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MaterialLab

1st CONSOLIDATED MONTHLY EM&A REPORT

November 2016

Client : Civil Engineering and Development Department, HKSAR

EP No. : EP-337/2009 –
New Distributor Roads Serving the Planned Kai Tak
Development Area

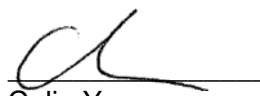
Contract No. : KLN/2016/05 –
Independent Environmental Checker for
Contract No. KL/2015/02 Kai Tak Development –
Stage 5A Infrastructure at Former North Apron Area

Report No. : 0087/16/ED/0193

Prepared by : Wingo So

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Certified by :



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Independent Environmental Checker
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EXECUTIVE SUMMARY

- i. This is the 1st Consolidated Monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project within the period between 1 November 2016 and 30 November 2016.
- ii. The EP-337/2009 relevant major construction activities undertaken in the reporting month are summarized as follow:

Contract No. KL/2010/03:

- NA (The works has been completed and no further EM&A submission is required.)

Contract No. KL/2012/02:

- Site Clearance;
- RC works for VT1 at Portion G;
- Drainage works for connection to box culvert (KTOB);
- RC works for VT1 at CH260 to Ch300;
- Cross road duct at Choi Hung Road;
- Road and drainage works at Sze Mei Street and Luk Hop Street;
- Condition survey and monitoring survey;
- RC works for VT1 at CH 335 to CH380;
- Footpath construction at Sam Chuk Street and Tsat Po Street; and
- ELS works for SW3 at San Po Kong.

Contract No. KL/2012/03:

- Daily Cleaning;
- Installation of hand-railing & ladder inside Box Culvert B5;
- Construction of staircase and landing and E&M Works at PS2;
- Water test, backfill and sheet-pile removal in Heading 7A;
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;
- Outfall construction at Box Culvert B6;
- Road widening works (excavation and UU works) at Sung Wong Toi Road;
- Maintenance & Servicing Engineer' s Office at Portion 9;
- Lay HDPE pipe at Pit 1 and 9;
- Pipe jacking at Pit 4;
- Chamber construction at Pit 5;
- Installation of drainage, UU laying works and Road works at Road D2;
- Finishing works and E&M works at NPS;
- UU works and Road works at Road L19 & Bailey St; and
- Storage of excavated material at Portion 6.

Contract No. KL/2014/01:

- Watermain works
- Ground investigation work;
- Construction of boundary wall at EPD recycling centre;
- Bored piles and Pre-bored socketed H-piles;
- TTA implementation at Shing Fung Road and Wang Chiu Road / Sheung Yee Road;
- Cable laying for transformer room;
- Open excavation for box culvert, piles caps and underpass; and
- ELS installation for box culvert.

Contract No. KL/2014/03:

- Carrying out pre-drilling;
- Construction of guide walls and D-walls;
- Construction of Socketed H piles;
- Temporary utility diversion;
- Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS);
- Construction of Subway B;
- Demolition of Radar Tower;
- Construction of District Cooling System Works; and
- Implementation of Temporary Traffic Arrangement (TTA).

Contract No. KL/2015/02:

- NA (No construction work for D1 road in reporting period)
- Baseline Monitoring Checking Method Statement had submitted to EPD on 21 Oct 2016.

Breaches of the Action and Limit Levels

- iii. No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- iv. No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- v. No Action / Limit Level exceedance was recorded for noise monitoring in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

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

Reporting Changes

- vii. There was no reporting change in the reporting month.

Future Key Issues

viii. The potential environmental impacts for the coming month and the control measures are shown in **Table I**:

Table I Summary of Key Issues for the Coming Month and Control Measures

Major Impact Prediction	Control Measures
Contract No. KL/2012/02:	
Air quality impact (dust)	<ul style="list-style-type: none"> • Frequent watering of haul road and unpaved/exposed areas; • Frequent watering or covering stockpiles with tarpaulin or similar means; and • Watering of any earth moving activities.
Water quality impact (surface run-off)	<ul style="list-style-type: none"> • Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; • Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; • Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and • Provision of measures to prevent discharge into the stream.
Noise Impact	<ul style="list-style-type: none"> • Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; • Controlling the number of plants use on site; • Regular maintenance of machines; and • Use of acoustic barriers if necessary.
Contract No. KL/2012/03:	
Air quality impact (dust)	<ul style="list-style-type: none"> • Frequent watering of haul road and unpaved/exposed areas; • Frequent watering or covering stockpiles with tarpaulin or similar means; and • Watering of any earth moving activities.
Water quality impact (surface run-off)	<ul style="list-style-type: none"> • Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; • Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; • Provision of site boundary bund such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and • Provision of measures to prevent discharge into the stream.
Noise Impact	<ul style="list-style-type: none"> • Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; • Controlling the number of plants use on site; • Regular maintenance of machines; and • Use of acoustic barriers if necessary.
Contract No. KL/2014/01:	
Air quality impact (dust)	<ul style="list-style-type: none"> • Frequent watering of haul road and unpaved/exposed areas; • Frequent watering or covering stockpiles with tarpaulin or similar means; and • Watering of any earth moving activities.
Water quality impact (surface run-off)	<ul style="list-style-type: none"> • Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; • Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; • Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and • Provision of measures to prevent discharge into the stream.

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Major Impact Prediction	Control Measures
Noise Impact	<ul style="list-style-type: none"> • Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; • Controlling the number of plants use on site; • Regular maintenance of machines; and • Use of acoustic barriers if necessary.
Contract No. KL/2014/03:	
Construction dust, construction noise, water quality, waste management and landscape and visual impact.	<ul style="list-style-type: none"> • 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. 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 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 March 2009.

1.1.3 The EP-337/2009 was issued on 23 April 2009 for the new distributor roads serving the planned Kai Tak Development to the following scale and slope:

- a) Road D1 – a dual 2-lane carriageway of approximately 1.3 km long.
- b) Road D2 – a dual 3-lane carriageway of approximately 1.1 km long.
- c) Road D3 – a dual 2-lane carriageway of approximately 2.3 km long.
- d) Road D4 – a dual 2-lane carriageway of approximately 0.9 km long.

1.1.4 The Civil Engineering and Development Department HKSAR has appointed MaterialLab Consultants Limited (MCL) to undertake the role of Independent Environmental Checker (IEC) for the Contract No. KL/2015/02.

1.1.5 This is the 1st Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 November 2016 and 30 November 2016.

1.2 Summary of relevant Contract Information of Key Personnel

Party	Position	Name	Telephone	Fax
Contract No. KL/2012/02:				
Project Proponent CEDD)	Engineer	Mr. Mike Cho	3579 2450	2369 4980
		Mr. Kelvin Chow	3579 2453	
Engineer's Representative (ARUP)	SRE	Mr. Gary Cheung	2210 6100	2210 6110
	RE	Ms. Edith Fung		
IEC (ANewR)	IEC	Mr. Adi Lee	2618 2836	3007 8648
ET (Cinotech)	ET Leader	Dr. Priscilla Choy	2151 2089	3107 1388
	Project Coordinator and Audit Team Leader	Ms. Ivy Tam	2151 2090	
Main Contractor (Build King)	Project Manager	Mr. Osbert Sit		
	EO	Mr. Edmond Wong	2639 6290	2639 6208
Contract No. KL/2012/03:				
Project Proponent (CEDD)	Senior Engineer	Mr. C. K. Choi	2301 1174	2301 1277
Engineer's Representative (AECOM)	SRE	Mr. John Yam	2798 0771	3013 8864
	RE	Mr. Ivan Yim		
IEC (Hyder)	IEC	Mr. Wong Fu Nam	2911 2744	2805 5028

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Party	Position	Name	Telephone	Fax
ET (Cinotech)	ET Leader	Dr. Priscilla Choy	2151 2089	3107 1388
	Project Coordinator and Audit Team Leader	Ms. Ivy Tam	2151 2090	
Main Contractor (Kwan On)	Site Agent	Mr. Albert Ng	3689 7752	3689 7726
			6146 6761 (Hotline)	
Contract No. KL/2014/01:				
Project Proponent (CEDD)	Senior Engineer	Mr. Ronald Siu	2301 1453	2301 1277
	Engineer	Mr. Bernard Chan	2301 1207	
Engineer's Representative (AECOM)	CRE	Mr. Clive Cheng	3746 1801	2798 0783
IEC (KSMC)	IEC	Dr. C. F. Ng	2618 2166	2120 7752
ET (Cinotech)	ET Leader	Dr. Priscilla Choy	2151 2089	3107 1388
	Audit Team Leader	Ms. Ivy Tam	2151 2090	
Main Contractor (CCJV)	EO	Mr. Dennis Ho	2960 1398	2960 1399
Contract No. KL/2014/03:				
Project Proponent (CEDD)	Co-ordinator	Ms. Amy Chu	3106 3172	2369 4980
Engineer's Representative (HMJV)	CRE	Mr. Chris Wong	3742 3803	3742 3899
IEC (Ramboll Environ)	IEC	Mr. F. C. Tsang	3465 2888	3465 2899
ET (MCL)	ET Leader	Mr. Colin Yung	3565 4114	3565 4160
Main Contractor (CRBC)	Site Agent	Mr. Arnold Chan	9380 4110	2283 1689
	EO	Mr. Andy Choy	6278 2693	

1.3 Summary of Construction Programme and Activities

- 1.3.1 The construction programme of each Contract is summarized in the appendices of the corresponding Monthly EM&A.
- 1.3.2 The major construction activities undertaken in the reporting month are summarized as follow:

Contract No. KL/2010/03:

NA (The works has been completed and no further EM&A submission is required.)

Contract No. KL/2012/02:

- Site Clearance;
- RC works for VT1 at Portion G;
- Drainage works for connection to box culvert (KTOB);
- RC works for VT1 at CH260 to Ch300;
- Cross road duct at Choi Hung Road;
- Road and drainage works at Sze Mei Street and Luk Hop Street;
- Condition survey and monitoring survey;
- RC works for VT1 at CH 335 to CH380;
- Footpath construction at Sam Chuk Street and Tsat Po Street; and
- ELS works for SW3 at San Po Kong.

Contract No. KL/2012/03:

- Daily Cleaning;

- Installation of hand-railing & ladder inside Box Culvert B5;
- Construction of staircase and landing and E&M Works at PS2;
- Water test, backfill and sheet-pile removal in Heading 7A;
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;
- Outfall construction at Box Culvert B6;
- Road widening works (excavation and UU works) at Sung Wong Toi Road;
- Maintenance & Servicing Engineer's Office at Portion 9;
- Lay HDPE pipe at Pit 1 and 9;
- Pipe jacking at Pit 4;
- Chamber construction at Pit 5;
- Installation of drainage, UU laying works and Road works at Road D2;
- Finishing works and E&M works at NPS;
- UU works and Road works at Road L19 & Bailey St; and
- Storage of excavated material at Portion 6.

Contract No. KL/2014/01:

- Watermain works
- Ground investigation work;
- Construction of boundary wall at EPD recycling centre;
- Bored piles and Pre-bored socketed H-piles;
- TTA implementation at Shing Fung Road and Wang Chiu Road / Sheung Yee Road;
- Cable laying for transformer room;
- Open excavation for box culvert, piles caps and underpass; and
- ELS installation for box culvert.

Contract No. KL/2014/03:

- Carrying out pre-drilling;
- Construction of guide walls and D-walls;
- Construction of Socketed H piles;
- Temporary utility diversion;
- Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS);
- Construction of Subway B;
- Demolition of Radar Tower;
- Construction of District Cooling System Works; and
- Implementation of Temporary Traffic Arrangement (TTA).

Contract No. KL/2015/02:

- NA (No construction work for D1 road in reporting period)
- Baseline Monitoring Checking Method Statement had submitted to EPD on 21 Oct 2016.

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

- 1.4.1 The summary of inter-relationship with environmental protection/mitigation measures are presented as follow:

Major Environmental Impact	Control Measures
Contract No. KL/2012/02:	
Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> • Sufficient watering of the works site with active dust emitting activities; • Properly cover the stockpiles; • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge; • Use of quiet plant and well-maintained construction plant; Provide movable noise barrier; • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; • Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.
Contract No. KL/2012/03:	
Dust, Water Quality, Waste Management (Construction of superstructure of Pumping Station PS2 and NPS;	<ul style="list-style-type: none"> • Sufficient watering of the works site with active dust emitting activities; • Properly cover the stockpiles; • Appropriate desilting/sedimentation devices provided on site for treatment before discharge; • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; and • On-site waste sorting and implementation of trip ticket system.
Dust, Noise (Backfilling between sewerage manholes 1K1_1 and FMH10_340 and construction of manhole FMH10_370a at L6;)	<ul style="list-style-type: none"> • Use of quiet plant and well-maintained construction plant; and • Properly cover the stockpiles;
Noise, Waste Management (Installation of precast unit and construction of in-situ portions of Box Culvert B6; Construction of jacking pits nos. 1 and 2; Installation of gas pipe at pit no. 10; Construction of washout chamber at pit no. 11;)	<ul style="list-style-type: none"> • Use of quiet plant and well-maintained construction plant; and • Provide hoarding. • Good management and control on construction waste reduction
Noise (Construction of sewerage manhole FMH 10 at Bailey Street; Widening works of Sung Wong Toi Road.)	<ul style="list-style-type: none"> • Use of quiet plant and well-maintained construction plant; and • Provide hoarding.
Noise, Water Quality (Pipe laying from manhole SMH2204 to Box Culvert B6; Laying of rising mains from PS2 to chainage CHA-18; Pipe laying from stormwater manholes SMH1962 to SMH1963 and construction of manholes SMH1953 and SMH1963 at L6; Installation of DCS;)	<ul style="list-style-type: none"> • Use of quiet plant and well-maintained construction plant; and • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall.
Contract No. KL/2014/01:	
Noise, dust impact, water	<ul style="list-style-type: none"> • Sufficient watering of the works site with active dust emitting

Major Environmental Impact	Control Measures
quality and waste generation	activities; <ul style="list-style-type: none"> • Properly cover the stockpiles; • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge; • Use of quiet plant and well-maintained construction plant; • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; • Provide mitigation measure to temporary use of chemicals; • Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.
Contract No. KL/2014/03:	
Air Quality Impact, Construction Noise Impact, Water Quality Impact, Chemical and Waste Management, Landscape and Visual Impact	<ul style="list-style-type: none"> • 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 Machinerics (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 Summary 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 EP and relevant Contract are presented in **Table 1.1**.

Table 1.1 Relevant Environmental Licenses, Permits and/or Notifications

Environmental License / Permit / Notification	Reference Number	Valid From	Valid Till
Contract No. KL/2012/02:			
Environmental Permit	EP-337/2009	23/04/2009	N/A
Effluent Discharge License	WT00016873-2013	-	31/08/2018
	WT00016723-2013	-	31/08/2018
Registration of Chemical Waste Producer	5213-286-K3022-04	-	N/A
Construction Noise Permit	GW-RE0646-16	14/09/2016	13/03/2017
	GW-RE0648-16	25/07/2016	24/01/2017
	GW-RE1002-16	15/10/2016	11/12/2016
	GW-RE1033-16	23/10/2016	11/12/2016
	GW-RE1041-16	27/10/2016	23/04/2017
	GW-RE1054-16	28/10/2016	23/04/2017
Contract No. KL/2012/03:			
Environmental Permit	EP-337/2009	23/04/2009	N/A
	EP-344/2009	23/04/2009	N/A
Effluent Discharge License	WT00020971-2015	22/04/2015	21/04/2020
Registration of Chemical Waste Producer	5213-286-K2958-05	-	N/A
Construction Noise Permit	GW-RE0964-16	30/09/2016	29/03/2017
Contract No. KL/2014/01:			
Environmental Permit	EP-337/2009	23/04/2009	N/A
	EP-445/2013/A	13/08/2009	N/A
Effluent Discharge License	WT00023634-2016	-	31/03/2021
Registration of Chemical Waste Producer	213-247-C4004-01	-	N/A
Construction Noise Permit	GW-RE0436-16	10/05/2016	09/11/2016
Construction Noise Permit	GW-RE1092-16	09/11/2016	08/05/2017
Contract No. KL/2014/03:			
Environmental Permit	EP-337/2009	23/04/2009	N/A
	EP-339/2009/A	18/06/2009	N/A
	EP-451/2013	19/09/2013	N/A
Notification pursuant to Air Pollution (Construction Dust) Regulation	395601	16/11/2015	N/A
Billing Account for Waste Disposal	A/C No.: 7023814	30/11/2015	N/A
Construction Noise Permit	GW-RE0538-16	01/06/2016	30/11/2016
	GW-RE1008-16	19/10/2016	09/04/2017
	PP-RE0032-16	23/11/2016	15/05/2017
Wastewater Discharge License	WT00023125-2015	06/01/2016	31/01/2021
Chemical Waste Producer License	5213-247-C1232-12	23/11/2015	N/A

2. ENVIRONMENTAL MONITORING AND AUDIT

2.1 Results and Observations

Air Quality

- 2.1.1 The schedule of air quality monitoring in reporting month is provided in the appendices of the corresponding Monthly EM&A.
- 2.1.2 The weather conditions during the monitoring are provided in the appendices of the corresponding Monthly EM&A.
- 2.1.3 The monitoring data of 24-hr TSP and 1 hour TSP are summarized in **Table 2.1**. Detailed monitoring data are presented in the appendices of the corresponding Monthly EM&A.

Table 2.1 Summary of 24-hr and 1 hour TSP Monitoring Results

Parameter	Monitoring Station	Average (µg/m ³)	Range (µg/ m ³)	Action Level (µg/ m ³)	Limit Level (µg/ m ³)
Contract No. KL/2012/02:					
1-hr TSP	AM1(B)	134.1	60.8-193.3	342	500
	AM2	122.0	69.3-146.0	346	
24-hr TSP	AM1(B)	72.0	37.5-104.9	159	260
	AM2	70.0	30.5-103.7	157	
Contract No. KL/2012/03:					
1-hr TSP	AM2	122.0	69.3-146.0	346	500
	AM3(A)	130.8	79.2-177.3	351	
	AM4(A)	111.8	62.7-153.2	371	
	AM5(5)	119.6	66.1-165.2	345	
24-hr TSP	AM2	70.0	30.5-103.7	157	260
	AM3(A)	74.4	37.4-99.4	167	
	AM4(A)	54.4	31.2-97.2	187	
	AM5(5)	43.4	20.9-60.5	156	
Contract No. KL/2014/01:					
NA (No air quality monitoring is required for the Project)					
Contract No. KL/2014/03:					
1-hr TSP	KTD1a	No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted.			
	KTD2a				
	KER1a				
24-hr TSP	KTD1a	80	34-122	177	260
	KTD2a	35	16-56	157	
	KER1a	65	9-116	172	

- 2.1.4 No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- 2.1.5 No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- 2.1.6 The monitoring data of 24-hr TSP was compared with the EIA predictions are presented in the appendices of the corresponding Monthly EM&A.

2.1.7 The Event and Action Plan for air quality is given in in the appendices of the corresponding Monthly EM&A.

Noise

2.1.8 The schedule of noise monitoring in reporting month is provided in in the appendices of the corresponding Monthly EM&A.

2.1.9 The noise monitoring data are summarized in **Table 2.2**. Detailed monitoring data are presented in the appendices of the corresponding Monthly EM&A.

Table 2.2 Summary of Noise Impact Monitoring Results

Monitoring Stations	Construction Noise Level Leq _(30min) dB(A) (Range)	Action Level	Limit Level dB (A)	
Contract No. KL/2012/02:				
M3	60.6-75.8 [#]	When one documented complaint is received	70*	
M4	69.1-74.6 [#]		70*	
M9	54.5-60.8		75	
Contract No. KL/2012/03:				
M6(A)	61.0-64.6		70*	
M7	65.7-68.7		70*	
M8	56.5-69.2		70*	
M9	54.5-60.8		75	
Contract No. KL/2014/01:				
NA (No Construction noise monitoring is required for the Project.)				NA
Contract No. KL/2014/03:				
KTD1a	67-72		75	
KTD2a	61-69		75	
KER1a	64-70		75	

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

([#]) Measured noise level ≤ background / baseline noise level, detailed data refer to the corresponding Monthly EM&A report.

2.1.10 The noise monitoring data was compared with the EIA predictions are presented in the appendices of the corresponding Monthly EM&A.

2.1.11 No Action / Limit Level exceedance was recorded for noise monitoring in the reporting month.

2.1.12 The Event and Action Plan for noise is given in in the appendices of the corresponding Monthly EM&A.

Landscape and Visual

2.1.13 Site audits were carried out on a weekly basis to monitor and audit the landscape and visual mitigation measures within the site boundaries of this Project. Detailed of observations are presented in the appendices of the corresponding Monthly EM&A.

3. SITE INSPECTION

3.1 Site Inspection

3.1.1 Site inspections were carried out weekly to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. The site inspection of each Contract are summarized as follow:

Contract No. KL/2012/02:

Site audits were conducted on 2nd, 9th, 16th, 22nd and 30th November 2016 in the reporting month. IEC site inspection was conducted on 22nd November 2016.

Contract No. KL/2012/03:

Site audits were conducted on 4th, 11th, 16th and 25th November 2016 in the reporting month. IEC site inspection was conducted on 16th November 2016.

Contract No. KL/2014/01:

Site audits were conducted by representatives of the Contractor, Supervising Officer and ET on 2, 9, 16, 23 and 30 November 2016 in the reporting month. IEC joint site inspection was conducted on 30 November 2016.

Contract No. KL/2014/03:

In the reporting month, four site inspections were carried out on 3, 10, 16 and 24 November 2016. Two of them, held on 3 and 16 November 2016 were the joint inspections with the IEC, ER, the Contractor and the ET.

3.1.2 Detailed of observation, recommendation of site inspections and summary of the mitigation measures implementation schedule is provided in the appendices of the corresponding Monthly EM&A.

4. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

4.1 Complaints, Notification of Summons and Prosecution

4.1.1 The summary of complaints, notification of summons and prosecution in the reporting month is shown as **Table 4.1**. Detailed records are presented in the appendices of the corresponding Monthly EM&A.

Table 4.1 Summary of Complaints, Notification of Summons and Prosecution

Event	No. of Event This Month	Remark
Contract No. KL/2012/02:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. KL/2012/03:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. KL/2014/01:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. KL/2014/03:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA

4.1.2 No complaint, notification of summons or prosecution was received in this reporting month.

5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

5.1 Implementation Status

5.1.1 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 are presented in the appendices of the corresponding Monthly EM&A.

5.2 Waste Management

5.2.1 The amount of wastes generated of this Project during the reporting month is shown in the appendices of the corresponding Monthly EM&A.

6. FUTURE KEY ISSUES

6.1 Construction Programme for the Next Two Months

6.1.1 The major site activities undertaken for the coming two months are summarized in follow:

Contract No. KL/2012/02:

- Site Clearance for all possessed portion;
- Condition survey and monitoring survey;
- Road and drainage works at Sze Mei Street;
- RC works for VT1 at CH260 to Ch300;
- RC works for VT1 at CH 380 to CH500;
- PERE Stage 5A works;
- Excavation for VT1 at Portion G, C and B6;
- RC for SW2 and SW3;
- RC works for VT1 at Portion G; and
- RC works for VT1 at Ch300 to Ch350

Contract No. KL/2012/03:

- Daily Cleaning;
- Installation of hand-railing & ladder inside Box Culvert B5;
- Construction of staircase and landing and E&M Works at PS2;
- Water test, backfill and sheet-pile removal in Heading 7A;
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;
- Outfall construction at Box Culvert B6;
- Road widening works (excavation and UU works) at Sung Wong Toi Road;
- Maintenance & Servicing Engineer' s Office at Portion 9;
- Lay HDPE pipe at Pit 1 and 9;
- Pipe jacking at Pit 4;
- Chamber construction at Pit 5;
- Installation of drainage, UU laying works and Road works at Road D2;
- Finishing works and E&M works at NPS;
- UU works and Road works at Road L19 & Bailey St; and
- Storage of excavated material at Portion 6.

Contract No. KL/2014/01:

- Watermain works;
- Ground investigation work;
- Construction of boundary wall at EPD recycling centre;
- Bored piles and Pre-bored socketed H-piles;
- TTA implementation at Shing Fung Road and Wang Chiu Road/ Sheung Yee Road;
- Open excavation for box culvert, pile caps and underpass; and
- ELS installation for box culvert.

Contract No. KL/2014/03:

- Temporary utility diversion;
- Implementation of Temporary Traffic Arrangement (TTA);
- Construction of Socket H piles;
- Setting up temporary barging point;
- Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS);
- Construction of Subway B;
- Construction of guide walls and D-walls;

- Construction of District Cooling System Works; and
- Demolition of Pump House

6.2 Key Issues for the Coming Month

6.2.1 The potential environmental impacts arising from the above construction activities and the control measures are shown in **Table 6.1**:

Table 6.1 Summary of Key Issues for the Coming Month and Control Measures

Major Impact Prediction	Control Measures
Contract No. KL/2012/02:	
Air quality impact (dust)	<ul style="list-style-type: none"> • Frequent watering of haul road and unpaved/exposed areas; • Frequent watering or covering stockpiles with tarpaulin or similar means; and • Watering of any earth moving activities.
Water quality impact (surface run-off)	<ul style="list-style-type: none"> • Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; • Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; • Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and • Provision of measures to prevent discharge into the stream.
Noise Impact	<ul style="list-style-type: none"> • Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; • Controlling the number of plants use on site; • Regular maintenance of machines; and • Use of acoustic barriers if necessary.
Contract No. KL/2012/03:	
Air quality impact (dust)	<ul style="list-style-type: none"> • Frequent watering of haul road and unpaved/exposed areas; • Frequent watering or covering stockpiles with tarpaulin or similar means; and • Watering of any earth moving activities.
Water quality impact (surface run-off)	<ul style="list-style-type: none"> • Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; • Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; • Provision of site boundary bund such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and • Provision of measures to prevent discharge into the stream.
Noise Impact	<ul style="list-style-type: none"> • Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; • Controlling the number of plants use on site; • Regular maintenance of machines; and • Use of acoustic barriers if necessary.
Contract No. KL/2014/01:	
Air quality impact (dust)	<ul style="list-style-type: none"> • Frequent watering of haul road and unpaved/exposed areas; • Frequent watering or covering stockpiles with tarpaulin or similar means; and • Watering of any earth moving activities.
Water quality impact (surface run-off)	<ul style="list-style-type: none"> • Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; • Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; • Provision of perimeter protection such as sealing of hoarding footings to avoid

Major Impact Prediction	Control Measures
	run-off from entering the existing storm water drainage system via public road; and <ul style="list-style-type: none"> • Provision of measures to prevent discharge into the stream.
Noise Impact	<ul style="list-style-type: none"> • Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; • Controlling the number of plants use on site; • Regular maintenance of machines; and • Use of acoustic barriers if necessary.
Contract No. KL/2014/03:	
Construction dust, construction noise, water quality, waste management and landscape and visual impact.	<ul style="list-style-type: none"> • 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

6.3 Monitoring Schedules for the Next Three Months

6.3.1 The tentative schedules for environmental monitoring in the coming three months are provided in in the appendices of the corresponding Monthly EM&A.

7. CONCLUSIONS

- 7.1.1 No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- 7.1.2 No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- 7.1.3 No Action / Limit Level exceedance was recorded for noise monitoring in the reporting month.
- 7.1.4 No complaint, notification of summons or prosecution was received in this reporting month.
- 7.1.5 The potential environmental impacts arising from the coming two months of major construction activities and the control measures are shown in **Table 6.1**

MATERIALAB CONSULTANTS LIMITED

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Materialab

Appendix A

**Monthly EM&A Report
For**

Contract No. KL/2012/02

Stage 3A infrastructure works at north apron area of Kai Tak Airport

Civil Engineering and Development Department

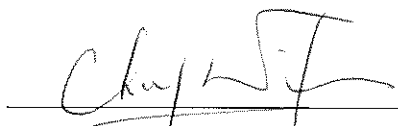
**EP-337/2009 – New Distributor Roads Serving the
Planned KTD**

**Contract No. KL/2012/02
Kai Tak Development –Stage 3A Infrastructure at
Former North Apron Area**

Monthly EM&A Report

November 2016

(version 1.0)

Approved By 
(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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Ove Arup & Partners Hong Kong Limited
L5 Festival Walk
80 Tat Chee Avenue
Kowloon Tong
Hong Kong

Your reference:

Our reference: HKCEDD04/50/103949

Date: 13 December 2016

Attention: Mr Gary Cheung / Mr Chris Lee

BY POST

Dear Sirs

Contract No.: KLN/2013/01
Independent Environmental Checker for "Contract No. KL/2012/02
Kai Tak Development – Stage 3A Infrastructure at Former North Apron Area"
Verification of Monthly EM&A Report for November 2016

We refer to emails of 6 and 12 December 2016 attaching a Monthly EM&A Report for November 2016 prepared by the ET.

We have no comment and hereby verify the Report in accordance with Clause 3.3 of the Environmental Permit no. EP-337/2009.

Please do not hesitate to contact the undersigned or our Mr Adi Lee on 2618 2836 should you have any queries.

Yours faithfully
ANEWR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/FCCA/esym

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EXECUTIVE SUMMARY

Introduction

1. This is the 38th Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for “Contract No. KL/2012/02 - Kai Tak Development – Stage 3A Infrastructure at Former North Apron Area” (Hereafter referred to as “the Project”). This contract comprises one Schedule 2 designated project (DP), namely the new distributor road D1 serving the planned KTD. The DP is part of the designated project under Environmental Permit (EP) No.: EP-337/2009 (“New distributor roads serving the planned Kai Tak Development”) respectively. This report documents the findings of EM&A Works conducted from 1 – 30 November 2016.
2. With reference to the same principle of EIA report of the Project, air quality monitoring stations within 500m and noise monitoring stations within 300m from the boundary of this Project are considered as relevant monitoring locations. In such regard, the relevant air quality and noise monitoring locations are tabulated in Table I (see Figure 2 and 3 for their locations).

Table I – Air Quality and Noise Monitoring Stations for this Project

Locations	Monitoring Stations In accordance with EM&A Manual	Alternative Monitoring Stations
Air Quality Monitoring Stations		
AM1 - Rhythm Garden	No	AM1(B) - Contractor Site Office (KL/2012/02)
AM2 - Lee Kau Yan Memorial School	Yes	N/A
AM6 – Site 1B4 (Planned)		N/A
Noise Monitoring Stations		
M3 - Cognitio College	Yes	N/A
M4 - Lee Kau Yan Memorial School	Yes	N/A
M9 – Tak Long Estate	Yes	N/A
M10 – Site 1B4 (Planned)		N/A

3. According to the Environmental Monitoring and Audit Manual (EM&A Manual) of the Kai Tak Development (KTD) Schedule 3 Environmental Impact Assessment (EIA) Report, the impact monitoring at the designated monitoring stations as required in KTD EM&A Manual under the EP, have been conducted in Contract No. KLN/2013/16 – Environmental Monitoring Works for Kai Tak Development under Schedule 3 of KTD, which is on-going starting from December 2010. The impact monitoring data under Contract No. KLN/2013/16 will be adopted for the Project. Therefore, this report presents the air quality and noise monitoring works extracted from Contract No. KLN/2013/16.

4. The major site activities undertaken in the reporting month included:
- Site Clearance;
 - RC works for VT1 at Portion G;
 - Drainage works for connection to box culvert (KTOB);
 - RC works for VT1 at CH260 to Ch300;
 - Cross road duct at Choi Hung Road;
 - Road and drainage works at Sze Mei Street and Luk Hop Street;
 - Condition survey and monitoring survey;
 - RC works for VT1 at CH 335 to CH380;
 - Footpath construction at Sam Chuk Street and Tsat Po Street; and
 - ELS works for SW3 at San Po Kong.

Environmental Monitoring Works

5. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
6. Summary of the non-compliance in the reporting month for the Project is tabulated in Table II.

Table II Non-compliance Recorded for the Project in the Reporting Month

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

1-hour & 24-hour TSP Monitoring

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

Construction Noise Monitoring

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

Environmental Licenses and Permits

9. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, EP-337/2009 issued on 23 April 2009.
10. Registration of Chemical Waste Producer (License: 5213-286-K3022-04).
11. Water Discharge License (License No.: WT00016873-2013 and WT00016723-2013).
12. Construction Noise Permit (License No.: GW-RE0646-16, GW-RE0648-16, GW-RE1002-16, GW-RE1033-16, GW-RE1041-16 & GW-RE1054-16).

Key Information in the Reporting Month

13. Summary of key information in the reporting month is tabulated in Table III.

Table III Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Reporting Changes	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Future Key Issues

14. The future key environmental issues in the coming month include:

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

1. INTRODUCTION

Background

- 1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 3A Infrastructure at Former North Apron Area is one of the construction stages of KTD. It contains one Schedule 2 DP including new distributor roads serving the planned KTD. The general layout of the Project is shown in **Figure 1**.
- 1.2 One Environmental Permit (EP) No. EP-337/2009 was also issued on 23 April 2009 for new distributor roads serving the planned KTD to Civil Engineering and Development Department as the Permit Holder.
- 1.3 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. An EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 April 2009.
- 1.4 Cinotech Consultants Limited (Cinotech) was commissioned by Build King Construction Ltd. (the Contractor) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2012/02 – Stage 3A Infrastructure at Former North Apron Area. The construction work under KL/2012/02 comprises the construction of part of the Road D1 under the EP (EP-337/2009).
- 1.5 Cinotech Consultants Limited was commissioned by Build King Construction Ltd. To undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The construction commencement of this Contract was on 24th October 2013 for Road D1. This is the 38th Monthly EM&A report summarizing the EM&A works for the Project from 1 – 30 November 2016.

Project Organizations

- 1.6 Different parties with different levels of involvement in the project organization include:
 - Project Proponent – Civil Engineering and Development Department (CEDD).
 - The Engineer and the Engineer's Representative (ER) – Ove Arup & Partners (ARUP).
 - Environmental Team (ET) – Cinotech Consultants Limited (CCL).
 - Independent Environmental Checker (IEC) – AnewR Consulting Limited (AnewR).
 - Contractor – Build King Construction Ltd. (Build King).

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

Table 1.1 Key Project Contacts

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. Mike Cho / Mr. Kelvin Chow	Engineer	3579 2450 / 3579 2453	2369 4980
ARUP	Engineer's Representative	Mr. Gary Cheung	SRE	2210 6100	2210 6110
		Ms. Edith Fung	RE		
Cinotech	Environmental Team	Dr. Priscilla Choy	Environmental Team Leader	2151 2089	3107 1388
		Ms. Ivy Tam	Project Coordinator and Audit Team Leader	2151 2090	
AnewR	Independent Environmental Checker	Mr. Adi Lee	Independent Environmental Checker	2618 2836	3007 8648
Build King	Contractor	Mr. Osbert Sit	Project Manager		
		Mr. Edmond Wong	Environmental Officer	2639 6290	2639 6208

Construction Activities undertaken during the Reporting Month

1.8 The site activities undertaken in the reporting month included:

- Site Clearance;
- RC works for VT1 at Portion G;
- Drainage works for connection to box culvert (KTOB);
- RC works for VT1 at CH260 to Ch300;
- Cross road duct at Choi Hung Road;
- Road and drainage works at Sze Mei Street and Luk Hop Street;
- Condition survey and monitoring survey;
- RC works for VT1 at CH 335 to CH380;
- Footpath construction at Sam Chuk Street and Tsat Po Street; and
- ELS works for SW3 at San Po Kong.

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

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

Construction Works	Major Environmental Impact	Control Measures
As mentioned in Section 1.8	Noise, dust impact, water quality and waste generation	Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; On-site waste sorting and implementation of trip ticket system Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Use of quiet plant and well-maintained construction plant;

		Provide movable noise barrier; Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.
--	--	---

Summary of EM&A Requirements

- 1.10 The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 1.12 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely air quality and noise levels and audit works for the Project from 1 – 30 November 2016.

2. AIR QUALITY

Monitoring Requirements

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

Monitoring Locations

- 2.2 Three designated monitoring stations were selected for air quality monitoring programme. Impact dust monitoring was conducted at two air quality monitoring stations, Contractor Site Office (KL/2012/02) AM1(B), Lee Kau Yan Memorial School (AM2) in the reporting month. Table 2.1 describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Stations	Locations	Location of Measurement
AM1(B)	Contractor Site Office (KL/2012/02)	Ground Floor Area
AM2	Lee Kau Yan Memorial School	Rooftop (about 8/F) Area
#AM6	PA 15	Site 1B4 (Planned)

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

Monitoring Equipment

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

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Calibrator	TISCH TE-5025A	1
1-hour TSP Dust Meter	Laser Dust Monitor – Model LD-3, LD-3B, AEROCET-531	5
HVS Sampler	GMWS 2310 c/w of TSP sampling inlet	2
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	1

Monitoring Parameters, Frequency and Duration

- 2.4 Table 2.3 summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting

month is shown in **Appendix D**.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedure

1-hour TSP Monitoring

(Equipment: Sibata; Model no. LD-3, LD-3B)

Measuring Procedures

2.5 The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follows:

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

Maintenance/Calibration

2.6 The following maintenance/calibration was required for the direct dust meters:

Check the meter at a 3-month interval and calibrate the meter at a 1-year interval throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

2.7 High volume (HVS) samplers (Model GMWS-2310 Accu-Vol) completed with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in section 2.5 of the updated EM&A Manual.

Operating/Analytical Procedures

2.8 Operating/analytical procedures for the operation of HVS were as follows:

- A horizontal platform was provided with appropriate support to secure the samplers

- against gusty wind.
- No two samplers were placed less than 2 meters apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
 - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
 - No furnaces or incineration flues were nearby.
 - Airflow around the sampler was unrestricted.
 - The sampler was more than 20 meters from the drip line.
 - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
- 2.9 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 2.10 For TSP sampling, fiberglass filters have a collection efficiency of > 99% for particles of 0.3µm diameter were used.
- 2.11 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.12 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 2.13 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 2.14 The shelter lid was closed and secured with the aluminum strip.
- 2.15 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.16 After sampling, the filter was removed and sent to the HOKLAS laboratory (Wellab Ltd.) for weighing. The elapsed time was also recorded.
- 2.17 Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

2.18 The following maintenance/calibration was required for the HVS:

- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers were calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

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

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

2.21 The air temperature, precipitation and the relative humidity data was obtained from Hong Kong Observatory where the wind speed and wind direction were recorded by the installed Wind Anemometer set at rooftop (about 8/F) Lee Kau Yan Memorial School. The location is shown in **Figure 4**. This weather information for the reporting month is summarized in **Appendix C**.

2.22 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F** respectively.

2.23 The summary of exceedance record in reporting month is shown in **Appendix H**. No exceedance was recorded for the air quality monitoring.

2.24 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Station	Major Dust Source
AM1(B) – Contractor Site Office (KL/2012/02)	Road Traffic Dust Exposed site area and open stockpiles Site vehicle movement
AM2 – Lee Kau Yan Memorial School	Road Traffic Dust Exposed site area and open stockpiles Excavation works Site vehicle movement

2.25 Table 2.4 shows the summary of air quality monitoring results during the reporting month.

Table 2.4 Summary Table of Air Quality Monitoring Results during the reporting month

Parameter	Date	Concentration (µg/m ³)	Action Level, µg/m ³	Limit Level, µg/m ³
AM1(B) – Contractor Site Office (KL/2012/02)				
1-hr TSP	4-Nov-16	140.1	342	500
	4-Nov-16	137.2		
	4-Nov-16	143.4		
	9-Nov-16	138.9		
	9-Nov-16	139.5		
	9-Nov-16	140.8		
	15-Nov-16	188.9		
	15-Nov-16	192.1		
	15-Nov-16	193.3		
	21-Nov-16	135.7		
	21-Nov-16	139.8		
	21-Nov-16	137.7		
	25-Nov-16	62.4		
	25-Nov-16	61.6		
25-Nov-16	60.8			
24-hr TSP	3-Nov-16	57.4	159	260
	8-Nov-16	75.2		
	14-Nov-16	104.9		
	18-Nov-16	76.7		
	24-Nov-16	37.5		
	30-Nov-16	80.2		
AM2 – Lee Kau Yan Memorial School				
1-hr TSP	4-Nov-16	145.6	346	500
	4-Nov-16	143.6		
	4-Nov-16	146.0		
	9-Nov-16	133.8		
	9-Nov-16	134.5		
	9-Nov-16	137.1		
	15-Nov-16	140.1		
	15-Nov-16	140.7		
	15-Nov-16	144.1		
	21-Nov-16	115.5		
	21-Nov-16	115.6		
	21-Nov-16	120.1		
	25-Nov-16	71.3		
	25-Nov-16	69.3		
25-Nov-16	72.3			
24-hr TSP	3-Nov-16	55.3	157	260
	8-Nov-16	67.6		
	14-Nov-16	103.7		
	18-Nov-16	80.5		
	24-Nov-16	30.5		
	30-Nov-16	82.5		

3. NOISE

Monitoring Requirements

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

Monitoring Locations

- 3.2 Four designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at three designated monitoring stations (M3, M4, M9). **Figure 3** shows the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
M3	Cognitio College	Rooftop (about 6/F) Area
M4	Lee Kau Yan Memorial School	Rooftop (about 7/F) Area
M9	Tak Long Estate	Car Park Building (about 2/F)
#M10	Site 1B4 (Planned)	-

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

Monitoring Equipment

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

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	BSWA 801, SVAN 955 & 957	6
Calibrator	SVAN 30A, B&K4231	4

Monitoring Parameters, Frequency and Duration

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

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency	Measurement
M3 M4 M9	L ₁₀ (30 min.) dB(A) L ₉₀ (30 min.) dB(A) L _{eq} (30 min.) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade

Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - time measurement : 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L_{eq} , L_{90} and L_{10} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused temporarily during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

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

Results and Observations

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

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

Monitoring Stations	Locations	Major Noise Source
M3	Cognitio College	Traffic Noise Daily school activities
M4	Lee Kau Yan Memorial School	Traffic Noise Site vehicle movement Excavation works Piling works Daily school activities
M9	Tak Long Estate	Traffic Noise Construction works

Table 3.4 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Station	Baseline Noise Level, dB (A)	Noise Limit Level, dB (A)
M3	76.3/78.6 ⁽¹⁾ (at 0700 – 1900 hrs on normal weekdays) /	70* (at 0700 – 1900 hrs on normal weekdays)
M4	76.7 (at 0700 – 1900 hrs on normal weekdays)	
M9	59.9 (at 0700 – 1900 hrs on normal weekdays)	75 (at 0700 – 1900 hrs on normal weekdays)

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

Note (1): The baseline noise review report submitted under KLN/2013/16 for M3 was approved by EPD on 23rd August 2013. (Baseline Level was found to be 78.6 dB(A) at Rooftop of Cognitio College)

Table 3.5 Summary Table of Noise Monitoring Results during the Reporting Month

Date	Measured Noise Level, Leq(30min) dB (A)	Baseline Level dB (A)	Construction Noise Level ⁽¹⁾ : Leq(30min) dB (A)
M3 – Cognitio College			
--	--	Background Noise ⁽²⁾	--
9-Nov-16	75.8	75.9	75.8 Measured ≤ Background
15-Nov-16	77.2	76.9	65.4
21-Nov-16	77.0	76.9	60.6
M4 – Lee Kau Yan Memorial School			
9-Nov-16	77.4	76.7	69.1
15-Nov-16	74.6		74.6 Measured ≤ Baseline
21-Nov-16	74.3		74.3 Measured ≤ Baseline
M9 – Tak Long Estate			
1-Nov-16	61.0	59.9	54.5
7-Nov-16	61.4		56.1
17-Nov-16	63.4		60.8
23-Nov-16	63.3		60.6
29-Nov-16	62.4		58.8

Note (1) The noise level due to the construction work (CNL) was calculated by the following formula:

$$CNL = 10 \log (10^{MNL/10} - 10^{BNL/10})$$

Remarks: MNL = Measured Noise Level BNL = Baseline Noise Level

(2): The background Noise Level was recorded during the Lunch Hour of Construction Site (i.e. 12:00-13:00) and to be used as the referencing value for compliance checking for Noise Action and Limit Level.

4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

4.1 The EM&A data was compared with the EIA predictions as summarized in Tables 4.1 to 4.3.

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

Station	Predicted 1-hr TSP conc.		
	Scenario1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$	Scenario2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	Reporting Month (Nov 16), $\mu\text{g}/\text{m}^3$
AM1(B) – Contractor Site Office of KL/2012/02	192	298	134.1
AM 2 – Lee Kau Yan Memorial School	290	312	122.0

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

Station	Predicted 24-hr TSP conc.		
	Scenario1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$	Scenario2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	Reporting Month (Nov 16), $\mu\text{g}/\text{m}^3$
AM1(B) – Contractor Site Office of KL/2012/02	121	156	72.0
AM2 – Lee Kau Yan Memorial School	145	169	70.0

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Stations	Predicted Mitigated Construction Noise Levels during Normal Working Hour ($L_{eq(30min)}$ dB(A))	Reporting Month (Nov 16), $L_{eq(30min)}$ dB(A)
M3 – Cognito College	47 – 75	60.6 – 75.8 ⁽¹⁾
M4 – Lee Kau Yan Memorial School	47 – 74	69.1 – 74.6 ⁽²⁾
M9 – Tak Long Estate	Not Predicted in EIA Report	54.5 – 60.8

Remark:

(1) Since the background noise level recorded during 12:00 to 13:00 was higher than those recorded during the construction period, the recorded noise levels were considered non-valid exceedance of Noise Limit Level.

(2) Since the baseline noise level was higher than those recorded during the construction period, the recorded noise levels were considered non-valid exceedance of Noise Limit Level.

4.2 The 1-hour TSP concentrations in the reporting month were below to the prediction in the approved Environmental Impact Assessment (EIA) Report.

4.3 The 24-hour TSP concentrations in the reporting month were below to the prediction in the approved Environmental Impact Assessment (EIA) Report.

- 4.4 Mitigated construction noise levels at M9 were not predicted in EIA Report. The noise monitoring results in the reporting month at M3 & M4 were not within the range of predicted mitigated construction noise levels in the EIA report. For M3, please refer to remark in Table 4.3. The noise data at M4 exceeds the prediction of mitigated scenario in EIA report but did not exceed the baseline level.

5. LANDSCAPE AND VISUAL

Monitoring Requirements

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

Results and Observations

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

6. ENVIRONMENTAL AUDIT

Site Audits

- 6.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix I**.
- 6.2 Site audits were conducted on 2nd, 9th, 16th, 22nd and 30th November 2016 in the reporting month. IEC site inspection was conducted on 22nd November 2016. No non-compliance was observed during the site audits.

Review of Environmental Monitoring Procedures

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

Air Quality Monitoring

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

Noise Monitoring

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

Status of Environmental Licensing and Permitting

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

Table 6.1 Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-337/2009	23/04/09	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
Effluent Discharge License				
WT00016873-2013	-	31/08/18	Wastewater from the construction site including contaminated surface run-off	Valid
WT00016723-2013	-	31/08/18		Valid
Registration of Chemical Waste Producer				
5213-286-K3022-04	-	N/A	Chemical Waste Types: Spent lubricating oil, Soil contaminated with lubricating oil, Spent battery containing heavy metals, Surplus paint, Spent solvent, Spent alkali and acid	Valid
Construction Noise Permit (CNP)				
GW-RE0646-16	14/09/16	13/03/17	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work other than percussive piling and performing prescribed construction work.	Valid
GW-RE0648-16	25/07/16	24/01/17		Valid
GW-RE1002-16	15/10/16	11/12/16		Valid
GW-RE1033-16	23/10/16	11/12/16		Valid
GW-RE1041-16	27/10/16	23/04/17		Valid
GW-RE1054-16	28/10/16	23/04/17		Valid

Status of Waste Management

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

Implementation Status of Environmental Mitigation Measures

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

Table 6.2 Observations and Recommendations of Site Inspections

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	--	--	--
<i>Air Quality</i>	25 October 2016	<u>Reminder:</u> The dusty material should be covered by impervious material to prevent the dust emission near CLP.	Rectification/improvement was observed during the follow-up audit session.
	25 October 2016	<u>Reminder:</u> Spraying water should be provided regularly to prevent the dust emission especially the exposed surface area in the site area near CLP.	This item was remarked on 2 November 2016.
	2 November 2016	<u>Reminder:</u> The dusty material should be covered by impervious material to prevent the dust emission near VT1's access and Tsat Po Street.	Rectification/improvement was observed during the follow-up audit session.
	2 November 2016	<u>Reminder:</u> Spraying water should be provided regularly to prevent the dust emission especially the exposed surface area in the site area near CLP.	This item was remarked on 7 November 2016.
	7 November 2016	<u>Reminder:</u> Spraying water should be provided regularly to prevent the dust emission especially the exposed surface area in the site area near CLP.	Rectification/improvement was observed during the follow-up audit session.
	30 November 2016	<u>Reminder:</u> The dusty material on the access road near T.I. Tower should be cleared.	Follow-up action will be reported in the next report month.
<i>Noise</i>	--	--	--
<i>Waste/ Chemical Management</i>	22 November 2016	<u>Observation:</u> Waste was observed accumulated near King Fuk Street. Waste sorting area should be provided for the waste stored near King Fuk Street prior disposal.	This item was remarked on 30 November 2016.
	22 November 2016	<u>Reminder:</u> General refuse at VT1 & SW3 should be properly disposed of to prevent accumulation.	This item was remarked on 30 November 2016.
	30 November 2016	<u>Reminder:</u> Waste sorting area should be provided for the waste stored near King Fuk Street prior disposal.	Follow-up action will be reported in the next report month.
	30 November 2016	<u>Reminder:</u> General refuse at SW3 should be properly disposed of to prevent accumulation.	Follow-up action will be reported in the next report month.
<i>Landscape and Visual</i>	16 November 2016	<u>Reminder:</u> The damaged fencing for tree protection zone at SW3 should be repaired.	Rectification/improvement was observed during the follow-up audit session.
<i>Permits/ Licenses</i>	--	--	--

Summary of Mitigation Measures Implemented

6.8 The monthly IEC audit was carried out on 22nd November 2016, the observations were recorded and they are presented as follows:

Observations:

- Wheel-washing facilities were not always provided in site entrance. Wheel-washing was not provided to all vehicles. It was recommended to provide wheel washing facilities at all site entrances and wheel-washing for all vehicles leaving the site.
- Not all stockpiles were properly covered by impervious materials. It was recommended to cover the stockpiles at the site near CLP station, or back-fill as soon as possible.
- General refuse and C&D waste were found in SW3. It was recommended to provide more refuse collection facilities/ bins to collect/ sort waste. C&D waste should be disposed of as soon as possible.

Reminder:

- Stagnant water was found in sites. It was recommended to remove general refuse to avoid accumulation of water.

Follow up of last observation:

- Most of stockpiles were covered during the site inspection. However, some stockpiles still required follow-up actions proximity to CLP station.
- Exposed lands were no longer dry and no dusty materials were emitted during the site visit.

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

Implementation Status of Event Action Plans

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

1-hr TSP Monitoring

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

24-hr TSP Monitoring

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

Construction Noise

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

Landscape and visual

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

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

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

7. FUTURE KEY ISSUES

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

- Site Clearance for all possessed portion;
- Condition survey and monitoring survey;
- Road and drainage works at Sze Mei Street;
- RC works for VT1 at CH260 to Ch300;
- RC works for VT1 at CH 380 to CH500;
- PERE Stage 5A works;
- Excavation for VT1 at Portion G, C and B6;
- RC for SW2 and SW3;
- RC works for VT1 at Portion G; and
- RC works for VT1 at Ch300 to Ch350

Key Issues for the Coming Month

7.2 Key environmental issues in the coming month include:

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

7.3 The tentative program of major site activities and the impact prediction and control measures for the coming two months, i.e. December 2016 and January 2017 are summarized as follows:

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

Monitoring Schedule for the Next Month

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

8. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

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

1-hr TSP Monitoring

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

24-hr TSP Monitoring

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

Construction Noise Monitoring

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

Landscape and visual

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

Complaint and Prosecution

- 8.6 No environmental complaints and environmental prosecution were received in the reporting month.
- 8.7 No environmental prosecution was received in the reporting month.

Recommendations

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

Air quality

- To provide water spraying on the exposed surface area regularly for dust suppression; and
- To properly maintain the haul road and access road with free from dusty trail/material.

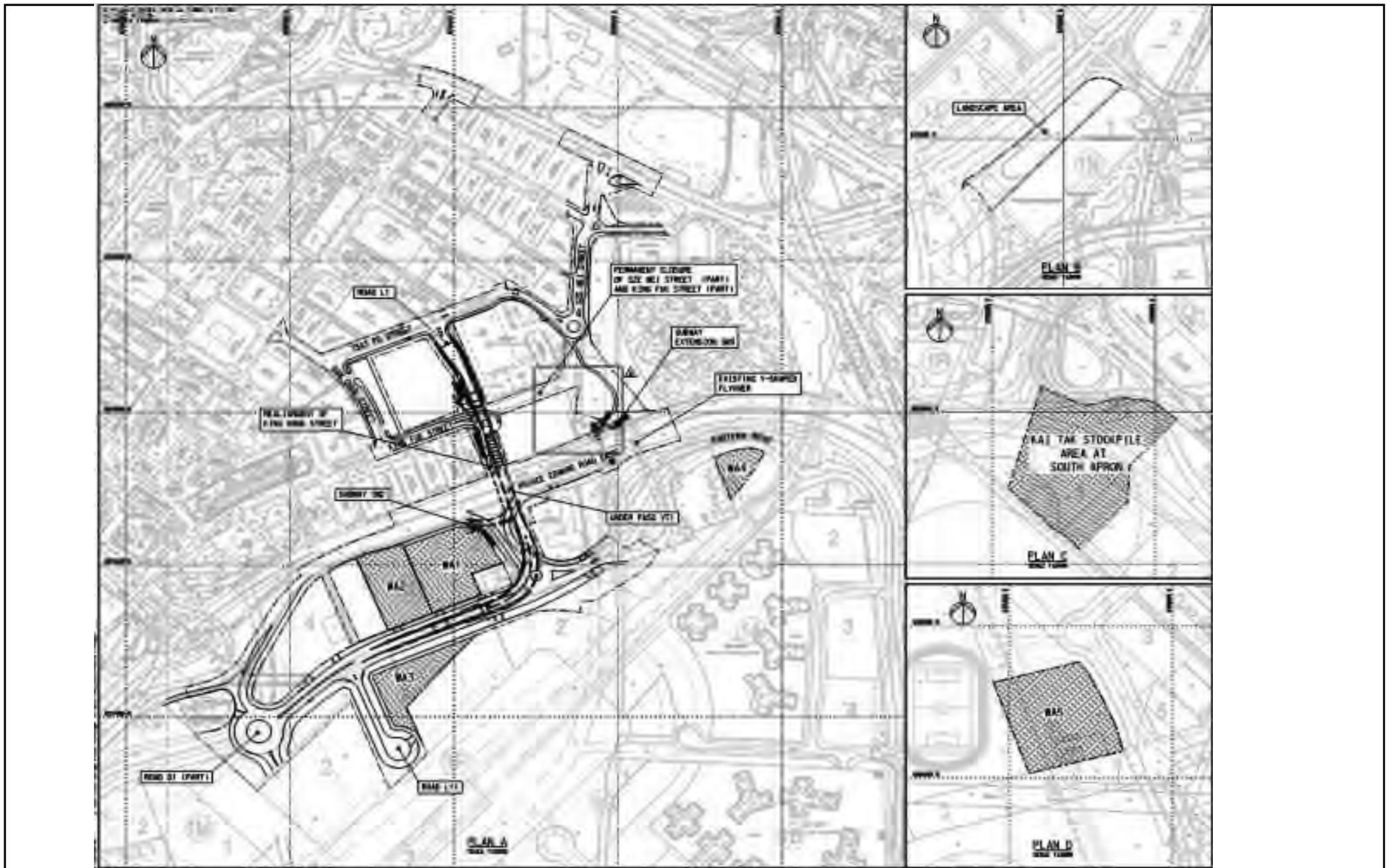
Waste / Chemical Management

- To provide waste sorting area for stored within the site prior disposal; and
- To dispose the waste regularly to prevent accumulation.

