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MONTHLY EM&A REPORT

January 2017

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/0702A
EP-337/2009		New Distributor Roads Serving the Planned Kai Tak Development Area
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
EP-451/2013		Trunk Road T2

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Environmental Team Leader
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RAMBOLL ENVIRON

Ref.: CEDKTDS3EM00_0_0155L.17

16 February 2017

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 January 2017

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for January 2017 (Report No. 0405/15/ED/0702A) we received by e-mail on 16 February 2017.

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

F. C. Tsang
Independent Environmental Checker

c.c.	CEDD	Attn.:	Ms. Amy Chu	Fax: 2369 4980
	MateriaLab	Attn.:	Mr. Colin K. L. Yung	Fax: 2450 8032
	CRBC	Attn.:	Mr. Arnold Chan	Fax: 2283 1689

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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 January 2017 and 31 January 2017. As informed by the Contractor, major activities in the reporting month were:

- Temporary utility diversion;
- Implementation of Temporary Traffic Arragement (TTA);
- Construction of Tunnel structure;
- Construction of Subway B;
- Construction of guide walls and D-walls; and
- Construction of District Cooling System Works.

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 KER1b in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

iv. A compliant received on 7th December 2016 was referred from EPD on 15th December 2016 regarding the sand and mud dropped from the vehicle that caused Cheung Yip Street and Shing Cheong dusty. The notification of complaint was received by ET on 27th January 2017.

Reporting Changes

v. There was no reporting change in the reporting month.

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.

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

(i) Construction of approximately 420m long supporting underground structure (SUS) 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

(ii) Widening and re-alignment of Cheung Yip Street of approximately 330m long and associated footpaths;
(iii) Demolition, reconstruction and widening of Shing Cheong Road of approximately 410m long and associated footpaths;
(iv) Construction of drainage outfall and modification of existing seawall;
(v) Construction of ancillary works including surface drainage, sewerage, water, fire 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

(vii) Construction of two subways between Phase II of New Acute Hospital (Site A) and 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 eleventh monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project within the period between 1 January 2017 and 31 January 2017.

1.2 Project Organization

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**.

Table 1.1 Contact Information of Key Personnel

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 2851	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

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:

- Temporary utility diversion;
- Implementation of Temporary Traffic Arragement (TTA);
- Construction of Tunnel structure;
- Construction of Subway B;
- Construction of guide walls and D-walls; and
- Construction of District Cooling System Works.

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

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-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

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 C**.

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.

Table 2.1 Air Quality Monitoring Equipment

Item	Brand	Model	Equipment	Serial Number
1	Tisch	TE-5170 (TSP)	High Volume Sampler	
		TE-300-310X	- Mass Flow Controller	2037
		TE-5005X	- Blower Motor Assembly	3482
		TE-5007X	- Mechanical Timer	4488
		TE-5009X	- Continuous Flow Recorder	4371
2	Tisch	TE-5170 (TSP)	High Volume Sampler	
		TE-300-310X	- Mass Flow Controller	2524
		TE-5005X	- Blower Motor Assembly	4037
		TE-5007X	- Mechanical Timer	5160
		TE-5009X	- Continuous Flow Recorder	4377
3	Tisch	TE-5170 (TSP)	High Volume Sampler	
		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	Sibata Portable TSP Monitors	NA

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.

- 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 ±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^3/min and 1.7 m^3/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 quality 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 ±3°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.

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 KER1b) for air quality monitoring, they are summarized in **Table 2.2** and shown in **Figure 2**.

Table 2.2 Location of Air Quality Monitoring Station

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)
KER1b	Site Boundary at Cheung Yip Street

2.6 Results and Observations

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 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 2.3 Summary of 24-hr TSP Monitoring Results

Parameter	Monitoring Station	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
24-hr TSP in $\mu g/m^3$	KTD1a	99	17 – 142	177	260
	KTD2a	59	25 – 94	157	
	KER1b	66	36 – 95	172	

2.6.7 The Event and Action Plan for air quality is given in **Appendix H**.

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 Comparison of 24-hr TSP data with EIA predictions

Monitoring Station	Receiver Reference	Predicted Maximum 24-hour TSP Concentration ($\mu g/m^3$)	24-hour TSP concentration in January 2017 ($\mu g/m^3$)	Average 24-hour TSP concentration in January 2017 ($\mu g/m^3$)
KTD1a	KTD3	126	17 – 142	99
KTD2a	-	-	25 – 94	59
KER1b	KTD6	169	36 – 95	66

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 at KER1b 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.

2.7.3 The 24-hour TSP monitoring result of KTD 1a on 5 January 2017 exceeded the prediction in the approved EIA report. However, the result did not exceed the Action Level. Mitigation measures, including water spraying and covering of stockpiles of dusty materials were adopted and observed near the monitoring station KTD1a during the site inspections on 5 January 2017. The discrepancy between the 24-hour TSP concentration and EIA Prediction in KTD1a is considered due to dust source from the non-project related construction activities near the monitoring station and the road travel along Shing Fung Road.

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.

Table 3.1 Noise Monitoring Equipment

Item	Brand	Model	Equipment	Serial Number
1	Casella	CEL-63X Series	Integrating Sound Level Meter	2451028
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

3.3 Monitoring Parameters and Frequency

Table 3.2 presents the noise monitoring parameters and frequencies.

Table 3.2 Monitoring Parameters and Frequencies of Noise Monitoring

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

3.4 Monitoring Methodology

The monitoring procedures are as follows:

- The monitoring station is set at a point 1m from the exterior of the sensitive receivers building façade 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 Leq, 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 KER1b) for noise monitoring, they are summarized in **Table 3.3** and shown in **Figure 2**.

Table 3.3 Location of Noise Monitoring Station

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)
KER1b	Site Boundary at Cheung Yip Street

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 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**.

Table 3.4 Summary of Noise Impact Monitoring Results

Time Period	Leq $_{(30min)}$ dB(A) (Range)			Action Level	Limit Level
	Noise Monitoring Stations				
	KTD1a	KTD2a	KER1b		
0700-1900 hrs on normal weekdays	67 - 73	64 - 69	65 - 73	When one documented complaint is received	75 dB(A)

Note:
KTD1a: Façade Measurement
KTD2a & KER1b: 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.

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 EIA predictions

Monitoring Station	Receiver Reference	Maximum Predicted Mitigated Construction Noise Level, dB(A)	Leq $_{(30min)}$ dB(A) in January 2017
KTD1a	KTD1	74	67 - 73
KTD2a	KTD2	75	64 - 69
KER1b	KER1	75	65 - 73

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 were below 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 5, 12 18 and 26 January 2017 and two of them, 5 and 18 January 2017 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 5 January 2017, 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 12 January 2017.

4.2.3 During the Site audit on 18 January 2017, 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 26 January 2017.

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.

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 5, 12 18 and 26 January 2017. Two of them, held on 5 and 18 January 2017 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.

7. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

7.1 Environmental Exceedance

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

7.2 Complaints, Notification of Summons and Prosecution

7.2.1 A compliant received on 7th December 2016 was referred from EPD on 15th December 2016 regarding the sand and mud dropped from the vehicle that caused Cheung Yip Street and Shing Cheong dusty. The notification of complaint was received by ET on 27th January 2017.

7.2.2 Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Appendix L**.

8. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

8.1 Implementation Status

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**.

Table 8.1 Status of Required Submission under Environmental Permit

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 (December 2016)	13/01/2017
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 (December 2016)	13/01/2017
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	12/02/2016
Condition 3.4	Monthly EM&A Report (December 2016)	13/01/2017

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;
- Construction of Tunnel structure;
- Construction of guide walls and D-walls; and
- Construction of District Cooling System Works.

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**.

10. CONCLUSIONS

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 January 2017. 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 5, 12 18 and 26 January 2017 and two of them, 5 and 18 January 2017 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
- Contractor was reminded to provide adequate watering to reduce dust emission.
- The C&D material shall be properly covered after the excavation is done.
- Open stockpile shall be covered with impermeable sheeting to prevent dust emission.
- Dark smoke was observed in an operating crane. Purifier shall be installed and repairing programme shall be implemented.

Construction Noise Impact
- No specific observation was identified in the reporting month.

Water Quality Impact
- Contractor shall provide a good practise to prevent waste water from wheel washing to enter the public drainage. Proper wheel washing area shall be provided.
- Waste water shall be removed.

Chemical and Waste Management
- Chemical oil shall be stored properly. Drip tray shall be provided.

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.

General Condition

- No specific observation was identified in the reporting month.

Permit / Licenses

- No specific observation was identified in the reporting month.

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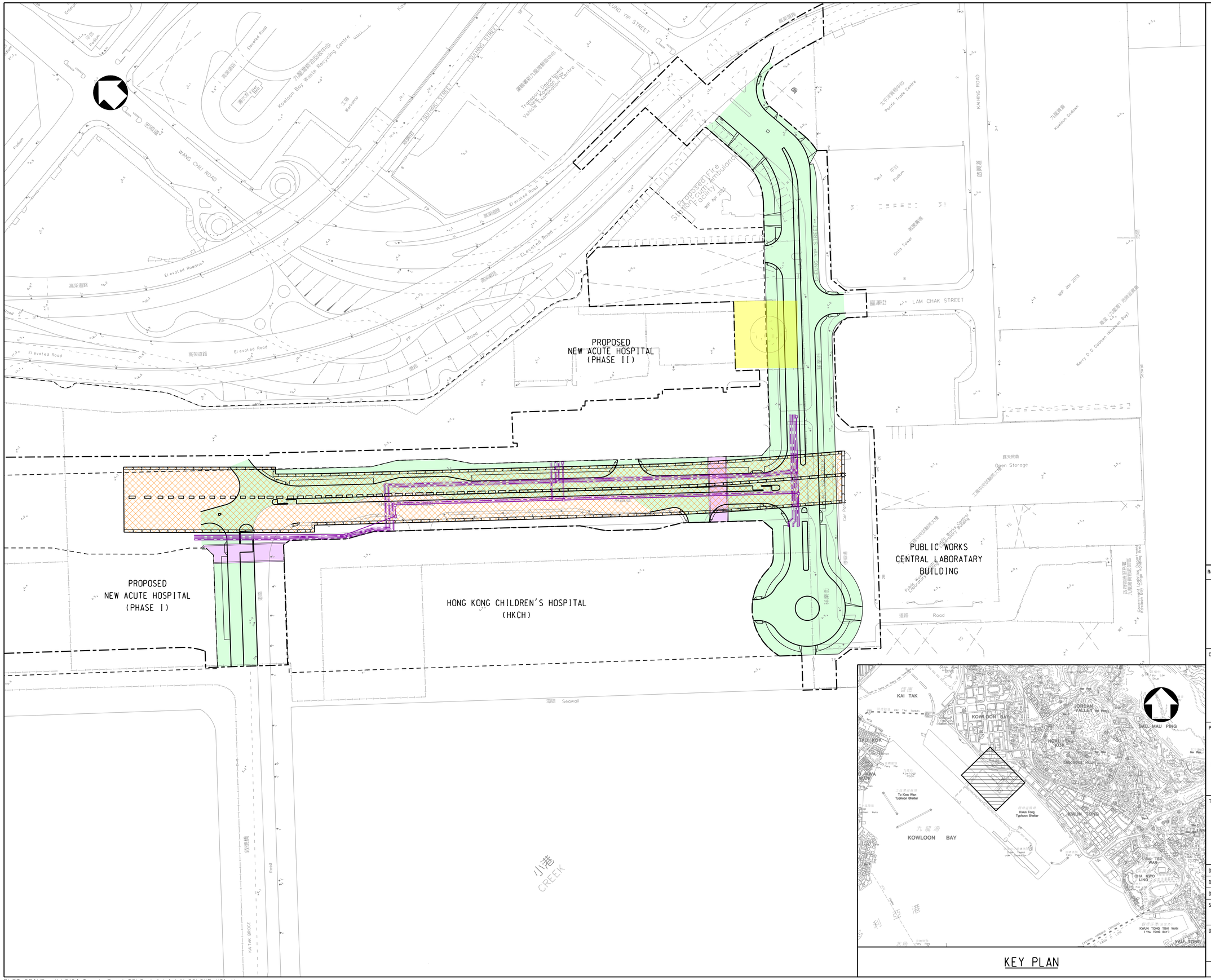
Figure 1

Project General Layout



LEGENDS:

- SITE BOUNDARY
- HOSPITAL SITE BOUNDARY
- PROPOSED SUPPORTING UNDERGROUND STRUCTURE
- PROPOSED SUBWAYS
- PROPOSED ROADWORKS
- PROPOSED DISTRICT COOLING SYSTEM
- DEMOLITION OF RADAR TOWER

Rev.	Date	Drawn	Description	Checked	Approved

Hyder MEINHARDT
Hyder-Meinhardt JV

CLIENT

CEDD 土木工程拓展署
Civil Engineering and Development Department
九龍拓展處
Kowloon Development Office

PROJECT

CONTRACT NO. KL/2014/03
KAI TAK DEVELOPMENT - STAGE 3
INFRASTRUCTURE WORKS FOR DEVELOPMENTS AT THE SOUTHERN PART OF THE FORMER RUNWAY

TITLE

GENERAL LAYOUT PLAN

DESIGNED			ENG. CHECK		
DRAWN			COORDINATION		
DWG. CHECK			APPROVED		

SCALE AT A1	STATUS	REV
1 : 1000		A

Drawing No.

FIGURE 1.0

KEY PLAN

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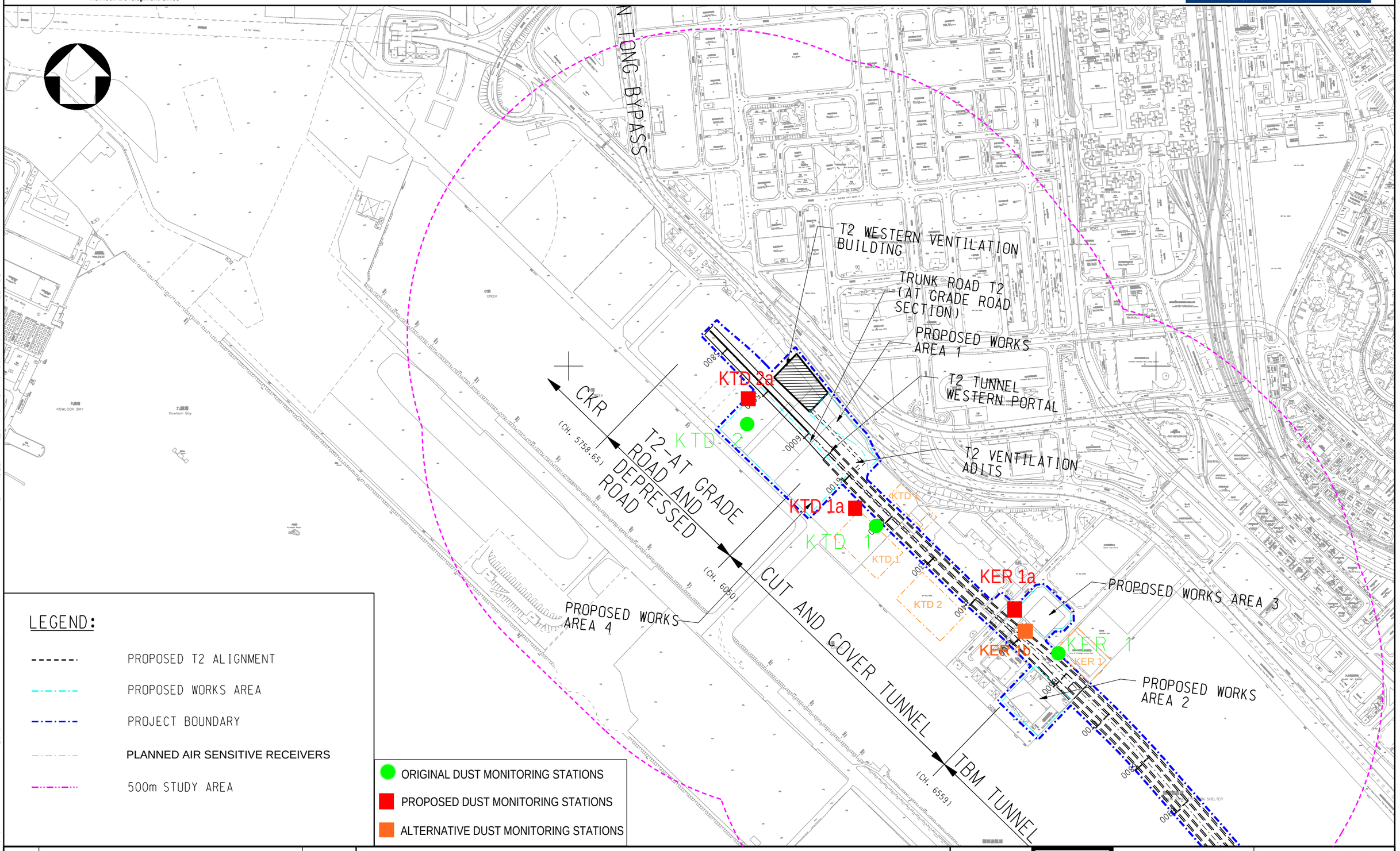
Figure 2

