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

1st CONSOLIDATED QUARTERLY EM&A REPORT

January 2017 – March 2017

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/0500

Prepared by : Wingo So

Reviewed by : Calvin Leung

Certified by : _____
Colin Yung
Independent Environmental Checker
Fugro Technical Services Limited

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

TABLE OF CONTENTS

LIST OF APPENDICES

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

EXECUTIVE SUMMARY

i. This is the 1st Consolidated Quarterly EM&A Report which summaries the quarterly EM&A works undertaken by respective contracts under the EP-337/2009 within the reporting period between January and March 2017.

Construction Activities for the Reporting Period

ii. The major construction activities undertaken 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);
- Hard landscaping works for Portion F1;
- Earthwork at Portion E3;
- 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:

- Installation of hand-railing & ladder inside Box Culvert B5;
- Construction of staircase and landing and E&M Works at PS2;
- Chamber construction, backfill and sheet pile removal at 7A;
- Chamber construction. segment tunneling, corrugated steel pipe installation at 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;
- Pipe jacking at Pit 4 and 9;
- 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;
- Daily Cleaning;
- Water test, backfill and sheet-pile removal in Heading 7A; and
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;

Contract No. KL/2014/01:

- Watermain works;
- 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;

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

- Open excavation for box culvert, piles caps and underpass;
- ELS installation for box culvert and underpass; and
- Construction of pile caps, sewer and manholes.

Contract No. KL/2014/03:

December 2016

- Temporary utility diversion;
- Implementation of Temporary Traffic Arragement (TTA);
- Construction of Socket H piles;
- Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS).
- Construction of Subway B;
- Construction of guide walls and D-walls; and
- Construction of District Cooling System Works.

January 2017

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

February 2017

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

Contract No. KL/2015/02:

January 2017

- Bored piling works at abutment A02;
- Demolition of existing concrete structure for construction of subway SW6;
- Construction of box culvert b3; and
- Excavation for box culvert b3, b4 & b5

February 2017

- Bored piling works at abutment A02;
- Demolition of existing substructure at the proposed Staircase ST3 of Subway SW6;
- Driving sheet piles at Subway SW6 between Staircases ST2 and ST3;
- Construction of Box Culver B3;
- Excavation and Construction Works for Box Culvert B4;
- Sheetpiling Works at Box Culvert B5;
- Pre-drilling works at Pile Cap S15;
- Drilling works for inclinometer; and
- Trench excavation at Road L7.

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

March 2017

- Bored piling works at abutment A02;
- Carrying out pre-bored works and driving sheet piles at Subway SW6 between Staircases ST2 and ST3;
- Drilling works for standpipe and piezometer;
- Trench excavation for DCS works at Road L7;
- Construction of Box Culvert B3 (Top slab);
- Excavation and Construction Works for Box Culvert B4;
- ELS Works and Excavation Works at Box Culvert B5;
- Excavation Works for Box Culvert B2; and
- ELS Construction for Sewerage Works near SCL Tunnels.

Breaches of Action and Limit Levels for Air Quality

iii. No Action or Limit Level Exceedance of 1-hr TSP monitoring was recorded in the reporting period.

iv. No Action or Limit Level Exceedance of 24hr TSP monitoring was recorded in the reporting period.

Breaches of Action and Limit Levels for Noise

v. No Action or Limit Level Exceedance of noise monitoring was recorded in the reporting period.

Complaint, Notifications of Summons and Successful Prosecutions

vi. No notification of summon or prosecution was received and two complaints received for Contract No. KL/2014/03 in the reporting period.

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

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 (CEDD) has appointed Fugro Technical Services Limited (FTS) to undertake the role of Independent Environmental Checker (IEC) for the Contract No. KL/2015/02.

1.1.5 This is the 1st Consolidated Quarterly EM&A Report which summaries the quarterly EM&A works undertaken by respective contracts under the EP-337/2009 within the reporting period between January and March 2017.

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. Jacky Pun		
IEC (Arcadis)	IEC	Mr. Wong Fu Nam	2911 2744	2805 5028
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 2851	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	
Contract No. KL/2015/02:				
Project Proponent (CEDD)	Senior Engineer	Ms. K. Pong	2301 1466	2369 4980
Engineer's Representative (AECOM)	SRE	Mr. John Yam	2798 0771	2798 0783
IEC (MCL)	IEC	Mr. Colin Yung	3565 4114	2450 8032
ET (Cinotech)	ET Leader	Dr. Priscilla Choy	2151 2089	3107 1388
	Audit Team Leader	Ms. Ivy Tam	2151 2090	
Main Contractor (PWHJV)	Site Agent	Mr. W. M. Wong	6386 3535	2398 8301

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

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 Quarterly EM&A.

1.4 Works undertaken in reporting period

1.4.1 The major construction activities undertaken 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);
- Hard landscaping works for Portion F1;
- Earthwork at Portion E3;
- 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:

- Installation of hand-railing & ladder inside Box Culvert B5;
- Construction of staircase and landing and E&M Works at PS2;
- Chamber construction, backfill and sheet pile removal at 7A;
- Chamber construction. segment tunneling, corrugated steel pipe installation at 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;
- Pipe jacking at Pit 4 and 9;
- 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;
- Daily Cleaning;
- Water test, backfill and sheet-pile removal in Heading 7A; and
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;

Contract No. KL/2014/01:

- Watermain works;
- 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;

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

- Open excavation for box culvert, piles caps and underpass;
- ELS installation for box culvert and underpass; and
- Construction of pile caps, sewer and manholes.

Contract No. KL/2014/03:

December 2016

- Temporary utility diversion;
- Implementation of Temporary Traffic Arragement (TTA);
- Construction of Socket H piles;
- Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS).
- Construction of Subway B;
- Construction of guide walls and D-walls; and
- Construction of District Cooling System Works.

January 2017

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

February 2017

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

Contract No. KL/2015/02:

January 2017

- Bored piling works at abutment A02;
- Demolition of existing concrete structure for construction of subway SW6;
- Construction of box culvert b3; and
- Excavation for box culvert b3, b4 & b5

February 2017

- Bored piling works at abutment A02;
- Demolition of existing substructure at the proposed Staircase ST3 of Subway SW6;
- Driving sheet piles at Subway SW6 between Staircases ST2 and ST3;
- Construction of Box Culver B3;
- Excavation and Construction Works for Box Culvert B4;
- Sheetpiling Works at Box Culvert B5;
- Pre-drilling works at Pile Cap S15;
- Drilling works for inclinometer; and
- Trench excavation at Road L7.

March 2017

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

- Bored piling works at abutment A02;
- Carrying out pre-bored works and driving sheet piles at Subway SW6 between Staircases ST2 and ST3;
- Drilling works for standpipe and piezometer;
- Trench excavation for DCS works at Road L7;
- Construction of Box Culvert B3 (Top slab);
- Excavation and Construction Works for Box Culvert B4;
- ELS Works and Excavation Works at Box Culvert B5;
- Excavation Works for Box Culvert B2; and
- ELS Construction for Sewerage Works near SCL Tunnels.

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

2. ENVIRONMENTAL MONITORING & AUDIT

2.1 Results and Observations

2.1.1 Contract No. KL/2010/03:

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

2.1.2 Contract No. KL/2012/02:

Air Quality
- No Action/ Limit Level exceedance was recorded in the reporting period.

Construction Noise
- No Action/ Limit Level exceedance was recorded in the reporting period.

Landscape and Visual
- No non-compliance of the landscape and visual impact was recorded in the reporting period.

2.1.3 Contract No. KL/2012/03:

Air Quality
1-hour TSP Monitoring
- Most 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. 1-hour TSP monitoring at AM4(A) – EMSD Workshop was cancelled on 29 December 2016 due to unsuccessful accessibility to the facility. 1-hr TSP monitoring was conducted at AM4(B) – Ma Tau Kok Road (next to EMSD workshop) temporarily in January and February 2017.

24-hour TSP Monitoring
- Most 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. 24-hour TSP monitoring at AM4(A) – EMSD Workshop was cancelled on 28 December 2016 due to unsuccessful accessibility to the facility. The alternative monitoring location was pending in January and February 2017.

Construction Noise
- All construction noise monitoring was conducted as scheduled in the reporting quarter. No Action and Limit Level exceedance was recorded.

Landscape and Visual
- Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures of this project. No noncompliance of the landscape and visual impact was recorded in the reporting quarter.

2.1.4 Contract No. KL/2014/01:

- No monitoring for air quality and construction noise is required for the Project. No Action/Limit Level exceedance was recorded.

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

2.1.5 Contract No. KL/2014/03:

- No Action and Limit Level exceedance for 24-hr TSP and noise was recorded in the reporting period at all monitoring stations.

2.1.6 Contract No. KL/2015/02:

Air Quality
- No Action/ Limit Level exceedance was recorded in the reporting period.

Construction Noise
- No Action/ Limit Level exceedance was recorded in the reporting period.

Landscape and Visual
- No non-compliance of the landscape and visual impact was recorded in the reporting period.

2.1.7 Summary of exceedances and graphical presentations are presented in the appendices of the corresponding Quarterly EM&A reports.

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

3. ENVIRONMENTAL SITE INSPECTION AND AUDIT

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:
During site inspections in the reporting period, no non-conformance was identified.

Contract No. KL/2012/03:
During site inspections in the reporting period, no non-conformance was identified.

Contract No. KL/2014/01:
Site audits were carried out on a weekly basis. During site inspections in the reporting period, no non-conformance was identified.

Contract No. KL/2014/03:
No outstanding issues were reported during the reporting period.

Contract No. KL/2015/02:
During site inspections in the reporting period, no non-conformance was identified.

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 Quarterly EM&A Reports.

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 Quarterly EM&A Reports.

Table 4.1 Summary of Complaints, Notification of Summons and Prosecution

Event	No. of Event(s) This Reporting Period	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	2	Detailed refer to section 4.1.2.
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	2	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. KL/2015/02:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA

4.1.2 Contract No. KL/2014/03:

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

4.1.2.2. A complaint received on 9 February 2017 was referred from EPD on 21 February 2017 and summarized as below:

- No car washing machine was found in the construction site near the gate of former Radar Tower (hereinafter referred to as " the Site").
- Dust was observed when the vehicle leaving and entering the Site.

The notification of complaint was received by ET on 22 February 2017.

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

5.1 Implementation Status

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 Quarterly EM&A Reports**.**

5.2 Waste Management

The amount of wastes generated of relevant Contracts is shown in the appendices of the corresponding Quarterly EM&A Reports.

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

6. CONCLUSIONS

6.1.1 No Action or Limit Level Exceedance of 1-hr TSP monitoring was recorded in the reporting period.

6.1.2 No Action or Limit Level Exceedance of 24hr TSP monitoring was recorded in the reporting period.

6.1.3 No Action or Limit Level Exceedance of noise monitoring was recorded in the reporting period.

6.1.4 No notification of summons or prosecution was received and two complaints received for Contract No. KL/2014/03 in the reporting period.

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

Appendix A

Monthly EM&A Report
For
Contract No. KL/2012/02
Kai Tak Development - Stage 3A Infrastructure at North Apron Area

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

Quarterly EM&A Report

November 2016 to January 2017

(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

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

ANEWR

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

Your reference:

Our reference: HKCEDD04/50/104130

Date: 23 February 2017

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 Quarterly EM&A Report (November 2016 to January 2017)

We refer to the email of 17 February 2017 attaching a Quarterly EM&A Report (November 2016 to January 2017) prepared by the ET.

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

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

Yours faithfully
ANEWR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/LYMA/ACCF/csym

ANewR Consulting Limited
Unit 517, 5/F, Tower A, Regent Centre
63 Wo Yi Hop Road, Kwai Chung, Hong Kong
Tel: (852) 2618 2836 Fax: (852) 3007 8648
Email: info@anewr.com
Web: www.anewr.com

ISO 9001 : 2008
Certificate No.: CC 3988

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ANNEXES

EXECUTIVE SUMMARY

Introduction

1. This is the 13th Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the "Contract No. KL/2012/02 - Kai Tak Development – Stage 3A Infrastructure at Former North Apron Area" (hereinafter called "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 summary report presents the EM&A works performed in the period between 1st November 2016 and 31st January 2017.

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 construction activities undertaken in the reporting period were:
   - Site Clearance;
   - RC works for VT1 at Portion G;
   - Drainage works for connection to box culvert (KTOB);
   - Hard landscaping works for Portion F1;
   - Earthwork at Portion E3;
   - 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 period for the Project is tabulated in Table II.

Table II Non-compliance Record for the Project in the Reporting Period

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
November 2016			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
December 2016			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
January 2017			
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 period. No Action/Limit Level exceedance was recorded.

Construction Noise

8. All construction noise monitoring was conducted as scheduled in the reporting period. 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, GW-RE1154-16, GW-RE1197-16, GW-RE0069-17 & GW-RE0070-17).

Key Information in the Reporting Period

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

Table III Summary Table for Key Information in the Reporting Period

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	---

14. Environmental monitoring works for the Project are considered effective and is generating data to categorically identify the environmental impacts from the works and influencing factors in the vicinity of monitoring stations.

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 Kaden 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 Kaden 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 summary report presents the EM&A works performed in the period between 1st November 2016 and 31st January 2017.

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

2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

2.1 The EM&A Manual designates locations for the ET to monitor environmental impacts in terms of air quality, noise, landscape and visual due to the Project. The Project area and monitoring locations are depicted in **Figures 2 and 3**. **Appendix A** gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

2.2 Monitoring works/equipments were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates are attached in the appendices of the Monthly EM&A Reports.

Environmental Quality Performance Limits (Action and Limit Levels)

2.3 The environmental quality performance limits, i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix B**.

Implementation Status of Environmental Mitigation Measures

2.4 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manual for the Contractor to implement. The implementation status of environmental mitigation measures (EMIS) is given in **Appendix E**.

Site Audit Summary

2.5 During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations made during the reporting period are summarized in **Appendix F**.

Status of Waste Management

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

3. Monitoring Results

Weather Conditions

3.1 The weather during monitoring sessions was summarized in Table 3.1.

Table 3.1 Summary of Weather Conditions in the Reporting Period

Reporting Month	General Weather Conditions
November 2016	Fine and Cloudy
December 2016	Fine and Cloudy
January 2017	Fine and Cloudy

3.2 The detail of weather conditions for each individual monitoring session was presented in monthly EM&A report.

Air Quality

1-hour TSP Monitoring

3.3 1-hour TSP monitoring at 2 monitoring stations, AM1(B) – Contractor Site Office and AM2 - Lee Kau Yan Memorial School, was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting period.

24-hour TSP Monitoring

3.4 24-hr TSP monitoring at 2 monitoring stations, AM1(B) and AM2, was also conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting period.

3.5 The graphical presentations of the air quality monitoring results are shown in **Appendix C**.

Construction Noise

3.6 Noise monitoring at 3 monitoring stations, M3 – Cognitio College, M4 – Lee Kau Yan Memorial College and M9 – Tak Long Estate, was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for construction noise monitoring in the reporting period.

3.7 The graphical presentations of the noise monitoring results are shown in **Appendix D**.

Landscape and Visual

3.8 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within KTD. No non-compliance of the landscape and visual impact was recorded in the reporting period.

Influencing Factors on the Monitoring Results

3.9 During the reporting period, the major dust and noise source identified at the designated monitoring stations are as follows:

Table 3.2 Major Dust Sources during the Monitoring in the Reporting Period

Monitoring Stations	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

Table 3.3 Major Noise Sources during the Monitoring in the Reporting Period

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

Comparison of EM&A results with EIA predictions

3.10 The EM&A data was compared with the EIA predictions and summarized in **Annex I**.

3.11 The 1-hour and 24-hour average TSP concentration in the reporting period were well below and within the prediction in the approved Environmental Impact Assessment (EIA) Report and no Action/Limit Level exceedance was recorded.

3.12 Mitigated construction noise levels at M9 were not predicted in EIA Report. The noise monitoring results in the reporting month at M3 were not within the range of predicted mitigated construction noise levels in the EIA report in the reporting period. The noise monitoring results in the reporting month at M4 were not within the range of predicted mitigated construction noise levels in the EIA report in the reporting period. The noise data at M3 and M4 exceeds the prediction of mitigated scenario in EIA report but did not exceed the baseline level.

3.13 The discrepancy between the EM&A data and EIA predictions is considered due to road traffic noise from Prince Edward Road East which is the major noise source during the monitoring.

4. Non-compliance (exceedances) of the Environmental Quality Performance Limits (Action and Limit Levels)

Summary of Exceedances

4.1 Environmental monitoring works were performed in the reporting period and all monitoring results were checked and reviewed. A summary of exceedances is attached in **Appendix H**. The details of each exceedance were attached in the Monthly EM&A Reports.

Air Quality

4.2 No Action/ Limit Level exceedance was recorded in the reporting period.

Construction Noise

4.3 No Action/ Limit Level exceedance was recorded in the reporting period.

Landscape and Visual

4.4 No non-compliance of the landscape and visual impact was recorded in the reporting period.

Review of the Reasons for and the Implications of Non-compliance

4.5 There was no non-compliance from the site audits in the reporting period. The observations and recommendations made in each individual site audit session were attached in the **Appendix F**.

Summary of Environmental Complaints and Prosecutions

4.6 No environmental complaints and environmental prosecution were received during the reporting period.

4.7 No warning, summon and notification of successful prosecution was received in the reporting period.

4.8 There were no warnings, summons and successful prosecutions received since the commencement of the Project.

5. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

Effectiveness of Mitigation Measures

5.1 The mitigation measures recommended in the EIA report are considered effective in minimizing environmental impacts.

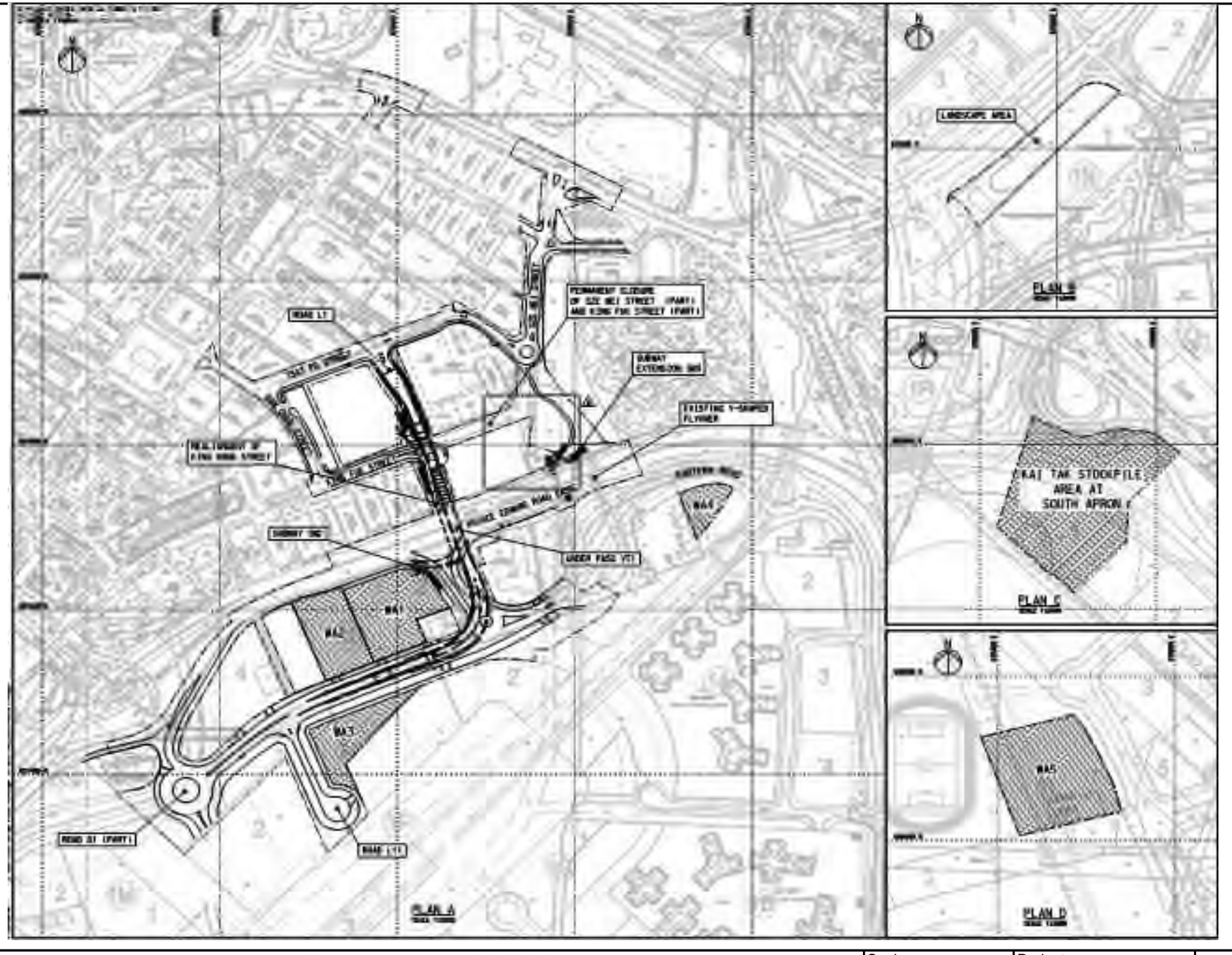
5.2 The Contractor has implemented the recommended mitigation measures except those mitigation measures not applicable at this stage.

5.3 Environmental monitoring works were performed in the reporting period and all monitoring results were checked and reviewed. No non-compliance (exceedances) of Action/Limit Level was recorded.

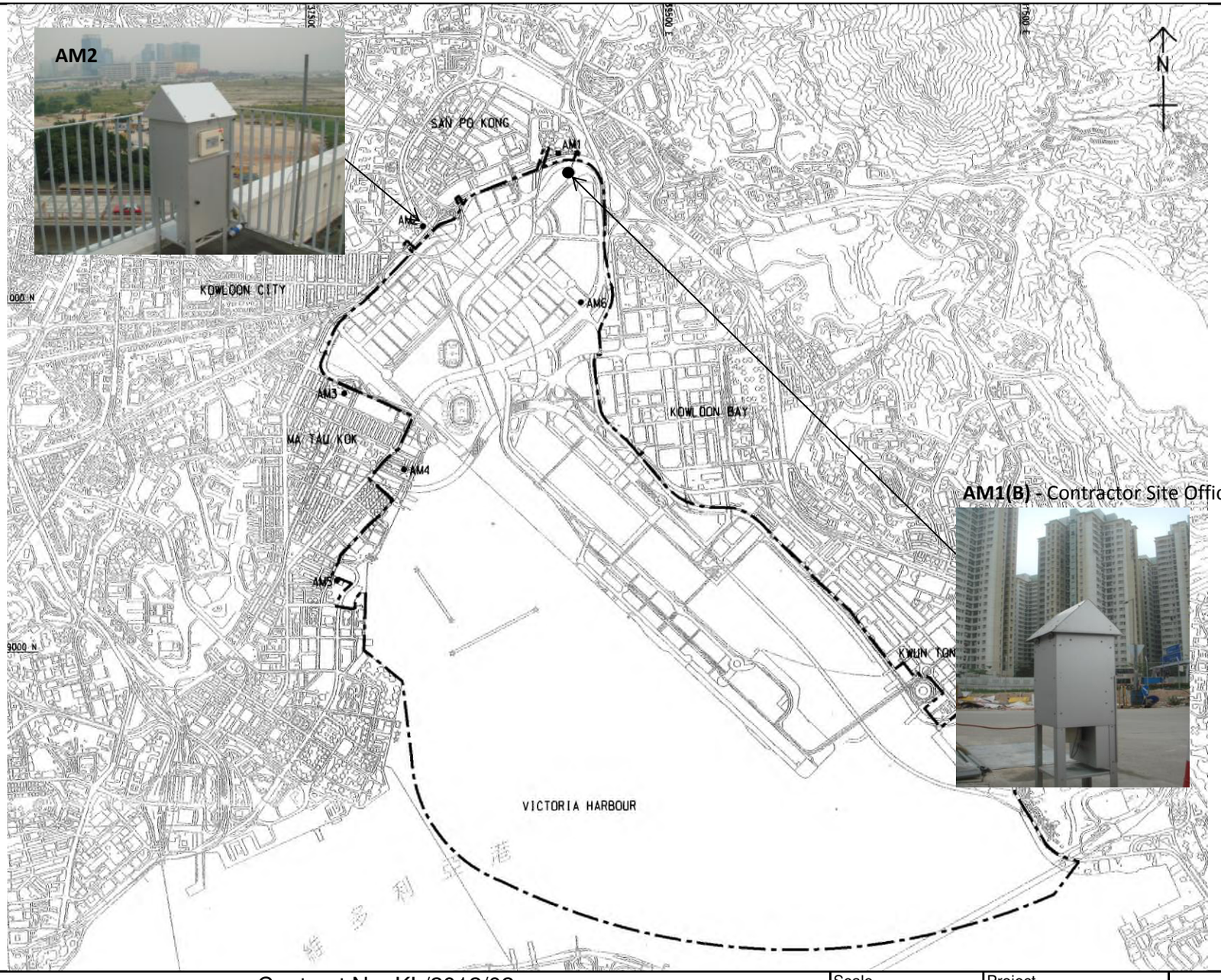
5.4 No environmental complaint was received in the reporting period.

5.5 No environmental prosecution was received in the reporting period.

FIGURES

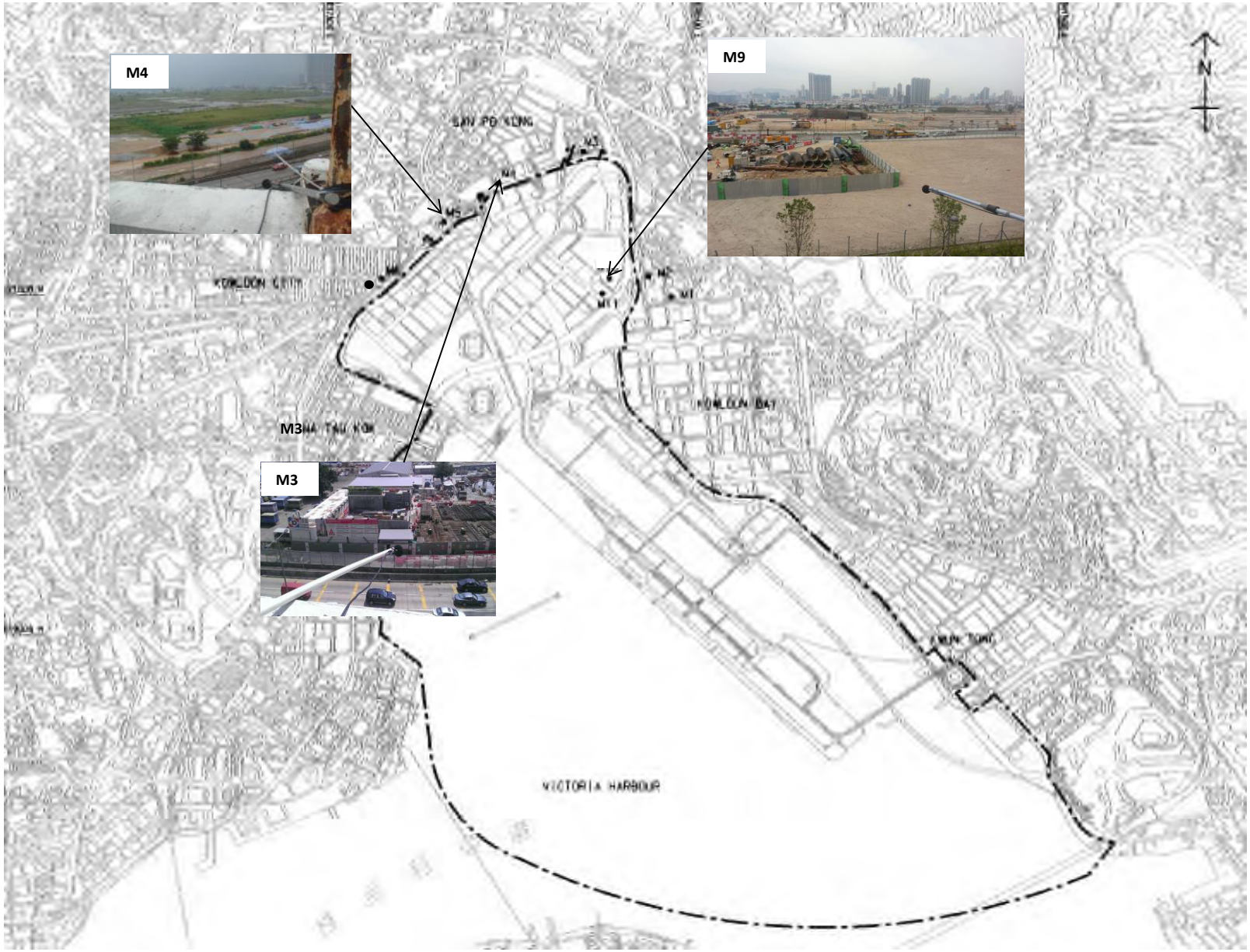


Title	Contract No. KL/2012/02	Scale N.T.S	Project No. MA13043
	Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area	Date Aug-13	Figure 1
	Site Layout Plan		CINOTECH



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

Title: Contract No. KL/2012/02 Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area Air Quality Monitoring Stations under Contract No.: KLN/2010/04	Scale: N.T.S	Project No.: MA13043	CINOTECH
	Date: Aug-13	Figure: 2	



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 Date: Dec-16	Project No.: MA13043 Figure: 3

CINOTECH

APPENDIX A
MONITORING REQUIREMENTS

Appendix A - Environmental Impact Monitoring Requirements

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Air Quality	1 hour TSP	Three times / 6 days	• AM1(B) – Contractor site office (KL/2012/02) • AM2 – Lee Kau Yan Memorial School • #AM6 – PA 15	• AM1(B) – Ground Floor Area • AM2 – Rooftop (about 8/F) Area • #AM6 – Site 1B4 (Planned)
	24 hour TSP	Once / 6 days		

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

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Construction Noise	L_{eq}, L_{90} & L_{10} at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	• M3 (Cognitio College) • M4 (Lee Kau Yan Memorial School) • M9 (Tak Long Estate) • #M10 (Site 1B4 (Planned))	• M3 - Facade measurement at Rooftop (about 6/F) Area • M4 - Facade measurement at Rooftop (about 7/F) Area • M9 - Facade measurement at Car Park Building (about 2/F)

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

APPENDIX B
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

Appendix B - Action and Limit Levels

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

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM1(B)	342	500
AM2	346	

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

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM1(B)	159	260
AM2	157	

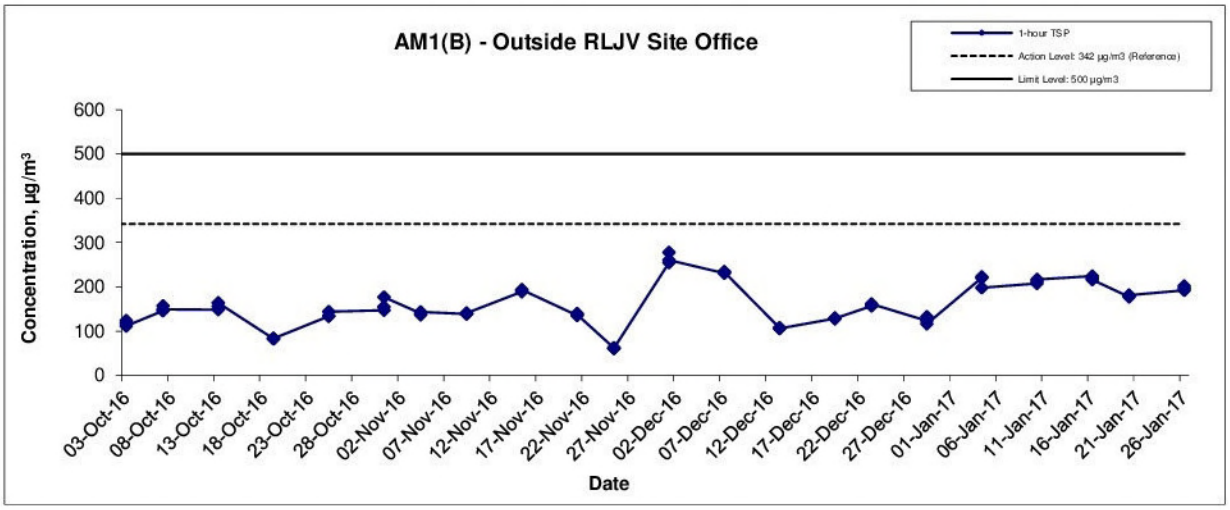
Table B-3 Action and Limit Levels for Construction Noise

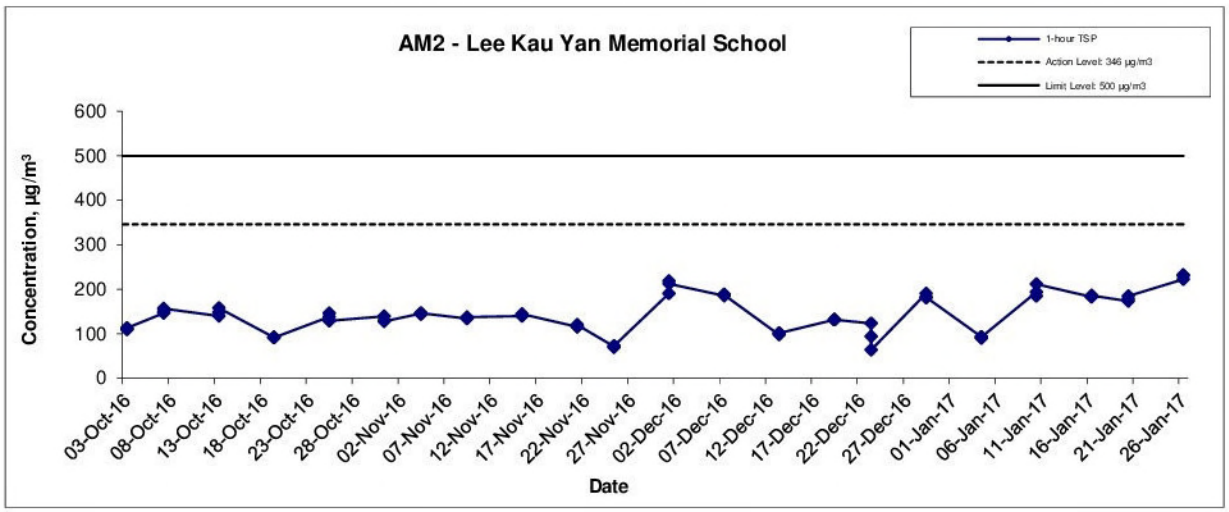
Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

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 C
GRAPHICAL PRESENTATION OF AIR QUALITY MONITORING RESULTS

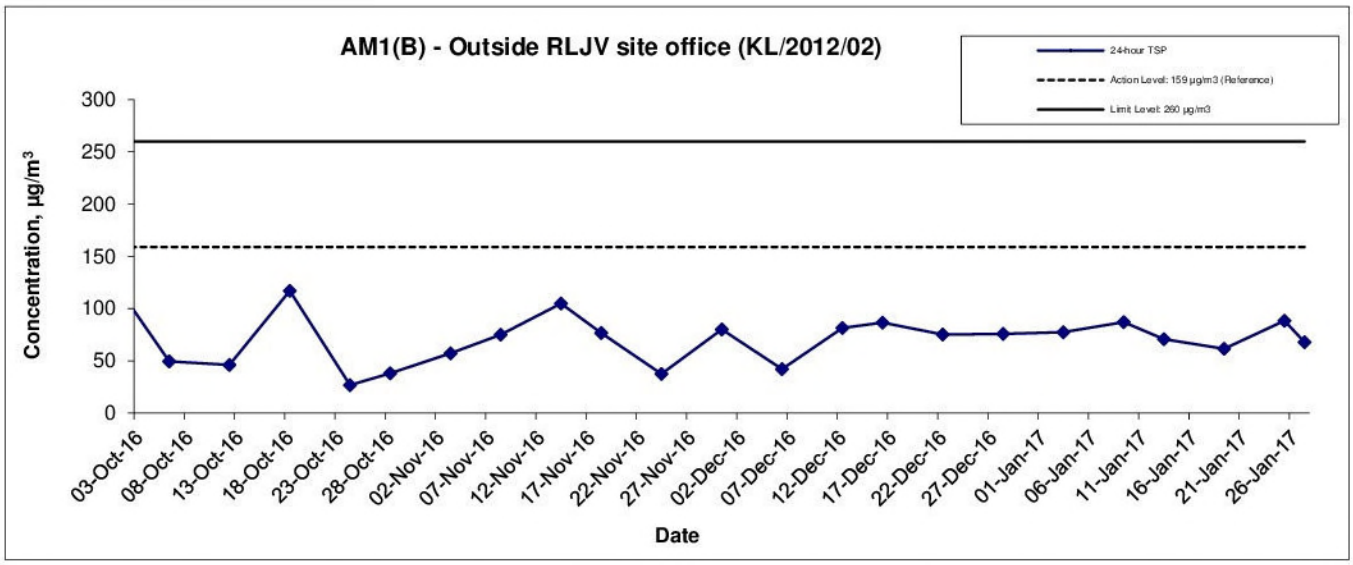
1-hr TSP Concentration Levels

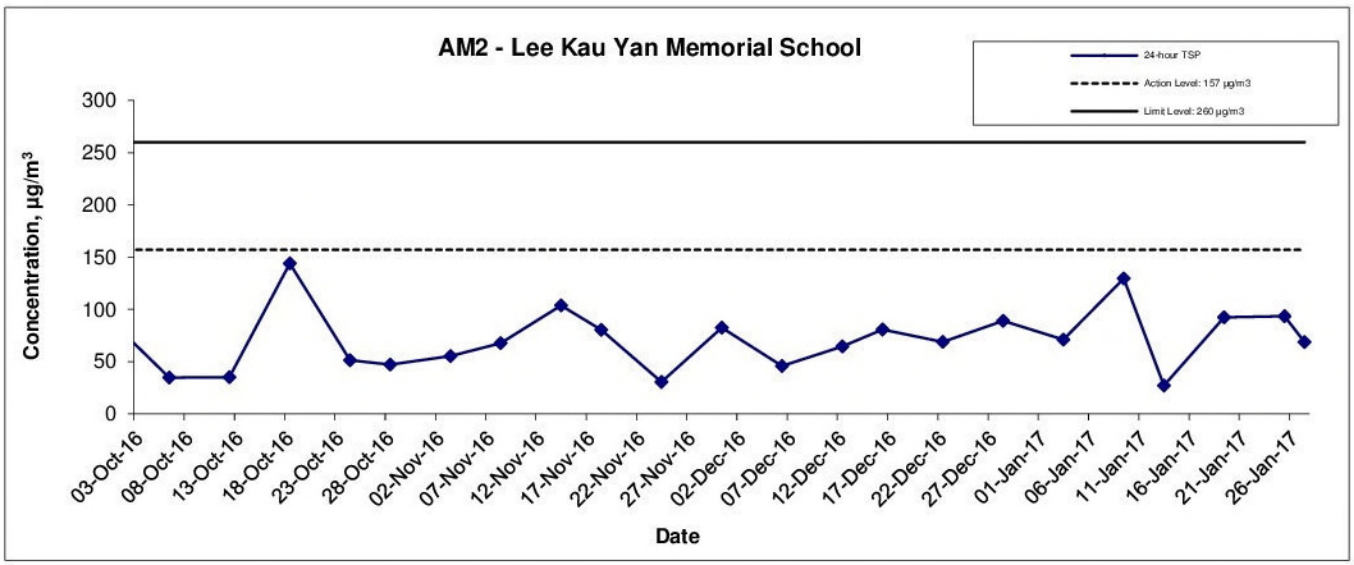




Title: Contract No. KL/2012/02 Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Jan 17	Project No.: MA13043 Appendix: C	CINOTECH

