the reporting month included:
 - Daily Clearance;
 - Base slab, wall, roof construction of Box culvert B5;
 - Backfilling of box culvert B5
 - Excavation of trench for sewers;
 - Excavation for NPS for Portion 4 and Box culvert B6;
 - Strut and waling of NPS;
 - Installation of DN750 drainage pipe and sewer at L19;
 - Installation of precast box culvert B6;
 - Installation of DCS;
 - Fixing of reinforcement and concreting to walls and slab of pumping station for PS2;
 - Laying concrete pipes DN750 from FMH10 345 to FHH10 350;
 - Construction of jacking pits 10, 11, 3 & 4; and
 - Widening works of Sung Wong Toi Road.
- 1.9 The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in Table 1.2.

Construction Works	Generated Major Environmental Impact	Control Measures
Daily Clearance	N/A	N/A
Excavation of trench for sewers; Excavation for NPS for Portion 4 and Box culvert B6.	Dust, Water Quality	 Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; and On-site waste sorting and implementation of trip ticket system.
Base slab , wall and roof slab construction for B5	Noise, Waste Management	 Use of quiet plant and well-maintained construction plant; and Provide hoarding. Good management and control on construction waste reduction
Road widening works for Sun Wong Tai Road; Strut and waling of NPS; Fixing of	Noise	 Use of quiet plant and well-maintained construction plant; and Provide hoarding.
reinforcement and concreting to walls and slab of pumping station for PS2	Noise	 Use of quiet plant and well-maintained construction plant; and Provide hoarding.
Installation of DN750 drainage pipe and sewer at L19, precast box culvert B6 and DCS; Laying concrete pipes DN750 from FMH10_345 to FHH10_350; Construction of jacking pits 10, 11, 3 & 4	Noise, Water Quality	 Use of quiet plant and well-maintained construction plant; and Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall.

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 November 2014.

1.13 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	No	M6(A) – Oblate Primary School
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 the EPD.
- 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, has 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.11 (October 2014)	18 November 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	1.11 Notification of Commencement 31 October 2013 Station		For Pumping Station PS2 and PS 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		28 October 2013	For Pumping Station PS2 and PS NPS
2.11	Landscape Mitigation Plan(s) for sewage pumping station(s)	7 January 2014	For Pumping Station PS2 and PS 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.11 (October 2014)	18 November 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 Total Suspended Particulates (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-3 & 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	At least three times every 6 days
24-hr TSP	At least once every 6 days

Monitoring Methodology and Quality Assurance and Quality Control (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 High-Volume Sampler (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 samplers (HVS) (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 24-hour TSP sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 2.10 For 24-hour TSP sampling, fiberglass filters having a collection efficiency of \geq 99% for particles of 0.3µm (DOP) 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 so that the TSP will be sampled for 24 hours. 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 completion of 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 temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

- 2.18 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 the reporting month is shown in **Appendix H**. No exceedance in Action/Limit Levels of 1-hour and 24-hour TSP 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:

Table 2.4 Major dust source identified at the designated air quality monitoring stations

Station	Major Dust Source
AM2 – Lee Kau Yan Memorial School	Road Traffic Dust
	Exposed site area and open stockpiles
	Site vehicle movement
AM3(A) – Holy Trinity Bradbury	Road Traffic Dust
Centre	Exposed site area
	Excavation works
	Site vehicle movement
AM4(A) – EMSD Workshops	Recycling Company
	Site vehicle movement
AM5(A) – Po Leung Kuk Ngan Po	Road Traffic Dust
Ling College	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 four designated monitoring stations (M6, M7, M8 and M9). **Figure 3** shows the locations of these stations.
- 3.3 Construction noise monitoring at Station M6 Holy Carpenter Primary School was rejected by the premise owner on 6th October 2014. The monitoring works were relocated and carried out at a proposed alternative noise monitoring station M6(A) Oblate Primary School since 10th October 2014.

Table 3.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
*M6(A)	Oblate 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:

Monitoring Equipment

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	6
Colibrator	SVAN 30A	5
Calibrator	B&K4231	1

Monitoring Parameters, Frequency and Duration

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

^{*} Alternative noise monitoring station for M6 – Holy Carpenter Primary School from 10th October 2014 onwards

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

Monitoring Stations	Parameter	Period	Frequency	Type of Measurement
M7 M8 M9	L ₁₀ (30 min.) dB(A) L ₉₀ (30 min.) dB(A) L _{eq} (30 min.) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade (*)
M6(A)	L ₁₀ (30 min.) dB(A) L ₉₀ (30 min.) dB(A) L _{eq} (30 min.) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Free Field (*)

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was set on a tripod at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels was adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

frequency weighting : A time weighting : Fast time measurement : 30 minutes

- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L_{eq}, L₉₀ and L₁₀ 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

- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth 3.6 at quarterly intervals.
- 3.7 The sound level meter and calibrator were checked and calibrated at yearly intervals.
- 3.8 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.

^(*) Refer to bullet point 1 and 2 in the following section.

- 3.9 All construction noise monitoring was conducted as scheduled in the reporting month. One Limit Level exceedance was recorded at monitoring station M8 Po Leung Kok Ngan Po Ling College on 13 November 2014, which is concluded to be non-Project related. The details are listed in **Appendix H**.
- 3.10 The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.4**.
- 3.11 Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 3.12 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(A)	Oblate 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(A)	63.9 (at 0700 – 1900 hrs on normal weekdays)	
M7	68.7 (at 0700 – 1900 hrs on normal weekdays)	70* (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	Transfer of the second		0
	Mid 2013), μg/m3	Late 2016), μg/m3	Average	Range
AM2 – Lee Kau Yan Memorial School	290	312	176.3	85.2 – 274.7
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	217	247	180.9	77.1 – 316.7
AM4(A) – EMSD Workshops (Alternative station for Grand Waterfront)	246	258	176.3	51.7 – 334.5
AM5(A) – Po Leung Kuk Ngan Po Ling College (Alternative station for CCC Kei To Secondary School)	159	221	176.6	41.3 – 309.0

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

Station	Predicted 24-hr TSP conc.			
	Scenario1 (Mid 2009 to	Scenario2 (Mid 2013 to	Reporting Month (November 2014), µg/m3	
	Mid 2013), μg/m3	Late 2016), μg/m3	Average	Range
AM2 – Lee Kau Yan Memorial School	145	169	92.1	46.6 – 129.5
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	106	138	81.2	46.7 – 99.1
AM4(A) – EMSD Workshops (Alternative station for Grand Waterfront)	143	152	126.6	102.7 – 154.6
AM5(A) – Po Leung Kuk Ngan Po Ling College (Alternative station for CCC Kei To Secondary School)	103	128	49.6	28.4 – 84.5

Table 4.3	Comparison of Noise Mo	onitoring Data with	EIA predictions

Stations	Predicted Mitigated Construction Noise Levels during Normal Working Hour (Leq (30min) dB(A))	Reporting Month (November 2014), Leq (30min) dB(A)
M6(A) - Oblate Primary School ^	N/A	47.6 – 65.7
M7 - CCC Kei To Secondary School	45 – 68	63.4 – 64.4
M8 - Po Leung Kuk Ngan Po Ling College	44 – 70	59.8 – 70.7
M9 – Tak Long Estate	Not predicted in EIA Report	54.5 – 61.0

^(^) Alternative noise monitoring station for M6 - Holy Carpenter Primary School from 10th October 2014 onwards.

- 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.
- The averages of 24-hour TSP concentrations in all stations in the reporting month were 4.3 below to the prediction in the approved Environmental Impact Assessment (EIA) Report.
- 4.4 The noise monitoring results in the reporting month were within the range of predicted mitigated construction noise levels in the EIA report, except for Station M8 – Po Leung Kuk Ngan Po Ling College. One Limit Level exceedance was recorded at monitoring Station M8 on 13 November 2014. Investigation was carried out according to the Event Action Plan. Based on the investigation and on-site observations, the exceedance is concluded to be non-Project related as the major noise source was located outside the area of this Project. No further mitigation measures would be required.

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 In accordance with the Action Plan presented in Appendix J, no corrective actions were required in the reporting month.

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 7th, 14th, 19th and 28th November 2014 in the reporting month. IEC site inspection was conducted on 19th November 2014. No non-compliance was observed during the site audits.

Status of Environmental Licensing and Permitting

6.3 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 Details		
Environmental Peri	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 m³ per day and a boundary of which is less than 150m from an existing or planned residential area or educational institution.	Valid
Effluent Discharge Li	cense		,	
Registration of Chem	Registration of Chemical Waste Producer			
5213-286-K2958-05			Registration of chemical waste producer for chemical waste produced during construction of Stage 4 at former North Apron Area Infrastructure.	Valid
Construction Noise Permit (CNP)				
GW-RE0646-14	11/6/14	8/12/14	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work	Valid

Status of Waste Management

6.4 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix M**.

Implementation Status of Environmental Mitigation Measures

6.6 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 for EP-337/2009

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality			
Air Quality			
Noise			
Waste/Chemical Management	14 Nov 2014	Clear the construction material of drip tray of generator-set in Road L19.	The Construction materials are removed.
	19 Nov 2014	Some sand and dust observed deposited out of site boundary at Kwei Chow Street Portion. The Contractor is reminded to clear the sand properly.	
Landscape and Visual			
Permits /Licences			

Table 6.3 Observations and Recommendations of Site Inspections for EP-344/2009

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality			
Air Quality			
Noise			
Waste/Chemical Management	31 Oct 2014	To provide drip tray to chemical container in Pumping Station NPS.	Drip tray is provided.
	31 Oct 2014	To clear the oil stain on paved ground near Pumping Station NPS.	Follow up action to be reviewed in the next reporting month.
	7 Nov 2014	Properly remove the oil stain as "chemical waste" near Pumping Station NPS.	Follow up action to be reviewed in the next reporting month.
	14 Nov 2014	Properly remove the oil stain as "chemical waste" near Pumping Station NPS.	Follow up action to be reviewed in the next reporting month.
	19 Nov 2014	Drip tray for generator observed damaged near Pumping Station NPS. The Contractor is reminded to provide proper drip tray.	Follow up action to be reviewed in the next reporting month.
	19 Nov 2014	Clear the oil stain on paved ground near Pumping Station NPS.	Follow up action to be reviewed in the next reporting month.
	28 Nov 2014	Drip tray for generator observed damaged near Pumping Station NPS. The Contractor is reminded to provide proper drip tray.	Follow up action to be reviewed in the next reporting month.
	28 Nov 2014	Clear the oil stain on paved ground near Pumping Station NPS.	Follow up action to be reviewed in the next reporting

Parameters	Date	Observations and Recommendations	Follow-up
			month.
Landscape and Visual	31 Oct 2014	To clear the construction waste and general refuse in the tree protection zone in Pumping Station PS2.	The Construction materials are removed.
	7 Nov 2014	Remove the construction waste and general refuse in the tree protection zone near Pumping Station PS2.	The Construction materials are removed.
Permits /Licences			

Summary of Mitigation Measures Implemented

6.7 The monthly IEC audit was carried out on 19th November 2014, the observations were recorded and they are presented as follows:

Follow up of last observation:

1. Chemical containers were found without drip tray at various point on site. The Contractor was reminded to provide drip tray for any chemical containers on site or remove from site, whenever necessary. (NPS, Box Culvert B5/6) (No containers were observed on site, item Closed)

Reminder:

- 2. A drip tray was observed broken on site, the Contractor was reminded to fix the drip tray or replace with a new one. (DCS)
- 3. Trace of mud was observed around the site near Kwei Chow Street, the Contractor was reminded to clear the mud around site and prevent any washing away of construction materials.
- 4. Trace of oil was observed on ground on site, the Contractor was reminded to clear and remove the contaminated earth and prevent similar contamination events in future (DCS).
- 6.8 An updated summary of the EMIS is provided in **Appendix K**.

Implementation Status of Event Action Plans

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

1-hr TSP Monitoring

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

24-hr TSP Monitoring

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

Construction Noise

6.12 One Limit Level exceedance was recorded at monitoring station M8 - Po Leung Kok Ngan Po Ling College on 13 November 2014. Investigation was carried out according to the Event Action Plan. Based on the investigation and on-site observations, the exceedance is concluded to be non-Project related as the major noise source was located outside the area of this Project. No further mitigation measures would be required.

Landscape and visual

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

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

6.14 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;
 - Backfilling of box culvert B5;
 - Excavation of trench for sewers;
 - Concerting of base slab and walls of NPS.
 - Installation of DN750 drainage pipe at L19;
 - Excavation of Box culvert B6;
 - Installation of precast box culvert B6;
 - Installation of DCS;
 - Fixing of reinforcement and concreting to walls and slab of pumping station for PS2;
 - Laying concrete pipes DN750 from FMH10 345 to FHH10 350;
 - Excavation and installation of clay pipe in Portion 4;
 - Construction of jacking pits 10, 11, 3 & 4; and
 - Widening works f Sung Wong Toi Road.
- 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. December 2014 and January 2015 are summarized as follows:

Table 7.1 Summary of the tentative program of major site activities, the impact prediction and control measures for December 2014 and January 2015

Construction Works	Major Impact Prediction	Control Measures
As mentioned in Section 7.1	Air quality impact (dust) Water quality impact (surface run-off)	 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. 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 required under the EM&A Manual 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 required under the EM&A Manual was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. 1-hour TSP concentrations in all stations in the reporting month were below the prediction in the approved Environmental Impact Assessment (EIA) Report.

24-hr TSP Monitoring

8.3 All 24-hr TSP monitoring required under the EM&A Manual was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. 24-hour TSP concentrations in all stations in the reporting month were below the prediction in the approved Environmental Impact Assessment (EIA) Report.

Construction Noise Monitoring

8.4 All construction noise monitoring required under the EM&A Manual was conducted as scheduled in the reporting month. One Limit Level exceedance was recorded at monitoring station M8 - Po Leung Kok Ngan Po Ling College on 13 November 2014. Investigation was carried out according to the Event Action Plan. Based on the investigation and on-site observations, the exceedance is concluded to be non-Project related as the major noise source was located outside the area of this Project. No further mitigation measures would be required. The construction noise levels in all stations in the reporting month, except for Station M8 – Po Leung Kuk Ngan Po Ling College, were within the range of predicted mitigated construction noise levels in the approved Environmental Impact Assessment (EIA) report.

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 disperse the locations of noisy equipments and position the equipments 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 as the above recommendations are met. Some of the examples of mitigation measures for the following recommendations are given in **Table 8.1** below.
 - 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.

Table 8.1 Examples of Mitigation Measures for Environmental Recommendations



To prevent any surface runoff discharge into any stream course.



Follow-up measure(s) after identification of wastewater discharges from site.



To avoid any discharge or accidental spillage of chemical waste or oil directly from the site



To avoid improper handling or storage of oil drum on site

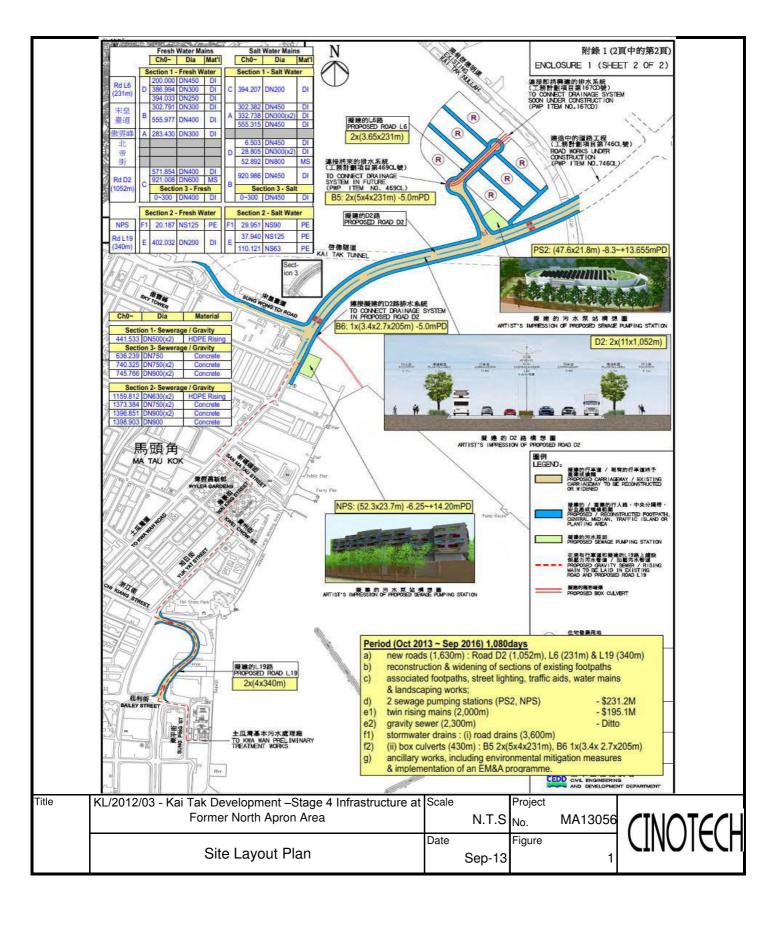


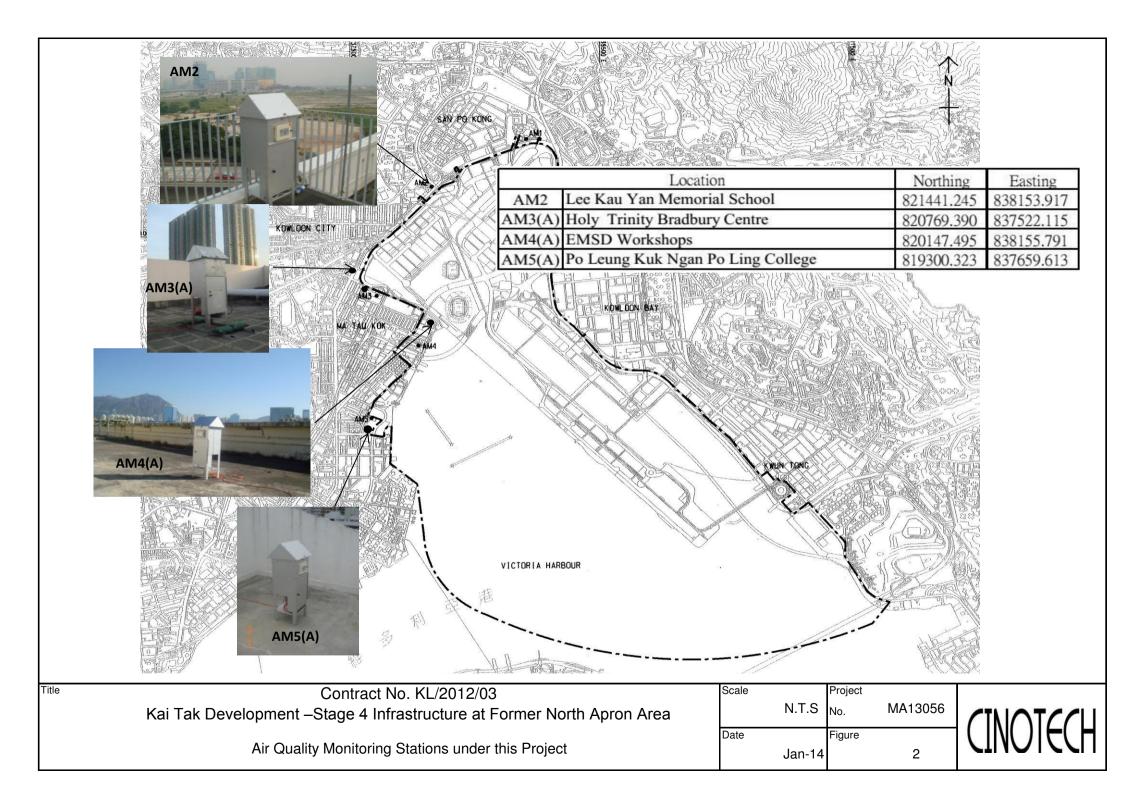
To protect the existing trees to be retained