Air and Noise Monitoring Locations

土木工程拓展署
Civil Engineering and Development Department
九龍拓展處
Kowloon Development Office

AGREEMENT NO. CE 38/2008(HY)
KAI TAK DEVELOPMENT - TRUNK ROAD T2 AND INFRASTRUCTURE AT SOUTH APRON - INVESTIGATION, DESIGN AND CONSTRUCTION

Hyder-Meinhardt JV



LEGEND:

- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PLANNED AIR SENSITIVE RECEIVERS
- 500m STUDY AREA

- ORIGINAL DUST MONITORING STATIONS
- PROPOSED DUST MONITORING STATIONS
- ALTERNATIVE DUST MONITORING STATIONS

Rev.	Description	Date

Drawing title

IDENTIFIED DUST MONITORING STATIONS AT SOUTH APRON OF FORMER KAI TAK AIRPORT

Original Size: A3

Scale: 1 : 6000 | Date: 30/01/2012

File name

Drawing No.: FIGURE 2.1a (revised)

Rev.: --

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Civil Engineering and Development Department
九龍拓展處
Kowloon Development Office

AGREEMENT NO. CE 38/2008(HY)
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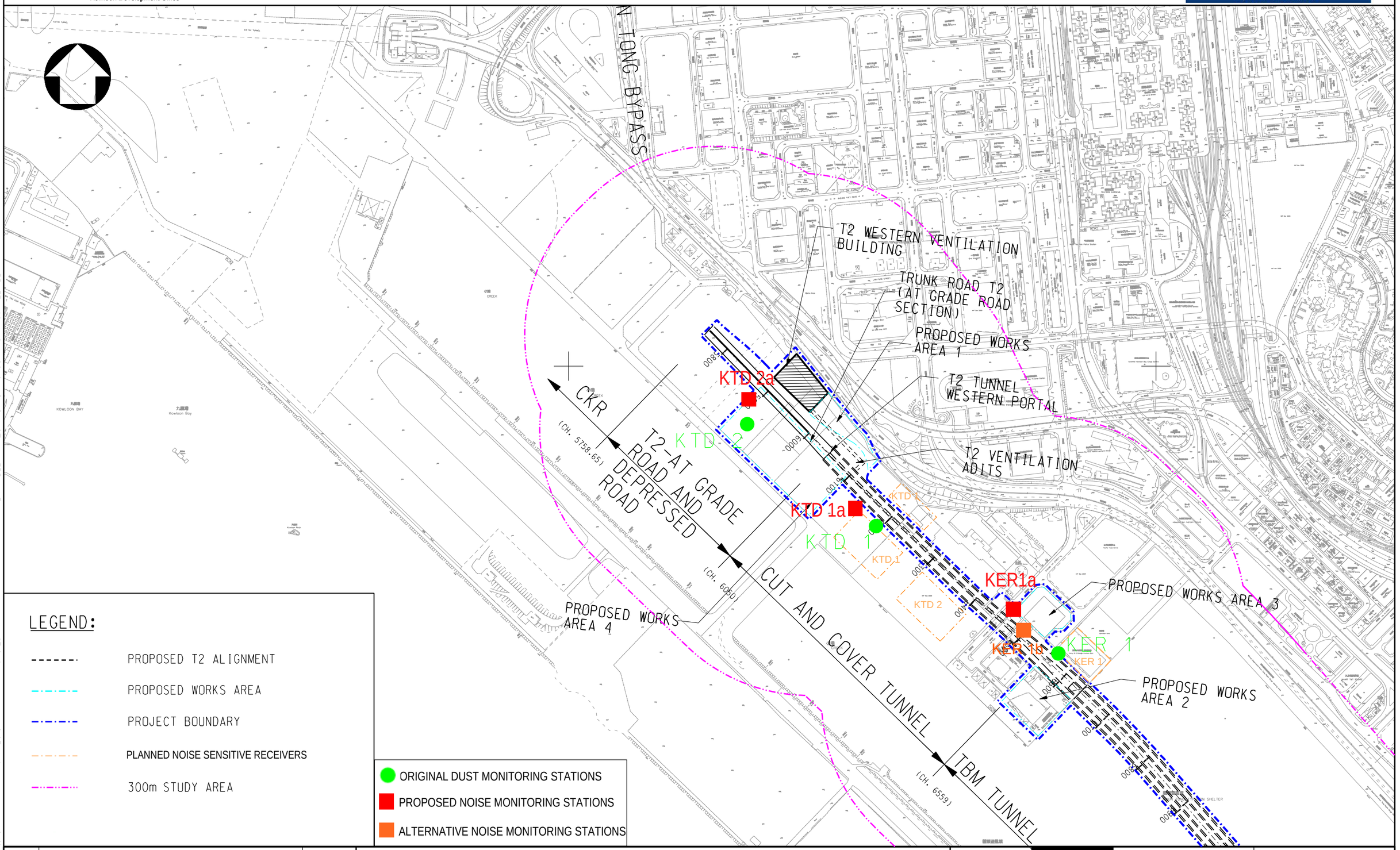

LEGEND:

- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PLANNED NOISE SENSITIVE RECEIVERS
- 300m STUDY AREA

- ORIGINAL DUST MONITORING STATIONS
- PROPOSED NOISE MONITORING STATIONS
- ALTERNATIVE NOISE MONITORING STATIONS

Rev.	Description	Date

Drawing title

IDENTIFIED NOISE MONITORING STATIONS AT SOUTH APRON OF FORMER KAI TAK AIRPORT

Original Size: A3

Scale: 1 : 6000 | Date: 30/01/2012

File name

Drawing No.: FIGURE 3.1a (revised)

Rev.: --

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Appendix A

Construction Programme

Hyder - Meinhardt JV

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

CEDD 土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 Kowloon Development Office

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
KL/2014/03-Stage 3 Infrastructure Works for Developments at the Southern Part of the Form		1200	895	04-Jan-16 A	13-Jun-19
Project Key Dates		1190	895	01-Feb-16 A	13-Jun-19
General Submission		332	127	11-May-16 A	06-May-17
Programming / Reporting		28	48	09-Jun-16 A	16-Feb-17
Works Programme		28	48	09-Jun-16 A	16-Feb-17
K-PA-GSP-4300	Acceptance of the Works Programme	28	48	09-Jun-16 A	16-Feb-17
Condition Survey & Construction Impact Assessment		211	89	11-May-16 A	29-Mar-17
K-DR-PRE-1190	Condition survey at HKCH	7	7	09-Mar-17	15-Mar-17
K-DR-PRE-1195	Submit condition survey report at HKCH	14	14	16-Mar-17	29-Mar-17
K-DR-PRE-1230	Approval of the CIA report submissions for Zone 1	28	28	14-Sep-16 A	27-Jan-17
K-DR-PRE-1320	Revise & resubmit CIA Report for Zone 2 to 4	56	30	11-May-16 A	29-Jan-17
K-DR-PRE-1330	Approval of the CIA report submissions	28	28	30-Jan-17	26-Feb-17
Alternative Design Submission and Approval		228	84	12-Jul-16 A	24-Mar-17
Package B03 : SUS Tunnel box from (CH6+150 to CH6+220)		56	15	12-Jul-16 A	14-Jan-17
K-PA-ADS-1030	Engineer's review and approval	56	15	12-Jul-16 A	14-Jan-17
Package B05 : SUS D-wall from (CH6+291 to CH6+568)		28	12	13-Jul-16 A	11-Jan-17
K-PA-ADS-1550	Engineer's review and approval	28	12	13-Jul-16 A	11-Jan-17
Package B06 : SUS Top & base slab and intermediate wall from (CH6+220 to CH6+568)		225	84	12-Aug-16 A	24-Mar-17
K-PA-ADS-1420	Revise & resubmit DDA drawing (SUS Top & Base slab and Intermediate wall from CH6+220 to CH6+568)	28	28	12-Aug-16 A	27-Jan-17
K-PA-ADS-1430	Engineer's review and approval	56	56	28-Jan-17	24-Mar-17
Major Temporary Works Design		106	75	02-Nov-16 A	15-Mar-17
K-PA-GSP-6835	ELS design for construction of SUS from CH6+291 to CH6+568 in Zone 4 - horizontal members	56	48	16-Nov-16 A	16-Feb-17
K-PA-GSP-6880	Formwork and falsework design for construction of tunnel box structure	56	10	02-Nov-16 A	09-Jan-17
K-PA-GSP-8860	Pumping Test for SUS Cofferdam in Zone 4	50	50	21-Jan-17	11-Mar-17
K-PA-GSP-9100	Temporary support for existing 132kV CLP cable across SUS at CH6+560	35	15	16-Nov-16 A	14-Jan-17
K-PA-GSP-9250	ELS design for construction of existing seawall	35	35	09-Feb-17	15-Mar-17
K-PA-GSP-9260	Design review for revised construction sequence of Ventilition Adit 2 for Zone 1 CH6+185 to CH6+220	28	16	26-Nov-16 A	15-Jan-17
Major Construction Works Method Statement		168	62	06-Sep-16 A	02-Mar-17
K-PA-GSP-7145	Engineer's comments and approval for Method statement of Excavation and ELS for SUS Construction for Zone 1	28	2	06-Sep-16 A	01-Jan-17
K-PA-GSP-7150	Method statement of Excavation and ELS for SUS Construction for Zone 3	28	28	06-Jan-17	02-Feb-17
K-PA-GSP-7155	Engineer's comments and approval	28	28	03-Feb-17	02-Mar-17
K-PA-GSP-7316	Engineer's comments and approval	28	7	28-Oct-16 A	06-Jan-17
K-PA-GSP-7405	Engineer's comments and approval	28	12	29-Oct-16 A	11-Jan-17
K-PA-GSP-7490	Method statement for Erection and Removal of the temporary vehicular and pedestrian access for HKCH	28	15	15-Dec-16 A	14-Jan-17
K-PA-GSP-7495	Engineer's comments and approval	28	28	15-Jan-17	11-Feb-17
K-PA-GSP-7500	Method statement for Erection and Removal of the temporary support for the utilities	28	24	26-Nov-16 A	23-Jan-17
K-PA-GSP-7505	Engineer's comments and approval	28	28	24-Jan-17	20-Feb-17

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

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

3 MRP Jan 2017- Mar 2017

Project ID :13 3MPR Jan - Mar 17
Layout : KL201403 WP3 3MRP

3 Months Rolling Programme

Date	Revision	Checked	Approved
31-Dec-16	Jan 17 - Mar...		

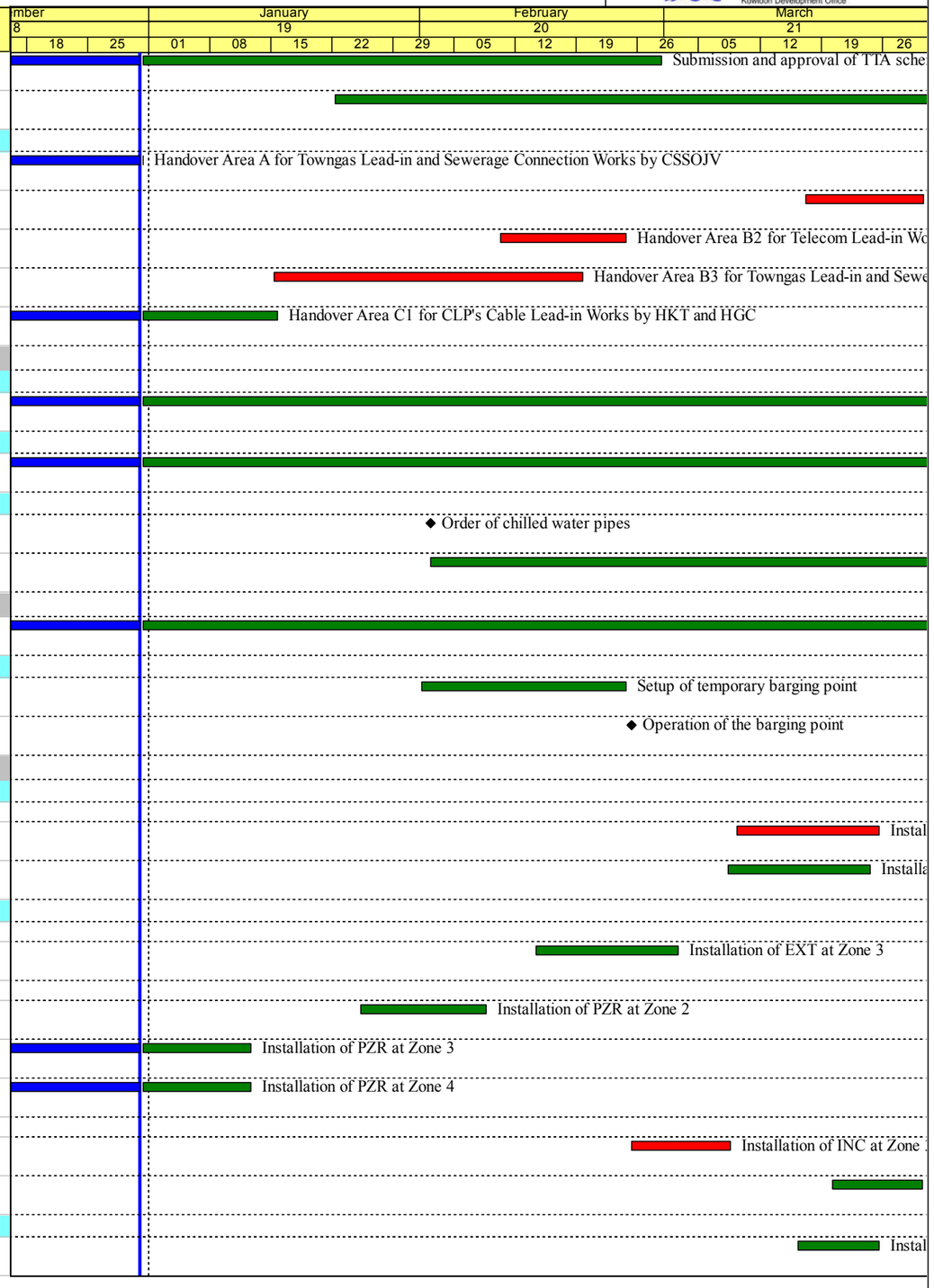
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-PA-GSP-9270	Method Statement for revised construction sequence of Ventilition Adit 2 for Zone 1 CH6+185 to CH6+220	18	18	31-Dec-16	17-Jan-17
K-PA-GSP-9280	Engineer's comments and approval	28	28	18-Jan-17	14-Feb-17
Temporary Utility Diversion Works		183	99	05-Sep-16 A	06-May-17
Temporary Diversion for Watermain Works		72	21	31-Oct-16 A	25-Jan-17
Laying Proposed (Fresh) Watermain		72	21	31-Oct-16 A	25-Jan-17
K-PA-TUD-1100	Trench excavation for DN600 MS & DI fresh watermain at subway B & zone 1	15	9	31-Oct-16 A	11-Jan-17
K-PA-TUD-1120	Laying DN600 MS & DI fresh watermain at subway B & zone 1	20	11	21-Nov-16 A	13-Jan-17
K-PA-TUD-1150	DN600 DI connected (X1 and X2)	0	0		25-Jan-17
K-PA-TUD-1170	DN600 DI connected (X3)	0	0		25-Jan-17
K-PA-TUD-2050	DN450 DI connected (X4)	0	0		25-Jan-17
Laying Proposed (Salt) Watermain		72	17	31-Oct-16 A	25-Jan-17
K-PA-TUD-1200	Trench excavation for DN300 MS salt watermain at subway B & zone 1	18	5	31-Oct-16 A	11-Jan-17
K-PA-TUD-1220	Laying DN300 MS salt watermain at subway B & zone 1	20	5	21-Nov-16 A	13-Jan-17
K-PA-TUD-1250	Connection to DN300 DI (Y1)	0	0		25-Jan-17
K-PA-TUD-2250	Connection to DN300 DI (Y2 and Y3)	0	0		25-Jan-17
Temporary Diversion for Drainage Works		183	99	05-Sep-16 A	06-May-17
K-PA-TUD-2400	Diversion of 2100 storm drain at zone 4	60	23	05-Sep-16 A	27-Jan-17
K-PA-TUD-2500	Excavation and laying of DN600 MS pipe and manhole (N-CP-1) at zone 4 for HKCH connection	25	25	21-Mar-17	22-Apr-17
K-PA-TUD-2600	Excavation and laying of DN300 MS pipe and manhole (FMH23-15D) at zone 4	70	70	08-Feb-17	06-May-17
Temporary Diversion for CLP Cable at CH6+560		84	84	07-Nov-16 A	13-Apr-17
K-PA-TUD-3405	Trench excavation area 5 for cable diversion by CLP at zone 4	21	3	07-Nov-16 A	04-Jan-17
K-PA-TUD-3450	Erection of traffic decking and divert traffic back to orignal position	12	12	05-Jan-17	18-Jan-17
K-PA-TUD-3550	Handover area 3 to CLP cable diversion at zone 4	0	0		18-Jan-17
K-PA-TUD-3555	Trench excavation area 3 for cable diversion by CLP at zone 4	27	27	19-Jan-17	22-Feb-17
K-PA-TUD-3560	Handover area 4 to CLP cable diversion at zone 4	0	0		22-Feb-17
K-PA-TUD-3700	Trench excavation area 4 for cable diversion and CLP cable slewing works by CLP	42	42	23-Feb-17	13-Apr-17
K-PA-TUD-3750	Fabrication and Erection temporary support to utilities at zone 4	14	14	23-Feb-17	10-Mar-17
Temporary Diversion for Sewage Rising Main		62	62	04-Feb-17	21-Apr-17
K-PA-TUD-1500	Construction of 3xDN350 sewage rising main and manhole	28	28	16-Mar-17	21-Apr-17
K-PA-TUD-1600	Construction of DN750 sewage pipe and manhole - stage 1	20	20	04-Feb-17	27-Feb-17
K-PA-TUD-2750	Construction of DN450 sewerage pipe at zone 2 - stage 1	48	48	17-Feb-17	18-Apr-17
Temporary Diversion for Telecommunication Cable		18	18	04-Jan-17	24-Jan-17
K-PA-TUD-4000	Diversion of Fibre cable (PCCW)	18	18	04-Jan-17	24-Jan-17
K-PA-TUD-4050	Diversion of Fibre optical cable (HGC)	18	18	04-Jan-17	24-Jan-17
Temporary Traffic Management		265	112	31-Jul-16 A	21-Apr-17
Temp Traffic Arrangement Schemes		265	112	31-Jul-16 A	21-Apr-17

