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

3rd CONSOLIDATED QUARTERLY EM&A REPORT

July 2017 – September 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/0614

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 3rd 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 July and September 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;
- Traffic signal road duct at Choi Hung Road;
- Road and drainage works at Sze Mei Street and Luk Hop Street;
- Condition survey and monitoring survey;
- Earthwork at Portion E3;
- Footpath construction at Sam Chuk Street and Tsat Po Street; and
- Structure works for SW3 at San Po Kong.
- Backfilling works for VT1 and SW2;
- Road works at Road D1 and King Fuk Street;
- Drainage works near SW3 at Prince Edward Road East footpath;
- T&C for Lift at SW2 and SW3;
- Beautification work at VT1.

Contract No. KL/2012/03:

- Daily Cleaning;
- Finishing works, E&M work in PS2;
- Water test, backfill and sheet-pile removal in Heading 7A, DCS pipe installation;
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;
- Road widening works (excavation and UU works) at Sung Wong Toi Road;
- Maintenance & Servicing Engineer's Office at Portion 9;
- Install fitting inside chamber in Pit 1 and Pit 5;
- Rising Main installation in Pit 2, Pit 4, Pit6/7 and Pit 9;
- Pipe Jacking from Pit 10 to Pit 9;
- 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;
- Refer construction works of NPS in Portion 4 sewerage; and
- Removal of excavated material at Portion 6.

Contract No. KL/2014/01:

- Watermain works;
- TTA implementation, tree felling and junction improvement works at Shing Fung Road and Wang Chiu Road / Sheung Yee Road;
- Open excavation and construction of box culvert and underpass;
- Erection of falseworks for Landscaped Deck;

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

- ELS installation for box culvert and underpass; and
- Construction of pile caps, noise barrier footings, outfalls, deck structure, columns, sewer and manholes.

Contract No. KL/2014/03:

June 2017

- Temporary utility diversion works;
- Temporary diversion for CLP cable at CH6+560;
- Temporary diversion for sewage rising main;
- Construction of temporary diversion road for Shing Cheong Road (TTA Stage 2);
- Setup of temporary barging point;
- Drainage works (CH100 to CH240);
- Excavation of drainage pipe and manhole (M206 to M213);
- Seawall Modification Works;
- Construction of tunnel box structure;
- D-wall construction works;
- Construction of socket Hpile;
- Pumping test for Zone 3;
- Excavation and ELS construction; and
- Installation of dewatering, observation and recharging wells.

July 2017

- Temporary diversion for drainage works;
- Temporary diversion for CLP cable at CH6+560;
- Temporary diversion for sewage rising main;
- Construction of temporary diversion road for Shing Cheong Road (TTA Stage 2);
- Setup of temporary barging point;
- Excavation of drainage pipe and manhole (M206 to M207);
- Seawall Modification Works;
- Construction of tunnel box structure;
- D-wall construction works;
- Guide wall construction works;
- Construction of socket Hpile;
- Pumping test for Zone 3;
- Excavation and ELS construction; and
- Installation of dewatering, observation and recharging wells.

August 2017

- Excavation and laying of drainage pipe and manhole;
- Seawall modification works;
- Construction of tunnel box structure;
- D-wall construction works;
- Pumping test;
- Excavation and ELS construction; and
- Setup of temporary barging point.

Contract No. KL/2015/02:

July 2017

- Bored piling works at Abutment A02 and Pier S15
- Excavation with installation of ELS and utilities support at Subway SW6
- Excavation for retaining wall at slip road S15
- Construction of temporary slip road and decking for TTA next to PERE
- Construction of Box Culvert B4 and B2(Wall and Top slab)
- Excavation and Construction Works for Box Culvert B5 (Base slab)
- Backfilling works at Box Culvert B3 and B4
- Sewerage works in Portion 2
- DCS pipe insulation works in Road L7
- Backfilling works of DCS pipe trench in Road D1 (Portion 6)

August 2017

- Bored piling works at Abutment A02 and Pier S15
- Excavation with installation of ELS and utilities support at Subway SW6
- Excavation and construction works for retaining wall at slip road S15
- Construction of temporary slip road with hoarding erection for TTA next to PERE
- Construction of Box Culvert B4 and B2(Base slab and Top slab)
- Excavation and Construction Works for Box Culvert B5
- ELS Construction for Sewerage Works near SCL Tunnel
- Drainage and Sewerage Works near Box Culvert B3
- Excavation Works for Box Culvert B3 and B4
- Road L7 drainage works
- Road L7 DCS Pipe insulation works

September 2017

- Bored piling works at Pier S15
- Excavation with installation of ELS and utilities support at Subway SW6
- Excavation and construction works for retaining wall at slip road S15
- Hoarding erection along the temporary slip road next to PERE
- Installation of geotechnical instrumentation at SKLR Playground
- Construction of Box Culvert B2 (Baseslab), Culvert B3 (Baseslab and wall & topslab) and Culvert B5 (Wall & topslab)
- Excavation for Box Culvert B4
- Backfilling works at Box Culvert B3 and B4
- DCS pipe and Drainage pipe laying works in road L7
- Trench excavation works in road L7 and road D1
- Sewerage pipe laying works in portion 2 and portion 3

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. One non project related Limit Level exceedance was recorded for Contract No. KL/2012/02 in the reporting period.

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

Complaint, Notifications of Summons and Successful Prosecutions

vi. No notification of summons or prosecution was received and one complaint received for Contract No. KL/2014/03 in the reporting period.

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 3rd 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 July and September 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 Mr. Kelvin Chow	3579 2450/ 3579 2453	2369 4980
Engineer's Representative (ARUP)	SRE RE	Mr. Gary Cheung Ms. Edith Fung	2210 6100	2210 6110
IEC (ANewR)	IEC	Mr. Adi Lee	2618 2836	3007 8648
ET (Cinotech)	ET Leader Project Coordinator and Audit Team Leader	Dr. Priscilla Choy Ms. Ivy Tam	2151 2089 2151 2090	3107 1388
Main Contractor (Build King)	Project Manager EO	Mr. Joe Yip 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 RE	Mr. John Yam Mr. Stanley Chan	2798 0771	3013 8864
IEC (Arcadis)	IEC	Mr. Wong Fu Nam	2911 2744	2805 5028
ET (Cinotech)	ET Leader Project Coordinator and Audit Team Leader	Dr. Priscilla Choy Ms. Ivy Tam	2151 2089 2151 2090	3107 1388
Main Contractor (Kwan On)	Site Agent	Mr. Albert Ng	3689 7752 6146 6761 (Hotline)	3689 7726
Contract No. KL/2014/01:				
Project Proponent (CEDD)	Senior Engineer Engineer	Mr. Sunny Lo Mr. Keith Chu	2301 1421 2301 1607	2301 1277
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 Audit Team Leader	Dr. Priscilla Choy Ms. Ivy Tam	2151 2089 2151 2090	3107 1388
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 EO	Mr. Arnold Chan Mr. Calvin So	9380 4110 9724 6254	2283 1689
Contract No. KL/2015/02:				
Project Proponent (CEDD)	Senior Engineer	Ms. K. Pong	2301 1466	2369 4980
Engineer's Representative (AECOM)	SRE	Mr. Vincent Lee	2798 0771	2210 6110
IEC (MCL)	IEC	Mr. Colin Yung	3565 4114	2450 8032
ET (Cinotech)	ET Leader Audit Team Leader	Dr. Priscilla Choy Ms. Ivy Tam	2151 2089 2151 2090	3107 1388
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;
- Traffic signal road duct at Choi Hung Road;
- Road and drainage works at Sze Mei Street and Luk Hop Street;
- Condition survey and monitoring survey;
- Earthwork at Portion E3;
- Footpath construction at Sam Chuk Street and Tsat Po Street; and
- Structure works for SW3 at San Po Kong.
- Backfilling works for VT1 and SW2;
- Road works at Road D1 and King Fuk Street;
- Drainage works near SW3 at Prince Edward Road East footpath;
- T&C for Lift at SW2 and SW3;
- Beautification work at VT1.

Contract No. KL/2012/03:

- Daily Cleaning;
- Finishing works, E&M work in PS2;
- Water test, backfill and sheet-pile removal in Heading 7A, DCS pipe installation;
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;
- Road widening works (excavation and UU works) at Sung Wong Toi Road;
- Maintenance & Servicing Engineer’ s Office at Portion 9;
- Install fitting inside chamber in Pit 1 and Pit 5;
- Rising Main installation in Pit 2, Pit 4, Pit6/7 and Pit 9;
- Pipe Jacking from Pit 10 to Pit 9;
- 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;
- Refer construction works of NPS in Portion 4 sewerage; and
- Removal of excavated material at Portion 6.

Contract No. KL/2014/01:

- Watermain works;
- TTA implementation, tree felling and junction improvement works at Shing Fung Road and Wang Chiu Road / Sheung Yee Road;
- Open excavation and construction of box culvert and underpass;

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

- Erection of falseworks for Landscaped Deck;
- ELS installation for box culvert and underpass; and
- Construction of pile caps, noise barrier footings, outfalls, deck structure, columns, sewer and manholes.

Contract No. KL/2014/03:

June 2017

- Temporary utility diversion works;
- Temporary diversion for CLP cable at CH6+560;
- Temporary diversion for sewage rising main;
- Construction of temporary diversion road for Shing Cheong Road (TTA Stage 2);
- Setup of temporary barging point;
- Drainage works (CH100 to CH240);
- Excavation of drainage pipe and manhole (M206 to M213);
- Seawall Modification Works;
- Construction of tunnel box structure;
- D-wall construction works;
- Construction of socket Hpile;
- Pumping test for Zone 3;
- Excavation and ELS construction; and
- Installation of dewatering, observation and recharging wells.

July 2017

- Temporary diversion for drainage works;
- Temporary diversion for CLP cable at CH6+560;
- Temporary diversion for sewage rising main;
- Construction of temporary diversion road for Shing Cheong Road (TTA Stage 2);
- Setup of temporary barging point;
- Excavation of drainage pipe and manhole (M206 to M207);
- Seawall Modification Works;
- Construction of tunnel box structure;
- D-wall construction works;
- Guide wall construction works;
- Construction of socket Hpile;
- Pumping test for Zone 3;
- Excavation and ELS construction; and
- Installation of dewatering, observation and recharging wells.

August 2017

- Excavation and laying of drainage pipe and manhole;
- Seawall modification works;
- Construction of tunnel box structure;
- D-wall construction works;
- Pumping test;
- Excavation and ELS construction; and
- Setup of temporary barging point.

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

Contract No. KL/2015/02:

July 2017

- Bored piling works at Abutment A02 and Pier S15
- Excavation with installation of ELS and utilities support at Subway SW6
- Excavation for retaining wall at slip road S15
- Construction of temporary slip road and decking for TTA next to PERE
- Construction of Box Culvert B4 and B2(Wall and Top slab)
- Excavation and Construction Works for Box Culvert B5 (Base slab)
- Backfilling works at Box Culvert B3 and B4
- Sewerage works in Portion 2
- DCS pipe insulation works in Road L7
- Backfilling works of DCS pipe trench in Road D1 (Portion 6)

August 2017

- Bored piling works at Abutment A02 and Pier S15
- Excavation with installation of ELS and utilities support at Subway SW6
- Excavation and construction works for retaining wall at slip road S15
- Construction of temporary slip road with hoarding erection for TTA next to PERE
- Construction of Box Culvert B4 and B2(Base slab and Top slab)
- Excavation and Construction Works for Box Culvert B5
- ELS Construction for Sewerage Works near SCL Tunnel
- Drainage and Sewerage Works near Box Culvert B3
- Excavation Works for Box Culvert B3 and B4
- Road L7 drainage works
- Road L7 DCS Pipe insulation works

September 2017

- Bored piling works at Pier S15
- Excavation with installation of ELS and utilities support at Subway SW6
- Excavation and construction works for retaining wall at slip road S15
- Hoarding erection along the temporary slip road next to PERE
- Installation of geotechnical instrumentation at SKLR Playground
- Construction of Box Culvert B2 (Baseslab), Culvert B3 (Baseslab and wall & topslab) and Culvert B5 (Wall & topslab)
- Excavation for Box Culvert B4
- Backfilling works at Box Culvert B3 and B4
- DCS pipe and Drainage pipe laying works in road L7
- Trench excavation works in road L7 and road D1
- Sewerage pipe laying works in portion 2 and portion 3

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
- 1 non-project related 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
- 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.
- 1-hour TSP monitoring at AM5(A) – Po Leung Kuk Ngan Po Ling College was shifted to AM5 – CCC Kei To Secondary School on 9 June 2017.

24-hour TSP Monitoring
- 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.
- 24-hour TSP monitoring at AM2 – Lee Kau Yan Memorial School was shifted to AM2(A) – Ng Wah Catholic Secondary School.

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:

Air Quality and Construction Noise
- No monitoring for air quality and construction noise is required for the Project.

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

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:
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	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. KL/2014/01:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. KL/2014/03:		
Complaint received	1	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

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 One non project related Limit Level exceedance was recorded for Contract No. KL/2012/02 in the reporting period.

6.1.4 No notification of summons or prosecution was received and one complaint 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

May 2017 to July 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: HKCEDD04/50/104537

Date: 4 September 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 (May 2017 to July 2017)

We refer to the emails of 28 and 30 August 2017 attaching a Quarterly EM&A Report (May 2017 to July 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/LHHN/lhmh

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 15th 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 from 1st May 2017 and 31st July 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) AM1(C)* – Contractor Site Office (SCL 1107)
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	

Remark:
* Air Quality Monitoring at AM1(B) was canceled due to the relocation and failure of electricity supply of contractor site office (KL/2012/02). 1-hr and 24-hr TSP monitoring were relocated to AM1(C) and was operated from July 2017.

3. 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;
   - Traffic signal road duct at Choi Hung Road;
   - Road and drainage works at Sze Mei Street and Luk Hop Street;
   - Condition survey and monitoring survey;
   - Earthwork at Portion E3;
   - Footpath construction at Sam Chuk Street and Tsat Po Street; and
   - Structure works for SW3 at San Po Kong.
   - Backfilling works for VT1 and SW2;
   - Road works at Road D1 and King Fuk Street;
   - Drainage works near SW3 at Prince Edward Road East footpath;
   - T&C for Lift at SW2 and SW3;
   - Beautification work at VT1.

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	
May 2017			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
June 2017			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
July 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. 1-hour TSP monitoring at 3 monitoring stations, AM1(B) – Contractor Site Office, AM2 - Lee Kau Yan Memorial School and AM1(C) – Contractor Site Office (SCL 1107), were conducted in the reporting period. AM1(B) – Contractor Site Office (KL/2012/02) was closed due to the relocation of contractor site office, 1-hour TSP monitoring was shifted and conducted at alternative location AM1(C) – Contractor Site Office (SCL 1107) with following the criteria in Section 2.2.19 of EM&A Manual since 17 July 2017. No Action/Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting period.

7. 24-hr TSP monitoring at 3 monitoring stations, AM1(B), AM2 and AM1(C) were conducted in the reporting period. 24-hour TSP monitoring at AM1(B) – Contractor Site Office (KL/2012/02) was canceled due to the relocation of contractor site office with failure of electricity supply from 4 July 2017. In order to obtain the secured supply of electricity for 24-hour TSP monitoring, monitoring works were shifted and conducted at alternative location AM1(C) – Contractor Site Office (SCL 1107) with following the criteria in Section 2.2.19 of EM&A Manual since 14 July 2017. No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting period.

Construction Noise

8. All construction noise monitoring was conducted as scheduled in the reporting period. One non project related 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-RE0069-17, GW-RE0070-17, GW-RE0351-17, GW-RE0370-17, GW-RE0384-17, GW-RE0375-17, GW-RE0472-17, GW-RE0495-17).

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 from 1st May 2017 to 31st July 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. Joe Yip	Project Manager	2639 6290	2639 6208
		Mr. Edmond Wong	Environmental Officer		

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
May 2017	Sunny and Cloudy
June 2017	Sunny and Cloudy
July 2017	Sunny 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 3 monitoring stations, AM1(B) – Contractor Site Office, AM2 - Lee Kau Yan Memorial School and AM1(C) – Contractor Site Office (SCL 1107), were conducted in the reporting period. AM1(B) – Contractor Site Office (KL/2012/02) was closed due to the relocation of contractor site office, 1-hour TSP monitoring was shifted and conducted at alternative location AM1(C) – Contractor Site Office (SCL 1107) with following the criteria in Section 2.2.19 of EM&A Manual since 17 July 2017. 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 3 monitoring stations, AM1(B), AM2 and AM1(C) were conducted in the reporting period. 24-hour TSP monitoring at AM1(B) – Contractor Site Office (KL/2012/02) was canceled due to the relocation of contractor site office with failure of electricity supply from 4 July 2017. In order to obtain the secured supply of electricity for 24-hour TSP monitoring, monitoring works were shifted and conducted at alternative location AM1(C) – Contractor Site Office (SCL 1107) with following the criteria in Section 2.2.19 of EM&A Manual since 14 July 2017. 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 scheduled in the reporting period.

3.7 1 Limit Level exceedance was recorded at M3 on 1 June 2017. According to the investigation, the exceedance was considered as non-project related.

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

Landscape and Visual

3.9 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

3.10 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
AM1(C) – Contractor Site Office (SCL 1107)	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

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

3.12 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.

3.13 Mitigated construction noise levels at M9 were not predicted in EIA Report. The noise data at M3 were not within the range of predicted mitigated construction noise levels in the EIA report, M3 exceeded the prediction of mitigated scenario in EIA report but did not exceed the baseline level.

3.14 The noise data at M4 was slightly higher than those predicted mitigated construction noise level in the EIA report and the discrepancy was considered to be contributed from the major noise sources during the monitoring; i.e. the road traffic noise.

3.15 Noise Limit Level exceedance was recorded at M3 on 1 June 2017. According to the investigations, the exceedance was considered as non-project related.

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 1 non-project related 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 **Appendix F**.

Summary of Environmental Complaints and Prosecutions

4.6 No environmental complaint and no environmental prosecution was 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.

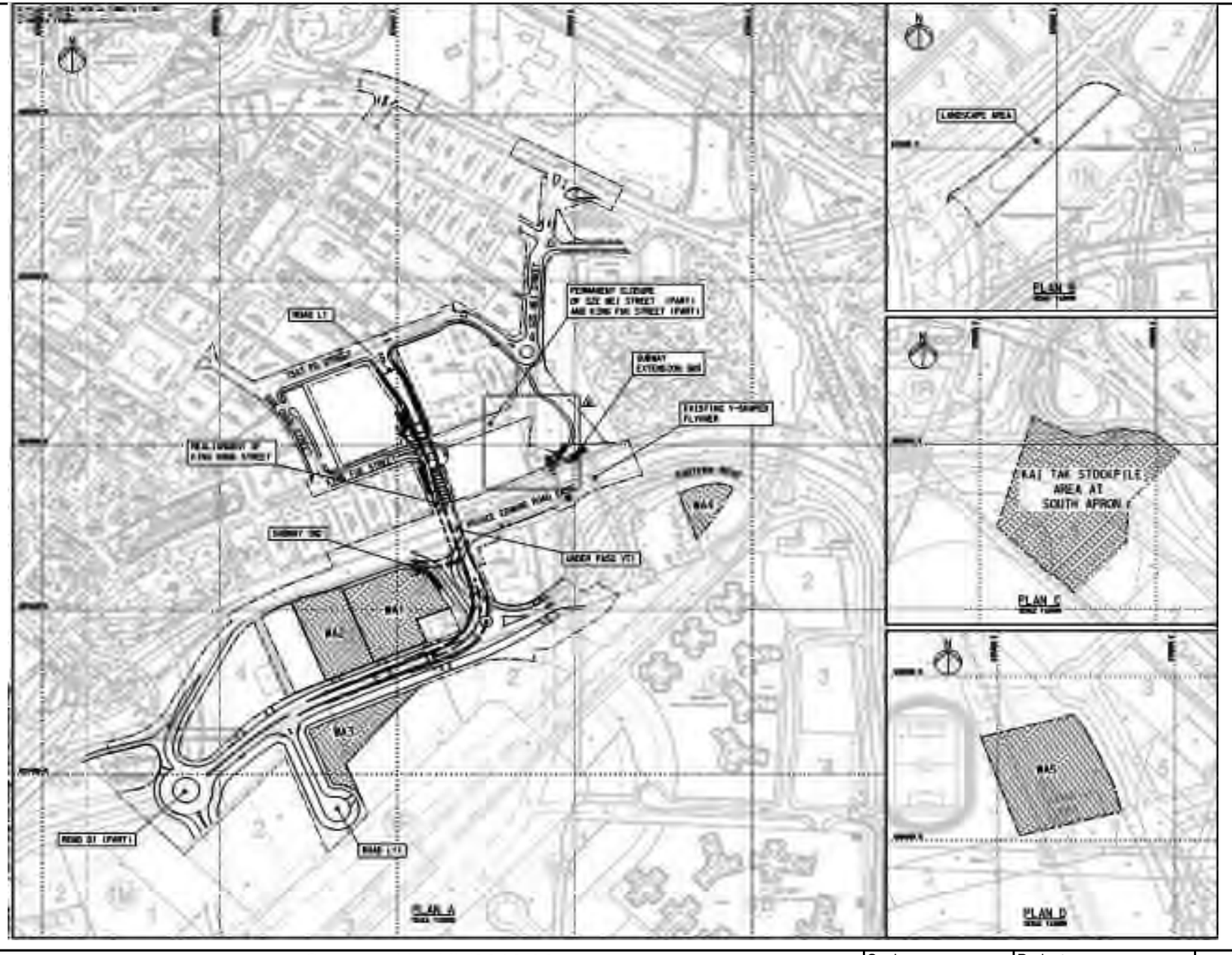
5.2 The Contractor has implemented the recommended mitigation measures except for those mitigation measures not applicable at this stage.

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

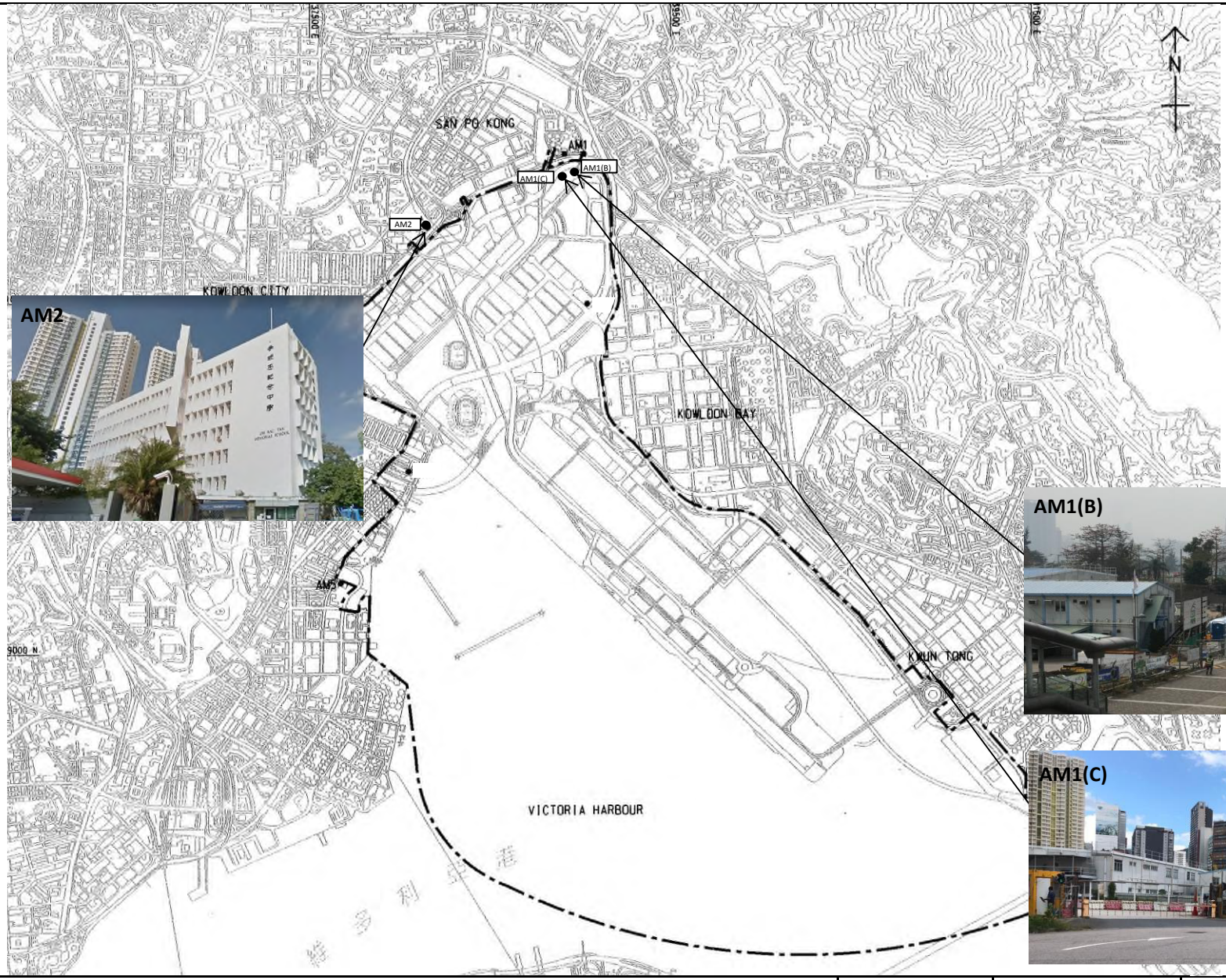
5.4 No environmental complaint was received in the reporting period.

5.5 No environmental prosecution was received in the reporting period.

FIGURES

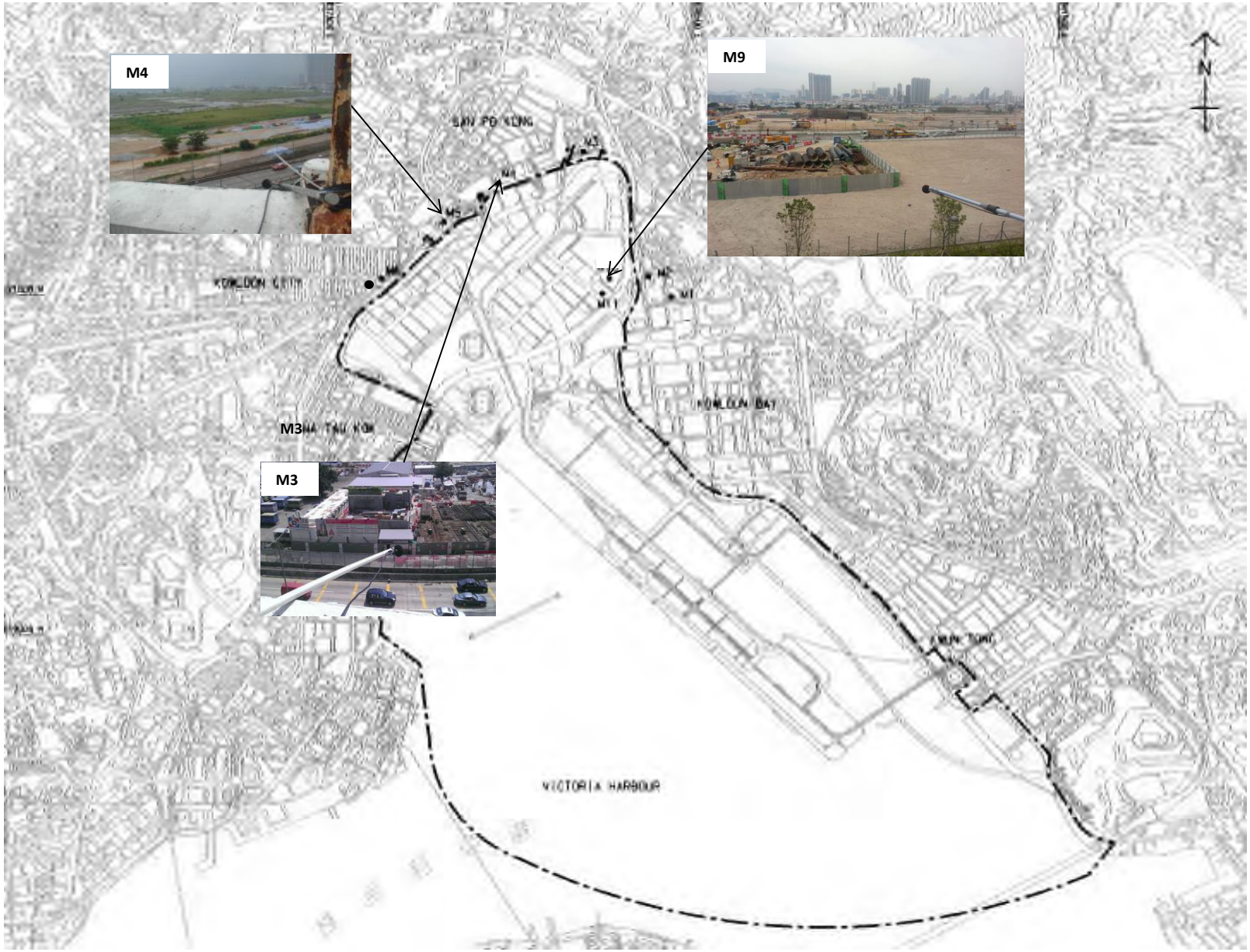


Title	Contract No. KL/2012/02	Scale N.T.S	Project No. MA13043
	Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area	Date Aug-13	Figure 1
	Site Layout Plan		CINOTECH



Title	Contract No. KL/2012/02 Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area Location of Alternative Air Quality Mointoring Location	Scale N.T.S Date Jul-17	Project No. MA13043 Figure 2

CINOTECH



Title	Contract No. KL/2012/02 Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area Noise Monitoring Stations under Contract No.: KLN/2013/16	Scale: N.T.S 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) • AM1(C) – Contractor Site Office of SCL 1107 • AM2 – Lee Kau Yan Memorial School • #AM6 – PA 15	• AM1(B) – Ground Floor Area • AM1(C) – Contractor Site Office of SCL 1107 • 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	