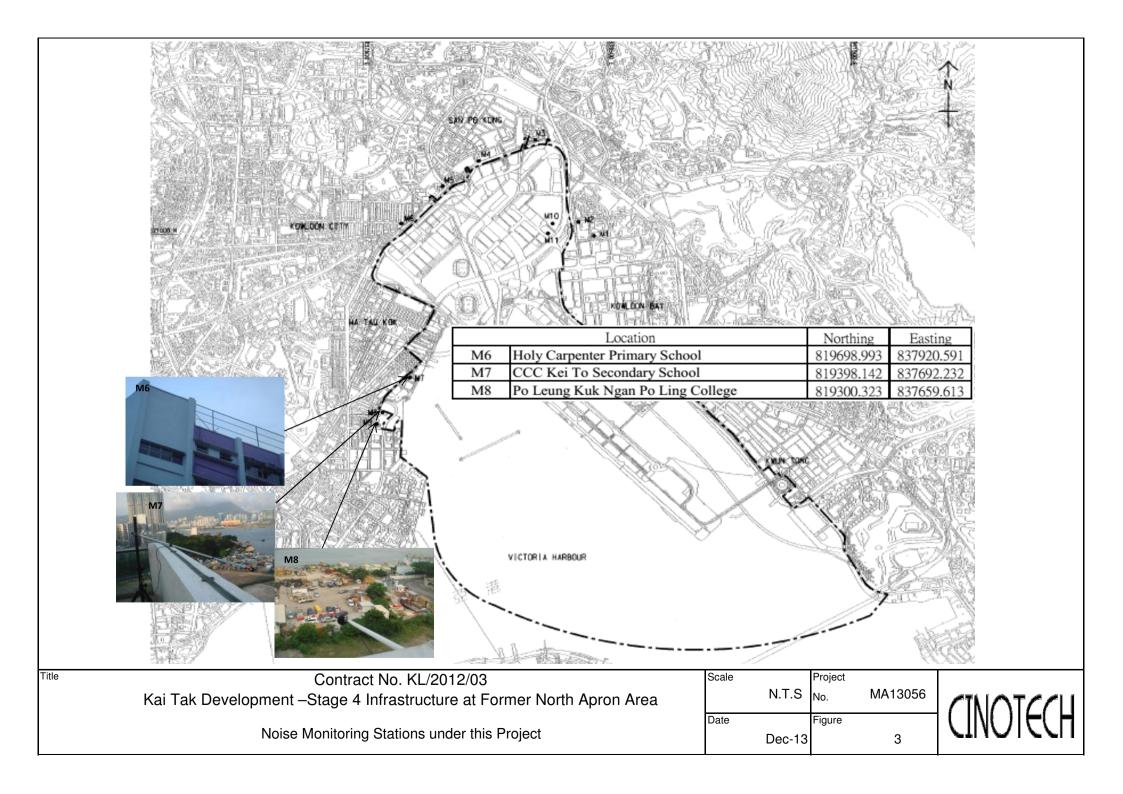


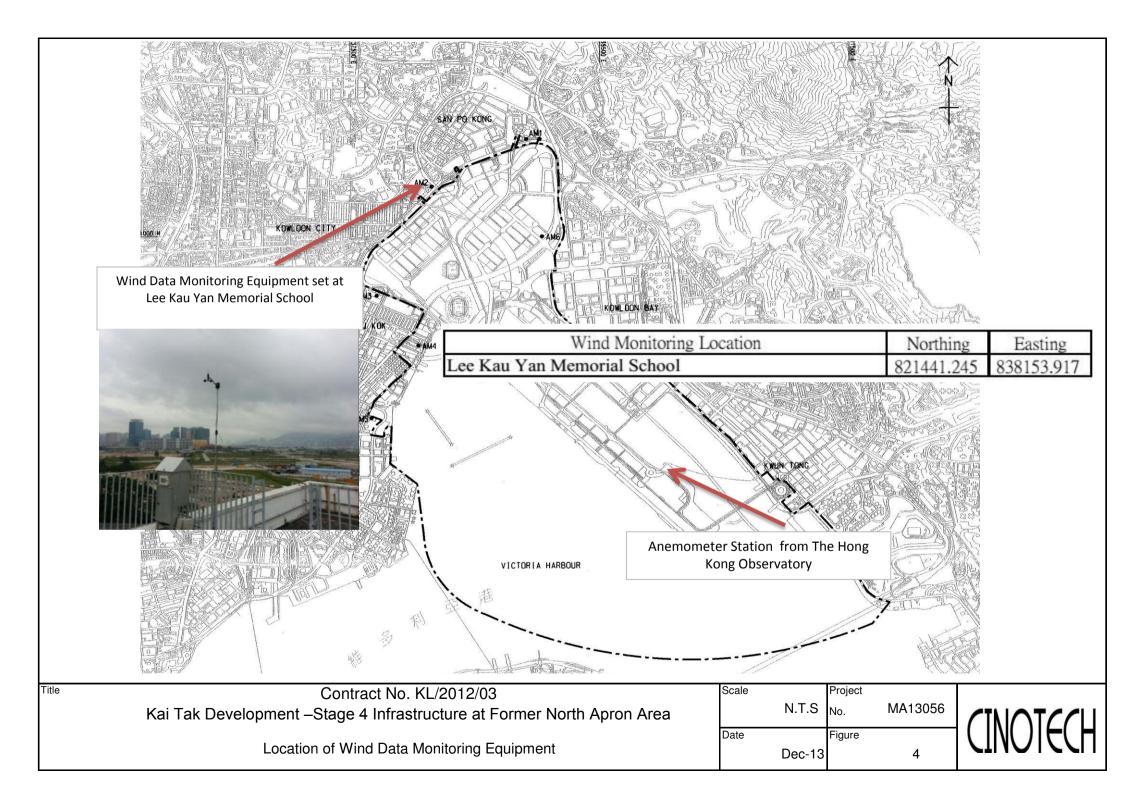
To control of night-time lighting

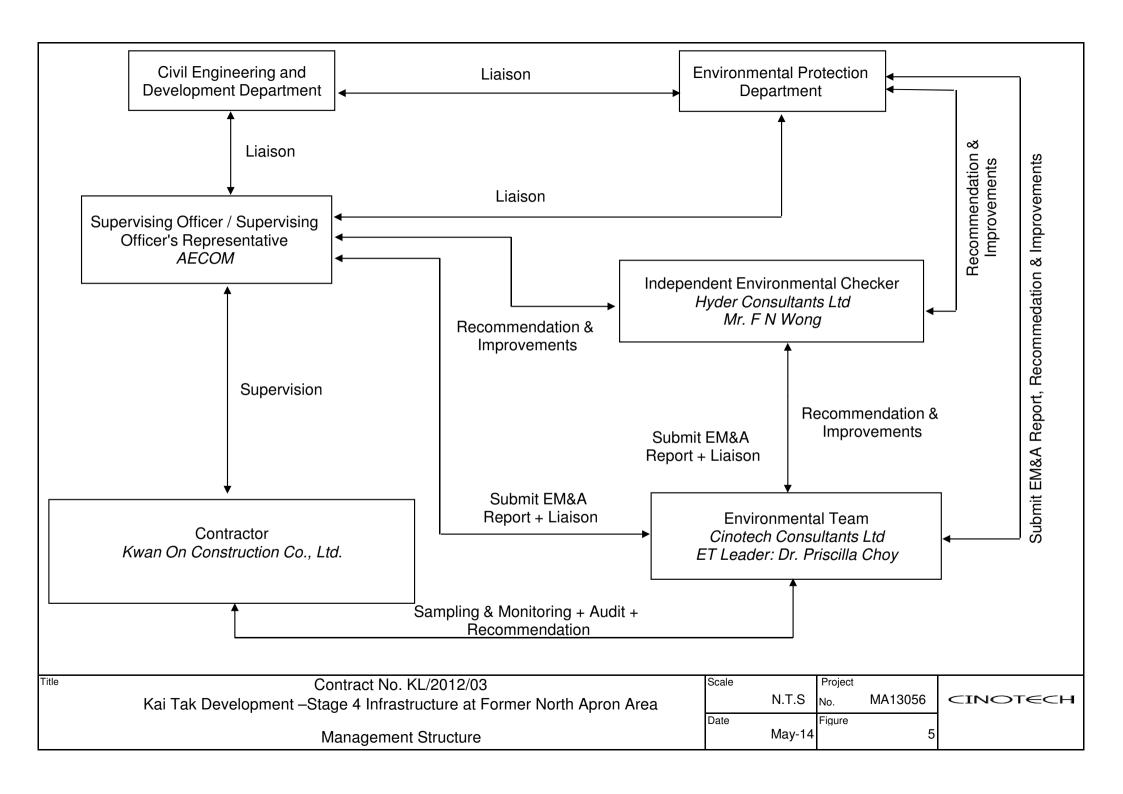
FIGURES











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, μg/m³	Limit Level, μg/m³
AM2	346	
AM3(A)	351	500
AM4(A)	371	500
AM5(A)	345	

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

Location	Action Level, μg/m³	Limit Level, μg/m³
AM2	157	
AM3(A)	167	260
AM4(A)	187	260
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



						File No.	MA14008/59/0026
Station	AM2 - Lee Kau	Yan Memorial S	chool	_ Operator:	WK		
Date:	29-Oct-14		. 1	– Next Due Date:	28-Dec	-14	
Equipment No.:	A-01-59			Serial No.	2354		
			Ambient	Condition			
Temperatu	ıre, Ta (K)	298.9	Pressure, Pa	ı (mmHg)		766	
	Line in the first section of	Oı	ifice Transfer Sta	andard Inform	nation		
Equipm	ent No.:	A-04-04	Slope, mc	0.0582	Intercep		-0.0249
Last Calibr	ation Date:	27-Sep-14		me x Qstd + l	$bc = [\Delta H \times (Pa/70)]$	50) x (298/Ta)]1/2
Next Calibr	ration Date:	26-Sep-15		$Qstd = \{ [\Delta H] \}$	x (Pa/760) x (298	/Ta)] ^{1/2} -be} .	/ me
		•					
			Calibration of	TSP Sampler			
Calibration		Or	fice			HVS	-
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil		760) x (298/Ta)] ^{1/2} Y-axis
1	11.8	3	3.44	59.59	7.9		2.82
2	9.6	3	3.11	53.79	6.4		2.54
3	7.5	2	2.75	47.60	5.0		2.24
4	5.3	2	2.31	40.08	3,4		1.85
5	3.2	1	.79	31.24	2.0		1.42
By Linear Regi Slope , mw = Correlation o	* ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	-	999	Intercept, bw	-0.129	99	
*If Correlation (Coefficient < 0.99	0, check and reca	alibrate.				
			Set Point C	Calculation			
From the TSP F	ield Calibration C	urve, take Qstd =	= 43 CFM				
From the Regres	ssion Equation, th	e "Y" value acco	rding to				
					129		
		mw x ($Qstd + bw = [\Delta W]$	x (Pa/760) x (2	98/Ta)]'' ²		
Therefore, S	et Point: W = (m	w x Ostd + hw)2	x(760/Pa)x(Γa / 298) =	3.98		
1110101010, 0	ot i onn, ii (iii	m A Quita : On)	x(700714)x(xu	3.70		
Remarks:							
			1				,
Conducted by:	WK. Tang	Signature:	/(L	iai/		Date:	29/10/14
Checked by:	120	Signature:		α	-	Date:	29 October 2010

CINOTECH

File No. MA14008/49/0025

Station	AM3(A) - Holy	Trinity Bradbury	Centre	Operator:	WK		• • • • • • • • • • • • • • • • • • • •
Date:	29-Oct-14	Next Due Date:			28-Dec	28-Dec-14	
Equipment No.:	A-01-49	·			1793		_
			Ambient C	Condition			
Temperatu	ire, Ta (K)	298.4	Pressure, Pa	(mmHg)		766.1	
		Ori	fice Transfer Sta	ndard Inform	ation		
Equipm		A-04-04	Slope, mc	0.0582	Intercept		-0.0249
Last Calibr		27-Sep-14			$e = [\Delta H \times (Pa/760)]$		
Next Calibr	ation Date:	26-Sep-15		$Qstd = \{ [\Delta H x] \}$	(Pa/760) x (298/	Γa)] ^{1/2} -bc}	/ me
The service of the se		·	ana, ana ana ana ana ana			*******	on one interesses of owner or
			Calibration of	TSP Sampler			THE PROPERTY OF THE PARTY OF TH
Calibration	1777 (177)	Or:	lice	l		HVS	1/2
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	[ΔW x (Pa	a/760) x (298/Ta)] ^{1/2} Y-axis
1	11.3	3	.37	58.38	7.9		2.82
2	9.7	3	.12	54.12	6.5		2.56
3	7.6	2	.77	47.95	5.1		2.27
4	5.1	2	.27	39.36	3.2		1.79
5	3.3]	.82	31.74	2.1		1.45
Slope, mw = Correlation c		0.9	991	Intercept, bw	-0.194	2	-
Tr Correlation C	Coefficient < 0.99	o, check and rec	Set Point C	alculation			
	ield Calibration C ssion Equation, th	e "Y" value acco		· (0 - /7 (0) (0)	20 cm 21/2		
Therefore, Se	et Point; W = (m		x (760 / Pa) x (` , `	4.01		-
Remarks:							
Conducted by: Checked by:	wk. Tang	Signature:	Kwa	;		Date: Date:	29/10/14 29 October 2014

CINOTECH

File No. MA14008/62/0025

Station	AM4(A) - EMSI) Workshops		Operators	WK		. WAT4000/02/0023
Date:	29-Oct-14	> 11 OLKSHOPS	7	_	28-Dec		_
Equipment No.:					2351		
zquipment 11011				Serial 110.	2001		_
	. 1 1 1		Ambient (Condition			
Temperatu	re, Ta (K)	298.2	Pressure, Pa	ı (mmHg)		766.5	
		Ori	fice Transfer Sta	ndard Inform	ation	1, 4 %	
Equipme	ent No.:	A-04-04	Slope, mc	0.0582	Intercept		-0.0249
Last Calibra	ation Date:	27-Sep-14			$c = [\Delta H x (Pa/760)]$		
Next Calibr	ation Date:	26-Sep-15		$Qstd = \{ [\Delta H x] \}$	(Pa/760) x (298/	$[\Gamma a]^{1/2}$ -be	/ me
***************************************		•					
			Calibration of	TSP Sampler			
Calibration		Or	fice			HVS	
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	[ΔW x (Pa	a/760) x (298/Ta)] ^{1/2} Y-axis
1	12.3	,	3.52	60.92	7.8		2.80
2	9.5		3.09	53.59	6.3		2.52
3	7.5	:	2.75	47.67	4.8		2.20
4	5.1	:	2.27	39.38	3.2		1.80
5	3.3		1.82		2.1		1.45
By Linear Regr Slope, mw = Correlation c	-		9990	Intercept, bw	-0.045	9	-
*If Correlation (Coefficient < 0.99	0, check and red	calibrate.	-			
			Sat Baint C	alaulation			
	ield Calibration C ssion Equation, th		= 43 CFM	исшиноп			
		mw x Q	$std + bw = [\Delta W]$	(Pa/760) x (29	98/Ta)] ^{1/2}		
Therefore, Se	et Point; W = (m	w x Qstd + bw)	² x (760 / Pa) x (Ta/298)=	3,90	***************************************	-
Remarks:	-						
Conducted by: Checked by:	Wk. Jang (A	Signature: Signature:	k	wen	•	Date: Date:	29/10/14 29 Odberd



						File No	MA14008/60/0026
Station	AM5(A) - Po Le	ung Kuk Ngan P	Ling College	Operator:	WK		
Date:	29-Oct-14		1	Next Due Date:	28-Dec-	14	
Equipment No.:	A-01-60			Serial No.	2358		
* * * * * * * * * * * * * * * * * * * *			Ambient	Condition			
Temperatu	ıre, Ta (K)	299.4	Pressure, Pa	ı (mmHg)		767.6	
		Or	ifice Transfer Sta			•	
Equipme		A-04-04	Slope, mc	0.0582	Intercept		-0.0249
Last Calibra	ation Date:	27-Sep-14			oc = [ΔH x (Pa/76		
Next Calibr	ration Date:	26-Sep-15		$Qstd = \{ [\Delta H] \}$	x (Pa/760) x (298	/Ta)]*** -bc} /	me
	11-11-11-11-11-11-11-11-11-11-11-11-11-		<u> </u>	Harrier (1995)			
			Calibration of	TSP Sampler	<u>I</u>		
Calibration	177 (10)	Ori		O-44 (OF) O	A337	HVS	60) x (298/Ta)] ^{1/2} Y-
Point	ΔH (orifice), in, of water	[ΔH x (Pa/76	0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil		60) X (298/18)] Y-
1	11.8	1	.44	59.61	7.9		2.82
2	9.7		.12	54.08	6.5		2.56
3	7.6		2.76	47.92	5.1		2.26
4	5.2		2.29	39.71	3.3		1.82
5	3.1		.77	30.76	2.0		1.42
Slope, mw =	•	 -		Intercept, bw	-0.10	9	
Correlation of	coefficient* = _	0.9	996	_			
*If Correlation	Coefficient < 0.99	90, check and rec	alibrate.				
				Calculation			
	ield Calibration (
From the Regre	ssion Equation, th	ne "Y" value acco	rding to				
		mw x t	$Qstd + bw = \Delta W $	x (Pa/760) x (2	298/Ta)] ^{1/2}		
			C		71		
Therefore, S	Set Point; W = (n	nw x Qstd + bw)	² x (760 / Pa) x (Ta / 298) =	4.01		
<u>.</u>							
Remarks:				}			
	-						
	. 1. 0	.	λ	/		Data	79/1/14
Conducted by: Checked by		Signature: Signature:		san /		Date:	29 October 201



File No. MA14008/71/0003

Project No.	AA1 - Ching Lot	ng Shopping Cer	ntre	Operator:	WK		
Date:	10-Oct-14		N	Text Due Date:	9-Dec-14		
Equipment No.:	A-01-71			Serial No.	3220		
				***		<u> </u>	
			Ambient C	ondition			
Temperatu	re, Ta (K)	298.2	Pressure, Pa	(mmHg)		761.2	
		Ori	fice Transfer Star	ndard Informs	ntion		V see the second
Equipme	ent No.:	A-04-04	Slope, mc	0.0582	Intercept		-0.0249
Last Calibra		27-Sep-14]	me x Qstd + bo	$e = [\Delta H \times (Pa/760)]$) x (298/Ta)]1/2
Next Calibr		26-Sep-15		$Qstd = \{ [\Delta H x] \}$	(Pa/760) x (298/I	[a)] ^{1/2} -bc} /	mc
		•	-				
			Calibration of	TSP Sampler			
C.11		Or	fice			HVS	
Calibration Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	[ΔW x (Pa	/760) x (298/Ta)] ^{1/2} Y-axis
1	11.8		3.44	59.48	7.9		2.81
2	9.6		3.10	53.69	6.5		2.55
3	7.8		2.79	48.44	5.0		2.24
4	5.2		2.28	39.63	3.3		1.82
5	3.1		1.76	30.69	2.0		1.41
Slope, mw =	ression of Y on X	-		Intercept, bw	-0,109	4	
	coefficient* = _		9991	-			
*If Correlation	Coefficient < 0.99	00, check and re	calibrate.				
			Set Point C	alculation			
From the TSP F	ield Calibration (Curve, take Qstd	= 43 CFM				
From the Regre	ssion Equation, th	ne "Y" value acc	ording to				
			$\mathbf{pstd} + \mathbf{bw} = [\mathbf{\Delta W}]$	и (Do/760) v (1	09/Te)] ^{1/2}		
		mw x Ç	ista + pw – [Ww.)	K (FM/700) X (Z	90/ 1 a) j		
Therefore, S	Set Point; W = (m	w x Qstd + bw)	o ² x (760 / Pa) x (Ta / 298) =	4.00		-
Remarks:							
Conducted by:	WK. Tang	Signature:	KW	ai	_	Date:	10/10/14 10 October 2014
Checked by	: <u> </u>	Signature:		X	_	Date:	10 October doly
				V			



File No. MA14008/51/0003

Station	AA2 - Tak Long	Estate		Operator:	WK		
Date:	3-Oct-14		Next Due D		2-Dec-14		
Equipment No.:				Serial No.	1790		
			Ambient C				
Temperatu	ıre, Ta (K)	303	Pressure, Pa	(mmHg)		760	
		0"	fice Transfer Sta	ndard Informs	otion		
Equipme	ent No ·	A-04-04	Slope, mc	0.0582	Intercept	, bc	-0.0249
Last Calibr		27-Sep-14			$c = [\Delta H \times (Pa/760)]$) x (298/Ta)	l ^{1/2}
Next Calibr		26-Sep-15			(Pa/760) x (298/I		
Next Carrot	ation Date:	20 0 c p 10					
			Calibration of	TSP Sampler			
		Oı	·fice			HVS	
Calibration Point	ΔH (orifice),			Qstd (CFM)	ΔW	[ΔW x (Pa	/760) x (298/Ta)] ^{1/2}
Point	in. of water	[ΔH x (Pa//6	50) x (298/Ta)] ^{1/2}	X - axis	(HVS), in. of oil		Y-axis
1	11.9		3.42	59.21	6.9		2.61
2	9.7		3.09	53.50	5.4		2.30
3	7.1		2.64	45.83	4.2		2.03
4	4.8		2.17	37.76	3.0		1.72
5	3.3		1.80	31.38	2.1		1.44
By Linear Reg Slope , mw =	ression of Y on X	<u>-</u>		Intercept, bw	: 0.160	5	-
Correlation	coefficient* = _	0.	9985	_			
*If Correlation	Coefficient < 0.99	90, check and re	calibrate.				
			Set Point C	Calculation			
From the TSP I	Field Calibration (Curve, take Qsto	1 = 43 CFM				
From the Regre	ession Equation, tl	ne "Y" value acc	cording to				
		mw x ($Qstd + bw = [\Delta W]$	x (Pa/760) x (2	98/Ta)] ^{1/2}		
Therefore, S	Set Point; W = (m	w x Qstd + bw) ² x (760 / Pa) x (Ta/298) =	3.73		_
Remarks:							
Tomarks.				ì			
Conducted by:	INK TAMA	Signature:	Ki	Nevi/		Date:	3/12/14
Checked by		Signature:			_	Date:	30ddur dol
Circover of	·	SiBilatui Vi		/	_		
				•			



WELLAB LIMITED

Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076

Website: www.wellab.com.hk

TEST REPORT

Description Calibration Orifice

Serial No.

0993

Model No.