Landscape and Visual

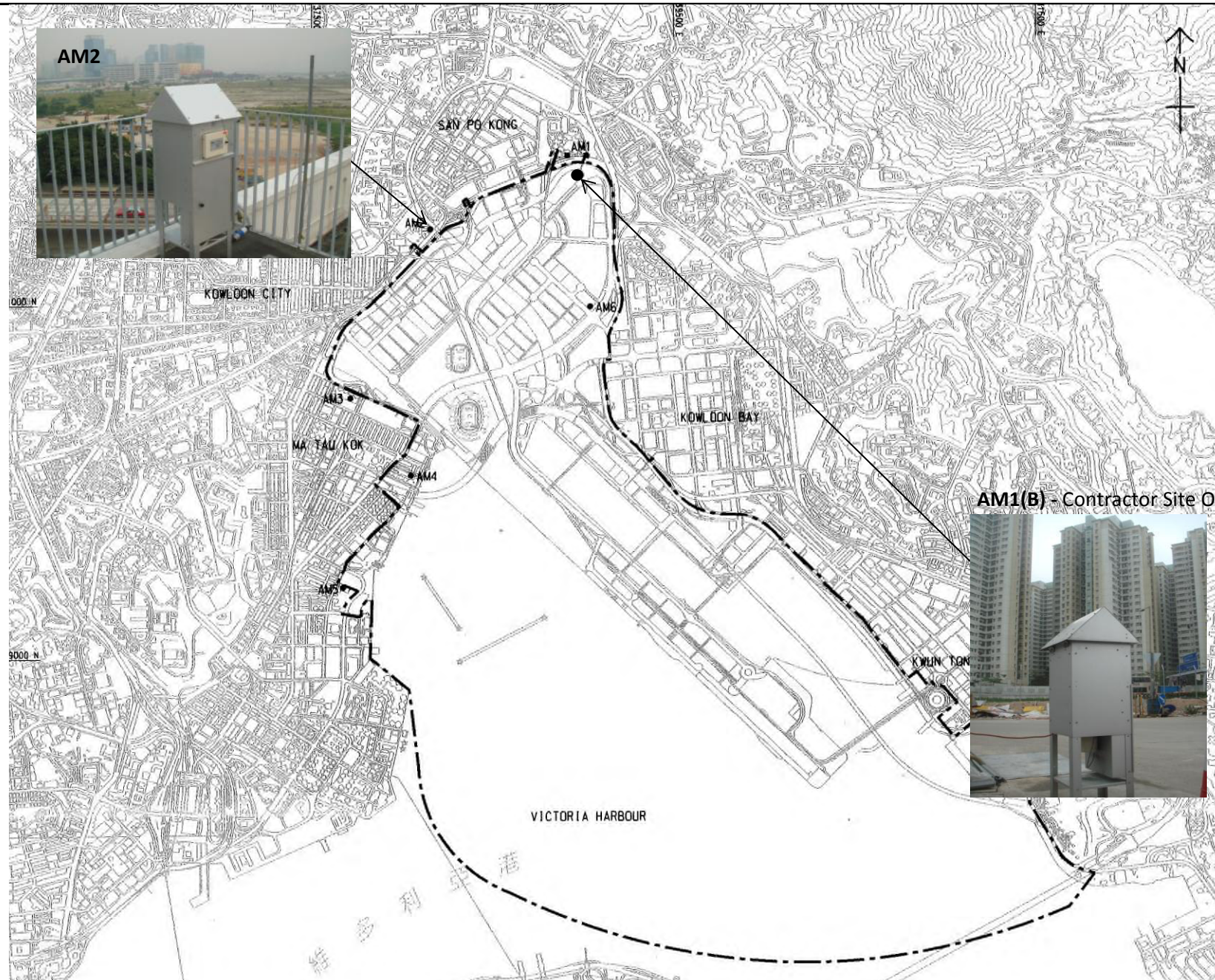
- To properly maintain the fencing of tree protection zone to avoid damage to the retained tree.

FIGURES



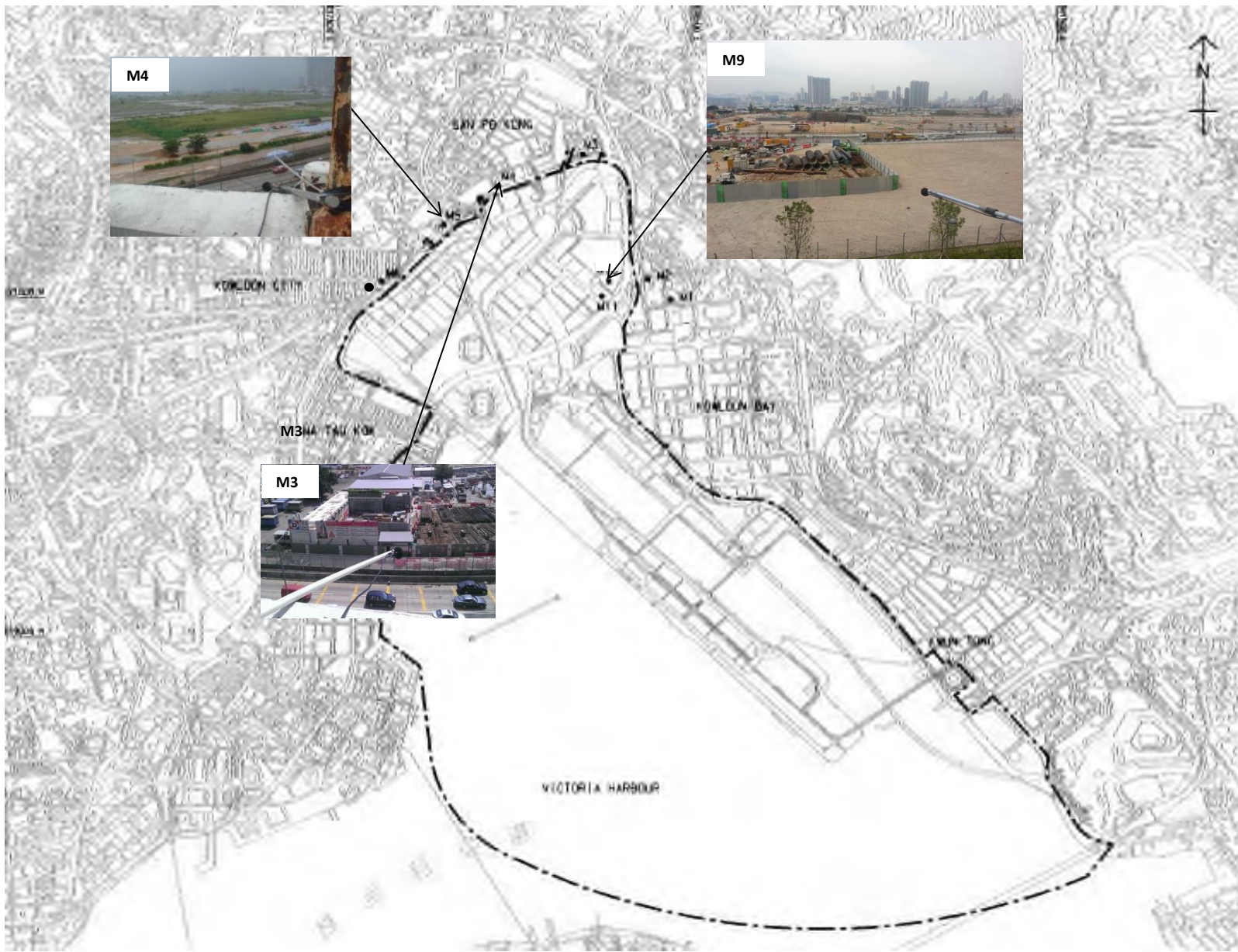
Title	Contract No. KL/2012/02		Scale	Project
	Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area		N.T.S	No. MA13043
Site Layout Plan			Date	Figure
			Aug-13	1



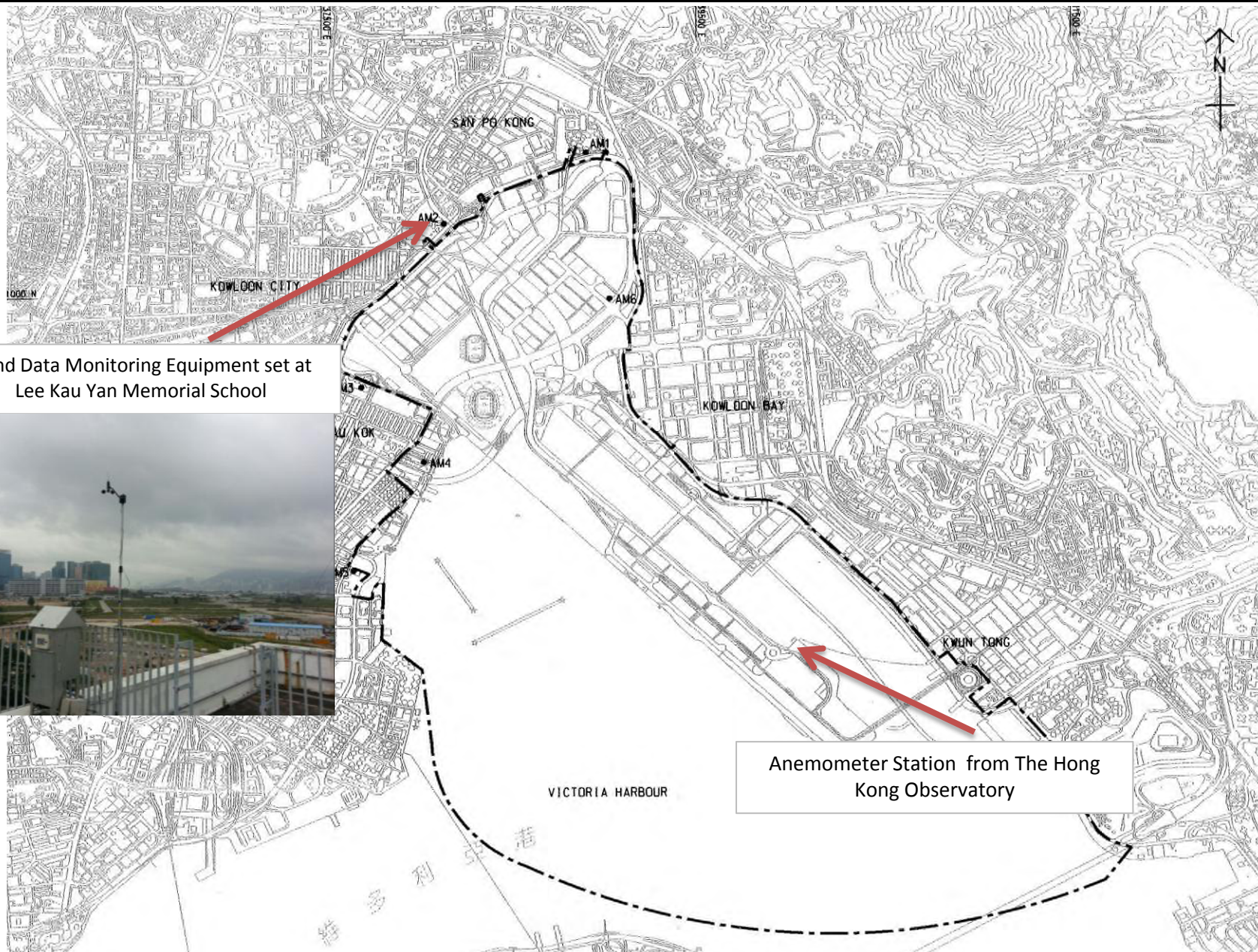


AM1(B) - Contractor Site Office (KL/2012/02)

Title	Contract No. KL/2012/02		Scale	Project
	Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area		N.T.S	No. MA13043
Date			Figure	
Air Quality Monitoring Stations under Contract No.: KLN/2013/16		Apr-14	2	CINOTECH



Title Contract No. KL/2012/02 Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area Noise Monitoring Stations under Contract No.: KLN/2013/16	Scale N.T.S	Project No. MA13043	
	Date Dec-16	Figure 3	



Wind Data Monitoring Equipment set at Lee Kau Yan Memorial School



Anemometer Station from The Hong Kong Observatory

Title Contract No. KL/2012/02
 Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area
 Location of Wind Data Monitoring Equipment

Scale	N.T.S	Project No.	MA13043
Date	Oct-13	Figure	4



**APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR
QUALITY AND NOISE**

Appendix A - Action and Limit Levels

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

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1(B)	342	500
AM2	346	

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

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1(B)	159	260
AM2	157	

Table A-3 Action and Limit Levels for Construction Noise

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

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

**APPENDIX B
COPIES OF CALIBRATION
CERTIFICATES**

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/58/0036

Station AM1(B) - Outside RLJV site office (KL/2008/09) Operator: WK
 Date: 21-Sep-16 Next Due Date: 20-Nov-16
 Equipment No.: A-01-58 Serial No. 2357

Ambient Condition			
Temperature, Ta (K)	302.2	Pressure, Pa (mmHg)	755.6

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.8	3.40	57.74	7.9	2.78
2	9.7	3.08	52.43	6.4	2.50
3	7.7	2.75	46.80	5.1	2.24
4	5.4	2.30	39.33	3.3	1.80
5	3.2	1.77	30.47	2.0	1.40

By Linear Regression of Y on X
 Slope, mw = 0.0513 Intercept, bw = -0.1807
 Correlation coefficient* = 0.9992

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM
 From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.18

Remarks: _____

Conducted by: wk tang Signature: Kwan Date: 21/9/16
 Checked by: lar Signature: _____ Date: 21 September 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/58/0037

Station AM1(B) - Outside RLJV site office (KL/2008/09) Operator: WK
 Date: 21-Nov-16 Next Due Date: 20-Jan-17
 Equipment No.: A-01-58 Serial No. 2357

Ambient Condition			
Temperature, Ta (K)	298.2	Pressure, Pa (mmHg)	762.7

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.6	3.41	57.90	7.9	2.81
2	9.8	3.13	53.28	6.6	2.57
3	7.7	2.78	47.33	5.2	2.28
4	5.0	2.24	38.30	3.4	1.85
5	3.3	1.82	31.28	2.1	1.45

By Linear Regression of Y on X
 Slope, mw = 0.0506 Intercept, bw = -0.1152
 Correlation coefficient* = 0.9996
 *If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM
 From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; W = (mw x Qstd + bw)² x (760 / Pa) x (Ta / 298) = 4.24

Remarks: _____

Conducted by: wk Tang Signature: [Signature] Date: 21/11/16
 Checked by: [Signature] Signature: [Signature] Date: 21 November 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/59/0038

Station AM2 - Lee Kau Yan Memorial School Operator: WK
 Date: 21-Sep-16 Next Due Date: 20-Nov-16
 Equipment No.: A-01-59 Serial No. 2354

Ambient Condition			
Temperature, Ta (K)	301.3	Pressure, Pa (mmHg)	756.2

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.6	3.38	57.36	7.8	2.77
2	9.7	3.09	52.52	6.4	2.51
3	7.4	2.70	45.98	5.0	2.22
4	4.7	2.15	36.82	3.2	1.77
5	3.2	1.77	30.53	2.1	1.44

By Linear Regression of Y on X

Slope, $m_w =$ 0.0490 Intercept, $b_w =$ -0.0449
 Correlation coefficient* = 0.9996

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

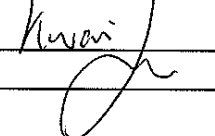
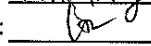
From the TSP Field Calibration Curve, take Qstd = 43 CFM

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

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

Therefore, Set Point; $W = (m_w \times Qstd + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.32

Remarks: _____

Conducted by: wk Tang Signature: 
 Checked by:  Signature: _____

Date: 21/9/16
 Date: 21 September 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/59/0039

Station AM2 - Lee Kau Yan Memorial School Operator: WK
 Date: 21-Nov-16 Next Due Date: 20-Jan-17
 Equipment No.: A-01-59 Serial No. 2354

Ambient Condition			
Temperature, Ta (K)	298.6	Pressure, Pa (mmHg)	762.2

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.4	3.38	57.35	7.3	2.70
2	9.8	3.13	53.23	6.4	2.53
3	7.6	2.76	46.98	5.0	2.24
4	4.9	2.21	37.89	3.1	1.76
5	3.3	1.82	31.25	2.2	1.48

By Linear Regression of Y on X

Slope, $m_w =$ 0.0476 Intercept, $b_w =$ -0.0168
 Correlation coefficient* = 0.9993

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM
 From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; $W = (m_w \times Qstd + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.12

Remarks: _____

Conducted by: w.k. Tang Signature: Kwai
 Checked by: AV Signature: _____

Date: 21/11/16
 Date: 21 November 2016



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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

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

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

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0001	0.6974	1.4173	0.9957	0.6944	0.8836
0.9959	0.9716	2.0044	0.9915	0.9674	1.2496
0.9938	1.0861	2.2410	0.9894	1.0814	1.3971
0.9928	1.1320	2.3503	0.9885	1.1271	1.4653
0.9875	1.3696	2.8346	0.9831	1.3636	1.7672
Qstd slope (m) = 2.11176			Qa slope (m) = 1.32235		
intercept (b) = -0.05079			intercept (b) = -0.03166		
coefficient (r) = 0.99982			coefficient (r) = 0.99982		
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 }

TEST REPORT

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

Test Report No.:	C/160820
Date of Issue:	2016-08-20
Date Received:	2016-08-20
Date Tested:	2016-08-20
Date Completed:	2016-08-20
Next Due Date:	2017-02-19

ATTN: Miss Mei Ling Tang

Page: 1 of 2

Certificate of Calibration

Item for calibration:

Description	: Weather Monitor II
Manufacturer	: Davis Instruments
Model No.	: 7440
Serial No.	: MC01010A44

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 56 %

Test Specifications:

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

Methodology:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

Test Report No.:	C/160820
Date of Issue:	2016-08-20
Date Received:	2016-08-20
Date Tested:	2016-08-20
Date Completed:	2016-08-20
Next Due Date:	2017-02-19

Page: 2 of 2

Results:

1. Performance check of anemometer

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

2. Performance check of wind direction sensor

Wind Direction (°)		Difference D (°)
Instrument Reading (W1)	Reference Value (W2)	D = W1 - W2
0	0	0
45.2	45	0.2
90.1	90	0.1
134.8	135	-0.2
180.3	180	0.3
225.1	225	0.1
270.2	270	0.2
315.1	315	0.1
360	360	0

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

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3
Serial No.	: 251634
Sensitivity (K) 1 CPM	: 0.001 mg/m ³
Sen. Adjustment Scale Setting	: 550 CPM
Equipment No.	: A-02-01

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 54 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0035
-------------------------	--------

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3
Serial No.	: 251634
Sensitivity (K) 1 CPM	: 0.001 mg/m ³
Sen. Adjustment Scale Setting	: 550 CPM
Equipment No.	: A-02-01

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0034
-------------------------	--------

PREPARED AND CHECKED BY:

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 54 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0035
-------------------------	--------

PREPARED AND CHECKED BY:

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

Patrick Tse

PATRICK TSE

Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0034
-------------------------	--------

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Laser Dust Monitor
 Manufacturer : Sibata
 Model No. : LD-3B
 Serial No. : 014750
 Sensitivity (K) 1 CPM : 0.001 mg/m³
 Sen. Adjustment Scale Setting : 790 CPM
 Equipment No. : A-02-06

Test Conditions:

Room Temperature : 23 degree Celsius
 Relative Humidity : 54 %

Test Specifications & Methodology:

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

Results:

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

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



PATRICK TSE
 Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0032
-------------------------	--------

PREPARED AND CHECKED BY:

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



HATRICK TSE

Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

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

Results:

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

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/161028C
Date of Issue:	2016-10-31
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-10-31
Next Due Date:	2016-12-30

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 64 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0038
-------------------------	--------

PREPARED AND CHECKED BY:

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


PATRICK TSE
 Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/160917B
Date of Issue:	2016-09-19
Date Received:	2016-09-17
Date Tested:	2016-09-17
Date Completed:	2016-09-19
Next Due Date:	2017-09-18

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12553
Microphone No.	: 35222
Equipment No.	: N-08-02

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/160917C
Date of Issue:	2016-09-19
Date Received:	2016-09-17
Date Tested:	2016-09-17
Date Completed:	2016-09-19
Next Due Date:	2017-09-18

ATTN: Mr. W.K. Tang

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Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12563
Microphone No.	: 34377
Equipment No.	: N-08-03

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/160826A
Date of Issue:	2016-08-29
Date Received:	2016-08-26
Date Tested:	2016-08-26
Date Completed:	2016-08-29
Next Due Date:	2017-08-28

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

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Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 58%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/151127/1
Date of Issue:	2015-11-30
Date Received:	2015-11-27
Date Tested:	2015-11-27
Date Completed:	2015-11-30
Next Due Date:	2016-11-29

ATTN: Mr. W.K. Tang

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Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 62%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/151215-2
Date of Issue:	2015-12-18
Date Received:	2015-12-15
Date Tested:	2015-12-15
Date Completed:	2015-12-18
Next Due Date:	2016-12-17

ATTN: Mr. W. K. Tang

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Certificate of Calibration

Item for calibration:

Description	: Sound & Vibration Analyser
Manufacturer	: BSWA
Model No.	: BSWA 801
Serial No.	: 35921
Equipment No.	: N-13-02

Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 56%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/161028/1
Date of Issue:	2016-10-31
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-10-31
Next Due Date:	2017-10-30

ATTN: Mr. W.K. Tang

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Item for calibration:

Description : Acoustical Calibrator
Manufacturer : SVANTEK
Model No. : SV30A
Serial No. : 10965
Equipment No. : N-09-02

Test conditions:

Room Temperature : 21 degree Celsius
Relative Humidity : 60 %

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

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Item for calibration:

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

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

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

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 58%

Methodology:

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

Results:

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

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


PATRICK TSE
Laboratory Manager

APPENDIX C
WEATHER INFORMATION

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

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 November 2016	22.5 – 25.3	66 – 77	0
2 November 2016	21.0 – 24.8	61 – 75	0
3 November 2016	20.1 – 24.8	55 – 74	0
4 November 2016	19.6 – 25.3	56 – 77	0
5 November 2016	21.7 – 26.9	68 – 83	0
6 November 2016	22.4 – 26.9	69 – 87	0
7 November 2016	23.4 – 28.4	70 – 87	0
8 November 2016	22.1 – 28.1	68 – 91	4.8
9 November 2016	19.0 – 22.1	75 – 93	1.3
10 November 2016	17.0 – 19.0	78 – 88	1.9
11 November 2016	17.1 – 22.3	75 – 85	Trace
12 November 2016	21.6 – 25.1	77 – 91	0.2
13 November 2016	23.8 – 26.9	80 – 89	0
14 November 2016	23.3 – 28.1	68 – 93	0
15 November 2016	23.8 – 29.2	64 – 95	Trace
16 November 2016	23.9 – 26.1	72 – 85	Trace
17 November 2016	23.6 – 27.5	66 – 86	Trace
18 November 2016	23.5 – 26.8	76 – 86	Trace
19 November 2016	24.0 – 28.0	69 – 94	1.4

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

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 November 2016	25.0 – 26.8	72 – 83	Trace
21 November 2016	24.0 – 25.3	81 – 88	0.3
22 November 2016	21.6 – 24.5	86 – 99	36.5
23 November 2016	16.7 – 21.6	80 – 100	25.9
24 November 2016	15.0 – 19.8	69 – 82	Trace
25 November 2016	17.4 – 22.3	70 – 84	0.1
26 November 2016	13.3 – 21.1	81 – 99	50.3
27 November 2016	12.8 – 19.9	67 – 96	8.6
28 November 2016	16.1 – 20.1	57 – 78	0
29 November 2016	17.5 – 20.5	60 – 72	0
30 November 2016	17.4 – 22.0	55 – 74	0

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

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

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Speed m/s	Direction
1-Nov-2016	0:00	2.1	NE
1-Nov-2016	1:00	2.6	ENE
1-Nov-2016	2:00	2.6	NE
1-Nov-2016	3:00	3.3	NE
1-Nov-2016	4:00	2.7	NE
1-Nov-2016	5:00	2.6	NE
1-Nov-2016	6:00	2.8	NE
1-Nov-2016	7:00	2.3	NE
1-Nov-2016	8:00	3.4	NE
1-Nov-2016	9:00	3.9	NNE
1-Nov-2016	10:00	3.8	NE
1-Nov-2016	11:00	3.0	E
1-Nov-2016	12:00	3.3	ENE
1-Nov-2016	13:00	3.2	ENE
1-Nov-2016	14:00	3.4	E
1-Nov-2016	15:00	3.4	ENE
1-Nov-2016	16:00	2.6	NNE
1-Nov-2016	17:00	2.6	NE
1-Nov-2016	18:00	1.6	SSW
1-Nov-2016	19:00	1.4	WSW
1-Nov-2016	20:00	1.4	SSW
1-Nov-2016	21:00	1.4	SSW
1-Nov-2016	22:00	1.7	WNW
1-Nov-2016	23:00	1.5	SW
2-Nov-2016	0:00	2.5	W
2-Nov-2016	1:00	4.1	WNW
2-Nov-2016	2:00	4.2	WSW
2-Nov-2016	3:00	3.4	W
2-Nov-2016	4:00	2.8	SSW
2-Nov-2016	5:00	2	WNW
2-Nov-2016	6:00	1.4	SE
2-Nov-2016	7:00	1.7	SE
2-Nov-2016	8:00	2.1	E
2-Nov-2016	9:00	2.3	NW
2-Nov-2016	10:00	3	ESE
2-Nov-2016	11:00	2.9	SE

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

II. Mean Wind Speed and Wind Direction

2-Nov-2016	12:00	3.3	SE
2-Nov-2016	13:00	2.1	ESE
2-Nov-2016	14:00	3.2	NE
2-Nov-2016	15:00	2.8	NE
2-Nov-2016	16:00	2.3	NE
2-Nov-2016	17:00	3.8	SE
2-Nov-2016	18:00	2.4	ENE
2-Nov-2016	19:00	1.7	NE
2-Nov-2016	20:00	1.9	ESE
2-Nov-2016	21:00	2.3	SE
2-Nov-2016	22:00	1.7	ESE
2-Nov-2016	23:00	3	ESE
3-Nov-2016	0:00	3.7	NNE
3-Nov-2016	1:00	4.3	NNE
3-Nov-2016	2:00	3.7	NNE
3-Nov-2016	3:00	2.3	ENE
3-Nov-2016	4:00	2.6	ENE
3-Nov-2016	5:00	2.4	SSE
3-Nov-2016	6:00	2	SE
3-Nov-2016	7:00	3	SE
3-Nov-2016	8:00	3.3	SSE
3-Nov-2016	9:00	2.3	ENE
3-Nov-2016	10:00	2.8	ENE
3-Nov-2016	11:00	3.8	SSE
3-Nov-2016	12:00	4.4	SE
3-Nov-2016	13:00	4.4	SE
3-Nov-2016	14:00	3.6	SE
3-Nov-2016	15:00	3	ESE
3-Nov-2016	16:00	2.1	ESE
3-Nov-2016	17:00	3	SE
3-Nov-2016	18:00	2.6	SE
3-Nov-2016	19:00	1.7	SE
3-Nov-2016	20:00	1.7	ESE
3-Nov-2016	21:00	2.7	SSE
3-Nov-2016	22:00	2.7	S
3-Nov-2016	23:00	1.4	SE
4-Nov-2016	0:00	2	SE

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

II. Mean Wind Speed and Wind Direction

4-Nov-2016	1:00	3.6	NE
4-Nov-2016	2:00	3.4	SE
4-Nov-2016	3:00	3.6	E
4-Nov-2016	4:00	2.6	ESE
4-Nov-2016	5:00	3.7	SE
4-Nov-2016	6:00	2.7	NE
4-Nov-2016	7:00	2.4	SE
4-Nov-2016	8:00	2.4	NE
4-Nov-2016	9:00	2	E
4-Nov-2016	10:00	2.9	NE
4-Nov-2016	11:00	2.5	E
4-Nov-2016	12:00	1.4	ESE
4-Nov-2016	13:00	1.8	SE
4-Nov-2016	14:00	1.8	S
4-Nov-2016	15:00	1.4	N
4-Nov-2016	16:00	2.7	NE
4-Nov-2016	17:00	1.3	ESE
4-Nov-2016	18:00	1	ESE
4-Nov-2016	19:00	2.4	ESE
4-Nov-2016	20:00	2.3	S
4-Nov-2016	21:00	3.9	SSW
4-Nov-2016	22:00	4.7	W
4-Nov-2016	23:00	3.7	N
5-Nov-2016	0:00	3.3	N
5-Nov-2016	1:00	2.7	ESE
5-Nov-2016	2:00	4.2	ENE
5-Nov-2016	3:00	2.4	NE
5-Nov-2016	4:00	3	E
5-Nov-2016	5:00	2.2	WNW
5-Nov-2016	6:00	3	SE
5-Nov-2016	7:00	1	SE
5-Nov-2016	8:00	3	NE
5-Nov-2016	9:00	4.1	SSE
5-Nov-2016	10:00	3.9	SE
5-Nov-2016	11:00	1.4	SE
5-Nov-2016	12:00	2.6	NE
5-Nov-2016	13:00	2.1	ESE

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

II. Mean Wind Speed and Wind Direction

5-Nov-2016	14:00	1.7	E
5-Nov-2016	15:00	3.1	SE
5-Nov-2016	16:00	2.3	SE
5-Nov-2016	17:00	2	SE
5-Nov-2016	18:00	3.1	ESE
5-Nov-2016	19:00	2.2	NE
5-Nov-2016	20:00	2.2	ENE
5-Nov-2016	21:00	4.3	ENE
5-Nov-2016	22:00	3.4	NE
5-Nov-2016	23:00	2.6	NE
6-Nov-2016	0:00	2.6	E
6-Nov-2016	1:00	2.3	SSW
6-Nov-2016	2:00	2.2	W
6-Nov-2016	3:00	3	WNW
6-Nov-2016	4:00	2.2	NE
6-Nov-2016	5:00	0.8	ESE
6-Nov-2016	6:00	1.1	SE
6-Nov-2016	7:00	0.6	NE
6-Nov-2016	8:00	1.9	SE
6-Nov-2016	9:00	2.4	ESE
6-Nov-2016	10:00	3	SE
6-Nov-2016	11:00	3.1	E
6-Nov-2016	12:00	2.3	NE
6-Nov-2016	13:00	3	SSW
6-Nov-2016	14:00	1.5	SE
6-Nov-2016	15:00	1.4	NE
6-Nov-2016	16:00	3.3	NE
6-Nov-2016	17:00	2.3	NE
6-Nov-2016	18:00	2.7	ESE
6-Nov-2016	19:00	4.2	NE
6-Nov-2016	20:00	4.2	SE
6-Nov-2016	21:00	3.4	SE
6-Nov-2016	22:00	2.8	ESE
6-Nov-2016	23:00	2	SE
7-Nov-2016	0:00	1.9	E
7-Nov-2016	1:00	2	NE
7-Nov-2016	2:00	1.6	ESE

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

II. Mean Wind Speed and Wind Direction

7-Nov-2016	3:00	1.4	NE
7-Nov-2016	4:00	1.4	NNE
7-Nov-2016	5:00	1.1	NE
7-Nov-2016	6:00	0.7	WNW
7-Nov-2016	7:00	0.6	WSW
7-Nov-2016	8:00	1.2	ENE
7-Nov-2016	9:00	1.9	WNW
7-Nov-2016	10:00	2.3	NE
7-Nov-2016	11:00	2.3	NE
7-Nov-2016	12:00	3.3	NE
7-Nov-2016	13:00	3.6	NE
7-Nov-2016	14:00	3.4	N
7-Nov-2016	15:00	3.7	SSE
7-Nov-2016	16:00	3.6	N
7-Nov-2016	17:00	3.3	ENE
7-Nov-2016	18:00	2.6	W
7-Nov-2016	19:00	2.3	SE
7-Nov-2016	20:00	1.6	N
7-Nov-2016	21:00	1.7	ESE
7-Nov-2016	22:00	1.9	W
7-Nov-2016	23:00	1	SSW
8-Nov-2016	0:00	1.3	WNW
8-Nov-2016	1:00	1.9	WNW
8-Nov-2016	2:00	1.4	N
8-Nov-2016	3:00	1.1	N
8-Nov-2016	4:00	1.2	N
8-Nov-2016	5:00	1.4	ENE
8-Nov-2016	6:00	1.4	NE
8-Nov-2016	7:00	1.3	WNW
8-Nov-2016	8:00	2.3	WNW
8-Nov-2016	9:00	3.1	W
8-Nov-2016	10:00	3.3	SSW
8-Nov-2016	11:00	3.1	E
8-Nov-2016	12:00	3.3	WSW
8-Nov-2016	13:00	3.6	ENE
8-Nov-2016	14:00	2.4	SE
8-Nov-2016	15:00	2.8	SSE

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

II. Mean Wind Speed and Wind Direction

8-Nov-2016	16:00	3.4	ESE
8-Nov-2016	17:00	2.7	SSE
8-Nov-2016	18:00	3.6	SSE
8-Nov-2016	19:00	3.1	ENE
8-Nov-2016	20:00	2.7	N
8-Nov-2016	21:00	3.4	ENE
8-Nov-2016	22:00	2.7	E
8-Nov-2016	23:00	3	W
9-Nov-2016	0:00	3.4	W
9-Nov-2016	1:00	3.7	W
9-Nov-2016	2:00	3.3	W
9-Nov-2016	3:00	2.8	ENE
9-Nov-2016	4:00	2.1	ENE
9-Nov-2016	5:00	2.3	W
9-Nov-2016	6:00	1.4	S
9-Nov-2016	7:00	1.7	SSW
9-Nov-2016	8:00	2.4	WSW
9-Nov-2016	9:00	3.7	WNW
9-Nov-2016	10:00	3.7	SSW
9-Nov-2016	11:00	3.6	SSW
9-Nov-2016	12:00	4.6	W
9-Nov-2016	13:00	3.9	ENE
9-Nov-2016	14:00	2.6	ENE
9-Nov-2016	15:00	3.4	SSW
9-Nov-2016	16:00	3.5	E
9-Nov-2016	17:00	3.4	ESE
9-Nov-2016	18:00	2.4	E
9-Nov-2016	19:00	2.1	NNE
9-Nov-2016	20:00	1.6	N
9-Nov-2016	21:00	1.9	SSE
9-Nov-2016	22:00	1.3	ENE
9-Nov-2016	23:00	1.7	WNW
10-Nov-2016	0:00	1.7	W
10-Nov-2016	1:00	1	W
10-Nov-2016	2:00	0.7	W
10-Nov-2016	3:00	0.8	SW
10-Nov-2016	4:00	0.7	SSW

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

II. Mean Wind Speed and Wind Direction

10-Nov-2016	5:00	0.7	ENE
10-Nov-2016	6:00	0.4	NNE
10-Nov-2016	7:00	0.7	N
10-Nov-2016	8:00	1.4	ENE
10-Nov-2016	9:00	1.4	N
10-Nov-2016	10:00	1.6	SSW
10-Nov-2016	11:00	3.4	NE
10-Nov-2016	12:00	3.5	NNE
10-Nov-2016	13:00	2.9	ENE
10-Nov-2016	14:00	3	E
10-Nov-2016	15:00	3.1	W
10-Nov-2016	16:00	3.2	E
10-Nov-2016	17:00	3.7	NNE
10-Nov-2016	18:00	2.7	E
10-Nov-2016	19:00	1.8	E
10-Nov-2016	20:00	2.6	ESE
10-Nov-2016	21:00	1.7	ESE
10-Nov-2016	22:00	1.9	ESE
10-Nov-2016	23:00	1.7	ESE
11-Nov-2016	0:00	1.7	ENE
11-Nov-2016	1:00	1.7	N
11-Nov-2016	2:00	1.6	NE
11-Nov-2016	3:00	2	ENE
11-Nov-2016	4:00	2	NE
11-Nov-2016	5:00	1.1	ENE
11-Nov-2016	6:00	1.4	NNE
11-Nov-2016	7:00	1.4	NNE
11-Nov-2016	8:00	1.6	NE
11-Nov-2016	9:00	2.3	WSW
11-Nov-2016	10:00	2.7	W
11-Nov-2016	11:00	3.6	W
11-Nov-2016	12:00	3.3	SE
11-Nov-2016	13:00	2.6	E
11-Nov-2016	14:00	3	SE
11-Nov-2016	15:00	2.8	NNE
11-Nov-2016	16:00	2.1	WNW
11-Nov-2016	17:00	2.7	WNW

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

II. Mean Wind Speed and Wind Direction

11-Nov-2016	18:00	2	NE
11-Nov-2016	19:00	1.9	ENE
11-Nov-2016	20:00	1.7	NE
11-Nov-2016	21:00	1.6	ESE
11-Nov-2016	22:00	1.7	ESE
11-Nov-2016	23:00	1.7	ENE
12-Nov-2016	0:00	1.7	NE
12-Nov-2016	1:00	1.1	NNE
12-Nov-2016	2:00	1.2	NNE
12-Nov-2016	3:00	1.3	ENE
12-Nov-2016	4:00	1.5	ESE
12-Nov-2016	5:00	1.4	NE
12-Nov-2016	6:00	1	ENE
12-Nov-2016	7:00	0.4	NNE
12-Nov-2016	8:00	0.8	SSE
12-Nov-2016	9:00	1.5	NE
12-Nov-2016	10:00	1.7	NNE
12-Nov-2016	11:00	2.8	ENE
12-Nov-2016	12:00	2.8	ESE
12-Nov-2016	13:00	2.6	NE
12-Nov-2016	14:00	2.6	NE
12-Nov-2016	15:00	2.7	NE
12-Nov-2016	16:00	3	ENE
12-Nov-2016	17:00	3.3	NE
12-Nov-2016	18:00	2.6	SE
12-Nov-2016	19:00	3.7	ESE
12-Nov-2016	20:00	3.5	ESE
12-Nov-2016	21:00	2.6	ESE
12-Nov-2016	22:00	1.5	ENE
12-Nov-2016	23:00	1.4	ENE
13-Nov-2016	0:00	1.1	NNE
13-Nov-2016	1:00	0.8	NE
13-Nov-2016	2:00	0.9	SW
13-Nov-2016	3:00	1.3	SW
13-Nov-2016	4:00	0.9	WNW
13-Nov-2016	5:00	0.6	ENE
13-Nov-2016	6:00	0.7	WNW

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

II. Mean Wind Speed and Wind Direction

13-Nov-2016	7:00	0.8	SSW
13-Nov-2016	8:00	1.4	NW
13-Nov-2016	9:00	2.7	WNW
13-Nov-2016	10:00	2.8	ENE
13-Nov-2016	11:00	3.4	ENE
13-Nov-2016	12:00	3.7	NE
13-Nov-2016	13:00	3.3	NE
13-Nov-2016	14:00	3.4	ENE
13-Nov-2016	15:00	2.9	ESE
13-Nov-2016	16:00	3.4	E
13-Nov-2016	17:00	3	WSW
13-Nov-2016	18:00	2.4	SSW
13-Nov-2016	19:00	1.4	SW
13-Nov-2016	20:00	1	NE
13-Nov-2016	21:00	1.4	NNE
13-Nov-2016	22:00	1	NNE
13-Nov-2016	23:00	1	NE
14-Nov-2016	0:00	1.6	NE
14-Nov-2016	1:00	2	ENE
14-Nov-2016	2:00	2	N
14-Nov-2016	3:00	2.6	ESE
14-Nov-2016	4:00	1.6	ENE
14-Nov-2016	5:00	1.9	ENE
14-Nov-2016	6:00	1.7	ENE
14-Nov-2016	7:00	1.7	NNE
14-Nov-2016	8:00	2.4	NE
14-Nov-2016	9:00	3.1	ENE
14-Nov-2016	10:00	3.2	SW
14-Nov-2016	11:00	3.5	WNW
14-Nov-2016	12:00	3.1	ENE
14-Nov-2016	13:00	3.4	NNE
14-Nov-2016	14:00	3.5	N
14-Nov-2016	15:00	2.6	NNE
14-Nov-2016	16:00	2.4	ESE
14-Nov-2016	17:00	2.6	ESE
14-Nov-2016	18:00	1.9	ENE
14-Nov-2016	19:00	2	ENE

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

II. Mean Wind Speed and Wind Direction

14-Nov-2016	20:00	2.1	NNE
14-Nov-2016	21:00	2	NNE
14-Nov-2016	22:00	2	SSE
14-Nov-2016	23:00	1.7	ENE
15-Nov-2016	0:00	1.7	NNE
15-Nov-2016	1:00	0.9	NE
15-Nov-2016	2:00	0.8	SW
15-Nov-2016	3:00	0.9	SW
15-Nov-2016	4:00	1.6	SSW
15-Nov-2016	5:00	1.9	SW
15-Nov-2016	6:00	1.6	WSW
15-Nov-2016	7:00	1.9	WNW
15-Nov-2016	8:00	2.4	WNW
15-Nov-2016	9:00	2	WSW
15-Nov-2016	10:00	1.9	W
15-Nov-2016	11:00	2.1	WSW
15-Nov-2016	12:00	1.9	SSW
15-Nov-2016	13:00	1.4	W
15-Nov-2016	14:00	1.7	WNW
15-Nov-2016	15:00	2.3	WNW
15-Nov-2016	16:00	2.4	N
15-Nov-2016	17:00	1.9	N
15-Nov-2016	18:00	1.5	NNE
15-Nov-2016	19:00	1.4	W
15-Nov-2016	20:00	0.7	W
15-Nov-2016	21:00	1	W
15-Nov-2016	22:00	0.7	WSW
15-Nov-2016	23:00	0.4	ESE
16-Nov-2016	0:00	0.3	WNW
16-Nov-2016	1:00	1.2	ESE
16-Nov-2016	2:00	1	NE
16-Nov-2016	3:00	1.6	SW
16-Nov-2016	4:00	1.4	WNW
16-Nov-2016	5:00	1.2	NE
16-Nov-2016	6:00	0.3	NNE
16-Nov-2016	7:00	1.2	NE
16-Nov-2016	8:00	1.3	NE

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

II. Mean Wind Speed and Wind Direction

16-Nov-2016	9:00	2.1	E
16-Nov-2016	10:00	2.7	ENE
16-Nov-2016	11:00	2.1	ENE
16-Nov-2016	12:00	2.6	E
16-Nov-2016	13:00	2.4	E
16-Nov-2016	14:00	2.6	ESE
16-Nov-2016	15:00	2.8	E
16-Nov-2016	16:00	2.3	ESE
16-Nov-2016	17:00	2.4	ESE
16-Nov-2016	18:00	2	ESE
16-Nov-2016	19:00	2	W
16-Nov-2016	20:00	1.7	S
16-Nov-2016	21:00	2.4	NE
16-Nov-2016	22:00	1.7	NNE
16-Nov-2016	23:00	1.9	NNE
17-Nov-2016	0:00	1.6	NNE
17-Nov-2016	1:00	1.4	NNE
17-Nov-2016	2:00	1.4	N
17-Nov-2016	3:00	1.2	NNE
17-Nov-2016	4:00	1	NE
17-Nov-2016	5:00	1.7	E
17-Nov-2016	6:00	1.6	E
17-Nov-2016	7:00	1.4	E
17-Nov-2016	8:00	1.6	E
17-Nov-2016	9:00	1.7	E
17-Nov-2016	10:00	2.4	E
17-Nov-2016	11:00	3.3	WSW
17-Nov-2016	12:00	3.5	ENE
17-Nov-2016	13:00	3.7	SSE
17-Nov-2016	14:00	3	NE
17-Nov-2016	15:00	3.5	WNW
17-Nov-2016	16:00	3	ENE
17-Nov-2016	17:00	2.3	ENE
17-Nov-2016	18:00	2.6	ENE
17-Nov-2016	19:00	2.6	WNW
17-Nov-2016	20:00	3.2	ESE
17-Nov-2016	21:00	3.3	ENE

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

II. Mean Wind Speed and Wind Direction

17-Nov-2016	22:00	2.7	NE
17-Nov-2016	23:00	2.6	ENE
18-Nov-2016	0:00	3	ENE
18-Nov-2016	1:00	2.7	ENE
18-Nov-2016	2:00	2.6	SSE
18-Nov-2016	3:00	1.4	SE
18-Nov-2016	4:00	1.3	WNW
18-Nov-2016	5:00	0.9	SSE
18-Nov-2016	6:00	0.9	SE
18-Nov-2016	7:00	1.6	NNW
18-Nov-2016	8:00	1.9	WNW
18-Nov-2016	9:00	2.6	ESE
18-Nov-2016	10:00	2.7	ESE
18-Nov-2016	11:00	3.1	SE
18-Nov-2016	12:00	3.4	WNW
18-Nov-2016	13:00	3.3	ENE
18-Nov-2016	14:00	3.1	ENE
18-Nov-2016	15:00	3.7	S
18-Nov-2016	16:00	3.6	N
18-Nov-2016	17:00	3.1	N
18-Nov-2016	18:00	2.4	SE
18-Nov-2016	19:00	2.1	ESE
18-Nov-2016	20:00	1.9	SE
18-Nov-2016	21:00	1.9	SE
18-Nov-2016	22:00	2	E
18-Nov-2016	23:00	2	ENE
19-Nov-2016	0:00	1.9	NE
19-Nov-2016	1:00	1.4	ESE
19-Nov-2016	2:00	1.3	SSE
19-Nov-2016	3:00	1.3	ESE
19-Nov-2016	4:00	1.3	NE
19-Nov-2016	5:00	1.1	NE
19-Nov-2016	6:00	1	NE
19-Nov-2016	7:00	1	S
19-Nov-2016	8:00	2.4	N
19-Nov-2016	9:00	3.7	N
19-Nov-2016	10:00	3.7	NNE

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

II. Mean Wind Speed and Wind Direction

19-Nov-2016	11:00	4	NE
19-Nov-2016	12:00	4.4	WNW
19-Nov-2016	13:00	3.7	E
19-Nov-2016	14:00	4.2	NNE
19-Nov-2016	15:00	3.1	SE
19-Nov-2016	16:00	3.6	SSE
19-Nov-2016	17:00	3.3	ESE
19-Nov-2016	18:00	2.1	NNE
19-Nov-2016	19:00	1.3	SSW
19-Nov-2016	20:00	1.4	NNE
19-Nov-2016	21:00	1	NNE
19-Nov-2016	22:00	1	ENE
19-Nov-2016	23:00	0.7	E
20-Nov-2016	0:00	1	NE
20-Nov-2016	1:00	1.1	NE
20-Nov-2016	2:00	1	ENE
20-Nov-2016	3:00	1.3	ENE
20-Nov-2016	4:00	1.3	ENE
20-Nov-2016	5:00	1.3	NE
20-Nov-2016	6:00	1.7	ESE
20-Nov-2016	7:00	1	NE
20-Nov-2016	8:00	1.3	ESE
20-Nov-2016	9:00	2.8	NE
20-Nov-2016	10:00	3.6	NNW
20-Nov-2016	11:00	4.2	NNE
20-Nov-2016	12:00	3.6	NE
20-Nov-2016	13:00	3.7	NE
20-Nov-2016	14:00	3.6	W
20-Nov-2016	15:00	3.1	W
20-Nov-2016	16:00	2.4	ESE
20-Nov-2016	17:00	2.6	ENE
20-Nov-2016	18:00	2.6	SSE
20-Nov-2016	19:00	2	NE
20-Nov-2016	20:00	2.1	ENE
20-Nov-2016	21:00	1.4	ENE
20-Nov-2016	22:00	1.4	NE
20-Nov-2016	23:00	1	NE

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

II. Mean Wind Speed and Wind Direction

21-Nov-2016	0:00	1.6	ENE
21-Nov-2016	1:00	1.6	SW
21-Nov-2016	2:00	1.6	WSW
21-Nov-2016	3:00	1.9	W
21-Nov-2016	4:00	1.7	W
21-Nov-2016	5:00	1.7	NE
21-Nov-2016	6:00	1.1	ENE
21-Nov-2016	7:00	1.1	SSE
21-Nov-2016	8:00	1.7	SSE
21-Nov-2016	9:00	1.7	NE
21-Nov-2016	10:00	2	NNE
21-Nov-2016	11:00	2.6	ENE
21-Nov-2016	12:00	2.7	WNW
21-Nov-2016	13:00	2.7	SSE
21-Nov-2016	14:00	3.1	WSW
21-Nov-2016	15:00	2.6	W
21-Nov-2016	16:00	3	NW
21-Nov-2016	17:00	2.8	SSW
21-Nov-2016	18:00	2.1	SSE
21-Nov-2016	19:00	1.5	N
21-Nov-2016	20:00	1	ESE
21-Nov-2016	21:00	1.2	ESE
21-Nov-2016	22:00	1	S
21-Nov-2016	23:00	0.9	S
22-Nov-2016	0:00	1.4	E
22-Nov-2016	1:00	1	WSW
22-Nov-2016	2:00	0.9	NE
22-Nov-2016	3:00	0.7	WSW
22-Nov-2016	4:00	1	NW
22-Nov-2016	5:00	0.7	NNW
22-Nov-2016	6:00	0.3	WNW
22-Nov-2016	7:00	0.4	NW
22-Nov-2016	8:00	0.7	S
22-Nov-2016	9:00	0.8	N
22-Nov-2016	10:00	1.3	NE
22-Nov-2016	11:00	2	NNE
22-Nov-2016	12:00	2.3	SSE

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

II. Mean Wind Speed and Wind Direction

22-Nov-2016	13:00	2.1	SSE
22-Nov-2016	14:00	2.7	NE
22-Nov-2016	15:00	3.3	E
22-Nov-2016	16:00	2.3	WSW
22-Nov-2016	17:00	2.3	WSW
22-Nov-2016	18:00	2.8	WNW
22-Nov-2016	19:00	2.4	SSW
22-Nov-2016	20:00	2.6	NW
22-Nov-2016	21:00	1.6	NE
22-Nov-2016	22:00	1.6	NE
22-Nov-2016	23:00	2.1	E
23-Nov-2016	0:00	1.2	ESE
23-Nov-2016	1:00	1.6	NE
23-Nov-2016	2:00	0.8	NE
23-Nov-2016	3:00	0.3	NE
23-Nov-2016	4:00	0.4	N
23-Nov-2016	5:00	0.3	N
23-Nov-2016	6:00	0.4	SSE
23-Nov-2016	7:00	0.3	ENE
23-Nov-2016	8:00	1.4	NE
23-Nov-2016	9:00	1.5	ENE
23-Nov-2016	10:00	2.7	ESE
23-Nov-2016	11:00	3.2	SSW
23-Nov-2016	12:00	2.9	ENE
23-Nov-2016	13:00	3.5	NNE
23-Nov-2016	14:00	4.4	NNE
23-Nov-2016	15:00	3.5	ENE
23-Nov-2016	16:00	3	SE
23-Nov-2016	17:00	2.7	SE
23-Nov-2016	18:00	1.7	ENE
23-Nov-2016	19:00	1.7	ENE
23-Nov-2016	20:00	1.7	SSW
23-Nov-2016	21:00	2.3	WSW
23-Nov-2016	22:00	2.7	SSW
23-Nov-2016	23:00	2.4	W
24-Nov-2016	0:00	1.6	WNW
24-Nov-2016	1:00	1.6	WSW

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

II. Mean Wind Speed and Wind Direction

24-Nov-2016	2:00	1.2	W
24-Nov-2016	3:00	0.7	WNW
24-Nov-2016	4:00	1.3	WNW
24-Nov-2016	5:00	1.4	WNW
24-Nov-2016	6:00	0.7	WSW
24-Nov-2016	7:00	0.7	SW
24-Nov-2016	8:00	1	WNW
24-Nov-2016	9:00	1.9	WNW
24-Nov-2016	10:00	3.3	WSW
24-Nov-2016	11:00	3	WSW
24-Nov-2016	12:00	3.3	WSW
24-Nov-2016	13:00	3.5	SW
24-Nov-2016	14:00	3.1	SW
24-Nov-2016	15:00	3.1	SW
24-Nov-2016	16:00	3.3	WSW
24-Nov-2016	17:00	2.8	WNW
24-Nov-2016	18:00	2.7	NW
24-Nov-2016	19:00	2.3	S
24-Nov-2016	20:00	2.4	WSW
24-Nov-2016	21:00	2.6	W
24-Nov-2016	22:00	2.4	W
24-Nov-2016	23:00	1.7	SW
25-Nov-2016	0:00	2.7	WSW
25-Nov-2016	1:00	2.4	SSW
25-Nov-2016	2:00	2.4	WSW
25-Nov-2016	3:00	1.9	WSW
25-Nov-2016	4:00	2	SW
25-Nov-2016	5:00	2	SSW
25-Nov-2016	6:00	1.6	SSW
25-Nov-2016	7:00	1.3	SSW
25-Nov-2016	8:00	1.3	WSW
25-Nov-2016	9:00	2.1	WSW
25-Nov-2016	10:00	1.7	WSW
25-Nov-2016	11:00	2.1	NE
25-Nov-2016	12:00	2.6	SW
25-Nov-2016	13:00	2.4	SSW
25-Nov-2016	14:00	2	SW

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

II. Mean Wind Speed and Wind Direction

25-Nov-2016	15:00	1.7	SW
25-Nov-2016	16:00	2.3	SW
25-Nov-2016	17:00	1.4	SSW
25-Nov-2016	18:00	1.2	SW
25-Nov-2016	19:00	1	SSW
25-Nov-2016	20:00	1	WSW
25-Nov-2016	21:00	0.9	W
25-Nov-2016	22:00	0.5	WNW
25-Nov-2016	23:00	1	SSW
26-Nov-2016	0:00	1	N
26-Nov-2016	1:00	0.7	W
26-Nov-2016	2:00	0.6	W
26-Nov-2016	3:00	0.7	SSW
26-Nov-2016	4:00	1	WNW
26-Nov-2016	5:00	0.3	SW
26-Nov-2016	6:00	0.3	WSW
26-Nov-2016	7:00	0.6	ENE
26-Nov-2016	8:00	0.6	WNW
26-Nov-2016	9:00	1.4	WSW
26-Nov-2016	10:00	1.6	SSW
26-Nov-2016	11:00	1.8	SW
26-Nov-2016	12:00	3.4	NW
26-Nov-2016	13:00	4	SW
26-Nov-2016	14:00	2	ENE
26-Nov-2016	15:00	1.7	S
26-Nov-2016	16:00	2.4	S
26-Nov-2016	17:00	2.4	ESE
26-Nov-2016	18:00	2.1	ESE
26-Nov-2016	19:00	2.4	ESE
26-Nov-2016	20:00	1	SSE
26-Nov-2016	21:00	0.6	SSE
26-Nov-2016	22:00	0.4	S
26-Nov-2016	23:00	1.2	SE
27-Nov-2016	0:00	0.7	E
27-Nov-2016	1:00	0.7	E
27-Nov-2016	2:00	1.2	S
27-Nov-2016	3:00	0.9	SE

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

II. Mean Wind Speed and Wind Direction

27-Nov-2016	4:00	0.9	ESE
27-Nov-2016	5:00	0.5	SSW
27-Nov-2016	6:00	0.4	SSE
27-Nov-2016	7:00	0.3	ESE
27-Nov-2016	8:00	0.3	NNE
27-Nov-2016	9:00	0.8	ENE
27-Nov-2016	10:00	1.2	ENE
27-Nov-2016	11:00	2	N
27-Nov-2016	12:00	2.7	NE
27-Nov-2016	13:00	3	NNE
27-Nov-2016	14:00	2.7	NE
27-Nov-2016	15:00	3.1	NE
27-Nov-2016	16:00	2.4	ENE
27-Nov-2016	17:00	2.6	ENE
27-Nov-2016	18:00	1.7	NE
27-Nov-2016	19:00	1.7	NNE
27-Nov-2016	20:00	1	NE
27-Nov-2016	21:00	3.8	NE
27-Nov-2016	22:00	0.5	NE
27-Nov-2016	23:00	1	ENE
28-Nov-2016	0:00	1	NNE
28-Nov-2016	1:00	1.3	NNE
28-Nov-2016	2:00	1.6	WNW
28-Nov-2016	3:00	1.3	SSW
28-Nov-2016	4:00	0.9	ENE
28-Nov-2016	5:00	0.5	NE
28-Nov-2016	6:00	0.8	NNE
28-Nov-2016	7:00	1.3	NE
28-Nov-2016	8:00	2.8	NNE
28-Nov-2016	9:00	2.7	SSW
28-Nov-2016	10:00	3.1	SW
28-Nov-2016	11:00	2.7	ENE
28-Nov-2016	12:00	3.3	ENE
28-Nov-2016	13:00	3.3	ESE
28-Nov-2016	14:00	2.8	ESE
28-Nov-2016	15:00	2.1	ESE
28-Nov-2016	16:00	1.7	ENE

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

II. Mean Wind Speed and Wind Direction

28-Nov-2016	17:00	2.3	W
28-Nov-2016	18:00	1.7	WNW
28-Nov-2016	19:00	1.4	E
28-Nov-2016	20:00	1.3	SSW
28-Nov-2016	21:00	1.7	W
28-Nov-2016	22:00	2	WNW
28-Nov-2016	23:00	1.7	W
29-Nov-2016	0:00	1.4	W
29-Nov-2016	1:00	1	WSW
29-Nov-2016	2:00	1.2	W
29-Nov-2016	3:00	1	W
29-Nov-2016	4:00	0.5	SW
29-Nov-2016	5:00	1	W
29-Nov-2016	6:00	0.7	W
29-Nov-2016	7:00	1	ENE
29-Nov-2016	8:00	2.3	W
29-Nov-2016	9:00	2.8	W
29-Nov-2016	10:00	3.5	NE
29-Nov-2016	11:00	3.8	S
29-Nov-2016	12:00	3.8	SSE
29-Nov-2016	13:00	4	SSE
29-Nov-2016	14:00	3.6	N
29-Nov-2016	15:00	3.1	NE
29-Nov-2016	16:00	2.7	N
29-Nov-2016	17:00	2.4	S
29-Nov-2016	18:00	2.3	ENE
29-Nov-2016	19:00	1.1	NE
29-Nov-2016	20:00	1	ENE
29-Nov-2016	21:00	0.8	NNE
29-Nov-2016	22:00	0.7	NE
29-Nov-2016	23:00	0.4	ENE
30-Nov-2016	0:00	0.5	NNE
30-Nov-2016	1:00	0.7	SW
30-Nov-2016	2:00	0.4	ENE
30-Nov-2016	3:00	0.5	NE
30-Nov-2016	4:00	2.3	ENE
30-Nov-2016	5:00	2.1	WSW

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

II. Mean Wind Speed and Wind Direction

30-Nov-2016	6:00	2.4	SSE
30-Nov-2016	7:00	2.1	WNW
30-Nov-2016	8:00	3	NNW
30-Nov-2016	9:00	3.4	WNW
30-Nov-2016	10:00	3.9	WNW
30-Nov-2016	11:00	4.7	NE
30-Nov-2016	12:00	3.5	ENE
30-Nov-2016	13:00	3.5	WSW
30-Nov-2016	14:00	4.6	W
30-Nov-2016	15:00	3.7	NNE
30-Nov-2016	16:00	3.6	NNE
30-Nov-2016	17:00	3	W
30-Nov-2016	18:00	3	W
30-Nov-2016	19:00	2.6	N
30-Nov-2016	20:00	2.7	N
30-Nov-2016	21:00	2.6	ENE
30-Nov-2016	22:00	2.1	ENE
30-Nov-2016	23:00	1.9	ESE