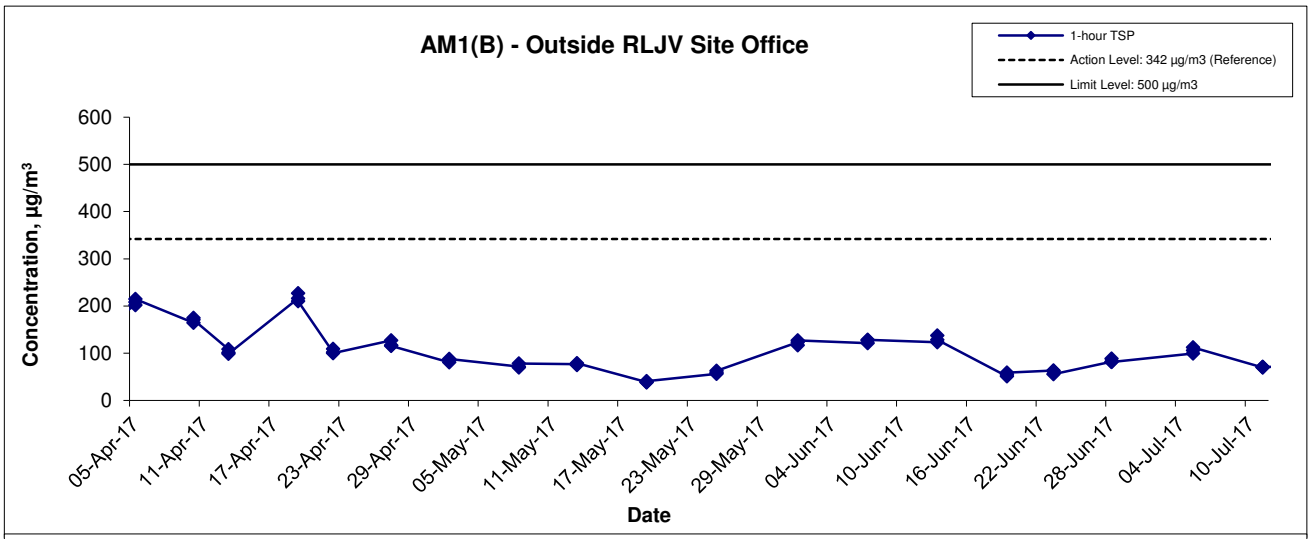
Table B-3 Action and Limit Levels for Construction Noise

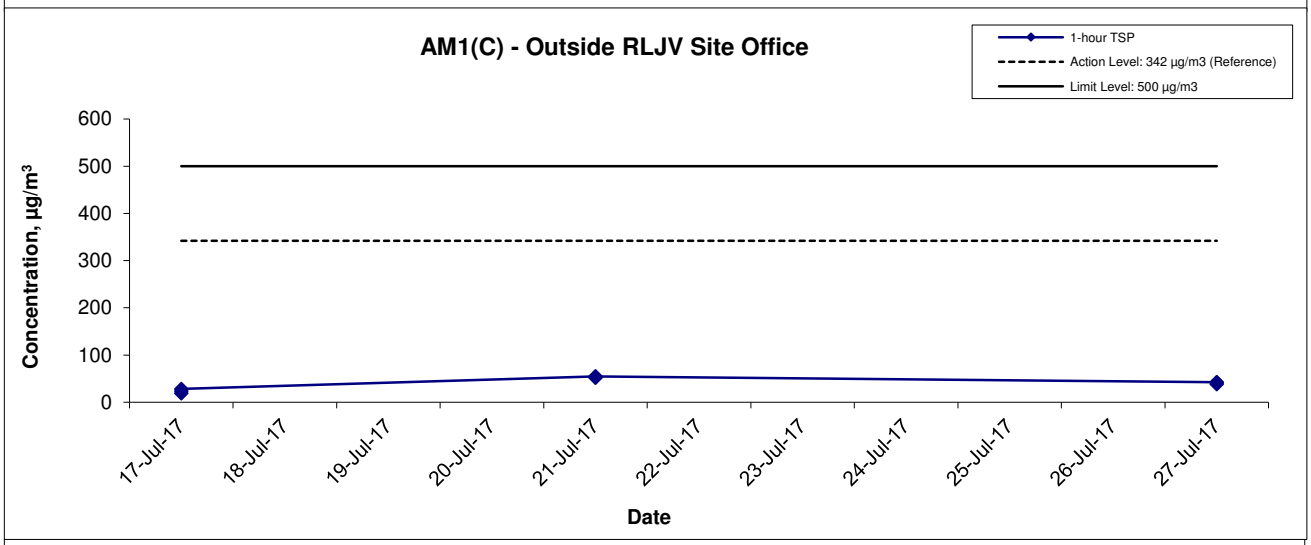
Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

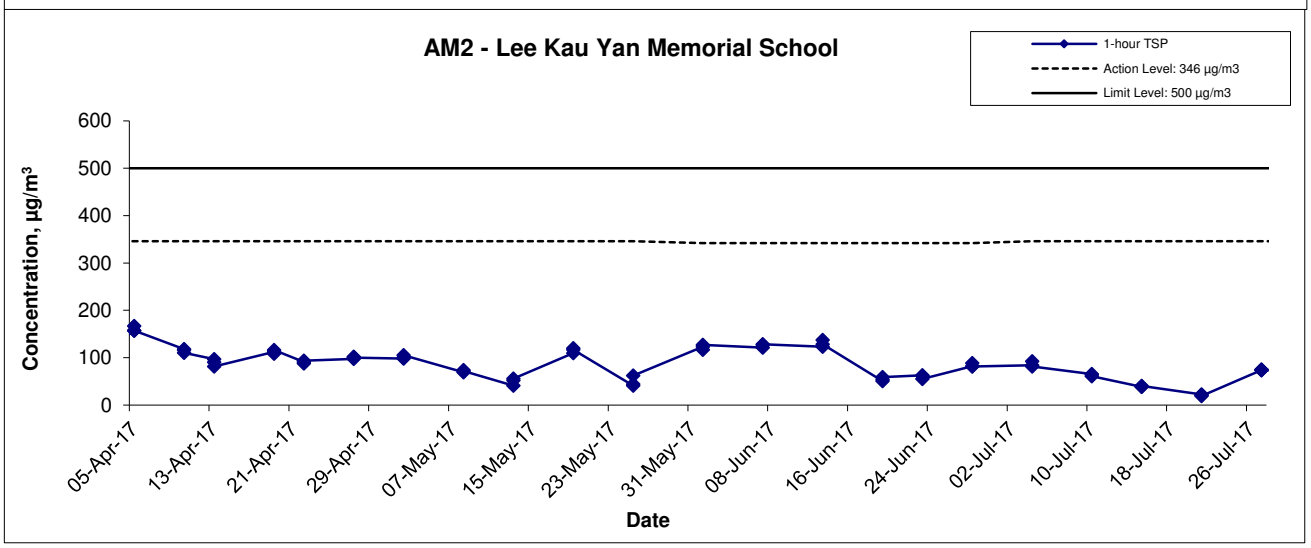
Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed. *70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods, respectively.

APPENDIX C
GRAPHICAL PRESENTATION OF AIR QUALITY MONITORING RESULTS

1-hr TSP Concentration Levels

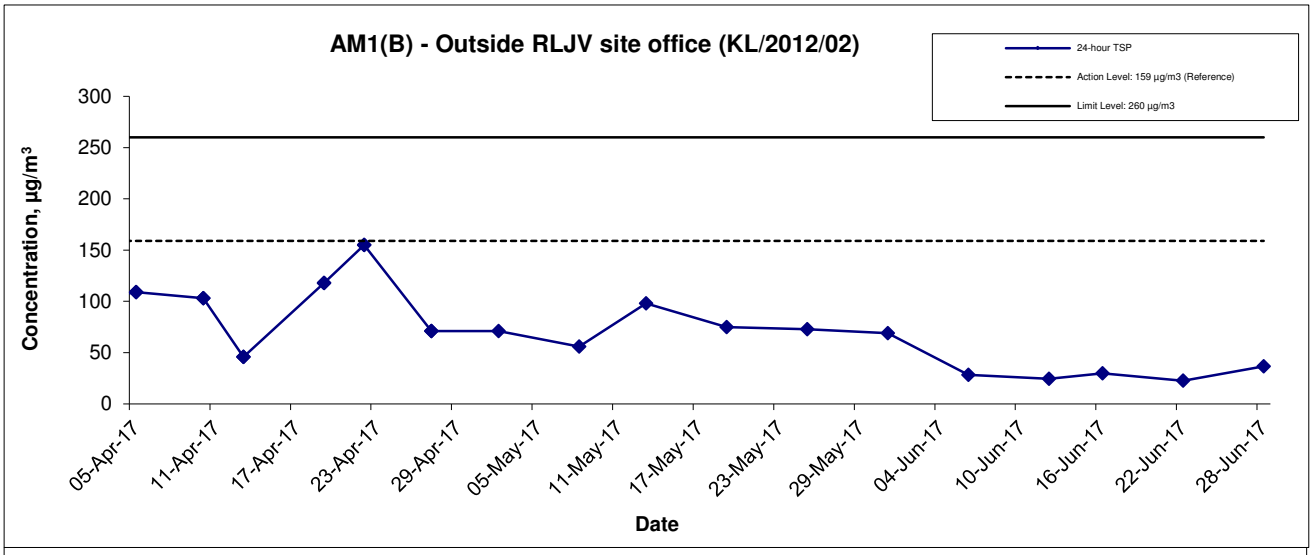


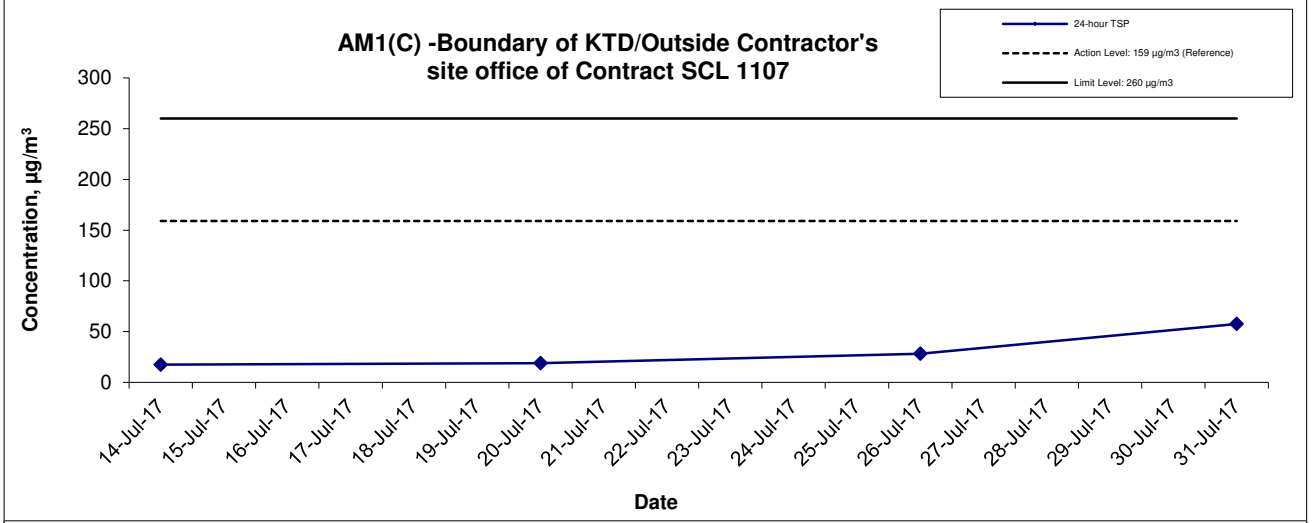


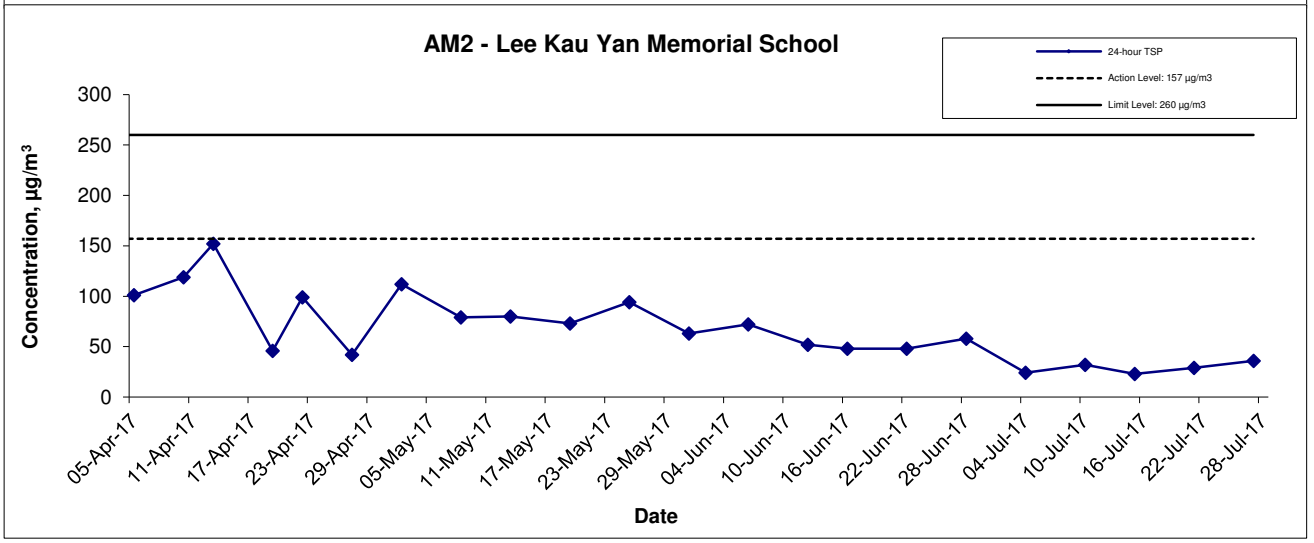


Title: Contract No. KL/2012/02 Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Jul 17	Project No.: MA13043 Appendix: C	CINOTECH

24-hr TSP Concentration Levels



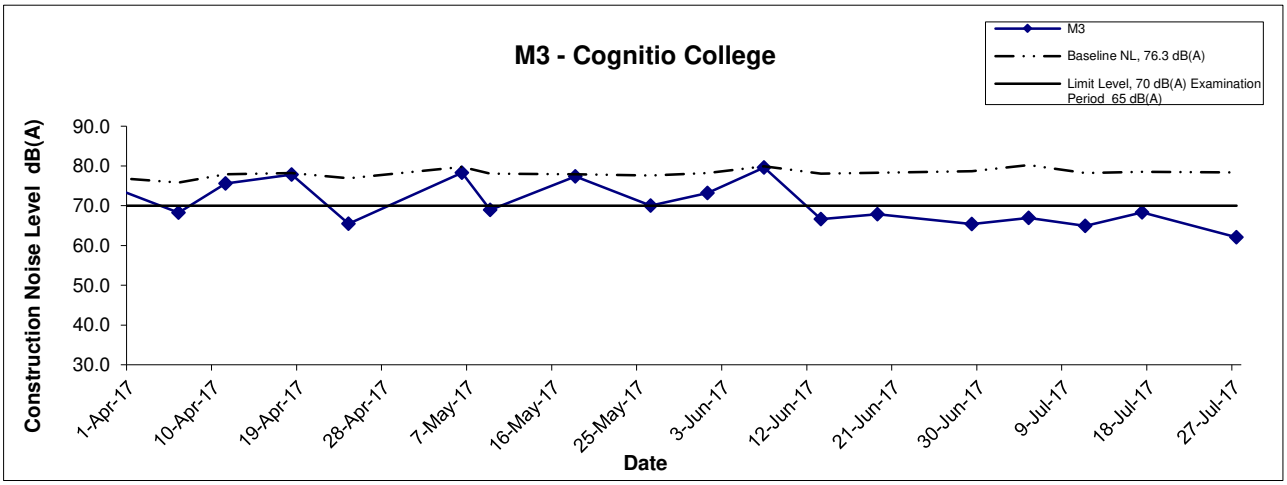


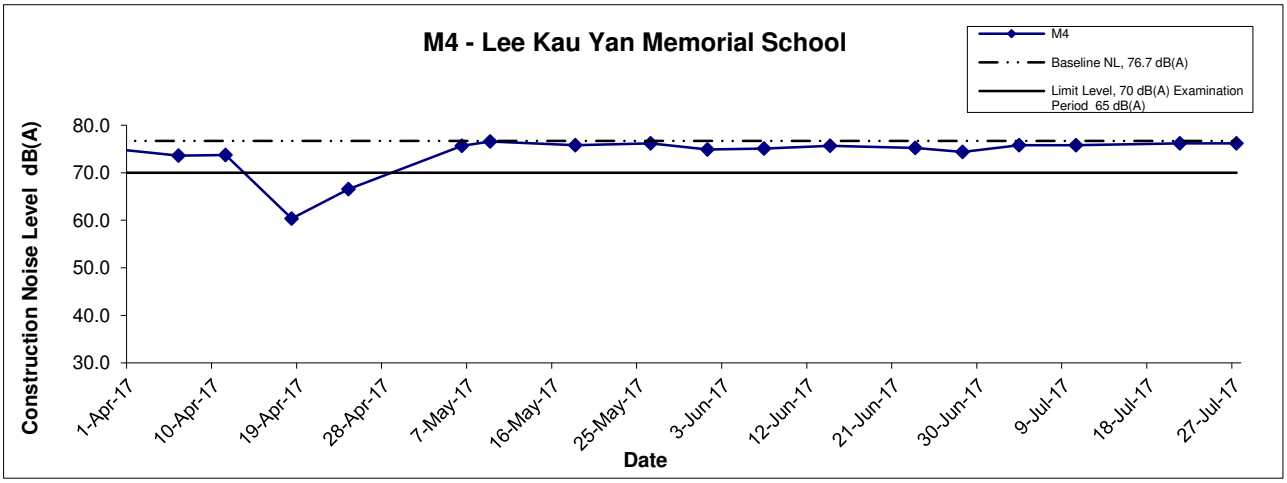


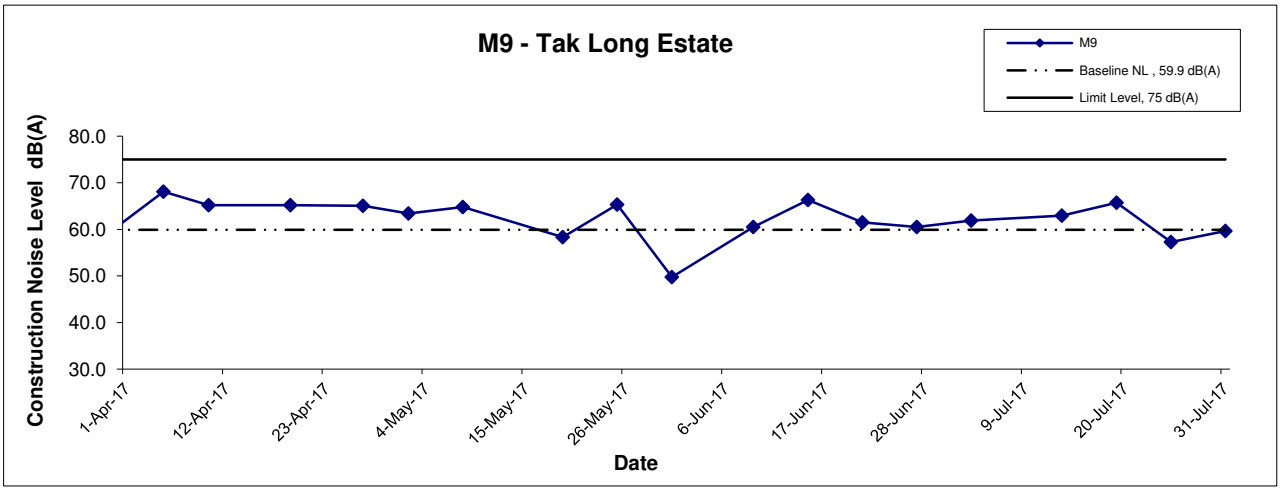
Title: Contract No. KL/2012/02 Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S	Project No.: MA13043	CINOTECH
	Date: Jul 17	Appendix: C	

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: Jul 17	Appendix: D	

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

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

	impacts at the future ASRs during the maintenance dredging operation. • <u>Improvement of water circulation in KTAC and KTTS:</u> 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. • <u>In-situ sediment treatment by bioremediation:</u> 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

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

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	^ * ^

	• 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 May 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	23 May 2017	Observation: Muddy water near the site entrance should be pumped back to site area for treatment, to avoid discharging through the public gully (SW 3).	Rectification/improvement was observed during the follow-up audit session
Air Quality	26 April 2017	Reminder: Silty tyre marks near Sze Mei Street should be cleared.	Rectification/improvement was observed during the follow-up audit session
	10 May 2017	Reminder: Stockpile of dusty material placed near former KTOB and Tsat Po Street should be properly covered.	Rectification/improvement was observed during the follow-up audit session
	17 May 2017	Reminder: NRMM Label should be provided for the generator placed near Concorde Road.	Rectification/improvement was observed during the follow-up audit session
	31 May 2017	Reminder: Water spraying should be provided at haul road to prevent dust generation.	Follow up action will be reported in the next reporting month.
Noise	--	--	--
Waste/ Chemical Management	26 April 2017	Reminder: Accumulated general refuse near former KTOB should be cleared.	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 June 2016

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	21 June 2017	Reminder: Site runoff should be directed back to treatment facility for treatment, to avoid discharging through the public gully. (SW3)	Rectification/improvement was observed during the follow-up audit session
Air Quality	31 May 2017	Reminder: Water spraying should be provided at haul road to prevent dust generation.	Rectification/improvement was observed during the follow-up audit session
	7 June 2017	Reminder: Dusty trail near the exit of SW3 and dusty material on the haul road of King Fuk Street should be cleared.	Rectification/improvement was observed during the follow-up audit session
	21 June 2017	Reminder: Dusty stockpile should be properly covered. (near Concorde Road)	This item was remarked on 28 June 2017.
	28 June 2017	Reminder: Stockpile of dusty stockpile should be properly covered. (near Concorde Road)	Follow up action will be reported in the next reporting month
	28 June 2017	Reminder: Dusty material on the haul road of King Fuk Street should be cleared.	Follow up action will be reported in the next reporting month
Noise	--	--	--
Waste/ Chemical Management	13 June 2017	Reminder: Construction waste and general refuse at King Fuk Street should be removed.	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 July 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Air Quality	21 June 2017	Reminder: Dusty stockpile should be properly covered. (near Concorde Road)	This item was remarked on 28 June 2017.
	28 June 2017	Reminder: Stockpile of dusty stockpile should be properly covered. (near Concorde Road)	Rectification/improvement was observed during the follow-up audit session
	28 June 2017	Reminder: Dusty material on the haul road of King Fuk Street should be cleared.	Rectification/improvement was observed during the follow-up audit session
	7 July 2017	Reminder: Stockpile of dusty materials placed near Concorde Road should be properly covered for dust suppression.	Rectification/improvement was observed during the follow-up audit session
	26 July 2017	Reminder: Dusty material placed near Concorde Road should be properly covered.	Follow up action will be reported in the next reporting month
	26 July 2017	Reminder: Water spray should be provided for breaking works near KTOB	Follow up action will be reported in the next reporting month
Noise	--	--	--
Waste/ Chemical Management	18 July 2017	Reminder: Construction waste stored at King Fuk Street should be properly sorted and disposed.	Rectification/improvement was observed during the follow-up audit session
Landscape and Visual	--	--	--
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 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	5.14235	0	0	0	4.92240	0	0	0	0	0	0.21995
MAR	17.63202	0	0	0	17.21112	0	0	0	0	0	0.42090
APR	0.44095	0	0	0	0	0	0	0	0	0	0.44095
MAY	0.00719	0	0	0	0.00719	0	0	0	0	0	0.00000
JUNE	0.69634	0	0	0	0.19429	0	0	0	0	0	0.50205
SUB-TOTAL	27.64195	0	0	0.15500	25.73955	0	0	0	0	0	1.74740
JULY	0.64610	0	0	0	0	0	0	0	0	0	0.64610
AUG											
SEPT											
OCT											
NOV											
DEC											
TOTAL	28.28805	0	0	0.15500	25.73955	0	0	0	0	0	2.39350

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
(One non-project related Limit Level exceedance was rerecord at M3 on 1 June 2017)

Station	Date	Measured Noise Level, Leq(30min) dB (A)	Background Noise Level dB (A)	Construction Noise Level: Leq(30min) dB (A)	Limit Level	Level exceeded
M3	1-Jun-17	79.4	78.2	73.2	70.0	Limit Level

According to the information provided by the Contractor, the major site activities undertaken on 1 June 2017 included:

- Site cleaning for all possessed portion
- Backfilling works for VT1 and SW2
- Road works at Road D1
- Drainage works near SW3 at Prince Edward Road East footpath
- T&C for Lift at SW2 and SW3
- Road works at King Fuk Street
- Beautification work at VT1

The noise impact arose from the above construction works were expected to be minimal as no noisy PME were involved. The major noise source received at M3 were likely to be the traffic noise from Prince Edward Road East or from other construction sites. Therefore, the exceedance was considered to be non-project related.

(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 (May 16), µg/m3**	**Reporting Month (Jun 16), µg/m3**	**Reporting Month (Jul 17), µg/m3**
AM1(B) – Contractor Site Office of KL/2012/02	192	298	69	96.0	88.1(4)
AM1(C) – Contractor Site Office of SCL 1107	192	298	N/A	N/A	39.5(4)
AM2 – Lee Kau Yan Memorial School	290	312	71	49.6	56.8

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 (May 16), µg/m3**	**Reporting Month (Jun 16), µg/m3**	**Reporting Month (Jul 17), µg/m3**
AM1(B) – Contractor Site Office of KL/2012/02	121	156	84	22.6	N/A(4)
AM1(C) – Contractor Site Office of SCL 1107	121	156	N/A	N/A	30.5(4)
AM2 – Lee Kau Yan Memorial School	145	169	74	48.0	28.8

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 (May 16), $L_{eq\ (30min)}$ dB(A)	Reporting Month (Jun 16), $L_{eq\ (30min)}$ dB(A)	Reporting Month (Jul 17), $L_{eq\ (30min)}$ dB(A)
M3- Cognitio College	47 – 75	69.0 – 78.3(1)	65.4 – 79.6(1)(3)	62.1 – 68.3
M4 - Lee Kau Yan Memorial School	47 – 74	75.7 – 76.6(2)	74.4 – 75.7(2)	75.8 – 76.2(2)
M9 – Tak Long Estate	Not Predicted in EIA Report	49.7 – 65.3	60.5 – 66.3	57.3 – 65.7

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.

(3) The exceedance recorded on 1 June 2017 at monitoring station M3 was considered as non-project related exceedance.

(4) Air Quality Monitoring at AM1(B) was cancelled due to the relocation and failure of electricity supply of contractor site office (KL/2012/02). 1-hr and 24-hr TSP monitoring were relocated to AM1(C) and was operated from July 2017.

FUGRO TECHNICAL SERVICES LIMITED

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

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

June 2017 – August 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 (June – August 2017)
(Ref. Draft_Qrpt1706-1708_v1.0_1)

Our ref: EB001399-320/THW18-36595
Your ref:
Date: 29 January 2018

Dear Dr. Choy,

We have no further comments on the captioned report, which was received via e-mail dated 29 January 2018, 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 15th 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 June 2017 and August 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	
June 2017			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
July 2017			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
August 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:

- Daily Cleaning;
- Finishing works, E&M work in PS2;
- Water test, backfill and sheet-pile removal in Heading 7A, DCS pipe installation;
- Segment tunneling, backfill and sheet-pile removed chamber construction in Heading 7B;
- Road widening works (excavation and UU works) at Sung Wong Toi Road;
- Maintenance & Servicing Engineer's Office at Portion 9;
- Install fitting inside chamber in Pit 1 and Pit 5;
- Rising Main installation in Pit 2, Pit 4, Pit6/7 and Pit 9;
- Pipe Jacking from Pit 10 to Pit 9;
- 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;
- Refer construction works of NPS in Portion 4 sewerage; and
- Removal of excavated material at Portion 6.

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 June 2017 and August 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. Stanley Chan	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 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

3.4 1-hour TSP monitoring at AM5(A) – Po Leung Kuk Ngan Po Ling College was shifted to AM5 – CCC Kei To Secondary School on 9 June 2017.

24-hour TSP Monitoring

3.5 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

3.6 24-hour TSP monitoring at AM2 – Lee Kau Yan Memorial School was shifted to AM2(A) – Ng Wah Catholic Secondary School.

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

Construction Noise

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

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

Landscape and Visual

3.10 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

3.11 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(C) – New Pumping Station under Contract No. KL/2012/03	Site vehicle movement
AM5 – CCC Kei To Secondary School	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

3.12 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**.

3.13 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.

3.14 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.

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.