TE-5025A

Date

27 September 2014

Manufacturer

TISCH

Temperature,Ta (K)

299

Pressure, Pa (mmHg)

761.8

Equipment No.:

A-04-04

Plate	Diff.Vol (m ³)	Diff.Time (min)	Diff.Hg (mm)	Diff.H ₂ O (in.)
1	1.00	1.4230	3.3	2.00
2	1.00	1.0050	6.5	4.00
3	1.00	0.8950	8.2	5.00
4	1.00	0.8570	9.0	5.50
5	1.00	0.7080	13.0	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9947	0.6990	1.4135
0.9905	0.9856	1.9990
0.9883	1.1042	2.2350
0.9872	1.1519	2.3441
0.9820	1.3870	2.8270

Y axis= SQRT[H₂O(Pa/760)(298/Ta)]

Qstd Slope (m) = 2.05398

Intercept (b) = -0.02487

Coefficient (r) = 0.99996

Va	(X axis)	(Y axis)
	Qa	
0.9957	0.6997	0.8860
0.9915	0.9865	1.2530
0.9892	1.1053	1.4009
0.9882	1.1531	1.4693
0 9829	1 3883	1 7720

Y axis= SQRT[H₂O(Ta/Pa)]

Qa Slope (m) = 1.28617

Intercept (b) = -0.01559

Coefficient (r) = 0.99996

CALCULATIONS

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

For subsequent flow rate calculations:

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

Qa=I/m{[SQRT H₂O(Ta/Pa)]-b}

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

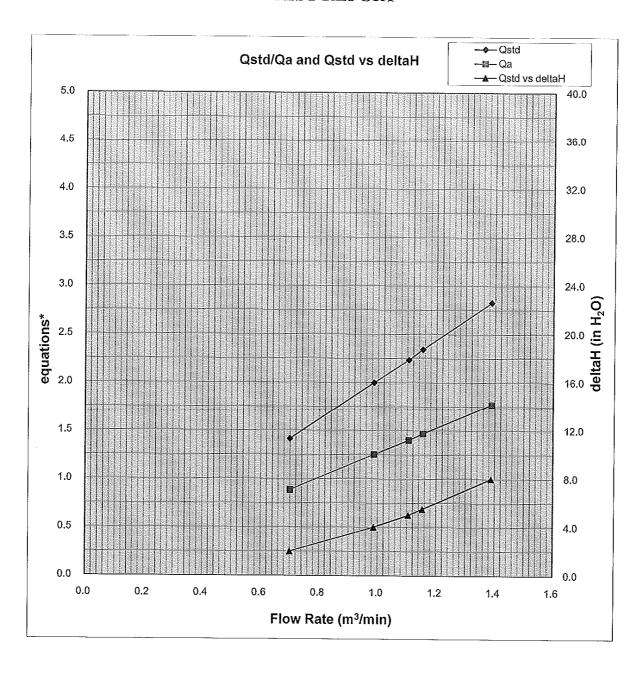
Laboratory Manager





Website: www.wellab.com.hk

TEST REPORT



Y-axis equations:

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

Qa series: SQRT[Δ H(Ta/Pa)]



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TEST REPORT

APPLICANT: Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.: C/141011A
Date of Issue: 2014-10-11
Date Received: 2014-10-11
Date Tested: 2014-10-11
Date Completed: 2014-10-11
Next Due Date: 2015-04-10

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

: 22 degree Celsius

Relative Humidity

: 54%

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



TEST REPORT

Test Report No.: C/141011A

Date of Issue: 2014-10-11

Date Received: 2014-10-11

Date Tested: 2014-10-11

Date Completed: 2014-10-11

Next Due Date: 2015-04-10

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 Dire	ection (°)	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
225.2	225	0.2
270.2	270	0.2
315	315	0
359.8	360	-0.2



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TEST REPORT

APPLICANT: Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

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

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Certificate of Calibration

Item for Calibration:

Description : Laser Dust Monitor

Manufacturer : Sibata

Model No. : LD-3

Serial No. : 251634

Sensitivity (K) 1 CPM : 0.001 mg/m³

Sen. Adjustment Scale Setting : 550 CPM

Equipment No. : A-02-01

Test Conditions:

Room Temperature : 23 degree Celsius

Relative Humidity : 63%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0031

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TEST REPORT

Cinotech Consultants Limited APPLICANT:

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.: C/141107/1 Date of Issue: 2014-11-10 Date Received: 2014-11-07 Date Tested: 2014-11-07 Date Completed: 2014-11-10 Next Due Date: 2015-01-06

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Certificate of Calibration

Item for Calibration:

: Laser Dust Monitor Description

: Sibata Manufacturer Model No. : LD-3 : 251634 Serial No. $: 0.001 \text{ mg/m}^3$ Sensitivity (K) 1 CPM Sen. Adjustment Scale Setting : 550 CPM

Equipment No.

: A-02-01

Test Conditions:

Room Temperature : 20 degree Celsius

Relative Humidity : 58%

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:

0.0030 Correlation Factor (CF)

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TEST REPORT

APPLICANT:

Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.: C/141017/1
Date of Issue: 2014-10-10
Date Received: 2014-10-17
Date Tested: 2014-10-17
Date Completed: 2014-10-20

Next Due Date:

2014-12-19

ATTN:

Mr. WK Tang

Page:

1 of 1

Certificate of Calibration

Item for Calibration:

Description

Manufacturer

Model No.

Serial No.

Sensitivity (K) 1 CPM

Sen. Adjustment Scale Setting

Equipment No.

: Laser Dust Monitor

: Sibata

: LD-3B

: 954253

: 0.001 mg/m³

: 772 CPM : A-02-05

Test Conditions:

Room Temperature

: 24 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)

0.0029

PREPARED AND CHECKED BY:

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PATRICK TSE

Laboratory Manager



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TEST REPORT

APPLICANT: Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.: C/140905/3
Date of Issue: 2014-09-08
Date Received: 2014-09-05
Date Tested: 2014-09-05
Date Completed: 2014-09-08
Next Due Date: 2014-11-07

ATTN:

Mr. W. K. Tang

Page:

1 of 1

Certificate of Calibration

Item for Calibration:

Description

: Laser Dust Monitor

Manufacturer

: Sibata

Model No.

: LD-3B

Serial No.

: 014750

Sensitivity (K) 1 CPM

 $: 0.001 \text{ mg/m}^3$

Sen. Adjustment Scale Setting

: 790 CPM

Equipment No.

: A-02-06

Test Conditions:

Room Temperature

: 23 degree Celsius

Relative Humidity

: 63%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF) 0.0030

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

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Website: www.wellab.com.hk

TEST REPORT

Cinotech Consultants Limited APPLICANT:

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.: C/141107/3 Date of Issue: 2014-11-10 Date Received: 2014-11-07 Date Tested: 2014-11-07 Date Completed: 2014-11-10 Next Due Date: 2015-01-06

ATTN:

Mr. W. K. Tang

Page:

1 of 1

Certificate of Calibration

Item for Calibration:

: Laser Dust Monitor Description

Manufacturer : Sibata : LD-3B Model No. Serial No. : 014750 Sensitivity (K) 1 CPM $: 0.001 \text{ mg/m}^3$: 790 CPM Sen. Adjustment Scale Setting : A-02-06 Equipment No.

Test Conditions:

Room Temperature : 20 degree Celsius

Relative Humidity : 58%

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:

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.: C/141031/2
Date of Issue: 2014-11-03
Date Received: 2014-10-31
Date Tested: 2014-10-31
Date Completed: 2014-11-03
Next Due Date: 2015-01-02

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. : 095050

Sensitivity (K) 1 CPM : 0.001 mg/m³

Sen. Adjustment Scale Setting : 577 CPM

Equipment No. : A-02-09

Test Conditions:

Room Temperature : 23 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.

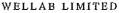
Results:

Correlation Factor (CF)	0.0033
**********	**************

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE





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TEST REPORT

APPLICANT: Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.: C/N/140919/1
Date of Issue: 2014-09-21
Date Received: 2014-09-19
Date Tested: 2014-09-21
Date Completed: 2014-09-21
Next Due Date: 2015-09-20

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Certificate of Calibration

Item for calibration:

Description

: 'SVANTEK' Integrating Sound Level Meter

Manufacturer

: SVANTEK

Model No. Serial No.

: SVAN 955 : 12553

Microphone No.

: 35222

Equipment No.

: N-08-02

Test conditions:

Room Temperatre

: 23 degree Celsius

Relative Humidity

: 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE



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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.:	C/N/140919/3
Date of Issue:	2014-09-21
Date Received:	2014-09-19
Date Tested:	2014-09-21
Date Completed:	2014-09-21
Next Due Date:	2015-09-20

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Certificate of Calibration

Item for calibration:

Description

: 'SVANTEK' Integrating Sound Level Meter

Manufacturer Model No.

: SVANTEK : SVAN 955

Serial No.

: 12563

Microphone No. Equipment No.

: 34377 : N-08-03

Test conditions:

Room Temperatre

: 23 degree Celsius

Relative Humidity

: 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.



Rms 816, 1516 & 1701, Technology Park, 18 On Lai Street, Shatin, N.T, Hong Kong. Tel: 2898 7388 Fax: 2898 7076

Website: www.wellab.com.hk

TEST REPORT

APPLICANT: Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.: C/N/140829/1
Date of Issue: 2014-09-01
Date Received: 2014-08-29
Date Tested: 2014-08-29
Date Completed: 2014-09-01
Next Due Date: 2015-08-31

ATTN:

Mr. W.K. Tang

Page:

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Certificate of Calibration

Item for calibration:

Description

: 'SVANTEK' Integrating Sound Level Meter

Manufacturer

: SVANTEK

Model No.

: SVAN 957

Serial No.

: 21455

Microphone No.

: 43730

Equipment No.

: N-08-07

Test conditions:

Room Temperatre

: 24 degree Celsius

Relative Humidity

: 60%

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.



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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: Cino

Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

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

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Certificate of Calibration

Item for calibration:

Description

: 'SVANTEK' Integrating Sound Level Meter

Manufacturer

: SVANTEK

Model No.

: SVAN 957

Serial No.

: 21459

Microphone No.

: 43676

Equipment No.

: N-08-08

Test conditions:

Room Temperatre

: 22 degree Celsius

Relative Humidity

: 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

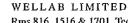
In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.





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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

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

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Certificate of Calibration

Item for calibration:

: 'SVANTEK' Integrating Sound Level Meter Description

Manufacturer : SVANTEK Model No. : SVAN 957 Serial No. : 21460 Microphone No. : 43679 Equipment No. : N-08-09

Test conditions:

Room Temperatre : 22 degree Celsius

Relative Humidity : 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.



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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.: C/N/131129/1 Date of Issue: 2013-11-30 Date Received: 2013-11-29 Date Tested: 2013-11-29 Date Completed: 2013-11-30

Next Due Date: Page:

2014-11-29 1 of 1

ATTN:

Mr. W.K. Tang

Certificate of Calibration

Item for calibration:

Description

: 'SVANTEK' Integrating Sound Level Meter

Manufacturer

: SVANTEK : SVAN 957

Model No. Serial No.

: 23853

Microphone No. Equipment No.

: 48530 : N-08-10

Test conditions:

Room Temperatre

: 19 degree Celsius

Relative Humidity

: 57%

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.



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TEST REPORT

APPLICANT:

Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.:	C/N/140919/4
Date of Issue:	2014-09-21
Date Received:	2014-09-19
Date Tested:	2014-09-21
Date Completed:	2014-09-21
Next Due Date:	2015-09-20

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Item for calibration:

Description

: Acoustical Calibrator

Manufacturer

: SVANTEK

Model No.

: SV30A

Serial No.

: 10929

Equipment No.

: N-09-01

Test conditions:

Room Temperatre

: 23 degree Celsius

Relative Humidity

: 55%

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



WELLAB LIMITED Rms 816, 1516 & 1701, Technology Park, 18 On Lai Street, Shatin, N.T, Hong Kong. Tel: 2898 7388 Fax: 2898 7076

Website: www.wellab.com.hk

TEST REPORT

APPLICANT:

Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

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Test Report No.:	C/N/141101/1
Date of Issue:	2014-11-03
Date Received:	2014-11-01
Date Tested:	2014-11-01
Date Completed:	2014-11-03
Next Due Date:	2015-11-02

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Item for calibration:

Description

: Acoustical Calibrator

Manufacturer

: SVANTEK

Model No.

: SV30A

Serial No.

: 10965

Equipment No.

: N-09-02

Test conditions:

Room Temperatre

: 20 degree Celsius

Relative Humidity

: 55%

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.



Rms 816, 1516 & 1701, Technology Park, 18 On Lai Street, Shatin, N.T, Hong Kong. Tel: 2898 7388 Fax: 2898 7076

Website: www.wellab.com.hk

TEST REPORT

Cinotech Consultants Limited APPLICANT:

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.: C/N/141003/1 Date of Issue: 2014-10-04 Date Received: 2014-10-03 Date Tested: 2014-10-03 Date Completed: 2014-10-04 Next Due Date: 2015-10-03

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Item for calibration:

Description

: Acoustical Calibrator

Manufacturer Model No.

: SVANTEK

Serial No.

: SV30A : 24803

Equipment No.

: N-09-03

Test conditions:

Room Temperatre

: 22 degree Celsius

Relative Humidity

: 56%

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.



Rms 816, 1516 & 1701, Technology Park, 18 On Lai Street, Shatin, N.T, Hong Kong. Tel: 2898 7388 Fax: 2898 7076

Website: www.wellab.com.hk

TEST REPORT

Cinotech Consultants Limited APPLICANT:

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.:	C/N/141003/2
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Item for calibration:

Description

: Acoustical Calibrator

Manufacturer Model No.

: SVANTEK

Serial No.

: SV30A : 24791

Equipment No.

: N-09-04

Test conditions:

Room Temperatre

: 22 degree Celsius

Relative Humidity

: 56%

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE



Rms 816, 1516 & 1701, Technology Park, 18 On Lai Street, Shatin, N.T, Hong Kong. Tel: 2898 7388 Fax: 2898 7076

Website: www.wellab.com.hk

TEST REPORT

APPLICANT: Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

 Test Report No.:
 C/N/141003/3

 Date of Issue:
 2014-10-04

 Date Received:
 2014-10-03

 Date Tested:
 2014-10-03

 Date Completed:
 2014-10-04

 Next Due Date:
 2015-10-03

ATTN:

Mr. W.K. Tang

Page:

1 of 1

Item for calibration:

Description

: Acoustical Calibrator

Manufacturer

: SVANTEK

Model No.

: SV30A

Serial No.

: 24780

Equipment No.

: N-09-05

Test conditions:

Room Temperatre

: 22 degree Celsius

Relative Humidity

: 56%

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE
Laboratory Manager



Rms 816, 1516 & 1701, Technology Park, 18 On Lai Street, Shatin, N.T, Hong Kong. Tel: 2898 7388 Fax: 2898 7076 Website: www.wellab.com.hk

TEST REPORT

APPLICANT:

Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

 Test Report No.:
 C/N/141107/1

 Date of Issue:
 2014-11-08

 Date Received:
 2014-11-07

 Date Tested:
 2014-11-07

 Date Completed:
 2014-11-08

Page:

Next Due Date:

2015-11-07 1 of 1

ATTN:

Mr. W.K. Tang

Item for calibration:

Description

: Acoustical Calibrator

Manufacturer

: Brüel & Kjær

Model No.

: 4231

Serial No.

: 2326353

Equipment No.

: N-02-01

Test conditions:

Room Temperatre

: 21 degree Celsius

Relative Humidity

: 53 %

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE
Laboratory Manager





ATTN:

Rms 816, 1516 & 1701, Technology Park, 18 On Lai Street, Shatin, N.T, Hong Kong. Tel: 2898 7388 Fax: 2898 7076 Website: www.wellab.com.hk

TEST REPORT

APPLICANT: Cinotech Consultants Limited

Room 1710, Technology Park,

18 On Lai Street,

Shatin, NT, Hong Kong

 Test Report No.:
 C/N/140822/2

 Date of Issue:
 2014-08-25

 Date Received:
 2014-08-22

 Date Tested:
 2014-08-22

 Date Completed:
 2014-08-25

 Next Due Date:
 2015-08-24

1 of 1

Mr. W.K. Tang Page:

Certificate of Calibration

Item for calibration:

Description

: Acoustical Calibrator

Manufacturer

: Brüel & Kjær

Model No.

: 4231

Serial No.

: 2412367

Equipment No.

: N-02-03

Test conditions:

Room Temperatre

: 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	$114.0 \pm 0.1 \text{ dB}$

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

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 November 2014	23.9 – 28.6	70 – 86	0
2 November 2014	22.9 – 27.4	61 – 85	Trace
3 November 2014	21.0 – 22.9	63 – 74	Trace
4 November 2014	21.9 – 23.5	72 – 81	Trace
5 November 2014	23.0 – 25.2	74 – 81	Trace
6 November 2014	22.7 – 26.5	74 – 87	0.1
7 November 2014	22.1 – 24.0	82 – 97	11.8
8 November 2014	19.3 – 22.1	84 – 98	18.0
9 November 2014	20.2 – 23.9	75 – 86	Trace
10 November 2014	22.6 – 24.7	72 – 84	Trace
11 November 2014	22.8 – 25.0	76 – 85	0
12 November 2014	20.0 – 24.3	74 – 88	Trace
13 November 2014	18.6 – 21.3	72 – 88	Trace
14 November 2014	18.9 – 23.0	69 – 79	Trace
15 November 2014	20.0 – 24.1	65 – 85	0.4
16 November 2014	20.3 – 25.8	61 – 85	0
17 November 2014	19.2 – 24.3	56 – 73	0
18 November 2014	18.1 – 23.5	57 – 72	Trace
19 November 2014	19.1 – 23.7	58 – 78	Trace

APPENDIX C – WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 November 2014	20.2 – 23.4	60 – 80	0
21 November 2014	20.5 – 24.5	62 – 83	0
22 November 2014	20.7 – 24.6	68 – 88	0
23 November 2014	21.8 – 24.9	70 – 88	0
24 November 2014	21.6 – 25.7	67 – 88	0
25 November 2014	21.9 – 26.9	65 – 92	0
26 November 2014	22.5 – 24.8	75 – 85	0
27 November 2014	21.4 – 23.0	77 – 90	0.4
28 November 2014	21.9 – 25.0	75 – 88	Trace
29 November 2014	23.1 – 24.2	78 – 94	0.2
30 November 2014	22.9 – 26.0	82 – 96	0.2

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

Date	Time	Wind Speed m/s	Direction
1-Nov-2014	00:00	1.2	NE
1-Nov-2014	01:00	1.1	NE
1-Nov-2014	02:00	0.9	NE
1-Nov-2014	03:00	0.9	NE
1-Nov-2014	04:00	0.9	NE
1-Nov-2014	05:00	0.7	ENE
1-Nov-2014	06:00	0.8	ENE
1-Nov-2014	07:00	0.8	NE
1-Nov-2014	08:00	0.7	NE
1-Nov-2014	09:00	1.1	NW
1-Nov-2014	10:00	1.7	WSW
1-Nov-2014	11:00	2.6	WSW
1-Nov-2014	12:00	3	W
1-Nov-2014	13:00	2.9	ENE
1-Nov-2014	14:00	3.3	E
1-Nov-2014	15:00	3.1	ENE
1-Nov-2014	16:00	2.9	ENE
1-Nov-2014	17:00	2.4	NE
1-Nov-2014	18:00	2	NE
1-Nov-2014	19:00	1.8	NNE
1-Nov-2014	20:00	1.9	NNE
1-Nov-2014	21:00	1.8	NNE
1-Nov-2014	22:00	2.1	NE
1-Nov-2014	23:00	2	NE
2-Nov-2014	00:00	1.9	NNE
2-Nov-2014	01:00	2.1	NE
2-Nov-2014	02:00	2.1	NE
2-Nov-2014	03:00	1.8	NE
2-Nov-2014	04:00	1.9	N
2-Nov-2014	05:00	1.7	NE
2-Nov-2014	06:00	2	NE
2-Nov-2014	07:00	1.9	NE
2-Nov-2014	08:00	1.6	NE
2-Nov-2014	09:00	2	NE
2-Nov-2014	10:00	2.6	ENE
2-Nov-2014	11:00	2.9	N
	I .		

