



中國港灣工程有限責任公司

香港代表： 振華工程有限公司

CHINA HARBOUR ENGINEERING COMPANY LIMITED  
HONG KONG REPRESENTATIVE: ZHEN HUA ENGINEERING CO., LTD.

Date : 20 June 2018  
Our Ref. : CHEC300/OUT/2018/06/04.05/039655

21 JUN '18 14:47

By Hand

**AECOM Asia Company Limited**  
8/F Grand Central Plaza  
Tower 2, 138 Shatin Rural Committee Road  
Shatin, Hong Kong

Attn: **Mr. Ng Wang Shek**  
**The Engineer's Representative**


Dear Sir,

**Contract No. HY/2013/03**  
**Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –**  
**Vehicle Clearance Plazas and Ancillary Buildings and Facilities**  
**EP Condition 5.4 – Monthly EM&A Report (May 2018)**

Pursuant to the Condition 5.4 of the EP-353/2009/K, we are pleased to submit one soft copy and three hard copies of the certified Monthly EM&A Report (Rev.1) for May 2018 for your on-ward submission.

Thank you for your kind attention.

Yours faithfully,  
For and on behalf of  
**China Harbour Engineering Co. Ltd.**

  
Paul PUI  
Site Agent

PP/FH/MC/mt  


Encl.

香港北角英皇道 370-374 號振華大廈 19 樓

19/F., China Harbour Building, 370-374 King's Road, North Point, Hong Kong.  
Tel: (852) 2887 8118 Fax: (852) 2512 0427 Website: <http://www.checkk.com>



A330931

19 June 2018

By Fax (3468 2076) and By Post

AECOM Asia Co. Ltd.  
The PRE's Office  
5 Ying Hei Road, Tung Chung, Lantau  
Hong Kong

Attention: Mr. W.S. Ng

Dear Sir,

**Re: Agreement No. CE 48/2011 (EP)  
Environmental Project Office for the  
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities,  
and Tuen Mun-Chek Lap Kok Link – Investigation**

**Contract No. HY/2013/03 – HZMB HKBCF – Vehicle Clearance Plazas and  
Ancillary Buildings and Facilities  
Monthly Environmental Monitoring & Audit Report for May 2018**

Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for May 2018 certified by the ET Leader (ET's ref.: "MCL/ED/0295/2018/C" dated 19 June 2018) and provided to us via e-mail on 19 June 2018.

We are pleased to inform you that we have no adverse comment on the captioned submission. We write to verify the captioned submission in accordance with Condition 5.4 of the Environmental Permit No. EP-353/2009/K.

The ET Leader is reminded that it is the ET's responsibility to implement the EM&A programme in accordance with the procedures and requirements as set out in the EM&A Manual of the approved EIA Report, and to ensure the report be timely submitted to the Director of Environmental Protection and the reported information be true, valid and correct as per Conditions 5.4 and 5.5 of EP-353/2009/K respectively.

With respect to the landscape works observed, please be reminded that the ET shall regularly check with the Landscape Resident Site Staff on the latest status of landscape construction and/or establishment and implement the bi-weekly landscape monitoring accordingly as required by the approved EM&A Manual.

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  
Ramboll Hong Kong Limited



Raymond Dai  
Independent Environmental Checker

Q:\Projects\HYDHZMBEEM00\02\_Proj\_Mgt\02\_Corr\HYDHZMBEEM00\_0\_6590L.18.doc

c.c.	HyD	Mr. Vico Cheung	(By Fax: 3188 6614)
	HyD	Mr. Ken Woo	(By Fax: 3188 6614)
	MCL	Mr. Arthur Cheng	(By Fax: 2450 8032)
	CHEC	Mr. Johnason Ko	(By Fax: 2887 3014)

Internal: DY, YH, TM, HW, ENPO Site

Q:\Projects\HYDHZMBEEM00\02\_Proj\_Mgt\02\_Corr\HYDHZMBEEM00\_0\_6590L.18.doc

Ramboll 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.com](http://www.Ramboll.com)

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 : 19 June 2018

Our Ref. : MCL/ED/0295/2018/C

Ramboll Hong Kong Limited  
(formerly Ramboll Environ Hong Kong Limited)  
21/F, BEA Harbour View Centre  
56 Gloucester Road, Wan Chai  
Hong Kong

BY HAND

Attn.: Mr. Raymond Dai, IEC

Dear Sir,

**EP Condition 5.4 – Monthly EM&A Report for  
Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
Vehicle Clearance Plazas and Ancillary Buildings and Facilities (Contract No. HY/2013/03)**

Pursuant to Condition 5.4 of the Environmental Permit (EP-353/2009/K) for the captioned project, we are pleased to submit the certified Monthly EM&A Report for May 2018 for your verification.

Should you require further information, please do not hesitate to contact our Mr. Vincent Lu at 3565 4371 or the undersigned at 3565 4115.

Yours faithfully,  
for and on behalf of  
MATERIALAB CONSULTANTS LIMITED

  
\_\_\_\_\_  
Arthur Cheng  
Environmental Team Leader

AC/vl

c.c. AECOM – Mr. P.K. Lee, Mr. W.S. Ng, Mr. Dominic Mow  
RAMBOLL – Mr. Ray Yan, Mr. Harris Wong  
CHEC – Mr. Marko Chan

**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**

Report No.: 0165/15/ED/1057

**MONTHLY ENVIRONMENTAL MONITORING & AUDIT  
REPORT**

**May 2018**

**Client:** China Harbour Engineering Co., Ltd.

**Project:** Contract No. HY/2013/03  
Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing Facilities -  
Vehicle Clearance Plazas and  
Ancillary Buildings and Facilities

**Report No.:** 0165/15/ED/1057

Prepared by: Vincent Lu

Certified by:

  
\_\_\_\_\_  
Arthur Cheng  
Environmental Team Leader

## **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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and set against a dark, rectangular background that has a slight gradient and a thin white border.

Report No.: 0165/15/ED/1057

## **CONTENTS**

### **EXECUTIVE SUMMARY**

1. INTRODUCTION
  - 1.1 Background
  - 1.2 Project Description
  - 1.3 Project Organisation
  - 1.4 Construction Programme
  - 1.5 Construction Works undertaken during the Reporting Period
2. AIR QUALITY MONITORING
  - 2.1 Monitoring Locations
  - 2.2 Monitoring Requirements
  - 2.3 Monitoring Results
3. NOISE MONITORING
  - 3.1 Monitoring Locations
  - 3.2 Monitoring Requirements
  - 3.3 Monitoring Results
4. WATER QUALITY MONITORING
  - 4.1 Monitoring Locations
  - 4.2 Monitoring Requirements
  - 4.3 Monitoring Results
5. ECOLOGY MONITORING
  - 5.1 Monitoring Locations
  - 5.2 Monitoring Requirements
  - 5.3 Monitoring Results
6. DISPOSAL OF MARINE SEDIMENT EXTRACTED FROM BORED PILING WORKS
  - 6.1 Background
  - 6.2 Dumping Arrangements
  - 6.3 Quantity Disposed
7. ENVIRONMENTAL SITE INSPECTION AND AUDIT
  - 7.1 Site Inspection
  - 7.2 Advice on the Solid and Liquid Waste Management Status
  - 7.3 Environmental Licenses and Permits
  - 7.4 Implementation Status of Environmental Mitigation Measures
  - 7.5 Summary of Exceedance of the Environmental Quality Performance Limit

## **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



Report No.: 0165/15/ED/1057

### 7.6 Summary of Complaints, Notification of Summons and Successful Prosecution

## 8. FUTURE KEY ISSUES

### 8.1 Construction Programme for the Coming Months

### 8.2 Environmental Site Inspection Schedule for the Coming Month

## 9. CONCLUSIONS

## **APPENDICES**

- A Location of Works Areas
- B Project Organization for Environmental Works
- C Construction Program
- D Event / Action Plan
- E Waste Flow Table
- F Environmental Licenses and Permits
- G Implementation Schedule for Environmental Mitigation Measures (EMIS)
- H Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions
- I Environmental Site Inspection Schedule
- J Investigation Reports on Action Level or Limit Level Non-compliance

## **FIGURES**

- Figure 1 Air Quality Monitoring Stations
- Figure 2 Noise Monitoring Stations
- Figure 3 Water Quality Monitoring Stations
- Figure 4 Ecological Monitoring Transect Line and Layout Map

## 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



Report No.: 0165/15/ED/1057

### EXECUTIVE SUMMARY

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2013/03 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities" (includes the construction works of Contract No. HY/2013/06 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System" within Contract No. HY/2013/03 works area) (hereafter referred to as "the Contract") for the Highways Department of Hong Kong Special Administrative Region (HKSAR). Contract No. HY/2013/03 was awarded to China Harbour Engineering Co. Limited (construction works of Contract No. HY/2013/06 was awarded to ATAL Technologies Limited within Contract No. HY/2013/03 works area) (hereafter referred to as "the Contractor") and MaterialLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by the Contractor.

Contract No. HY/2013/03 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) is part of the "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities" (HZMB HKBCF) Project which is a "Designated Project" under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and for which an EIA Report (Register No. AEIAR-145/2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP-353/2009/K, was issued on 11 April 2016. These documents are available through the EIA Ordinance Register.

Commencement of Contract No. HY/2013/03 took place on 10 April 2015 while the construction works and the EM&A programme of Contract No. HY/2013/03 commenced on 29 August 2015 (commencement of Contract No. HY/2013/06 took place on 14 August 2015 while the construction works and the EM&A programme of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area commenced on 13 September 2016).

MaterialLab Consultants Limited (MCL) has been appointed by the Contractor to implement the Environmental Monitoring & Audit (EM&A) programme for the Contract in accordance with the Updated EM&A Manual for HKBCF (Version 1.0) and will be providing environmental team services for the Contract.

This is the 33<sup>rd</sup> Monthly EM&A Report for the Contract which summaries findings of the EM&A programme during the reporting period from 1 May 2018 to 31 May 2018 (includes the findings of the EM&A programme of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area during the reporting period from 1 May 2018 to 31 May 2018) (the "reporting period"). The monthly EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1.0). It should be noted that the air quality and noise monitoring works for the Contract are covered by Contract No. HY/2013/01 "Hong Kong-Zhuhai-Macao Bridge HKBCF – Passenger Clearance Building" and Contract No. HY/2011/03 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF". The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS2, AMS3B, AMS6 and AMS7B, noise monitoring at NMS2 and NMS3B, water quality monitoring at the locations shown in **Figure 3** and ecological monitoring as shown in **Figure 4** as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2013/01 and HY/2011/03. However, this is subject to ENPO's final decision on which ET should carry out the monitoring work at these stations.

The dates of site inspection for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) during the reporting period are listed below:

Environmental Site Inspection: 3, 10, 17, 25 and 31 May 2018.



## 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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and set against a black rectangular background with horizontal lines above and below the text.

Report No.: 0165/15/ED/1057

### Breaches of Action and Limit Levels

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

There was no Action and Limit Level exceedance recorded on other monitoring dates at station AMS2, AMS3B and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

There were Action and Limit Level exceedances of Dissolved Oxygen and Turbidity recorded on three days by the Environmental Team of Contract No. HY/2013/01 during reporting period. After investigation, it was concluded that all exceedances were not relevant to Contract No. HY/2013/03. There was no Action and Limit Level exceedance recorded on other monitoring dates at the monitoring stations shown as shown at **Table 4.1** by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

Ecological monitoring results at all transects are reported in the EM&A report prepared by Contract No. HY/2013/01.