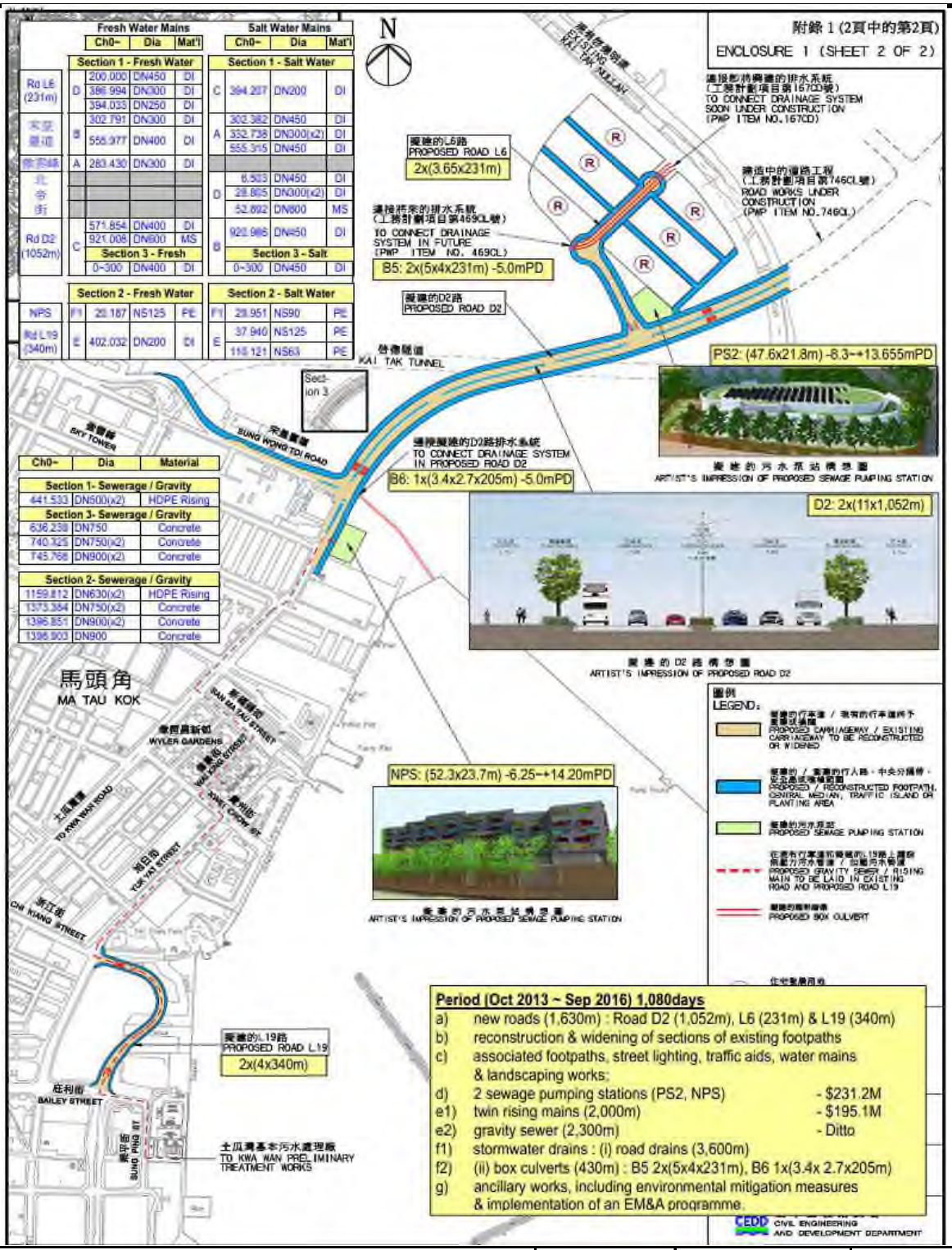
4.3 The Contractor has implemented the recommended mitigation measures.

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.

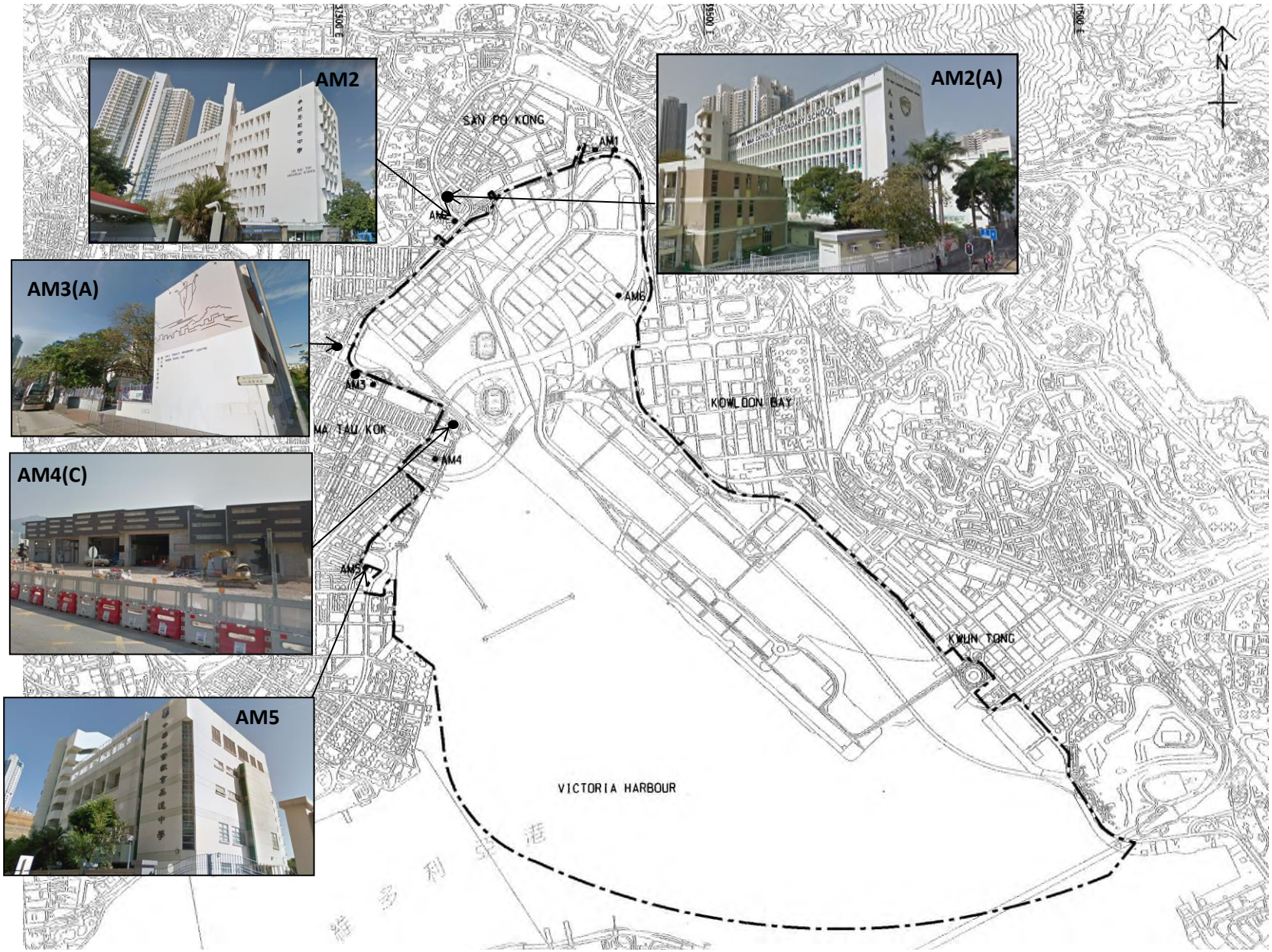
4.5 No environmental complaints and environmental prosecution were received in the reporting quarter.

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

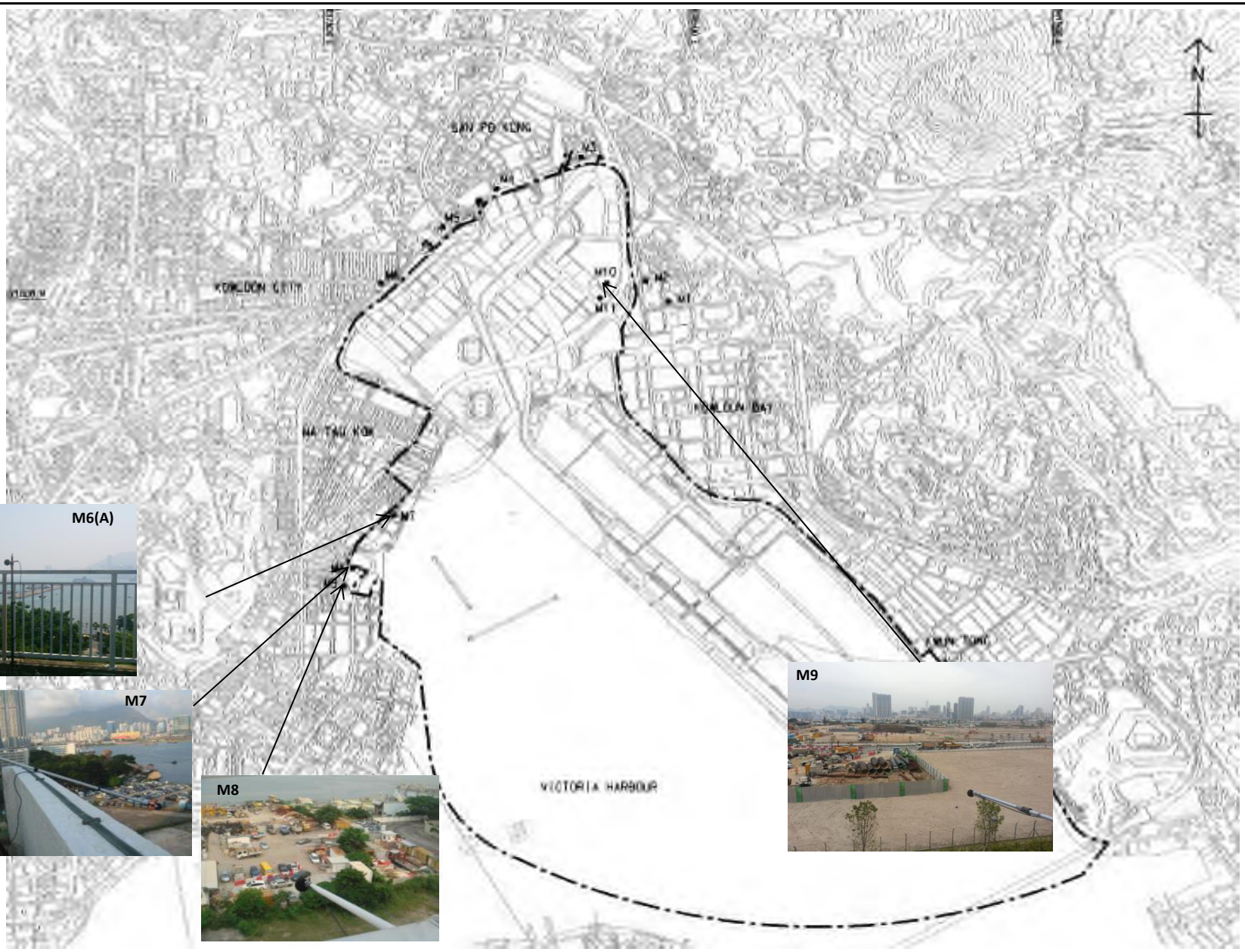


Title	KL/2012/03 - Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area	Scale N.T.S	Project No. MA13056	CINOTECH
	Site Layout Plan	Date Sep-13	Figure 1	



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: Aug-17	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	

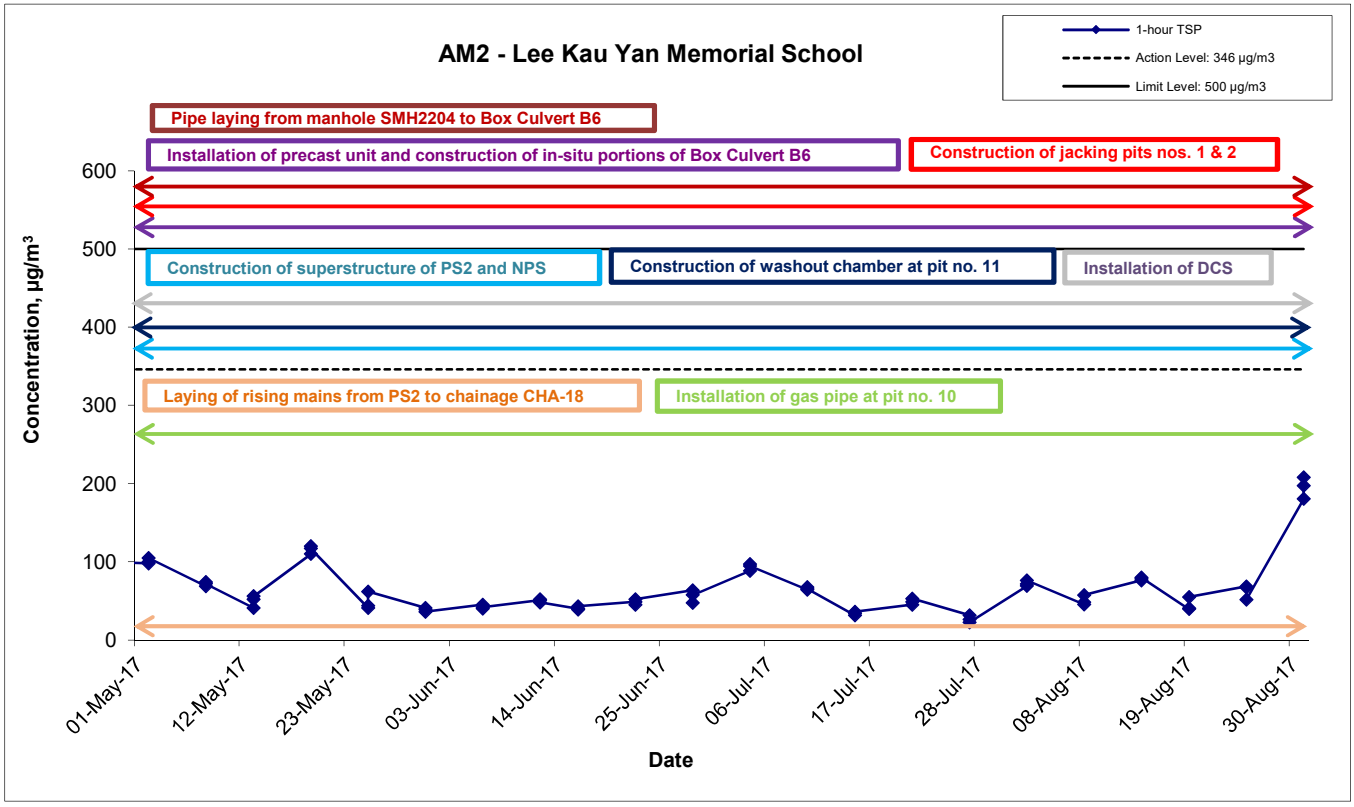
Table B-3 Action and Limit Levels for Construction Noise

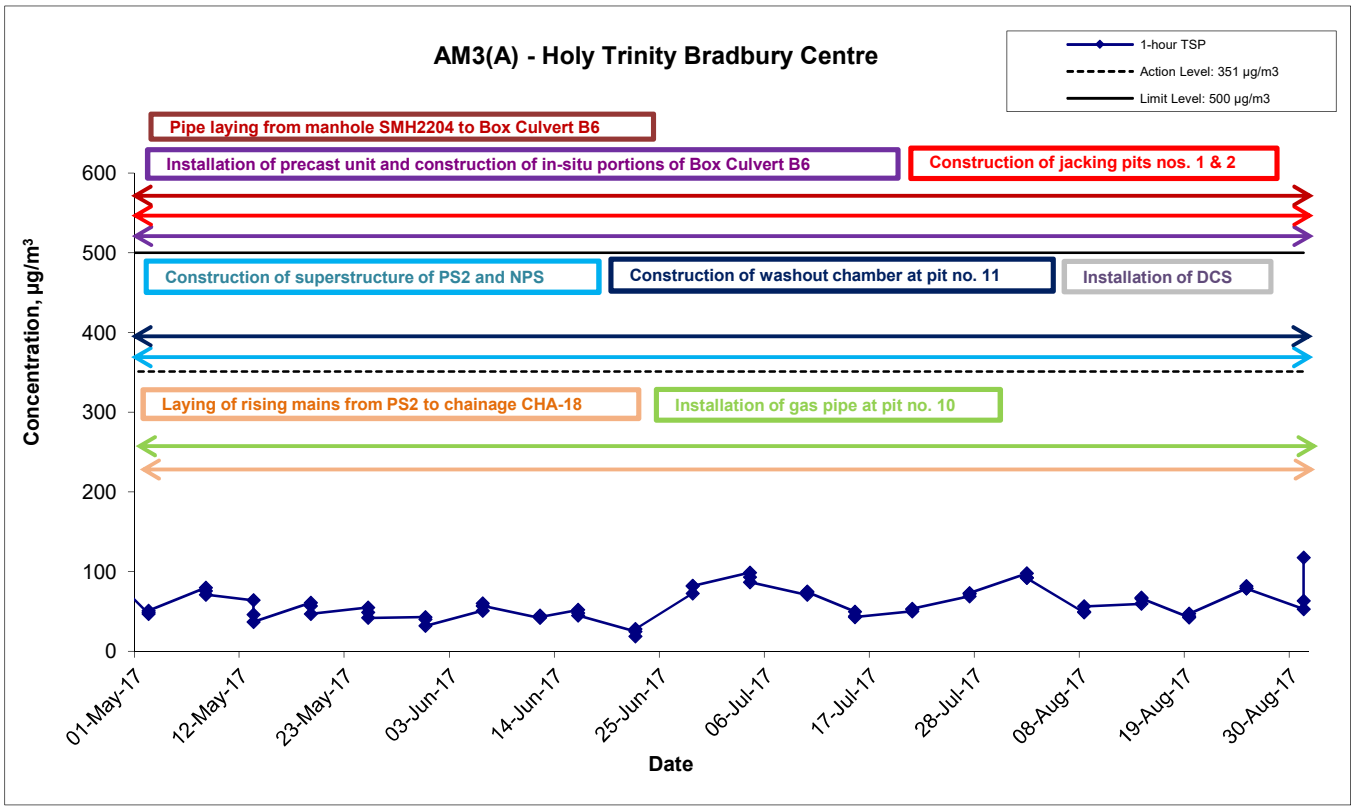
Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

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

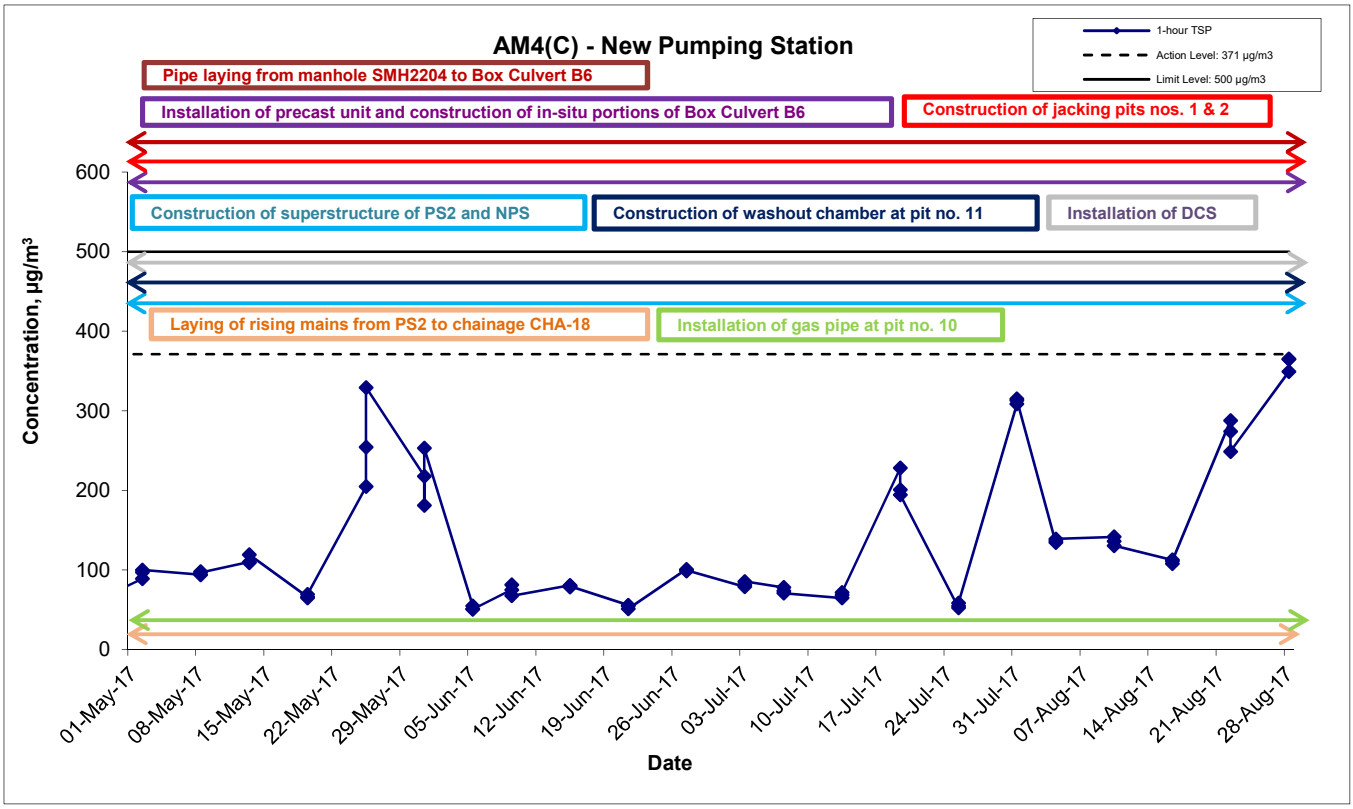


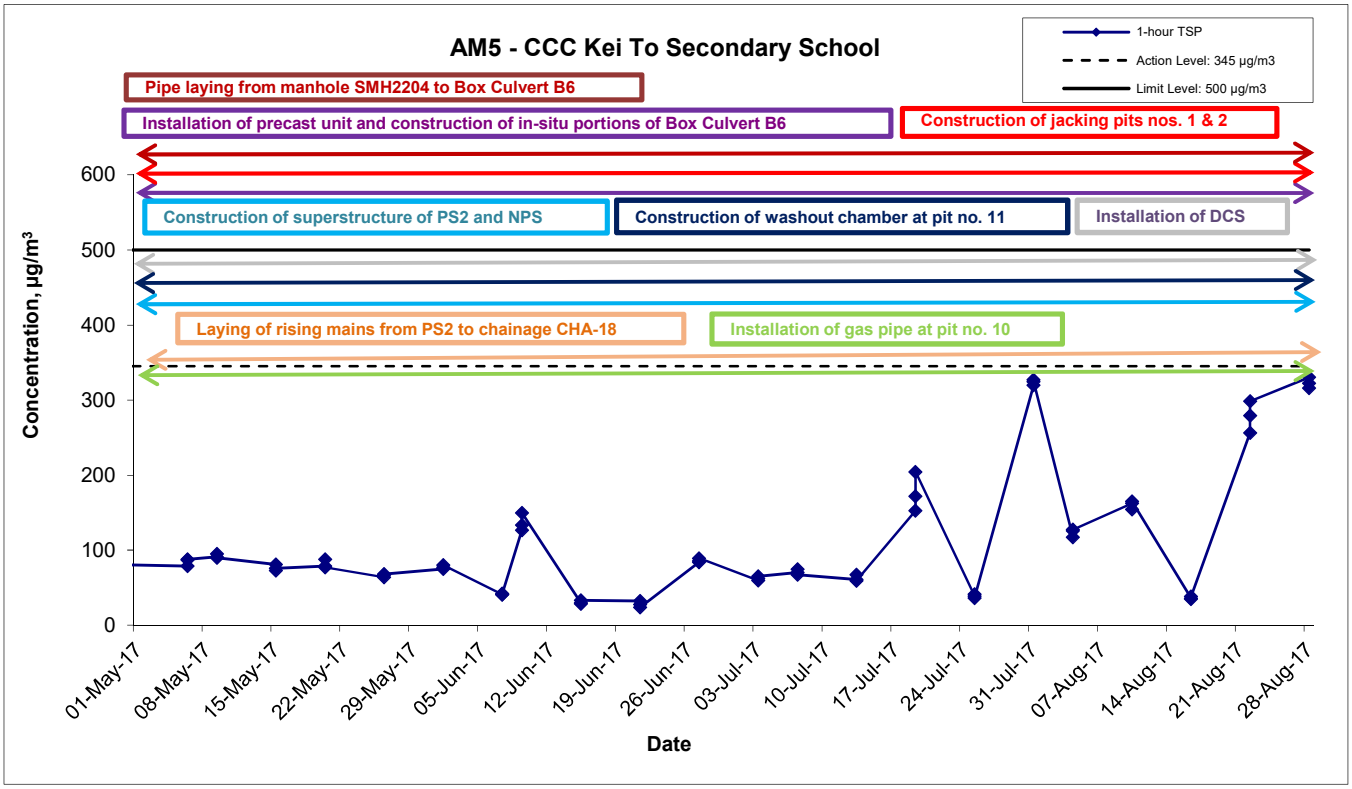


Title: Graphical Presentation of 1-hour TSP Monitoring Results	Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area	Scale: N.T.S Date: Aug 17	Project No.: MA13056 Appendix: E

CINOTECH

1-hr TSP Concentration Levels

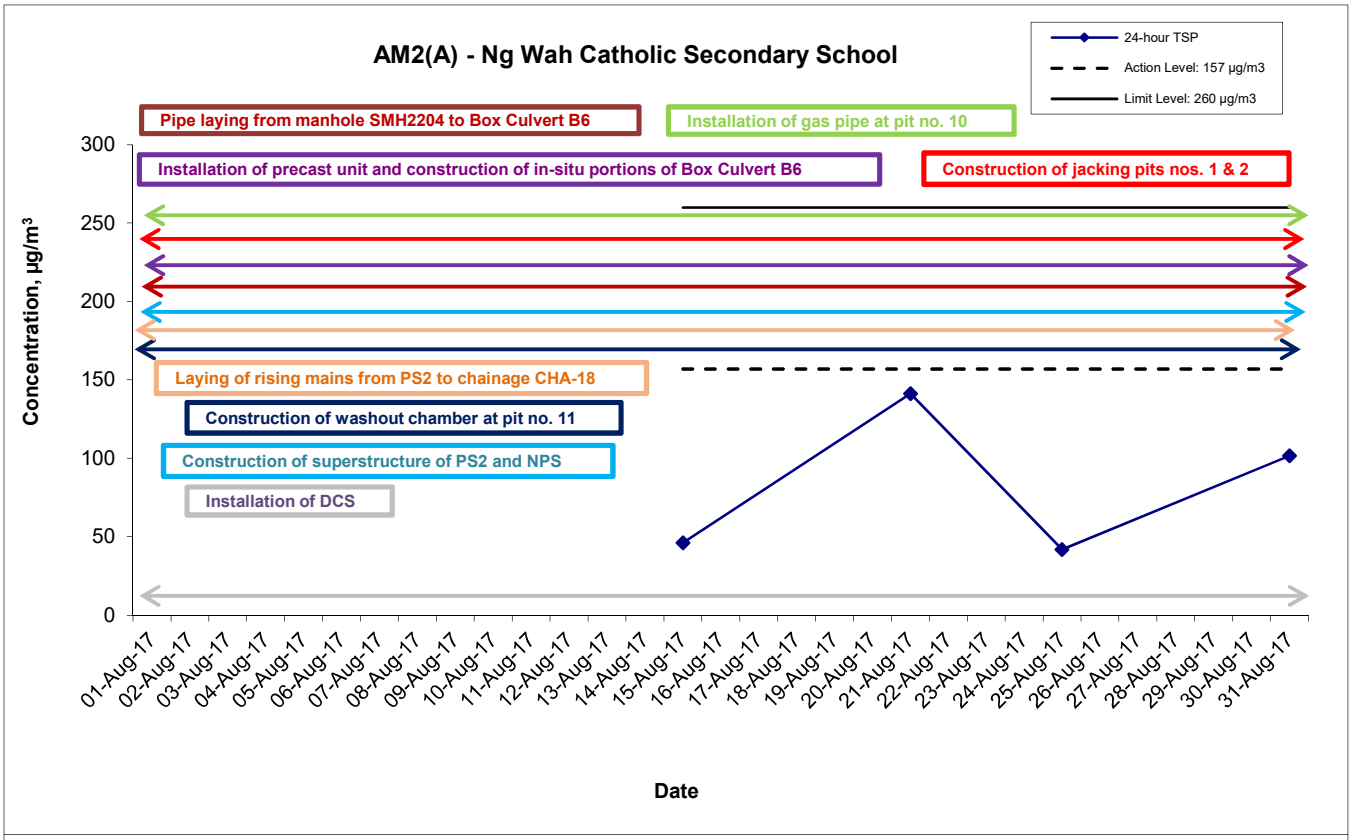


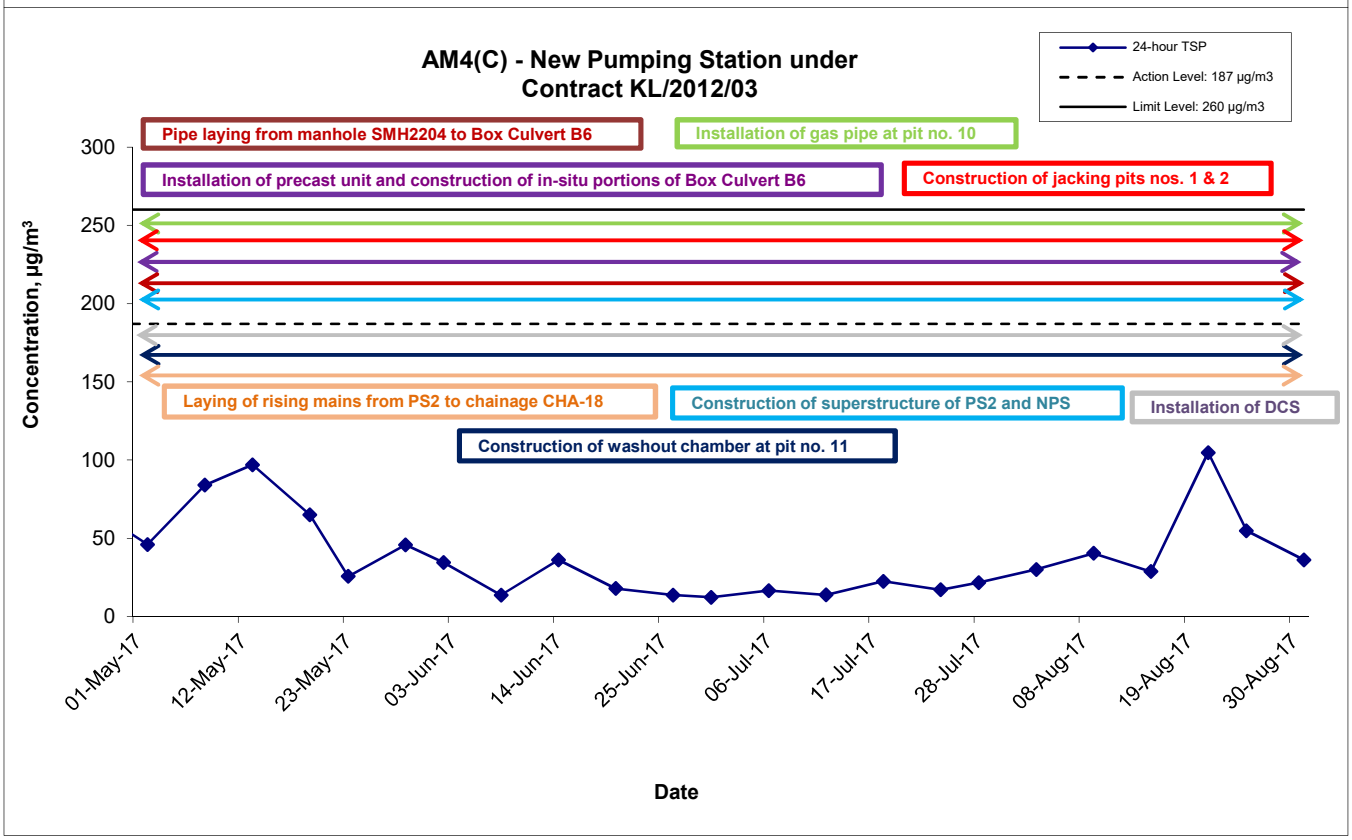


Title: Graphical Presentation of 1-hour TSP Monitoring Results	Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area	Scale: N.T.S Date: Aug 17	Project No.: MA13056 Appendix: E