Hyder - Meinhardt JV

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

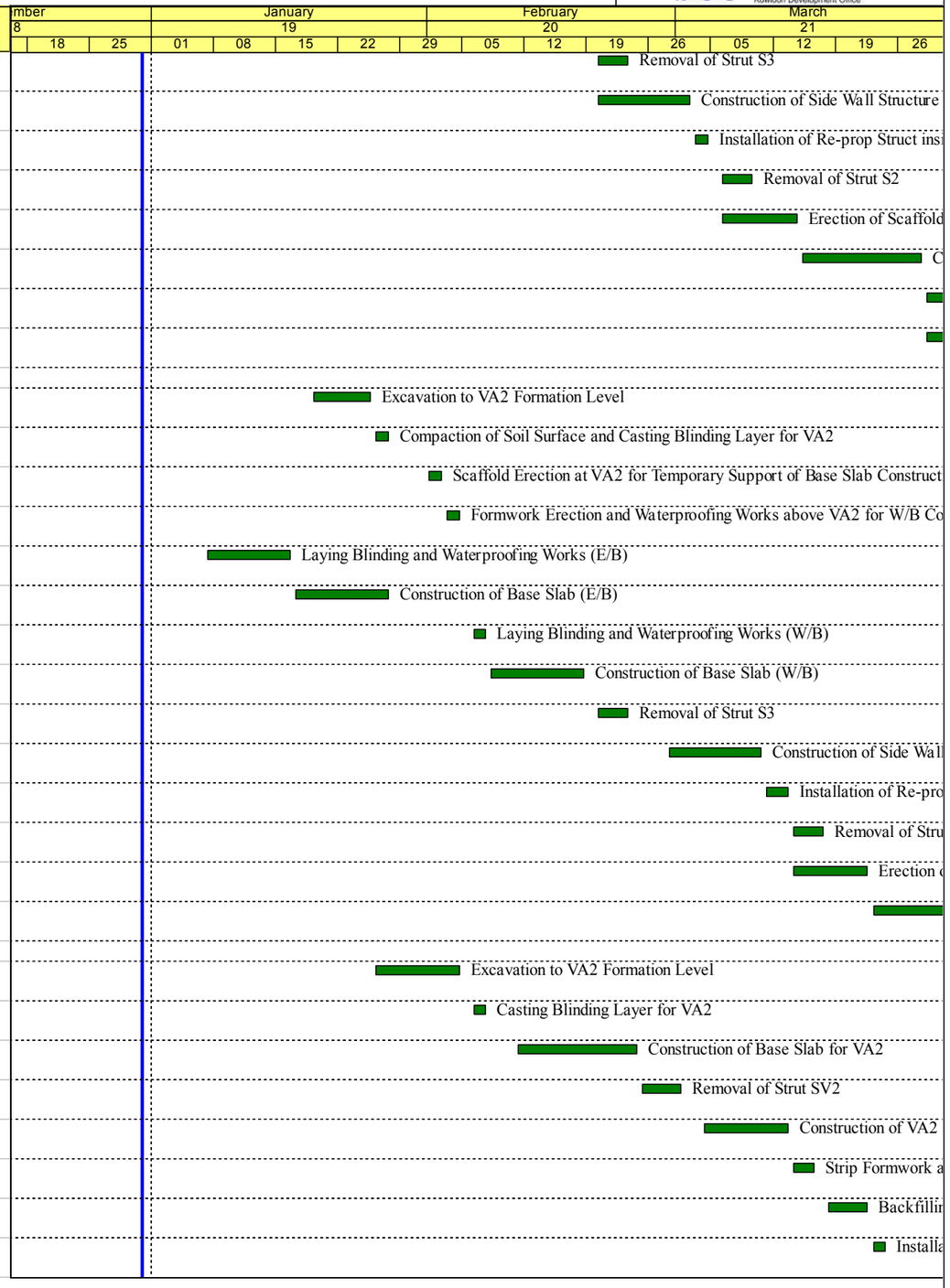
CEDD 土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 Kowloon Development Office

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-PA-TTA-8100	Submission and approval of TTA schemes-TTA stage 2 for D-wall W/B at Zone 2	90	60	31-Jul-16 A	28-Feb-17
K-PA-TTA-8900	Submission and approval of TTA schemes-TTA stage 3 for re-construction of Cheung Yip Street	90	90	22-Jan-17	21-Apr-17
Interfacing Works		89	90	28-Nov-16 A	30-Mar-17
K-PA-INT-6020	Handover Area A for Towngas Lead-in and Sewerage Connection Works by CSSOJV	28	0	28-Nov-16 A	31-Dec-16
K-PA-INT-6030	Handover Area B1 for Telecom Lead-in Works by HKT and HGC	14	14	17-Mar-17	30-Mar-17
K-PA-INT-6040	Handover Area B2 for Telecom Lead-in Works by HKT and HGC	15	15	10-Feb-17	24-Feb-17
K-PA-INT-6050	Handover Area B3 for Towngas Lead-in and Sewerage Works by HKT and HGC	36	36	15-Jan-17	19-Feb-17
K-PA-INT-6060	Handover Area C1 for CLP's Cable Lead-in Works by HKT and HGC	36	16	15-Dec-16 A	15-Jan-17
Materials Procurement (Major Materials)		900	613	01-Feb-16 A	04-Sep-18
ELS struct / waling		360	300	10-Jun-16 A	26-Oct-17
K-PA-MP-1150	Manufacturing & delivery to site	360	300	10-Jun-16 A	26-Oct-17
Steel H-Pile		420	160	01-Feb-16 A	08-Jun-17
K-PA-MP-1250	Manufacturing & delivery to site	420	160	01-Feb-16 A	08-Jun-17
Chilled Water Pipes - DCS		580	580	02-Feb-17	04-Sep-18
K-PA-MP-1300	Order of chilled water pipes	0	0	02-Feb-17	
K-PA-MP-1350	Manufacturing & delivery to site	580	580	02-Feb-17	04-Sep-18
Prelimiaries		1190	895	11-Mar-16 A	13-Jun-19
K-DR-PRE-1800	Submission of time-lapsed photographs and video	1190	895	11-Mar-16 A	13-Jun-19
Barge Loading Facilities		21	21	01-Feb-17	25-Feb-17
K-DR-PRE-1450	Setup of temporary barging point	21	21	01-Feb-17	24-Feb-17
K-DR-PRE-1480	Operation of the barging point	0	0	25-Feb-17	
Instrumentation and Monitoring		414	235	19-Jul-16 A	22-Aug-17
Eastbound Instrumentation and Monitoring		16	16	08-Mar-17	25-Mar-17
Inclinometer (INC)		16	16	08-Mar-17	25-Mar-17
K-IM-INC-1330	Installation of INC at Zone 3	15	15	09-Mar-17	25-Mar-17
K-IM-INC-1340	Installation of INC at Zone 4	15	15	08-Mar-17	24-Mar-17
Westbound Instrumentation and Monitoring		222	73	19-Jul-16 A	30-Mar-17
Extensomter (EXT)		15	15	14-Feb-17	02-Mar-17
K-IM-EXT-1370	Installation of EXT at Zone 3	15	15	14-Feb-17	02-Mar-17
Piezometer/Standpipe (PZR)		179	30	19-Jul-16 A	08-Feb-17
K-IM-PZR-1360	Installation of PZR at Zone 2	10	10	25-Jan-17	08-Feb-17
K-IM-PZR-1370	Installation of PZR at Zone 3	40	10	05-Aug-16 A	12-Jan-17
K-IM-PZR-1380	Installation of PZR at Zone 4	40	10	19-Jul-16 A	12-Jan-17
Inclinometer (INC)		29	29	25-Feb-17	30-Mar-17
K-IM-INC-1370	Installation of INC at Zone 3	10	10	25-Feb-17	08-Mar-17
K-IM-INC-1380	Installation of INC at Zone 4	10	10	20-Mar-17	30-Mar-17
Crack Meters		10	10	16-Mar-17	25-Mar-17
K-IM-CRM-1010	Installation of Crack Meters at HKCH	10	10	16-Mar-17	25-Mar-17

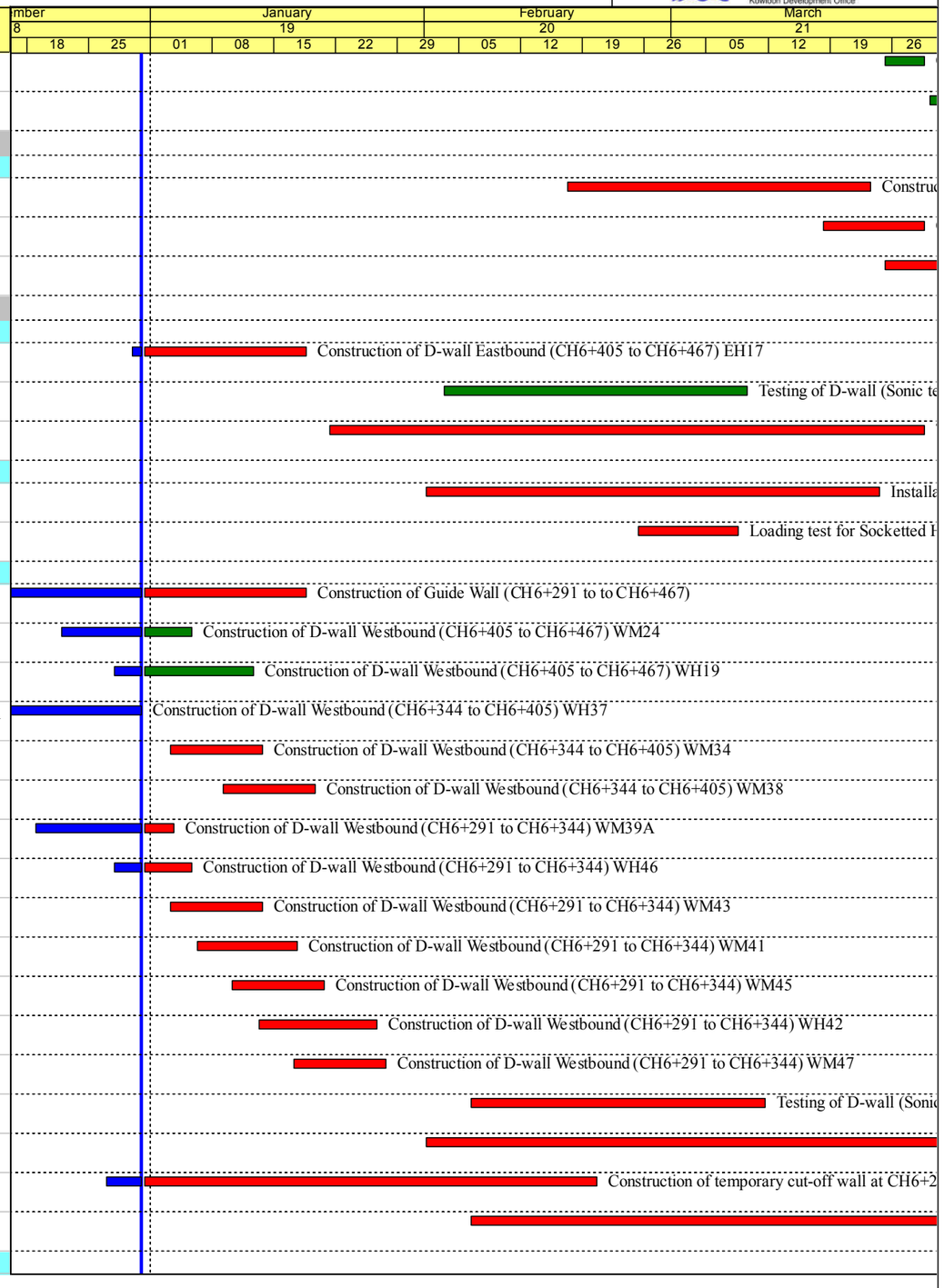


Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
Tilt Monitoring Tile Plates		357	235	03-Aug-16 A	22-Aug-17
K-IM-TMT-1000	Tilt Monitoring near PWCL	310	180	03-Aug-16 A	28-Jun-17
K-IM-TMT-1020	Tilt Monitoring near HKCH	160	160	16-Mar-17	22-Aug-17
Section 1 of the Works-Remainder of the Works		33	33	03-Mar-17	11-Apr-17
Roadwork and Drainage Works		33	33	03-Mar-17	11-Apr-17
Road D4-4 (Cheung Yip Street)		33	33	03-Mar-17	11-Apr-17
Drainage Works (CH100 to CH200)		33	33	03-Mar-17	11-Apr-17
K-01-RWS-2100	Excavation of Drainage Pipe and Manhole (M101 to M105)	8	8	03-Mar-17	11-Mar-17
K-01-RWS-2110	Laying Drainage Pipe and Construction Manhole (M101 to M105)	25	25	13-Mar-17	11-Apr-17
Section 1A of the Works -Construction of Supporting Underground Structure (Alternative Design)		179	113	15-Oct-16 A	23-May-17
SUS and Ventilation Adits from CH6+150 to CH6+220 in Zone 1		88	78	17-Dec-16 A	06-Apr-17
Construction of Socketed H-Pile		40	25	19-Dec-16 A	02-Feb-17
K-1A-SV1-3400	Trimming Pilehead at Cut-off Level	40	25	19-Dec-16 A	02-Feb-17
Pumping Test		15	5	27-Dec-16 A	11-Jan-17
K-1A-SV1-4210	Stage 2 - Installation of Dewatering Well in VA2 of Zone 1	15	0	27-Dec-16 A	04-Jan-17 A
K-1A-SV1-4220	Stage 2 - Pumping Test for VA2 in Zone 1	5	5	06-Jan-17	11-Jan-17
Construction of Tunnel Box Structure		88	78	17-Dec-16 A	06-Apr-17
SUS Bay 1 (Ch6150-Ch6167.5)		77	77	31-Dec-16 A	05-Apr-17
K-1A-SV1-8040	Excavation to Foundation Level for VA2	8	8	31-Dec-16 A	10-Jan-17
K-1A-SV1-8050	Modify the Dewatering Well and Casting Blinding Layer for VA2	3	3	12-Jan-17	14-Jan-17
K-1A-SV1-8060	Waterproofing Works for VA2	5	5	16-Jan-17	20-Jan-17
K-1A-SV1-8070	Construction of Base Slab for VA2 (-18.0mPD)	10	10	21-Jan-17	04-Feb-17
K-1A-SV1-8100	Removal of Strut SV1A	2	2	06-Feb-17	07-Feb-17
K-1A-SV1-8140	Construction of Base Slab VA1 and VA3 (-13.9 mPD)	20	20	08-Feb-17	02-Mar-17
K-1A-SV1-8170	Removal of Strut S5	5	5	03-Mar-17	08-Mar-17
K-1A-SV1-8190	Construction of Wall Struct for VA1 and VA3	10	10	09-Mar-17	20-Mar-17
K-1A-SV1-8210	Backfilling with Sand to Formation Level of Service Adit	3	3	21-Mar-17	23-Mar-17
K-1A-SV1-8240	Construction of VA1 and VA3 Side Wall and base slab of SA	10	10	24-Mar-17	05-Apr-17
SUS Bay 4 (Ch6202.5-Ch6220)		86	76	17-Dec-16 A	03-Apr-17
K-1A-SV1-8500	Excavation to VA2 Formation Level	6	6	12-Jan-17	18-Jan-17
K-1A-SV1-8510	Compaction of Soil Surface and Casting Blinding Layer for VA2	2	2	19-Jan-17	20-Jan-17
K-1A-SV1-8520	Scaffold Erection at VA2 for Temporary Support of Base Slab Construction	2	2	01-Feb-17	02-Feb-17
K-1A-SV1-8530	Formwork Erection and Waterproofing Works above VA2 for W/B Construction	2	2	03-Feb-17	04-Feb-17
K-1A-SV1-8540	Laying Blinding and Waterproofing Works (E/B)	10	10	17-Dec-16 A	12-Jan-17
K-1A-SV1-8550	Construction of Base Slab (E/B)	10	10	17-Jan-17	27-Jan-17
K-1A-SV1-8552	Laying Blinding and Waterproofing Works (W/B)	2	2	06-Feb-17	07-Feb-17
K-1A-SV1-8555	Construction of Base Slab (W/B)	10	10	08-Feb-17	18-Feb-17