### Complaint Log

There was no complaint received in relation to the environmental impact during the reporting period.

### Notifications of Summons and Successful Prosecutions

There was no notifications of summons or prosecutions received during this reporting period.

### Reporting Changes

There was no reporting change during the reporting period.

### Future Key Issues

The future key issues to be undertaken in the upcoming month are:

#### For Contract No. HY/2013/03

1. Building at Portion A1, B, G, N, J, STP & Pumping Stations;
2. CUE Construction at Portion B, C & J;
3. Drainage & Sewerage Work, Water Main & Cable Duct at Portion A1, B, H1, H2, J, P & G;
4. Fencing work at All site Area;
5. Sewerage Pumping Station at Portion A1 & G;
6. Slope Works at Portion K;
7. Cover Walkway at Portion B, C, J & K;
8. Box Culvert B at Portion N;
9. Shuttle kiosk & Subway at Portion E;
10. Road Work at All site area;
11. Landscape work at All site area.

#### For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

1. CUE, Kiosk & Building 037

## 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



Report No.: 0165/15/ED/1057

### 1. INTRODUCTION

#### 1.1 Background

1.1.1 Materialab Consultants Limited was commissioned by China Harbour Engineering Co. Limited (also referred to as “the Contractor”) to undertake the Environmental Team (ET) services (including environmental monitoring and audit (EM&A)) for Contract No. HY/2013/03 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities” (includes the construction works of Contract No. HY/2013/06 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System” within Contract No. HY/2013/03 works area) (“the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR).

1.1.2 Contract No. HY/2013/03 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) is part of Hong Kong–Zhuhai–Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) which is “Designated Projects”, under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499) and for which an EIA Report (Register No. AEIAR-145-2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP- 353/2009/K, was issued on 11 April 2016. These documents are available through the EIA Ordinance. The general layout of the Project area is shown in **Appendix A**.

1.1.3 This is the thirty-third EM&A report to document the findings of site inspection activities and EM&A programme carried out by the Contractor of Contract No. HY/2013/03 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) from 1 May 2018 to 31 May 2018 (reporting period) under Contract No. HY/2013/03 (from 1 May 2018 to 31 May 2018 for the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) and is submitted to fulfil Condition 5.4 of the EP.

#### 1.2 Project Description

1.2.1 The works to be executed under Contract No. HY/2013/03 include the following major items:

- a. Cargo clearance facilities including kiosks for clearance of good vehicles, customs inspection platforms, X-ray building, etc.;
- b. Passenger related facilities including processing kiosks and examination facilities for private cars and coaches, annexure for examination of accompanying passengers of private cars, etc.;
- c. Accommodation/offices for the facilities (like fire station, police station, buildings for Immigration Department [ImmD], Hong Kong Customs and Excise Department [C&ED], Agriculture, Fisheries and Conservation Department [AFCD], Food and Environmental Hygiene Department [FEHD], Department of Health [DofH] etc.) of the Government departments providing services in connection with the HKBCF;
- d. Provision of transport and miscellaneous facilities inside the HKBCF including public transport interchange (PTI), transport drop-off and pick-up areas, vehicle holding areas, passenger queuing areas, road networks, footbridges, fencing, sewerage and drainage systems, sewage treatment plant and treated effluent disposal facilities, water supply

## 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



Report No.: 0165/15/ED/1057

system, building services works, electronic system, and traffic control and information system including traffic control and surveillance system (TCSS), etc.;

- e. Provision of roads connecting the BCF to the Hong Kong Link Road (HKLR), the Tuen Mun – Chek Lap Kok Link (TM-CLKL) and the Hong Kong International Airport (HKIA), expect the part of road works in HKIA entrusted to the HKLR project; and
- f. Reprovisioning of the affected HKIA's facilities, expect those affected by the Automated People Mover (APM) system such as the existing east rescue berth.

1.2.2 The works to be executed under Contract No. HY/2013/06 within Contract No. HY/2013/03 works area include the following major items:

- a. The Automatic Vehicle Clearance Support System amid to increasing traffic flow for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities;
- b. Responsible for designs and develops a set of tailor-made computer monitoring and control systems to for daily security operation; and
- c. The Clearance Workstations at 72 vehicle clearance kiosks, Customs and Excise's inbound and outbound traffic control centers as well as a Vehicle Tracking System.

### 1.3 Project Organisation

1.3.1 The Project Organisation for Environmental Works of Contract No. HY/2013/03 is shown in **Appendix B**. The contact person and telephone numbers of key personnel for the captioned project are shown in **Table 1.1**:

Table 1.1 Contact Persons and Telephone Numbers of Key Personnel (for Contract No. HY/2013/03)

Party	Position	Contact Person	Telephone No.	Fax No.
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Mr. W. S. Ng	3958 7400	3902 8800
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Mr. Y. H. Hui	3547 2133	3465 2899
	Independent Environmental Checker (IEC)	Mr. Raymond Dai	3465 2888	3465 2899
	Environmental Site Supervisor	Mr. Ray Yan	5181 8165	3465 2899
Contractor (China Harbour Engineering Co. Ltd)	Site Agent	Mr. Paul Pui	9125 0700	2512 0427
	Environmental Officer	Mr. Marko Chan	9427 2879	2512 0427
Environmental Team (Materialab Consultants Limited)	Environmental Team Leader (ETL)	Mr. Arthur Cheng	3565 4115	2450 8032
24-hr Complaint Hotline	--	--	5236 7111	--

## 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



Report No.: 0165/15/ED/1057

- 1.3.2 The Project Organisation for Environmental Works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area is shown in **Appendix B**. The contact person and telephone numbers of key personnel for the captioned project are shown in **Table 1.2**:

Table 1.2 Contact Persons and Telephone Numbers of Key Personnel (for Contract No. HY/2013/06 within Contract No. HY/2013/03 works area)

Party	Position	Contact Person	Telephone No.	Fax No.
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Mr. W. S. Ng	3958 7400	3902 8800
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Mr. Y. H. Hui	3547 2133	3465 2899
	Independent Environmental Checker (IEC)	Mr. Raymond Dai	3465 2888	3465 2899
	Environmental Site Supervisor	Mr. Ray Yan	5181 8165	3465 2899
Contractor (ATAL Technologies Limited)	Site Agent	Mr. Eric Yim	2565 3355	3162 5217
	Environmental Officer	Mr. W. Li	2565 3137	3162 5217
Environmental Team (MaterialLab Consultants Limited)	Environmental Team Leader (ETL)	Mr. Arthur Cheng	3565 4115	2450 8032
24-hr Complaint Hotline	--	--	6509 0375	--

- 1.3.3 The Contract HY/2013/03 has commenced on 10 April 2015. The commencement of construction works and the EM&A programme have commenced on 29 August 2015.
- 1.3.4 The Contract HY/2013/06 has commenced on 14 August 2015. The commencement of construction works and the EM&A programme have commenced on 13 September 2016 within Contract No. HY/2013/03 works area.

### 1.4 Construction Programme

- 1.4.1 The construction programme for Contract No. HY/2013/03 (includes the construction works of HY/2013/06 within Contract No. HY/2013/03 works area) are provided in **Appendix C**.

### 1.5 Construction Works Undertaken during the Reporting Period

- 1.5.1 The construction works of Contract No. HY/2013/03 commenced on 29 August 2015 (includes the construction works of Contract No. HY/2013/06 commenced on 13 September 2016 within Contract No. HY/2013/03 works area). During this reporting period, the following major site activities were commenced:

#### For Contract No. HY/2013/03

1. Building at Portion A1, B, G, N, J, STP & Pumping Stations;
2. CUE Construction at Portion B, C & J;
3. Drainage & Sewerage Work, Water Main & Cable Duct at Portion A1, B, H1, H2, J, P & G;

## 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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and set against a black rectangular background with horizontal lines above and below the text.

Report No.: 0165/15/ED/1057

4. Fencing work at All site Area;
5. Sewerage Pumping Station at Portion A1 & G;
6. Slope Works at Portion K;
7. Cover Walkway at Portion B, C, J & K;
8. Box Culvert B at Portion N;
9. Shuttle kiosk & Subway at Portion E;
10. Road Work at All site area;
11. Landscape work at All site area.

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

1. CUE, Kiosk & Building 037

## 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



Report No.: 0165/15/ED/1057

## 2. AIR QUALITY MONITORING

### 2.1 Monitoring Locations

2.1.1 The air quality monitoring works for the Contract are covered by Contract No. HY/2013/01 "Hong Kong-Zhuhai-Macao-Bridge HKBCF – Passenger Clearance Building" and Contract No. HY/2011/03 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF". The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS2, AMS3B, AMS6 and AMS7B as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract No. HY/2013/01 and HY/2011/03. **Figure 1** shows the locations of air monitoring stations.

Table 2.1 Air Quality Monitoring Location

Air Monitoring Station	Location
AMS2	Thung Chung Development Pier
AMS3B	Site Boundary of Site Office Area at Works Area WA2
AMS6	Dragonair/CNAC (Group) Building (A80)
AMS7B	3RS Site Offices

### 2.2 Monitoring Requirements

2.2.1 The monitoring requirements, equipment, parameters, frequency and duration, methodology, schedule, and meteorological information are described in the monthly EM&A Reports prepared for Contract No. HY/2013/01 and HY/2011/03.

2.2.2 The Action and Limit levels for 1-hr TSP and 24-hr TSP are summarized in **Table 2.2**.

Table 2.2 Action and Limit Levels for Air Quality

Monitoring Station	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
<b>1 hour TSP</b>		
AMS2	374	500
AMS3B	368	
AMS6	360	
AMS7B	370	
<b>24 hours TSP</b>		
AMS2	176	260
AMS3B	167	
AMS6	173	
AMS7B	183	

2.2.3 The event and action plan is provided in **Appendix D**.

2.2.4 If exceedance(s) at these stations is/are recorded by the ET of the Contract or referred by the other ET under the HZMB project to the Contract, the ET of the Contract will carry out an investigation and findings will be reported in the monthly EM&A Report.

### 2.3 Monitoring Results

2.3.1 The monitoring results for AMS2, AMS3B, AMS6 and AMS7B are reported in the monthly EM&A Reports prepared for Contract No. HY/2011/03 and HY/2013/01 respectively.

2.3.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

## **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

---

**MaterialLab**

---

---

Report No.: 0165/15/ED/1057

- 2.3.3 There was no Action and Limit Level exceedances of 1-hr TSP level and 24-hr TSP level recorded at station AMS2, AMS3B and AMS7B by the Environmental Team of Contract No. HY/2013/01 during 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



Report No.: 0165/15/ED/1057

### 3. NOISE MONITORING

#### 3.1 Monitoring Locations

3.1.1 The noise monitoring works for the Contract are covered by Contract No. HY/2013/01 "Hong Kong-Zhuhai-Macao Bridge HKBCF – Passenger Clearance Building". The ET of the Contract or another ET of the HZMB project is required to conduct noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2013/01. **Figure 2** shows the locations of noise monitoring stations.

Table 3.1 Construction Noise Monitoring Location

ID No.	Description
NMS2	Seaview Crescent
NMS3B	Site Boundary of Site Office Area at WA2

#### 3.2 Monitoring Requirements

3.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports prepared for Contract No. HY/2013/01.