**APPENDIX D
ENVIRONMENTAL MONITORING
SCHEDULES**

Contract No. KL/2012/02
Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area
Impact Air and Noise Monitoring Schedule for November 2016

		1-Nov	2-Nov	3-Nov	4-Nov	5-Nov
		Noise (M9)			1 hr TSP X3	
6-Nov	7-Nov			24 hr TSP		
	Noise (M9)		1 hr TSP X3			
13-Nov	14-Nov	24 hr TSP	Noise (M3, M4)			
		1 hr TSP X3				
20-Nov	21-Nov	24 hr TSP	Noise (M3, M4)	Noise (M9)	24 hr TSP	
	1 hr TSP X3				1 hr TSP X3	
27-Nov	28-Nov		Noise (M9)			
				24 hr TSP		
		Noise (M9)				
			24 hr TSP			

Air Quality Monitoring Station

AM1(B) -Boundary of KTD/Outside Contractor's site office of Contract KL/2012/02
AM2 - Lee Kau Yan Memorial School

Noise Monitoring Station

M3 - Cognitio College
M4 - Lee Kau Yan Memorial School
M9 - Tak Long Estate

**Contract No. KL/2012/02
Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area
Tentative Impact Air and Noise Monitoring Schedule for December 2016**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Dec	2-Dec	3-Dec
				1 hr TSP X3 AM1(B), AM2 Noise (M3 & M4)		
4-Dec	5-Dec	6-Dec	7-Dec	8-Dec	9-Dec	10-Dec
	Noise (M9)	24 hr TSP	1 hr TSP X3 AM1(B) & AM2 Noise (M3 & M4)			
11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec
	24 hr TSP	1 hr TSP X3 AM1(B) & AM2 Noise (M3, M4 & M9)			24 hr TSP	
18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec
	1 hr TSP X3 AM1(B) & AM2 Noise (M3, M4 & M9)			24 hr TSP	1 hr TSP X3 AM1(B) & AM2	
25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec
			Noise (M9) 24 hr TSP	1 hr TSP X3 AM1(B) & AM2 Noise (M3 & M4)		

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

Air Quality Monitoring Station

AM1(B) -Boundary of KTD/Outside Contractor's site office of Contract KL/2012/02
AM2 - Lee Kau Yan Memorial School

Noise Monitoring Station

M3 - Cognitio College
M4 - Lee Kau Yan Memorial School
M9 - Tak Long Estate

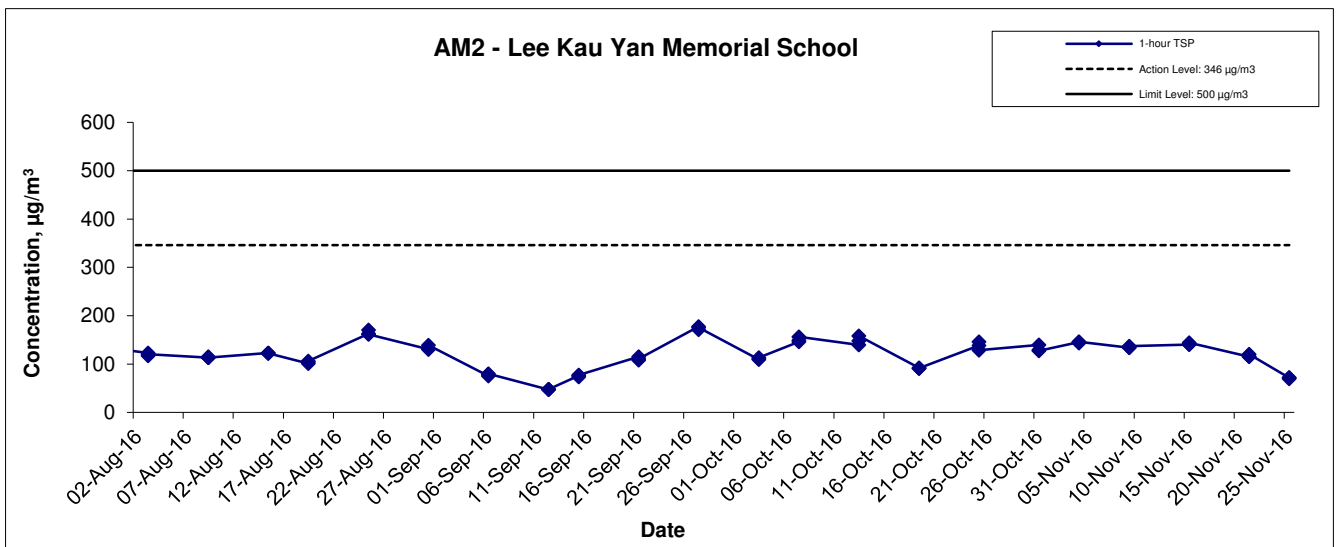
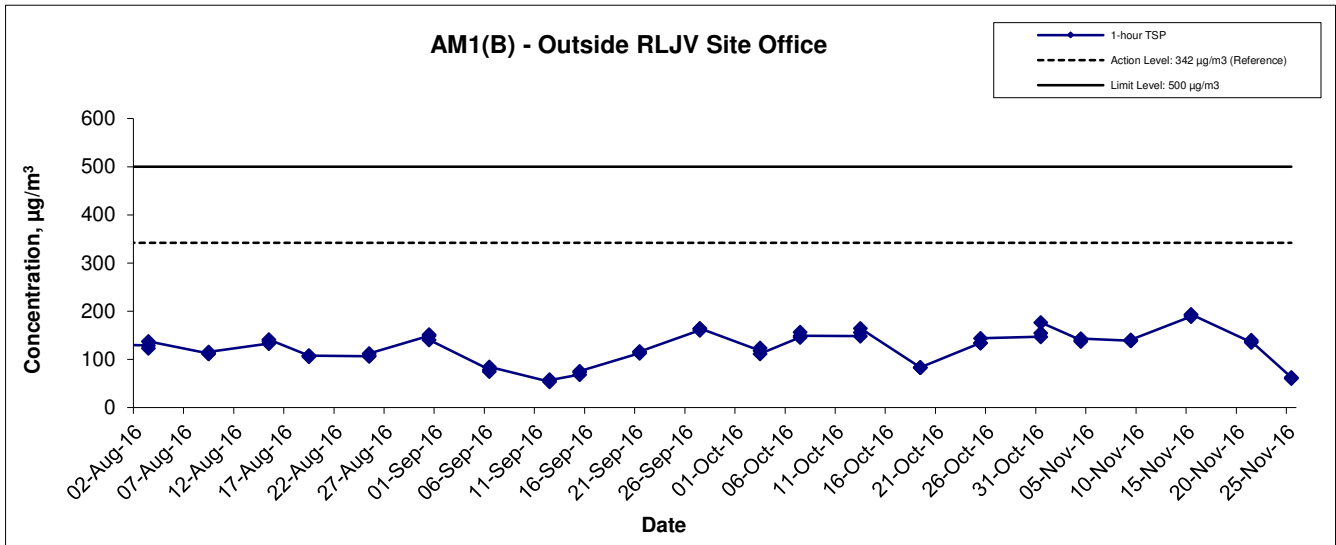
**APPENDIX E
1-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATION**

Appendix E - 1-hour TSP Monitoring Results

Location AM1(B) - Outside RLJV Site Office			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-Nov-16	13:00	Sunny	140.1
4-Nov-16	14:00	Sunny	137.2
4-Nov-16	15:00	Sunny	143.4
9-Nov-16	13:00	Cloudy	138.9
9-Nov-16	14:00	Cloudy	139.5
9-Nov-16	15:00	Cloudy	140.8
15-Nov-16	9:00	Sunny	188.9
15-Nov-16	10:00	Sunny	192.1
15-Nov-16	11:00	Sunny	193.3
21-Nov-16	13:00	Cloudy	135.7
21-Nov-16	14:00	Cloudy	139.8
21-Nov-16	15:00	Cloudy	137.7
25-Nov-16	9:00	Cloudy	62.4
25-Nov-16	10:00	Cloudy	61.6
25-Nov-16	11:00	Cloudy	60.8
		Average	134.1
		Maximum	193.3
		Minimum	60.8

Location AM2 - Lee Kau Yan Memorial School			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-Nov-16	13:25	Sunny	145.6
4-Nov-16	14:25	Sunny	143.6
4-Nov-16	15:25	Sunny	146.0
9-Nov-16	8:15	Cloudy	133.8
9-Nov-16	9:15	Cloudy	134.5
9-Nov-16	10:15	Cloudy	137.1
15-Nov-16	13:00	Sunny	140.1
15-Nov-16	14:00	Sunny	140.7
15-Nov-16	15:00	Sunny	144.1
21-Nov-16	9:00	Cloudy	115.5
21-Nov-16	10:00	Cloudy	115.6
21-Nov-16	11:00	Cloudy	120.1
25-Nov-16	13:00	Cloudy	71.3
25-Nov-16	14:00	Cloudy	69.3
25-Nov-16	15:00	Cloudy	72.3
		Average	122.0
		Maximum	146.0
		Minimum	69.3

1-hr TSP Concentration Levels



Title Contract No. KL/2012/02 Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA13043	
	Date Nov 16	Appendix E	

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

Appendix F - 24-hour TSP Monitoring Results

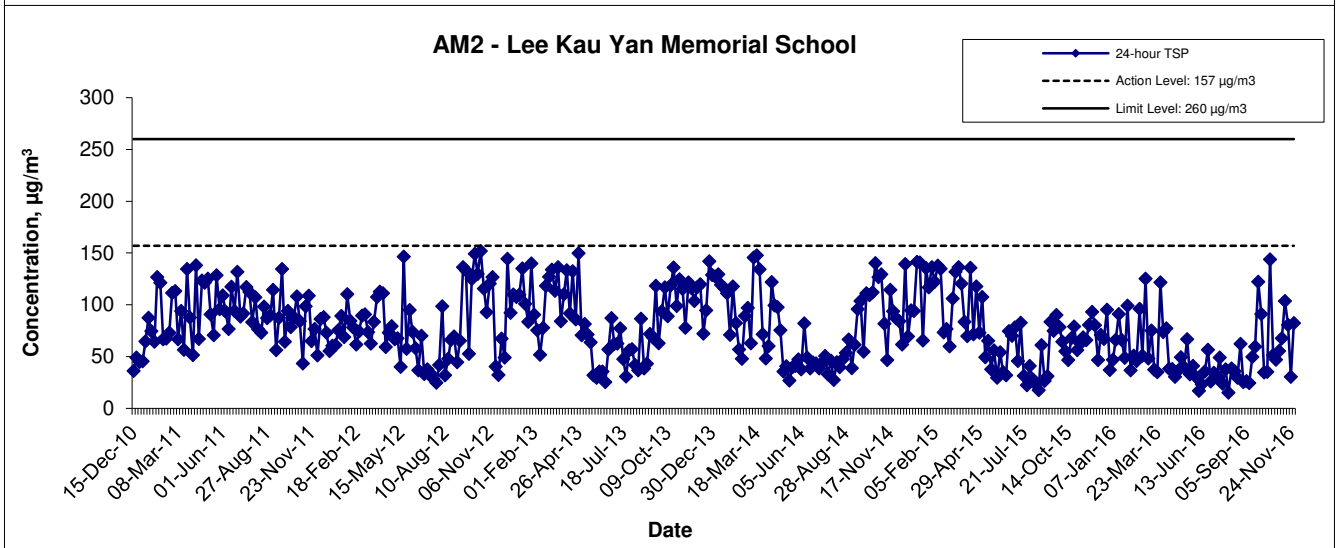
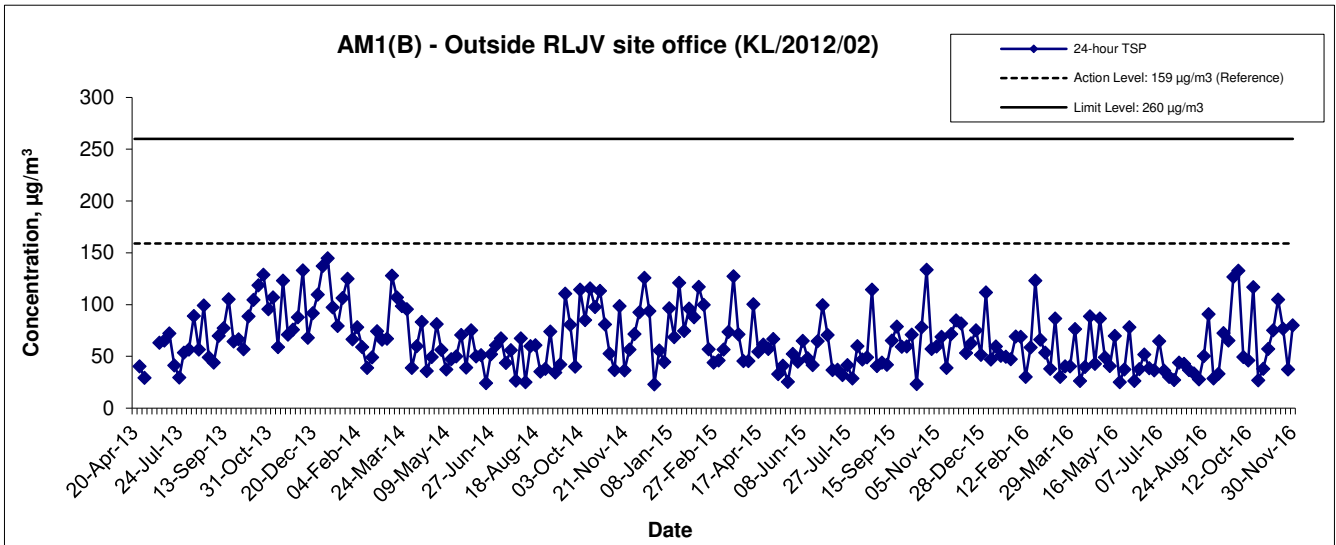
Location AM1(B) - Outside RLJV site office (KL/2012/02)

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
3-Nov-16	Sunny	292.7	768.6	3.2547	3.3577	0.1030	696.1	720.1	24.0	1.25	1.25	1.25	1795.5	57.4
8-Nov-16	Cloudy	299.7	766.3	3.6012	3.7345	0.1333	720.1	744.1	24.0	1.23	1.23	1.23	1773.6	75.2
14-Nov-16	Sunny	299.3	765.2	3.6247	3.8108	0.1861	744.1	768.1	24.0	1.23	1.23	1.23	1773.6	104.9
18-Nov-16	Cloudy	296.6	764.3	3.3018	3.4383	0.1365	768.1	792.1	24.0	1.24	1.24	1.24	1780.0	76.7
24-Nov-16	Cloudy	287.5	768.4	3.2712	3.3381	0.0669	792.1	816.1	24.0	1.24	1.24	1.24	1782.4	37.5
30-Nov-16	Sunny	291.3	770.3	3.5858	3.7280	0.1422	816.6	840.6	24.0	1.23	1.23	1.23	1773.5	80.2
													Min	37.5
													Max	104.9
													Average	72.0

Location AM2 - Lee Kau Yan Memorial School

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
3-Nov-16	Sunny	293.4	768.3	3.2862	3.3849	0.0987	17333.4	17357.4	24.0	1.24	1.24	1.24	1784.9	55.3
8-Nov-16	Cloudy	300.2	766.6	3.5866	3.7058	0.1192	17357.4	17381.4	24.0	1.22	1.22	1.22	1763.1	67.6
14-Nov-16	Sunny	299.7	765.4	3.5781	3.7609	0.1828	17381.4	17405.4	24.0	1.22	1.22	1.22	1763.1	103.7
18-Nov-16	Cloudy	296.4	764.7	3.2841	3.4267	0.1426	17405.4	17429.4	24.0	1.23	1.23	1.23	1771.9	80.5
24-Nov-16	Cloudy	287.8	768.1	3.2628	3.3174	0.0546	17429.4	17453.4	24.0	1.24	1.24	1.24	1787.8	30.5
30-Nov-16	Sunny	292.5	769.6	3.6115	3.7579	0.1464	17453.5	17477.5	24.0	1.23	1.23	1.23	1775.2	82.5
													Min	30.5
													Max	103.7
													Average	70.0

24-hr TSP Concentration Levels



Title Contract No. KL/2012/02 Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA13043	
	Date Nov 16	Appendix F	

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

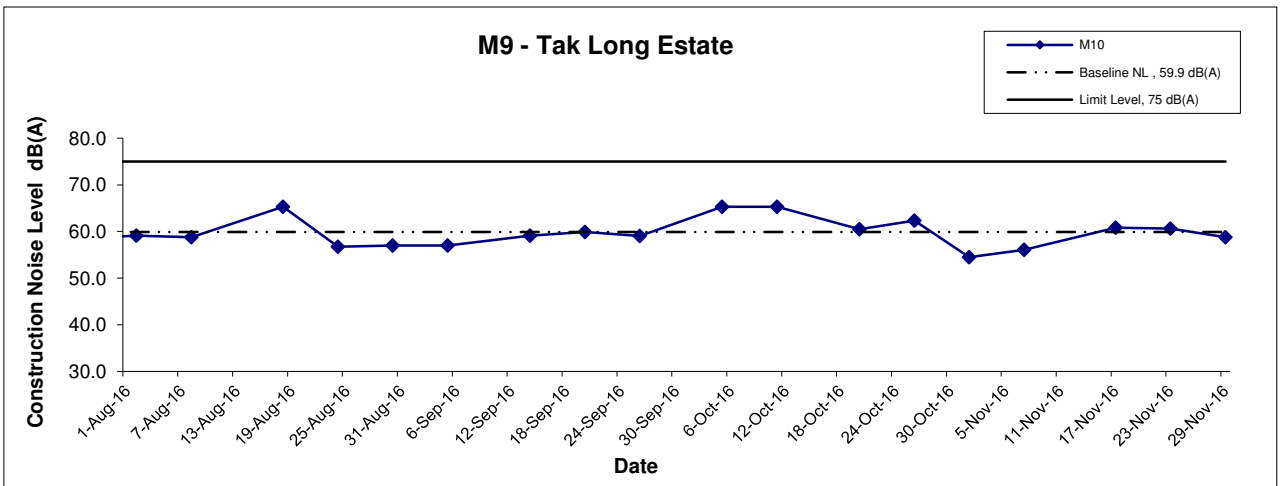
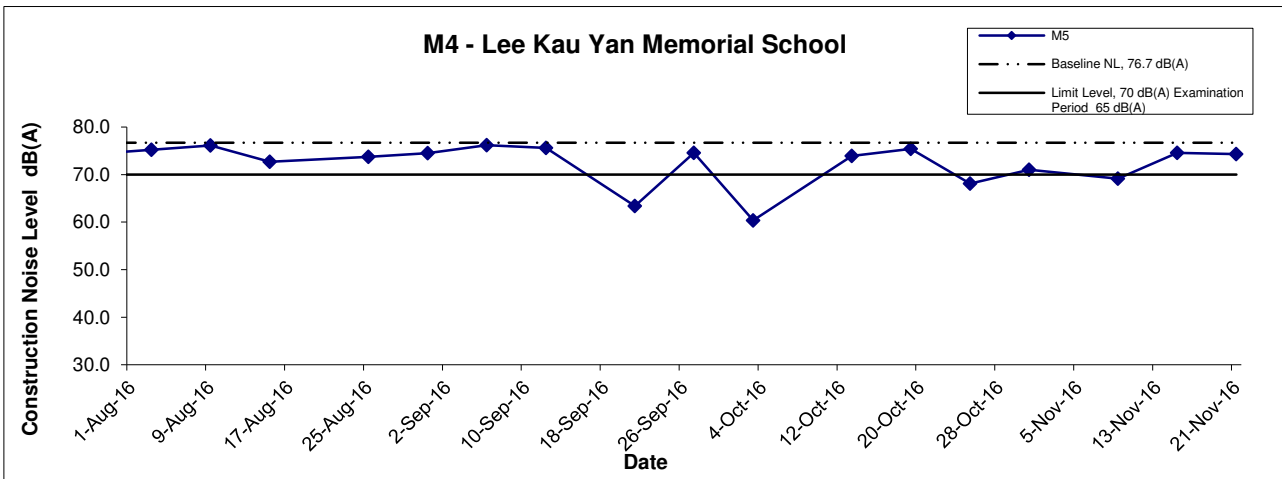
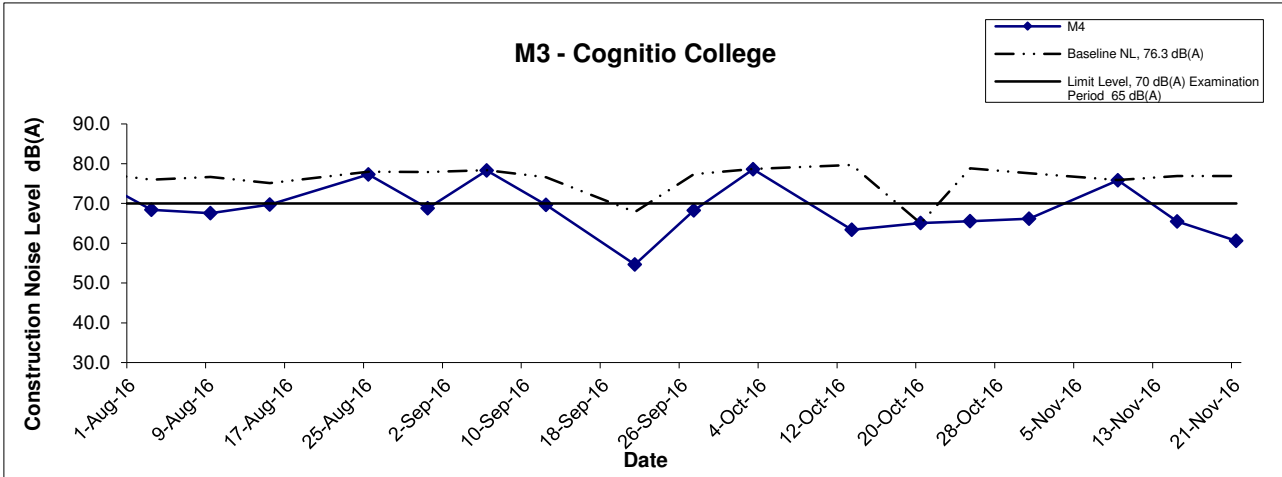
Appendix G - Noise Monitoring Results

Location M3 - Cognito College							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Background Noise	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
9-Nov-16	11:30	Cloudy	75.8	77.3	75.2	75.9	75.8 Measured ≤ Background
15-Nov-16	15:15	Sunny	77.2	79.3	73.9	76.9	65.4
21-Nov-16	15:30	Cloudy	77.0	78.2	74.8	76.9	60.6

Location M4 - Lee Kau Yan Memorial School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
9-Nov-16	08:30	Cloudy	77.4	79.3	75.7	76.7	69.1
15-Nov-16	13:05	Sunny	74.6	76.8	72.0		74.6 Measured ≤ Baseline
21-Nov-16	09:05	Cloudy	74.3	76.8	73.1		74.3 Measured ≤ Baseline

Location M9 - Tak Long Estate							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
1-Nov-16	13:00	Cloudy	61.0	62.2	59.0	59.9	54.5
7-Nov-16	13:45	Sunny	61.4	62.6	59.5		56.1
17-Nov-16	09:30	Sunny	63.4	63.7	59.5		60.8
23-Nov-16	13:30	Cloudy	63.3	64.4	61.3		60.6
29-Nov-16	10:30	Cloudy	62.4	64.4	59.8		58.8

Noise Levels



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

Title Contract No. KL/2012/02 Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA13043	CINOTECH
	Date Nov 16	Appendix G	

APPENDIX H
SUMMARY OF EXCEEDANCE

Contract No. KL/2012/02

Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area

Appendix H – Summary of Exceedance

Exceedance Report for Contract No. KL/2012/02

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

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

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

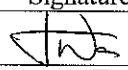

**APPENDIX I
SITE AUDIT SUMMARY**

Contract No. KL/2012/02
Stage 3A Infrastructure at Former North Apron Area

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161102
Date	2 November 2016
Time	14:00 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
161102-R01	• Spraying water should be provided regularly to prevent the dust emission especially the exposed surface area in the site area near CLP.	C 13
161102-R02	• The dusty material should be covered by impervious material to prevent the dust emission near VT1's access and Tsat Po Street.	C 7
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161025), item 161025-R02 was found outstanding and remarked as 161102-R01. Review will be needed during next audit section.	

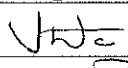
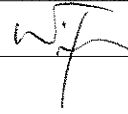
	Name	Signature	Date
Recorded by	Janet Wai		2 November 2016
Checked by	Dr. Priscilla Choy		2 November 2016

Contract No. KL/2012/02
Stage 3A Infrastructure at Former North Apron Area

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161109
Date	9 November 2016
Time	14:00 – 16:20

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
161109-R01	• Spraying water should be provided regularly to prevent the dust emission especially the exposed surface area in the site area near CLP.	C 13
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits / Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161102), item 161102-R02 was found outstanding and remarked as 161109-R01. Review will be needed during next audit section.	

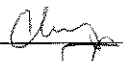
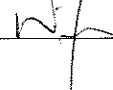
	Name	Signature	Date
Recorded by	Janet Wai		9 November 2016
Checked by	Dr. Priscilla Choy		9 November 2016

Contract No. KL/2012/02
Stage 3A Infrastructure at Former North Apron Area

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161116
Date	16 November 2016
Time	14:00 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
161116-R01	• The damaged fencing for tree protection zone at SW3 should be repaired.	F 1
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161109), all environmental deficiency has been rectified/improved by the Contractor.	

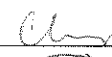

	Name	Signature	Date
Recorded by	KC Chung		16 November 2016
Checked by	Dr. Priscilla Choy		16 November 2016

Contract No. KL/2012/02
Stage 3A Infrastructure at Former North Apron Area

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161122
Date	22 November 2016
Time	14:30 – 16:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
161122-O01	• Waste was observed accumulated near King Fuk Street . Waste sorting area should be provided for the waste stored near King Fuk Street prior disposal.	E 4 ii
161122-R02	• General refuse at VT1 & SW3 should be properly disposed of to prevent accumulation.	E 1 i & 1 iii
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161116), all environmental deficiency has been rectified/improved by the Contractor.	

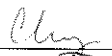
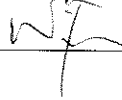
	Name	Signature	Date
Recorded by	KC Chung		22 November 2016
Checked by	Dr. Priscilla Choy		22 November 2016

Contract No. KL/2012/02
Stage 3A Infrastructure at Former North Apron Area

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161130
Date	30 November 2016
Time	14:00 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
161130-O01	• The haul road of Sze Mei Street should be properly maintained and the dusty trail should be cleared.	C 3
161130-R03	• The dusty material deposit on the access road near T.I. Tower should be cleared.	C 3
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
161130-R02	• Waste sorting area should be provided for the waste stored near King Fuk Street prior disposal.	E 4 ii
161130-R04	• General refuse at SW3 should be properly disposed of to prevent accumulation.	E 1 i & 1 iii
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161122), follow up actions are required for item 161122-O01 and 161122-R02 which were remarked as 161130-R02 and 161130-R04.	

	Name	Signature	Date
Recorded by	KC Chung		30 November 2016
Checked by	Dr. Priscilla Choy		30 November 2016

APPENDIX J
EVENT ACTION PLANS

Appendix J - Event Action Plans

Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contactor, IEC and ER; 3. Repeat measurement to confirm finding. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and ER; 3. Increase monitoring frequency to daily; 4. Discuss with IEC and Contractor on remedial actions required; 5. Assess the effectiveness of Contractor's remedial actions; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues. 	<ol style="list-style-type: none"> 1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to ER and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Assess effectiveness of Contractor's remedial actions and keep 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposals for remedial actions to ER and IEC within three

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

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Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals;

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

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

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	<p>ER</p> <p>2. Increase monitoring frequency</p> <p>3. Discuss remedial actions with IEC, ER and Contractor</p> <p>4. Monitor remedial actions until rectification has been completed</p> <p>5. If non-conformity stops, cease additional monitoring</p>	<p>2. Check Contractor's working method</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise ER on effectiveness of proposed remedial measures</p> <p>5. Supervise implementation of remedial measures.</p>	<p>implemented</p>	<p>undertake any necessary replacement</p>
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**APPENDIX K
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

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

Types of Impacts	Mitigation Measures	Status
<p>Construction Dust</p>	<p>8 times daily watering of the work site with active dust emitting activities.</p>	<p>*</p>
	<p>Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.</p>	
	<ul style="list-style-type: none"> • Stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. 	<p>*</p>
	<ul style="list-style-type: none"> • Misting for the dusty material should be carried out before being loaded into the vehicle. 	<p>^</p>
	<ul style="list-style-type: none"> • Any vehicle with an open load carrying area should have properly fitted side and tail boards. 	<p>^</p>
	<ul style="list-style-type: none"> • 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. 	<p>^</p>
	<ul style="list-style-type: none"> • The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation. 	<p>^</p>
<ul style="list-style-type: none"> • The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. On-site unpaved roads should be compacted and kept free of lose materials. 	<p>^</p>	
<ul style="list-style-type: none"> • Vehicle washing facilities should be provided at every 	<p>^</p>	

	<p>vehicle exit point.</p> <ul style="list-style-type: none"> • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. • Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. • Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides. • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. • <u>DWFI compound for JVBC:</u> a DWFI compound is proposed at the downstream of JVC to contain pollution in drainage systems entering the KTAC and KTTS by interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desilting facilities will form part of the compounds to prevent any accumulation of sediment within the downstream section of JVBC and hence fully mitigate the potential odour emissions from the headspace of JVBC near the existing discharge locations. The odour generating operations within the proposed desilting compound will be fully enclosed and the odorous air will be collected and treated by high 	<p>^</p> <p>*</p> <p>^</p> <p>^</p> <p>N/A</p>
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Construction Noise	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump	^
	Good Site Practice:	^
	• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.	N/A(1)
	• Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.	^
	• Mobile plant, if any, should be sited as far away from NSRs as possible.	^
	• Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.	^
	• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	^
	• Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	^
Scheduling of Construction Works during School Examination Period	^	
(i) Provision of low noise surfacing in a section of Road L2; and	N/A	
(ii) Provision of structural fins	N/A	

	(i) Avoid the sensitive façade of class room facing Road L2 and L4; and	N/A
	(ii) Provision of low noise surfacing in a section of Road L2 & L4	N/A
	(i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 111; and	N/A
	(ii) Setback of building about 5m from site boundary.	N/A
	Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A
	(i) avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and	N/A
	(ii) for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not provide the facades with openable window.	N/A
	(i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or	N/A
	(ii) provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height of the residential block(s) located at less than 55m away from To Kwa Wan Road to no more than 25m above ground.	N/A
	(i) avoid any sensitive facades with openable window facing the slip road connecting Prince Edward Road East and San Po Kong or other alternative mitigation measures and at-source mitigation measures for the surrounding new local roads to minimise the potential traffic noise impacts from the slip road	N/A

	<p>All the ventilation fans installed in the below will be provided with silencers or acoustics treatment.</p> <ul style="list-style-type: none"> (i) SPS (ii) ESS (iii) Tunnel Ventilation Shaft (iv) EFTS depot <p>Installation of retractable roof or other equivalent measures</p>	<p>N/A N/A N/A N/A N/A</p>
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<p style="text-align: center;">Construction Water Quality</p>	<p>The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including:</p>	
	<ul style="list-style-type: none"> • Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply; 	N/A
	<ul style="list-style-type: none"> • Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps; 	N/A
	<ul style="list-style-type: none"> • An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and 	N/A
	<ul style="list-style-type: none"> • For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided so that swift actions could be taken in case of malfunction of unmanned facilities. 	N/A
	<p>Construction Phase <u>Marine-based Construction</u></p>	
	<p><i>Capital and Maintenance Dredging for Cruise Terminal</i></p>	
	<p>Mitigation measures for construction of the proposed cruise terminal should follow those recommended in the approved EIA for CT Dredging.</p>	N/A

	<p><i>Fireboat Berth, Runway Opening and Road T2</i></p> <p>Silt curtains should be deployed around the close grab dredger to minimize release of sediment and other contaminants for any dredging and filling activities in open water.</p> <p>Dredging at and near the seawall area for construction of the public landing steps cum fireboat berth should be carried out at a maximum production rate of 1,000m³ per day using one grab dredger.</p> <p>The proposed construction method for runway opening should adopt an approach where the existing seawall at the runway will not be removed until completion of all excavation and dredging works for demolition of the runway. Thus, excavation of bulk fill and majority of the dredging works will be carried out behind the existing seawall, and the sediment plume can be effectively contained within the works area. As there is likely some accumulation of sediments alongside the runway, there will be a need to dredge the existing seabed after completion of all the demolition works. Dredging alongside the 600m opening should be carried out at a maximum production rate of 2,000m³ per day using one grab dredger.</p> <p>Dredging for Road T2 should be conducted at a maximum rate of 8,000m³ per day (using four grab dredgers) whereas the sand filling should be conducted at a maximum rate of 2,000m³ per day (using two grab dredgers).</p> <p>Silt screens shall be applied to seawater intakes at WSD seawater intake.</p>	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A (1)</p> <p>N/A</p>
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Land-based Construction

Construction Runoff

Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:

- use of sediment traps
- adequate maintenance of drainage systems to prevent flooding and overflow

Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.

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	<p>Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.</p> <p>Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 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.</p> <p>Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.</p> <p>Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
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	<p>Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.</p> <p>Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.</p> <p>All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.</p> <p><i>Drainage</i></p> <p>It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
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	<p>All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.</p> <p>All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.</p> <p><i>Sewage Effluent</i></p> <p>Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.</p> <p><i>Stormwater Discharges</i></p> <p>Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
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	<p><i>Debris and Litter</i></p> <p>In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials. litter or wastes to marine waters does not occur</p> <p><i>Construction Works at or in Close Proximity of Storm Culvert or Seafront</i></p> <p>The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.</p> <p>The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.</p> <p>Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works.</p> <p>Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.</p> <p>Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers.</p> <hr/> <p>Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
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	<p>Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.</p> <p>Construction effluent, site run-off and sewage should be properly collected and/or treated.</p> <p>Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.</p> <p>Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.</p> <p>Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.</p> <p>Supervisory staff should be assigned to station on site to closely supervise and monitor the works</p> <p>Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.</p>	<p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>N/A</p>
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	<p>Good Site Practices It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include:</p> <ul style="list-style-type: none"> • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site • Training of site personnel in proper waste management and chemical waste handling procedures • Provision of sufficient waste disposal points and regular collection for disposal • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers • A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites) 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
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	<p>Waste Reduction Measures Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> • Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal • Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force • Any unused chemicals or those with remaining functional capacity should be recycled • Proper storage and site practices to minimise the potential for damage or contamination of construction materials <p>Dredged Marine Sediment</p> <p>The basic requirements and procedures for dredged mud disposal are specified under the ETWB TCW No. 34/2002. The management of the dredging, use and disposal of marine mud is monitored by the MFC, while the licensing of marine dumping is required under the Dumping at Sea Ordinance and is the responsibility of the Director of Environmental Protection (DEP)</p>	<p style="text-align: center;">^</p> <p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p>
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	<p>The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 - Open Sea Disposal. Contaminated sediment would require either Type 1 - Open Sea Disposal (Dedicated Sites), Type 2 - Confined Marine Disposal, or Type 3 - Special Treatment / Disposal and must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment and disposed properly at the designated disposal site.</p>	N/A
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	<p>It will be the responsibility of the contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The contractor for the dredging works should apply for allocation of marine disposal sites and all necessary permits from relevant authorities for the disposal of dredged sediment. During transportation and disposal of the dredged marine sediments requiring Type 1, Type 2, or Type 3 disposal, the following measures should be taken to minimise potential impacts on water quality:</p> <ul style="list-style-type: none"> • Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved • Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic self-monitoring devices as required under the Dumping at Sea Ordinance and as specified by the DEP • Barges or hopper barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation 	<p>N/A</p> <p>N/A</p> <p>N/A</p>
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	<p>Construction and Demolition Material</p> <p>Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:</p> <ul style="list-style-type: none"> • Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric • Skip hoist for material transport should be totally enclosed by impervious sheeting • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet • The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
--	--	--

	<p>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.</p> <p>Chemical Waste</p> <p>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i></p> <p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separate from C&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</p>	<p>^</p> <p>^</p> <p>*</p>
--	---	----------------------------

<p>Landscape and Visual</p>	<p>CM1 All existing trees should be carefully protected during construction.</p> <p>CM2 Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.</p> <p>CM3 Control of night-time lighting.</p> <p>CM4 Erection of decorative screen hoarding.</p>	<p>*</p> <p>^</p> <p>N/A(1)</p> <p>^</p>
------------------------------------	---	--

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

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

Contract No. KL/2012/02

Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area

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

Reporting Month: November 2016

Contract No. KL/2012/02

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

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

**APPENDIX M
SUMMARY OF WASTE GENERATION
AND DISPOSAL RECORDS**

MONTHLY SUMMARY WASTE FLOW TABLE FOR 2016 (YEAR)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Borken Concrete (4)	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse
	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]
JAN	1.33977	0	0	0.89856	0.32871	0	0	0	0	0	0.11250
FEB	3.60932	0	0	3.47750	0.04472	0	0	0	0	0	0.08710
MAR	5.27182	0	0	5.08400	0.01982	0	0	0	0	0	0.16800
APR	8.34401	0	0	8.12400	0.00451	0	0	0	0	0	0.21550
MAY	15.66432	0	0	15.29400	0.04401	0	0	0	0	0	0.32632
JUNE	3.47485	0	0	3.34700	0.01415	0	0	0	0	0	0.11370
SUB-TOTAL	37.70411	0	0	36.22506	0.45594	0	0	0	0	0	1.02312
JULY	2.45816	0	0	1.83100	0.04076	0	0	0	0	0	0.58640
AUG	0.34249	0	0	0	0.04059	0	0	0	0	0	0.30190
SEPT	0.53205	0	0	0.14700	0.06335	0	0	0	0	0	0.32170
OCT	1.13318	0	0	0.77000	0.04833	0	0	0	0	0	0.31485
NOV	1.12286	0	0	0.70700	0.02466	0	0	0	0	0	0.39120
DEC											
TOTAL	43.29285	0	0	39.68006	0.67362	0	0	0	0	0	2.93917

Forecast of Total Quantities of C&D materials to be Generated from the Contracts *										
Total Quantity	Borken Concrete (4)	Reused in the Contract	Reused in other	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard	Plastics (3)	Chemical Waste	Other, e.g. general
[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]
27.972	26.472	0	0	0	0	0	0.9	0	1.8	1.5

- Notes :
- (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 material.

MATERIALAB CONSULTANTS LIMITED

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MaterialLab

Appendix B

**Monthly EM&A Report
For**

Contract No. KL/2012/03

Stage 4 infrastructure works at north apron area of Kai Tak Airport

Civil Engineering and Development Department


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

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

Monthly EM&A Report

November 2016

(Version 1.0)

Approved By	 (Environmental Team Leader)
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REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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For the attention of: Dr. Priscilla Choy

Subject: Contract No. KL/2012/03 Kai Tak Development – Stage 4
Infrastructure at Former North Apron Area
Verification for Monthly EM&A Report (November 2016)
(Draft Mrpt1611 v1 (Revised))

By Email

Our ref: EB001399-320/THW16-30971
Your ref:
Date: 12 December 2016

Dear Dr Choy,

We have no further comments on the revised report received via e-mail dated 12 December 2016 and hereby verify the report.

Should there be any queries, please feel free to contact the undersigned on 2911 2744.

Yours faithfully,
For and on behalf of
Arcadis Design & Engineering Limited



F N Wong
Independent Environmental Checker

cc. Mr. John Yam (AECOM) (By-email)

FN/my

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EXECUTIVE SUMMARY

Introduction

1. This is the 36th Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Ltd. for “Contract No. KL/2012/03 - Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area” (Hereafter referred to as “the Project”). This contract comprises the construction of Schedule 2 Designated Projects (DP) Road D2 & Sewage Pumping Station PS2 and PS NPS which forms a part of the works under two Environmental Permits (EP), EP-337/2009 and EP-344/2009. The title of the designated projects under Environmental Permit No.: EP-344/2009 is “New sewage pumping stations serving Kai Tak Development” and under Environmental Permit No.: EP-337/2009 is “New distributor roads serving the planned Kai Tak Development”. This report documents the findings of EM&A Works conducted from 1 to 30 November 2016.
2. The major site activities undertaken in the reporting month included:
 - Daily Cleaning;
 - Installation of hand-railing & ladder inside Box Culvert B5;
 - Construction of staircase and landing and E&M Works at PS2;
 - Water test, backfill and sheet-pile removal in Heading 7A;
 - Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;
 - Outfall construction at Box Culvert B6;
 - Road widening works (excavation and UU works) at Sung Wong Toi Road;
 - Maintenance & Servicing Engineer’s Office at Portion 9;
 - Lay HDPE pipe at Pit 1 and 9;
 - Pipe jacking at Pit 4;
 - Chamber construction at Pit 5;
 - Installation of drainage, UU laying works and Road works at Road D2;
 - Finishing works and E&M works at NPS;
 - UU works and Road works at Road L19 & Bailey St; and
 - Storage of excavated material at Portion 6.

Environmental Monitoring Works

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

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

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

1-hour & 24-hour TSP Monitoring

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

Construction Noise Monitoring

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

Environmental Licenses and Permits

8. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, Environmental Permits No. EP-344/2009 and EP-337/2009 were issued on 23 April 2009.
9. Registration of Chemical Waste Producer (Waste Producer Number: 5213-286-K2958-05).
10. Water Discharge License (WT00020971-2015).
11. Construction Noise Permit (GW-RE0964-16).

Key Information in the Reporting Month

12. Summary of complaint received, reporting changes and notifications of any summons and successful prosecutions in the reporting month is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Reporting Changes	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Future Key Issues

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

1. INTRODUCTION

Background

- 1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 4 Infrastructure at Former North Apron Area is one of the construction stages of KTD. Schedule 2 DPs in this Project include new distributor roads serving the planned KTD and new sewage pumping stations serving the planned KTD. The general layout of the Project is shown in **Figure 1**.
- 1.2 Two Environmental Permits (EPs) No. EP-344/2009 and EP-337/2009 were also issued to the Permit Holder Civil Engineering and Development Department on 23 April 2009 for new sewage pumping stations serving the planned KTD and new distributor roads serving the planned KTD respectively.
- 1.3 A study of environmental impact assessment (EIA) was undertaken to identify the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and recommend possible mitigation measures associated with the works. The EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 April 2009.
- 1.4 Cinotech Consultants Limited (Cinotech) is commissioned by Kwan On Construction Co., Ltd. (the Contractor) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2012/03 - Stage 4 Infrastructure at Former North Apron Area. The construction work under KL/2012/03 comprises the construction of Road D2 & Sewage Pumping Station PS2 and PS NPS which forms a part of the works under two EPs (EP-337/2009 and EP-344/2009).
- 1.5 The construction commencement of this Contract was on 1st December 2013 for Road D2, Sewage Pumping Station PS2 and PS NPS. This is the 36th Monthly EM&A report summarizing the EM&A works for the Project from 1 to 30 November 2016.

Project Organizations

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

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

Table 1.1 Key Project Contacts

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. C. K. Choi	Senior Engineer	2301 1174	2301 1277
AECOM	Engineer's Representative	Mr. John Yam	SRE	2798 0771	3013 8864
		Mr. Ivan Yim	RE		
Cinotech	Environmental Team	Dr. Priscilla Choy	Environmental Team Leader	2151 2089	3107 1388
		Ms. Ivy Tam	Project Coordinator and Audit Team Leader	2151 2090	
Arcadis	Independent Environmental Checker	Mr. Wong Fu Nam	Independent Environmental Checker	2911 2744	2805 5028
Kwan On	Contractor	Mr. Albert Ng	Site Agent	3689 7752	3689 7726
				6146 6761 (Hotline telephone number)	

Construction Activities undertaken during the Reporting Month

1.8 The site activities undertaken in the reporting month included:

- Daily Cleaning;
- Installation of hand-railing & ladder inside Box Culvert B5;
- Construction of staircase and landing and E&M Works at PS2;
- Water test, backfill and sheet-pile removal in Heading 7A;
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;
- Outfall construction at Box Culvert B6;
- Road widening works (excavation and UU works) at Sung Wong Toi Road;
- Maintenance & Servicing Engineer's Office at Portion 9;
- Lay HDPE pipe at Pit 1 and 9;
- Pipe jacking at Pit 4;
- Chamber construction at Pit 5;
- Installation of drainage, UU laying works and Road works at Road D2;
- Finishing works and E&M works at NPS;
- UU works and Road works at Road L19 & Bailey St; and
- Storage of excavated material at Portion 6.

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

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

Construction Works	Generated Major Environmental Impact	Control Measures
Construction of superstructure of Pumping Station PS2 and NPS;	Dust, Water Quality, Waste Management	<ul style="list-style-type: none"> Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; and On-site waste sorting and implementation of trip ticket system.
Backfilling between sewerage manholes 1K1_1 and FMH10_340 and construction of manhole FMH10_370a at L6;	Dust, Noise	<ul style="list-style-type: none"> Use of quiet plant and well-maintained construction plant; and Properly cover the stockpiles;
Installation of precast unit and construction of in-situ portions of Box Culvert B6; Construction of jacking pits nos. 1 and 2; Installation of gas pipe at pit no. 10; Construction of washout chamber at pit no. 11;	Noise, Waste Management	<ul style="list-style-type: none"> Use of quiet plant and well-maintained construction plant; and Provide hoarding. Good management and control on construction waste reduction
Construction of sewerage manhole FMH 10 at Bailey Street; Widening works of Sung Wong Toi Road.	Noise	<ul style="list-style-type: none"> Use of quiet plant and well-maintained construction plant; and Provide hoarding.
Pipe laying from manhole SMH2204 to Box Culvert B6; Laying of rising mains from PS2 to chainage CHA-18; Pipe laying from stormwater manholes SMH1962 to SMH1963 and construction of manholes SMH1953 and SMH1963 at L6; Installation of DCS;	Noise, Water Quality	<ul style="list-style-type: none"> Use of quiet plant and well-maintained construction plant; and Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall.

Summary of EM&A Requirements

1.10 The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event Action Plans;
- Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.

1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.

1.12 This report presents the implementation of the EM&A programme for the Project from 1 to 30 November 2016.

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

Table 1.3 Air Quality and Noise Monitoring Stations for this Project

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

Remarks:

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

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

Status of Compliance with Environmental Permits Conditions

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

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

EP Conditions	Submission	Submission Date	Remark
1.11	Notification of Commencement Date of Construction of Project	31 October 2013	For Road D2
2.3	Management Organization of Main Construction Companies	31 October 2013	For Contract No. KL/2012/03
2.4	Design Drawing(s) of the Project	28 October 2013	For Road D2
2.11	Landscape Mitigation Plan(s) for distributors road(s)	7 January 2014	For Road D2
2.12	As-built drawing(s) for the distributor road(s)	To be submitted at least one week before the commencement of operation of distributor road(s)	
3.2	Baseline Monitoring Report	26 November 2010 (Part I) 24 December 2010 (Part II)	/
3.3	Four hard copies and one electronic copy of the Monthly EM&A Report No. 34 (September 2016)	14 November 2016	Monthly EM&A Report for Contract No. KL/2012/03

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

EP Conditions	Submission	Submission Date	Remark
1.11	Notification of Commencement Date of Construction of Project	31 October 2013	For Pumping Station PS2 and PS NPS
2.3	Management Organization of Main Construction Companies	31 October 2013	For Contract No. KL/2012/03
2.4	Design Drawing(s) of the Project	28 October 2013	For Pumping Station PS2 and PS NPS
2.11	Landscape Mitigation Plan(s) for sewage pumping station(s)	7 January 2014	For Pumping Station PS2 and PS NPS
2.12	As-built drawing(s) for the sewage pumping station (s)	To be submitted at least one week before the commencement of operation of distributor road(s)	
3.2	Baseline Monitoring Report	26 November 2010 (Part I) 24 December 2010 (Part II)	/
3.3	Four hard copies and one electronic copy of the Monthly EM&A Report No.34 (September 2016)	14 November 2016	Monthly EM&A Report for Contract No. KL/2012/03

2. AIR QUALITY

Monitoring Requirements

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

Monitoring Locations

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

Table 2.1 Locations for Air Quality Monitoring

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

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

Monitoring Equipment

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

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Calibrator	G25A	1
1-hour TSP Dust Meter	Laser Dust Monitor – Model LD-3, LD-3B/ Met One Instruments – AEROCET-531	5
HVS Sampler	GMWS 2310 c/w of TSP sampling inlet	4
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	1

Monitoring Parameters, Frequency and Duration

- 2.4 Table 2.3 summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting month is shown in **Appendix D**.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

Parameters	Frequency
1-hr TSP	At least three times every 6 days
24-hr TSP	At least once every 6 days

Monitoring Methodology and Quality Assurance and Quality Control (QA/QC) Procedure

1-hour TSP Monitoring

Measuring Procedures

- 2.5 The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follows:
- The 1-hour dust meter is placed at least 1.3 meters above ground.
 - Set POWER to "ON" and make sure that the battery level was not flash or in low level.
 - Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
 - Push the knob at MEASURE position.
 - Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
 - Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
 - Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

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

24-hour TSP Monitoring

Instrumentation

- 2.7 High volume samplers (HVS) (Model GMWS-2310 Accu-Vol) completed with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in section 2.5 of the updated EM&A Manual.

Operating/Analytical Procedures

- 2.8 Operating/analytical procedures for the operation of HVS were as follows:
- A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
 - No two samplers were placed less than 2 meters apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
 - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
 - No furnaces or incineration flues were nearby.
 - Airflow around the sampler was unrestricted.
 - The sampler was more than 20 meters from the drip line.
 - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
- 2.9 Prior to the commencement of the 24-hour TSP sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 2.10 For 24-hour TSP sampling, fiberglass filters having a collection efficiency of $\geq 99\%$ for particles of 0.3 μm (DOP) diameter were used.
- 2.11 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.12 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 2.13 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

- 2.14 The shelter lid was closed and secured with the aluminum strip.
- 2.15 The timer was then programmed so that the TSP will be sampled for 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.16 After completion of sampling, the filter was removed and sent to Wellab Ltd., which is accredited under HOKLAS for laboratory analysis. The elapsed time was also recorded.
- 2.17 Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning temperature should be between 25°C and 30°C and not vary by more than $\pm 3^\circ\text{C}$; the relative humidity (RH) should be $< 50\%$ and not vary by more than $\pm 5\%$. A convenient working RH is 40%.

Maintenance/Calibration

- 2.18 The following maintenance/calibration was required for the HVS:
- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
 - High volume samplers were calibrated at bi-monthly intervals using G25A Calibration Kit throughout all stages of the air quality monitoring.
 - Orifice Transfer Standards were calibrated at yearly intervals throughout all stages of the air quality monitoring.

Results, Observations and Action/Limit Level Exceedance

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

- 2.24 According to our field observations, the major dust source identified at the designated air quality monitoring stations is as follows:

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

Station	Major Dust Source
AM2 – Lee Kau Yan Memorial School	Road Traffic Dust Exposed site area and open stockpiles Site vehicle movement
AM3(A) – Holy Trinity Bradbury Centre	Road Traffic Dust Exposed site area Excavation works Site vehicle movement
AM4(A) – EMSD Workshops	Site vehicle movement
AM5(A) – Po Leung Kuk Ngan Po Ling College	Road Traffic Dust Excavation works at the site (Contract No.: 1/WSD/14(K)) facing Po Leung Kuk Ngan Po Ling College

3. NOISE

Monitoring Requirements

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

Monitoring Locations

- 3.2 Five designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at four designated monitoring stations (M6, M7, M8 and M9). **Figure 3** shows the locations of these stations.
- 3.3 Construction noise monitoring at Station M6 – Holy Carpenter Primary School was rejected by the premise owner on 6th October 2014. The monitoring station has been relocated at a proposed alternative noise monitoring station M6(A) – Oblate Primary School since 10th October 2014 to carry out the monitoring works.

Table 3.1 Noise Monitoring Stations

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

Remarks:

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

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

Monitoring Equipment

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

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	SVAN 955, 957;	6
	BSWA 801	
Calibrator	SVAN 30A	3
	B&K4231	1

Monitoring Parameters, Frequency and Duration

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

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

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

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

Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was set on a tripod at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels was adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - time measurement : 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L_{eq}, L₉₀ and L₁₀ were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused temporarily during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

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

Results, Observations and Action/Limit Level Exceedance

- 3.9 All construction noise monitoring was conducted as scheduled in the reporting month. No Action and Limit Level exceedance was recorded.
- 3.10 The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.4**.
- 3.11 Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 3.12 The major noise source identified at the designated noise monitoring stations is as follows:

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

Monitoring Stations	Locations	Major Noise Source
M6(A)	Oblate Primary School	Road and marine traffic Noise
M7	CCC Kei To Secondary School	Road and marine traffic Noise
M8	Po Leung Kuk Ngan Po Ling College	Excavation works at the site (Contract No.: 1/WSD/14(K)) facing Po Leung Kuk Ngan Po Ling College
M9	Tak Long Estate	Road paving and asphalt paving works

Table 3.5 Baseline noise level and noise limit level for monitoring stations

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

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

4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

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

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

Station	Predicted 1-hr TSP conc.			
	Scenario1 (Mid 2009 to Mid 2013), µg/m3	Scenario2 (Mid 2013 to Late 2016), µg/m3	Reporting Month (November 2016), µg/m3	
			Average	Range
AM2 – Lee Kau Yan Memorial School	290	312	122.0	69.3-146.0
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	217	247	130.8	79.2-177.3
AM4(A) – EMSD Workshops (Alternative station for Grand Waterfront)	246	258	111.8	62.7-153.2
AM5(A) – Po Leung Kuk Ngan Po Ling College (Alternative station for CCC Kei To Secondary School)	159	221	119.6	66.1-165.2

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

Station	Predicted 24-hr TSP conc.			
	Scenario1 (Mid 2009 to Mid 2013), µg/m3	Scenario2 (Mid 2013 to Late 2016), µg/m3	Reporting Month (November 2016), µg/m3	
			Average	Range
AM2 – Lee Kau Yan Memorial School	145	169	70.0	30.5-103.7
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	106	138	74.4	37.4-99.4
AM4(A) – EMSD Workshops (Alternative station for Grand Waterfront)	143	152	54.4	31.2-97.2
AM5(A) – Po Leung Kuk Ngan Po Ling College (Alternative station for CCC Kei To Secondary School)	103	128	43.4	20.9-60.5

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Stations	Predicted Mitigated Construction Noise Levels during Normal Working Hour ($L_{eq(30min)}$ dB(A))	Reporting Month (November 2016), $L_{eq(30min)}$ dB(A)
M6(A) - Oblate Primary School ^	N/A	61.0 – 64.6
M7 - CCC Kei To Secondary School	45 – 68	65.7 – 68.7
M8 - Po Leung Kuk Ngan Po Ling College	44 – 70	56.5 – 69.2
M9 – Tak Long Estate	Not predicted in EIA Report	54.5 – 60.8

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

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

5. LANDSCAPE AND VISUAL

Monitoring Requirements

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

Results and Observations

- 5.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix I**.
- 5.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 5.4 In accordance with the Action Plan presented in **Appendix J**, no corrective actions were required in the reporting month.

6. ENVIRONMENTAL AUDIT**Site Audits**

- 6.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix I**.
- 6.2 Site audits were conducted on 4th, 11th, 16th and 25th November 2016 in the reporting month. IEC site inspection was conducted on 16th November 2016. No non-compliance was observed during the site audits.

Status of Environmental Licensing and Permitting

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

Table 6.1 Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-337/2009	23/04/09	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
EP-344/2009	23/04/09	N/A	Construction of a new sewage pumping station serving the planned Kai Tak development with installed capacity of more than 2,000 m ³ per day and a boundary of which is less than 150m from an existing or planned residential area or educational institution.	Valid
Effluent Discharge License				
WT00020971-2015	22/04/15	21/04/20	Discharge Licence for the discharge of wastewater from the construction site including contaminated surface run-off to the communal storm water drain	Valid
Registration of Chemical Waste Producer				
5213-286-K2958-05	--	--	Registration of chemical waste producer for chemical waste produced during construction of Stage 4 at former North Apron Area Infrastructure.	Valid
Construction Noise Permit				
GW-RE0964-16	30/09/16	29/03/17	Location: Heading 7A & 7B	Valid

Status of Waste Management

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

Implementation Status of Environmental Mitigation Measures

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

Table 6.2 Observations and Recommendations of Site Inspections for EP-337/2009

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	11 November 2016	<u>Reminder:</u> Contractor is reminded to provide sedimentation tank for treating discharge and stand water should be cleared. (near PS2)	Stand water was cleared.
	25 November 2016	<u>Reminder:</u> The accumulated stagnant water should be cleared. (PS2)	Stagnant water was cleared.
<i>Air Quality</i>	11 November 2016	<u>Reminder:</u> Regulated machine should be provided with NRMM label. (PS2)	NRMM label was provided.
	25 November 2016	<u>Reminder:</u> Stockpile of dusty material should be properly covered to prevent dust generation.	Stockpile of dusty material was covered.
<i>Noise</i>	--	--	--
<i>Waste/Chemical Management</i>	11 November 2016	<u>Observation:</u> Oil stain should be cleared. (near PS2)	Oil stain was cleared.
<i>Landscape and Visual</i>	--	--	--
<i>Permits /Licences</i>	--	--	--

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

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	--	--	--
<i>Air Quality</i>	4 November 2016	<u>Reminder:</u> Water spraying should be provided within site area near NPS.	Site area was observed wet.
<i>Noise</i>	--	--	--
<i>Waste/Chemical Management</i>	4 November 2016	<u>Reminder:</u> General refuse and stand water should be cleared at NPS.	General refuse and stand water were cleared.
<i>Landscape and Visual</i>	--	--	--
<i>Permits /Licences</i>	--	--	--

Summary of Mitigation Measures Implemented

6.7 The monthly IEC audit was carried out on 16th November 2016, the observations were recorded and they are presented as follows:

Follow up of last monthly audit:

- Nil

Observation(s) in the reporting month:

- Nil

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

Implementation Status of Event Action Plans

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

1-hr TSP Monitoring

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

24-hr TSP Monitoring

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

Construction Noise

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

Landscape and visual

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

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

6.14 No environmental complaints and environmental prosecution were received in the reporting month. The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project are presented in **Appendix L**.