24-hr TSP Concentration Levels

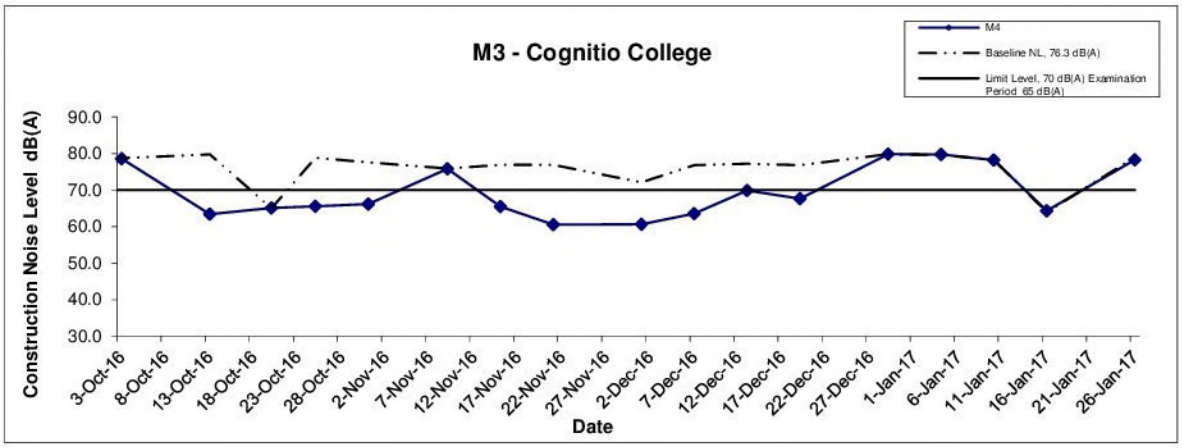


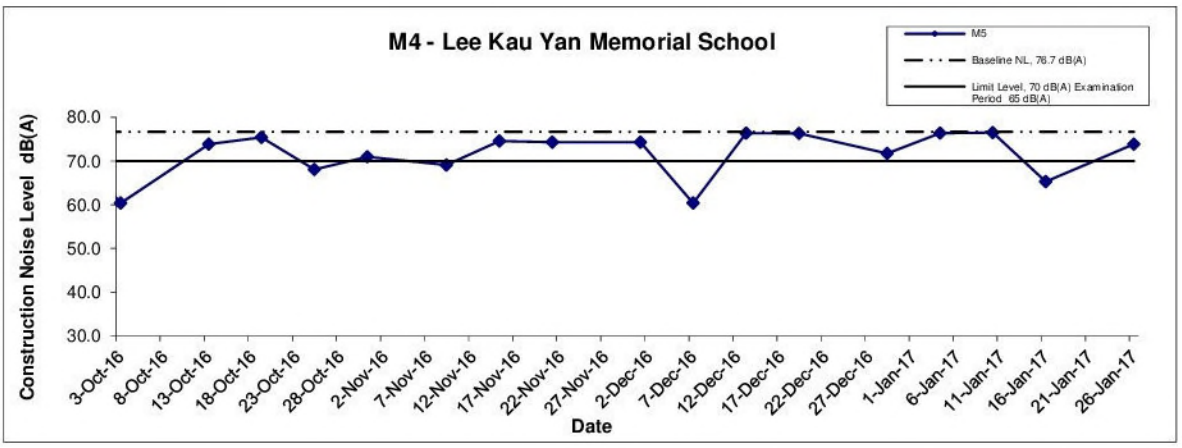


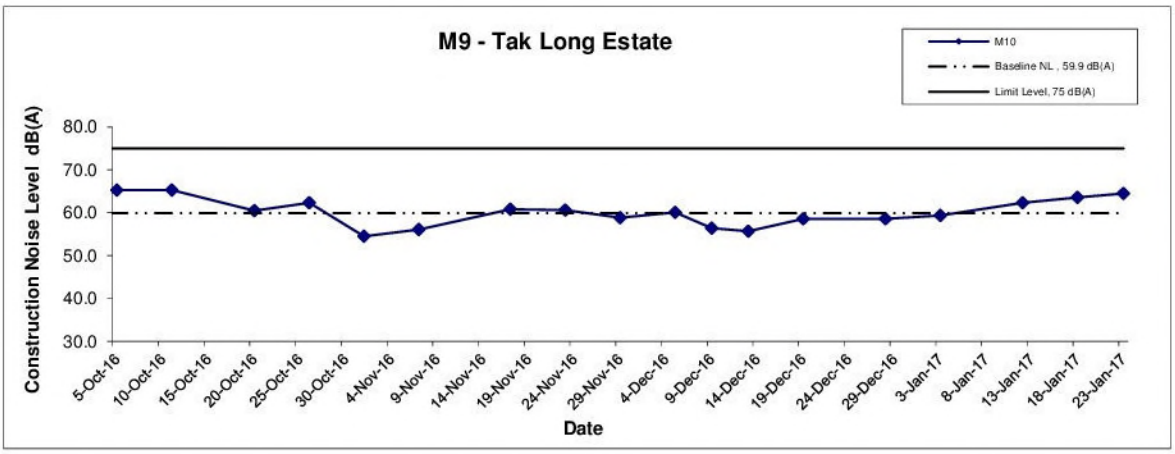
Title: Contract No. KL/2012/02 Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Jan 17	Project No.: MA13043 Appendix: C	CINOTECH

APPENDIX D
GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS

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: Jan 17	Appendix: D	

APPENDIX E
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

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

Types of Impacts	Mitigation Measures	Status
Construction Dust	8 times daily watering of the work site with active dust emitting activities. Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts. • Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. • Misting for the dusty material should be carried out before being loaded into the vehicle. • 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. On-site unpaved roads should be compacted and kept free of lose materials. • 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. • 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	^ * ^ ^ N/A

	efficiency deodorizers before discharge to the atmosphere. • Desilting compound for KTN: Two desilting compounds are proposed for KTN (at Site 1D6 and Site 1P1) 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 KTN and hence fully mitigate the potential odour emissions from the headspace of KTN 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 efficiency deodorizers before discharge to the atmosphere. • Decking or reconstruction of KTN within apron area: it is proposed to deck the KTN or reconstruct the KTN within the former Apron area into Kai Tak River from the south of Road D1 to the north of Road D2 along the existing alignment of KTN. The Kai Tak River will compose of a number of channels flowing with non-odorous fresh water and THEES effluent. The channel flowing with THEES effluent will be designed with the width of water surface of not more than 16m.	N/A N/A

	• Localised maintenance dredging: Localised maintenance dredging should be conducted to provide water depth of not less than 3.5m over the whole of KTAC and KTTS. With reference to the water depth data recorded during the odour survey, only some of the areas in the northern part of KTAC (i.e. to the north of taxiway bridge) including the area near the northern edge of KTAC, the area near western bank of KTAC, and the area near the JVC discharge have water depths shallower than 3.5m. The area involved would be about 40% of the northern KTAC and the dredging depth required would be from about 2.7m to less than 1m. The maintenance dredging to be carried out prior to the occupation of any new development in the immediate vicinity of KTAC to avoid potential localized odour impacts at the future ASRs during the maintenance dredging operation.	N/A
	• Improvement of water circulation in KTAC and KTTS: 600m gap opening at the northern part of the former Kai Tak runway, the water circulation in KTAC and KTTS would be substantially improved. Together with the improvement in water circulation, the DO level in KTAC and KTTS would also be increased.	N/A
	• In-situ sediment treatment by bioremediation: Bioremediation would be applied to the entire KTAC and KTTS.	N/A

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. • 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.	^ N/A(1) ^ ^ ^ ^
	Scheduling of Construction Works during School Examination Period	^
	(i) Provision of low noise surfacing in a section of Road L2; and	N/A
	(ii) Provision of structural fins	N/A

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

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

Construction Water Quality	The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including: • Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply; • Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps; • An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and • For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided so that swift actions could be taken in case of malfunction of unmanned facilities. **Construction Phase** Marine-based Construction *Capital and Maintenance Dredging for Cruise Terminal* Mitigation measures for construction of the proposed cruise terminal should follow those recommended in the approved EIA for CT Dredging.	N/A N/A N/A N/A N/A

	Fireboat Berth, Runway Opening and Road T2	
	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.	N/A
	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 1,000m^3 per day using one grab dredger.	N/A
	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 2,000m^3 per day using one grab dredger.	N/A
	Dredging for Road T2 should be conducted at a maximum rate of 8,000m^3 per day (using four grab dredgers) whereas the sand filling should be conducted at a maximum rate of 2,000m^3 per day (using two grab dredgers).	N/A (1)
	Silt screens shall be applied to seawater intakes at WSD seawater intake.	N/A

	Land-based Construction *Construction Runoff* Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include: • use of sediment traps • adequate maintenance of drainage systems to prevent flooding and overflow Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	^ ^ ^

	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. 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.	^
	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.	^
	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.	^

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

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

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

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

	Good Site Practices It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include: • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site • Training of site personnel in proper waste management and chemical waste handling procedures • Provision of sufficient waste disposal points and regular collection for disposal • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers • A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)	^ ^ ^ ^ ^

	Waste Reduction Measures Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: • Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal • Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force • Any unused chemicals or those with remaining functional capacity should be recycled • Proper storage and site practices to minimise the potential for damage or contamination of construction materials Dredged Marine Sediment 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)	^ * ^ ^ ^ N/A

	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	N/A

	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:	
	• 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	N/A
	• 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	N/A
	• 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	N/A

	Construction and Demolition Material Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: • Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric • Skip hoist for material transport should be totally enclosed by impervious sheeting • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet • The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading	^ ^ ^ ^ ^ ^ ^ ^

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

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

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

APPENDIX F
SITE AUDIT SUMMARY

Appendix F Summary of Observation and Recommendation Made during Site Inspection

Summary of Observation and Recommendation Made during Site Inspection in November 2016

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Air Quality	25 October 2016	Reminder: 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	Reminder: 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	Reminder: 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	Reminder: 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	Reminder: 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	Reminder: The dusty material on the access road near T.I. Tower should be cleared.	Follow-up action will be reportinged in the next reportinging month.
Noise	--	--	--
Waste/ Chemical Management	22 November 2016	Observation: 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	Reminder: General refuse at VT1 & SW3 should be properly disposed of to prevent accumulation.	This item was remarked on 30 November 2016.
	30 November 2016	Reminder: Waste sorting area should be provided for the waste stored near King Fuk Street prior disposal.	Follow-up action will be reportinged in the next reporting month.
	30 November 2016	Reminder: General refuse at SW3 should be properly disposed of to prevent accumulation.	Follow-up action will be reportinged in the next reporting month.
Landscape and Visual	16 November 2016	Reminder: The damaged fencing for tree protection zone at SW3 should be repaired.	Rectification/improvement was observed during the follow-up audit session.
Permits/ Licenses	--	--	--

Summary of Observation and Recommendation Made during Site Inspection in December 2016

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Air Quality	30 November 2016	Observation: The haul road of Sze Mei Street should be properly maintained and the dusty trail should be cleared.	Rectification/improvement was observed during the follow-up audit session.
	30 November 2016	Reminder: The dusty material on the access road near T.I. Tower should be cleared.	Rectification/improvement was observed during the follow-up audit session.
	7 December 2016	Reminder: The stockpile of dusty material placed near Concorde Road should be properly covered to prevent dust generation.	Rectification/improvement was observed during the follow-up audit session.
	28 December 2016	Observation: Dust suppression measures should be provided to supress the dust generation arise from the construction works at VT1.	Follow-up action will be reportinged in the next reporting month.
Noise	--	--	--
Waste/ Chemical Management	30 November 2016	Reminder: Waste sorting area should be provided for the waste stored near King Fuk Street prior disposal.	Rectification/improvement was observed during the follow-up audit session.
	30 November 2016	Reminder: General refuse at SW3 should be properly disposed of to prevent accumulation.	Rectification/improvement was observed during the follow-up audit session.
	21 December 2016	Reminder: General refuse at VT1 should be properly disposed of to prevent accumulation.	Rectification/improvement was observed during the follow-up audit session.
Landscape and Visual	28 December 2016	Reminder: The fencing of tree protection zone at SW3 should be properly erected and maintained.	Follow-up action will be reportinged in the next reporting month.
Permits/ Licenses	--	--	--

Summary of Observation and Recommendation Made during Site Inspection in January 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Air Quality	28 December 2016	Observation: Dust suppression measures should be provided to supress the dust generation arise from the construction works at VT1.	Rectification/improvement was observed during the follow-up audit session.
	4 January 2017	Reminder: The stockpiles of dusty material should be provided by impervious material to prevent the dusty emission near PERE, carpark, near VT1 and near Tsat Po Street.	Rectification/improvement was observed during the follow-up audit session.
	11 January 2017	Observation: The accumulated muddy track on the haul road near the site entrance adjacent to the carpark should be cleared.	Rectification/improvement was observed during the follow-up audit session.
	24 January 2017	Observation: Dusty stockpile placed at SW3 should be properly covered to suppress dust generation.	Follow-up action will be reportinged in the next reporting month.
Noise	--	--	--
Waste/ Chemical Management	4 January 2017	Reminder: The construction waste should be cleared properly and regularly to prevent the accumulation at SW3.	Rectification/improvement was observed during the follow-up audit session.
	24 January 2017	Observation: Wastes and construction materials at VT1 and near Tsat Po Street should be removed to prevent accumulation.	Follow-up action will be reportinged in the next reporting month.
	24 January 2017	Reminder: Chemical containers placed in SW3 should be properly removed or stored at appropriate storage area.	Follow-up action will be reportinged in the next reporting month.
Landscape and Visual	28 December 2016	Reminder: The fencing of tree protection zone at SW3 should be properly erected and maintained.	Rectification/improvement was observed during the follow-up audit session.
	11 January 2017	Reminder: The fencing of tree protection zone near VT1 should be properly erected and maintained.	This item was remarked on 18 January 2017.
	18 January 2017	Reminder: The fencing of tree protection zone near VT1 should be properly erected and maintained.	Follow-up action will be reportinged in the next reporting month.
Permits/ Licenses	--	--	--

APPENDIX G
WASTE GENERATED QUANTITY

Name of Department : Civil Engineering and Development Department / Kowloon Development Office **Contract No. : KL/2012/02**

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.

Name of Department : Civil Engineering and Development Department / Kowloon Development Office **Contract No. : KL/2012/02**

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	3.83480	0	0	2.99000	0.04620	0	0	0	0	0	0.79860
TOTAL	47.12765	0	0	42.67006	0.71983	0	0	0	0	0	3.73777

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.

Name of Department : Civil Engineering and Development Department / Kowloon Development Office **Contract No. : KL/2012/02**

MONTHLY SUMMARY WASTE FLOW TABLE FOR 2017 (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	3.72310	0	0	0.15500	3.40455	0	0	0	0	0	0.16355
FEB											
MAR											
APR											
MAY											
JUNE											
SUB-TOTAL	3.72310	0	0	0.15500	3.40455	0	0	0	0	0	0.16355
JULY											
AUG											
SEPT											
OCT											
NOV											
DEC											
TOTAL	3.72310	0	0	0.15500	3.40455	0	0	0	0	0	0.16355

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.

APPENDIX H
SUMMARY OF EXCEEDANCES

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 period)

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

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

ANNEX I
COMPARISON OF EM&A DATA AND EIA PREDICTIONS

Annex I – Comparison of EM&A Data and EIA Predictions

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 (Nov 16), µg/m3**	**Reporting Month (Dec 16), µg/m3**	**Reporting Month (Jan 17), µg/m3**
AM1(B) – Contractor Site Office of KL/2012/02	192	298	134.1	169.3	204.5
AM2 – Lee Kau Yan Memorial School	290	312	122.0	150.6	175.8

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 (Nov 16), µg/m3**	**Reporting Month (Dec 16), µg/m3**	**Reporting Month (Jan 17), µg/m3**
AM1(B) – Contractor Site Office of KL/2012/02	121	156	72.0	72.3	75.5
AM2 – Lee Kau Yan Memorial School	145	169	70.0	69.8	80.4

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)**	**Reporting Month (Dec 16), $L_{eq\ (30min)}$ dB(A)**	**Reporting Month (Jan 17), $L_{eq\ (30min)}$ dB(A)**
M3- Cognitio College	47 – 75	60.6 – 75.8(1)	72.4 – 79.8(1)	52.5 – 78.3(1)
M4 - Lee Kau Yan Memorial School	47 – 74	69.1 – 74.6(2)	74.3 – 77.9(2)	65.3 – 76.5(2)
M9 – Tak Long Estate	Not Predicted in EIA Report	54.5 – 60.8	55.7 – 63.0	58.6 – 62.7

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.

FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

Appendix B

Monthly EM&A Report
For
Contract No. KL/2012/03
Kai Tak Development - Stage 4 Infrastructure at North Apron Area

Civil Engineering and Development Department

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

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

Quarterly EM&A Summary Report

December 2016 – February 2017

(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

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

ARCADIS DESIGN & ENGINEERING LIMITED

20/F, AXA Tower,
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong

Tel +852 2911 2233
Fax +852 2805 5028
arcadis.com

By Email

Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, New Territories

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 Quarterly EM&A Summary Report (December 2016-February 2017)
(Ref. Draft_Mrpt1612_v1.0_revised)

Our ref: EB001399-320/THW17-33706
Your ref:
Date: 10 July 2017

Dear Dr. Choy,

We have no adverse comments on the captioned report, which was received via e-mail dated 7 July 2017 and hereby verify the report.

Should you have 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

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ANNEXES

EXECUTIVE SUMMARY

Introduction

1. This is the 13th Quarterly Environmental Monitoring and Audit 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 summary report presents the EM&A works performed in the period between December 2016 and February 2017.

Environmental Monitoring Works

2. 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.

3. Summary of the non-compliance in the reporting quarter for the Project is tabulated in Table I.

Table I Non-compliance Record for the Project in the Reporting Quarter

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
December 2016			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
January 2017			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
February 2017			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A

4. No exceedance was recorded at any air quality or noise monitoring station during the reporting period.

Key Information in the Reporting Quarter

5. Summary of key information in the reporting quarter is tabulated in Table II.

Table II Summary Table for Key Information in the Reporting Quarter

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	---

6. Environmental monitoring works for the Project are considered effective and are generating data to categorically identify the environmental impacts from the works and influencing factors in the vicinity of monitoring stations.

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. The general layout of the Project is shown in **Figure 1.**

1.2 The construction activities undertaken in the reporting quarter were:

- Installation of hand-railing & ladder inside Box Culvert B5;
- Construction of staircase and landing and E&M Works at PS2;
- Chamber construction, backfill and sheet pile removal at 7A;
- Chamber construction. segment tunneling, corrugated steel pipe installation at 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;
- Pipe jacking at Pit 4 and 9;
- 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;
- Daily Cleaning;
- Water test, backfill and sheet-pile removal in Heading 7A; and
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;

1.3 Cinotech Consultants Limited (Cinotech) was commissioned by Kwan On Construction Co., Ltd. (the Contractor) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2012/03 - Stage 4 Infrastructure at Former North Apron Area. The construction work under KL/2012/03 comprises the construction of Road D2 & Sewage Pumping Station PS2 and PS NPS which forms a part of the works under two EPs (EP-337/2009 and EP-344/2009).

1.4 The construction commencement of this Contract was on 1st December 2013 for Road D2, Sewage Pumping Station PS2 and PS NPS. This summary report presents the EM&A works performed in the period between December 2016 and February 2017.

Project Organizations

1.5 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).

1.6 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. C. K. Choi	Senior Engineer	2301 1174	2301 1277
AECOM	Engineer's Representative	Mr. John Yam	SRE	2798 0771	3013 8864
		Mr. Jacky Pun	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)	

2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

2.1 The EM&A Manual designates locations for the ET to monitor environmental impacts in terms of air quality, noise, landscape and visual due to the Project. The Project area and monitoring locations are depicted in **Figures 2 and 3**. **Appendix A** gives details of monitoring requirements.

Environmental Quality Performance Limits (Action and Limit Levels)

2.2 The environmental quality performance limits, i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix B**.

Implementation Status of Environmental Mitigation Measures

2.3 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manual for the Contractor to implement. The implementation status of environmental mitigation measures (EMIS) is given in **Appendix E**.

Site Audit Summary

2.4 During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations made during the reporting period are summarized in **Appendix F**.

Status of Waste Management

2.5 The amount of wastes generated by the major site activities of this Project during the reporting quarter is shown in **Appendix G**.

3. MONITORING RESULTS AND NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

3.1 Environmental monitoring works were performed in the reporting period and all monitoring results were checked and reviewed. A summary of exceedances is attached in **Appendix H**.

Weather Conditions

3.2 The detail of weather conditions for each individual monitoring session was presented in monthly EM&A report.

Air Quality

1-hour TSP Monitoring

3.3 Most 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. 1-hour TSP monitoring at AM4(A) – EMSD Workshop was cancelled on 29 December 2016 due to unsuccessful accessibility to the facility. 1-hr TSP monitoring was conducted at AM4(B) – Ma Tau Kok Road (next to EMSD workshop) temporarily in January and February 2017.

24-hour TSP Monitoring

3.4 Most 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. 24-hour TSP monitoring at AM4(A) – EMSD Workshop was cancelled on 28 December 2016 due to unsuccessful accessibility to the facility. The alternative monitoring location was pending in January and February.

3.5 The graphical presentations of the air quality monitoring results are shown in Appendix C.

Construction Noise

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

3.7 The graphical presentations of the noise monitoring results are shown in **Appendix D**.

Landscape and Visual

3.8 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures of this project. No non-compliance of the landscape and visual impact was recorded in the reporting quarter.

Influencing Factors on the Monitoring Results

3.9 During the reporting period, the major dust and noise sources identified at the designated monitoring stations are as follows:

Table 3.1 Major Dust Sources in the Reporting Period

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
AM4(B) – Ma Tau Kok Road (next to EMSD workshops)(Temporary)	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

Table 3.2 Major Noise Sources during the Monitoring in the Reporting Period

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 Excavation works at the site (Contract No.: 1/WSD/14(K)) facing Po Leung Kuk Ngan Po Ling College
M8	Po Leung Kuk Ngan Po Ling College	
M9	Tak Long Estate	Road paving and asphalt paving works

Comparison of EM&A results with EIA predictions

3.10 According to Section 16.7.1 (viii) of the EM&A Manual, the EM&A data are compared with the EIA predictions and summarized in **Annex I**.

3.11 The average 1-hour and 24-hour TSP concentrations in the reporting period were generally well below the prediction in the approved Environmental Impact Assessment (EIA) Report. No Action/Limit Level exceedance was recorded.

3.12 The noise monitoring results in most of the reporting month were within the range of predicted mitigated construction noise levels in the EIA report. No Action/Limit Level exceedance was recorded.

3.13 The noise monitoring results in January at M7 was higher than predicted mitigated construction noise levels in the EIA report due to the traffic noise.

4. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

Review of the Reasons for and the Implications of Non-compliance

4.1 No Action/Limit Level exceedance was recorded at all air quality and noise monitoring stations in the reporting quarter.

Effectiveness of Mitigation Measures

4.2 The mitigation measures recommended in the EIA report are considered effective in minimizing environmental impacts.

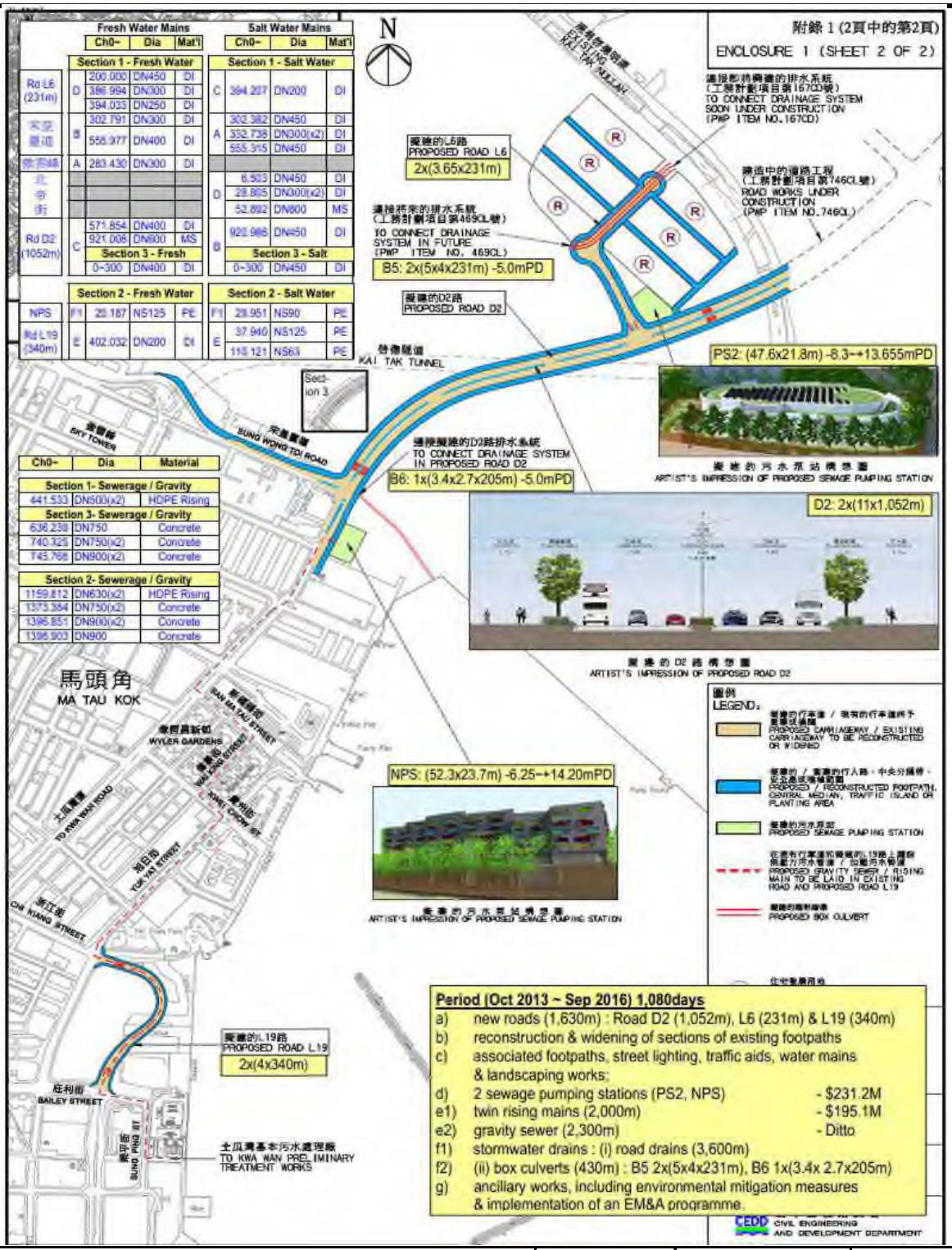
4.3 The Contractor has implemented the recommended mitigation measures.

4.4 Environmental monitoring works performed in the reporting quarter and all monitoring results were checked and reviewed. No non-compliance (exceedances) of Action/Limit Level was recorded.

4.5 No environmental complaints and environmental prosecution were received in the reporting quarter.

4.6 The effectiveness of environmental management is satisfactory given that the recommendations given in the site inspections performed in the reporting period (as shown in **Appendix F**) are met.

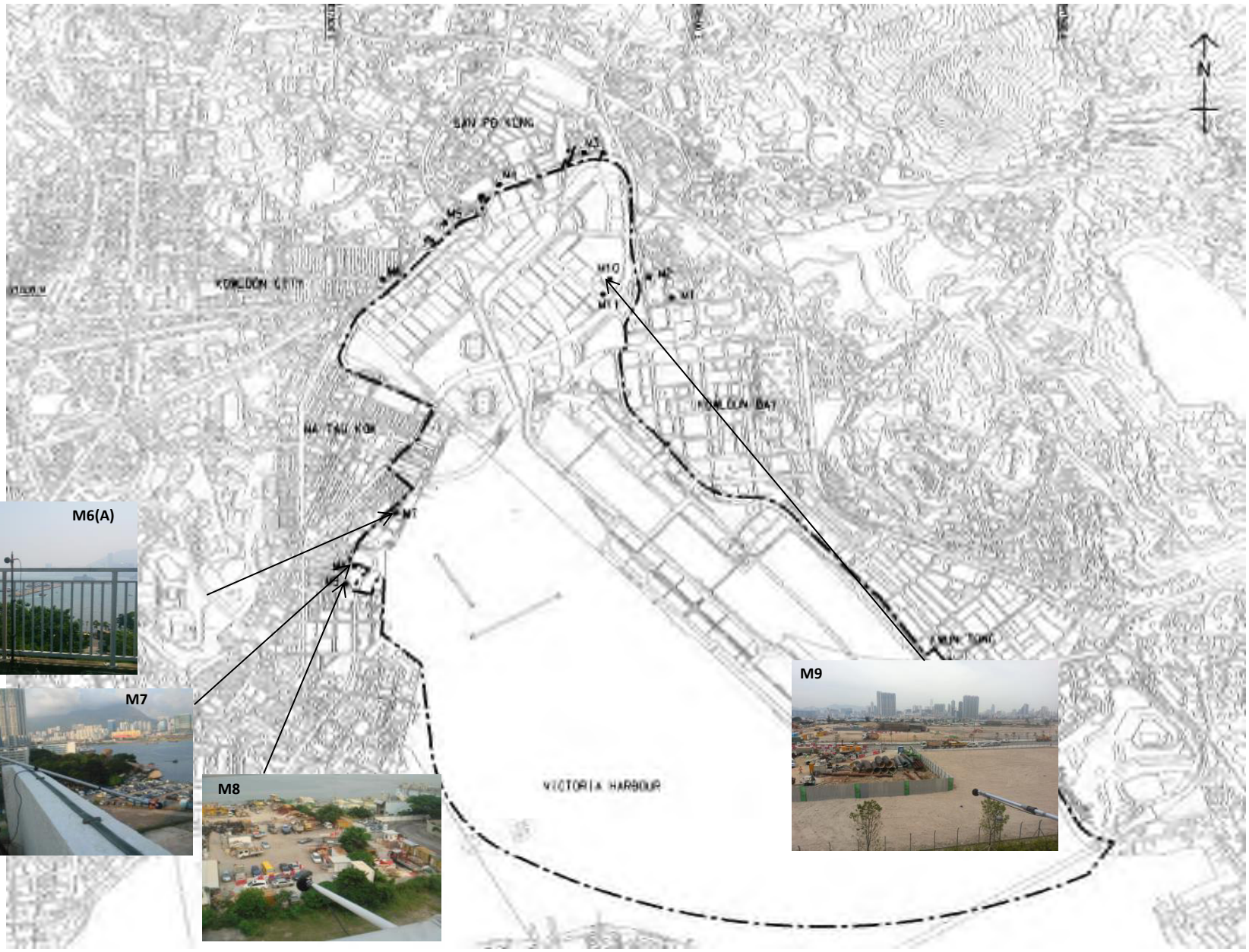
FIGURES



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

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

CINOTECH



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

APPENDIX A
MONITORING REQUIREMENTS

Appendix A - Environmental Impact Monitoring Requirements

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Air Quality	1 hour TSP	Three times / 6 days	• AM2 – Lee Kau Yan Memorial School • AM3(A) – Holy Trinity Bradbury Centre • AM4(A) – EMSD Workshop • AM5(A) – Po Leung Kuk Ngan Po Ling College • #AM6 – PA 15	• AM2 – Rooftop (about 8/F) Area • AM3(A) - Rooftop (about 8/F) Area • AM4(A) - Rooftop (about 6/F) Area • AM5(A) - Rooftop (about 10/F) Area • #AM6 – Site 1B4 (Planned)
	24 hour TSP	Once / 6 days		

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

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Construction Noise	L_{eq}, L_{90} & L_{10} at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	• M6 – Holy Carpenter Primary School • M6(A) - Oblate Primary School • M7 – CCC Kei To Secondary School • M8 – Po Leung Kuk Ngan Po Ling College • M9 – Tak Long Estate (from April 2014 onward) • #M10 (Site 1B4 (Planned))	• M6 - Facade measurement at Rooftop (about 7/F) Area • M6(A) – Free-field measurement at Rooftop (about 7/F) Area • M7 - Facade measurement at Rooftop (about 8/F) Area • M8 - Facade measurement at Staircase Area (about 9/F) • M9 – Façade measurement at 2/F Podium • #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.