2-Nov-2014	12:00	3.6	ENE
2-Nov-2014	13:00	3.5	NE
2-Nov-2014	14:00	3.6	N
2-Nov-2014	15:00	3.3	NNE
2-Nov-2014	16:00	2.7	N
2-Nov-2014	17:00	2.9	NNE
2-Nov-2014	18:00	2.3	ESE
2-Nov-2014	19:00	1.8	SSW
2-Nov-2014	20:00	1.8	NNE
2-Nov-2014	21:00	2.3	NNE
2-Nov-2014	22:00	2.5	NNE
2-Nov-2014	23:00	2.7	NNE
3-Nov-2014	00:00	2.9	NNE
3-Nov-2014	01:00	2.6	NNE
3-Nov-2014	02:00	2.9	NNE
3-Nov-2014	03:00	2.9	NNE
3-Nov-2014	04:00	2.9	NNE
3-Nov-2014	05:00	2.8	NNE
3-Nov-2014	06:00	2.8	NE
3-Nov-2014	07:00	2.3	NE
3-Nov-2014	08:00	2	NNE
3-Nov-2014	09:00	2.5	NE
3-Nov-2014	10:00	2.4	NNE
3-Nov-2014	11:00	2.5	NE
3-Nov-2014	12:00	2.8	ENE
3-Nov-2014	13:00	2.7	ENE
3-Nov-2014	14:00	3	NE
3-Nov-2014	15:00	3.1	NNE
3-Nov-2014	16:00	2.9	NNE
3-Nov-2014	17:00	3.1	E
3-Nov-2014	18:00	3.2	ENE
3-Nov-2014	19:00	2.7	ENE
3-Nov-2014	20:00	2.7	ENE
3-Nov-2014	21:00	2.7	NE
3-Nov-2014	22:00	2.5	NE
3-Nov-2014	23:00	3.2	NNE
4-Nov-2014	00:00	3.2	NW
<u> </u>	1	L	

4-Nov-2014	01:00	3.1	NW
4-Nov-2014	02:00	2.5	W
4-Nov-2014	03:00	2.5	W
4-Nov-2014	04:00	2	W
4-Nov-2014	05:00	2.2	W
4-Nov-2014	06:00	2.2	W
4-Nov-2014	07:00	2.6	W
4-Nov-2014	08:00	3.3	W
4-Nov-2014	09:00	3.8	WNW
4-Nov-2014	10:00	4.4	NNE
4-Nov-2014	11:00	4.6	N
4-Nov-2014	12:00	4.7	ENE
4-Nov-2014	13:00	4.5	ENE
4-Nov-2014	14:00	4.2	NE
4-Nov-2014	15:00	3.9	NNE
4-Nov-2014	16:00	3.1	NNE
4-Nov-2014	17:00	2.8	NE
4-Nov-2014	18:00	1.7	NNE
4-Nov-2014	19:00	1.3	NNE
4-Nov-2014	20:00	0.9	ENE
4-Nov-2014	21:00	1.6	NNE
4-Nov-2014	22:00	1.8	NE
4-Nov-2014	23:00	2.1	NE
5-Nov-2014	00:00	2.2	ESE
5-Nov-2014	01:00	2.4	S
5-Nov-2014	02:00	2.4	S
5-Nov-2014	03:00	2.7	SE
5-Nov-2014	04:00	2.6	SE
5-Nov-2014	05:00	2.4	ESE
5-Nov-2014	06:00	2.5	ESE
5-Nov-2014	07:00	2.5	Е
5-Nov-2014	08:00	2.9	ENE
5-Nov-2014	09:00	2.8	ENE
5-Nov-2014	10:00	2.8	Е
5-Nov-2014	11:00	2.5	Е
5-Nov-2014	12:00	3.2	E
5-Nov-2014	13:00	3.8	E
	1	l	

5-Nov-2014	14:00	3.3	Ν
5-Nov-2014	15:00	2.8	NNW
5-Nov-2014	16:00	2.6	W
5-Nov-2014	17:00	2.2	NNW
5-Nov-2014	18:00	2.1	SE
5-Nov-2014	19:00	1.7	N
5-Nov-2014	20:00	1.7	NNW
5-Nov-2014	21:00	1.5	N
5-Nov-2014	22:00	1.6	N
5-Nov-2014	23:00	1.5	W
6-Nov-2014	00:00	2	WSW
6-Nov-2014	01:00	2.1	SW
6-Nov-2014	02:00	1.8	SW
6-Nov-2014	03:00	1.9	SW
6-Nov-2014	04:00	2.4	SW
6-Nov-2014	05:00	2.1	SSW
6-Nov-2014	06:00	2.3	S
6-Nov-2014	07:00	2.2	SSE
6-Nov-2014	08:00	2.3	SSE
6-Nov-2014	09:00	2.2	SW
6-Nov-2014	10:00	2.7	SW
6-Nov-2014	11:00	2.9	SSW
6-Nov-2014	12:00	3.1	WSW
6-Nov-2014	13:00	3.1	WSW
6-Nov-2014	14:00	2.6	SW
6-Nov-2014	15:00	3.9	SW
6-Nov-2014	16:00	2.6	SW
6-Nov-2014	17:00	3.3	SW
6-Nov-2014	18:00	3	SSW
6-Nov-2014	19:00	2.8	SSW
6-Nov-2014	20:00	2.2	SSW
6-Nov-2014	21:00	2.2	SSE
6-Nov-2014	22:00	2	SW
6-Nov-2014	23:00	2.2	SW
7-Nov-2014	00:00	2.6	WSW
7-Nov-2014	01:00	2.8	W
7-Nov-2014	02:00	2.5	WSW
i	1	L	

7-Nov-2014	03:00	2.6	WSW
7-Nov-2014	04:00	2.3	SW
7-Nov-2014	05:00	2.3	SW
7-Nov-2014	06:00	2.6	SW
7-Nov-2014	07:00	2.3	SW
7-Nov-2014	08:00	2.7	SSW
7-Nov-2014	09:00	3.1	SSW
7-Nov-2014	10:00	3	SSE
7-Nov-2014	11:00	2.7	SW
7-Nov-2014	12:00	3	WSW
7-Nov-2014	13:00	3.3	S
7-Nov-2014	14:00	2.8	SSE
7-Nov-2014	15:00	2.8	SE
7-Nov-2014	16:00	3.4	NNW
7-Nov-2014	17:00	3	NNW
7-Nov-2014	18:00	2.7	NNW
7-Nov-2014	19:00	1.9	W
7-Nov-2014	20:00	1.5	SE
7-Nov-2014	21:00	1.4	NE
7-Nov-2014	22:00	1.6	N
7-Nov-2014	23:00	1.7	NNE
8-Nov-2014	00:00	1.7	ENE
8-Nov-2014	01:00	2.3	ENE
8-Nov-2014	02:00	2.4	SSE
8-Nov-2014	03:00	2.3	SSE
8-Nov-2014	04:00	2.1	SSE
8-Nov-2014	05:00	2	SSE
8-Nov-2014	06:00	2.3	SSE
8-Nov-2014	07:00	2.7	S
8-Nov-2014	08:00	3.1	SSE
8-Nov-2014	09:00	3.1	NE
8-Nov-2014	10:00	3.2	SSW
8-Nov-2014	11:00	3.5	WSW
8-Nov-2014	12:00	3.5	W
8-Nov-2014	13:00	3.5	N
8-Nov-2014	14:00	3.7	NNE
8-Nov-2014	15:00	3.6	Е
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8-Nov-2014	16:00	2.9	WSW
8-Nov-2014	17:00	2.5	W
8-Nov-2014	18:00	2.4	SSW
8-Nov-2014	19:00	2.6	S
8-Nov-2014	20:00	2.5	W
8-Nov-2014	21:00	2.3	W
8-Nov-2014	22:00	1.9	W
8-Nov-2014	23:00	2.1	WNW
9-Nov-2014	00:00	2.3	WNW
9-Nov-2014	01:00	1.9	Е
9-Nov-2014	02:00	1.9	NNE
9-Nov-2014	03:00	1.9	NNE
9-Nov-2014	04:00	2	NE
9-Nov-2014	05:00	1.8	NNE
9-Nov-2014	06:00	1.9	NNE
9-Nov-2014	07:00	2.4	SSW
9-Nov-2014	08:00	2.6	SW
9-Nov-2014	09:00	3.6	SSW
9-Nov-2014	10:00	4	SSW
9-Nov-2014	11:00	4	NNE
9-Nov-2014	12:00	3.8	N
9-Nov-2014	13:00	3.5	W
9-Nov-2014	14:00	3.3	N
9-Nov-2014	15:00	3.4	NNE
9-Nov-2014	16:00	3.2	NNW
9-Nov-2014	17:00	2.7	N
9-Nov-2014	18:00	2.4	W
9-Nov-2014	19:00	2.1	WNW
9-Nov-2014	20:00	1.7	WNW
9-Nov-2014	21:00	1.7	ENE
9-Nov-2014	22:00	1.8	Е
9-Nov-2014	23:00	1.8	W
10-Nov-2014	00:00	1.9	Е
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10-Nov-2014	02:00	1.6	ENE
10-Nov-2014	03:00	1.8	ENE
10-Nov-2014	04:00	1.4	E
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10-Nov-2014	05:00	1.4	Е
10-Nov-2014	06:00	1.6	W
10-Nov-2014	07:00	1.8	WSW
10-Nov-2014	08:00	2.6	WSW
10-Nov-2014	09:00	2.7	ENE
10-Nov-2014	10:00	3.4	SW
10-Nov-2014	11:00	3.7	WSW
10-Nov-2014	12:00	3.9	W
10-Nov-2014	13:00	3.5	WSW
10-Nov-2014	14:00	4.1	SSW
10-Nov-2014	15:00	3.3	WSW
10-Nov-2014	16:00	3.6	W
10-Nov-2014	17:00	3	W
10-Nov-2014	18:00	2.2	W
10-Nov-2014	19:00	2.2	W
10-Nov-2014	20:00	1.9	W
10-Nov-2014	21:00	3	W
10-Nov-2014	22:00	2.2	SSW
10-Nov-2014	23:00	3.1	W
11-Nov-2014	00:00	1.7	ENE
11-Nov-2014	01:00	2.1	W
11-Nov-2014	02:00	2.1	SW
11-Nov-2014	03:00	2	N
11-Nov-2014	04:00	2.2	Е
11-Nov-2014	05:00	2	W
11-Nov-2014	06:00	2	WNW
11-Nov-2014	07:00	2.2	W
11-Nov-2014	08:00	3.1	W
11-Nov-2014	09:00	3.6	W
11-Nov-2014	10:00	3.5	S
11-Nov-2014	11:00	4.2	NNE
11-Nov-2014	12:00	3.9	SW
11-Nov-2014	13:00	4.1	SW
11-Nov-2014	14:00	4	SW
11-Nov-2014	15:00	3.9	SW
11-Nov-2014	16:00	4	W
11-Nov-2014	17:00	3.2	WNW
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11-Nov-2014	18:00	2.2	W
11-Nov-2014	19:00	2.4	W
11-Nov-2014	20:00	2.2	W
11-Nov-2014	21:00	2.6	WNW
11-Nov-2014	22:00	2.3	WNW
11-Nov-2014	23:00	2.4	W
12-Nov-2014	00:00	2.6	NE
12-Nov-2014	01:00	2.5	NE
12-Nov-2014	02:00	2.9	ESE
12-Nov-2014	03:00	2.8	W
12-Nov-2014	04:00	3.1	W
12-Nov-2014	05:00	2.9	WSW
12-Nov-2014	06:00	3.1	WSW
12-Nov-2014	07:00	3.2	WSW
12-Nov-2014	08:00	3.4	WSW
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12-Nov-2014	11:00	3.5	WNW
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12-Nov-2014	13:00	3.4	W
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12-Nov-2014	15:00	3.5	W
12-Nov-2014	16:00	3.3	WSW
12-Nov-2014	17:00	3.5	WSW
12-Nov-2014	18:00	2.7	SSE
12-Nov-2014	19:00	2.6	S
12-Nov-2014	20:00	1.9	W
12-Nov-2014	21:00	1.9	W
12-Nov-2014	22:00	2.2	W
12-Nov-2014	23:00	2	W
13-Nov-2014	00:00	1.9	W
13-Nov-2014	01:00	2.1	SW
13-Nov-2014	02:00	1.6	SW
13-Nov-2014	03:00	2	S
13-Nov-2014	04:00	1.9	SSW
13-Nov-2014	05:00	2.3	SW
13-Nov-2014	06:00	2.1	SW

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13-Nov-2014	07:00	2	SW
13-Nov-2014	08:00	2.5	WSW
13-Nov-2014	09:00	3.3	SSW
13-Nov-2014	10:00	3.6	SSW
13-Nov-2014	11:00	4.1	SSW
13-Nov-2014	12:00	4.3	S
13-Nov-2014	13:00	4	S
13-Nov-2014	14:00	3.2	SSW
13-Nov-2014	15:00	2.9	SSW
13-Nov-2014	16:00	2.6	SSW
13-Nov-2014	17:00	2.6	SW
13-Nov-2014	18:00	2.3	W
13-Nov-2014	19:00	1.8	SE
13-Nov-2014	20:00	1.3	WNW
13-Nov-2014	21:00	1.1	S
13-Nov-2014	22:00	1.3	NW
13-Nov-2014	23:00	1.8	N
14-Nov-2014	00:00	1.5	N
14-Nov-2014	01:00	1.2	NE
14-Nov-2014	02:00	1.5	S
14-Nov-2014	03:00	1.6	WNW
14-Nov-2014	04:00	1.5	NE
14-Nov-2014	05:00	1.4	ENE
14-Nov-2014	06:00	1.2	SSE
14-Nov-2014	07:00	1.2	N
14-Nov-2014	08:00	1.6	NE
14-Nov-2014	09:00	2.4	ENE
14-Nov-2014	10:00	2.7	NE
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14-Nov-2014	13:00	3.7	NNE
14-Nov-2014	14:00	3.8	NE
14-Nov-2014	15:00	3.7	ENE
14-Nov-2014	16:00	3.7	ENE
14-Nov-2014	17:00	3.4	ENE
14-Nov-2014	18:00	2.7	ENE
14-Nov-2014	19:00	1.8	N
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14-Nov-2014	20:00	1.3	WNW
14-Nov-2014	21:00	1	WNW
14-Nov-2014	22:00	1.1	WNW
14-Nov-2014	23:00	0.8	W
15-Nov-2014	00:00	0.7	W
15-Nov-2014	01:00	0.5	W
15-Nov-2014	02:00	0.9	S
15-Nov-2014	03:00	1	SSE
15-Nov-2014	04:00	1.3	SW
15-Nov-2014	05:00	1.4	SSW
15-Nov-2014	06:00	1.2	SSW
15-Nov-2014	07:00	1.6	SW
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15-Nov-2014	09:00	3	SW
15-Nov-2014	10:00	3	W
15-Nov-2014	11:00	3.1	W
15-Nov-2014	12:00	3.4	SW
15-Nov-2014	13:00	3.5	WNW
15-Nov-2014	14:00	3	WNW
15-Nov-2014	15:00	3	WSW
15-Nov-2014	16:00	3.3	W
15-Nov-2014	17:00	2.4	WNW
15-Nov-2014	18:00	2.3	W
15-Nov-2014	19:00	2.2	WNW
15-Nov-2014	20:00	2.2	W
15-Nov-2014	21:00	2.6	W
15-Nov-2014	22:00	2.5	W
15-Nov-2014	23:00	2	WNW
16-Nov-2014	00:00	2.7	WNW
16-Nov-2014	01:00	2.7	WNW
16-Nov-2014	02:00	2.7	W
16-Nov-2014	03:00	2.1	W
16-Nov-2014	04:00	2.2	WNW
16-Nov-2014	05:00	2.8	WNW
16-Nov-2014	06:00	2.5	WNW
16-Nov-2014	07:00	2.1	WNW
16-Nov-2014	08:00	1.4	WNW

16-Nov-2014	09:00	2.2	WNW
16-Nov-2014	10:00	2.5	Е
16-Nov-2014	11:00	3	SE
16-Nov-2014	12:00	2.8	ESE
16-Nov-2014	13:00	2.8	ESE
16-Nov-2014	14:00	2.8	NE
16-Nov-2014	15:00	2.8	Е
16-Nov-2014	16:00	2.7	NE
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16-Nov-2014	22:00	1.3	E
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17-Nov-2014	01:00	1.4	SE
17-Nov-2014	02:00	1.1	SE
17-Nov-2014	03:00	1.7	ENE
17-Nov-2014	04:00	0.9	SSE
17-Nov-2014	05:00	1.4	ESE
17-Nov-2014	06:00	1.8	ESE
17-Nov-2014	07:00	1.1	ENE
17-Nov-2014	08:00	1.1	ENE
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17-Nov-2014	10:00	1.9	ENE
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17-Nov-2014	13:00	1.9	NE
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17-Nov-2014	15:00	2	W
17-Nov-2014	16:00	2.8	W
17-Nov-2014	17:00	1.5	W
17-Nov-2014	18:00	1.9	NNE
17-Nov-2014	19:00	1.9	NE
17-Nov-2014	20:00	1.2	N
17-Nov-2014	21:00	1.4	NNE
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17-Nov-2014	22:00	2.1	SE
17-Nov-2014	23:00	2.3	SE
18-Nov-2014	00:00	2.4	WSW
18-Nov-2014	01:00	2.3	W
18-Nov-2014	02:00	1.6	W
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18-Nov-2014	04:00	1.6	ENE
18-Nov-2014	05:00	1.7	ESE
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18-Nov-2014	07:00	1.2	S
18-Nov-2014	08:00	1.7	SE
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18-Nov-2014	15:00	3.9	SSE
18-Nov-2014	16:00	3.7	Е
18-Nov-2014	17:00	2.9	SE
18-Nov-2014	18:00	2.5	SE
18-Nov-2014	19:00	2	SSE
18-Nov-2014	20:00	1.8	SSE
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19-Nov-2014	00:00	2.1	E
19-Nov-2014	01:00	1.9	SSE
19-Nov-2014	02:00	2.4	SSE
19-Nov-2014	03:00	2.1	Е
19-Nov-2014	04:00	2	Е
19-Nov-2014	05:00	2.2	Е
19-Nov-2014	06:00	2	N
19-Nov-2014	07:00	1.6	W
19-Nov-2014	08:00	2.3	W
19-Nov-2014	09:00	3.9	W
19-Nov-2014	10:00	4	W
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19-Nov-2014	11:00	3.9	W	
19-Nov-2014	12:00	4.2	W	
19-Nov-2014	13:00	3.9	NE	
19-Nov-2014	14:00	3.4	Е	
19-Nov-2014	15:00	3.8	Е	
19-Nov-2014	16:00	3.7	NE	
19-Nov-2014	17:00	3.2	Е	
19-Nov-2014	18:00	2.7	SW	
19-Nov-2014	19:00	2.6	N	
19-Nov-2014	20:00	2.7	SSW	
19-Nov-2014	21:00	1.6	WNW	
19-Nov-2014	22:00	2.6	W	
19-Nov-2014	23:00	2.7	S	
20-Nov-2014	00:00	2.6	W	
20-Nov-2014	01:00	2.8	W	
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20-Nov-2014	04:00	3.2	W	
20-Nov-2014	05:00	3.5	W	
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20-Nov-2014	10:00	3.5	SW	
20-Nov-2014	11:00	4	ENE	
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20-Nov-2014	13:00	4.3	SSE	
20-Nov-2014	14:00	4.7	S	
20-Nov-2014	15:00	4.2	SSE	
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20-Nov-2014	17:00	3.4	ESE	
20-Nov-2014	18:00	2.6	ESE	
20-Nov-2014	19:00	2.2	ESE	
20-Nov-2014	20:00	2.3	NE	
20-Nov-2014	21:00	1.9	Е	
20-Nov-2014	22:00	2.5	SE	
20-Nov-2014	23:00	3.6	SE	
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21-Nov-2014	00:00	2	SE	
21-Nov-2014	01:00	1.9	SSE	
21-Nov-2014	02:00	2.2	SSE	
21-Nov-2014	03:00	2.6	SSE	
21-Nov-2014	04:00	2.3	ESE	
21-Nov-2014	05:00	3	ESE	
21-Nov-2014	06:00	1.8	ESE	
21-Nov-2014	07:00	1.6	Е	
21-Nov-2014	08:00	1.8	SSE	
21-Nov-2014	09:00	3.3	ESE	
21-Nov-2014	10:00	3.7	SSE	
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21-Nov-2014	12:00	3.9	SSE	
21-Nov-2014	13:00	4	ESE	
21-Nov-2014	14:00	3.8	SW	
21-Nov-2014	15:00	2.9	SW	
21-Nov-2014	16:00	2.7 WNW		
21-Nov-2014	17:00	2.7	WSW	
21-Nov-2014	18:00	2.7	SSW	
21-Nov-2014	19:00	3	S	
21-Nov-2014	20:00	1.9	SSW	
21-Nov-2014	21:00	2.5	WNW	
21-Nov-2014	22:00	2.1 WNW		
21-Nov-2014	23:00	2.7	ENE	
22-Nov-2014	00:00	2.4	ENE	
22-Nov-2014	01:00	2.7	SW	
22-Nov-2014	02:00	2.4	SSW	
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22-Nov-2014	10:00	4	WSW	
22-Nov-2014	11:00	4.2	W	
22-Nov-2014	12:00	4.1	SSW	
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22-Nov-2014	13:00	3.8	WSW	
22-Nov-2014	14:00	3.4	W	
22-Nov-2014	15:00	3.9	SW	
22-Nov-2014	16:00	3.6	SW	
22-Nov-2014	17:00	3.1	SW	
22-Nov-2014	18:00	3.2	SSW	
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22-Nov-2014	21:00	2.1	E	
22-Nov-2014	22:00	2.2	E	
22-Nov-2014	23:00	2.4	ENE	
23-Nov-2014	00:00	2.4	SW	
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23-Nov-2014	02:00	2.4	SW	
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23-Nov-2014	04:00	1.9	W	
23-Nov-2014	05:00	1.4	WSW	
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23-Nov-2014	08:00	2.1	WNW	
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23-Nov-2014	11:00	3.9	SSE	
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23-Nov-2014	13:00	3.8	SE	
23-Nov-2014	14:00	3.9	SE	
23-Nov-2014	15:00	4	W	
23-Nov-2014	16:00	4.2	WNW	
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23-Nov-2014	18:00	2.5	E	
23-Nov-2014	19:00	2.6	ESE	
23-Nov-2014	20:00	2	ESE	
23-Nov-2014	21:00	1.7	SE	
23-Nov-2014	22:00	1.6	SE	
23-Nov-2014	23:00	1.5	NE	
24-Nov-2014	00:00	1.3	ESE	
24-Nov-2014	01:00	1.7	SE	

24-Nov-2014	02:00	1.4	Е
24-Nov-2014	03:00	1.4	ESE
24-Nov-2014	04:00	1.4	ESE
24-Nov-2014	05:00	1.4	SSE
24-Nov-2014	06:00	1.3	SE
24-Nov-2014	07:00	1.2	SE
24-Nov-2014	08:00	2.1	SSE
24-Nov-2014	09:00	2.7	SSE
24-Nov-2014	10:00	3.4	SE
24-Nov-2014	11:00	3.1	SSE
24-Nov-2014	12:00	3.1	SSE
24-Nov-2014	13:00	3.3	SSE
24-Nov-2014	14:00	2.9	SE
24-Nov-2014	15:00	3.1	ESE
24-Nov-2014	16:00	3.1	ESE
24-Nov-2014	17:00	2.5	SSE
24-Nov-2014	18:00	1.8	SSE
24-Nov-2014	19:00	1.6	SSE
24-Nov-2014	20:00	1.3	SSE
24-Nov-2014	21:00	1.3	ESE
24-Nov-2014	22:00	1.7 WNW	
24-Nov-2014	23:00	1.5	N
25-Nov-2014	00:00	1.4	SSE
25-Nov-2014	01:00	1.6	SSE
25-Nov-2014	02:00	1.3	SE
25-Nov-2014	03:00	0.9	NNE
25-Nov-2014	04:00	0.9	N
25-Nov-2014	05:00	1.1	N
25-Nov-2014	06:00	1.2	ESE
25-Nov-2014	07:00	1.2	WNW
25-Nov-2014	08:00	1.7	ENE
25-Nov-2014	09:00	2	SSE
25-Nov-2014	10:00	2.4	ESE
25-Nov-2014	11:00	2.9	SE
25-Nov-2014	12:00	3.3	NNE
25-Nov-2014	13:00	2.6	NNE
25-Nov-2014	14:00	2.2	ENE
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25-Nov-2014	15:00	2.9	SSE
25-Nov-2014	16:00	2.9	SSE
25-Nov-2014	17:00	2.6	NE
25-Nov-2014	18:00	3	E
25-Nov-2014	19:00	2.9	S
25-Nov-2014	20:00	2.5	S
25-Nov-2014	21:00	2.2	NW
25-Nov-2014	22:00	2.2	SW
25-Nov-2014	23:00	2.2	NNE
26-Nov-2014	00:00	2	S
26-Nov-2014	01:00	1.7	WNW
26-Nov-2014	02:00	1.8	NE
26-Nov-2014	03:00	2.1	NE
26-Nov-2014	04:00	1.1	ESE
26-Nov-2014	05:00	0.9	W
26-Nov-2014	06:00	0.4	NE
26-Nov-2014	07:00	1	NE
26-Nov-2014	08:00	08:00 0.9	
26-Nov-2014	09:00	1.6	SW
26-Nov-2014	10:00	2.1	SE
26-Nov-2014	11:00	3.2	E
26-Nov-2014	12:00	3.6	ESE
26-Nov-2014	13:00	3.6	ESE
26-Nov-2014	14:00	3.6	ESE
26-Nov-2014	15:00	2.7	SE
26-Nov-2014	16:00	3.2	ESE
26-Nov-2014	17:00	3.5	SE
26-Nov-2014	18:00	2.9	ESE
26-Nov-2014	19:00	2.8	ESE
26-Nov-2014	20:00	2.4	ESE
26-Nov-2014	21:00	2.7	SE
26-Nov-2014	22:00	2.5	ESE
26-Nov-2014	23:00	2.9	SSE
27-Nov-2014	00:00	2.9	SW
27-Nov-2014	01:00	2.3	NNE
27-Nov-2014	02:00	2.8	NE
27-Nov-2014	03:00	2.4	SSE
·	•	•	