7. FUTURE KEY ISSUES

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

- Daily Cleaning;
- Installation of hand-railing & ladder inside Box Culvert B5;
- Construction of staircase and landing and E&M Works at PS2;
- Water test, backfill and sheet-pile removal in Heading 7A;
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;
- Outfall construction at Box Culvert B6;
- Road widening works (excavation and UU works) at Sung Wong Toi Road;
- Maintenance & Servicing Engineer's Office at Portion 9;
- Lay HDPE pipe at Pit 1 and 9;
- Pipe jacking at Pit 4;
- Chamber construction at Pit 5;
- Installation of drainage, UU laying works and Road works at Road D2;
- Finishing works and E&M works at NPS;
- UU works and Road works at Road L19 & Bailey St; and
- Storage of excavated material at Portion 6.

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

Key Issues for the Coming Month

7.3 Key environmental issues in the coming month include:

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

7.4 The tentative program of major site activities and the impact prediction and environmental mitigation measures for the coming two months, i.e. December 2016 and January 2017 are summarized as follows:

Table 7.1 Summary of the tentative program of major site activities, the impact prediction and control measures for December 2016 and January 2017

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

Monitoring Schedule for the Next Month

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

8. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 8.1 Environmental monitoring works required under the EM&A Manual were performed in the reporting month and all monitoring results were checked and reviewed.

1-hr TSP Monitoring

- 8.2 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. 1-hour TSP concentrations in all stations in the reporting month were below the prediction in the approved Environmental Impact Assessment (EIA) Report.

24-hr TSP Monitoring

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

Construction Noise Monitoring

- 8.4 All construction noise monitoring was conducted as scheduled in the reporting month. No Action and Limit Level exceedance was recorded. The construction noise levels in all stations in the reporting month were within the range of predicted mitigated construction noise levels in the approved Environmental Impact Assessment (EIA) report.

Complaints, Notification of any Summons and Prosecution Received

- 8.5 No environmental complaints and environmental prosecution were received in the reporting month. The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project are presented in **Appendix L**.

Recommendations

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

Air Quality Impact

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

Noise Impact

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

Water Impact

- To prevent any surface runoff discharge into any stream course.
- To review and implement temporary drainage system.
- To identify any wastewater discharges from site.
- To ensure properly maintenance for de-silting facilities.
- To clear the silt and sediment in the sedimentation tanks.
- To review the capacity of de-silting facilities for discharge.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.

Waste/Chemical Management

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

Landscape and Visual

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

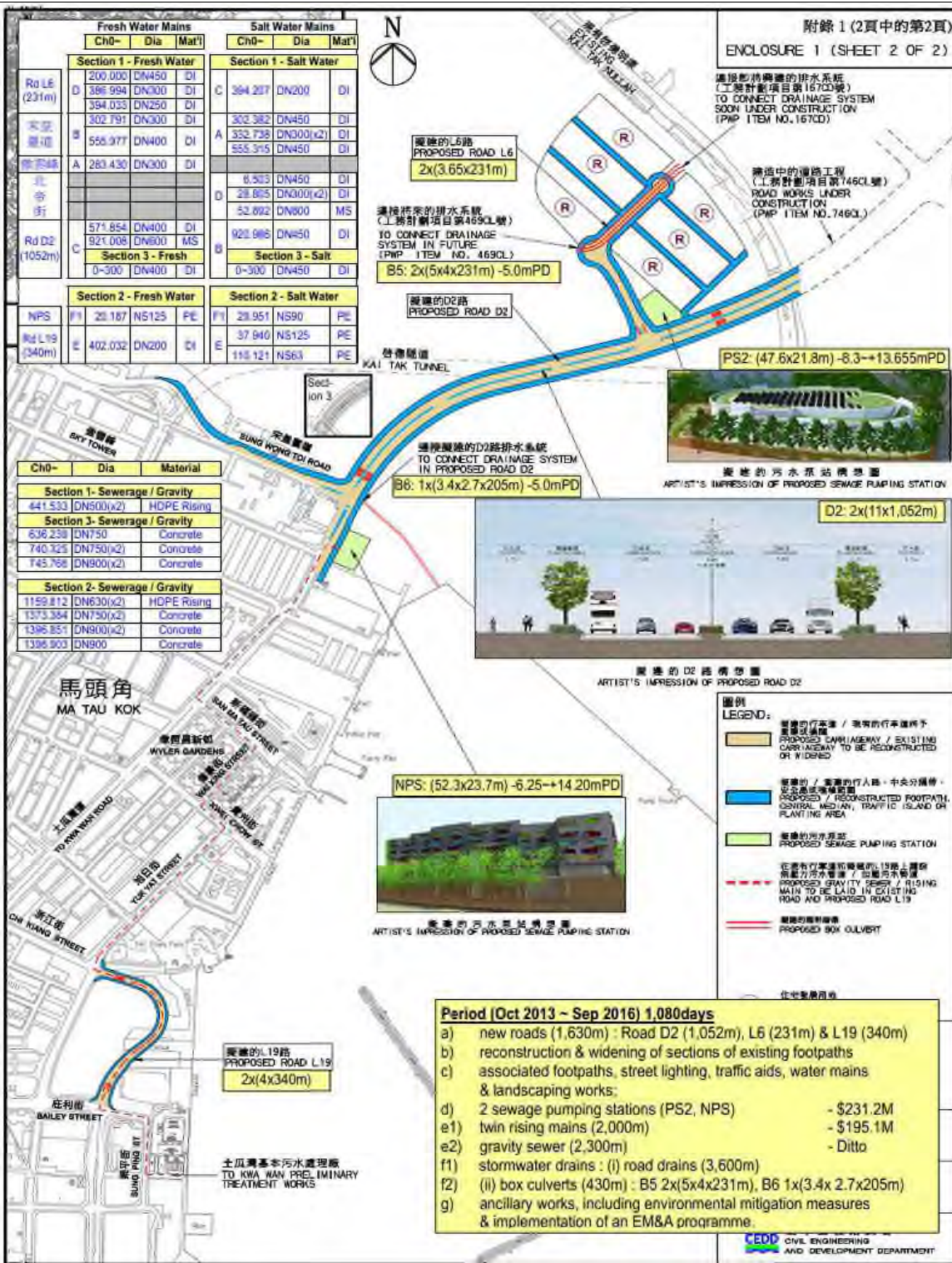
Effectiveness of Environmental Management

- 8.7 The above recommendations and the recommended mitigation measures in the EM&A Manual were carried out by the Contractor during construction. No non-compliance was recorded during the environmental site inspections as shown in **Appendix I**.
- 8.8 The effectiveness of environmental management is satisfactory as the above recommendations are met. Some of the examples of mitigation measures for the following recommendations are given in **Table 8.1** below.
- Surface runoff discharge into any stream course is prevented;
 - Provision of sedimentation facilities after identification of wastewater discharges from site;
 - Discharge or accidental spillage of chemical waste or oil directly from the site is avoided;
 - Improper handling or storage of oil drum on site is avoided;
 - The existing trees to be retained are protected; and
 - Night-time lighting is controlled.

Table 8.1 Examples of Mitigation Measures for Environmental Recommendations

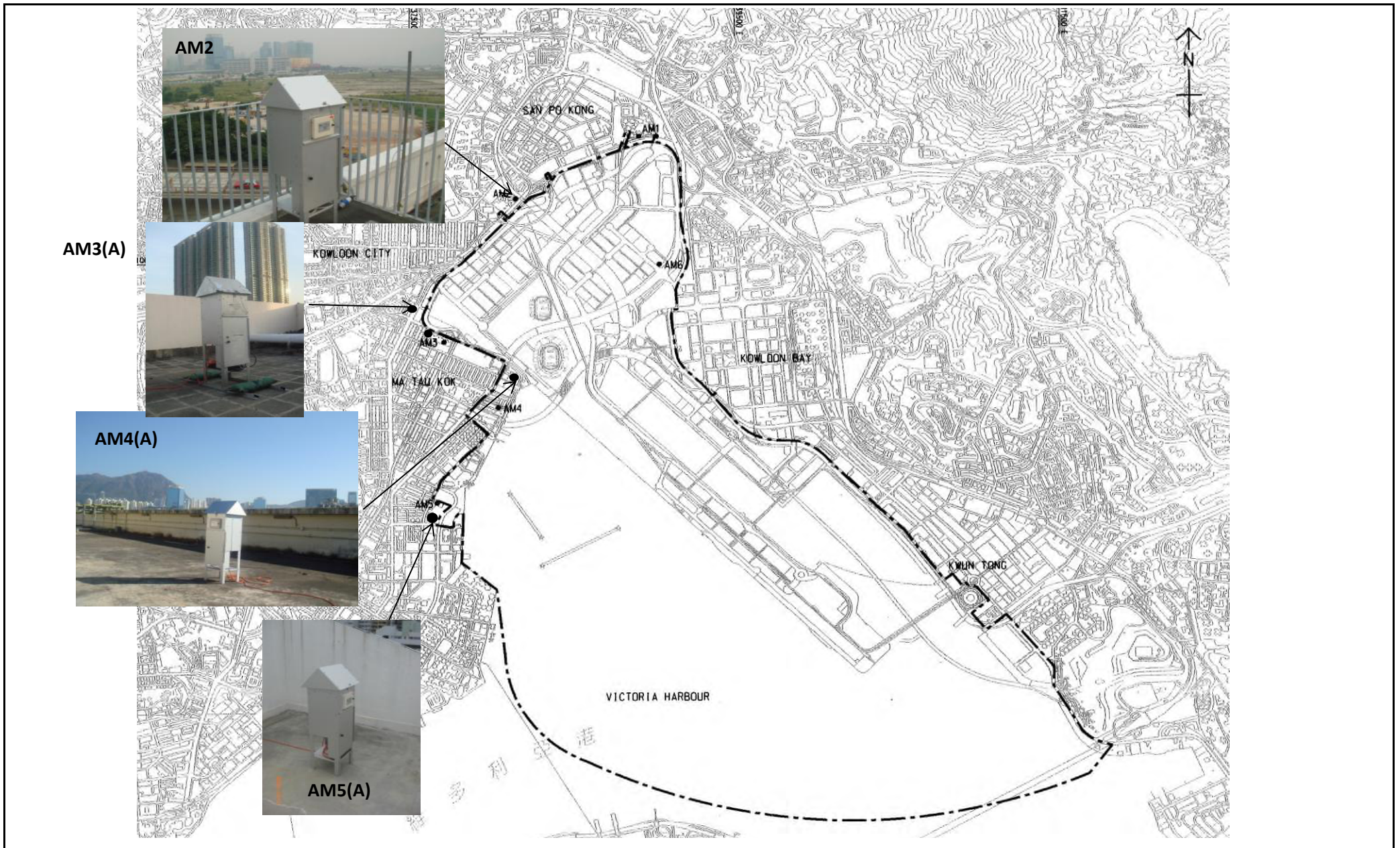
	
<p>To prevent any surface runoff discharge into any stream course.</p>	<p>Follow-up measure(s) after identification of wastewater discharges from site.</p>
	
<p>To avoid any discharge or accidental spillage of chemical waste or oil directly from the site</p>	<p>To avoid improper handling or storage of oil drum on site</p>
	 <p style="text-align: right; color: red;">25/11/2016</p>
<p>To protect the existing trees to be retained</p>	<p>To control of night-time lighting</p>

FIGURES

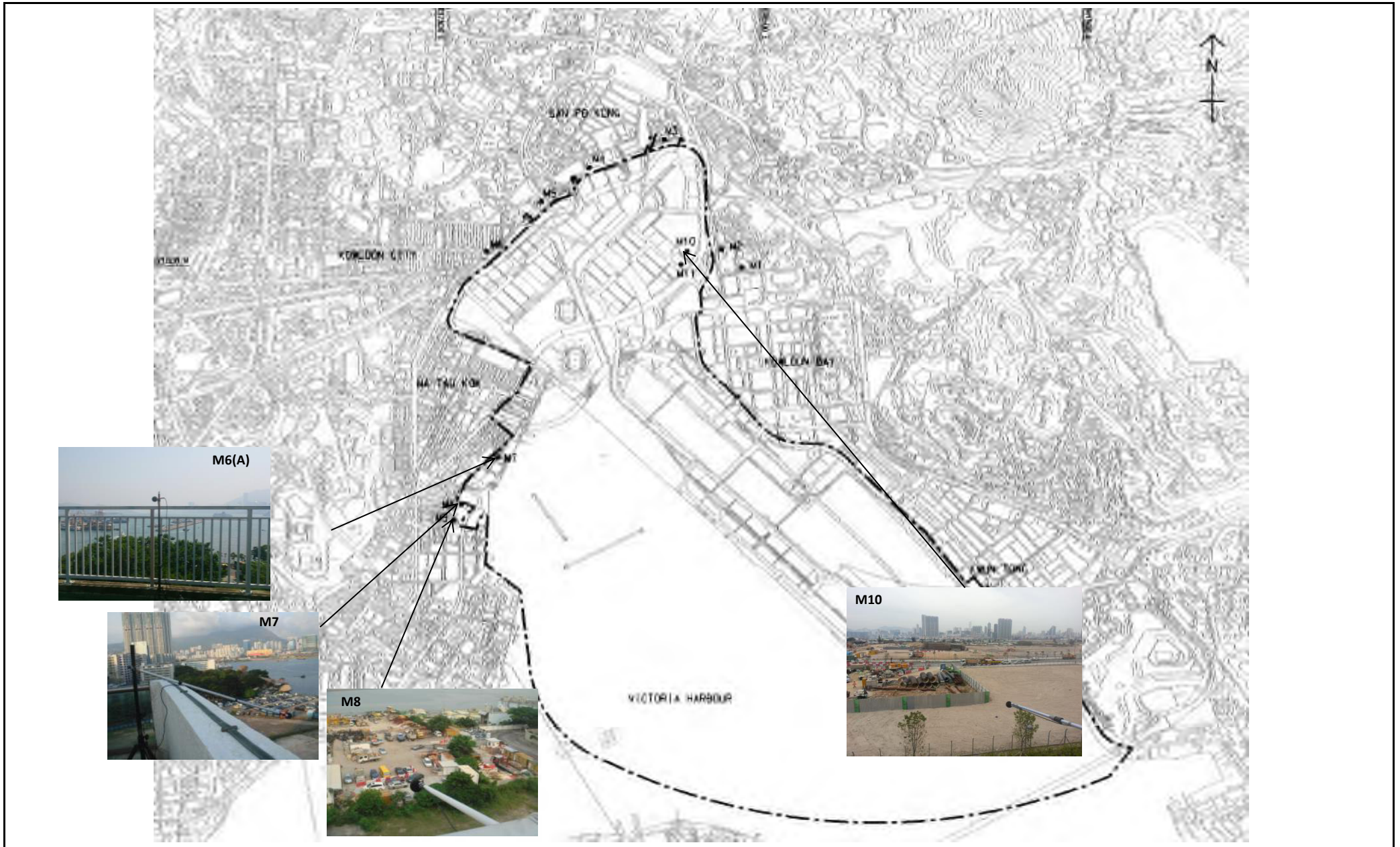


Title	KL/2012/03 - Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area	Scale	N.T.S	Project No.	MA13056
	Site Layout Plan	Date	Sep-13	Figure	1



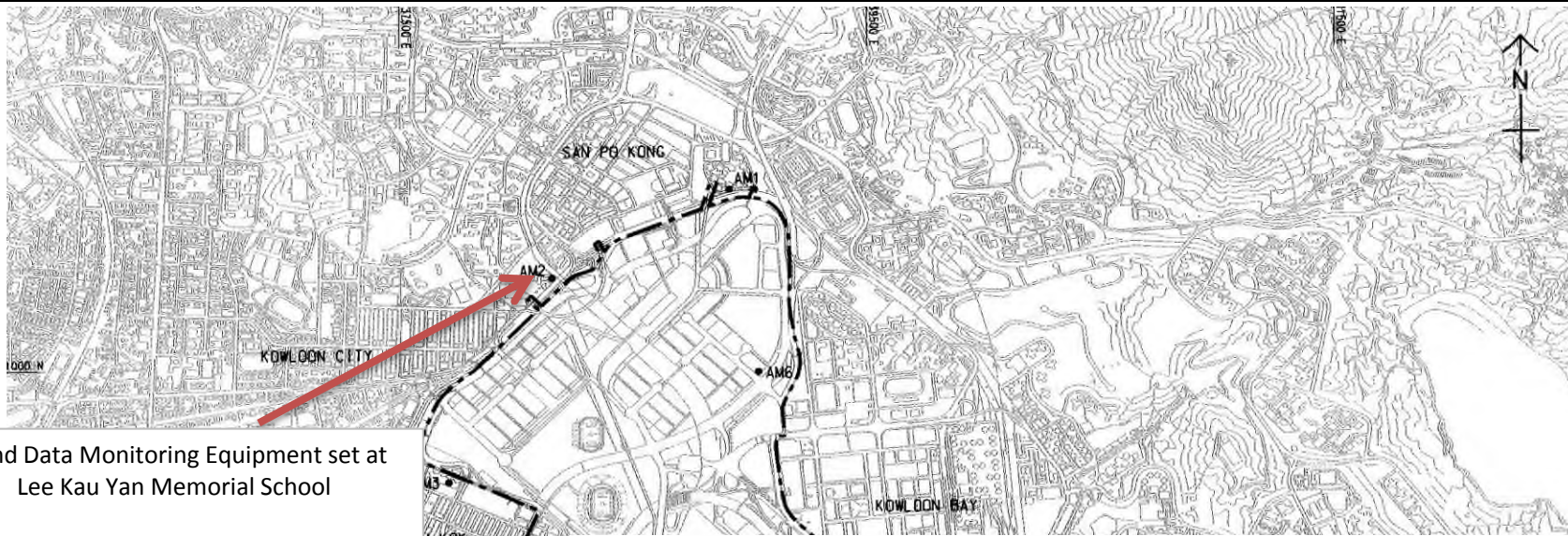


Title	Contract No. KL/2012/03		Scale	Project	CINOTECH
	Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area		N.T.S	No. MA13056	
	Air Quality Monitoring Stations under this Project		Date	Figure	
			Jan-14	2	



Title	Contract No. KL/2012/03		Scale	Project
	Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area		N.T.S	No. MA13056
	Noise Monitoring Stations under this Project		Date	Figure
			Dec-16	3

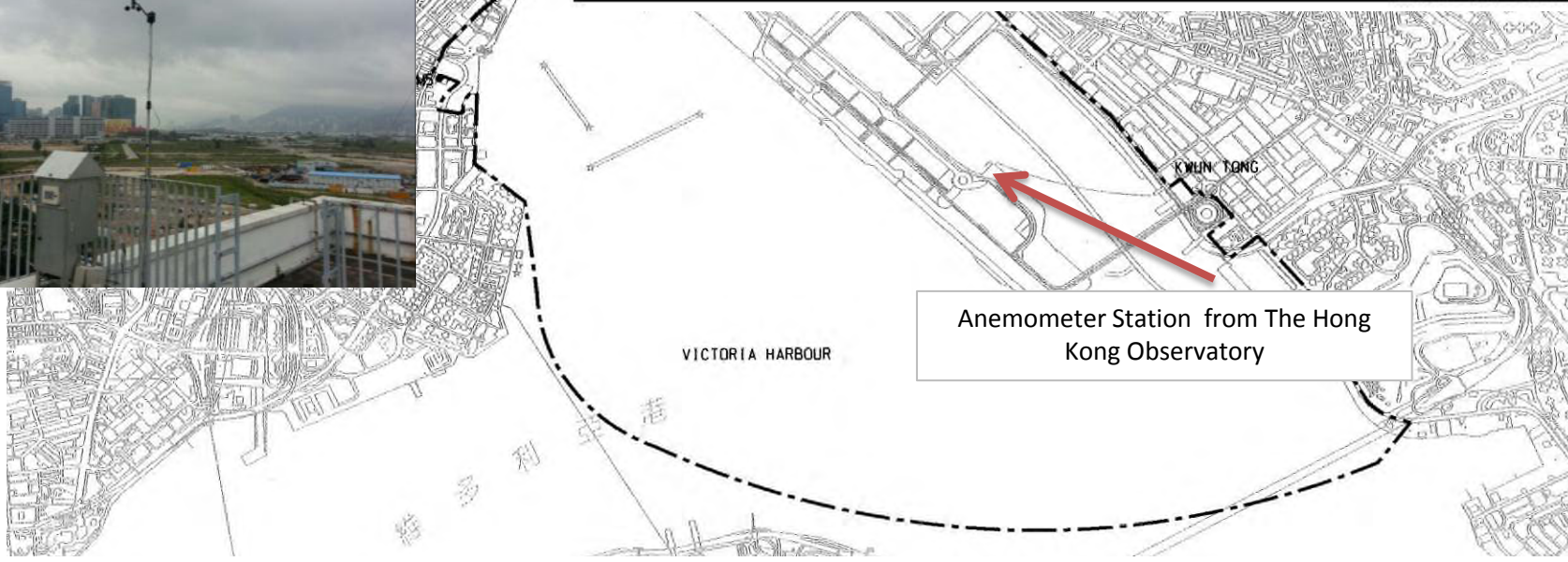




Wind Data Monitoring Equipment set at Lee Kau Yan Memorial School



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

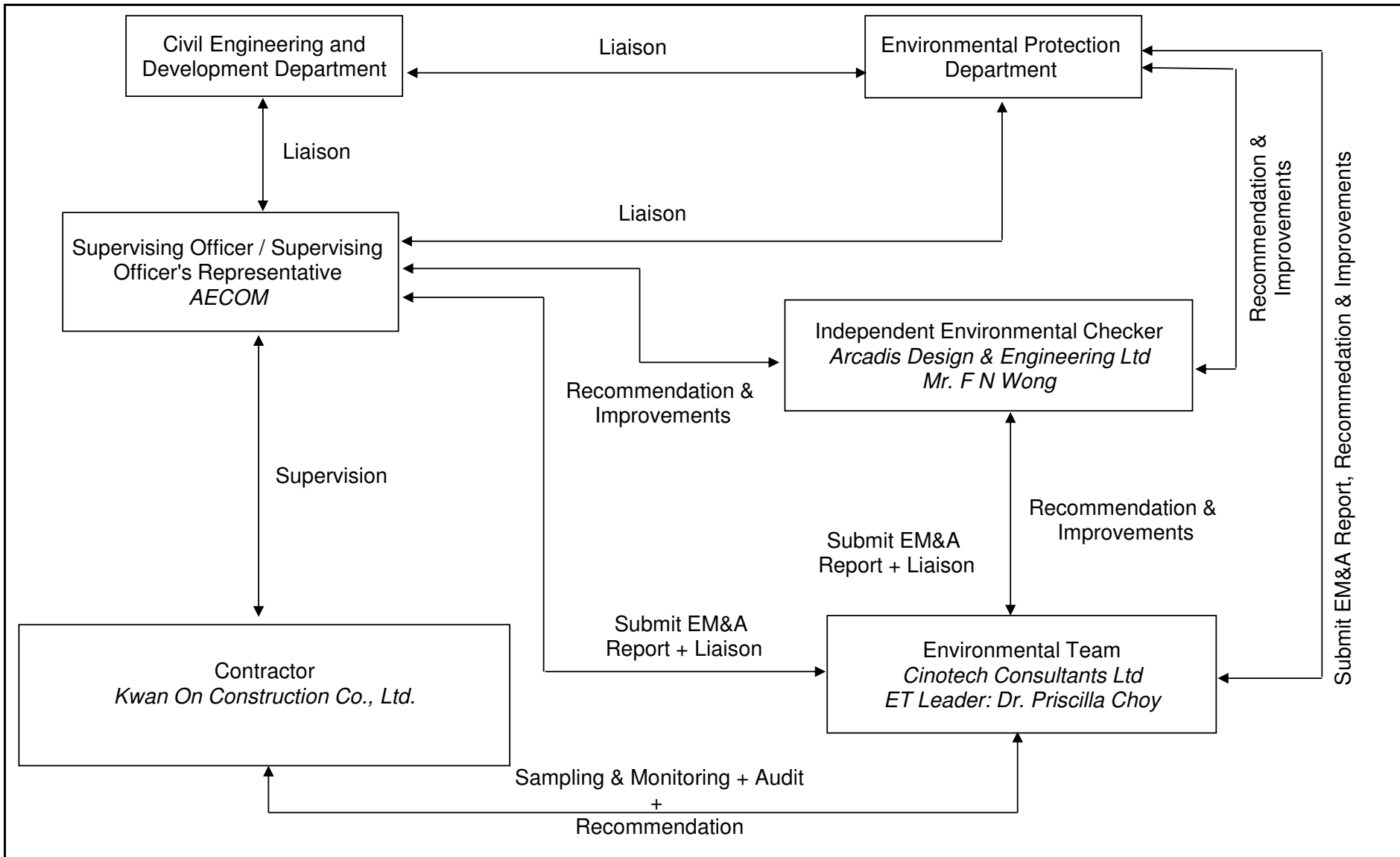


Anemometer Station from The Hong Kong Observatory

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

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





Title	Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Management Structure	Scale	N.T.S	Project No.	MA13056	CINOTECH
		Date	Dec-16	Figure	5	

**APPENDIX A
ACTION AND LIMIT LEVELS**

Appendix A - Action and Limit Levels

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

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

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

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

Table A-3 Action and Limit Levels for Construction Noise

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

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

**APPENDIX B
COPIES OF CALIBRATION
CERTIFICATES**

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/59/0038

Station AM2 - Lee Kau Yan Memorial School Operator: WK
 Date: 21-Sep-16 Next Due Date: 20-Nov-16
 Equipment No.: A-01-59 Serial No. 2354

Ambient Condition			
Temperature, Ta (K)	301.3	Pressure, Pa (mmHg)	756.2

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.6	3.38	57.36	7.8	2.77
2	9.7	3.09	52.52	6.4	2.51
3	7.4	2.70	45.98	5.0	2.22
4	4.7	2.15	36.82	3.2	1.77
5	3.2	1.77	30.53	2.1	1.44

By Linear Regression of Y on X

Slope, $m_w =$ 0.0490 Intercept, $b_w =$ -0.0449
 Correlation coefficient* = 0.9996

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

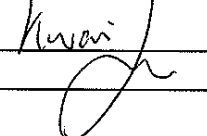
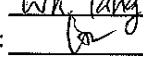
From the TSP Field Calibration Curve, take Qstd = 43 CFM

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

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

Therefore, Set Point; $W = (m_w \times Qstd + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.32

Remarks: _____

Conducted by: Wk Tang Signature:  Date: 21/9/16
 Checked by:  Signature: _____ Date: 21 September 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/59/0039

Station AM2 - Lee Kau Yan Memorial School Operator: WK
 Date: 21-Nov-16 Next Due Date: 20-Jan-17
 Equipment No.: A-01-59 Serial No. 2354

Ambient Condition			
Temperature, Ta (K)	298.6	Pressure, Pa (mmHg)	762.2

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X-axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.4	3.38	57.35	7.3	2.70
2	9.8	3.13	53.23	6.4	2.53
3	7.6	2.76	46.98	5.0	2.24
4	4.9	2.21	37.89	3.1	1.76
5	3.3	1.82	31.25	2.2	1.48

By Linear Regression of Y on X
 Slope, mw = 0.0476 Intercept, bw = -0.0168
 Correlation coefficient* = 0.9993

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM
 From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.12

Remarks: _____

Conducted by: w.k. Tang Signature: Kwai Date: 21/11/16
 Checked by: AV Signature: _____ Date: 21 November 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/49/0036

Station AM3(A) - Holy Trinity Bradbury Centre Operator: WK
 Date: 21-Sep-16 Next Due Date: 20-Nov-16
 Equipment No.: A-01-49 Serial No. 1793

Ambient Condition			
Temperature, Ta (K)	300.5	Pressure, Pa (mmHg)	754.1

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.8	3.41	57.84	8.0	2.81
2	9.9	3.12	53.05	6.7	2.57
3	7.7	2.75	46.89	5.1	2.24
4	5.3	2.28	39.04	3.3	1.80
5	3.4	1.83	31.44	2.2	1.47

By Linear Regression of Y on X

Slope, mw = 0.0514 Intercept, bw : -0.1677
 Correlation coefficient* = 0.9992

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation	
From the TSP Field Calibration Curve, take Qstd = 43 CFM	
From the Regression Equation, the "Y" value according to	
$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$	
Therefore, Set Point; W = (mw x Qstd + bw) ² x (760 / Pa) x (Ta / 298) =	<u>4.23</u>

Remarks: _____

Conducted by: Wk Tang Signature: Kwan Date: 21/9/16
 Checked by: kw Signature: _____ Date: 21 September 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/49/0037

Station: AM3(A) - Holy Trinity Bradbury Centre Operator: WK
 Date: 21-Nov-16 Next Due Date: 20-Jan-17
 Equipment No.: A-01-49 Serial No.: 1793

Ambient Condition			
Temperature, Ta (K)	297.8	Pressure, Pa (mmHg)	763.5

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.6	3.41	57.96	7.6	2.76
2	9.4	3.07	52.26	6.2	2.50
3	7.6	2.76	47.08	5.2	2.29
4	5.2	2.29	39.09	3.4	1.85
5	3.4	1.85	31.77	2.3	1.52

By Linear Regression of Y on X

Slope, mw = 0.0479 Intercept, bw = -0.0045
 Correlation coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; W = (mw x Qstd + bw)² x (760 / Pa) x (Ta / 298) = 4.21

Remarks: _____

Conducted by: Wk Tang
 Checked by: lv

Signature: [Signature]
 Signature: [Signature]

Date: 21/11/16
 Date: 21 November 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/62/0037

Station AM4(A) - EMSD Workshops Operator: WK
 Date: 21-Sep-16 Next Due Date: 20-Nov-16
 Equipment No.: A-01-62 Serial No. 2351

Ambient Condition			
Temperature, Ta (K)	301.9	Pressure, Pa (mmHg)	755.4

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	10.9	3.27	55.54	7.2	2.66
2	9.6	3.07	52.18	6.4	2.51
3	7.4	2.69	45.92	5.1	2.24
4	5.2	2.26	38.63	3.4	1.83
5	3.4	1.83	31.40	2.2	1.47

By Linear Regression of Y on X

Slope, mw = 0.0496 Intercept, bw = -0.0807
 Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.30

Remarks: _____

Conducted by: Wk. Tang Signature: Kwai Date: 21/9/16
 Checked by: Wk Signature: _____ Date: 21 September 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/62/0038

Station: AM4(A) - EMSD Workshops Operator: WK
 Date: 21-Nov-16 Next Due Date: 20-Jan-17
 Equipment No.: A-01-62 Serial No. 2351

Ambient Condition			
Temperature, Ta (K)	297.2	Pressure, Pa (mmHg)	761.1

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	10.8	3.29	55.93	7.4	2.73
2	9.7	3.12	53.05	6.3	2.52
3	7.4	2.73	46.44	5.0	2.24
4	5.2	2.29	39.07	3.3	1.82
5	3.3	1.82	31.30	2.1	1.45

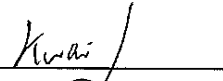
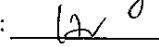
By Linear Regression of Y on X

Slope, mw = 0.0510 Intercept, bw = -0.1538
 Correlation coefficient* = 0.9985

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation	
From the TSP Field Calibration Curve, take Qstd = 43 CFM	
From the Regression Equation, the "Y" value according to	
$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$	
Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ <u>4.15</u>	

Remarks: _____

Conducted by: Wk. Tang Signature:  Date: 21/11/16
 Checked by:  Signature: _____ Date: 21 November 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/60/0038

Station AM5(A) - Po Leung Kuk Ngan Po Ling College Operator: WK
 Date: 21-Sep-16 Next Due Date: 20-Nov-16
 Equipment No.: A-01-60 Serial No. 2358

Ambient Condition			
Temperature, Ta (K)	302.8	Pressure, Pa (mmHg)	755.4

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.3	3.32	56.46	7.6	2.73
2	9.9	3.11	52.90	6.8	2.58
3	7.6	2.73	46.45	5.0	2.21
4	5.2	2.26	38.57	3.3	1.80
5	3.4	1.82	31.35	2.1	1.43

By Linear Regression of Y on X

Slope, mw = 0.0523 Intercept, bw = -0.2120
 Correlation coefficient* = 0.9996

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM
 From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; W = (mw x Qstd + bw)² x (760 / Pa) x (Ta / 298) = 4.24

Remarks: _____

Conducted by: Wk Tang Signature: Kwan Date: 21/9/16
 Checked by: la Signature: _____ Date: 21 September 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/60/0039

Station AM5(A) - Po Leung Kuk Ngan Po Ling College Operator: WK
 Date: 21-Nov-16 Next Due Date: 20-Jan-17
 Equipment No.: A-01-60 Serial No. 2358

Ambient Condition			
Temperature, Ta (K)	297.9	Pressure, Pa (mmHg)	761.5

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

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.4	3.38	57.39	7.8	2.80
2	9.8	3.13	53.27	6.7	2.59
3	7.5	2.74	46.71	5.1	2.26
4	5.1	2.26	38.66	3.4	1.85
5	3.2	1.79	30.80	2.0	1.42

By Linear Regression of Y on X

Slope, mw = 0.0518 Intercept, bw = -0.1686
 Correlation coefficient* = 0.9998

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.23

Remarks: _____

Conducted by: wkw zang Signature: Kwan
 Checked by: hw Signature: _____

Date: 21/11/16
 Date: 21 November 2016



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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

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

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

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0001	0.6974	1.4173	0.9957	0.6944	0.8836
0.9959	0.9716	2.0044	0.9915	0.9674	1.2496
0.9938	1.0861	2.2410	0.9894	1.0814	1.3971
0.9928	1.1320	2.3503	0.9885	1.1271	1.4653
0.9875	1.3696	2.8346	0.9831	1.3636	1.7672
Qstd slope (m) = 2.11176			Qa slope (m) = 1.32235		
intercept (b) = -0.05079			intercept (b) = -0.03166		
coefficient (r) = 0.99982			coefficient (r) = 0.99982		
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 }

TEST REPORT

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

Test Report No.:	C/160820
Date of Issue:	2016-08-20
Date Received:	2016-08-20
Date Tested:	2016-08-20
Date Completed:	2016-08-20
Next Due Date:	2017-02-19

ATTN: Miss Mei Ling Tang

Page: 1 of 2

Certificate of Calibration

Item for calibration:

Description	: Weather Monitor II
Manufacturer	: Davis Instruments
Model No.	: 7440
Serial No.	: MC01010A44

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 56 %

Test Specifications:

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

Methodology:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

Test Report No.:	C/160820
Date of Issue:	2016-08-20
Date Received:	2016-08-20
Date Tested:	2016-08-20
Date Completed:	2016-08-20
Next Due Date:	2017-02-19

Page: 2 of 2

Results:

1. Performance check of anemometer

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

2. Performance check of wind direction sensor

Wind Direction (°)		Difference D (°)
Instrument Reading (W1)	Reference Value (W2)	D = W1 - W2
0	0	0
45.2	45	0.2
90.1	90	0.1
134.8	135	-0.2
180.3	180	0.3
225.1	225	0.1
270.2	270	0.2
315.1	315	0.1
360	360	0

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

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3
Serial No.	: 251634
Sensitivity (K) 1 CPM	: 0.001 mg/m ³
Sen. Adjustment Scale Setting	: 550 CPM
Equipment No.	: A-02-01

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 54 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0035
-------------------------	--------

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3
Serial No.	: 251634
Sensitivity (K) 1 CPM	: 0.001 mg/m ³
Sen. Adjustment Scale Setting	: 550 CPM
Equipment No.	: A-02-01

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0034
-------------------------	--------

PREPARED AND CHECKED BY:

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 54 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0035
-------------------------	--------

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0034
-------------------------	--------

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Laser Dust Monitor
 Manufacturer : Sibata
 Model No. : LD-3B
 Serial No. : 014750
 Sensitivity (K) 1 CPM : 0.001 mg/m³
 Sen. Adjustment Scale Setting : 790 CPM
 Equipment No. : A-02-06

Test Conditions:

Room Temperature : 23 degree Celsius
 Relative Humidity : 54 %

Test Specifications & Methodology:

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

Results:

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

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


PATRICK TSE
 Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0032
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PREPARED AND CHECKED BY:

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



HATRICK TSE

Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 61 %

Test Specifications & Methodology:

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

Results:

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

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/161028C
Date of Issue:	2016-10-31
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-10-31
Next Due Date:	2016-12-30

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 64 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0038
-------------------------	--------

PREPARED AND CHECKED BY:

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/160917B
Date of Issue:	2016-09-19
Date Received:	2016-09-17
Date Tested:	2016-09-17
Date Completed:	2016-09-19
Next Due Date:	2017-09-18

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12553
Microphone No.	: 35222
Equipment No.	: N-08-02

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/160917C
Date of Issue:	2016-09-19
Date Received:	2016-09-17
Date Tested:	2016-09-17
Date Completed:	2016-09-19
Next Due Date:	2017-09-18

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12563
Microphone No.	: 34377
Equipment No.	: N-08-03

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/160826A
Date of Issue:	2016-08-29
Date Received:	2016-08-26
Date Tested:	2016-08-26
Date Completed:	2016-08-29
Next Due Date:	2017-08-28

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperature : 24 degree Celsius
Relative Humidity : 58%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/151127/1
Date of Issue:	2015-11-30
Date Received:	2015-11-27
Date Tested:	2015-11-27
Date Completed:	2015-11-30
Next Due Date:	2016-11-29

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 62%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/151215-2
Date of Issue:	2015-12-18
Date Received:	2015-12-15
Date Tested:	2015-12-15
Date Completed:	2015-12-18
Next Due Date:	2016-12-17

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: Sound & Vibration Analyser
Manufacturer	: BSWA
Model No.	: BSWA 801
Serial No.	: 35921
Equipment No.	: N-13-02

Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 56%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/161028/1
Date of Issue:	2016-10-31
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-10-31
Next Due Date:	2017-10-30

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description : Acoustical Calibrator
Manufacturer : SVANTEK
Model No. : SV30A
Serial No. : 10965
Equipment No. : N-09-02

Test conditions:

Room Temperature : 21 degree Celsius
Relative Humidity : 60 %

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

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

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

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

Results:

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

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

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

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 58%

Methodology:

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

Results:

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

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


PATRICK TSE
Laboratory Manager

APPENDIX C
WEATHER INFORMATION

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

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 November 2016	22.5 – 25.3	66 – 77	0
2 November 2016	21.0 – 24.8	61 – 75	0
3 November 2016	20.1 – 24.8	55 – 74	0
4 November 2016	19.6 – 25.3	56 – 77	0
5 November 2016	21.7 – 26.9	68 – 83	0
6 November 2016	22.4 – 26.9	69 – 87	0
7 November 2016	23.4 – 28.4	70 – 87	0
8 November 2016	22.1 – 28.1	68 – 91	4.8
9 November 2016	19.0 – 22.1	75 – 93	1.3
10 November 2016	17.0 – 19.0	78 – 88	1.9
11 November 2016	17.1 – 22.3	75 – 85	Trace
12 November 2016	21.6 – 25.1	77 – 91	0.2
13 November 2016	23.8 – 26.9	80 – 89	0
14 November 2016	23.3 – 28.1	68 – 93	0
15 November 2016	23.8 – 29.2	64 – 95	Trace
16 November 2016	23.9 – 26.1	72 – 85	Trace
17 November 2016	23.6 – 27.5	66 – 86	Trace
18 November 2016	23.5 – 26.8	76 – 86	Trace
19 November 2016	24.0 – 28.0	69 – 94	1.4

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

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 November 2016	25.0 – 26.8	72 – 83	Trace
21 November 2016	24.0 – 25.3	81 – 88	0.3
22 November 2016	21.6 – 24.5	86 – 99	36.5
23 November 2016	16.7 – 21.6	80 – 100	25.9
24 November 2016	15.0 – 19.8	69 – 82	Trace
25 November 2016	17.4 – 22.3	70 – 84	0.1
26 November 2016	13.3 – 21.1	81 – 99	50.3
27 November 2016	12.8 – 19.9	67 – 96	8.6
28 November 2016	16.1 – 20.1	57 – 78	0
29 November 2016	17.5 – 20.5	60 – 72	0
30 November 2016	17.4 – 22.0	55 – 74	0

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

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

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Speed m/s	Direction
1-Nov-2016	0:00	2.1	NE
1-Nov-2016	1:00	2.6	ENE
1-Nov-2016	2:00	2.6	NE
1-Nov-2016	3:00	3.3	NE
1-Nov-2016	4:00	2.7	NE
1-Nov-2016	5:00	2.6	NE
1-Nov-2016	6:00	2.8	NE
1-Nov-2016	7:00	2.3	NE
1-Nov-2016	8:00	3.4	NE
1-Nov-2016	9:00	3.9	NNE
1-Nov-2016	10:00	3.8	NE
1-Nov-2016	11:00	3.0	E
1-Nov-2016	12:00	3.3	ENE
1-Nov-2016	13:00	3.2	ENE
1-Nov-2016	14:00	3.4	E
1-Nov-2016	15:00	3.4	ENE
1-Nov-2016	16:00	2.6	NNE
1-Nov-2016	17:00	2.6	NE
1-Nov-2016	18:00	1.6	SSW
1-Nov-2016	19:00	1.4	WSW
1-Nov-2016	20:00	1.4	SSW
1-Nov-2016	21:00	1.4	SSW
1-Nov-2016	22:00	1.7	WNW
1-Nov-2016	23:00	1.5	SW
2-Nov-2016	0:00	2.5	W
2-Nov-2016	1:00	4.1	WNW
2-Nov-2016	2:00	4.2	WSW
2-Nov-2016	3:00	3.4	W
2-Nov-2016	4:00	2.8	SSW
2-Nov-2016	5:00	2	WNW
2-Nov-2016	6:00	1.4	SE
2-Nov-2016	7:00	1.7	SE
2-Nov-2016	8:00	2.1	E
2-Nov-2016	9:00	2.3	NW
2-Nov-2016	10:00	3	ESE
2-Nov-2016	11:00	2.9	SE

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

II. Mean Wind Speed and Wind Direction

2-Nov-2016	12:00	3.3	SE
2-Nov-2016	13:00	2.1	ESE
2-Nov-2016	14:00	3.2	NE
2-Nov-2016	15:00	2.8	NE
2-Nov-2016	16:00	2.3	NE
2-Nov-2016	17:00	3.8	SE
2-Nov-2016	18:00	2.4	ENE
2-Nov-2016	19:00	1.7	NE
2-Nov-2016	20:00	1.9	ESE
2-Nov-2016	21:00	2.3	SE
2-Nov-2016	22:00	1.7	ESE
2-Nov-2016	23:00	3	ESE
3-Nov-2016	0:00	3.7	NNE
3-Nov-2016	1:00	4.3	NNE
3-Nov-2016	2:00	3.7	NNE
3-Nov-2016	3:00	2.3	ENE
3-Nov-2016	4:00	2.6	ENE
3-Nov-2016	5:00	2.4	SSE
3-Nov-2016	6:00	2	SE
3-Nov-2016	7:00	3	SE
3-Nov-2016	8:00	3.3	SSE
3-Nov-2016	9:00	2.3	ENE
3-Nov-2016	10:00	2.8	ENE
3-Nov-2016	11:00	3.8	SSE
3-Nov-2016	12:00	4.4	SE
3-Nov-2016	13:00	4.4	SE
3-Nov-2016	14:00	3.6	SE
3-Nov-2016	15:00	3	ESE
3-Nov-2016	16:00	2.1	ESE
3-Nov-2016	17:00	3	SE
3-Nov-2016	18:00	2.6	SE
3-Nov-2016	19:00	1.7	SE
3-Nov-2016	20:00	1.7	ESE
3-Nov-2016	21:00	2.7	SSE
3-Nov-2016	22:00	2.7	S
3-Nov-2016	23:00	1.4	SE
4-Nov-2016	0:00	2	SE

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

II. Mean Wind Speed and Wind Direction

4-Nov-2016	1:00	3.6	NE
4-Nov-2016	2:00	3.4	SE
4-Nov-2016	3:00	3.6	E
4-Nov-2016	4:00	2.6	ESE
4-Nov-2016	5:00	3.7	SE
4-Nov-2016	6:00	2.7	NE
4-Nov-2016	7:00	2.4	SE
4-Nov-2016	8:00	2.4	NE
4-Nov-2016	9:00	2	E
4-Nov-2016	10:00	2.9	NE
4-Nov-2016	11:00	2.5	E
4-Nov-2016	12:00	1.4	ESE
4-Nov-2016	13:00	1.8	SE
4-Nov-2016	14:00	1.8	S
4-Nov-2016	15:00	1.4	N
4-Nov-2016	16:00	2.7	NE
4-Nov-2016	17:00	1.3	ESE
4-Nov-2016	18:00	1	ESE
4-Nov-2016	19:00	2.4	ESE
4-Nov-2016	20:00	2.3	S
4-Nov-2016	21:00	3.9	SSW
4-Nov-2016	22:00	4.7	W
4-Nov-2016	23:00	3.7	N
5-Nov-2016	0:00	3.3	N
5-Nov-2016	1:00	2.7	ESE
5-Nov-2016	2:00	4.2	ENE
5-Nov-2016	3:00	2.4	NE
5-Nov-2016	4:00	3	E
5-Nov-2016	5:00	2.2	WNW
5-Nov-2016	6:00	3	SE
5-Nov-2016	7:00	1	SE
5-Nov-2016	8:00	3	NE
5-Nov-2016	9:00	4.1	SSE
5-Nov-2016	10:00	3.9	SE
5-Nov-2016	11:00	1.4	SE
5-Nov-2016	12:00	2.6	NE
5-Nov-2016	13:00	2.1	ESE

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

II. Mean Wind Speed and Wind Direction

5-Nov-2016	14:00	1.7	E
5-Nov-2016	15:00	3.1	SE
5-Nov-2016	16:00	2.3	SE
5-Nov-2016	17:00	2	SE
5-Nov-2016	18:00	3.1	ESE
5-Nov-2016	19:00	2.2	NE
5-Nov-2016	20:00	2.2	ENE
5-Nov-2016	21:00	4.3	ENE
5-Nov-2016	22:00	3.4	NE
5-Nov-2016	23:00	2.6	NE
6-Nov-2016	0:00	2.6	E
6-Nov-2016	1:00	2.3	SSW
6-Nov-2016	2:00	2.2	W
6-Nov-2016	3:00	3	WNW
6-Nov-2016	4:00	2.2	NE
6-Nov-2016	5:00	0.8	ESE
6-Nov-2016	6:00	1.1	SE
6-Nov-2016	7:00	0.6	NE
6-Nov-2016	8:00	1.9	SE
6-Nov-2016	9:00	2.4	ESE
6-Nov-2016	10:00	3	SE
6-Nov-2016	11:00	3.1	E
6-Nov-2016	12:00	2.3	NE
6-Nov-2016	13:00	3	SSW
6-Nov-2016	14:00	1.5	SE
6-Nov-2016	15:00	1.4	NE
6-Nov-2016	16:00	3.3	NE
6-Nov-2016	17:00	2.3	NE
6-Nov-2016	18:00	2.7	ESE
6-Nov-2016	19:00	4.2	NE
6-Nov-2016	20:00	4.2	SE
6-Nov-2016	21:00	3.4	SE
6-Nov-2016	22:00	2.8	ESE
6-Nov-2016	23:00	2	SE
7-Nov-2016	0:00	1.9	E
7-Nov-2016	1:00	2	NE
7-Nov-2016	2:00	1.6	ESE

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

II. Mean Wind Speed and Wind Direction

7-Nov-2016	3:00	1.4	NE
7-Nov-2016	4:00	1.4	NNE
7-Nov-2016	5:00	1.1	NE
7-Nov-2016	6:00	0.7	WNW
7-Nov-2016	7:00	0.6	WSW
7-Nov-2016	8:00	1.2	ENE
7-Nov-2016	9:00	1.9	WNW
7-Nov-2016	10:00	2.3	NE
7-Nov-2016	11:00	2.3	NE
7-Nov-2016	12:00	3.3	NE
7-Nov-2016	13:00	3.6	NE
7-Nov-2016	14:00	3.4	N
7-Nov-2016	15:00	3.7	SSE
7-Nov-2016	16:00	3.6	N
7-Nov-2016	17:00	3.3	ENE
7-Nov-2016	18:00	2.6	W
7-Nov-2016	19:00	2.3	SE
7-Nov-2016	20:00	1.6	N
7-Nov-2016	21:00	1.7	ESE
7-Nov-2016	22:00	1.9	W
7-Nov-2016	23:00	1	SSW
8-Nov-2016	0:00	1.3	WNW
8-Nov-2016	1:00	1.9	WNW
8-Nov-2016	2:00	1.4	N
8-Nov-2016	3:00	1.1	N
8-Nov-2016	4:00	1.2	N
8-Nov-2016	5:00	1.4	ENE
8-Nov-2016	6:00	1.4	NE
8-Nov-2016	7:00	1.3	WNW
8-Nov-2016	8:00	2.3	WNW
8-Nov-2016	9:00	3.1	W
8-Nov-2016	10:00	3.3	SSW
8-Nov-2016	11:00	3.1	E
8-Nov-2016	12:00	3.3	WSW
8-Nov-2016	13:00	3.6	ENE
8-Nov-2016	14:00	2.4	SE
8-Nov-2016	15:00	2.8	SSE

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

II. Mean Wind Speed and Wind Direction

8-Nov-2016	16:00	3.4	ESE
8-Nov-2016	17:00	2.7	SSE
8-Nov-2016	18:00	3.6	SSE
8-Nov-2016	19:00	3.1	ENE
8-Nov-2016	20:00	2.7	N
8-Nov-2016	21:00	3.4	ENE
8-Nov-2016	22:00	2.7	E
8-Nov-2016	23:00	3	W
9-Nov-2016	0:00	3.4	W
9-Nov-2016	1:00	3.7	W
9-Nov-2016	2:00	3.3	W
9-Nov-2016	3:00	2.8	ENE
9-Nov-2016	4:00	2.1	ENE
9-Nov-2016	5:00	2.3	W
9-Nov-2016	6:00	1.4	S
9-Nov-2016	7:00	1.7	SSW
9-Nov-2016	8:00	2.4	WSW
9-Nov-2016	9:00	3.7	WNW
9-Nov-2016	10:00	3.7	SSW
9-Nov-2016	11:00	3.6	SSW
9-Nov-2016	12:00	4.6	W
9-Nov-2016	13:00	3.9	ENE
9-Nov-2016	14:00	2.6	ENE
9-Nov-2016	15:00	3.4	SSW
9-Nov-2016	16:00	3.5	E
9-Nov-2016	17:00	3.4	ESE
9-Nov-2016	18:00	2.4	E
9-Nov-2016	19:00	2.1	NNE
9-Nov-2016	20:00	1.6	N
9-Nov-2016	21:00	1.9	SSE
9-Nov-2016	22:00	1.3	ENE
9-Nov-2016	23:00	1.7	WNW
10-Nov-2016	0:00	1.7	W
10-Nov-2016	1:00	1	W
10-Nov-2016	2:00	0.7	W
10-Nov-2016	3:00	0.8	SW
10-Nov-2016	4:00	0.7	SSW

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

II. Mean Wind Speed and Wind Direction

10-Nov-2016	5:00	0.7	ENE
10-Nov-2016	6:00	0.4	NNE
10-Nov-2016	7:00	0.7	N
10-Nov-2016	8:00	1.4	ENE
10-Nov-2016	9:00	1.4	N
10-Nov-2016	10:00	1.6	SSW
10-Nov-2016	11:00	3.4	NE
10-Nov-2016	12:00	3.5	NNE
10-Nov-2016	13:00	2.9	ENE
10-Nov-2016	14:00	3	E
10-Nov-2016	15:00	3.1	W
10-Nov-2016	16:00	3.2	E
10-Nov-2016	17:00	3.7	NNE
10-Nov-2016	18:00	2.7	E
10-Nov-2016	19:00	1.8	E
10-Nov-2016	20:00	2.6	ESE
10-Nov-2016	21:00	1.7	ESE
10-Nov-2016	22:00	1.9	ESE
10-Nov-2016	23:00	1.7	ESE
11-Nov-2016	0:00	1.7	ENE
11-Nov-2016	1:00	1.7	N
11-Nov-2016	2:00	1.6	NE
11-Nov-2016	3:00	2	ENE
11-Nov-2016	4:00	2	NE
11-Nov-2016	5:00	1.1	ENE
11-Nov-2016	6:00	1.4	NNE
11-Nov-2016	7:00	1.4	NNE
11-Nov-2016	8:00	1.6	NE
11-Nov-2016	9:00	2.3	WSW
11-Nov-2016	10:00	2.7	W
11-Nov-2016	11:00	3.6	W
11-Nov-2016	12:00	3.3	SE
11-Nov-2016	13:00	2.6	E
11-Nov-2016	14:00	3	SE
11-Nov-2016	15:00	2.8	NNE
11-Nov-2016	16:00	2.1	WNW
11-Nov-2016	17:00	2.7	WNW

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

II. Mean Wind Speed and Wind Direction

11-Nov-2016	18:00	2	NE
11-Nov-2016	19:00	1.9	ENE
11-Nov-2016	20:00	1.7	NE
11-Nov-2016	21:00	1.6	ESE
11-Nov-2016	22:00	1.7	ESE
11-Nov-2016	23:00	1.7	ENE
12-Nov-2016	0:00	1.7	NE
12-Nov-2016	1:00	1.1	NNE
12-Nov-2016	2:00	1.2	NNE
12-Nov-2016	3:00	1.3	ENE
12-Nov-2016	4:00	1.5	ESE
12-Nov-2016	5:00	1.4	NE
12-Nov-2016	6:00	1	ENE
12-Nov-2016	7:00	0.4	NNE
12-Nov-2016	8:00	0.8	SSE
12-Nov-2016	9:00	1.5	NE
12-Nov-2016	10:00	1.7	NNE
12-Nov-2016	11:00	2.8	ENE
12-Nov-2016	12:00	2.8	ESE
12-Nov-2016	13:00	2.6	NE
12-Nov-2016	14:00	2.6	NE
12-Nov-2016	15:00	2.7	NE
12-Nov-2016	16:00	3	ENE
12-Nov-2016	17:00	3.3	NE
12-Nov-2016	18:00	2.6	SE
12-Nov-2016	19:00	3.7	ESE
12-Nov-2016	20:00	3.5	ESE
12-Nov-2016	21:00	2.6	ESE
12-Nov-2016	22:00	1.5	ENE
12-Nov-2016	23:00	1.4	ENE
13-Nov-2016	0:00	1.1	NNE
13-Nov-2016	1:00	0.8	NE
13-Nov-2016	2:00	0.9	SW
13-Nov-2016	3:00	1.3	SW
13-Nov-2016	4:00	0.9	WNW
13-Nov-2016	5:00	0.6	ENE
13-Nov-2016	6:00	0.7	WNW

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

II. Mean Wind Speed and Wind Direction

13-Nov-2016	7:00	0.8	SSW
13-Nov-2016	8:00	1.4	NW
13-Nov-2016	9:00	2.7	WNW
13-Nov-2016	10:00	2.8	ENE
13-Nov-2016	11:00	3.4	ENE
13-Nov-2016	12:00	3.7	NE
13-Nov-2016	13:00	3.3	NE
13-Nov-2016	14:00	3.4	ENE
13-Nov-2016	15:00	2.9	ESE
13-Nov-2016	16:00	3.4	E
13-Nov-2016	17:00	3	WSW
13-Nov-2016	18:00	2.4	SSW
13-Nov-2016	19:00	1.4	SW
13-Nov-2016	20:00	1	NE
13-Nov-2016	21:00	1.4	NNE
13-Nov-2016	22:00	1	NNE
13-Nov-2016	23:00	1	NE
14-Nov-2016	0:00	1.6	NE
14-Nov-2016	1:00	2	ENE
14-Nov-2016	2:00	2	N
14-Nov-2016	3:00	2.6	ESE
14-Nov-2016	4:00	1.6	ENE
14-Nov-2016	5:00	1.9	ENE
14-Nov-2016	6:00	1.7	ENE
14-Nov-2016	7:00	1.7	NNE
14-Nov-2016	8:00	2.4	NE
14-Nov-2016	9:00	3.1	ENE
14-Nov-2016	10:00	3.2	SW
14-Nov-2016	11:00	3.5	WNW
14-Nov-2016	12:00	3.1	ENE
14-Nov-2016	13:00	3.4	NNE
14-Nov-2016	14:00	3.5	N
14-Nov-2016	15:00	2.6	NNE
14-Nov-2016	16:00	2.4	ESE
14-Nov-2016	17:00	2.6	ESE
14-Nov-2016	18:00	1.9	ENE
14-Nov-2016	19:00	2	ENE