CINOTECH

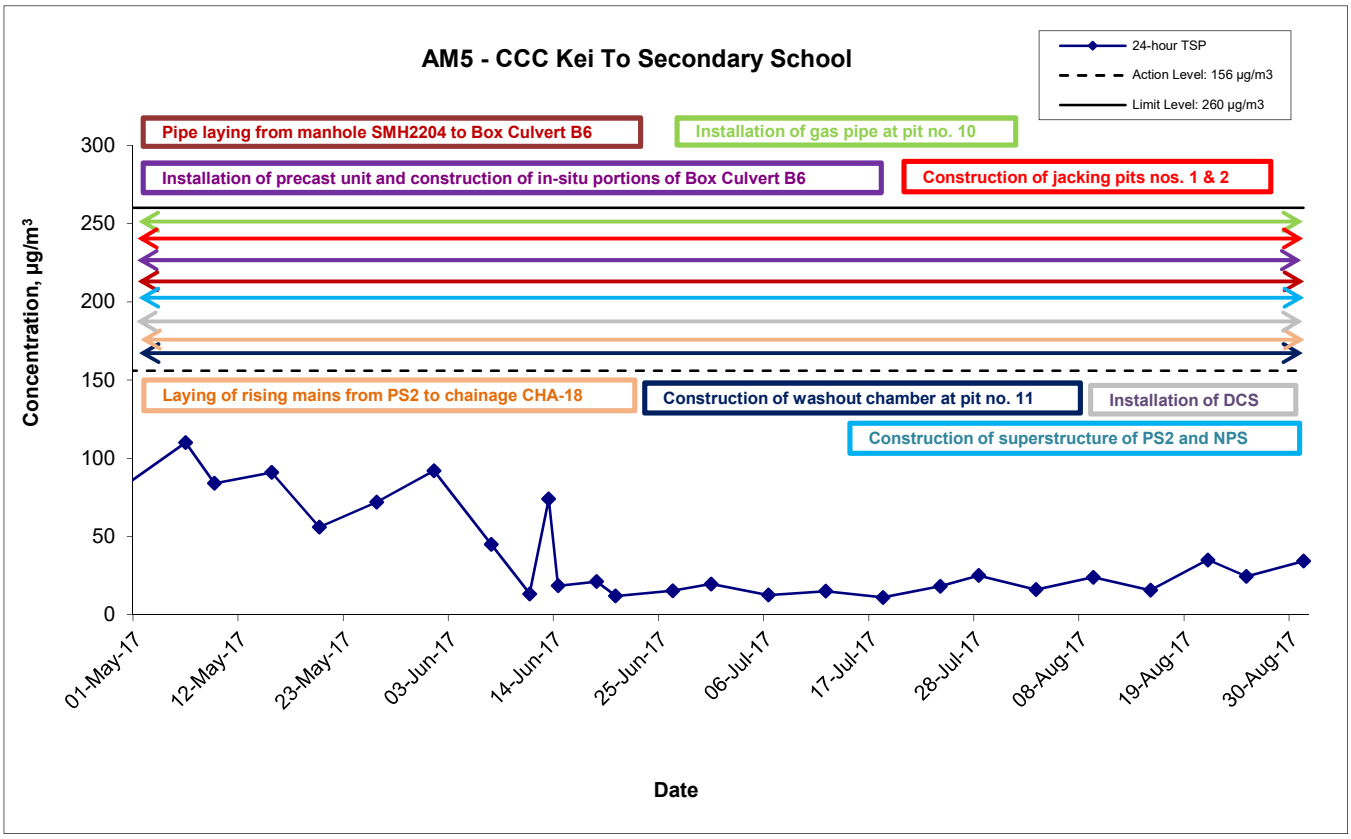
24-hr TSP Concentration Levels





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: Aug 17	Project No.: MA13056 Appendix: F	CINOTECH

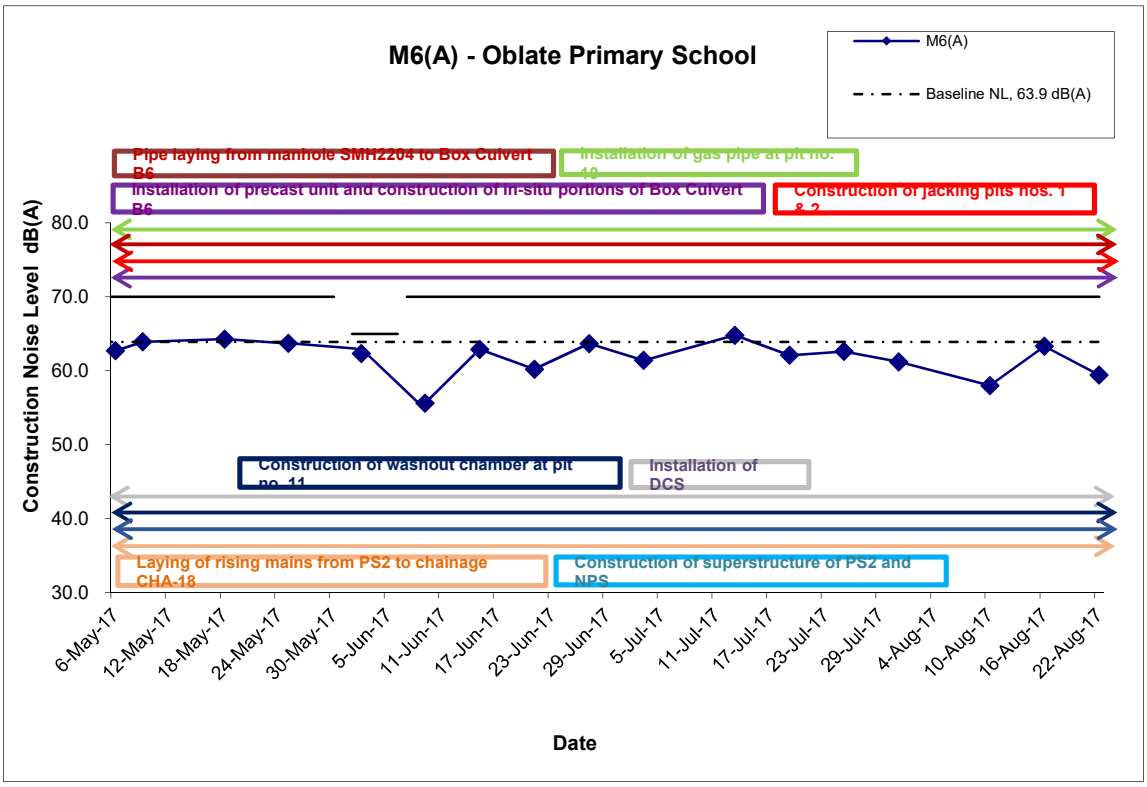
24-hr TSP Concentration Levels

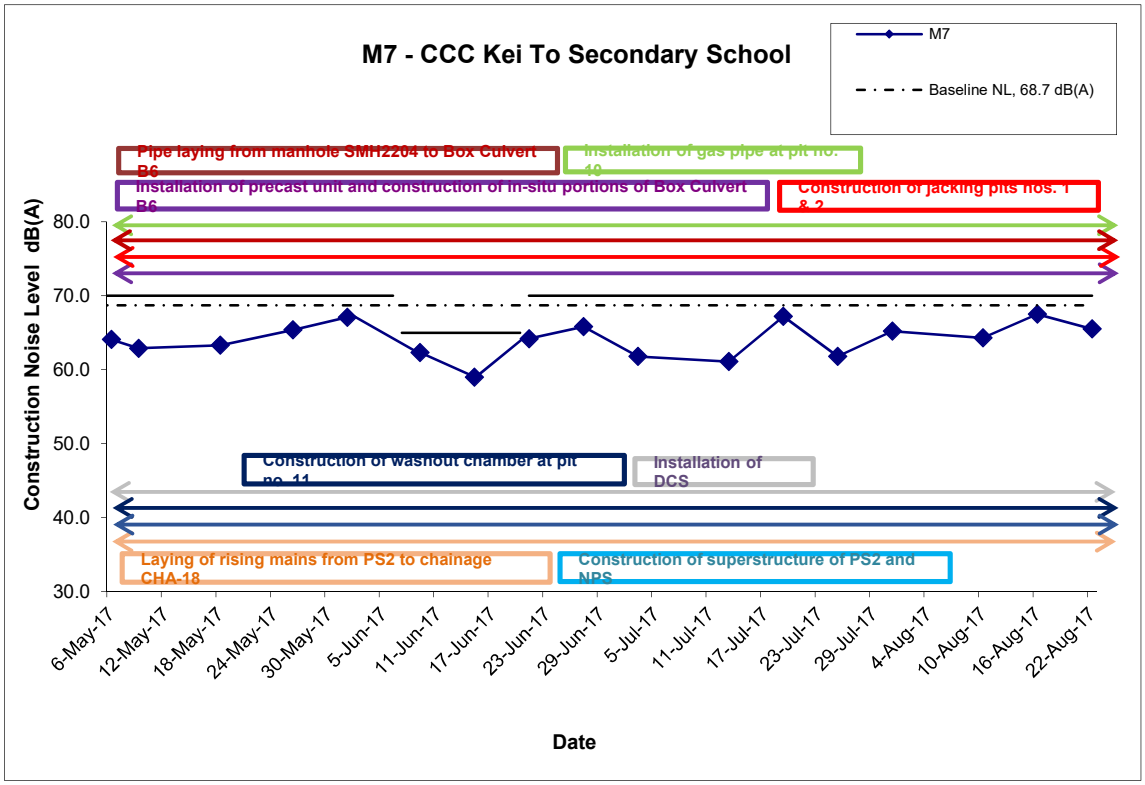


Title: Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Aug 17	Project No.: MA13056 Appendix: F	CINOTECH

APPENDIX D
GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS

Noise Levels

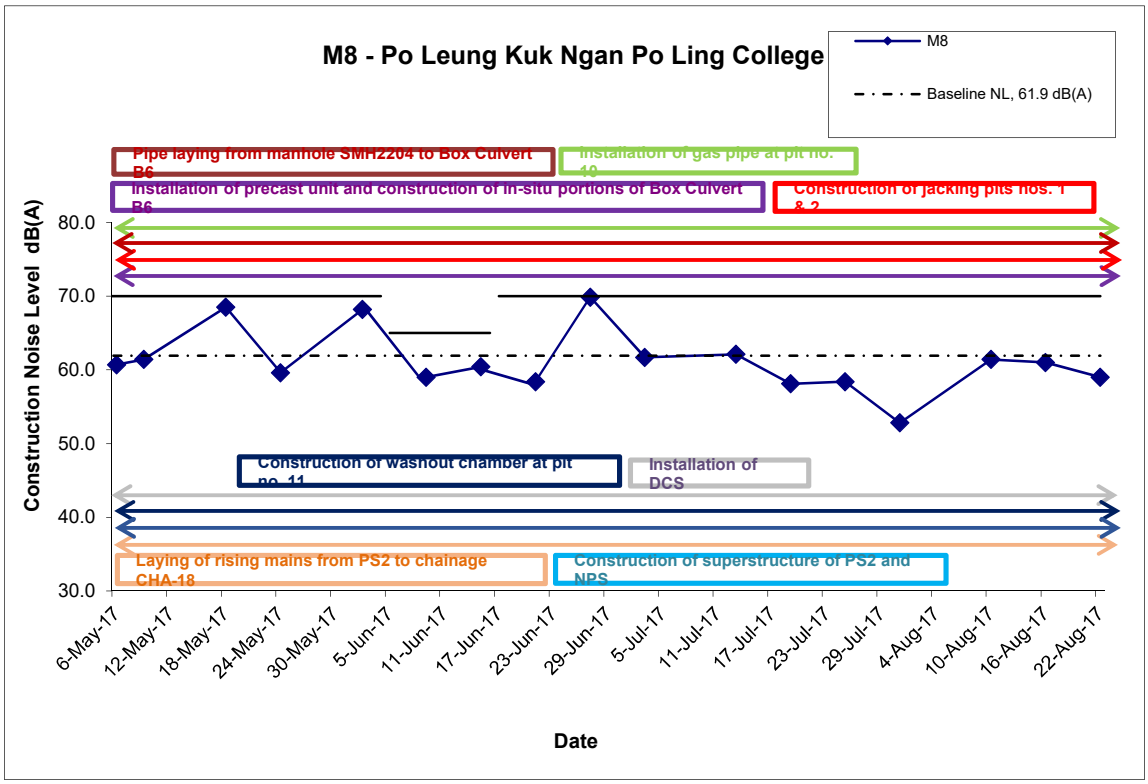


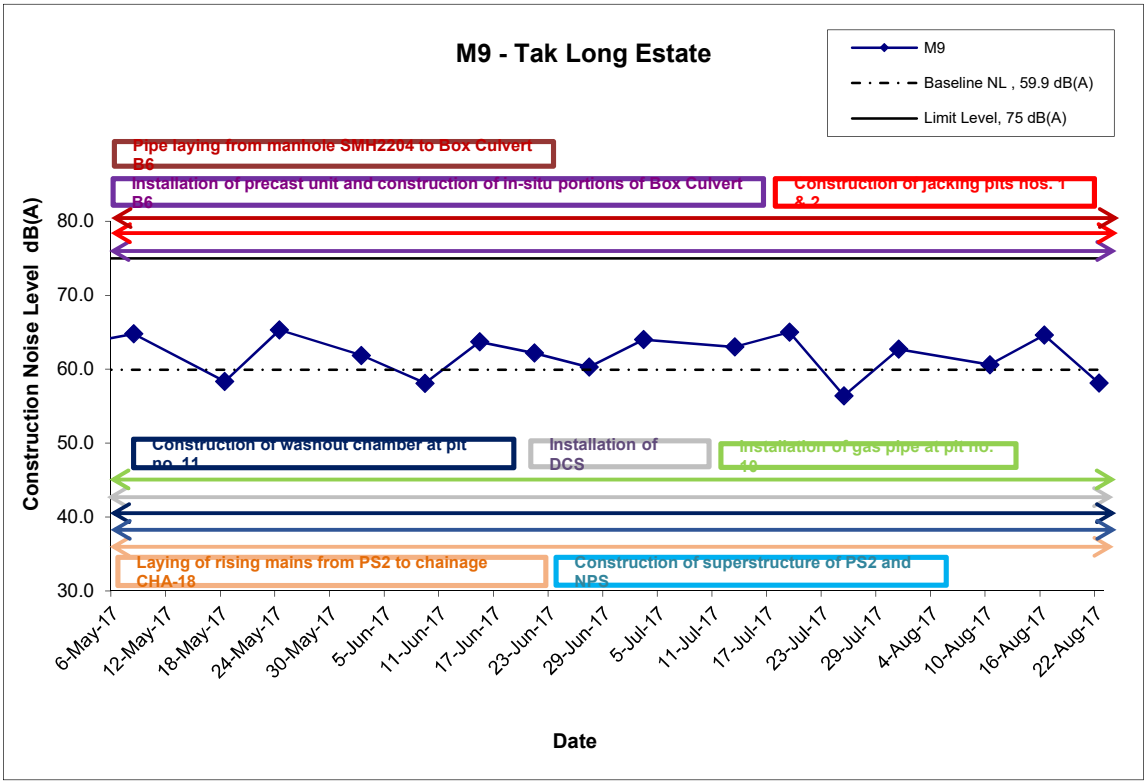


Remarks: The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

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: Aug 17	Project No.: MA13056 Appendix: G	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: Aug 17	Appendix: G	

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 June 2017

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	2 June 2017	Follow-up: Sedimentation tank should be well-maintained and ensure that no muddy eater was diverted to public drainage. (Heading)	No muddy water was observed during the site inspection.
	16 June 2017	Observation: Ponding water should be cleared regularly and mitigation measures should be provided to drainage system during rainstorms.	Ponding water was cleared. Pump was placed to control water flow.
	21 June 2017	Reminder: Contractor is advised to provide mitigation measures to facilitate drainage system for storm flow.	Storm water was diverted and treated in the sedimentation tank.
	30 June 2017	Reminder: Contractor was reminded to treat the muddy water before discharge to public drain.	Drainage was well-maintained.
Air Quality	--	--	**--**
Noise	--	--	**--**
Waste/Chemical Management	2 June 2017	Observation: Drip tray should be provided for chemical container to prevent leakage. (Heading)	Drip tray was provided and chemical container was removed.
	2 June 2017	Observation: Construction waste should be disposed of regularly. (Heading)	Construction waste was removed.
	2 June 2017	Reminder: Housekeeping should be enhanced at PS2.	Site was clean and tidy.
	16 June 2017	Observation: Construction waste should be disposed of regularly	Truck was provided to remove construction waste.
Landscape and Visual	--	--	**--**
Permits /Licences	--	--	**--**

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	2 June 2017	Reminder: Ponding water should be avoided. (NPS)	Ponding water was cleared.
	2 June 2017	Reminder: Water spraying should be provided for dust suppression. (NPS)	Haul road was observed wet.

Parameters	Date	Observations and Recommendations	Follow-up
	2 June 2017	Follow-up: Sedimentation tank should be well-maintained and ensure that no muddy water was diverted to public drainage. (NPS)	Item was remarked as 170607-R01.
	7 June 2017	Reminder: Contractor was reminded to clean the sedimentation tank regularly. (NPS)	Sedimentation tank was well-maintained.
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	6 July 2017	Reminder: Ponding water should be avoided.	Ponding water was cleared on 14 July 2017
	14 July 2017	Observation: Ponding water should be avoided.	Item was remarked as 170719-O01.
	19 July 2017	Follow up: Ponding water should be avoided.	Ponding water was cleared on 28 July 2017.
Air Quality	14 July 2017	Observation: Haul road should be sprayed with water regularly.	Haul road was observed wet on 19 July 2017.
	28 July 2017	Observation: Subbase at Portion 6 should be properly covered to prevent dust generation.	Follow up actions will be reported in the next month.
Noise	--	--	**--**
Waste/Chemical Management	--	--	**--**
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	--	--	**--**

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

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	4 August 2017	Reminder: Ponding water should be cleared after rain events.	Ponding water was observed cleared on 11 Aug 2017.
Air Quality	28 July 2017	Observation: Subbase at Portion 6 should be properly covered to prevent dust generation.	Stockpiles or unpaved area were covered on 4 Aug 2017.
	25 August 2017	Reminder: Water spraying should be provided more frequently for dust suppression.	Follow up actions will be reported in the next month.
Noise	--	--	**--**
Waste/Chemical Management	16 August 2017	Observation: General refuse found near Contractor site office should be cleared to prevent accumulation.	General refuse near Contractor office was observed cleared on 25 Aug 2017.
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	16 August 2017	Reminder: NRMM label for excavator should be properly displayed (NPS).	NRMM label was provided for excavator on 25 Aug 2017.
Noise	--	--	**--**
Waste/Chemical Management	4 August 2017	Reminder: Oil leakage should be avoided and oil stains near NPS should be properly disposed of as chemical waste.	Oil stains near NPS were not observed on 11 Aug 2017.
	11 August 2017	Reminder: General refuse found next to Pumping Station should be cleared and housekeeping should be improved.	Housekeeping near pumping station was observed improved on 16 Aug 2017
Landscape and Visual	--	--	**--**
Permits /Licences	--	--	**--**

APPENDIX G
MONTHLY SUMMARY
WASTE FLOW TABLE

APPENDIX M

Monthly Summary Waste Flow Table

(PS Clause 1.86)

Name of Department: CEDD

Contract No. : KL/2012/03

Monthly Summary Waste Flow Table for August 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	307	4426.51	0	0	0	4379.15	0	0	0	0	0	47.36
Apr-17	124	1741.5	0	0	0	1703.61	0	0	0	0	0	37.89
May-17	111	1608.02	0	0	0	1590.33	0	0	0	0	0	17.69
Jun-17	176	2649.19	0	0	0	2631.73	0	0	0	0	0	17.46
Jul-17	123	1732.3	0	0	0	1688.75	0	0	0	0	0	43.55
Aug-17	93	1229.67	0	0	0	1188.3	0	0	0	0	0	41.37
Sep-17												
Oct-17												
Nov-17												
Dec-17												
Total	5969	182455.58	0	0	55090.84	125574.1	25744.27	0	0	0	0	1980.06

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), µg/m³	Scenario2 (Mid 2013 to Late 2016), µg/m³	Reporting Month (Jun 17), µg/m³		Reporting Month (Jul 17), µg/m³		Reporting Month (Aug 17), µg/m³	
			Average	Range	Average	Range	Average	Range
AM2 – Lee Kau Yan Memorial School	290	312	47.6	39.0 – 63.6	53.8	22.7 – 97.1	83.9	39.6 – 208.1
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	217	247	50.1	19.0 – 82.3	67.1	43.1 – 98.7	68.8	42.7 – 117.5
AM4(C) – New Pumping Station	N/A	N/A	72.0	50.7 – 100.8	133.3	52.2 – 314.9	202.6	107.8 – 365.1
AM5 – CCC Kei To Secondary School	159	221	66.7	23.9 – 149.5	122.4	36.4 – 326.9	184.2	35.0 – 330.2

Comparison of 24-hr TSP data with EIA predictions

Station	Predicted 24-hr TSP conc.							
	Scenario1 (Mid 2009 to Mid 2013), µg/m³	Scenario2 (Mid 2013 to Late 2016), µg/m³	Reporting Month (Jun 17), µg/m³		Reporting Month (Jul 17), µg/m³		Reporting Month (Aug 17), µg/m³	
			Average	Range	Average	Range	Average	Range
AM2 – Lee Kau Yan Memorial School	145	169	56.0	48.0 – 72.0	29.0	23.0 – 36.0	N/A	N/A
AM2(A) – Ng Wah Catholic Secondary School	N/A	N/A	N/A	N/A	N/A	N/A	82.8	42.0 – 141.3
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	106	138	32.0	18.0 – 47.0	39.0	18.0 – 54.0	34.0	a30.0 – 45.0
AM4(C) – New Pumping Station (Alternative station for Grand Waterfront)	143	152	21.3	12.3 – 36.2	18.3	13.8 – 22.5	49.2	28.7 – 104.7
AM5 – CCC Kei To Secondary School	103	128	39.5	11.9 – 92.0	16.4	11.0 – 25.1	24.9	15.7 – 35.0

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 (Jun 17), $L_{eq\ (30min)}$ dB(A)	Reporting Month (Jul 17), $L_{eq\ (30min)}$ dB(A)	Reporting Month (Aug 17), $L_{eq\ (30min)}$ dB(A)
M6(A) - Oblate Primary School ^	N/A	55.6 – 63.7	61.2 – 64.8	58.0 – 63.3
M7 - CCC Kei To Secondary School	45 – 68	59.0 – 67.1	61.1 – 67.2	64.3 – 67.5
M8 - Po Leung Kuk Ngan Po Ling College	44 – 70	58.4 – 69.9	58.1 – 62.1	59.0 – 61.4
M9 - Tak Long Estate	Not predicted in EIA Report	58.1 – 63.7	56.4 – 65.0	58.1 – 64.6

(^) 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

July 2017 to September 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: 9-10-2017

9 th October 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 July 2017 to September 2017

Reference is made to the Environmental Team's submission of the draft Quarterly EM&A Report (version 1.0) for July 2017 to September 2017 provided to Independent Environmental Checker (IEC) via email dated on 6 th October 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 6th 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 July 2017 and 30 September 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;
   - TTA implementation, tree felling and junction improvement works at Shing Fung Road and Wang Chiu Road / Sheung Yee Road;
   - Open excavation and construction of box culvert and underpass;
   - Erection of falseworks for Landscaped Deck;
   - ELS installation for box culvert and underpass; and
   - Construction of pile caps, noise barrier footings, outfalls, deck structure, columns, 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-RE0294-17, GW-0649-17 and GW-RE0702-17).

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 July and 30 September 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. Sunny Lo	Senior Engineer	2301 1421	2301 1277
		Mr. Keith Chu	Engineer	2301 1607	
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

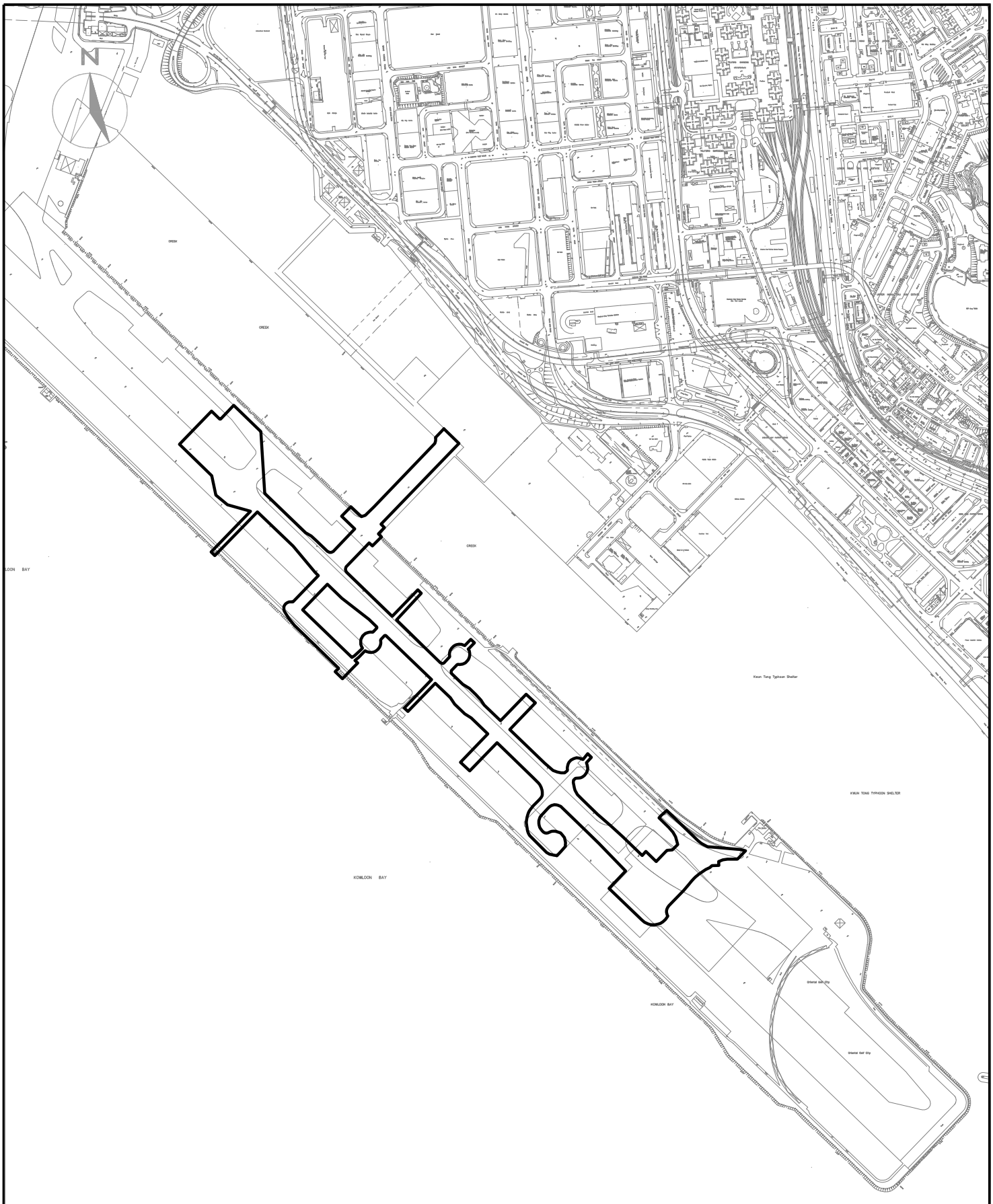
5.1 The mitigation measures recommended in the EIA report are considered effective in minimizing environmental impacts.