27-Nov-2014	04:00	2.2	SE	
27-Nov-2014	05:00	1.9	ENE	
27-Nov-2014	06:00	1.6	ESE	
27-Nov-2014	07:00	2.1	ESE	
27-Nov-2014	08:00	2.1	ESE	
27-Nov-2014	09:00	2.6	E	
27-Nov-2014	10:00	3.3	ESE	
27-Nov-2014	11:00	3.5	NNE	
27-Nov-2014	12:00	3.4	NE	
27-Nov-2014	13:00	2.8	ENE	
27-Nov-2014	14:00	3.2	SSE	
27-Nov-2014	15:00	3	ENE	
27-Nov-2014	16:00	2.3	E	
27-Nov-2014	17:00	2.8	ENE	
27-Nov-2014	18:00	1.8	E	
27-Nov-2014	19:00	1.1	SSE	
27-Nov-2014	20:00	1.2	NE	
27-Nov-2014	21:00	0.9	NE	
27-Nov-2014	22:00	0.9	ENE	
27-Nov-2014	23:00	1.7	SE	
28-Nov-2014	00:00	1.6	NE	
28-Nov-2014	01:00	1.4	SE	
28-Nov-2014	02:00	1.7	SE	
28-Nov-2014	03:00	1.5	WSW	
28-Nov-2014	04:00	1.6	SE	
28-Nov-2014	05:00	1.5	WNW	
28-Nov-2014	06:00	1.3	ENE	
28-Nov-2014	07:00	1.3	ESE	
28-Nov-2014	08:00	1.2	NE	
28-Nov-2014	09:00	1.5	NE	
28-Nov-2014	10:00	2.1	N	
28-Nov-2014	11:00	2.3	N	
28-Nov-2014	12:00	2.6	WNW	
28-Nov-2014	13:00	3.5	W	
28-Nov-2014	14:00	2.7	W	
28-Nov-2014	15:00	2	WSW	
28-Nov-2014	16:00	1.8	WNW	
L	I.	l	1	

28-Nov-2014	17:00	2.7	N	
28-Nov-2014	18:00	2	N	
28-Nov-2014	19:00	1.1	N	
28-Nov-2014	20:00	0.7	N	
28-Nov-2014	21:00	1.4	N	
28-Nov-2014	22:00	1.3	W	
28-Nov-2014	23:00	1.4	NNE	
29-Nov-2014	00:00	1.2	ENE	
29-Nov-2014	01:00	1.6	NNW	
29-Nov-2014	02:00	1.8	NNW	
29-Nov-2014	03:00	1.5	WNW	
29-Nov-2014	04:00	1	SSE	
29-Nov-2014	05:00	0.9	SSW	
29-Nov-2014	06:00	1.1	WNW	
29-Nov-2014	07:00	0.9	W	
29-Nov-2014	08:00	1.4	WNW	
29-Nov-2014	09:00	2	SE	
29-Nov-2014	10:00	3	NE NE	
29-Nov-2014	11:00	3	E	
29-Nov-2014	12:00	2.4	NE	
29-Nov-2014	13:00	2.6	WSW	
29-Nov-2014	14:00	2.6	NE	
29-Nov-2014	15:00	3.3	ESE	
29-Nov-2014	16:00	2.5	ENE	
29-Nov-2014	17:00	2.1	ENE	
29-Nov-2014	18:00	1.7	NNE	
29-Nov-2014	19:00	1.8	NNE	
29-Nov-2014	20:00	1.5	NNE	
29-Nov-2014	21:00	2.1	ENE	
29-Nov-2014	22:00	2.5	SSE	
29-Nov-2014	23:00	1.7	ENE	
30-Nov-2014	00:00	1.6	ENE	
30-Nov-2014	01:00	1.8	SE	
30-Nov-2014	02:00	1.5	ENE	
30-Nov-2014	03:00	1.6	SE	
30-Nov-2014	04:00	1.7	WSW	
30-Nov-2014	05:00	1.2	NNE	

30-Nov-2014	06:00	0.8	NNE	
30-Nov-2014	07:00	07:00 1.1		
30-Nov-2014	08:00	1.4	NE	
30-Nov-2014	09:00	2.3	NE	
30-Nov-2014	10:00	3.3	WSW	
30-Nov-2014	11:00	3.3	WNW	
30-Nov-2014	12:00	3.9	SE	
30-Nov-2014	13:00	3.4	ENE	
30-Nov-2014	14:00	3.4	NE	
30-Nov-2014	15:00	3.1	N	
30-Nov-2014	16:00	2.9	NNE	
30-Nov-2014	17:00	2.5	2.5 WNW	
30-Nov-2014	18:00	1.8	SW	
30-Nov-2014	19:00	2.3	NE	
30-Nov-2014	20:00	2.1	SSW	
30-Nov-2014	21:00	1.5	SE	
30-Nov-2014	22:00	1.7	E	
30-Nov-2014	23:00	1.8	ENE	

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 November 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
							1-Nov
						24 hr TSP	
2-Nov	3-Nov	4-Nov	5-Nov	6-Nov	7-Nov		8-Nov
	1 hr TSP X3				1 hr TSP X3		
					AM2, AM3(A), AM4(A) &		
	AM2, AM3(A), AM4(A) & AM5(A)	Noise		Noise	AM5(A)		
	Noise	(M6(A), M7)		(M9)			
	(M8)				24 hr TSP		
9-Nov	10-Nov	11-Nov	12-Nov	13-Nov	14-Nov		15-Nov
7-1107	10-1407	11-1404	12-1107	13-1101	14-1107		13-1101
				1 hr TSP X3			
				AM2, AM3(A), AM4(A) &			
		Noise		AM5(A)			
		(M9)	24 hr TSP	Noise (M6(A), M7, M8)			
			24 III 13F	(MO(A), M7, M6)			
16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov		22-Nov
		1.1 EOD 3/2					
		1 hr TSP X3 AM2, AM3(A), AM4(A) &					
	Noise	AM5(A)		Noise			
	(M9)	Noise		(M6(A), M7)			
	24 hr TSP	(M8)			24 hr TSP		
23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov		29-Nov
	1 hr TSP X3				1 hr TSP X3		
	AM2, AM3(A), AM4(A) & AM5(A)				AM2, AM3(A), AM4(A) &		
				Noise	AM5(A)		
	Noise (M8)			(M6(A), M7, M9)			
				24 hr TSP			
30-Nov							

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(A) - Oblate 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 December 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec
				1 hr TSP X3		
		Noise		AM2, AM3(A), AM4(A) &		
		(M6(A), M7)	Noise	AM5(A)		
		, , , ,	(M9)	Noise		
			24 hr TSP	(M8)		
7-Dec	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec
			1 hr TSP X3			
		Noise	AM2, AM3(A), AM4(A) & AM5(A)			
		(M9)	Noise	Noise		
		24 hr TSP	(M8)	(M6(A), M7)		
14-Dec	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec
		1 hr TSP X3				
		AM2, AM3(A), AM4(A) &				
	Noise	AM5(A)				
	(M9)	Noise		Noise		
	24 hr TSP	(M8)		(M6(A), M7)	24 hr TSP	
21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec
	1 hr TSP X3		1 hr TSP X3			
			AM2, AM3(A), AM4(A) &			
	AM2, AM3(A), AM4(A) & AM5(A)	Noise	AM5(A)			
	Noise	(M6(A), M7, M9)				
	(M8)	24 hr TSP				
28-Dec	29-Dec	30-Dec	31-Dec			
		1 hr TSP X3				
	Noise	AM2, AM3(A), AM4(A) & AM5(A)				
	(M9)	AM5(A) Noise				
	24 hr TSP	(M6(A), M7, M8)				
	· · · · · · · · · · · · · · · · · · ·	1 ()				

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(A) - Oblate 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 -	Location AM2 - Lee Kau Yan Memorial School					
Date	Time	Weather	Particulate Concentration (μg/m³)			
3-Nov-14	13:15	Cloudy	236.7			
3-Nov-14	14:15	Cloudy	247.4			
3-Nov-14	15:15	Cloudy	270.4			
7-Nov-14	9:00	Cloudy	145.6			
7-Nov-14	10:00	Cloudy	153.7			
7-Nov-14	11:00	Cloudy	157.9			
13-Nov-14	13:00	Cloudy	203.2			
13-Nov-14	14:00	Cloudy	216.6			
13-Nov-14	15:00	Cloudy	219.1			
18-Nov-14	9:00	Sunny	124.4			
18-Nov-14	10:00	Sunny	138.0			
18-Nov-14	11:00	Sunny	140.8			
24-Nov-14	9:00	Sunny	85.2			
24-Nov-14	10:00	Sunny	97.2			
24-Nov-14	11:00	Sunny	103.8			
28-Nov-14	9:00	Cloudy	274.7			
28-Nov-14	10:00	Cloudy	180.9			
28-Nov-14	11:00	Cloudy	178.1			
		Average	176.3			
		Maximum	274.7			
		Minimum	85.2			

Location AM3(A)	Location AM3(A) - Holy Trinity Bradbury Centre				
Date	Time	Weather	Particulate Concentration (μg/m³)		
3-Nov-14	9:00	Cloudy	268.4		
3-Nov-14	10:00	Cloudy	304.7		
3-Nov-14	11:00	Cloudy	316.7		
7-Nov-14	13:00	Cloudy	148.1		
7-Nov-14	14:00	Cloudy	143.8		
7-Nov-14	15:00	Cloudy	149.5		
13-Nov-14	9:00	Cloudy	178.2		
13-Nov-14	10:00	Cloudy	174.0		
13-Nov-14	11:00	Cloudy	176.6		
18-Nov-14	13:00	Sunny	163.2		
18-Nov-14	14:00	Sunny	170.5		
18-Nov-14	15:00	Sunny	180.3		
24-Nov-14	13:30	Sunny	81.3		
24-Nov-14	14:30	Sunny	77.1		
24-Nov-14	15:30	Sunny	84.4		
28-Nov-14	13:00	Cloudy	216.4		
28-Nov-14	14:00	Cloudy	209.1		
28-Nov-14	15:00	Cloudy	213.7		
		Average	180.9		
		Maximum	316.7		
		Minimum	77.1		

MA13056/App E - 1hr TSP Cinotech

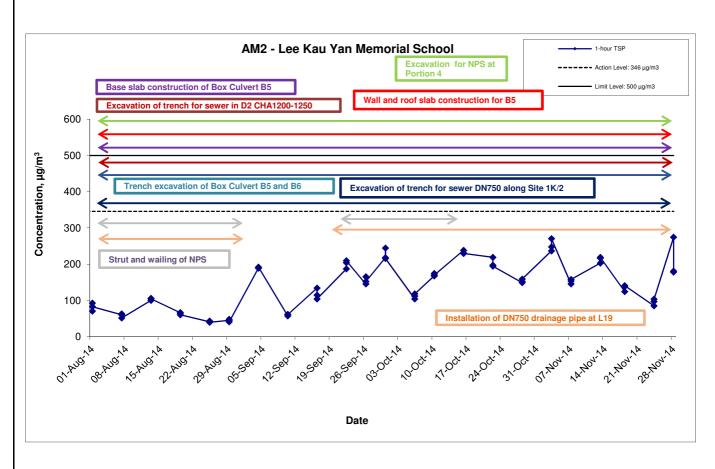
Appendix E - 1-hour TSP Monitoring Results

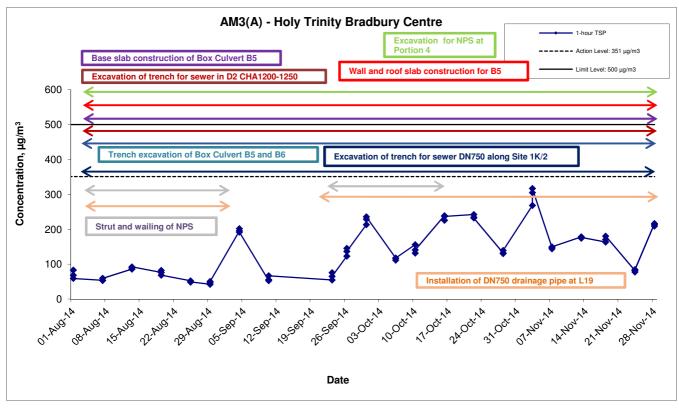
Location AM4(A)	- EMSD Wor	rkshops	
Date	Time	Weather	Particulate Concentration (μg/m³)
3-Nov-14	9:00	Windy	324.6
3-Nov-14	10:00	Windy	334.5
3-Nov-14	11:00	Windy	332.6
7-Nov-14	9:00	Cloudy	183.9
7-Nov-14	10:00	Cloudy	195.6
7-Nov-14	11:00	Cloudy	222.9
13-Nov-14	9:00	Cloudy	144.4
13-Nov-14	10:00	Cloudy	116.3
13-Nov-14	11:00	Cloudy	115.7
18-Nov-14	9:00	Sunny	179.4
18-Nov-14	10:00	Sunny	188.0
18-Nov-14	11:00	Sunny	184.5
24-Nov-14	9:00	Sunny	51.7
24-Nov-14	10:00	Sunny	63.8
24-Nov-14	11:00	Sunny	58.8
28-Nov-14	9:00	Fine	157.6
28-Nov-14	10:00	Fine	169.1
28-Nov-14	11:00	Fine	150.1
	·	Average	176.3
		Maximum	334.5
		Minimum	51.7

Location AM5(A	i) - Po Leung	Kuk Ngan Po Lin	g College
Date	Time	Weather	Particulate Concentration (μg/m³)
3-Nov-14	13:00	Windy	250.1
3-Nov-14	14:00	Windy	225.0
3-Nov-14	15:00	Windy	226.2
7-Nov-14	13:00	Cloudy	309.0
7-Nov-14	14:00	Cloudy	297.1
7-Nov-14	15:00	Cloudy	305.7
13-Nov-14	13:00	Cloudy	129.7
13-Nov-14	14:00	Cloudy	121.2
13-Nov-14	15:00	Cloudy	159.6
18-Nov-14	13:00	Sunny	171.8
18-Nov-14	14:00	Sunny	178.9
18-Nov-14	15:00	Sunny	181.6
24-Nov-14	13:00	Sunny	41.3
24-Nov-14	14:00	Sunny	52.8
24-Nov-14	15:00	Sunny	62.9
28-Nov-14	13:00	Fine	149.3
28-Nov-14	14:00	Fine	161.5
28-Nov-14	15:00	Fine	155.6
		Average	176.6
		Maximum	309.0
		Minimum	41.3

MA13056/App E - 1hr TSP Cinotech

1-hr TSP Concentration Levels





Title Contract No. KL/2012/03

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

Graphical Presentation of 1-hour TSP Monitoring Results

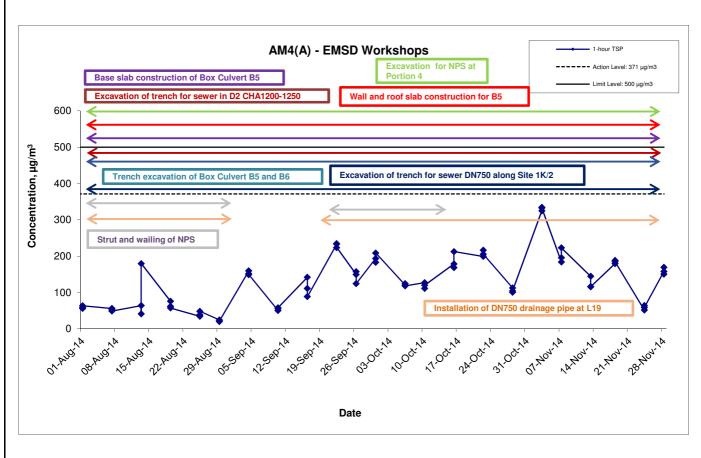
Scale Project No. MA13056

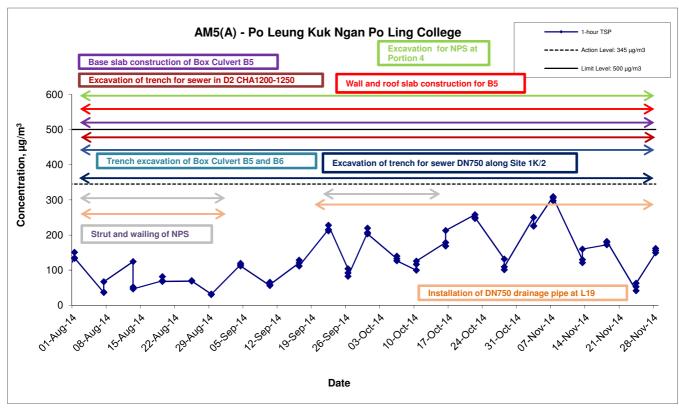
Date Nov 14

Appendix

Nov 14

1-hr TSP Concentration Levels





Title Contract No. KL/2012/03
Kai Tak Development -Stage 4 Infrastructure at Former
North Apron Area
Graphical Presentation of 1-hour TSP Monitoring Results

Scale N.T.S Project No. MA13056

Date 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	Air	Atmospheric	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m³/min.)	Av. flow	Total vol.	Conc.
Start Date	Condition	Temp. (K)	Pressure, Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	$(\mu g/m^3)$
1-Nov-14	Cloudy	298.6	763.3	3.2412	3.4680	0.2268	13996.8	14020.8	24.0	1.22	1.22	1.22	1751.9	129.5
7-Nov-14	Cloudy	296.4	764.4	3.1915	3.3354	0.1439	14020.8	14044.8	24.0	1.22	1.22	1.22	1759.1	81.8
12-Nov-14	Cloudy	295.4	766.3	3.2363	3.3185	0.0822	14044.8	14068.8	24.0	1.23	1.22	1.23	1764.1	46.6
17-Nov-14	Sunny	292.4	768.3	3.2539	3.4569	0.2030	14068.8	14092.8	24.0	1.23	1.23	1.23	1774.8	114.4
21-Nov-14	Sunny	295.8	766.7	3.2649	3.4301	0.1652	14092.8	14116.8	24.0	1.22	1.22	1.22	1763.3	93.7
27-Nov-14	Cloudy	295.4	764.2	3.2632	3.4162	0.1530	14116.8	14140.8	24.0	1.22	1.22	1.22	1761.7	86.8
													Min	46.6
													Max	129.5
													Average	92.1

Location AM3(A) - Holy Trinity Bradbury Centre

Start Date	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m³/min.)	Av. flow	Total vol.	Conc.
Start Date	Condition	Temp. (K)	Pressure, Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	$(\mu g/m^3)$
1-Nov-14	Cloudy	298.6	763.7	3.2408	3.4140	0.1732	8626.8	8650.8	24.0	1.21	1.21	1.21	1748.7	99.0
7-Nov-14	Cloudy	293.6	764.7	3.2287	3.3660	0.1373	8650.8	8674.8	24.0	1.22	1.22	1.22	1763.4	77.9
12-Nov-14	Cloudy	294.8	766.7	3.2762	3.3585	0.0823	8674.8	8698.8	24.0	1.22	1.22	1.22	1762.1	46.7
17-Nov-14	Sunny	292.3	768.7	3.2312	3.4068	0.1756	8698.8	8722.8	24.0	1.23	1.23	1.23	1771.2	99.1
21-Nov-14	Sunny	295.5	766.2	3.2374	3.3953	0.1579	8722.8	8746.8	24.0	1.22	1.22	1.22	1759.7	89.7
27-Nov-14	Cloudy	295.7	764.7	3.2349	3.3659	0.1310	8746.8	8770.8	24.0	1.22	1.22	1.22	1757.6	74.5
													Min	46.7
													Max	99.1
													Average	81.2