3.2.2 The Action and Limit Levels for construction noise are defined in **Table 3.2**.

Table 3.2 Action and Limit Level for Construction Noise

Monitoring Station	Action Level	Limit Level
<b>For the Time Period 0700-1900 hrs. on Normal Weekdays</b>		
NMS2	When one documented complaint is received	75.0 dB (A) Leq (30 min.)
NMS3B		70.0 dB (A) Leq (30 min.)*

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

\* Reduce to 70 dB(A) for schools and 65 dB(A) during school examination period

#### 3.3 Monitoring Results

3.3.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports prepared for Contract No. HY/2013/01. No noise exceedance was recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2013/01 during 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

**MaterialLab**

Report No.: 0165/15/ED/1057

### 4. WATER QUALITY MONITORING

#### 4.1 Monitoring Locations

- 4.1.1 The water monitoring works for the Contract are covered by Contract No. HY/2013/01 "Hong Kong-Zhuhai-Macao-Bridge HKBCF – Passenger Clearance Building". The ET of the Contract or another ET of the HZMB project is required to conduct impact water quality monitoring at the stations shown in **Table 4.1** and **Figure 3**.

Table 4.1 Water Quality Monitoring Stations

Station	Description	Easting	Northing
IS5	Impact Station (Close to HKBCF construction site)	811579	817106
IS(Mf)6	Impact Station (Close to HKBCF construction site)	812101	817873
IS7	Impact Station (Close to HKBCF construction site)	812244	818777
IS8	Impact Station (Close to HKBCF construction site)	814251	818412
IS(Mf)9	Impact Station (Close to HKBCF construction site)	813273	818850
IS10(N)	Impact Station (Close to HKBCF construction site)	812942	820881
IS(Mf)11	Impact Station (Close to HKBCF construction site)	813562	820716
IS(Mf)16	Impact Station (Close to HKBCF construction site)	814328	819497
IS17	Impact Station (Close to HKBCF construction site)	814539	820391
SR3(N)	Sensitive receivers (San Tau SSSI)	810689	816591
SR4(N)	Sensitive receivers (Tai Ho)	814705	817859
SR5(N)	Control Station	812569	821475
SR6	Sensitive receivers (Sha Chau and Lung Kwu Chau Marine Park)	805837	821818
SR7	Sensitive receivers (Tai Mo Do)	814293	821431
SR10A(N) <sup>(1)</sup>	Sensitive receivers (Ma Wan FCZ) 1	823644	823484
SR10B(N2) <sup>(1)</sup>	Sensitive receivers (Ma Wan FCZ) 2	823689	823159
CS(Mf)3(N)	Control Station	808814	822355
CS(Mf)5	Control Station	817990	821129
CS4	Control Station	810025	824004
CS6	Control Station	817028	823992
CSA <sup>(2)</sup>	Control Station	818103	823064

Note:

<sup>(1)</sup> Additional monitoring station for Ma Wan FCZ

<sup>(2)</sup> Additional control monitoring station for Ma Wan FCZ

Remarks:

The ET of the Contract should conduct impact water quality monitoring at the WQMs listed in the table as part of EM&A programme according to latest notification from ENPO if water quality monitoring is no longer covered by another ET of the HZMB project. The ET of the Contract shall communicate and share the monitoring data to the ET(s) of the other contracts if the water quality monitoring station(s) is/are as part of EM&A programme.

#### 4.2 Monitoring Requirements

- 4.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/01.

- 4.2.2 The event and action plan is provided in **Appendix D**.

## 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



Report No.: 0165/15/ED/1057

4.2.3 The Action and Limit Levels for Water Quality are provided in **Table 4.2**.

Table 4.2 Action and Limit Levels for Water Quality

Parameters	Action	Limit
DO in mg/L (Surface, Middle & Bottom)	Surface and Middle 5.0 Bottom 4.7	Surface and Middle = 4.2 (except 5 mg/L for FCZ) Bottom = 3.6
SS in mg/L (depth-averaged) at all monitoring stations and control stations	23.5 and 120% of upstream control station's SS at the same tide of the same day*	34.4 and 130% of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes*
Turbidity in NTU (depth-averaged)	27.5 and 120% of upstream control station's turbidity at the same tide of the same day*	47.0 and 130% of upstream control station's turbidity at the same tide of the same day*

\* Remarks: Reference is made to EPD approval of adjustment of water quality assessment criteria issued and became effective on 18 February 2013.

Notes:

- "depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
- All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.
- The 1%-ile of baseline data for dissolved oxygen (surface and middle) and dissolved oxygen (bottom) are 4.2mg/L and 3.6mg/L respectively.

4.2.4 If exceedance(s) at these stations is/are recorded by the ET of the Contract or referred by the other ET under the HZMB project to the Contract, the ET of the Contract will carry out an investigation and findings will be reported in the monthly EM&A Report.

### 4.3 Monitoring Results

4.3.1 The monitoring and investigation results for the monitoring stations showed in **Table 4.1** are reported in the monthly EM&A Report prepared for Contract No. HY/2013/01. There were Action and Limit Level exceedances recorded at different WQM stations on three days during 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

# MaterialLab

Report No.: 0165/15/ED/1057

## 5. ECOLOGY MONITORING

### 5.1 Monitoring Locations

5.1.1 The ecological monitoring works for the Contract are covered by Contract No. HY/2013/01 "Hong Kong-Zhuhai-Macao-Bridge HKBCF – Passenger Clearance Building". The ET of the Contract or another ET of the HZMB project is required to conduct dolphin monitoring at 24 transects as part of EM&A programme if these transects are no longer covered under Contract No. HY/2013/01. The ecological monitoring should adopt line-transect vessel survey method. The survey follows pre-set and fixed transect lines in the two areas defined by AFCD as: Northeast Lantau survey area; and Northwest Lantau survey area. **Figure 4** shows the co-ordinates for the transect lines and layout map.

Remarks:

The ET of this Contract should conduct impact ecological monitoring as part of EM&A programme according to latest notification from ENPO when the monitoring transect(s) is/are no longer covered by another ET of the HZMB project.

### 5.2 Monitoring Requirements

5.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/01.

5.2.2 The event and action plan is provided in **Appendix D**.

5.2.3 The Action and Limit Levels for Chinese White Dolphin Monitoring are provided in **Table 5.1(a)** & **Table 5.1(b)**.

**Table 5.1(a)** Action and Limit Levels for Chinese White Dolphin Monitoring - Approach to Define Action Level (AL) and Limit Level (LL)

	North Lantau Social Cluster	
	NEL	NWL
Action Level	(STG < 70% of baseline) & (ANI < 70% of baseline)	(STG < 70% of baseline) & (ANI < 70% of baseline)
Limit Level	[(STG < 40% of baseline) & (ANI < 40% of baseline)] AND [(STG < 40% of baseline) & (ANI < 40% of baseline)]	

For North Lantau Social Cluster, action level will be trigger if either NEL or NWL fall below the criteria; limit level will be triggered if both NEL and NWL fall below the criteria.

**Table 5.2(b)** Derived Value of Action Level (AL) and Limit Level (LL) for Chinese White Dolphin Monitoring

	North Lantau Social Cluster	
	NEL	NWL
Action Level	(STG < 4.2) & (ANI < 15.5)	(STG < 6.9) & (ANI < 31.3)
Limit Level	[(STG < 2.4) & (ANI < 8.9)] AND [(STG < 3.9) & (ANI < 17.9)]	

5.2.4 If exceedance(s) at these transects is/are recorded by the ET of the Contract or referred by the other ET under the HZMB project to the Contract, the ET of the Contract will carry out an investigation and findings will be reported in the monthly EM&A Report.

### 5.3 Monitoring Result

5.3.1 The dolphin survey results for all transects are reported in the monthly EM&A Reports prepared by Contract No. HY/2013/01.

## 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

**MaterialLab**

Report No.: 0165/15/ED/1057

### 6. DISPOSAL OF MARINE SEDIMENT EXTRACTED FROM BORED PILING WORKS

#### 6.1 Background

- 6.1.1 After the acceptance of the review of the approved Sediment Quality Report (SQR) for this Project under EPD letter dated 19 August 2015, an approval to dispose the marine sediment extracted from bored piling for this Project was then approved under memo from Secretary, Marine Fill Committee of CEDD dated 20 August 2015 for the disposal of marine sediment extracted from bored piling works. The disposal site allocated to this Project is the Mud Pit CMP Vd of the Confined Marine Sediment Disposal Facility to the East of Sha Chau (ESC) during this reporting period.
- 6.1.2 No extracted marine sediment was treated using cement solidification/stabilisation (Cement S/S) techniques under Contract No. HY/2013/03 during this reporting period. The marine sediment extracted from this Contract was disposed to the MFC allocated disposal sites directly without treatment during this reporting period. As a practical means, the disposal operation is managed by one contractor who is also responsible for applying dumping permit and its subsequent extension applications from EPD. Contract No. HY/2013/03 has been assigned to coordinate and arrange for disposal of extracted marine sediment from all three Contracts (Contract Nos. HY/2013/02, HY/2013/03 and HY/2013/04).

#### 6.2 Dumping Arrangements

- 6.2.1 The barge for disposal of marine sediment was moored at the temporary loading and unloading at the east shore of the HKBCF Island, which has been being used by reclamation contractor (Contract No. HY/2010/02) for reclamation activities. In terms of safety consideration and to avoid mixing of sediment between contracts, each dumping date was allocated to one Contract. The quantity of marine sediment disposed on each date was from one Contract.
- 6.2.2 During dumping, Contractor of Contract No. HY/2013/03 is responsible for transporting the marine sediment from the site area of Contract No. HY/2013/03 to the barge. The estimated quantity of marine sediment in each truck is confirmed by Resident Site Staff of Contract Nos. HY/2013/02, HY/2013/03 and HY/2013/04. The trip tickets for transportation and disposal of marine sediment are collected and checked. Contract No. HY/2013/03 as the dumping permit holder is responsible for reporting to EPD the quantity disposed of as the condition stipulated in the dumping permit. The disposal site allocated to this Project is the Mud Pit CMP Vd of the Confined Marine Sediment Disposal Facility to the East of Sha Chau (ESC) during this reporting period.