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 July 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	30 June 2017	Designated area for manual wheel washing should be set up beside the automatic wheel washing bay.	Rectification/improvement was observed during the follow-up audit session.
	5 July 2017	Ponding water in Section 2 should be cleared after rain events.	Rectification/improvement was observed during the follow-up audit session.
Air Quality	12 July 2017	Stockpiles in Section 2 should be properly covered with impervious sheets to prevent dust generation.	Rectification/improvement was observed during the follow-up audit session.
Noise	--	--	--
Waste/ Chemical Management	26 July 2017	Drip tray should be provided to chemical containers near Cruise Terminal. Oil stains should be properly cleared and dispose of as chemical waste.	Follow up actions will be reported in the next month.
Landscape and Visual	--	--	--
Permits/ Licences	--	--	--

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	25 August 2017	Ponding water should be removed at Urban Room C.	Rectification/improvement was observed during the follow-up audit session.
Air Quality	16 August 2017	Water spraying should be provided more frequently at Section 2 for dust suppression.	Rectification/improvement was observed during the follow-up audit session.
	28 August 2017	Impervious materials for stockpiles coverage should be provided or repaired at Section 2.	Follow up actions will be reported in the next month.
Noise	--	--	--
Waste/ Chemical Management	26 July 2017	Drip tray should be provided to chemical containers near Cruise Terminal. Oil stains should be properly cleared and dispose of as chemical waste.	Rectification/improvement was observed during the follow-up audit session.
Landscape and Visual	--	--	--
Permits/ Licences	--	--	--

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	27 September 2017	Sandbag bund should be set up at Outfall D to prevent untreated discharge.	Follow up actions will be reported in the next reporting period.
Air Quality	28 August 2017	Impervious materials for stockpiles coverage should be provided or repaired at Section 2.	Rectification/improvement was observed during the follow-up audit session.
	6 September 2017	Dark smoke emitted from PME at Section 2 should be avoided.	Rectification/improvement was observed during the follow-up audit session.
	27 September 2017	Water spraying should be provided more frequently at Section 2 for dust suppression.	Follow up actions will be reported in the next reporting period.
Noise	--	--	--
Waste/ Chemical Management	13 September 2017	Drip tray should be provided to chemical containers at Outfall D.	Rectification/improvement was observed during the follow-up audit session.
Landscape and Visual	--	--	--
Permits/ Licences	--	--	--

APPENDIX D
WASTE GENERATED QUANTITY

Name of Department: CEDD

Contract No. KL/2014/01

Waste Flow Table for Year 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	15,470.22	0	0	0	15470.22	0	0	0.301	0.019	0	53.3
Feb	23,173.51	0	0	0	23173.51	0	0	0	0	0	9.2
Mar	27,261.03	0	0	0	27261.03	0	0	0	0	0	69.65
Apr	5,637	0	0	0	5637.28	0	0	0	0	0	23.62
May	12,030.39	0	0	0	12030.39	0	0.0035	0.394	0.006	0	29.98
June	2733.74	0	0	0	2733.74	0	3.8000	0	0	0	47.08
Sub-total	86,306.17	0.00	0.00	0.00	86,306.17	0.00	3.80	0.695	0.025	0.00	232.83
July	2,464.60	0	0	0	2464.60	0	0	0	0	0	33.1
Aug	3,696.53	0	0	0	3696.53	0	0	0	0	0	59.52
Sept	3102.44	0	0	0	3446.39	0	0	0	0	0	110.45
Oct											
Nov											
Dec											
Total	95,569.74	0.00	0.00	0.00	95,913.69	0.00	3.80	0.695	0.025	0.00	435.87

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: July 2017 to September 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

June 2017 – August 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/0919A
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_0233L.17

27 September 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 June to August 2017

Reference is made to the Environmental Team's submission of the Quarterly EM&A Report for June 2017 to August 2017 (Report No. 0405_15_ED_0919A) we received by e-mail on 27 September 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_0233L.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

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

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 sixth Quarterly EM&A Report presents the environmental monitoring and audit works for the period between 1 June 2017 and 31 August 2017. As informed by the Contractor, major activities in the reporting period included:

June 2017	July 2017	August 2017
· Temporary utility diversion works; · Temporary diversion for CLP cable at CH6+560; · Temporary diversion for sewage rising main; · Construction of temporary diversion road for Shing Cheong Road (TTA Stage 2); · Setup of temporary barging point; · Drainage works (CH100 to CH240); · Excavation of drainage pipe and manhole (M206 to M213); · Seawall Modification Works; · Construction of tunnel box structure; · D-wall construction works; · Construction of socket H-pile; · Pumping test for Zone 3; · Excavation and ELS construction; and · Installation of dewatering, observation and recharging wells.	· Temporary diversion for drainage works; · Temporary diversion for CLP cable at CH6+560; · Temporary diversion for sewage rising main; · Construction of temporary diversion road for Shing Cheong Road (TTA Stage 2); · Setup of temporary barging point; · Excavation of drainage pipe and manhole (M206 to M207); · Seawall Modification Works; · Construction of tunnel box structure; · D-wall construction works; · Guide wall construction works; · Construction of socket H-pile; · Pumping test for Zone 3; · Excavation and ELS construction; and · Installation of dewatering, observation and recharging wells.	· Excavation and laying of drainage pipe and manhole; · Seawall modification works; · Construction of tunnel box structure; · D-wall construction works; · Pumping test; · Excavation and ELS construction; and · Setup of temporary barging point.

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 complaint received on 16 July 2017 was referred from the 1823 regarding the muddy water discharge at Kai Tak River by CEDD project. The notification of complaint was received by ET on 27 July 2017.

v. 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 sixth quarterly EM&A Report which summaries the impact monitoring results and audit findings for the Project within the period between 1 June 2017 and 31 August 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. Calvin So	9724 6254	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:

June 2017	July 2017	August 2017
· Temporary utility diversion works; · Temporary diversion for CLP cable at CH6+560; · Temporary diversion for sewage rising main; · Construction of temporary diversion road for Shing Cheong Road (TTA Stage 2); · Setup of temporary barging point; · Drainage works (CH100 to CH240); · Excavation of drainage pipe and manhole (M206 to M213); · Seawall Modification Works; · Construction of tunnel box structure; · D-wall construction works; · Construction of socket H-pile; · Pumping test for Zone 3; · Excavation and ELS construction; and · Installation of dewatering, observation and recharging wells.	· Temporary diversion for drainage works; · Temporary diversion for CLP cable at CH6+560; · Temporary diversion for sewage rising main; · Construction of temporary diversion road for Shing Cheong Road (TTA Stage 2); · Setup of temporary barging point; · Excavation of drainage pipe and manhole (M206 to M207); · Seawall Modification Works; · Construction of tunnel box structure; · D-wall construction works; · Guide wall construction works; · Construction of socket H-pile; · Pumping test for Zone 3; · Excavation and ELS construction; and · Installation of dewatering, observation and recharging wells.	· Excavation and laying of drainage pipe and manhole; · Seawall modification works; · Construction of tunnel box structure; · D-wall construction works; · Pumping test; · Excavation and ELS construction; and · Setup of temporary barging point.

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/m³)	24-hour TSP concentration in Reporting Period (μg/ m³)			Average 24-hour TSP concentration in Reporting Period (μg/ m³)		
			Jun 2017	Jul 2017	Aug 2017	Jun 2017	Jul 2017	Aug 2017
KTD1a	KTD3	126	59 - 119	43 - 125	14 - 114	86	88	54
KTD2a	-	-	15 - 55	20 - 106	17 - 47	34	38	26
KER1b	KTD6	169	29 - 85	18 - 36	30 - 107	44	26	51

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		
			Jun 2017	Jul 2017	Aug 2017
KTD1a	KTD1	74	58 - 74	66 - 71	64 - 72
KTD2a	KTD2	75	59 - 66	58 - 68	58 - 63
KER1b	KER1	75	63 - 73	64 - 71	67 - 71

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 and noise monitoring results in the reporting months did not exceed the Predicted Maximum 24-hour TSP Concentration and 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, 14 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, 14 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	1 June 217	Regular watering to the site working area shall be provided to suppress dust emission. (Zone 1)	The item was rectified by the Contractor and inspected on 8 June 2017.
	15 June 2017	Open stockpiles of excavated material shall be covered properly with impervious sheeting to avoid dust emission. (Zone 1)	The item was rectified by the Contractor and inspected on 23 June 2017
	6 July 2017	Stockpile of excavated materials shall be covered with impervious sheeting. (Zone 4)	The item was rectified by the Contractor and inspected on 13 July 2017
	13 July 2017	Spent bags of cement shall be stored properly. (Zone 3)	The item was rectified by the Contractor and inspected on 19 July 2017.
	24 August 2017	Contractor was reminded to cover stockpiles with impervious sheetings properly. (Portion I)	The item was rectified by the Contractor and inspected on 31 August 2017.
	31 August 2017	Open stockpiling of C&D materials shall be covered properly. Impermeable sheeting shall be provided. (Zone 1)	The item was rectified by the Contractor and inspected on 7 September 2017.
Noise	27 July 2017	Contractor was reminded to close the door of the air compressor to reduce noise emission. (Zone 4)	The item was rectified by the Contractor and inspected on 3 August 2017.

Parameters	Date	Observations and Recommendations	Follow-up
	31 August 2017	Appropriate noise absorption material shall be provided to the operating breaker. (Zone 4)	The item was rectified by the Contractor and inspected on 7 September 2017.
Water Quality	1 June 2017	The mud at mud tank shall be removed to prevent overflow of storm water at the mud tank. (Zone 1)	The item was rectified by the Contractor and inspected on 8 June 2017.
	6 July 2017	Seepage of muddy water shall be prevented. (Portion I)	The item was rectified by the Contractor and inspected on 13 July 2017.
	3 August 2017	Waste water treatment system shall be improved to prevent the accumulation of muddy water and water seepage at the low lying area at Portion I. Contractor was recommended to separate the discharge point and the desilting pond, seal the concrete blocks, and provide additional pumps. (Portion I)	The item was rectified by the Contractor and inspected on 10 August 2017.
Chemical and Waste Management	8 June 2017	Chemical containers shall be stored on drip tray. (Zone 1)	The item was rectified by the Contractor and inspected on 15 June 2017.
	8 June 2017	General refuse shall be stored properly and removed regularly. (Zone 2)	The item was rectified by the Contractor and inspected on 15 June 2017.
	15 June 2017	General refuse, spent chemical containers and used bags of cement shall be stored properly. (Zone 2)	The item was rectified by the Contractor and inspected on 23 June 2017.
	6 July 2017	Chemical containers shall be stored on drip tray. (Zone 2)	The item was rectified by the Contractor and inspected on 13 July 2017.
	13 July 2017	Chemical containers shall be stored on drip tray. (Zone 4) Chemical containers shall be stored in good conditions. (Zone 1)	The item was rectified by the Contractor and inspected on 19 July 2017.
	10 August 2017	Cement residue was found in the public haul road. Impermeable sheeting shall be provided when loading the cement. (Zone 2)	The item was rectified by the Contractor and inspected on 17 August 2017.
Land Contamination	NA		

Parameters	Date	Observations and Recommendations	Follow-up
Landscape and Visual Impact	8 June 2017	Debris and concrete shall be properly covered. (Zone 4)	The item was rectified by the Contractor and inspected on 15 June 2017.
	15 June 2017	Excavated materials shall be properly covered by impervious sheeting. (Zone 4)	The item was rectified by the Contractor and inspected on 23 June 2017.
	6 July 2017	Stockpile of excavated materials shall be covered with impervious sheeting. (Zone 4)	The item was rectified by the Contractor and inspected on 13 July 2017.
	3 August 2017	Decorative hoardings shall be provided along Shing Cheong Road.	The item was rectified by the Contractor and inspected on 17 August 2017.
	24 August 2017	Contractor was reminded to cover stockpiles with impervious sheetings properly. (Portion I)	The item was rectified by the Contractor and inspected on 31 August 2017.
	31 August 2017	Open stockpiling of C&D materials shall be covered properly. Impermeable sheeting shall be provided. (Zone 1)	The item was rectified by the Contractor and inspected on 7 September 2017.
General	23 June 2017	Stagnant water shall be removed. (Portion I and Portion O)	The item was rectified by the Contractor and inspected on 29 June 2017.
	19 July 2017	Stagnant water was observed at Portion I and Zone 1. Contractor shall remove stagnant water frequently. (Portion I and Zone 1)	The item was rectified by the Contractor and inspected on 27 July 2017.
	17 August 2017	Contractor was reminded that the low-lying area at Portion I shall be kept clear of silt, dusty or muddy materials. (Portion I)	The item was rectified by the Contractor and inspected on 24 August 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/m³			Leq (30min) dB(A)			Total
		June 2017	July 2017	August 2017	June 2017	July 2017	August 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 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	7 December 2016	Andy Choy	Air	13 February 2017	Project-related	13 February 2017
2	9 February 2017	Andy Choy	Air	22 February 2017	Not Project-related	7 March 2017
3	2 May 2017	Andy Choy	Noise	4 May 2017	Not Valid	22 May 2017
4	16 July 2017	HMJV	Water Quality	4 August 2017	Not Project-related	4 August 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
		June 2017	July 2017	August 2017	
Air	2	0	0	0	2
Noise	1	0	0	0	1
Water	0	0	1	0	1
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
		June 2017	July 2017	August 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 14 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 14 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 complaint received on 16 July 2017 was referred from the 1823 regarding the muddy water discharge at Kai Tak River by CEDD project. The notification of complaint was received by ET on 27 July 2017.

8.1.5 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 stockpile shall be covered with impermeable sheeting to prevent dust emission.
- Regular watering to site working areas shall be provided to suppress dust emission.
- Spent bags of cement shall be stored properly.

Construction Noise Impact
- Contractor was reminded to close the door of the air compressor to reduce noise emission.
- Appropriate noise absorption material shall be provided to the operating breaker.

Water Quality Impact
- The mud at mud tank shall be removed to prevent overflow of storm water at the mud tank.
- Seepage of muddy water shall be prevented.
- Waste water treatment system shall be improved to prevent the accumulation of muddy water and water seepage at the low lying area at Portion I. Contractor was recommended to separate the discharge point and the desilting pond, seal the concrete blocks, and provide additional pumps.

Chemical and Waste Management

- General refuse shall be stored properly in enclosed bins or compaction units and removed regularly.
- Cement residue was found in the public haul road. Impermeable sheeting shall be provided when loading the cement. Spent chemical containers and used bags of cement shall be stored properly.
- Chemical containers shall be stored on drip tray.
- Chemical containers shall be stored in good conditions.

Land Contamination

- No specific observation was identified in the reporting period.

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.
- Debris and concrete shall be properly covered.
- Decorative hoardings shall be provided along Shing Cheong Road.

General Condition

- Stagnant water shall be removed.
- Contractor was reminded that the low-lying area at Portion I shall be kept clear of silt, dusty or muddy materials.

Permit / Licenses

- No specific observation was identified in the reporting period.

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

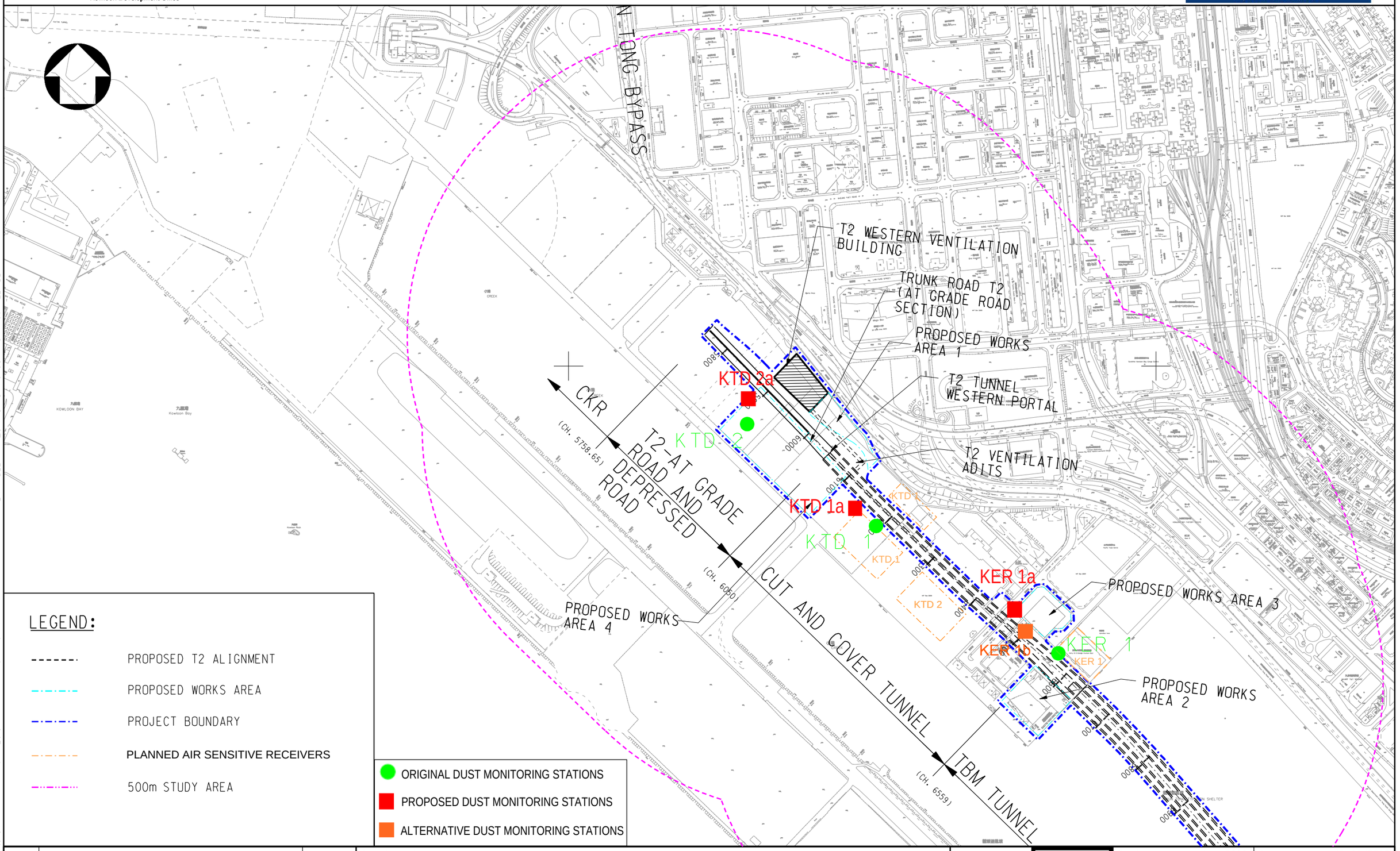
Figure 2

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

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

Rev.	Description	Date

Drawing title

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

Original Size: A3

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

File name

Drawing No.: FIGURE 2.1a (revised)

Rev.: --

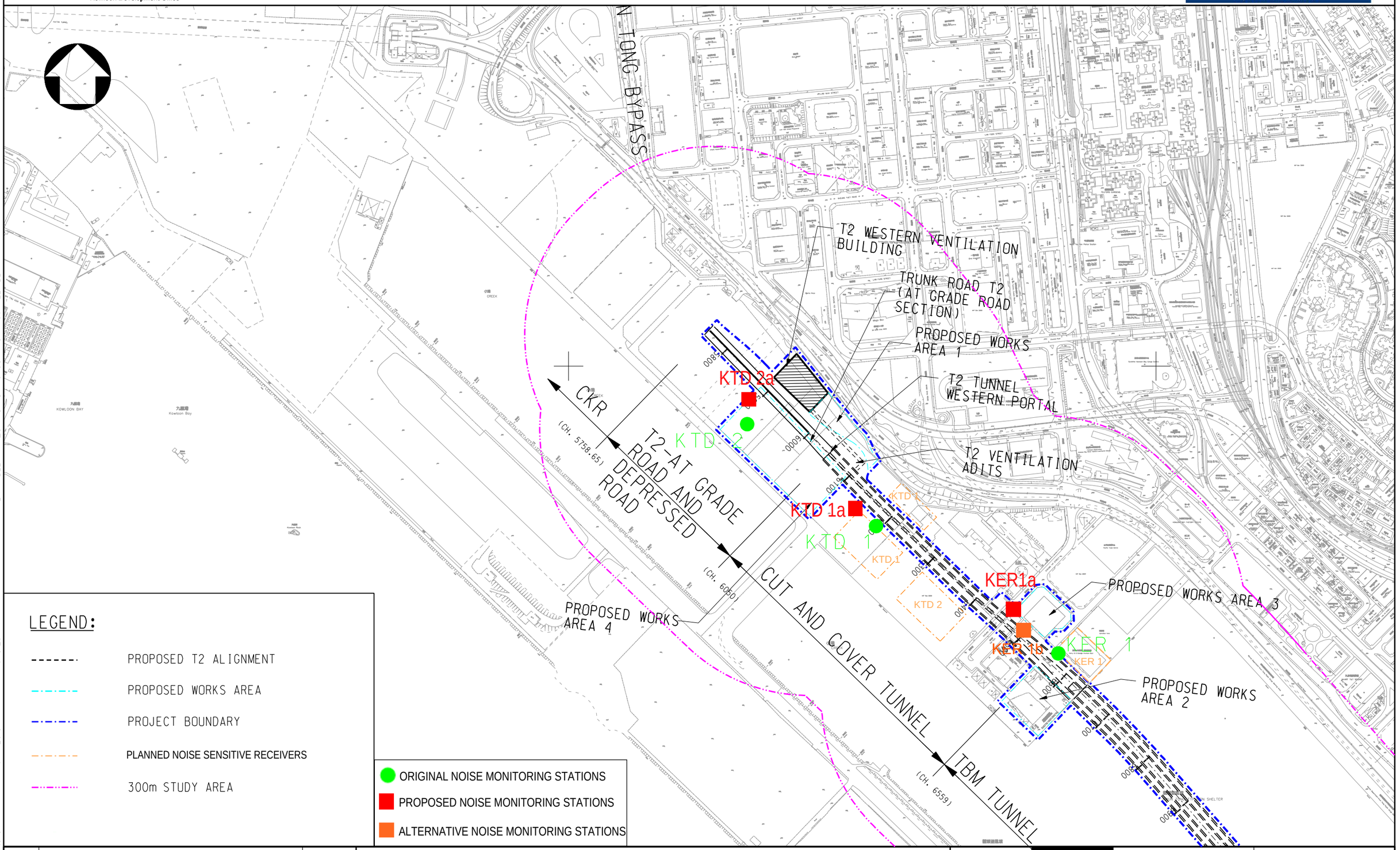
PEN TABLE: K:_STANDARD\MICROSTATION\Plot\MIEL.TBL
PRINTER NAME: PDFCreator
PLOT DRV: K:\91164 Trunk Road T2\Cad Admin\A3_colour.plt
PRINTED BY: kitchan
6/11/2013 6:14:49 PM

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

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

Rev.	Description	Date

Drawing title

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

Original Size: A3

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

File name

Drawing No.: FIGURE 3.1a (revised)

Rev.: --

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
PEN TABLE: K:_STANDARD\MICROSTATION\Plot\MIEL.TBL

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

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		1200	750	04-Jan-16 A	19-Jun-19
Project Key Dates		1190	745	01-Feb-16 A	14-Jun-19
Site Possession Date		0	0	01-Aug-17	01-Aug-17
K-PK-SPD-1900	Portion K	0	0	01-Aug-17*	
Site Handover Date		0	0	28-Jul-17	28-Jul-17
K-PK-SHD-1100	Portion B	0	0		28-Jul-17*
General Submission		415	123	12-Aug-16 A	30-Sep-17
Condition Survey & Construction Impact Assessment		21	21	22-Jun-17	13-Jul-17
K-DR-PRE-1190	Condition survey at HKCH	7	7	22-Jun-17	29-Jun-17
K-DR-PRE-1195	Submit condition survey report at HKCH	14	14	29-Jun-17	13-Jul-17
Alternative Design Submission and Approval		376	84	12-Aug-16 A	22-Aug-17
Package B06 : SUS Top & base slab and intermediate wall from (CH6+220 to CH6+568)		376	84	12-Aug-16 A	22-Aug-17
K-PA-ADS-1420	Revise & resubmit DDA drawing (SUS Top & Base slab and Intermediate wall from CH6+220 to CH6+568)	28	28	12-Aug-16 A	27-Jun-17
K-PA-ADS-1430	Engineer's review and approval	56	56	28-Jun-17	22-Aug-17
Major Temporary Works Design		140	123	10-May-17 A	30-Sep-17
K-PA-GSP-6820	ELS design for construction of SUS from CH6+220 to CH6+291 in Zone 2 - horizontal members	56	56	03-Jun-17	28-Jul-17
K-PA-GSP-6835	ELS design for construction of SUS from CH6+291 to CH6+568 in Zone 4 - horizontal members	56	56	14-May-17 A	25-Jul-17
K-PA-GSP-6900	Falsework design for construction of top slab of SUS structure	56	56	06-Aug-17	30-Sep-17
K-PA-GSP-8870	Pumping Test for SUS Cofferdam in Zone 2	50	3	10-May-17 A	02-Jun-17
Major Construction Works Method Statement		132	101	10-May-17 A	08-Sep-17
K-PA-GSP-7150	Method statement of Excavation and ELS for SUS Construction for Zone 3	28	4	15-May-17 A	03-Jun-17
K-PA-GSP-7155	Engineer's comments and approval	28	28	04-Jun-17	01-Jul-17
K-PA-GSP-7160	Method statement of Excavation and ELS for SUS Construction for Zone 4	28	28	04-Jun-17	01-Jul-17
K-PA-GSP-7165	Engineer's comments and approval	28	28	02-Jul-17	29-Jul-17
K-PA-GSP-7170	Method statement of Excavation and ELS for SUS Construction for Zone 2	28	28	05-Jun-17	02-Jul-17
K-PA-GSP-7175	Engineer's comments and approval	28	28	03-Jul-17	30-Jul-17
K-PA-GSP-7450	Method statement for Construction of top slab and base slab of SUS	28	28	15-Jul-17	11-Aug-17
K-PA-GSP-7455	Engineer's comments and approval	28	28	12-Aug-17	08-Sep-17
K-PA-GSP-7495	Engineer's comments and approval	28	0	10-May-17 A	31-May-17
Temporary Utility Diversion Works		284	52	05-Sep-16 A	31-Jul-17
Temporary Diversion for Drainage Works		284	10	05-Sep-16 A	10-Jun-17

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

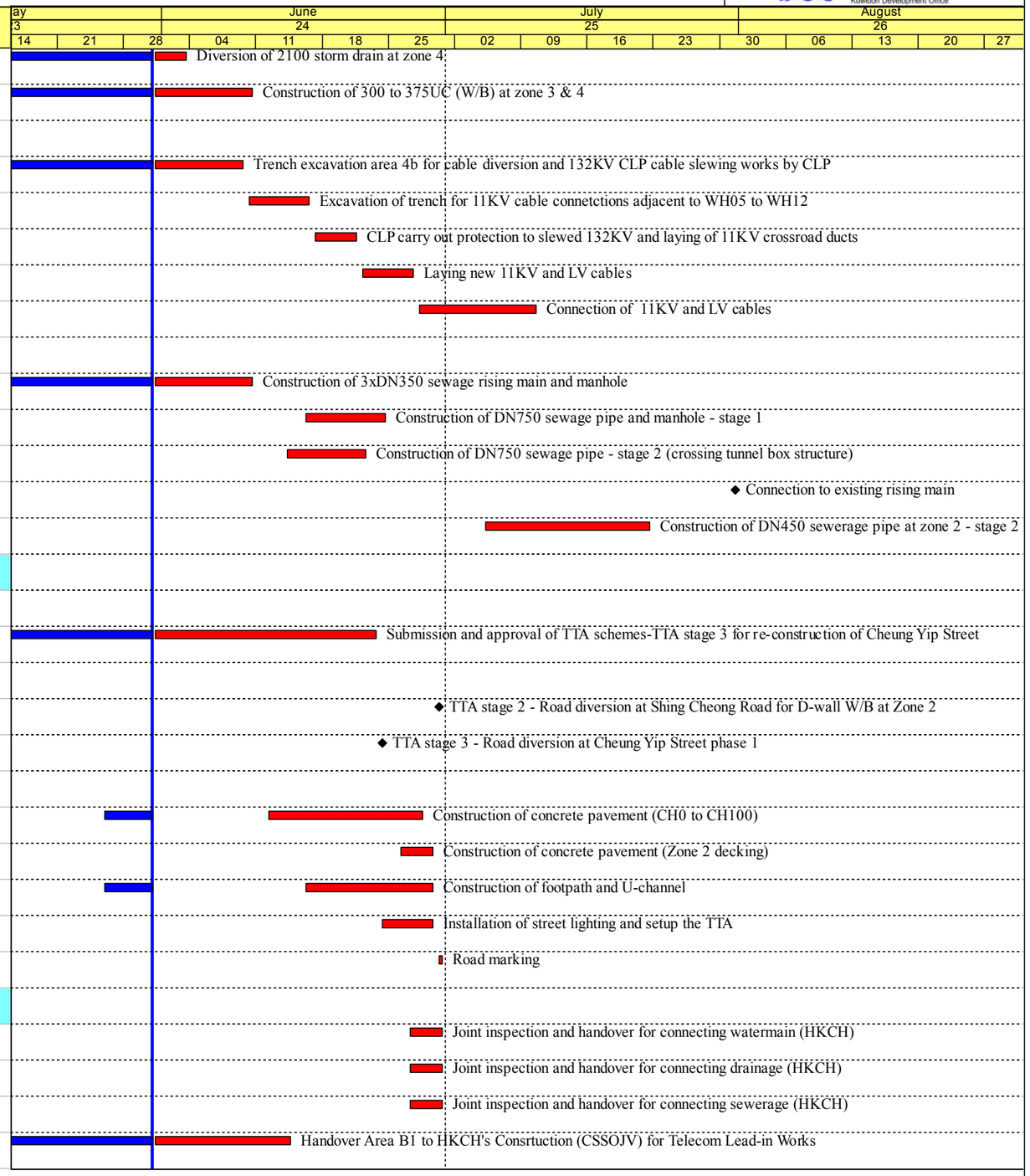
◆ Milestone
Critical Activity
Non-Critical Activity
Remaining Level of Effort
Actual Work

3 MRP Jun 2017 - Aug 2017

Project ID :18 3MPR Jun - Aug 17
Layout : KL201403 3MRP

3 Months Rolling Programme			
Date	Revision	Checked	Approved
31-May-17	Jun 17 - Aug 17		

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-PA-TUD-2400	Diversion of 2100 storm drain at zone 4	60	4	05-Sep-16 A	03-Jun-17
K-PA-TUD-2700	Construction of 300 to 375UC (W/B) at zone 3 & 4	50	10	29-Mar-17 A	10-Jun-17
Temporary Diversion for CLP Cable at CH6+560		54	34	06-Apr-17 A	10-Jul-17
K-PA-TUD-3700	Trench excavation area 4b for cable diversion and 132KV CLP cable slewing works by CLP	28	9	06-Apr-17 A	09-Jun-17
K-PA-TUD-4060	Excavation of trench for 11KV cable connetctions adjacent to WH05 to WH12	6	6	10-Jun-17	16-Jun-17
K-PA-TUD-4070	CLP carry out protection to slewed 132KV and laying of 11KV crossroad ducts	4	4	17-Jun-17	21-Jun-17
K-PA-TUD-4080	Laying new 11KV and LV cables	5	5	22-Jun-17	27-Jun-17
K-PA-TUD-4090	Connection of 11KV and LV cables	10	10	28-Jun-17	10-Jul-17
Temporary Diversion for Sewage Rising Main		89	52	20-Feb-17 A	31-Jul-17
K-PA-TUD-1500	Construction of 3xDN350 sewage rising main and manhole	28	10	20-Feb-17 A	10-Jun-17
K-PA-TUD-1600	Construction of DN750 sewage pipe and manhole - stage 1	8	8	16-Jun-17	24-Jun-17
K-PA-TUD-1700	Construction of DN750 sewage pipe - stage 2 (crossing tunnel box structure)	8	8	14-Jun-17	22-Jun-17
K-PA-TUD-1800	Connection to existing rising main	0	0		31-Jul-17
K-PA-TUD-2800	Construction of DN450 sewerage pipe at zone 2 - stage 2	16	16	05-Jul-17	22-Jul-17
Temporary Traffic Management		126	31	11-Feb-17 A	30-Jun-17
Temp Traffic Arrangement Schemes		90	24	11-Feb-17 A	23-Jun-17
K-PA-TTA-8900	Submission and approval of TTA schemes-TTA stage 3 for re-construction of Cheung Yip Street	90	24	11-Feb-17 A	23-Jun-17
Implementation of Temporary Traffic Arrangement		5	5	24-Jun-17	30-Jun-17
K-PA-TTA-3000	TTA stage 2 - Road diversion at Shing Cheong Road for D-wall W/B at Zone 2	0	0	30-Jun-17	
K-PA-TTA-4000	TTA stage 3 - Road diversion at Cheung Yip Street phase 1	0	0	24-Jun-17	
Construction of Temporary Diversion Road for Shing Cheong Road (TTA stage 2)		15	17	26-May-17 A	30-Jun-17
K-PA-TTA-6000	Construction of concrete pavement (CH0 to CH100)	15	15	26-May-17 A	28-Jun-17
K-PA-TTA-6020	Construction of concrete pavement (Zone 2 decking)	4	4	26-Jun-17	29-Jun-17
K-PA-TTA-6050	Construction of footpath and U-channel	12	12	26-May-17 A	29-Jun-17
K-PA-TTA-6100	Installation of street lighting and setup the TTA	5	5	24-Jun-17	29-Jun-17
K-PA-TTA-6150	Road marking	1	1	30-Jun-17	30-Jun-17
Interfacing Works		141	31	10-Feb-17 A	30-Jun-17
K-PA-INT-1000	Joint inspection and handover for connecting watermain (HKCH)	4	4	27-Jun-17	30-Jun-17*
K-PA-INT-2000	Joint inspection and handover for connecting drainage (HKCH)	4	4	27-Jun-17	30-Jun-17*
K-PA-INT-3000	Joint inspection and handover for connecting sewerage (HKCH)	4	4	27-Jun-17	30-Jun-17*
K-PA-INT-6030	Handover Area B1 to HKCH's Consrtuction (CSSOJV) for Telecom Lead-in Works	15	15	10-Feb-17 A	14-Jun-17