Location AM4(A) - EMSD Workshops

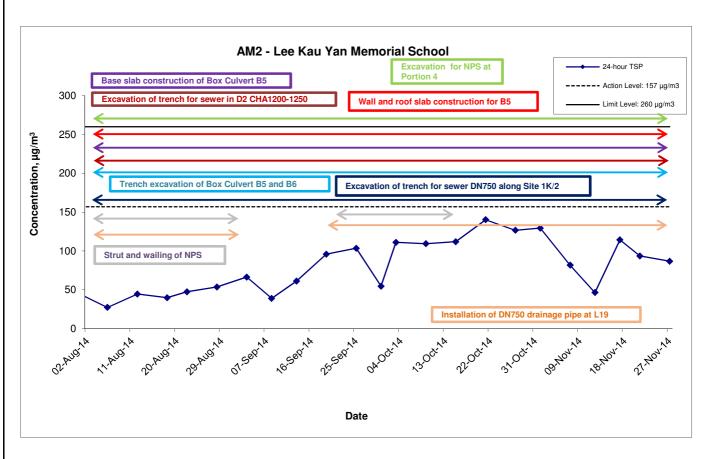
Start Date	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m³/min.)	Av. flow	Total vol.	Conc.
Start Date	Condition	Temp. (K)	Pressure, Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m^3)	(µg/m³)
1-Nov-14	Cloudy	298.2	763.3	3.2243	3.4558	0.2315	4869.6	4893.6	24.0	1.21	1.21	1.21	1747.8	132.5
7-Nov-14	Cloudy	293.8	764.7	3.2464	3.4771	0.2307	4893.6	4917.6	24.0	1.22	1.22	1.22	1762.1	130.9
12-Nov-14	Cloudy	294.9	766.4	3.2745	3.4553	0.1808	4917.6	4941.6	24.0	1.22	1.22	1.22	1761.0	102.7
17-Nov-14	Sunny	292.6	768.0	3.2427	3.5163	0.2736	4941.6	4965.6	24.0	1.23	1.23	1.23	1769.4	154.6
21-Nov-14	Sunny	295.8	766.7	3.2690	3.4884	0.2194	4965.6	4989.6	24.0	1.22	1.22	1.22	1758.5	124.8
27-Nov-14	Cloudy	295.5	764.8	3.2074	3.4080	0.2006	4989.6	5013.6	24.0	1.22	1.22	1.22	1757.3	114.2
													Min	102.7
													Max	154.6
													Average	126.6

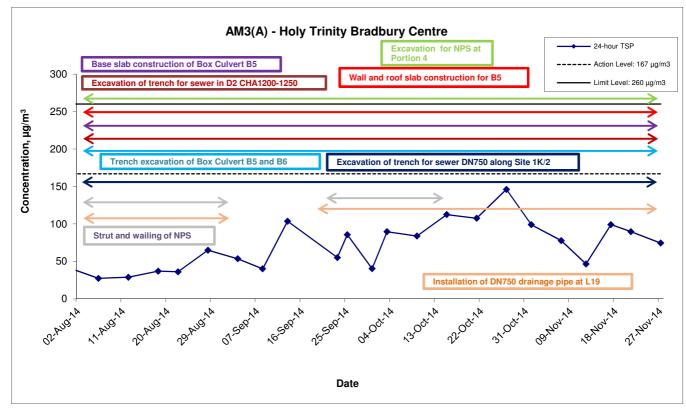
Location AM5(A) - Po Leung Kuk Ngan Po Ling College

Start Date	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	(m³/min.)	Av. flow	Total vol.	Conc.
Start Date	Condition	Temp. (K)	Pressure, Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	$(\mu g/m^3)$
1-Nov-14	Cloudy	299.3	763.0	3.2364	3.3141	0.0777	3902.5	3926.5	24.0	1.21	1.21	1.21	1744.3	44.5
7-Nov-14	Cloudy	293.3	764.3	3.2333	3.3107	0.0774	3926.5	3950.5	24.0	1.22	1.22	1.22	1762.5	43.9
12-Nov-14	Cloudy	295.2	766.2	3.2706	3.3206	0.0500	3950.5	3974.5	24.0	1.22	1.22	1.22	1759.2	28.4
17-Nov-14	Sunny	292.6	768.3	3.2216	3.3711	0.1495	3974.5	3998.5	24.0	1.23	1.23	1.23	1768.9	84.5
21-Nov-14	Sunny	295.5	766.1	3.2502	3.3513	0.1011	3998.5	4022.5	24.0	1.22	1.22	1.22	1758.3	57.5
27-Nov-14	Cloudy	295.2	764.3	3.2275	3.2954	0.0679	4022.5	4046.5	24.0	1.22	1.22	1.22	1757.1	38.6
													Min	28.4
													Max	84.5
													Average	49.6

MA13056/App F - 24hr TSP

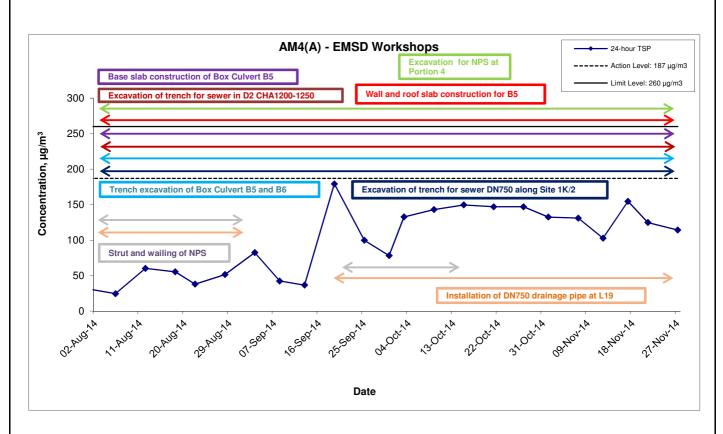
24-hr TSP Concentration Levels

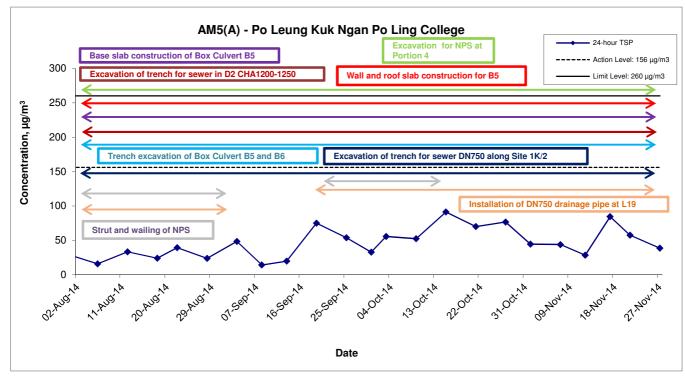




Title Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area	Scale		Project No. MA13056	CINOTECH
Graphical Presentation of 24-hour TSP Monitoring Results	Date	Nov 14	Appendix F	

24-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	Proje No.
Graphical Presentation of 24-hour TSP Monitoring Results	Date	Nov 14	Appe

Scale		Project	
	N.T.S	No.	MA13056
Date		Appendi	ix
	Nov 14		F



APPENDIX G NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix G - Noise Monitoring Results

Location M6(A	A) - Oblate P	rimary Schoo	l				
					Uni	t: dB (A) (30-min)	
Date	Time	Weather	Meas	sured Noise	Level	Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L 90	L _{eq}	L _{eq}
4-Nov-14	13:50	Cloudy	67.9	72.0	61.1		65.7
13-Nov-14	13:30	Cloudy	67.4	69.3	63.2	60.0	64.8
20-Nov-14	13:00	Sunny	63.4	64.9	61.9	63.9	63.4 Measured ≤ Baseline
27-Nov-14	10:53	Cloudy	64.0	67.0	61.0		47.6

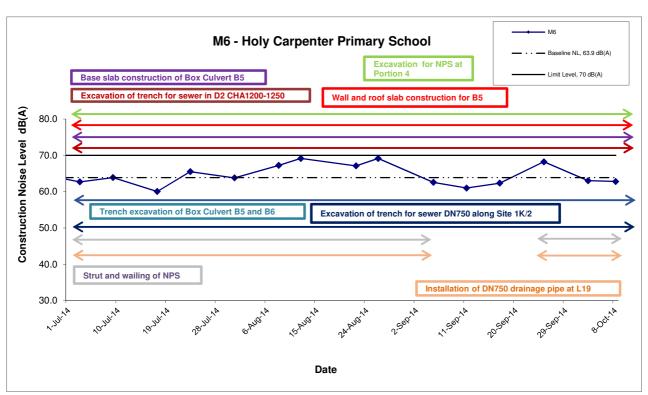
Location M7 -	CCC Kei To	Location M7 - CCC Kei To Secondary School											
				Unit: dB (A) (30-min)									
Date	Time	Weather	Meas	sured Noise	Level	Baseline Level	Construction Noise Level						
			L _{eq}	L ₁₀	L 90	L _{eq}	L _{eq}						
4-Nov-14	14:35	Cloudy	64.3	66.5	60.2		64.3 Measured ≤ Baseline						
13-Nov-14	14:15	Cloudy	63.4	65.2	59.8	CO 7	63.4 Measured ≤ Baseline						
20-Nov-14	14:00	Sunny	63.9	65.5	61.1	68.7	63.9 Measured ≤ Baseline						
27-Nov-14	10:16	Cloudy	64.4	66.8	61.1		64.4 Measured ≦ Baseline						

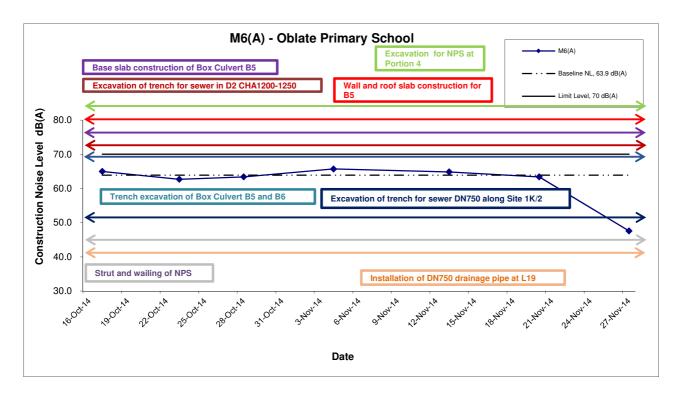
Location M8 - Po Leung Kuk Ngan Po Ling College											
	9	3	J J -		Uni	t: dB (A) (30-min)					
Date	Time	Weather	Mea	sured Noise	Level	Baseline Level	Construction Noise Level				
			L _{eq}	L ₁₀	L 90	L _{eq}	L _{eq}				
3-Nov-14	13:15	Cloudy	66.1	68.4	62.9		64.0				
13-Nov-14	13:15	Cloudy	71.2	73.8	67.1	61.0	70.7				
18-Nov-14	13:10	Sunny	64.0	66.3	60.2	61.9	59.8				
24-Nov-14	13:15	Sunny	64.5	66.3	61.7		61.0				

Location M9 - Tak Long Estate									
	Time	Weather	Unit: dB (A) (30-min)						
Date			Measured Noise Level			Baseline Level	Construction Noise Level		
			L _{eq}	L ₁₀	L 90	L _{eq}	L _{eq}		
6-Nov-14	10:05	Sunny	59.8	61.5	57.4		59.8 Measured ≤ Baseline		
11-Nov-14	9:15	Cloudy	62.9	64.2	60.6	59.9	59.9		
17-Nov-14	9:10	Sunny	61.0	64.2	59.7	53.5	54.5		
27-Nov-14	9:15	Cloudy	63.5	65.5	60.8		61.0		

MA13056/App G - Noise Cinotech

Noise Levels

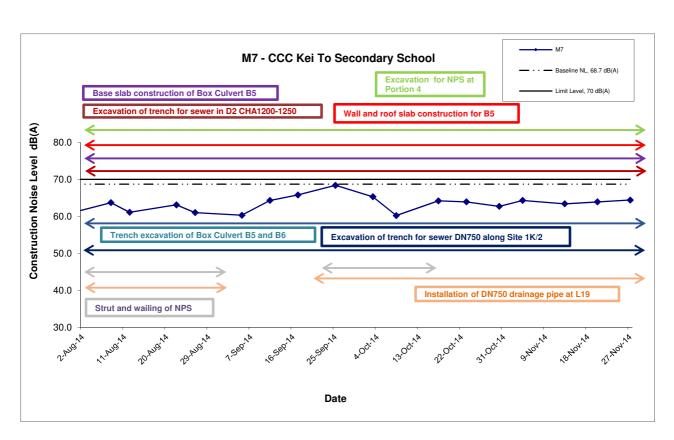


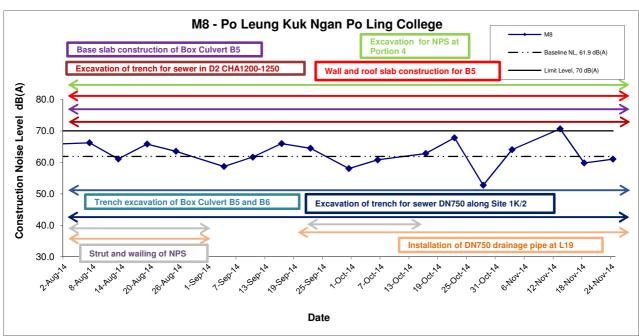


Remarks: The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

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

Noise Levels

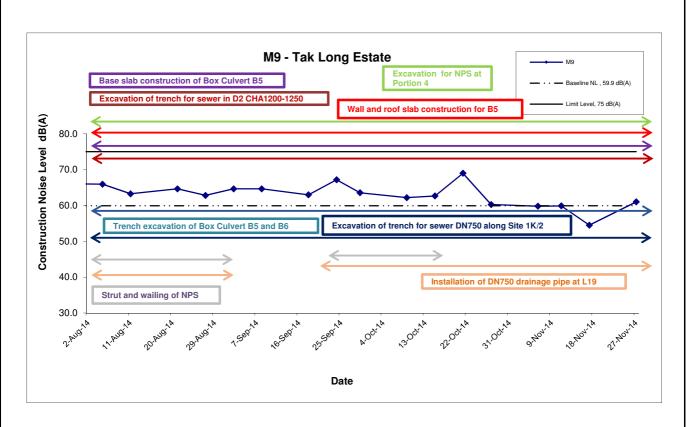




Remarks: The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

Title	Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area			Project No. MA13056	CINOTCCII
	Graphical Presentation of Construction Noise Monitoring Results	Date	_	Appendix G	CINOICU

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	Scale	N.T.S	Project No.	MA13056	CINOTECH
	Graphical Presentation of Construction Noise Monitoring Results	Date	Nov 14	Append	dix G	CINOICCI

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 (One Limit Level exceedance was recorded at monitoring station M8 - Po Leung Kok Ngan Po Ling College on 13 November 2014.)

> Cause of Exceedance

The exceedance was considered non-related to the Project works:

- During the noise monitoring conducted at 13:15, mobile cranes were found operating in the open ground outside Kai Tak Development Area.
- According to field staffs' observation, the major noise source came from the loading and unloading works from the mobile crane. (Shown in Photo 2.)
- As the major noise source was located outside the project area of Kai Tak Development, the
 exceedance recorded at Station M8 Po Leung Kuk Ngan Po Ling College was considered to
 be non-Project related.



Photo 1

(Construction works conducting outside KTD Project Area.)

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

Appendix H - Summary of Exceedance



ET's conclusions/recommendations for mitigation

- The exceedance was considered non-related to the Project works.
- No further mitigation measures would be required.

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

APPENDIX I SITE AUDIT SUMMARY

Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area EP-337/2009 - New Distributor Roads serving the Planned Kai Tak Development

Checklist Reference Number	141107	
Date	7 November 2014	
Time	10:00 – 11:15	

		Related
Ref. No.	Non-Compliance	Item No.
-	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.:141031), no environmental deficiency was observed during the site inspection.	

	Name	Signature	Date
Recorded by	Johnny Fung		7 November 2014
Checked by	Ivy Tam	Tus	7 November 2014

Checklist Reference Number	141114
Date .	14 November 2014
Time	10:00 – 11:15

		Related
Ref. No.	Non-Compliance	Item No.
•	None identified	
		Related
Ref. No.	Remarks/Observations	Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
141114-R01	Clear the construction material of drip tray of generator-set in Road L19.	E 9
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
******	H. Others	
	• Follow-up on previous audit section (Ref. No.:141107), no environmental deficiency was observed during the site inspection.	

	Name	Signature	Date
Recorded by	Johnny Fung	1	14 November 2014
Checked by	Dr. Priscilla Choy	NÃ.	14 November 2014

Contract No. KL/2012/03 Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area EP-337/2009 - New Distributor Roads serving the Planned Kai Tak Development

Checklist Reference Number	141119	
Date	19 November 2014	
Time	14:00 – 15:00	

		Related Item No.
Ref. No.	Non-Compliance	Reili Ivo.
	None identified	Related
Ref. No.	Remarks/Observations	Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
141119-R01	• Some sand and dust observed deposited out of site boundary at Kwei Chow Street Portion. The Contractor is reminded to clear the sand properly.	C 3
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
-	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	Follow-up on previous audit section (Ref. No.:141114), all environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Johnny Fung	1/2	19 November 2014
Checked by	Ivy Tam	Tul	19 November 2014

Checklist Reference Number	141128
Date	28 November 2014
Time	10:00 – 11:00

D.C.N.	N. Complement	Related Item No.
Ref. No.	Non-Compliance	Helli No.
=	None identified	
		Related
Ref. No.	Remarks/Observations	Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.:141119), all environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Johnny Fung	1	28 November 2014
Checked by	Dr. Priscilla Choy	WI	28 November 2014

Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area EP-344/2009 - New Sewage Pumping Stations serving Kai Tak Development

Checklist Reference Number	141107	
Date	7 November 2014	
Time	10:00 - 11:15	·

		Related
Ref. No.	Non-Compliance	Item No.
<u></u>	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
141107-R01	Properly remove the oil stain as "chemical waste" near Pumping Station NPS.	E 8
	F. Visual and Landscape	
141107-R02	Remove the construction waste and general refuse in the tree protection zone near Pumping Station PS2.	F 1
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 141031), follow up action is needed to be reviewer for items 141031-R02 and 141031-R03.	

	Name	Signature	Date
Recorded by	Johnny Fung	17	7 November 2014
Checked by	Ivy Tam	Jul	7 November 2014

Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area EP-344/2009 - New Sewage Pumping Stations serving Kai Tak Development

Checklist Reference Number	141114
Date	14 November 2014
Time	10:00 – 11:15

		Related
Ref. No.	Non-Compliance	Item No.
<u>-</u>	None identified	
		Related
Ref. No.	Remarks/Observations	Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
141114-R01	Properly remove the oil stain as "chemical waste" near Pumping Station NPS.	E 8
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	Follow-up on previous audit section (Ref. No.: 141107), follow up action is needed to be reviewer for items 141107-R01.	

	Name	Signature	Date
Recorded by	Johnny Fung	17	14 November 2014
Checked by	Dr. Priscilla Choy	WI	14 November 2014

Contract No. KL/2012/03 Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area EP-344/2009 - New Sewage Pumping Stations serving Kai Tak Development

Checklist Reference Number	141119
Date	19 November 2014
Time	14:00 – 15:00

		Related
Ref. No.	Non-Compliance	Item No.
Text 110.	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No.
110111101	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
141119-001	• Drip tray for generator observed damaged near Pumping Station NPS. The Contractor is	E 9
	reminded to provide proper drip tray. • Clear the oil stain on paved ground near Pumping Station NPS.	E 8
141119-R02	Clear the oil stain on paved ground near rumping station (VI 3.)	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	Follow-up on previous audit section (Ref. No.: 141114), follow up action is needed to be reviewer for items 141114-R01.	

•	Name	Signature	Date
Recorded by	Johnny Fung	10	19 November 2014
Checked by	Ivy Tam	Tuy	19 November 2014

Checklist Reference Number	141128	
Date	28 November 2014	
Time	10:00 - 11:00	

Ref. No.	Non-Compliance	Related Item No.
_	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
141128-O01	• Drip tray for generator observed damaged near Pumping Station NPS. The Contractor is reminded to provide proper drip tray.	E 9
141128-R02	Clear the oil stain on paved ground near Pumping Station NPS.	E 8
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 141119), follow up action is needed to be reviewer for items 141119-O01 and 141119-R02.	

	Name	Şignature	Date
Recorded by	Johnny Fung		28 November 2014
Checked by	Dr. Priscilla Choy	WI	28 November 2014

APPENDIX J EVENT ACTION PLANS

Event/Action Plan for Air Quality

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

	EPD, IEC and ER informed of	4. Advise the ER on the	implemented;	working days of notification;
	the results.	effectiveness of the proposed	4. Supervise implementation of	4. Implement the agreed proposals.
		remedial measures.	remedial measures;	
			5. Conduct meeting with ET and	
			IEC if exceedance continues.	
Limit Level being	1. Notify IEC, ER, Contractor and	1. Check monitoring data submitted	Confirm receipt of notification	Take immediate action to avoid
exceeded by	EPD;	by ET;	of exceedance in writing;	further exceedance;
two or more	2. Repeat measurement to confirm	2. Check Contractor's working	2. Notify Contractor;	2. Discuss with ET, ER and IEC on
consecutive	findings;	method;	3. In consolidation with the IEC,	proper remedial actions;
sampling	3. Carry out analysis of Contractor's	3. Discuss amongst ER, ET, and	agree with the Contractor on the	3. Submit proposals for remedial
	working procedures to identify source and	Contractor on the potential remedial	remedial measures to be	actions to IEC within three working
	investigate the causes of exceedance;	actions;	implemented;	days of notification;
	4. Increase monitoring frequency to	4. Review Contractor's remedial	4. Supervise implementation of	4. Implement the agreed proposals;
	daily;	actions whenever necessary to	remedial measures;	5. Submit further remedial actions if
	5. Arrange meeting with IEC, ER	assure their effectiveness and	5. If exceedance continues,	problem still not under control;
	and Contractor to discuss the	advise the ER accordingly.	consider stopping the Contractor	6. Stop the relevant portion of works
	remedial actions to be taken;		to continue working on that	as instructed by the ER until the
	6. Assess effectiveness of		portion of work which causes the	exceedance is abated.
	Contractor's remedial actions and		exceedance until the	
	keep EPD, IEC and ER informed		exceedance is abated.	
	of the results;			
	7. If exceedance stops, cease additional			
	monitoring.			