#### 6.3 Quantity Disposed

- 6.3.1 No marine sediment extracted from bored piling from this Contract was disposed to allocated dumping site in September 2017. As confirmed by RSS, all marine sediments extracted from HY/2013/02, HY/2013/03 and HY/2013/04 have been completed with the last batch disposal on 30 August 2017. The total disposed quantity up to the last batch is 114.088 (in'000m<sup>3</sup>). The summary of marine sediment disposed up to end August 2017 is shown in the following 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



Report No.: 0165/15/ED/1057

Table 6.1 Summary of Marine Sediment Disposed to Dumping Site

Month/Year	Quantity disposed (in'000m <sup>3</sup> )			Total
	HY/2013/02	HY/2013/03	HY/2013/04	
Jan 2016	1.272	1.950	0.800	4.022
Feb 2016	2.816	2.328	0.704	5.848
Mar 2016	0.600	2.464	3.942	7.006
Apr 2016	5.128	5.602	5.028	15.758
May 2016	0.000	0.000	0.000	0.000
Jun 2016	1.200	4.584	1.578	7.362
<b>Sub-Total</b>	<b>11.016</b>	<b>16.928</b>	<b>12.052</b>	<b>39.996</b>
Jul 2016	0.728	10.728	3.690	15.146
Aug 2016	1.784	1.544	4.428	7.756
Sep 2016	2.328	6.816	3.888	13.032
Oct 2016	1.096	2.376	5.286	8.758
Nov 2016	0.000	0.000	0.000	0.000
Dec 2016	1.568	4.960	2.538	9.066
Cat L in Dec 2016	0.000	2.792	3.570	6.362
<b>Sub-Total</b>	<b>18.520</b>	<b>46.144</b>	<b>35.452</b>	<b>100.116</b>
Jan 2017	0.000	0.656	6.552	7.208
Feb 2017	0.088	0.264	1.380	1.732
Mar 2017	0.000	0.000	0.000	0.000
Apr 2017	0.624	1.288	0.000	1.912
May 2017	0.000	1.440	0.000	1.440
June 2017	1.432	0.000	0.000	1.432
July 2017	0.000	0.000	0.000	0.000
August 2017	0.000	0.248	0.000	0.248
<b>Total</b>	<b>20.664</b>	<b>50.040</b>	<b>43.384</b>	<b>114.088</b>

Note: All sediments are in Type II disposal method except Cat L (in Type I)

## 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

**MaterialLab**

Report No.: 0165/15/ED/1057

### 7. ENVIRONMENTAL SITE INSPECTION AND AUDIT

#### 7.1 Site Inspection

7.1.1 Site audits were carried out by ET on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project site.

7.1.2 The landscape work of green roof for Contract No. HY/2013/03 was commenced on 7 November 2017. The landscape work of all areas at ground level for Contract No. HY/2013/03 was commenced at early February 2018. Detail commencement date of each building were shown in **Table 7.1**. The implementation of mitigation measures for landscape and visual resources recommended in the EIA Report were monitored during the reporting period. Landscape and visual mitigation measures in accordance with the EP, EIA and EM&A Manual were implemented by the Contractor.

Table 7.1 Commencement date of green roof for each building

Building No. of Green Roof	Commencement dates of planting for roof greening
037	7 Nov 2017
043	20 Dec 2017
041	27 Dec 2017
026	22 Jan 2018
039	22 Jan 2018
All areas at ground level	Early Feb 2018
031	8 Mar 2018
046	8 Mar 2018

7.1.3 The joint site audits for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) were conducted on 3, 10, 17, 25 and 31 May 2018 by the representatives of Engineer, Contractor, ET and IEC (IEC for 25 May 2018).

7.1.4 Particular observations during the site inspection and corrective actions undertaken by the Contractor are described below:

#### For Contract No. HY/2013/03

##### 26 April 2018

1. The Contractor was reminded to provide drip tray for the chemical in Building 042. The observation was closed on 3 May 2018.

##### 3 May 2018

1. The Contractor was reminded to provide drip tray for the chemical outside Building 049. The observation was closed on 10 May 2018.

##### 10 May 2018

1. The Contractor was reminded to remove the stagnant water accumulated in Building 048 & 049. The observation was closed on 17 May 2018.

##### 17 May 2018

## 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



Report No.: 0165/15/ED/1057

1. The Contractor was reminded to remove the construction waste accumulated in CUE. The observation was closed on 25 May 2018.
2. The Contractor was reminded to remove the general waste accumulated in Building 030. The observation was closed on 25 May 2018.

### 25 May 2018

1. The Contractor was reminded to remove the general waste accumulated in CUE. The observation was closed on 31 May 2018.
2. The Contractor was reminded to remove the stagnant water accumulated in CUE. The observation was closed on 31 May 2018.
3. The Contractor was reminded to provide drip tray for the chemical in CUE. The observation was closed on 31 May 2018.

### 31 May 2018

1. The Contractor was reminded to clean the U channel in Building 029. Follow-up actions for outstanding observation will be checked in the upcoming site inspections and reported in the coming reporting period.

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

### 3 May 2018

1. Nil findings.

### 10 May 2018

1. Nil findings.

### 17 May 2018

1. Nil findings.

### 25 May 2018

1. Nil findings.

### 31 May 2018

1. Nil findings.

## **7.2 Advice on the Solid and Liquid Waste Management Status**

- 7.2.1 The Contractor of Contract No. HY/2013/03 registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 7.2.2 The monthly summary of waste flow table for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) are detailed in **Appendix E**.

**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



Report No.: 0165/15/ED/1057

7.2.3 Contract No. HY/2013/03 has been assigned to arrange for delivery of surplus filling materials from Contract No. HY/2013/03 to other projects, including Tuen Mun - Chek Lap Kok Link (TM-CLKL) project of HZMB, the Airport Authority Hong Kong's Three Runway (3RS) Project, Wan Chai Development Phase II project, Contract No. HY/2013/02 of HKBCF and Hong Kong Link Road (HKLR) project of HZMB. The estimated quantity of surplus filling materials is confirmed by Resident Site Staff of Contract No. HY/2013/03. The summary of surplus filling materials delivered to other projects up to the end of April 2018 is shown in **Table 7.2**.

Table 7.2 Summary of Surplus Filling Materials Delivered from Contract No. HY/2013/03 to other projects

Month/Year	Density (in tonnes/m <sup>3</sup> )	Quantity disposed (in '000m <sup>3</sup> )					Total
		To HY/2013/02	To TM-CLKL Project	To 3RS Project	To WDII Project	To HKLR Project	
May 2017	2.3	0	12.637	0	0	0	12.637
June 2017	2.63925	0	14.769	11.238	0	0	26.007
July 2017	1.9	0	4.406	34.875	10.048	0.760	50.089
August 2017	1.9	0.480	0	67.942	2.761	7.455	78.638
September 2017	1.9	5.544	0	62.770	0	4.648	72.962
October 2017	/	3.384	0	45.92809	0	0	49.31209
November 2017	/	5.412	0	5.507	0	0	10.919
December 2017	/	12.57173	0	0	0	0	12.57173
January 2018	/	10.228	0	0	0	0	10.228
February 2018	/	0	0	0	0	0	0
March 2018	/	0.45276	0	0	0	0	0.45276
April 2018	/	0	42.544	0	0	0	42.544
May 2018	/	0	13.123	0	0	0	13.123
<b>Total</b>	/	<b>38.07249</b>	<b>87.479</b>	<b>228.26009</b>	<b>12.809</b>	<b>12.863</b>	<b>379.48358</b>

Remarks:

- The variation in density is due to different compositions of surplus filling materials
- There may be discrepancies in the total quantities with the quantities of inert C&D materials stated in Appendix E and section 7.2.4, due to rounding errors
- No density was given from October 2017 to May 2018 due to the direct volume figures as provided and confirmed by the RSS

7.2.4 0.000 (in'000m<sup>3</sup>) of excavated marine sediment (from Contract No. HY/2013/03), 15.066 (in'000m<sup>3</sup>) of Inert C & D Wastes and 2.165 (in'000m<sup>3</sup>) of Non-inert C & D Wastes were generated (from Contract No. HY/2013/03) in this reporting period. 13.123 (in'000m<sup>3</sup>) of Inert C & D Wastes were reused in other projects and 1.943 (in'000m<sup>3</sup>) of Inert C & D Wastes was disposed as public fill. 0.000 (in tonnes) of Inert C & D Wastes and 0.030 (in tonnes) of Non-inert C & D Wastes were generated (from Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) in this reporting period. 0.000 (in tonnes) metals were generated and recycled (from Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) in this reporting period.

7.2.5 The excavated marine mud from the land-based works was disposed of at the designated disposal sites within Hong Kong as allocated by the Marine Fill Committee. The Contractor of Contract No. HY/2013/03 shall ensure no spilling and overflowing of materials during loading / unloading / transportation is allowed.

7.2.6 The Contractor was 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 Packing, Labelling and Storage of Chemical Waste.



## 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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and set against a dark, rectangular background that has a slight gradient and a thin white border.

Report No.: 0165/15/ED/1057

7.2.7 Contractor of Contract No. HY/2013/03's site arrangement for disposal of bentonite slurry to Tseung Kwan O Area 137 Fill Bank was checked by ET and formal consent has been obtained from Tseung Kwan O Area 137 Fill Bank for receiving used bentonite slurry generated from Contract No. HY/2013/03.

### 7.3 Environmental Licenses and Permits

7.3.1 The valid environmental licenses and permits for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) during the reporting period are summarized in **Appendix F**. The Contractor of Contract No. HY/2013/06 was advised to register as a chemical waste producer when chemical waste is expected to generate for the foreseeable future from the operations (For Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation).

### 7.4 Implementation Status of Environmental Mitigation Measures

7.4.1 In response to the site audit findings, the Contractor carried out corrective actions.

7.4.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix G**. All necessary mitigation measures at this stage of works were implemented properly.

7.4.3 Implementation status of Regular Marine Travel Route Plan (RMTRP) was checked by ET. Training of marine travel route for marine vessels operator was given to relevant staff and relevant records were kept properly. The marine traffic records and geographical plots of all the vessels tracks to demonstrate the conformance of the vessel to the proposed route in May 2018 would be provided to ER, ETL, IEC/ENPO for checking within the month of June 2018.

7.4.4 With respect to condition 3.26A of EP-353/2009/K approved by EPD on 11 April 2016, the numbers and operating periods of floating grout production facilities and floating concrete batching plants on-site to review on the compliance to this EP condition were checked. Under Contract No. HY/2013/03, no floating concrete batching plant was operated on-site during the reporting period.

7.4.5 As silt curtain was installed since May 2017, Dolphin Watching Plan (DWP) should be implemented. The status of silt curtain was reviewed by ET and there was no change on the status of silt curtain during the reporting period. Implementation status of DWP was checked by ET. The records of dolphin watching training, regular inspection of the silt curtains and visual inspection of waters surrounded by the silt curtain in May 2018 would be provided to ER, ETL, IEC/ENPO for checking within the month of June 2018.

### 7.5 Summary of Exceedance of the Environmental Quality Performance Limit

7.5.1 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

7.5.2 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS2, AMS3B and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

7.5.3 There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2013/01 during 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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and set against a dark, rectangular background with horizontal lines above and below it.

Report No.: 0165/15/ED/1057

- 7.5.4 Summary of Action and Limit Level exceedance of water quality at the monitoring stations shown as shown at **Table 4.1** shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01.
- 7.5.5 There were Action Level exceedances recorded on three days by the Environmental Team of Contract No. HY/2013/01 during reporting period. After investigation, it was concluded that all exceedances were not relevant to Contract No. HY/2013/03. There was no Action and Limit Level exceedance recorded on other monitoring dates at the monitoring stations shown as shown at **Table 4.1** by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 7.5.6 Ecological monitoring results at all transects are reported in the EM&A report prepared by Contract No. HY/2013/01.

### **7.6 Summary of Complaints, Notification of Summons and Successful Prosecution**

- 7.6.1 There was no complaint received in relation to the environmental impact during the reporting period. The details of cumulative statistics of Environmental Complaints are provided in **Appendix H**.
- 7.6.2 There was no notification for summons or prosecutions received in relation to the environmental impact during this reporting period.
- 7.6.3 Statistics on environmental complaints, notifications of summons and successful prosecutions are provided in **Appendix H**.

