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### **MONTHLY EM&A REPORT**

### November 2016

Client	:	Civil Engineering and Development Department, HKSAR
Contract No.	:	KLN/2015/07
Contract Name	:	Environmental Monitoring Works for Contract KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway
Report No.	:	0405/15/ED/0643A
EP-337/2009		Distributor Roads Serving the Planned Kai Tak elopment Area
EP-339/2009/A	Build	ommissioning of the Remaining Parts (Ex-GFS ding, Radar Station and Hong Kong Aviation Club) e former Kai Tak Airport
EP-451/2013	Trun	k Road T2

Prepared by	:	Alfred Y. S. Lam
Reviewed by	:	Cyrus C. Y. Lai
Certified by	:	Colin K. L. Yung Environmental Team Leader MateriaLab Consultants Limited



Ref.: CEDKTDS3EM00 0 0138L.16

12 December 2016

By Post and Email

Hyder-Meinhardt Joint Venture 20/F., AXA Tower, Landmark East, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong

Attention: Mr. Wong W K, Chris

Dear Mr. Wong,

### Re: Contract No. KL/2014/03 - Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway Monthly EM&A Report for November 2016

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for November 2016 (Report No. 0405/15/ED/0643A) we received by e-mail on 9 December 2016.

Please be informed that we have no adverse comment on the captioned report. We hereby verify the captioned submission according to Condition 3.3 of EP-337/2009, Condition 3.3 of EP-339/2009/A and Condition 3.4 of EP-451/2013.

Thank you for your attention. Please do not hesitate to contact us should you have any queries.

Yours sincerely, For and on behalf of Ramboll Environ Hong Kong Limited

Fapta Pour

F. C. Tsang Independent Environmental Checker

CEDD C.C.

Attn.: Ms. Amy Chu MateriaLab Attn.: Mr. Colin K. L. Yung CRBC Attn.: Mr. Arnold Chan

Fax: 2369 4980 Fax: 2450 8032 Fax: 2283 1689

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### **TABLE OF CONTENTS**

CUTIVE SUMMARY	1
INTRODUCTION	1
AIR QUALITY	5
NOISE	10
LANDSCAPE AND VISUAL	14
WASTE MANAGEMENT	15
SITE INSPECTION	16
ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE	17
IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES	18
FUTURE KEY ISSUES	19
CONCLUSIONS	20
	INTRODUCTION AIR QUALITY NOISE LANDSCAPE AND VISUAL WASTE MANAGEMENT SITE INSPECTION ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES FUTURE KEY ISSUES

### **FIGURES**

Figure 1	Project General Layout
Figure 2	Air and Noise Monitoring Locations

### LIST OF APPENDICES

Appendix A	Construction Programme
Appendix B	Project Organization Chart
Appendix C	Action and Limit Levels for Air Quality and Noise
Appendix D	Calibration Certificates of Monitoring Equipment
Appendix E	Environmental Monitoring Schedules
Appendix F	Air Quality Monitoring Data
Appendix G	Noise Monitoring Data
Appendix H	Event Action Plans
Appendix I	Waste Flow Table
Appendix J	Environmental Mitigation Implementation Schedule (EMIS)
Appendix K	Weather and Meteorological Conditions during Reporting Month
Appendix L	Cumulative statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions
Appendix M	Summary of Site Audit in the Reporting Month

Appendix N Outstanding Issues and Deficiencies

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### **EXECUTIVE SUMMARY**

- i. The Civil Engineering and Development Department HKSAR has appointed MateriaLab Consultants Limited (MCL) to undertake the Environmental Team services for the Project and implement the EM&A works.
- ii. This Monthly EM&A report presents the environmental monitoring and audit works for the period between 1 November 2016 and 30 November 2016. As informed by the Contractor, major activities in the reporting month were:
  - Carrying out pre-drilling;
  - Construction of guide walls and D-walls;
  - Construction of Socketed H piles;
  - Temporary utility diversion;
  - Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS);
  - Construction of Subway B:
  - Demolition of Radar Tower:
  - Construction of District Cooling System Works; and
  - Implementation of Temporary Traffic Arrangement (TTA).

### Breaches of the Action and Limit Levels

iii. No Action / Limit Level exceedance was recorded for 24-hr TSP and construction noise at KTD1a, KTD2a and KER1a in the reporting month.

### **Complaint, Notification of Summons and Successful Prosecution**

iv. No environmental complaint and no notification of summons and successful prosecution were received in the reporting month.

### **Reporting Changes**

v. Due to construction works at Cheung Yip Street, the TSP monitoring location and noise monitoring location, KER 1a, was relocated to the approved location, KER 1b, on 16 November 2016. TSP monitoring and noise monitoring were carried out at KER 1b, effective from 16 November 2016 until the cable diversion works at Cheung Yip Street carried out by CLP are completed.

### **Future Key Issues**

vi. The key issues to be considered in the coming reporting month include:

Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, water quality, waste management and landscape and visual impact.

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#### 1. INTRODUCTION

#### 1.1 Background

- 1.1.1 The Kai Tak Development is located in the south-eastern part of Kowloon Peninsula of the HKSAR, 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.
- 1.1.2 Contract No. KL/2014/03 is the works package to construct an approximately 420m long supporting underground structure (SUS) underneath Shing Cheong Road and Cheung Yip Street. The EM&A programme under this Contract is governed by three EPs (EP-337/2009. EP-339/2009/A and EP-451/2013) and two EM&A Manuals (AEIAR-130/2009 and AEIAR-174/2013). The Works to be executed under this Contract and corresponding EPs include but not be limited to the following main items:

### EP-451/2013 - Trunk Road T2

Construction of approximately 420m long supporting underground structure (SUS) (i) including diaphragm walls, barrettes, piled foundation, top and bottom slabs, end wall and adits underneath Shing Cheong Road and Cheung Yip Street;

### EP-337/2009 – New Distributor Roads Serving the Planned Kai Tak Development

- Widening and re-alignment of Cheung Yip Street of approximately 330m long and (ii) associated footpaths:
- (iii) Demolition, reconstruction and widening of Shing Cheong Road of approximately 410m long and associated footpaths;
- Construction of drainage outfall and modification of existing seawall; (iv)
- Construction of ancillary works including surface drainage, sewerage, water, fire (v) fighting, street lighting, street furniture, road marking, road signage, utilities and services, irrigation and landscape works.

### EP-339/2009/A – Decommissioning of the Remaining Parts (Ex-GFS Building, Radar Station and Hong Kong Aviation Club) of the former Kai Tak Airport

(vi) Demolition of RADAR Tower and guard house;

### Other works not covered by any EP

- Construction of two subways between Phase II of New Acute Hospital (Site A) and (vii) Hong Kong Children's Hospital (Site C), and between Phase I of New Acute Hospital (Site B) and Site C:
- (viii) Construction of District Cooling System (DCS) along Cheung Yip Street and Shing Cheong Road
- 1.1.3 The location and boundary of the site is shown in **Figure 1**.
- 1.1.4 This Monthly EM&A report is required under EP-337/2009 Condition 3.3, EP-339/2009/A Condition 3.3 and EP-451/2013 Condition 3.4. It is to report the results and findings of the EM&A programme required in the EM&A Manuals.
- 1.1.5 This is the ninth monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project within the period between 1 November 2016 and 30 November 2016.

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### 1.2 Project Organization

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- 1.2.1 The project proponent was the Civil Engineering and Development Department, HKSAR (CEDD). Hyder Meinhardt Joint Venture (HMJV) was commissioned by CEDD as the Engineer for the Project. Ramboll Environ Hong Kong Limited was commissioned as the Independent Environmental Checker (IEC). China Road and Bridge Corporation (Hong Kong) (CRBC) was appointed as the main contractor for the construction works under the contract KL/2014/03. MateriaLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by CEDD to implement the EM&A programme for the Project.
- 1.2.2 The organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarized in **Table 1.1**.

Party	Position	Name	Telephone	Fax
Project Proponent (CEDD)	Co-ordinator	Ms. Amy Chu	3106 3172	2369 4980
Engineer's Representative (HMJV)	Chief Resident Engineer	Mr. W. K., Chris Wong	3742 3803	3742 3899
IEC (Ramboll Environ Hong Kong Limited)	Independent Environmental Checker	Mr. F. C. Tsang	3465 2888	3465 2899
Main Contractor (CRBC)	Site Agent	Mr. Chan See Wai, Arnold	9380 4110	2283 1689
	Environmental Officer	Mr. Andy Choy	6278 2693	2283 1689
ET (MCL)	Environmental Team Leader	Mr. Colin Yung	3565 4114	3565 4160

 Table 1.1
 Contact Information of Key Personnel

### **1.3** Construction Programme and Activities

- 1.3.1 The construction of the Project commenced in February 2016 and is expected to complete in 2020. The construction programme is shown in **Appendix A**.
- 1.3.2 A summary of the major construction activities undertaken in the reporting month were:
  - · Carrying out pre-drilling;
  - Construction of guide walls and D-walls;
  - Construction of Socketed H piles;
  - Temporary utility diversion;
  - Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS);
  - Construction of Subway B;
  - Demolition of Radar Tower;
  - Construction of District Cooling System Works; and
  - Implementation of Temporary Traffic Arrangement (TTA).

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#### 1.4 Inter-relationship with the environmental protection/ mitigation measures with the construction programme

- 1.4.1 According to the construction activities in the construction programme mentioned in Section 1.3.2, the following environmental protection/ mitigation measures including Air Quality Impact. Construction Noise Impact, Water Quality Impact, Chemical and Waste Management, Landscape and Visual Impact shall be implemented:
  - Sufficient watering of the works site with the active dust emitting activities;
  - Limitation of the speed for vehicles on unpaved site roads;
  - Properly cover or enclosure of the stockpiles and dusty materials;
  - Good site practices on loading dusty materials;
  - Providing sufficient vehicles washing facilities at every vehicle exit point:
  - Good maintenance to the plant and equipment;
  - Use of quieter plant and Quality Powered Mechanical Equipment (QPME);
  - Use of acoustic fabric and noise barrier;
  - Using the approved Non-road Mobile Machineries (NRMMs);
  - Proper storage and handling of chemical;
  - Appropriate desilting, oil interceptors or sedimentation devices provided on site for treatment before discharge:
  - Onsite waste sorting and implementation of trip ticket system;
  - Training of the site personnel in proper waste management and chemical waste handling procedures;
  - Proper storage of the construction materials;
  - Erection of decorative screen hoarding;
  - Strictly following the Environmental Permits and Licenses;
  - Provide sufficient mitigation measures as recommended in Approved EIA Reports

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### 1.5 Status of Environmental Licences, Notifications and Permits

1.5.1 A summary of the relevant environmental licenses, permits and/or notifications on environmental protection for this Contract is presented in **Table 1.2**.

 Table 1.2
 Relevant Environmental Licenses, Permits and/or Notifications

Environmental License / Permit / Notification	Reference Number	Valid From	Valid Till
Environmental Permit	EP-337/2009 EP-339/2009/A EP-451/2013	23 April 2009 18 June 2009 19 September 2013	Not Applicable Not Applicable Not Applicable
Notification pursuant to Air Pollution (Construction Dust) Regulation	395601	16 November 2015	Not Applicable
Billing Account for Waste Disposal	A/C No.: 7023814	30 November 2015	Not Applicable
Construction Noise Permit	GW-RE0538-16	1 June 2016	30 November 2016
Construction Noise Permit	GW-RE1008-16	19 October 2016	09 April 2017
Construction Noise Permit	PP-RE0032-16	23 November 2016	15 May 2017
Wastewater Discharge License	WT00023125-2015	6 January 2016	31 January 2021
Chemical Waste Producer License	5213-247-C1232-12	23 November 2015	Not Applicable

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#### 2. **AIR QUALITY**

#### 2.1 **Monitoring Requirement**

In accordance with the approved EM&A Manuals, 24-hour Total Suspended Particulates (TSP) level at the designated air quality monitoring station is required. Impact 24-hour TSP monitoring should be carried out at least once every 6 days. In case of complaints, 1-hour TSP monitoring should be carried out at least 3 times per 6 days when the highest dust impacts are likely to occur. The Action and Limit Levels of the air quality monitoring are given in Appendix С.

#### 2.2 **Monitoring Equipment**

The 24-hour TSP air quality monitoring was performed using High Volume Air Samplers (HVS) located at each of the designated monitoring station. Portable TSP Monitors would be used in case of complaints for 1-hour TSP monitoring.

**Table 2.1** summarizes the equipment used in air quality monitoring.

Item Brand		Model Equipment		Serial Number	
1		TE-5170 (TSP)	High Volume Sampler		
		TE-300-310X	- Mass Flow Controller	2037	
	Tisch	TE-5005X	- Blower Motor Assembly	3482	
		TE-5007X	- Mechanical Timer	4488	
		TE-5009X	- Continuous Flow Recorder	4371	
2		TE-5170 (TSP)	High Volume Sampler		
		TE-300-310X	- Mass Flow Controller	2524	
	Tisch	TE-5005X	- Blower Motor Assembly	4037	
		TE-5007X	- Mechanical Timer	5160	
		TE-5009X	- Continuous Flow Recorder	4377	
3		TE-5170 (TSP)	High Volume Sampler		
TE-300-310X Tisch TE-5005X G3031 G1051		TE-300-310X	- Mass Flow Controller	2618	
		TE-5005X	- Blower Motor Assembly	3838	
		G3031	- Mechanical Timer	2251	
		G1051	- Continuous Flow Recorder	2307	
4	Tisch	TE-5025A	HVS Sampler Calibrator	0438320 / 2456	
5 *Sibata Model LD-3B Siba		Model LD-3B	Sibata Portable TSP Monitors	NA	

Table 21 Air Quality Monitoring Equipment

Note:

No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted.

#### 2.3 **Monitoring Methodology**

2.3.1 24-hour TSP air quality monitoring

### **HVS** Installation

The following guidelines were adopted during the installation of HVS:

- Sufficient support is provided to secure the samplers against gusty wind.
- No two samplers are placed less than 2 meters apart.

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- The distance between the sampler and an obstacle, such as buildings, is at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2 meters of separation from walls, parapets and penthouses is required for rooftop samples.
- A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
- No furnaces or incineration flues are nearby.
- Airflow around the samplers is unrestricted.
- The samplers are more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

### Filters Preparation

Fiberglass filters (provided by the HOKLAS accredited laboratory) shall be used (Note: these filters have a collection efficiency of larger than 99% for particles of 0.3 µm diameter). A HOKLAS accredited laboratory (ALS Technichem (HK) Pty Ltd.) is responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for monitoring team.

All filters are equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature is around 25°C and not variable by more than ±3°C; the relative humidity (RH) is < 50% and not variable by more than  $\pm 5\%$ . A convenient working RH is 40%.

### **Operating / Analytical Procedures**

Operating / analytical procedures for the air quality monitoring are highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the HVS are properly set (between 0.6 m<sup>3</sup>/min and 1.7 m<sup>3</sup>/min) in accordance with the EM&A manual. The flow rate shall be indicated on the flow rate chart.
- The power supply shall be checked to ensure the samplers worked properly.
- On sampling, the samplers shall be operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air guality monitoring station.
- The filter holding frame is then removed by loosening the four nuts and carefully a weighted and conditioned filter is centered with the stamped number upwards, on a supporting screen.
- The filter shall be aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame is tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The shelter lid shall be closed and secured with the aluminum strip.
- The timer is then programmed. Information shall be 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).
- After sampling, the filter shall be removed and sent to laboratory for weighing. The elapsed time is also recorded.
- Before weighing, all filters are equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than  $\pm 3^{\circ}$ C: the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%. Weighing results are returned to MCL for further analysis of TSP concentrations collected by each filter.

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### 2.3.2 1-hour TSP air quality monitoring

### **Operating / Analytical Procedures**

The measuring procedures of the 1-hr dust meter are in accordance with the Manufacturer's instruction Manual as follows:

- Pull up the air sampling inlet cover -
- Change the Mode 0 to BG once
- Push Start/Stop switch once
- Turn the knob to SENSI.ADJ and press it
- . Push Start/Stop switch once
- Return the knob to the position MEASURE slowly .
- Push the timer set switch to set measuring time
- Remove the cap and make a measurement

#### 2.4 Maintenance / Calibration

2.4.1 24-hour TSP air quality monitoring

The following maintenance / calibration are required for the HVS:

- The high volume motors and their accessories are properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking are made to ensure that the equipments and necessary power supply are in good working condition.
- All HVS shall be calibrated (five point calibration) using Calibration Kit upon installation and thereafter in every 3 months.
- A copy of the calibration certificates for the HVS and calibrator are provided in **Appendix** D.
- 2.4.2 1-hour TSP air quality monitoring

The portable TSP monitor should be calibrated at 1 year intervals

#### 2.5 **Monitoring Locations**

- 2.5.1 According to the EM&A Manual, three air quality monitoring locations, namely KTD1, KTD2 and KER1, are covered by this Contract within the South Apron Area of Former Kai Tak Airport. The other two air quality monitoring locations, which are identified in Cha Kwo Ling area, are farther than 500m away from the site boundary and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by other Contract(s) respectively.
- 2.5.2 According to the approved alternative baseline air quality and noise monitoring locations (EPD reference: EP2/K19/A/21 Pt.5), the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1a) for air quality monitoring, they are summarized in **Table 2.2** and shown in **Figure 2**.

Table 2.2 Location of Air Quality	y Monitoring Station
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Monitoring Station Location	
KTD1a	Centre of Excellence in Paediatrics (Children's Hospital)
KTD2a G/IC Zone next to Kwun Tong Bypass (Future Hospital at	
KER1a / KER1b	Site Boundary at Cheung Yip Street

2.5.3 The existing location KER 1a for 24-hours TSP monitoring is situated at the work area of upcoming cable diversion works of CLP Hong Kong Power Limited (CLP) at Cheung Yip Street. The proposal of temporary relocation of monitoring location KER 1a for TSP monitoring was submitted to EPD on 26 October 2016 for approval under condition 3.1 of EP-337/2009, EP339/2009/A and EP-451/2013 and Section 11.3.1.2 of the EM&A Manual, AEIAR-174/2013. The monitoring location of KER1b for TSP monitoring was approved by EPD on 11 November 2016. 24-hours TSP monitoring at KER 1a was suspended on 16 November 2016. 24-hours TSP monitoring was carried out at KER 1b, effective from 16 November 2016 until the cable diversion works at Cheung Yip Street carried out by CLP are completed.

### 2.6 Results and Observations

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- 2.6.1 The schedule of air quality monitoring in reporting month is provided in Appendix E.
- 2.6.2 No Action / Limit Level exceedance was recorded for 24-hr TSP at KTD1a, KTD2a, KER1a and KER1b in the reporting month.
- 2.6.3 No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted in the reporting month.
- 2.6.4 During the reporting month, major dust sources including loading and unloading of C&D wastes, vehicles movement were observed in the site. Non-project related construction activities at the nearby construction site and road traffic along Shing Cheong Road, Cheung Yip Street and the Kwun Tong By-pass were observed. The above factors may affect the monitoring results.
- 2.6.5 The weather conditions during the monitoring are provided in **Appendix K**.
- 2.6.6 The monitoring data of 24-hr TSP are summarized in **Table 2.3**. Detailed monitoring data are presented in **Appendix F**.

Table 2.5	a 2.3 Summary of 24-hr TSP Monitoring Results				
Parameter	Monitoring Station	Average (μg/m³)	Range (µg/ m³)	Action Level (µg/ m³)	Limit Level (µg/ m <sup>3</sup> )
24-hr TSP	KTD1a	80	34 – 122	177	
24-nr 15P in $\mu$ g/m <sup>3</sup>	KTD2a	35	16 – 56	157	260
in µg/m	KER1a / KER1b	65	9 – 116	172	

	able 2.3	Summary	of 24-hr TSP Monitoring Results
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2.6.7 The Event and Action Plan for air quality is given in **Appendix H**.

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### 2.7 Comparison of 24-hr TSP Monitoring Results with EIA Predictions

2.7.1 The monitoring data of 24-hr TSP was compared with the EIA predictions as summarized in **Table 2.4**.

Table 2.4 Companyon of 24-in TSP data with EIA predictions					
Monitoring Station	Receiver Reference	Predicted Maximum 24-hour TSP Concentration (μg/m <sup>3</sup> )	24-hour TSP concentration in November 2016 (µg/m³)	Average 24-hour TSF concentration in November 2016 (µg/m <sup>3</sup> )	
KTD1a	KTD3	126	34 – 122	80	
KTD2a	-	-	16 – 56	35	
KER1a / KER1b	KTD6	169	9 – 116	65	

### Table 2.4 Comparison of 24-hr TSP data with EIA predictions

Note:

For KTD2a, there was no receiver reference in the EIA report, EIAR-174/2013.