APPENDIX B
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

Appendix B - Action and Limit Levels

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

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM2	346	500
AM3(A)	351	
AM4(A)	371	
AM5(A)	345	

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

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM2	157	260
AM3(A)	167	
AM4(A)	187	
AM5(A)	156	

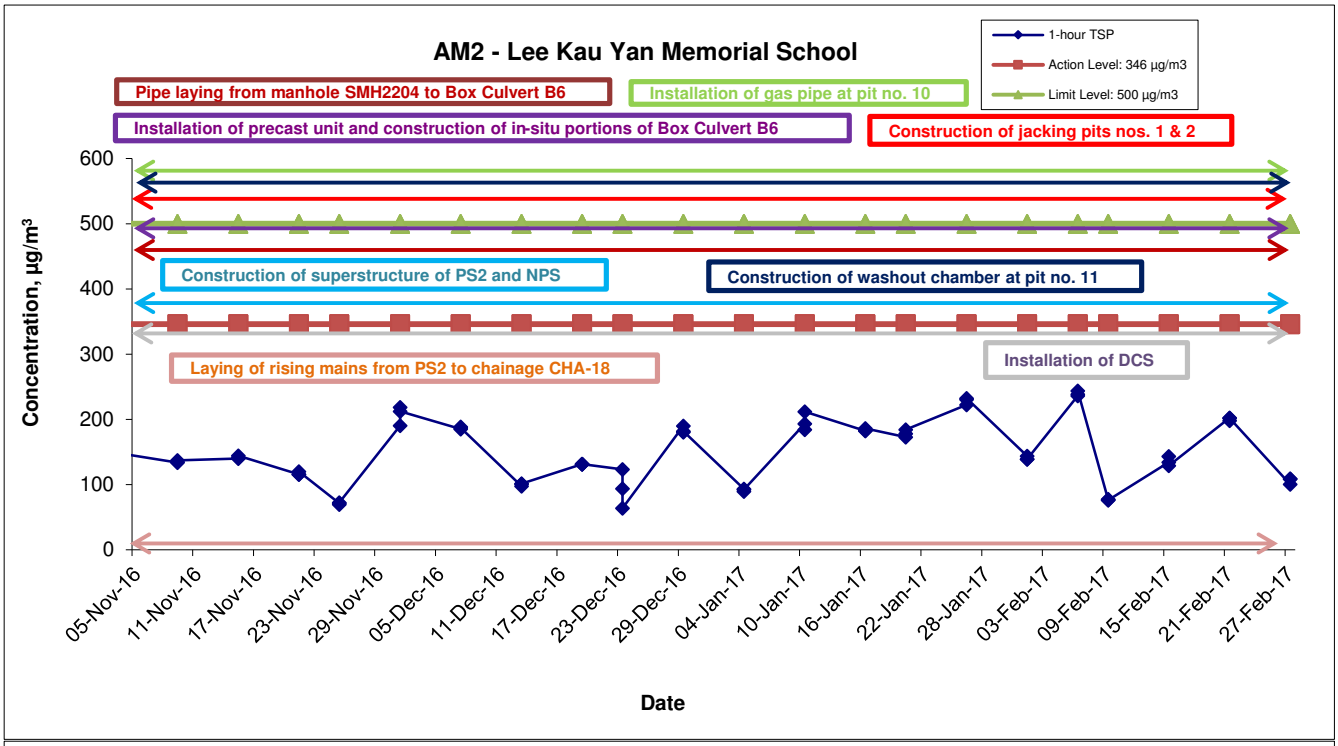
Table B-3 Action and Limit Levels for Construction Noise

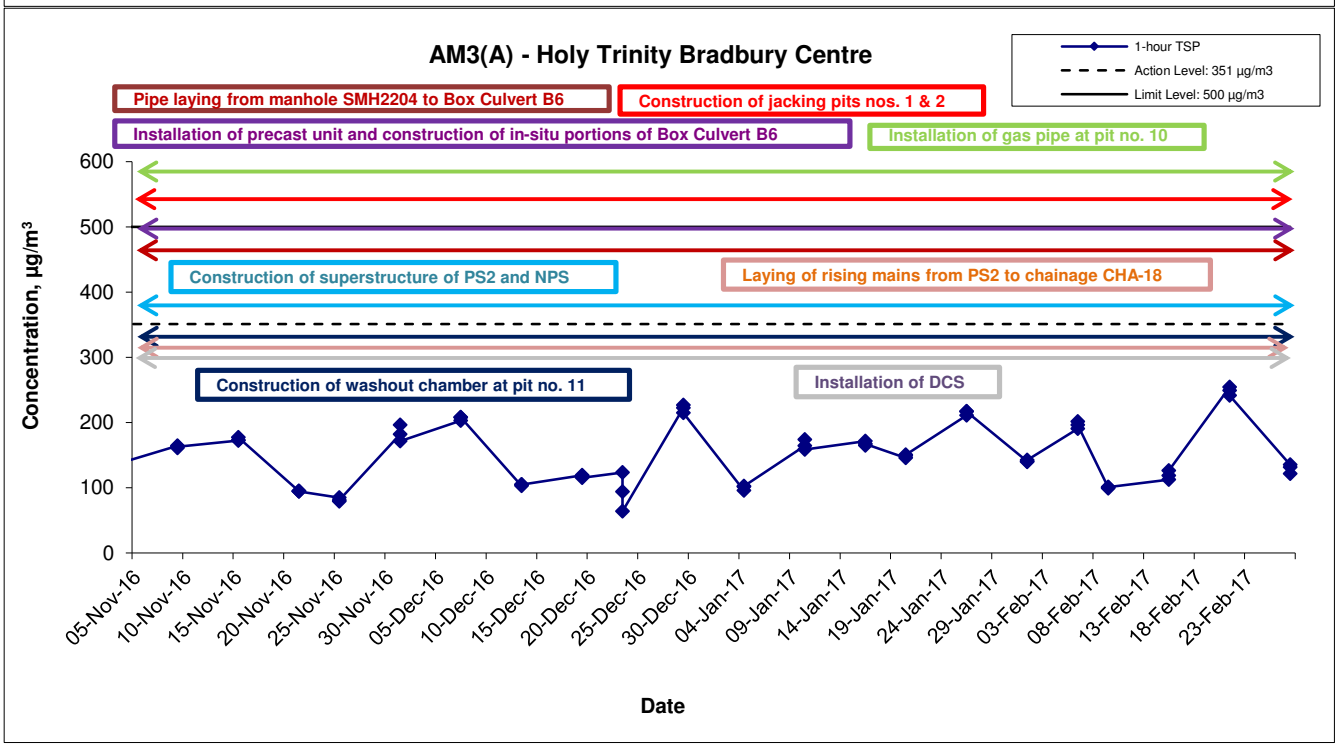
Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

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 C
GRAPHICAL PRESENTATION OF AIR QUALITY MONITORING RESULTS

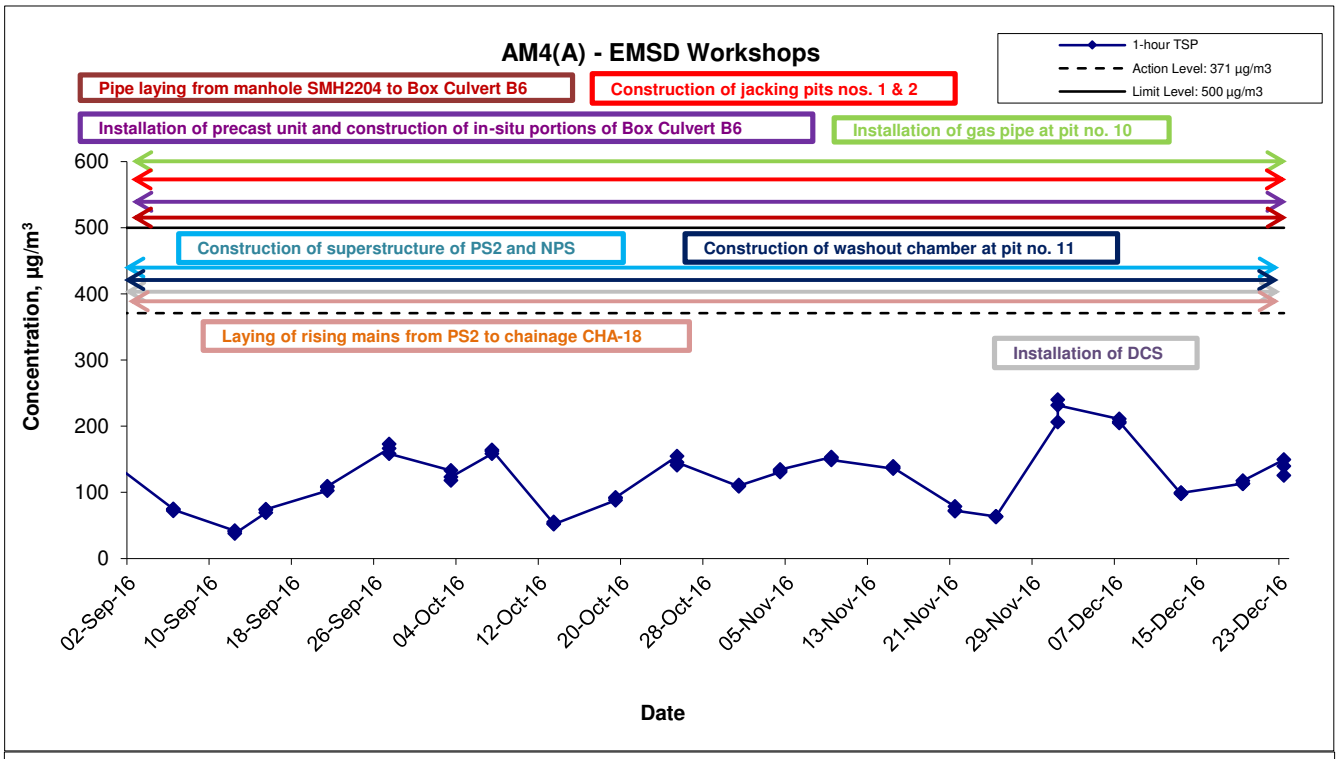
1-hr TSP Concentration Levels

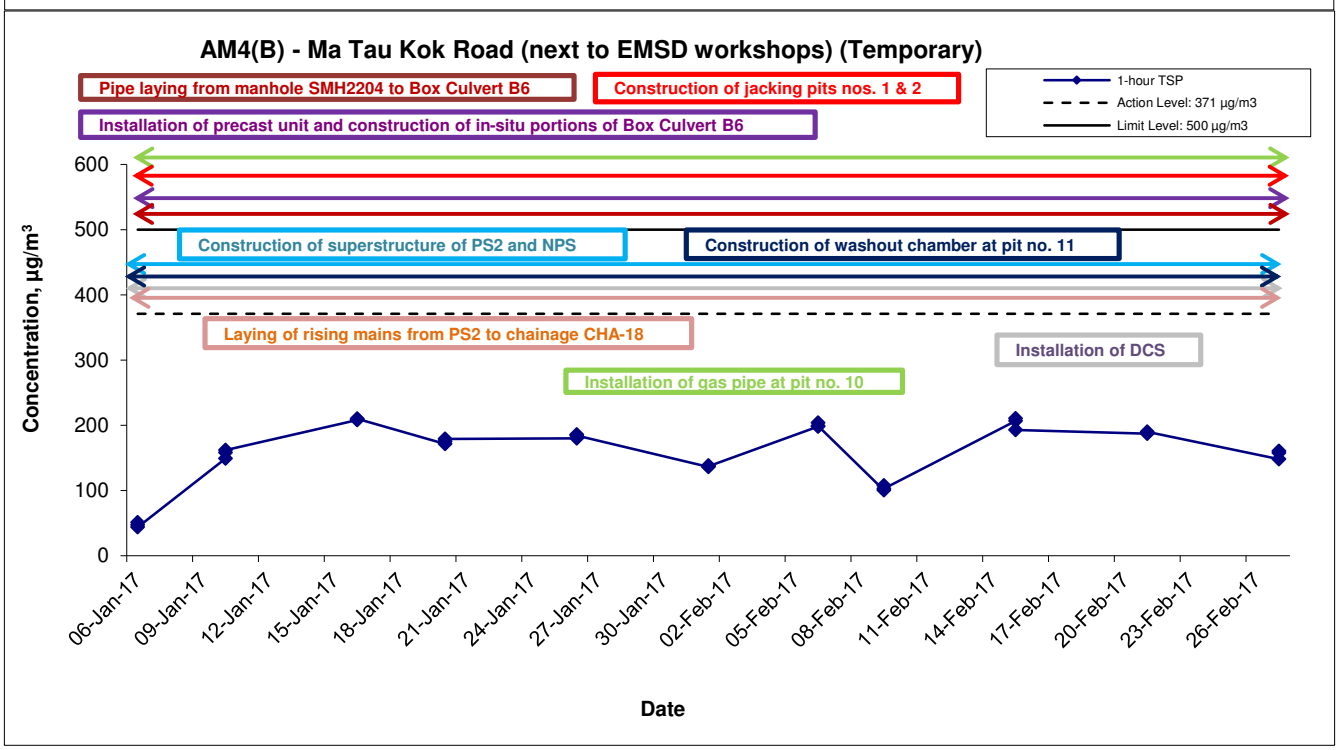




Title: Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Feb 17	Project No.: MA13056 Appendix: C	CINOTECH

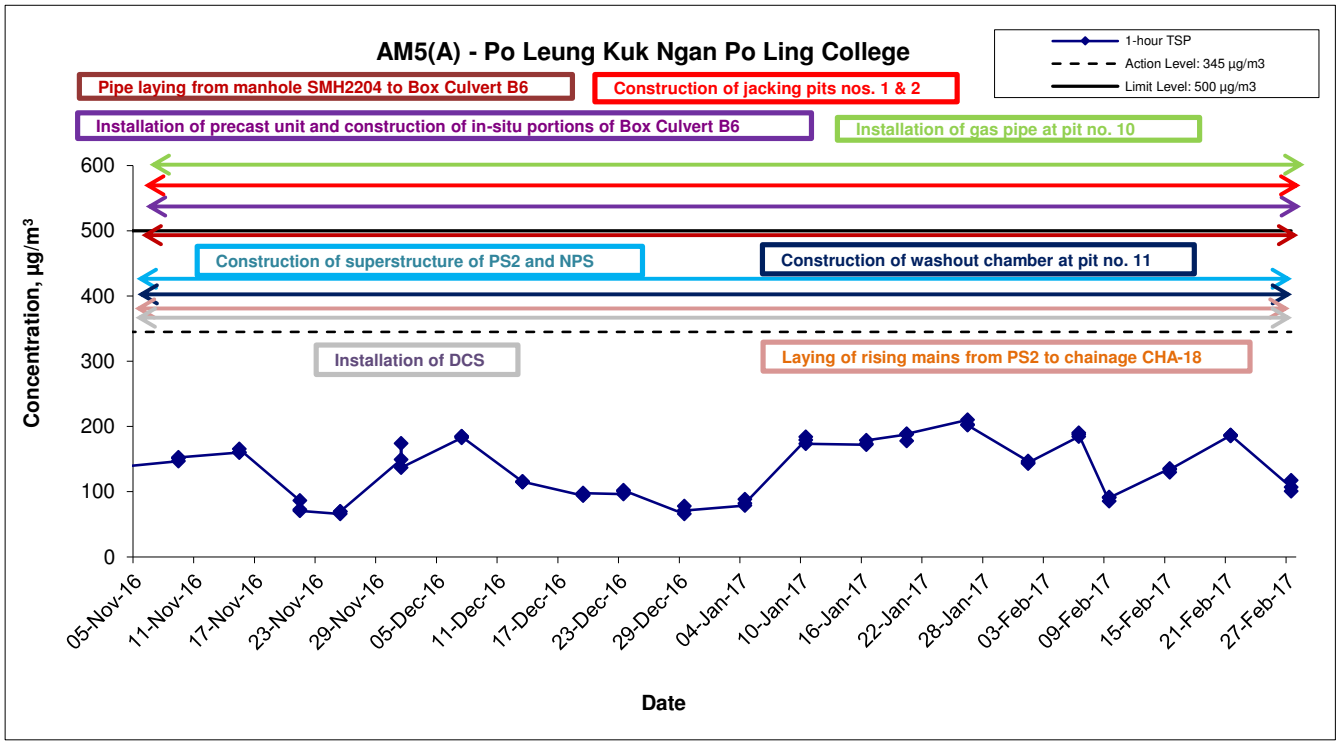
1-hr TSP Concentration Levels





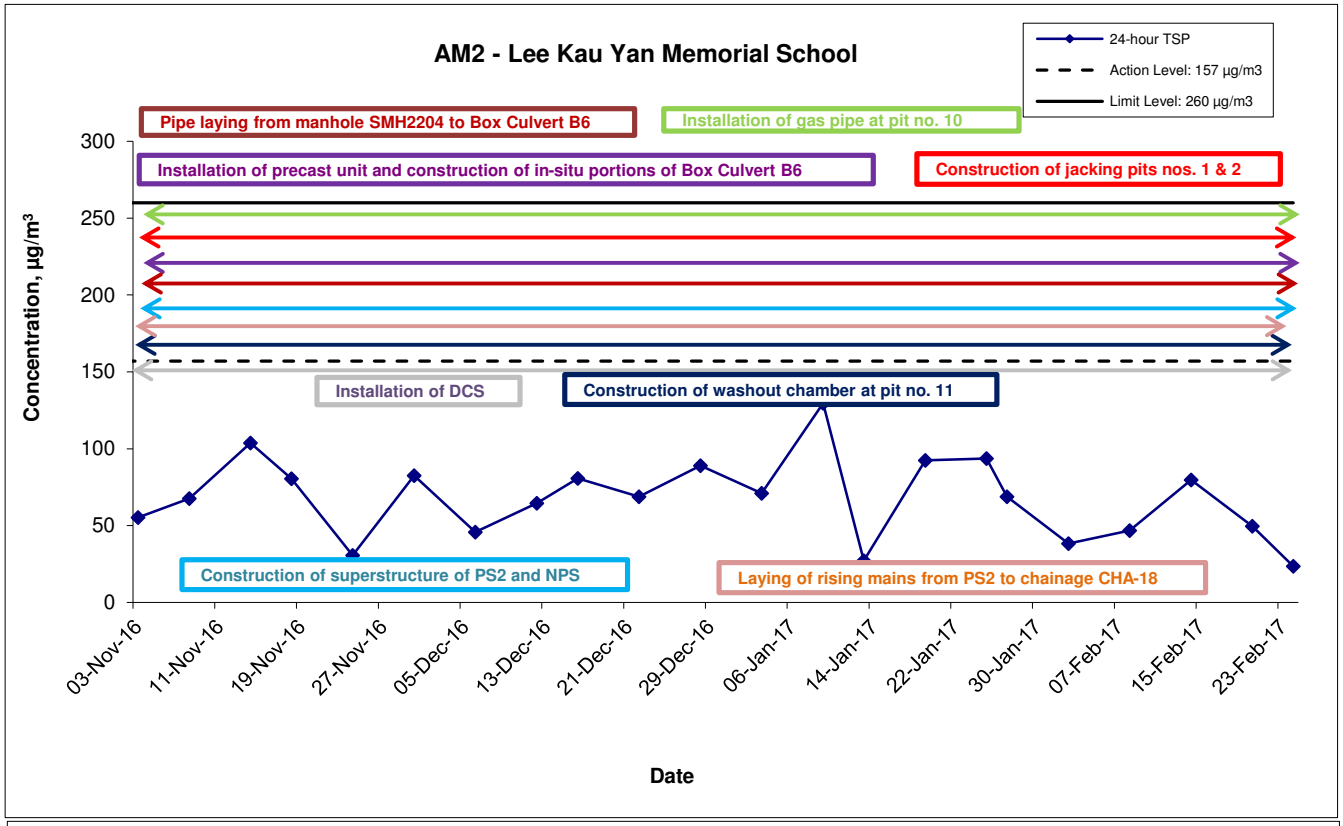
Title: Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Feb 17	Project No.: MA13056 Appendix: C	CINOTECH

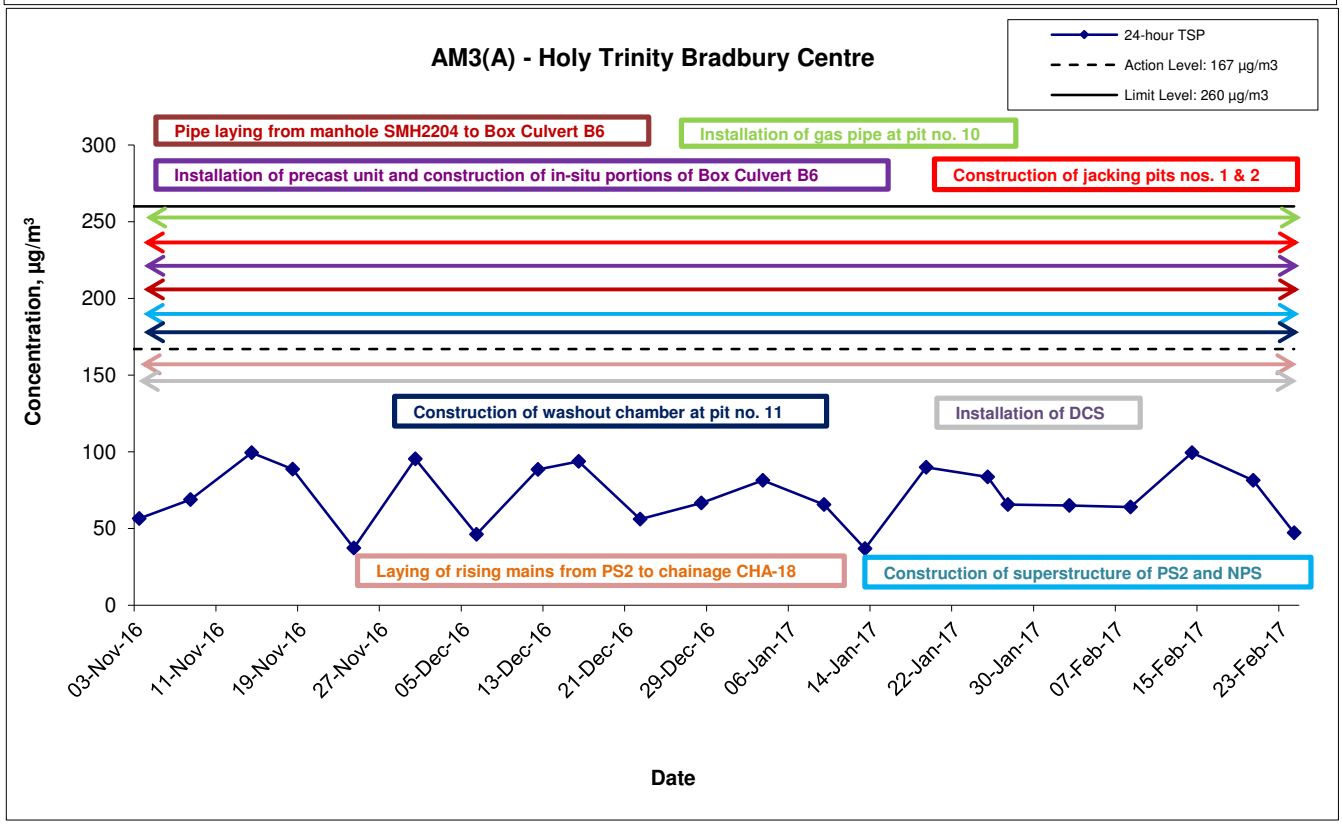
1-hr TSP Concentration Levels



Title: Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Feb 17	Project No.: MA13056 Appendix: C	CINOTECH

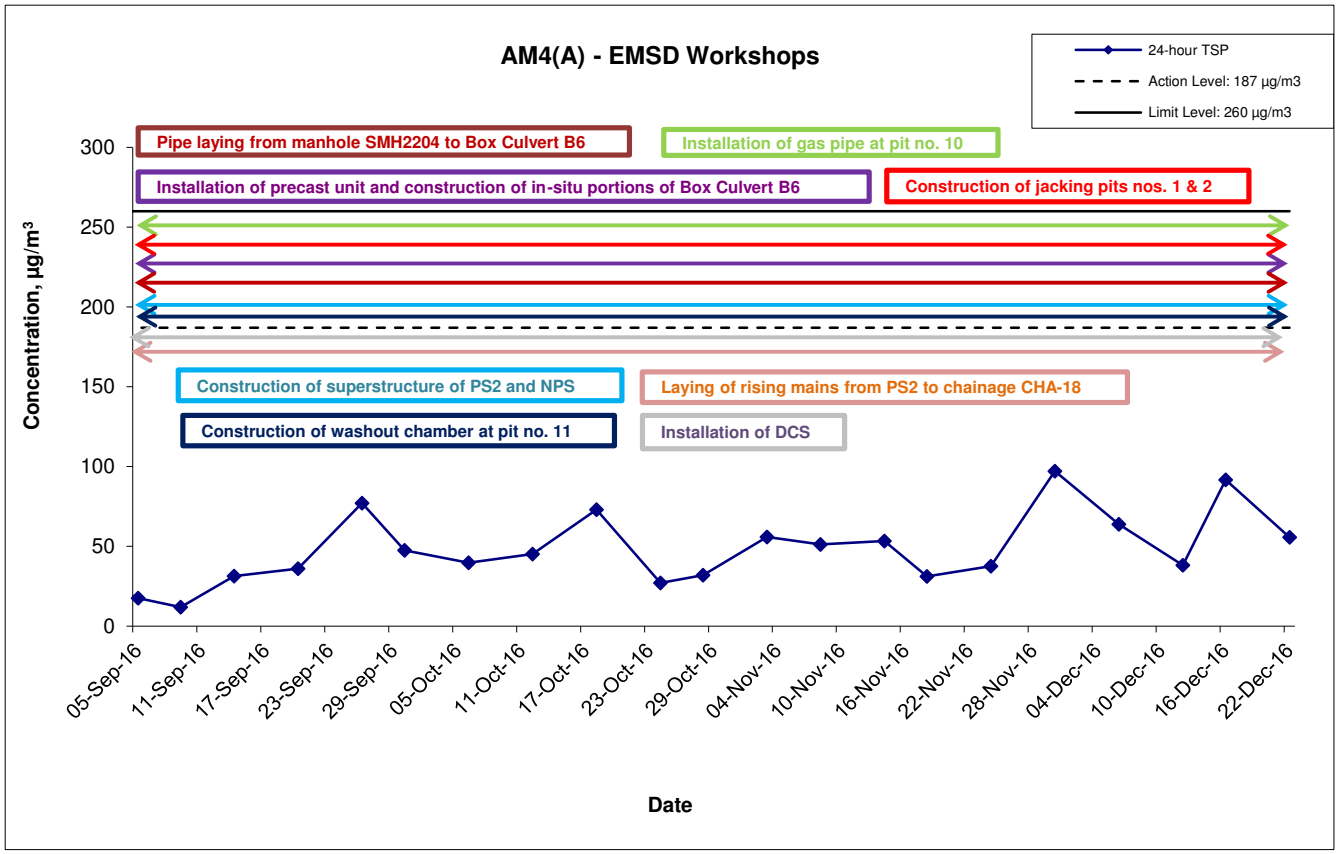
24-hr TSP Concentration Levels

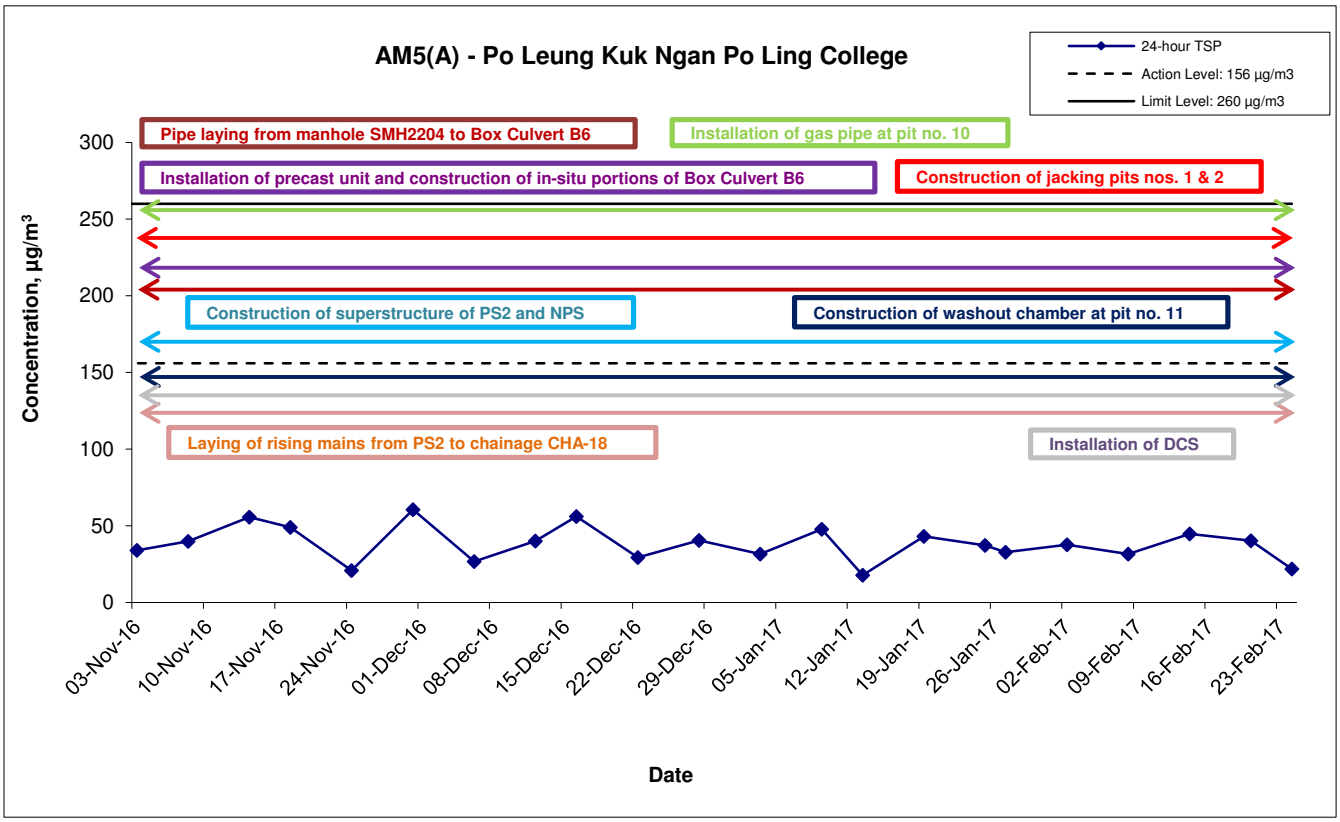




Title: Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Feb 17	Project No.: MA13056 Appendix: D	CINOTECH

24-hr TSP Concentration Levels

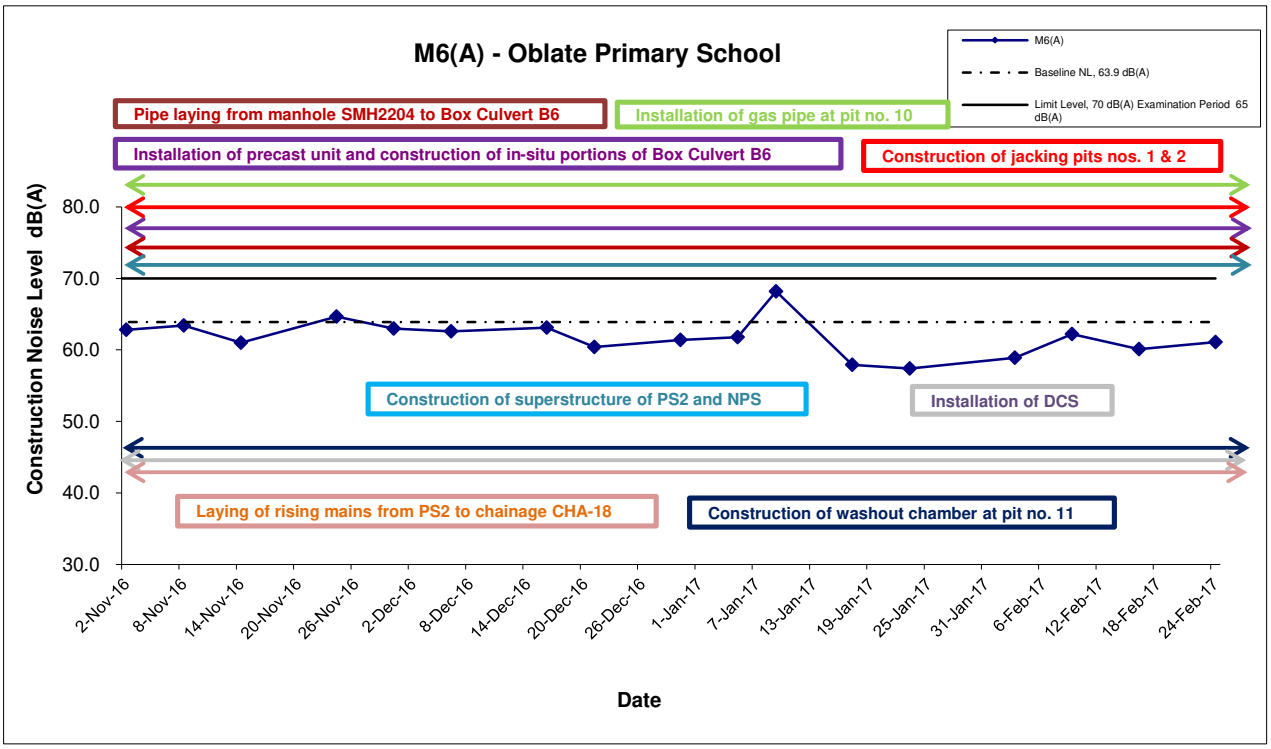


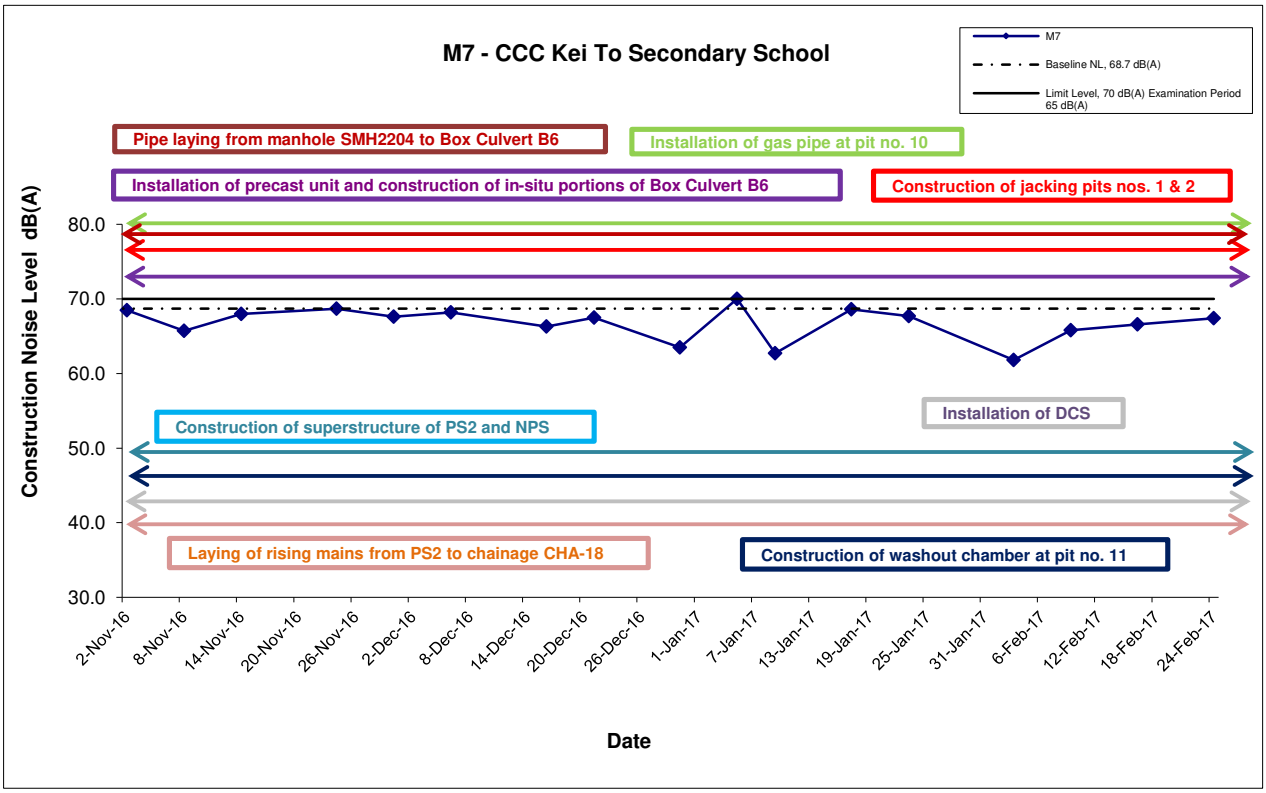


Title: Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Feb 17	Project No.: MA13056 Appendix: D	CINOTECH

APPENDIX D
GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS

Noise Levels

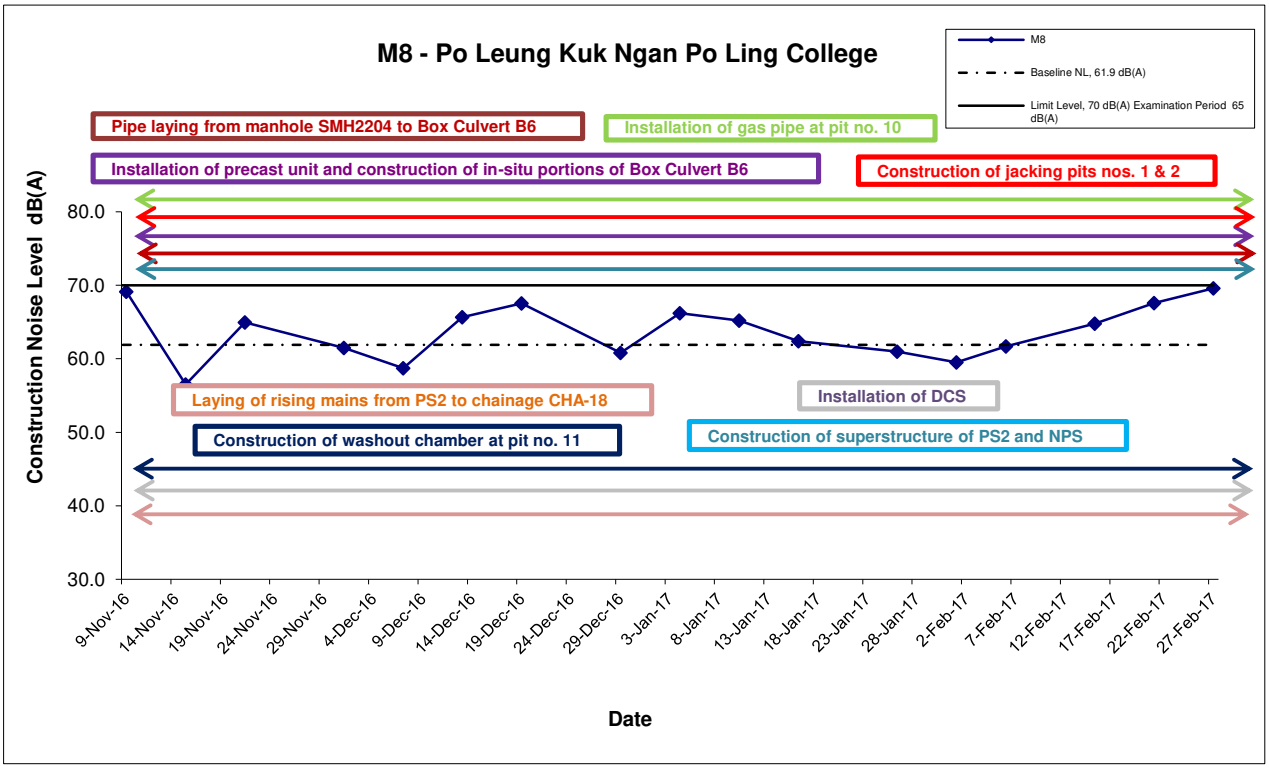


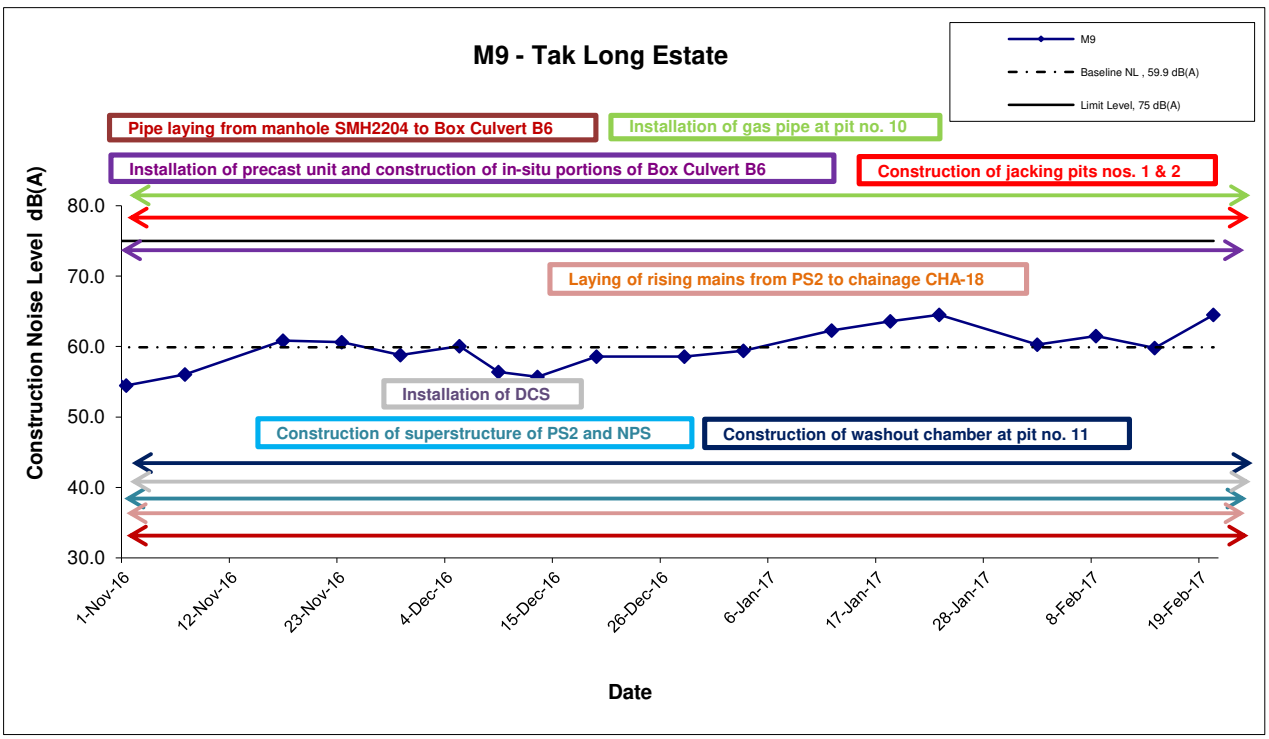


Remarks: The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

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 Date: Feb 17	Project No.: MA13056 Appendix: D	CINOTECH