## 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

**MaterialLab**

Report No.: 0165/15/ED/1057

### 8. FUTURE KEY ISSUES

#### 8.1 Construction Programme for the Coming Months

8.1.1 As informed by the Contractor, the following are the major construction activities anticipated in June 2018:

For Contract No. HY/2013/03

1. Building at Portion A1, B, G, N, J, STP & Pumping Stations;
2. CUE Construction at Portion B, C & J;
3. Drainage & Sewerage Work, Water Main & Cable Duct at Portion A1, B, H1, H2, J, P & G;
4. Fencing work at All site Area;
5. Sewerage Pumping Station at Portion A1 & G;
6. Slope Works at Portion K;
7. Cover Walkway at Portion B, C, J & K;
8. Box Culvert B at Portion N;
9. Shuttle kiosk & Subway at Portion E;
10. Road Work at All site area;
11. Landscape work at All site area.

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

1. CUE, Kiosk & Building 037.

#### 8.2 Environmental Site Inspection Schedule for the Coming Month

8.2.1 The tentative schedule for weekly site inspections for June 2018 is provided in **Appendix I**.

## 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

**MaterialLab**

Report No.: 0165/15/ED/1057

### 9. CONCLUSIONS

- 9.1 Commencement of Contract No. HY/2013/03 took place on 10 April 2015. The commencement date for construction works and the EM&A programme of Contract No. HY/2013/03 commenced on 29 August 2015 (commencement of Contract No. HY/2013/06 took place on 14 August 2015. The commencement date for construction works and the EM&A programme of Contract No. HY/2013/06 commenced on 13 September 2016 within Contract No. HY/2013/03 works area).
- 9.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.
- 9.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS2, AMS3B and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 9.4 There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 9.5 Summary of Action and Limit Level exceedance of water quality at the monitoring stations shown as shown at **Table 4.1** shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01.
- 9.6 There were Action Level exceedances on three days by the Environmental Team of Contract No. HY/2013/01 during reporting period. After investigation, it was concluded that all exceedances were not relevant to Contract No. HY/2013/03. There was no Action and Limit Level exceedance recorded on other monitoring dates at the monitoring stations shown as shown at **Table 4.1** by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 9.7 Ecological monitoring results at all transects are reported in the EM&A report prepared by Contract No. HY/2013/01.
- 9.8 Environmental site inspections were carried out on 3, 10, 17, 25 and 31 May 2018. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site inspections.
- 9.9 There was no complaint received in relation to the environmental impact during the report period.
- 9.10 There were no notifications of summons or prosecutions received during 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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and is set against a black rectangular background that has a thin white border.

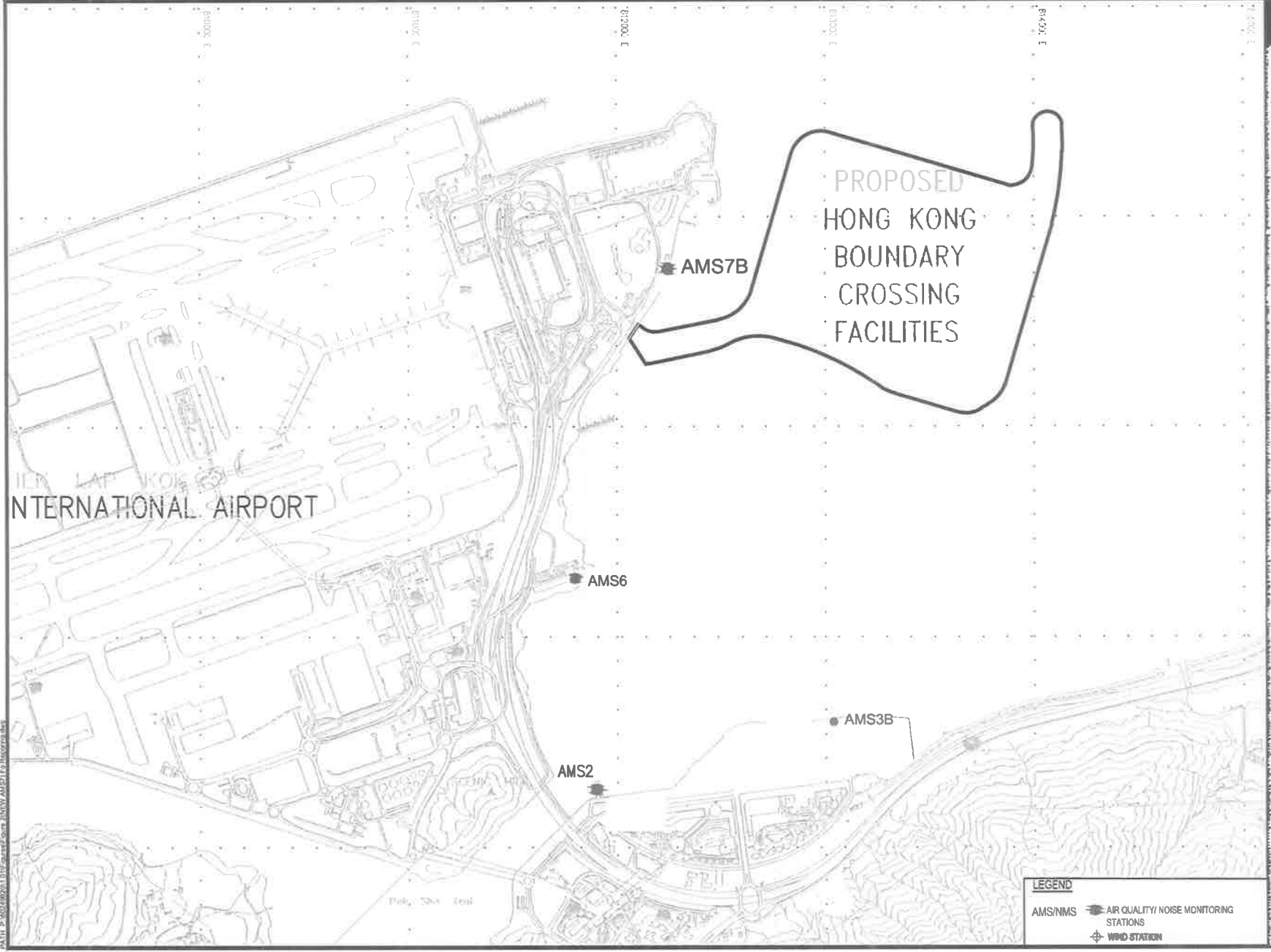
Report No.: 0165/15/ED/1057

---

### **Figure 1**

#### **Air Quality Monitoring Stations**

150.43 297mm x 420mm  
Checkdate  
Project Management Inhibitor  
11/09/2014  
P:\11 - P\20140201 - 11/09/2014\11/09/2014\11/09/2014.dwg



LEGEND	
AMS/NMS	AIR QUALITY/ NOISE MONITORING STATIONS
+	WIND STATION



AIR QUALITY AND NOISE MONITORING STATIONS FOR HKBCF

HONG KONG - ZHUHAI - MACAO BRIDGE  
HONG KONG BOUNDARY CROSSING FACILITIES  
- RECLAMATION WORKS  
Project No.: -

## **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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is centered between two thick, horizontal black bars.

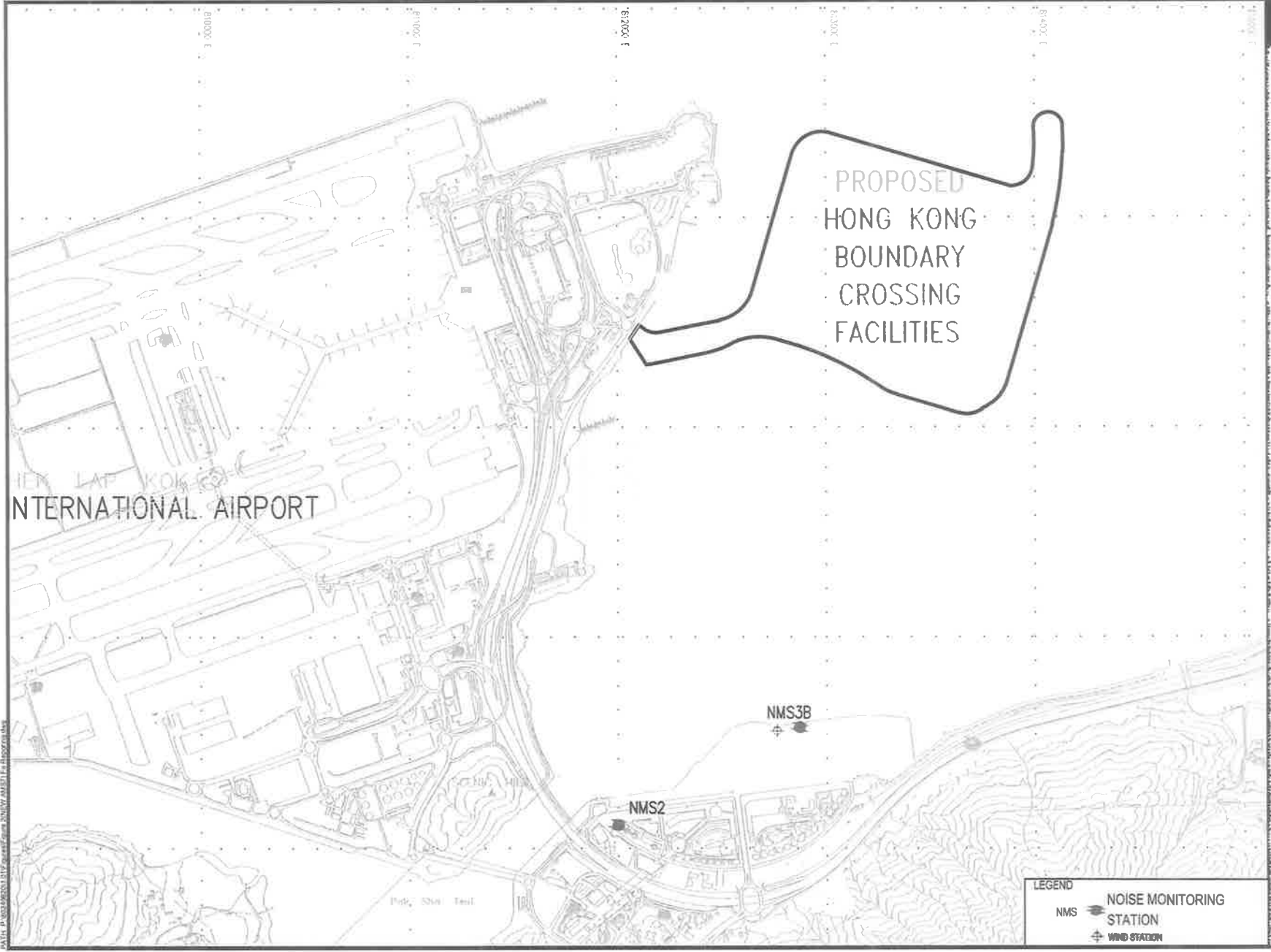
Report No.: 0165/15/ED/1057

---

### **Figure 2**

### **Noise Monitoring Stations**

150(A) 291mm x 420mm  
Checked:  
Project Management Inhibit:  
11/02/2016  
PASTE IN MONITORING STATION AND WIND STATION DATA



LEGEND	
NMS	NOISE MONITORING STATION
+	WIND STATION



AIR QUALITY AND NOISE MONITORING STATIONS FOR HKBCF

HONG KONG - ZHUHAI - MACAO BRIDGE  
HONG KONG BOUNDARY CROSSING FACILITIES  
- RECLAMATION WORKS  
Project No.:



## **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

---

**MaterialLab**

---

Report No.: 0165/15/ED/1057

---

### **Figure 3**

#### **Water Quality Monitoring Stations**



**LEGEND**

- IS      IMPACT STATIONS
- CS      CONTROL / FAR FIELD STATIONS
- △ SR      SENSITIVE RECEIVERS STATIONS

FIGURE 4.1— LOCATION OF WATER QUALITY MONITORING STATIONS

SETTING OUT SCHEDULE

MONITORING STATIONS	CO-ORDINATES	
	EASTING	NORTHING
IS5	811579	817106
IS(MF)6	812101	817873
IS7	812244	818777
IS8	814251	818412
IS(MF)9	813273	818850
IS10	812577	820670
IS10(N)	812942	820455
IS(MF)11	813562	820716
IS(MF)16	814328	819497
IS17	814539	820391
SR3(N)	810689	816591
SR4(N)	814705	817859
SR5	811489	820455
SR5(N)	812569	821475
SR6	805837	821818
SR7	814293	821431
SR10A(N)	823644	<b>823484</b>
SR10B(N2)	823689	<b>823159</b>
CS(MF)3	809989	821117
CS(MF)3(N)	808814	822355
CS(MF)5	817390	821129
CS4	810025	824004
CS6	817028	823992
CSA	818103	823064

## **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

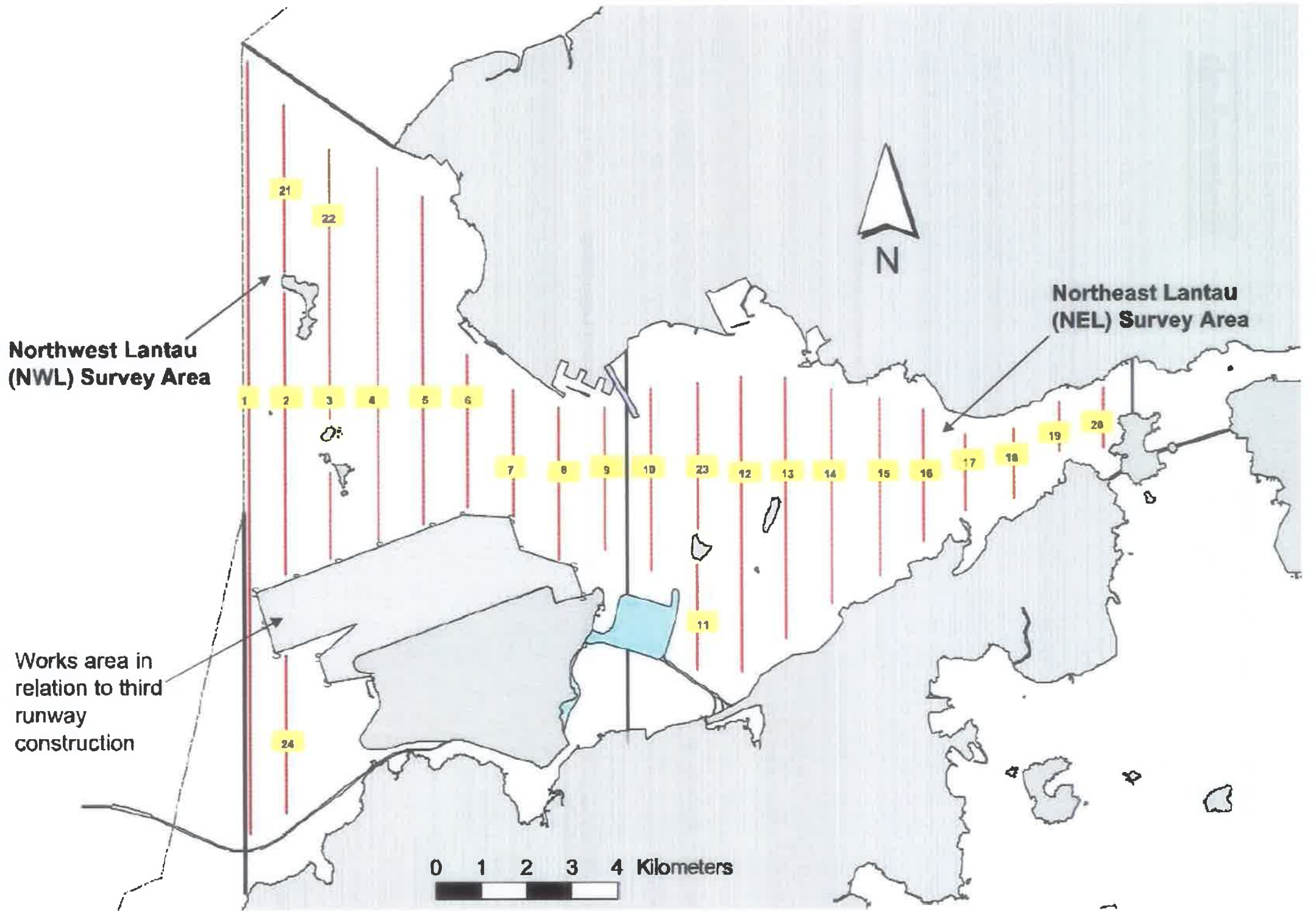
**MaterialLab**

Report No.: 0165/15/ED/1057

---

### **Figure 4**

#### **Ecological Monitoring Transect Line and Layout Map**



## **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

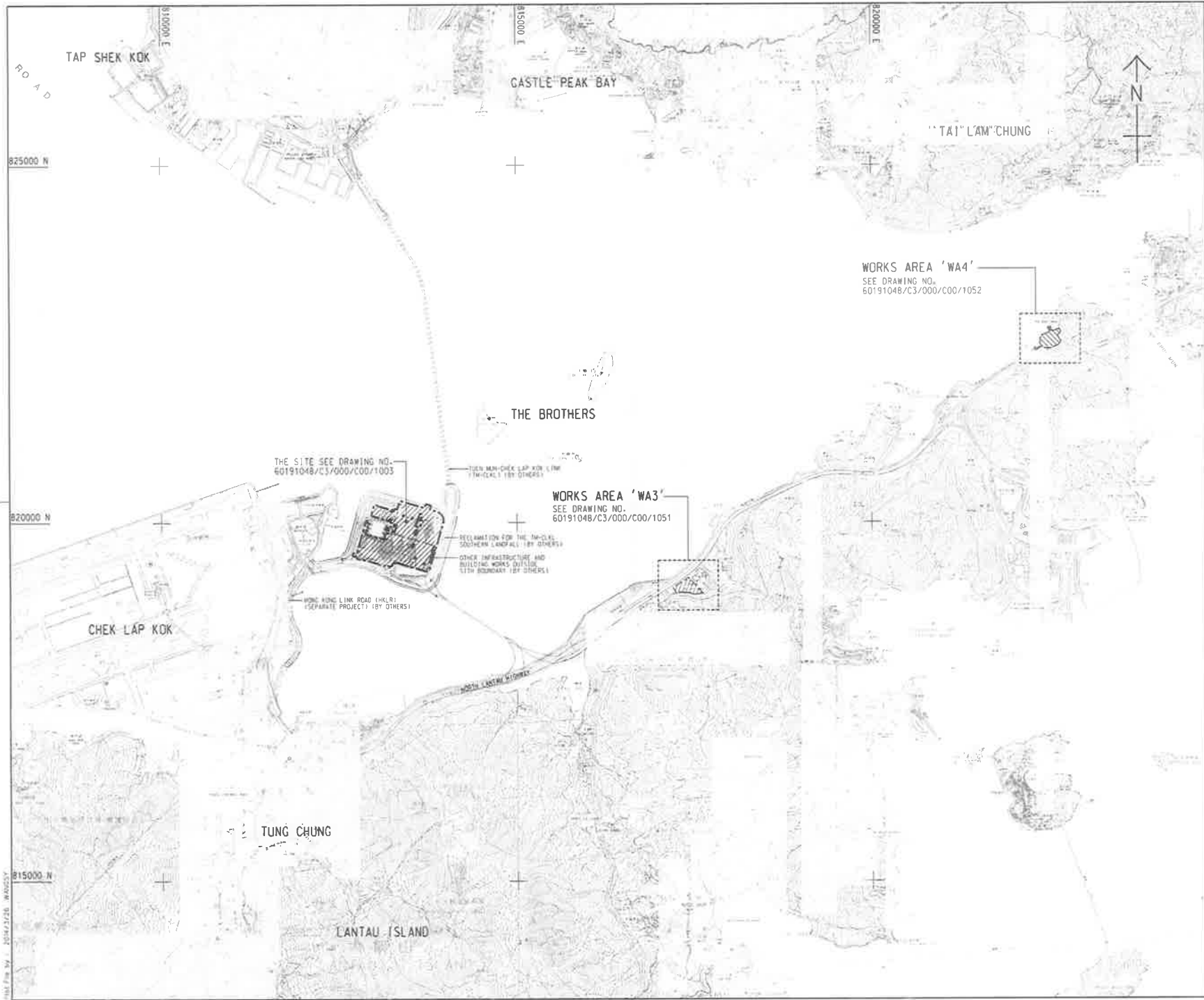
The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is centered between two thick, horizontal black bars.

Report No.: 0165/15/ED/1057

---

### **Appendix A**

#### **Location of Works Areas**



- NOTES:**
- COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
  - DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.
  - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C3/000/C00/1051 TO 1053.



THE SITE SEE DRAWING NO. 60191048/C3/000/C00/1003

TUEN MAN CHEK LAP KOK LINK (TUNCKEL) (BY OTHERS)

WORKS AREA 'WA3'  
SEE DRAWING NO. 60191048/C3/000/C00/1051

DECLARATION FOR THE FACILITY  
SCHEDULED UNDER ALL (BY OTHERS)

OTHER INFRASTRUCTURE AND  
BUILDING WORKS OUTSIDE  
SITE BOUNDARY (BY OTHERS)

HONG KONG LINK ROAD (HKL) (SEPARATE PROJECT) (BY OTHERS)

WORKS AREA 'WA4'  
SEE DRAWING NO. 60191048/C3/000/C00/1052

TEACHER DRAWING		DATE: MAR. 14
BY: [Signature]	SCALE: 1:25000	DATE: 2013



HONG KONG AIRPORT AUTHORITY  
HONG KONG AIRPORT BOUNDARY CROSSING FACILITIES  
(VEHICLE CLEARANCE PLAZAS AND  
ANCILLARY BUILDINGS AND FACILITIES)