Predicted Maximum TSP Concentration extracted from Table 4.14 of EIA Report, EIAR-174/2013.

2.7.2 The 24-hour TSP monitoring results were below the Predicted Maximum 24-hr TSP concentration in the approved Environmental Impact Assessment (EIA) Report and no Action / Limit Level exceedance was recorded in the reporting period.

### 3. NOISE

### 3.1 Monitoring Requirement

In accordance with the approved EM&A Manuals, Leq (30min) monitoring is conducted for at least once a week during the construction phase between 0700 and 1900 on normal weekdays at the designated monitoring locations.

### 3.2 Monitoring Equipment

The sound level meter used in noise monitoring will comply with the International Electrotechnical Commission Publication (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications as referred to in the Technical Memorandum issued under the Noise Control Ordinance (NCO).

Sound level calibrator will be used for the on-site calibration of the meter. This calibrator complies with the IEC Publication 942 (1988) Class 1 and ANSI S1.40 - 1984. Noise measurements were only accepted to be valid if the calibration levels from before and after the measurement agree to within 1.0dB.

Measurements shall be recorded to the nearest 0.1dB. This noise monitors are programmed to measure A-weighted equivalent continuous sound pressure level at 30-minute intervals between 0700 and 1900 on normal weekdays at least once a week when construction activities are underway.

**Table 3.1** summarizes the noise monitoring equipment model being used for this project.

Item	Brand	Model	Equipment	Serial Number
1	Casella	CEL-63X Series	Integrating Sound Level Meter	3321823
2	Casella	CEL-633A Series	Integrating Sound Level Meter	3756072
3	Casella	CEL-633A Series	Integrating Sound Level Meter	3756084
4	Casella	CEL-633A Series	Integrating Sound Level Meter	3756127
5	Casella	CEL-120/1	Calibrator	5230736
6	Casella	CEL-120/1	Calibrator	5230742
7	Casella	CEL-120/1	Calibrator	4358251
8	Smart Sensor	AR816+	Wind Speed Anemometer	MC-A-001

### Table 3.1 Noise Monitoring Equipment

### 3.3 Monitoring Parameters and Frequency

**Table 3.2** presents the noise monitoring parameters and frequencies.

Parameter	Frequency and Period
LAeq (30min)	At each station at 0700-1900 hours on normal weekdays at a frequency
L10 and L90 will be recorded for reference	of once a week

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#### 3.4 **Monitoring Methodology**

The monitoring procedures are as follows:

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- The monitoring station is set at a point 1m from the exterior of the sensitive receivers building facade and set at a position 1.2m above the ground.
- The battery condition is checked to ensure good functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time are set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - measurement time : Weekly 30 minutes between 0700-1900 on normal weekdays
- Prior to and after noise measurement, the meter shall be calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement will be considered invalid and repeat of noise measurement is required after re-calibration or repair of the equipment.
- Noise monitoring should be 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.
- Noise measurement should be paused during periods of high intrusive noise if possible and observation shall be recorded when intrusive noise is not avoided.
- At the end of the monitoring period, the Leg, L10 and L90 are recorded. In addition, site conditions and noise sources are recorded on a standard record sheet.

#### 3.5 Maintenance / Calibration

Maintenance and Calibration procedures are as follows:

- The microphone head of the sound level meter and calibrator should be cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator should be calibrated annually by a HOKLAS laboratory.
- Relevant calibration certificates are provided in **Appendix D**.

#### 3.6 **Monitoring Locations**

- 3.6.1 According to the EM&A Manual, three noise monitoring locations, namely KTD1, KTD2 and KER1, are covered by this Contract within the South Apron Area of Former Kai Tak Airport. The other two noise quality monitoring locations, which are identified in Cha Kwo Ling area, are farther than 300m away from the site boundary and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by other Contract(s) respectively.
- 3.6.2 According to the approved alternative baseline air quality and noise monitoring locations (EPD reference: EP2/K19/A/21 Pt.5), the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1a) for noise monitoring, they are summarized in **Table 3.3** and shown in **Figure 2**.

Monitoring Station	Location
KTD1a Centre of Excellence in Paediatrics (Children's Hospital)	
KTD2a	G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
KER1a / KER1b	Site Boundary at Cheung Yip Street

3.6.3 The existing location KER 1a for noise monitoring is situated at the work area of upcoming cable diversion works of CLP Hong Kong Power Limited (CLP) at Cheung Yip Street. The proposal of temporary relocation of monitoring location KER 1a for noise monitoring was submitted to EPD on 26 October 2016 for approval under condition 3.1 of EP-337/2009, EP339/2009/A and EP-451/2013 and Section 11.3.1.2 of the EM&A Manual, AEIAR-174/2013. The monitoring location of KER1b for noise monitoring was approved by EPD on 11 November 2016. Noise monitoring at KER 1a was suspended on 16 November 2016. Noise monitoring works at Cheung Yip Street carried out by CLP are completed.

### 3.7 Results and Observations

- 3.7.1 The schedule of noise monitoring in reporting month is provided in **Appendix E**.
- 3.7.2 During the monitoring month, at KTD1a, non-project related construction activities at the nearby construction site and road traffic along Shing Cheong Road were observed in the surroundings. At KTD2a, road traffic along the Kwun Tong By-pass was observed. At KER1a and KER1b, road traffic along Cheung Yip Street was observed. Major noise sources including noise emission from plant & PME and some other construction activities, travel of vehicles, loading and unloading of C&D waste were observed in the site. The above factors may affect the monitoring results.
- 3.7.3 No raining and wind with speed over 5 m/s was observed during noise monitoring according to the onsite observation. The weather conditions during the monitoring month are provided in **Appendix K**.
- 3.7.4 The noise monitoring data are summarized in **Table 3.4**. Detailed monitoring data are presented in **Appendix G**.

Time Period		eq <sub>(30min)</sub> dB( <i>i</i> (Range) Monitoring S KTD2a		Action Level	Limit Level
0700-1900 hrs on normal weekdays	67 - 72	61 - 69	64 - 70	When one documented complaint is received	75 dB(A)

Table 3.4	Summary	, of Noise Im	pact Monitoring	n Rosults
able 3.4	Summary		pact womening	y nesuits

Note:

Т

KTD1a: Façade Measurement

KTD2a & KER1a: Free-field measurement (+3dB(A) correction has been applied)

3.7.5 No Action / Limit Level exceedance was recorded for construction noise in the reporting month.

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- 3.7.6 The Action and Limit Levels for noise impact monitoring have been set are presented in **Appendix C**.
- 3.7.7 The Event and Action Plan for noise is given in **Appendix H**.

### 3.8 Comparison of Noise Monitoring Results with EIA Predictions

3.8.1 The noise monitoring data was compared with the EIA predictions as summarized in **Table 3.5**.

Table 3.5 Comparison of Noise Monitoring data with E	A predictions
--	---------------

Monitoring Station	Receiver Reference	Maximum Predicted Mitigated Construction Noise Level, dB(A)	Leq <sub>(30min)</sub> dB(A) in November 2016
KTD1a	KTD1	74	67 - 72
KTD2a	KTD2	75	61 - 69
KER1a / KER1b	KER1	75	64 - 70

### Note:

Maximum Predicted Mitigated Construction Noise Level extracted from Table 5.13 of EIA Report, EIAR-174/2013.

3.8.2 The impact noise monitoring results in the reporting month did not exceed the Maximum Predicted Mitigated Construction Noise Level in the approved Environmental Impact Assessment (EIA) Report and no Action / Limit Level exceedance was recorded in the reporting period.

### 4. LANDSCAPE AND VISUAL

### 4.1 Audit Requirements

- 4.1.1 As per the Trunk Road T2 EM&A Manual, the landscape and visual mitigation measures during the construction phase shall be audited by a Registered Landscape Architect, as a member of the Environmental Team, at least once every two weeks to ensure compliance with the intended aims of the measures.
- 4.1.2 According to the Kai Tak Development EM&A Manual, measures to mitigate landscape and visual impacts during construction should be checked to ensure compliance with the intended aims of the measures. The progress of the engineering works shall be regularly reviewed onsite to identify the earliest practical opportunities for the landscape works to be undertaken. The ET shall report on the Contractor's compliance on a weekly basis.

### 4.2 Results and Observations

- 4.2.1 To monitor and audit the implementation of landscape and visual mitigation measures, four weekly Landscape and Visual Site audits were carried out on 3, 10, 16 and 24 November 2016 and two of them, 3 and 16 November 2016 were carried out by a Registered Landscape Architect. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009).
- 4.2.2 During the Site audit on 3 November 2016, it is observed that open stockpiles at Portion I were not fully covered with impervious sheeting. The item was rectified by the Contractor and inspected on 10 November 2016.
- 4.2.3 During the Site audit on 10 November 2016, it is observed that open stockpiles at Portion I were not fully covered by impervious sheeting. The item was rectified by the Contractor and inspected on 16 November 2016.
- 4.2.4 Should non-compliance of the landscape and visual impact occur, action in accordance to the event action plan presented in **Appendix H** shall be carried out.

### 5. WASTE MANAGEMENT

### 5.1 Audit Requirements

- 5.1.1 The effective management of waste arising during the construction phase will be monitored through the site audit programme. Regular audits and site inspections should be carried out to ensure that the recommended good site practices and other mitigation measures are implemented by the Contractor.
- 5.1.2 The audit should look at all aspects of on-site waste management practices including the waste generation, storage, recycling, transport and disposal. The aims of waste audit are:
  - to ensure the waste arising from the works are handled, stored, collected, transferred and disposed of in an environmentally acceptable manner;
  - verify the implementation status and evaluate the effectiveness of the mitigation measures; and
  - to encourage the reuse and recycling of material.

### 5.2 Results and Observations

- 5.2.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.
- 5.2.2 The amount of wastes generated by the site activities in the reporting month is shown in **Appendix I**.
- 5.2.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.
- 5.2.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

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#### 6. SITE INSPECTION

#### 6.1 Site Inspection

- 6.1.1 Site inspections were carried out weekly to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the mitigation measures implementation schedule is provided in Appendix J.
- 6.1.2 In the reporting month, four site inspections were carried out on 3, 10, 16 and 24 November 2016. Two of them, held on 3 and 16 November 2016 were the joint inspections with the IEC, ER, the Contractor and the ET.
- 6.1.3 No outstanding issues were reported during the reporting month. Details of observations recorded during the site inspections are summarized in **Appendix M**.
- 6.1.4 All the follow-up actions requested by Contractor's ET and IEC during the site inspections were undertaken as reported by the Contractor and confirmed in the following weekly site inspection conducted during the reporting month.

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#### 7. **ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE**

#### 7.1 **Environmental Exceedance**

No Action / Limit Level exceedance was recorded for 24-hr TSP and construction noise at 7.1.1 KTD1a, KTD2a, KER1a and KER1b in the reporting month.

#### 7.2 **Complaints, Notification of Summons and Prosecution**

7.2.1 No complaint, inspection notice, notification of summons or prosecution was received in this reporting month. Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in Appendix L.

Email

### 8. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

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### 8.1 Implementation Status

Hong Kong ..

8.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting month is summarized in **Appendix J**. Status of required submission under the EP during the reporting period is summarized in **Table 8.1**.

EP Condition	Submission	Submission Date
EP-337/2009		
Condition 2.3	Management Organization of Main Construction Companies	18/12/2015
Condition 2.4	Design Drawing of the Project	18/12/2015
Condition 2.11	Landscape Mitigation Plan(s)	18/12/2015
Condition 3.3	Monthly EM&A Report (October 2016)	14/11/2016
EP-339/2009/A		
Condition 2.4	Management Organization of Main Construction Companies	18/12/2015
Condition 2.5	Design Drawing of the Project	18/12/2015
Condition 3.3	Monthly EM&A Report (October 2016)	14/11/2016
EP-451/2013		
Condition 2.3	Management Organization of Main Construction Companies	18/12/2015
Condition 2.4	Design Drawing of the Project	18/12/2015
Condition 2.5	Landscape Mitigation Plan(s)	18/12/2015
Condition 2.10	Supplementary Contamination Assessment Report	18/12/2015
Condition 3.3	Baseline Monitoring Report	12/2/2016
Condition 3.4	Monthly EM&A Report (October 2016)	14/11/2016

 Table 8.1
 Status of Required Submission under Environmental Permit

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### 9. FUTURE KEY ISSUES

### 9.1 Construction Programme for the Next Two Months

- · Temporary utility diversion;
- · Implementation of Temporary Traffic Arragement (TTA);
- Construction of Socket H piles;
- · Setting up temporary barging point;
- Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS);
- Construction of Subway B;
- · Construction of guide walls and D-walls;
- · Construction of District Cooling System Works; and
- Demolition of Pump House

### 9.2 Key Issues for the Coming Month

9.2.1 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, water quality, waste management and landscape and visual impact.

### 9.3 Monitoring Schedules for the Next Three Months

9.3.1 The tentative schedules for environmental monitoring in the coming three months are provided in **Appendix E**.

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### 10. CONCLUSIONS

Hong Kong.

- 10.1.1 24-hour TSP impact monitoring and construction noise monitoring were carried out in the reporting month, no Action / Limit Level exceedance was recorded during the period.
- 10.1.2 No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted in the reporting month.
- 10.1.3 Four environmental site inspections were carried out in November 2016. Recommendations on mitigation measures on air quality, water quality, noise, waste management and landscape and visual impact were given to the Contractor for remediating the deficiencies identified during the site inspections.
- 10.1.4 Four weekly Landscape and Visual Site audits were carried out on 3, 10, 16 and 24 November 2016 and two of them, 3 and 16 November 2016 were carried out by a Registered Landscape Architect in the reporting month. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009).
- 10.1.5 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

### **10.2** Comment and Recommendations

- 10.2.1 The recommended environmental mitigation measures, as proposed in the EIA reports and EM&A Manuals shall be effectively implemented to minimize the potential environmental impacts from the Project. The EM&A programme would effectively monitor the environmental impacts generated from the construction activities and ensure the proper implementation of mitigation measures.
- 10.2.2 According to the environmental audit performed in the reporting month, the following recommendations were made:

Air Quality Impact

• Open stockpiles shall be covered by unobtrusive sheeting to prevent dust emission.

Construction Noise Impact

• No specific observation was identified in the reporting month.

Water Quality Impact

• Gully which linked to the public drainage shall be covered properly.

Chemical and Waste Management

- Drip tray shall be provided to store the oil containers.
- General refuse shall be cleaned up and stored properly. Larger skip shall be provided and general refuse shall be collected regularly.

Landscape and Visual Impact

• Open stockpiles shall be covered by unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance.

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### **General Condition**

Stagnant water was found in the storage area of construction materials. Stagnant water shall be removed.

Permit / Licenses

No specific observation was identified in the reporting month. •

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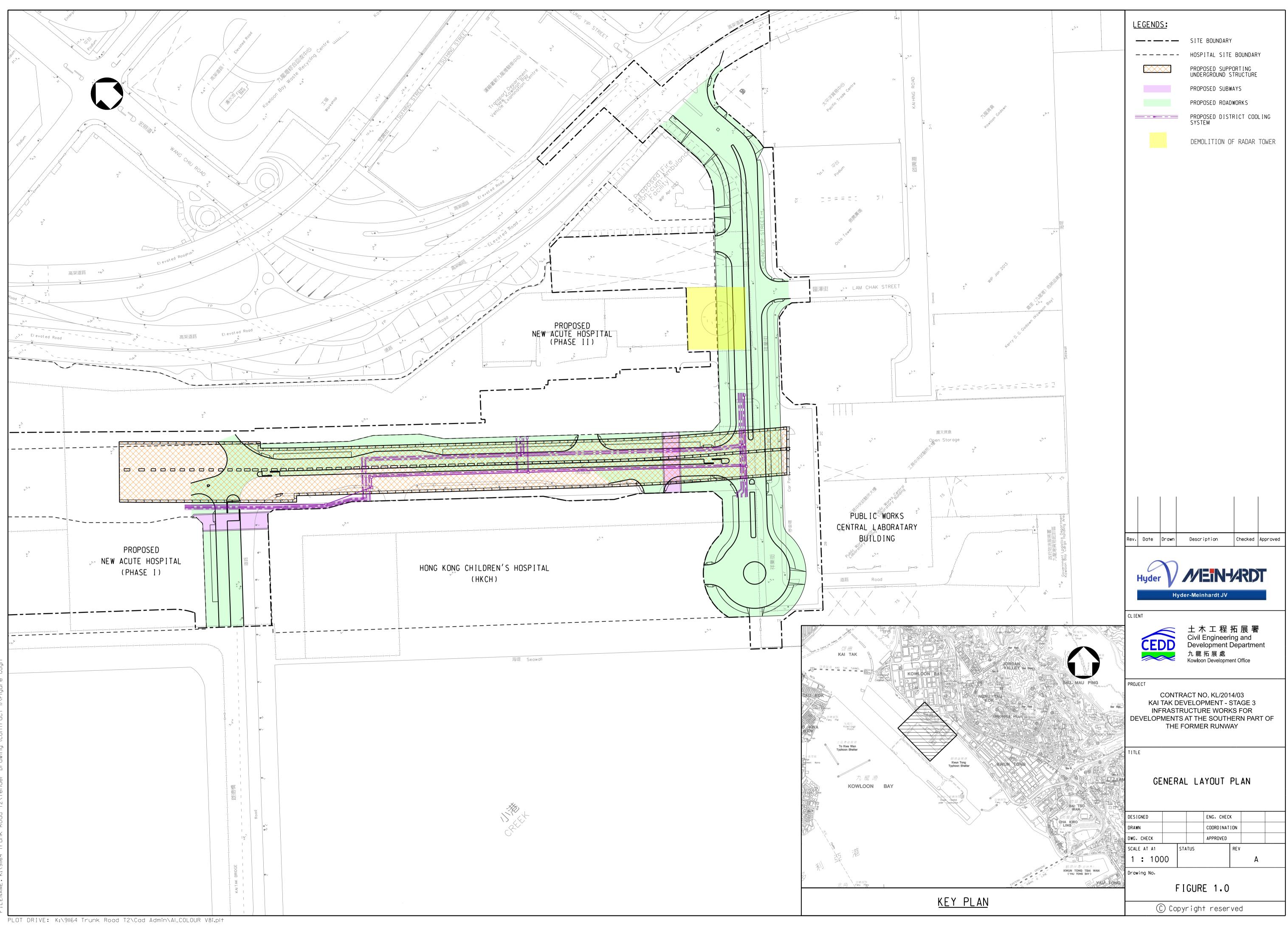
Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong..