Noise Levels





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

Title	Contract No. KL/2012/03 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 Feb 17	Appendix D	

APPENDIX E
ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

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

Types of Impacts	Mitigation Measures	Status
Construction Dust	8 times daily watering of the work site with active dust emitting activities.	^
	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.	
	• Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	^
	• Misting for the dusty material should be carried out before being loaded into the vehicle.	^
	• 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. On-site unpaved roads should be compacted and kept free of lose materials.	^
	• 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.	^
	• 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.	^

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.	^
	• Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.	N/A(1)
	• 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 1I1; and	N/A
	(ii) Setback of building about 5m from site boundary.	N/A
	Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A
	(i) avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and	N/A
	(ii) for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not provide the facades with openable window.	N/A

	(i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or (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. (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 N/A N/A
	All the ventilation fans installed in the below will be provided with silencers or acoustics treatment. (i) SPS (ii) ESS (iii) Tunnel Ventilation Shaft (iv) EFTS depot Installation of retractable roof or other equivalent measures	N/A N/A N/A N/A N/A
Construction Water Quality	The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including: • Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply; • Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps; • An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and • For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided so that swift actions could be taken in case of malfunction of unmanned facilities. <u>Land-based Construction</u> *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	N/A N/A N/A N/A ^ ^ ^

	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.	^
	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.	^
	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.	^
	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	^
	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	^

	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	*
	Drainage It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	^
	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	^
	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	^
	Sewage Effluent Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	^
	Stormwater Discharges Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	N/A

	Debris and Litter In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials. litter or wastes to marine waters does not occur	^
	Construction Works at or in Close Proximity of Storm Culvert or Seafront The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.	^
	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.	^
	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.	^
	Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.	^
	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.	^
	Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	^
	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.	^
	Construction effluent, site run-off and sewage should be properly collected and/or treated.	^
	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.	^
	Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.	^
	Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	^

	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	^
	Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.	^
	Good Site Practices It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include: • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site • Training of site personnel in proper waste management and chemical waste handling procedures • Provision of sufficient waste disposal points and regular collection for disposal • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers • A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)	^ ^ ^ ^
	Waste Reduction Measures Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: • Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal • Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force • Any unused chemicals or those with remaining functional capacity should be recycled • Proper storage and site practices to minimise the potential for damage or contamination of construction materials	^ ^ ^ ^ ^

Construction and Demolition Material

Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:

- Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible ^
- Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric ^
- Skip hoist for material transport should be totally enclosed by impervious sheeting ^
- Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site ^
- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores ^
- The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle ^
- All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet ^
- The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading ^

When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system. ^

Chemical Waste

After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation* ^

	General Refuse General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem	^
Landscape and Visual	CM1 All existing trees should be carefully protected during construction. CM2 Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work. CM3 Control of night-time lighting. CM4 Erection of decorative screen hoarding.	^ N/A ^ ^

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 F
SITE AUDIT SUMMARY

Appendix F Summary of Observation and Recommendation Made during Site Inspection

Summary of Observation and Recommendation Made during Site Inspection in December 2016

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
	--	--	--
Air Quality	2 December 2016	Observation: Water spraying should be provided to the haul road.	Haul road was observed wet.
	15 December 2016	Observation: Water spraying should be provided to the haul road to suppress dust emission. (near PS2)	Water spraying was provided to the haul road.
	23 December 2016	Observation: Stockpile of dusty material should be covered. (Portion 6)	Stockpile of dusty material was covered.
	29 December 2016	Observation: Water spray should be provided to the haul road near Gate D for dust suppression.	Water spraying was provided near Gate D.
Noise	--	--	--
Waste/Chemical Management	2 December 2016	Observation: Oil stain should be cleared an oil/chemical containers should be provided with drip trays.	Oil stain was cleared. Chemical containers should be provided with tray and labels. Item was remarked as 161209-R01.
	9 December 2016	Reminder: Chemical containers should be provided with labels and trays.	Chemical containers were provided with drip trays and labels.
	9 December 2016	Reminder: Chemical refuse should be cleared. (PS2)	Chemical refuse was cleared.
Landscape and Visual	--	--	**--**
Permits /Licences	--	--	**--**

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Air Quality	--	--	--
Noise	--	--	--
Waste/Chemical Management	--	--	--
Landscape and Visual	--	--	**--**
Permits /Licences	--	--	**--**

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	**--**
Air Quality	--	--	--
Noise	--	--	--
Waste/Chemical Management	13 January 2017	Observation: Drip tray should be provided to chemical containers.	Chemical containers were removed.
Landscape and Visual	--	--	**--**
Permits /Licences	--	--	**--**

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Air Quality	--	--	--
Noise	--	--	--
Waste/Chemical Management	26 January 2017	Observation: Oil stain should be removed as chemical waste. (near PS2)	Oil stain was cleared.
Landscape and Visual	--	--	**--**
Permits /Licences	--	--	**--**

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Air Quality	--	--	--
Noise	--	--	**--**
Waste/Chemical Management	22 February 2017	Reminder: Provide drip tray to chemical containers near generator set at Portion 7B.	Chemical containers were removed.
	22 February 2017	Reminder: General refuse deposited near KO site office should be properly placed in rubbish bins.	General refuse was cleared.
Landscape and Visual	--	--	**--**
Permits /Licences	--	--	**--**

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	**--**
Air Quality	--	--	--
Noise	--	--	**--**
Waste/Chemical Management	--	--	--
Landscape and Visual	--	--	--
Permits /Licences	--	--	**--**

APPENDIX G
MONTHLY SUMMARY
WASTE FLOW TABLE

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 December 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**
Dec-16	**39**	**198.33**	**0**	**0**	**0**	**138.91**	**0**	**0**	**0**	**0**	**0**	**59.42**
Total	3785	150012	0	0	55090.84	93435.54	25744.27	0	0	0	0	1685.01

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 February 2017 (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
2015 (Jan – Dec) Sub-Total	284	81859.97	0	0	38291.91	43457.21	19920	0	0	0	0	310.26
2015 (Jan – Dec) Sub-Total	3369	50762.64	0	0	0	49894.67	4020	0	0	0	0	867.95
Jan-17	23	107.63	0	0	0	58.53	0	0	0	0	0	39.1
Feb-17	1227	18948.76	0	0	0	18898.13	0	0	0	0	0	50.63
Mar-17												
Apr-17												
May-17												
Jun-17												
Jul-17												
Aug-17												
Sep-17												
Oct-17												
Nov-17												
Dec-17												
Total	5035	169068.39	0	0	55090.84	112392.2	25744.27	0	0	0	0	1774.74

APPENDIX H
SUMMARY OF EXCEEDANCES

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 period)

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

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

ANNEX I
COMPARISON OF EM&A DATA AND EIA PREDICTIONS

Annex I – Comparison of EM&A Data and EIA Predictions

Comparison of 1-hr TSP data with EIA predictions

Station	Predicted 1-hr TSP conc.							
	Scenario1 (Mid 2009 to Mid 2013), $\mu g/m^3$	Scenario2 (Mid 2013 to Late 2016), $\mu g/m^3$	Reporting Month (Dec 16), $\mu g/m^3$		Reporting Month (Jan 17), $\mu g/m^3$		Reporting Month (Feb 17), $\mu g/m^3$	
			Average	Range	Average	Range	Average	Range
AM2 – Lee Kau Yan Memorial School	290	312	155.6	97.7– 218.7	175.8	89.7 – 232.2	149.9	76.1 – 243.5
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	217	247	154.3	63.7– 226.7	159.3	95.5 – 217.2	155.6	99.2 – 254.3
AM4(A) – EMSD Workshops (Alternative station for Grand Waterfront)	246	258	157.0	97.7– 240.2	N/A	N/A	N/A	N/A
Location AM4(B) - Ma Tau Kok Road (next to EMSD workshops) (Temporary)	N/A	N/A	N/A	N/A	181.0	149.2–210.2	170.2	100.3 –210.5
AM5(A) – Po Leung Kuk Ngan Po Ling College (Alternative station for CCC Kei To Secondary School)	159	221	119.9	66.0– 185.1	165.3	78.7 – 209.9	141.5	85.3 – 190.2

Comparison of 24-hr TSP data with EIA predictions

Station	Predicted 24-hr TSP conc.							
	Scenario1 (Mid 2009 to Mid 2013), $\mu g/m^3$	Scenario2 (Mid 2013 to Late 2016), $\mu g/m^3$	Reporting Month (Dec 16), $\mu g/m^3$		Reporting Month (Jan 17), $\mu g/m^3$		Reporting Month (Feb 17), $\mu g/m^3$	
			Average	Range	Average	Range	Average	Range
AM2 – Lee Kau Yan Memorial School	145	169	69.8	45.8 – 89.0	80.4	27.1 – 129.5	47.5	23.5 – 79.6
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	106	138	70.2	46.2 – 93.7	70.5	37.0 – 89.9	71.4	47.2 – 99.5
AM4(A) – EMSD Workshops (Alternative station for Grand Waterfront)	143	152	62.4	38.3 – 91.8	N/A	N/A	N/A	N/A
AM5(A) – Po Leung Kuk Ngan Po Ling College (Alternative station for CCC Kei To Secondary School)	103	128	38.6	26.8 – 56.1	35.2	18.4 – 47.9	35.2	21.9 – 44.8

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 (Dec 16), $L_{eq\ (30min)}$ dB(A)	Reporting Month (Jan 17), $L_{eq\ (30min)}$ dB(A)	Reporting Month (Feb 17), $L_{eq\ (30min)}$ dB(A)
M6(A) - Oblate Primary School ^	N/A	60.4 – 63.1	57.4 – 66.2	58.9 – 62.2
M7 - CCC Kei To Secondary School	45 – 68	63.5 – 68.2	62.7 – 68.6	61.8 – 67.4
M8 - Po Leung Kuk Ngan Po Ling College	44 – 70	58.7 – 67.6	52.8 – 64.2	59.5 – 69.6
M9 - Tak Long Estate	Not predicted in EIA Report	55.7 – 60.1	58.6 – 62.7	59.8 – 64.5

(^) Construction noise monitoring at Station M6 – Holy Carpenter Primary School was carried out on 3rd and 8th October 2014 as it was rejected by the premise owner afterwards. An alternative noise monitoring station – M6(A) – Oblate Primary School replaced M6 – Holy Carpenter Primary School from 10th October 2014 onwards.

FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

Appendix C

Monthly EM&A Report
For
Contract No. KL/2014/01
Kai Tak Development - Stage 2 Infrastructure works for Developments at 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

Quarterly EM&A Report

January 2017 to March 2017

(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

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

嘉誠管理顧問有限公司
Ka Shing management consultant Limited

Our ref: 6-4-2017

6 th April 2017

By email: clive.cheng@aecom-ktd.com and By post

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
Quarterly EM&A report for January 2017 to March 2017

Reference is made to the Environmental Team's submission of the draft Quarterly EM&A Report (version 1.0) for January 2017 to March 2017 provided to Independent Environmental Checker (IEC) via email dated on 3 rd April 2017 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

C.C.	CEDD	Mr. Ronald Siu	(By email: ronaldsiu@cedd.gov.hk)
	AECOM	Mr. Anthony Lok	(By email: anthony.lok@aecom-ktd.com)
	CEC-CCC	Mr. Andrew Wong	(By email: andrew-wong@continental-engineering.com)
	Cinotech	Dr. Priscilla Choy	(By email: priscilla.choy@cinotech.com.hk)
	SFK	Ms Alice Leung	(By email: aliceleung@sfk.com.hk)

Unit 2, 13/F Kai Yue Commercial Building, 2C Argyle St, Mong Kok, Kowloon
九龍旺角亞皆老街 2C 號啟如商業大廈 13 樓 2 室
Tel: (852) 2618 2166 Fax: (852) 2120 7752 Wed Site: http://www.ka-shing.net
電話: (852) 2618 2166 傳真: (852) 2120 7752 網站: http://www.ka-shing.net

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

Introduction

1. This is the 4th Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the "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 project (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 summary report presents the EM&A works performed in the period between 1 January 2017 and 31 March 2017.

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, which is on-going starting from December 2010.

3. The construction activities undertaken in the reporting quarter were:
   - Watermain works;
   - 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, piles caps and underpass;
   - ELS installation for box culvert and underpass; and
   - Construction of pile caps, sewer and manholes.

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 quarter for the Project is tabulated in Table I.

Table I Non-compliance Record for the Project in the Reporting Quarter

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
July 2016			
Noise	0	0	N/A
August 2016			
Noise	0	0	N/A
September 2016			
Noise	0	0	N/A

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 No.: WT00023634-2016).

11. Construction Noise Permit (License No.: GW-RE1092-16 and GW-RE 1251-16).

Key Information in the Reporting Quarter

12. Summary of key information in the reporting quarter is tabulated in Table II.

Table II Summary Table for Key Information in the Reporting Quarter

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	---

13. Environmental monitoring works for the Project are considered effective and is generating data to categorically identify the environmental impacts from the works and influencing factors in the vicinity of monitoring stations.

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 summary report presents the EM&A works performed in the period between 1 January 2017 and 31 March 2017.

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 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).

1.7 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. 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

2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

2.1 The EM&A Manual designates locations for the ET to monitor environmental impacts in terms of air quality, noise, landscape and visual due to the Project. With reference to the same principle of EIA report of the Project, no air quality monitoring station within 500m and no construction noise monitoring station within 300m from the boundary of this Project are considered as relevant monitoring locations. No air quality and noise monitoring is required for the Project.

Monitoring Methodology

2.2 Monitoring works/equipments were conducted/calibrated regularly in accordance with the EM&A Manual.

Environmental Quality Performance Limits (Action and Limit Levels)

2.3 Should the environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix A**.

Implementation Status of Environmental Mitigation Measures

2.4 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manual for the Contractor to implement. The implementation status of environmental mitigation measures (EMIS) is given in **Appendix B**.

Site Audit Summary

2.5 Site audits were carried out on a weekly basis. During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations made during the reporting period are summarized in **Appendix C**.

Status of Waste Management

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

3. MONITORING RESULTS

Air Quality and Construction Noise

3.1 No monitoring for air quality and construction noise is required for the Project.

3.2 Site audits were carried out to monitor and audit the timely implementation of air quality and noise mitigation measures under the Project on a weekly basis. No non-compliance of the air quality impact and noise impact was recorded in the reporting quarter.

Landscape and Visual

3.3 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures under the Project. No non-compliance of the landscape and visual impact was recorded in the reporting quarter.

4. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

Summary of Exceedances

4.1 A summary of exceedances is attached in **Appendix E**. The details of each exceedance were attached in the Monthly EM&A Reports.

Air Quality and Construction Noise

4.2 No monitoring for air quality and noise impact is required under the Project. No Action/ Limit Level exceedance was recorded in the reporting quarter.

Landscape and Visual

4.3 No non-compliance of the landscape and visual impact was recorded in the reporting quarter.

Review of the Reasons for and the Implications of Non-compliance

4.4 There was no non-compliance from the site audits in the reporting quarter. The observations and recommendations made in each individual site audit session were attached in the **Appendix C**.

Summary of Environmental Complaints and Prosecutions

4.5 No environmental complaint was received during the reporting quarter.

4.6 No warning, summon and notification of successful prosecution was received in the reporting period.

4.7 There were no environmental complaints, warnings, summons and successful prosecutions received since the commencement of the Project.

5. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

Effectiveness of Mitigation Measures

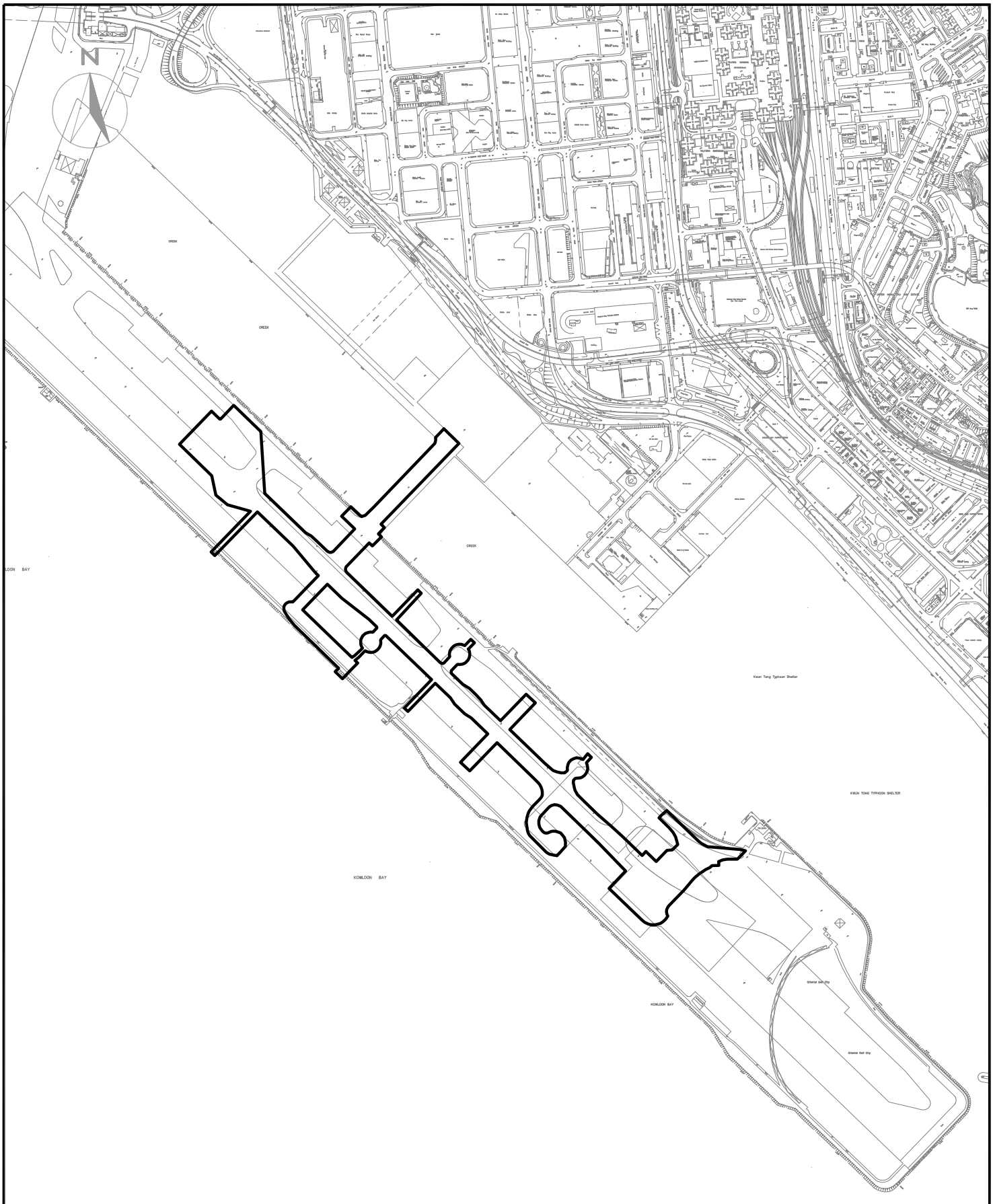
5.1 The mitigation measures recommended in the EIA report are considered effective in minimizing environmental impacts.

5.2 The Contractor has implemented the recommended mitigation measures except those mitigation measures not applicable at this stage.

5.3 Environmental monitoring works were performed in the reporting quarter and all monitoring results were checked and reviewed. No non-compliance (exceedances) of Action/Limit Level was recorded.

5.4 No environmental complaints and environmental prosecution were received in the reporting quarter.

FIGURE(S)



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
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

Appendix B - 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)	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.	
	● Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	*
	● Misting for the dusty material should be carried out before being loaded into the vehicle.	^
	● 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.	^

EIA Ref.	Mitigation Measures	Status
	● 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.	^ * ^ ^
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)	Good Site Practice: ● Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. ● Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. ● Mobile plant, if any, should be sited as far away from NSRs as possible. ● Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. ● Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. ● Material stockpiles and other structures should be effectively utilized, wherever	^ N/A(1) ^ ^ ^

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)	● 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 It should be noted that the exact length of the mitigation measures would be subject to minor refinement during the detailed design stage.	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)	<u>Construction Runoff</u> 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	 ^ ^

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)	<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.	^
	<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	^
S3.4 (AEIAR-130/2009)	<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.	^
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
	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: ● 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.	^ ^ ^ ^
Construction Waste Management		
S6.7 (AEIAR-170/2013)	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.	^
S3.5 (AEIAR-130/2009) and S6.7 (AEIAR-170/2013)	Good Site Practices It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include: ● Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site Training of site personnel in proper waste management and chemical waste handling procedures ● Provision of sufficient waste disposal points and regular collection for disposal	^ ^

EIA Ref.	Mitigation Measures	Status
	● 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	^ ^ ^ ^
	Waste Reduction Measures Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: ● Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals ● Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal ● Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force ● Any unused chemicals or those with remaining functional capacity should be recycled ● Proper storage and site practices to minimise the potential for damage or contamination of construction materials ● 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.	 ^ ^ ^ ^ ^ ^ ^

EIA Ref.	Mitigation Measures	Status
S3.5 (AEIAR-130/2009)	Construction and Demolition Materials 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: ● 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. 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	^ * ^ ^ ^ ^ ^ ^ ^

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)	General Refuse General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem	^
Construction Landscape and Visual		
S3.8.12 (AEIAR-130/2009) and S7.9 (AEIAR-170/2013)	● 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.	^ ^ ^ N/A(1) ^ ^ ^ N/A

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 C
SITE AUDIT SUMMARY

Appendix C Summary of Observation and Recommendation Made during Site Inspection

Summary of Observation and Recommendation Made during Site Inspection in January 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	25 Jan 2017	Appropriate signage should be provided at wheel washing machine to remind all drivers to perform wheel washing before leaving the Site.	Rectification/improvement was observed during the follow-up audit session.
Air Quality	28 Dec 2016	Bagged cement should be properly covered in Section 2 for dust suppression.	Rectification/improvement was observed during the follow-up audit session.
	04 Jan 2017	Stockpiles in Section 1 should be covered with impervious materials to prevent dust generation.	Rectification/improvement was observed during the follow-up audit session.
	04 Jan 2017	Water spraying on haul roads should be provided more frequently in Section 1 for dust suppression.	Rectification/improvement was observed during the follow-up audit session.
	11 Jan 2017	Tarpaulin coverage should be provided to stockpiles in Section 2 to prevent dust generation.	Rectification/improvement was observed during the follow-up audit session.
Noise	--	--	--
Waste/ Chemical Management	--	--	--
Landscape and Visual	--	--	--
Permits/ Licences	--	--	--

Summary of Observation and Recommendation Made during Site Inspection in February 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	25 Jan 2017	Appropriate signage should be provided at wheel washing machine to remind all drivers to perform wheel washing before leaving the Site.	Rectification/improvement was observed during the follow-up audit session.
	22 Feb 2017	Reminder: Sandbag bund at Gate 5A should be enhanced to prevent silty runoff.	Rectification/improvement was observed during the follow-up audit session.
Air Quality	2 Feb 2017	Reminder: Dusty materials of stockpiles should be covered by impervious sheet after works.	Rectification/improvement was observed during the follow-up audit session.
	8 Feb 2017	Reminder: Black smoke emission by the PME at Gate 5A should be avoided.	Rectification/improvement was observed during the follow-up audit session.
	15 Feb 2017	Reminder: Water spraying should be performed more frequently in Section 1 for dust suppression.	Rectification/improvement was observed during the follow-up audit session.
Noise	--	--	--
Waste/ Chemical Management	--	--	--
Landscape and Visual	--	--	--
Permits/ Licences	--	--	--

Summary of Observation and Recommendation Made during Site Inspection in March 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	22 Feb 2017	Sandbag bund should be provided at Gate 5A to prevent silty runoff.	Rectification/improvement was observed during the follow-up audit session.
Air Quality	1 Mar 2017	Stockpiles in Section 1 should be properly covered by imperious sheets for dust suppression.	Rectification/improvement was observed during the follow-up audit session.
	15 Mar 2017	Dark smoke emitted by PME in Section 1 should be avoided.	Rectification/improvement was observed during the follow-up audit session.
	22 Mar 2017	Impervious sheets for stockpiles coverage should be maintained more frequently.	Rectification/improvement was observed during the follow-up audit session.
Noise	--	--	--
Waste/ Chemical Management	--	--	--
Landscape and Visual	--	--	--
Permits/ Licences	--	--	--

APPENDIX D
WASTE GENERATED QUANTITY

Appendix 5. Monthly Summary Waste Flow Table

Name of Department: CEDD

Contract No.: _KL/2014/01_____

Monthly Summary Waste Flow Table for 2017

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	15470.22	0	0	0	15470.22	0	0	0.301	0.019	0	53.3
Feb	23173.51	0	0	0	23173.51	0	0	0	0	0	9.2
Mar	27239.72	0	0	0	27239.72	0	0	0	0	0	76.6
Apr											
May											
June											
Sub-total	65883.45	0	0	0	65883.45	0	0	0.301	0.019	0	139.1
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	65883.45	0	0	0	65883.45	0	0	0.301	0.019	0	139.1

APPENDIX E
SUMMARY OF EXCEEDANCES

Contract No. KL/2014/01
Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

Appendix E – Summary of Exceedance

Exceedance Record for Contract No. KL/2014/01

Report period: January 2017 to March 2017

(A) Exceedance Record for Construction Noise

(NIL in the reporting period)

(B) Exceedance Record for Landscape and Visual

(NIL in the reporting period)

FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

Appendix D

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

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

QUARTERLY EM&A REPORT

December 2016 – February 2017

Client	**:**	Civil Engineering and Development Department, HKSAR
Contract No.	**:**	KLN/2015/07
Contract Name	**:**	Environmental Monitoring Works for Contract KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway
Report No.	**:**	0405/15/ED/0745A

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
MateriaLab Consultants Limited

RAMBOLL ENVIRON

Ref.: CEDKTDS3EM00_0_0180L.17

27 March 2017

By Post and Email

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

Attention: Mr. Wong W K, Chris

Dear Mr. Wong,

Re: Contract No. KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway
Quarterly EM&A Report for December to February 2017

Reference is made to the Environmental Team's submission of the Quarterly EM&A Report for December 2016 to February 2017 (Report No. 0405_15_ED_0745A) we received by e-mail on 27 March 2017.

Please be informed that we have no adverse comment on the captioned report.

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_0180L.17.docx

Ramboll Environ Hong Kong Limited 英環香港有限公司
21/F, BEA Harbour View Centre, 56 Gloucester Road, Wan Chai, Hong Kong Tel: 852.3465 2888 Fax: 852.3465 2899
www.Ramboll-Environ.com

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

TABLE OF CONTENTS

FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

i. The Civil Engineering and Development Department HKSAR has appointed MateriaLab Consultants Limited (MCL) to undertake the Environmental Team services for the Project and implement the EM&A works.

ii. This is the fourth Quarterly EM&A Report presents the environmental monitoring and audit works for the period between 1 December 2016 and 28 February 2017. As informed by the Contractor, major activities in the reporting period included:

December 2016	January 2017	February 2017
• Temporary utility diversion; • Implementation of Temporary Traffic Arragement (TTA); • Construction of Socket H piles; • Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS). • Construction of Subway B; • Construction of guide walls and D-walls; and • Construction of District Cooling System Works.	• Temporary utility diversion; • Implementation of Temporary Traffic Arragement (TTA); • Construction of Tunnel structure; • Construction of Subway B; • Construction of guide walls and D-walls; and • Construction of District Cooling System Works.	• Temporary utility diversion; • Implementation of Temporary Traffic Arragement (TTA); • Construction of Tunnel structure; • Construction of Subway B; • Construction of guide walls and D-walls; and • Construction of District Cooling System Works.

Breaches of the Action and Limit Levels

iii. No Action and Limit Level exceedance for 24-hr TSP and noise was recorded in the reporting period at all monitoring stations.

Complaint, Notification of Summons and Successful Prosecution

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

v. A complaint received on 9 February 2017 was referred from EPD on 21 February 2017 and summarized as below:

- No car washing machine was found in the construction site near the gate of former Radar Tower.
- Dust was observed when the vehicle leaving and entering the Site.

The notification of complaint was received by ET on 22 February 2017.

vi. No notification of summons and successful prosecution were received in the reporting period.

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 Quarterly EM&A report is required under Section 16.1.2 and 16.7.1 of the EM&A Manual AEIAR-130/2009. It is to report the results and findings of the EM&A programme required in the EM&A Manual.

1.1.5 This is the fourth quarterly EM&A Report which summaries the impact monitoring results and audit findings for the Project within the period between 1 December 2016 and 28 February 2017.

1.2 Project Organization

1.2.1 The project proponent was the Civil Engineering and Development Department, HKSAR (CEDD). Hyder Meinhardt Joint Venture (HMJV) was commissioned by CEDD as the Engineer for the Project. Ramboll Environ Hong Kong Limited was commissioned as the Independent Environmental Checker (IEC). China Road and Bridge Corporation (Hong Kong) (CRBC) was appointed as the main contractor for the construction works under the contract KL/2014/03. MateriaLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by CEDD to implement the EM&A programme for the Project.

1.2.2 The organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarized in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Project Proponent (CEDD)	Co-ordinator	Ms. Amy Chu	3106 3172	2369 4980
Engineer's Representative (HMJV)	Chief Resident Engineer	Mr. W. K., Chris Wong	3742 3803	3742 3899
IEC (Ramboll Environ Hong Kong Limited)	Independent Environmental Checker	Mr. F. C. Tsang	3465 2851	3465 2899
Main Contractor (CRBC)	Site Agent	Mr. Chan See Wai, Arnold	9380 4110	2283 1689
	Environmental Officer	Mr. Andy Choy	6278 2693	2283 1689
ET (MCL)	Environmental Team Leader	Mr. Colin Yung	3565 4114	3565 4160

1.3 Construction Programme and Activities

1.3.1 The construction of the Project commenced in February 2016 and is expected to complete in 2020. The construction programme is shown in **Appendix A**.

1.3.2 A summary of the major construction activities undertaken in the reporting period were:

December 2016	January 2017	February 2017
• Temporary utility diversion; • Implementation of Temporary Traffic Arragement (TTA); • Construction of Socket H piles; • Excavation and Earth Lateral Support (ELS) construction for Supporting Underground Structure (SUS). • Construction of Subway B; • Construction of guide walls and D-walls; and • Construction of District Cooling System Works.	• Temporary utility diversion; • Implementation of Temporary Traffic Arragement (TTA); • Construction of Tunnel structure; • Construction of Subway B; • Construction of guide walls and D-walls; and • Construction of District Cooling System Works.	• Temporary utility diversion; • Implementation of Temporary Traffic Arragement (TTA); • Construction of Tunnel structure; • Construction of Subway B; • Construction of guide walls and D-walls; and • Construction of District Cooling System Works.

2. SUMMARY OF EM&A REQUIREMENTS AND MONITORING RESULTS

2.1 Monitoring Requirement

In accordance with the approved EM&A Manuals, 24-hour Total Suspended Particulates (TSP) level and Leq (30min) at the designated monitoring stations 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. Leq (30min) monitoring is conducted for at least once a week during the construction phase between 0700 and 1900 on normal weekdays. The Action and Limit Levels of the air quality monitoring and noise monitoring are given in **Appendix C**

2.2 Monitoring Locations

2.2.1 According to the EM&A Manual, three monitoring locations for air quality monitoring and noise monitoring, 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 and two noise monitoring locations which are identified in Cha Kwo Ling area, are farther than 500m and 300m away from the site boundary respectively and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by other Contract(s) respectively.

2.2.2 According to the approved alternative baseline air quality and noise monitoring locations (EPD reference: EP2/K19/A/21 Pt.5), the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1b), they are summarized in **Table 2.1** and shown in **Figure 2**.

Table 2.1 Location of Air Quality Monitoring and Noise Monitoring Station

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

2.3 Results and Observations

2.3.1 No Action and Limit Level exceedance for 24-hr TSP was recorded in the reporting period at all monitoring stations.

2.3.2 No Action / Limit Level exceedance for construction noise was recorded in the reporting period at all monitoring stations.

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

2.3.4 During the reporting period, major dust sources including loading and unloading of C&D wastes, vehicles movement were observed in the site. 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. 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.

2.3.5 Graphical presentation of the monitoring data in the reporting period is presented in **Appendix D**.

2.4 Comparison of Monitoring Results with EIA Predictions

2.4.1 The monitoring data was compared with the EIA predictions as summarized in **Table 2.4** and **Table 2.5**.

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

Monitoring Station	Receiver Reference	Predicted Maximum 24-hour TSP Concentration (μg/m^3)	24-hour TSP concentration in Reporting Period (μg/ m^3)			Average 24-hour TSP concentration in Reporting Period (μg/ m^3)		
			Dec 2016	Jan 2017	Feb 2017	Dec 2016	Jan 2017	Feb 2017
KTD1a	KTD3	126	60 – 174	17 – 142	44 – 110	131	99	75
KTD2a	-	-	19 – 93	25 – 94	34 – 87	56	59	58
KER1b	KTD6	169	110 – 144	36 – 95	58 – 132	128	66	86

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.

Table 2.5 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 Reporting Period		
			Dec 2016	Jan 2017	Feb 2017
KTD1a	KTD1	74	68 - 71	67 - 73	67 - 72
KTD2a	KTD2	75	63 - 69	64 - 69	60 - 66
KER1b	KER1	75	64 - 74	65 - 73	65 - 73

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

2.4.2 The 24-hour TSP monitoring result of KTD 1a on 3, 9, 15 and 20 December 2016 exceeded the prediction in the approved in the approved EIA report. However, the result did not exceed the Action Level. Mitigation measures, including water spraying and covering of stockpiles of dusty materials were adopted and observed near the monitoring station KTD1a during the site inspections in December 2016. The discrepancy between the 24-hour TSP concentration and EIA Prediction in KTD1a is considered due to dust source from the non-project related construction activities near the monitoring station and the road travel along Shing Fung Road.

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

2.4.4 The noise monitoring results in the reporting months were below the Maximum Predicted Mitigated Construction Noise Level in the approved Environmental Impact Assessment (EIA) Report and no Action / Limit Level exceedance was recorded in the reporting period.

3. LANDSCAPE AND VISUAL

3.1 Results and Observations

3.1.1 To monitor and audit the implementation of landscape and visual mitigation measures, 13 weekly Landscape and Visual Site audits were carried out and 7 of them 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).

3.1.2 Total 6 no. of non-compliance were recorded in the weekly Landscape and Visual Site audits in the reporting period.

3.1.3 Observations and recommendations during site audits are summarized in **Table 5.1**.

4. WASTE MANAGEMENT

4.1 Results and Observations

4.1.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.