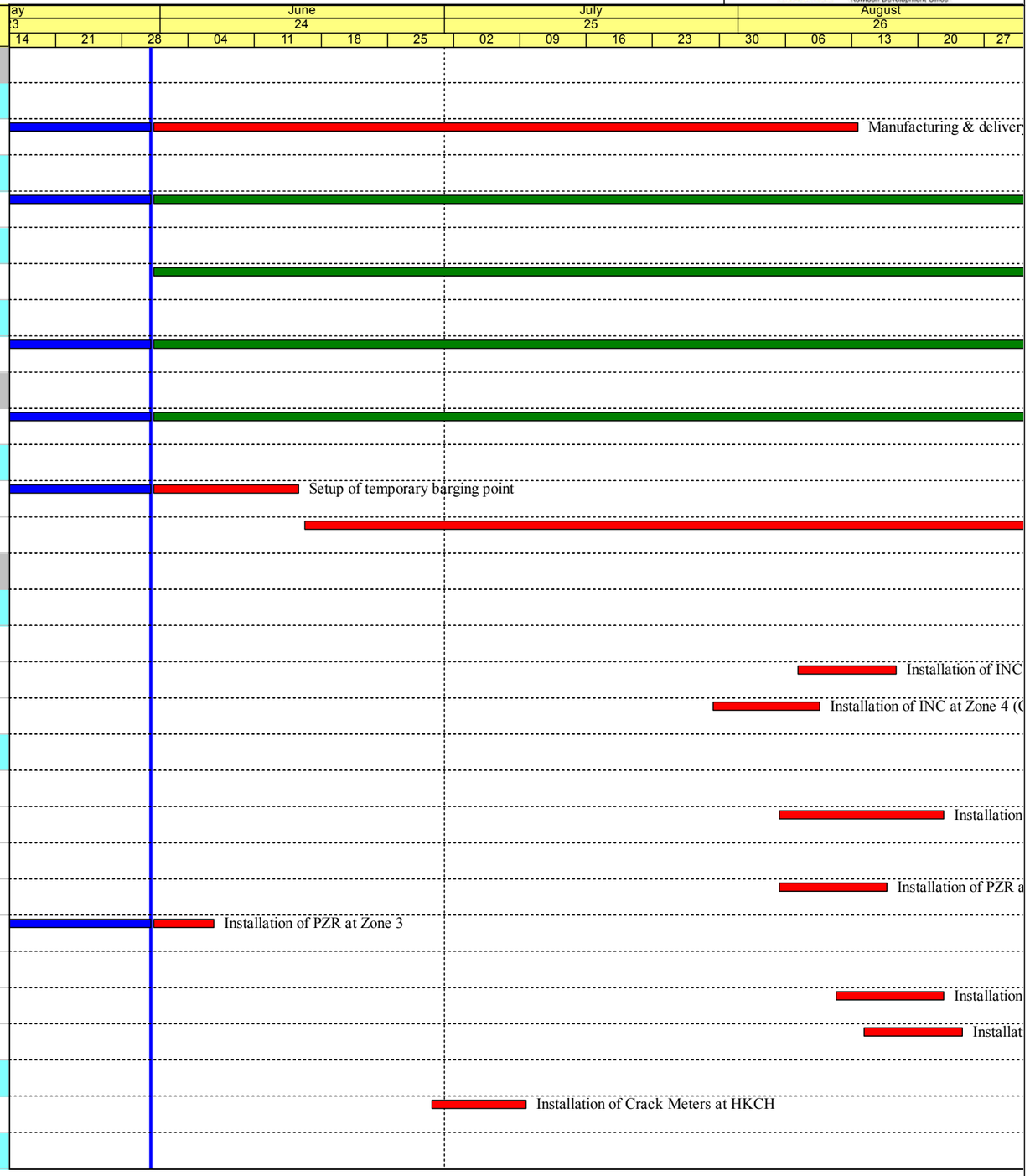


Hyder - Meinhardt JV

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
Materials Procurement (Major Materials)		901	440	01-Feb-16 A	13-Aug-18
Steel H-Pile		420	75	01-Feb-16 A	13-Aug-17
K-PA-MP-1250	Manufacturing & delivery to site	420	75	01-Feb-16 A	13-Aug-17
ELS struct / waling		360	165	10-Jun-16 A	11-Nov-17
K-PA-MP-1150	Manufacturing & delivery to site	360	165	10-Jun-16 A	11-Nov-17
Water Works		210	210	31-May-17	26-Dec-17
K-PA-MP-1050	Manufacturing & delivery to site	210	210	31-May-17	26-Dec-17
Chilled Water Pipes - DCS		550	440	06-Feb-17 A	13-Aug-18
K-PA-MP-1350	Manufacturing & delivery to site	550	440	06-Feb-17 A	13-Aug-18
Prelimiaries		1190	745	11-Mar-16 A	14-Jun-19
K-DR-PRE-1800	Submission of time-lapsed photographs and video	1190	745	11-Mar-16 A	14-Jun-19
Barge Loading Facilities		459	444	15-May-17 A	23-Nov-18
K-DR-PRE-1450	Setup of temporary barging point	21	14	15-May-17 A	15-Jun-17
K-DR-PRE-1480	Operation of temporary barging point	430	430	16-Jun-17	23-Nov-18
Instrumentation and Monitoring		416	93	25-Apr-16 A	31-Aug-17
Eastbound Instrumentation and Monitoring		17	17	29-Jul-17	17-Aug-17
Inclinometer (INC)		17	17	29-Jul-17	17-Aug-17
K-IM-INC-1320	Installation of INC at Zone 2	10	10	07-Aug-17	17-Aug-17
K-IM-INC-1335	Installation of INC at Zone 4 (CH6+467 to CH6+540)	10	10	29-Jul-17	09-Aug-17
Westbound Instrumentation and Monitoring		341	73	05-Aug-16 A	24-Aug-17
Extensomter (EXT)		15	15	05-Aug-17	22-Aug-17
K-IM-EXT-1360	Installation of EXT at Zone 2	15	15	05-Aug-17	22-Aug-17
Piezometer/Standpipe (PZR)		334	66	05-Aug-16 A	16-Aug-17
K-IM-PZR-1360	Installation of PZR at Zone 2	10	10	05-Aug-17	16-Aug-17
K-IM-PZR-1370	Installation of PZR at Zone 3	40	6	05-Aug-16 A	06-Jun-17
Inclinometer (INC)		12	12	11-Aug-17	24-Aug-17
K-IM-INC-1360	Installation of INC at Zone 2	10	10	11-Aug-17	22-Aug-17
K-IM-INC-1375	Installation of INC at Zone 4 (CH6+467 to CH6+540)	10	10	14-Aug-17	24-Aug-17
Crack Meters		10	10	29-Jun-17	09-Jul-17
K-IM-CRM-1010	Installation of Crack Meters at HKCH	10	10	29-Jun-17	09-Jul-17
Tilt Monitoring Tile Plates		310	93	25-Apr-16 A	31-Aug-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 Jun 2017 - Aug 2017

Project ID :18 3MPR Jun - Aug 17
Layout : KL201403 3MRP

3 Months Rolling Programme

Date	Revision	Checked	Approved
31-May-17	Jun 17 - Aug 17		

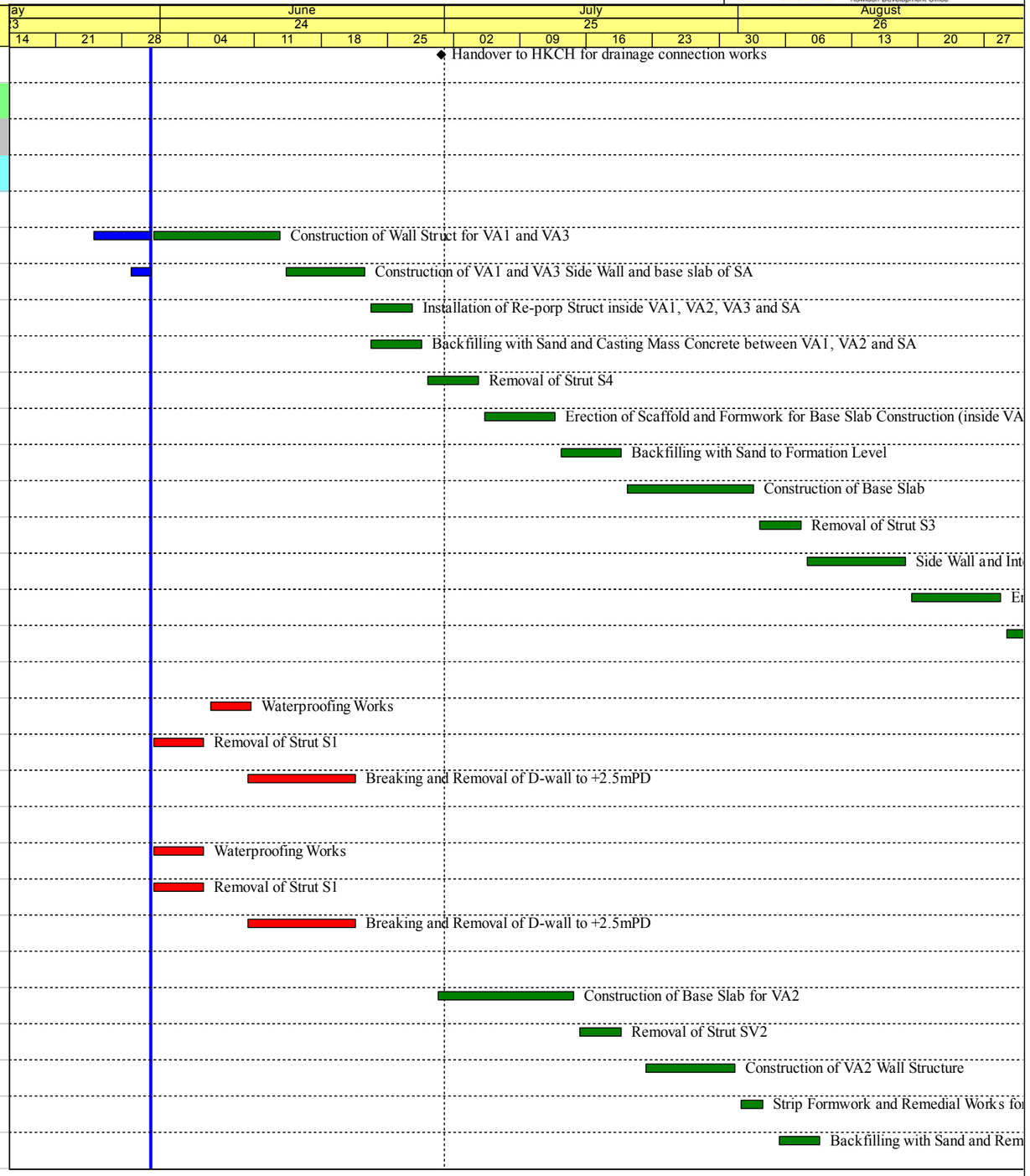
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-IM-TMT-1000	Tilt Monitoring near PWCL	310	93	25-Apr-16 A	31-Aug-17
Section 1 of the Works-Remainder of the Works		142	133	22-May-17 A	10-Oct-17
Roadwork and Drainage Works		142	133	22-May-17 A	10-Oct-17
Road D4-4 (Cheung Yip Street)		142	133	22-May-17 A	10-Oct-17
Drainage Works (CH100 to CH240)		27	16	26-May-17 A	26-Jun-17
K-01-RWS-9320	Excavation of Drainage Pipe and Manhole (M101 to outfall)	8	0	26-May-17 A	31-May-17 A
K-01-RWS-9322	Laying Drainage Pipe and Construction Manhole (M101 to outfall)	8	8	08-Jun-17	16-Jun-17
K-01-RWS-9325	Backfilling of Drainage Pipe and Manhole (M101 to outfall)	8	8	17-Jun-17	26-Jun-17
CH240 - CH400 Northbound		90	90	24-Jun-17	10-Oct-17
Sewerage Works		40	40	05-Jul-17	19-Aug-17
K-01-RWS-9815	Excavation of Sewerage Pipe and Manhole (Site 3C1-1)	6	6	05-Jul-17	11-Jul-17
K-01-RWS-9820	Laying Sewerage Pipe and Manhole (Site 3C1-1)	22	22	12-Jul-17	05-Aug-17
K-01-RWS-9830	Backfilling Sewerage Pipe and Manhole (Site 3C1-1)	12	12	07-Aug-17	19-Aug-17
Laying of Drainage Pipe and Construction of Manhole (M206 to M213)		50	50	24-Jun-17	22-Aug-17
K-01-RWS-9340	Excavation of Drainage Pipe and Manhole (M206 to M213)	8	8	24-Jun-17	04-Jul-17
K-01-RWS-9350	Laying Drainage Pipe and Construction Manhole (M206 to M213)	30	30	05-Jul-17	08-Aug-17
K-01-RWS-9410	Backfilling Drainage Pipe and Manhole (M206 to M213)	12	12	09-Aug-17	22-Aug-17
Road Works		40	40	23-Aug-17	10-Oct-17
K-01-RWS-9440	Construction of Road Base and Road Pavement	40	40	23-Aug-17	10-Oct-17
Temporary Traffic Arrangement		0	0	24-Jun-17	24-Jun-17
K-01-RWS-9400	Implementation of TTA stage 3 - phase 1	0	0	24-Jun-17	
Seawall Modification Works		40	31	22-May-17 A	30-Jun-17
K-01-RWS-9700	Application of MD notice	15	8	22-May-17 A	08-Jun-17
K-01-RWS-9710	Concrete surround DN2100 drainage 5.34m*4m*1.5m	15	15	31-May-17	16-Jun-17
K-01-RWS-9730	Excavation and placing Blinding layer	5	4	26-May-17 A	03-Jun-17
K-01-RWS-9740	Breaking concrete coping and removal of seawall block	10	10	09-Jun-17	20-Jun-17
K-01-RWS-9750	Placing concrete surrounding DN2100 drainage pipe and construction of drainage pipe joint	5	5	22-Jun-17*	26-Jun-17
K-01-RWS-9770	AI test and CCTV test for drainage pipe	1	1	27-Jun-17	27-Jun-17
K-01-RWS-9780	Beakfilling of Drianage pipe near seawall	1	1	28-Jun-17	28-Jun-17
K-01-RWS-9790	Maintance department handover inspection	1	1	29-Jun-17	29-Jun-17
K-01-RWS-9800	Removal of stop log	1	1	30-Jun-17	30-Jun-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-01-RWS-9810	Handover to HKCH for drainage connection works	0	0		30-Jun-17*
Section 1A of the Works -Construction of Supporting Underground Structure (Alter		248	122	22-Sep-16 A	23-Oct-17
SUS and Ventilation Adits from CH6+150 to CH6+220 in Zone 1		105	86	25-May-17 A	08-Sep-17
Construction of Tunnel Box Structure		105	86	25-May-17 A	08-Sep-17
SUS Bay 1 (Ch6150-Ch6167.5)		100	81	25-May-17 A	02-Sep-17
K-1A-SV1-8190	Construction of Wall Struct for VA1 and VA3	10	12	25-May-17 A	13-Jun-17
K-1A-SV1-8240	Construction of VA1 and VA3 Side Wall and base slab of SA	10	8	29-May-17 A	22-Jun-17
K-1A-SV1-8250	Installation of Re-porp Struct inside VA1, VA2, VA3 and SA	4	4	23-Jun-17	27-Jun-17
K-1A-SV1-8260	Backfilling with Sand and Casting Mass Concrete between VA1, VA2 and SA	5	5	23-Jun-17	28-Jun-17
K-1A-SV1-8270	Removal of Strut S4	4	4	29-Jun-17	04-Jul-17
K-1A-SV1-8290	Erection of Scaffold and Formwork for Base Slab Construction (inside VA1 and VA3)	7	7	05-Jul-17	12-Jul-17
K-1A-SV1-8300	Backfilling with Sand to Formation Level	6	6	13-Jul-17	19-Jul-17
K-1A-SV1-8320	Construction of Base Slab	12	12	20-Jul-17	02-Aug-17
K-1A-SV1-8330	Removal of Strut S3	4	4	03-Aug-17	07-Aug-17
K-1A-SV1-8350	Side Wall and Intermediate Wall Construction	10	10	08-Aug-17	18-Aug-17
K-1A-SV1-8360	Erection of Scaffold and Installation of Re-prop Struct inside W/B and E/B	8	8	19-Aug-17	28-Aug-17
K-1A-SV1-8370	Removal of Strut S2	5	5	29-Aug-17	02-Sep-17
SUS Bay 4 (Ch6202.5-Ch6220)		19	19	31-May-17	21-Jun-17
K-1A-SV1-8625	Waterproofing Works	5	5	06-Jun-17	10-Jun-17
K-1A-SV1-8640	Removal of Strut S1	5	5	31-May-17	05-Jun-17
K-1A-SV1-8650	Breaking and Removal of D-wall to +2.5mPD	10	10	10-Jun-17	21-Jun-17
SUS Bay 3 (Ch6185-Ch6202.5)		19	19	31-May-17	21-Jun-17
K-1A-SV1-8785	Waterproofing Works	5	5	31-May-17	05-Jun-17
K-1A-SV1-8800	Removal of Strut S1	5	5	31-May-17	05-Jun-17
K-1A-SV1-8810	Breaking and Removal of D-wall to +2.5mPD	10	10	10-Jun-17	21-Jun-17
SUS Bay 2 (Ch6167.5-Ch6185)		60	60	30-Jun-17	08-Sep-17
K-1A-SV1-8840	Construction of Base Slab for VA2	12	12	30-Jun-17	14-Jul-17
K-1A-SV1-8860	Removal of Strut SV2	4	4	15-Jul-17	19-Jul-17
K-1A-SV1-8870	Construction of VA2 Wall Structure	8	8	22-Jul-17	31-Jul-17
K-1A-SV1-8880	Strip Formwork and Remedial Works for Waterproofing	3	3	01-Aug-17	03-Aug-17
K-1A-SV1-8890	Backfilling with Sand and Removal part of SV1	4	4	05-Aug-17	09-Aug-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 Jun 2017 - Aug 2017

Project ID :18 3MPR Jun - Aug 17
Layout : KL201403 3MRP

3 Months Rolling Programme

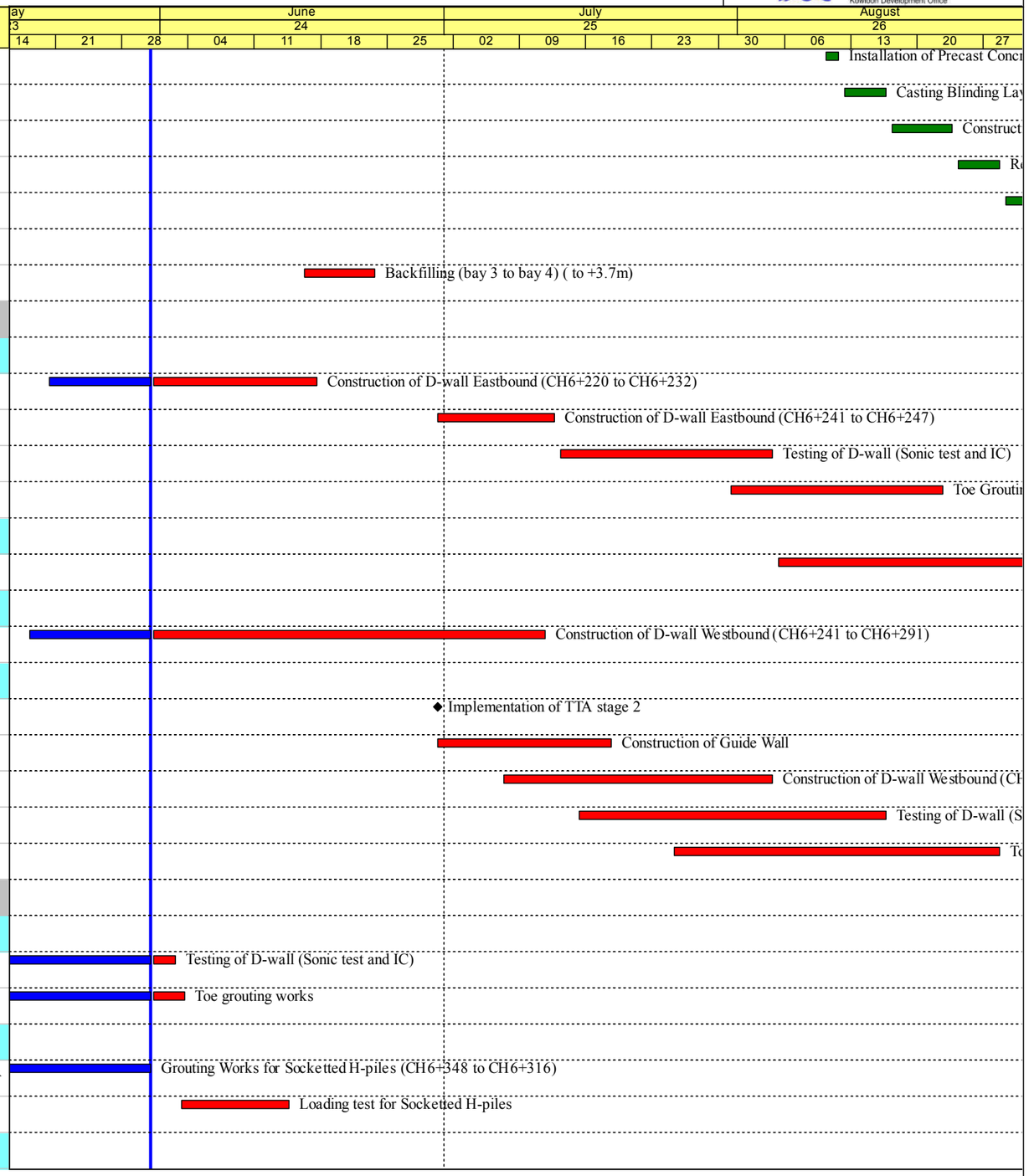
Date	Revision	Checked	Approved
31-May-17	Jun 17 - Aug 17		

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-SV1-8900	Installation of Precast Concrete Slab for Base Slab Constrcution	2	2	10-Aug-17	11-Aug-17
K-1A-SV1-8910	Casting Blinding Layer (No-Fine) and Laying Waterproofing Works	4	4	12-Aug-17	16-Aug-17
K-1A-SV1-8920	Construction of Base Slab	6	6	17-Aug-17	23-Aug-17
K-1A-SV1-8930	Removal of Strut S3	4	4	24-Aug-17	28-Aug-17
K-1A-SV1-8950	Construction of Side Wall Construction	10	10	29-Aug-17	08-Sep-17
Backfilling Works		7	7	16-Jun-17	23-Jun-17
K-1A-SV1-6800	Backfilling (bay 3 to bay 4) (to +3.7m)	7	7	16-Jun-17	23-Jun-17
SUS and Ventilation Adits from CH6+220 to CH6+291 in Zone 2		92	81	18-May-17 A	02-Sep-17
E/B Construction of D-Wall		80	71	20-May-17 A	22-Aug-17
K-1A-SV2-2500	Construction of D-wall Eastbound (CH6+220 to CH6+232)	18	16	20-May-17 A	17-Jun-17
K-1A-SV2-2700	Construction of D-wall Eastbound (CH6+241 to CH6+247)	10	10	30-Jun-17	12-Jul-17
K-1A-SV2-2750	Testing of D-wall (Sonic test and IC)	20	20	13-Jul-17	04-Aug-17
K-1A-SV2-2800	Toe Grouting Works	20	20	31-Jul-17	22-Aug-17
Construction of Socketed H-Pile		25	25	05-Aug-17	02-Sep-17
K-1A-SV2-3300	Installation of Socketted H-piles (CH6+220 to CH6+248)	25	25	05-Aug-17	02-Sep-17
W/B Construction of D-Wall in TTA Stage 1A		45	35	18-May-17 A	11-Jul-17
K-1A-SV2-5500	Construction of D-wall Westbound (CH6+241 to CH6+291)	45	35	18-May-17 A	11-Jul-17
W/B Construction of D-Wall in TTA Stage 2		50	50	30-Jun-17	28-Aug-17
K-1A-SV2-4300	Implementation of TTA stage 2	0	0	30-Jun-17	
K-1A-SV2-4400	Construction of Guide Wall	15	15	30-Jun-17	18-Jul-17
K-1A-SV2-4500	Construction of D-wall Westbound (CH6+220 to CH6+241)	25	25	07-Jul-17	04-Aug-17
K-1A-SV2-4600	Testing of D-wall (Sonic test and IC)	28	28	15-Jul-17	16-Aug-17
K-1A-SV2-4700	Toe Grouting Works	30	30	25-Jul-17	28-Aug-17
SUS Structure from CH6+291 to 6+467 in Zone 3		248	122	22-Sep-16 A	23-Oct-17
E/B Construction of D-Wall		55	4	22-Sep-16 A	03-Jun-17
K-1A-SV3-2400	Testing of D-wall (Sonic test and IC)	30	3	22-Sep-16 A	02-Jun-17
K-1A-SV3-7440	Toe grouting works	55	4	06-Apr-17 A	03-Jun-17
Construction of Socketed H-Pile		37	10	13-Apr-17 A	14-Jun-17
K-1A-SV3-3020	Grouting Works for Socketted H-piles (CH6+348 to CH6+316)	30	0	13-Apr-17 A	31-May-17 A
K-1A-SV3-3025	Loading test for Socketted H-piles	10	10	03-Jun-17	14-Jun-17
W/B Construction of D-Wall in TTA Stage 1A		178	12	27-Dec-16 A	13-Jun-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-SV3-4270	Testing of D-wall (Sonic test and IC)	30	8	10-Jan-17 A	08-Jun-17
K-1A-SV3-4280	Toe grouting works	50	4	22-Mar-17 A	03-Jun-17
K-1A-SV3-4290	Construction of temporary cut-off wall at CH6+291	55	12	27-Dec-16 A	13-Jun-17
Pumping Test for Zone 3		78	30	12-Apr-17 A	05-Jul-17
K-1A-SV3-5100	Installation of Dewatering well, Observation well and Recharging well in Zone 3	35	14	12-Apr-17 A	15-Jun-17
K-1A-SV3-5200	Initial Dewatering to verify the Discharge Rates of Wells for Pumping Test for Excavation in Zone 3	1	1	17-Jun-17	17-Jun-17
K-1A-SV3-5210	Dewatering to Required Levels and Maintained for 48 Hours for Pumping Test for Excavation in Zone 3	3	3	19-Jun-17	21-Jun-17
K-1A-SV3-5220	Ground Water Recovery Stage for Pumping Test for Excavation in Zone 3	3	3	22-Jun-17	24-Jun-17
K-1A-SV3-5230	Review stage for Pumping test for excavation in Zone 3	1	1	26-Jun-17	26-Jun-17
K-1A-SV3-5240	Review Report for Pumping test for excavation in Zone 3	7	7	27-Jun-17	05-Jul-17
Excavation and ELS Construction		118	118	05-Jun-17	23-Oct-17
K-1A-SV3-5490	Open Gate 1A for construction of temporary bridge at CH6+325	15	15	05-Jun-17	21-Jun-17
K-1A-SV3-5500	Excavation and Triming Dwall to +2.0mPD for Temporary Bridge at CH6+325	6	6	22-Jun-17	28-Jun-17
K-1A-SV3-5510	Breaking Bulging for Temporary Vehicular Access at CH6+325	3	3	29-Jun-17	03-Jul-17
K-1A-SV3-5520	Installation of Lateral Support for Temporary Vehicular Access at CH6+325	9	9	04-Jul-17	13-Jul-17
K-1A-SV3-5530	Installation of Steel Bridge for Temporary Vehicular Access at CH6+325	10	10	14-Jul-17	25-Jul-17
K-1A-SV3-5540	Laying Sheetpiles and Concretng for Temporary Vehicular Access at CH6+325	10	10	26-Jul-17	05-Aug-17
K-1A-SV3-5550	Miscellaneous Activities for Temporary Vehicular Access at CH6+325	5	5	07-Aug-17	11-Aug-17
K-1A-SV3-5600	Breaking existing concrete slab / Excavation and Lateral Support (S1) to +1.95mPD	31	31	30-Jun-17	05-Aug-17
K-1A-SV3-5650	Excavation and Lateral Support (S2) to -2.20mPD	24	24	07-Aug-17	02-Sep-17
K-1A-SV3-5910	Construction of temporary steel decking and platforms along the westbound diaphram walls	65	65	07-Aug-17	23-Oct-17
SUS Structure from CH6+467 to 6+568 in Zone 4		125	86	27-Feb-17 A	08-Sep-17
E/B Construction of D-Wall		53	29	27-Feb-17 A	04-Jul-17
K-1A-SV4-2440	Testing of D-wall (Sonic test and IC) (CH6+467 to CH6+510)	12	5	10-Apr-17 A	05-Jun-17
K-1A-SV4-2450	Testing of D-wall (Sonic test and IC) (CH6+510 to CH6+560)	18	10	27-Feb-17 A	10-Jun-17
K-1A-SV4-2460	Toe Grouting Works	14	14	17-Jun-17	04-Jul-17
Construction of Socketed H-Pile		58	58	02-Jun-17	09-Aug-17
K-1A-SV4-3200	Installation of Socketted H-piles (CH6+550 to CH6+530)	16	16	02-Jun-17	20-Jun-17
K-1A-SV4-3300	Installation of Socketted H-piles (CH6+530 to CH6+510)	42	42	21-Jun-17	09-Aug-17
W/B and End Construction of D-Wall in TTA Stage 1A		123	81	12-Apr-17 A	08-Sep-17
K-1A-SV4-4040	CLP carry out protection to sewed 132KV and laying of 11KV crossroad ducts	0	0		21-Jun-17