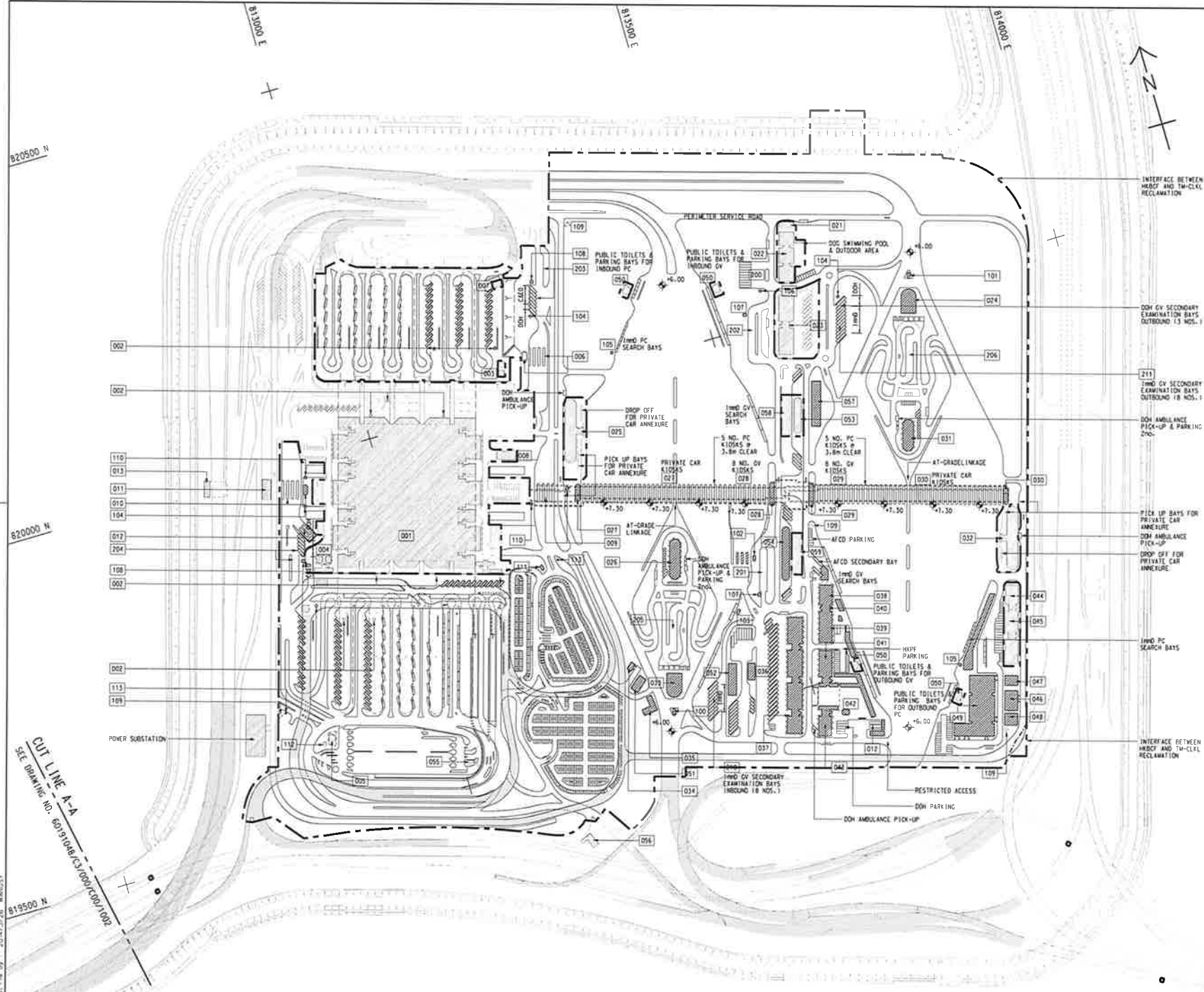
**SITE LOCATION PLAN**

**AECOM** +  
Rogers Stirk Harbour + Partners  
BURO HAPPOLD ATKINS ADI +  
**Aedas**

DRAWING NO. 60191048/C3/000/C00/1000	
DESIGNED BY: BWM	DATE: 11/2013/03
CHECKED BY: HSY	DATE: 12/11/13
SCALE: A1 1 : 25000	
PROJECT NO. 60191048/C3/000/C00/1000	

© COPYRIGHT RESERVED

10/1/2013 10:47:26 AM



**NOTE:**  
 1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NO. 60191048/C3/000/C00/1001.

- LEGEND:**
- SITE BOUNDARY
  - VIADUCT
  - BUILDING/FACILITIES

INTERFACE BETWEEN HRCF AND TM-CLEL RECLAMATION

PERIMETER SERVICE ROAD

PUBLIC TOILETS & PARKING BAYS FOR INBOUND PC

PUBLIC TOILETS & PARKING BAYS FOR INBOUND CY

DON SWIMMING POOL & OUTDOOR AREA

DON CY SECONDARY EXAMINATION BAYS (OUTBOUND 13 NOS.)

DON CY SECONDARY EXAMINATION BAYS (OUTBOUND 18 NOS.)

DON AMBULANCE PICK-UP & PARKING 270-

5 NO. PC K1054S P 3-BM CLEAR

8 NO. CY K1054S

AT-GRADE LINKAGE

PRIVATE CAR K1031/1054S

PICK UP BAYS FOR PRIVATE CAR ANNEXURE

DON AMBULANCE PICK-UP

DON CY SEARCH BAYS

AT-CD PARKING

AT-CD SECONDARY BAY

DON CY SEARCH BAYS

HSKP PARKING

PUBLIC TOILETS & PARKING BAYS FOR OUTBOUND CY

PUBLIC TOILETS & PARKING BAYS FOR OUTBOUND PC

DON AMBULANCE PICK-UP

RESTRICTED ACCESS

DON PARKING

DON AMBULANCE PICK-UP

POWER SUBSTATION

INTERFACE BETWEEN HRCF AND TM-CLEL RECLAMATION

820500 N

820000 N

819500 N

813500 E

814500 E

814000 E



CUT LINE A-A  
 SEE DRAWING NO. 60191048/C3/000/C00/1002

TENDER DRAWING		DATE	BY
REV.	DESCRIPTION	DATE	BY

**HA** 香港房屋委員會  
**HW** HIGHWAYS DEPARTMENT  
 港務局水陸口岸工程署  
 Hong Kong Water, Marine and Harbour Project Management Office

HONG KONG-ZHUHAI-MACAO BRIDGE  
 HONG KONG BOUNDARY CROSSING FACILITIES -  
 VEHICLE CLEARANCE PLAZAS AND  
 ANCILLARY BUILDINGS AND FACILITIES

Figure 1-1  
 Current Layout Plan

SHEET 1 OF 2

**AECOM** Aedas  
 Rogers Stark Harbour + Partners  
 BURRO HAPPOLD ATKINS ADI

DRG.NO 60191048/C3/000/C00/1001  
 圖紙編號

DESIGNED BY	BWCW	CONTRACT NO.	HY/2013/03	APPROVED BY	TKH
DRAWN BY	NSY	DATE	15/03/2013	SCALE	A1 1:2 2500
CHECKED BY	TKH	DATE	15/03/2013	UNIT	METRES

COPYRIGHT RESERVED  
 版權所有

SETTING OUT POINT

POINT	EASTING	NORTHING
301	817467.245	819142.683
302	817314.741	819069.828
303	817327.339	819049.295
304	817440.855	819317.811
305	817340.825	819029.214
306	817387.350	819023.405
307	817337.864	819043.396
308	817434.133	819001.047
309	817419.783	819087.181
310	817513.449	819113.764
311	817347.717	819016.082
312	817450.595	819032.307
313	817445.369	819032.157
314	817531.154	819001.045
315	817533.345	818991.506
316	817520.249	819000.620
317	817435.827	819058.596
318	817522.110	819015.588
319	817566.404	819028.472
320	817566.507	819008.126
321	817569.351	818998.921

817200 E

817000 E

817600 E

HONG KONG HIGHWAY



LOCATION PLAN  
SCALE 1 : 25000

NOTES:

- COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1990).
- DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.

LEGEND:

- WORKS AREA BOUNDARY
- PORTION 3.1
- PORTION 3.2
- PORTION 3.3
- PORTION 3.4
- PORTION 3.5
- PORTION 3.6
- PORTION 3.7
- PORTION 3.8
- PORTION 3.9
- PORTION 3.10
- NON-BUILDING AREA (200M<sup>2</sup> MIN.)

FOR CONSTRUCTION

C	WORKING DRAWING	REV. 44	MAY-15
B	TENDER ADDENDUM NO. 2	REV. SC1	MAY-14
A	TENDER ADDENDUM NO. 1	REV. SC1	APR-14
-	TENDER DRAWING	REV. SC1	MAR-14

**ROADWAYS DEPARTMENT**  
 道路及橋樑工程處  
 HONG KONG ROADWAY CROSSING FACILITIES  
 HONG KONG ROADWAY CROSSING FACILITIES  
 VEHICLE CLEARANCE PLAZAS AND  
 ANCILLARY BUILDINGS AND FACILITIES

WORKS AREA WA3

**AECOM** +  
 Rogers Stirk Harbour + Partners  
**Aedas**  
 BURD HAPPOLD ATKINS ADI +

DRGN. NO. 60191048/C3/000/C00/1051C

DESIGNED BY	BWCM	APPROVED BY	HY/2013/03	SCALE	1:1000
DRAWN BY	WSY	CHECKED BY	TRH	<b>WORKING DRAWING</b>	
DATE	AT 1 : 1000	© COPYRIGHT RESERVED			
UNIT	METRES	圖 樣 冊 號			

**CONTROLLED DOCUMENT**  
 不來發  
 繪圖控  
 查許文  
 能可性

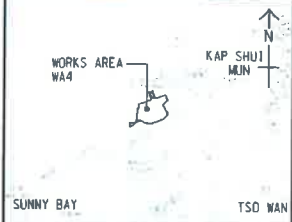
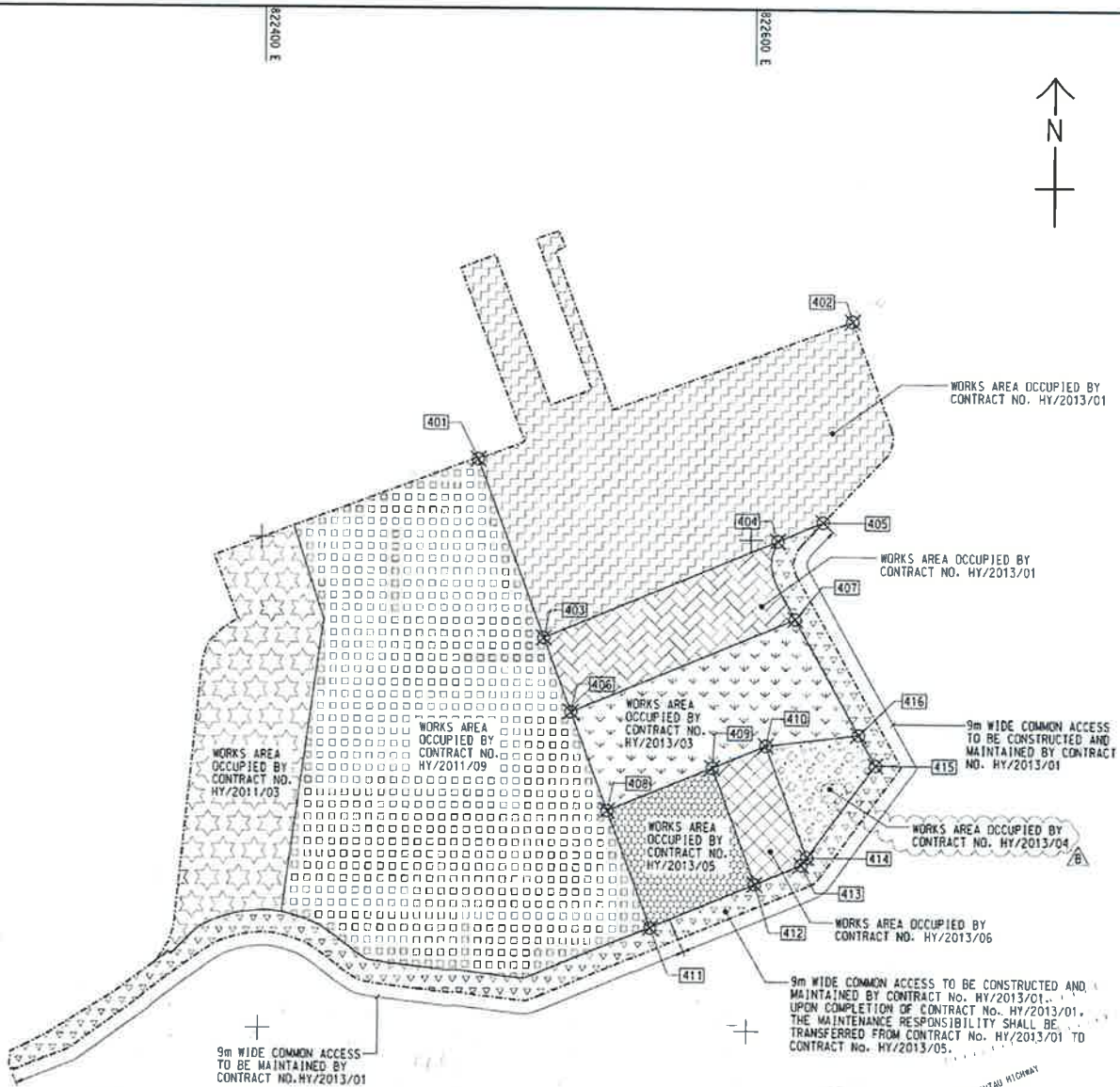
819200 N