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Figure 1

**Project General Layout** 



INTED BY: kitchan 18/2/2015 13:00:43 .ENAME: K:\9||64 Trunk Road T2\Tender Drawing (Contract I)\

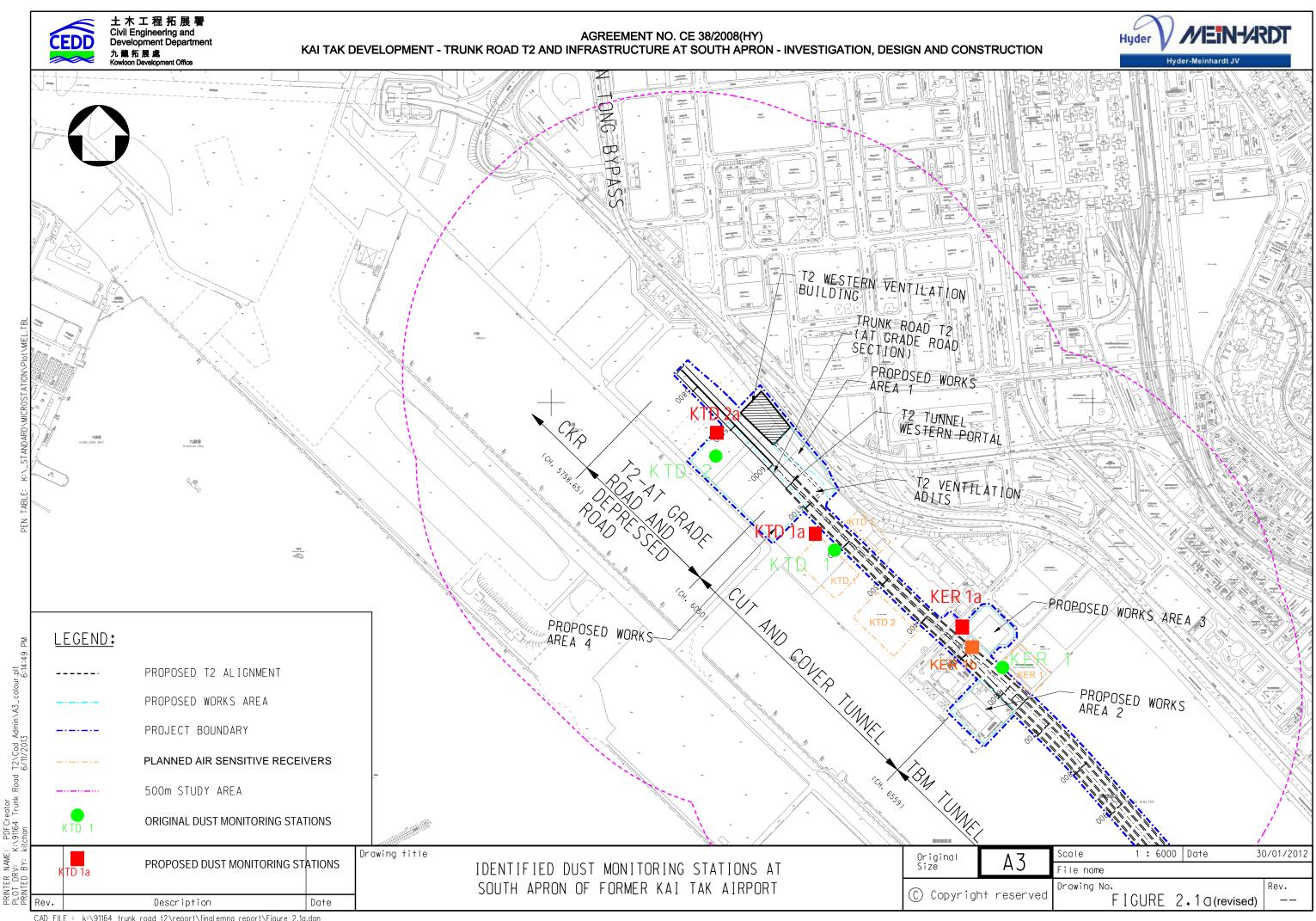
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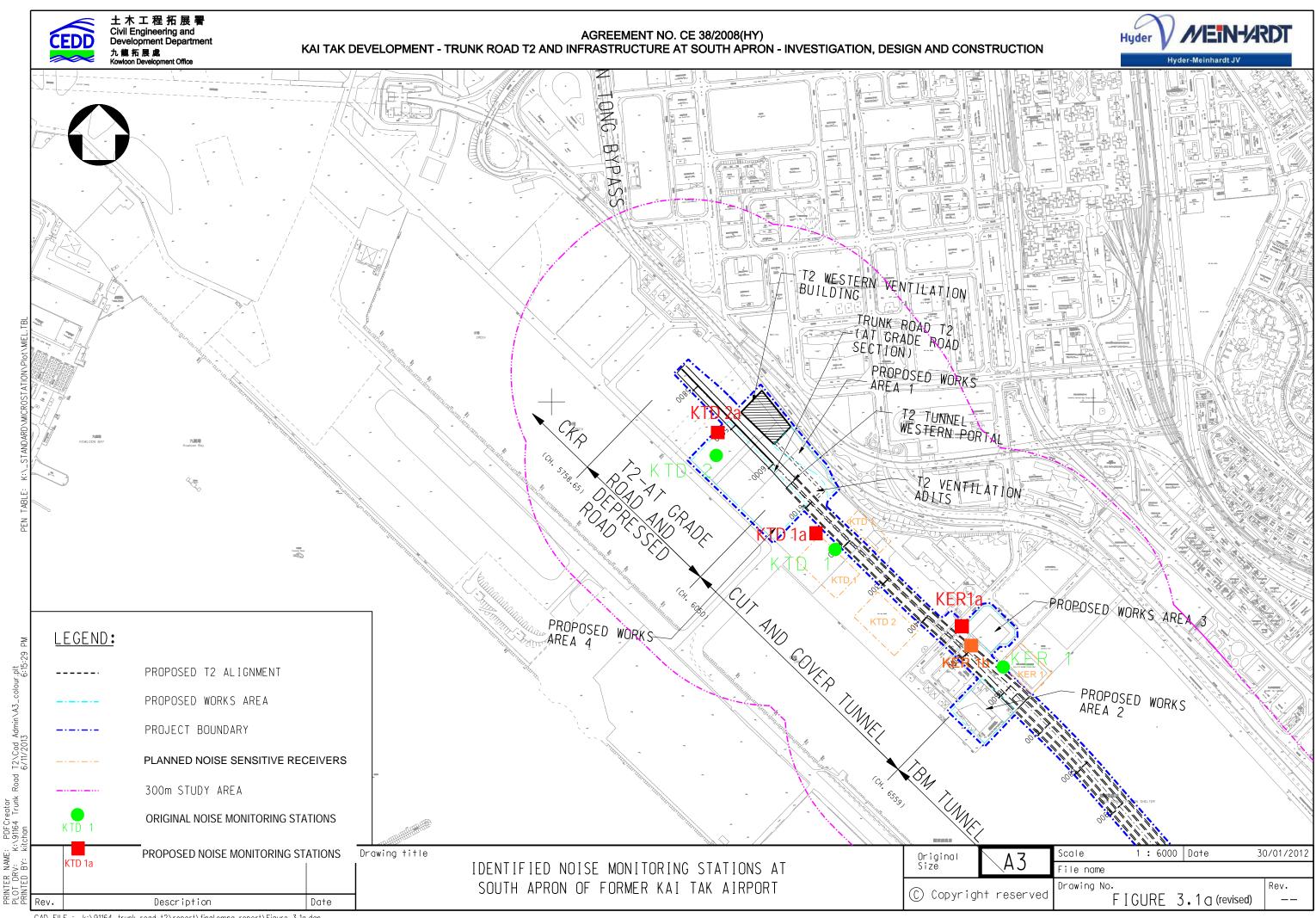


Figure 2

**Air and Noise Monitoring Locations** 



CAD FILE : k:\91164 trunk road t2\report\finalemna report\Figure 2.1a.dgn



CAD FILE : k:\91164 trunk road t2\report\finalemna report\Figure 3.1a.dgn

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Appendix A

**Construction Programme** 

r ID	Activity Name	Orig	Rem	Start	Finish	ober			 	Novem	ber						Dece
		Dur	Dur			16 16	23	30	06	17 13	3	20		27	04		1 11
L/2014/03-St	age 3 Infrastructure Works for Developments at the Sout	1200		04-Jan-16 A	12-Jun-19				 								
roject Key Dat		1190		01-Feb-16 A	12-Jun-19				 								
General Submi		306		25-Mar-16 A	10-Apr-17				 								
	ey & Construction Impact Assessment	162		11-May-16 A	08-Feb-17				 	<u></u>	A	ral of the	CIA	ort aub			
K-DR-PRE-1230	Approval of the CIA report submissions	56		14-Sep-16 A	15-Nov-16				 		11	val of the	1				D
K-DR-PRE-1320	Revise & resubmit CIA Report	30		11-May-16 A	14-Dec-16 08-Feb-17				 								
K-DR-PRE-1330	Approval of the CIA report submissions	56 216		15-Dec-16 25-Mar-16 A	29-Jan-17				 								
	sign Submission and Approval	56		12-Jul-16 A	09-Dec-16				 								
<i>К-PA-ADS-1030</i>	US Tunnel box from (CH6+150 to CH6+220) Engineer's review and approval	56		12-Jul-16 A	09-Dec-16				 							Er	igineer's
	US D-wall from (CH6+291 to CH6+568)	158		25-Mar-16 A	09-Dec-16				 								
K-PA-ADS-1510	Engineer's review and approval	21		13-Jul-16 A	11-Nov-16				 	Enginee	er's revi	iew and a	pproval				
K-PA-ADS-1510	Revise & resubmit DDA drawing (SUS D-Wall from Westbound CH6+467 to CH6+568)	85		25-Mar-16 A	19-Nov-16									nit DDA	drawing	(SUS	D-Wall fi
K-PA-ADS-1550	Engineer's review and approval	28		13-Jul-16 A	09-Dec-16												ngineer's
	US Top & base slab and intermediate wall from (CH6+220 to CH6+568)	74	74		29-Jan-17				 								
K-PA-ADS-1420	Revise & resubmit DDA drawing (SUS Top & Base slab and Intermediate wall from CH6+	18	18		04-Dec-16			· <mark>·</mark> ·····	 						Rev	ise & r	esubmit l
K-PA-ADS-1430	Engineer's review and approval	56	56	05-Dec-16	29-Jan-17				 								
rogramming /	Reporting	28	56	09-Jun-16 A	25-Dec-16			•••••••	 								
Works Programn	· · ·	28	56	09-Jun-16 A	25-Dec-16				 								
K-PA-GSP-4300	Acceptance of the Works Programme	28	56	09-Jun-16 A	25-Dec-16			•••••••••	 								
<b>Jaior Tempor</b> a	ary Works Design	190	129	24-Aug-16 A	08-Mar-17			•••••••	 								
K-PA-GSP-6820	ELS design for construction of SUS from CH6+220 to CH6+291 in Zone 2 - horizontal n	56	56	11-Jan-17	07-Mar-17			•••••••	 								
K-PA-GSP-6830	ELS design for construction of SUS from CH6+291 to CH6+568 in Zone 3 to 4 - horizon	56	56	16-Nov-16	10-Jan-17				 								
K-PA-GSP-6870	Temporary vehicular and pedestrian access for HKCH	35	35	24-Aug-16 A	04-Dec-16			•	 						Tem	porary	vehicula
K-PA-GSP-6880	Formwork and falsework design for construction of tunnel box structure	56	56	04-Nov-16	29-Dec-16			-									
K-PA-GSP-7000	ELS design for construction of DCS	35	35	29-Aug-16 A	04-Dec-16				 						ELS	desigi	1 for con
K-PA-GSP-8850	Pumping Test for SUS Cofferdam in Zone 3	38	38	11-Nov-16	18-Dec-16			-									
K-PA-GSP-8860	Pumping Test for SUS Cofferdam in Zone 4	50	50	18-Jan-17	08-Mar-17				 								
K-PA-GSP-9100	Temporary support for existing 132kV CLP cable across SUS at CH6+560	35	35	16-Nov-16	20-Dec-16			-	 								
K-PA-GSP-9250	ELS design for construction of existing seawall	35	35	15-Jan-17	18-Feb-17				 								
Aajor Constru	ction Works Method Statement	138	93	09-Aug-16 A	31-Jan-17				 								
K-PA-GSP-7145	Engineer's comments and approval	28	28	06-Sep-16 A	27-Nov-16			-					E E	nginee	's comm	ents an	nd approv
K-PA-GSP-7305	Engineer's comments and approval	28	23	09-Aug-16 A	22-Nov-16				 			En			ents and		
K-PA-GSP-7400	Method statement for Construction of tunnel box structure	28	28	31-Oct-16	27-Nov-16				 								onstructi
K-PA-GSP-7405	Engineer's comments and approval	28	28		25-Dec-16				 								
K-PA-GSP-7490	Method statement for Erection and Removal of the temporary vehicular and pedestrian a	28	28		31-Jan-17				 								
K-PA-GSP-7500	Method statement for Erection and Removal of the temporary support for the utilities	28	28		27-Nov-16				 				N	1ethod	statemer	t for E	rection a
K-PA-GSP-7505	Engineer's comments and approval	28	28		25-Dec-16				 								
	ity Diversion Works	156		05-Sep-16 A	29-Mar-17				 								
	sion for Watermain Works	44		13-Oct-16 A	20-Dec-16				 								
_	I (Fresh) Watermain	44		13-Oct-16 A	20-Dec-16				 			Event	on tra-	h for P	N600 M	C & D	(frach
K-PA-TUD-1100	Excavation trench for DN600 MS & DI fresh watermain at subway B & zone 1	18		31-Oct-16 A	19-Nov-16				 	Emer	on too	Excavati	ion tren	201 10T L	INDUU IM	5 & DI	I fresh wa
K-PA-TUD-1110	Erection temporary support to utilities at zone 1	15	12	31-Oct-16 A	12-Nov-16							porary su	· ·		es at zon		

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### 中國路橋工程有限責任公司 CHINA ROAD AND BRIDGE CORPORATION

K-PA-TUD-1120 Laying DN600 MS & DI fresh watermain at subway B & zone 1

KL/2014/03 Kai Tak Developm	nent	- Stage 3 Inf	rastructu	re Works for D	evelopment	s at the S	Southern	Part of	f the For	mer Rur	iway		CEDD	土木工程序 Civil Engineerin Development D 九龍拓展處 Kowloon Developmen	g and epartmer	nt
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rks for Developments at the Sou	1200	955 04-Jan-16 A	12-Jun-19													
	1190	955 01-Feb-16 A	12-Jun-19													
	306	162 25-Mar-16 A														
Assessment	162	101 11-May-16 A	08-Feb-17			Approx	al of the CIA re	nort submissi	ons							
sions	56	16 14-Sep-16 A	15-Nov-16			Аррю	al of the CIA re			Revise & res	ubmit CIA Rei	orf				
	30	45 11-May-16 A	14-Dec-16							Revise & res						
sions	56	56 15-Dec-16	08-Feb-17													
	216	91 25-Mar-16A	29-Jan-17													
to CH6+220)	56	39 12-Jul-16 A	09-Dec-16						Engine	er's review and	annroval					
	56	39 12-Jul-16 A	09-Dec-16						Engine							
H6+568)	158	40 25-Mar-16A	09-Dec-16			Engineerare	and annras									
	21	12 13-Jul-16 A	11-Nov-16				ew and approva		ing (SUS D Wa	ll from Worth	und CU4+447	to CU4+549				
SUS D-Wall from Westbound CH6+467 to CH6+568)	85	15 25-Mar-16 A	19-Nov-16						ving (SUS D-Wa				<i>,</i>			
	28	35 13-Jul-16 A	09-Dec-16						Engine	er's review and	approvai					
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	56	56 05-Dec-16	29-Jan-17													I
	28	56 09-Jun-16 A	25-Dec-16													
	28	56 09-Jun-16 A	25-Dec-16													
ne	28	56 09-Jun-16 A	25-Dec-16								Accept	ance of the V	Works Progra	imme		
	190	129 24-Aug-16 A	08-Mar-17													
S from CH6+220 to CH6+291 in Zone 2 - horizontal n	56	56 11-Jan-17	07-Mar-17												,	
S from CH6+291 to CH6+568 in Zone 3 to 4 - horizon	56	56 16-Nov-16	10-Jan-17										EI	LS design for co	nstructi	ion of SUS
n access for HKCH	35	35 24-Aug-16 A	04-Dec-16						Femporary vehic	*		r HKCH				
r construction of tunnel box structure	56	56 04-Nov-16	29-Dec-16									Formwork a	nd falsework	design for con	structio	n of tunnel
S	35	35 29-Aug-16 A	04-Dec-16					E F	ELS design for o	construction of	DCS					
n Zone 3	38	38 11-Nov-16	18-Dec-16							Pum	ping Test for S	US Cofferdar	1 in Zone 3			
n Zone 4	50	50 18-Jan-17	08-Mar-17													
2kV CLP cable across SUS at CH6+560	35	35 16-Nov-16	20-Dec-16							1	emporary supp			LP cable across		
sting seawall	35	35 15-Jan-17	18-Feb-17													
ient	138	93 09-Aug-16 A	31-Jan-17													
	28	28 06-Sep-16 A	27-Nov-16					e	mments and app							
	28	23 09-Aug-16 A	22-Nov-16													
n of tunnel box structure	28	28 31-Oct-16	27-Nov-16													
	28	28 28-Nov-16	25-Dec-16								Engin	eer's commen	ts and appro	val		
Removal of the temporary vehicular and pedestrian a	28	28 04-Jan-17	31-Jan-17													
Removal of the temporary support for the utilities	28	28 31-Oct-16	27-Nov-16					Method stater	ment for Erectio	n and Remova	l of the tempor	ary support f	or the utilitie	es		
	28	28 28-Nov-16	25-Dec-16								Engin	eer's commen	ts and appro	val		
	156	123 05-Sep-16 A	29-Mar-17													
	44	44 13-Oct-16 A	20-Dec-16													
	44	44 13-Oct-16 A	20-Dec-16													
& DI fresh watermain at subway B & zone 1	18	18 31-Oct-16 A	19-Nov-16				Excavation tren	nch for DN600	0 MS & DI fresh	watermain at	subway B & zo	ne l				
ties at zone 1	15	12 31-Oct-16 A	12-Nov-16		1	Erection tem	porary support	to utilities at a	zone l							
rmain at subway B & zone 1	20	20 11-Nov-16	03-Dec-16					La	ying DN600 M	S & DI fresh wa	termain at sub	way B & zon	e 1			
◆ ◆ Milestone							Project	ID :11 3MPR	R Nov - Jan 17				-	Programme		
Critical Activity Non-Critical Activity			2 MDD	Nov 2016	lan 2017			: KL201403 V	WP3 3MRP		Date 31-Oct-16		Revision / 16 - Jan 1		ed A	pproved
Remaining Level of Effort			JINKP	Nov 2016 -	Jan 2017		Page 1 o	of 6			51-001-10		10 - Jail I			
Actual Work				Page 1 of 6												

K-PA-TUD-1150						16					17						
K-PA-TUD-1150		Dur	Dur			16	23	30		06	13	20		27	04		11
	DN600 DI connected (X1 and X2)	0	0		20-Dec-16												
	DN600 DI connected (X3)	0	0		20-Dec-16												
	DN450 DI connected (X4)	0	0		26-Nov-16								•		connecte	ed (X4)	
K-PA-TUD-2120	Laying DN300 DI fresh watermain at zone 4	17	8	13-Oct-16 A	08-Nov-16					Laying	g DN300 D	I fresh wate					
K-PA-TUD-2140	DN300 DI connected (X5)	0	0		25-Nov-16								-		onnected	` ´	
K-PA-TUD-2150	DN300 DI connected (X6)	0	0		25-Nov-16								◆ DN30	00 DI c	onnected	(X6)	
Laying Proposed (	(Salt) Watermain	38	38	13-Oct-16 A	13-Dec-16												
K-PA-TUD-1200	Excavation trench for DN300 MS salt watermain at subway B & zone 1	18	18	31-Oct-16 A	19-Nov-16										DN300 M		
K-PA-TUD-1220	Laying DN300 MS salt watermain at subway B & zone 1	20	20	07-Nov-16	29-Nov-16									Layi	ng DN30	0 MS sa	lt wat
K-PA-TUD-1250	DN300 DI connected (Y1)	0	0		13-Dec-16												♦ D
K-PA-TUD-2250	DN300 DI connected (Y2 and Y3)	0	0		18-Nov-16							DN300 DI					
K-PA-TUD-2320	Laying DN250 DI salt watermain at zone 4	17	8	13-Oct-16 A	08-Nov-16					Laying	g DN250 D						
K-PA-TUD-2340	DN250 DI connected (Y4)	0	0		18-Nov-16						٠	DN250 D	I connect	ted (Y4	l)		
K-PA-TUD-2350	DN250 DI connected (Y5)	0	0		18-Nov-16						•	DN250 D	I connect	ted (Y5	5)		
Temporary Diversi	ion for Drainage Works	156	123	05-Sep-16 A	29-Mar-17			•••••••									
K-PA-TUD-2400	Diversion of 2100 storm drain at zone 4	60	31	05-Sep-16 A	05-Dec-16			•••••••							Di	version	of210
K-PA-TUD-2500	Excavation and laying of DN600 MS pipe and manhole (N-CP-1) at zone 4 for HKCH co	25	25	04-Jan-17	04-Feb-17			•									
K-PA-TUD-2600	Excavation and laying of DN300 MS pipe and manhole (FMH23-15D) at zone 4	70	70	04-Jan-17	29-Mar-17			•••••••									
Temporary Diversi	ion for CLP Cable at CH6+560	82	82	17-Oct-16 A	09-Feb-17			•••••••									
	Trench excavation for cable diversion at zone 4 - stage 1	22	15	17-Oct-16 A	16-Nov-16						Tr	ench excav	ation for	cable	diversion	at zone	4 - st
K-PA-TUD-3500	Trench excavation for cable diversion at zone 4 - stage 2	22	22	17-Nov-16	12-Dec-16			•									Tre
K-PA-TUD-3600	CLP cable slewing works at zone 4	45	45		09-Feb-17			•••••••									
K-PA-TUD-3650	Erection temporary support to utilities at zone 4	14	14		12-Jan-17			·· <mark>·</mark> ·····									
Temporary Diversi		18	5		04-Nov-16			·· <mark>·</mark> ·····									
	Laying gas pipe and connection at zone 4	18		15-Oct-16 A	04-Nov-16				Layin	ng gas pi	pe and con	nection at a	zone 4				
	ion for Sewage Rising Main	40	40		15-Dec-16												
	Construction of DN750 sewage pipe and manhole - stage 1	10	10		26-Nov-16			••••••••					Cor	istructi	ion of DN	750 sev	wage r
	Construction of DN450 sewrage pipe at zone 2 - stage 1	40	40		15-Dec-16												
	ion for Telecommunication Cable	18	18		03-Jan-17												
	Diversion of Fibre cable (PCCW)				03-Jan-17												
		18	18														
	Diversion of Fibre optical cable (HGC)	18	18		03-Jan-17												
	fic Management	254		31-Jul-16 A	10-Apr-17												
Temp Traffic Arrai		254		31-Jul-16 A	10-Apr-17												Subr
	Submit and approval of TTA schemes-TTA stage 2 for D-wall W/B at Zone 2	90		31-Jul-16 A	11-Dec-16												
	Submit and approval of TTA schemes-TTA stage 3 for re-construction of Cheung Yip Street		90		10-Apr-17												
	rement (Major Materials)	906		01-Feb-16 A	10-Sep-18												
ELS struct / wali		360		10-Jun-16 A	06-Aug-17												
K-PA-MP-1150	Manufacturing & delivery to site	360		10-Jun-16 A	06-Aug-17												
Steel H-Pile		420		01-Feb-16 A	07-Jun-17												
	Manufacturing & delivery to site	420	220	01-Feb-16 A	07-Jun-17												
Chilled Water Pi	ipes - DCS	630	630	20-Dec-16	10-Sep-18												
K-PA-MP-1300	Place Order	0	0	20-Dec-16													
K-PA-MP-1350	Manufacturing & delivery to site	630	630	20-Dec-16	10-Sep-18	1		1									