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

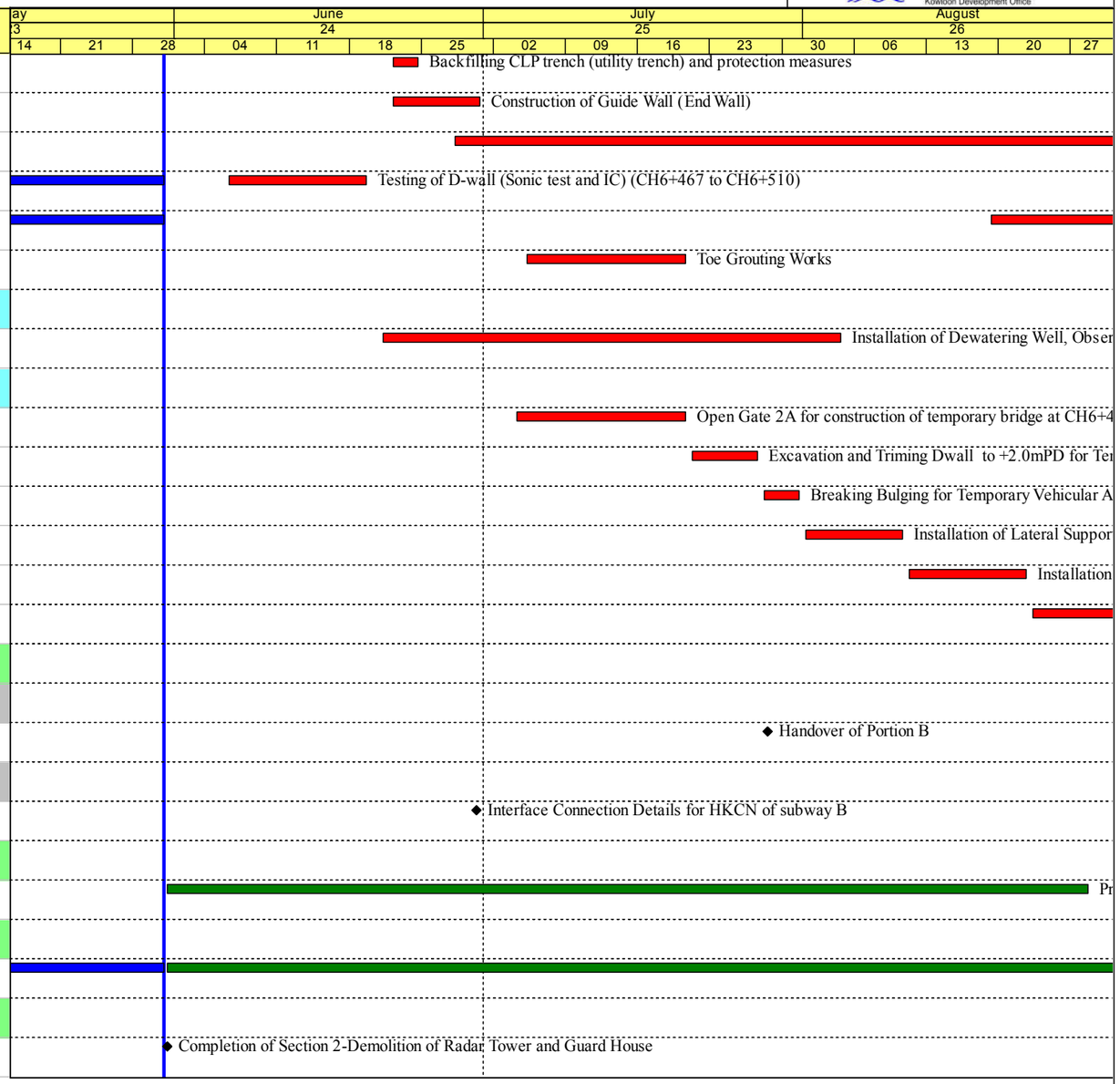
◆ Milestone
Critical Activity
Non-Critical Activity
Remaining Level of Effort
Actual Work

3 MRP Jun 2017 - Aug 2017

Project ID :18 3MPR Jun - Aug 17
Layout : KL201403 3MRP

3 Months Rolling Programme			
Date	Revision	Checked	Approved
31-May-17	Jun 17 - Aug 17		

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
K-1A-SV4-4045	Backfilling CLP trench (utility trench) and protection measures	3	3	22-Jun-17	24-Jun-17
K-1A-SV4-4050	Construction of Guide Wall (End Wall)	8	8	22-Jun-17	30-Jun-17
K-1A-SV4-4700	Construction of D-wall (CH6+560 to CH6+568) & end wall at CH6+568	55	55	28-Jun-17	31-Aug-17
K-1A-SV4-4745	Testing of D-wall (Sonic test and IC) (CH6+467 to CH6+510)	12	12	12-Apr-17 A	19-Jun-17
K-1A-SV4-4750	Testing of D-wall (Sonic test and IC) (CH6+510 to CH6+568 and End Wall)	18	18	19-Apr-17 A	08-Sep-17
K-1A-SV4-4760	Toe Grouting Works	14	14	05-Jul-17	20-Jul-17
Pumping Test		38	38	21-Jun-17	04-Aug-17
K-1A-SV4-5000	Installation of Dewatering Well, Observation Well and Recharging Well at CH6+467 to CH6+550	38	38	21-Jun-17	04-Aug-17
Excavation and ELS Construction		53	53	04-Jul-17	02-Sep-17
K-1A-SV4-5490	Open Gate 2A for construction of temporary bridge at CH6+482	15	15	04-Jul-17	20-Jul-17
K-1A-SV4-5500	Excavation and Triming Dwall to +2.0mPD for Temporary Bridge at CH6+482	6	6	21-Jul-17	27-Jul-17
K-1A-SV4-5510	Breaking Bulging for Temporary Vehicular Access at CH6+482	3	3	28-Jul-17	31-Jul-17
K-1A-SV4-5520	Installation of Lateral Support for Temporary Vehicular Access at CH6+482	9	9	01-Aug-17	10-Aug-17
K-1A-SV4-5530	Installation of Steel Bridge for Temporary Vehicular Access at CH6+482	10	10	11-Aug-17	22-Aug-17
K-1A-SV4-5540	Laying Sheetpiles and Concretng for Temporary Vehicular Access at CH6+482	10	10	23-Aug-17	02-Sep-17
Section 4B of the Works- Construction of Subway B (Subject to Excision)		29	29	30-Jun-17	28-Jul-17
Bay 1 & 2		0	0	28-Jul-17	28-Jul-17
K-4B-BAY-3100	Handover of Portion B	0	0		28-Jul-17*
Bay 3 & 4		0	0	30-Jun-17	30-Jun-17
K-4B-BAY-2480	Interface Connection Details for HKCN of subway B	0	0	30-Jun-17	
Section 5 of the Works-Completion of All Landscape Softworks		90	90	31-May-17	28-Aug-17
K-05-LCS-1000	Procurement of plant species	90	90	31-May-17	28-Aug-17
Section 7 of the Works-Preservation and Protection of Existing Trees		1200	750	04-Jan-16 A	19-Jun-19
K-07-001-1000	Section 7 of the Works-Preservation and Protection of Existing Trees	1200	750	04-Jan-16 A	19-Jun-19
Sections Completion Date		0	0	31-May-17	31-May-17
K-PK-SCC-2100	Completion of Section 2-Demolition of Radar Tower and Guard House	0	0		31-May-17

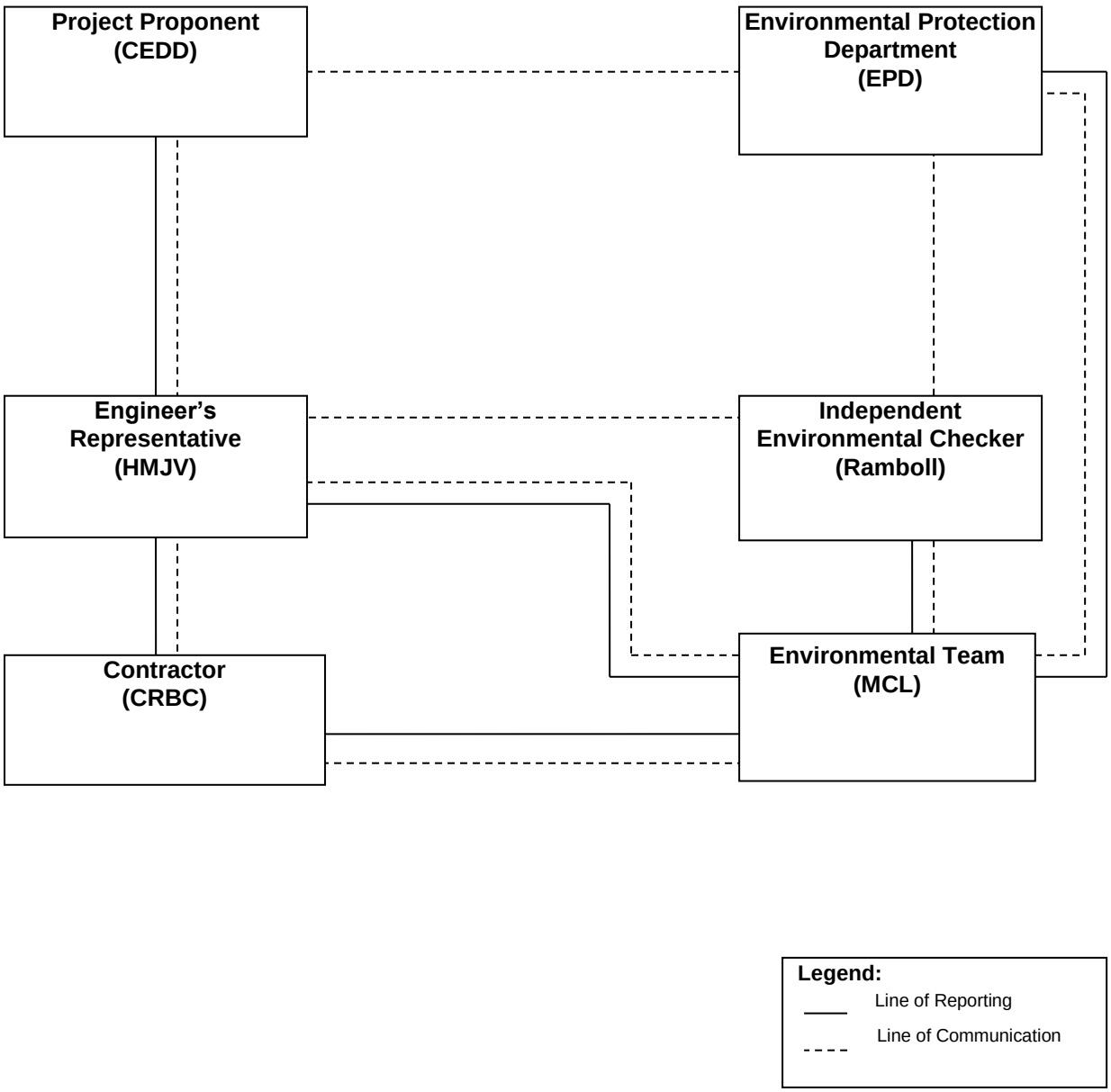


MATERIALAB CONSULTANTS LIMITED
Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..
Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com

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.

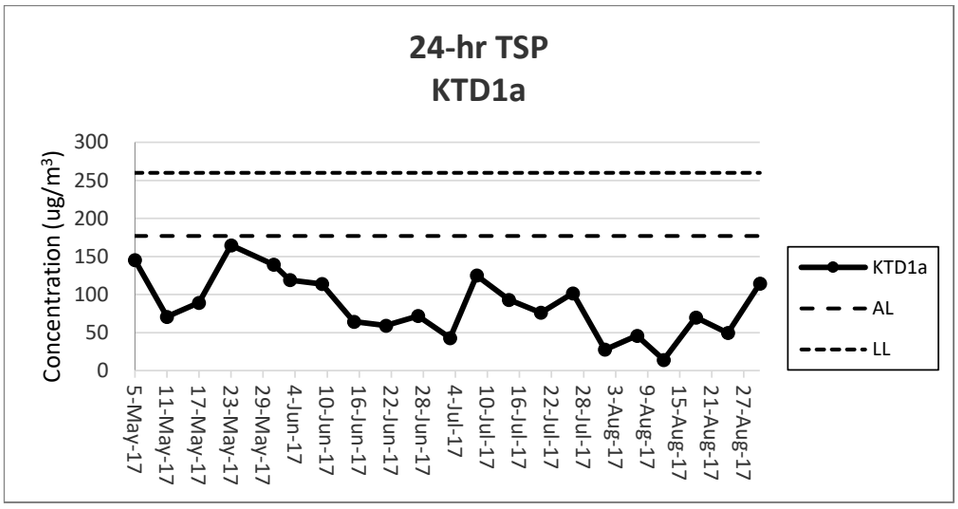
Action and Limit Levels for Construction Noise, Leq (30min), dB(A)

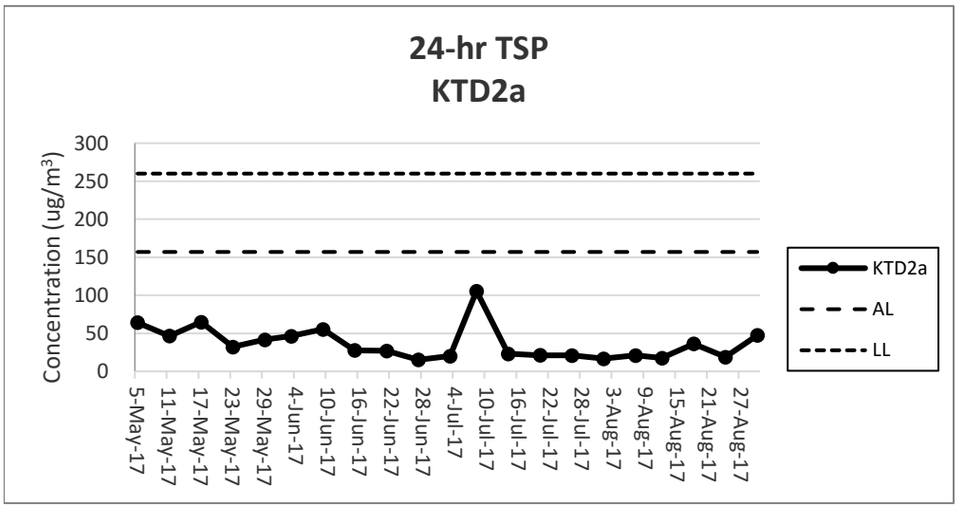
Time Period	Location	Action	Limit
0700-1900 hrs on normal weekdays	KTD1a KTD2a KER1b	When one documented complaint is received	75 dB(A)

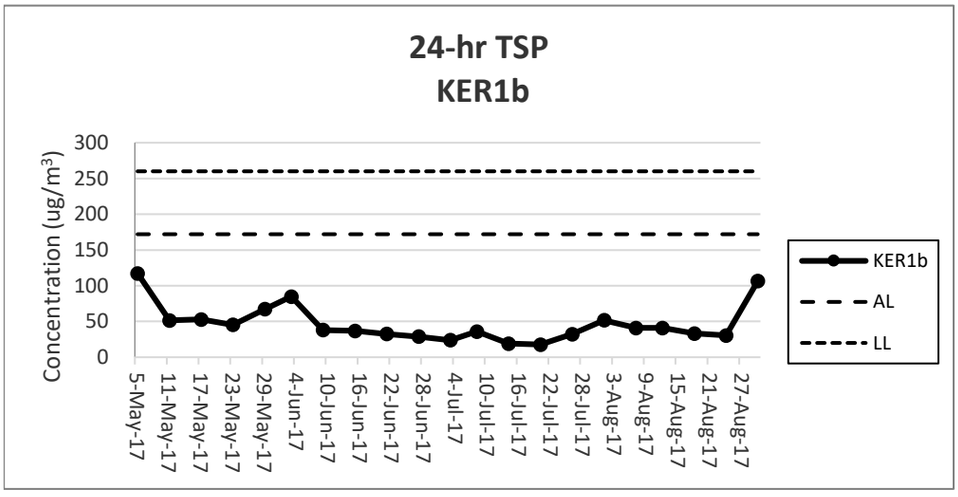
MATERIALAB CONSULTANTS LIMITED
Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..
Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com

Appendix D

Graphical Presentation of Monitoring Data





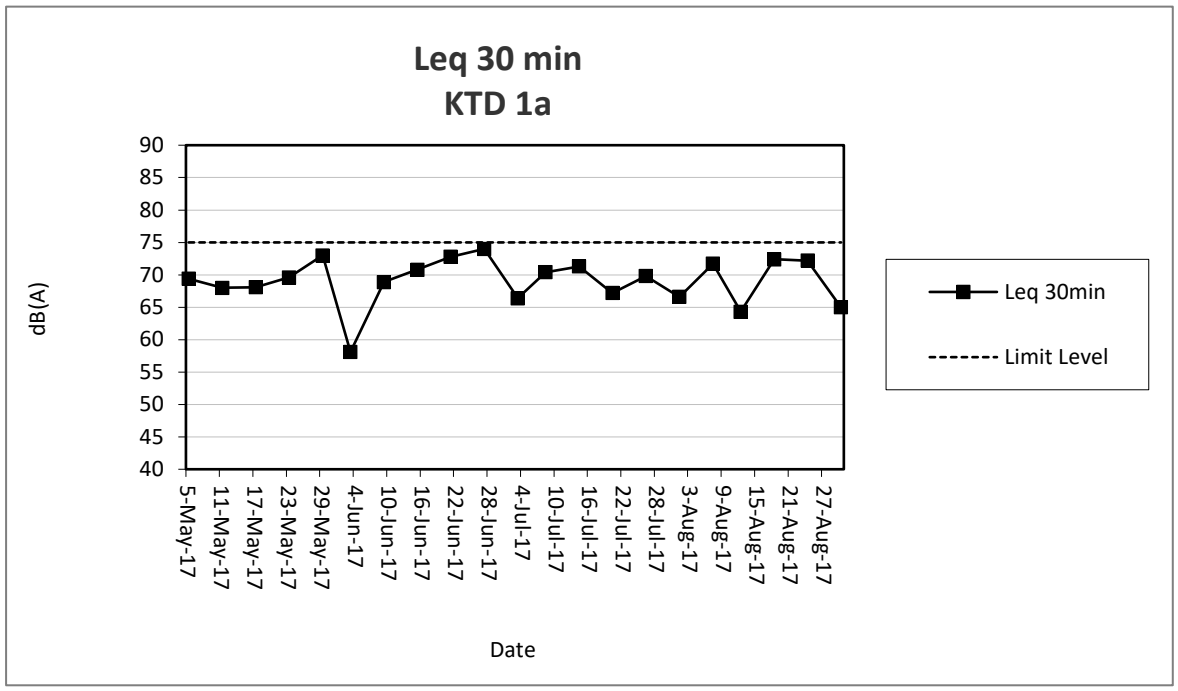


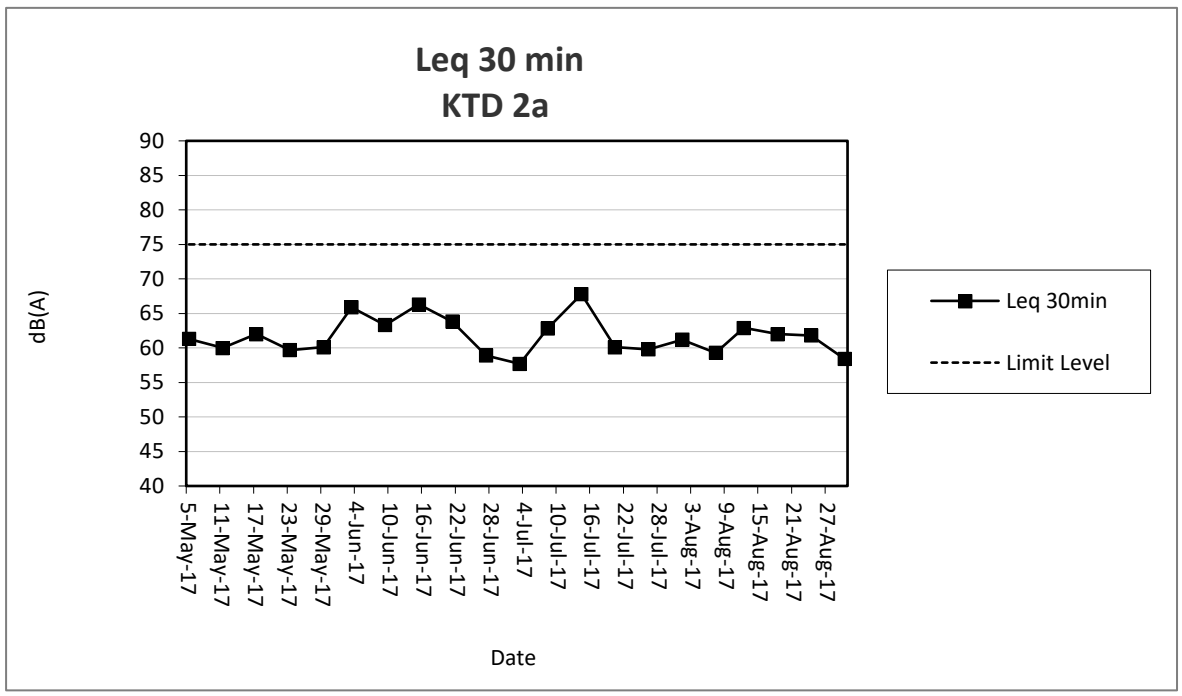
Note:

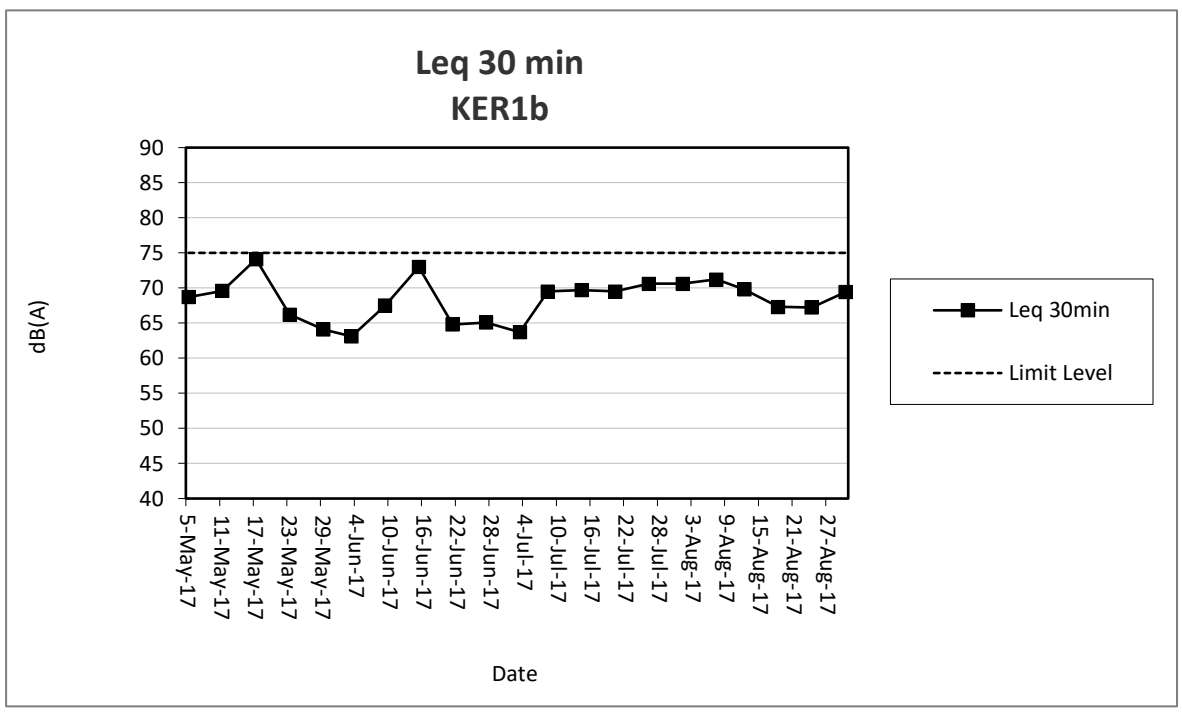
1) The major activities being carried out on site during the reporting period can be referred to Section 1.3.2.

2) The weather conditions during monitoring in the reporting period was range from hazy, cloudy, fine and sunny.

3) Any other factors which might affect the monitoing results can be referred to Section 2.3.4.







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 ranged from 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.

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

MateriaLab

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
2017 Mar	9.4759	Nil	Nil	Nil	9.4759	Nil	0.034	0.023	Nil	Nil	0.0162
2017 Apr	4.8827	Nil	Nil	Nil	4.8827	Nil	0.016	0.023	Nil	Nil	0.0062
2017 May	3.0366	Nil	Nil	Nil	3.0366	Nil	0.022	0.023	Nil	Nil	0.0282
2017 Jun	2.5656	Nil	Nil	Nil	2.5656	Nil	41.25	Nil	Nil	Nil	0.0357
2017 Jul	5.5267	Nil	0.7851	Nil	4.7416	Nil	4.01	0.4515	Nil	0.25	0.0364
2017 Aug	11.4734	Nil	0.0276	Nil	11.4458	Nil	7.4	Nil	Nil	Nil	0.0196
Total	44.4037	Nil	0.8127	Nil	43.5910	Nil	52.762	0.5665	Nil	0.25	0.1628

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	Partially 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	Partially Implemented
		Open stockpiles shall be avoided or covered. Prevent placing dusty material storage piles near ASRs.	Contractor	All relevant worksites	Partially Implemented
		Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs.	Contractor	All relevant worksites	Implemented
		Dark smoke			
		Dark smoke emission shall be control in accordance with the Air Pollution Control (Smoke)	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
		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 vehicles with proper labels are allowed to be used in specified activities on-site.	Contractor	All relevant worksites	Implemented
Water Quality Measures					
Trunk Road T2					
		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
		<u>Dredging, Reclamation and Filling</u>			
		No dredging, reclamation or filling in the marine environment shall be carried out.	Contractor	All relevant worksites	Implemented
Decommissioning of the Radar Station of the former Kai Tak Airport					
		<u>Building Demolition</u>			
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
		<u>General Construction Works</u>			
		<u>Construction Runoff</u>			
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	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	Partially 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	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
		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	Implemented
		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
		Drainage			
		It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	Contractor	All relevant worksites	Implemented
		All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	Contractor	All relevant worksites	Implemented
		Stormwater Discharges			
		Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes.	Contractor	All relevant worksites	Implemented
		Sewage Effluent			
		Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	Contractor	All relevant worksites	Implemented
		Debris and Litter			
		In order to maintain water quality in acceptable conditions with regard to aesthetic quality,	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
		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

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

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 relevant	Not Applicable

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
				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

July to September 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 28 October 2017
Our Ref. MCL/ED/0591/2017/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 - July 2017 to September 2017

We refer to your emails dated 26 and 27 October 2017 regarding the Quarterly EM&A Report (July 2017 to September 2017) for the captioned project prepared by the ET.

We have no further comment and hereby verify the Quarterly EM&A Report (July 2017 to September 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. Stanley Chan

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ANNEXES

EXECUTIVE SUMMARY

Introduction

1. This is the 3rd 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 1 July 2017 and 30 September 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 (1-hour TSP)	N/A
	No (24-hour TSP)	*AM2(A) – Ng Wah Catholic Secondary School
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

Remark:
* 24-hour TSP air quality monitoring at AM2 was not accepted by the premise. 24-hour TSP air quality monitoring was relocated from AM2 to AM2(A) since August 2017.

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

July 2017

- Bored piling works at Abutment A02 and Pier S15
- Excavation with installation of ELS and utilities support at Subway SW6
- Excavation for retaining wall at slip road S15
- Construction of temporary slip road and decking for TTA next to PERE
- Construction of Box Culvert B4 and B2(Wall and Top slab)
- Excavation and Construction Works for Box Culvert B5 (Base slab)
- Backfilling works at Box Culvert B3 and B4
- Sewerage works in Portion 2
- DCS pipe insulation works in Road L7
- Backfilling works of DCS pipe trench in Road D1 (Portion 6)

August 2017

- Bored piling works at Abutment A02 and Pier S15
- Excavation with installation of ELS and utilities support at Subway SW6
- Excavation and construction works for retaining wall at slip road S15
- Construction of temporary slip road with hoarding erection for TTA next to PERE
- Construction of Box Culvert B4 and B2(Base slab and Top slab)
- Excavation and Construction Works for Box Culvert B5
- ELS Construction for Sewerage Works near SCL Tunnel
- Drainage and Sewerage Works near Box Culvert B3
- Excavation Works for Box Culvert B3 and B4
- Road L7 drainage works
- Road L7 DCS Pipe insulation works

September 2017

- Bored piling works at Pier S15
- Excavation with installation of ELS and utilities support at Subway SW6
- Excavation and construction works for retaining wall at slip road S15
- Hoarding erection along the temporary slip road next to PERE
- Installation of geotechnical instrumentation at SKLR Playground
- Construction of Box Culvert B2 (Baseslab), Culvert B3 (Baseslab and wall & topslab) and Culvert B5 (Wall & topslab)
- Excavation for Box Culvert B4
- Backfilling works at Box Culvert B3 and B4
- DCS pipe and Drainage pipe laying works in road L7
- Trench excavation works in road L7 and road D1
- Sewerage pipe laying works in portion 2 and portion 3

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	
July 2017			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
August 2017			
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A
September 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 record.