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

II. Mean Wind Speed and Wind Direction

14-Nov-2016	20:00	2.1	NNE
14-Nov-2016	21:00	2	NNE
14-Nov-2016	22:00	2	SSE
14-Nov-2016	23:00	1.7	ENE
15-Nov-2016	0:00	1.7	NNE
15-Nov-2016	1:00	0.9	NE
15-Nov-2016	2:00	0.8	SW
15-Nov-2016	3:00	0.9	SW
15-Nov-2016	4:00	1.6	SSW
15-Nov-2016	5:00	1.9	SW
15-Nov-2016	6:00	1.6	WSW
15-Nov-2016	7:00	1.9	WNW
15-Nov-2016	8:00	2.4	WNW
15-Nov-2016	9:00	2	WSW
15-Nov-2016	10:00	1.9	W
15-Nov-2016	11:00	2.1	WSW
15-Nov-2016	12:00	1.9	SSW
15-Nov-2016	13:00	1.4	W
15-Nov-2016	14:00	1.7	WNW
15-Nov-2016	15:00	2.3	WNW
15-Nov-2016	16:00	2.4	N
15-Nov-2016	17:00	1.9	N
15-Nov-2016	18:00	1.5	NNE
15-Nov-2016	19:00	1.4	W
15-Nov-2016	20:00	0.7	W
15-Nov-2016	21:00	1	W
15-Nov-2016	22:00	0.7	WSW
15-Nov-2016	23:00	0.4	ESE
16-Nov-2016	0:00	0.3	WNW
16-Nov-2016	1:00	1.2	ESE
16-Nov-2016	2:00	1	NE
16-Nov-2016	3:00	1.6	SW
16-Nov-2016	4:00	1.4	WNW
16-Nov-2016	5:00	1.2	NE
16-Nov-2016	6:00	0.3	NNE
16-Nov-2016	7:00	1.2	NE
16-Nov-2016	8:00	1.3	NE

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

II. Mean Wind Speed and Wind Direction

16-Nov-2016	9:00	2.1	E
16-Nov-2016	10:00	2.7	ENE
16-Nov-2016	11:00	2.1	ENE
16-Nov-2016	12:00	2.6	E
16-Nov-2016	13:00	2.4	E
16-Nov-2016	14:00	2.6	ESE
16-Nov-2016	15:00	2.8	E
16-Nov-2016	16:00	2.3	ESE
16-Nov-2016	17:00	2.4	ESE
16-Nov-2016	18:00	2	ESE
16-Nov-2016	19:00	2	W
16-Nov-2016	20:00	1.7	S
16-Nov-2016	21:00	2.4	NE
16-Nov-2016	22:00	1.7	NNE
16-Nov-2016	23:00	1.9	NNE
17-Nov-2016	0:00	1.6	NNE
17-Nov-2016	1:00	1.4	NNE
17-Nov-2016	2:00	1.4	N
17-Nov-2016	3:00	1.2	NNE
17-Nov-2016	4:00	1	NE
17-Nov-2016	5:00	1.7	E
17-Nov-2016	6:00	1.6	E
17-Nov-2016	7:00	1.4	E
17-Nov-2016	8:00	1.6	E
17-Nov-2016	9:00	1.7	E
17-Nov-2016	10:00	2.4	E
17-Nov-2016	11:00	3.3	WSW
17-Nov-2016	12:00	3.5	ENE
17-Nov-2016	13:00	3.7	SSE
17-Nov-2016	14:00	3	NE
17-Nov-2016	15:00	3.5	WNW
17-Nov-2016	16:00	3	ENE
17-Nov-2016	17:00	2.3	ENE
17-Nov-2016	18:00	2.6	ENE
17-Nov-2016	19:00	2.6	WNW
17-Nov-2016	20:00	3.2	ESE
17-Nov-2016	21:00	3.3	ENE

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

II. Mean Wind Speed and Wind Direction

17-Nov-2016	22:00	2.7	NE
17-Nov-2016	23:00	2.6	ENE
18-Nov-2016	0:00	3	ENE
18-Nov-2016	1:00	2.7	ENE
18-Nov-2016	2:00	2.6	SSE
18-Nov-2016	3:00	1.4	SE
18-Nov-2016	4:00	1.3	WNW
18-Nov-2016	5:00	0.9	SSE
18-Nov-2016	6:00	0.9	SE
18-Nov-2016	7:00	1.6	NNW
18-Nov-2016	8:00	1.9	WNW
18-Nov-2016	9:00	2.6	ESE
18-Nov-2016	10:00	2.7	ESE
18-Nov-2016	11:00	3.1	SE
18-Nov-2016	12:00	3.4	WNW
18-Nov-2016	13:00	3.3	ENE
18-Nov-2016	14:00	3.1	ENE
18-Nov-2016	15:00	3.7	S
18-Nov-2016	16:00	3.6	N
18-Nov-2016	17:00	3.1	N
18-Nov-2016	18:00	2.4	SE
18-Nov-2016	19:00	2.1	ESE
18-Nov-2016	20:00	1.9	SE
18-Nov-2016	21:00	1.9	SE
18-Nov-2016	22:00	2	E
18-Nov-2016	23:00	2	ENE
19-Nov-2016	0:00	1.9	NE
19-Nov-2016	1:00	1.4	ESE
19-Nov-2016	2:00	1.3	SSE
19-Nov-2016	3:00	1.3	ESE
19-Nov-2016	4:00	1.3	NE
19-Nov-2016	5:00	1.1	NE
19-Nov-2016	6:00	1	NE
19-Nov-2016	7:00	1	S
19-Nov-2016	8:00	2.4	N
19-Nov-2016	9:00	3.7	N
19-Nov-2016	10:00	3.7	NNE

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

II. Mean Wind Speed and Wind Direction

19-Nov-2016	11:00	4	NE
19-Nov-2016	12:00	4.4	WNW
19-Nov-2016	13:00	3.7	E
19-Nov-2016	14:00	4.2	NNE
19-Nov-2016	15:00	3.1	SE
19-Nov-2016	16:00	3.6	SSE
19-Nov-2016	17:00	3.3	ESE
19-Nov-2016	18:00	2.1	NNE
19-Nov-2016	19:00	1.3	SSW
19-Nov-2016	20:00	1.4	NNE
19-Nov-2016	21:00	1	NNE
19-Nov-2016	22:00	1	ENE
19-Nov-2016	23:00	0.7	E
20-Nov-2016	0:00	1	NE
20-Nov-2016	1:00	1.1	NE
20-Nov-2016	2:00	1	ENE
20-Nov-2016	3:00	1.3	ENE
20-Nov-2016	4:00	1.3	ENE
20-Nov-2016	5:00	1.3	NE
20-Nov-2016	6:00	1.7	ESE
20-Nov-2016	7:00	1	NE
20-Nov-2016	8:00	1.3	ESE
20-Nov-2016	9:00	2.8	NE
20-Nov-2016	10:00	3.6	NNW
20-Nov-2016	11:00	4.2	NNE
20-Nov-2016	12:00	3.6	NE
20-Nov-2016	13:00	3.7	NE
20-Nov-2016	14:00	3.6	W
20-Nov-2016	15:00	3.1	W
20-Nov-2016	16:00	2.4	ESE
20-Nov-2016	17:00	2.6	ENE
20-Nov-2016	18:00	2.6	SSE
20-Nov-2016	19:00	2	NE
20-Nov-2016	20:00	2.1	ENE
20-Nov-2016	21:00	1.4	ENE
20-Nov-2016	22:00	1.4	NE
20-Nov-2016	23:00	1	NE

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

II. Mean Wind Speed and Wind Direction

21-Nov-2016	0:00	1.6	ENE
21-Nov-2016	1:00	1.6	SW
21-Nov-2016	2:00	1.6	WSW
21-Nov-2016	3:00	1.9	W
21-Nov-2016	4:00	1.7	W
21-Nov-2016	5:00	1.7	NE
21-Nov-2016	6:00	1.1	ENE
21-Nov-2016	7:00	1.1	SSE
21-Nov-2016	8:00	1.7	SSE
21-Nov-2016	9:00	1.7	NE
21-Nov-2016	10:00	2	NNE
21-Nov-2016	11:00	2.6	ENE
21-Nov-2016	12:00	2.7	WNW
21-Nov-2016	13:00	2.7	SSE
21-Nov-2016	14:00	3.1	WSW
21-Nov-2016	15:00	2.6	W
21-Nov-2016	16:00	3	NW
21-Nov-2016	17:00	2.8	SSW
21-Nov-2016	18:00	2.1	SSE
21-Nov-2016	19:00	1.5	N
21-Nov-2016	20:00	1	ESE
21-Nov-2016	21:00	1.2	ESE
21-Nov-2016	22:00	1	S
21-Nov-2016	23:00	0.9	S
22-Nov-2016	0:00	1.4	E
22-Nov-2016	1:00	1	WSW
22-Nov-2016	2:00	0.9	NE
22-Nov-2016	3:00	0.7	WSW
22-Nov-2016	4:00	1	NW
22-Nov-2016	5:00	0.7	NNW
22-Nov-2016	6:00	0.3	WNW
22-Nov-2016	7:00	0.4	NW
22-Nov-2016	8:00	0.7	S
22-Nov-2016	9:00	0.8	N
22-Nov-2016	10:00	1.3	NE
22-Nov-2016	11:00	2	NNE
22-Nov-2016	12:00	2.3	SSE

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

II. Mean Wind Speed and Wind Direction

22-Nov-2016	13:00	2.1	SSE
22-Nov-2016	14:00	2.7	NE
22-Nov-2016	15:00	3.3	E
22-Nov-2016	16:00	2.3	WSW
22-Nov-2016	17:00	2.3	WSW
22-Nov-2016	18:00	2.8	WNW
22-Nov-2016	19:00	2.4	SSW
22-Nov-2016	20:00	2.6	NW
22-Nov-2016	21:00	1.6	NE
22-Nov-2016	22:00	1.6	NE
22-Nov-2016	23:00	2.1	E
23-Nov-2016	0:00	1.2	ESE
23-Nov-2016	1:00	1.6	NE
23-Nov-2016	2:00	0.8	NE
23-Nov-2016	3:00	0.3	NE
23-Nov-2016	4:00	0.4	N
23-Nov-2016	5:00	0.3	N
23-Nov-2016	6:00	0.4	SSE
23-Nov-2016	7:00	0.3	ENE
23-Nov-2016	8:00	1.4	NE
23-Nov-2016	9:00	1.5	ENE
23-Nov-2016	10:00	2.7	ESE
23-Nov-2016	11:00	3.2	SSW
23-Nov-2016	12:00	2.9	ENE
23-Nov-2016	13:00	3.5	NNE
23-Nov-2016	14:00	4.4	NNE
23-Nov-2016	15:00	3.5	ENE
23-Nov-2016	16:00	3	SE
23-Nov-2016	17:00	2.7	SE
23-Nov-2016	18:00	1.7	ENE
23-Nov-2016	19:00	1.7	ENE
23-Nov-2016	20:00	1.7	SSW
23-Nov-2016	21:00	2.3	WSW
23-Nov-2016	22:00	2.7	SSW
23-Nov-2016	23:00	2.4	W
24-Nov-2016	0:00	1.6	WNW
24-Nov-2016	1:00	1.6	WSW

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

II. Mean Wind Speed and Wind Direction

24-Nov-2016	2:00	1.2	W
24-Nov-2016	3:00	0.7	WNW
24-Nov-2016	4:00	1.3	WNW
24-Nov-2016	5:00	1.4	WNW
24-Nov-2016	6:00	0.7	WSW
24-Nov-2016	7:00	0.7	SW
24-Nov-2016	8:00	1	WNW
24-Nov-2016	9:00	1.9	WNW
24-Nov-2016	10:00	3.3	WSW
24-Nov-2016	11:00	3	WSW
24-Nov-2016	12:00	3.3	WSW
24-Nov-2016	13:00	3.5	SW
24-Nov-2016	14:00	3.1	SW
24-Nov-2016	15:00	3.1	SW
24-Nov-2016	16:00	3.3	WSW
24-Nov-2016	17:00	2.8	WNW
24-Nov-2016	18:00	2.7	NW
24-Nov-2016	19:00	2.3	S
24-Nov-2016	20:00	2.4	WSW
24-Nov-2016	21:00	2.6	W
24-Nov-2016	22:00	2.4	W
24-Nov-2016	23:00	1.7	SW
25-Nov-2016	0:00	2.7	WSW
25-Nov-2016	1:00	2.4	SSW
25-Nov-2016	2:00	2.4	WSW
25-Nov-2016	3:00	1.9	WSW
25-Nov-2016	4:00	2	SW
25-Nov-2016	5:00	2	SSW
25-Nov-2016	6:00	1.6	SSW
25-Nov-2016	7:00	1.3	SSW
25-Nov-2016	8:00	1.3	WSW
25-Nov-2016	9:00	2.1	WSW
25-Nov-2016	10:00	1.7	WSW
25-Nov-2016	11:00	2.1	NE
25-Nov-2016	12:00	2.6	SW
25-Nov-2016	13:00	2.4	SSW
25-Nov-2016	14:00	2	SW

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

II. Mean Wind Speed and Wind Direction

25-Nov-2016	15:00	1.7	SW
25-Nov-2016	16:00	2.3	SW
25-Nov-2016	17:00	1.4	SSW
25-Nov-2016	18:00	1.2	SW
25-Nov-2016	19:00	1	SSW
25-Nov-2016	20:00	1	WSW
25-Nov-2016	21:00	0.9	W
25-Nov-2016	22:00	0.5	WNW
25-Nov-2016	23:00	1	SSW
26-Nov-2016	0:00	1	N
26-Nov-2016	1:00	0.7	W
26-Nov-2016	2:00	0.6	W
26-Nov-2016	3:00	0.7	SSW
26-Nov-2016	4:00	1	WNW
26-Nov-2016	5:00	0.3	SW
26-Nov-2016	6:00	0.3	WSW
26-Nov-2016	7:00	0.6	ENE
26-Nov-2016	8:00	0.6	WNW
26-Nov-2016	9:00	1.4	WSW
26-Nov-2016	10:00	1.6	SSW
26-Nov-2016	11:00	1.8	SW
26-Nov-2016	12:00	3.4	NW
26-Nov-2016	13:00	4	SW
26-Nov-2016	14:00	2	ENE
26-Nov-2016	15:00	1.7	S
26-Nov-2016	16:00	2.4	S
26-Nov-2016	17:00	2.4	ESE
26-Nov-2016	18:00	2.1	ESE
26-Nov-2016	19:00	2.4	ESE
26-Nov-2016	20:00	1	SSE
26-Nov-2016	21:00	0.6	SSE
26-Nov-2016	22:00	0.4	S
26-Nov-2016	23:00	1.2	SE
27-Nov-2016	0:00	0.7	E
27-Nov-2016	1:00	0.7	E
27-Nov-2016	2:00	1.2	S
27-Nov-2016	3:00	0.9	SE

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

II. Mean Wind Speed and Wind Direction

27-Nov-2016	4:00	0.9	ESE
27-Nov-2016	5:00	0.5	SSW
27-Nov-2016	6:00	0.4	SSE
27-Nov-2016	7:00	0.3	ESE
27-Nov-2016	8:00	0.3	NNE
27-Nov-2016	9:00	0.8	ENE
27-Nov-2016	10:00	1.2	ENE
27-Nov-2016	11:00	2	N
27-Nov-2016	12:00	2.7	NE
27-Nov-2016	13:00	3	NNE
27-Nov-2016	14:00	2.7	NE
27-Nov-2016	15:00	3.1	NE
27-Nov-2016	16:00	2.4	ENE
27-Nov-2016	17:00	2.6	ENE
27-Nov-2016	18:00	1.7	NE
27-Nov-2016	19:00	1.7	NNE
27-Nov-2016	20:00	1	NE
27-Nov-2016	21:00	3.8	NE
27-Nov-2016	22:00	0.5	NE
27-Nov-2016	23:00	1	ENE
28-Nov-2016	0:00	1	NNE
28-Nov-2016	1:00	1.3	NNE
28-Nov-2016	2:00	1.6	WNW
28-Nov-2016	3:00	1.3	SSW
28-Nov-2016	4:00	0.9	ENE
28-Nov-2016	5:00	0.5	NE
28-Nov-2016	6:00	0.8	NNE
28-Nov-2016	7:00	1.3	NE
28-Nov-2016	8:00	2.8	NNE
28-Nov-2016	9:00	2.7	SSW
28-Nov-2016	10:00	3.1	SW
28-Nov-2016	11:00	2.7	ENE
28-Nov-2016	12:00	3.3	ENE
28-Nov-2016	13:00	3.3	ESE
28-Nov-2016	14:00	2.8	ESE
28-Nov-2016	15:00	2.1	ESE
28-Nov-2016	16:00	1.7	ENE

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

II. Mean Wind Speed and Wind Direction

28-Nov-2016	17:00	2.3	W
28-Nov-2016	18:00	1.7	WNW
28-Nov-2016	19:00	1.4	E
28-Nov-2016	20:00	1.3	SSW
28-Nov-2016	21:00	1.7	W
28-Nov-2016	22:00	2	WNW
28-Nov-2016	23:00	1.7	W
29-Nov-2016	0:00	1.4	W
29-Nov-2016	1:00	1	WSW
29-Nov-2016	2:00	1.2	W
29-Nov-2016	3:00	1	W
29-Nov-2016	4:00	0.5	SW
29-Nov-2016	5:00	1	W
29-Nov-2016	6:00	0.7	W
29-Nov-2016	7:00	1	ENE
29-Nov-2016	8:00	2.3	W
29-Nov-2016	9:00	2.8	W
29-Nov-2016	10:00	3.5	NE
29-Nov-2016	11:00	3.8	S
29-Nov-2016	12:00	3.8	SSE
29-Nov-2016	13:00	4	SSE
29-Nov-2016	14:00	3.6	N
29-Nov-2016	15:00	3.1	NE
29-Nov-2016	16:00	2.7	N
29-Nov-2016	17:00	2.4	S
29-Nov-2016	18:00	2.3	ENE
29-Nov-2016	19:00	1.1	NE
29-Nov-2016	20:00	1	ENE
29-Nov-2016	21:00	0.8	NNE
29-Nov-2016	22:00	0.7	NE
29-Nov-2016	23:00	0.4	ENE
30-Nov-2016	0:00	0.5	NNE
30-Nov-2016	1:00	0.7	SW
30-Nov-2016	2:00	0.4	ENE
30-Nov-2016	3:00	0.5	NE
30-Nov-2016	4:00	2.3	ENE
30-Nov-2016	5:00	2.1	WSW

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

II. Mean Wind Speed and Wind Direction

30-Nov-2016	6:00	2.4	SSE
30-Nov-2016	7:00	2.1	WNW
30-Nov-2016	8:00	3	NNW
30-Nov-2016	9:00	3.4	WNW
30-Nov-2016	10:00	3.9	WNW
30-Nov-2016	11:00	4.7	NE
30-Nov-2016	12:00	3.5	ENE
30-Nov-2016	13:00	3.5	WSW
30-Nov-2016	14:00	4.6	W
30-Nov-2016	15:00	3.7	NNE
30-Nov-2016	16:00	3.6	NNE
30-Nov-2016	17:00	3	W
30-Nov-2016	18:00	3	W
30-Nov-2016	19:00	2.6	N
30-Nov-2016	20:00	2.7	N
30-Nov-2016	21:00	2.6	ENE
30-Nov-2016	22:00	2.1	ENE
30-Nov-2016	23:00	1.9	ESE

**APPENDIX D
ENVIRONMENTAL MONITORING
SCHEDULES**

Contract No. KL/2012/03
Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area
Impact Air and Noise Monitoring Schedule for November 2016

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

Air Quality Monitoring Station

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

Noise Monitoring Station

M6(A) - Oblate Primary School
M7 - CCC Kei To Secondary School
M8 - Po Leung Kuk Ngan Po Ling College
M9 - Tak Long Estate

Contract No. KL/2012/03
Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area
Tentative Impact Air and Noise Monitoring Schedule for December 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Dec	2-Dec	3-Dec
				1 hr TSP X3 AM1(B), AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)		
4-Dec	5-Dec	6-Dec	7-Dec	8-Dec	9-Dec	10-Dec
	Noise (M9)	Noise (M6(A) and M7) 24 hr TSP	1 hr TSP X3 AM1(B), AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)			
11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec
	24 hr TSP	1 hr TSP X3 AM1(B), AM2, AM3(A), AM4(A), AM5(A), AA1 & AA2 Noise (M8 & M9)			Noise (M6(A) and M7) 24 hr TSP	
18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec
	1 hr TSP X3 AM1(B), AM2, AM3(A), AM4(A), AM5(A), AA1 & AA2 Noise (M8 & M9)		Noise (M6(A) and M7)		1 hr TSP X3 AM1(B), AM2, AM3(A), AM4(A) & AM5(A)	
25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec
			Noise (M9) 24 hr TSP	1 hr TSP X3 AM1(B), AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)	Noise (M6(A) and M7)	

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

Air Quality Monitoring Station

AM1(B) -Boundary of KTD/Outside Contractor's site office of Contract KL/2012/02
AM2 - Lee Kau Yan Memorial School
AM3(A) - Holy Trinity Bradbury Centre
AM4(A) - EMSD Workshops
AM5(A) - Po Leung Kuk Ngan Po Ling College

Noise Monitoring Station

M6(A) - Oblate Primary School
M7 - CCC Kei To Secondary School
M8 - Po Leung Kuk Ngan Po Ling College
M9 - Tak Long Estate

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

Appendix E - 1-hour TSP Monitoring Results

Location AM2 - Lee Kau Yan Memorial School			
Date	Time	Weather	Particulate Concentration (µg/m3)
4-Nov-16	13:25	Sunny	145.6
4-Nov-16	14:25	Sunny	143.6
4-Nov-16	15:25	Sunny	146.0
9-Nov-16	8:15	Cloudy	133.8
9-Nov-16	9:15	Cloudy	134.5
9-Nov-16	10:15	Cloudy	137.1
15-Nov-16	13:00	Sunny	140.1
15-Nov-16	14:00	Sunny	140.7
15-Nov-16	15:00	Sunny	144.1
21-Nov-16	9:00	Cloudy	115.5
21-Nov-16	10:00	Cloudy	115.6
21-Nov-16	11:00	Cloudy	120.1
25-Nov-16	13:00	Cloudy	71.3
25-Nov-16	14:00	Cloudy	69.3
25-Nov-16	15:00	Cloudy	72.3
Average			122.0
Maximum			146.0
Minimum			69.3

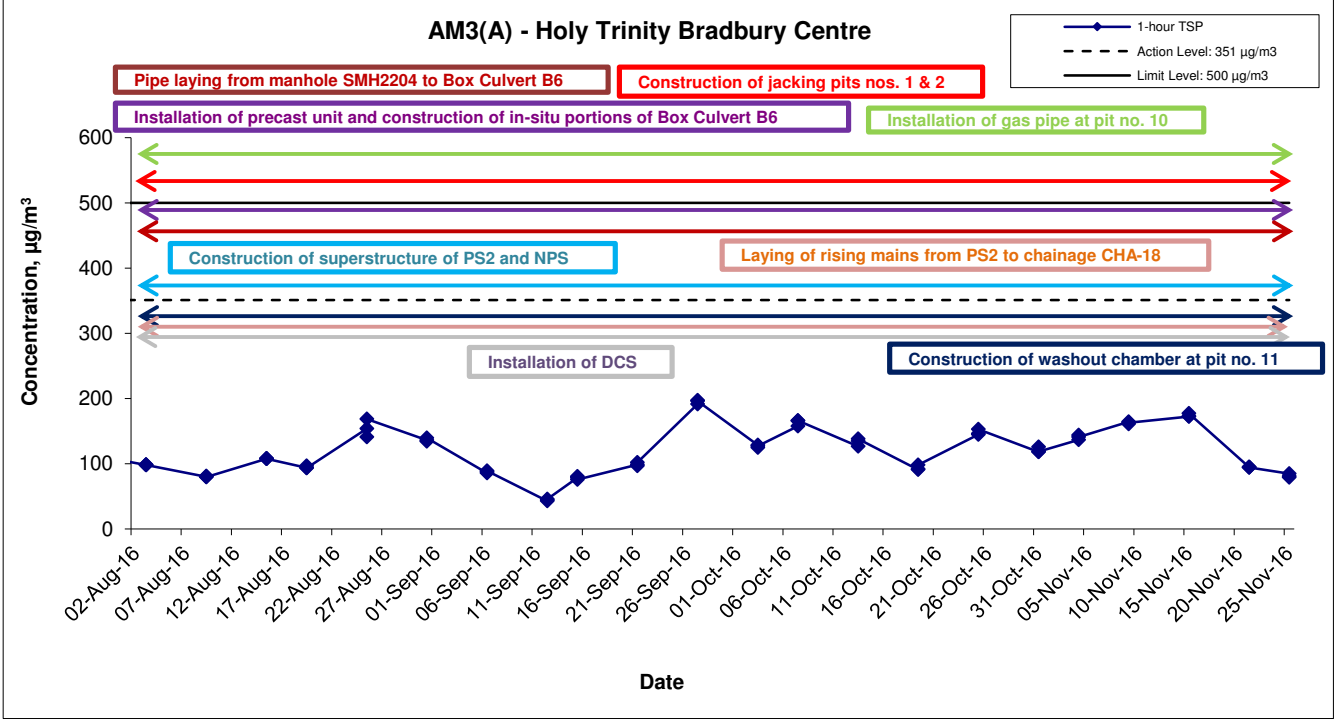
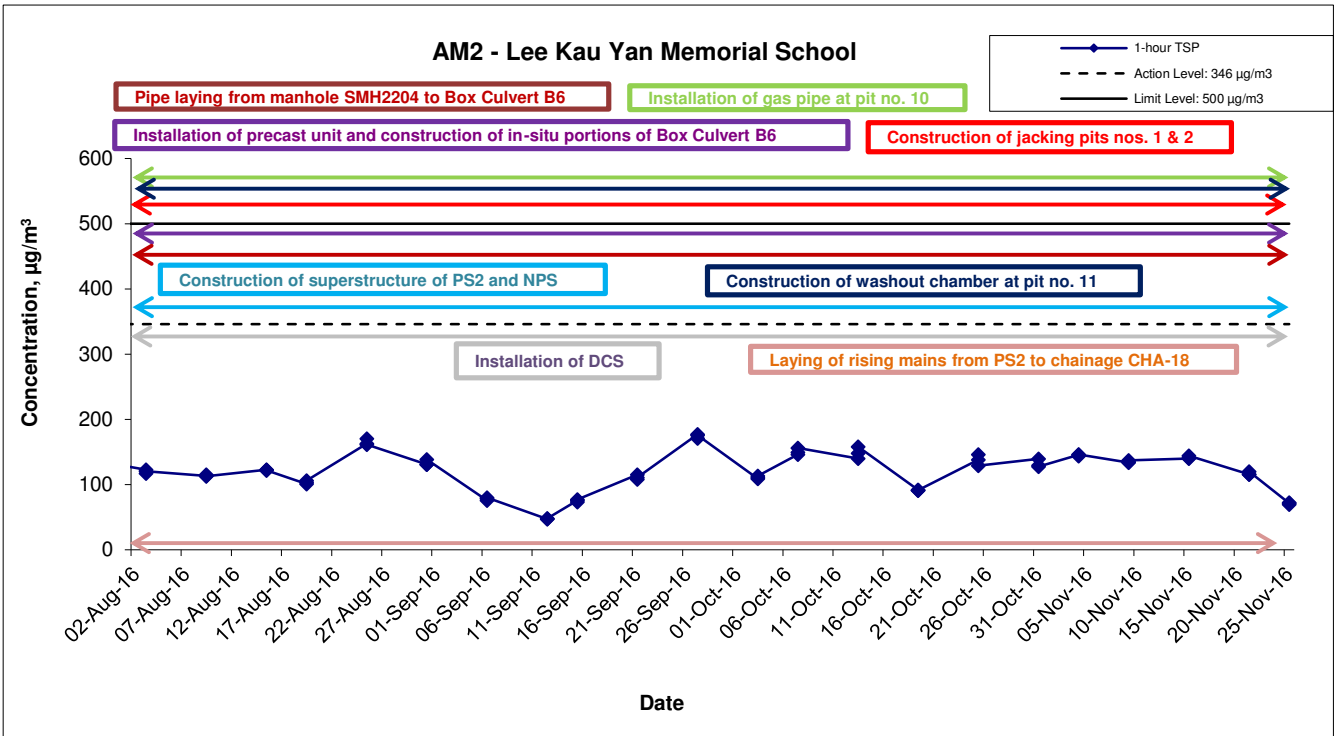
Location AM3(A) - Holy Trinity Bradbury Centre			
Date	Time	Weather	Particulate Concentration (µg/m3)
4-Nov-16	8:55	Sunny	136.8
4-Nov-16	9:55	Sunny	143.9
4-Nov-16	10:55	Sunny	140.9
9-Nov-16	8:45	Cloudy	164.2
9-Nov-16	9:45	Cloudy	161.1
9-Nov-16	10:45	Cloudy	162.9
15-Nov-16	9:00	Sunny	172.3
15-Nov-16	10:00	Sunny	173.0
15-Nov-16	11:00	Sunny	177.3
21-Nov-16	13:00	Cloudy	94.6
21-Nov-16	14:00	Cloudy	94.9
21-Nov-16	15:00	Cloudy	94.5
25-Nov-16	9:00	Cloudy	84.9
25-Nov-16	10:00	Cloudy	79.2
25-Nov-16	11:00	Cloudy	80.9
Average			130.8
Maximum			177.3
Minimum			79.2

Appendix E - 1-hour TSP Monitoring Results

Location AM4(A) - EMSD Workshops			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-Nov-16	8:20	Fine	130.9
4-Nov-16	9:20	Fine	132.5
4-Nov-16	10:20	Fine	134.3
9-Nov-16	13:00	Cloudy	153.2
9-Nov-16	14:00	Cloudy	151.8
9-Nov-16	15:00	Cloudy	148.8
15-Nov-16	13:00	Sunny	136.0
15-Nov-16	14:00	Sunny	139.0
15-Nov-16	15:00	Sunny	137.5
21-Nov-16	13:00	Cloudy	78.7
21-Nov-16	14:00	Cloudy	71.7
21-Nov-16	15:00	Cloudy	72.5
25-Nov-16	13:00	Cloudy	63.7
25-Nov-16	14:00	Cloudy	62.7
25-Nov-16	15:00	Cloudy	63.8
Average			111.8
Maximum			153.2
Minimum			62.7

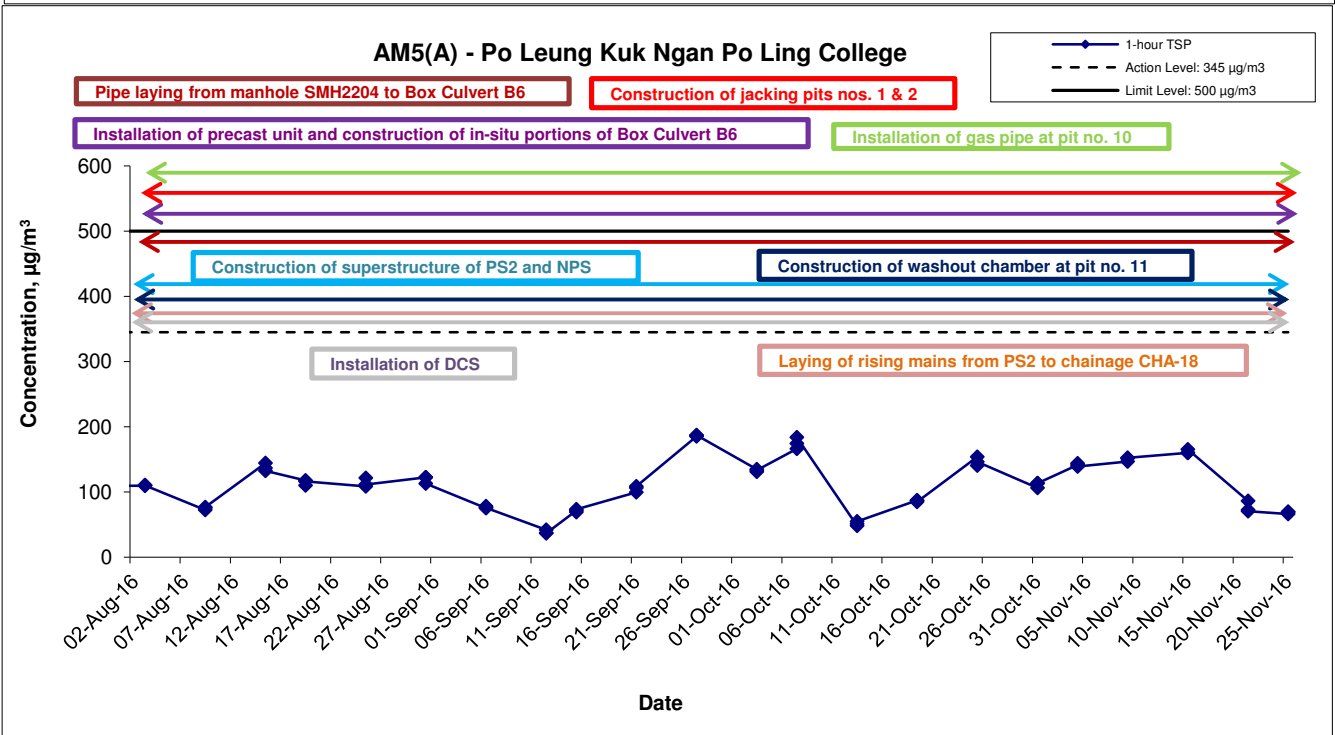
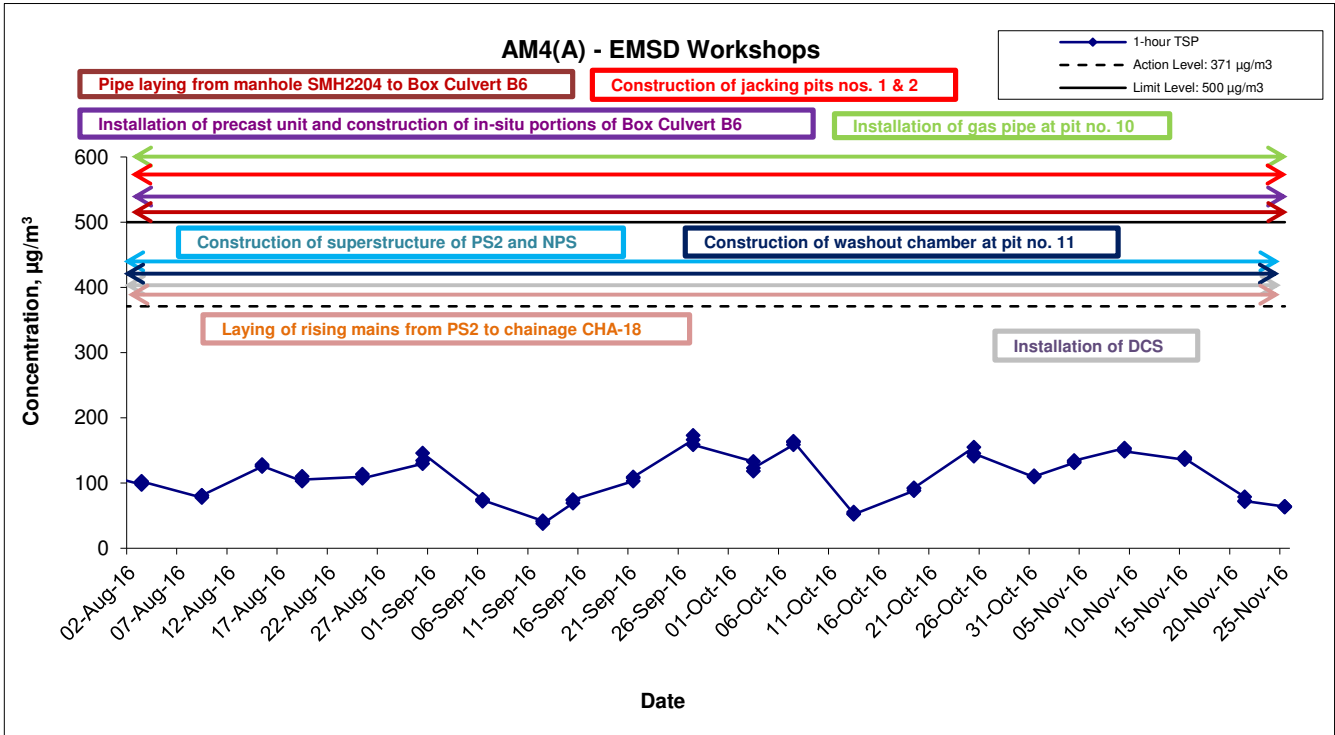
Location AM5(A) - Po Leung Kuk Ngan Po Ling College			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-Nov-16	8:00	Sunny	141.6
4-Nov-16	9:00	Sunny	143.6
4-Nov-16	10:00	Sunny	139.0
9-Nov-16	8:45	Cloudy	146.8
9-Nov-16	9:45	Cloudy	151.3
9-Nov-16	10:45	Cloudy	152.5
15-Nov-16	14:00	Sunny	160.0
15-Nov-16	15:00	Sunny	160.2
15-Nov-16	16:00	Sunny	165.2
21-Nov-16	9:00	Cloudy	86.2
21-Nov-16	10:00	Cloudy	72.6
21-Nov-16	11:00	Cloudy	70.5
25-Nov-16	14:00	Cloudy	66.1
25-Nov-16	15:00	Cloudy	69.1
25-Nov-16	16:00	Cloudy	69.8
Average			119.6
Maximum			165.2
Minimum			66.1

1-hr TSP Concentration Levels



Title Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA13056	
	Date Nov 16	Appendix E	

1-hr TSP Concentration Levels



Title Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale	N.T.S	Project No.	MA13056	CINOTECH
	Date	Nov 16	Appendix	E	

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

Appendix F - 24-hour TSP Monitoring Results

Location AM2 - Lee Kau Yan Memorial School

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
3-Nov-16	Sunny	293.4	768.3	3.2862	3.3849	0.0987	17333.4	17357.4	24.0	1.24	1.24	1.24	1784.9	55.3
8-Nov-16	Cloudy	300.2	766.6	3.5866	3.7058	0.1192	17357.4	17381.4	24.0	1.22	1.22	1.22	1763.1	67.6
14-Nov-16	Sunny	299.7	765.4	3.5781	3.7609	0.1828	17381.4	17405.4	24.0	1.22	1.22	1.22	1763.1	103.7
18-Nov-16	Cloudy	296.4	764.7	3.2841	3.4267	0.1426	17405.4	17429.4	24.0	1.23	1.23	1.23	1771.9	80.5
24-Nov-16	Cloudy	287.8	768.1	3.2628	3.3174	0.0546	17429.4	17453.4	24.0	1.24	1.24	1.24	1787.8	30.5
30-Nov-16	Sunny	292.5	769.6	3.6115	3.7579	0.1464	17453.5	17477.5	24.0	1.23	1.23	1.23	1775.2	82.5
													Min	30.5
													Max	103.7
													Average	70.0

Location AM3(A) - Holy Trinity Bradbury Centre

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
3-Nov-16	Sunny	292.8	768.4	3.2732	3.3748	0.1016	9830.9	9854.9	24.0	1.25	1.25	1.25	1800.7	56.4
8-Nov-16	Cloudy	299.7	765.9	3.6047	3.7271	0.1224	9854.9	9878.9	24.0	1.24	1.23	1.24	1778.7	68.8
14-Nov-16	Sunny	298.0	765.0	3.6277	3.8049	0.1772	9878.9	9902.9	24.0	1.24	1.24	1.24	1782.4	99.4
18-Nov-16	Cloudy	296.7	764.8	3.2785	3.4370	0.1585	9902.9	9926.9	24.0	1.24	1.24	1.24	1785.8	88.8
24-Nov-16	Cloudy	288.4	767.2	3.2722	3.3389	0.0667	9926.9	9950.9	24.0	1.24	1.24	1.24	1784.6	37.4
30-Nov-16	Sunny	292.1	769.8	3.5796	3.7490	0.1694	9951.6	9975.6	24.0	1.23	1.23	1.23	1776.2	95.4
													Min	37.4
													Max	99.4
													Average	74.4

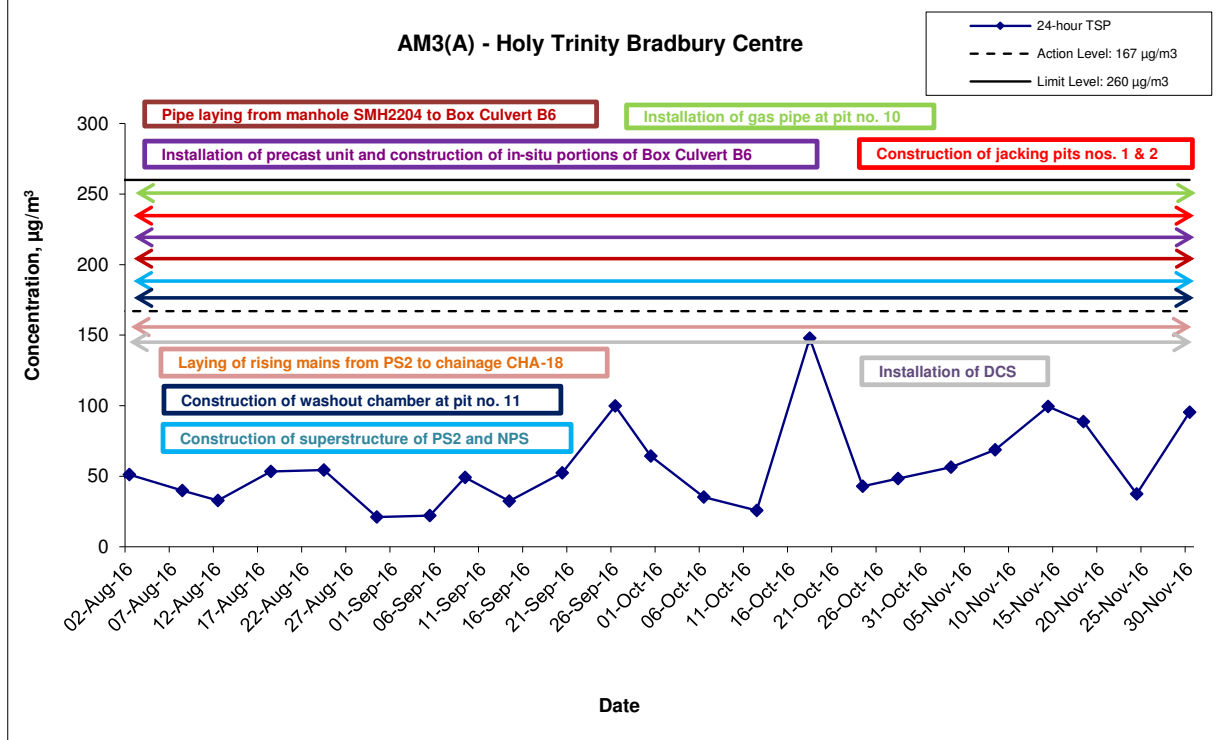
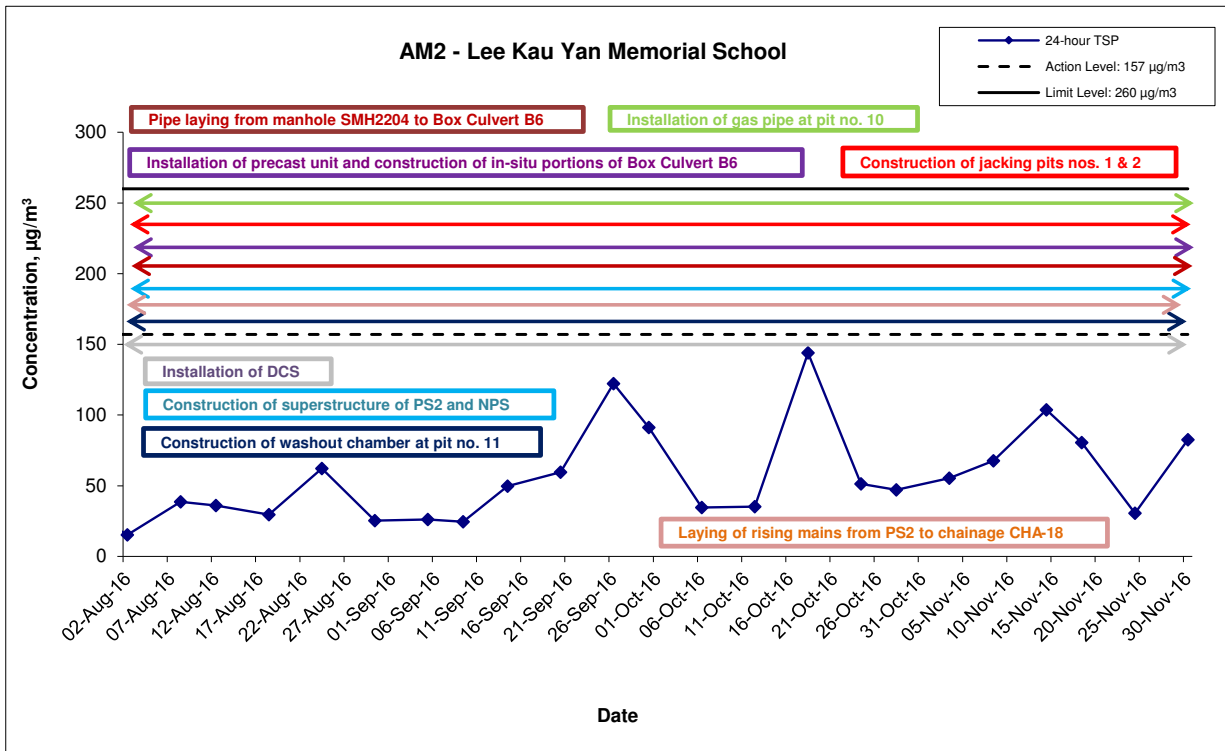
Location AM4(A) - EMSD Workshops

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
3-Nov-16	Sunny	293.5	767.1	3.3123	3.4125	0.1002	1056.1	1080.1	24.0	1.24	1.24	1.24	1791.0	55.9
8-Nov-16	Cloudy	299.8	766.5	3.6025	3.6934	0.0909	1080.1	1104.1	24.0	1.23	1.23	1.23	1772.2	51.3
14-Nov-16	Sunny	299.3	765.2	3.5832	3.6776	0.0944	1104.1	1128.1	24.0	1.23	1.23	1.23	1772.1	53.3
18-Nov-16	Cloudy	295.4	764.8	3.3091	3.3647	0.0556	1128.1	1152.1	24.0	1.24	1.24	1.24	1782.9	31.2
24-Nov-16	Cloudy	287.8	767.5	3.2723	3.3398	0.0675	1152.1	1176.1	24.0	1.25	1.25	1.25	1797.4	37.6
30-Nov-16	Sunny	291.7	770.4	3.5907	3.7646	0.1739	1176.1	1200.1	24.0	1.24	1.24	1.24	1789.4	97.2
													Min	31.2
													Max	97.2
													Average	54.4

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

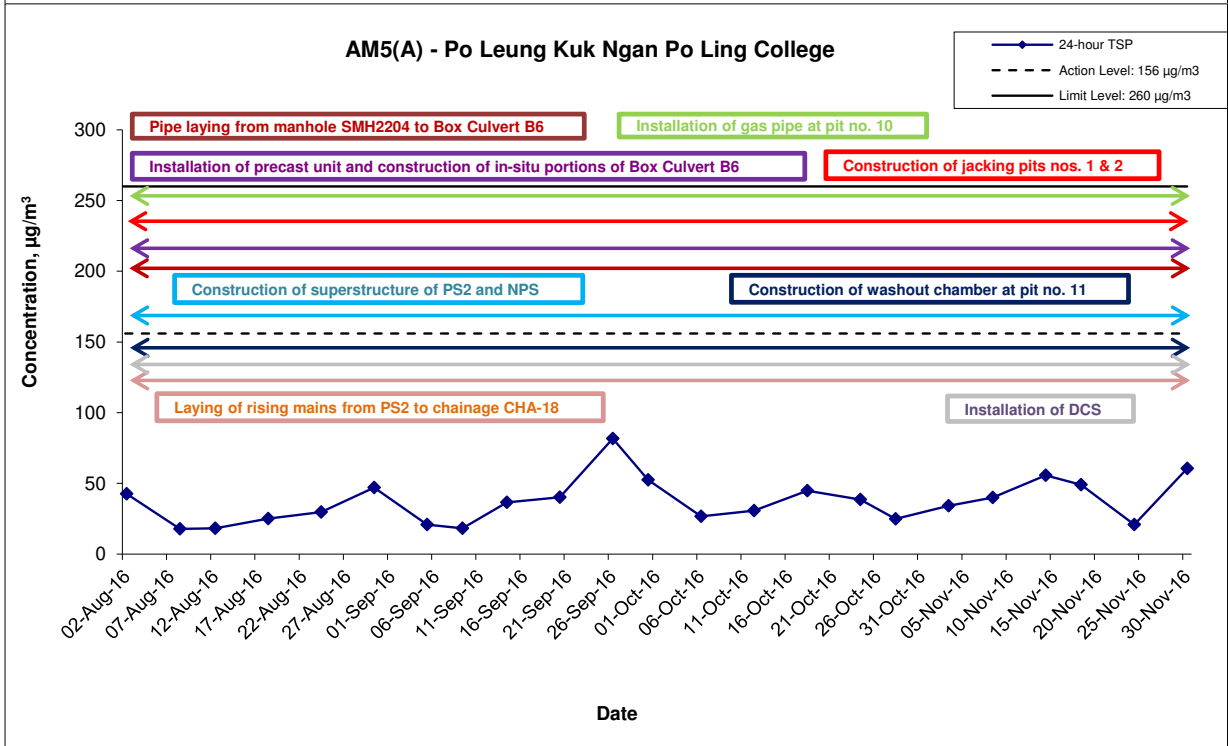
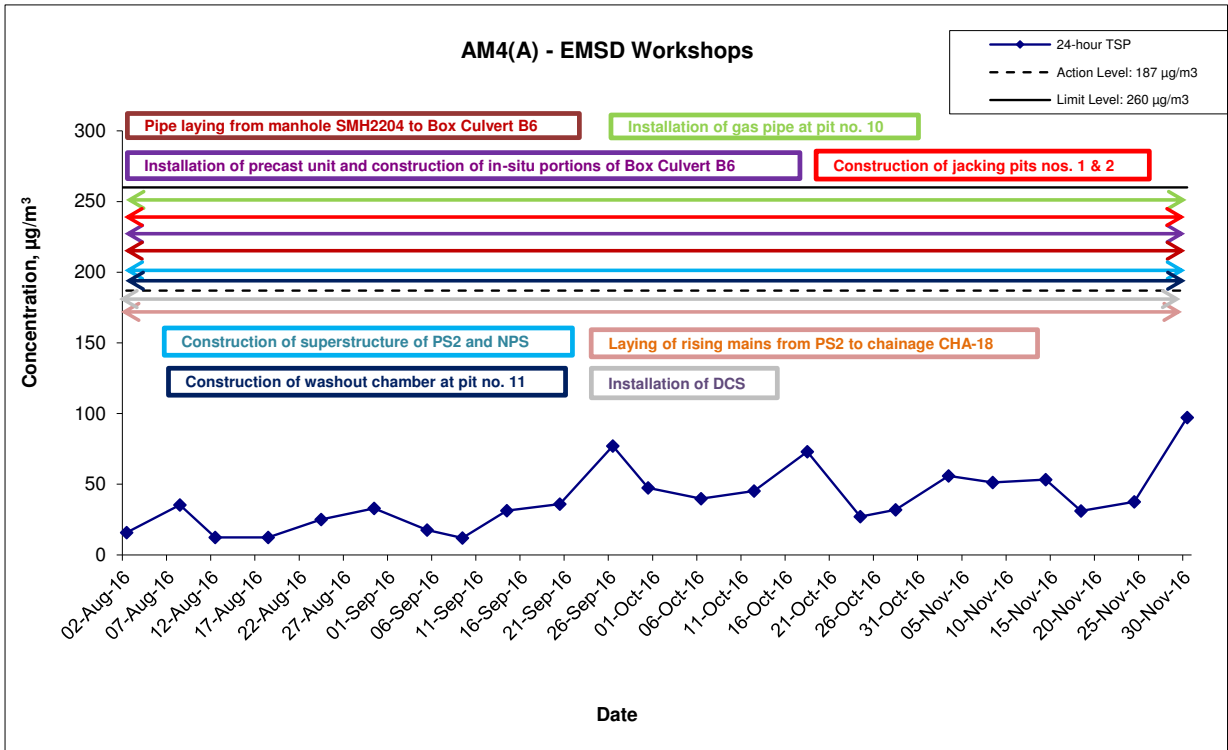
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
3-Nov-16	Sunny	294.2	768.4	3.2902	3.3509	0.0607	2403.1	2427.1	24.0	1.24	1.24	1.24	1781.3	34.1
8-Nov-16	Cloudy	299.7	765.2	3.6387	3.7091	0.0704	2427.1	2451.1	24.0	1.22	1.22	1.22	1763.0	39.9
14-Nov-16	Sunny	300.4	765.8	3.6504	3.7484	0.0980	2451.1	2475.1	24.0	1.22	1.22	1.22	1761.7	55.6
18-Nov-16	Cloudy	297.6	764.0	3.2851	3.3718	0.0867	2475.1	2499.1	24.0	1.23	1.23	1.23	1768.1	49.0
24-Nov-16	Cloudy	287.4	768.1	3.3122	3.3495	0.0373	2499.1	2523.1	24.0	1.24	1.24	1.24	1783.1	20.9
30-Nov-16	Sunny	291.8	769.7	3.6133	3.7206	0.1073	2530.1	2554.1	24.0	1.23	1.23	1.23	1772.3	60.5
													Min	20.9
													Max	60.5
													Average	43.4

24-hr TSP Concentration Levels



Title Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA13056	CINOTECH
	Date Nov 16	Appendix F	

24-hr TSP Concentration Levels



Title Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Contract No. KL/2012/03	Scale N.T.S	Project No. MA13056	CINOTECH
		Date Nov 16	Appendix F	