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-1A-SV1-8560	Removal of Strut S3	4	4	20-Feb-17	23-Feb-17
K-1A-SV1-8580	Construction of Side Wall Structure	10	10	20-Feb-17	02-Mar-17
K-1A-SV1-8590	Installation of Re-prop Struct inside W/B and E/B	2	2	03-Mar-17	04-Mar-17
K-1A-SV1-8600	Removal of Strut S2	4	4	06-Mar-17	09-Mar-17
K-1A-SV1-8605	Erection of Scaffold for Base Slab	8	8	06-Mar-17	14-Mar-17
K-1A-SV1-8610	Constrcution of Top Slab	12	12	15-Mar-17	28-Mar-17
K-1A-SV1-8625	Waterproofing Works	5	5	29-Mar-17	03-Apr-17
K-1A-SV1-8640	Removal of Strut S1	5	5	29-Mar-17	03-Apr-17
SUS Bay 3 (Ch6185-Ch6202.5)		73	73	07-Jan-17	06-Apr-17
K-1A-SV1-8660	Excavation to VA2 Formation Level	6	6	19-Jan-17	25-Jan-17
K-1A-SV1-8661	Compaction of Soil Surface and Casting Blinding Layer for VA2	2	2	26-Jan-17	27-Jan-17
K-1A-SV1-8662	Scaffold Erection at VA2 for Temporary Support of Base Slab Construction	2	2	01-Feb-17	02-Feb-17
K-1A-SV1-8663	Formwork Erection and Waterproofing Works above VA2 for W/B Construction	2	2	03-Feb-17	04-Feb-17
K-1A-SV1-8664	Laying Blinding and Waterproofing Works (E/B)	8	8	07-Jan-17	16-Jan-17
K-1A-SV1-8665	Construction of Base Slab (E/B)	10	10	17-Jan-17	27-Jan-17
K-1A-SV1-8666	Laying Blinding and Waterproofing Works (W/B)	2	2	06-Feb-17	07-Feb-17
K-1A-SV1-8667	Construction of Base Slab (W/B)	10	10	08-Feb-17	18-Feb-17
K-1A-SV1-8720	Removal of Strut S3	4	4	20-Feb-17	23-Feb-17
K-1A-SV1-8740	Construction of Side Wall Structure	10	10	28-Feb-17	10-Mar-17
K-1A-SV1-8750	Installation of Re-prop Struct inside W/B and E/B	2	2	11-Mar-17	13-Mar-17
K-1A-SV1-8760	Removal of Strut S2	4	4	14-Mar-17	17-Mar-17
K-1A-SV1-8765	Erection of Scaffold	8	8	14-Mar-17	22-Mar-17
K-1A-SV1-8770	Constrcution of Top Slab	12	12	23-Mar-17	06-Apr-17
SUS Bay 2 (Ch6167.5-Ch6185)		57	57	26-Jan-17	06-Apr-17
K-1A-SV1-8815	Excavation to VA2 Formation Level	6	6	26-Jan-17	04-Feb-17
K-1A-SV1-8820	Casting Blinding Layer for VA2	2	2	06-Feb-17	07-Feb-17
K-1A-SV1-8840	Construction of Base Slab for VA2	12	12	11-Feb-17	24-Feb-17
K-1A-SV1-8860	Removal of Strut SV2	4	4	25-Feb-17	01-Mar-17
K-1A-SV1-8870	Construction of VA2 Wall Structure	8	8	04-Mar-17	13-Mar-17
K-1A-SV1-8880	Strip Formwork and Remedial Works for Waterproofing	3	3	14-Mar-17	16-Mar-17
K-1A-SV1-8890	Backfilling with Sand and Removal part of SV1	4	4	18-Mar-17	22-Mar-17
K-1A-SV1-8900	Installation of Precast Concrete Slab for Base Slab Constrcution	2	2	23-Mar-17	24-Mar-17



Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-1A-SV1-8910	Casting Blinding Layer (No-Fine) and Laying Waterproofing Works	4	4	25-Mar-17	29-Mar-17
K-1A-SV1-8920	Construction of Base Slab	6	6	30-Mar-17	06-Apr-17
SUS and Ventilation Adits from CH6+220 to CH6+291 in Zone 2		41	41	17-Feb-17	06-Apr-17
W/B Construction of D-Wall in TTA Stage 1A		41	41	17-Feb-17	06-Apr-17
K-1A-SV2-5000	Construction of Guide Wall	30	30	17-Feb-17	23-Mar-17
K-1A-SV2-5500	Construction of D-wall Westbound (CH6+241 to CH6+291) WM49	10	10	18-Mar-17	29-Mar-17
K-1A-SV2-8410	Construction of D-wall Westbound (CH6+241 to CH6+291) WM51	10	10	25-Mar-17	06-Apr-17
SUS Structure from CH6+291 to 6+467 in Zone 3		151	85	15-Oct-16 A	18-Apr-17
E/B Construction of D-Wall		138	72	30-Dec-16 A	29-Mar-17
K-1A-SV3-2355	Construction of D-wall Eastbound (CH6+405 to CH6+467) EH17	12	15	30-Dec-16 A	18-Jan-17
K-1A-SV3-2400	Testing of D-wall (Sonic test and IC)	30	30	03-Feb-17	09-Mar-17
K-1A-SV3-2500	Toe Grouting Works	55	55	21-Jan-17	29-Mar-17
Construction of Socketed H-Pile		45	45	01-Feb-17	24-Mar-17
K-1A-SV3-3008	Installation of Socketted H-piles (CH6+320 to CH6+380)	45	45	01-Feb-17	24-Mar-17
K-1A-SV3-3009	Loading test for Socketted H-piles	10	10	25-Feb-17	08-Mar-17
W/B Construction of D-Wall in TTA Stage 1A		143	79	15-Oct-16 A	07-Apr-17
K-1A-SV3-4000	Construction of Guide Wall (CH6+291 to to CH6+467)	45	15	15-Oct-16 A	18-Jan-17
K-1A-SV3-4035	Construction of D-wall Westbound (CH6+405 to CH6+467) WM24	10	4	22-Dec-16 A	05-Jan-17
K-1A-SV3-4038	Construction of D-wall Westbound (CH6+405 to CH6+467) WH19	12	10	28-Dec-16 A	12-Jan-17
K-1A-SV3-4205	Construction of D-wall Westbound (CH6+344 to CH6+405) WH37	12	0	16-Dec-16 A	31-Dec-16 A
K-1A-SV3-4210	Construction of D-wall Westbound (CH6+344 to CH6+405) WM34	10	10	03-Jan-17	13-Jan-17
K-1A-SV3-4250	Construction of D-wall Westbound (CH6+344 to CH6+405) WM38	10	10	09-Jan-17	19-Jan-17
K-1A-SV3-4262	Construction of D-wall Westbound (CH6+291 to CH6+344) WM39A	10	2	19-Dec-16 A	03-Jan-17
K-1A-SV3-4264	Construction of D-wall Westbound (CH6+291 to CH6+344) WH46	12	4	28-Dec-16 A	05-Jan-17
K-1A-SV3-4265	Construction of D-wall Westbound (CH6+291 to CH6+344) WM43	10	10	03-Jan-17	13-Jan-17
K-1A-SV3-4266	Construction of D-wall Westbound (CH6+291 to CH6+344) WM41	10	10	06-Jan-17	17-Jan-17
K-1A-SV3-4267	Construction of D-wall Westbound (CH6+291 to CH6+344) WM45	10	10	10-Jan-17	20-Jan-17
K-1A-SV3-4268	Construction of D-wall Westbound (CH6+291 to CH6+344) WH42	12	12	13-Jan-17	26-Jan-17
K-1A-SV3-4269	Construction of D-wall Westbound (CH6+291 to CH6+344) WM47	10	10	17-Jan-17	27-Jan-17
K-1A-SV3-4270	Testing of D-wall (Sonic test and IC)	30	30	06-Feb-17	11-Mar-17
K-1A-SV3-4280	Toe Grouting Works	50	50	01-Feb-17	31-Mar-17
K-1A-SV3-4290	Construction of temporary cut-off wall at CH6+291	45	40	27-Dec-16 A	20-Feb-17
K-1A-SV3-4300	Construction of temporary cut-off wall at CH6+467	52	52	06-Feb-17	07-Apr-17
Pumping Test		35	35	27-Feb-17	08-Apr-17



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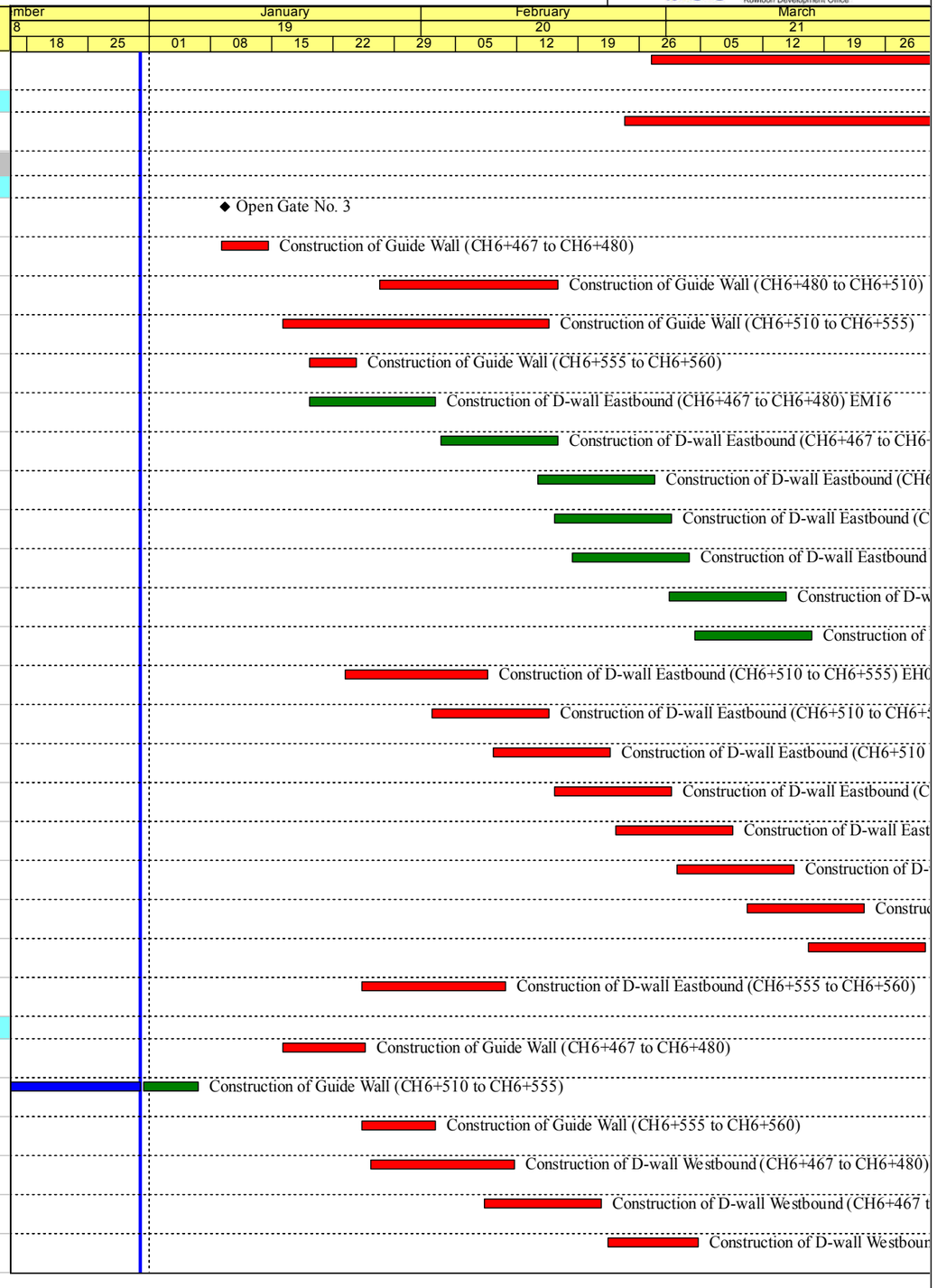
KL/2014/03 Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

CEDD 土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 Kowloon Development Office

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-1A-SV3-5100	Installation of Dewatering Well, Observation Well and Recharging Well in Zone 3	35	35	27-Feb-17	08-Apr-17
Excavation and ELS Construction		42	42	24-Feb-17	18-Apr-17
K-1A-SV3-5500	Construction of temporary vehicular access at CH6+325	42	42	24-Feb-17	18-Apr-17
SUS Structure from CH6+467 to 6+568 in Zone 4		113	113	06-Dec-16 A	23-May-17
E/B Construction of D-Wall		67	67	09-Jan-17	30-Mar-17
K-1A-SV4-2000	Open Gate No. 3	0	0		09-Jan-17*
K-1A-SV4-2100	Construction of Guide Wall (CH6+467 to CH6+480)	6	6	09-Jan-17	14-Jan-17
K-1A-SV4-2110	Construction of Guide Wall (CH6+480 to CH6+510)	15	15	27-Jan-17	16-Feb-17
K-1A-SV4-2120	Construction of Guide Wall (CH6+510 to CH6+555)	24	24	16-Jan-17	15-Feb-17
K-1A-SV4-2130	Construction of Guide Wall (CH6+555 to CH6+560)	5	5	19-Jan-17	24-Jan-17
K-1A-SV4-2170	Construction of D-wall Eastbound (CH6+467 to CH6+480) EM16	10	10	19-Jan-17	02-Feb-17
K-1A-SV4-2171	Construction of D-wall Eastbound (CH6+467 to CH6+480) EH17	12	12	03-Feb-17	16-Feb-17
K-1A-SV4-2172	Construction of D-wall Eastbound (CH6+480 to CH6+510) EH12	12	12	14-Feb-17	27-Feb-17
K-1A-SV4-2173	Construction of D-wall Eastbound (CH6+480 to CH6+510) EH14	12	12	16-Feb-17	01-Mar-17
K-1A-SV4-2174	Construction of D-wall Eastbound (CH6+480 to CH6+510) EH10	12	12	18-Feb-17	03-Mar-17
K-1A-SV4-2175	Construction of D-wall Eastbound (CH6+480 to CH6+510) EH13	12	12	01-Mar-17	14-Mar-17
K-1A-SV4-2176	Construction of D-wall Eastbound (CH6+480 to CH6+510) EH11	12	12	04-Mar-17	17-Mar-17
K-1A-SV4-2177	Construction of D-wall Eastbound (CH6+510 to CH6+555) EH09	12	12	23-Jan-17	08-Feb-17
K-1A-SV4-2178	Construction of D-wall Eastbound (CH6+510 to CH6+555) EH07	12	12	02-Feb-17	15-Feb-17
K-1A-SV4-2179	Construction of D-wall Eastbound (CH6+510 to CH6+555) EH05	12	12	09-Feb-17	22-Feb-17
K-1A-SV4-2180	Construction of D-wall Eastbound (CH6+510 to CH6+555) EH03	12	12	16-Feb-17	01-Mar-17
K-1A-SV4-2181	Construction of D-wall Eastbound (CH6+510 to CH6+555) EH08A	12	12	23-Feb-17	08-Mar-17
K-1A-SV4-2182	Construction of D-wall Eastbound (CH6+510 to CH6+555) EH06	12	12	02-Mar-17	15-Mar-17
K-1A-SV4-2183	Construction of D-wall Eastbound (CH6+510 to CH6+555) EH08	12	12	10-Mar-17	23-Mar-17
K-1A-SV4-2185	Construction of D-wall Eastbound (CH6+510 to CH6+555) EH04	12	12	17-Mar-17	30-Mar-17
K-1A-SV4-2190	Construction of D-wall Eastbound (CH6+555 to CH6+560)	12	12	25-Jan-17	10-Feb-17
W/B and End Construction of D-Wall in TTA Stage 1A		71	71	06-Dec-16 A	28-Mar-17
K-1A-SV4-3992	Construction of Guide Wall (CH6+467 to CH6+480)	9	9	16-Jan-17	25-Jan-17
K-1A-SV4-3996	Construction of Guide Wall (CH6+510 to CH6+555)	24	5	06-Dec-16 A	06-Jan-17
K-1A-SV4-4005	Construction of Guide Wall (CH6+555 to CH6+560)	5	5	25-Jan-17	02-Feb-17
K-1A-SV4-4102	Construction of D-wall Westbound (CH6+467 to CH6+480) WH19	12	12	26-Jan-17	11-Feb-17
K-1A-SV4-4105	Construction of D-wall Westbound (CH6+467 to CH6+480) WH17	12	12	08-Feb-17	21-Feb-17
K-1A-SV4-4108	Construction of D-wall Westbound (CH6+467 to CH6+480) WM18	10	10	22-Feb-17	04-Mar-17