# 中國路德工程有限責任公司 CHINA ROAD AND RPIPOSE CONSTIN

 Milestone ٠ Critical Activity Non-Critical Activity Remaining Level of Effort Actual Work

3 MRP Nov 2016 - Jan 2017

Layout : KL201403 WP3 3MRP Page 2 of 6

Project ID :11 3MPR Nov - Jan 17

Page 2 of 6

# 土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 er Runway CEDD anuary 19 18 25 01 ◆ DN600 DI connected (X1 and X2) 08 15 ◆ DN600 DI connected (X3) ...... ----at subway B & zone 1 main at subway B & zone 1 300 DI connected (Y1) ----storm drain at zone 4 ..... h excavation for cable diversion at zone 4 - stage 2 .....<u>(</u>..... Erection temporary support to u ...... e and manhole - stage 1 Construction of DN450 sewerage pipe at zone 2 - stage 1 ······ Diversion of Fibre cable (PCCW) Diversion of Fibre optical cable (HGC) ····· and approval of TTA schemes-TTA stage 2 for D-wall W/B at Zone 2 ...... Place Order

3 Months Rolling Progr	amme	
Revision	Checked	Approved
PR Nov 16 - Jan 17		
	Revision PR Nov 16 - Jan 17	

y ID	Activity Name	Orig	Rem	Start	Finish	ober					ember 17						De
		Dur	Dur			16 23	3	0	06		13	20		27	0	4	11
K-DR-PRE-1800	Submission of time-lapsed photographs and viedo	1190		11-Mar-16 A	12-Jun-19												
<b>Barge Loadin</b>		21	21		24-Nov-16							<u></u>					
K-DR-PRE-1450	Set up temporary barging point	21	21		23-Nov-16								Set up ten	· · · · · · ·			
K-DR-PRE-1480	Operation of the barging point	0	0									•	Operatio	n of t	ne bargi	ig poi	.nt
Instrumentati	ion and Monitoring	367	240	19-Jul-16 A	27-Jun-17												
	strumentation and Monitoring	15	15		17-Jan-17												
Inclinometer (I		15	15		17-Jan-17												
K-IM-INC-1330	Installation of INC at Zone 3	15	15	30-Dec-16	17-Jan-17												
Westbound In	strumentation and Monitoring	135	37	19-Jul-16 A	12-Dec-16		<b>.</b>										
Piezometer/Sta	ndpipe (PZR)	135	37	19-Jul-16 A	12-Dec-16												
K-IM-PZR-1360	Installation of PZR at Zone 2	15	15	25-Nov-16	12-Dec-16												Ins Ins
K-IM-PZR-1370	Installation of PZR at Zone 3	40	10	05-Aug-16 A	10-Nov-16							ZR at Zo					
K-IM-PZR-1380	Installation of PZR at Zone 4	40	22	19-Jul-16 A	24-Nov-16								Installat	ion o	PZR at	Zone	4
Tilt Monitori	ng Tile Plates	310	240	03-Aug-16 A	27-Jun-17		· · · · ·										
K-IM-TMT-1000	Tilt Monitoring Tile Plates near PWCL	310	240	03-Aug-16 A	27-Jun-17												
ection 1A of t	the Works -Construction of Supporting Underground Structure (	165	116	23-Sep-16 A	21-Mar-17												
	tilation Adits from CH6+150 to CH6+220 in Zone 1	99	80	05-Oct-16 A	07-Feb-17												
Construction	of Socketed H-Pile	40	40	13-Dec-16	03-Feb-17		· · · · ·										
K-1A-SV1-3400	Trimming pilehead at cut-off level	40	40	13-Dec-16	03-Feb-17												
Pumping Test		27	27	19-Nov-16	20-Dec-16		· • · · · ·										
K-1A-SV1-4210	Stage 2 - Installation of dewatering well control in Zone 1	9	9	19-Nov-16	29-Nov-16									Stag	e 2 - Ins	allatio	on of de
K-1A-SV1-4220	Stage 2 - Pumping test for excavation in Zone 1	18	18	30-Nov-16	20-Dec-16		· • · · · ·										
Excavation a	nd ELS Construction	85	66	05-Oct-16 A	18-Jan-17												
K-1A-SV1-5100	Excavation and ELS(S3) to -6.50mPD (CH6+185 to CH6+220)	14	5	12-Oct-16 A	04-Nov-16			E,	cavation	and EI	LS(S3) to	-6.50mF	D (CH6+	185 to	0 CH6+2	20)	
K-1A-SV1-5200	Excavation to formation -9.40mPD (CH6+185 to CH6+220)	8	8	05-Nov-16	14-Nov-16		••••••				Excavat	ion to for	mation -9	0.40m	PD (CH	+185	to CH6
K-1A-SV1-5350	Excavation and ELS(S3) to -4.65mPD (CH6+150 to CH6+185)	14	0	05-Oct-16 A	31-Oct-16 A		Ēx	cavation	n and ELS	S(S3) to	-4.65m	PD (CH6	150 to C	H6+1	85)		
K-1A-SV1-5400	Excavation and ELS(S4) to -8.80mPD (CH6+150 to CH6+185)	14	14	31-Oct-16	15-Nov-16		••••••				Excav	ation and	ELS(S4)	to -8.	80mPD	(CH6+	+150 to (
K-1A-SV1-5450	Excavation and ELS(S5) to -11.85mPD (CH6+150 to CH6+185)	17	17	16-Nov-16	05-Dec-16		••••••								Ē	xcavat	tion and
K-1A-SV1-5550	Excavation to formation -13.30mPD (CH6+150 to CH6+185)	6	6	06-Dec-16	12-Dec-16		•		•••••								Ex
K-1A-SV1-5650	Sheet pile installation for ventilation adit 2 (VA2) construction (CH6+150 to CH6+220)	28	28	15-Nov-16	16-Dec-16		•										
K-1A-SV1-5700	Excavation and ELS to formation -18.0mPD for VA2 construction (CH6+150 to CH6+175)	20	20	21-Dec-16	16-Jan-17		•										
K-1A-SV1-5750	Excavation and ELS to formation -17.2mPD for VA2 construction (CH6+175 to CH6+220)	22	22	21-Dec-16	18-Jan-17		•										
Construction	of Tunnel Box Structure	16	16	17-Jan-17	07-Feb-17		••••••										
	50 to CH6+165)	15	15	17-Jan-17	06-Feb-17		•										
K-1A-SV1-6000		15	15	17-Jan-17	06-Feb-17		•										
Bay 5 (CH6+2)	10 to CH6+220)	14	14	19-Jan-17	07-Feb-17		•										
K-1A-SV1-6600		14	14	19-Jan-17	07-Feb-17		•										
SUS and Vont	tilation Adits from CH6+220 to CH6+291 in Zone 2	47	44	20-Oct-16 A	20-Dec-16		•										
	of Socketed H-Pile	47		20-Oct-16 A	20-Dec-16		•										
K-1A-SV2-3204	Installation of socketted H-piles (CH6+250 to CH6+291) HPC53	12		20-Oct-16 A	31-Oct-16 A		Ins	tallation	n of socke	etted H-	-piles (C	H6+250 i	o CH6+2	91)H	PC53		
K-1A-SV2-3204 K-1A-SV2-3205	Installation of socketted H-piles (CH6+250 to CH6+251) HPC51	12		20-Oct-16 A	05-Nov-16		. <b>.</b>		Installatio							HPC'	51
K-1A-SV2-3205 K-1A-SV2-3206	Installation of socketted H-piles (CH6+250 to CH6+291) HPC49	12		23-Oct-16 A 28-Oct-16 A	03-Nov-16				Insta			· ·					
					08-Nov-16								iles (CH6				
K-1A-SV2-3207 K-1A-SV2-3208	Installation of socketted H-piles (CH6+250 to CH6+291) HPC47 Installation of socketted H-piles (CH6+250 to CH6+291) HPC48 and HPC45	7 14	7		08-Nov-16 01-Dec-16							*					sockette



### 中國路橋工程有限責任公司 CHINA ROAD AND BRIDGE CORPORATION



# 3 MRP Nov 2016 - Jan 2017

Page 3 of 6

Project ID :11 3MPR Nov - Jan 17 Layout : KL201403 WP3 3MRP Page 3 of 6

er Rur	nway			CEL	~	Devei 九龍 Kowloo	て工程 Engineeri lopment I 拓展處 n Developm	Depar	tment	
ember						Janua 19	ary			
18   18	25	+	01		08	19	15		22	29
							Inst	allati	on of I	NC at 7
										·····
Illation of P	ZR at Zone 2									
	control in Zon	1								
S	tage 2 - Pumpi	ng te	st for ex	cavation	i in Zo	one l				
20)										
			•••••							
16+185)										
,	11.85mPD (CH	6+13	0 to CH	6+185)						
	ormation -13.30					85)				
									211202	
Sheet pil	le installation f	or ye		n adit 2						
									n and E	
							E	cava	tion an	d ELS
										•••••
		Ť								
H-piles (CH	16+250 to CH6	+291	)HPC4	8 and H	PC45					
		i								
			3 Mont			rogra				
	Date			evisior			Check	ked	Appr	oved
	31-Oct-16	3M	PR Nov	16 - J	an 17	,				

Hyder MEINHARDT

### KL/2014/03 Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

ctivity ID	Hyder - Meinl	Activity Name		Orig	Rem	Start	Finish	ober				Novemb	ber						Decemb
				Dur	Dur			16 16	23	30	06	17		20		27	04		18 11
K-1A-SV	/2-3209	Installation of sockett	ted H-piles (CH6+250 to CH6+291) HPC52 and HPC50	14	14	25-Nov-16	10-Dec-16		20		00	10		20				Ins	stallation
K-1A-SV	/2-3215	Installation of sockett	ted H-piles (CH6+250 to CH6+291) HPC44 and HPC46	14	14	05-Dec-16	20-Dec-16				 								
SUS Sti	ructure f	rom CH6+291 to	o 6+467 in Zone 3	132	83	15-Oct-16 A	10-Feb-17				 								
E/B Co	nstructio	n of D-Wall		132	83	26-Oct-16 A	10-Feb-17				 								
K-1A-SV	/3-2300	Construction of D-wa	ll eastbound(CH6+344 to CH6+405) EH29	12	10	28-Oct-16 A	10-Nov-16										6+344 to C		
K-1A-SV	/3-2303	Construction of D-wa	ll eastbound(CH6+344 to CH6+405) EM28	10	10	08-Nov-16	18-Nov-16										astbound(		4 to CH6
K-1A-SV	/3-2350	Construction of D-wa	ll eastbound(CH6+405 to CH6+467) EM24	10	3	26-Oct-16 A	02-Nov-16										467) EM2		
K-1A-SV	/3-2351	Construction of D-wa	ll eastbound(CH6+405 to CH6+467) EM20	10	8	31-Oct-16 A	08-Nov-16										05 to CH6-		
K-1A-SV	/3-2353	Construction of D-wa	ll eastbound(CH6+405 to CH6+467) EM18	10	10	05-Nov-16	16-Nov-16						Con	structio	n of D-wa	all east	bound(CH	6+405 to	CH6+46
K-1A-SV	/3-2355	Construction of D-wa	ll eastbound(CH6+405 to CH6+467) EH17	12	12	19-Nov-16	02-Dec-16				 						Construc		
K-1A-SV	/3-2400	Testing of D-wall (Son	nic test and IC)	30	30	03-Dec-16	10-Jan-17				 								
K-1A-SV	/3-2500	Toe grouting works		54	54	03-Dec-16	10-Feb-17				 								
Constru	uction of	Socketed H-Pile		75	75	04-Nov-16	06-Feb-17				 								
K-1A-SV			ted H-piles (CH6+291 to CH6+300) HPC58	8	8	04-Nov-16	12-Nov-16					_					H6+291 to		·
K-1A-SV	/3-3007	Installation of sockett	ted H-piles (CH6+291 to CH6+300) HPC66	8	8	08-Nov-16	16-Nov-16						Inst	allation	of socket	ted H-	piles (CH6	+291 to (	CH6+300
K-1A-SV	/3-3008	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC88 and HPC90	14	14	15-Dec-16	03-Jan-17				 								
K-1A-SV	/3-3008.1	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC92 and HPC94	14	14	23-Dec-16	11-Jan-17				 								
K-1A-SV	/3-3008.2	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC96 and HPC98	14	14	29-Dec-16	14-Jan-17				 								
K-1A-SV	/3-3008.3	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC89 and HPC91	14	14	03-Jan-17	18-Jan-17				 								
K-1A-SV	/3-3008.4	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC93 and HPC95	14	14	06-Jan-17	21-Jan-17				 								
K-1A-SV	/3-3008.5	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC97 and HPC99	14	14	10-Jan-17	25-Jan-17				 								
K-1A-SV	/3-3008.6	Installation of socket	ted H-piles (CH6+330 to CH6+380) HPC78 and HPC76	14	14	05-Dec-16	20-Dec-16				 								
K-1A-SV	/3-3008.7	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC82 and HPC80	14	14	08-Dec-16	23-Dec-16				 								
K-1A-SV	/3-3008.8	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC84 and HPC86	14	14	12-Dec-16	29-Dec-16				 								
K-1A-SV	/3-3008.9	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC81 and HPC83	14	14	15-Dec-16	03-Jan-17				 								
K-1A-SV	/3-3008.91	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC85 and HPC87	14	14	19-Dec-16	06-Jan-17				 								
K-1A-SV	/3-3008.94	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC74 and HPC72	14	14	22-Dec-16	10-Jan-17				 								
K-1A-SV	/3-3008.95	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC70 and HPC68	14	14	14-Jan-17	02-Feb-17				 								
K-1A-SV	/3-3008.96	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC79 and HPC77	14	14	18-Jan-17	06-Feb-17				 								
K-1A-SV	/3-3008.97	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC75 and HPC73	14	14	28-Dec-16	13-Jan-17				 								
K-1A-SV	3-3008.98	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC71 and HPC69	14	14	31-Dec-16	17-Jan-17	+			 								
K-1A-SV	3-3008.99	Installation of sockett	ted H-piles (CH6+330 to CH6+380) HPC67	6	6	23-Jan-17	01-Feb-17	+			 								
W/B Co	onstructio	on of D-Wall in T	TA Stage 1A	93	80	15-Oct-16 A	07-Feb-17				 								
K-1A-SV		Construction of guide		45	60	15-Oct-16 A	11-Jan-17				 								
K-1A-SV	/3-4200	Construction of D-wa	ll westbound (CH6+394 to CH6+467) WH23	32	30	23-Oct-16 A	03-Dec-16				 						Constr	action of	D-wall w
K-1A-SV	/3-4200.1	Construction of D-wa	ll westbound (CH6+394 to CH6+467) WH27	14	10	28-Oct-16 A	10-Nov-16				 	Constructi	on o	f D-wall	westbour	nd (CH	16+394 to	CH6+467	7) WH27
K-1A-SV	/3-4200.2	Construction of D-wa	ll westbound (CH6+394 to CH6+467) WM31	10	10	05-Nov-16	16-Nov-16										bound (Cl		
K-1A-SV	/3-4200.3	Construction of D-wa	ll westbound (CH6+394 to CH6+467) WM24	10	10	15-Nov-16	25-Nov-16										on of D-wa		
K-1A-SV	/3-4200.4	Construction of D-wa	ll westbound (CH6+394 to CH6+467) WM28	10	10	24-Nov-16	05-Dec-16										Co		
K-1A-SV			ll westbound (CH6+394 to CH6+467) WM32	10	10		13-Dec-16	+			 								Const
	/3-4200.6		ll westbound (CH6+394 to CH6+467) WM22	10	10		19-Dec-16				 								
K-1A-SV			ll westbound (CH6+394 to CH6+467) WH25	14	14		31-Dec-16	+			 								
K-1A-SV			ll westbound (CH6+394 to CH6+467) WM30	10	10		05-Jan-17	+			 								
	/3-4200.9		ll westbound (CH6+394 to CH6+467) WH21	14	14		18-Jan-17	+			 								



### ٠ 中國路德工程有限責任公司 CHINA ROAD AND BRIDGE CORPORATION

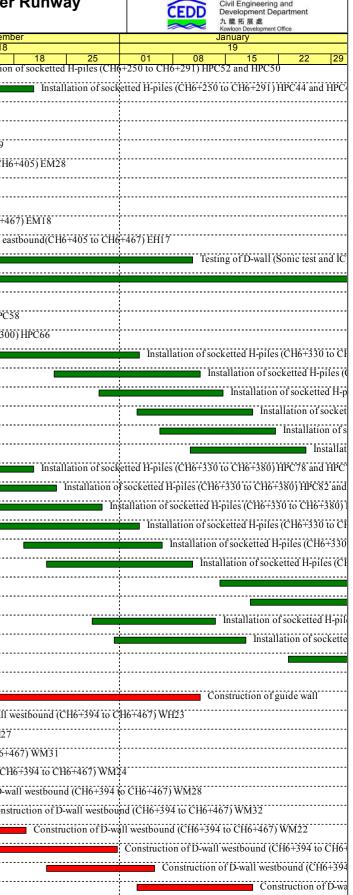
Critical Activity Non-Critical Activity Remaining Level of Effort Actual Work