4.1.2 The amount of wastes generated by the site activities in the reporting period is shown in **Appendix E**.

4.1.3 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.

4.1.4 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.

5. SITE INSPECTION

5.1 Site Inspection

5.1.1 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 F**.

5.1.2 In the reporting month, 13 site inspections were carried out. 7 of them were the joint inspections with the IEC, ER, the Contractor and the ET.

5.1.3 No outstanding issues were reported during the reporting period.

5.1.4 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.

5.1.5 Details of observations recorded during the site inspections are presented in **Table 5.1**.

Table 5.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	14 December 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 21 December 2016.
	29 December 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 5 January 2017.
	5 January 2017	Contractor was reminded to provide adequate watering to reduce dust emission. Adequate watering shall be provided. (Portion I).	The item was rectified by the Contractor and inspected on 12 January 2017.
	5 January 2017	The C&D material shall be properly covered after the excavation is done (Zone1).	The item was rectified by the Contractor and inspected on 12 January 2017.
	12 January 2017	Dusty road shall be sprayed with water regularly to reduce dust emission. (Zone 4)	The item was rectified by the Contractor and inspected on 18 January 2017.
	18 January 2017	Open stockpile shall be covered with impermeable sheeting to prevent dust emission. (Zone 4)	The item was rectified by the Contractor and inspected on 26 January 2017.
	26 January 2017	Dark smoke was observed in an operating crane. Purifier shall be installed and repairing programme shall be implemented (Zone 2).	The item was rectified by the Contractor and inspected on 2 February 2017.
	26 January 2017	Contractor was reminded to keep watering to reduce dust emission form construction activities (Zone 4).	The item was rectified by the Contractor and inspected on 2 February 2017.
	9 February 2017	Open stockpile shall be covered with impermeable sheeting to prevent dust emission. (Zone 4)	The item was rectified by the Contractor and inspected on 15 February 2017.

Parameters	Date	Observations and Recommendations	Follow-up
	23 February 2017	Open stockpile shall be covered with impermeable sheeting to prevent dust emission. (Zone 4)	The item was rectified by the Contractor and inspected on 2 March 2017.
Noise	1 December 2016	The door of air compressor shall be closed in order to reduce noise impact. (Zone 4)	The item was rectified by the Contractor and inspected on 8 December 2016.
Water Quality	5 January 2017	Contractor shall provide a good practise to prevent waste water from wheel washing to enter the public drainage. Proper wheel washing area shall be provided. (Zone 2)	The item was rectified by the Contractor and inspected on 12 January 2017.
	26 January 2017	Waste water from wheel washing shall be from the pit at Zone 2. Waste water shall be removed. (Zone 2).	The item was rectified by the Contractor and inspected on 2 February 2017.
	23 February 2017	Channel between Zone 1 and the Wetsep was blocked by silt or clay. Blockage should be cleared before the wet season. (Zone 1)	The item was rectified by the Contractor and inspected on 2 March 2017.
	23 February 2017	Surface runoff shall be prevented to enter public drainage or haul road. (Zone 4)	The item was rectified by the Contractor and inspected on 2 March 2017.
Chemical and Waste Management	21 December 2016	Sufficient waste disposal points and regular collection for disposal shall be provided. Larger skip shall be provided. General refuse shall be collected regularly (Zone 2).	The item was rectified by the Contractor and inspected on 29 December 2016.
	21 December 2016	Chemical oil shall be stored properly. Drip tray shall be provided (Zone 3).	The item was rectified by the Contractor and inspected on 29 December 2016.
	12 January 2017	Oil Containers shall be stored properly. Drip tray shall be provided. Empty oil containers shall be removed. (Zone 1 and Zone 4)	The item was rectified by the Contractor and inspected on 18 January 2017.
Land Contamination	2 February 2017	Breaker tips should be removed or stored on tray to prevent land contamination. (Zone 2)	The item was rectified by the Contractor and inspected on 9 February 2017.
Landscape and Visual Impact	14 December 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 and Zone 1)	The item was rectified by the Contractor and inspected on 21 December 2016.
	29 December 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	The item was rectified by the Contractor and inspected on 5 January 2017.

Parameters	Date	Observations and Recommendations	Follow-up
		and tidy visual appearance. (Portion I)	
	5 January 2017	Open stockpiles shall be covered by unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance. (Portion I)	The item was rectified by the Contractor and inspected on 12 January 2017.
	18 January 2017	Open stockpiles shall be covered by unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance. (Zone 4)	The item was rectified by the Contractor and inspected on 26 January 2017.
	9 February 2017	Open stockpiles shall be covered by unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance. (Zone 4)	The item was rectified by the Contractor and inspected on 15 February 2017.
	23 February 2017	Open stockpiles shall be covered by unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance. (Zone 4)	The item was rectified by the Contractor and inspected on 2 March 2017.
General	8 December 2016	Stagnant water was found in the platform in Zone 1. Stagnant water shall be removed. (Zone 1)	The item was rectified by the Contractor and inspected on 14 December 2016.
	9 February 2017	Proper wheel washing facilities in every vehicle exit point shall be provided or otherwise to ensure no vehicle would exit. (Zone 2)	The item was rectified by the Contractor and inspected on 15 February 2017.
	23 February 2017	Proper wheel washing facilities in every vehicle exit point shall be provided or otherwise to ensure no vehicle would exit. (Zone 3)	The item was rectified by the Contractor and inspected on 2 March 2017.

6. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

6.1 Environmental Exceedance

6.1.1 No Action and Limit Level exceedance for 24-hr TSP and noise was recorded in the reporting period at all monitoring stations. Number of exceedance in the reporting period was summarized in **Table 6.1**.

Table 6.1 Summary of Exceedance in Reporting Period

Monitoring Station		Number of exceedance in the reporting period						
		24hr TSP μg/m^3			Leq $_{(30min)}$ dB(A)			Total
		December 2016	January 2017	February 2017	December 2016	January 2017	February 2017	
KTD1a	AL	0	0	0	0	0	0	0
	LL	0	0	0	0	0	0	0
KTD2a	AL	0	0	0	0	0	0	0
	LL	0	0	0	0	0	0	0
KER1b	AL	0	0	0	0	0	0	0
	LL	0	0	0	0	0	0	0
Total	AL	0	0	0	0	0	0	0
	LL	0	0	0	0	0	0	0

6.2 Complaints, Notification of Summons and Prosecution

6.2.1 No complaint, inspection notice, notification of summons or prosecution was received in this reporting period. Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Table 6.2, 6.3 and 6.4**.

Table 6.2 Environmental Complaints Log

Complaint Log No.	Date of Notification	Received From and Received By	Nature of Complaint	Date of Investigation	Outcome	Date of Reply
1	15 December 2016	Andy Choy	Air	13 February 2017	Project-related	13 February 2017
2	21 February 2017	Andy Choy	Air	22 February 2017	Not Project-related	7 March 2017

Table 6.3 Cumulative Statistics on Complaints

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints in the Reporting Period			Cumulative Project-to-Date
		December 2016	January 2017	February 2017	
Air	0	1	0	1	2
Noise	0	0	0	0	0
Water	0	0	0	0	0
Waste	0	0	0	0	0
Total	0	0	0	0	0

Table 6.4 Cumulative Statistics on Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Reporting Period			Cumulative Project-to-Date
		December 2016	January 2017	February 2017	
Air	0	0	0	0	0
Noise	0	0	0	0	0
Water	0	0	0	0	0
Waste	0	0	0	0	0
Total	0	0	0	0	0

7. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

7.1 Implementation Status

7.1.1 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 period is summarized in **Appendix F**.

8. CONCLUSIONS

8.1.1 No Action and Limit Level exceedance for 24-hr TSP and noise was recorded in the reporting period at all monitoring stations.

8.1.2 13 weekly environmental site inspections were carried out in the reporting period. Recommendations on mitigation measures on air quality, water quality, noise, waste management, land contamination and landscape and visual impact were given to the Contractor for remediating the deficiencies identified during the site inspections.

8.1.3 13 weekly Landscape and Visual Site audits were carried out on in the reporting period and 7 of them were carried out by a Registered Landscape Architect in the reporting period. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009). Total 6 no. of non-compliance were recorded in the weekly Landscape and Visual Site audits in the reporting period.

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

8.1.5 A complaint received on 9 February 2017 was referred from EPD on 21 February 2017 and summarized as below:

- No car washing machine was found in the construction site near the gate of former Radar Tower.
- Dust was observed when the vehicle leaving and entering the Site.

The notification of complaint was received by ET on 22 February 2017.

8.1.6 Referring to the Contractor's information, no notification of summons and successful prosecution was received in the reporting period.

8.2 Comment and Recommendations

8.2.1 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.

8.2.2 According to the environmental audit performed in the reporting period, the following recommendations were made:

Air Quality Impact

- Open stockpiles shall be covered by unobtrusive sheeting to prevent dust emission.
- Contractor was reminded to provide adequate watering to reduce dust emission.
- The C&D material shall be properly covered after the excavation is done.
- Dark smoke was observed in an operating crane. Purifier shall be installed and repairing programme shall be implemented.

Construction Noise Impact

- The door of air compressor shall be closed in order to reduce noise impact.

Water Quality Impact

- Contractor shall provide a good practise to prevent waste water from wheel washing to enter the public drainage. Proper wheel washing area shall be provided.
- Waste water shall be removed.
- Channel between Zone 1 and the Wetsep was blocked by silt or clay. Blockage should be cleared before the wet season Waste water shall be removed.
- Surface runoff shall be prevented to enter public drainage or haul road.

Chemical and Waste Management

- Sufficient waste disposal points and regular collection for disposal shall be provided.
- Chemical oil shall be stored properly. Drip tray shall be provided.

Landscape and Visual Impact

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

General Condition

- Stagnant water was found in the storage area of construction materials. Stagnant water shall be removed.
- Proper wheel washing facilities in every vehicle exit point shall be provided or otherwise to ensure no vehicle would exit.

Permit / Licenses

- No specific observation was identified in the reporting month.

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

Figure 1

Project General Layout

PROPOSED
NEW ACUTE HOSPITAL
(PHASE II)

PROPOSED
NEW ACUTE HOSPITAL
(PHASE I)

HONG KONG CHILDREN'S HOSPITAL
(HKCH)

PUBLIC WORKS
CENTRAL LABORATARY
BUILDING

Proposed Fire Station cum Ambulance Facility

WANG CHU ROAD

TSUNG YIP STREET

KAI TAK ROAD

KAHING ROAD

LAM CHAK STREET

Kowloon Bay Waste Recycling Centre

Temporary Department Vehicle Examination Centre

Elevated Road

Road

Seawall

CREEK

KAI TAK BRIDGE

Octa Tower

Kowloon Godown

Kerry D.G. Godown (Kowloon Bay)

Open Storage

KEY PLAN

KAI TAK
KOWLOON BAY
JORDAN VALLEY
SAU MAU PING
TAU KOK
NGAU TAU KOK
KWUN TONG
AWA WAN
KOWLOON BAY
SAU TAU KOK
SHA KWO LING
YAU TONG

LEGENDS:

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

Rev.	Date	Drawn	Description	Checked	Approved

Hyder-Meinhardt JV

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
1 : 1000		A

Drawing No.

FIGURE 1.0

PRINTED BY: kitchan 18/2/2015 13:00:43
FILENAME: K:\9164 Trunk Road T2\Tender Drawing (Contract II)\Figure 1.dgn

PLOT DRIVE: K:\9164 Trunk Road T2\Cad Admin\AI_COLOUR V8I.plt

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

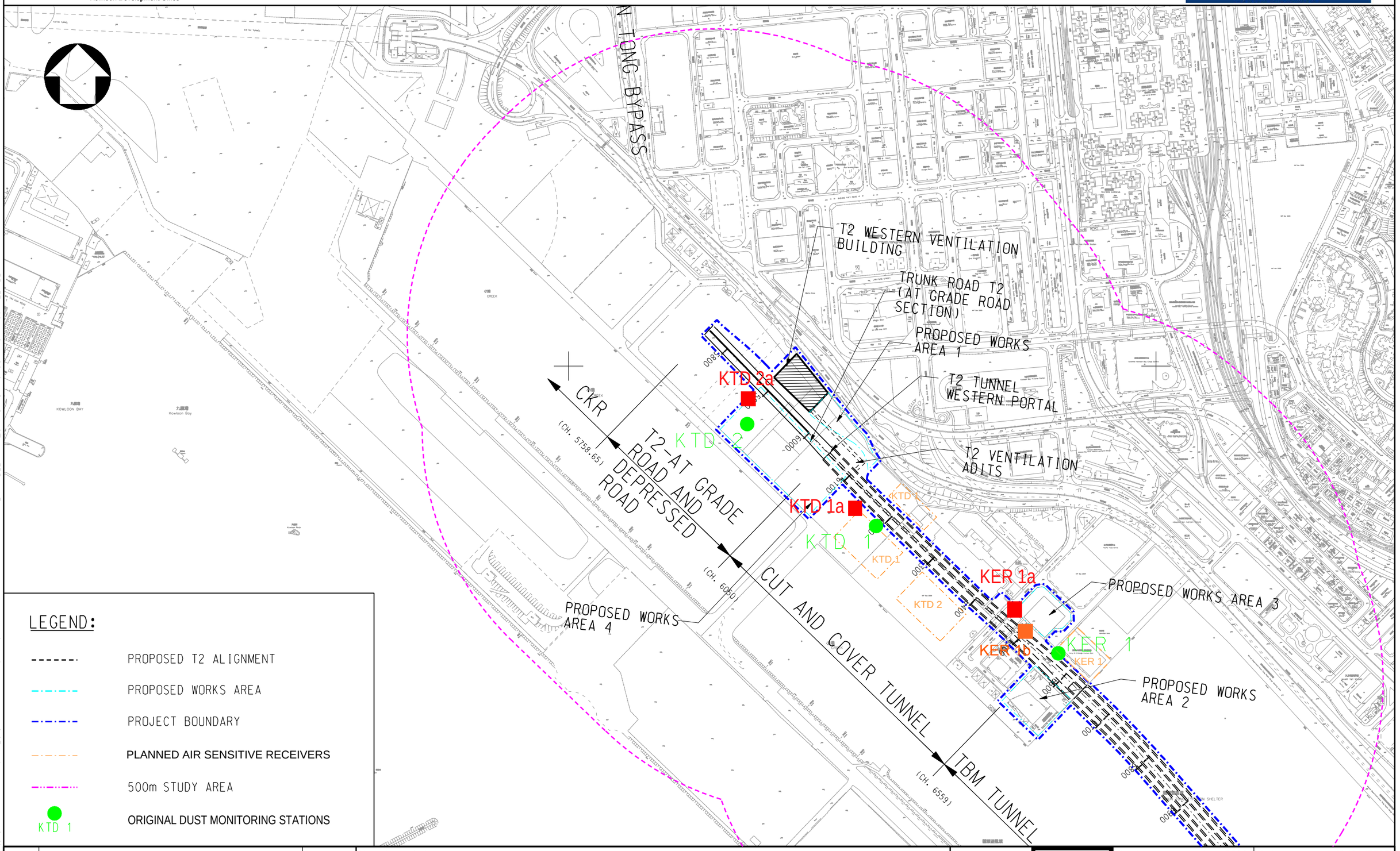
Figure 2

Air and Noise Monitoring Locations

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

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

Hyder-Meinhardt JV



LEGEND:

- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PLANNED AIR SENSITIVE RECEIVERS
- 500m STUDY AREA
- KTD 1 — ORIGINAL DUST MONITORING STATIONS
- KTD 1a — PROPOSED DUST MONITORING STATIONS

Rev.	Description	Date

Drawing title

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

Original Size: A3
Scale: 1 : 6000
Date: 30/01/2012
File name:
© Copyright reserved
Drawing No.: FIGURE 2.1a (revised)
Rev.: --

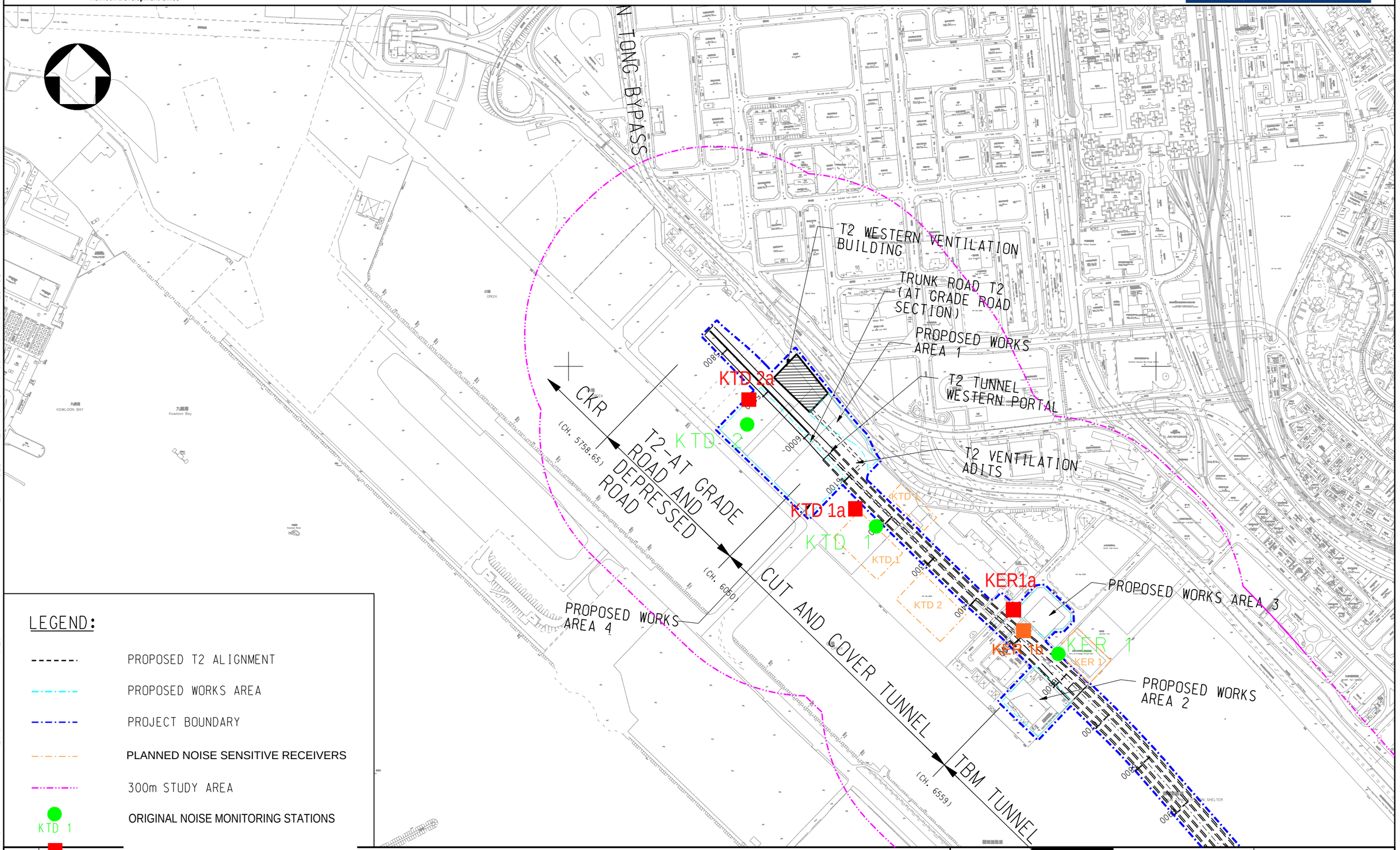
PEN TABLE: K:_STANDARD\MICROSTATION\Plot\MIEL.TBL
PRINTER NAME: PDFCreator
PLOT DRV: K:\91164 Trunk Road T2\Cad Admin\A3_colour.plt
PRINTED BY: kitchan
6/11/2013 6:14:49 PM

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

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

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

Hyder-Meinhardt JV



LEGEND:

- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PLANNED NOISE SENSITIVE RECEIVERS
- 300m STUDY AREA
- KTD 1 — ORIGINAL NOISE MONITORING STATIONS
- KTD 1a — PROPOSED NOISE MONITORING STATIONS

Rev.	Description	Date

Drawing title

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

Original Size: A3

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

File name

Drawing No. FIGURE 3.1a (revised) | Rev. --

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

PEN TABLE: K:_STANDARD\MICROSTATION\Plot\MIEL_TBL
PRINTER NAME: PDFCreator
PLOT DRV: K:\91164 Trunk Road T2\Cad Admin\A3_colour.plt
PRINTED BY: kitchan
6/11/2013 6:15:29 PM

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

Appendix A

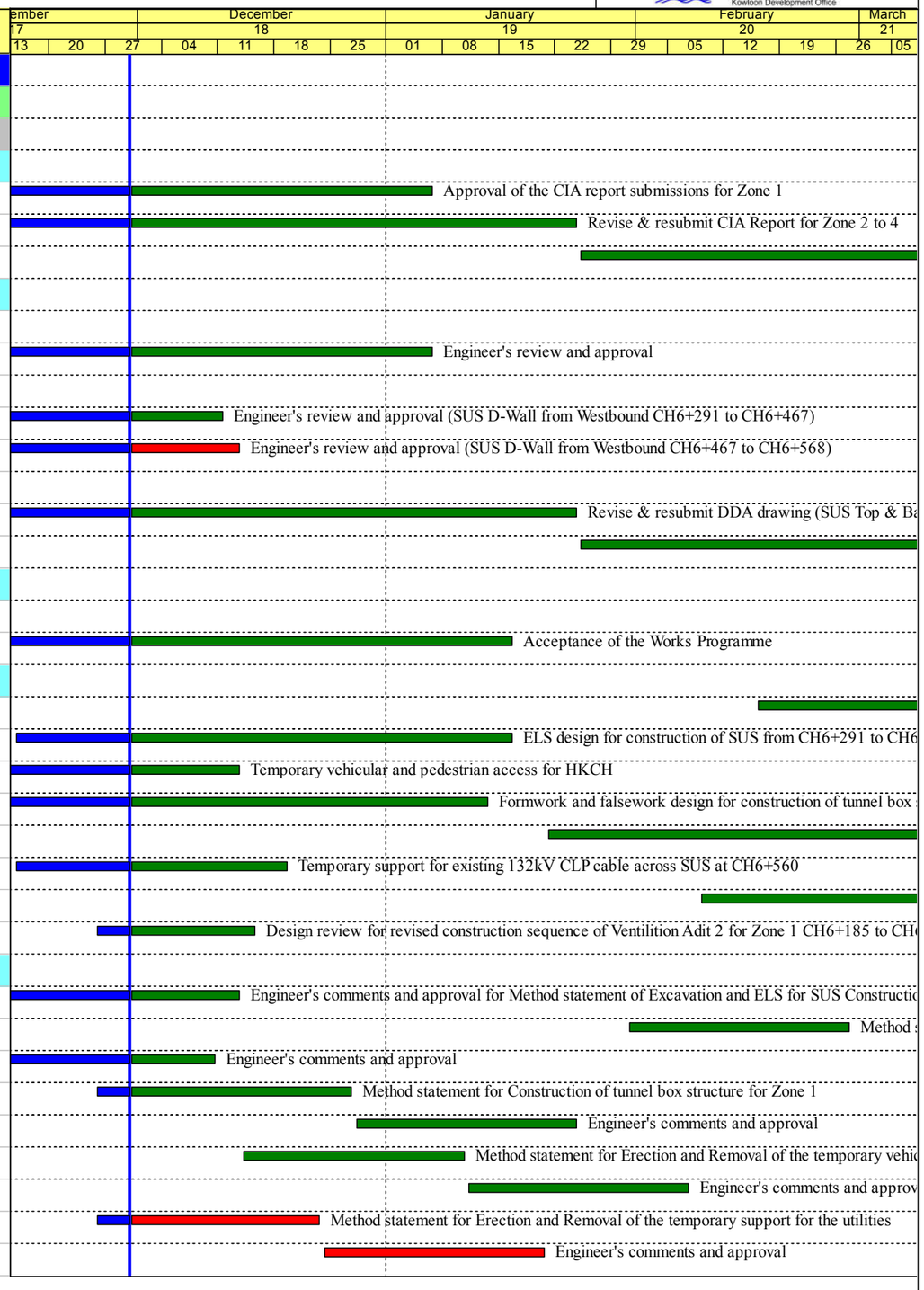
Construction Programme

Hyder - Meinhardt JV

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

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

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
KL/2014/03-Stage 3 Infrastructure Works for Developments at the Southern Part of the Forme		1200	925	04-Jan-16 A	12-Jun-19
Project Key Dates		1190	925	01-Feb-16 A	12-Jun-19
General Submission		321	147	11-May-16 A	25-Apr-17
Condition Survey & Construction Impact Assessment		203	112	11-May-16 A	21-Mar-17
K-DR-PRE-1230	Approval of the CIA report submissions for Zone 1	56	38	14-Sep-16 A	06-Jan-17
K-DR-PRE-1320	Revise & resubmit CIA Report for Zone 2 to 4	30	56	11-May-16 A	24-Jan-17
K-DR-PRE-1330	Approval of the CIA report submissions	56	56	25-Jan-17	21-Mar-17
Alternative Design Submission and Approval		225	112	12-Jul-16 A	21-Mar-17
Package B03 : SUS Tunnel box from (CH6+150 to CH6+220)		56	38	12-Jul-16 A	06-Jan-17
K-PA-ADS-1030	Engineer's review and approval	56	38	12-Jul-16 A	06-Jan-17
Package B05 : SUS D-wall from (CH6+291 to CH6+568)		86	14	13-Jul-16 A	13-Dec-16
K-PA-ADS-1510	Engineer's review and approval (SUS D-Wall from Westbound CH6+291 to CH6+467)	21	12	13-Jul-16 A	11-Dec-16
K-PA-ADS-1550	Engineer's review and approval (SUS D-Wall from Westbound CH6+467 to CH6+568)	28	14	13-Jul-16 A	13-Dec-16
Package B06 : SUS Top & base slab and intermediate wall from (CH6+220 to CH6+568)		222	112	12-Aug-16 A	21-Mar-17
K-PA-ADS-1420	Revise & resubmit DDA drawing (SUS Top & Base slab and Intermediate wall from CH6+220 to CH6+568)	28	56	12-Aug-16 A	24-Jan-17
K-PA-ADS-1430	Engineer's review and approval	56	56	25-Jan-17	21-Mar-17
Programming / Reporting		28	48	09-Jun-16 A	16-Jan-17
Works Programme		28	48	09-Jun-16 A	16-Jan-17
K-PA-GSP-4300	Acceptance of the Works Programme	28	48	09-Jun-16 A	16-Jan-17
Major Temporary Works Design		225	134	24-Aug-16 A	12-Apr-17
K-PA-GSP-6820	ELS design for construction of SUS from CH6+220 to CH6+291 in Zone 2 - horizontal members	56	56	16-Feb-17	12-Apr-17
K-PA-GSP-6835	ELS design for construction of SUS from CH6+291 to CH6+568 in Zone 4 - horizontal members	56	48	16-Nov-16 A	16-Jan-17
K-PA-GSP-6870	Temporary vehicular and pedestrian access for HKCH	35	14	24-Aug-16 A	13-Dec-16
K-PA-GSP-6880	Formwork and falsework design for construction of tunnel box structure	56	45	02-Nov-16 A	13-Jan-17
K-PA-GSP-8860	Pumping Test for SUS Cofferdam in Zone 4	50	50	21-Jan-17	11-Mar-17
K-PA-GSP-9100	Temporary support for existing 132kV CLP cable across SUS at CH6+560	35	20	16-Nov-16 A	19-Dec-16
K-PA-GSP-9250	ELS design for construction of existing seawall	35	35	09-Feb-17	15-Mar-17
K-PA-GSP-9260	Design review for revised construction sequence of Ventilition Adit 2 for Zone 1 CH6+185 to CH6+220	28	16	26-Nov-16 A	15-Dec-16
Major Construction Works Method Statement		165	90	06-Sep-16 A	27-Feb-17
K-PA-GSP-7145	Engineer's comments and approval for Method statement of Excavation and ELS for SUS Construction for Zone 1	28	14	06-Sep-16 A	13-Dec-16
K-PA-GSP-7150	Method statement of Excavation and ELS for SUS Construction for Zone 3	28	28	31-Jan-17	27-Feb-17
K-PA-GSP-7316	Engineer's comments and approval	28	11	28-Oct-16 A	10-Dec-16
K-PA-GSP-7400	Method statement for Construction of tunnel box structure for Zone 1	28	28	26-Nov-16 A	27-Dec-16
K-PA-GSP-7405	Engineer's comments and approval	28	28	28-Dec-16	24-Jan-17
K-PA-GSP-7490	Method statement for Erection and Removal of the temporary vehicular and pedestrian access for HKCH	28	28	14-Dec-16	10-Jan-17
K-PA-GSP-7495	Engineer's comments and approval	28	28	11-Jan-17	07-Feb-17
K-PA-GSP-7500	Method statement for Erection and Removal of the temporary support for the utilities	28	24	26-Nov-16 A	23-Dec-16
K-PA-GSP-7505	Engineer's comments and approval	28	28	24-Dec-16	20-Jan-17



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

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

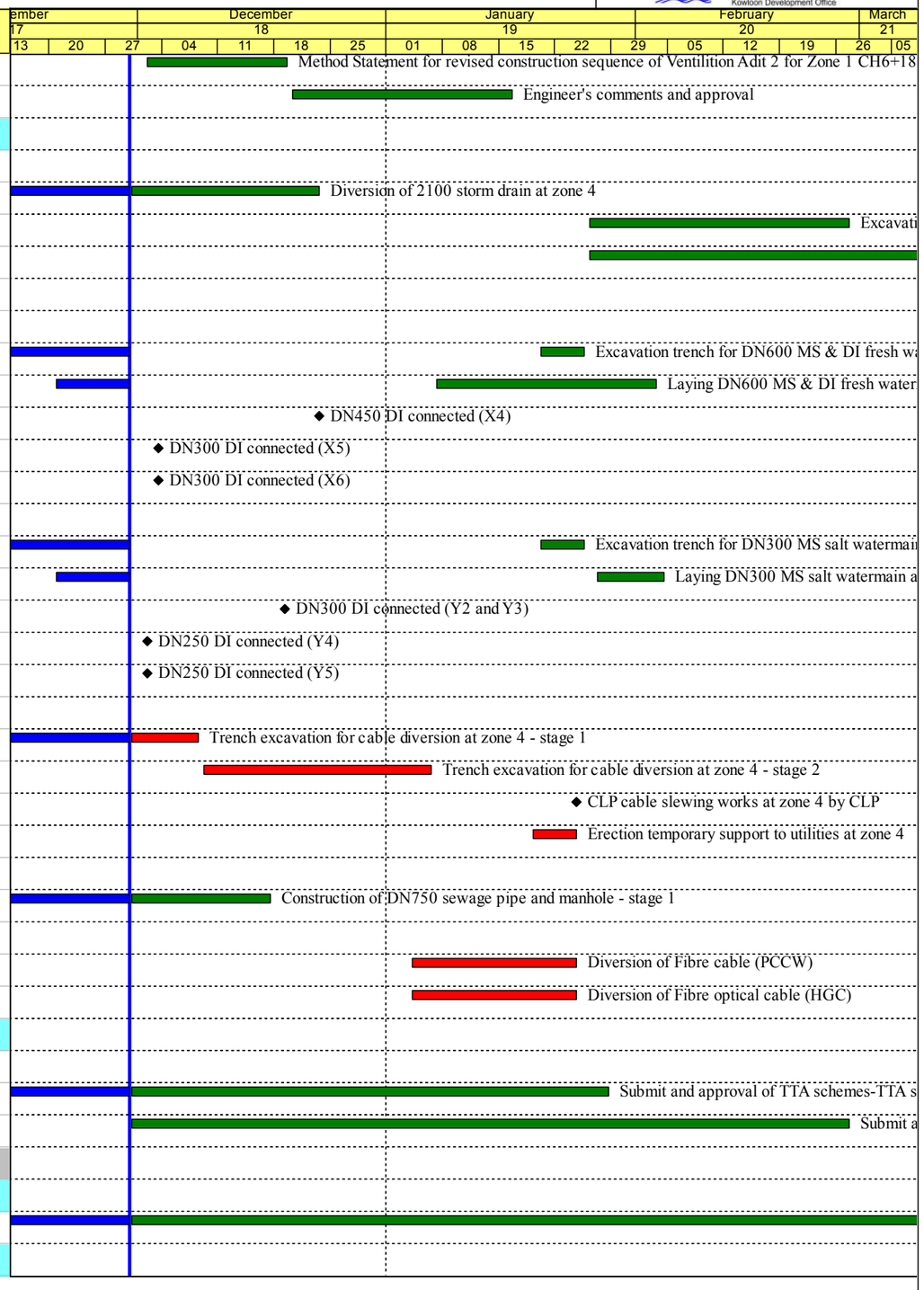
3 MRP Dec 2016 - Feb 2017

Project ID :12 3MPR Dec - Feb 17
Layout : KL201403 WP3 3MRP

3 Months Rolling Programme

Date	Revision	Checked	Approved
30-Nov-16	3MPR Dec 16 - Feb 17		

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-PA-GSP-9270	Method Statement for revised construction sequence of Ventilition Adit 2 for Zone 1 CH6+185 to CH6+220	18	18	02-Dec-16	19-Dec-16
K-PA-GSP-9280	Engineer's comments and approval	28	28	20-Dec-16	16-Jan-17
Temporary Utility Diversion Works		175	116	05-Sep-16 A	25-Apr-17
Temporary Diversion for Drainage Works		175	116	05-Sep-16 A	25-Apr-17
K-PA-TUD-2400	Diversion of 2100 storm drain at zone 4	60	21	05-Sep-16 A	23-Dec-16
K-PA-TUD-2500	Excavation and laying of DN600 MS pipe and manhole (N-CP-1) at zone 4 for HKCH connection	25	25	26-Jan-17	27-Feb-17
K-PA-TUD-2600	Excavation and laying of DN300 MS pipe and manhole (FMH23-15D) at zone 4	70	70	26-Jan-17	25-Apr-17
Temporary Diversion for Watermain Works		47	50	31-Oct-16 A	04-Feb-17
Laying Proposed (Fresh) Watermain		47	47	31-Oct-16 A	03-Feb-17
K-PA-TUD-1100	Excavation trench for DN600 MS & DI fresh watermain at subway B & zone 1	15	5	31-Oct-16 A	25-Jan-17
K-PA-TUD-1120	Laying DN600 MS & DI fresh watermain at subway B & zone 1	20	21	21-Nov-16 A	03-Feb-17
K-PA-TUD-2050	DN450 DI connected (X4)	0	0		23-Dec-16
K-PA-TUD-2140	DN300 DI connected (X5)	0	0		03-Dec-16
K-PA-TUD-2150	DN300 DI connected (X6)	0	0		03-Dec-16
Laying Proposed (Salt) Watermain		46	50	31-Oct-16 A	04-Feb-17
K-PA-TUD-1200	Excavation trench for DN300 MS salt watermain at subway B & zone 1	18	5	31-Oct-16 A	25-Jan-17
K-PA-TUD-1220	Laying DN300 MS salt watermain at subway B & zone 1	20	5	21-Nov-16 A	04-Feb-17
K-PA-TUD-2250	DN300 DI connected (Y2 and Y3)	0	0		19-Dec-16
K-PA-TUD-2340	DN250 DI connected (Y4)	0	0		02-Dec-16
K-PA-TUD-2350	DN250 DI connected (Y5)	0	0		02-Dec-16
Temporary Diversion for CLP Cable at CH6+560		71	45	17-Oct-16 A	24-Jan-17
K-PA-TUD-3300	Trench excavation for cable diversion at zone 4 - stage 1	22	8	17-Oct-16 A	08-Dec-16
K-PA-TUD-3500	Trench excavation for cable diversion at zone 4 - stage 2	22	22	09-Dec-16	06-Jan-17
K-PA-TUD-3600	CLP cable slewing works at zone 4 by CLP	0	0		24-Jan-17
K-PA-TUD-3650	Erection temporary support to utilities at zone 4	5	5	19-Jan-17	24-Jan-17
Temporary Diversion for Sewage Rising Main		10	16	15-Nov-16 A	17-Dec-16
K-PA-TUD-1600	Construction of DN750 sewage pipe and manhole - stage 1	10	16	15-Nov-16 A	17-Dec-16
Temporary Diversion for Telecommunication Cable		18	18	04-Jan-17	24-Jan-17
K-PA-TUD-4000	Diversion of Fibre cable (PCCW)	18	18	04-Jan-17	24-Jan-17
K-PA-TUD-4050	Diversion of Fibre optical cable (HGC)	18	18	04-Jan-17	24-Jan-17
Temporary Traffic Management		212	90	31-Jul-16 A	27-Feb-17
Temp Traffic Arrangement Schemes		212	90	31-Jul-16 A	27-Feb-17
K-PA-TTA-8100	Submit and approval of TTA schemes-TTA stage 2 for D-wall W/B at Zone 2	90	60	31-Jul-16 A	28-Jan-17
K-PA-TTA-8900	Submit and approval of TTA schemes-TTA stage 3 for re-construction of Cheung Yip Street	90	90	30-Nov-16	27-Feb-17
Materials Procurement (Major Materials)		921	665	01-Feb-16 A	25-Sep-18
ELS struct / waling		360	300	10-Jun-16 A	25-Sep-17
K-PA-MP-1150	Manufacturing & delivery to site	360	300	10-Jun-16 A	25-Sep-17
Chilled Water Pipes - DCS		630	630	04-Jan-17	25-Sep-18