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

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

3 MRP Jan 2017- Mar 2017

Project ID :13 3MPR Jan - Mar 17
Layout : KL201403 WP3 3MRP

3 Months Rolling Programme

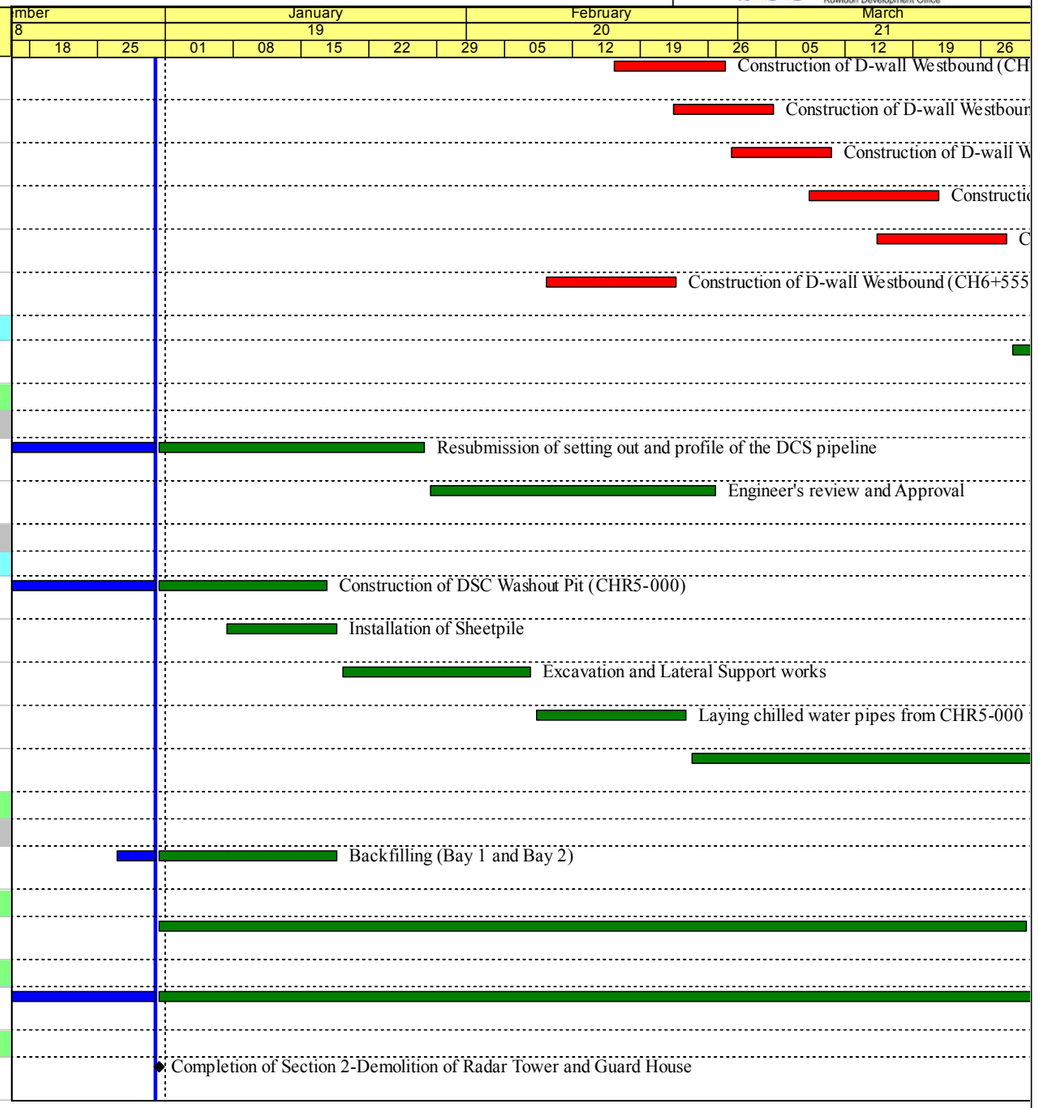
Date	Revision	Checked	Approved
31-Dec-16	Jan 17 - Mar...		

Hyder - Meinhardt JV

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

CEDD 土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 Kowloon Development Office

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-1A-SV4-4400	Construction of D-wall Westbound (CH6+480 to CH6+510) WM14	10	10	16-Feb-17	27-Feb-17
K-1A-SV4-4402	Construction of D-wall Westbound (CH6+480 to CH6+510) WM16	10	10	22-Feb-17	04-Mar-17
K-1A-SV4-4404	Construction of D-wall Westbound (CH6+480 to CH6+510) WM12	10	10	28-Feb-17	10-Mar-17
K-1A-SV4-4406	Construction of D-wall Westbound (CH6+480 to CH6+510) WH15	12	12	08-Mar-17	21-Mar-17
K-1A-SV4-4408	Construction of D-wall Westbound (CH6+480 to CH6+510) WH13	12	12	15-Mar-17	28-Mar-17
K-1A-SV4-4600	Construction of D-wall Westbound (CH6+555 to CH6+560)	12	12	09-Feb-17	22-Feb-17
Excavation and ELS Construction		42	42	29-Mar-17	23-May-17
K-1A-SV4-5500	Construction of temporary vehicular access at CH6+482(approx.)	42	42	29-Mar-17	23-May-17
Section 3 of the Works- Construction of District Cooling System (Subject to Excision)		227	97	23-Aug-16 A	06-Apr-17
Preparation Works		188	58	23-Aug-16 A	26-Feb-17
K-03-DCS-0820	Resubmission of setting out and profile of the DCS pipeline	30	28	23-Aug-16 A	27-Jan-17
K-03-DCS-0830	Engineer's review and Approval	30	30	28-Jan-17	26-Feb-17
Construction of District Cooling System		132	78	10-Sep-16 A	06-Apr-17
Construction of DCS Works at Zone 1		132	78	10-Sep-16 A	06-Apr-17
K-03-DCS-1050	Construction of DSC Washout Pit (CHR5-000)	30	14	10-Sep-16 A	17-Jan-17
K-03-DCS-1100	Installation of Sheetpile	10	10	07-Jan-17	18-Jan-17
K-03-DCS-1150	Excavation and Lateral Support works	14	14	19-Jan-17	07-Feb-17
K-03-DCS-1200	Laying chilled water pipes from CHR5-000 to CHR5-024	14	14	08-Feb-17	23-Feb-17
K-03-DCS-1300	Backfilling at Zone 1 (CHR5-000 to CHR5-024)	35	35	24-Feb-17	06-Apr-17
Section 4B of the Works- Construction of Subway B (Subject to Excision)		25	15	27-Dec-16 A	18-Jan-17
Bay 1 & 2		25	15	27-Dec-16 A	18-Jan-17
K-4B-BAY-2450	Backfilling (Bay 1 and Bay 2)	25	15	27-Dec-16 A	18-Jan-17
Section 5 of the Works-Completion of All Landscape Softworks		90	90	31-Dec-16	30-Mar-17
K-05-LCS-1000	Procurement of plant species	90	90	31-Dec-16	30-Mar-17
Section 7 of the Works-Preservation and Protection of Existing Trees		1200	886	04-Jan-16 A	04-Jun-19
K-07-001-1000	Section 7 of the Works-Preservation and Protection of Existing Trees	1200	886	04-Jan-16 A	04-Jun-19
Sections Completion Date		0	0	31-Dec-16	31-Dec-16
K-PK-SCC-2100	Completion of Section 2-Demolition of Radar Tower and Guard House	0	0		31-Dec-16



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

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MATERIALAB CONSULTANTS LIMITED
Room 723 & 725, 7/F, Block B,
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Hong Kong..
Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

Appendix B

Project Organization Chart

MATERIALAB CONSULTANTS LIMITED
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Hong Kong..
Tel : (852)-24508238
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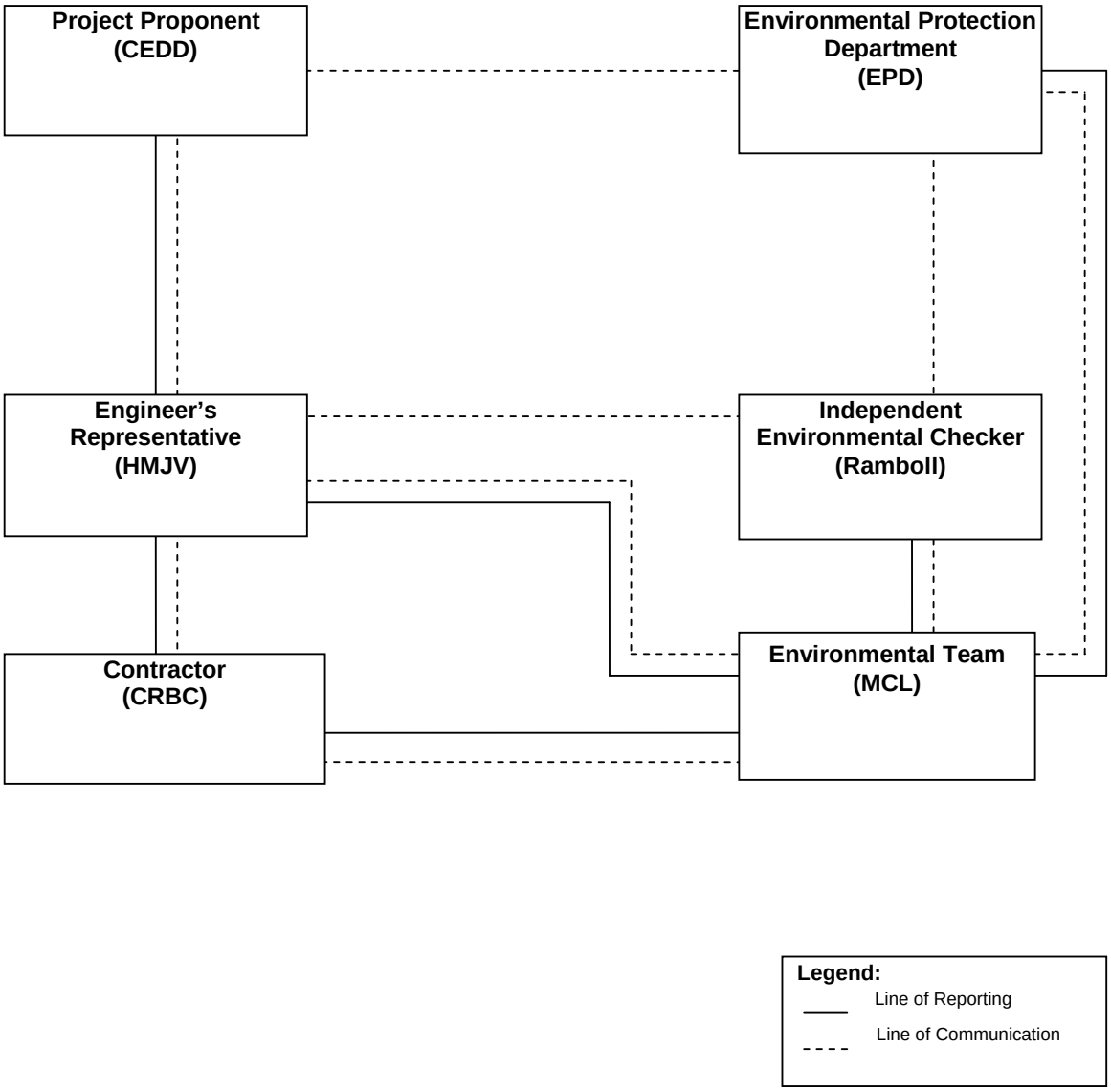

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Appendix C

Action and Limit Levels for Air Quality and Noise

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

Parameter	Monitoring Station	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/ m^3$)
24-hr TSP ($\mu g/m^3$)	KTD1a	177	260
	KTD2a	157	
	KER1b	172	
*1-hr TSP ($\mu g/m^3$)	KTD1a	285	500
	KTD2a	279	
	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 KER1b	When one documented complaint is received	75 dB(A)

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Appendix D

Calibration Certificates of Monitoring Equipment

TISCH Environmental

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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jan 14, 2016 Rootsmeter S/N 0438320 Ta (K) - 292
Operator Tisch Orifice I.D. - 2456 Pa (mm) - 748.03

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4420	3.2	2.00
2	NA	NA	1.00	1.0220	6.4	4.00
3	NA	NA	1.00	0.9130	7.9	5.00
4	NA	NA	1.00	0.8670	8.8	5.50
5	NA	NA	1.00	0.7170	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0002	0.6936	1.4174		0.9957	0.6905	0.8836
0.9959	0.9745	2.0045		0.9915	0.9701	1.2496
0.9938	1.0885	2.2411		0.9893	1.0836	1.3971
0.9926	1.1449	2.3504		0.9882	1.1398	1.4653
0.9874	1.3771	2.8347		0.9830	1.3710	1.7672
Qstd slope (m) =		2.07173		Qa slope (m) =		1.29728
intercept (b) =		-0.01761		intercept (b) =		-0.01098
coefficient (r) =		0.99996		coefficient (r) =		0.99996
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Date of Calibration: 16-Nov-16
Location : KER1b
Next Calibration Date: 15-Feb-17
Brand: Tisch
Technician: Jimmy Lui
Model: TE-5170 S/N: 3482

CONDITIONS

Sea Level Pressure (hPa):	1017.2	Corrected Pressure (mm Hg):	763
Temperature (°C):	25	Temperature (K):	298

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.07173
Model:	TE-5025A	Qstd Intercept:	-0.01761
Calibration Date:	14-Jan-16	Expiry Date:	14-Jan-17
S/N:	2456		

CALIBRATIONS

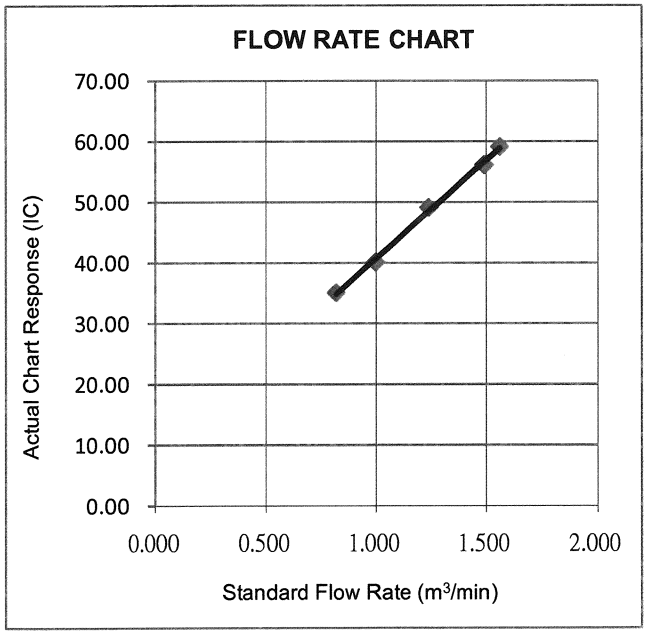
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	12.20	1.90	10.300	1.561	59.00	59.12	Slope =	32.3615
13	11.50	2.10	9.400	1.491	56.00	56.11	Intercept =	8.3422
10	10.30	3.80	6.500	1.242	49.00	49.10	Corr. coeff.=	0.9987
7	8.80	4.60	4.200	1.000	40.00	40.08		
5	7.90	5.10	2.800	0.818	35.00	35.07		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]
Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