Milestone

# 3 MRP Nov 2016 - Jan 2017

Page 4 of 6

Project ID :11 3MPR Nov - Jan 17 Layout : KL201403 WP3 3MRP Page 4 of 6



土木工程拓展署 Civil Engineering and Development Department

	3 Months Rolling Progra	amme	
Date	Revision	Checked	Approved
31-Oct-16	3MPR Nov 16 - Jan 17		



### KL/2014/03 Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former

Activity ID	Activity Name	Orig	Rem	Start	Finish	ober					Novembe	er				Decemb
		Dur	Dur			16 16	23		30	06	17	20	27	04	1	18 11
K-1A-SV3-4200.91	Construction of D-wall westbound (CH6+394 to CH6+467) WM26	10	10	11-Jan-17	21-Jan-17		20			00	10	20	21	0		
K-1A-SV3-4200.92	Construction of D-wall westbound (CH6+394 to CH6+467) WH29	14	14	19-Jan-17	07-Feb-17											
K-1A-SV3-4300	Construction of D-wall westbound (CH6+322 to CH6+394) WM34	10	10	16-Nov-16	26-Nov-16									uction of D-		· ·
K-1A-SV3-4300.2	Construction of D-wall westbound (CH6+322 to CH6+394) WH37	14	14	22-Nov-16	07-Dec-16										Construc	ction of I
K-1A-SV3-4300.3	Construction of D-wall westbound (CH6+322 to CH6+394) WM40	10	10	28-Nov-16	08-Dec-16											
K-1A-SV3-4300.4	Construction of D-wall westbound (CH6+322 to CH6+394) WM42	10	10	03-Dec-16	14-Dec-16											Con
K-1A-SV3-4300.5	Construction of D-wall westbound (CH6+322 to CH6+394)WH35	14	14	09-Dec-16	24-Dec-16											
K-1A-SV3-4300.6	Construction of D-wall westbound (CH6+322 to CH6+394)WM38	10	10	15-Dec-16	28-Dec-16											
SUS Structure	from CH6+467 to 6+568 in Zone 4	146	116	23-Sep-16 A	21-Mar-17											
G.I and Pre-dr		9	5	23-Sep-16 A	04-Nov-16											
K-1A-SV4-1300	Predrilling works (3 nos) after road diversion at TTA stage 1A	9	5	23-Sep-16 A	04-Nov-16				P	redrilling w	vorks (3 no	s) after road d	iversion at	TTA stage 1	Ä	
E/B Constructi	on of D-Wall	60	60	28-Nov-16	11-Feb-17											
K-1A-SV4-2100	Construction of guide wall (CH6+467 to CH6+555)	45	45	05-Dec-16	01-Feb-17											
K-1A-SV4-2110	Construction of guide wall (CH6+555 to CH6+560)	6	6	28-Nov-16	03-Dec-16									Const	ruction of	guide w
K-1A-SV4-2200.11	Construction of D-wall eastbound(CH6+467 to CH6+523) EM14	10	10	16-Dec-16	29-Dec-16											
K-1A-SV4-2200.12		14	14		10-Jan-17											
K-1A-SV4-2200.13		10	10		11-Jan-17											
K-1A-SV4-2200.14		14	14		21-Jan-17											
K-1A-SV4-2200.15		14	14		27-Jan-17											
K-1A-SV4-2200.16		10	10		01-Feb-17											
K-1A-SV4-2200.17		14	14		11-Feb-17											
K-1A-SV4-2400	Construction of D-wall eastbound(CH6+555 to CH6+560)	7	7	08-Dec-16	15-Dec-16											Co
		19	19		07-Dec-16											
K-1A-SV4-3500	f Socketed H-Pile												Install	ation of soci	cetted H-ni	iles(CH6
K-1A-SV4-3500	Installation of socketted H-piles(CH6+550 to CH6+560) HPC193 and HPC195	10	10		26-Nov-16											
	Installation of socketted H-piles(CH6+550 to CH6+560) HPC197 and HPC199	10	10		01-Dec-16									instantati	Installation	n of sock
K-1A-SV4-3500.2	Installation of socketted H-piles(CH6+550 to CH6+560) HPC194 and HPC 196	10	10		06-Dec-16										Installati	ion of so
K-1A-SV4-3500.3	Installation of socketted H-piles(CH6+550 to CH6+560) HPC 198	6	6		07-Dec-16											
	Construction of D-Wall in TTA Stage 1A	82	82		21-Mar-17										···· <u>·····</u>	
K-1A-SV4-3990	Construction of guide wall (CH6+555 to CH6+560)	6		09-Dec-16	15-Dec-16											
K-1A-SV4-4000	Construction of guide wall (Remaining Guide Wall )	56	56		21-Mar-17											<u></u>
K-1A-SV4-4300	Construction of D-wall westbound (CH6+555 to CH6+560)	7	7	16-Dec-16	23-Dec-16											
Section 2 of the	Works-Demolition of Radar Tower and Guard House	21		28-Oct-16 A	26-Nov-16											
Demolition of l		21	24	28-Oct-16 A	26-Nov-16											
K-02-DRT-1800	Demolition of Radar Tower below 12m by Hydraulic Breaker	21	10	28-Oct-16 A	10-Nov-16							of Radar Tow		5 5		er
K-02-DRT-1810	Miscellaneous Works	14	14	11-Nov-16	26-Nov-16								Miscel	laneous Wo	rks	
Section 3 of the	Works- Construction of District Cooling System (Subject to Ex	199	130	23-Aug-16 A	09-Mar-17											
Preparation W	orks	119	50	23-Aug-16 A	19-Dec-16											
K-03-DCS-0820	Resubmit setting out and profile of the DCS pipeline	30	20	23-Aug-16 A	19-Nov-16								-	it and profil		
K-03-DCS-0830	Engineer's review and approval	30	30	20-Nov-16	19-Dec-16											
Construction o	f District Cooling System	109	106	10-Sep-16 A	09-Mar-17			Ι								
Construction o	f DCS Works at Zone 1	109	106	10-Sep-16 A	09-Mar-17											
K-03-DCS-1050	Construction of DSC Washout Pit (CHR5-000)	30	20	10-Sep-16 A	22-Nov-16							Co	nstruction	of DSC Was	10ut Pit (C	HR5-00
K-03-DCS-1100	Installation of sheetpile	10	10	05-Dec-16	15-Dec-16											In:
K-03-DCS-1150	Excavation and ELS works	14	14	16-Dec-16	04-Jan-17	1										



### ◆ 中國路檔工程有限責任公司 CHINA ROAD AND BRIDGE CORPORATION

Critical Activity Non-Critical Activity Remaining Level of Effort Actual Work

Milestone

3 MRP Nov 2016 - Jan 2017

Page 5 of 6

Project ID :11 3MPR Nov - Jan 17 Layout : KL201403 WP3 3MRP Page 5 of 6

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						•••••				
CH6+322	to CH6+394)	VM3	34							
	estbound (CH6			+394) \	VH37					
	westbound (CH									
nstruction	n of D-wall wes									
	Construc									
	C	onst	ruction o	of D-wal	l west	tboun	d (CH6	+322	to CH	6+394)
<u></u>	<u></u>	<u>.                                    </u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u> </u>	<u></u>
wall (CH6	+555 to CH6+5	60)								
		Con	struction	n of D-w	all ea	stbou	nd(CH	6+46	7 to CH	(6+523)
					Cor	nstruc	tion of	D-wa	ll eastb	ound(C
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										ction of
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		1								
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6+550 to	CH6+560) HP0		and HP	C195						
	6+550 to CH6+				DO10					
· ·										
	piles(CH6+550					d HP	C 196			
ocketted l	H-piles(CH6+5	50 to	CH6+5	60) HPC	198					
onstructi	on of guide wa	II (C	H6+555	to CH6	+560)	 )				
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	Constructi	ono		westbot				_H0+	360)	
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	Data		3 Mont			rogra		kod	٨٠٠٠	ovod
	Date 31-Oct-16	31/	PR Nov	evision		,	Chec	ĸeŭ	Appr	oved
	51-001-10			10 - Ji	ALI 17					

KL/2014/03 Kai Tak Devel			pment - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway												vay	土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 Krokon Development Office					
ctivity ID	Activity Name		Orig	Rem	Start	Finish	ober				November				Decer	mber				January	
			Dur	Dur			16	23	30	06			27					22			
K-03-DCS-1200	Laying chilled water pipes from C	CHR5-000 to CHR5-024	14	14	09-Jan-17	24-Jan-17	10	23	30	00	15	20	21			10	23			15	Laying
K-03-DCS-1300	Backfilling at Zone 1 (CHR5-000	to CHR5-024)	35	35	25-Jan-17	09-Mar-17															
Section 4B of t	ection 4B of the Works- Construction of Subway B (Subject to Excision)				05-Nov-16	23-Dec-16															
Bay 1 & 2			42	42	05-Nov-16	23-Dec-16															
K-4B-BAY-2400	Laying waterproofing and protect	ive screeding (Bay 1 to Bay 2)	14	14	05-Nov-16	21-Nov-16								0 1		0.	2 /				
K-4B-BAY-2450	Backfilling (Bay 1 and Bay 2) Sta	ge l	14	14	22-Nov-16	07-Dec-16															
K-4B-BAY-3110	Backfilling (Bay 1 and Bay 2) Sta	ge 2	14	14	08-Dec-16	23-Dec-16											Backfilling	(Bay 1 and B	ay 2) Stage	2	
Section 5 of the	e Works-Completion of Al	l Landscape Softworks	90	90	10-Nov-16	07-Feb-17															
K-05-LCS-1000	Procurement of plant species	-	90	90	10-Nov-16	07-Feb-17															
Section 7 of the	e Works-Preservation and	Protection of Existing Trees	1200	916	04-Jan-16 A	04-May-19															
K-07-001-1000		on and Protection of Existing Trees	1200	916	04-Jan-16 A	04-May-19			_												
Sections Comp	letion Date		0	0	26-Nov-16	26-Nov-16															
K-PK-SCC-2100	Completion of Section 2-Demolit	ion of Radar Tower and Guard House	0	0		26-Nov-16						٠	Completi	on of Sectio	n 2-Demolitic	on of Radar T	ower and Guar	rd House			



Milestone
 Critical Activity
 Non-Critical Activity
 Remaining Level of Effort
 Actual Work

3 MRP Nov 2016 - Jan 2017

Page 6 of 6

Project ID :11 3MPR Nov - Jan 17 Layout : KL201403 WP3 3MRP Page 6 of 6

	3 Months Rolling Programme										
Date	Revision	Checked	Approved								
31-Oct-16	3MPR Nov 16 - Jan 17										

Tel

Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong..

: (852)-24508238 : (852)-24508032 : mcl@fugro.com.hk Fax Email



Appendix **B** 

**Project Organization Chart** 

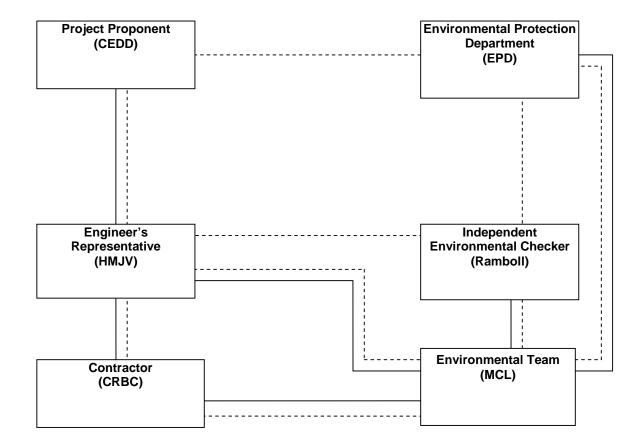
Tel

Fax

Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong ..

: (852)-24508238 : (852)-24508032 Email : mcl@fugro.com.hk





Legend: Line of Reporting

Line of Communication ----

Tel

Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong..

: (852)-24508238 : (852)-24508032 Fax Email : mcl@fugro.com.hk



Appendix C

Action and Limit Levels for Air Quality and Noise

Tel Fax

Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong

: (852)-24508238 : (852)-24508032 Email : mcl@fugro.com.hk



#### Action and Limit Levels for 24-hr TSP and 1-hr TSP

Parameter	Monitoring Station	Action Level (μg/m³)	Limit Level (µg/ m³)
24 br TOD	KTD1a	177	
24-hr TSP (µg/m <sup>3</sup> )	KTD2a	157	260
(µg/m)	KER1a / KER1b	172	
*1 6* TOD	KTD1a	285	
*1-hr TSP (µg/m <sup>3</sup> )	KTD2a	279	500
(µg/m)	KER1a / KER1b	295	

Note:

1-hr TSP monitoring should be required in case of complaints.

#### Action and Limit Levels for Construction Noise, Leq (30min), dB(A)

Time Period	Location	Action	Limit
0700-1900 hrs on normal weekdays	KTD1a KTD2a KER1a / KER1b	When one documented complaint is received	75 dB(A)

Tel

Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong..

: (852)-24508238 : (852)-24508032 Fax Email : mcl@fugro.com.hk



Appendix D

**Calibration Certificates of Monitoring Equipment** 



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

# ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jan 14, 2016	Rootsmeter	~, =:	438320	Ta (K) -	292
Operator Tisch	Orifice I.I		2456	Pa (mm) -	- 748.03
PLATE VOLUME OR START Run # (m3) 1 NA 2 NA 3 NA 4 NA 5 NA	VOLUME STOP (m3) NA NA NA NA NA NA	DIFF VOLUME (m3) 1.00 1.00 1.00 1.00 1.00	DIFF TIME (min) 1.4420 1.0220 0.9130 0.8670 0.7170	METER DIFF Hg (mm) 3.2 6.4 7.9 8.8 12.7	ORFICE DIFF H2O (in.) 2.00 4.00 5.00 5.50 8.00

#### DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0002 0.9959 0.9938 0.9926 0.9874	0.6936 0.9745 1.0885 1.1449 1.3771	$ \begin{array}{r} 1.4174\\2.0045\\2.2411\\2.3504\\2.8347\end{array} $		0.9957 0.9915 0.9893 0.9882 0.9830	0.6905 0.9701 1.0836 1.1398 1.3710	0.8836 1.2496 1.3971 1.4653 1.7672
Qstd slop intercept coefficie	t (b) =	2.07173 -0.01761 0.99996	nèn	Qa slope intercept coefficie	t (b) =	1.29728 -0.01098 0.99996
y axis =	SQRT [H2O (H	Pa/760) (298/5	[a)]	' y axis =	SQRT [H2O (	[a/Pa)].

#### CALCULATIONS

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

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

For subsequent flow rate calculations:

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

Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong.

Tel : (852)-24508238 Fax : (852)-24508032 Email : mcl@fugro.com.hk



Project : Env	rironmantal N	Ionitoring Wo	orks For Cor	ntract No. I	<b>KLN</b>	/2015/07	and the second se	Date of	Calibration:	12-Oct-16
_ocation : KE		Ū							ration Date:	
Brand:		Tisch						3 18-2008 - 190489-900 3	Technician:	Jimmy Lu
Model:		TE-5170		S/N:	34	482				224
		and the second second second second								
				CON	DITI	ONS				
	Se	a Level Pres		1012.		Corre	cted Pressur	÷.	759	
		Tempe	rature (°C):	25	5		Temp	erature (K):	298	
		- 44.40m3 h		CALIBRA						
		Make:		Tisch			Qstd Slope:		2.07173	
		Model:		TE-5025A		Q	std Intercept:		-0.01761	
	Calib	ration Date:		14-Jan-16			Expiry Date:		14-Jan-17	
		S/N:		2456						
				CALIB	RA'	TIONS				
Plate No.	H2O (L)	H2O (R)	H2O	Qstd		1	IC		LINEAR	
	(in)	(in)	(in)	(m <sup>3</sup> /min)		(chart)	(corrected)		REGRESSIC	DN
18	11.10	-2.80	13.900	1.807		56.00	55.96	Slope =	25.9329	
13	9.80	-1.20	11.000	1.608		50.00		Intercept =	8.4758	
10	8.80	-0.10	8.900	1.448		45.00	44.97	Corr. coeff.	0.9971	
7	6.90	1.70	5.200	1.108		38.00	37.97			
5	6.00	2.50	3.500	0.91	1	32.00	31.98			
		/Pstd)(Tstd/T	(a)) b1				FLOW	RATE CHAR		
5 GT6	a/Pstd)(Tstd	1. A.M. A.M. A.M. A.M. A.M. A.M. A.M. A.	a))-D]			60.00	I LOW			
Qstd = stand						60.00 -			•	
IC = correcte						50.00 -				
I = actual ch										
m = calibrat					(IC	40.00 -				
	or Qstd intere				onse					
Ta = actual	temperature	during calibra	ation (deg K	)	Response (IC)	30.00 -				
Pa = actual	pressure dur	ing calibratio	n (mm Hg)		r R	20.00				
Tstd = 298 c	leg K				Actual Chart	20.00 -				
Pstd = 760 r	nm Hg				ual	10.00 -				
For subseq	uent calcula	ation of sam	pler flow:		Act	10100				
1/m((I)[Sqrt(	298/Tav)(Pa	v/760)]-b)				0.00 -				
m = sample	er slope					0.0	000 0.500	1.000 1.5	500 2.000	
b = sample										
I = chart re							Standard	Flow Rate (m <sup>3</sup> /	min)	
Tay = daily a	average temp	oerature								

CHOI KAM HO **Project Consultant**  Report Date: 12<sup>th</sup> October, 2016

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Proiect : Env	ironmantal N	Ionitoring Wo	rks For Cor	ntract No. K	LN/2	2015/07		Date of	Calibration: 1	6-Nov-16
Location : KE								Next Calib	pration Date: 1	5-Feb-17
Brand:	-	Tisch							Technician: J	limmy Lui
Model:	-	TE-5170	•	S/N:	38	38				
					2000000000000					
				CON						
	Se	a Level Press		1017.		Corre	ected Pressu		763	
		Temper	rature (°C):	25			Tem	perature (K):	298	
- -				CALIBRAT	<b>FION</b>	ORIFICE	-			
		Make:		Tisch			Qstd Slope:		2.07173	
		Model:		TE-5025A		Q	std Intercept:		-0.01761	
	Calib	ration Date:		14-Jan-16			Expiry Date:		14-Jan-17	
	1	S/N:		2456						
				CALIB	RAT	IONS		_		
Plate No.	H2O (L)	H2O (R)	H2O	Qstd		1	IC		LINEAR	
	(in)	(in)	(in)	(m³/min)	-	(chart)	(corrected)	Protocol and a second s	REGRESSIO	N
18	12.20	1.90	10.300	1.561		59.00	59.12	Slope =	32.3615	
13	11.50	2.10	9.400	1.491	1	56.00	56.11	Intercept =	8.3422	
10	10.30	3.80	6.500	1.242		49.00	49.10	Corr. coeff.:	0.9987	
7	8.80	4.60	4.200	1.000	1	40.00	40.08			
5	7.90	5.10	2.800	0.818		35.00	35.07			
Calculations Qstd = 1/m[S		/Pstd)(Tstd/Ta	a))-b]				FLO\	WRATE CH	ART	
C = I[Sqrt(Pa	a/Pstd)(Tstd/	'Ta)]		<u>`````````````````````````````````````</u>		70.00				-
Qstd = stand										
C = correcte	=	onse				60.00 -				-
= actual cha	-				6	50.00 -				_
m = calibrato	-				e U					
o = calibrato		•			Chart Response (IC)	40.00 -				
	•	during calibrat			lesp	20.00		*		
-		ng calibration	(mm Hg)		Ľ	30.00 -				
Fstd = 298 de Detd = 760 m	-					20.00 -				_
Pstd = 760 m For subsequ	-	tion of samp	ler flow:		Actual					
	298/Tav)(Pav		ICI IIUW.		Ac	10.00 -				-
n = sample						0.00 -				
o = sampler	•					0.00	00 0.500	1.000	1.500 2	.000
= chart res	•					0.0				.000
Fav = daily a	-	erature					Standa	rd Flow Rate (r	n³/min)	
	verage press			1						

CHOI KAM HO Project Consultant

0

**Report Date:** 16<sup>th</sup> November, 2016

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		TSP SAM	IPLER CAL	IBRATION		LCULAT	ION SPREA	DSHEET		
Project : Env	vironmantal N	Ionitoring Wo	orks For Co	ntract No. k	KLN/	2015/07		Date of	Calibration:	12-Oct-16
Location : K								Next Calib	ration Date:	11-Jan-17
Brand:		Tisch							Technician:	Jimmy Lu
Model:		TE-5170		S/N:	38	38				
	2			CON	DITI	ONS	alay			
	Se	a Level Press	sure (hPa):	1012.5			ected Pressu	re (mm Ha):	759	
			rature (°C):	25				perature (K):	298	
				CALIBRAT	ION					
		Make:		Tisch			Qstd Slope:		2.07173	
		Model:		TE-5025A		Q	std Intercept:		-0.01761	
		ration Date:		14-Jan-16			Expiry Date:		14-Jan-17	
		S/N:		2456 CALIB	DAT					
	H2O (L)	H2O (R)	H2O	Qstd	T		IC		LINEAR	
Plate No.	(in)	(in)	(in)	(m <sup>3</sup> /min)		(chart)	(corrected)		REGRESSIO	N
18	11.30	-2.90	14.200	1.826		57.00	56.96	Slope =	27.2421	
13	9.70	-1.30	11.000	1.608		52.00	51.97	Intercept =	7.2807	
10	8.70	-0.30	9.000	1.456		46.00	45.97	Corr. coeff.:	0.9979	
7	6.90	1.50	5.400	1.129		38.00	37.97			
5	5.90	2.50	3.400	0.898		32.00	31.98			
Calculation	s:									
Qstd = 1/m[	Sqrt(H2O(Pa	/Pstd)(Tstd/T	a))-b]				FLO\	N RATE CH	ART	
	a/Pstd)(Tstd					60.00 -	[			
	lard flow rate									
	ed chart resp					50.00 -				-
	art response				0					
	or Qstd slop				e (IC	40.00 -				-
	or Qstd interc		e		(SI) esponse					
		during calibra		)	lesp	30.00 -				
in the second second second second		ing calibratior	i (mm Hg)		art R					
Tstd = 298 c Pstd = 760 r					Cha	20.00 -				
		tion of samp	oler flow:		Actual Chart F	10.00				
	298/Tav)(Pa	eren al para de la seconda	JIGT HOW.		Ac	10.00 -				
m = sample	5	•// 00) <u>[</u> -b]				0.00 -				
•	r intercept					0.00	00 0.500	1.000	1.500 2	2.000
= chart re						0.0				5.000
	iverage temp	perature					Standa	rd Flow Rate (r	m³/min)	
	verage pres									]

Project Consultant

Report Date: 12<sup>th</sup> October, 2016

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A Fugro Group Company

Tel Fax

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Tel : (852)-24508238 Fax : (852)-24508032 Email : mcl@fugro.com.hk