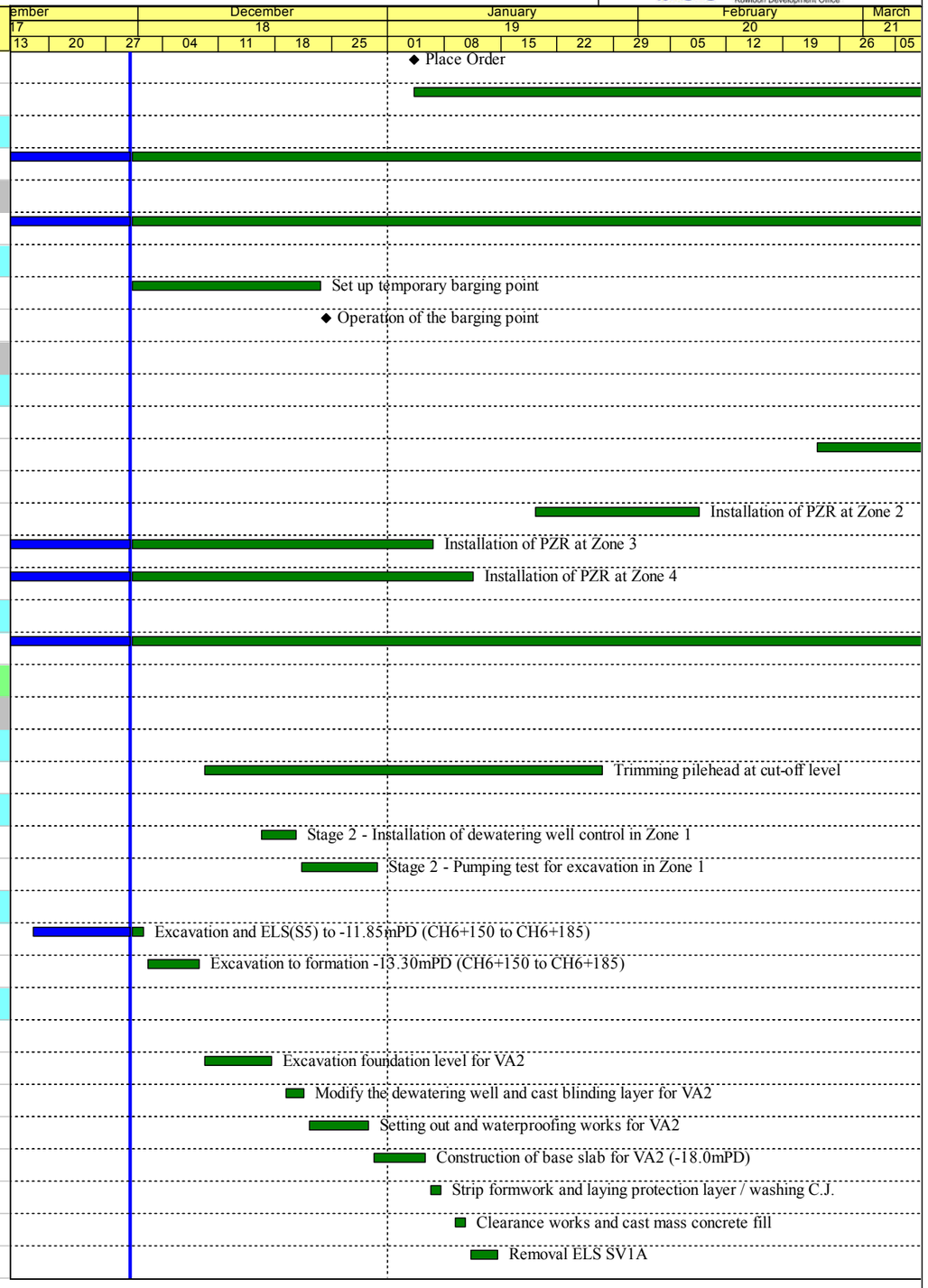


Hyder - Meinhardt JV

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

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

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-PA-MP-1300	Place Order	0	0	04-Jan-17	
K-PA-MP-1350	Manufacturing & delivery to site	630	630	04-Jan-17	25-Sep-18
Steel H-Pile		420	160	01-Feb-16 A	08-May-17
K-PA-MP-1250	Manufacturing & delivery to site	420	160	01-Feb-16 A	08-May-17
Prelimiaries		1190	925	11-Mar-16 A	12-Jun-19
K-DR-PRE-1800	Submission of time-lapsed photographs and viedo	1190	925	11-Mar-16 A	12-Jun-19
Barge Loading Facilities		21	21	30-Nov-16	24-Dec-16
K-DR-PRE-1450	Set up temporary barging point	21	21	30-Nov-16	23-Dec-16
K-DR-PRE-1480	Operation of the barging point	0	0	24-Dec-16	
Instrumentation and Monitoring		367	240	19-Jul-16 A	27-Jul-17
Westbound Instrumentation and Monitoring		206	82	19-Jul-16 A	11-Mar-17
Extensomter (EXT)		15	15	23-Feb-17	11-Mar-17
K-IM-EXT-1370	Installation of EXT at Zone 3	15	15	23-Feb-17	11-Mar-17
Piezometer/Standpipe (PZR)		179	55	19-Jul-16 A	08-Feb-17
K-IM-PZR-1360	Installation of PZR at Zone 2	15	15	19-Jan-17	08-Feb-17
K-IM-PZR-1370	Installation of PZR at Zone 3	40	30	05-Aug-16 A	06-Jan-17
K-IM-PZR-1380	Installation of PZR at Zone 4	40	34	19-Jul-16 A	11-Jan-17
Tilt Monitoring Tile Plates		310	240	03-Aug-16 A	27-Jul-17
K-IM-TMT-1000	Tilt Monitoring Tile Plates near PWCL	310	240	03-Aug-16 A	27-Jul-17
Section 1A of the Works -Construction of Supporting Underground Structure (Alternative Design)		156	117	15-Oct-16 A	26-Apr-17
SUS and Ventilation Adits from CH6+150 to CH6+220 in Zone 1		76	78	15-Nov-16 A	07-Mar-17
Construction of Socketed H-Pile		40	40	09-Dec-16	27-Jan-17
K-1A-SV1-3400	Trimming pilehead at cut-off level	40	40	09-Dec-16	27-Jan-17
Pumping Test		11	11	16-Dec-16	30-Dec-16
K-1A-SV1-4210	Stage 2 - Installation of dewatering well control in Zone 1	4	4	16-Dec-16	20-Dec-16
K-1A-SV1-4220	Stage 2 - Pumping test for excavation in Zone 1	7	7	21-Dec-16	30-Dec-16
Excavation and ELS Construction		29	8	18-Nov-16 A	08-Dec-16
K-1A-SV1-5450	Excavation and ELS(S5) to -11.85mPD (CH6+150 to CH6+185)	17	2	18-Nov-16 A	01-Dec-16
K-1A-SV1-5550	Excavation to formation -13.30mPD (CH6+150 to CH6+185)	6	6	02-Dec-16	08-Dec-16
Construction of Tunnel Box Structure		72	78	15-Nov-16 A	07-Mar-17
SUS Bay 1 (Ch6150-Ch6167.5)		70	70	09-Dec-16	07-Mar-17
K-1A-SV1-8040	Excavation foundation level for VA2	8	8	09-Dec-16	17-Dec-16
K-1A-SV1-8050	Modify the dewatering well and cast blinding layer for VA2	3	3	19-Dec-16	21-Dec-16
K-1A-SV1-8060	Setting out and waterproofing works for VA2	5	5	22-Dec-16	29-Dec-16
K-1A-SV1-8070	Construction of base slab for VA2 (-18.0mPD)	5	5	30-Dec-16	05-Jan-17
K-1A-SV1-8080	Strip formwork and laying protection layer / washing C.J.	2	2	06-Jan-17	07-Jan-17
K-1A-SV1-8090	Clearance works and cast mass concrete fill	2	2	09-Jan-17	10-Jan-17
K-1A-SV1-8100	Removal ELS SV1A	4	4	11-Jan-17	14-Jan-17



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

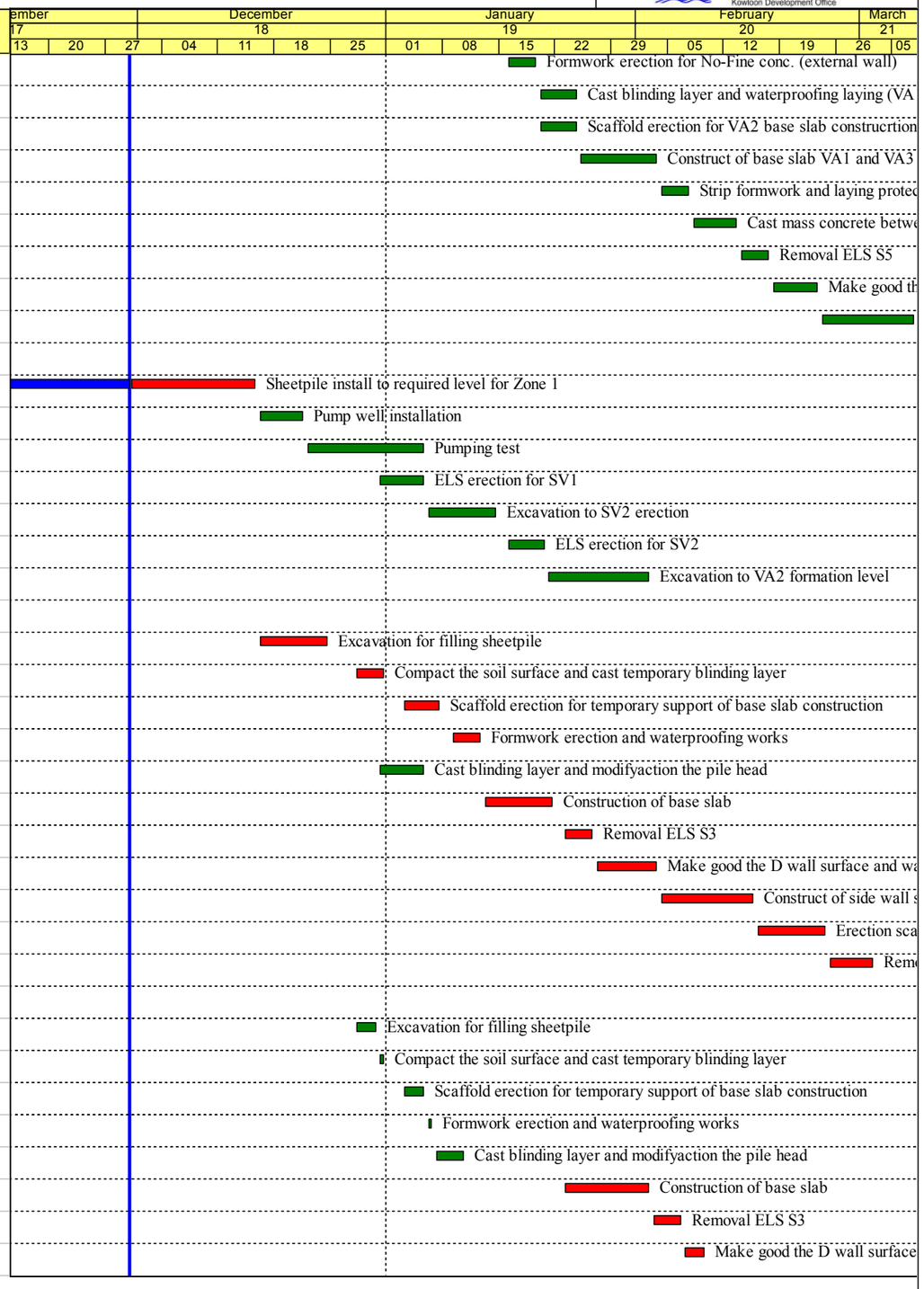
◆ Milestone
Critical Activity
Non-Critical Activity
Remaining Level of Effort
Actual Work

3 MRP Dec 2016 - Feb 2017

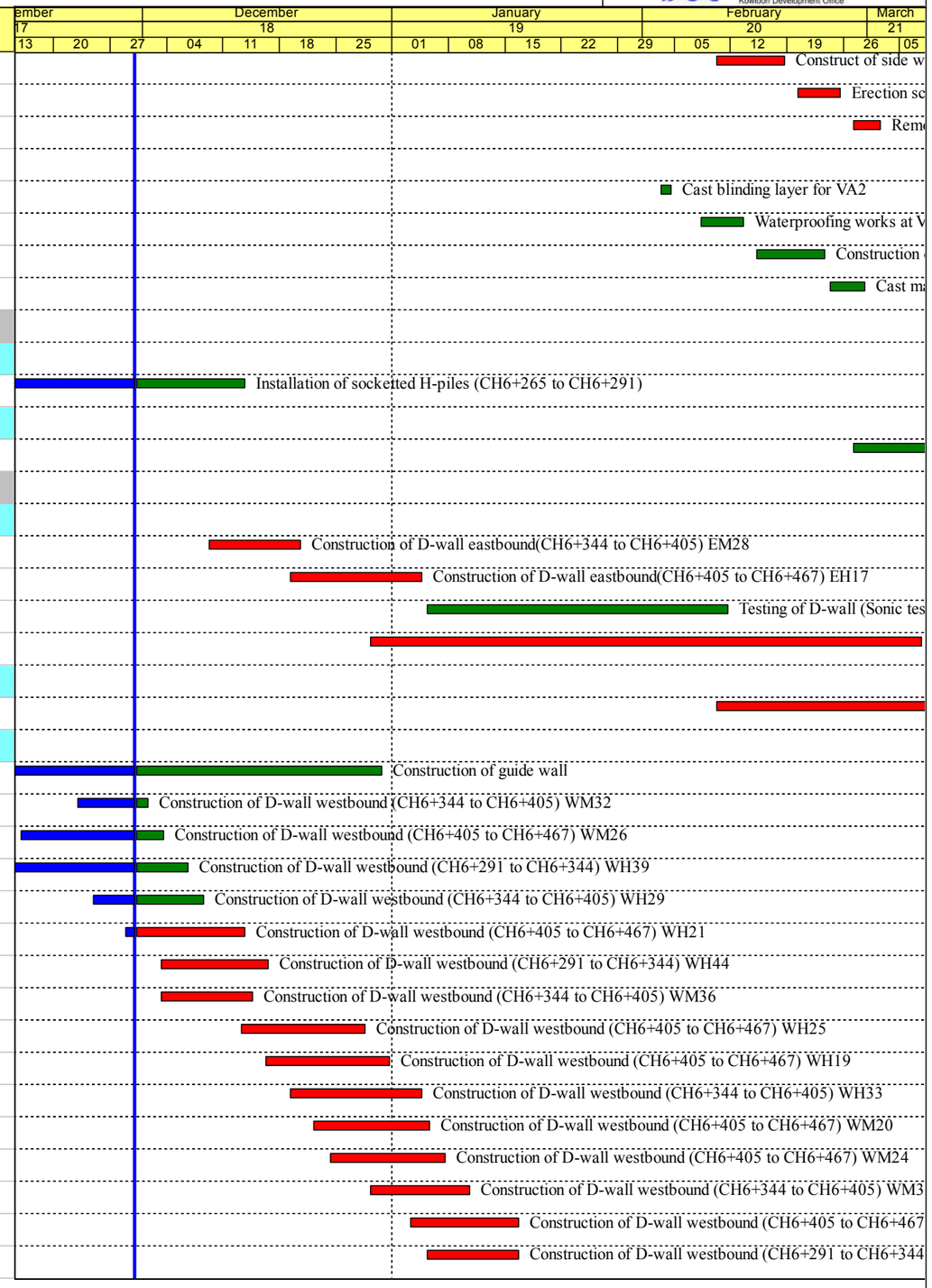
Project ID :12 3MPR Dec - Feb 17
Layout : KL201403 WP3 3MRP

3 Months Rolling Programme			
Date	Revision	Checked	Approved
30-Nov-16	3MPR Dec 16 - Feb 17		

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-1A-SV1-8110	Formwork erection for No-Fine conc. (external wall)	4	4	16-Jan-17	19-Jan-17
K-1A-SV1-8120	Cast blinding layer and waterproofing laying (VA1 and VA3)	4	4	20-Jan-17	24-Jan-17
K-1A-SV1-8130	Scaffold erection for VA2 base slab construcrtion	4	4	20-Jan-17	24-Jan-17
K-1A-SV1-8140	Construct of base slab VA1 and VA3 (-13.9 mPD)	6	6	25-Jan-17	03-Feb-17
K-1A-SV1-8150	Strip formwork and laying protection layer / washing C.J.	3	3	04-Feb-17	07-Feb-17
K-1A-SV1-8160	Cast mass concrete between VA1 and VA3	5	5	08-Feb-17	13-Feb-17
K-1A-SV1-8170	Removal ELS S5	4	4	14-Feb-17	17-Feb-17
K-1A-SV1-8180	Make good the D wall surface and waterproofing works	5	5	18-Feb-17	23-Feb-17
K-1A-SV1-8190	Construction of wall struct for VA1 and VA3	10	10	24-Feb-17	07-Mar-17
Sheet pile installation and Excavation works to VA2 formation level		44	50	15-Nov-16 A	02-Feb-17
K-1A-SV1-8430	Sheetpile install to required level for Zone 1	15	14	15-Nov-16 A	15-Dec-16
K-1A-SV1-8440	Pump well installation	5	5	16-Dec-16	21-Dec-16
K-1A-SV1-8450	Pumping test	10	10	22-Dec-16	05-Jan-17
K-1A-SV1-8460	ELS erection for SV1	4	4	31-Dec-16	05-Jan-17
K-1A-SV1-8470	Excavation to SV2 erection	8	8	06-Jan-17	14-Jan-17
K-1A-SV1-8480	ELS erection for SV2	5	5	16-Jan-17	20-Jan-17
K-1A-SV1-8490	Excavation to VA2 formation level	8	8	21-Jan-17	02-Feb-17
SUS Bay 4 (Ch6202.5-Ch6220)		60	60	16-Dec-16	02-Mar-17
K-1A-SV1-8500	Excavation for filling sheetpile	8	8	16-Dec-16	24-Dec-16
K-1A-SV1-8510	Compact the soil surface and cast temporary blinding layer	4	4	28-Dec-16	31-Dec-16
K-1A-SV1-8520	Scaffold erection for temporary support of base slab construction	5	5	03-Jan-17	07-Jan-17
K-1A-SV1-8530	Formwork erection and waterproofing works	4	4	09-Jan-17	12-Jan-17
K-1A-SV1-8540	Cast blinding layer and modifyaction the pile head	4	4	31-Dec-16	05-Jan-17
K-1A-SV1-8550	Construction of base slab	8	8	13-Jan-17	21-Jan-17
K-1A-SV1-8560	Removal ELS S3	4	4	23-Jan-17	26-Jan-17
K-1A-SV1-8570	Make good the D wall surface and waterproofing works	4	4	27-Jan-17	03-Feb-17
K-1A-SV1-8580	Construct of side wall structure (external wall)	10	10	04-Feb-17	15-Feb-17
K-1A-SV1-8590	Erection scaffold and install re-prop struct inside W/B and E/B	8	8	16-Feb-17	24-Feb-17
K-1A-SV1-8600	Removal ELS S2	5	5	25-Feb-17	02-Mar-17
SUS Bay 3 (Ch6185-Ch6202.5)		52	52	28-Dec-16	02-Mar-17
K-1A-SV1-8660	Excavation for filling sheetpile	3	3	28-Dec-16	30-Dec-16
K-1A-SV1-8670	Compact the soil surface and cast temporary blinding layer	1	1	31-Dec-16	31-Dec-16
K-1A-SV1-8680	Scaffold erection for temporary support of base slab construction	3	3	03-Jan-17	05-Jan-17
K-1A-SV1-8690	Formwork erection and waterproofing works	1	1	06-Jan-17	06-Jan-17
K-1A-SV1-8700	Cast blinding layer and modifyaction the pile head	3	3	07-Jan-17	10-Jan-17
K-1A-SV1-8710	Construction of base slab	7	7	23-Jan-17	02-Feb-17
K-1A-SV1-8720	Removal ELS S3	3	3	03-Feb-17	06-Feb-17
K-1A-SV1-8730	Make good the D wall surface and waterproofing works	3	3	07-Feb-17	09-Feb-17



Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-1A-SV1-8740	Construct of side wall construction (external wall)	8	8	10-Feb-17	18-Feb-17
K-1A-SV1-8750	Erection scaffold and install re-prop struct inside W/B and E/B	6	6	20-Feb-17	25-Feb-17
K-1A-SV1-8760	Removal ELS S2	4	4	27-Feb-17	02-Mar-17
SUS Bay 2 (Ch6167.5-Ch6185)		22	22	03-Feb-17	28-Feb-17
K-1A-SV1-8820	Cast blinding layer for VA2	2	2	03-Feb-17	04-Feb-17
K-1A-SV1-8830	Waterproofing works at VA2	5	5	08-Feb-17	13-Feb-17
K-1A-SV1-8840	Construction of base slab for VA2	8	8	15-Feb-17	23-Feb-17
K-1A-SV1-8850	Cast mass conc. fill	4	4	24-Feb-17	28-Feb-17
SUS and Ventilation Adits from CH6+220 to CH6+291 in Zone 2		129	100	17-Oct-16 A	01-Apr-17
Construction of Socketed H-Pile		30	12	17-Oct-16 A	13-Dec-16
K-1A-SV2-3201	Installation of socketted H-piles (CH6+265 to CH6+291)	30	12	17-Oct-16 A	13-Dec-16
W/B Construction of D-Wall in TTA Stage 1A		30	30	27-Feb-17	01-Apr-17
K-1A-SV2-5000	Construction of guide wall	30	30	27-Feb-17	01-Apr-17
SUS Structure from CH6+291 to 6+467 in Zone 3		156	117	15-Oct-16 A	26-Apr-17
E/B Construction of D-Wall		70	70	09-Dec-16	07-Mar-17
K-1A-SV3-2310	Construction of D-wall eastbound(CH6+344 to CH6+405) EM28	10	10	09-Dec-16	20-Dec-16
K-1A-SV3-2355	Construction of D-wall eastbound(CH6+405 to CH6+467) EH17	12	12	19-Dec-16	04-Jan-17
K-1A-SV3-2400	Testing of D-wall (Sonic test and IC)	30	30	05-Jan-17	11-Feb-17
K-1A-SV3-2500	Toe grouting works	55	55	29-Dec-16	07-Mar-17
Construction of Socketed H-Pile		45	45	10-Feb-17	03-Apr-17
K-1A-SV3-3008	Installation of socketted H-piles (CH6+320 to CH6+380)	45	45	10-Feb-17	03-Apr-17
W/B Construction of D-Wall in TTA Stage 1A		156	117	15-Oct-16 A	26-Apr-17
K-1A-SV3-4000	Construction of guide wall	45	25	15-Oct-16 A	30-Dec-16
K-1A-SV3-4010	Construction of D-wall westbound (CH6+344 to CH6+405) WM32	10	2	23-Nov-16 A	01-Dec-16
K-1A-SV3-4030	Construction of D-wall westbound (CH6+405 to CH6+467) WM26	10	4	16-Nov-16 A	03-Dec-16
K-1A-SV3-4040	Construction of D-wall westbound (CH6+291 to CH6+344) WH39	12	6	14-Nov-16 A	06-Dec-16
K-1A-SV3-4050	Construction of D-wall westbound (CH6+344 to CH6+405) WH29	12	8	25-Nov-16 A	08-Dec-16
K-1A-SV3-4060	Construction of D-wall westbound (CH6+405 to CH6+467) WH21	12	12	29-Nov-16 A	13-Dec-16
K-1A-SV3-4070	Construction of D-wall westbound (CH6+291 to CH6+344) WH44	12	12	03-Dec-16	16-Dec-16
K-1A-SV3-4080	Construction of D-wall westbound (CH6+344 to CH6+405) WM36	10	10	03-Dec-16	14-Dec-16
K-1A-SV3-4090	Construction of D-wall westbound (CH6+405 to CH6+467) WH25	12	12	13-Dec-16	28-Dec-16
K-1A-SV3-4100	Construction of D-wall westbound (CH6+405 to CH6+467) WH19	12	12	16-Dec-16	31-Dec-16
K-1A-SV3-4110	Construction of D-wall westbound (CH6+344 to CH6+405) WH33	12	12	19-Dec-16	04-Jan-17
K-1A-SV3-4120	Construction of D-wall westbound (CH6+405 to CH6+467) WM20	10	10	22-Dec-16	05-Jan-17
K-1A-SV3-4130	Construction of D-wall westbound (CH6+405 to CH6+467) WM24	10	10	24-Dec-16	07-Jan-17
K-1A-SV3-4140	Construction of D-wall westbound (CH6+344 to CH6+405) WM38	10	10	29-Dec-16	10-Jan-17
K-1A-SV3-4150	Construction of D-wall westbound (CH6+405 to CH6+467) WH28	12	12	03-Jan-17	16-Jan-17
K-1A-SV3-4160	Construction of D-wall westbound (CH6+291 to CH6+344) WM47	10	10	05-Jan-17	16-Jan-17

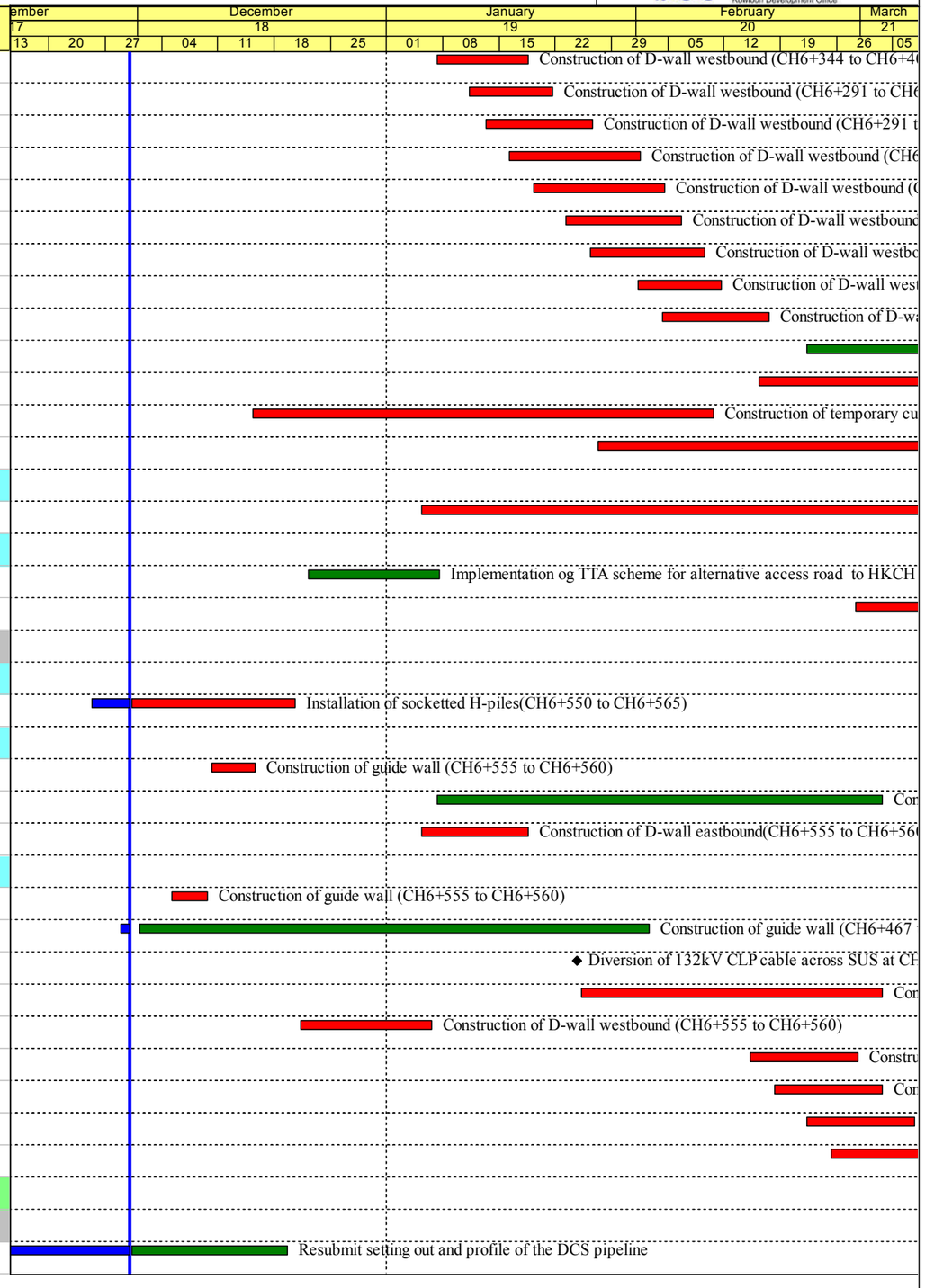


Hyder - Meinhardt JV

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

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

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-1A-SV3-4170	Construction of D-wall westbound (CH6+344 to CH6+405) WM34	10	10	07-Jan-17	18-Jan-17
K-1A-SV3-4180	Construction of D-wall westbound (CH6+291 to CH6+344) WM43	10	10	11-Jan-17	21-Jan-17
K-1A-SV3-4190	Construction of D-wall westbound (CH6+291 to CH6+344) WH40	12	12	13-Jan-17	26-Jan-17
K-1A-SV3-4200	Construction of D-wall westbound (CH6+344 to CH6+405) WH37	12	12	16-Jan-17	01-Feb-17
K-1A-SV3-4210	Construction of D-wall westbound (CH6+291 to CH6+344) WH42	12	12	19-Jan-17	04-Feb-17
K-1A-SV3-4220	Construction of D-wall westbound (CH6+291 to CH6+344) WM45	10	10	23-Jan-17	06-Feb-17
K-1A-SV3-4230	Construction of D-wall westbound (CH6+291 to CH6+344) WM39A	10	10	26-Jan-17	09-Feb-17
K-1A-SV3-4240	Construction of D-wall westbound (CH6+291 to CH6+344) WM41	10	10	01-Feb-17	11-Feb-17
K-1A-SV3-4250	Construction of D-wall westbound (CH6+291 to CH6+344) WH46	12	12	04-Feb-17	17-Feb-17
K-1A-SV3-4270	Testing of D-wall (Sonic test and IC)	30	30	22-Feb-17	28-Mar-17
K-1A-SV3-4280	Toe grouting works	56	56	16-Feb-17	26-Apr-17
K-1A-SV3-4290	Construction of temporary cut-off wall at CH6+291	44	44	15-Dec-16	10-Feb-17
K-1A-SV3-4300	Construction of temporary cut-off wall at CH6+467	61	61	27-Jan-17	12-Apr-17
Pumping Test		80	80	05-Jan-17	12-Apr-17
K-1A-SV3-5000	Installation of dewatering well,observation well and recharging well in Zone 3	80	80	05-Jan-17	12-Apr-17
Excavation and ELS Construction		94	94	22-Dec-16	21-Apr-17
K-1A-SV3-5450	Implementation og TTA scheme for alternative access road to HKCH at Zone 3	12	12	22-Dec-16	07-Jan-17
K-1A-SV3-5500	Construction of temporary vehicular access at CH6+325	42	42	28-Feb-17	21-Apr-17
SUS Structure from CH6+467 to 6+568 in Zone 4		85	81	25-Nov-16 A	10-Mar-17
Construction of Socketed H-Pile		32	18	25-Nov-16 A	20-Dec-16
K-1A-SV4-3500	Installation of socketted H-piles(CH6+550 to CH6+565)	32	18	25-Nov-16 A	20-Dec-16
E/B Construction of D-Wall		66	66	10-Dec-16	03-Mar-17
K-1A-SV4-2110	Construction of guide wall (CH6+555 to CH6+560)	5	5	10-Dec-16	15-Dec-16
K-1A-SV4-2150	Construction of guide wall (CH6+467 to CH6+555)	45	45	07-Jan-17	03-Mar-17
K-1A-SV4-2400	Construction of D-wall eastbound(CH6+555 to CH6+560)	12	12	05-Jan-17	18-Jan-17
W/B and End Construction of D-Wall in TTA Stage 1A		77	80	29-Nov-16 A	10-Mar-17
K-1A-SV4-3990	Construction of guide wall (CH6+555 to CH6+560)	5	5	05-Dec-16	09-Dec-16
K-1A-SV4-4000	Construction of guide wall (CH6+467 to CH6+555)	50	49	29-Nov-16 A	02-Feb-17
K-1A-SV4-4040	Diversion of 132kV CLP cable across SUS at CH6+560 by CLP	0	0		24-Jan-17
K-1A-SV4-4050	Construction of guide wall (End Wall)	30	30	25-Jan-17	03-Mar-17
K-1A-SV4-4300	Construction of D-wall westbound (CH6+555 to CH6+560)	12	12	21-Dec-16	06-Jan-17
K-1A-SV4-4700	Construction of D-wall (CH6+560 to CH6+568) & end wall at CH6+568 SH06	12	12	15-Feb-17	28-Feb-17
K-1A-SV4-4702	Construction of D-wall (CH6+560 to CH6+568) & end wall at CH6+568 SH03	12	12	18-Feb-17	03-Mar-17
K-1A-SV4-4703	Construction of D-wall (CH6+560 to CH6+568) & end wall at CH6+568 EH01	12	12	22-Feb-17	07-Mar-17
K-1A-SV4-4704	Construction of D-wall (CH6+560 to CH6+568) & end wall at CH6+568 SH07	12	12	25-Feb-17	10-Mar-17
Section 3 of the Works- Construction of District Cooling System (Subject to Excision)		212	113	23-Aug-16 A	22-Mar-17
Preparation Works		149	50	23-Aug-16 A	18-Jan-17
K-03-DCS-0820	Resubmit setting out and profile of the DCS pipeline	30	20	23-Aug-16 A	19-Dec-16



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

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

3 MRP Dec 2016 - Feb 2017

Project ID :12 3MPR Dec - Feb 17
Layout : KL201403 WP3 3MRP

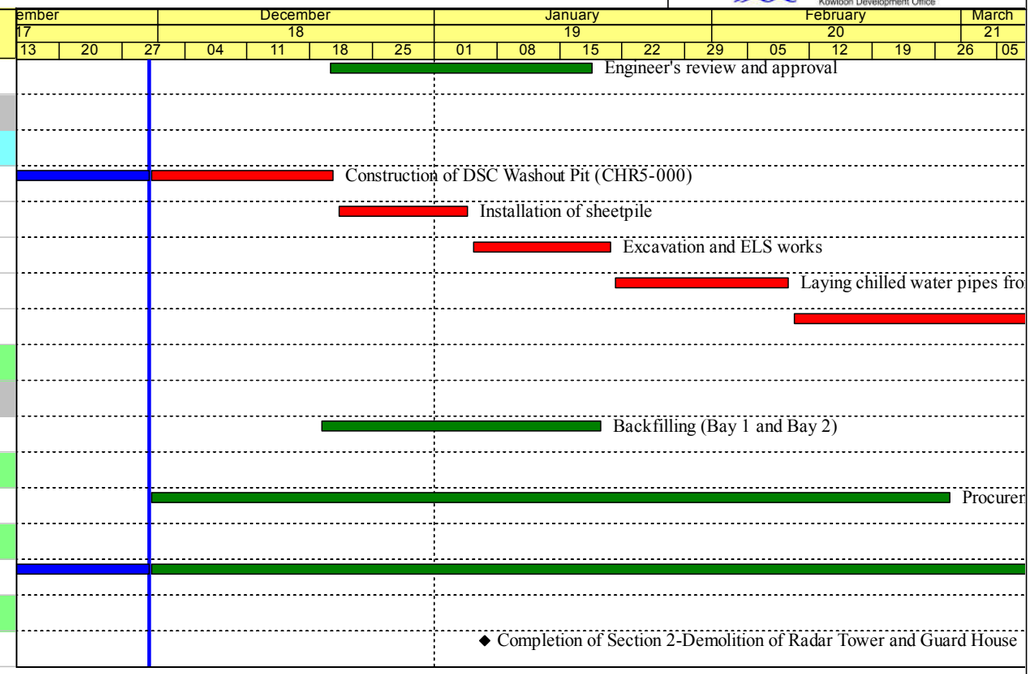
3 Months Rolling Programme			
Date	Revision	Checked	Approved
30-Nov-16	3MPR Dec 16 - Feb 17		

Hyder - Meinhardt JV

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

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

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-03-DCS-0830	Engineer's review and approval	30	30	20-Dec-16	18-Jan-17
Construction of District Cooling System		120	91	10-Sep-16 A	22-Mar-17
Construction of DCS Works at Zone 1		120	91	10-Sep-16 A	22-Mar-17
K-03-DCS-1050	Construction of DSC Washout Pit (CHR5-000)	30	18	10-Sep-16 A	20-Dec-16
K-03-DCS-1100	Installation of sheetpile	10	10	21-Dec-16	04-Jan-17
K-03-DCS-1150	Excavation and ELS works	14	14	05-Jan-17	20-Jan-17
K-03-DCS-1200	Laying chilled water pipes from CHR5-000 to CHR5-024	14	14	21-Jan-17	09-Feb-17
K-03-DCS-1300	Backfilling at Zone 1 (CHR5-000 to CHR5-024)	35	35	10-Feb-17	22-Mar-17
Section 4B of the Works- Construction of Subway B (Subject to Excision)		25	25	19-Dec-16	19-Jan-17
Bay 1 & 2		25	25	19-Dec-16	19-Jan-17
K-4B-BAY-2450	Backfilling (Bay 1 and Bay 2)	25	25	19-Dec-16	19-Jan-17
Section 5 of the Works-Completion of All Landscape Softworks		90	90	30-Nov-16	27-Feb-17
K-05-LCS-1000	Procurement of plant species	90	90	30-Nov-16	27-Feb-17
Section 7 of the Works-Preservation and Protection of Existing Trees		1200	916	04-Jan-16 A	03-Jun-19
K-07-001-1000	Section 7 of the Works-Preservation and Protection of Existing Trees	1200	916	04-Jan-16 A	03-Jun-19
Sections Completion Date		0	0	06-Jan-17	06-Jan-17
K-PK-SCC-2100	Completion of Section 2-Demolition of Radar Tower and Guard House	0	0		06-Jan-17