Report Date: 16th November, 2016

CHOI KAM HO
Project Consultant

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Date of Calibration: 12-Oct-16
Location : KTD1a
Next Calibration Date: 11-Jan-17
Brand: Tisch
Technician: Jimmy Lui
Model: TE-5170 S/N: 4037

CONDITIONS

Sea Level Pressure (hPa):	1012.5	Corrected Pressure (mm Hg):	759
Temperature (°C):	25	Temperature (K):	298

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.07173
Model:	TE-5025A	Qstd Intercept:	-0.01761
Calibration Date:	14-Jan-16	Expiry Date:	14-Jan-17
S/N:	2456		

CALIBRATIONS

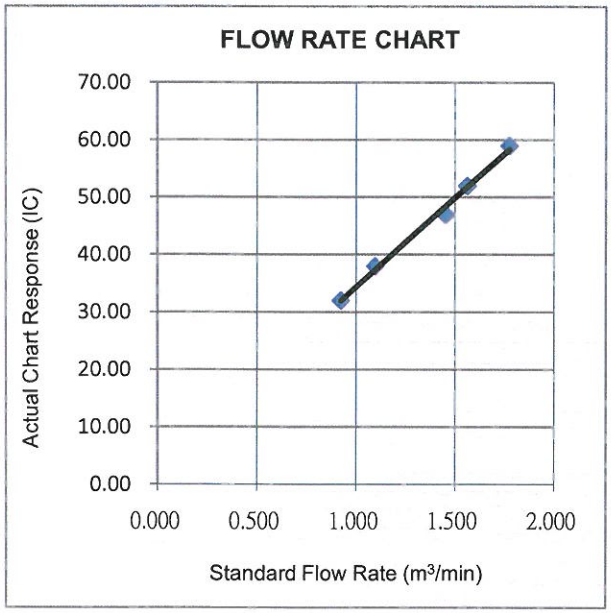
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	11.00	-2.40	13.400	1.774	59.00	58.96	Slope =	30.9648
13	9.50	-0.90	10.400	1.564	52.00	51.97	Intercept =	3.3615
10	8.80	-0.20	9.000	1.456	47.00	46.97	Corr. coeff.=	0.9968
7	6.90	1.80	5.100	1.098	38.00	37.97		
5	6.10	2.50	3.600	0.924	32.00	31.98		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]
Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



CHOI KAM HO
Project Consultant

Report Date: 12th October, 2016

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Date of Calibration: 12-Oct-16
Location : KTD2a
Next Calibration Date: 11-Jan-17
Brand: Tisch
Technician: Jimmy Lui
Model: TE-5170 S/N: 3838

CONDITIONS

Sea Level Pressure (hPa):	1012.5	Corrected Pressure (mm Hg):	759
Temperature (°C):	25	Temperature (K):	298

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.07173
Model:	TE-5025A	Qstd Intercept:	-0.01761
Calibration Date:	14-Jan-16	Expiry Date:	14-Jan-17
S/N:	2456		

CALIBRATIONS

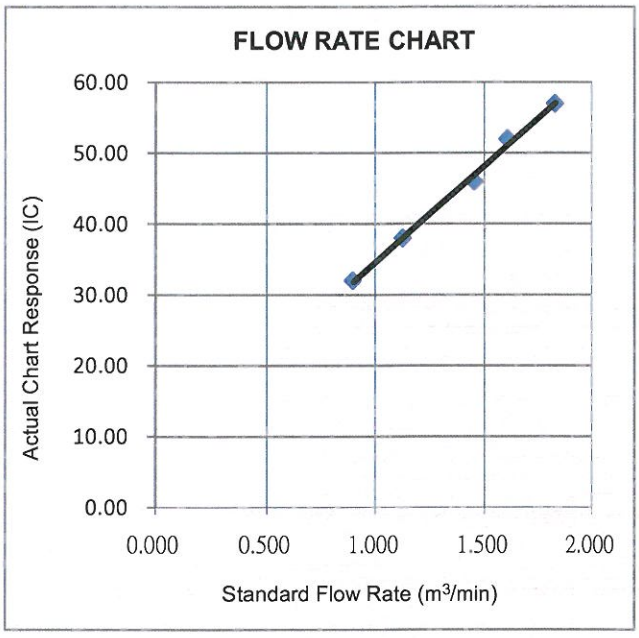
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	11.30	-2.90	14.200	1.826	57.00	56.96	Slope =	27.2421
13	9.70	-1.30	11.000	1.608	52.00	51.97	Intercept =	7.2807
10	8.70	-0.30	9.000	1.456	46.00	45.97	Corr. coeff.=	0.9979
7	6.90	1.50	5.400	1.129	38.00	37.97		
5	5.90	2.50	3.400	0.898	32.00	31.98		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]
Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



CHOI KAM HO
Project Consultant

Report Date: 12th October, 2016

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Location : KER1b
Brand: Tisch
Model: TE-5170 S/N: 3482

Date of Calibration: 10-Jan-17
Next Calibration Date: 7-Apr-17
Technician: Jimmy Lui

CONDITIONS

Sea Level Pressure (hPa):	1018.1	Corrected Pressure (mm Hg):	764
Temperature (°C):	19	Temperature (K):	292

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.07173
Model:	TE-5025A	Qstd Intercept:	-0.01761
Calibration Date:	14-Jan-16	Expiry Date:	14-Jan-17
S/N:	2456		

CALIBRATIONS

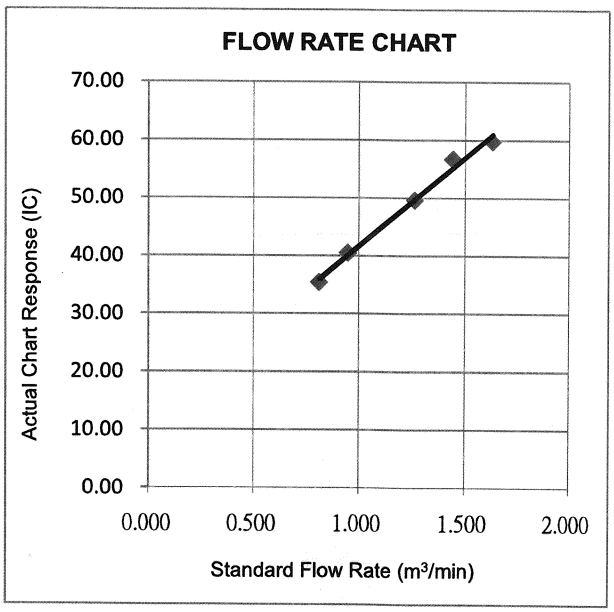
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	-0.60	-11.60	11.000	1.630	59.00	59.76	Slope =	30.4307
13	-1.80	-10.40	8.600	1.442	56.00	56.72	Intercept =	11.3049
10	-2.80	-9.40	6.600	1.265	49.00	49.63	Corr. coeff.=	0.9952
7	-4.20	-7.90	3.700	0.949	40.00	40.52		
5	-4.70	-7.40	2.700	0.812	35.00	35.45		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]
Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



CHOI KAM HO
Project Consultant

Report Date: 10th January, 2017

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Date of Calibration: 10-Jan-17
Location : KTD1a
Next Calibration Date: 7-Apr-17
Technician: Jimmy Lui

Brand: Tisch
Model: TE-5170 S/N: 4037

CONDITIONS

Sea Level Pressure (hPa):	1018.1	Corrected Pressure (mm Hg):	764
Temperature (°C):	19	Temperature (K):	292

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.07173
Model:	TE-5025A	Qstd Intercept:	-0.01761
Calibration Date:	14-Jan-16	Expiry Date:	14-Jan-17
S/N:	2456		

CALIBRATIONS

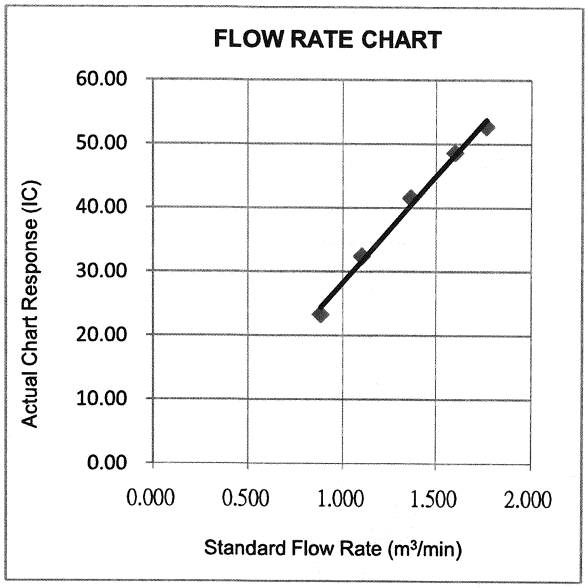
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	0.40	-12.50	12.900	1.764	52.00	52.67	Slope =	33.2726
13	-0.80	-11.40	10.600	1.600	48.00	48.62	Intercept =	-4.9783
10	-2.20	-9.90	7.700	1.365	41.00	41.53	Corr. coeff.=	0.9963
7	-3.50	-8.50	5.000	1.102	32.00	32.41		
5	-4.40	-7.60	3.200	0.883	23.00	23.30		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]
Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



CHOI KAM HO
Project Consultant

Report Date: 10th January, 2017

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MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Location : KTD2a
Brand: Tisch
Model: TE-5170 S/N: 3838

Date of Calibration: 10-Jan-17
Next Calibration Date: 7-Apr-17
Technician: Jimmy Lui

CONDITIONS

Sea Level Pressure (hPa):	1018.1	Corrected Pressure (mm Hg):	764
Temperature (°C):	19	Temperature (K):	292

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.07173
Model:	TE-5025A	Qstd Intercept:	-0.01761
Calibration Date:	14-Jan-16	Expiry Date:	14-Jan-17
S/N:	2456		

CALIBRATIONS

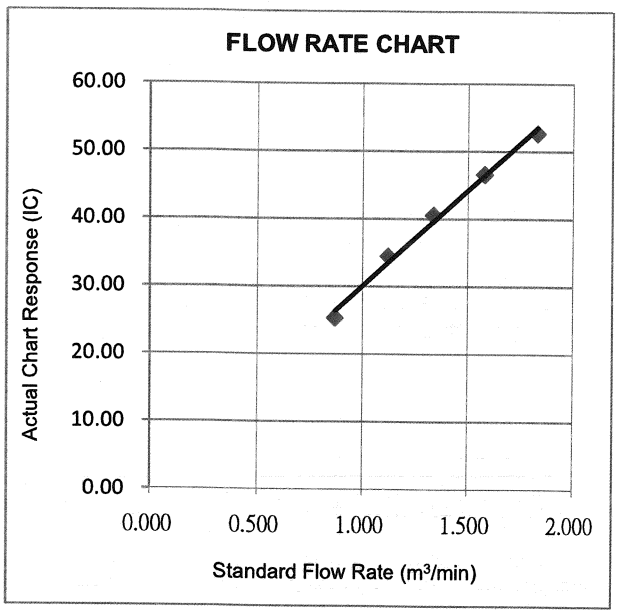
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	0.80	-13.00	13.800	1.825	52.00	52.67	Slope =	28.2743
13	-0.80	-11.10	10.300	1.578	46.00	46.59	Intercept =	1.8309
10	-2.30	-9.70	7.400	1.338	40.00	40.52	Corr. coeff.=	0.9964
7	-3.30	-8.50	5.200	1.123	34.00	34.44		
5	-4.40	-7.50	3.100	0.869	25.00	25.32		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]
Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



CHOI KAM HO
Project Consultant

Report Date: 10th January, 2017

FUGRO TECHNICAL SERVICES LIMITED
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

MateriaLab

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 (m/s)	UUT Reading (m/s)	Error (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.

Checked by : _____ Date : 7-6-2016 Certified by : _____ Date : 7.6.2016.

CA-R-297 (22/07/2009)

Chan Chun Wai (Manager)

** End of Report **

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
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Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk

MaterialLab

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	:	Reference Sound Level Meter
Equipment ID.	:	R-119-1
Date of Calibration :	03-Mar-2016	Ambient Temperature : 21 °C
Calibration Location :	Calibration Laboratory of MateriaLab	
Method Used	:	By 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	

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.

Checked by : _____ Date : 7.3.2016 Certified by : _____ Date : 07 MAR 2016

Kwok Chi Wa (Assistant Manager)

CA-R-297 (22/07/2009)

** End of Report **

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
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E-mail : matlab@fugro.com
Website : www.materialab.com

MateriaLab

Report no.: 161966CA160797

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

Description	:	Sound Calibrator
Manufacturer	:	Casella (Model no. CEL-120/1)
Serial No.	:	5230736
Next Calibration Date	:	20-Apr-2017
Specification Limit	:	±0.5dB

Laboratory Information

Description : Reference Sound Level Meter

Equipment ID. : R-119-1

Date of Calibration : 21-Apr-2016 Ambient Temperature : 21 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct comparison

Calibration Results :

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

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.

Checked by : _____ Date : 22-4-2016 Certified by : _____ Date : 22 APR 2016

CA-R-297 (22/07/2009)

Kwok Chi Wa (Assistant Manager)

** End of Report **

CASELLA CEL

Certificate of Conformance and Calibration for

CEL-120 Acoustic Calibrator

Applicable Standards :-IEC 60942: 2003 & ANSI S1.40: 2006

CEL-120/1 Class 1 [✓]

CEL-120/2 Class 2 [ ]

Serial No: 4358251

Firmware: 03

Temperature: 22.0 °C Pressure: 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 :- M. Rouse Date :- 12 MAY 2016

Company test equipment and acoustic working standards, used for conformance testing, are subject to periodic calibration, traceable to UK national standards, in accordance with the company's ISO9001 Quality System.

DECLARATION OF CONFORMITY

This certificate confirms that the instrument specified above has been produced and tested to comply with the manufacturer's published specifications and the relevant European Community CE directives.

Casella CEL (U.K.),
Regent House, Wolseley Road, Kempston, Bedford. MK42 7JY
Phone: +44 (0) 1234 844100 Fax: +44 (0) 1234 841490
E-mail: info@casellacel.com
Web: www.casellameasurement.com

198032A-01

CASELLA

Certificate of Conformity and Calibration

Instrument Model:- CEL-633A

Serial Number 3756127
Firmware revision V129-09

Microphone Type:- CEL-251
Serial Number 1231

Preamplifier Type:- CEL-495
Serial Number 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, 52 %RH, 1010 mBar

Test Engineer:- Millie Duncan
Date of Issue:- 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.

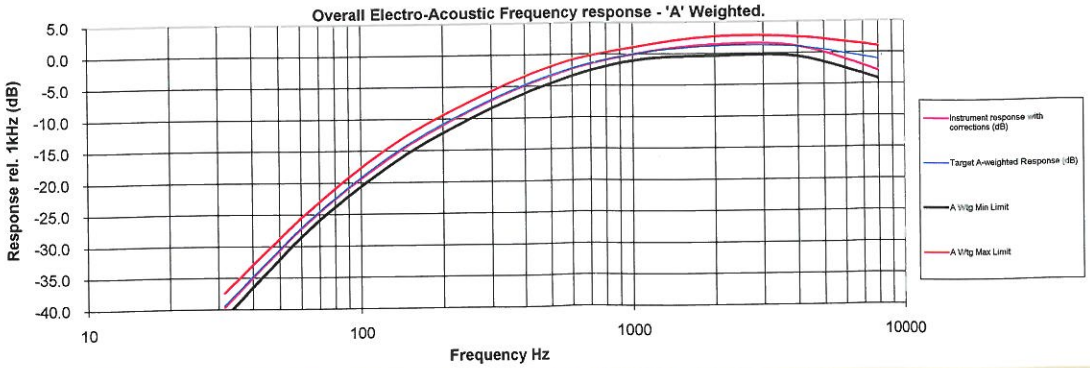
Test Summary:-

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.



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CASELLA

Certificate of Conformity and Calibration

Instrument Model:-	**CEL-633A**		
Serial Number	3756084		
Firmware revision	V129-09		
Microphone Type:-	**CEL-251**	**Preamplifier Type:-**	**CEL-495**
Serial Number	1257	Serial Number	003538
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		

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.