Event/Action Plan for Construction Noise

EVENT	ACTION				
	ET	IEC	ER	CONTRACTOR	
Action Level	1. Notify ER, IEC and Contractor;	1. Review the investigation	1. Confirm receipt of	1. Submit noise mitigation	
being	2. Carry out investigation;	results submitted by the ET;	notification of failure in	proposals to IEC and ER;	
exceeded	3. Report the results of investigation	2. Review the proposed remedial	writing;	2. Implement noise mitigation	
	to the IEC, ER and Contractor;	measures by the Contractor and	2. Notify Contractor;	proposals.	
	4. Discuss with the IEC and	advise the ER accordingly;	3. In consolidation with the	(The above actions should be	
	Contractor on remedial measures	3. Advise the ER on the	IEC, agree with the	taken within 2 working days after	
	required;	effectiveness of the proposed	Contractor on the remedial	the exceedance is identified)	
	5. Increase monitoring frequency to	remedial measures.	measures to be implemented;		
	check mitigation effectiveness.	(The above actions should be	4. Supervise the		
	(The above actions should be taken	taken within 2 working days after	implementation of remedial		
	within 2 working days after the	the exceedance is identified)	measures.		
	exceedance is identified)		(The above actions should be		
			taken within 2 working days		
			after the exceedance is		
			identified)		
Limit Level	1. Inform IEC, ER, Contractor and	1. Discuss amongst ER, ET, and	1. Confirm receipt of	1. Take immediate action to	
being	EPD;	Contractor on the potential	notification of failure in	avoid further exceedance;	
exceeded	2. Repeat measurements to confirm	remedial actions;	writing;	2. Submit proposals for remedial	
	findings;	2. Review Contractor's remedial	2. Notify Contractor;	actions to IEC and ER within 3	
	3. Increase monitoring frequency;	actions whenever necessary to	3. In consolidation with the	working days of notification;	
	4. Identify source and investigate the	assure their effectiveness and	IEC, agree with the	3. Implement the agreed	
	cause of exceedance;	advise the ER accordingly.	Contractor on the remedial	proposals;	

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

Event/Action Plan for Landscape and Visual

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

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

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
	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.	
	 Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. 	*
	 Misting for the dusty material should be carried out before being loaded into the vehicle. 	^
Construction Dust	Any vehicle with an open load carrying area should have properly fitted side and tail boards. Metarial basing the petartial to greate dust about patents.	^
Construction Dust	 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. 	^
	 The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation. 	^
	 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. 	^
	Vehicle washing facilities should be provided at every	۸

vehicle exit point.	
 The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, 	^
 bituminous materials or hardcores. 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. 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. 	^
Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	^

	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	^
Construction Noise	 Good Site Practice: Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. Mobile plant, if any, should be sited as far away from NSRs as possible. 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. 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. Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. 	^
	Scheduling of Construction Works during School Examination Period	^
	(i) Provision of low noise surfacing in a section of RoadL2; and	N/A
	(ii) Provision of structural fins	N/A

	woid the sensitive façade of class room facing Road and L4; and	N/A
(ii) F & L	Provision of low noise surfacing in a section of Road L2	N/A
	rovision of low noise surfacing in a section of Road L4 are occupation of Site 1I1; and	N/A
(ii) S	Setback of building about 5m from site boundary.	N/A
	back of building about 35m to the northwest direction L3 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) (ii)	avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height	N/A
(i)	of the residential block(s) located at less than 55m away from To Kwa Wan Road to no more than 25m above ground. avoid any sensitive facades with openable window	N/A
	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

		All the ventilation fans installed in the below will be provided with silencers or acoustics treatment. (i) SPS (ii) ESS (iii) Tunnel Ventilation Shaft (iv) EFTS depot Installation of retractable roof or other equivalent measures	N/A N/A N/A N/A
--	--	--	--------------------------

Construction Water Quality	The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including: Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply; Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps; An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and 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.	N/A N/A N/A

Land-based Construction	
Construction Runoff	
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: • use of sediment traps • adequate maintenance of drainage systems to prevent flooding and overflow	^ ^
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.	^

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. 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. Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m3 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. Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m3 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. 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.

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. 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. 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. Drainage 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.

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	^
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.	^
Sewage Effluent	
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.	^
Stormwater Discharges	
Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	N/A

^
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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.	۸
Construction effluent, site run-off and sewage should be properly collected and/or treated.	٨
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.	٨
Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.	٨
Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	٨
Supervisory staff should be assigned to station on site to closely supervise and monitor the works	^
Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.	^

Good Site Practices	
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:	
 Nomination of an approved person, such as a site 	
manager, to be responsible for good site practices,	
arrangements for collection and effective disposal	^
to an appropriate facility, of all wastes generated at	
the site	
 Training of site personnel in proper waste 	
management and chemical waste handling	
procedures	^
Provision of sufficient waste disposal points and	
regular collection for disposal	
Appropriate measures to minimise windblown litter	^
and dust during transportation of waste by either	
covering trucks or by transporting wastes in	^
enclosed containers	
A recording system for the amount of wastes	
generated, recycled and disposed of (including the	^
disposal sites)	

Waste Reduction Measures	
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:	
 Sort C&D waste from demolition of the remaining 	
structures to recover recyclable portions such as	^
metals	
 Segregation and storage of different types of 	
waste in different containers, skips or stockpiles to	
enhance reuse or recycling of materials and their	^
proper disposal	
 Encourage collection of 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	
 Any unused chemicals or those with remaining 	
functional capacity should be recycled	^
 Proper storage and site practices to minimise the 	
potential for damage or contamination of	
construction materials	^
construction materials	

Construction and Demolition Material	
Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: • Where it is unavoidable to have transient stockpiles of C&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 Open stockpiles of construction materials or construction wastes on-site should be covered with	^
 tarpaulin or similar fabric Skip hoist for material transport should be totally enclosed by impervious sheeting Every vehicle should be washed to remove any 	^
dusty materials from its body and wheels before leaving a construction site 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 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	^
 All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet The height from which excavated materials are 	^
dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading	^

When delivering inert C&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&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.

Chemical Waste

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 Waste Disposal (Chemical Waste) (General) Regulation

General Refuse

General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&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

	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
Landscape and Visual	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

Reporting Month: November 2014

Contract No. KL/2012/03

Log Ref.	Location	Received Date Date Complaint/warning/summ and prosecution N/A N/A	Complaint/warning/summon	Investigation/Mitigation Action	Status
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

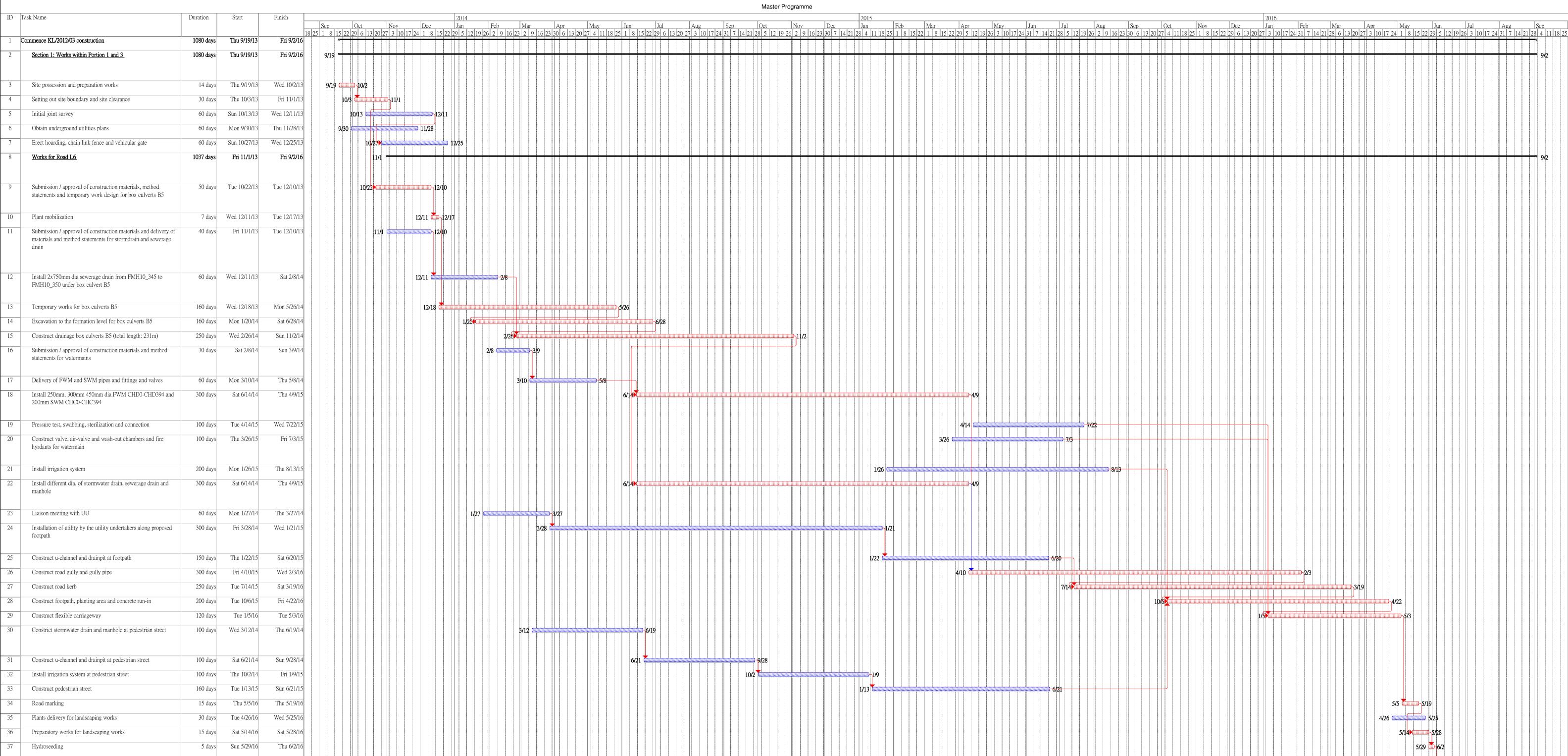
(PS Clause 1.86)

Name of Department: CEDD Contract No.: <u>KL/2012/03</u>

Monthly Summary Waste Flow Table for November 2014(year) (in tons)

			Actual Q	uantities of Inert	C&D Materials	Generated Month	Actual Quantities of C&D Wastes Generated Monthly											
Month	Total Disposal Loads	Total Quantity Generated	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.						
	(No.s)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)						
Oct 2013	6	22.19	0	0	0	0	0	0	0	0	0	22.19						
Nov 2013	83	353.51	0	0	0	0	0	0	0	0	0	353.51						
Dec 2013	19	87.99	0	0	0	0	0	0	0 0		0	87.99						
Sub-Total	108	463.69	0	0	0	0	0	0	0 0		0	463.69						
Jan 2014	0	0	0	0	0	0	106.65	0	0	0	0	0						
Feb 2014	0	0	0	0	0	0	84.05	0	0	0	0	0						
Mar 2014	0	0	0	0	0	0	63.57	0	0	0	0	0						
Apr 2014	2	4.36	0	0	0	0	0	0	0	0	0	4.36						
May 2014	2	9.75	0	0	0	0	0	0	0	0	0	9.75						
June 2014	0	0	0	0	0	0	0	0	0	0	0	0						
July2014	6	56.4	0	0	0	56.4	0	0	0	0	0	0						
Aug 2014	3	27.26	0	0	0	27.26	0	0	0	0	0	0						
Sep 2014	0	0	0	0	0	0	0	0	0	0	0	0						
Oct 2014	4	11.91	0	0	0	0	0	0	0	0	0	11.91						
Nov 2014	5	12.46	0	0	0	0	0	0	0	0	0	12.46						
Sub-Total	122	122.14	0	0	0	83.66	254.27	0	0	0	0	38.48						
Total	130	585.83	0	0	0	83.66	254.27	0	0	0	0	502.17						

APPENDIX N CONSTRUCTION PROGRAMME



Commencement Date: 19 September 2013 Completion Date: 2 September 2016

Tree and shurb planting

Terminal float

Critical tasks Working days

Fri 6/3/16

Sun 7/3/16

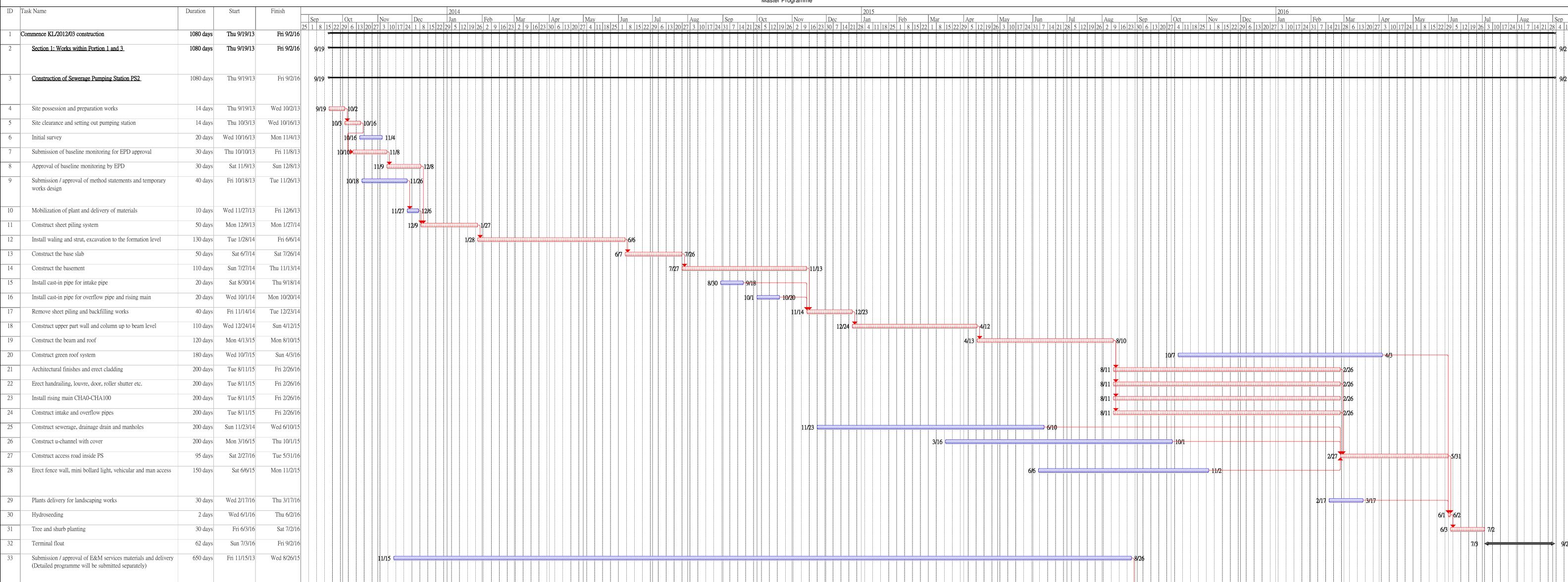
30 days

62 days

Sat 7/2/16

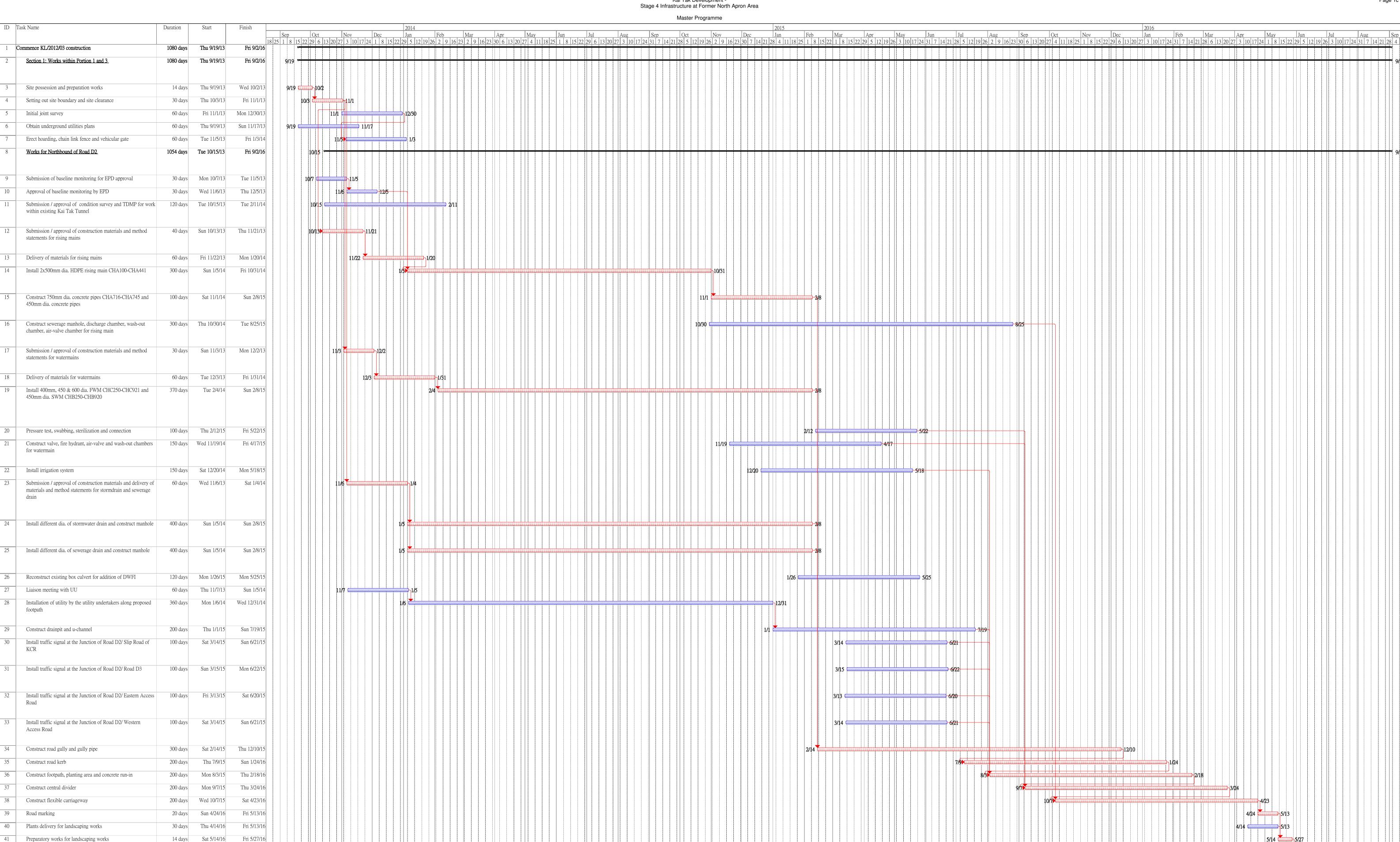
Fri 9/2/16

Master Programme



E&M building service installation. (Detailed programme will be 250 days Thu 8/27/15 Mon 5/2/16

submitted separately)



Critical tasks Working days Commencement Date: 19 September 2013 Completion Date: 2 September 2016

Tree and shurb planting

Terminal float

Sat 5/28/16

Fri 6/3/16

Sun 7/3/16

Thu 6/2/16

Sat 7/2/16

Fri 9/2/16

6 days

30 days

62 days

Kwan On Construction Co. Ltd. KL/2012/03 Kai Tak Development Stage 4 Infrastructure at Former North Apron Area Master Programme ID Task Name Duration Start Finish Commence KL/2012/03 construction 1445 days Thu 9/19/13 Sat 9/2/17 1080 days Fri 9/2/16 Section 1: Works within Portion 1 and 3 Thu 9/19/13 Widening of Existing Footpaths at Sung Wong Toi Road and 1080 days Thu 9/19/13 Fri 9/2/16 To Kwa Wan Road 21 days Thu 9/19/13 Site possession and preparation works Wed 10/9/13 Setting out site boundary and site clearance Fri 11/8/13 25 days Tue 11/12/13 Fri 12/6/13 Initial joint survey Sun 11/17/13 Obtain underground utilities plans 60 days Thu 9/19/13 Thu 12/5/13 Sun 2/2/14 Erect hoarding, chain link fence and vehicular gate 60 days Tue 4/29/14 Apply XP for roadworks 210 days Wed 10/2/13 Approval of TTA drawings 90 days | Mon 11/18/13 Sat 2/15/14 Tue 1/7/14 Liaison meeting with UU Installation of utility by the utility undertakers along proposed 340 days Wed 1/8/14 Sat 12/13/14 footpath, XP to be applied by UU 30 days Wed 1/29/14 Thu 2/27/14 Submission / approval of construction materials and method statements for watermains Delivery of materials for watermains Fri 2/28/14 Mon 4/28/14 Install 300mm dia. fresh water main CHA0-CHA283 Sat 11/15/14 Wed 4/30/14 5/20 Install 300mm dia. fresh water main CHB0-CHB555 200 days Tue 5/20/14 Fri 12/5/14 Install 450mm dia. salt water main CHA0-CHA555 Sun 6/15/14 Wed 12/31/14 Install 800mm dia. salt water main CHD0-CHD52 Wed 1/28/15 11/12 Pressure test, swabbing, sterilization and connection Thu 2/19/15 100 days Fri 10/10/14 Sat 1/17/15 Construct valve, fire hydrant, air-valve and wash-out chambers for watermain Fri 3/13/15 Install irrigation system 120 days Fri 11/14/14 Construct u-channel, drainpit and stormwater drain 150 days Fri 10/24/14 250 days Sun 12/14/14 Construct road gully and gully pipe Thu 8/20/15 Mon 8/31/15 Application and install traffic signal at the Junction of Sung 150 days Sat 4/4/15 Wong Toi Road / To Kwa Wan Road Application and install traffic signal at the Junction along Sung 150 days Sun 4/5/15 Wong Toi Road Fri 11/27/15 Construct road kerb and new footpath Thu 4/2/15 Construct carriageway at the existing footpath 270 days Sat 3/26/16 Erect traffic sign 100 days Re-surface existing carriageway 60 days Sun 3/27/16 Wed 5/25/16 Road marking Fri 5/13/16 5/4 5/13 Tue 5/24/16 30 days Mon 4/25/16 Plants delivery for landscaping works Thu 5/26/16 Preparatory works for landscaping works 14 days Wed 6/8/16 Thu 6/9/16 Sun 6/12/16 Hydroseeding Tree and shurb planting 20 days Mon 6/13/16 Sat 7/2/16 Terminal float Sun 7/3/16 Fri 9/2/16 Construction of Box Culverts B6 978 days Mon 9/30/13 Fri 6/3/16 15 days Mon 9/30/13 Mon 10/14/13 Site possession and preparation works 9/30 ______10/14 60 days Tue 10/15/13 Fri 12/13/13 10/15 Submission / approval of construction materials and method statements for box culverts B6 Plant mobilization 14 days Sat 12/14/13 Fri 12/27/13 12/14 12/27 12/28 🌉 Construct temporary works and excavation to the formation 500 days Sat 12/28/13 Mon 5/11/15 level for box culverts B6 Construct drainage box culverts B6 500 days Wed 6/4/14 Precast box culvert preparation works 100 days Tue 6/16/15 Modification of seawall 100 days Sat 10/17/15 Sun 1/24/16 Soil backfilling works 160 days Mon 1/25/16 Sat 7/2/16