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	28/03/17	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-P3271-01	14/08/17	N/A	Valid
Construction Noise Permit (CNP)			
GW-RE0033-17	24/01/17	05/07/17	Valid
GW-RE0588-17	29/07/17	28/12/17	Valid
GW-RE0595-17	02/08/17	13/01/18	Valid
GW-RE0632-17	14/08/17	08/09/17	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 1 July 2017 and 30 September 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. Vincent Lee	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
July 2017	Sunny and Cloudy
August 2017	Sunny and Cloudy
September 2017	Sunny 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 conducted as schedule in July 2017.

3.5 As 24-hour TSP air quality monitoring at AM2 was not accepted by the premise, 24-hour TSP air quality monitoring was relocated from AM2 to AM2(A) since August 2017. 24-hr TSP monitoring at monitoring station, AM2(A) - Ng Wah Catholic Secondary School was conducted as schedule in August and September 2017.

3.6 No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting period.

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

Construction Noise

3.8 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.

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

Landscape and Visual

3.10 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

3.11 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
AM2(A) – Ng Wah Catholic Secondary 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

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

3.13 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 in the reporting period.

3.14 Mitigated construction noise levels at M5(C) were not predicted in EIA Report in the reporting period.

3.15 The noise monitoring results in the reporting period at M3 were within the range of predicted mitigated construction noise levels in the EIA report in July and August 2017, while the noise levels in September 2017 were not within the range.

3.16 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 M4 exceeds the prediction of mitigated scenario in EIA report but did not exceed the baseline level.

3.17 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.

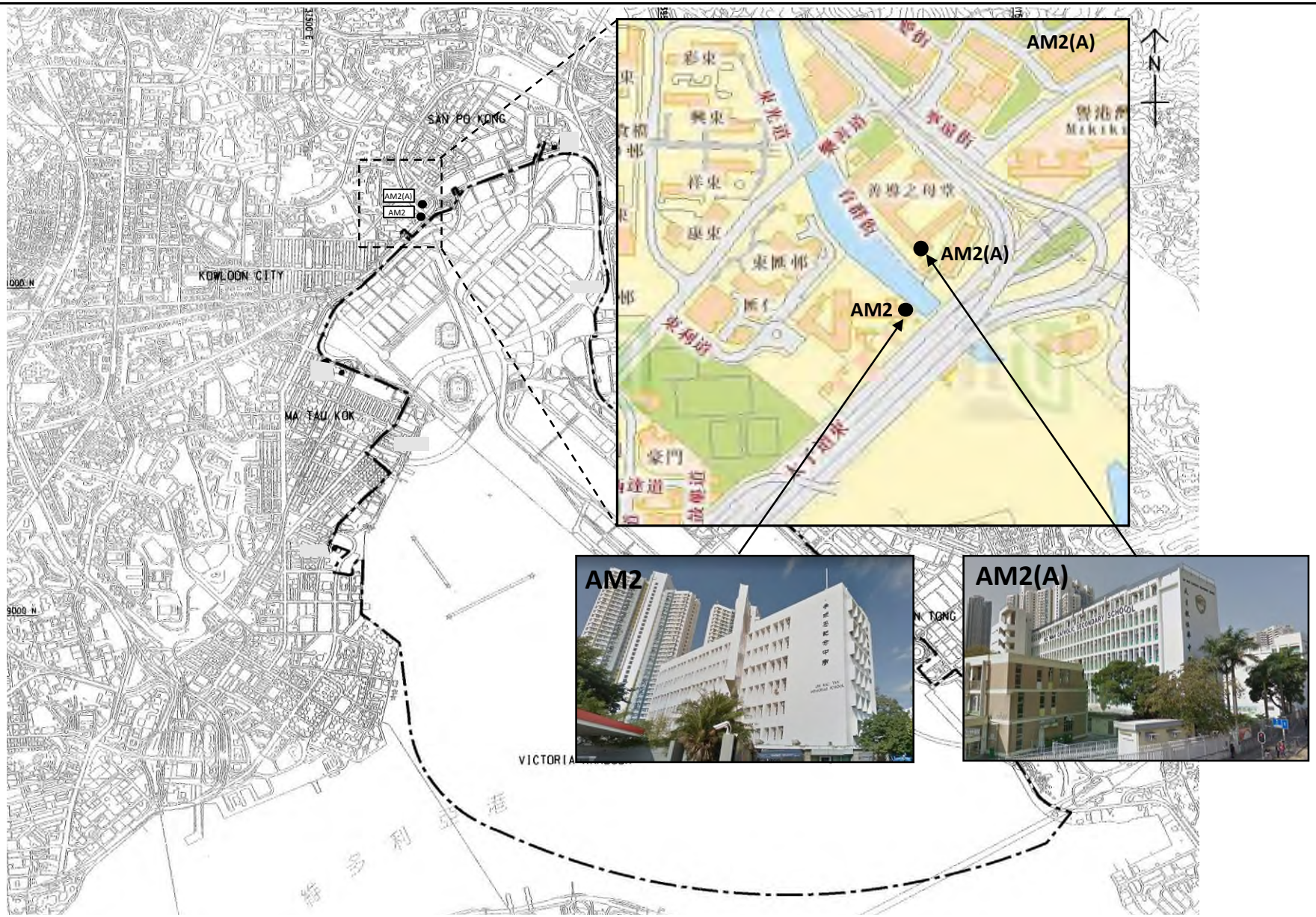
FIGURES

CINOTECH
Cinotech Consultants Limited

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

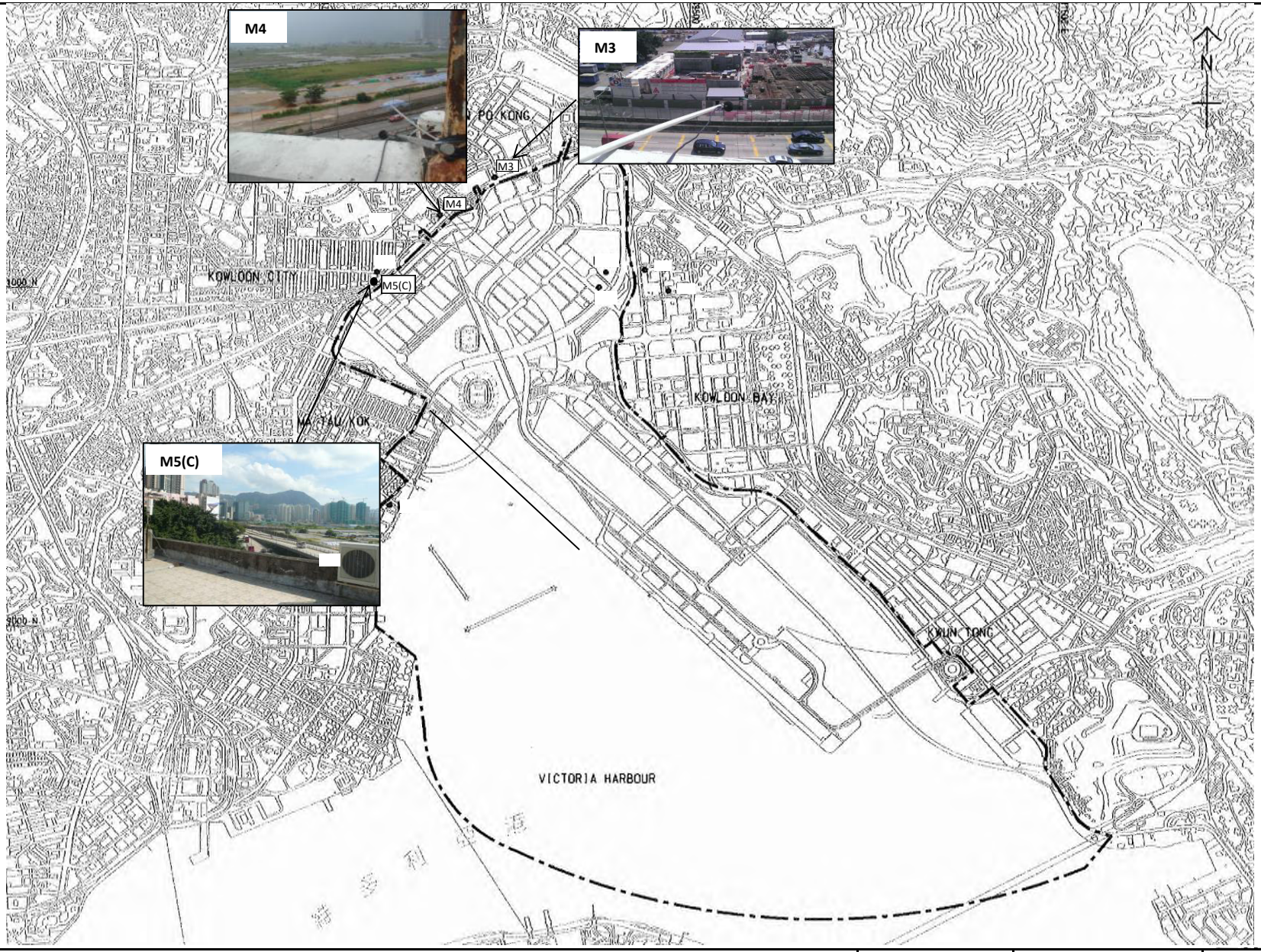
SITE LAYOUT PLAN

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 Location of Air Quality Monitoring Stations	Scale: N.T.S Date: Aug-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

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 (1 hour TSP) • *AM2 – Lee Kau Yan Memorial School (24 hour TSP) • *AM2(A) – Ng Wah Catholic Secondary School (24 hour TSP)	• AM2 – Rooftop (about 8/F) Area • AM2(A) – Rooftop (about 8/F) Area
	24 hour TSP	Once / 6 days		

Remarks: *24-hr TSP monitoring works were shifted from AM2 to AM2(A) since August 2017.

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
AM2(A)		

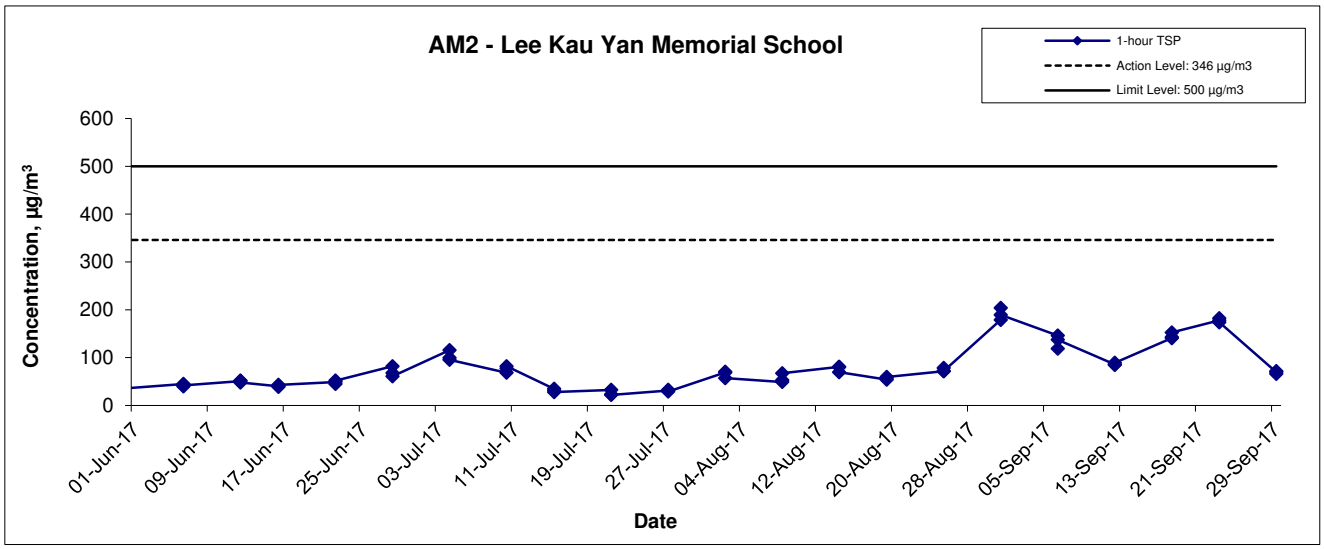
Table B-3 Action and Limit Levels for Construction Noise

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.

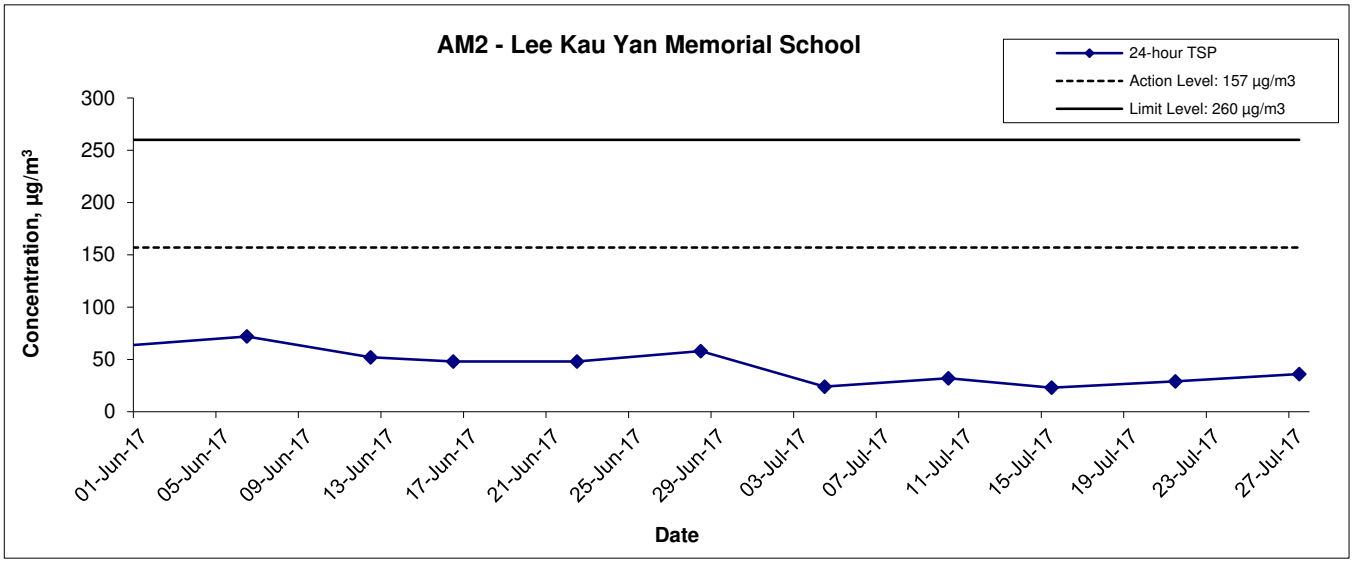
APPENDIX C
GRAPHICAL PRESENTATION OF AIR QUALITY MONITORING RESULTS

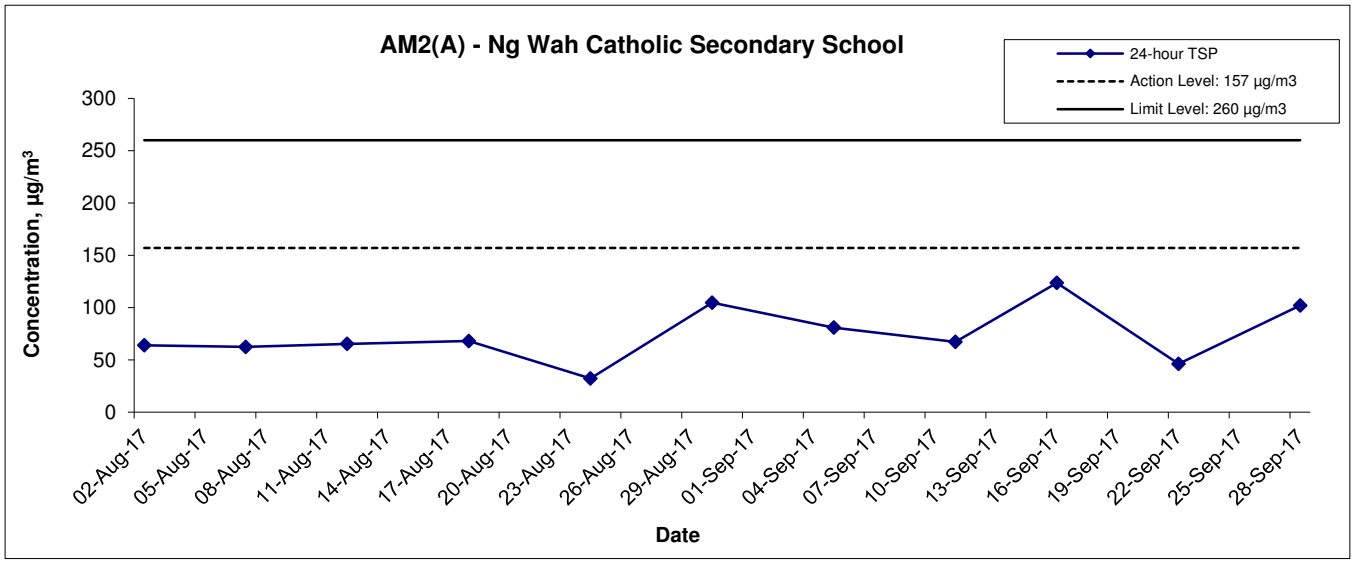
1-hr TSP Concentration Levels



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: Sep 17	Project No.: MA16043 Appendix: E	CINOTECH

24-hr TSP Concentration Levels

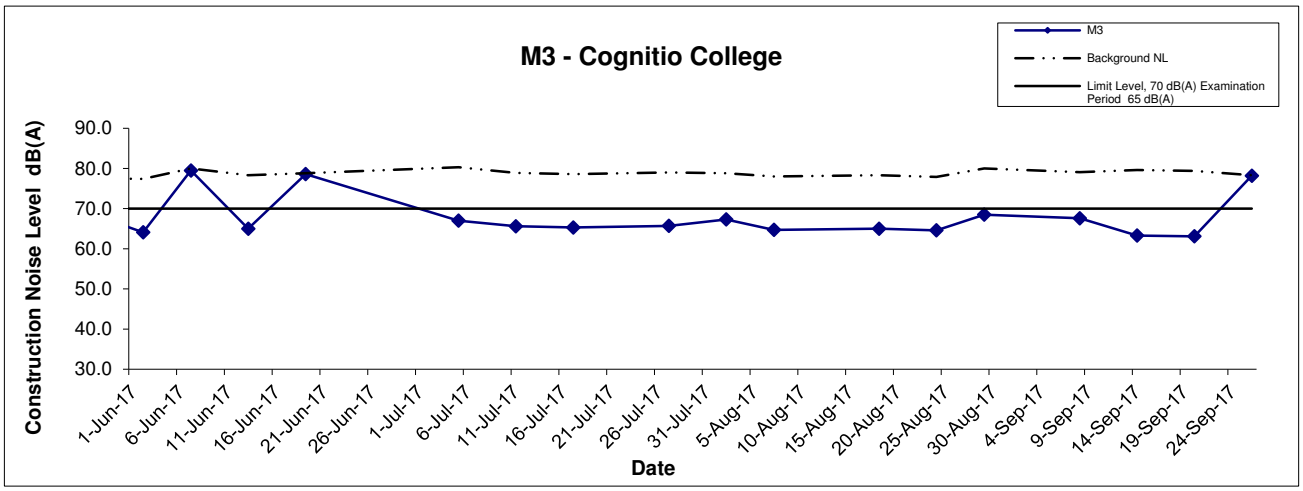


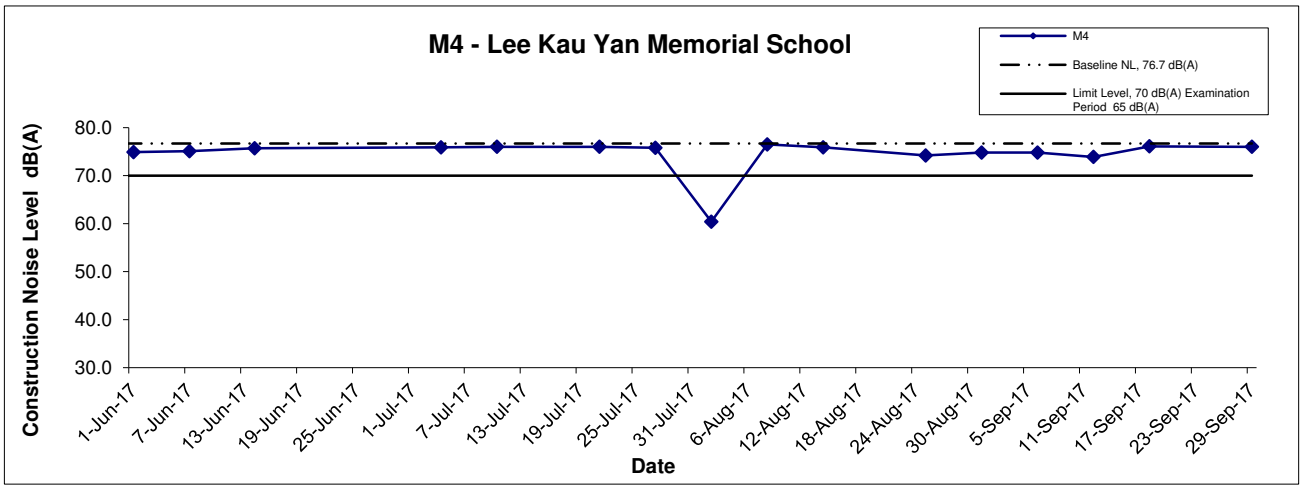


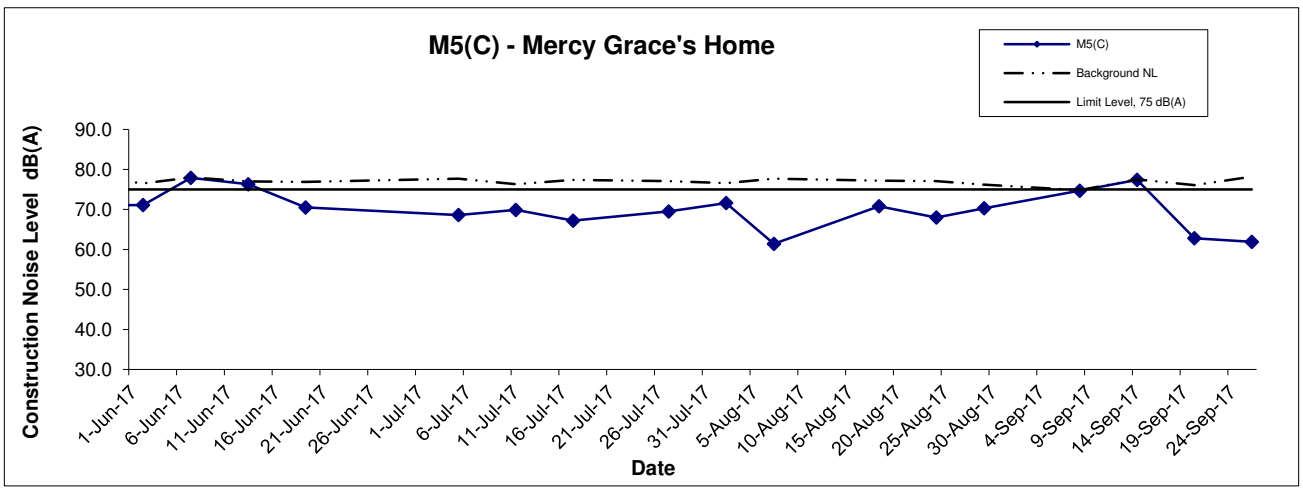
Title: Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Sep 17	Project No.: MA16043 Appendix: C	CINOTECH

APPENDIX D
GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS

Noise 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 Construction Noise Monitoring Results	Scale: N.T.S	Project No.: MA16043	CINOTECH
	Date: Sep 17	Appendix: D	

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. • 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. • 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. • 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 N/A N/A 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

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

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 July 2017

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	7 July 2017	Reminder: To properly clear the mud at Portion B2.	Rectification/improvement was observed during the follow-up audit session on 14 July 2017.
	21 July 2017	Reminder: Stagnant water on the drip tray for generator should be cleared. (Portion 1)	Rectification/improvement was observed during the follow-up audit session on 25 July 2017
Air Quality	21 July 2017	Reminder: Stockpile of dusty material should be properly covered. (Portion 1)	Rectification/improvement was observed during the follow-up audit session on 25 July 2017
	25 July 2017	Reminder: Water spraying should be provided more frequently in order to avoid potential dust generation during dry weather.	Follow up action will be reported in the next reporting month
Noise	--	--	--
Waste/ Chemical Management	30 June 2017	Reminder: Chemical container should be provided by drip tray or stored at appropriate area (Portion 2).	Rectification/improvement was observed during the follow-up audit session on 7 July 2017.
Landscape and Visual	21 July 2017	Reminder: Construction material should be placed away from the tree protection zone. (Portion B5)	Rectification/improvement was observed during the follow-up audit session on 25 July 2017
Permits/ Licenses	--	--	**--**

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	9 August 2017	Reminder: Stagnant water should be cleared after rain with proper treatment to prevent direct discharge.	Rectification/improvement was observed during the follow-up audit session on 18 August 2017.
Air Quality	25 July 2017	Reminder: Water spraying should be provided more frequently in order to avoid potential dust generation during dry weather.	Rectification/improvement was observed during the follow-up audit session on 4 August 2017.
	18 August 2017	Reminder: Exposed slope should be properly covered. (Portion 2)	Rectification/improvement was observed during the follow-up audit session on 25 August 2017.
	18 August 2017	Reminder: Water spray should be provided to the haul road frequently to minimize the dust impact arise from vehicle movement. (Portion 1 & 2)	Rectification/improvement was observed during the follow-up audit session on 25 August 2017.
Noise	--	--	--
Waste/ Chemical Management	4 August 2017	Reminder: Chemical containers should be properly disposed or stored in appropriate area (Portion B2).	Rectification/improvement was observed during the follow-up audit session on 9 August 2017.
	9 August 2017	Observation: General refuse should be properly disposed and receptacles should be provided to prevent accumulation. (Box culvert at Portion 2)	Rectification/improvement was observed during the follow-up audit session on 18 August 2017.
	25 August 2017	Reminder: Drip tray should be provided to oil drum to prevent chemical leakage. (Portion B5)	Rectification/improvement was observed during the follow-up audit session on 31 August 2017.
	31 August 2017	Reminder: Drip tray should be provided for the chemical container and oil drum to prevent chemical leakage. (Portion 1 & 2)	Follow up action will be reported in the next reporting month.
Landscape and Visual	--	--	**--**
Permits/ Licenses	--	--	**--**

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	6 September 2017	Reminder: The drainage pipe should be properly diverted to the sedimentation tank for proper desilting function. (Portion 1)	Rectification/improvement was observed during the follow-up audit session on 13 September 2017.
	6 September 2017	Reminder: Stagnant water accumulated on the drip tray for generator should be removed. (Portion 1)	Rectification/improvement was observed during the follow-up audit session on 13 September 2017.
Air Quality	--	--	--
Noise	--	--	--
Waste/ Chemical Management	31 August 2017	Reminder: Drip tray should be provided for the chemical container and oil drum to prevent chemical leakage. (Portion 1 & 2)	Rectification/improvement was observed during the follow-up audit session on 6 September 2017.
	6 September 2017	Reminder: General refuse should be properly disposed of. (Portion 1)	This item was remarked on 13 September 2017
	13 September 2017	Reminder: General refuse should be properly disposed of. (Portion 1)	Rectification/improvement was observed during the follow-up audit session on 18 September 2017.
	13 September 2017	Reminder: Drip tray should be provided for the chemical containers stored on site. (Portion B5)	Rectification/improvement was observed during the follow-up audit session on 18 September 2017.
	18 September 2017	Reminder: Drip tray should be provided to chemical containers at Portion 1.	Rectification/improvement was observed during the follow-up audit session on 25 September 2017.
	18 September 2017	Reminder: Waste skip at Portion 1 should be maintained more frequently.	Rectification/improvement was observed during the follow-up audit session on 25 September 2017.
Landscape and Visual	13 September 2017	Reminder: Materials placed in the tree protection zone should be removed. (Portion B5)	Rectification/improvement was observed during the follow-up audit session on 18 September 2017.
	25 September 2017	Reminder: Material placed within the tree protection zone should be removed. (Portion B5)	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 3 October 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	5445	0	0	0	5445	0	0	0	0	0	21
May	7470	0	0	0	7470	0	0	0	0	0	49
June	4905	0	0	0	4905	0	0	0	0	0	35
Sub-total	57105	0	0	0	57105	0	0	0	0	0	133
July	342	0	0	0	342	0	0	0	0	0	35
Aug	153	0	0	0	153	0	0	0	0	0	42
Sept	0	0	0	0	0	0	0	0	0	0	105
Oct											
Nov											
Dec											
Total	57600	0	0	0	57600	0	0	0	0	0	315

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/m³	**Scenario2 (Mid 2013 to Late 2016), µg/m³**	**Reporting Month (Apr 17), µg/m3**	**Reporting Month (May 17), µg/m3**	**Reporting Month (Jun 17), µg/m3**
AM2 – Lee Kau Yan Memorial School	290	312	53.5	86.7	122.6

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 (Apr 17), µg/m3**	**Reporting Month (May 17), µg/m3**	**Reporting Month (Jun 17), µg/m3**
AM2 – Lee Kau Yan Memorial School	145	169	29	-	-
AM2(A) – Ng Wah Catholic Memorial Schiil			-	66.1	84.0

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 (May 17), $L_{eq\ (30min)}$ dB(A)**	**Reporting Month (June 17), $L_{eq\ (30min)}$ dB(A)**
M3- Cognitio College	47 – 75	65.3 – 67.0	64.6 – 68.5	63.1 – 78.2(1)
M4 - Lee Kau Yan Memorial School	47 – 74	75.8 – 76.0(2)	60.4 – 76.5(2)	73.9 – 76.1(2)
M5(C) – Mercy Grace's Home	Not Predicted in EIA Report	67.2 – 69.9	61.4 – 71.6	61.9 – 77.4(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.