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

Appendix G - Noise Monitoring Results

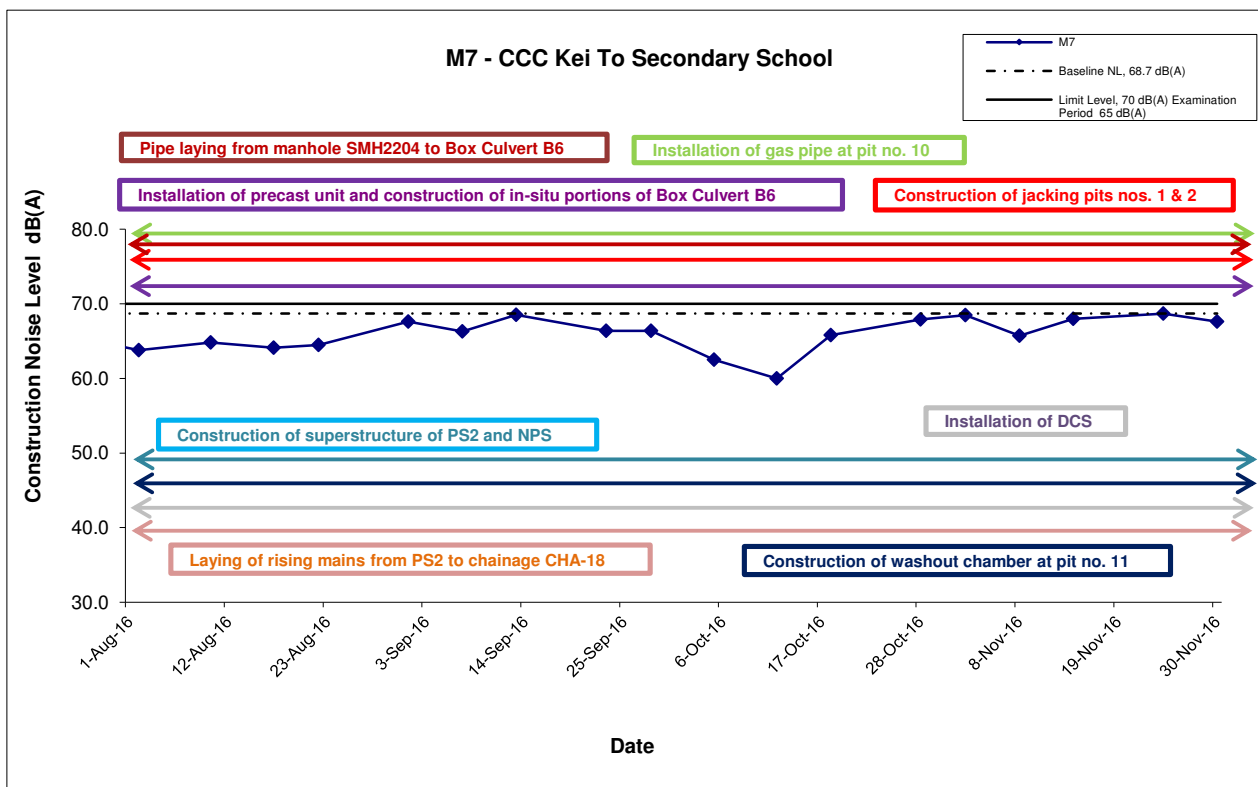
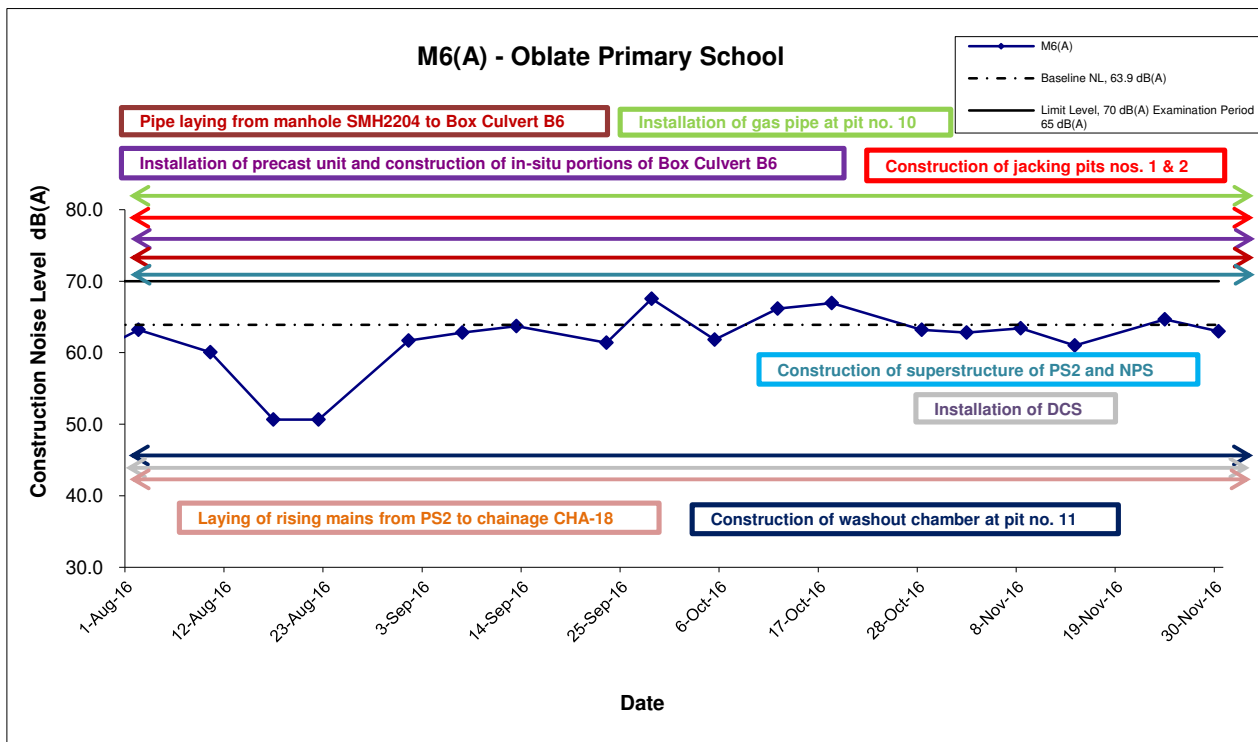
Location M6(A) - Oblate Primary School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
2-Nov-16	10:45	Sunny	66.4	68.4	64.1	63.9	62.8
8-Nov-16	13:00	Cloudy	63.4	65.4	60.4		63.4 Measured ≤ Baseline
14-Nov-16	10:45	Sunny	65.7	67.8	63.3		61.0
24-Nov-16	08:30	Cloudy	67.3	69.8	63.8		64.6
30-Nov-16	11:00	Sunny	63.0	64.9	59.2		63.0 Measured ≤ Baseline

Location M7 - CCC Kei To Secondary School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
2-Nov-16	11:30	Sunny	71.6	74.1	67.5	68.7	68.5
8-Nov-16	13:45	Cloudy	65.7	67.1	63.0		65.7 Measured ≤ Baseline
14-Nov-16	11:30	Sunny	68.0	70.2	62.9		68.0 Measured ≤ Baseline
24-Nov-16	09:15	Cloudy	71.7	74.4	67.6		68.7
30-Nov-16	10:15	Sunny	67.6	69.9	63.3		67.6 Measured ≤ Baseline

Location M8 - Po Leung Kuk Ngan Po Ling College							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
9-Nov-16	09:00	Cloudy	69.9	73.0	63.5	61.9	69.2
15-Nov-16	14:15	Sunny	63.0	64.9	60.2		56.5
21-Nov-16	09:10	Cloudy	66.7	69.7	61.6		65.0

Location M9 - Tak Long Estate							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
1-Nov-16	13:00	Cloudy	61.0	62.2	59.0	59.9	54.5
7-Nov-16	13:45	Sunny	61.4	62.6	59.5		56.1
17-Nov-16	09:30	Sunny	63.4	63.7	59.5		60.8
23-Nov-16	13:30	Cloudy	63.3	64.4	61.3		60.6
29-Nov-16	10:30	Cloudy	62.4	64.4	59.8		58.8

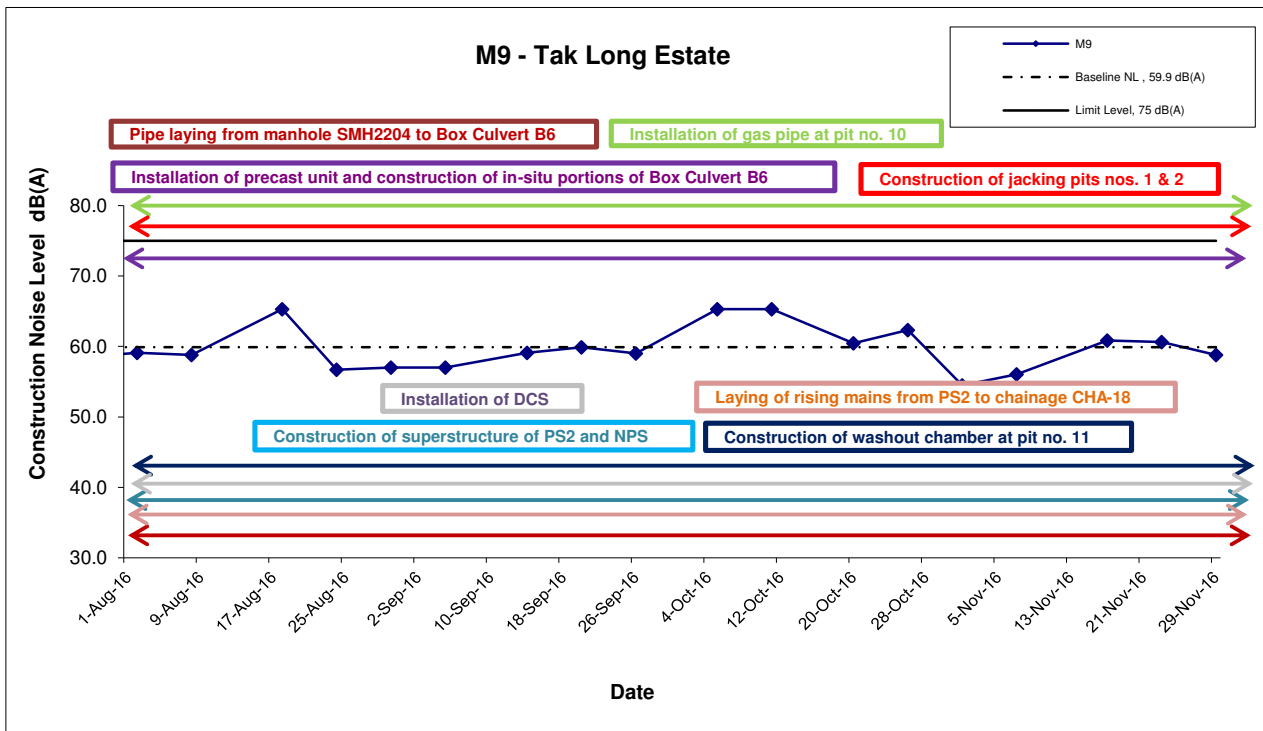
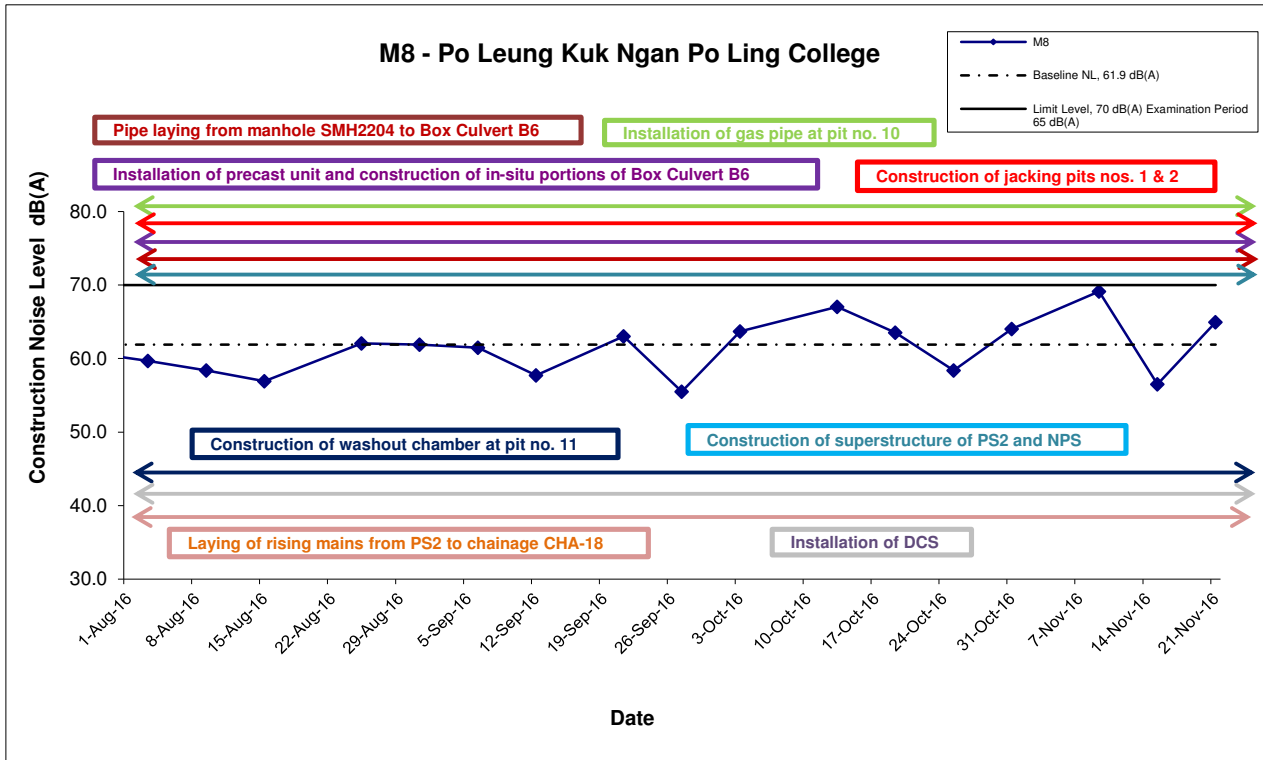
Noise Levels



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

Title Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA13056	
	Date Nov 16	Appendix G	

Noise Levels



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

Title Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA13056	CINOTECH
	Date Nov 16	Appendix G	

APPENDIX H
SUMMARY OF EXCEEDANCE

Contract No. KL/2012/03

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

Appendix H – Summary of Exceedance

Exceedance Report for Contract No. KL/2012/03

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

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

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

**APPENDIX I
SITE AUDIT SUMMARY**

Contract No. KL/2012/03

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

**Weekly Site Inspection Record Summary
Inspection Information**

Checklist Reference Number	161104
Date	4 November 2016
Time	10:00-12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161028), all environmental deficiencies were observed rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Carrie Leung		4 November 2016
Checked by	Dr. Priscilla Choy		4 November 2016

Contract No. KL/2012/03

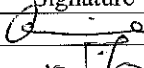
Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area

EP-337/2009 - New Distributor Roads serving the Planned Kai Tak Development

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161111
Date	11 November 2016
Time	10:00-12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
161111-R01	• Contractor is reminded to provide sedimentation tank for treating discharge and stand water should be cleared. (near PS2)	B 3i
	C. Air Quality	
161111-R02	• Regulated machine should be provided with NRMM label. (PS2)	C 19
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
161111-O01	• Oil stain should be cleared. (near PS2)	E 8
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161104), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		11 November 2016
Checked by	Dr. Priscilla Choy		11 November 2016

Contract No. KL/2012/03

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

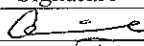

EP-337/2009 - New Distributor Roads serving the Planned Kai Tak Development

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	161116
Date	16 November 2016
Time	14:00-17:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161111), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		16 November 2016
Checked by	Dr. Priscilla Choy		16 November 2016

Contract No. KL/2012/03



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

EP-337/2009 - New Distributor Roads serving the Planned Kai Tak Development

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161125
Date	25 November 2016
Time	10:00-12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
161125-R02	• The accumulated stagnant water should be cleared. (PS2)	B 8
	C. Air Quality	C 7
161125-R01	• Stockpile of dusty material should be properly to prevent dust generation. (PS2)	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161116), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	KC Chung		25 November 2016
Checked by	Dr. Priscilla Choy		25 November 2016

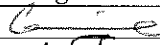

Contract No. KL/2012/03

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

**Weekly Site Inspection Record Summary
Inspection Information**

Checklist Reference Number	161104
Date	4 November 2016
Time	10:00-12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	<ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	C. Air Quality	
161104-R02	<ul style="list-style-type: none">Water spraying should be provided within site area near NPS.	C 6
	D. Noise	
	<ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
161104-R01	<ul style="list-style-type: none">General refuse and stand water should be cleared at NPS.	E 1iii
	F. Visual and Landscape	
	<ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	<ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	H. Others	
	<ul style="list-style-type: none">Follow-up on previous audit section (Ref. No.: 161028), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		4 November 2016
Checked by	Dr. Priscilla Choy		4 November 2016

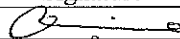

Contract No. KL/2012/03

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

**Weekly Site Inspection Record Summary
Inspection Information**

Checklist Reference Number	161111
Date	11 November 2016
Time	10:00-12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161104), all environmental deficiencies were observed rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Carrie Leung		11 November 2016
Checked by	Dr. Priscilla Choy		11 November 2016

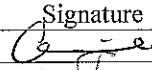

Contract No. KL/2012/03

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

**Weekly Site Inspection Record Summary
Inspection Information**

Checklist Reference Number	161116
Date	16 November 2016
Time	14:00-17:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161111), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		16 November 2016
Checked by	Dr. Priscilla Choy		16 November 2016



Contract No. KL/2012/03

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

**Weekly Site Inspection Record Summary
Inspection Information**

Checklist Reference Number	161125
Date	25 November 2016
Time	10:00-12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits / Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.: 161116), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	KC Chung		25 November 2016
Checked by	Dr. Priscilla Choy		25 November 2016

APPENDIX J
EVENT ACTION PLANS

Appendix J - Event Action Plans

Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contactor, IEC and ER; 3. Repeat measurement to confirm finding. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and ER; 3. Increase monitoring frequency to daily; 4. Discuss with IEC and Contractor on remedial actions required; 5. Assess the effectiveness of Contractor's remedial actions; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues. 	<ol style="list-style-type: none"> 1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to ER and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Assess effectiveness of Contractor's remedial actions and keep 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposals for remedial actions to ER and IEC within three

Appendix J - Event Action Plans

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

Appendix J - Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals;

Appendix J - Event Action Plans

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

Event/Action Plan for Landscape and Visual

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

Appendix J - Event Action Plans

	<p>ER</p> <p>2. Increase monitoring frequency</p> <p>3. Discuss remedial actions with IEC, ER and Contractor</p> <p>4. Monitor remedial actions until rectification has been completed</p> <p>5. If non-conformity stops, cease additional monitoring</p>	<p>2. Check Contractor's working method</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise ER on effectiveness of proposed remedial measures</p> <p>5. Supervise implementation of remedial measures.</p>	<p>implemented</p>	<p>undertake any necessary replacement</p>
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**APPENDIX K
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

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

Types of Impacts	Mitigation Measures	Status
<p align="center">Construction Dust</p>	<p>8 times daily watering of the work site with active dust emitting activities.</p>	<p align="center">^</p>
	<p>Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.</p>	
	<ul style="list-style-type: none"> + Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. 	<p align="center">^</p>
	<ul style="list-style-type: none"> • Misting for the dusty material should be carried out before being loaded into the vehicle 	<p align="center">^</p>
	<ul style="list-style-type: none"> • Any vehicle with an open load carrying area should have properly fitted side and tail boards. 	<p align="center">^</p>
	<ul style="list-style-type: none"> + 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. 	<p align="center">^</p>
	<ul style="list-style-type: none"> • The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation. 	<p align="center">^</p>
	<ul style="list-style-type: none"> + The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways inside the site. On-site unpaved roads should be compacted and kept free of loose materials. 	<p align="center">^</p>
	<ul style="list-style-type: none"> + Vehicle washing facilities should be provided at every vehicle exit point. • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. 	<p align="center">*</p> <p align="center">^</p>
	<ul style="list-style-type: none"> • Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. • Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides. • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. 	<p align="center">^</p> <p align="center">^</p> <p align="center">^</p>

Construction Noise	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump	^
	Good Site Practice:	^
	<ul style="list-style-type: none"> • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. 	N/A(1)
	<ul style="list-style-type: none"> • Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. 	^
	<ul style="list-style-type: none"> • Mobile plant, if any, should be sited as far away from NSRs as possible 	^
	<ul style="list-style-type: none"> • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. 	^
	<ul style="list-style-type: none"> • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. 	^
	<ul style="list-style-type: none"> • Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities 	^
	Scheduling of Construction Works during School Examination Period	^
	(i) Provision of low noise surfacing in a section of Road L2; and	N/A
	(ii) Provision of structural fins	N/A
	(i) Avoid the sensitive façade of class room facing Road L2 and L4; and	N/A
	(ii) Provision of low noise surfacing in a section of Road L2 & L4	N/A
(i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 111; and	N/A	
(ii) Setback of building about 5m from site boundary.	N/A	
Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A	
(i) avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and	N/A	
(ii) for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not provide the facades with openable window.	N/A	

	<p>(i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height of the residential block(s) located at less than 55m away from To Kwa Wan Road to no more than 25m above ground.</p> <p>(ii) avoid any sensitive facades with openable window facing the slip road connecting Prince Edward Road East and San Po Kong or other alternative mitigation measures and at-source mitigation measures for the surrounding new local roads to minimise the potential traffic noise impacts from the slip road</p>	<p>N/A</p> <p>N/A</p> <p>N/A</p>
	<p>All the ventilation fans installed in the below will be provided with silencers or acoustics treatment.</p> <p>(i) SPS (ii) ESS (iii) Tunnel Ventilation Shaft (iv) EFTS depot</p> <p>Installation of retractable roof or other equivalent measures</p>	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>
<p>Construction Water Quality</p>	<p>The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including:</p> <ul style="list-style-type: none"> • Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply; • Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps; • An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and • For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided so that swift actions could be taken in case of malfunction of unmanned facilities. <p><u>Land-based Construction</u></p> <p><i>Construction Runoff</i></p> <p>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:</p> <ul style="list-style-type: none"> • use of sediment traps • adequate maintenance of drainage systems to prevent flooding and overflow 	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p>

	<p>Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.</p> <p>Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.</p> <p>Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 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.</p> <p>Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.</p> <p>Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.</p> <p>Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.</p> <p>Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
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	<p>All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.</p> <p><i>Drainage</i></p> <p>It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.</p> <p>All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.</p> <p>All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.</p> <p><i>Sewage Effluent</i></p> <p>Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.</p> <p><i>Stormwater Discharges</i></p> <p>Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes</p>	<p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>N/A</p>
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	<p><i>Debris and Litter</i></p> <p>In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials. litter or wastes to marine waters does not occur</p> <p><i>Construction Works at or in Close Proximity of Storm Culvert or Seafront</i></p> <p>The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.</p> <p>The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.</p> <p>Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works.</p> <p>Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.</p> <p>Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers.</p> <hr/> <p>Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.</p> <hr/> <p>Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.</p> <p>Construction effluent, site run-off and sewage should be properly collected and/or treated.</p> <p>Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.</p> <p>Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.</p> <p>Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
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	<p>Construction and Demolition Material</p> <p>Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:</p> <ul style="list-style-type: none"> • Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric • Skip hoist for material transport should be totally enclosed by impervious sheeting • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet • The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading <p>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.</p> <p>Chemical Waste</p> <p>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i></p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
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	<p>General Refuse</p> <p>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</p>	^
Landscape and Visual	<p>CM1 All existing trees should be carefully protected during construction.</p>	^
	<p>CM2 Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.</p>	N/A
	<p>CM3 Control of night-time lighting.</p>	^
	<p>CM4 Erection of decorative screen hoarding.</p>	^

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

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

Contract No. KL/2012/03

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

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

Reporting Month: November 2016

Warnings / Summons and Successful Prosecutions received in the reporting month

Log Ref.	Received Date	Details of Warning / Summons and Successful Prosecutions	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A

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

Complaint Log

EPD Complaint Ref No.	Date of Complaint	Complaint Details	Investigation / Mitigation Action	Status
15-14258	10/6/2015	Complainant said dust emission from the construction work affecting him/her. The stockpiles was not covered properly such that dust emission was observed. Some muddy water was found in To Kwa Wan Typhoon Shelter.	Complaint cases referred to the Contractor. Investigation conducted by the Contract ET. The investigation results showed that no major construction activities were conducted at the time of complaint on the day - 10 th June 2015. Since no marine works or land-based construction activities near the To Kwa Wan Typhoon Shelter were conducted, muddy effluent discharged to the To Kwa Wan Typhoon Shelter is not anticipated. The regular impact air monitoring results in the first three weeks of June 2015 were in full compliance with the Action and Limit levels. No major environmental deficiencies were observed related to the air quality and water quality, and the deficiencies as mentioned in the complaint were not recorded during the site inspections.	Closed

**APPENDIX M
GENERATED WASTE QUANTITY**

APPENDIX IV

Monthly Summary Waste Flow Table

(PS Clause 1.86)

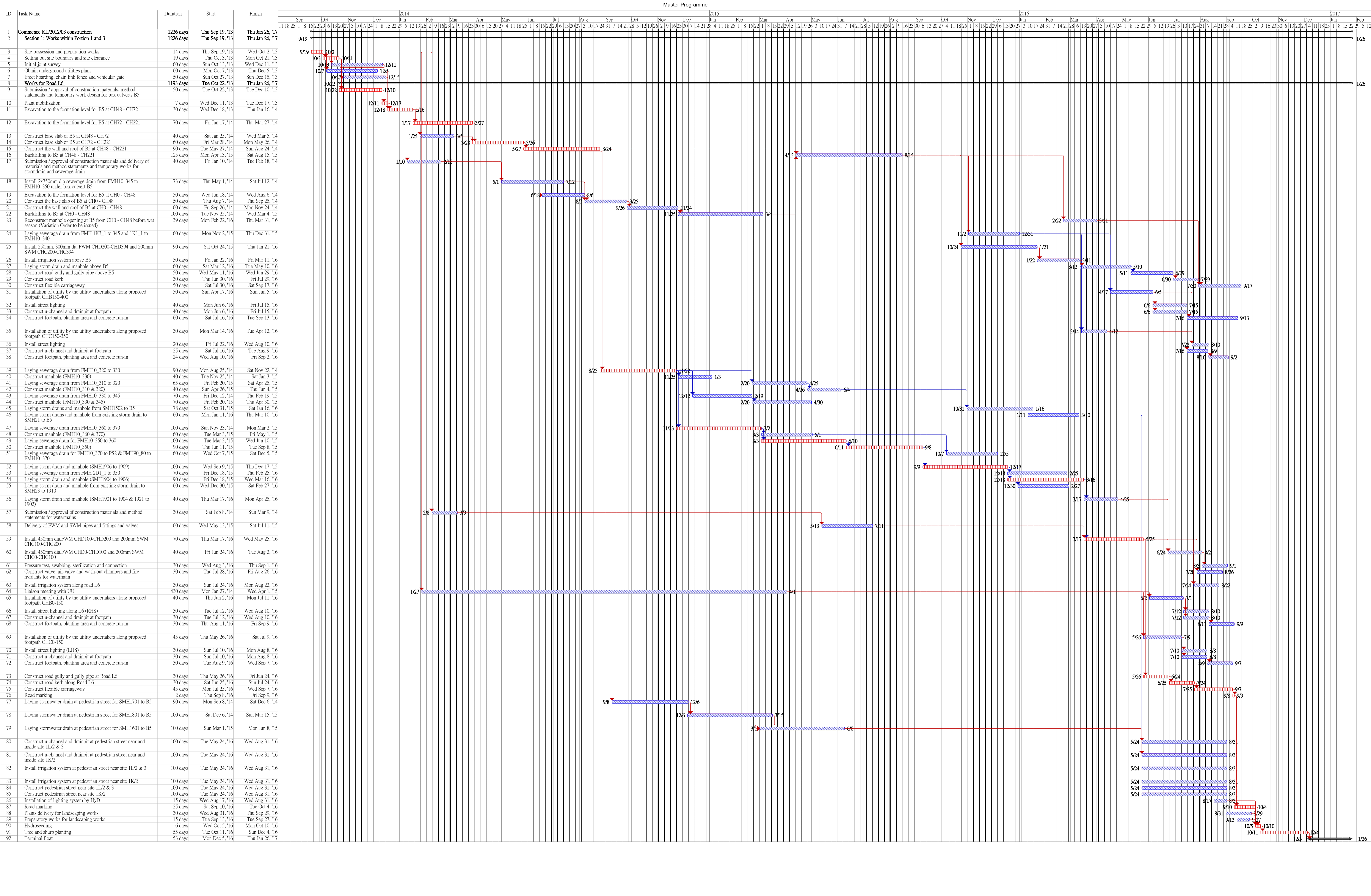
Name of Department: CEDD

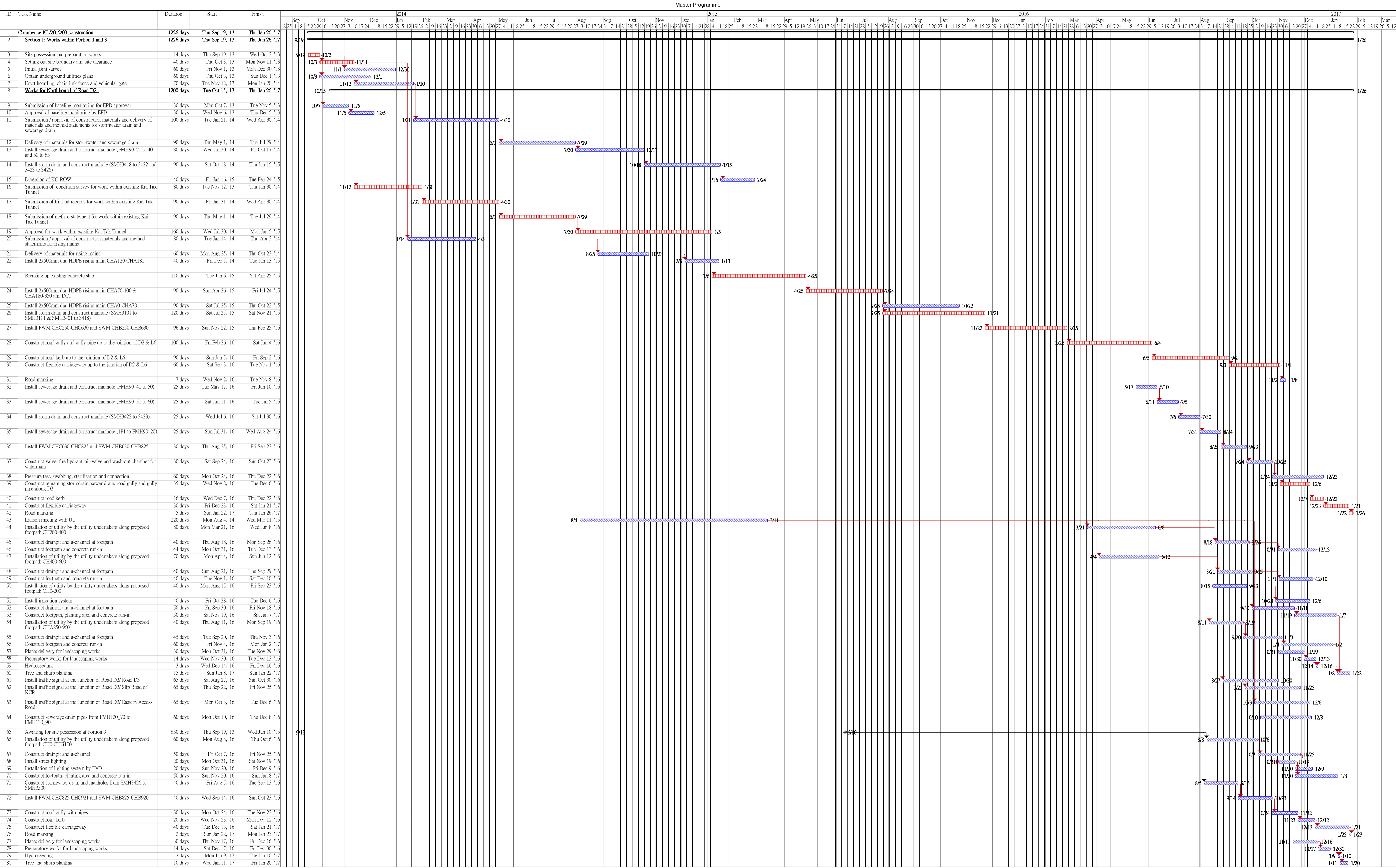
Contract No. : KL/2012/03

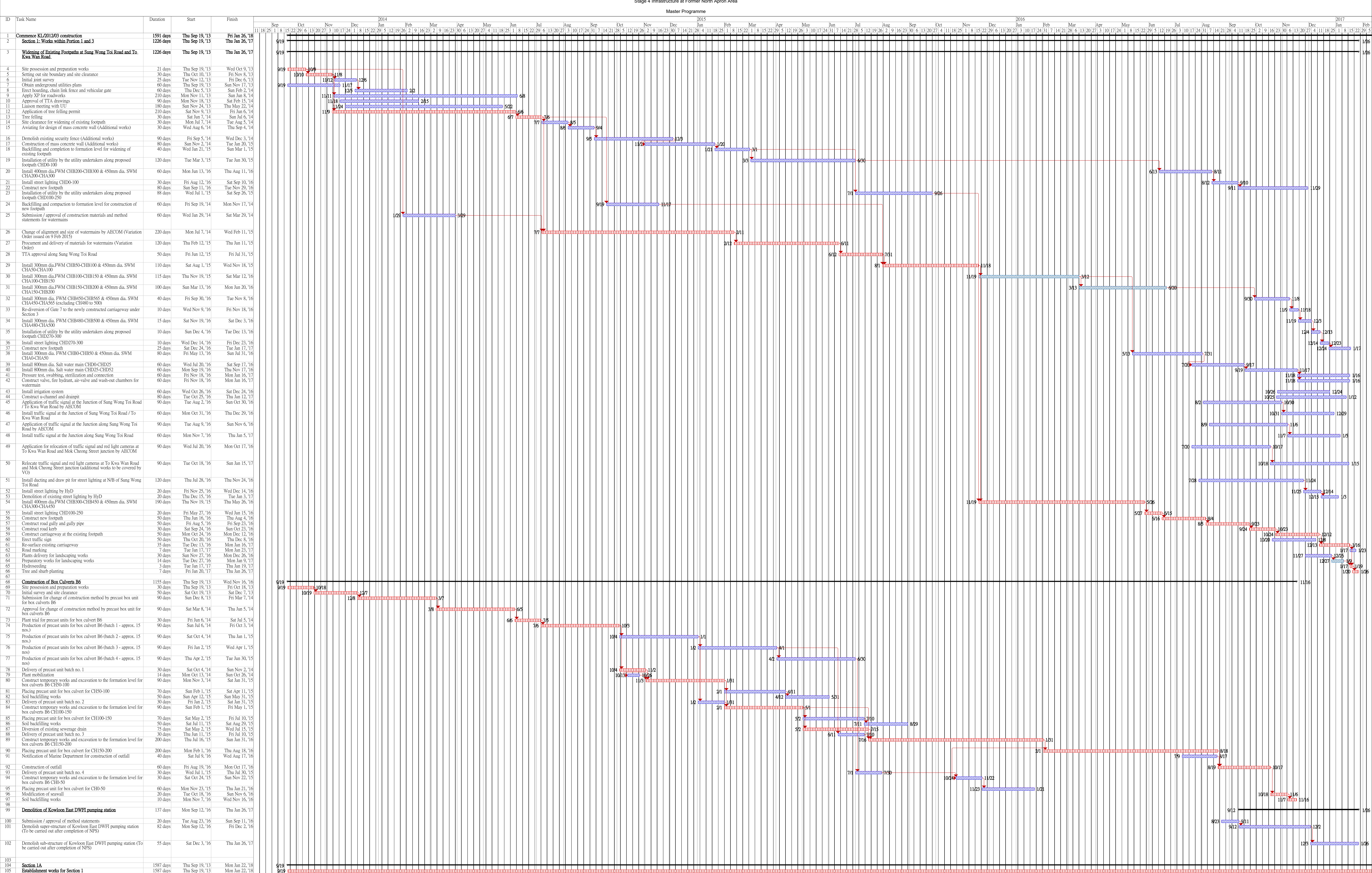
Monthly Summary Waste Flow Table for November 2016 (year) (in tons)

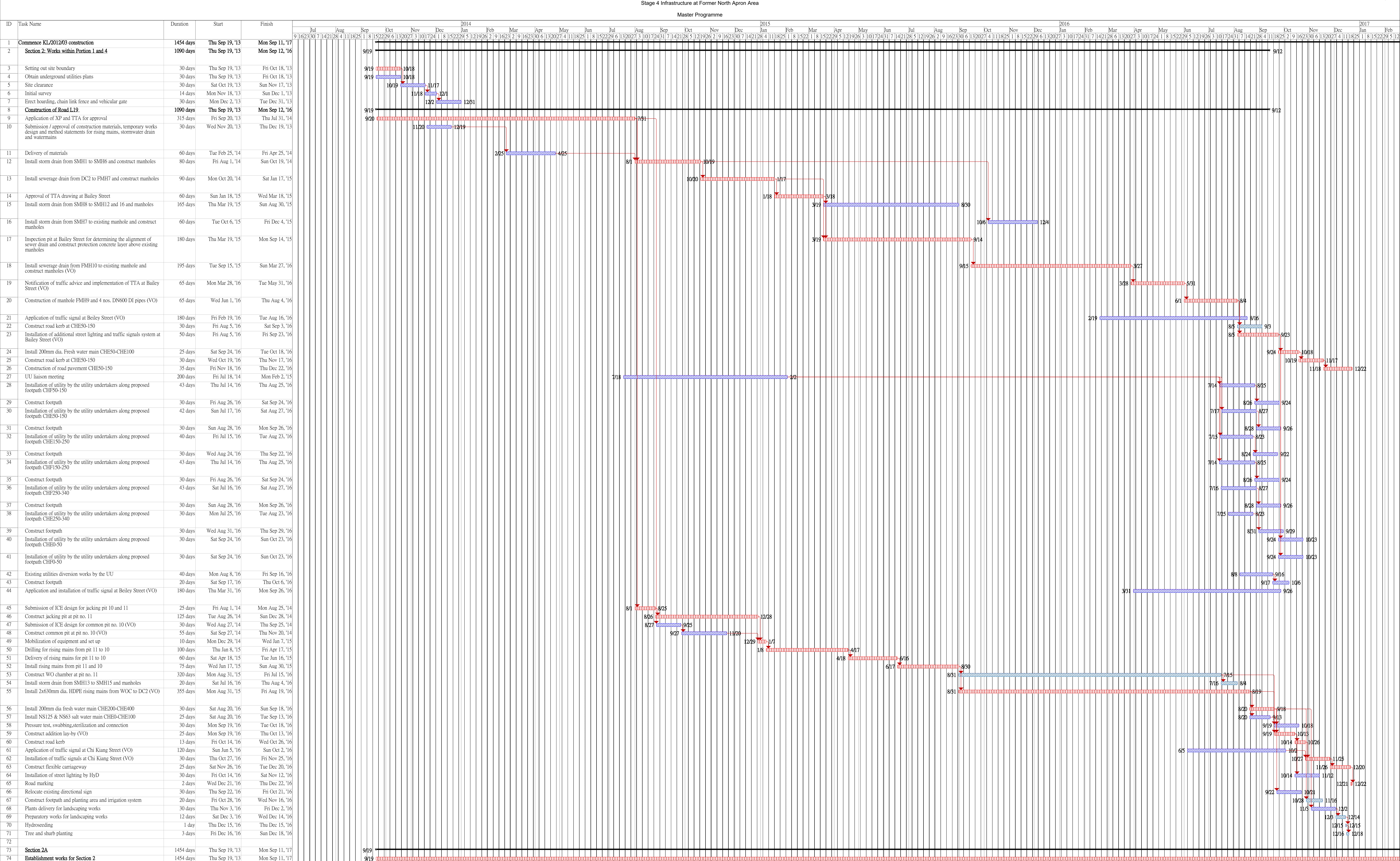
Month	Total Disposal Loads	Total Quantity Generated	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of C&D Wastes Generated Monthly				
			Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
	(No.s)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)
2013 (Oct - Dec) Sub-Total	108	463.69	0	0	0	0	0	0	0	0	0	463.69
2014 (Jan – Dec) Sub-Total	24	16925.7	0	0	16798.93	83.66	1804.27	0	0	0	0	43.11
Jan-15	3	38301.47	0	0	38291.91	0	2064	0	0	0	0	9.56
Feb-15	2	7.8	0	0	0	0	1776	0	0	0	0	7.8
Mar-15	7	21.46	0	0	0	0	2450	0	0	0	0	21.46
Apr-15	26	2041.48	0	0	0	2230.43	2610	0	0	0	0	10.46
May-15	7	647.2	0	0	0	640.58	1550	0	0	0	0	6.62
Jun-15	60	516.9	0	0	0	501.45	0	0	0	0	0	15.45
Jul-15	9	27.74	0	0	0	0	510	0	0	0	0	27.74
Aug-15	12	45.39	0	0	0	0	2410	0	0	0	0	45.39
Sep-15	51	398.77	0	0	0	359.78	1120	0	0	0	0	38.99
Oct-15	54	367.55	0	0	0	323.83	240	0	0	0	0	43.72
Nov-15	24	119.28	0	0	0	81.64	1920	0	0	0	0	37.64
Dec-15	29	39364.93	0	0	0	39319.5	3270	0	0	0	0	45.43
Jan-16	22	119.94	0	0	0	81.77	2930	0	0	0	0	38.15
Feb-16	13	63.37	0	0	0	38.04	1090	0	0	0	0	25.33
Mar-16	1664	28328.67	0	0	0	28298	0	0	0	0	0	30.67
Apr-16	10	34.02	0	0	0	0	0	0	0	0	0	34.02
May-16	26	174.63	0	0	0	130.44	0	0	0	0	0	44.19
Jun-16	59	397.69	0	0	0	319.98	0	0	0	0	0	77.71
Jul-16	1049	16056.81	0	0	0	15973.72	0	0	0	0	0	83.09
Aug-16	344	4606.05	0	0	0	4455.94	0	0	0	0	0	150.11
Sep-16	58	377.77	0	0	0	290.28	0	0	0	0	0	87.49
Oct-16	21	60.62	0	0	0	0	0	0	0	0	0	60.62
Nov-16	64	344.74	0	0	0	167.59	0	0	0	0	0	177.15
Total	3746	149813.67	0	0	55090.84	93296.63	25744.27	0	0	0	0	1625.59

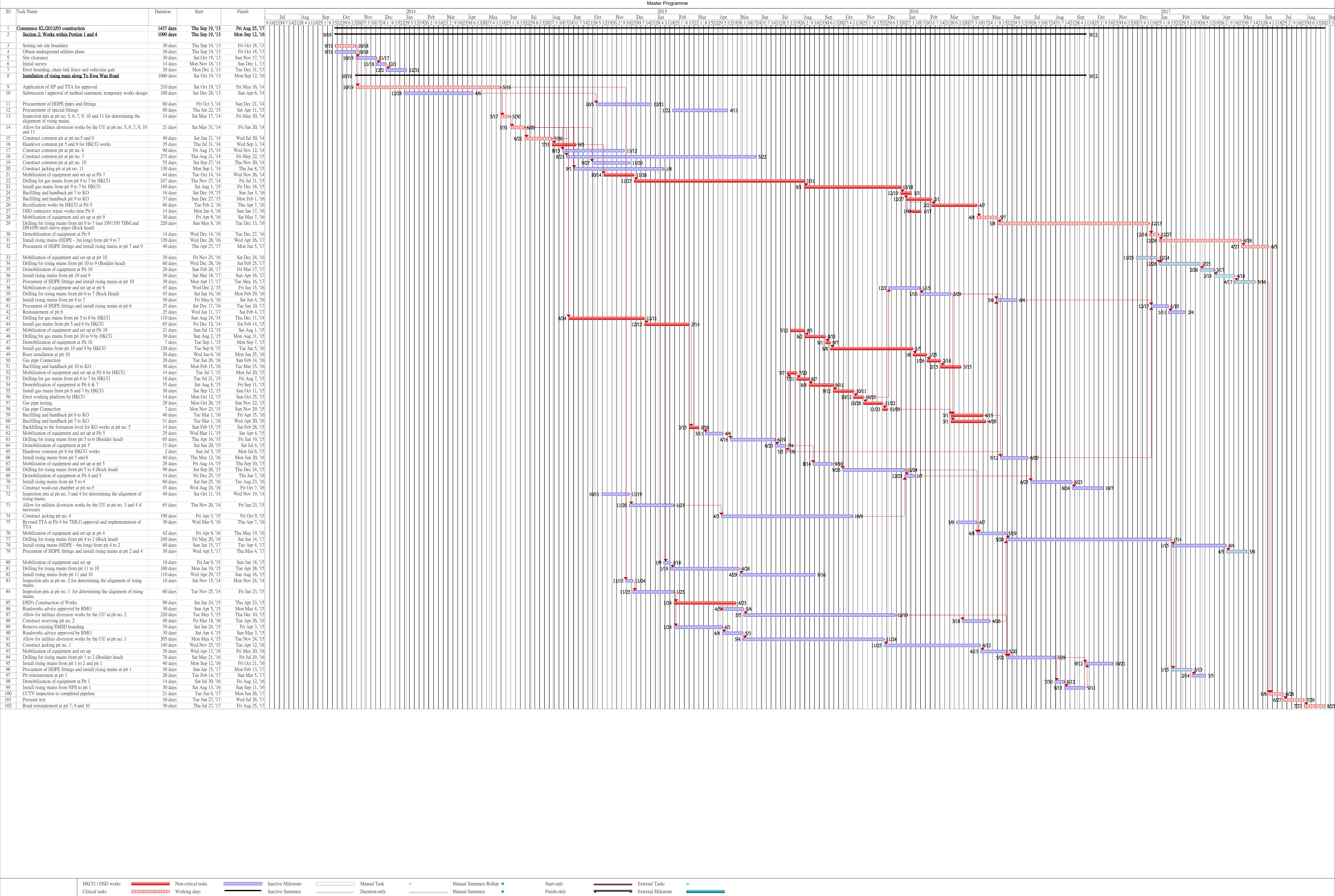
APPENDIX N
CONSTRUCTION PROGRAMME

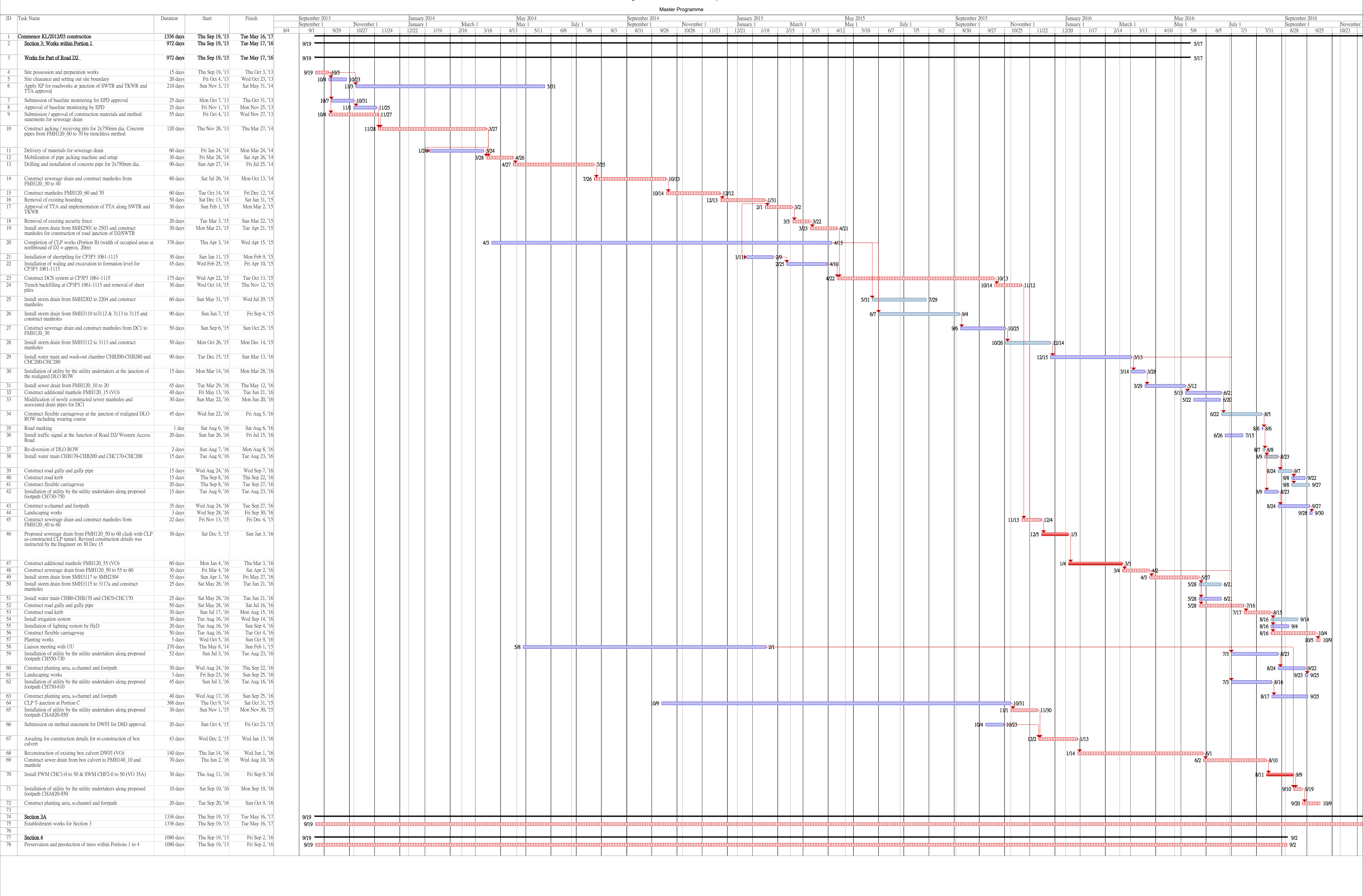




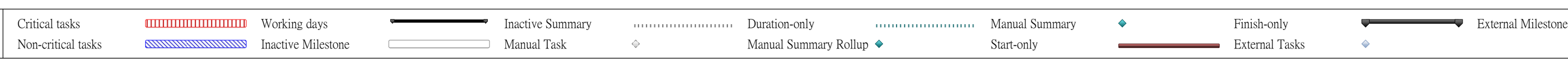
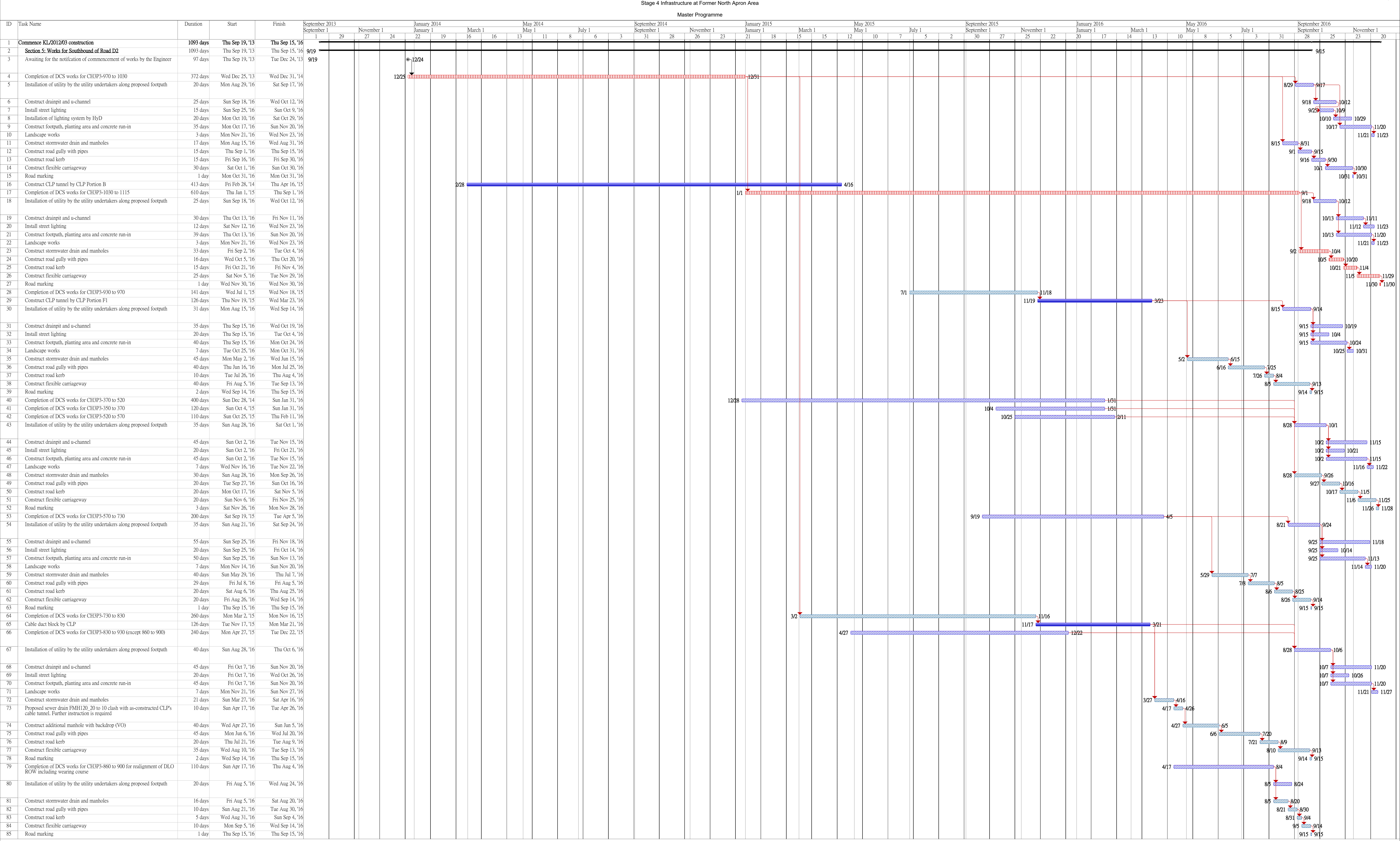


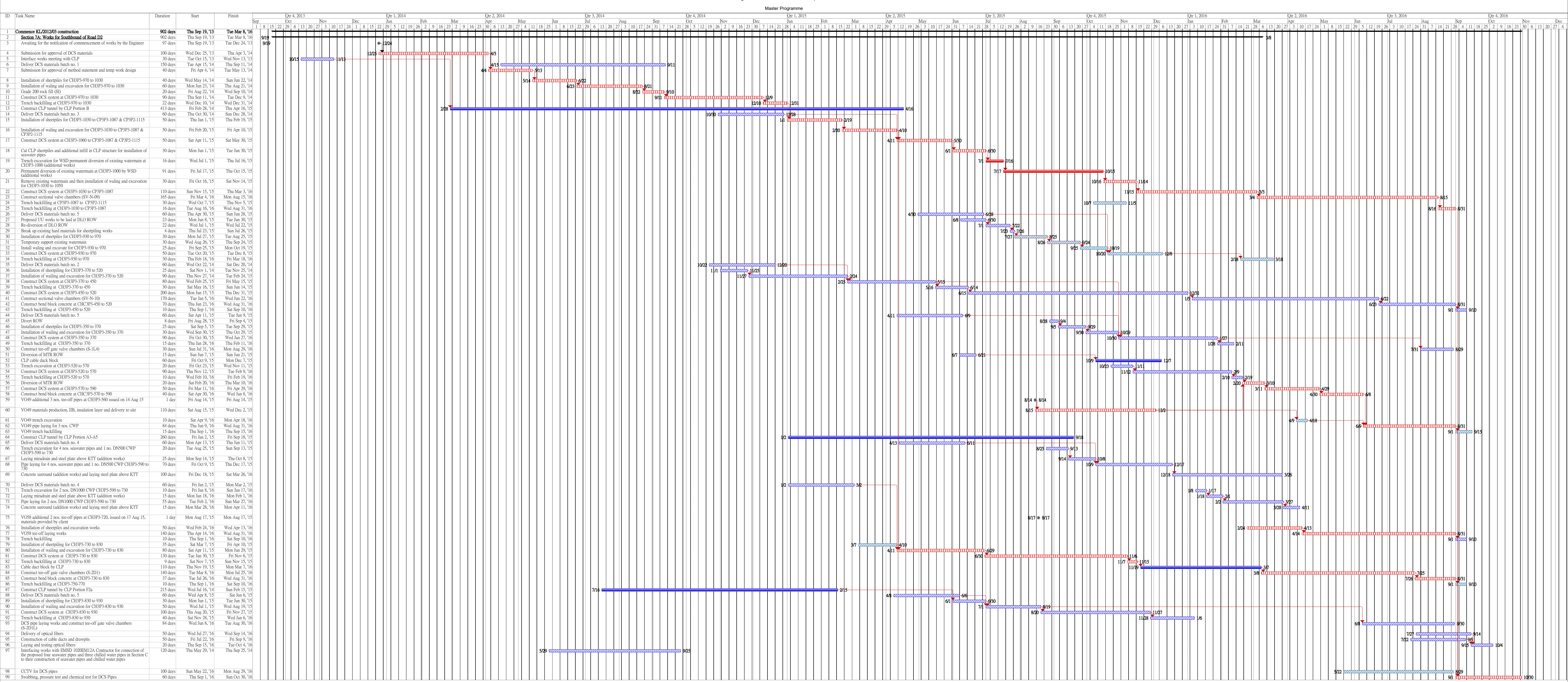






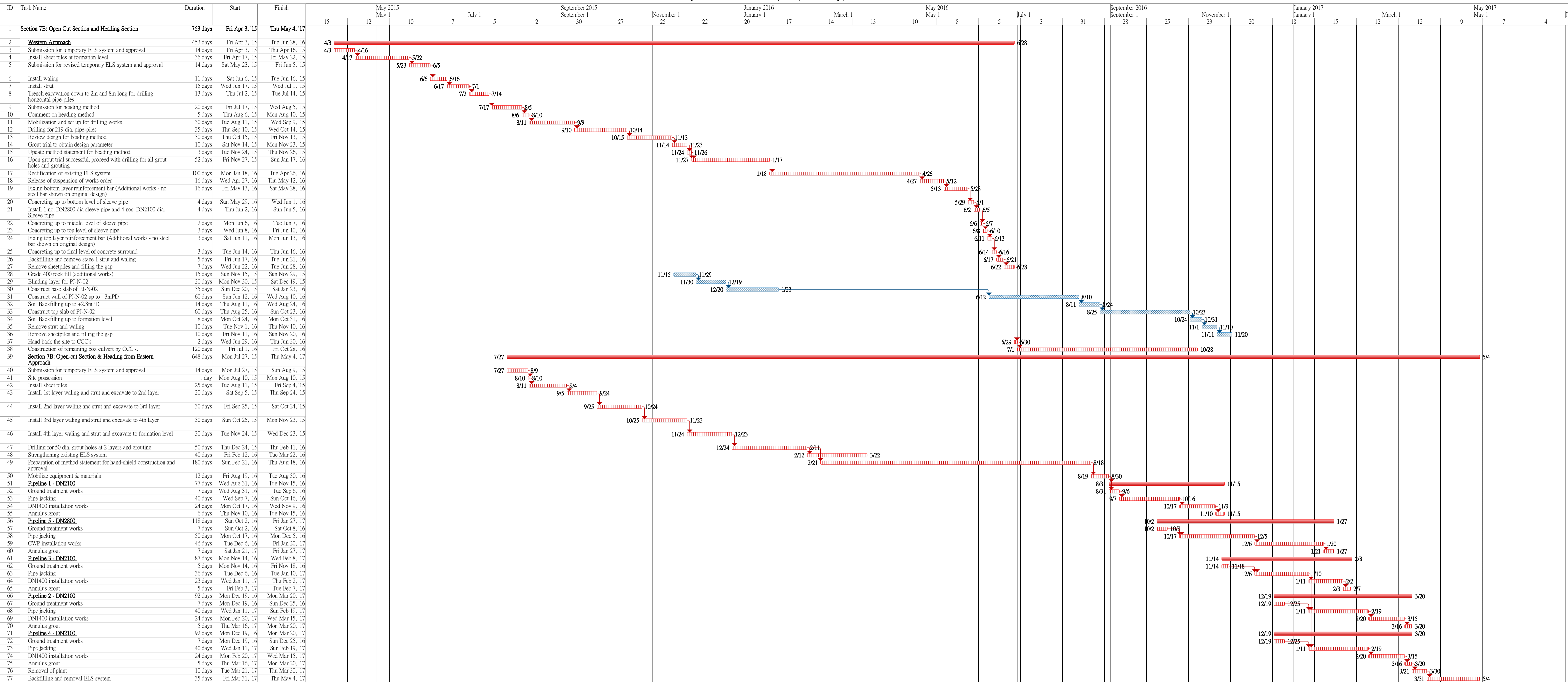
Legend: Critical tasks (red hatched), Non-critical tasks (blue hatched), Working days (solid black), Inactive Milestone (dashed black), Inactive Summary (solid black), Manual Task (solid black), Duration-only (dotted), Manual Summary Rollup (dotted), Manual Summary (dotted), Start-only (dotted), Finish-only (solid red), External Tasks (solid red), External Milestone (solid black), Manual Summary (dotted), Start-only (dotted), Finish-only (solid red), External Tasks (solid red).