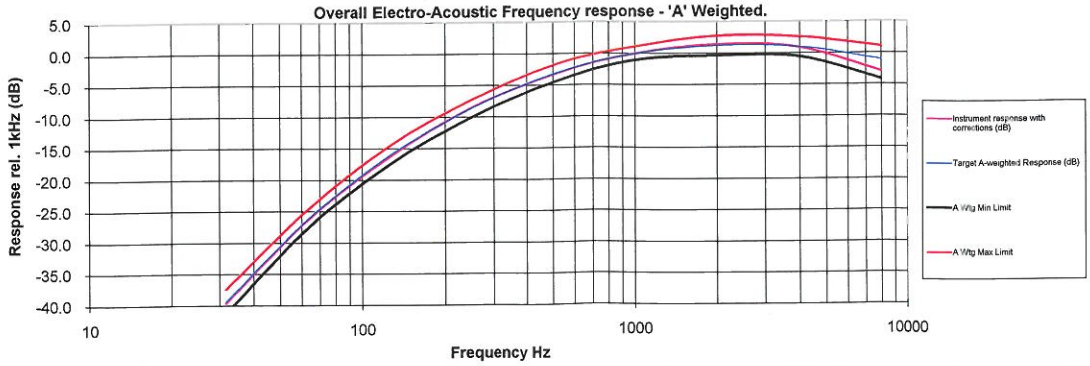
Test Summary:-

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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E-mail : matlab@fugro.com
Website : www.materialab.com.hk

MateriaLab

Report no.: 161966CA162338

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

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	:	Sound Level Meter
Manufacturer	:	Casella
Model No.		Casella (Model no. CEL-63X(meter), CEL-251(microphone), CEL-495(Preamplifier))
Serial No.	:	2451028 (meter), 01231(microphone), 002850 (Preamplifier))
Next Calibration Date	:	16-Nov-2017
Specification Limit	:	EN 61672: 2003 Type 1

Laboratory Information

Description : B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)

Equipment ID. : R-108-1

Date of Calibration : 17-Nov-2016 Ambient Temperature : 22 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct comparison

Calibration Results :

Parameters		Mean Value (dB)	Specification Limit(dB)
A-weighing frequency response	4000Hz	2.6	2.6 to -0.6
	2000Hz	0.8	2.8 to -0.4
	1000Hz	-1.0	1.1 to -1.1
	500Hz	-4.5	-1.8 to -4.6
	250Hz	-9.9	-7.2 to -10.0
	125Hz	-17.3	-14.6 to -17.6
	63Hz	-27.3	-24.7 to -27.7
	31.5Hz	-39.5	-37.4 to -41.4
Differential level linearity	94dB-104dB	0.0	± 0.6
	104dB-114dB	0.0	± 0.6

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 61672: 2003 Type 1 sound level meter for the above measurement.

Checked by : _____ Date : 23.11.2016 Certified by : _____ Date : 23.11.2016

CA-R-297 (22/07/2009)

Chan Chun Wai (Manager)

** End of Report **

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Appendix E

Environmental Monitoring Schedule

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

Impact Monitoring Schedule (January 2017)

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

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), 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.

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

Impact Monitoring Schedule (February 2017)

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

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

Impact Monitoring Schedule (March 2017)

Sun	Mon	Tue	Wed	Thur	Fri	Sat
			1 March	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	21 TSP Monitoring Noise Monitoring	22	23	24	25
26	27 TSP Monitoring Noise Monitoring	28	29	30	31	

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

Impact Monitoring Schedule (April 2017)

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

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
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

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

Start Date	Weather Condition	Air Temperature (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Sampling Time(hrs)	Flow Rate (m^3/min.)		Average flow (m^3/min.)	Total volume (m^3)	Conc. (ug/m^3)	Action Level	Limit Level
				Initial	Final			Initial	Final				(ug/m^3)	(ug/m^3)
5-Jan-17	Fine	294.1	762.7	2.7920	3.1287	0.3367	24	1.65	1.64	1.64	2365.5	142		
11-Jan-17	Fine	292.1	763.6	2.8115	3.0863	0.2748	24	1.72	1.60	1.66	2394.4	115		
17-Jan-17	Cloudy	292.2	759.1	2.8158	3.1709	0.3551	24	1.65	1.70	1.68	2714.7	131	177	260
23-Jan-17	Fine	289.8	769.3	2.8199	2.9973	0.1774	24	1.37	1.34	1.36	2017.9	88		
27-Jan-17	Fine	290.5	767.0	2.8149	2.8530	0.0381	24	1.53	1.51	1.52	2189.2	17		
											Min	17		
											Max	142		
											Average	99		

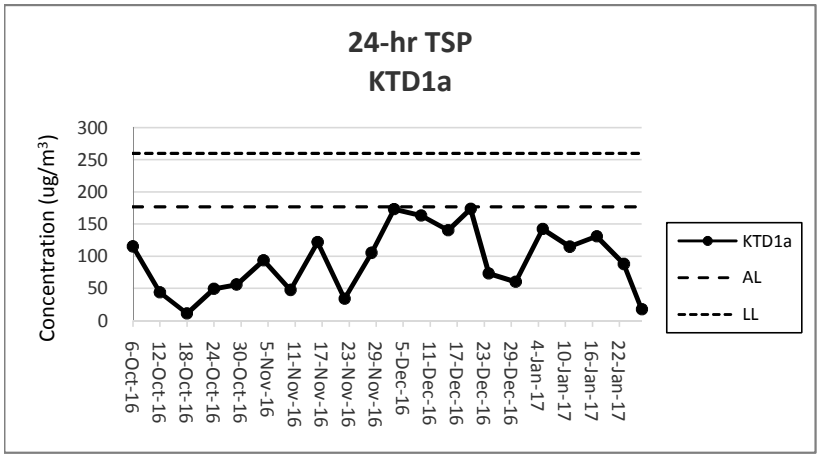
KTD2a - G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)

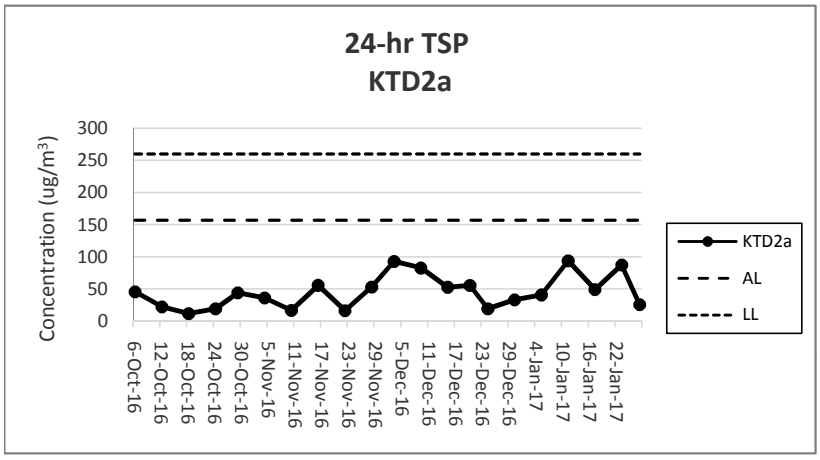
Start Date	Weather Condition	Air Temperature (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Sampling Time(hrs)	Flow Rate (m^3/min.)		Average flow (m^3/min.)	Total volume (m^3)	Conc. (ug/m^3)	Action Level	Limit Level
				Initial	Final			Initial	Final				(ug/m^3)	(ug/m^3)
5-Jan-17	Fine	294.1	762.7	2.7854	2.8777	0.0923	24	1.58	1.57	1.58	2269.2	41		
11-Jan-17	Fine	292.1	763.6	2.8064	3.0296	0.2232	24	1.67	1.64	1.65	2381.0	94		
17-Jan-17	Cloudy	292.2	759.1	2.8233	2.9348	0.1115	24	1.59	1.57	1.58	2270.4	49	157	260
23-Jan-17	Fine	289.8	769.3	2.8347	3.0250	0.1903	24	1.53	1.49	1.51	2178.1	87		
27-Jan-17	Fine	290.5	767.0	2.8187	2.8767	0.0580	24	1.60	1.57	1.58	2281.2	25		
											Min	25		
											Max	94		
											Average	59		

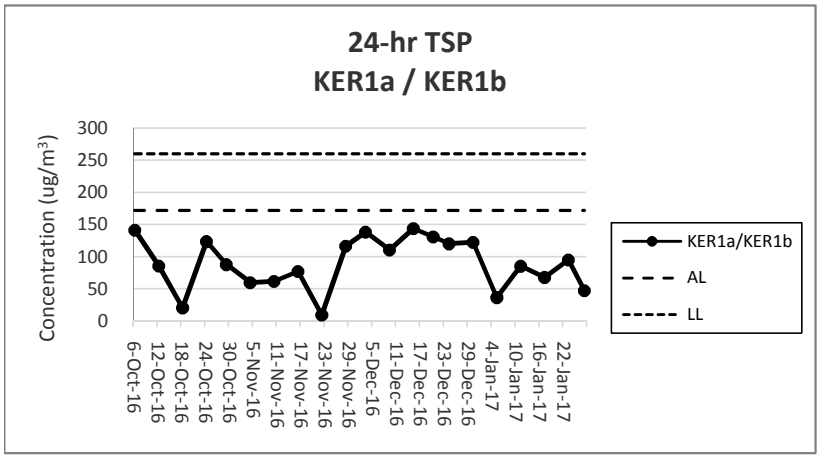
KER1b - Site Boundary at Cheung Yip Street

Start Date	Weather Condition	Air Temperature (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Sampling Time(hrs)	Flow Rate (m^3/min.)		Average flow (m^3/min.)	Total volume (m^3)	Conc. (ug/m^3)	Action Level	Limit Level
				Initial	Final			Initial	Final				(ug/m^3)	(ug/m^3)
5-Jan-17	Fine	294.1	762.7	2.8174	2.8884	0.0710	24	1.36	1.35	1.36	1952.4	36		
11-Jan-17	Fine	292.1	763.6	2.8131	2.9646	0.1515	24	1.24	1.23	1.23	1778.0	85		
17-Jan-17	Cloudy	292.2	759.1	2.8142	2.9162	0.1020	24	1.05	1.04	1.05	1506.4	68	172	260
23-Jan-17	Fine	289.8	769.3	2.8267	3.0051	0.1784	24	1.32	1.29	1.30	1880.9	95		
27-Jan-17	Fine	290.5	767.0	2.8477	2.9274	0.0797	24	1.19	1.16	1.18	1693.6	47		
											Min	36		
											Max	95		
											Average	66		

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-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

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

Date	Start Time	Leq 30min dB(A)	L10 dB(A)	L90 dB(A)	Wind Speed (m/s)	Weather
5-Jan-17	11:47	67	69	66	0.3	Fine
11-Jan-17	9:45	73	76	71	0.6	Fine
17-Jan-17	10:35	70	73	66	1.6	Cloudy
23-Jan-17	13:25	67	69	65	1.4	Fine
27-Jan-17	10:52	68	69	65	0.6	Fine
	Max	73				
	Min	67				
	Limit Level	**75**				

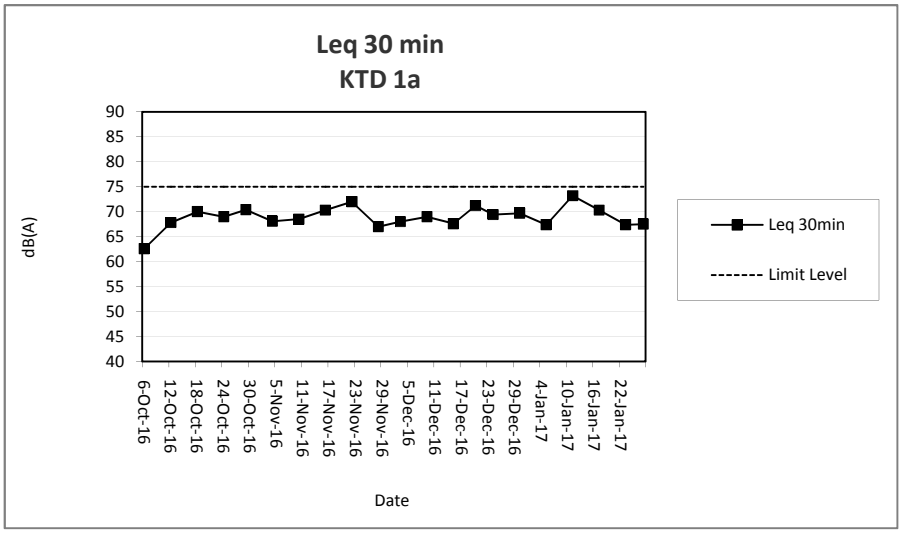
KTD 2a: G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)

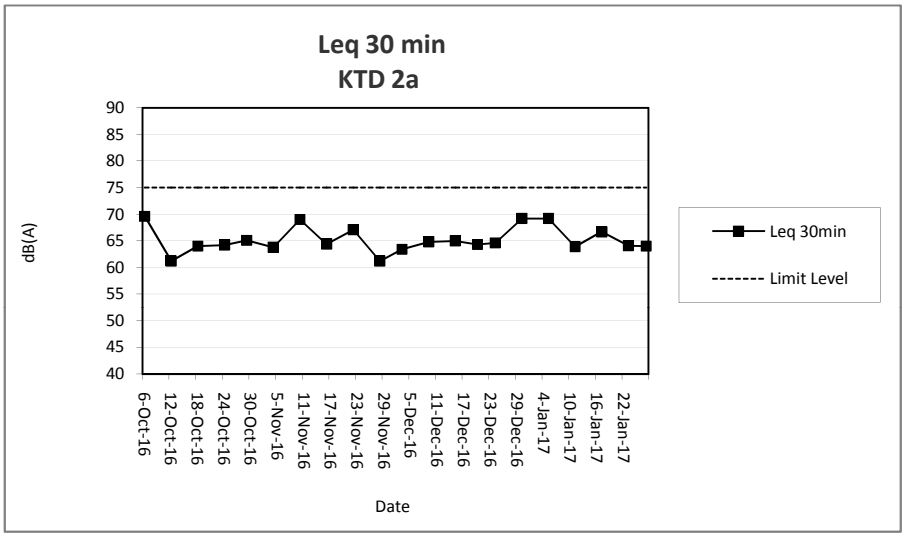
Date	Start Time	Leq 30min dB(A)	L10 dB(A)	L90 dB(A)	Wind Speed (m/s)	Weather
5-Jan-17	12:20	69	71	68	0.3	Fine
11-Jan-17	10:30	64	65	63	0.6	Fine
17-Jan-17	10:00	67	69	64	0.7	Cloudy
23-Jan-17	12:45	64	65	63	0.6	Fine
27-Jan-17	10:10	64	66	62	1.5	Fine
	Max	69				
	Min	64				
	Limit Level	**75**				

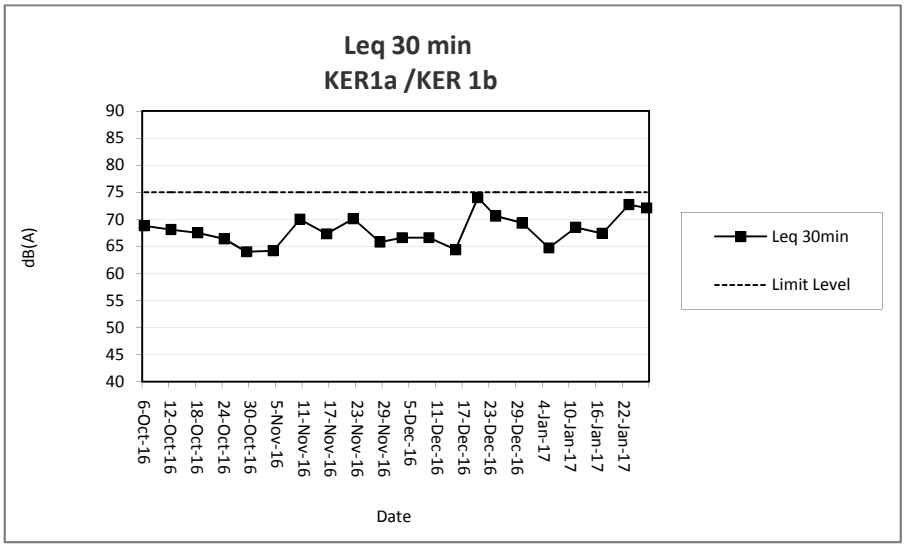
KER 1b: Site Boundary at Cheung Yip Street

Date	Start Time	Leq 30min dB(A)	L10 dB(A)	L90 dB(A)	Wind Speed (m/s)	Weather
5-Jan-17	13:00	65	67	60	0.3	Fine
11-Jan-17	9:00	69	71	66	0.6	Fine
17-Jan-17	11:22	67	69	64	0.5	Cloudy
23-Jan-17	14:05	73	75	70	0.7	Fine
27-Jan-17	11:30	72	75	69	0.8	Fine
	Max	73				
	Min	65				
	Limit Level	**75**				