Critical tasks Working days Commencement Date: 19 September 2013 Completion Date: 2 September 2016

Terminal float

Demolition of Kowloon East DWFI pumping station

Demolish Kowloon East DWFI pumping station (To be carried

Submission / approval of method statements

out after completion of NPS)

Establishment works for Section 1

Section 1A

62 days

Sun 7/3/16

120 days Sun 2/28/16 Sun 6/26/16

60 days Tue 12/22/15

120 days Sun 2/28/16

1445 days Thu 9/19/13

1445 days Thu 9/19/13

Fri 9/2/16

Fri 2/19/16

Sun 6/26/16

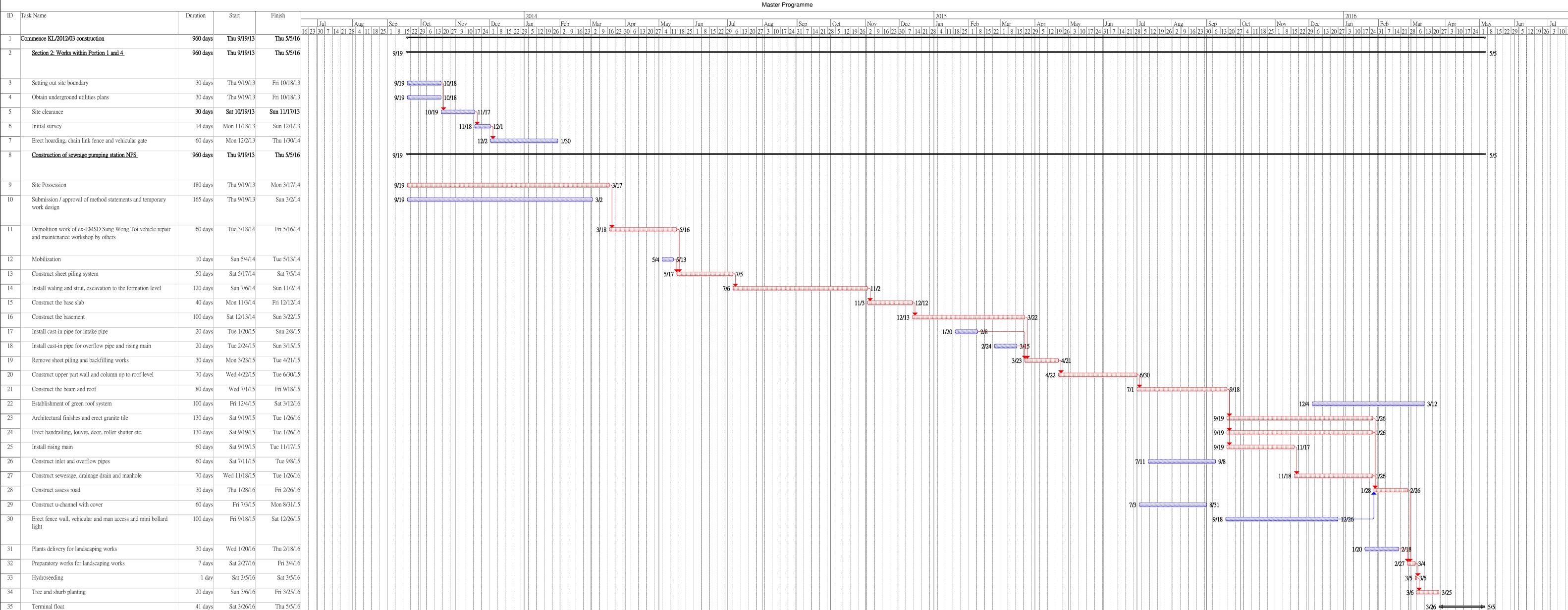
Sat 9/2/17

Sat 9/2/17

Master Programme

ID Task Name	Duration	Start	Finish					2014						Master Program	mme			2015										2016					
				Jul Aug 16 23 30 7 14 21 28 4 11	Sep 11 18 25 1 8 15 22	Oct No. 2 29 6 13 20 27 2	Dec Dec 10 17 24 1 8 15	Jan 22 29 5 12 10 26	Feb Ma	ar Apr 9 16 23 30 6	May 13 20 27 4 11	Jun 18 25 1 8 1	Jul 15 22 29 6 13 20 27	Aug Se	'ep Oct 7 14 21 28 5	t Nc	ov Dec 9 16 23 30 7	Jan 14 21 28 4 11 18 25	Feb Mar 1 8 15 22 1 8	Apr 15 22 29 5 12	May 19 26 3 10 17 2	Jun 24 31 7 14 21	Jul 4 28 5 12 19 26 7	Aug Sep 2 9 16 23 30 6	Oct	Nov	Dec 15 22 29 6 13 2	Jan 20 27 3 10 17	Feb 24 31 7 14 21 2	Mar 28 6 13 20 27	Apr M. 3 10 17 24 1	May Jun Jun	Jul
1 Commence KL/2012/03 construction		Thu 9/19/13	Fri 5/5/17	7/17		- 1.5 LU L/ 1.	1 0 1.	12 12 13 2	10 23 2	0 00 00		1 0		(20)11/24/31	21/21/20/3	2012	00 (24)	7 111 10 23	2 22 24 1 8	12 12 12	10 1/ .	, 14/21	12/12/20	0 00 00 00	20/2/14/1.	1 8	(12 ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا	10 1/	, 14 21	2 20 21	11/24/1	J 12 (1) J 12	10 1
2 Section 2: Works within Portion 1 and 4	960 days	Thu 9/19/13	Thu 5/5/16	716	9/19																											5/5	
3 Setting out site boundary			Fri 10/18/13		9/19 📖																												
4 Obtain underground utilities plans			Fri 10/18/13		9/19	10/18																											
5 Site clearance		Sat 10/19/13					11/17																										
6 Initial survey 7 Freet hoording chain link fance and vehicular gate			Sun 12/1/13				1/18																										
7 Erect hoarding, chain link fence and vehicular gate 8 Installation of riging main along To Kwa Wan Pood			Tue 12/31/13				12/2	12/31																									
8 Installation of rising main along To Kwa Wan Road	899 days	Thu 9/19/13	Sat 3/5/16	710	9/19																									3/5			
0 A 11		0.11	- TV7																														
9 Application of XP and TTA for approval Submission / approval of method statement, temporary works			Wed 4/16/14			10/19					4/16																						
Submission / approval of method statement, temporary works design and delivery of materials to site	100 days	Sat 12/28/13	Sun 4/6/14	"14"			12	/28		4/	##O																						
		thi																															
Inspection pits for determining the alignment of rising mains	60 days	Thu 4/17/14	Sun 6/15/14	714						4/17			0-6/15																				
12		3.5																															
12 Allow for utilities diversion works by the UU 13 Construct isolaing pits at different locations (Locations will be			Thu 8/14/14									6/16		8/14																			
Construct jacking pits at different locations (Locations will be subject to TMLG requirements. Detailed programme will be	300 days	Sun 6/29/14	Fri 4/24/15	(0.14)									6/29								4/24												
submitted after approval of TTA)			i																														
14																																	
Install 2x630mm HDPE rising main CHB0-CHB1050 (Alignment will be subject to TMLG requirements. Detailed	500 days	Mon 9/1/14	Wed 1/13/16	410										9/1													<u> </u>	1/13	5				
programme will be submitted after approval of TTA)			i																														
·			i																														
Construct sewerage manhole, discharge chamber, wash-out chamber, air-valve chamber for rising main	300 days	Mon 5/11/15	Sat 3/5/16	716																	5/11									3/5			
16 Terminal float	61 days	Sun 3/6/16	Thu 5/5/16	7/16																									3/6	5		5/5	
17																																	
18 Construction of Road L19		Thu 9/19/13	Sat 3/5/16		9/19																									3/5			
19 Application of XP and TTA for approval			Wed 4/16/14		9/19						4/16																						
20 Submission / approval of construction materials and method statements for rising mains	30 days	Wed 10/16/13	Thu 11/14/13	V13		10/16	11/14																										
21 Delivery of materials for rising mains		Fri 11/15/13					/15	1/13																									
22 Install 2x630mm HDPE rising main CHB1089-CHB1159	170 days	Tue 1/14/14	Wed 7/2/14	714				1/14					7/2																				
23 Install 2x750mm dia. concrete pipes CHB1159-CHB1300	170 days	Tue 1/14/14	Wed 7/2/14	714				1/14					7/2																				
			i																														
24 Install 600mm and 750 dia. stormwater drain		Thu 7/3/14											7/3					1/18															
25 Install 300mm dia. sewerage drain	200 days												7/3					1/18															
26 Install 200mm dia. fresh water main CHE0-CHE402		Thu 7/3/14											7/3					1/18															
27 Install NS125 & NS63 salt water main CHE0-CHE100 28 Pressure test swabbing sterilization and connection													7/3					1/18															
Pressure test, swabbing, sterilization and connection Construct sewerage manhole, discharge chamber, wash-out																			3/9			6/16											
Construct sewerage manhole, discharge chamber, wash-out chamber, air-valve chamber for rising main	160 days	Thu 12/18/14	rue 5/26/15														12/					≥ 5/2 6											
	300 .	Thu 4/15	Circ.																														
30 Install 2x630mm HDPE rising main CHB1050-CHB1089 by trenchless method	200 days	Thu 4/17/14	sun 11/2/14	# A T						4/17						1	11/2																
	150	Mon 11/2	Mr. ·																														
Install 2x750mm and 2x900mm dia. concrete pipes CHB1300-CHB1398	150 days	Mon 11/3/14	wed 4/1/15													11/3				4/1													
	20 :	Cat 12 -	<u> </u>																														
32 Liaison meeting with UU 33 Installation of utility by the utility undertakers along proposed			Sun 1/5/14 Thu 7/24/14				12/7																										
Installation of utility by the utility undertakers along proposed footpath	200 days	Mon 1/6/14	1 nu 7/24/14	"A T				1/6					7/	f ⁺																			
	160	E.: 7/05	Wedter																														
34 Utilities diversion works by the UU 35 Construct road gully and gully pipe		Fri 7/25/14											7/25					12/31)/8								
35 Construct road gully and gully pipe 36 Construct road kerb			Tue 9/8/15 Thu 9/17/15																	4/2		6/10		9	710								
36 Construct road kerb 37 Construct footpath, planting area and concrete run-in		Wed 6/10/15 Sat 7/25/15																				O TO	77.4-		ا 7/17 ا			y 11					
Construct footpath, planting area and concrete run-in Construct central refuge		Sat 7/25/15 Tue 7/28/15																					7/25					4 11					
Construct central refuge Construct flexible carriageway																							//28			11/4							
Construct flexible carriageway Road marking		Thu 11/5/15 Mon 2/1/16																								±1/3			2/2 2/1 2/10				
40 Road marking 41 Relocate existing directional sign		Mon 2/1/16 Thu 10/29/15	Wed 2/10/16 Fri 2/5/16																							10/29			2/1 2/10 2/5				
41 Relocate existing directional sign 42 Plants delivery for landscaping works		Thu 10/29/15 Mon 1/4/16	Fri 2/5/16 Tue 2/2/16																							10/29		1/4					
42 Plants delivery for landscaping works 43 Preparatory works for landscaping works		Mon 1/4/16 Wed 2/3/16																											2/2				
43 Preparatory works for landscaping works 44 Hydroseeding			Tue 2/16/16 Thu 2/18/16																										2/3 2/16 2/17 2/18				
44 Hydroseeding45 Tree and shurb planting		Wed 2/17/16 Fri 2/19/16	Thu 2/18/16 Sat 3/5/16																										2/17 4 2/18 2/19				
Tree and shurb planting Terminal float			Sat 3/5/16 Thu 5/5/16																										413			> 5/5	
47	or days	Jul 10/10																															
47 Section 2A Section 2A	1325 dave	Thu 9/19/13	Fri 5/5/17	<u>-17</u>	0/10																												
48 Section 2A 49 Establishment works for Section 2		Thu 9/19/13 Thu 9/19/13	Fri 5/5/17		9/10																												
	udys cac				¥117					<u></u>																					 <u> </u>	<u> </u>	

Critical tasks Working days Commencement Date: 19 September 2013 Completion Date: 5 May 2016



Submission / approval of E&M services materials and delivery

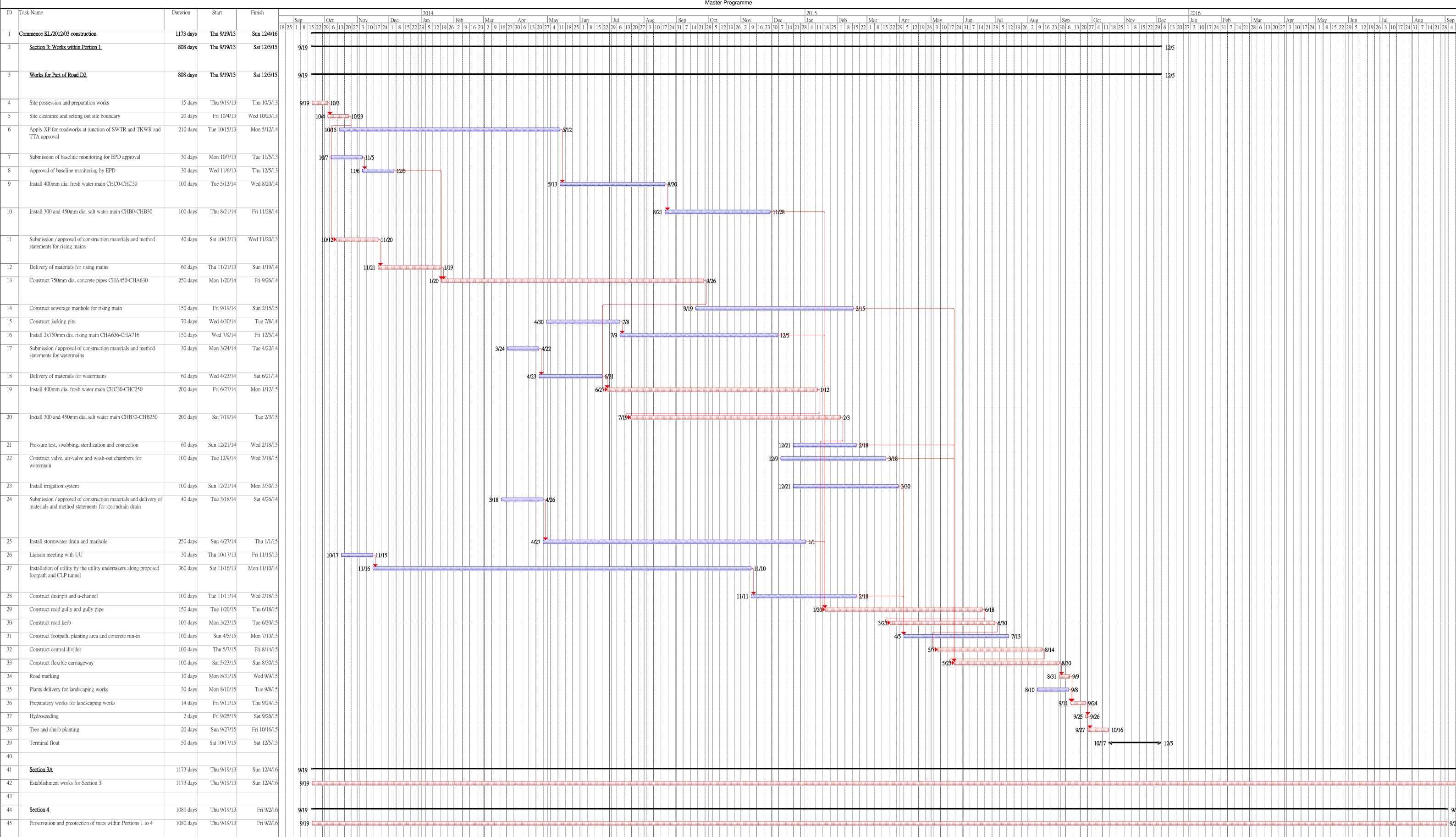
E&M building service installation. (Details programme will be 180 days Tue 9/22/15 Sat 3/19/16

(Detailed programme will be submitted separately)

submitted separately)

570 days Sat 3/1/14 Mon 9/21/15

Master Programme



Stage 4 Infrastructure at Former North Apron Area

Master Programme

Commence KL/2012/03 construction 1345 days Thu 9/19/13 Thu 5/25/17 Section 5: Portion 1 (Subject to Excision) 980 days Thu 9/19/13 Wed 5/25/16 980 days Thu 9/19/13 Works for Part of Road D2 (Footpath only) Wed 5/25/16 Mon 10/14/13 15 days Mon 9/30/13 9/30 🚃 Site possession and preparation works ₽_10/14 Awaiting for the notification of commencement of works by the Interface works meeting with CLP 30 days Tue 10/15/13 Wed 11/13/13 Construct of CLP tunnel by CLP CH67 to CH250 (Exact 444 days Thu 11/14/13 Sat 1/31/15 duration will be agreed with CLP) Construct of CLP tunnel by CLP CH527 to CH585 (Exact 383 days Thu 11/14/13 Mon 12/1/14 duration will be agreed with CLP) Construct of CLP tunnel by CLP CH385 to CH527(Exact 395 days Thu 10/2/14 Sat 10/31/15 duration will be agreed with CLP) Construct of CLP tunnel by CLP CH250 to CH385 (Exact 321 days Thu 11/14/13 Tue 9/30/14 duration will be agreed with CLP) Construct of CLP tunnel by CLP CH0 to CH67 Exact duration 275 days Sat 1/31/15 Sun 11/1/15 will be agreed with CLP) Construct of CLP tunnel by CLP CH585 to CH724 (Exact 365 days Wed 1/1/14 Wed 12/31/14 duration will be agreed with CLP) Installation of utility by the utility undertakers along proposed 350 days Fri 1/2/15 Thu 12/17/15 footpath (Exact duration will be agreed with UU) 340 days Thu 3/5/15 Sun 2/7/16 Construct drainpit and u-channel Thu 1/21/16 Sat 3/28/15 Install stormwater drain, sewerage drain and manholes Install FWM and SWM and chambers 300 days Thu 4/2/15 Tue 1/26/16 Install irrigation system Wed 4/1/15 Mon 1/25/16 300 days Tue 1/26/16 Install fire hydrant Tue 12/8/15 Sun 4/17/16 Install street lighting 70 days Mon 2/8/16 Mon 2/8/16 Sun 4/17/16 Construct footpath, planting area and concrete run-in 70 days Plants delivery for landscaping works Sun 4/10/16 Preparatory works for landscaping works 14 days Mon 4/18/16 Sun 5/1/16 Mon 5/2/16 Tue 5/3/16 Hydroseeding Tree and shurb planting Wed 5/4/16 Wed 5/25/16 Section 5A: (Subject to Excision) 1345 days Thu 9/19/13 Thu 5/25/17 Establishment works for Section 5 1345 days Thu 9/19/13 Thu 5/25/17 Section 7A: Portion 1 (Subject to Excision) 800 days Thu 9/19/13 Fri 11/27/15 Fri 12/27/13 Awaiting for the notification of commencement of works by the l Construct one 500mm dia., two 1000mm dia. District Cooling 350 days Sat 12/28/13 System (DCS) chilled water pipes and four 1400mm dia. seawater pipes 350 days Thu 3/6/14 Wed 2/18/15 Construct two DCS chilled water pipes tee to the building lots. The diameter of DCS chilled water pipes are 200mm, 500mm and 800mm subject to various locations 200 days Sat 9/13/14 Tue 3/31/15 Construct valve chambers, instrumentation chambers, access manhole, thrust blocks, insulation provision for the DCS chilled Construct the leakage detection system for DCS chilled water 150 days Sun 11/9/14 Tue 4/7/15 Construct the cable ducts and associated draw pits for the 150 days Wed 11/26/14 Fri 4/24/15 communication system Interfacing works with EMSD 1020EM12A Contractor for 300 days Wed 1/1/14 Mon 10/27/14 connection of the proposed four seawater pipes and three chilled water pipes in Section C to their construction of seawater pipes and chilled water pipes Testing and commissioning of the works Fri 3/6/15 Sat 6/13/15 Install FWM and SWM and chambers 200 days Sat 12/27/14 Tue 7/14/15 Thu 6/25/15 Pressure test, swabbing, sterilization and connection 70 days Wed 9/2/15 Tue 9/15/15 Construct valve, fire hydrant, air-valve and wash-out chambers f 80 days Sun 6/28/15 Mon 7/27/15 Fri 1/9/15 Install stormwater drain, sewerage drain and construct manhole 200 days Fri 5/29/15 Sun 10/25/15 150 days Construct road gully and gully pipe Construct road kerb 100 days Thu 7/23/15 Fri 10/30/15 Tue 11/17/15 Construct flexible carriageway 100 days Mon 8/10/15 10 days Wed 11/18/15 Fri 11/27/15 Road marking

Critical tasks Working days Working days

Commencement Date: Completion Date:

ID Task Name

Start

Duration