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

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

3 MRP Dec 2016 - Feb 2017

Project ID :12 3MPR Dec - Feb 17
Layout : KL201403 WP3 3MRP

3 Months Rolling Programme

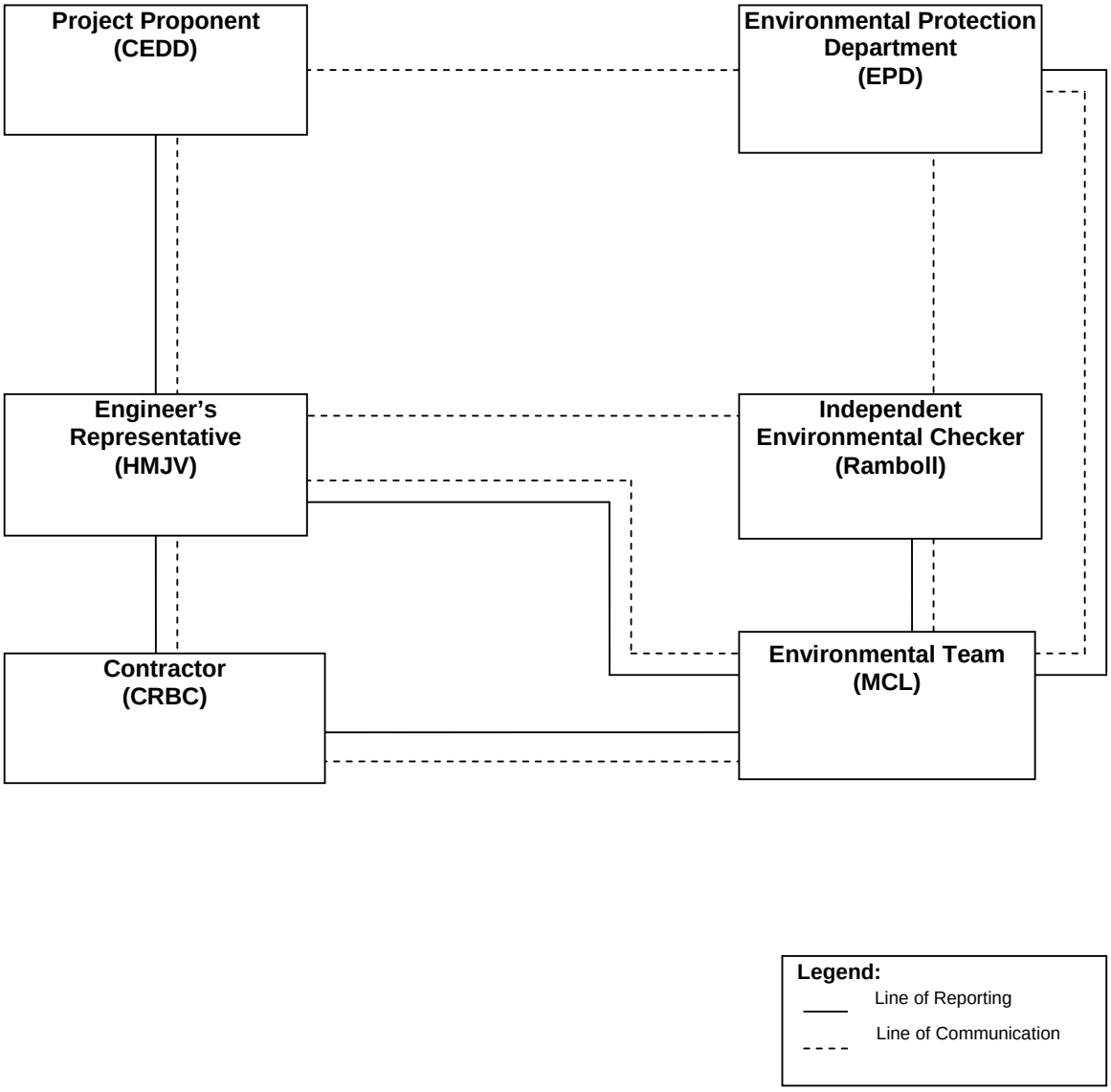
Date	Revision	Checked	Approved
30-Nov-16	3MPR Dec 16 - Feb 17		

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

Appendix B

Project Organization Chart

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



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

Appendix C

Action and Limit Levels for Air Quality and Noise

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

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

Parameter	Monitoring Station	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/ m^3$)
24-hr TSP ($\mu g/m^3$)	KTD1a	177	260
	KTD2a	157	
	KER1b	172	
*1-hr TSP ($\mu g/m^3$)	KTD1a	285	500
	KTD2a	279	
	KER1b	295	

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

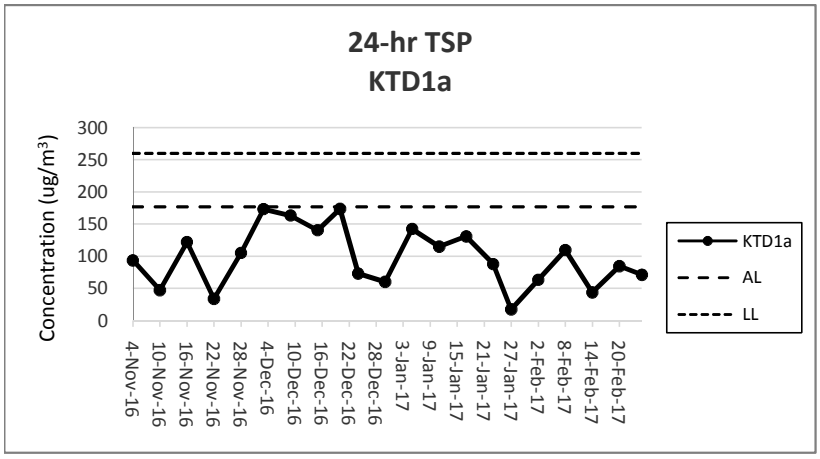
Action and Limit Levels for Construction Noise, Leq (30min), dB(A)

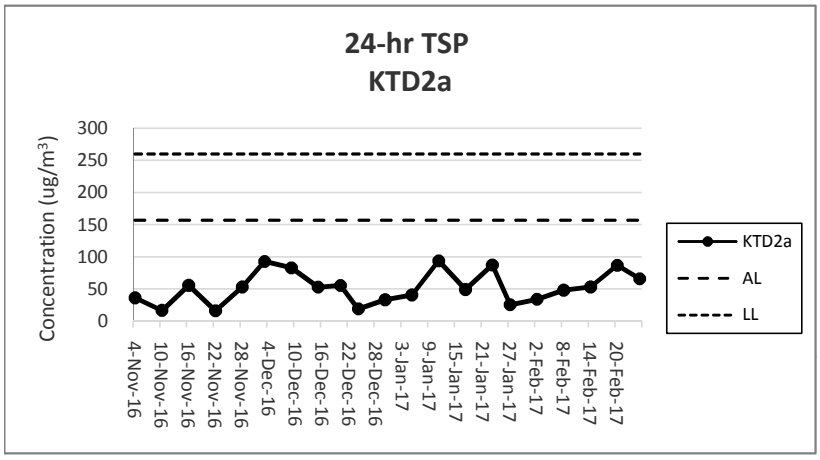
Time Period	Location	Action	Limit
0700-1900 hrs on normal weekdays	KTD1a KTD2a KER1b	When one documented complaint is received	75 dB(A)

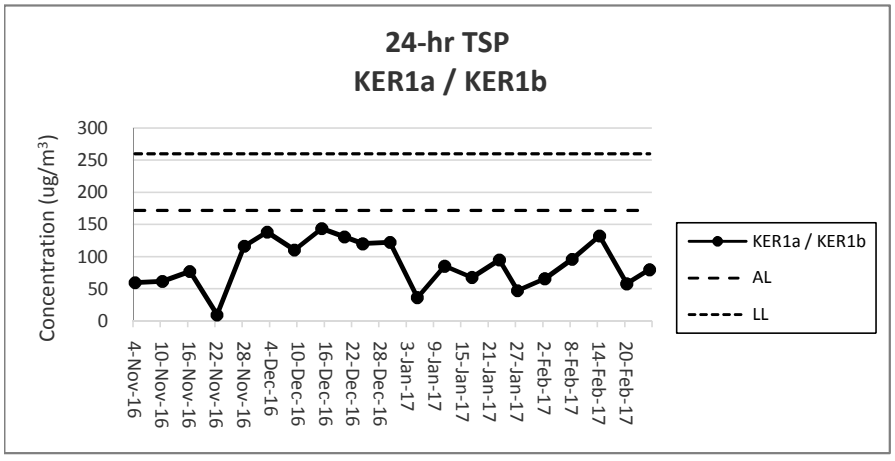
MATERIALAB CONSULTANTS LIMITED
Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..
Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com

Appendix D

Graphical Presentation of Monitoring Data

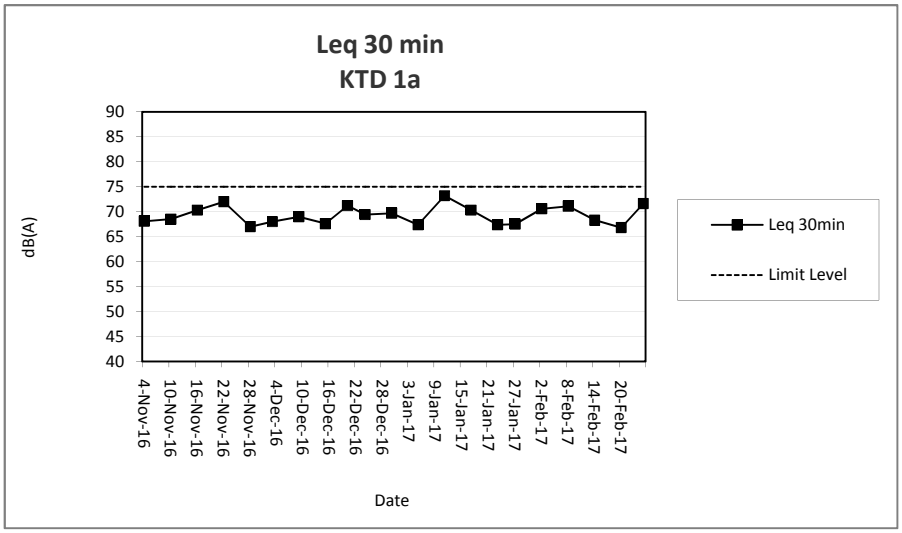


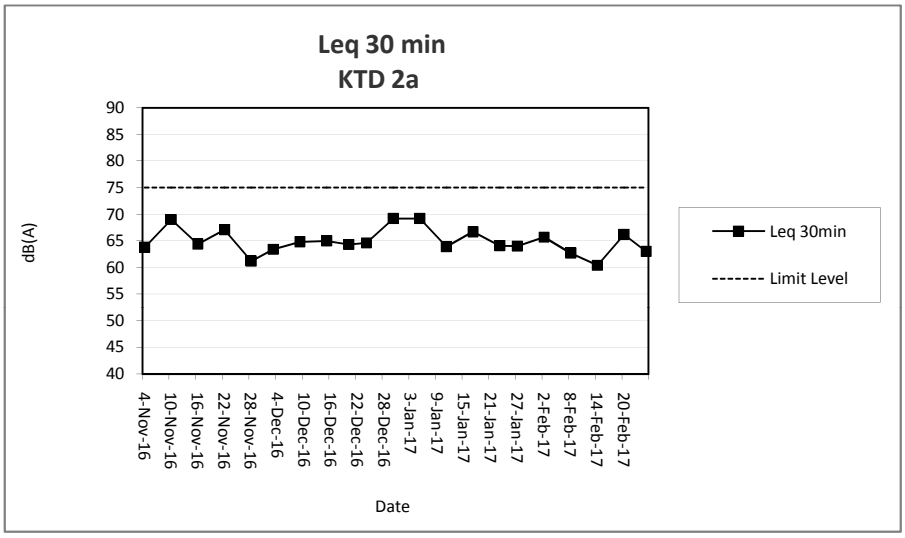


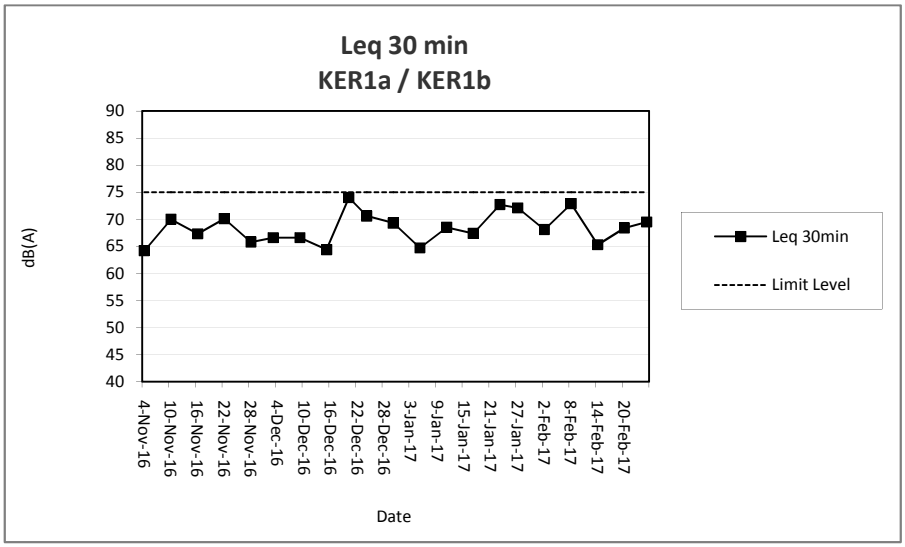


Note:

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 monitoring in the reporting period was range from hazy, cloudy, fine and sun
3) Any other factors which might affect the monitoing results can be referred to Section 2.3.4.
4) The 24-hour TSP monitoring location KER1a was replaced by KER1b, effective from 16 November 2016.







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 monitoring in the reporting period was range from hazy, cloudy, fine and sunny. No raining or wind with speed over 5 m/s was observed during monitoring in the reporting period.
3) Any other factors which might affect the monitoing results can be referred to Section 2.3.4.
4) Noise monitoring location KER1a was replaced by KER1b, effective from 16 November 2016.

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

Appendix E

Waste Flow Table

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

MateriaLab

Waste Flow Table for Year 2016

Months	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
2016 Jan	0.159	0.101	0.058	Nil	Nil	Nil	Nil	0.023	0.00002	0.0158	0.0335
2016 Feb	0.291	0.050	0.241	Nil	Nil	Nil	1.34	0.023	0.00002	0.0158	0.0335
2016 Mar	2.7389	0.0407	0.0662	Nil	2.632	Nil	5.92	0.023	0.00002	0.0158	0.0571
2016 Apr	4.1718	0.0578	0.462	Nil	3.652	Nil	12.5	0.023	0.00002	0.0158	0.0426
2016 May	3.592	Nil	0.299	Nil	3.293	Nil	5.23	0.023	0.00002	0.0158	0.0621
2016 June	4.6035	Nil	0.8555	Nil	3.748	Nil	Nil	0.023	0.00002	0.0158	0.0619
2016 July	6.155	0.153	0.015	Nil	5.987	Nil	7.84	0.023	0.00002	0.0158	0.0433
2016 Aug	5.1155	Nil	Nil	Nil	5.1155	Nil	19.93	0.023	Nil	Nil	0.0147
2016 Sept	7.2267	Nil	Nil	Nil	7.2267	Nil	33.65	0.023	Nil	Nil	0.0103
2016 Oct	4.6448	Nil	Nil	Nil	4.6448	Nil	13.30	0.023	Nil	Nil	0.0385
2016 Nov	6.1626	Nil	Nil	Nil	6.1626	Nil	27.06	0.023	Nil	Nil	0.0192
2016 Dec	6.3522	Nil	Nil	Nil	6.3522	Nil	13.30	0.023	Nil	Nil	0.0121
Total	51.213	0.4025	1.9967	Nil	48.8138	Nil	140.07	0.276	0.00014	0.1106	0.4288

Note:

1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

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

Waste Flow Table for Year 2017

Months	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
2017 Jan	4.2300	Nil	Nil	Nil	4.2300	Nil	0.015	0.023	Nil	Nil	0.0109
2017 Feb	3.2128	Nil	Nil	Nil	3.2128	Nil	0.015	0.023	Nil	Nil	0.0096
Total	7.4428	Nil	Nil	Nil	7.4428	Nil	0.030	0.046	Nil	Nil	0.0205

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.

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

Appendix F

Environmental Mitigation Implementation Schedule (EMIS)

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

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
Air Quality Measures					
New Distributor Roads Serving the Planned KTD					
AEIAR-130/2009 S3.2	AEIAR 130/2009 EM&A Manual S2.2	8 times daily watering of the work site with active dust emitting activities.	Contractor	All relevant worksites	Implemented
Decommissioning of the Radar Station of the former Kai Tak Airport					
AEIAR-130/2009 S5.2.19	AEIAR 130/2009 EM&A Manual S4.2.4	The excavation area should be limited to as small in size as possible and backfilled with clean and/or treated soil shortly after excavation work. The exposed excavated area should be covered by the tarpaulin during night time. The top layer soils should be sprayed with fine misting of water immediately before the excavation.	Contractor	All relevant worksites	Not Applicable
Trunk Road T2					
AEIAR-174/2013 S4.9.2.1	AEIAR-174/2013 EM&A Manual S2.3.1.1	Watering of the construction areas 12 times per day to reduce dust emissions by 91.7%, with reference to the "Control of Open Fugitive Dust Sources" (USEPA AP-42). The amount of water to be applied would be 0.91L/m2 for the respective watering frequency.	Contractor	All relevant worksites	Implemented
		Dust enclosures with watering would be provided along the loading ramps and conveyor belts for unloading the C&D materials to the barge for dust suppression.	Contractor	All relevant worksites	Not Applicable
		8 km per hour is the recommended limit of the speed for vehicles on unpaved site roads.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009 S3.2, S5.2.19, AEIAR-174/2013 S4.9.2.2	AEIAR 130/2009 EM&A Manual S2.2, S4.2, AEIAR-174/2013 EM&A Manual S2.3.1.2	Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	Contractor	All relevant worksites	Partially Implemented
		Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. Use of frequent watering for particularly dusty construction areas and areas close to ASRs.	Contractor	All relevant worksites	Partially Implemented
		Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should have properly fitted side and tail boards.	Contractor	All relevant worksites	Implemented
		Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.	Contractor	All relevant worksites	Implemented

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

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.	Contractor	All relevant worksites	Implemented
		The vehicles should be restricted to maximum speed of 10 km per hour. Confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials.	Contractor	All relevant worksites	Implemented
		Vehicle washing facilities should be provided at every vehicle exit point. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	Contractor	All relevant worksites	Partially Implemented
		Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	Contractor	All relevant worksites	Implemented
		Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	Contractor	All relevant worksites	Implemented
		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	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	Implemented
		Dark smoke			
		Dark smoke emission shall be control in accordance with the Air Pollution Control (Smoke)	Contractor	All relevant	Implemented

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

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Regulation and ETWB TCW 19/2005.		worksites	
		Plant and equipment should be well maintained to prevent dark smoke emission.	Contractor	All relevant worksites	Implemented
Noise Measures					
Trunk Road T2					
AEIAR-174/2013 S5.9.2.1	AEIAR-174/2013 EM&A Manual S3.4.1.1	The use of quieter plant, including Quality Powered Mechanical Equipment (QPME) is specified for the list of equipment: • Concrete lorry mixer • Dump Truck, 5.5 tonne < gross vehicle weight <= 38 tonne • Generator, Super Silenced, 70 dB(A) at 7m • Poker, vibratory, Hand-held (electric) • Water Pump, Submersible (Electric) • Mobile Crane - KOBELCO CKS900 • Excavator, wheeled/tracked - HYUNDAI R80CR-9	Contractor	All relevant worksites	Implemented
		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	Not Applicable
		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	Not Applicable
		Use of acoustic fabric for the silent piling system, drill rigs, rock drills etc.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009 S3.3, S5.3.10, AEIAR-174/2013 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	Not Applicable
		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	Contractor	All relevant	Implemented

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

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		The handling and disposal of bentonite slurries should be undertaken in accordance within ProPECC PN 1/94. Surplus bentonite slurries used in construction works shall be reconditioned and reused wherever practicable. Residual bentonite slurry shall be disposed of from the site as soon as possible as stipulated in Clause 8.56 of the General Specification for Civil Engineering Works. The Contractor should explore alternative disposal outlets for the residual bentonite slurry (dewatered bentonite slurry to be disposed to a public filling area and liquid bentonite slurry, if mixed with inert fill material, to be disposed to a public filling area) and disposal at landfill should be the last resort.	Contractor	All relevant worksites	Implemented
AEIAR-174/2013 S6.4.8.8	AEIAR-174/2013 EM&A Manual S4.2.1.1	In order to protect against impacts to the surrounding marine waters of the KTTS and Victoria Harbour in the event of an accidental spillage of fuel or oil, the Contractor will be required to prepare a spill response plan to the satisfaction of AFCD, EPD, FSD, Police, TD and WSD to define procedures for the control, containment and clean-up of any spillage that could occur on the construction site.	Contractor	All relevant worksites	Implemented
		Dredging, Reclamation and Filling			
		No dredging, reclamation or filling in the marine environment shall be carried out.	Contractor	All relevant worksites	Implemented
Decommissioning of the Radar Station of the former Kai Tak Airport					
		Building Demolition			
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	Not Applicable
		There is a need to apply to EPD for a discharge licence under the WPCO for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge licence. All the runoff, wastewater or extracted groundwater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. It is anticipated that the wastewater generated from the works areas would be of small quantity. Monitoring of the treated effluent quality from the works areas should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD.	Contractor	All relevant worksites	Implemented
		General Construction Works			
		Construction Runoff			
AEIAR-130/2009 S3.4,	AEIAR 130/2009 EM&A Manual	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	Contractor	All relevant worksites	Partially Implemented

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

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
S5.4/ AEIAR-174/2013 S6.4.8.1	S2.4, S4.4/ AEIAR-174/2013 EM&A Manual S4.2.1.1	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.			
		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 rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	Contractor	All relevant worksites	Implemented
		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	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	Not Applicable

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

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		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
		<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	Partially 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,	Contractor	All relevant	Implemented

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		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 properly to avoid entering into the adjacent harbour waters. Stockpiles of cement and other construction materials should be kept covered when not being used.		worksites	
		Accidental Spillage			
		Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to the nearby harbour waters, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ. The bund should be drained of rainwater after a rain event.	Contractor	All relevant worksites	Implemented
		Waste Management Measures			
		Waste Management Plan			
AEIAR-174/2013 S11.4.8.1	AEIAR-174/2013 EM&A Manual S9.2.1.2	Contractor should be requested to submit an outline Waste Management Plan (WMP) prior to the commencement of construction work, in accordance with the ETWB TC(W) No.19/2005 so as to provide an overall framework of waste management and reduction.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009 S3.5, S5.5	AEIAR 130/2009 EM&A Manual S2.5, S4.5	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	Contractor	All relevant worksites	Implemented
		Training of site personnel in proper waste management and chemical waste handling procedures.	Contractor	All relevant worksites	Implemented
		Provision of sufficient waste disposal points and regular collection for disposal.	Contractor	All relevant worksites	Partially 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
		A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Contractor	All relevant worksites	Implemented
		Waste Reduction Measures			
		Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals.	Contractor	All relevant worksites	Implemented

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

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	Contractor	All relevant worksites	Implemented
		Encourage collection of aluminum cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.	Contractor	All relevant worksites	Implemented
		Any unused chemicals or those with remaining functional capacity should be recycled.	Contractor	All relevant worksites	Implemented
		Proper storage and site practices to minimize the potential for damage or contamination of construction materials.	Contractor	All relevant worksites	Implemented
		Construction and Demolition Materials			
		Where it is unavoidable to have transient stockpiles of C&D material within the work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.	Contractor	All relevant worksites	Implemented
		Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	Contractor	All relevant worksites	Partially Implemented
		Skip hoist for material transport should be totally enclosed by impervious sheeting.	Contractor	All relevant worksites	Implemented
		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	Contractor	All relevant worksites	Implemented

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

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.			
		Chemical Waste			
		After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Contractor	All relevant worksites	Partially Implemented
		General Refuse			
		General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem.	Contractor	All relevant worksites	Partially Implemented
Land Contamination Measures					
		For any excavation works conducted at Radar Station			
AEIAR-130/2009 S3.6.57	AEIAR 130/2009 EM&A Manual S4.6	As the risk due to dermal contact with groundwater by site workers is uncertain, it is recommended that personnel protective equipment (PPE) be used by site workers as a mitigation measure.	Contractor	All relevant worksites	Not Applicable
Landscape and Visual Impact					
New Distributor Roads Serving the Planned KTD					
		Construction Phase			
AEIAR-130/2009 S3.8.12	AEIAR 130/2009 EM&A Manual S2.8	All existing trees should be carefully protected during construction.	Contractor	All relevant worksites	Not Applicable
		Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.	Contractor	All relevant worksites	Not Applicable
		Control of night-time lighting.	Contractor	All	Not Applicable

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

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

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

FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

Appendix E

Monthly EM&A Report
For
Contract No. KL/2015/02
Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

Civil Engineering and Development Department

Contract No. KLN/2016/04
Environmental Monitoring Works for
Contract No. KL/2015/02
Kai Tak Development – Stage 5A Infrastructure
at Former North Apron Area

Quarterly EM&A Report

January 2017 to March 2017

(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

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

MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong
Tel : +852-2450 8238
Fax : +852-2450 8032
E-mail : mcl@fugro.com.hk
Website : www.materialab-consultant.com

Date 13 June 2017
Our Ref. MCL/ED/0334/2017/C

Cinotech Consultants Limited
Rm 1710, Technology Park,
18 On Lai Street, Shatin,
New Territories,
Hong Kong

BY EMAIL

Attn.: Dr. Priscilla Choy

Dear Madam,

Contract No. KL/2015/02
Kai Tak Development –Stage 5A Infrastructure at Former North Apron
Verification of Quarterly EM&A Report - January 2017 to March 2017

We refer to your emails dated 24 May 2017 and 12 June 2017 regarding the Quarterly EM&A Report (January 2017 to March 2017) for the captioned project prepared by the ET.

We have no further comment and hereby verify the Quarterly EM&A Report (January 2017 to March 2017).

Should you require further information, please do not hesitate to contact Mr. Wingo So at 3565 4374 or the undersigned on 3565 4114.

Assuring you of our best attention at all times.

Yours faithfully,
For and on behalf of
MATERIALAB CONSULTANTS LIMITED

Colin K. L. Yung
Independent Environmental Checker

CY/ws

c.c. CEDD – Attn.: Ms. K. Pong
Attn.: Mr. Keith Chu
AECOM – Attn.: Mr. John Yam
Attn.: Mr. Jacky Pun

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ANNEXES

EXECUTIVE SUMMARY

Introduction

1. This is the 1st Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the "Contract No. KL/2015/02 - Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area" (hereinafter called "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 summary report presents the EM&A works performed in the period between 16th January 2017 and 31st March 2017.

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		
AM2 - Lee Kau Yan Memorial School	Yes	N/A
Noise Monitoring Stations		
M3 - Cognitio College	Yes	N/A
M4 - Lee Kau Yan Memorial School	Yes	N/A
M5 – Nam Yuen	No	M5(C) – Mercy Grace's Home

1. 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 and KLN/2016/09 – 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 and KLN/2016/09 will be adopted for the Project. Therefore, this report presents the air quality and noise monitoring works extracted from Contract No. KLN/2013/16 and KLN/2016/09.

3. The construction activities undertaken in the reporting period were:

January 2017
- Bored piling works at abutment A02;
- Demolition of existing concrete structure for construction of subway SW6;
- Construction of box culvert b3; and
- Excavation for box culvert b3, b4 & b5

February 2017
- Bored piling works at abutment A02;
- Demolition of existing substructure at the proposed Staircase ST3 of Subway SW6;
- Driving sheet piles at Subway SW6 between Staircases ST2 and ST3;
- Construction of Box Culver B3;
- Excavation and Construction Works for Box Culvert B4;
- Sheetpiling Works at Box Culvert B5;
- Pre-drilling works at Pile Cap S15;
- Drilling works for inclinometer; and
- Trench excavation at Road L7.

March 2017
- Bored piling works at abutment A02;
- Carrying out pre-bored works and driving sheet piles at Subway SW6 between Staircases ST2 and ST3;
- Drilling works for standpipe and piezometer;
- Trench excavation for DCS works at Road L7;
- Construction of Box Culvert B3 (Top slab);
- Excavation and Construction Works for Box Culvert B4;
- ELS Works and Excavation Works at Box Culvert B5;
- Excavation Works for Box Culvert B2; and
- ELS Construction for Sewerage Works near SCL Tunnels.

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 period for the Project is tabulated in Table II.

Table II Non-compliance Record for the Project in the Reporting Period

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
January 2017			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
February 2017			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
March 2017			
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

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

Construction Noise

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

Environmental Licenses and Permits

8. All permit/licenses obtained for the Project are summarized in Table III.

Table III Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-337/2009	23/04/09	N/A	Valid
Effluent Discharge License			
WT00027495-2017	N/A	31/03/22	Valid
Billing Account for Construction Waste Disposal			
A/C# 7026164	20/10/16	N/A	Valid
Registration of Chemical Waste Producer			
WPN5213-229-P3239-01	24/10/16	N/A	Valid
Construction Noise Permit (CNP)			
GW-RE0033-17	24/01/17	05/07/17	Valid
GW-RE1236-16	05/01/17	29/06/17	Valid

Key Information in the Reporting Period

9. Summary of key information in the reporting period is tabulated in Table IV.

Table IV Summary Table for Key Information in the Reporting Period

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	---

10. Environmental monitoring works for the Project are considered effective and is generating data to categorically identify the environmental impacts from the works and influencing factors in the vicinity of monitoring stations.

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 5A 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 Civil Engineering and Development Department (CEDD) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2015/02 – Stage 5A Infrastructure at Former North Apron Area. The construction work under KL/2015/02 comprises the construction of part of the Road D1 under the EP (EP-337/2009).

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 commencement date of construction of Road D1 (part) under this Contract was on 16 January 2017. This summary report presents the EM&A works performed in the period between 16th January 2017 and 31st March 2017.

Project Organizations

1.5 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 Asia Co. Ltd (AECOM).
- Environmental Team (ET) – Cinotech Consultants Limited (CCL).
- Independent Environmental Checker (IEC) – MateriaLab Consultants Limited (MCL).
- Contractor – Peako - Wo Hing Joint Venture (PWHJV).

1.6 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	Ms. K. Pong	Senior Engineer	2301 1466	2369 4980
AECOM	Engineer's Representative	Mr. John Yam	SRE	2798 0771	2210 6110
Cinotech	Environmental Team	Dr. Priscilla Choy	Environmental Team Leader	2151 2089	3107 1388
		Ms. Ivy Tam	Audit Team Leader	2151 2090	
MCL	Independent Environmental Checker	Mr. Colin Yung	Independent Environmental Checker	3565 4114	2450 8032
PWHJV	Contractor	Mr. W.M. Wong	Site Agent	6386 3535	2398 8301

2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

2.1 The EM&A Manual designates locations for the ET to monitor environmental impacts in terms of air quality, noise, landscape and visual due to the Project. The Project area and monitoring locations are depicted in **Figures 2 and 3**. **Appendix A** gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

2.2 Monitoring works/equipments were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates are attached in the appendices of the Monthly EM&A Reports.

Environmental Quality Performance Limits (Action and Limit Levels)

2.3 The environmental quality performance limits, i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix B**.

Implementation Status of Environmental Mitigation Measures

2.4 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manual for the Contractor to implement. The implementation status of environmental mitigation measures (EMIS) is given in **Appendix E**.

Site Audit Summary

2.5 During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations made during the reporting period are summarized in **Appendix F**.

Status of Waste Management

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

3. Monitoring Results

Weather Conditions

3.1 The weather during monitoring sessions was summarized in Table 3.1.

Table 3.1 Summary of Weather Conditions in the Reporting Period

Reporting Month	General Weather Conditions
January 2017	Fine and Cloudy
February 2017	Fine and Cloudy
March 2017	Fine and Cloudy

3.2 The detail of weather conditions for each individual monitoring session was presented in monthly EM&A report.

Air Quality

1-hour TSP Monitoring

3.3 1-hour TSP monitoring at monitoring station, AM2 - Lee Kau Yan Memorial School, was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting period.

24-hour TSP Monitoring

3.4 24-hr TSP monitoring at monitoring station, AM2 - Lee Kau Yan Memorial School, was also conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting period.

3.5 The graphical presentations of the air quality monitoring results are shown in **Appendix C**.

Construction Noise

3.6 Noise monitoring at 3 monitoring stations, M3 – Cognitio College, M4 – Lee Kau Yan Memorial College and M5(C) – Mercy Grace's Home, was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for construction noise monitoring in the reporting period.

3.7 The graphical presentations of the noise monitoring results are shown in **Appendix D**.

Landscape and Visual

3.8 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within KTD. No non-compliance of the landscape and visual impact was recorded in the reporting period.

Influencing Factors on the Monitoring Results

3.9 During the reporting period, the major dust and noise source identified at the designated monitoring stations are as follows:

Table 3.2 Major Dust Sources during the Monitoring in the Reporting Period

Monitoring Stations	Major Dust Source
AM2 – Lee Kau Yan Memorial School	Road Traffic Dust Exposed site area and open stockpiles Excavation works Site vehicle movement

Table 3.3 Major Noise Sources during the Monitoring in the Reporting Period

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
M5(C)	Mercy Grace's Home	Traffic Noise Site vehicle movement

Comparison of EM&A results with EIA predictions

3.10 The EM&A data was compared with the EIA predictions and summarized in **Annex I**.

3.11 The 1-hour and 24-hour average TSP concentration in the reporting period were well below and within the prediction in the approved Environmental Impact Assessment (EIA) Report and no Action/Limit Level exceedance was recorded.

3.12 Mitigated construction noise levels at M5(C) were not predicted in EIA Report. The noise monitoring results in the reporting period at M3 were not within the range of predicted mitigated construction noise levels in the EIA report in the reporting period. The noise monitoring results in the reporting period at M4 were not within the range of predicted mitigated construction noise levels in the EIA report in the reporting period. The noise data at M3 and M4 exceeds the prediction of mitigated scenario in EIA report but did not exceed the baseline level.

3.13 The discrepancy between the EM&A data and EIA predictions is considered due to road traffic noise from Prince Edward Road East which is the major noise source during the monitoring.

4. Non-compliance (exceedances) of the Environmental Quality Performance Limits (Action and Limit Levels)

Summary of Exceedances

4.1 Environmental monitoring works were performed in the reporting period and all monitoring results were checked and reviewed. A summary of exceedances is attached in **Appendix H**. The details of each exceedance were attached in the Monthly EM&A Reports.

Air Quality

4.2 No Action/ Limit Level exceedance was recorded in the reporting period.

Construction Noise

4.3 No Action/ Limit Level exceedance was recorded in the reporting period.

Landscape and Visual

4.4 No non-compliance of the landscape and visual impact was recorded in the reporting period.

Review of the Reasons for and the Implications of Non-compliance

4.5 There was no non-compliance from the site audits in the reporting period. The observations and recommendations made in each individual site audit session were attached in the **Appendix F**.

Summary of Environmental Complaints and Prosecutions

4.6 No environmental complaints and environmental prosecution were received during the reporting period.

4.7 No warning, summon and notification of successful prosecution was received in the reporting period.

4.8 There were no warnings, summons and successful prosecutions received since the commencement of the Project.

5. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

Effectiveness of Mitigation Measures

5.1 The mitigation measures recommended in the EIA report are considered effective in minimizing environmental impacts.

5.2 The Contractor has implemented the recommended mitigation measures except those mitigation measures not applicable at this stage.

5.3 Environmental monitoring works were performed in the reporting period and all monitoring results were checked and reviewed. No non-compliance (exceedances) of Action/Limit Level was recorded.