Project : Env	vironmantal N	Ionitoring Wo	orks For Con	tract No. K	(LN/	2015/07		Date of	Calibration: 1	2-Oct-16
ocation : K								Next Calib	ration Date: 1	1-Jan-17
Brand:		Tisch							Technician: J	immy Lu
Model:		TE-5170		S/N:	40	37				
				CON	DITI	ONS			And that A	
	Se	ea Level Pres	sure (hPa):	1012.	5	Corre	ected Pressu	re (mm Hg):	759	
		Tempe	erature (°C):	25	5		Temp	perature (K):	298	
		a. m		CALIBRA	TION		-			
		Make:		Tisch			Qstd Slope:		2.07173	
	Model: TE-5025/					Q	std Intercept:		-0.01761	
		ration Date:		14-Jan-16			Expiry Date:		14-Jan-17	
		S/N:		2456						
				CALIE	BRA	TIONS				
Plate No.	H2O (L)	H2O (R)	H2O	Qstd		1	IC		LINEAR	
	(in)	(in)	(in)	(m <sup>3</sup> /min)	_	(chart)	(corrected)		REGRESSION	1
18	11.00	-2.40	13.400	1.774		59.00	58.96	Slope =	30.9648	
13	9.50	-0.90	10.400	1.564		52.00	51.97	Intercept =	3.3615	
10	8.80	-0.20	9.000	1.456		47.00	46.97	Corr. coeff.:	0.9968	
7	6.90	1.80	5.100	1.098		38.00	37.97	2		
5 Calculation	6.10	2.50	3.600	0.924	+	32.00	31.98	<u> </u>		
		/Pstd)(Tstd/T	a))_b]				FLOW	RATE CHAR	т	
	a/Pstd)(Tstd		a))-b]			70.00 -				
	dard flow rate	0.00				/0.00				
	ed chart resp					60.00 -				
	art response				(	50.00 -				
	tor Qstd slop				(IC	50.00				
	or Qstd interc				onse	40.00 -				
Гa = actual t	temperature	during calibra			Response (IC)	30.00 -				
Pa = actual Fstd = 298 c	• CHECKEN AND CONTRACTOR CONTRACTOR	ing calibratior	n (mm Hg)		Actual Chart F	20.00 -				
Pstd = 760 r	<b>U</b>				ual C					
or subseq	uent calcula	tion of sam	oler flow:		Acti	10.00 -				
/m((I)[Sqrt(	m((I)[Sqrt(298/Tav)(Pav/760)]-b)									
n = sample	er slope					- 0.00 0.0	00 0.500	1.000 1.	.500 2.000	
= sample	er intercept					0.0				
= chart re	•						Standard	Flow Rate (m <sup>3</sup> /	min)	
	average temp	perature		L						
•	average pres									

CHOI KAM HO **Project Consultant** 

Fugro Development Centre, 5 Lok Yi Street, Tai Lam, Tuen Mun, N.T., Hong Kong. Tel : +852 2450 8233 Fax : +852 2450 6138 E-mail : matlab@fugro.com Website : www.materialab.com



Page 1 of 1

Report No. : 161966CA161195

# CALIBRATION CERTIFICATE OF ANEMOMETER

#### **Client Supplied Information**

Client : Materialab Consultants Ltd.

Address: Room 723 & 725, 7/F., Block B Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Chung, N.T.

Project : Calibration Services

#### Details of Unit Under Test, UUT

Description	•	Anemometer

Manufacturer : Smart Sensor

Model No. : AR816+

Equipment ID.: MC-A-001

Next Calibration Date : 05-Jun-2017

#### Laboratory Information

Details of Reference Equipment -

Description : Reference Anemometer

Equipment ID.: R-101-4

Date of Calibration : 06-Jun-2016 Ambient Temperature : 21 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct Comparison

#### **Calibration Results :**

Reference Reading	UUT Reading	Error
(m/s)	(m/s)	(m/s)
0.00	0.0	0.00
0.99	1.0	+0.01
2.02	2.0	-0.02
5.00	5.0	0.00
9.98	9.9	-0.08

#### **Remarks**:

1. The equipment being used in this calibration is traceable to recognized National Standards.

Date : 7-6-2016 Certified by : 10 m | Chan Chun Wai (Manager) Date : 7,6. 2016. Checked by : CA-R-297 (22/07/2009)

\*\* End of Report \*\*

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Page 1 of 1

# Report no.: 940891CA160442(1) CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client : Fugro Technical Services Ltd.

Project : Calibration Services

#### **Client Supplied Information**

Details of Unit Under Test, UUT

Description	:	Sound Calibrator	
Manufacturer	÷	Casella (Model no. CEL-120/1)	
Serial No.	:	5230742	
Next Calibration Date	:	02-Mar-2017	
Specification Limit	:	±0.5dB	

### Laboratory Information

Description	:	Re	Reference Sound Level Meter			
Equipment ID.	:	R-	R-119-1			
Date of Calibra	tion	:	03-Mar-2016	Ambient Temperature :	21	°C
Calibration Location : Calibration Laboratory of MateriaLab						
Method Used	:	Ву	/ direct comparison			

#### **Calibration Results :**

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)
94dB	-0.1 dB	±0.5dB
114dB	-0.3 dB	±0.00B

#### Remarks :

- 1. The equipment used in this calibration is traceable to recognized National Standards.
- 2. The mean value is the average of four measurements.
- 3. The equipment does comply with specification limit.

\_ Date : 43. Dolb Certified by 07 MAR 2016 Date : Checked by Kwok Chi Wa (Assistant Manager) CA-R-297 (22/07/2009

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Report no.: 161966CA160797

Page 1 of 1

# CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client : MateriaLab Consultants Ltd.

Address : Room 723 & 725, 7F., Block B Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Chung, N.T.

Project : Calibration Services

#### **Client Supplied Information**

Details of Unit Under Test, UUT

:	Sound Calibrator
:	Casella (Model no. CEL-120/1)
:	5230736
;	20-Apr-2017
:	±0.5dB

#### Laboratory Information

Description	:	Reference Sound Level Meter			
Equipment ID.	:	R-119-1	R-119-1		
Date of Calibrat	ion	: 21-Apr-2016	Ambient Temperature :	21	°C
Calibration Location : Calibration Laboratory of MateriaLab					
Method Used	:	By direct comparis	son		

#### **Calibration Results :**

Parameters (Setting of UUT)	Mean of Measured value	Specification Limit(dB)
94dB	93.9 dB	±0.5dB
114dB	114.1 dB	10.000

#### **Remarks**:

- 1. The equipment used in this calibration is traceable to recognized National Standards.
- 2. The mean value is the average of four measurements.
- 3. The equipment does comply with specification limit.

2 2 APR 2016 Date : W & 2-16 Certified by Date : Checked by CA-R-297 (22/07/2009) Kwok Chi Wa (Assistant Manager)

\*\* End of Report \*\*

	cate of d Calibration for
CEL-120 Acou	stic Calibrator
Applicable Standards :- IEC 6	0942: 2003 & ANSI S1.40: 2006
CEL-120/1 Class 1	
CEL-120/2 Class 2	
Serial No: 435825	I
Firmware: <u>03</u>	
Temperature: 22.0 °C Pre	essure: 999.5_mb %RH 55.0
Frequency = 1.00kHz ± 2Hz T.H.D. = < 1%	Calibration Level
SPL @ 114.0dB Setting	113.99 dB
SPL @ 94.0dB Setting (CEL-120/1 only)	93-93 dB/N.A
Engineer :- H - DensCo	12 MAY 2016
subject to periodic calibration, traceable to U	g standards, used for conformance testing, are IK national standards, in accordance with the 01 Quality System.
his certificate confirms that the instrument specifie	DF CONFORMITY d above has been produced and tested to comply with the relevant European Community CE directives.
Regent House, Wolseley Road, Phone: +44 (0) 1234 844100 E-mail: info@	EL (U.K.), Kempston, Bedford. MK42 7JY Fax: +44 (0) 1234 841490 )casellacel.com measurement.com
web. www.casella	198032A-01



# Certificate of Conformity and Calibration

Instrument Model:- Serial Number Firmware revision	<b>CEL-633A</b> 3756127 V129-09				
<u>Microphone Type:-</u> Serial Number	<b>CEL-251</b> 1231	<u>Preamplifier Type:-</u> Serial Number	CEL-495 003036		
Instrument Class/Type:-	1				
Applicable standards:-					
IEC 61672: 2002 / EN 60651 (Electroacoustics - Sound Level Meters) IEC 60651 1979 (Sound Level Meters), ANSI S1.4: 1983 (Specifications For Sound Level Meters)					
Note:- The test sequences performed in this report are in accordance with the current Sound level meter Standard - IEC61672. The combination of tests performed are considered to confirm the products electro-acoustic performance to all applicable standards including superceeded Sound Level Meter Standards - IEC60651 and IEC60804.					

 Test Conditions: 25 °C
 Test Engineer: Millie Duncan

 52 %RH
 Date of Issue: February 2, 2016

 1010 mBar
 February 2, 2016



#### Declaration of conformity:-

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications. Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9001:2008 quality procedures. This product is certified as being compliant to the requirements of the CE Directive.

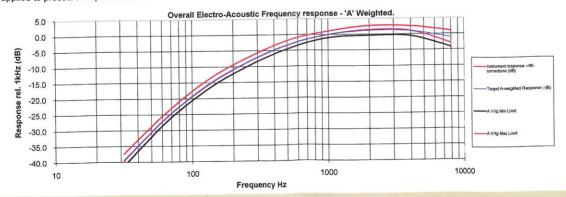
#### Test Summary:-

Self Generated Noise Test	All Tests Pass
Electrical Signal Test Of Frequency Weightings	All Tests Pass
Frequency & Time Weightings At 1 kHz	All Tests Pass
Level Linearity On The Reference Level Range	All Tests Pass
Toneburst Response Test	All Tests Pass
C-peak Sound Levels	All Tests Pass
Overload Indication	All Tests Pass
Acoustic Tests	All Tests Pass

# Combined Electro-Acoustic Frequency Response - A Weighted

Combined Electro-Acoustic Frequency Response - A Weighted (IEC 61672-3:2006)

The following A-Weighted frequency response graph shows this instruments overall frequency response based upon the application of multi-frequency pressure field calibrations. The microphones Pressure to Free field correction coefficients are applied to pressure response. Reference level taken at 1kHz.



Casella CEL Regen House, Wolseley Road, Kempston, Bedford MK42 7JY

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 info@casellausa.com

 Web:
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# Certificate of Conformity and Calibration

Instrument Model:-	CEL-633	A			
Serial Number Firmware revision	3756084 V129-09				
<u>Microphone Type:-</u> Serial Number	<b>CEL-251</b> 1257		<u>plifier Type:-</u> Number	CEL-495 003538	
Instrument Class/Type:-	1				
Applicable standards:-					
IEC 61672: 2002 / EN 60651 ( IEC 60651 1979 (Sound Leve			s For Sound Leve	I Meters)	
Note:- The test sequences performed Standard - IEC61672. The combin electro-acoustic performance to al Standards - IEC60651 and IEC60	ation of tests perf applicable stand	ormed are considered to com	firm the products	evel meter	
Test Conditions:-	25 °C 52 %RH 1010 mBar	Test Engineer:- Date of Issue:-	Millie Duncan February 2, 20	016	20

#### Declaration of conformity:-

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications. Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9001:2008 quality procedures. This product is certified as being compliant to the requirements of the CE Directive.

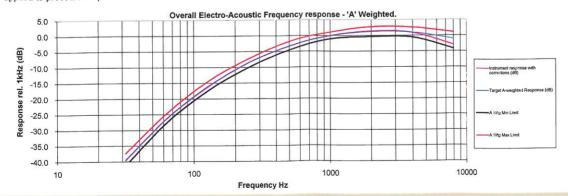
#### Test Summary:-

Self Generated Noise Test	All Tests Pass
Electrical Signal Test Of Frequency Weightings	All Tests Pass
Frequency & Time Weightings At 1 kHz	All Tests Pass
Level Linearity On The Reference Level Range	All Tests Pass
Toneburst Response Test	All Tests Pass
C-peak Sound Levels	All Tests Pass
Overload Indication	All Tests Pass
Acoustic Tests	All Tests Pass

#### Combined Electro-Acoustic Frequency Response - A Weighted

Combined Electro-Acoustic Frequency Response - A Weighted (IEC 61672-3:2006)

The following A-Weighted frequency response graph shows this instruments overall frequency response based upon the application of multi-frequency pressure field calibrations. The microphones Pressure to Free field correction coefficients are applied to pressure response. Reference level taken at 1kHz.



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# Certificate of Conformity and Calibration

Instrument Model:- Serial Number Firmware revision	<b>CEL-633A</b> 3756072 V129-09				
<u>Microphone Type:-</u> Serial Number	<b>CEL-251</b> 1361	<u>Preampl</u> Serial No	<u>lifier Type:-</u> umber	CEL-495 003527	
Instrument Class/Type:-	1				
Applicable standards:-					6
IEC 61672: 2002 / EN 60651 (Elec IEC 60651 1979 (Sound Level Me			For Sound Level N	leters)	E
Note:- The test sequences performed Standard - IEC61672. The combination electro-acoustic performance to all app Standards - IEC60651 and IEC60804.	of tests perforr	ned are considered to confirm	n the products	I meter	B
5	5 °C 2 %RH 0 mBar	Test Engineer:- Date of Issue:-	Millie Duncan May 13, 2016		E

#### Declaration of conformity:-

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications. Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9001:2008 quality procedures. This product is certified as being compliant to the requirements of the CE Directive.

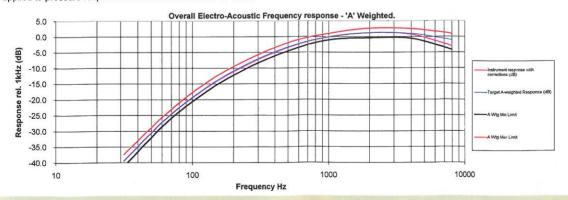
#### Test Summary:-

All Tests Pass
All Tests Pass

#### Combined Electro-Acoustic Frequency Response - A Weighted

Combined Electro-Acoustic Frequency Response - A Weighted (IEC 61672-3:2006)

The following A-Weighted frequency response graph shows this instruments overall frequency response based upon the application of multi-frequency pressure field calibrations. The microphones Pressure to Free field correction coefficients are applied to pressure response. Reference level taken at 1kHz.



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Report no.: 940891CA152019(1)

Page 1 of 1

# CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client : Fugro Technical Services Ltd.

Project : Calibration Services

# **Client Supplied Information**

Details of Unit Under Test, UUT

Description	:	Sound Level Meter
Manufacturer	:	Casella (Model no. CEL-63X(meter), CEL-251(microphone), CEL-495(Preamplifier))
Serial No.	:	3321823 (meter), 2058 (microphone), 001598 (Preamplifier))
Next Calibration Date	:	14-Oct-2016
Specification Limit	:	EN 60651: 1994 Type 1

### Laboratory Information

Description		B & K Acoustic Multifund	ction Calibrator 4226 (Tra	dition	al free field setting)
Equipment ID.	:	R-108-1			
Date of Calibrat	tion	: 15-Oct-2015	Ambient Temperature :	20	°C
Calibration Loca	atio	n: Calibration Laborato	ry of MateriaLab		
Method Used	:	By direct comparison			

### Calibration Results :

Parameters		Mean Value (dB)	Specific	Specification Limit(dB)			
	4000Hz	0.6	2.0	to	0.0		
	2000Hz	1.1	2.2	to	0.2		
Aussishing	1000Hz	0.0	1.0	to	-1.0		
A-weighing frequency	500Hz	-3.2	-2.2	to	-4.2		
response	250Hz	-8.6	-7.6	to	-9.6		
	125Hz	-16.0	-15.1	to	-17.1		
	63Hz	-26.0	-24.7	to	-27.7		
	31.5Hz	-38.9	-37.9	to	-40.9		
Differential level	94dB-104dB	0.0		± 0.4	ŀ		
linearity	104dB-114dB	0.1	± 0.4		ł		

#### Remarks :

- 1. The equipment used in this calibration is traceable to recognized National Standards.
- 2. The mean value is the average of four measurements.
- 3. For calibration: Reference SPL are 94, 104 & 114dB, range setting is 20-140dB & time weighing is fast
- 4. The equipment does comply with EN 60651: 1994 Type 1 sound level meter for the above measurement.

Checked by : CA-R-297 (22/07/2009)	7	Date : 1510-	2015		So Chi Kuen (Engineer)	Date : <u>15 (</u>	) (t., 2015
	/	**	End of	Report **			

Tel

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Appendix E

**Environmental Monitoring Schedule** 

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# Project: <u>KL/2014/03 - Kai Tak Development – Stage 3 Infrastructure Works for Developments at the</u> <u>Southern Part of the Former Runway</u>

# Impact Monitoring Schedule (November 2016)

Sun	Mon	Tue	Wed	Thur	Fri	Sat
		1 November 2016	2	3	4 TSP Monitoring Noise Monitoring at KTD1a, KTD2a & KER1a	5
6	7	8	9	10 TSP Monitoring Noise Monitoring at KTD1a, KTD2a & KER1a	11	12
13	14	15	16 TSP Monitoring Noise Monitoring at KTD1a, KTD2a & KER1b	17	18	19
20	21	22 TSP Monitoring Noise Monitoring at KTD1a, KTD2a & KER1b	23	24	25	26
27	28 TSP Monitoring Noise Monitoring at KTD1a, KTD2a & KER1b	29	30			

Remarks

1. Monitoring Locations – KTD1a: Centre of Excellence in Paediatric (Children's Hospital), KTD2a: G/IC Zone next to Kwun Tong Bypass (Future at Site 3C1), KER1a: Site Boundary at Cheung Yip Street/ KER1b: Site Boundary at Cheung Yip Street, close to open space car park area

2. TSP Monitoring: 24-hours TSP Monitoring per 6 days, and 3 x 1-hour TSP Monitoring per 6 days (as required in case of complaints)

3. Noise Monitoring: Leq (30 min) between 0700 and 1900 hours.

4. Proposal of Temporary Relocation of Monitoring Location KER 1a for TSP Monitoring and Noise Monitoring was submitted to EPD on 26 October 2016 and was approved on 11 November 2016, effective from 16 November 2016 until the cable diversion works at Cheung Yip Street carried out by CLP are completed.