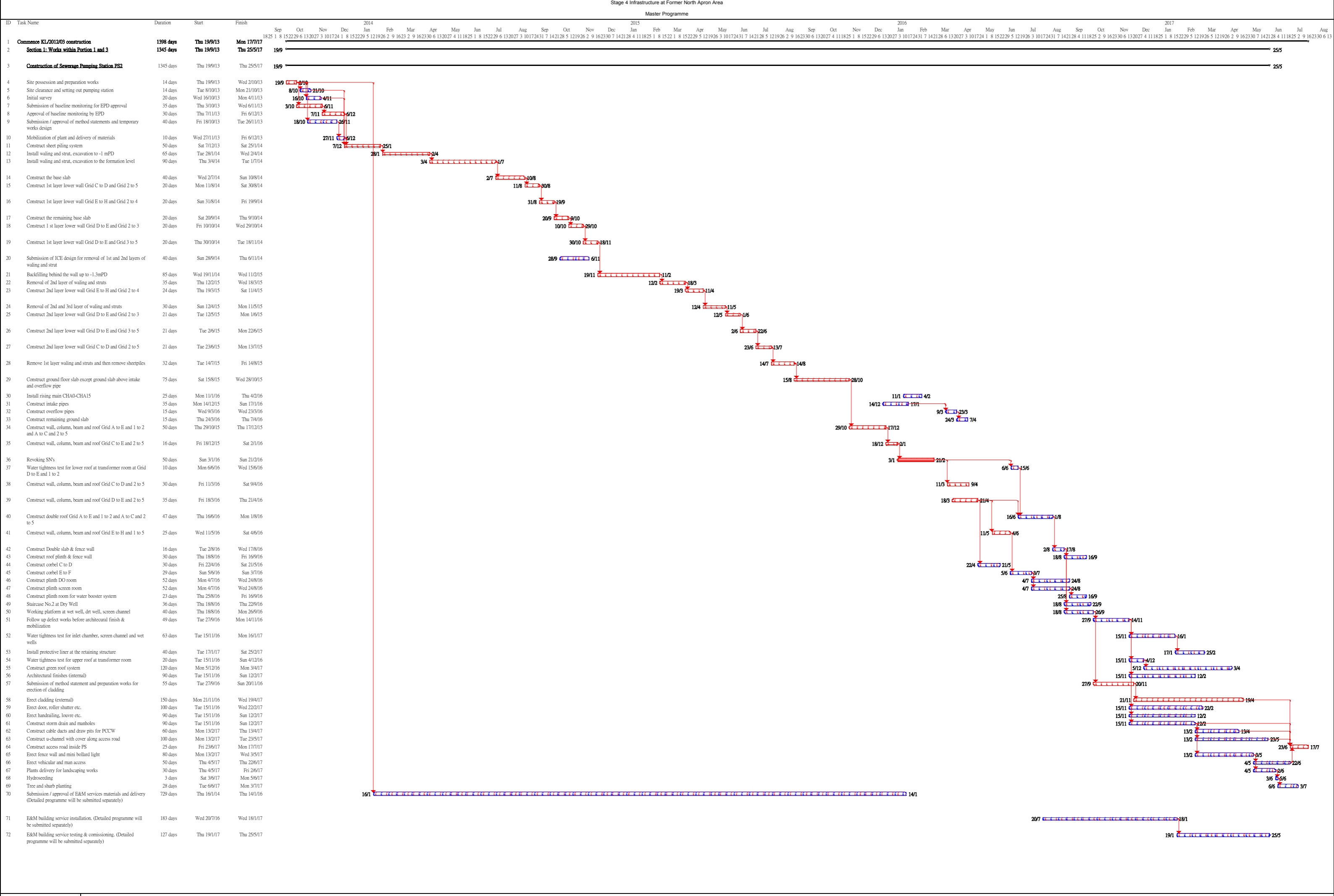


ID	Task Name	Start	Finish
1	Common KL/2012/03 construction	902 days	Thu Sep 19, '13
2	Section 7A: Works for Southbound of Road D2	902 days	Thu Sep 19, '13
3	Awaiting for the notification of commencement of works by the Engineer	97 days	Thu Sep 19, '13
4	Submission for approval of DCS materials	100 days	Wed Dec 25, '13
5	Interface works meeting with CLP	30 days	Tue Oct 15, '13
6	Deliver DCS materials batch no. 1	150 days	Tue Apr 15, '14
7	Submission for approval of method statement and temp work design	40 days	Fri Apr 4, '14
8	Installation of sheetpiles for CHEP3-970 to 1030	40 days	Wed May 14, '14
9	Installation of waling and excavation for CHEP3-970 to 1030	60 days	Mon Jun 23, '14
10	Grade 300 rock fill (S1)	20 days	Fri Aug 22, '14
11	Construct DCS system at CHEP3-970 to 1030	90 days	Thu Sep 11, '14
12	Trench backfilling at CHEP3-970 to 1030	22 days	Wed Dec 10, '14
13	Construct CLP Panel by CLP Portion B	413 days	Fri Feb 28, '14
14	Deliver DCS materials batch no. 3	60 days	Thu Oct 30, '14
15	Installation of sheetpiles for CHEP3-1030 to CP3P3-1087 & CP3P2-1115	50 days	Thu Jan 1, '15
16	Installation of waling and excavation for CHEP3-1030 to CP3P3-1087 & CP3P2-1115	50 days	Fri Feb 20, '15
17	Construct DCS system at CHEP3-1030 to CP3P3-1087 & CP3P2-1115	50 days	Sat Apr 11, '15
18	Cut CLP sheetpiles and additional infill in CLP structure for installation of sewerage pipes	30 days	Mon Jun 1, '15
19	Trench excavation for WSD permanent diversion of existing watermain at CHEP3-1000 (additional works)	16 days	Wed Jul 1, '15
20	Permanent diversion of existing watermain at CHEP3-1000 by WSD	91 days	Fri Jul 17, '15
21	Remove existing watermain and then installation of waling and excavation for CHEP3-1000 to 1050	30 days	Fri Oct 16, '15
22	Construct DCS system at CHEP3-1030 to CP3P3-1087	110 days	Sun Nov 15, '15
23	Construct sectional valve chambers (SV-N-09)	165 days	Fri Mar 4, '16
24	Trench backfilling at CP3P3-1087 to CP3P3-1115	30 days	Wed Oct 7, '15
25	Trench backfilling at CHEP3-1030 to CP3P3-1087	16 days	Tue Aug 16, '16
26	Deliver DCS materials batch no. 5	60 days	Thu Apr 30, '15
27	Proposed UV works to be laid at DLO ROW	22 days	Mon Jun 8, '15
28	Redressment of DLO ROW	22 days	Wed Jul 22, '15
29	Break up existing hard materials for sheetpiling works	4 days	Thu Jul 23, '15
30	Installation of sheetpiles for CHEP3-930 to 970	30 days	Mon Jul 27, '15
31	Temporary support existing watermain	30 days	Wed Aug 26, '15
32	Install waling and excavate for CHEP3-930 to 970	25 days	Fri Sep 25, '15
33	Construct DCS system at CHEP3-930 to 970	30 days	Tue Oct 20, '15
34	Trench backfilling at CHEP3-930 to 970	30 days	Thu Feb 18, '16
35	Deliver DCS materials batch no. 2	60 days	Wed Oct 22, '14
36	Installation of sheetpiling for CHEP3-370 to 530	25 days	Sat Nov 1, '14
37	Installation of waling and excavation for CHEP3-370 to 530	90 days	Thu Nov 27, '14
38	Construct DCS system at CHEP3-370 to 450	80 days	Wed Feb 25, '15
39	Trench backfilling at CHEP3-370 to 450	30 days	Sat May 16, '15
40	Construct DCS system at CHEP3-450 to 530	200 days	Mon Jun 15, '15
41	Construct sectional valve chambers (SV-N-10)	170 days	Tue Jan 5, '16
42	Construct bend block concrete at CHEP3-450 to 530	70 days	Thu Jan 23, '16
43	Trench backfilling at CHEP3-450 to 530	10 days	Thu Sep 1, '16
44	Deliver DCS materials batch no. 5	60 days	Sat Apr 11, '15
45	Divert ROW	8 days	Fri Aug 28, '15
46	Installation of sheetpiles for CHEP3-350 to 370	25 days	Sat Sep 5, '15
47	Installation of waling and excavation for CHEP3-350 to 370	30 days	Wed Sep 30, '15
48	Construct DCS system at CHEP3-350 to 370	90 days	Fri Oct 31, '15
49	Trench backfilling at CHEP3-350 to 370	15 days	Thu Jan 28, '16
50	Construct tee-off gate valve chambers (S-L4)	30 days	Sun Jul 31, '16
51	Diversion of MTR ROW	15 days	Sun Jun 7, '15
52	CLP cable duct block	60 days	Fri Oct 9, '15
53	Trench excavation at CHEP3-530 to 570	20 days	Fri Oct 23, '15
54	Construct DCS system at CHEP3-530 to 570	90 days	Thu Nov 12, '15
55	Trench backfilling at CHEP3-530 to 570	10 days	Wed Feb 10, '16
56	Diversion of MTR ROW	20 days	Sat Feb 20, '16
57	Construct DCS system at CHEP3-570 to 590	50 days	Fri Mar 11, '16
58	Construct bend block concrete at CHEP3-570 to 590	40 days	Sat Apr 26, '16
59	VO49 additional 3 nos. tee-off pipes at CHEP3-560 issued on 14 Aug 15	1 day	Fri Aug 14, '15
60	VO49 materials production, IBS, insulation layer and delivery to site	110 days	Sat Aug 15, '15
61	VO49 trench excavation	10 days	Sat Apr 9, '16
62	VO49 pipe laying for 3 nos. CWP	84 days	Thu Jun 18, '16
63	VO49 trench backfilling	15 days	Thu Sep 1, '16
64	Construct CLP Panel by CLP Portion A3-A5	260 days	Fri Jan 2, '15
65	Deliver DCS materials batch no. 4	60 days	Mon Apr 13, '15
66	Trench excavation for 4 nos. sewerage pipes and 1 no. DNS00 CWP CHEP3-590 to 730	20 days	Tue Aug 25, '15
67	Laying miradrain and steel plate above KTT (addition works)	25 days	Mon Sep 14, '15
68	Pipe laying for 4 nos. sewerage pipes and 1 no. DNS00 CWP CHEP3-590 to 730	70 days	Fri Oct 9, '15
69	Concrete surround (addition works) and laying steel plate above KTT	100 days	Fri Dec 18, '15
70	Deliver DCS materials batch no. 4	60 days	Fri Jan 2, '15
71	Trench excavation for 2 nos. DN1000 CWP CHEP3-590 to 730	10 days	Fri Jan 8, '16
72	Laying miradrain and steel plate above KTT (addition works)	15 days	Mon Jan 18, '16
73	Pipe laying for 2 nos. DN1000 CWP CHEP3-590 to 730	55 days	Tue Feb 2, '16
74	Concrete surround (addition works) and laying steel plate above KTT	15 days	Mon Mar 28, '16
75	VO58 additional 2 nos. tee-off pipes at CHEP3-720, issued on 17 Aug 15, materials provided by client	1 day	Mon Aug 17, '15
76	Installation of sheetpiles and excavation works	50 days	Wed Feb 24, '16
77	VO58 tee-off laying works	140 days	Thu Apr 14, '16
78	Trench backfilling	10 days	Thu Sep 1, '16
79	Installation of sheetpiles for CHEP3-730 to 830	35 days	Sat Mar 7, '15
80	Installation of waling and excavation for CHEP3-730 to 830	80 days	Sat Apr 11, '15
81	Construct DCS system at CHEP3-730 to 830	130 days	Tue Jun 30, '15
82	Trench backfilling at CHEP3-730 to 830	9 days	Sat Nov 7, '15
83	Cable duct block by CLP	110 days	Thu Nov 19, '15
84	Construct tee-off gate valve chambers (S-2D1)	140 days	Tue Mar 8, '16
85	Construct bend block concrete at CHEP3-730 to 830	37 days	Tue Jul 26, '16
86	Trench backfilling at CHEP3-730 to 770	10 days	Thu Sep 1, '16
87	Construct CLP Panel by CLP Portion P2a	215 days	Wed Jul 16, '14
88	Deliver DCS materials batch no. 5	60 days	Wed Apr 8, '15
89	Installation of sheetpiling for CHEP3-830 to 930	30 days	Mon Jun 1, '15
90	Installation of waling and excavation for CHEP3-830 to 930	50 days	Wed Jul 1, '15
91	Construct DCS system at CHEP3-830 to 930	100 days	Thu Aug 20, '15
92	Trench backfilling at CHEP3-830 to 930	40 days	Sat Nov 28, '15
93	DCS pipe laying works and construct tee-off gate valve chambers (S-2D1)	84 days	Wed Jun 8, '16
94	Delivery of optical fibers	50 days	Wed Jul 27, '16
95	Construction of cable ducts and drawpits	50 days	Fri Jul 22, '16
96	Laying and testing optical fibers	20 days	Thu Sep 15, '16
97	Interfacing works with EMSD (HDEM) J2A, Contractor for connection of the proposed four sewerage pipes and three chilled water pipes in Section C to their construction of sewerage pipes and chilled water pipes	120 days	Thu May 29, '14
98	CCTV for DCS pipes	100 days	Sun May 22, '16
99	Swabbing, pressure test and chemical test for DCS Pipes	60 days	Thu Sep 1, '16

Programme for Installation of DCS Pipelines (Revised Design) within Portion 3



Site Activity [Pattern]



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MaterialLab

Appendix C

**Monthly EM&A Report
For**

Contract No. KL/2014/01

Stage 2 infrastructure works for developments at the southern part of the former runway

Civil Engineering and Development Department

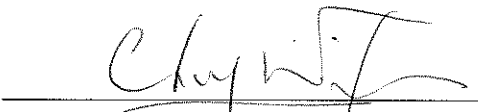
EP-337/2009 & EP-445/2013/A

Contract No. KL/2014/01

**Kai Tak Development –
Stage 2 Infrastructure works for Developments at
Southern Part of the Former Runway**

**Monthly EM&A Report
November 2016**

(Version 1.0)

Approved By 
(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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嘉誠管理顧問有限公司

Ka Shing management consultant Limited



中銀香港 BOCHK
企業環保領先大獎
Corporate Environmental Leadership Award

Our ref: 6-12-2016

6 th December 2016

By email: clive.cheng@acem-ktd.com and By mail

Supervising Officer Representative

Aecom Asia Co Ltd.

8/F Grand Central Plaza Tower 2

138 Shatin Rural Committee Road

Sha Tin, N.T. Hong Kong

(Attn: Mr. Cheng Chi Hung)

Dear Mr. Cheng,

Re: Contract No. KL/2014/01 (Environmental Permit Nos. EP-337/2009 and EP-445/2013/A)

Kai Tak Development –Stage 2 Infrastructure Works for Developments at Southern Part of the Former Runway

Monthly EM&A report for November 2016

Reference is made to the Environmental Team's submission of the draft Monthly EM&A Report (version 1.0) for November 2016 provided to Independent Environmental Checker (IEC) via email dated on 5 th December 2016 for review and comment.

Please be informed that IEC has no adverse comment on the captioned submission. IEC writes to verify the captioned submission in accordance with Specific Condition 2.2 of the Environmental Permit No. 337/2009 and 445/2013/A.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,

For and on behalf of

Ka Shing Management Consultant Limited


Dr. C.F. Ng

Independent Environmental Checker

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EXECUTIVE SUMMARY

Introduction

1. This is the 8th Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for “Contract No. KL/2014/01 - Kai Tak Development – Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway” (Hereafter referred to as “the Project”). This contract work comprises two Schedule 2 designated projects (DP), namely the new distributor road D4(part) and roads D3A & D4A serving the planned KTD. The DPs are part of the designated projects under Environmental Permits (EP) No.: EP-337/2009 (“New distributor roads serving the planned Kai Tak Development”) and EP-445/2013/A (“Kai Tak Development – Roads D3A & D4A”) respectively. This report documents the findings of EM&A Works conducted from 1 – 30 November 2016.
2. With reference to the same principle of EIA report of the Project, no air quality monitoring station within 500m and noise monitoring station within 300m from the boundary of this Project are considered as relevant monitoring locations. In such regard, no relevant air quality and noise monitoring location are required for monitoring under the Project. The monitoring works for recommended monitoring stations in EM&A Manual of the DPs are conducted by Kai Tak Development (KTD) Schedule 3 Project.
3. The major site activities undertaken in the reporting month included:
 - Watermain works
 - Ground investigation work;
 - Construction of boundary wall at EPD recycling centre;
 - Bored piles and Pre-bored socketed H-piles;
 - TTA implementation at Shing Fung Road and Wang Chiu Road / Sheung Yee Road;
 - Cable laying for transformer room;
 - Open excavation for box culvert, piles caps and underpass; and
 - ELS installation for box culvert.

Environmental Monitoring Works

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

Table I Non-compliance Recorded for the Project in the Reporting Month

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

Environmental Monitoring for Air Quality and Construction Noise

6. No monitoring for air quality and construction noise is required. No Action/Limit Level exceedance was recorded.

Environmental Licenses and Permits

7. Licenses/Permits granted to the Project include the Environmental Permits (EP) for the Project, EP-337/2009 issued on 23 April 2009 and EP-445/2013 issued on 3 May 2013 (Amended Environmental Permit (No.: EP-445/2013/A) issued on 13 August 2014).
8. Billing Account for Disposal of Construction Waste (A/C No. 7024073)
9. Registration of Chemical Waste Producer (License: 5213-247-C4004-01).
10. Water Discharge License (License: WT00023634-2016).
11. Construction Noise Permit (Permit: GW-RE0436-16 and GW-RE1092-16)

Key Information in the Reporting Month

12. Summary of key information in the reporting month is tabulated in Table II.

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Reporting Changes	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Future Key Issues

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

1. INTRODUCTION

Background

- 1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 2 Infrastructure Works for Developments for Southern Part of the Former Runway is one of the construction stages of KTD. It contains two Schedule 2 DPs including new distributor roads serving the planned KTD and KTD Roads D3A & D4A. The general layout of the Project is shown in **Figure 1**.
- 1.2 One Environmental Permits (EP) No.: EP-337/2009 was issued on 23 April 2009 for new distributor roads serving the planned KTD and one Environmental Permit No.: EP-445/2013 was issued on 3 May 2013 for Kai Tak Development Roads D3A & D4A to Civil Engineering and Development Department (CEDD) as the Permit Holder. Pursuant to Section 13 of the EIAO, the Director of Environmental Protection amended the Environmental Permit No.: EP-445/2013 based on the Application No. VEP-449/2014 and the Environmental Permit (No.: EP-445/2013/A) was issued on 13 August 2014.
- 1.3 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. EIA Reports (Register No. AEIAR-130/2009 and AEIAR-170/2013) were approved by the Environmental Protection Department (EPD) on 4 March 2009 and 3 May 2013 respectively.
- 1.4 Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2014/01 – Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway. The construction work under KL/2014/01 comprises the construction of part of the Road D4 under the EP (EP-337/2009) and the construction of Roads D3A & D4A under the EP (EP-445/2013/A).
- 1.5 Cinotech Consultants Limited was commissioned by Civil Engineering and Development Department (CEDD) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The construction commencement of this Contract is on 13 April 2016. This is the 8th Monthly EM&A report summarizing the EM&A works for the Project from 1 – 30 November 2016.
- 1.6 All project information since the commencement of work under EPs including Monthly EM&A Reports is made available to the public via internet access at the website: <http://www.kl201401.com/>

Project Organizations

- 1.7 Different parties with different levels of involvement in the project organization include:
- Project Proponent – Civil Engineering and Development Department (CEDD).
 - The Supervising Officer and the Supervising Officer’s Representative (SO) – AECOM Asia Co. Ltd. (AECOM).
 - Environmental Team (ET) – Cinotech Consultants Limited (CCL).
 - Independent Environmental Checker (IEC) – Ka Shing Management Consultant Ltd. (KSMC).
 - Contractor – Continental Engineering Corp. and Chit Cheung Construction Co. Ltd. Joint Venture (CCJV).
- 1.8 The key contacts of the Project are shown in **Table 1.1**.

Table 1.1 Key Project Contacts

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. Ronald Siu	Senior Engineer	2301 1453	2301 1277
		Mr. Bernard Chan	Engineer	2301 1207	
AECOM	Supervising Officer	Mr. Clive Cheng	CRE	3746 1801	2798 0783
Cinotech	Environmental Team	Dr. Priscilla Choy	Environmental Team Leader	2151 2089	3107 1388
		Ms. Ivy Tam	Audit Team Leader	2151 2090	
KSMC	Independent Environmental Checker	Dr. C. F. Ng	IEC	2618 2166	2120 7752
CCJV	Contractor	Mr. Dennis Ho	Environmental Officer	2960 1398	2960 1399

Construction Activities undertaken during the Reporting Month

- 1.9 The site activities undertaken in the reporting month included:
- Watermain works
 - Ground investigation work;
 - Construction of boundary wall at EPD recycling centre;
 - Bored piles and Pre-bored socketed H-piles;
 - TTA implementation at Shing Fung Road and Wang Chiu Road / Sheung Yee Road;
 - Cable laying for transformer room;
 - Open excavation for box culvert, piles caps and underpass; and
 - ELS installation for box culvert.
- 1.10 The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in Table 1.2.

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

Construction Works	Major Environmental Impact	Control Measures
As mentioned in Section 1.8	Noise, dust impact, water quality and waste generation	Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; On-site waste sorting and implementation of trip ticket system Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Use of quiet plant and well-maintained construction plant; Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; Provide mitigation measure to temporary use of chemicals; Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.

Summary of EM&A Requirements

- 1.11 The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 5 of this report.

2. AIR QUALITY

Monitoring Requirements

- 2.1 With reference to the same principle of EIA report of the Project, no air quality monitoring station within 500m from the boundary of this Project are considered as relevant monitoring locations. No air quality monitoring is required for the Project.

Observations

- 2.2 No monitoring for air quality is required for the Project.
- 2.3 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of air quality mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.

3. NOISE

Monitoring Requirements

- 3.1 With reference to the same principle of EIA report of the Project, no construction noise monitoring station within 300m from the boundary of this Project are considered as relevant monitoring locations. No Construction noise monitoring is required for the Project. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Observations

- 3.2 No monitoring for air quality is required for the Project. No Action/Limit Level exceedance was recorded. The summary of exceedance record in reporting month is shown in **Appendix B**.
- 3.3 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of construction noise mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.

4. LANDSCAPE AND VISUAL

Monitoring Requirements

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

Results and Observations

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

5. ENVIRONMENTAL AUDIT**Site Audits**

- 5.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix C**.
- 5.2 Site audits were conducted by representatives of the Contractor, Supervising Officer and ET on 2, 9, 16, 23 and 30 November 2016 in the reporting month. IEC joint site inspection was conducted on 30 November 2016. No non-compliance was observed during the site audits.

Status of Environmental Licensing and Permitting

- 5.3 All permits/licenses obtained for the Project are summarized in Table 5.1.

Table 5.1 Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-337/2009	23/04/09	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
EP-445/2013/A	13/08/14	N/A	Construction of Kai Tak Development roads D3A and D4A	Valid
Effluent Discharge License				
WT00023634-2016	--	31/03/21	Wastewater from the construction site including effluent treated by screen and sedimentation tank	Valid
Registration of Chemical Waste Producer				
5213-247-C4004-01	--	N/A	Chemical Waste Types: Surplus paint, waste contaminated by paint, diesel, waste contaminated by diesel, spent lubricating oil and waste, soil contaminated by lubricating oil.	Valid
Construction Noise Permit (CNP)				
GW-RE0436-16	10/05/16	09/11/16	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work other than percussive piling and performing prescribed construction work.	Expired in the reporting month
GW-RE1092-16	9/11/16	8/5/17		Valid

Status of Waste Management

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

Implementation Status of Environmental Mitigation Measures

- 5.6 During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in Table 5.2.

Table 5.2 Observations and Recommendations of Site Inspections

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	26 Oct 2016	Sand and silt in wheel washing facility should be removed regularly.	Rectification/improvement was observed during the follow-up audit session.
	30 Nov 2016	Appropriate signage should be provided to remind drivers of all types of vehicles to use wheel washing machines before leaving the Site.	Follow up actions will be reported in the next month.
<i>Air Quality</i>	2 Nov 2016	Water spraying for all exposed work area and haul roads within the Site should be enhanced for dust suppression.	Rectification/improvement was observed during the follow-up audit session.
	9 Nov 2016	Stockpiles and exposed area in Section 2 should be properly covered with impervious sheets to prevent dust generation.	Rectification/improvement was observed during the follow-up audit session.
<i>Noise</i>	--	--	--
<i>Waste/ Chemical Management</i>	16 Nov 2016	General refuse observed in Section 1 should be properly cleared. The Contractor was reminded to avoid the accumulation of waste.	Rectification/improvement was observed during the follow-up audit session.
	23 Nov 2016	Oil stains found in Kowloon Bay Recycle Centre should be properly cleared and disposed of as chemical waste.	Rectification/improvement was observed during the follow-up audit session.
<i>Landscape and Visual</i>	--	--	--
<i>Permits/ Licences</i>	--	--	--

Summary of Mitigation Measures Implemented

- 5.7 An updated summary of the EMIS is provided in **Appendix E**.

Implementation Status of Event Action Plans

- 5.8 The Event Action Plans for noise and landscape and visual are presented in **Appendix D**. No Event Action Plan for air quality is considered necessary.

Construction Noise

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

Landscape and visual

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

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

- 5.11 The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix F**.

6. FUTURE KEY ISSUES

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

- Watermain works;
- Ground investigation work;
- Construction of boundary wall at EPD recycling centre;
- Bored piles and Pre-bored socketed H-piles;
- TTA implementation at Shing Fung Road and Wang Chiu Road/ Sheung Yee Road;
- Open excavation for box culvert, pile caps and underpass; and
- ELS installation for box culvert.

Key Issues for the Coming Month

6.1 Key environmental issues in the coming month include:

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

6.1 The tentative program of major site activities and the impact prediction and control measures for the coming two months, i.e. December 2016 and January 2017 are summarized as follows:

Construction Works	Major Impact Prediction	Control Measures
As mentioned in Section 7.1	Air quality impact (dust)	a) Frequent watering of haul road and unpaved/exposed areas; b) Frequent watering or covering stockpiles with tarpaulin or similar means; and c) Watering of any earth moving activities.
	Water quality impact (surface run-off)	d) Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; e) Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; f) Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and g) Provision of measures to prevent discharge into the stream.

Construction Works	Major Impact Prediction	Control Measures
	Noise Impact	h) Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; i) Controlling the number of plants use on site; j) Regular maintenance of machines; and k) Use of acoustic barriers if necessary.

7. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 7.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 to 30 November 2016.

Air Quality and Construction Noise

- 7.2 No regular monitoring air quality and noise monitoring is required for the Project. No Action/Limit Level exceedance was recorded.

Landscape and visual

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

Complaint and Prosecution

- 7.4 No environmental complaints and environmental prosecution were received in the reporting month.
- 7.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

Air Quality Impact

- To provide adequate mitigation measures to prevent silty runoff on public areas, and clear muddy trails or sand on public road, if any.
- To maintain good site practices including covering stockpiles of dusty materials with impervious sheets in order to prevent dust generation.

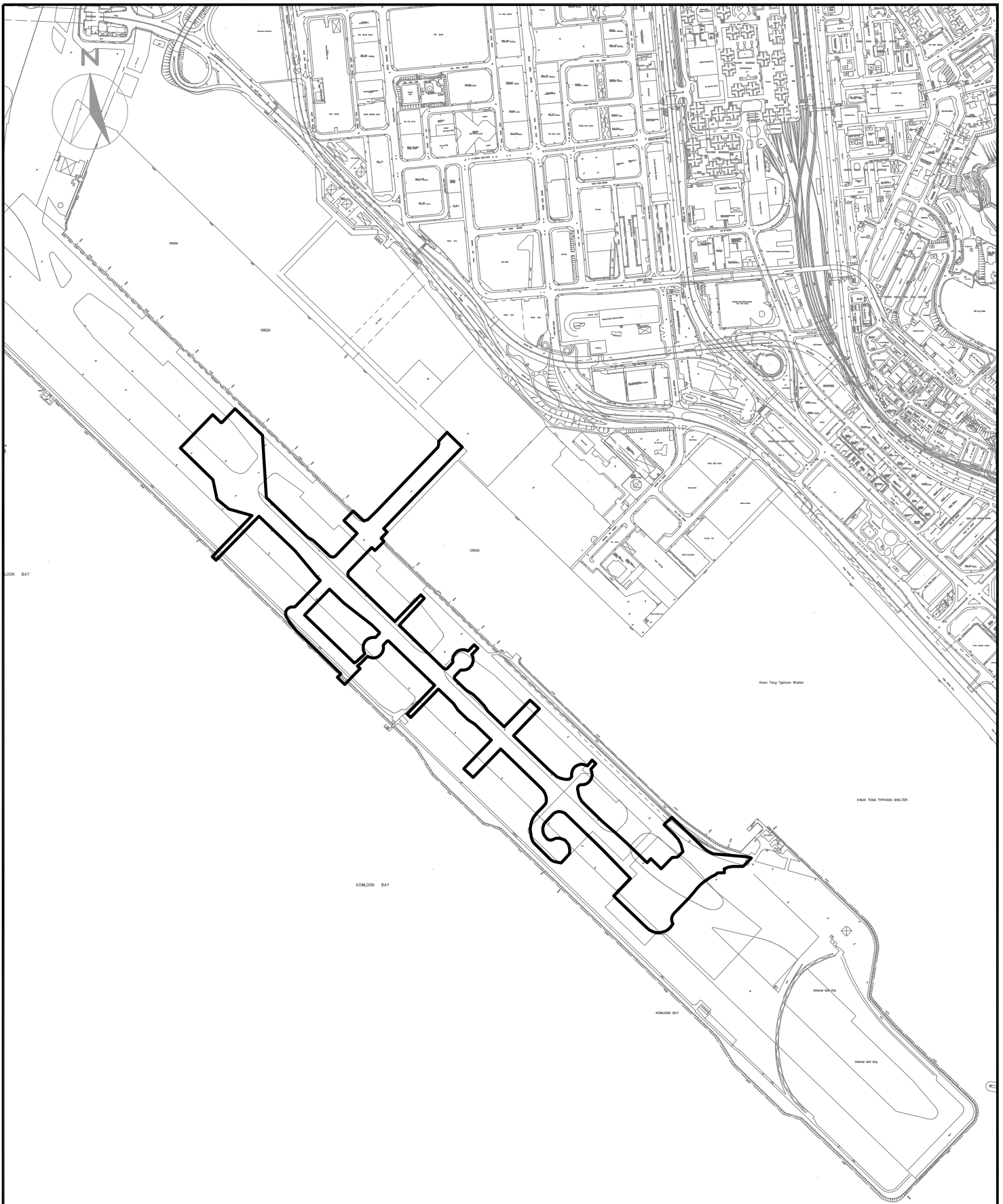
Water Quality Impact

- To provide adequate and conspicuous signage in order to remind all drivers to use the wheel washing machines before leaving the site so as to prevent the formation of mud trails in public area.

Waste / Chemical Management

- To clear any general refuse within the Site and avoid the accumulation of general refuse.
- To properly clear any oil stains or oil mixture within the work area and dispose of them as chemical waste.

FIGURES



LEGEND:	
	SITE BOUNDARY

CINOTECH
Cinotech Consultants Limited

KL/2014/01 KAI TAK DEVELOPMENT - STAGE 2
INFRASTRUCTURE WORKS FOR DEVELOPMENT AT
SOUTHERN PART OF THE FORMER RUNWAY

SITE LAYOUT PLAN

SCALE	1:1000@A4	DATE	MAY 2016
CHECK	JL	DRAWN	JW
JOB No.	MA15046	FIGURE NO.	1
		REV	-

**APPENDIX A
ACTION AND LIMIT LEVELS**

Appendix A - Action and Limit Levels

Table A-1 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level⁽¹⁾⁽²⁾
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: (1) If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

(2) No regular noise impact monitoring station for this Contract. It is subject to the noise sensitive receiver(s) and additional monitoring work.

(*) 70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods, respectively.

APPENDIX B
SUMMARY OF EXCEEDANCE

Contract No. KL/2014/01

Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

Appendix B – Summary of Exceedance

Exceedance Record for Contract No. KL/2014/01

Reporting Month: November 2016

(A) Exceedance Record for Construction Noise

(NIL in the reporting month)

(B) Exceedance Record for Landscape and Visual

(NIL in the reporting month)

APPENDIX C
SITE AUDIT SUMMARY

Contract No. KL/2014/01



Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

EP-337/2009 & EP-445/2013/A

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161102
Date	2 November 2016 (Wednesday)
Time	14:00 – 17:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
161102-R01	• Water spraying for all exposed work area and haul roads within the Site should be enhanced for dust suppression.	C 5
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No.:161026), all identified environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Kelvin Koo		2 November 2016
Checked by	Dr. Priscilla Choy		2 November 2016

Contract No. KL/2014/01



Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

EP-337/2009 & EP-445/2013/A

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161109
Date	9 November 2016 (Wednesday)
Time	14:00 – 16:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
161109-R01	• Stockpiles and exposed area in Section 2 should be properly covered with impervious sheets to prevent dust generation.	C 7
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits / Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No.:161102), all identified environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Kelvin Koo		9 November 2016
Checked by	Dr. Priscilla Choy		9 November 2016

Contract No. KL/2014/01

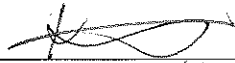

Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

EP-337/2009 & EP-445/2013/A

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161116
Date	16 November 2016 (Wednesday)
Time	14:00 – 16:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
161116-R01	• General refuse observed in Section 1 should be properly cleared. The Contractor was reminded to avoid the accumulation of waste.	E 1iii
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No.:161109), all identified environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Kelvin Koo		16 November 2016
Checked by	Dr. Priscilla Choy		16 November 2016

Contract No. KL/2014/01

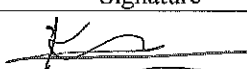

Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

EP-337/2009 & EP-445/2013/A

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161123
Date	23 November 2016 (Wednesday)
Time	14:00 – 16:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
161123-001	• Oil stains found in Kowloon Bay Recycle Centre should be properly cleared and disposed as chemical waste.	E 8
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No.:161116), all identified environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Kelvin Koo		23 November 2016
Checked by	Dr. Priscilla Choy		23 November 2016

Contract No. KL/2014/01

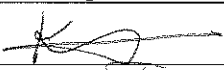

Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

EP-337/2009 & EP-445/2013/A

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	161130
Date	30 November 2016 (Wednesday)
Time	14:00 – 17:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
161130-R01	<ul style="list-style-type: none">Appropriate signage should be provided to remind drivers of all types of vehicles to use wheel washing machines before leaving the Site.	B 9
	C. Air Quality	
	<ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	D. Noise	
	<ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	<ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	<ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	<ul style="list-style-type: none">No environmental deficiency was identified during site inspection.	
	H. Others	
	<ul style="list-style-type: none">Follow-up on previous audit session (Ref. No.:161123), all identified environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Kelvin Koo		30 November 2016
Checked by	Dr. Priscilla Choy		30 November 2016

APPENDIX D
EVENT ACTION PLANS

Appendix D - Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 4. Notify ER, IEC and Contractor; 5. Carry out investigation; 6. Report the results of investigation to the IEC, ER and Contractor; 7. Discuss with the IEC and Contractor on remedial measures required; 8. Increase monitoring frequency to check mitigation effectiveness. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>

Appendix D - Event Action Plans

Event/Action Plan for Landscape and Visual

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	CONTRACTOR
Design Check	<ul style="list-style-type: none"> Check final design conforms to the requirements of EP and prepare report. 	<ul style="list-style-type: none"> Check report. Recommend remedial design if necessary 	<ul style="list-style-type: none"> Undertake remedial design if necessary 	
Non-conformity on one occasion	<ul style="list-style-type: none"> Identify Source Inform IEC and ER Discuss remedial actions with IEC, ER and Contractor Monitor remedial actions until rectification has been completed 	<ul style="list-style-type: none"> Check report Check Contractor's working method Discuss with ET and Contractor on possible remedial measures Advise ER on effectiveness of proposed remedial measures. Check implementation of remedial measures. 	<ul style="list-style-type: none"> Notify Contractor Ensure remedial measures are properly implemented 	<ul style="list-style-type: none"> Amend working methods Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ul style="list-style-type: none"> Identify Source Inform IEC and ER Increase monitoring frequency Discuss remedial actions with IEC, ER and Contractor Monitor remedial actions until rectification has been completed If non-conformity stops, cease additional monitoring 	<ul style="list-style-type: none"> Check monitoring report Check Contractor's working method Discuss with ET and Contractor on possible remedial measures Advise ER on effectiveness of proposed remedial measures Supervise implementation of remedial measures. 	<ul style="list-style-type: none"> Notify Contractor Ensure remedial measures are properly implemented 	<ul style="list-style-type: none"> Amend working methods Rectify damage and undertake any necessary replacement

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

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	Mitigation Measures	Status
Construction Air Quality		
S3.2 (AEIAR-130/2009)	8 times daily watering of the work site with active dust emitting activities.	^
S4.8 (AEIAR-170/2013)	Control measures stipulated in the approved KTD Schedule 3 EIA Report should be strictly followed.	^
S3.2 (AEIAR-130/2009) and S4.8 (AEIAR-170/2013)	<p>Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.</p> <ul style="list-style-type: none"> ● Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. ● Misting for the dusty material should be carried out before being loaded into the vehicle. ● Any vehicle with an open load carrying area should have properly fitted side and tail boards. ● Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin. ● The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation. ● The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials. ● Vehicle washing facilities should be provided at every vehicle exit point. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

EIA Ref.	Mitigation Measures	Status
	<ul style="list-style-type: none"> ● The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. ● Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. ● Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides; and ● Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. 	<p>^</p> <p>*</p> <p>^</p> <p>^</p>
Construction Noise		
S3.3 (AEIAR-130/2009)	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump.	^
S3.3 (AEIAR-130/2009)	<p>Good Site Practice:</p> <ul style="list-style-type: none"> ● Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. ● Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. ● Mobile plant, if any, should be sited as far away from NSRs as possible. ● Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. ● Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. ● Material stockpiles and other structures should be effectively utilized, wherever 	<p>^</p> <p>N/A(1)</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

EIA Ref.	Mitigation Measures	Status
	practicable, in screening noise from on-site construction activities.	
S3.3 (AEIAR-130/2009)	Scheduling of Construction Works during School Examination Period	N/A
S3.8 (AEIAR-170/2013)	Provision of a landscaped deck along Roads D3A & D4A.	N/A
S3.8 (AEIAR-170/2013)	<ul style="list-style-type: none"> ● Provision of about 1090 m length of vertical noise barrier (connected to the deck) at Roads D3A & D4A; ● Provision of about 60 m length of overhang vertical noise barrier (connected to the deck) at Road D4A; and ● Provision of staircases with noise barriers next to Sites 4A1 and 4B1 <p>It should be noted that the exact length of the mitigation measures would be subject to minor refinement during the detailed design stage.</p>	N/A N/A N/A
S3.8 (AEIAR-170/2013)	Non-noise sensitive use areas within Sites 4A1 and 4B1.	N/A
S3.8 (AEIAR-170/2013)	Avoid sensitive façade with openable window facing Road D3A.	N/A
Construction Water Quality		
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	<p><u>Construction Runoff</u></p> <p>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:</p> <ul style="list-style-type: none"> ● use of sediment traps ● adequate maintenance of drainage systems to prevent flooding and overflow 	^ ^

EIA Ref.	Mitigation Measures	Status
	Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	^
	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	^
S5.8 (AEIAR-170/2013)	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	^
	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	^
S3.4 (AEIAR-130/2009)	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacity, are recommended as a general mitigation measure	^

EIA Ref.	Mitigation Measures	Status
	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.	
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	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.	^
	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.	^
S3.4 (AEIAR-130/2009)	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	^
	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	*
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting	*

EIA Ref.	Mitigation Measures	Status
	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.	
S5.8 (AEIAR-170/2013)	<p><u>Boring and Drilling Water</u> Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.</p>	^
	<p><u>Acid Cleaning, Etching and Pickling Wastewater</u> Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers</p>	^
S3.4 (AEIAR-130/2009)	<p><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.</p>	^
S3.4 (AEIAR-130/2009)	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.	^

EIA Ref.	Mitigation Measures	Status
S3.4 (AEIAR-130/2009)	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	^
S5.8 (AEIAR-170/2013)	There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distance of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes and the planned WSR mentioned in S5.3.1 as appropriate. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence which is under the ambit of regional office (RO) of EPD.	^
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	<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.	^
S5.8	Notices should be posted at conspicuous locations to remind the workers not to discharge	^

EIA Ref.	Mitigation Measures	Status
(AEIAR-170/2013)	any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site will provide an effective control of any malpractices and can encourage continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures.	
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	<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.	^
	<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.	^
S5.8 (AEIAR-170/2013)	<u>Accidental Spillage</u> Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes. Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	^

EIA Ref.	Mitigation Measures	Status
	<p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> ● Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. ● Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. ● Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
Construction Waste Management		
<p>S6.7 (AEIAR-170/2013)</p>	<p>Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC(W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites.</p>	<p>^</p>
<p>S3.5 (AEIAR-130/2009) and S6.7 (AEIAR-170/2013)</p>	<p>Good Site Practices It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include:</p> <ul style="list-style-type: none"> ● Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site ● Training of site personnel in proper waste management and chemical waste handling procedures ● Provision of sufficient waste disposal points and regular collection for disposal 	<p>^</p> <p>^</p>

EIA Ref.	Mitigation Measures	Status
	<ul style="list-style-type: none"> ● Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers ● A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites) ● Regular cleaning and maintenance systems, sumps and oil interceptors ● Separation of chemical wastes for special handling and appropriate treatment 	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
	<p>Waste Reduction Measures</p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> ● Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals ● Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal ● Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force ● Any unused chemicals or those with remaining functional capacity should be recycled ● Proper storage and site practices to minimise the potential for damage or contamination of construction materials ● Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste ● Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

EIA Ref.	Mitigation Measures	Status
S3.5 (AEIAR-130/2009)	<p>Construction and Demolition Materials</p> <p>Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:</p> <ul style="list-style-type: none"> ● Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible. ● Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric. ● Skip hoist for material transport should be totally enclosed by impervious sheeting. ● Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site. ● The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. ● The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle. ● All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet. ● The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading. <p>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</p>	<p>^</p> <p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

EIA Ref.	Mitigation Measures	Status
	System for Disposal of Construction and Demolition Materials” should be included as one of the contractual requirement sand 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.	
S3.5 (AEIAR-130/2009)	<p>General Refuse</p> <p>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</p>	*
Construction Landscape and Visual		
S3.8.12 (AEIAR-130/2009) and S7.9 (AEIAR-170/2013)	<ul style="list-style-type: none"> ● Minimized construction area and contractor’s temporary works areas. ● All existing trees should be carefully protected during construction. ● 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. ● Control of night-time lighting. ● Erection of decorative screen hoarding. ● Reduction of construction period to practical minimum. ● Limitation of / Ensuring no run-off into surrounding landscape and adjacent seawater areas. ● Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open. 	<p>^</p> <p>^</p> <p>^</p> <p>N/A(1)</p> <p>^</p> <p>^</p> <p>^</p> <p>N/A</p>

Remarks:	EIA Report (AEIAR-130/2009) – Kai Tak Development	
	EIA Report (AEIAR-170/2013) – Kai Tak Development – Roads D3A & D4A	
	^ Compliance of mitigation measure;	X Non-compliance of mitigation measure;
	N/A Not Applicable at this stage; N/A(1) Not observed;	• Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor.		

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

Contract No. KL/2014/01

Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

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

Reporting Month: November 2016

Contract No. KL/2014/01

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

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

APPENDIX G
WASTE GENERATED QUANTITY

Waste Flow Table for Year 2016

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in tonne)
Jan	3,750.00	0	3,750.00	0	0	0	0	0	0	0	0
Feb	150.00	0	150.00	0	0	0	0	0	0	0	9.41
Mar	24.96	0	0	0	24.96	0	0	0	0	0	1.22
Apr	0	0	0	0	0	0	0	0	0	0	3.69
May	929.49	0	0	0	929.49	0	0	0	0	0	42.73
June	2,861.45	6.34	0	0	2855.11	0	0.0003	0.360	0.004	0	11.55
Sub-total	7,715.90	6.34	3,900.00	0	3809.56	0	0.0003	0.360	0.004	0	68.60
July	3,228.90	0	0	0	3228.90	0	0	0	0	0	19.89
Aug	5,068.14	0	0	0	5068.14	0	0	0	0	0	8.72
Sept	4703.17	0	0	0	4703.17	0	0	0	0	0	15.59
Oct (See Note 1)	6222.41	0	0	0	6222.41	0	0	0.179	0.552	0	44.23
Nov	19729.94	0	0	0	19729.94	0	0	0	0	0	35.02
Dec											
Total	46,668.46	6.34	3,900.00	0	42,762.12	0	0.0003	0.54	0.556	0	192.05

Note: (1) The waste flow data of Oct 2016 was updated in this table.

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Appendix D

Monthly EM&A Report For

Contract No. KL/2014/03

Stage 3 infrastructure works for developments at the southern part of the former runway

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MONTHLY EM&A REPORT

November 2016

Client : Civil Engineering and Development
Department, HKSAR

Contract No. : KLN/2015/07

Contract Name : Environmental Monitoring Works for
Contract KL/2014/03 – Kai Tak Development
– Stage 3 Infrastructure Works for Developments
at the Southern Part of the Former Runway

Report No. : 0405/15/ED/0643A

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

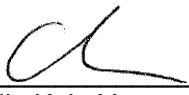
EP-339/2009/A Decommissioning of the Remaining Parts (Ex-GFS
Building, Radar Station and Hong Kong Aviation Club)
of the former Kai Tak Airport

EP-451/2013 Trunk Road T2

Prepared by : Alfred Y. S. Lam

Reviewed by : Cyrus C. Y. Lai

Certified by :



Colin K. L. Yung
Environmental Team Leader
MaterialLab Consultants Limited

Ref.: CEDKTDS3EM00_0_0138L.16

12 December 2016

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

By Post and Email

Attention: Mr. Wong W K, Chris

Dear Mr. Wong,

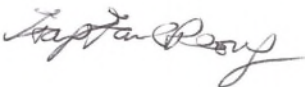
Re: Contract No. KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway
Monthly EM&A Report for November 2016

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

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

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

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



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

Q:\Projects\CEDKTDS3EM00\02_Proj_Mgt\02_Corr\CEDKTDS3EM00_0_0138L.16.docx

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EXECUTIVE SUMMARY

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

Breaches of the Action and Limit Levels

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

Complaint, Notification of Summons and Successful Prosecution

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

Reporting Changes

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

Future Key Issues

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

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

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 ninth monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project within the period between 1 November 2016 and 30 November 2016.

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. MaterialLab 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 2888	3465 2899
Main Contractor (CRBC)	Site Agent	Mr. Chan See Wai, Arnold	9380 4110	2283 1689
	Environmental Officer	Mr. Andy Choy	6278 2693	2283 1689
ET (MCL)	Environmental Team Leader	Mr. Colin Yung	3565 4114	3565 4160

1.3 Construction Programme and Activities

1.3.1 The construction of the Project commenced in February 2016 and is expected to complete in 2020. The construction programme is shown in **Appendix A**.

1.3.2 A summary of the major construction activities undertaken in the reporting month were:

- Carrying out pre-drilling;
- Construction of guide walls and D-walls;
- Construction of Socketed H piles;
- Temporary utility diversion;
- Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS);
- Construction of Subway B;
- Demolition of Radar Tower;
- Construction of District Cooling System Works; and
- Implementation of Temporary Traffic Arrangement (TTA).

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-RE0538-16	1 June 2016	30 November 2016
Construction Noise Permit	GW-RE1008-16	19 October 2016	09 April 2017
Construction Noise Permit	PP-RE0032-16	23 November 2016	15 May 2017
Wastewater Discharge License	WT00023125-2015	6 January 2016	31 January 2021
Chemical Waste Producer License	5213-247-C1232-12	23 November 2015	Not Applicable

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 $\pm 3^\circ\text{C}$; the relative humidity (RH) is < 50% and not variable by more than $\pm 5\%$. A convenient working RH is 40%.

Operating / Analytical Procedures

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

- Prior to the commencement of the dust sampling, the flow rate of the HVS are properly set (between 0.6 m^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 $\pm 3^\circ\text{C}$; the relative humidity (RH) should be < 50% and not vary by more than $\pm 5\%$. A convenient working RH is 40%. 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 KER1a) 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)
KER1a / KER1b	Site Boundary at Cheung Yip Street

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

2.6 Results and Observations

2.6.1 The schedule of air quality monitoring in reporting month is provided in **Appendix E**.

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

2.6.3 No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted in the reporting month.

2.6.4 During the reporting month, major dust sources including loading and unloading of C&D wastes, vehicles movement were observed in the site. Non-project related construction activities at the nearby construction site and road traffic along Shing Cheong Road, Cheung Yip Street and the Kwun Tong By-pass were observed. The above factors may affect the monitoring results.

2.6.5 The weather conditions during the monitoring are provided in **Appendix K**.

2.6.6 The monitoring data of 24-hr TSP are summarized in **Table 2.3**. Detailed monitoring data are presented in **Appendix F**.

Table 2.3 Summary of 24-hr TSP Monitoring Results

Parameter	Monitoring Station	Average (µg/m ³)	Range (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)
24-hr TSP in µg/m ³	KTD1a	80	34 – 122	177	260
	KTD2a	35	16 – 56	157	
	KER1a / KER1b	65	9 – 116	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 ($\mu\text{g}/\text{m}^3$)	24-hour TSP concentration in November 2016 ($\mu\text{g}/\text{m}^3$)	Average 24-hour TSP concentration in November 2016 ($\mu\text{g}/\text{m}^3$)
KTD1a	KTD3	126	34 – 122	80
KTD2a	-	-	16 – 56	35
KER1a / KER1b	KTD6	169	9 – 116	65

Note:

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

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

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

3. NOISE

3.1 Monitoring Requirement

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

3.2 Monitoring Equipment

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

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

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

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

Table 3.1 Noise Monitoring Equipment

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

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
LAeq (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 KER1a) 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)
KER1a / KER1b	Site Boundary at Cheung Yip Street

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

3.7 Results and Observations

3.7.1 The schedule of noise monitoring in reporting month is provided in **Appendix E**.

3.7.2 During the monitoring month, at KTD1a, non-project related construction activities at the nearby construction site and road traffic along Shing Cheong Road were observed in the surroundings. At KTD2a, road traffic along the Kwun Tong By-pass was observed. At KER1a and KER1b, road traffic along Cheung Yip Street was observed. Major noise sources including noise emission from plant & PME and some other construction activities, travel of vehicles, loading and unloading of C&D waste were observed in the site. The above factors may affect the monitoring results.

3.7.3 No raining and wind with speed over 5 m/s was observed during noise monitoring according to the onsite observation. The weather conditions during the monitoring month are provided in **Appendix K**.

3.7.4 The noise monitoring data are summarized in **Table 3.4**. Detailed monitoring data are presented in **Appendix G**.

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	KER1a / KER1b		
0700-1900 hrs on normal weekdays	67 - 72	61 - 69	64 - 70	When one documented complaint is received	75 dB(A)

Note:

KTD1a: Façade Measurement

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

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

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 November 2016
KTD1a	KTD1	74	67 - 72
KTD2a	KTD2	75	61 - 69
KER1a / KER1b	KER1	75	64 - 70

Note:

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

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

4. LANDSCAPE AND VISUAL

4.1 Audit Requirements

4.1.1 As per the Trunk Road T2 EM&A Manual, the landscape and visual mitigation measures during the construction phase shall be audited by a Registered Landscape Architect, as a member of the Environmental Team, at least once every two weeks to ensure compliance with the intended aims of the measures.

4.1.2 According to the Kai Tak Development EM&A Manual, measures to mitigate landscape and visual impacts during construction should be checked to ensure compliance with the intended aims of the measures. The progress of the engineering works shall be regularly reviewed onsite to identify the earliest practical opportunities for the landscape works to be undertaken. The ET shall report on the Contractor's compliance on a weekly basis.

4.2 Results and Observations

4.2.1 To monitor and audit the implementation of landscape and visual mitigation measures, four weekly Landscape and Visual Site audits were carried out on 3, 10, 16 and 24 November 2016 and two of them, 3 and 16 November 2016 were carried out by a Registered Landscape Architect. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009).

4.2.2 During the Site audit on 3 November 2016, it is observed that open stockpiles at Portion I were not fully covered with impervious sheeting. The item was rectified by the Contractor and inspected on 10 November 2016.

4.2.3 During the Site audit on 10 November 2016, it is observed that open stockpiles at Portion I were not fully covered by impervious sheeting. The item was rectified by the Contractor and inspected on 16 November 2016.

4.2.4 Should non-compliance of the landscape and visual impact occur, action in accordance to the event action plan presented in **Appendix H** shall be carried out.

5. WASTE MANAGEMENT

5.1 Audit Requirements

5.1.1 The effective management of waste arising during the construction phase will be monitored through the site audit programme. Regular audits and site inspections should be carried out to ensure that the recommended good site practices and other mitigation measures are implemented by the Contractor.

5.1.2 The audit should look at all aspects of on-site waste management practices including the waste generation, storage, recycling, transport and disposal. The aims of waste audit are:

- to ensure the waste arising from the works are handled, stored, collected, transferred and disposed of in an environmentally acceptable manner;
- verify the implementation status and evaluate the effectiveness of the mitigation measures; and
- to encourage the reuse and recycling of material.

5.2 Results and Observations

5.2.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.

5.2.2 The amount of wastes generated by the site activities in the reporting month is shown in **Appendix I**.

5.2.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

5.2.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

6. SITE INSPECTION

6.1 Site Inspection

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

MATERIALLAB CONSULTANTS LIMITED

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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, KER1a and KER1b in the reporting month.

7.2 Complaints, Notification of Summons and Prosecution

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

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

9. FUTURE KEY ISSUES

9.1 Construction Programme for the Next Two Months

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

9.2 Key Issues for the Coming Month

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

9.3 Monitoring Schedules for the Next Three Months

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

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

10.2 Comment and Recommendations

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

Air Quality Impact

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

Construction Noise Impact

- No specific observation was identified in the reporting month.

Water Quality Impact

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

Chemical and Waste Management

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

Landscape and Visual Impact

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

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General Condition

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

Permit / Licenses

- No specific observation was identified in the reporting month.