5.4 No environmental complaint was received in the reporting period.

5.5 No environmental prosecution was received in the reporting period.

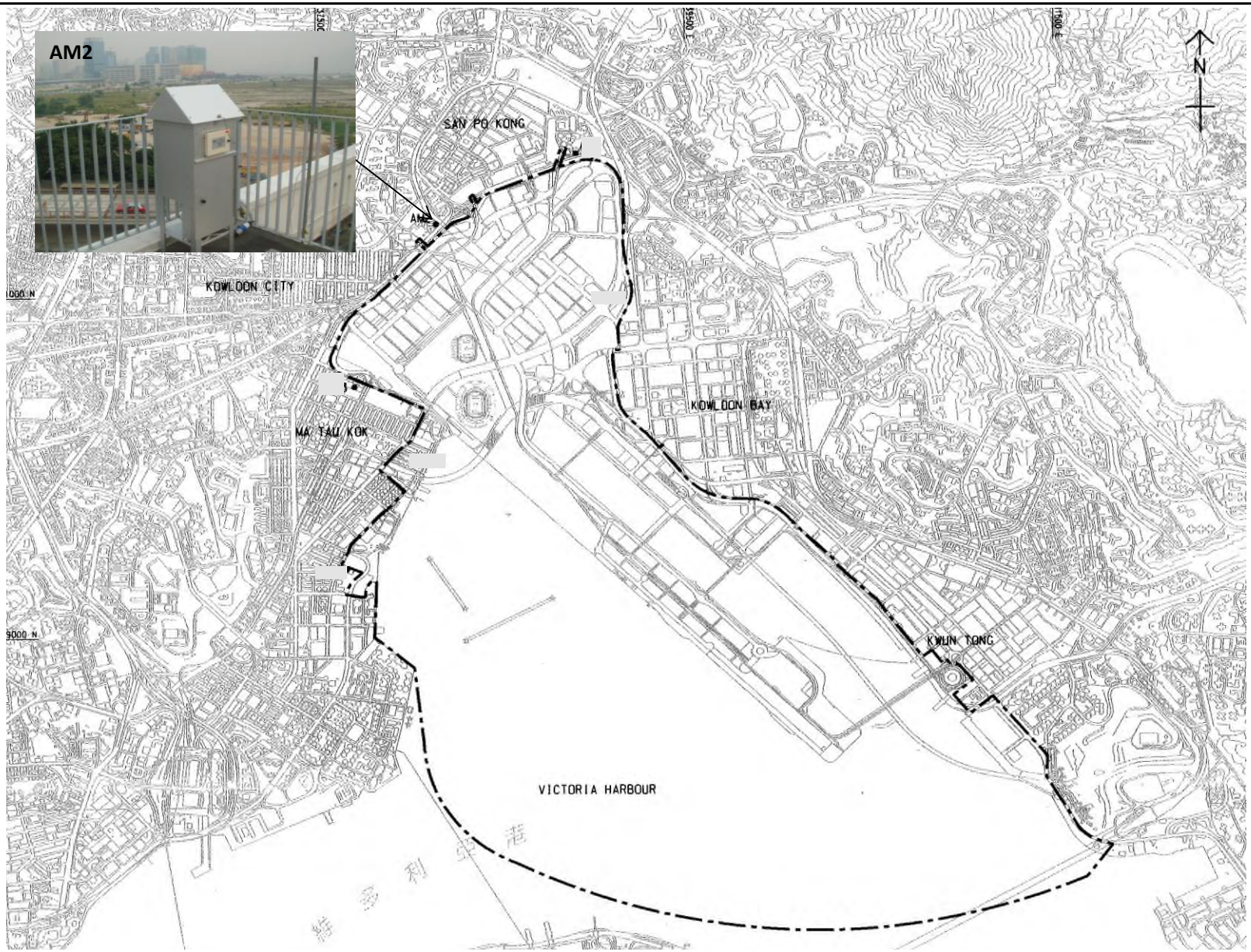
FIGURES

CINOTECH
Cinotech Consultants Limited

KL/2015/02 KAI TAK - STAGE 5A INFRASTRUCTURE AT FORMER NORTH APRON AREA

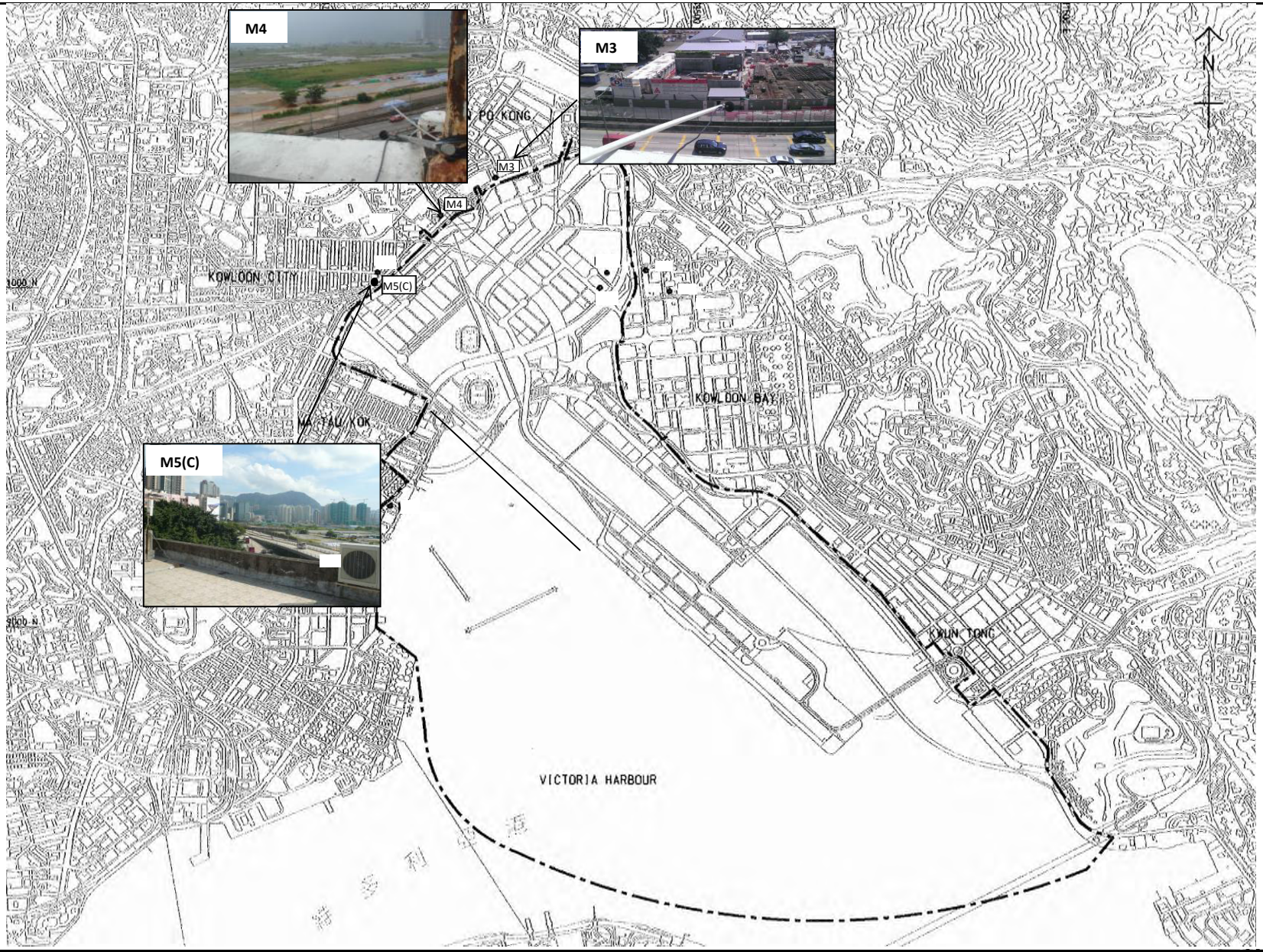
SITE LAYOUT PLAN

SCALE	1:1500@A4	DATE	DEC 2016
CHECK	KC	DRAWN	JW
JOB No.	MA16043	FIGURE NO. 1	REV -



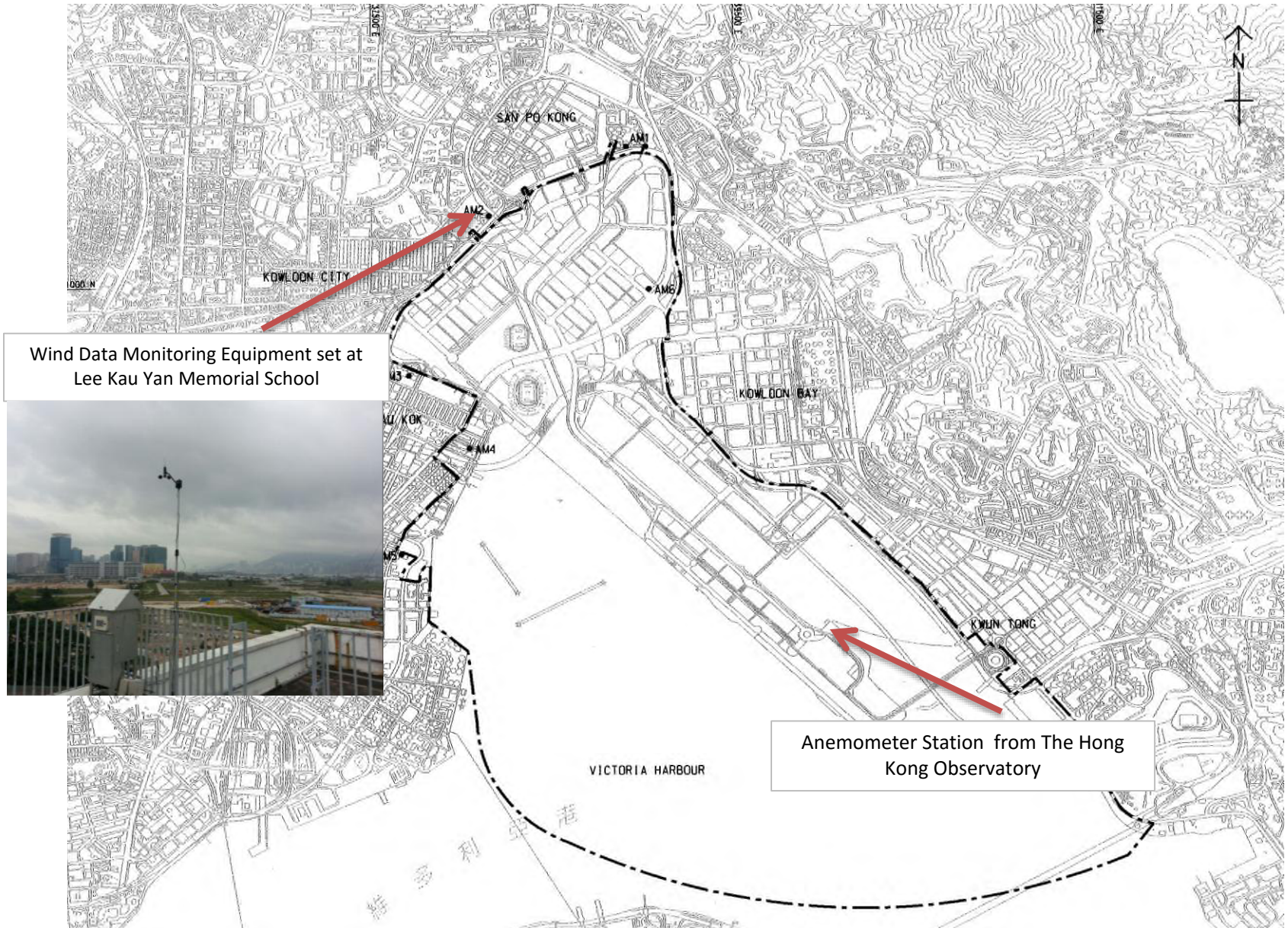
Title	Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area Air Quality Monitoring Stations under Contract No.: KLN/2013/16 and KLN/2016/09	Scale: N.T.S Date: Mar-17	Project No.: MA16043 Figure: 2

CINOTECH



Title	Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area Noise Monitoring Stations under Contract No.: KLN/2013/16 and KLN/2016/09	Scale: N.T.S Date: Mar-17	Project No.: MA16043 Figure: 3

CINOTECH



Title	Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area Location of Wind Data Monitoring Equipment	Scale: N.T.S Date: Jan-17	Project No.: MA16043 Figure: 4

CINOTECH

APPENDIX A
MONITORING REQUIREMENTS

Appendix A - Environmental Impact Monitoring Requirements

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Air Quality	1 hour TSP	Three times / 6 days	• AM2 – Lee Kau Yan Memorial School	• AM2 – Rooftop (about 8/F) Area
	24 hour TSP	Once / 6 days		

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

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Construction Noise	L_{eq}, L_{90} & L_{10} at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	• M3 (Cognitio College) • M4 (Lee Kau Yan Memorial School) • M5(C) (Mercy Grace's Home)	• M3 - Facade measurement at Rooftop (about 6/F) Area • M4 - Facade measurement at Rooftop (about 7/F) Area • M5(C) – Façade measurement at Rooftop (about 5/F) Area

APPENDIX B
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

Appendix B - Action and Limit Levels

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

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM2	346	500

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

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM2	157	260

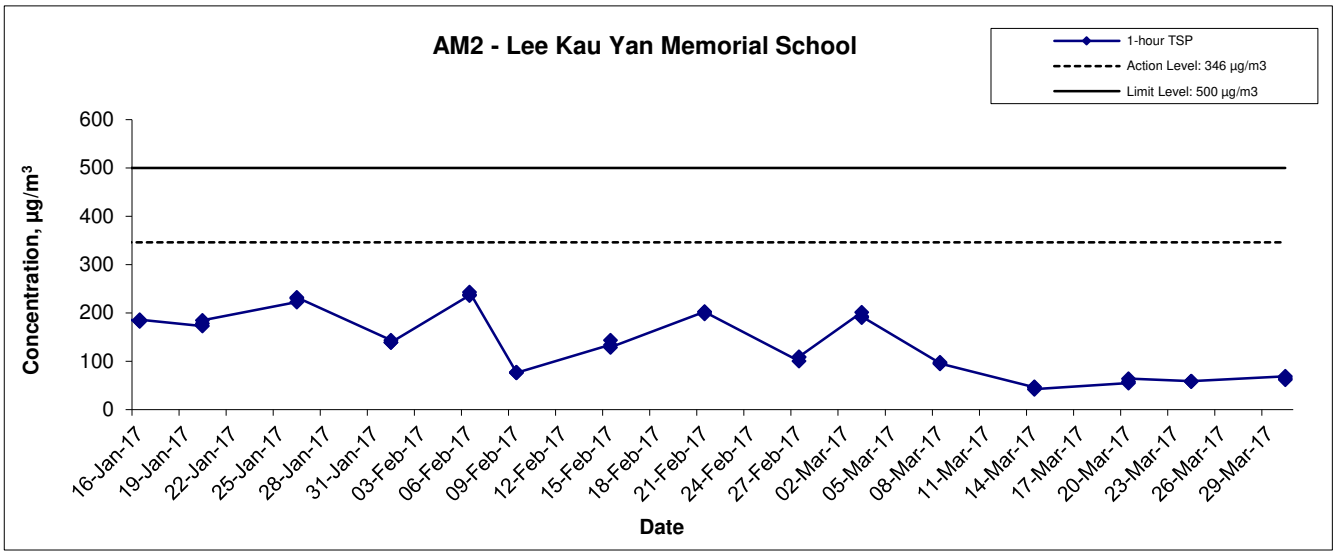
Table B-3 Action and Limit Levels for Construction Noise

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.

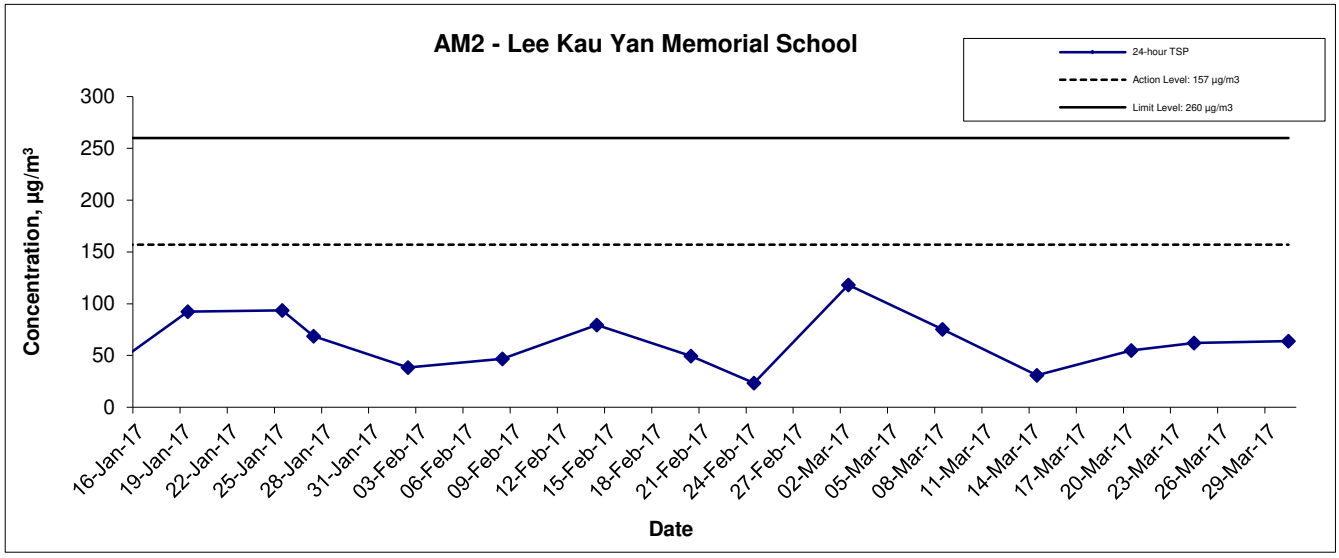
APPENDIX C
GRAPHICAL PRESENTATION OF AIR QUALITY MONITORING RESULTS

1-hr TSP Concentration Levels



Title: Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Mar 17	Project No.: MA16043 Appendix: C	CINOTECH

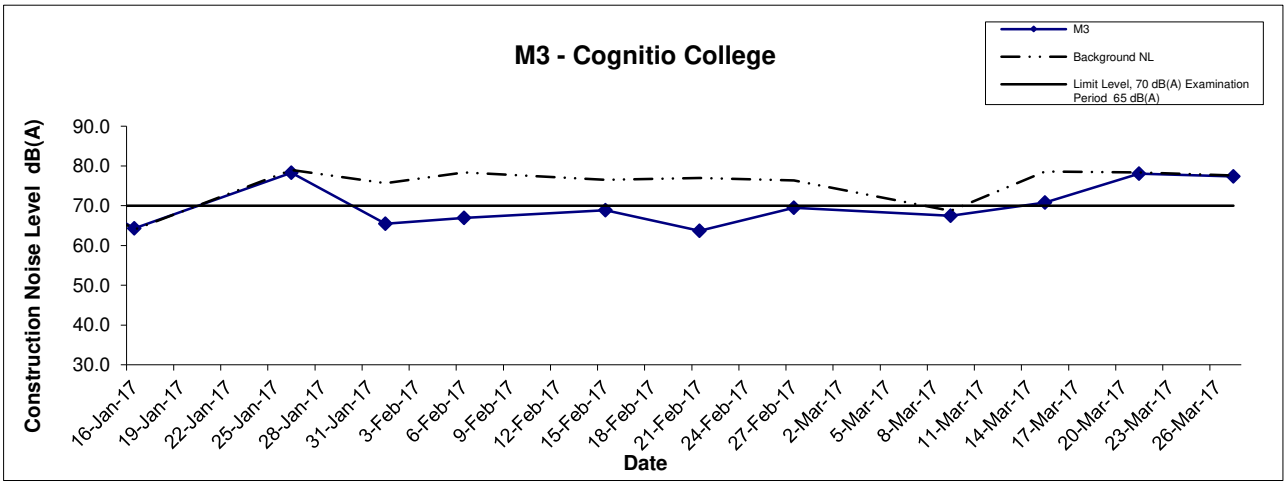
24-hr TSP Concentration Levels

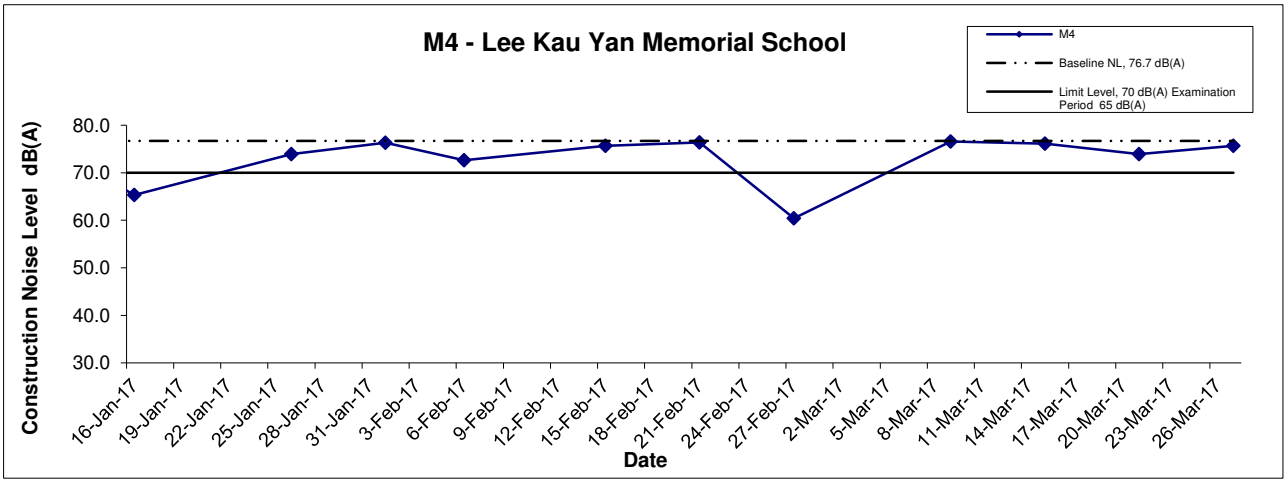


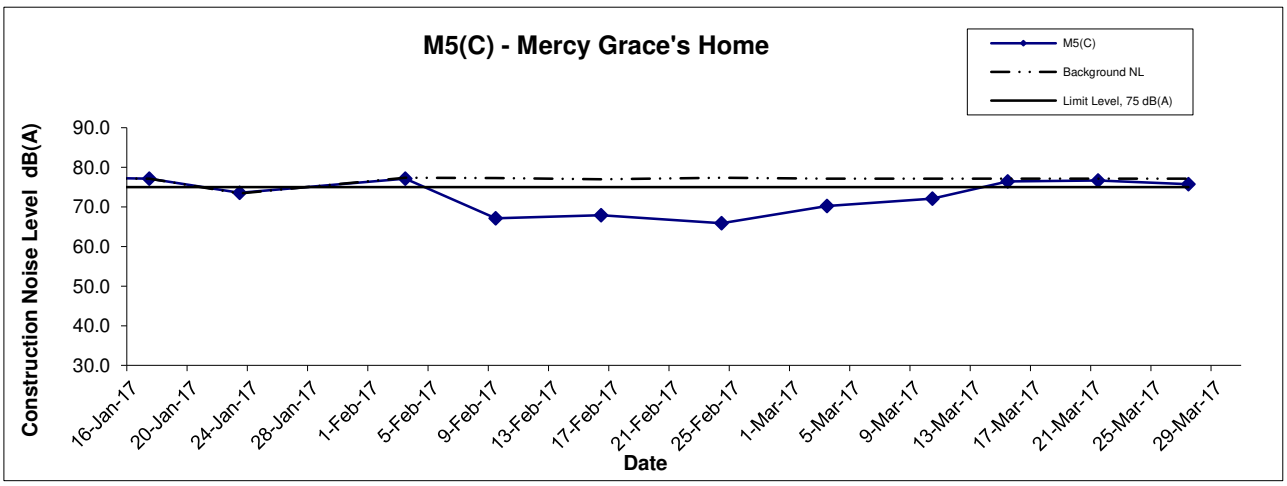
Title: Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Mar 17	Project No.: MA16043 Appendix: C	CINOTECH

APPENDIX D
GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS

Noise Levels







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

Title: Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Mar 17	Project No.: MA16043 Appendix: D	CINOTECH

APPENDIX E
ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

Appendix E – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	Recommended Mitigation Measures	Implementation Status
Construction Air Quality		
S6.5	8 times daily watering of the work site with active dust emitting activities.	^
S6.8	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.	
	• Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	*
	• Misting for the dusty material should be carried out before being loaded into the vehicle. 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.	^
	• 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.	^

S6.8	• DWFI compound for JVBC: 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 desiliting 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 efficiency deodorizers before discharge to the atmosphere.	N/A
	• Desilting compound for KTN: Two desilting compounds are proposed for KTN (at Site 1D6 and Site 1P1) 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 desiliting facilities will form part of the compounds to prevent any accumulation of sediment within the downstream section of KTN and hence fully mitigate the potential odour emissions from the headspace of KTN 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 efficiency deodorizers before discharge to the atmosphere.	N/A
	• Decking or reconstruction of KTN within apron area: It is proposed to deck the KTN or reconstruct the KTN within the former Apron area into Kai Tak River from the south of Road D1 to the north of Road D2 along the existing alignment of KTN. The Kai Tak River will compose of a number of channels flowing with nonodorous fresh water and THEES effluent. The channel flowing with THEES effluent will be designed with the width of water surface of not more than 16m.	N/A
	• Localised maintenance dredging: Localised maintenance dredging should be conducted to provide water depth of not less than 3.5m over the whole of KTAC and KTTS. With reference to the water depth data recorded during the odour survey, only some of the areas in the northern part of KTAC (i.e. to the north of taxiway bridge) including the area near the northern edge of KTAC, the area near western bank of KTAC, and the area near the JVC discharge have water depths shallower than 3.5m. The area involved would be about 40% of the northern KTAC and the dredging depth required would be from about 2.7m to less than 1m. The maintenance dredging to be carried out prior to the occupation of any new development in the immediate vicinity of KTAC to avoid potential localized odour	N/A

	impacts at the future ASRs during the maintenance dredging operation. • Improvement of water circulation in KTAC and KTTS: 600m gap opening at the northern part of the former Kai Tak runway, the water circulation in KTAC and KTTS would be substantially improved. Together with the improvement in water circulation, the DO level in KTAC and KTTS would also be increased. • In-situ sediment treatment by bioremediation: Bioremediation would be applied to the entire KTAC and KTTS.	N/A N/A
Construction Noise		
S7.8	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.	^
S7.9	Good Site Practice: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. • Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. • Mobile plant, if any, should be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	 ^ ^ ^ ^ ^ ^
S7.9	Scheduling of Construction Works during School Examination Period	^
S7.8	(i) Provision of low noise surfacing in a section of Road L2; and (ii) Provision of structural fins	N/A N/A
S7.8	(i) Avoid the sensitive façade of class room facing Road L2 and L4; and (ii) Provision of low noise surfacing in a section of Road L2 & L4	N/A N/A

Appendix E – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S7.8	(i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 1I1; and (ii) Setback of building about 5m from site boundary.	N/A N/A
S7.8	Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A
S7.8	(i) avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and Avoid the sensitive façade of class room facing Road L2 and L4; and (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 N/A
S7.8	(i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or (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 N/A
S7.8	(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	^
S7.8	All the ventilation fans installed in the below will be provided with silencers or acoustics treatment. (i) SPS (ii) ESS (iii) Tunnel Ventilation Shaft (iv) EFTS depot	 N/A N/A N/A N/A
S7.8	Installation of retractable roof or other equivalent measures	N/A
Construction Water Quality		
S8.8	The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including: • Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply; • Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps; • An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and	 N/A N/A N/A

	• 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
S8.8	**Construction Phase** Marine-based Construction *Capital and Maintenance Dredging for Cruise Terminal* Mitigation measures for construction of the proposed cruise terminal should follow those recommended in the approved EIA for CT Dredging.	N/A
S8.8	*Fireboat Berth, Runway Opening and Road T2* 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.	N/A
S8.8	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 1,000m^3 per day using one grab dredger.	N/A
S8.8	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 2,000m^3 per day using one grab dredger.	N/A
8.8	Dredging for Road T2 should be conducted at a maximum rate of 8,000m^3 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).	N/A
8.8	Silt screens shall be applied to seawater intakes at WSD seawater intake.	N/A

S8.8	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	 ^ ^
S8.8	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.	^
S8.8	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.	^
S8.8	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.	^
S8.8	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.	^
S8.8	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.	^
S8.8	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.	
S8.8	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.	N/A(1)
S8.8	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.	^
S8.8	*Drainage* It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea	^
S8.8	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.	^
S8.8	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.	^
S8.8	*Sewage Effluent* Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	^

S8.8	*Stormwater Discharges* Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	^
S8.8	*Debris and Litter* In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur	^
S8.8	*Construction Works at or in Close Proximity of Storm Culvert or Seafront* The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.	^
S8.8	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.	^
S8.8	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	^
S8.8	Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.	^
S8.8	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.	^
S8.8	Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	^
S8.8	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.	^
S8.8	Construction effluent, site run-off and sewage should be properly collected and/or treated.	^
S8.8	Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead	N/A

	edge at bottom and properly supported props to prevent adverse impact on the storm water quality.	
S8.8	Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.	N/A
S8.8	Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	N/A
S8.8	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	^
S8.8	Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.	N/A
Construction Waste Management		
S9.5	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 the dredging activities include: • Nomination of an approved person, such as a site manager, 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 measure to minimize 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).	^ ^ ^ ^ ^
S9.5	Waste Reduction Measures Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: • Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal • Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force	^ ^ ^

Appendix E – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

	• 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	^ ^
S9.5	Dredged Marine Sediment 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)	N/A
S9.5	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	N/A
S9.5	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: • 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 selfmonitoring 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	 N/A N/A N/A

S9.5	Construction and Demolition Material Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: • Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric • Skip hoist for material transport should be totally enclosed by impervious sheeting • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet • The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket System for Disposal of Construction and Demolition Materials” should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.	^ ^ ^ ^ ^ ^ ^ ^ ^

Appendix E – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S9.5	Chemical Waste After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*		*
S9.5	General Refuse General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem		*
Construction Landscape and Visual			
S13.9	CM1	All existing trees should be carefully protected during construction.	^
	CM2	Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.	^
	CM3	Control of night-time lighting.	N/A(1)
	CM4	Erection of decorative screen hoarding.	*

Remarks:

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

APPENDIX F
SITE AUDIT SUMMARY

Appendix F Summary of Observation and Recommendation Made during Site Inspection

Summary of Observation and Recommendation Made during Site Inspection in January 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Air Quality	26 January 2017	Observation: Water spray should be provided to the haul road and exposed area at Portion 2 for dust suppression.	Follow up action will be reported in the next reporting month.
Noise	--	--	--
Waste/ Chemical Management	20 January 2017	Reminder: Drip tray should be provided to the chemical containers placed near Portion 2.	Rectification/improvement was observed during the follow-up audit session.
Landscape and Visual	20 January 2017	Observation: Hoarding should be provided and erected at the site boundary of Portion 1.	Rectification/improvement was observed during the follow-up audit session.
Permits/ Licenses	--	--	--

Summary of Observation and Recommendation Made during Site Inspection in February 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Air Quality	26 January 2017	Observation: Water spray should be provided to the haul road and exposed area at Portion 2 for dust suppression.	This item was remarked on 3 February 2017.
	3 February 2017	Observation: Water spray should be provided to the haul road and exposed area at Portion 2 for dust suppression.	Rectification/improvement was observed during the follow-up audit session.
	15 February 2017	Observation: Water spray should be provided to the haul road and exposed area at Portion 2 for dust suppression.	Rectification/improvement was observed during the follow-up audit session.
Noise	--	--	--
Waste/ Chemical Management	20 January 2017	Reminder: Drip tray should be provided to the chemical containers placed near Portion 2.	Rectification/improvement was observed during the follow-up audit session.
	3 February 2017	Reminder: Chemical container should be provided with drip tray or stored at appropriate storage area. (Portion 2).	Rectification/improvement was observed during the follow-up audit session.
	10 February 2017	Reminder: General refuse should be removed regularly to prevent accumulation (Portion 1).	Rectification/improvement was observed during the follow-up audit session.
Landscape and Visual	--	--	--
Permits/ Licenses	--	--	--

Summary of Observation and Recommendation Made during Site Inspection in March 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Air Quality	3 March 2017	Reminder: Water spraying should be provided at haul road to avoid dust generation.	Rectification/improvement was observed during the follow-up audit session.
	10 March 2017	Observation: Excavated material should be properly covered for dust suppression. (Portion 2)	Rectification/improvement was observed during the follow-up audit session.
	10 March 2017	Observation: Water spray should be provided at haul road. (Portion 1)	Rectification/improvement was observed during the follow-up audit session.
	24 March 2017	Reminder: Water spraying should be provided to unpaved area to avoid dust generation.	Rectification/improvement was observed during the follow-up audit session.
	24 March 2017	Reminder: Stockpile of dusty material should be covered by impervious materials properly.	Rectification/improvement was observed during the follow-up audit session.
Noise	--	--	--
Waste/ Chemical Management	10 March 2017	Reminder: Oil stain accumulated near KCD should be properly cleared. (Portion 1)	Rectification/improvement was observed during the follow-up audit session.
	24 March 2017	Reminder: Drip tray near the generator-set should be maintained more regularly.	Rectification/improvement was observed during the follow-up audit session.
	31 March 2017	Reminder: To clear the general refuse at the box culvert at Portion 2.	Follow up action will be reported in the next reporting month.
Landscape and Visual	31 March 2017	Observation: To properly maintain the hoarding at the site boundary of Portion 1.	Follow up action will be reported in the next reporting month.
Permits/ Licenses	--	--	--

APPENDIX G
WASTE GENERATED QUANTITY

Department: CEDD
Contract No.: KL/2015/02
Project : Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

Peako - Wo Hing Joint Venture

Monthly Summary Waste Flow Table for 2017

As at 7 February 2017

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 (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)
Jan	6651	0	0	0	6651	0	0	0	0	0	7
Feb											
Mar											
Apr											
May											
June											
Sub-total											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	11574	0	0	0	11574	0	0	0	0	0	147

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)

Notes:
(1) The performance targets are given in PS clause 6(14).
(2) The waste flow table shall also include C & D materials that are specified in the Contract to be imported for use at the Site.
(3) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging material.
(4) The Contractor shall also submit the latest forcast of the total amount of C&D materials exected to be generated from the Works, together with a braskdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or excreeding 50,00 m³. (PS Cleuse 25.02A(7) refers).

Department: CEDD
Contract No.: KL/2015/02
Project : Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

Peako - Wo Hing Joint Venture

Monthly Summary Waste Flow Table for 2017

As at 28 February 2017

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 (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)
Jan	6651	0	0	0	6651	0	0	0	0	0	7
Feb	8100	0	0	0	8100	0	0	0	0	0	0
Mar											
Apr											
May											
June											
Sub-total											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	11574	0	0	0	11574	0	0	0	0	0	147

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)

Notes:
(1) The performance targets are given in PS clause 6(14).
(2) The waste flow table shall also include C & D materials that are specified in the Contract to be imported for use at the Site.
(3) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging material.
(4) The Contractor shall also submit the latest forcast of the total amount of C&D materials exected to be generated from the Works, together with a braskdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or excreeding 50,00 m³. (PS Cleuse 25.02A(7) refers).

Department: CEDD
Contract No.: KL/2015/02
Project : Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

Peako - Wo Hing Joint Venture

Monthly Summary Waste Flow Table for 2017

As at 1 April 2017

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 (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)
Jan	6651	0	0	0	6651	0	0	0	0	0	7
Feb	8100	0	0	0	8100	0	0	0	0	0	0
Mar	24534	0	0	0	24534	0	0	0	0	0	21
Apr											
May											
June											
Sub-total											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	39285	0	0	0	39285	0	0	0	0	0	28

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)

Notes:
(1) The performance targets are given in PS clause 6(14).
(2) The waste flow table shall also include C & D materials that are specified in the Contract to be imported for use at the Site.
(3) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging material.
(4) The Contractor shall also submit the latest forcast of the total amount of C&D materials exected to be generated from the Works, together with a braskdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or excreeding 50,00 m³. (PS Cleuse 25.02A(7) refers).

APPENDIX H
SUMMARY OF EXCEEDANCES

Contract No. KLN/2016/04
Environmental Monitoring Works for Contract No. KL/2015/02
Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area

Appendix H – Summary of Exceedance

Exceedance Report for Contract No. KL/2015/02

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

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

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

ANNEX I
COMPARISON OF EM&A DATA AND EIA PREDICTIONS

Annex I – Comparison of EM&A Data and EIA Predictions

Comparison of 1-hr TSP data with EIA predictions

Station	Predicted 1-hr TSP conc.				
	Scenario1 (Mid 2009 to Mid 2013), µg/m^3	**Scenario2 (Mid 2013 to Late 2016), µg/m^3**	**Reporting Month (Jan 17), µg/m3**	**Reporting Month (Feb 17), µg/m3**	**Reporting Month (Mar 17), µg/m3**
AM2 – Lee Kau Yan Memorial School	290	312	196.9	149.9	84.0

Comparison of 24-hr TSP data with EIA predictions

Station	Predicted 24-hr TSP conc.				
	Scenario1 (Mid 2009 to Mid 2013), µg/m^3	**Scenario2 (Mid 2013 to Late 2016), µg/m^3**	**Reporting Month (Jan 17), µg/m3**	**Reporting Month (Feb 17), µg/m3**	**Reporting Month (Mar 17), µg/m3**
AM2 – Lee Kau Yan Memorial School	145	169	84.9	47.5	67.6

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 (Jan 17), $L_{eq\ (30min)}$ dB(A)**	**Reporting Month (Feb 17), $L_{eq\ (30min)}$ dB(A)**	**Reporting Month (Mar 17), $L_{eq\ (30min)}$ dB(A)**
M3- Cognitio College	47 – 75	52.5 – 78.3(1)	63.7 – 69.5	67.5 – 78.1 (1)
M4 - Lee Kau Yan Memorial School	47 – 74	65.3 – 73.9(2)	60.4 – 76.4(2)	73.9 – 76.6 (2)
M5(C) – Mercy Grace's Home	Not Predicted in EIA Report	65.9 – 77.1(1)	65.9 – 77.1(1)	70.2 – 76.7(1)

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.