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Profit Industrial Building,	Tel	: (852)-24508238
1-15 Kwai Fung Crescent, Kwai Fong,	Fax	: (852)-24508032
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# Project: <u>KL/2014/03 - Kai Tak Development – Stage 3 Infrastructure Works for Developments at the</u> <u>Southern Part of the Former Runway</u>

Sun	Mon	Tue	Wed	Thur	Fri	Sat
				1 December 2016	2	3 TSP Monitoring Noise Monitoring
4	5	6	7	8	9 TSP Monitoring Noise Monitoring	10
11	12	13	14	15 TSP Monitoring Noise Monitoring	16	17
18	19	20 TSP Monitoring Noise Monitoring	21	22	23	24 TSP Monitoring Noise Monitoring
25	26	27	28	29	30 TSP Monitoring Noise Monitoring	31

# Impact Monitoring Schedule (December 2016)

#### Remarks

1. Actual monitoring may be subjected to change due to any safety concern or adverse weather condition

2. Monitoring Locations – KTD1a: Centre of Excellence in Paediatric (Children's Hospital), KTD2a: G/IC Zone next to Kwun Tong Bypass (Future at Site 3C1), KER1b: Site Boundary at Cheung Yip Street, close to open space car park area

3. TSP Monitoring: 24-hours TSP Monitoring per 6 days, and 3 x 1-hour TSP Monitoring per 6 days (as required in case of complaints)

4. Noise Monitoring: Leq (30 min) between 0700 and 1900 hours.

Room 723 & 725, 7/F, Block B,		
Profit Industrial Building,	Tel	: (852)-24508238
1-15 Kwai Fung Crescent, Kwai Fong,	Fax	: (852)-24508032
Hong Kong.	Email	: mcl@fugro.com.hk



# Project: <u>KL/2014/03 - Kai Tak Development – Stage 3 Infrastructure Works for Developments at the</u> <u>Southern Part of the Former Runway</u>

#### Sun Mon Tue Wed Thur Fri Sat 2 3 4 5 6 7 1 January **TSP** Monitoring Noise Monitoring 8 9 10 11 12 13 14 **TSP** Monitoring Noise Monitoring 16 17 18 19 20 21 15 TSP Monitoring Noise Monitoring 24 22 23 25 26 27 28 TSP Monitoring **TSP** Monitoring Noise Monitoring Noise Monitoring 29 30 31

# Impact Monitoring Schedule (January 2017)

#### Remarks

1. Actual monitoring may be subjected to change due to any safety concern or adverse weather condition

2. Monitoring Locations – KTD1a: Centre of Excellence in Paediatric (Children's Hospital), KTD2a: G/IC Zone next to Kwun Tong Bypass (Future at Site 3C1), KER1b: Site Boundary at Cheung Yip Street, close to open space car park area

3. TSP Monitoring: 24-hours TSP Monitoring per 6 days, and 3 x 1-hour TSP Monitoring per 6 days (as required in case of complaints)

4. Noise Monitoring: Leq (30 min) between 0700 and 1900 hours.

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# Project: <u>KL/2014/03 - Kai Tak Development – Stage 3 Infrastructure Works for Developments at the</u> <u>Southern Part of the Former Runway</u>

#### Sun Mon Tue Wed Thur Fri Sat 2 3 4 1 February **TSP** Monitoring Noise Monitoring 5 6 7 8 9 10 11 **TSP** Monitoring Noise Monitoring 13 14 15 17 12 16 18 TSP Monitoring Noise Monitoring 22 19 20 21 23 24 25 TSP Monitoring **TSP** Monitoring Noise Monitoring Noise Monitoring 26 27 28

# Impact Monitoring Schedule (February 2017)

Remarks

1. Actual monitoring may be subjected to change due to any safety concern or adverse weather condition

2. Monitoring Locations – KTD1a: Centre of Excellence in Paediatric (Children's Hospital), KTD2a: G/IC Zone next to Kwun Tong Bypass (Future at Site 3C1), KER1b: Site Boundary at Cheung Yip Street, close to open space car park area

3. TSP Monitoring: 24-hours TSP Monitoring per 6 days, and 3 x 1-hour TSP Monitoring per 6 days (as required in case of complaints)

4. Noise Monitoring: Leq (30 min) between 0700 and 1900 hours.

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Appendix F

Air Quality Monitoring Data

### 24-hour TSP Monitoring Result for Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

	Weather	Air	Atmospheric	Filtor W	oiabt (a)	Particulate	Sampling	Flow	Rate	Average	Total	Conc.	Action	Limit
Start Date		Temperature	Pressure, Pa	T III.CT VV	0 (0)		eight (g) Time(hrs)	$(m^{o}/min)$		flow	volume		Level	Level
	Condition	(K)	(mmHg)	Initial	Final	weight (g)	11116(1113)	Initial	Final	(m <sup>3</sup> /min.)	(m <sup>3)</sup>	(ug/m <sup>3</sup> )	$(ug/m^3)$	$(ug/m^3)$
4-Nov-16	Fine	295.4	761.5	2.8352	3.0684	0.2332	24	1.68	1.67	1.67	2491.6	94		
10-Nov-16	Fine	290.7	765.1	2.7928	2.8893	0.0965	24	1.40	1.38	1.39	2035.7	47	I	
16-Nov-16	Fine	297.6	763.0	2.8204	3.1179	0.2975	24	1.74	1.67	1.67	2438.9	122	177	260
22-Nov-16	Fine	295.7	760.0	2.8007	2.8649	0.0642	24	1.32	1.31	1.32	2359.8	34	I	
28-Nov-16	Fine	291.1	765.7	2.8125	3.0320	0.2195	24	1.47	1.44	1.45	2084.5	105		
											Min	34		
											Max	122	I	
											Average	80	Ι	
KTD2a - G	IC Zone ne	ext to Kwun Ton	ng Bynass (Fut	ure Hosp	ital at Site	3C1)							-	

#### KTD1a - Centre of Excellence in Paediatrics (Children's Hospital)

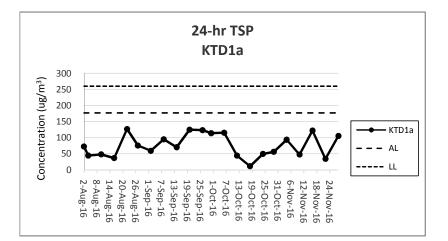
#### KTD2a - G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)

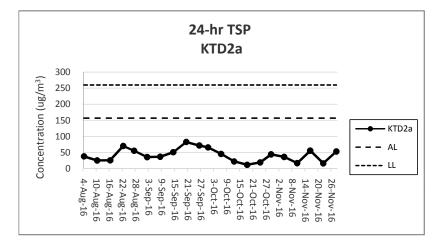
Start Date	Weather	Air Temperature			0 (0)		Particulate Sampling weight (g) Time(hrs)	(m <sup>o</sup> /min)		Average flow	Total volume	Conc.	Action Level	Limit Level	
	Condition	(K)	(mmHg)	Initial	Final	weight (g)	Time(IIIS)	Initial	Final	(m <sup>3</sup> /min.)	(m <sup>3)</sup>	(ug/m³)	$(ug/m^3)$	$(ug/m^3)$	1
4-Nov-16	Fine	295.4	761.5	2.8283	2.8909	0.0626	24	1.21	1.20	1.21	1735.2	36			1
10-Nov-16	Fine	290.7	765.1	2.7954	2.8299	0.0345	24	1.45	1.42	1.43	2066.0	17	Ĩ		
16-Nov-16	Fine	297.6	763.0	2.8153	2.9500	0.1347	24	1.68	1.68	1.68	2420.4	56	157	260	
22-Nov-16	Fine	295.7	760.0	2.8043	2.8388	0.0345	24	1.50	1.49	1.50	2157.3	16	Ĩ		
28-Nov-16	Fine	291.1	765.7	2.8160	2.9171	0.1011	24	1.30	1.35	1.32	1905.4	53	Ĩ		
											Min	16			
											Max	56	Ĩ		
											Average	35	Ι		
KER1a/ KE	R1b - Site	Boundary at Ch	eung Yip Stre	et									_		

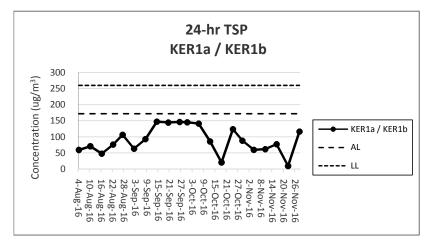
Start Date	Weather	Air Temperature	Atmospheric Pressure, Pa	Filter We			Particulate Sampling weight (g) Time(hrs)	1-3/	Flow Rate Aver (m <sup>3</sup> /min.) flo		volume	Conc.	Action Level	Limit Level
	Condition	(K)	(mmHg)	Initial	Final	weigint (g)	11116(1113)	Initial	Final	(m <sup>3</sup> /min.)	(m <sup>3)</sup>	(ug/m <sup>3</sup> )	$(ug/m^3)$	(ug/m <sup>3</sup> )
4-Nov-16	Fine	295.4	761.5	2.8260	2.9340	0.1080	24	1.22	1.22	1.22	1813.5	60		
10-Nov-16	Fine	290.7	765.1	2.7950	2.9406	0.1456	24	1.91	1.63	1.60	2364.6	62		
16-Nov-16	Fine	297.6	763.0	2.8281	3.0003	0.1722	24	1.53	1.52	1.53	2236.7	77	172	260
22-Nov-16	Fine	295.7	760.0	2.8070	2.8281	0.0211	24	1.49	1.49	1.49	2238.1	9	I	
28-Nov-16	Fine	291.1	765.7	2.8076	3.0447	0.2371	24	1.47	1.37	1.42	2039.5	116	I	
Note: The 2	lote: The 24-hour TSP monitoring on 4 and 10 November 2016 were carried out at monitoring location KER1a while the 24-									ile the 24-	Min	9		
hour TSP m	our TSP monitoring on 16, 22 and 28 November 2016 were carried out at monitoring location KER1b.									Max	116	Ι		
											Average	65	I	

Note: Underline: Exceedance of Action Level

Underline and Bold: Exceedance of Limit Level







Note:

- 1) The major activities being carried out on site during the reporting period can be referred to Section 1.3.2.
- 2) The weather conditions during the reporting period can be referred to Appendix K.
- 3) Any other factors which might affect the monitoing results can be referred to Section 2.6.4.
- 4) QA/QC results, calibration results and detection limits can be referred to Appendix D.
- 5) The 24-hr TSP monitoring at KTD 1a on 29 July 2016 was postponed due to the insufficient power supply and rescheduled to 2 August 2016.
- 6) The 24-hour TSP monitoring location KER1a was replaced by KER1b, effective from 16 November 2016.

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Appendix G

**Noise Monitoring Data** 

#### Noise Impact Monitoring Result for Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

Date	Start Time	Leq 30min dB(A)	L10 dB(A)	L90 dB(A)	Wind Speed (m/s)	Weather
4-Nov-16	10:15	68	70	66	0.5	Fine
10-Nov-16	11:10	69	72	67	1.1	Fine
16-Nov-16	13:30	70	72	67	0.4	Fine
22-Nov-16	10:08	72	74	68	0.6	Cloudy
28-Nov-16	16:30	67	71	66	0.6	Fine
	Max	72				
	Min	67				
	Limit Level	75				

#### KTD 1a: Centre of Excellence in Paediatrics (Children's Hospital)

#### KTD 2a: G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)

		Leq 30min	L10	L90	Wind Speed	
Date	Start Time	dB(A)	dB(A)	dB(A)	(m/s)	Weather
4-Nov-16	11:00	64	66	60	1.6	Fine
10-Nov-16	10:25	69	71	68	1.4	Fine
16-Nov-16	14:03	64	66	62	2.0	Fine
22-Nov-16	10:43	67	69	66	0.3	Cloudy
28-Nov-16	15:45	61	63	58	0.5	Fine
	Max	69				
	Min	61	I			
	Limit Level	75				

#### KER 1a / KER 1b: Site Boundary at Cheung Yip Street

Date	Start Time	Leq 30min dB(A)	L10 dB(A)	L90 dB(A)	Wind Speed (m/s)	Weather
4-Nov-16	11:40	64	66	62	1.2	Fine
10-Nov-16	9:45	70	72	69	1.0	Fine
16-Nov-16	14:39	67	69	65	0.4	Fine
22-Nov-16	9:30	70	76	62	0.3	Cloudy
28-Nov-16	15:00	66	68	61	0.6	Fine
	Max	70				
	Min	64				
	Limit Level	75				

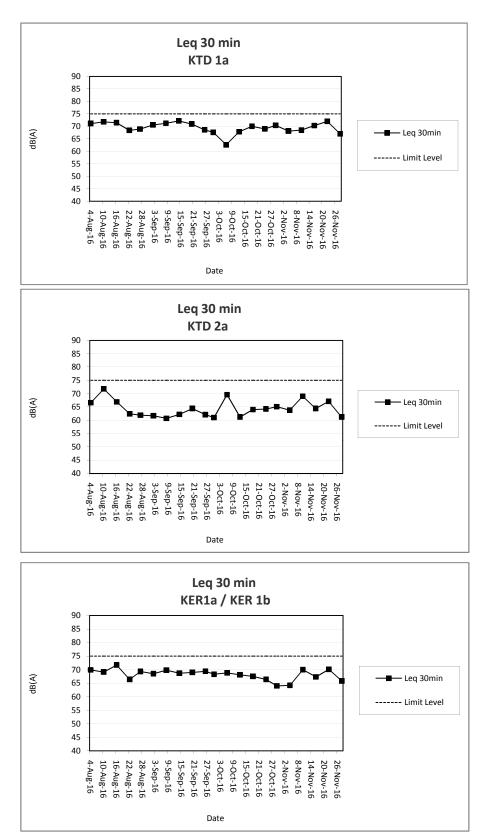
Note: The 24-hour TSP monitoring on 4 and 10 November 2016 were carried out at monitoring location KER1a while the 24-hour TSP monitoring on 16, 22 and 28 November 2016 were carried out at monitoring location KER1b.

Note:

KTD1a: Façade Measurement

KTD2a & KER1b: Free-field measurement (+3dB(A) correction has been applied)

No raining or wind with speed over 5 m/s was observed during noise monitoring according to the onsite observation.



Note:

1) The major activities being carried out on site during the reporting period can be referred to Section 1.3.2.

2) The weather conditions during the reporting period can be referred to Appendix K.

3) Any other factors which might affect the monitoing results can be referred to Section 3.7.2.

4) QA/QC results, calibration results and detection limits can be referred to Appendix D.

5) Noise monitoring location KER1a was replaced by KER1b, effective from 16 November 2016.

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Appendix H

**Events and Action Plan** 

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# Event and Action Plan for Construction Dust Monitoring

Tel Fax

EVENT		ACT	TION				
	ET	IEC	ER	Contractor			
Action Level				. <b>.</b>			
Exceedance for one sample.	<ol> <li>Identify sources, investigate the causes of complaint and propose remedial measures.</li> <li>Inform IEC and ER.</li> <li>Repeat measurement to confirm finding;.</li> <li>Increase monitoring frequency</li> </ol>	<ol> <li>Check monitoring data submitted by the ET.</li> <li>Check the Contractor's working methods.</li> </ol>	1. Notify the Contractor.	<ol> <li>Rectify any unacceptable practices.</li> <li>Amend working methods agreed with the ER as appropriate.</li> </ol>			
Exceedance for two or more consecutive samples.	<ol> <li>I.Identify sources.</li> <li>I.Identify sources.</li> <li>Inform the IEC and ER.</li> <li>Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>Repeat measurements to confirm findings.</li> <li>Increase monitoring frequency to daily.</li> <li>Discuss with the IEC, ER and Contractor on remedial action required.</li> <li>If exceedance continues, arrange meeting with the IEC, Contractor and ER.</li> <li>If exceedance stops, cease additional monitoring.</li> </ol>	<ol> <li>Check monitoring data submitted by the ET.</li> <li>Check the Contractor's working methods.</li> <li>Discuss with the ET, ER and Contractor on possible remedial measures if required.</li> <li>Advise the ER on the effectiveness of proposed remedial measures if required.</li> </ol>	<ol> <li>Notify the Contractor.</li> <li>Ensure remedial measures properly implemented.</li> </ol>	<ol> <li>Submit proposals for remedial action to the ER within 3 working days of notification.</li> <li>Implement the agreed proposals.</li> <li>Amend proposal as appropriate</li> </ol>			
Limit Level Exceedance for one sample.	<ol> <li>Identify sources, investigate causes of exceedance and proposed remedial measures.</li> <li>Inform the IEC, ER, and Contractor.</li> <li>Repeat measurement to confirm finding.</li> <li>4. Increase monitoring frequency to daily.</li> <li>Assess effectiveness of the Contractor's remedial action and keep the IEC and ER informed of the results</li> </ol>	<ol> <li>Check monitoring data submitted by the ET.</li> <li>Check the Contractor's working methods.</li> <li>Discuss with the ET, ER and Contractor on possible remedial measures.</li> <li>Advise the ER and ET on the effectiveness of the proposed remedial measures.</li> <li>Supervise the implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of the notification of exceedance in writing.</li> <li>Notify the Contractor.</li> <li>Ensure remedial measures are properly implemented.</li> </ol>	<ol> <li>Take immediate action to avoid further exceedance.</li> <li>Submit proposals for remedial action to the ER and copy to the ET and IEC within 3 working days of notification.</li> <li>Implement the agreed proposals.</li> <li>Amend proposal as appropriate.</li> </ol>			
Exceedance for two or more consecutive samples	<ol> <li>Notify the IEC, ER and Contractor.</li> <li>Identify sources.</li> <li>Repeat measurements to confirm findings.</li> <li>Increase monitoring frequency to daily.</li> <li>Carry out analysis of the Contractor's working procedures with the ER to determine the possible mitigation to be implemented.</li> <li>Arrange meeting with the IEC and ER to</li> </ol>	<ol> <li>Discuss amongst the ER, ET and Contractor on the potential remedial action.</li> <li>Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER and ET accordingly.</li> <li>Supervise the implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of the notification of exceedance in writing.</li> <li>Notify the Contractor.</li> <li>In consultation with the IEC and ET, agree with the Contractor on the remedial measures to be implemented.</li> <li>Ensure remedial measures are properly implemented.</li> <li>If exceedance</li> </ol>	<ol> <li>Take immediate action to avoid further exceedance.</li> <li>Submit proposals for remedial action to the ER and copy to the IEC and ET within 3 working days of notification.</li> <li>Implement the agreed proposals.</li> <li>Resubmit proposals if problems still not under control.</li> <li>Stop the relevant portion of works as</li> </ol>			

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EVENT		ACT	ION	
EVENT	ET	IEC	ER	Contractor
	discuss the remedial action to be taken. 7. Assess the effectiveness of the Contractor's remedial action and keep the IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring		continues, consider what portion of works is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated.	determined by the ER until the exceedance is abated.

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#### **Event and Action Plan for Noise Impact**

EVENT	ACTION							
EVENT	ET	IEC	ER	Contractor				
Action Level	<ol> <li>Notify the IEC, ER and Contractor.</li> <li>Carry out investigation.</li> <li>Report the results of investigation to the IEC and Contractor.</li> <li>Discuss jointly with the ER and Contractor and formulate remedial measures.</li> <li>Increase the monitoring frequency to check the mitigation effectiveness</li> </ol>	<ol> <li>Review the monitoring data submitted by the ET.</li> <li>Review the construction methods and proposed redial measures by the Contractor, and advise the ET and ER if the proposed remedial measures would be sufficient</li> </ol>	<ol> <li>Notify the Contractor.</li> <li>Require the Contractor to propose remedial measures for implementation if required.</li> </ol>	<ol> <li>Submit noise mitigation proposals to the ER and copy to the IEC and ET.</li> <li>Implement noise mitigation proposals.</li> </ol>				
Limit Level	<ol> <li>Notify the IEC, ER and Contractor.</li> <li>Identify sources.</li> <li>Repeat measurements to confirm findings.</li> <li>Carry out analysis of the Contractor's working procedures with the ER and Contractor to determine possible mitigations to be implemented.</li> <li>Record the causes and action taken for the exceedances.</li> <li>Increase the monitoring frequency.</li> <li>Assess the effectiveness of the Contractor's remedial action with the ER and keep the IEC informed of the results.</li> <li>If exceedance stops, cease additional monitoring</li> </ol>	<ol> <li>Discuss amongst the ER, ET and Contractor on the potential remedial action.</li> <li>Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER accordingly.</li> <li>Supervise the implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of exceedance in writing.</li> <li>Notify the Contractor.</li> <li>Require the Contractor to propose remedial measures for the analysed noise problems.</li> <li>Ensure remedial measures are properly implemented.</li> <li>If exceedance continues, consider what portion of work is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated.</li> </ol>	<ol> <li>Take immediate action to avoid further exceedance.</li> <li>Submit proposals for remedial action to the ER and copy to the ET and IEC within 3 working days of notification.</li> <li>Implement the agreed proposals.</li> <li>Resubmit proposals if problems still not under control.</li> <li>Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>				

AOTION

#### MATERIALAB CONSULTANTS LIMITED Room 723 & 725, 7/F, Block B,

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# Event and Action Plan for Landscape and Visual Impact

Tel

EVENT		ACTION							
EVENI	ET	IEC	ER	Contractor					
Non-conformity on one occasion	<ol> <li>Identify Source</li> <li>Inform the IEC and the ER</li> <li>Discuss remedial actions with the IEC, the ER and the Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> </ol>	<ol> <li>Check report</li> <li>Check the Contractor's working method</li> <li>Discuss with the ET and the Contractor on possible remedial measures</li> <li>Advise the ER on effectiveness of proposed remedial measures.</li> <li>Check implementation of remedial measures.</li> </ol>	1. Notify Contractor 2. Ensure remedial measures are properly implemented	<ol> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ol>					
Repeated Non- conformity	<ol> <li>Identify Source</li> <li>Inform the IEC and the ER</li> <li>Increase monitoring frequency</li> <li>Discuss remedial actions with the IEC, the ER and the Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> <li>If exceedance stops, cease additional monitoring</li> </ol>	<ol> <li>Check monitoring report</li> <li>Check the Contractor's working method</li> <li>Discuss with the ET and the Contractor on possible remedial measures</li> <li>Advise the ER on effectiveness of proposed remedial measures</li> <li>Supervise implementation of remedial measures.</li> </ol>	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	<ol> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ol>					