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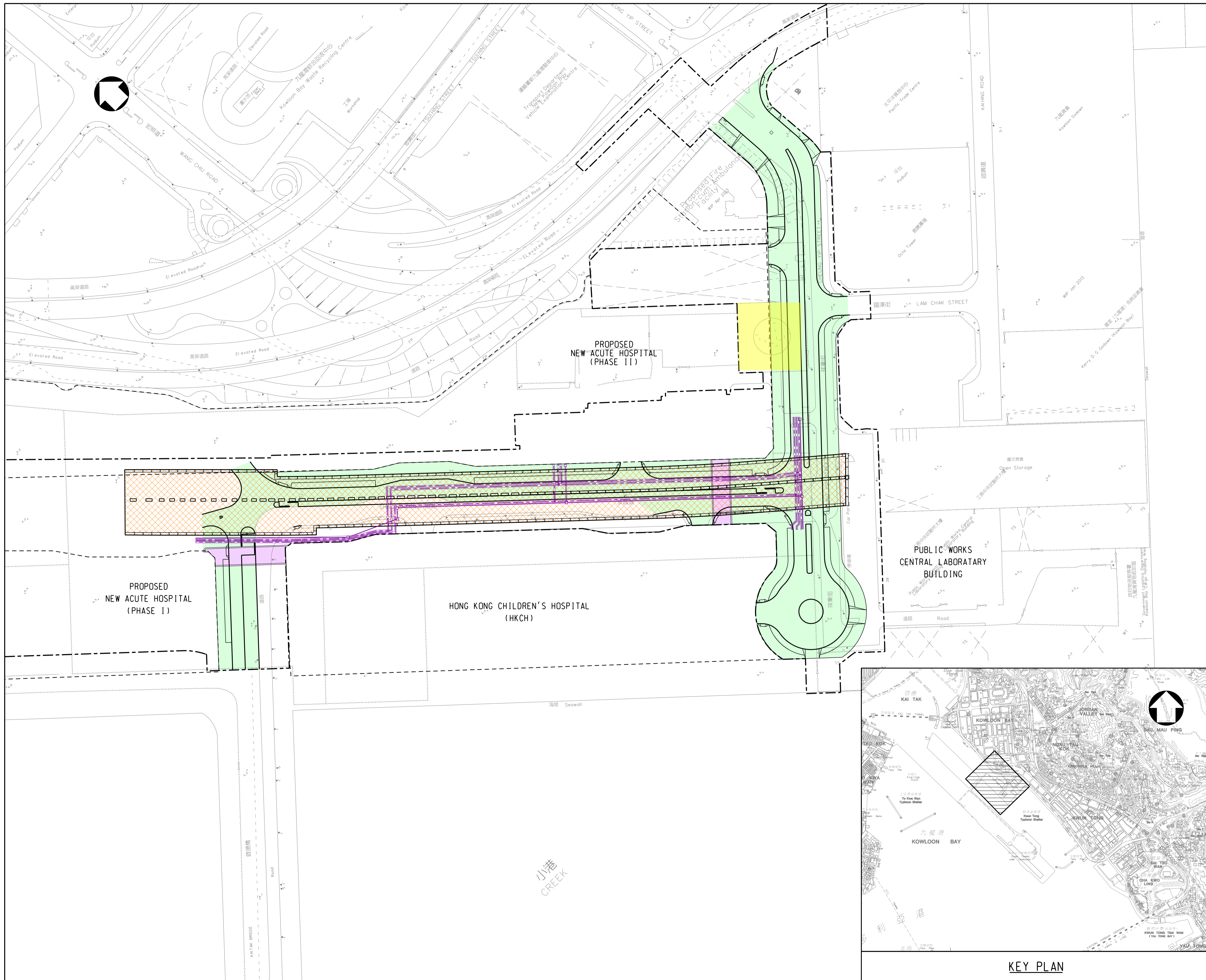
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Figure 1

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



CLIENT



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

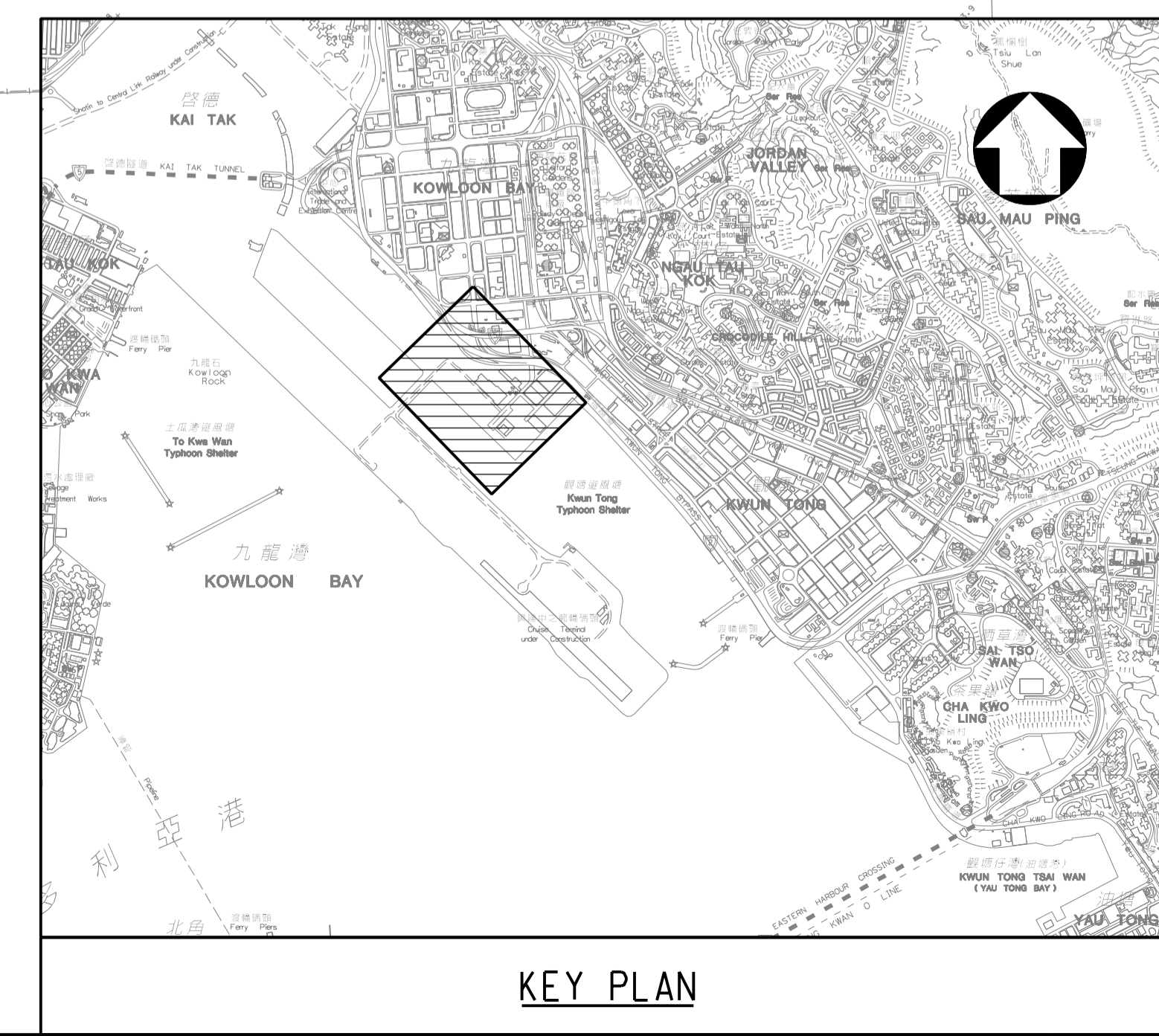
TITLE

GENERAL LAYOUT PLAN

DESIGNED		ENG. CHECK	
DRAWN		COORDINATION	
DWG. CHECK		APPROVED	
SCALE AT A1	STATUS	REV	
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Drawing No. **FIGURE 1.0**

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KEY PLAN

PRINTED BY: kitchan 18/2/2015 13:00:43
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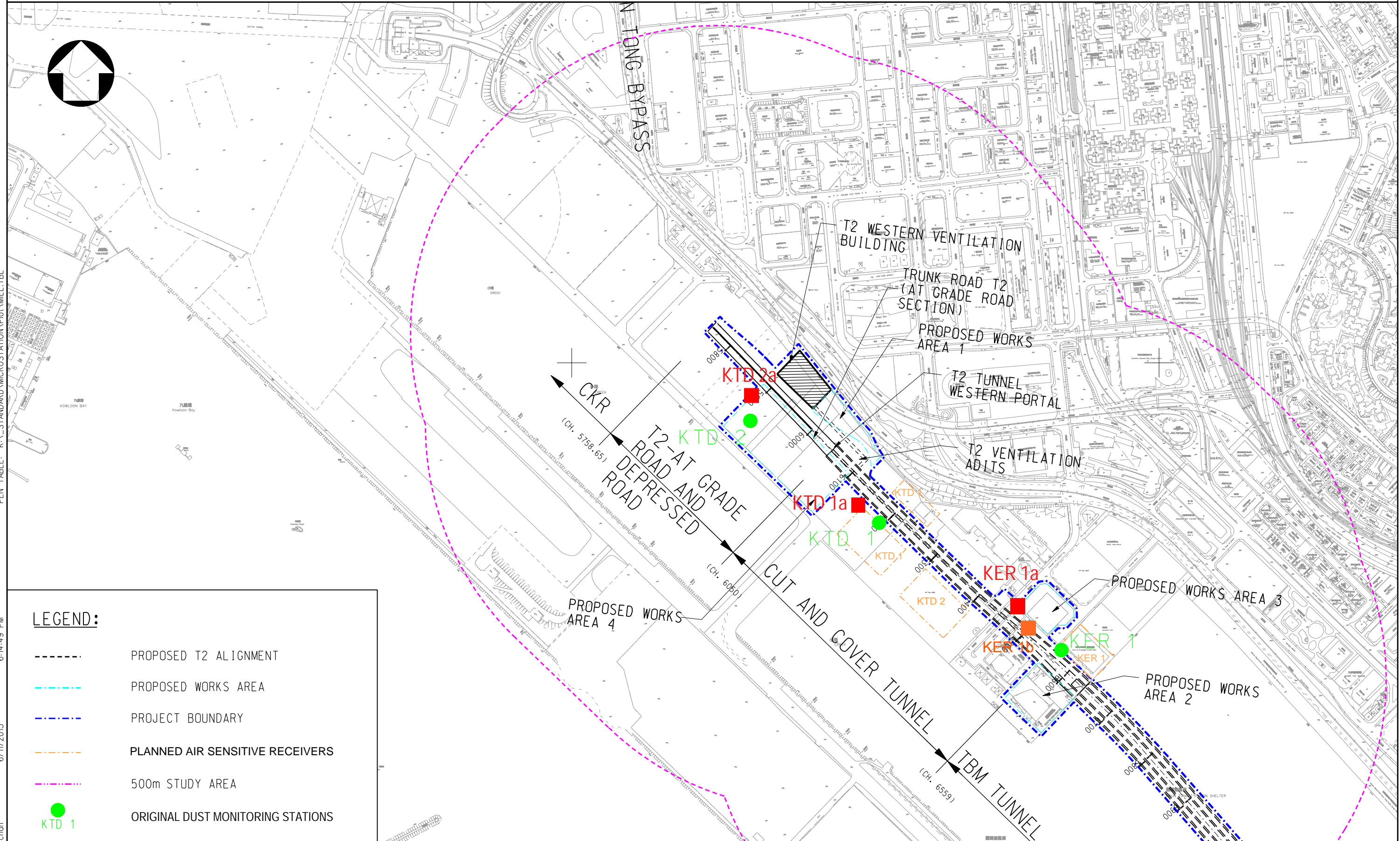
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Figure 2

Air and Noise Monitoring Locations

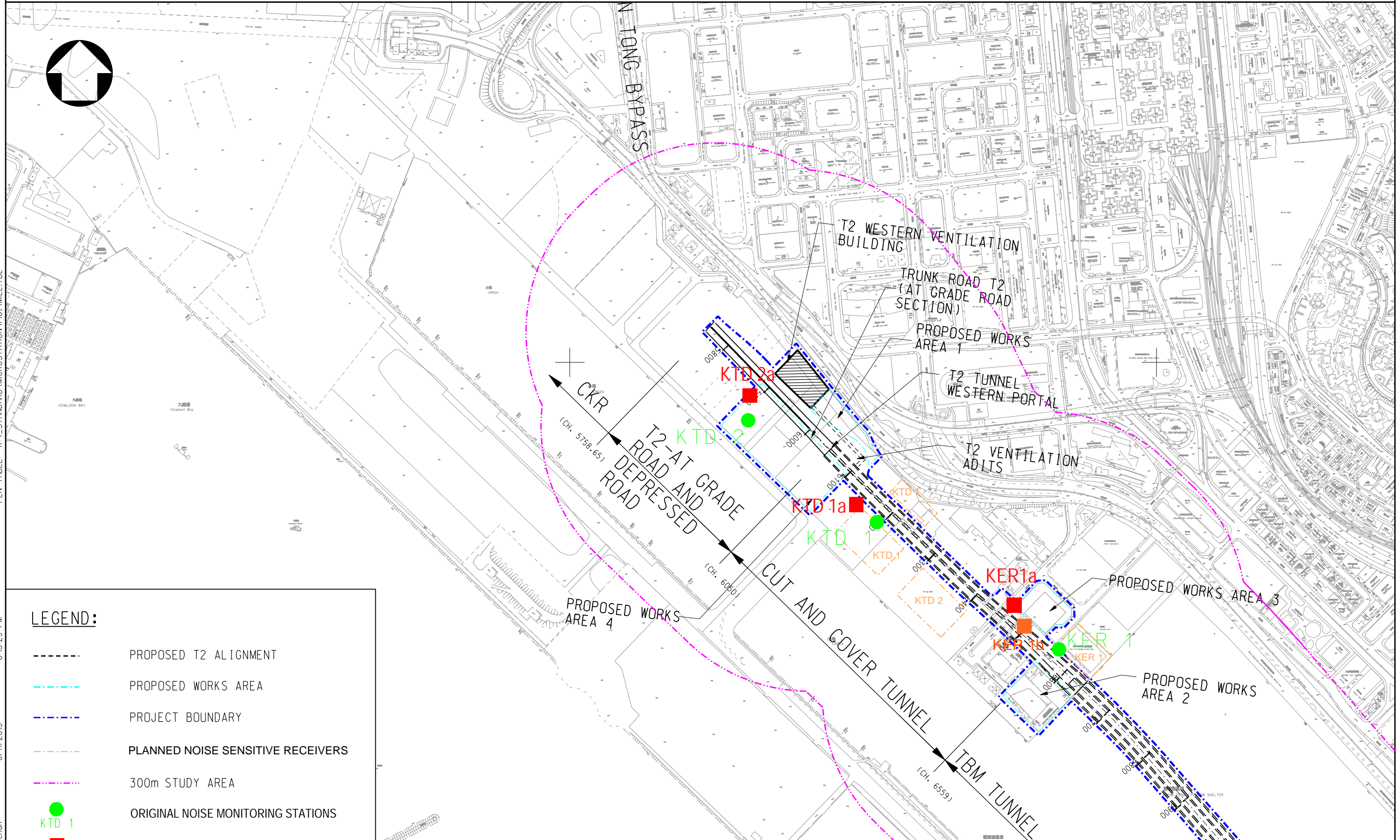


LEGEND:








- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PLANNED AIR SENSITIVE RECEIVERS
- 500m STUDY AREA
- ORIGINAL DUST MONITORING STATIONS
- PROPOSED DUST MONITORING STATIONS

PRINTER NAME: PDFCreator
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 6/11/2013 6:14:49 PM
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LEGEND: ■ PROPOSED DUST MONITORING STATIONS ● ORIGINAL DUST MONITORING STATIONS		Drawing title IDENTIFIED DUST MONITORING STATIONS AT SOUTH APRON OF FORMER KAI TAK AIRPORT		Original Size A3	Scale 1 : 6000	Date 30/01/2012
Rev.	Description	Date	© Copyright reserved	Drawing No. FIGURE 2.1a(revised)	Rev.	--



LEGEND:

-  PROPOSED T2 ALIGNMENT
-  PROPOSED WORKS AREA
-  PROJECT BOUNDARY
-  PLANNED NOISE SENSITIVE RECEIVERS
-  300m STUDY AREA
-  ORIGINAL NOISE MONITORING STATIONS
KTD 1
-  PROPOSED NOISE MONITORING STATIONS
KTD 1a

Drawing title

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

Original Size

A3

Scale 1 : 6000

Date 30/01/2012

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FIGURE 3.1a (revised)

Rev.

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Appendix A

Construction Programme

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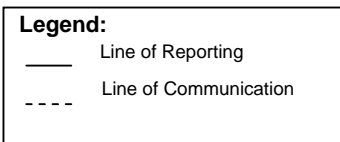
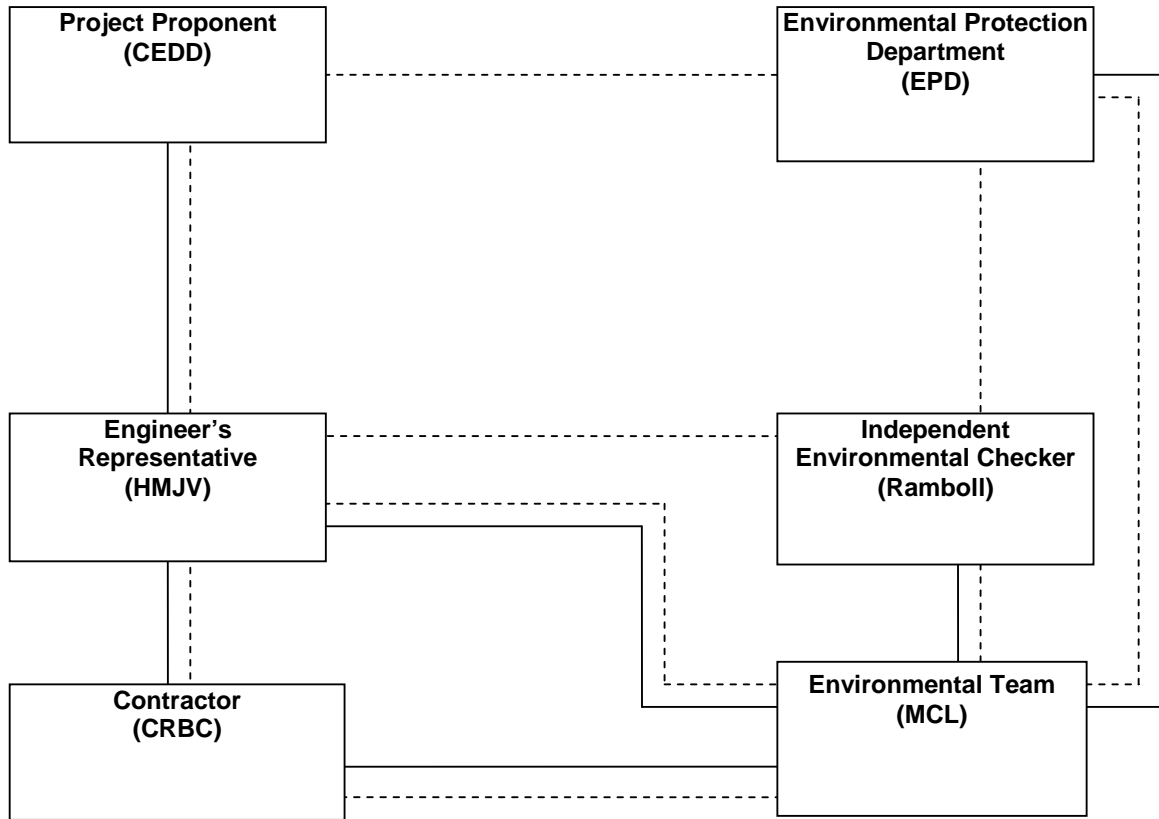
Appendix B

Project Organization Chart

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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 ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
24-hr TSP ($\mu\text{g}/\text{m}^3$)	KTD1a	177	260
	KTD2a	157	
	KER1a / KER1b	172	
*1-hr TSP ($\mu\text{g}/\text{m}^3$)	KTD1a	285	500
	KTD2a	279	
	KER1a / KER1b	295	

Note:

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

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

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

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Appendix D

Calibration Certificates of Monitoring Equipment



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE
 VILLAGE OF CLEVELS, 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	ORFICE
					DIFF Hg (mm)	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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TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmental Monitoring Works For Contract No. KLN/2015/07		Date of Calibration: 12-Oct-16
Location : KER1a		Next Calibration Date: 11-Jan-17
Brand: Tisch	Technician: Jimmy Lui	
Model: TE-5170	S/N: 3482	

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			

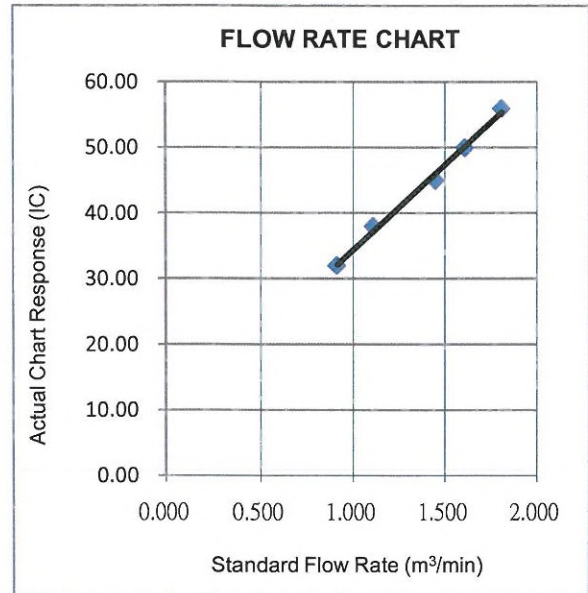
CALIBRATIONS							
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)	LINEAR REGRESSION
18	11.10	-2.80	13.900	1.807	56.00	55.96	Slope = 25.9329 Intercept = 8.4758 Corr. coeff. 0.9971
13	9.80	-1.20	11.000	1.608	50.00	49.97	
10	8.80	-0.10	8.900	1.448	45.00	44.97	
7	6.90	1.70	5.200	1.108	38.00	37.97	
5	6.00	2.50	3.500	0.911	32.00	31.98	

Calculations:

$Qstd = 1/m[\text{sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$
 $IC = I[\text{sqrt}(Pa/Pstd)(Tstd/Ta)]$
 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:

$1/m((I)[\text{sqrt}(298/Tav)(Pav/760)]-b)$
 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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TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

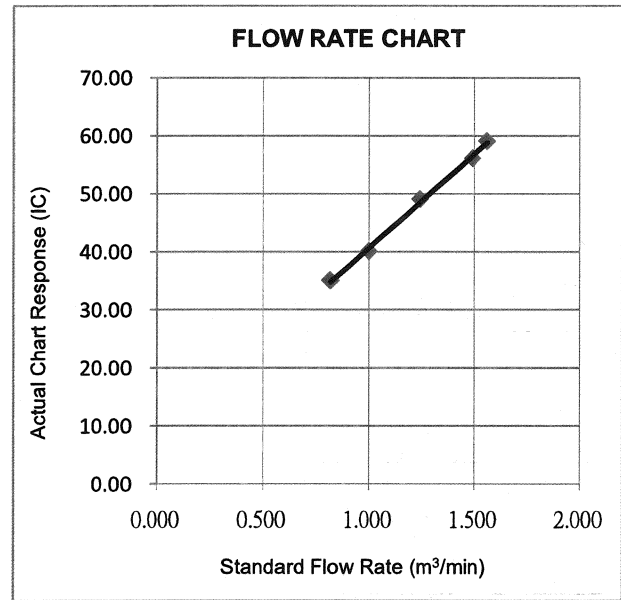
Project : Environmental Monitoring Works For Contract No. KLN/2015/07		Date of Calibration: 16-Nov-16	
Location : KER1b		Next Calibration Date: 15-Feb-17	
Brand:	Tisch	Technician: Jimmy Lui	
Model:	TE-5170	S/N:	3838

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 Intercept = 8.3422 Corr. coeff.: 0.9987
13	11.50	2.10	9.400	1.491	56.00	56.11	
10	10.30	3.80	6.500	1.242	49.00	49.10	
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:
 $Qstd = 1/m[\text{sqrt}(H2O(Pa/Pstd)(Tstd/Ta)) - b]$
 $IC = I[\text{sqrt}(Pa/Pstd)(Tstd/Ta)]$
 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:
 $1/m((I)[\text{sqrt}(298/Tav)(Pav/760)] - b)$
 m = sampler slope
 b = sampler intercept
 I = chart response
 Tav = daily average temperature
 Pav = daily average pressure




CHOI KAM HO
 Project Consultant

Report Date: 16th November, 2016

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmental 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		

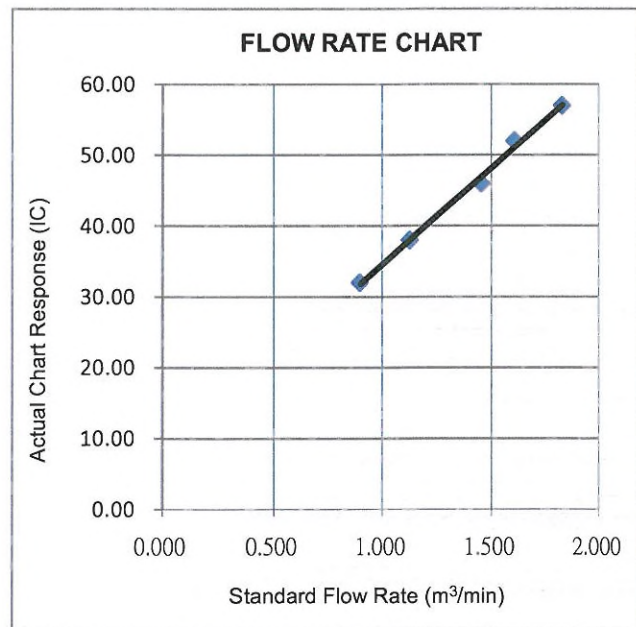

CALIBRATIONS							
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)	LINEAR REGRESSION
18	11.30	-2.90	14.200	1.826	57.00	56.96	Slope = 27.2421 Intercept = 7.2807 Corr. coeff.: 0.9979
13	9.70	-1.30	11.000	1.608	52.00	51.97	
10	8.70	-0.30	9.000	1.456	46.00	45.97	
7	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:

$Qstd = 1/m[\text{sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$
 $IC = I[\text{sqrt}(Pa/Pstd)(Tstd/Ta)]$
 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:

$1/m((I)[\text{sqrt}(298/Tav)(Pav/760)]-b)$
 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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TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmental 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		

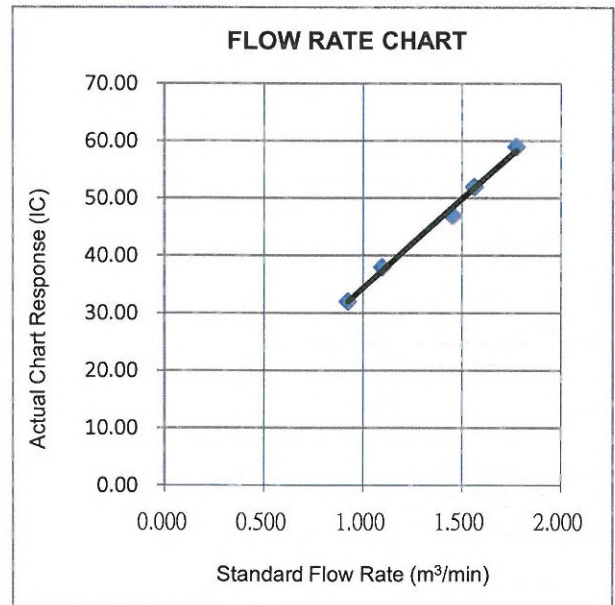
CALIBRATIONS							
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)	LINEAR REGRESSION
18	11.00	-2.40	13.400	1.774	59.00	58.96	Slope = 30.9648 Intercept = 3.3615 Corr. coeff.: 0.9968
13	9.50	-0.90	10.400	1.564	52.00	51.97	
10	8.80	-0.20	9.000	1.456	47.00	46.97	
7	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:

$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$
 $IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$
 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:

$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$
 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

FUGRO TECHNICAL SERVICES LIMITED

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Website : www.materialab.com

Materialab

Report No. : 161966CA161195

Page 1 of 1

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

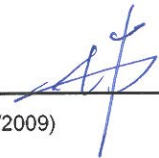
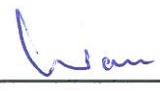
Method Used : By direct Comparison

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

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Materialab

Report no.: 940891CA160442(1)

Page 1 of 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 : ± 0.5 dB

Laboratory Information

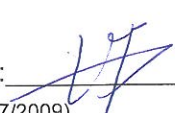
Description : Reference Sound Level Meter
Equipment ID. : R-119-1
Date of Calibration : 03-Mar-2016 Ambient Temperature : 21 °C
Calibration Location : Calibration Laboratory of Materialab
Method Used : By direct comparison

Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)
94dB	-0.1 dB	± 0.5 dB
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 : 
CA-R-297 (22/07/2009)

Date : 4.3.2016

Certified by :



Date : 07 MAR 2016

Kwok Chi Wa (Assistant Manager)

** End of Report **

FUGRO TECHNICAL SERVICES LIMITED

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Website : www.materiallab.com

MaterialLab

Report no.: 161966CA160797

Page 1 of 1

CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client : MaterialLab 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 : $\pm 0.5\text{dB}$

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 MaterialLab
Method Used : By direct comparison

Calibration Results :

Parameters (Setting of UUT)	Mean of Measured value	Specification Limit(dB)
94dB	93.9 dB	$\pm 0.5\text{dB}$
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 **

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	<u>113.99</u> dB
SPL @ 94.0dB Setting (CEL-120/1 only)	<u>93.93</u> dB/N.A

Engineer :- M. Duncanson 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, Wolsley 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

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:-

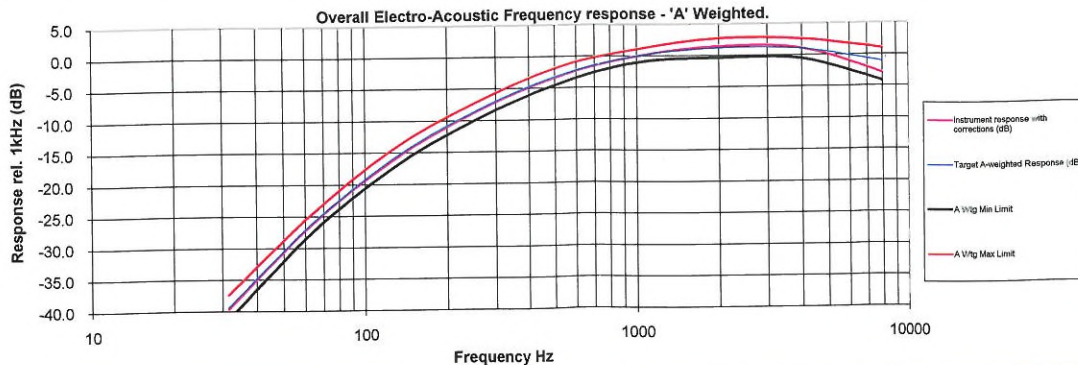
- Self Generated Noise Test
- Electrical Signal Test Of Frequency Weightings
- Frequency & Time Weightings At 1 kHz
- Level Linearity On The Reference Level Range
- Toneburst Response Test
- C-peak Sound Levels
- Overload Indication
- Acoustic Tests

- All Tests Pass
- All Tests Pass
- All Tests Pass
- All Tests Pass
- All Tests Pass
- All Tests Pass
- All Tests Pass
- All Tests Pass

Combined Electro-Acoustic Frequency Response - A Weighted

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

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



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 Buffalo, NY 14221
 Toll Free: (800) 366-2966
 Tel: (603) 672-0031 Fax: (603) 672-8053
 E-mail: info@casellausa.com
 Web: www.casellausa.com

Certificate of Conformity and Calibration

Instrument Model:- CEL-633A
Serial Number 3756084
Firmware revision V129-09

Microphone Type:- CEL-251
Serial Number 1257

Preamplifier Type:- CEL-495
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 superceded 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.

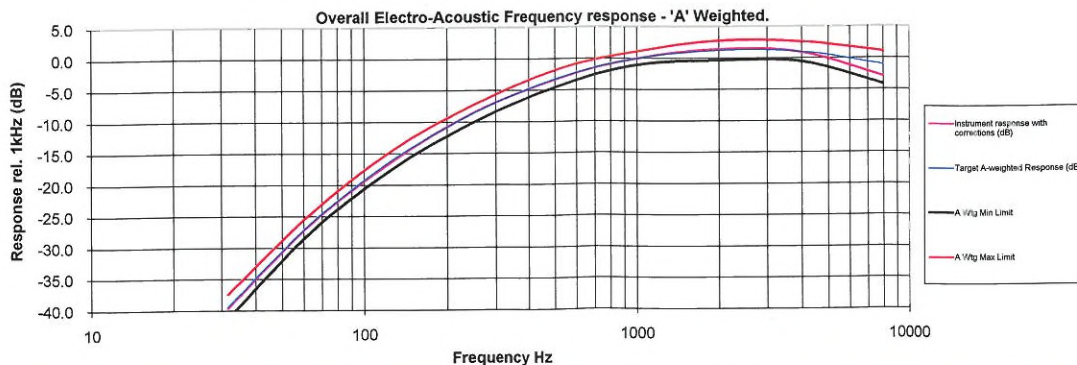
Test Summary:-

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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 Tel: (603) 672-0031 Fax: (603) 672-8053
 E-mail: info@casellausa.com
 Web: www.casellausa.com

Certificate of Conformity and Calibration

Instrument Model:- CEL-633A
Serial Number 3756072
Firmware revision V129-09

Microphone Type:- CEL-251
Serial Number 1361

Preamplifier Type:- CEL-495
Serial Number 003527

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:- May 13, 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:-

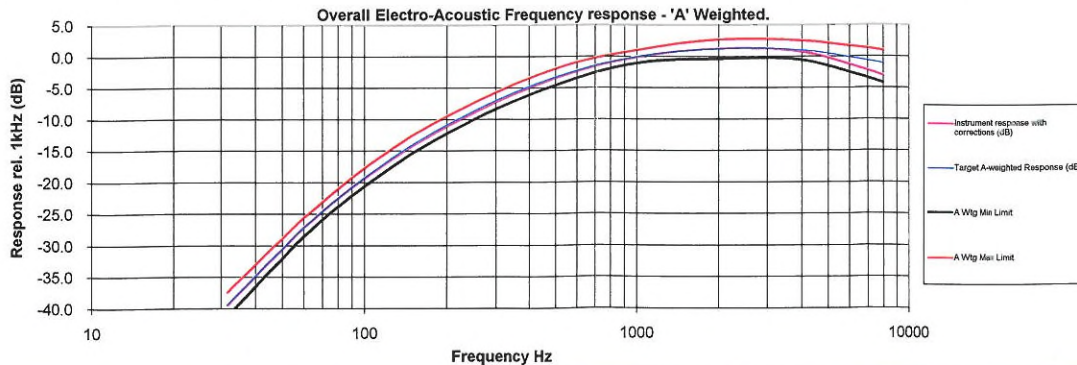
Self Generated Noise Test
 Electrical Signal Test Of Frequency Weightings
 Frequency & Time Weightings At 1 kHz
 Level Linearity On The Reference Level Range
 Toneburst Response Test
 C-peak Sound Levels
 Overload Indication
 Acoustic Tests

All Tests Pass
All Tests Pass
All Tests Pass
All Tests Pass
All Tests Pass
All Tests Pass
All Tests Pass
All Tests Pass

Combined Electro-Acoustic Frequency Response - A Weighted

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

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



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 Web: www.casellausa.com

FUGRO TECHNICAL SERVICES LIMITED

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Website : www.materialab.com.hk

Materialab

Report no.: 940891CA152019(1)

Page 1 of 1

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client : Fugro Technical Services Ltd.

Project : Calibration Services

Client Supplied Information

Details of Unit Under Test, UUT

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

Laboratory Information

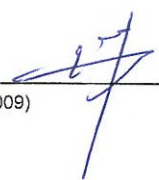
Description : B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)
Equipment ID. : R-108-1
Date of Calibration : 15-Oct-2015 Ambient Temperature : 20 °C
Calibration Location : Calibration Laboratory of Materialab
Method Used : By direct comparison

Calibration Results :

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

Remarks :

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

Checked by : 
CA-R-297 (22/07/2009)

Date : 15/10/2015

Certified by : 

So Chi Kuen (Engineer)

Date : 15 Oct, 2015

** End of Report **

MATERIALAB CONSULTANTS LIMITED

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MaterialLab

Appendix E

Environmental Monitoring Schedule

MATERIALAB CONSULTANTS LIMITED

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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 (November 2016)

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

Remarks

- Monitoring Locations – KTD1a: Centre of Excellence in Paediatric (Children’s Hospital), KTD2a: G/IC Zone next to Kwun Tong Bypass (Future at Site 3C1), KER1a: Site Boundary at Cheung Yip Street/ KER1b: Site Boundary at Cheung Yip Street, close to open space car park area
- 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)
- Noise Monitoring: Leq (30 min) between 0700 and 1900 hours.
- Proposal of Temporary Relocation of Monitoring Location KER 1a for TSP Monitoring and Noise Monitoring was submitted to EPD on 26 October 2016 and was approved on 11 November 2016, effective from 16 November 2016 until the cable diversion works at Cheung Yip Street carried out by CLP are completed.

MATERIALAB CONSULTANTS LIMITED

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The logo for MaterialLab, featuring the word "Material" in a bold, dark blue font and "Lab" in a lighter blue font, both in a sans-serif typeface. The text is set against a white background with a thin blue border.**Project: KL/2014/03 - Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway****Impact Monitoring Schedule (December 2016)**

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

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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Email : mcl@fugro.com.hk

Materialab**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. 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.

MATERIALAB CONSULTANTS LIMITED

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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

- Actual monitoring may be subjected to change due to any safety concern or adverse weather condition
- 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
- 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)
- Noise Monitoring: Leq (30 min) between 0700 and 1900 hours.

MATERIALAB CONSULTANTS LIMITED

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The logo for MaterialLab, featuring the word "MaterialLab" in a bold, black, sans-serif font. The text is centered between two thick, horizontal black bars, one above and one below the text.

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 (ug/m ³)	Limit Level (ug/m ³)
				Initial	Final			Initial	Final					
4-Nov-16	Fine	295.4	761.5	2.8352	3.0684	0.2332	24	1.68	1.67	1.67	2491.6	94	177	260
10-Nov-16	Fine	290.7	765.1	2.7928	2.8893	0.0965	24	1.40	1.38	1.39	2035.7	47		
16-Nov-16	Fine	297.6	763.0	2.8204	3.1179	0.2975	24	1.74	1.67	1.67	2438.9	122		
22-Nov-16	Fine	295.7	760.0	2.8007	2.8649	0.0642	24	1.32	1.31	1.32	2359.8	34		
28-Nov-16	Fine	291.1	765.7	2.8125	3.0320	0.2195	24	1.47	1.44	1.45	2084.5	105		
												Min		
												Max	122	
												Average	80	

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 (ug/m ³)	Limit Level (ug/m ³)
				Initial	Final			Initial	Final					
4-Nov-16	Fine	295.4	761.5	2.8283	2.8909	0.0626	24	1.21	1.20	1.21	1735.2	36	157	260
10-Nov-16	Fine	290.7	765.1	2.7954	2.8299	0.0345	24	1.45	1.42	1.43	2066.0	17		
16-Nov-16	Fine	297.6	763.0	2.8153	2.9500	0.1347	24	1.68	1.68	1.68	2420.4	56		
22-Nov-16	Fine	295.7	760.0	2.8043	2.8388	0.0345	24	1.50	1.49	1.50	2157.3	16		
28-Nov-16	Fine	291.1	765.7	2.8160	2.9171	0.1011	24	1.30	1.35	1.32	1905.4	53		
												Min		
												Max	56	
												Average	35	

KER1a/ KER1b - Site Boundary at Cheung Yip Street

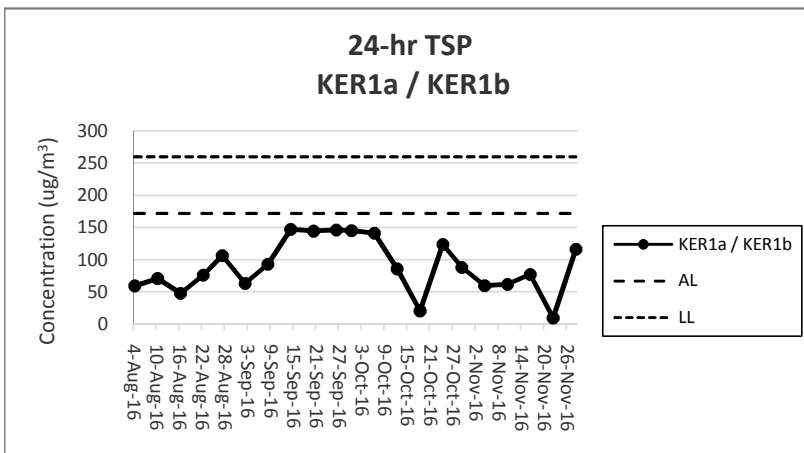
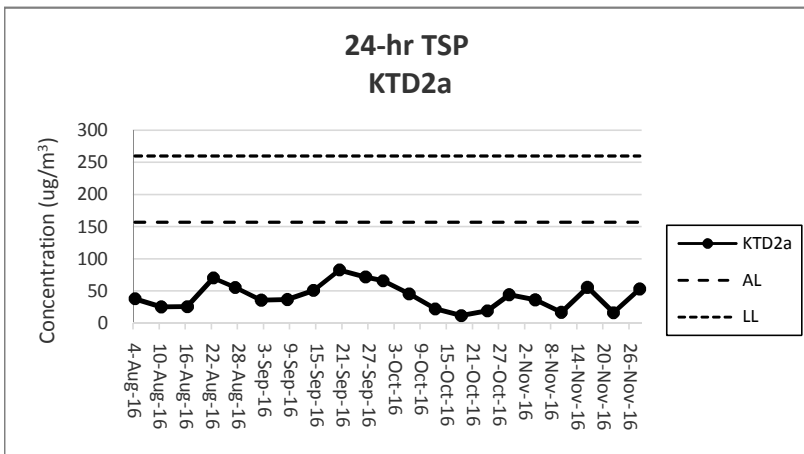
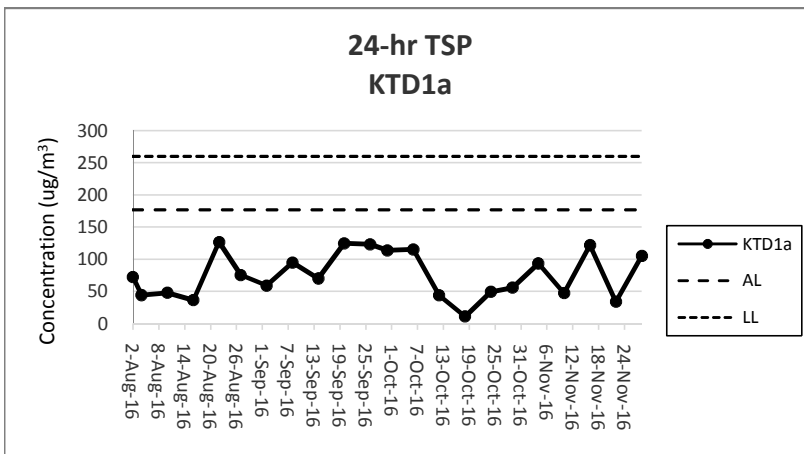
Start Date	Weather Condition	Air Temperature (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Sampling Time(hrs)	Flow Rate (m ³ /min.)		Average flow (m ³ /min.)	Total volume (m ³)	Conc. (ug/m ³)	Action Level (ug/m ³)	Limit Level (ug/m ³)
				Initial	Final			Initial	Final					
4-Nov-16	Fine	295.4	761.5	2.8260	2.9340	0.1080	24	1.22	1.22	1.22	1813.5	60	172	260
10-Nov-16	Fine	290.7	765.1	2.7950	2.9406	0.1456	24	1.91	1.63	1.60	2364.6	62		
16-Nov-16	Fine	297.6	763.0	2.8281	3.0003	0.1722	24	1.53	1.52	1.53	2236.7	77		
22-Nov-16	Fine	295.7	760.0	2.8070	2.8281	0.0211	24	1.49	1.49	1.49	2238.1	9		
28-Nov-16	Fine	291.1	765.7	2.8076	3.0447	0.2371	24	1.47	1.37	1.42	2039.5	116		
												Min		
												Max	116	
												Average	65	

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

Note:

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 monitoring results can be referred to Section 2.6.4.
- 4) QA/QC results, calibration results and detection limits can be referred to Appendix D.
- 5) The 24-hr TSP monitoring at KTD 1a on 29 July 2016 was postponed due to the insufficient power supply and rescheduled to 2 August 2016.
- 6) The 24-hour TSP monitoring location KER1a was replaced by KER1b, effective from 16 November 2016.

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Appendix G

Noise Monitoring Data

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

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
4-Nov-16	10:15	68	70	66	0.5	Fine
10-Nov-16	11:10	69	72	67	1.1	Fine
16-Nov-16	13:30	70	72	67	0.4	Fine
22-Nov-16	10:08	72	74	68	0.6	Cloudy
28-Nov-16	16:30	67	71	66	0.6	Fine
	Max	72				
	Min	67				
	Limit Level	75				

KTD 2a: G/C 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
4-Nov-16	11:00	64	66	60	1.6	Fine
10-Nov-16	10:25	69	71	68	1.4	Fine
16-Nov-16	14:03	64	66	62	2.0	Fine
22-Nov-16	10:43	67	69	66	0.3	Cloudy
28-Nov-16	15:45	61	63	58	0.5	Fine
	Max	69				
	Min	61				
	Limit Level	75				

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

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

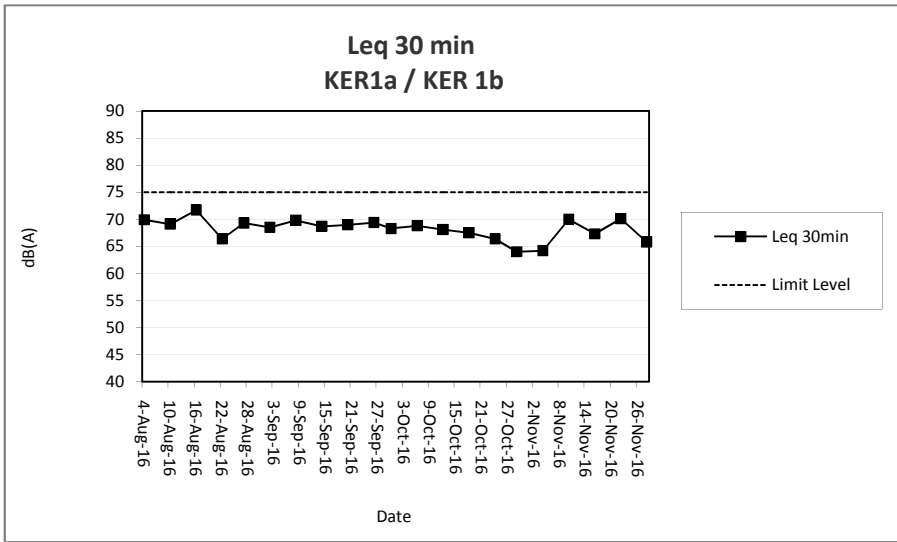
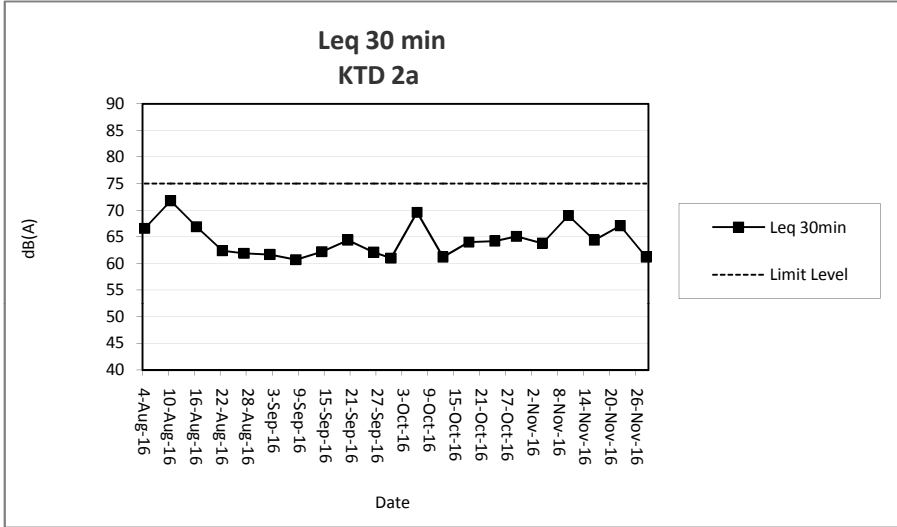
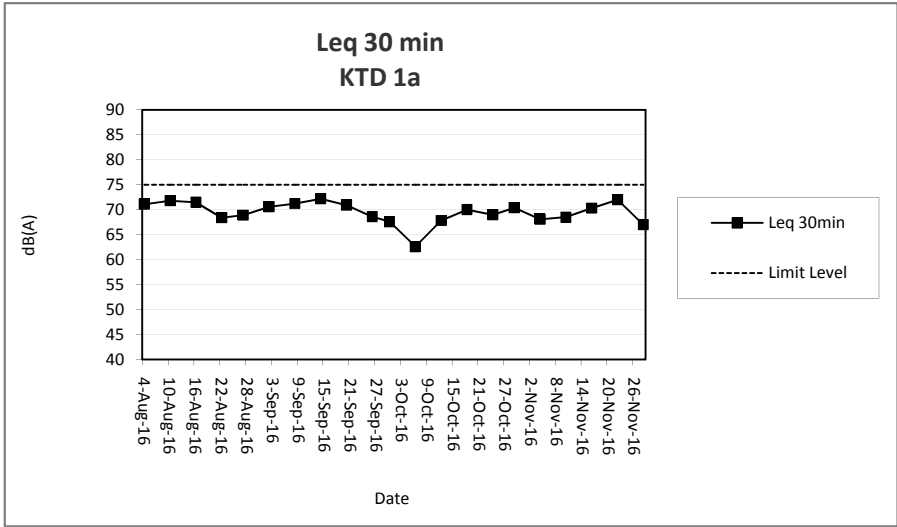
Note: The 24-hour TSP monitoring on 4 and 10 November 2016 were carried out at monitoring location KER1a while the 24-hour TSP monitoring on 16, 22 and 28 November 2016 were carried out at monitoring location KER1b.

Note:

KTD1a: Façade Measurement

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

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



Note:

- 1) The major activities being carried out on site during the reporting period can be referred to Section 1.3.2.
- 2) The weather conditions during the reporting period can be referred to Appendix K.
- 3) Any other factors which might affect the monitoring 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.	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET. 2. Check the Contractor's working methods. 	<ol style="list-style-type: none"> 1. Notify the Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practices. 2. Amend working methods agreed with the ER as appropriate.
Exceedance for two or more consecutive samples.	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Notify the Contractor. 2. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Confirm receipt of the notification of exceedance in writing. 2. Notify the Contractor. 3. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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

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

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Event and Action Plan for Noise Impact

EVENT	ACTION			
	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 1. Review the monitoring data submitted by the ET. 2. Review the construction methods and proposed remedial measures by the Contractor, and advise the ET and ER if the proposed remedial measures would be sufficient 	<ol style="list-style-type: none"> 1. Notify the Contractor. 2. Require the Contractor to propose remedial measures for implementation if required. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to the ER and copy to the IEC and ET. 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none">1. Identify Source2. Inform the IEC and the ER3. Discuss remedial actions with the IEC, the ER and the Contractor4. Monitor remedial actions until rectification has been completed	<ol style="list-style-type: none">1. Check report2. Check the Contractor's working method3. Discuss with the ET and the Contractor on possible remedial measures4. Advise the ER on effectiveness of proposed remedial measures.5. Check implementation of remedial measures.	<ol style="list-style-type: none">1. Notify Contractor2. Ensure remedial measures are properly implemented	<ol style="list-style-type: none">1. Amend working methods2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ol style="list-style-type: none">1. Identify Source2. Inform the IEC and the ER3. Increase monitoring frequency4. Discuss remedial actions with the IEC, the ER and the Contractor5. Monitor remedial actions until rectification has been completed6. If exceedance stops, cease additional monitoring	<ol style="list-style-type: none">1. Check monitoring report2. Check the Contractor's working method3. Discuss with the ET and the Contractor on possible remedial measures4. Advise the ER on effectiveness of proposed remedial measures5. Supervise implementation of remedial measures.	<ol style="list-style-type: none">1. Notify the Contractor2. Ensure remedial measures are properly implemented	<ol style="list-style-type: none">1. Amend working methods2. Rectify damage and undertake any necessary replacement

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Appendix I

Waste Flow Table

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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											
Total	44.8608	0.4025	1.9967	Nil	42.4616	Nil	126.77	0.253	0.00014	0.1106	0.4167

Note:

- 1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- 2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

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Appendix J

Environmental Mitigation Implementation Schedule (EMIS)

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
<u>Air Quality Measures</u>					
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	Implemented
Trunk Road T2					
AEIAR-174/2013 S4.9.2.1	AEIAR-174/2013 EM&A Manual S2.3.1.1	Watering of the construction areas 12 times per day to reduce dust emissions by 91.7%, with reference to the "Control of Open Fugitive Dust Sources" (USEPA AP-42). The amount of water to be applied would be 0.91L/m ² 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
<u>Good Site Practices</u>					
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	Implemented
		Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should have properly fitted side and tail boards.	Contractor	All relevant worksites	Implemented
		Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.	Contractor	All relevant worksites	Implemented
		Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.	Contractor	All relevant worksites	Implemented
		The vehicles should be restricted to maximum speed of 10 km per hour. Confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials.	Contractor	All relevant worksites	Implemented
		Vehicle washing facilities should be provided at every vehicle exit point. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	Contractor	All relevant worksites	Implemented
		The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.			
		Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	Contractor	All relevant worksites	Implemented
Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	Contractor	All relevant worksites	Implemented		

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase
					Implementation Status
		Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.	Contractor	All relevant worksites	Implemented
		Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.	Contractor	All relevant worksites	Implemented
		Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.	Contractor	All relevant worksites	Partially Implemented
		Open stockpiles shall be avoided or covered. Prevent placing dusty material storage piles near ASRs.	Contractor	All relevant worksites	Partially Implemented
		Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs.	Contractor	All relevant worksites	Not Applicable
		<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	Implemented
		Plant and equipment should be well maintained to prevent dark smoke emission.	Contractor	All relevant worksites	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: <ul style="list-style-type: none"> • Concrete lorry mixer • Dump Truck, 5.5 tonne < gross vehicle weight <= 38 tonne • Generator, Super Silenced, 70 dB(A) at 7m 	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		<ul style="list-style-type: none"> • 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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		Use of site hoarding as a noise barrier to screen noise at low level NSRs.	Contractor	All relevant worksites	Implemented
		For the use of hand held percussive breakers (with mass of above 10kg) and portable air compressors (supply air at 500 kPa or above), the noise level of such PME shall comply with a stringent noise emission standard and a noise emission label shall be obtained from the DEP before use at any time in construction site.	Contractor	All relevant worksites	Implemented
		Quiet powered mechanical equipment (PME) shall be used for the construction of the Project.	Contractor	All relevant worksites	Implemented
		Full enclosures shall be used to screen noise from relatively static PMEs (including air compressor, bar bender, concrete pump, generator and water pump) from sensitive receiver(s).	Contractor	All relevant worksites	Not Applicable
		Movable cantilevered noise barriers shall be used to screen noise from mobile PMEs (including asphalt paver, breaker, excavator and hand-held breaker) from sensitive receiver(s). These movable cantilevered noise barriers shall be located close to the mobile PMEs and shall be moved/adjusted iteratively in step with each movement of the corresponding mobile PMEs in order to maximize their noise reduction effects.	Contractor	All relevant worksites	Not Applicable
		Only approved or exempted Non-road Mobile Machineries (NRMMS) including regulated machines and non-road vehicles with proper labels are allowed to be used in specified activities on-site.	Contractor	All relevant worksites	Implemented
Water Quality Measures					
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

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		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 with 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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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

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.			
		Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ 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	Partially Implemented
		Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	Contractor	All relevant worksites	Implemented
		Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	Contractor	All relevant worksites	Not Applicable
		An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Contractor	All relevant worksites	Implemented

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					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

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		properly to avoid entering into the adjacent harbour waters. Stockpiles of cement and other construction materials should be kept covered when not being used.			
		<u>Accidental Spillage</u>			
		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
<u>Waste Management Measures</u>					
		<u>Waste Management Plan</u>			
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
		<u>Good Site Practices</u>			
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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		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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					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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		<u>General Refuse</u>			
		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
<u>Land Contamination Measures</u>					
		<u>For any excavation works conducted at Radar Station</u>			
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
<u>Landscape and Visual Impact</u>					
New Distributor Roads Serving the Planned KTD					
		<u>Construction Phase</u>			
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

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		Erection of decorative screen hoarding.	Contractor	All relevant worksites	Implemented
Trunk Road T2					
		<u>Construction Phase</u>			
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
<u>General Condition</u>					
		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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		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)		
November 2016						
01	1019.7	25.3	23.9	22.5	69	0.0
02	1020.3	24.8	22.8	21.0	68	0.0
03	1019.3	24.8	21.8	20.1	66	0.0
04	1015.2	25.3	22.4	19.6	68	0.0
05	1013.0	26.9	23.8	21.7	77	0.0
06	1015.1	26.9	24.2	22.4	79	0.0
07	1016.6	28.4	25.3	23.4	81	0.0
08	1017.4	28.1	24.6	22.1	80	4.8
09	1019.5	22.1	20.7	19.0	81	1.3
10	1020.1	19.0	17.7	17.0	82	1.9
11	1018.8	22.3	20.0	17.1	80	Trace
12	1017.9	25.1	23.3	21.6	84	0.2
13	1016.9	26.9	24.7	23.8	85	0.0
14	1015.4	28.1	25.4	23.3	83	0.0
15	1015.8	29.2	25.7	23.8	81	Trace
16	1017.2	26.1	24.6	23.9	81	Trace
17	1016.6	27.5	24.8	23.6	78	Trace
18	1014.2	26.8	24.8	23.5	83	Trace
19	1013.1	28.0	25.8	24.0	78	1.4
20	1012.9	26.8	25.6	25.0	78	Trace
21	1012.9	25.3	24.7	24.0	85	0.3
22	1013.3	24.5	22.7	21.6	95	36.5
23	1016.2	21.6	20.5	16.7	93	25.9
24	1018.6	19.8	17.3	15.0	76	Trace
25	1016.4	22.3	20.0	17.4	78	0.1
26	1015.9	21.1	17.6	13.3	89	50.3
27	1016.9	19.9	16.2	12.8	83	8.6
28	1020.9	20.1	18.1	16.1	68	0.0
29	1022.3	20.5	19.2	17.5	66	0.0
30	1022.3	22.0	19.7	17.4	64	0.0

Source: Hong Kong Observatory – Hong Kong Observatory

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Appendix L

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

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Environmental Complaints Log

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

Cumulative Statistics on Complaints

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

Cumulative Statistics on Notification of Summons and Successful Prosecutions

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

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Appendix M

Summary of Site Audit in the Reporting Month

Summary of Site Audit in the Reporting Month

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

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Appendix N

Outstanding Issues and Deficiencies

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MaterialLab**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	