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

EVENT	ACTION			
	ET	IEC	ER	Contractor
Action Level				
Exceedance for one sample.	1. Identify sources, investigate the causes of complaint and propose remedial measures. 2. Inform IEC and ER. 3. Repeat measurement to confirm finding;. 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET. 2. Check the Contractor's working methods.	1. Notify the Contractor.	1. Rectify any unacceptable practices. 2. Amend working methods agreed with the ER as appropriate.
Exceedance for two or more consecutive samples.	1.Identify sources. 2.Inform the IEC and ER. 3.Advise the ER on the effectiveness of the proposed remedial measures; 4.Repeat measurements to confirm findings. 5.Increase monitoring frequency to daily. 6.Discuss with the IEC, ER and Contractor on remedial action required. 7.If exceedance continues, arrange meeting with the IEC, Contractor and ER. **8.**If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET. 2. Check the Contractor's working methods. 3. Discuss with the ET, ER and Contractor on possible remedial measures if required. 4. Advise the ER on the effectiveness of proposed remedial measures if required.	1. Notify the Contractor. 2. Ensure remedial measures properly implemented.	1. Submit proposals for remedial action to the ER within 3 working days of notification. 2. Implement the agreed proposals. 3. Amend proposal as appropriate
Limit Level				
Exceedance for one sample.	1. Identify sources, investigate causes of exceedance and proposed remedial measures. 2. Inform the IEC, ER, and Contractor. 3. Repeat measurement to confirm finding. 4. 4. Increase monitoring frequency to daily. 5. Assess effectiveness of the Contractor's remedial action and keep the IEC and ER informed of the results	1. Check monitoring data submitted by the ET. 2. Check the Contractor's working methods. 3. Discuss with the ET, ER and Contractor on possible remedial measures. 4. Advise the ER and ET on the effectiveness of the proposed remedial measures. 5. Supervise the implementation of remedial measures.	1. Confirm receipt of the notification of exceedance in writing. 2. Notify the Contractor. 3. Ensure remedial measures are properly implemented.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial action to the ER and copy to the ET and IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Amend proposal as appropriate.
Exceedance for two or more consecutive samples	1. Notify the IEC, ER and Contractor. 2. Identify sources. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Carry out analysis of the Contractor's working procedures with the ER to determine the possible mitigation to be implemented. 6. Arrange meeting with the IEC and ER to	1. Discuss amongst the ER, ET and Contractor on the potential remedial action. 2. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER and ET accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of the notification of exceedance in writing. 2. Notify the Contractor. 3. In consultation with the IEC and ET, agree with the Contractor on the remedial measures to be implemented. 4. Ensure remedial measures are properly implemented. 5. If exceedance	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial action to the ER and copy to the IEC and ET within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problems still not under control. 5. Stop the relevant portion of works as

EVENT	ACTION			
	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			
	ET	IEC	ER	Contractor
Action Level	1.Notify the IEC, ER and Contractor. 2.Carry out investigation. 3.Report the results of investigation to the IEC and Contractor. 4.Discuss jointly with the ER and Contractor and formulate remedial measures. 5.Increase the monitoring frequency to check the mitigation effectiveness	1. Review the monitoring data submitted by the ET. 2. 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	1. Notify the Contractor. 2. Require the Contractor to propose remedial measures for implementation if required.	1.Submit noise mitigation proposals to the ER and copy to the IEC and ET. 2.Implement noise mitigation proposals.
Limit Level	1.Notify the IEC, ER and Contractor. 2.Identify sources. 3.Repeat measurements to confirm findings. 4.Carry out analysis of the Contractor's working procedures with the ER and Contractor to determine possible mitigations to be implemented. 5.Record the causes and action taken for the exceedances. 6.Increase the monitoring frequency. 7.Assess the effectiveness of the Contractor's remedial action with the ER and keep the IEC informed of the results. **8.**If exceedance stops, cease additional monitoring	1.Discuss amongst the ER, ET and Contractor on the potential remedial action. 2.Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER accordingly. **3.**Supervise the implementation of remedial measures.	1.Confirm receipt of notification of exceedance in writing. 2.Notify the Contractor. 3.Require the Contractor to propose remedial measures for the analysed noise problems. 4.Ensure remedial measures are properly implemented. **5.**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.	1.Take immediate action to avoid further exceedance. 2.Submit proposals for remedial action to the ER and copy to the ET and IEC within 3 working days of notification. 3.Implement the agreed proposals. 4.Resubmit proposals if problems still not under control. **5.**Stop the relevant portion of works as determined by the ER until the exceedance is abated.

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Event and Action Plan for Landscape and Visual Impact

EVENT	ACTION			
	ET	IEC	ER	Contractor
Non-conformity on one occasion	1. Identify Source 2. Inform the IEC and the ER 3. Discuss remedial actions with the IEC, the ER and the Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source 2. Inform the IEC and the ER 3. Increase monitoring frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If exceedance stops, cease additional monitoring	1. Check monitoring report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures.	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement

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Appendix I

Waste Flow Table

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Waste Flow Table for Year 2016

Monthly Ending	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	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^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
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	6.3522	Nil	Nil	Nil	6.3522	Nil	13.30	0.023	Nil	Nil	0.0121
Total	51.213	0.4025	1.9967	Nil	48.8138	Nil	140.07	0.276	0.00014	0.1106	0.4288

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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Waste Flow Table for Year 2017

Monthly Ending	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	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^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
2017 Jan	4.2300	Nil	Nil	Nil	4.2300	Nil	0.015	0.023	Nil	Nil	0.0109
Total	4.2300	Nil	Nil	Nil	4.2300	Nil	0.015	0.023	Nil	Nil	0.0109

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 Measures					
New Distributor Roads Serving the Planned 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 Station 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	Not Applicable
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 S4.9.2.2	EM&A Manual S2.2, S4.2, AEIAR-174/2013 EM&A Manual S2.3.1.2	be fully covered by impermeable sheeting to reduce dust emission.		worksites	Implemented
		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	Partially 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. 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
		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
		<u>Dark smoke</u>			
		Dark smoke emission shall be control in accordance with the Air Pollution Control (Smoke) Regulation and ETWB TCW 19/2005.	Contractor	All relevant worksites	Partially Implemented
		Plant and equipment should be well maintained to prevent dark smoke emission.	Contractor	All relevant worksites	Partially Implemented
<u>Noise Measures</u>					
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

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		• Poker, vibratory, Hand-held (electric) • Water Pump, Submersible (Electric) • Mobile Crane - KOBELCO CKS900 • Excavator, wheeled/tracked - HYUNDAI R80CR-9			
		Use of temporary or fixed noise barriers with a surface density of at least 10kg/m^2 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^2 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
		<u>Good Site Practices</u>			
AEIAR-130/2009 S3.3, S5.3.10, AEIAR-174/2013 S5.9.2.1	AEIAR 130/2009 EM&A Manual S2.3, S4.3.2, AEIAR-174/2013 EM&A Manual S3.4.1.1	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
		Silencers or mufflers on construction equipment should be utilized and shall be properly maintained during the construction/ decommissioning program.	Contractor	All relevant worksites	Implemented
		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	Implemented
		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	Implemented
		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
<u>Water Quality Measures</u>					
Trunk Road T2					
		<u>Accidental Spillage</u>			
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

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
		<u>Dredging, Reclamation and Filling</u>			
		No dredging, reclamation or filling in the marine environment shall be carried out.	Contractor	All relevant worksites	Implemented
Decommissioning of the Radar Station of the former Kai Tak Airport					
		<u>Building Demolition</u>			

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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 S5.4	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
		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
		<u>General Construction Works</u>			
		<u>Construction Runoff</u>			
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	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include the use of sediment traps and adequate maintenance of drainage systems to prevent flooding and overflow.	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

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^3 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	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
		<u>Drainage</u>			
		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
		<u>Stormwater Discharges</u>			
		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
		<u>Sewage Effluent</u>			
		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
		<u>Debris and Litter</u>			
		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

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			
		Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to the nearby harbour waters, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ. The bund should be drained of rainwater after a rain event.	Contractor	All relevant worksites	Implemented
		Waste Management Measures			
		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
		<u>Waste Reduction Measures</u>			
		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
		<u>Construction and Demolition Materials</u>			
		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
		<u>Chemical Waste</u>			
		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			
		General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem.	Contractor	All relevant worksites	Partially Implemented
Land Contamination Measures					
		For any excavation works conducted at Radar Station			
AEIAR-130/2009 S3.6.57	AEIAR 130/2009 EM&A Manual S4.6	As the risk due to dermal contact with groundwater by site workers is uncertain, it is recommended that personnel protective equipment (PPE) be used by site workers as a mitigation measure.	Contractor	All relevant worksites	Not Applicable
Landscape and Visual Impact					
New Distributor Roads Serving the Planned KTD					
		Construction Phase			
AEIAR-130/2009 S3.8.12	AEIAR 130/2009 EM&A Manual S2.8	All existing trees should be carefully protected during construction.	Contractor	All relevant worksites	Not Applicable
		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

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
		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	Who to implement the measure	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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Date	Mean Pressure (hPa)	Air Temperature			Mean Relative Humidity (%)	Total Rainfall (mm)
		Maximum (deg. C)	Mean (deg. C)	Minimum (deg. C)		
January 2017						
01	1021.7	20.8	19.2	18.4	80	0.0
02	1020.2	23.3	20.2	18.4	81	0.0
03	1019.8	21.3	20.0	18.9	83	0.0
04	1018.7	21.7	19.9	18.7	80	0.0
05	1016.9	23.4	21.1	18.9	80	0.0
06	1015.1	25.0	21.6	19.7	80	0.0
07	1013.9	22.8	21.1	19.7	79	0.0
08	1013.4	25.5	22.6	20.5	76	0.0
09	1016.3	21.8	20.6	19.7	78	0.0
10	1018.1	20.5	19.4	18.8	79	0.0
11	1018.1	19.7	19.1	18.2	80	0.0
12	1015.5	20.3	19.0	16.9	81	Trace
13	1015.7	17.1	15.9	15.1	84	0.5
14	1017.9	16.5	15.7	14.5	87	1.0
15	1020.5	16.8	15.5	14.3	85	1.5
16	1020.4	17.4	16.3	14.7	80	0.4
17	1021.1	19.2	18.0	16.7	76	0.0
18	1021.2	20.0	18.9	18.0	86	Trace
19	1020.1	24.1	20.4	18.7	85	0.0
20	1022.4	20.6	18.3	16.2	69	Trace
21	1025.3	19.0	16.7	14.6	67	0.0
22	1026.1	19.8	16.4	13.6	58	0.0
23	1025.7	19.4	16.8	15.2	71	0.0
24	1025.4	18.9	17.0	15.7	72	0.0
25	1025.5	20.9	17.5	15.9	76	0.0
26	1024.3	19.8	17.3	16.2	75	0.0
27	1022.6	21.3	17.5	14.4	69	0.0
28	1018.6	18.8	17.3	16.4	79	0.3
29	1016.6	21.5	19.1	18.1	88	2.4
30	1018.2	23.4	20.2	17.4	90	1.2
31	1020.2	17.6	16.7	15.9	87	0.5

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 Notification	Received From and Received By	Nature of Complaint	Date of Investigation	Outcome	Date of Reply
1	15 December 2016	Andy Choy	Air	13 February 2017	Project-related	13 February 2017

Cumulative Statistics on Complaints

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative Project-to-Date
Air	0	1	1
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

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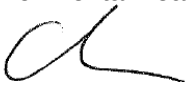
Investigation Report for the Complaint Received on 7th December 2016

Reference No.:	20161207_complaint_c
Project:	Contract KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway
Date of Complaint:	7th December 2016
Background:	A compliant received on 7th December 2016 was referred from EPD on 15th December 2016 regarding the sand and mud dropped from the vehicle that caused Cheung Yip Street and Shing Cheong dusty. The notification of complaint was received by ET on 27th January 2017.
Investigation Results:	• On 7th December 2016 (the date of the complaint), some wet soil and mud resulted from diaphragm wall construction were removed from the site of KL/2014/03 to disposal grounds. • All site vehicles, including dump trucks were thoroughly washed at site entrances before leaving the site to ensure no silt and mud stuck on wheels and vehicle body be delivered to the public road in their journey to the destination. • All dump trucks were covered with mechanical cover to ensure no mud and soil be dropped from the skip to the public road in their journey to the destination. • Cleaning of Shing Cheong Road and Cheung Yip Street were carried out by general workers of China Road and Bridge Corporation (CRBC) on 7th December 2016. • A thorough cleaning of Shing Cheong Road and Cheung Yip Street by street sweep vehicles was carried out by the Contractor in the afternoon of 7th December 2016. • Further thorough cleanings of Shing Cheong Road and Cheung Yip Street were also carried out on 7th and 20th January 2017. • The contractor of Hong Kong Children's Hospital (HKCH) shares the use of Cheung Yip Street with CRBC as the site access, which will have contribution to the complaint.
Conclusion	The complaint received on 7th December 2016 is project related.
Advice from ET:	• Each main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. • Every vehicle should be washed at the site exit to remove any dusty materials from its body and wheels before leaving the construction site. Water used for vehicle cleaning should be collected for sedimentation before re-use or disposal at a designated discharge location. No runoff or surface water is allowed to be drained out of the site boundary. • The load of dusty materials carried by vehicle leaving the construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle. • Dusty materials should not be loaded up to a height over the edges of the sides and tailboards of the vehicle. • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet. • The Contractor is reminded that street cleaning or washing to remove sand and silt deposited on the road surface near the construction site would generate muddy water that should be not drained into the stormwater sewers. Manual collection and cleaning of sand and silt are preferred.

Prepared by: Alfred Lam
Certified by: Colin Yung
Designation: Environmental Team Leader

Signature: 

Date: 16/02/2017

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Site Photo Record:

Watering and sweeping was provided for diversion road and Cheung Yip Street on 7 December 2016.

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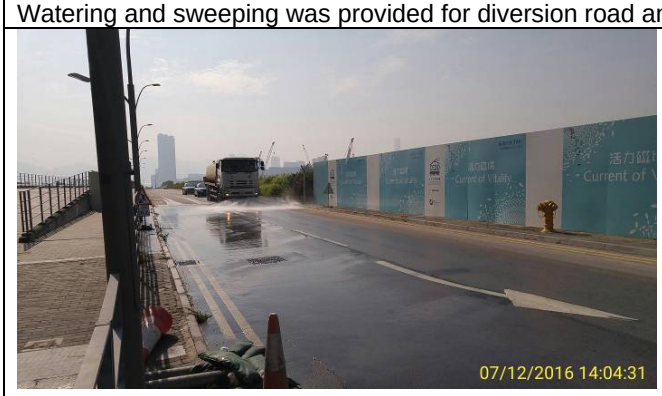
Watering and sweeping was provided for diversion road and Cheung Yip Street on 7 December 2016.	
	 07/12/2016 15:37:02

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Wheel washing at the site entrance was provided on 7 December 2016.

Stockpile of dusty materials were covered properly on 7 December 2016.

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Cleanings of Shing Cheong Road and Cheung Yip Street were provided on 7 and 20 January 2016.

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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	5 January 2017	Contractor was reminded to provide adequate watering to reduce dust emission. Adequate watering shall be provided. (Portion I).	The item was rectified by the Contractor and inspected on 12 January 2017.
	5 January 2017	The C&D material shall be properly covered after the excavation is done (Zone1).	The item was rectified by the Contractor and inspected on 12 January 2017.
	12 January 2017	Dusty road shall be sprayed with water regularly to reduce dust emission. (Zone 4)	The item was rectified by the Contractor and inspected on 18 January 2017.
	18 January 2017	Open stockpile shall be covered with impermeable sheeting to prevent dust emission. (Zone 4)	The item was rectified by the Contractor and inspected on 26 January 2017.
	26 January 2017	Dark smoke was observed in an operating crane. Purifier shall be installed and repairing programme shall be implemented (Zone 2).	The item was rectified by the Contractor and inspected on 2 February 2017.
	26 January 2017	Contractor was reminded to keep watering to reduce dust emission form construction activities (Zone 4).	The item was rectified by the Contractor and inspected on 2 February 2017.
Noise	NA		
Water Quality	5 January 2017	Contractor shall provide a good practise to prevent waste water from wheel washing to enter the public drainage. Proper wheel washing area shall be provided. (Zone 2)	The item was rectified by the Contractor and inspected on 12 January 2017.
	26 January 2017	Waste water from wheel washing shall be from the pit at Zone 2. Waste water shall be removed. (Zone 2).	The item was rectified by the Contractor and inspected on 2 February 2017.
Chemical and Waste Management	12 January 2017	Oil Containers shall be stored properly. Drip tray shall be provided. Empty oil containers shall be removed. (Zone 1 and Zone 4)	The item was rectified by the Contractor and inspected on 18 January 2017.
Land Contamination	NA		

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Parameters	Date	Observations and Recommendations	Follow-up
Landscape and Visual Impact	5 January 2017	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 12 January 2017.
	18 January 2017	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. (Zone 4)	The item was rectified by the Contractor and inspected on 26 January 2017.
General Condition	NA		

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Appendix N

Outstanding Issues and Deficiencies

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Summary of Outstanding Issues and Deficiencies in the Reporting Month

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