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Appendix I

Waste Flow Table

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### **MateriaLab**

		Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
Monthly Ending	Total Quantity Generated (Inert C&D)	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 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
2016 Jan	0.159	0.101	0.058	Nil	Nil	Nil	Nil	0.023	0.00002	0.0158	0.0335
2016 Feb	0.291	0.050	0.241	Nil	Nil	Nil	1.34	0.023	0.00002	0.0158	0.0335
2016 Mar	2.7389	0.0407	0.0662	Nil	2.632	Nil	5.92	0.023	0.00002	0.0158	0.0571
2016 Apr	4.1718	0.0578	0.462	Nil	3.652	Nil	12.5	0.023	0.00002	0.0158	0.0426
2016 May	3.592	Nil	0.299	Nil	3.293	Nil	5.23	0.023	0.00002	0.0158	0.0621
2016 June	4.6035	Nil	0.8555	Nil	3.748	Nil	Nil	0.023	0.00002	0.0158	0.0619
2016 July	6.155	0.153	0.015	Nil	5.987	Nil	7.84	0.023	0.00002	0.0158	0.0433
2016 Aug	5.1155	Nil	Nil	Nil	5.1155	Nil	19.93	0.023	Nil	Nil	0.0147
2016 Sept	7.2267	Nil	Nil	Nil	7.2267	Nil	33.65	0.023	Nil	Nil	0.0103
2016 Oct	4.6448	Nil	Nil	Nil	4.6448	Nil	13.30	0.023	Nil	Nil	0.0385
2016 Nov	6.1626	Nil	Nil	Nil	6.1626	Nil	27.06	0.023	Nil	Nil	0.0192
2016 Dec											
Total	44.8608	0.4025	1.9967	Nil	42.4616	Nil	126.77	0.253	0.00014	0.1106	0.4167

Note:

1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

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

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Appendix J

**Environmental Mitigation Implementation Schedule (EMIS)** 

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
Air Quality Measur	<u>es</u>				
New Distributor Ro	ads Serving the Pla	anned KTD			
AEIAR-130/2009 S3.2	AEIAR 130/2009 EM&A Manual S2.2	8 times daily watering of the work site with active dust emitting activities.	Contractor	All relevant worksites	Implemented
Decommissioning	of the Radar Statior	n of the former Kai Tak Airport			
AEIAR-130/2009 S5.2.19	AEIAR 130/2009 EM&A Manual S4.2.4	The excavation area should be limited to as small in size as possible and backfilled with clean and/or treated soil shortly after excavation work. The exposed excavated area should be covered by the tarpaulin during night time. The top layer soils should be sprayed with fine misting of water immediately before the excavation.	Contractor	All relevant worksites	Implemented
Trunk Road T2					
AEIAR-174/2013 S4.9.2.1	AEIAR-174/2013 EM&A Manual S2.3.1.1	Watering of the construction areas 12 times per day to reduce dust emissions by 91.7%, with reference to the "Control of Open Fugitive Dust Sources" (USEPA AP-42). The amount of water to be applied would be 0.91L/m2 for the respective watering frequency.	Contractor	All relevant worksites	Implemented
		Dust enclosures with watering would be provided along the loading ramps and conveyor belts for unloading the C&D materials to the barge for dust suppression.	Contractor	All relevant worksites	Not Applicable
		8 km per hour is the recommended limit of the speed for vehicles on unpaved site roads.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009	AEIAR 130/2009	Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should	Contractor	All relevant	Partially

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status		
S3.2, S5.2.19, AEIAR-174/2013	EM&A Manual	be fully covered by impermeable sheeting to reduce dust emission.		worksites	Implemented		
S4.9.2.2	S2.2, S4.2, AEIAR 174/2013 EM&A Manual S2.3.1.2	Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. Use of frequent watering for particularly dusty construction areas and areas close to ASRs.	Contractor	All relevant worksites	Implemented		
		Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should have properly fitted side and tail boards.	Contractor	All relevant worksites	Implemented		
		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.	Contractor	All relevant worksites	Implemented		
		Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; 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.	Contractor	All relevant worksites	Implemented		
			The vehicles should be restricted to maximum speed of 10 km per hour. Confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials.	Contractor	All relevant worksites	Implemented	
				Vehicle washing facilities should be provided at every vehicle exit point. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	Contractor	All relevant worksites	Implemented
			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.	Contractor	All relevant worksites	Implemented		
		Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	Contractor	All relevant worksites	Implemented		

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.	Contractor	All relevant worksites	Implemented
		Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.	Contractor	All relevant worksites	Implemented
		Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.	Contractor	All relevant worksites	Partially Implemented
		Open stockpiles shall be avoided or covered. Prevent placing dusty material storage piles near ASRs.	Contractor	All relevant worksites	Partially Implemented
		Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs.	Contractor	All relevant worksites	Not Applicable
		Dark smoke			
		Dark smoke emission shall be control in accordance with the Air Pollution Control (Smoke) Regulation and ETWB TCW 19/2005.	Contractor	All relevant worksites	Implemented
		Plant and equipment should be well maintained to prevent dark smoke emission.	Contractor	All relevant worksites	Implemented
Noise Measures					
Trunk Road T2					
AEIAR-174/2013 S5.9.2.1	AEIAR-174/2013 EM&A Manual S3.4.1.1	The use of quieter plant, including Quality Powered Mechanical Equipment (QPME) is specified for the list of equipment: • Concrete lorry mixer • Dump Truck, 5.5 tonne < gross vehicle weight <= 38 tonne • Generator, Super Silenced, 70 dB(A) at 7m	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		<ul> <li>Poker, vibratory, Hand-held (electric)</li> <li>Water Pump, Submersible (Electric)</li> <li>Mobile Crane - KOBELCO CKS900</li> <li>Excavator, wheeled/tracked - HYUNDAI R80CR-9</li> </ul>			
		Use of temporary or fixed noise barriers with a surface density of at least 10kg/m <sup>2</sup> to screen noise from movable and stationary plant.	Contractor	All relevant worksites	Implemented
		Use of enclosures with covers at top and three sides and a surface density of at least 10kg/m <sup>2</sup> to screen noise from generally static noisy plant such as air compressors.	Contractor	All relevant worksites	Implemented
		Use of acoustic fabric for the silent piling system, drill rigs, rock drills etc.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009 S3.3, S5.3.10, AEIAR-174/2013	AEIAR 130/2009 EM&A Manual	Only well-maintained plant should be operated on-site and plant shall be serviced regularly during the construction/ decommissioning program.	Contractor	All relevant worksites	Implemented
S5.9.2.1	S2.3, S4.3.2, AEIAR-174/2013 EM&A Manual S3.4.1.1	Silencers or mufflers on construction equipment should be utilized and shall be properly maintained during the construction/ decommissioning program.	Contractor	All relevant worksites	Implemented
	55.4.1.1	Mobile plant, if any, should be sited as far away from NSRs as possible.	Contractor	All relevant worksites	Implemented
		Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or should be throttled down to a minimum.	Contractor	All relevant worksites	Implemented
		Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	Contractor	All relevant worksites	Implemented
		Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction/ decommissioning activities.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Use of site hoarding as a noise barrier to screen noise at low level NSRs.	Contractor	All relevant worksites	Implemented
		For the use of hand held percussive breakers (with mass of above 10kg) and portable air compressors (supply air at 500 kPa or above), the noise level of such PME shall comply with a stringent noise emission standard and a noise emission label shall be obtained from the DEP before use at any time in construction site.	Contractor	All relevant worksites	Implemented
		Quiet powered mechanical equipment (PME) shall be used for the construction of the Project.	Contractor	All relevant worksites	Implemented
		Full enclosures shall be used to screen noise from relatively static PMEs (including air compressor, bar bender, concrete pump, generator and water pump) from sensitive receiver(s).	Contractor	All relevant worksites	Not Applicable
		Movable cantilevered noise barriers shall be used to screen noise from mobile PMEs (including asphalt paver, breaker, excavator and hand-held breaker) from sensitive receiver(s). These movable cantilevered noise barriers shall be located close to the mobile PMEs and shall be moved/adjusted iteratively in step with each movement of the corresponding mobile PMEs in order to maximize their noise reduction effects.	Contractor	All relevant worksites	Not Applicable
		Only approved or exempted Non-road Mobile Machineries (NRMMs) including regulated machines and non-road vechicles with proper labels are allowed to be used in specified activities on-site.	Contractor	All relevant worksites	Implemented
Water Quality Mea	sures				
Trunk Road T2					
		Accidental Spillage			
AEIAR-174/2013 S6.4.8.5	AEIAR-174/2013 EM&A Manual S4.2.1.1	All bentonite slurry should be stored in a container that resistant to corrosion, maintained in good conditions and securely closed; The container should be labelled in English and Chinese and note that the container is for storage of bentonite slurry only.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		The storage container should be placed on an area of impermeable flooring and bunded with capacity to accommodate 110% of the volume of the container size or 20% by volume stored in the area and enclosed with at least 3 sides.	Contractor	All relevant worksites	Implemented
		The storage container should be sufficiently covered to prevent rainfall entering the container or bunded area (water collected within the bund must be tested and disposed of as chemical waste, if necessary). An emergency clean up kit shall be readily available where bentonite fluid will be stored or used.	Contractor	All relevant worksites	Implemented
		The handling and disposal of bentonite slurries should be undertaken in accordance within ProPECC PN 1/94. Surplus bentonite slurries used in construction works shall be reconditioned and reused wherever practicable. Residual bentonite slurry shall be disposed of from the site as soon as possible as stipulated in Clause 8.56 of the General Specification for Civil Engineering Works. The Contractor should explore alternative disposal outlets for the residual bentonite slurry (dewatered bentonite slurry to be disposed to a public filling area and liquid bentonite slurry, if mixed with inert fill material, to be disposed to a public filling area) and disposal at landfill should be the last resort.	Contractor	All relevant worksites	Implemented
AEIAR-174/2013 S6.4.8.8	AEIAR-174/2013 EM&A Manual S4.2.1.1	In order to protect against impacts to the surrounding marine waters of the KTTS and Victoria Harbour in the event of an accidental spillage of fuel or oil, the Contractor will be required to prepare a spill response plan to the satisfaction of AFCD, EPD, FSD, Police, TD and WSD to define procedures for the control, containment and clean-up of any spillage that could occur on the construction site.	Contractor	All relevant worksites	Implemented
		Dredging, Reclamation and Filling			
		No dredging, reclamation or filling in the marine environment shall be carried out.	Contractor	All relevant worksites	Implemented
Decommissioning	of the Radar Statior	n of the former Kai Tak Airport			
		Building Demolition			

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
AEIAR-130/2009 \$5.4	AEIAR 130/2009 EM&A Manual S4.4	The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion.	Contractor	All relevant worksites	Implemented
	54.4	There is a need to apply to EPD for a discharge licence under the WPCO for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge licence. All the runoff, wastewater or extracted groundwater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. It is anticipated that the wastewater generated from the works areas would be of small quantity. Monitoring of the treated effluent quality from the works areas should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD.	Contractor	All relevant worksites	Implemented
		General Construction Works			
		Construction Runoff			
AEIAR- 130/2009 S3.4, S5.4/ AEIAR- 174/2013 S6.4.8.1	AEIAR 130/2009 EM&A Manual S2.4, S4.4/ AEIAR 174/2013 EM&A Manual S4.2.1.1	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 the use of sediment traps and adequate maintenance of	Contractor	All relevant worksites	Implemented
		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.	Contractor	All relevant worksites	Implemented
		Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		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.	Contractor	All relevant worksites	Implemented
		Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m <sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Contractor	All relevant worksites	Partially Implemented
		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.	Contractor	All relevant worksites	Partially Implemented
		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.	Contractor	All relevant worksites	Implemented
		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.	Contractor	All relevant worksites	Not Applicable
		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.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		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.	Contractor	All relevant worksites	Implemented
		All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	Contractor	All relevant worksites	Implemented
		Stormwater Discharges			
		Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes.	Contractor	All relevant worksites	Not Applicable
		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.	Contractor	All relevant worksites	Implemented
		Debris and Litter			
		In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur. Debris and refuse generated on-site should be collected, handled and disposed of	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		properly to avoid entering into the adjacent harbour waters. Stockpiles of cement and other construction materials should be kept covered when not being used.			
		Accidental Spillage			
		Contractor	All relevant worksites	Implemented	
		Waste Management Plan			
AEIAR-174/2013 S11.4.8.1	AEIAR-174/2013 EM&A Manual S9.2.1.2	Contractor should be requested to submit an outline Waste Management Plan (WMP) prior to the commencement of construction work, in accordance with the ETWB TC(W) No.19/2005 so as to provide an overall framework of waste management and reduction.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009 S3.5, S5.5	AEIAR 130/2009 EM&A Manual S2.5, S4.5	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.	Contractor	All relevant worksites	Implemented
		Training of site personnel in proper waste management and chemical waste handling procedures.	Contractor	All relevant worksites	Implemented
		Provision of sufficient waste disposal points and regular collection for disposal.	Contractor	All relevant worksites	Implemented
		Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Contractor	All relevant worksites	Implemented
		Waste Reduction Measures			
		Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals.	Contractor	All relevant worksites	Not Applicable
		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.	Contractor	All relevant worksites	Implemented
		Encourage collection of aluminum cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.	Contractor	All relevant worksites	Implemented
		Any unused chemicals or those with remaining functional capacity should be recycled.	Contractor	All relevant worksites	Implemented
		Proper storage and site practices to minimize the potential for damage or contamination of construction materials.	Contractor	All relevant worksites	Implemented
		Construction and Demolition Materials			
		Where it is unavoidable to have transient stockpiles of C&D material within the work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.	Contractor	All relevant worksites	Implemented
		Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	Contractor	All relevant worksites	Partially Implemented
		Skip hoist for material transport should be totally enclosed by impervious sheeting.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.	Contractor	All relevant worksites	Implemented
		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.	Contractor	All relevant worksites	Implemented
		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.	Contractor	All relevant worksites	Implemented
		All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.	Contractor	All relevant worksites	Implemented
		The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.	Contractor	All relevant worksites	Implemented
		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.	Contractor	All relevant worksites	Implemented
		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.	Contractor	All relevant worksites	Partially Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		General Refuse			
			All relevant worksites	Partially Implemented	
Land Contamination	on Measures				
		For any excavation works conducted at Radar Station			
AEIAR-130/2009 S3.6.57	······································		Contractor	All relevant worksites	Not Applicable
Landscape and Vi	sual Impact				•
New Distributor Ro	oads Serving the Pla	anned KTD			
		Construction Phase			
AEIAR-130/2009 S3.8.12	AEIAR 130/2009 EM&A Manual	All existing trees should be carefully protected during construction.	Contractor	All relevant worksites	Not Applicable
	S2.8	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.	Contractor	All relevant worksites	Not Applicable
		Control of night-time lighting.	Contractor	All relevant worksites	Not Applicable

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status	
		Erection of decorative screen hoarding.	Contractor	All relevant worksites	Implemented	
Trunk Road T2						
		Construction Phase				
AEIAR-174/2013 S9.9.1.1	AEIAR-174/2013 EM&A Manual S7.2.1.2	All works shall be carefully designed to minimize impacts on existing landscape resources and visually sensitive receivers. Existing trees within works area shall be retained and protected.	Contractor	All relevant worksites	Not Applicable	
	57.2.1.2	Existing trees of good quality and condition that are unavoidably affected by the works should be transplanted.	Contractor	All relevant worksites	Not Applicable	
		Large temporary stockpiles of excavated material shall be covered with unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance.	Contractor	All relevant worksites	Partially Implemented	
		Construction plant and building material shall be orderly and carefully stored in order to create a neat and tidy visual appearance.	Contractor	All relevant worksites	Implemented	
		Erection of decorative screen hoarding should be designed to be compatible with the existing urban context.	Contractor	All relevant worksites	Implemented	
		All lighting in construction site shall be carefully controlled to minimize light pollution and night- time glare to nearby residences and GIC user. The contractor shall consider other security measures, which shall minimize the visual impacts.	Contractor	All relevant worksites	Not Applicable	
General Condition						
		The Permit Holder shall display conspicuously a copy of this Permit on the Project site(s) at all vehicular site entrances/exits or at a convenient location for public's information at all times. The Permit Holder shall ensure that the most updated information about the Permit, including any amended Permit, is displayed at such locations. If the Permit Holder surrenders a part or the whole of the Permit, the notice he sends to the Director shall also be displayed at the same	Contractor	All relevant worksites	Implemented	

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures the the theory of the second s		Location / Timing	Construction Phase Implementation Status
	locations as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s).				

Implementation status: Implemented / Partially Implemented / Not Implemented / Not Applicable

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Appendix K

Weather and Meteorological Conditions during Reporting Month

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	Mean		Air Temperatur	e	Mean Relative	Total
Date	Pressure (hPa)	MaximumMeanMinimum(deg. C)(deg. C)(deg. C)		Humidity (%)	Rainfall (mm)	
	-	-	November 2016	5	-	-
01	1019.7	25.3	23.9	22.5	69	0.0
02	1020.3	24.8	22.8	21.0	68	0.0
03	1019.3	24.8	21.8	20.1	66	0.0
04	1015.2	25.3	22.4	19.6	68	0.0
05	1013.0	26.9	23.8	21.7	77	0.0
06	1015.1	26.9	24.2	22.4	79	0.0
07	1016.6	28.4	25.3	23.4	81	0.0
08	1017.4	28.1	24.6	22.1	80	4.8
09	1019.5	22.1	20.7	19.0	81	1.3
10	1020.1	19.0	17.7	17.0	82	1.9
11	1018.8	22.3	20.0	17.1	80	Trace
12	1017.9	25.1	23.3	21.6	84	0.2
13	1016.9	26.9	24.7	23.8	85	0.0
14	1015.4	28.1	25.4	23.3	83	0.0
15	1015.8	29.2	25.7	23.8	81	Trace
16	1017.2	26.1	24.6	23.9	81	Trace
17	1016.6	27.5	24.8	23.6	78	Trace
18	1014.2	26.8	24.8	23.5	83	Trace
19	1013.1	28.0	25.8	24.0	78	1.4
20	1012.9	26.8	25.6	25.0	78	Trace
21	1012.9	25.3	24.7	24.0	85	0.3
22	1013.3	24.5	22.7	21.6	95	36.5
23	1016.2	21.6	20.5	16.7	93	25.9
24	1018.6	19.8	17.3	15.0	76	Trace
25	1016.4	22.3	20.0	17.4	78	0.1
26	1015.9	21.1	17.6	13.3	89	50.3
27	1016.9	19.9	16.2	12.8	83	8.6
28	1020.9	20.1	18.1	16.1	68	0.0
29	1022.3	20.5	19.2	17.5	66	0.0
30	1022.3	22.0	19.7	17.4	64	0.0

Source: Hong Kong Observatory – Hong Kong Observatory

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Appendix L

Cumulative statistics on Environmental Complaints, Notifications of Summons and Successful Prosecution

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#### **Environmental Complaints Log**

Complaint Log No.	Date of Receipt	Received From and Received By	Nature of Complaint	Date Investigated	Outcome	Date of Reply
Nil	-	-	-	-	-	-

#### **Cumulative Statistics on Complaints**

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative Project- to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

#### **Cumulative Statistics on Notification of Summons and Successful Prosecutions**

Environmental Parameters	Cumulative No. Brought Forward	No. of Notification of Summons and Prosecutions This Month	Cumulative Project- to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

Tel

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Appendix M

Summary of Site Audit in the Reporting Month



#### Summary of Site Audit in the Reporting Month

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	3 November 2016	Open stockpile shall be covered with impermeable sheeting to prevent dust emission. (Portion I)	The item was rectified by the Contractor and inspected on 10 November 2016.
	10 November 2016	Open stockpile shall be covered with impermeable sheeting to prevent dust emission. (Portion I)	The item was rectified by the Contractor and inspected on 16 November 2016.
Noise		NA	
Water Quality	10 November 2016	Gully which linked to the public drainage shall be covered properly. (Portion X)	The item was rectified by the Contractor and inspected on 16 November 2016.
Chemical and Waste Management	3 November 2016	Drip tray shall be provided to store the oil containers. (Portion M)	The item was rectified by the Contractor and inspected on 10 November 2016.
	10 November 2016	General refuse shall be cleaned up and stored properly. Larger skip shall be provided and general refuse shall be collected regularly. (WA 1)	The item was rectified by the Contractor and inspected on 16 November 2016.
Land Contamination	16 November 2016	Breaker tips shall be placed on drip tray to prevent land contamination due to the leakage of lubricant oils. (Portion X and P).	The item was rectified by the Contractor and inspected on 24 November 2016.
Landscape and Visual Impact	3 November 2016	Open stockpiles shall be covered by unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance. (Portion I)	The item was rectified by the Contractor and inspected on 10 November 2016.
	10 November 2016	Open stockpiles shall be covered by unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance. (Portion I)	The item was rectified by the Contractor and inspected on 16 November 2016.
General Condition	24 November 2016	Stagnant water was found in the storage area of construction materials. Stagnant water shall be removed. (Portion B)	The item was rectified by the Contractor and inspected on 1 December 2016.

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Appendix N

**Outstanding Issues and Deficiencies** 



#### Summary of Outstanding Issues and Deficiencies in the Reporting Month

Parameters	Outstanding Issues	Deficiencies
Air Quality	NA	
Noise	NA	
Water Quality	NA	
Chemical and Waste Management	NA	Any items of deficiencies can be referred to <b>Appendix M</b> .
Land Contamination	NA	
Landscape and Visual Impact	NA	
General Condition	NA	
Others	NA	