819000 N

Plot File No.: 2014/3/13 10/02/14



SETTING OUT POINT		
POINT	EASTING	NORTHING
401	822488.151	822632.215
402	822640.593	822689.415
403	822515.608	822559.848
404	822610.940	822599.642
405	822629.428	822607.359
406	822526.988	822529.613
407	822618.348	822547.350
408	822542.232	822489.581
409	822584.983	822507.426
410	822508.886	822516.561
411	822560.276	822441.956
412	822602.949	822460.010
413	822621.914	822467.359
414	822624.130	822470.398
415	822631.725	822508.856
416	822644.758	822521.192



LOCATION PLAN  
SCALE 1 : 25000

NOTES:  
1. COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).  
2. DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.

LEGEND:

	WORKS AREA BOUNDARY
	PORTION 4.1
	PORTION 4.2
	PORTION 4.3
	PORTION 4.4
	PORTION 4.5
	PORTION 4.6
	PORTION 4.7
	PORTION 4.8
	PORTION 4.9

FOR CONSTRUCTION

C	WORKING DRAWING	HW/2013/01	MAY.13
B	TENDER ADDENDUM NO. 2	BWC/SC1	MAY.14
A	TENDER ADDENDUM NO. 1	BWC/SC1	APR.14
-	TENDER DRAWING	BWC/SC1	MAR.14

WORKS AREA WA4

**AECOM** +  
Rogers Stirk Harbour + Partners  
BURG HAPPOLD ATKINS ADI +

DRGNO. 60191048/C3/000/C00/1052C

DESIGNED BY	SWM	APPROVED BY	TKR
CHECKED BY	WSY	DATE	14/05/14
<b>WORKING DRAWING</b>			
SCALE: AT 1 : 1000			
METRES			

© COPYRIGHT RESERVED

## **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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and is set against a dark, rectangular background that has a slight gradient and a thin white border.

Report No.: 0165/15/ED/1057

---

### **Appendix B**

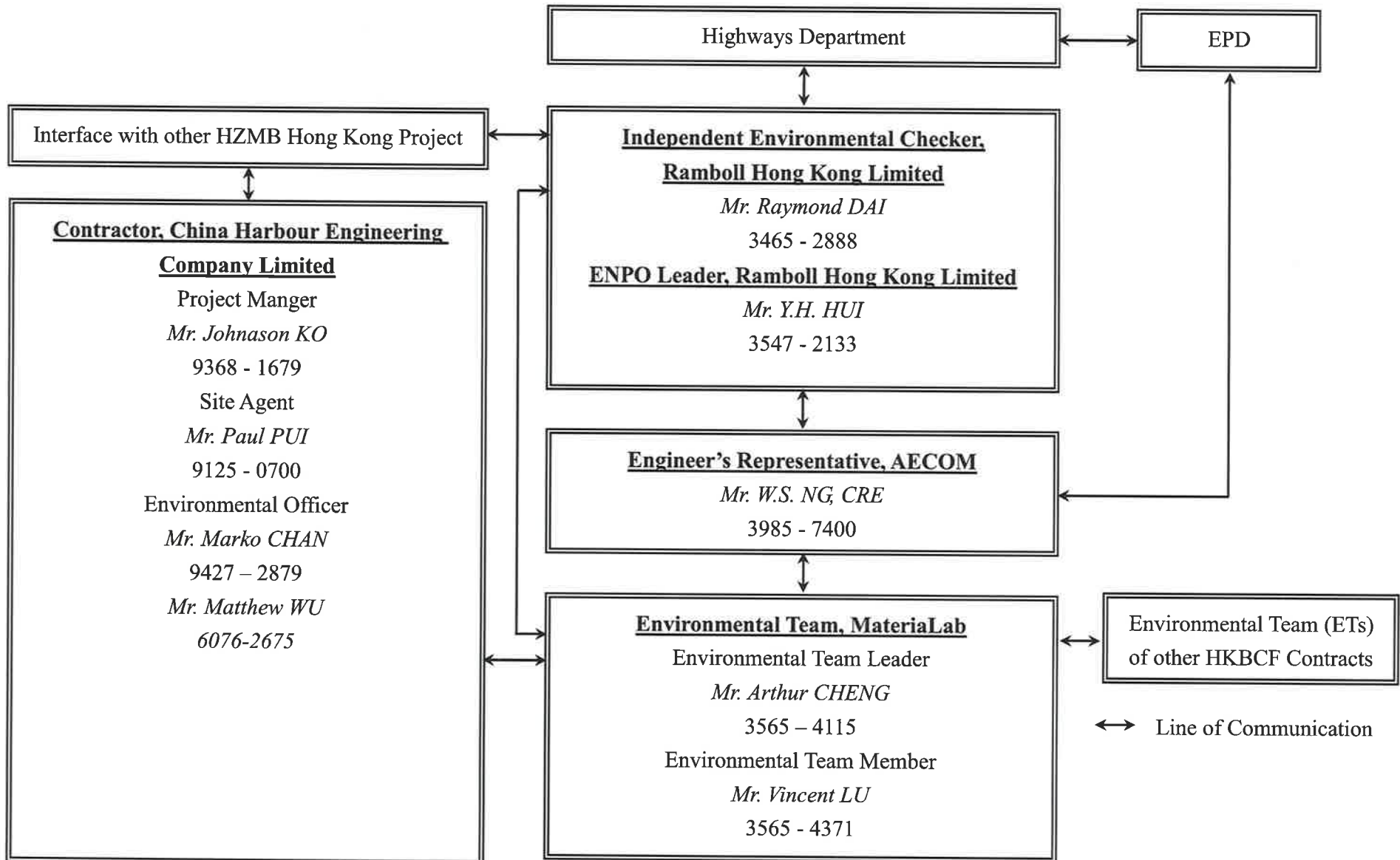
#### **Project Organization for Environmental Works**

# CHINA HARBOUR ENGINEERING COMPANY LIMITED



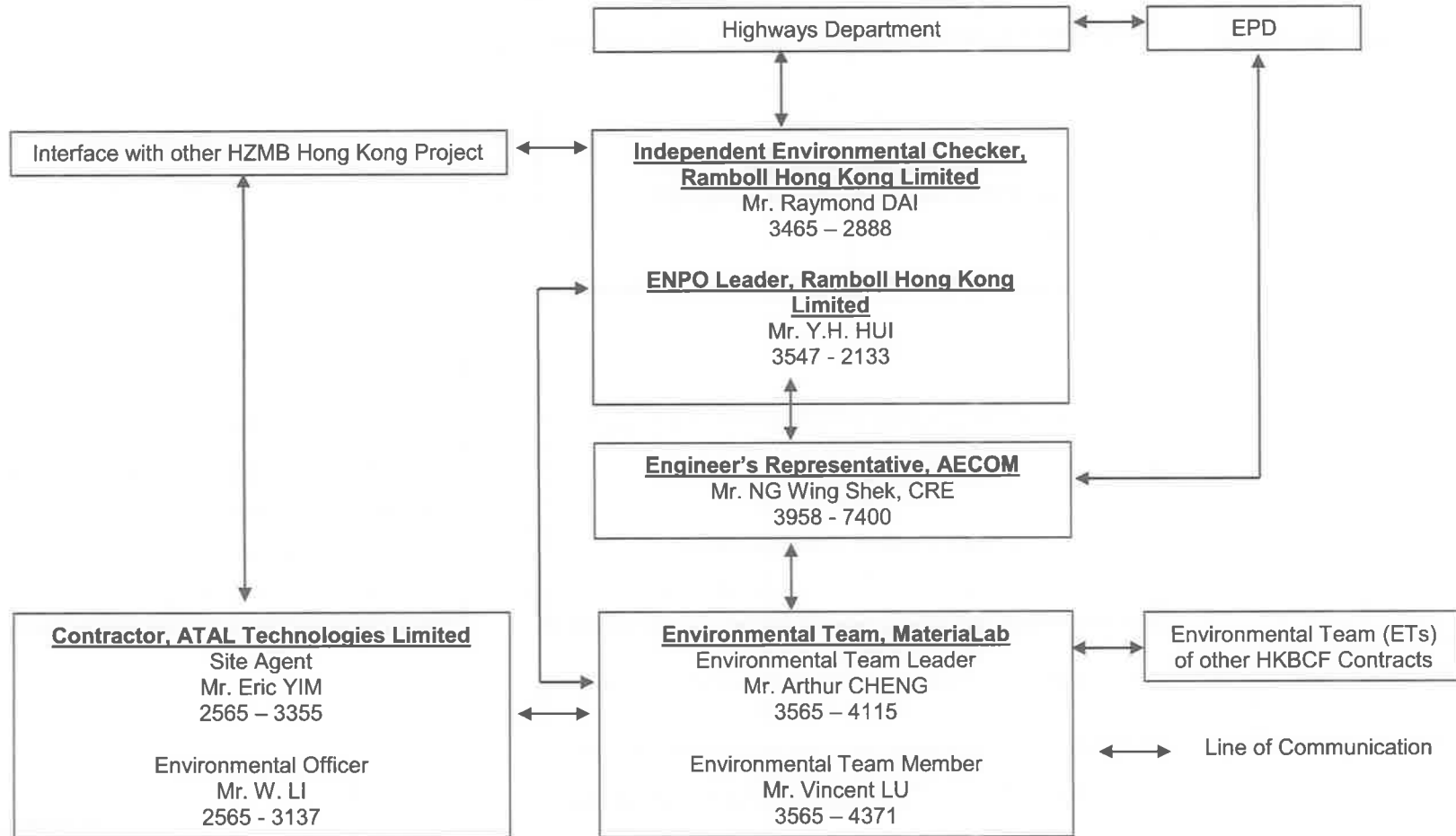
Contract No. HY/2013/03 Hong Kong-Zhuhai-Macao Bridge, Hong Kong Boundary Crossing  
Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities

## Projects Organization for Environmental Works



Contract No. HY/2013/06 (within Contract No. HY/2013/03 works area)  
 Hong Kong-Zhuhai-Macao Bridge, Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System

**Projects Organization for Environmental Works**



## **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

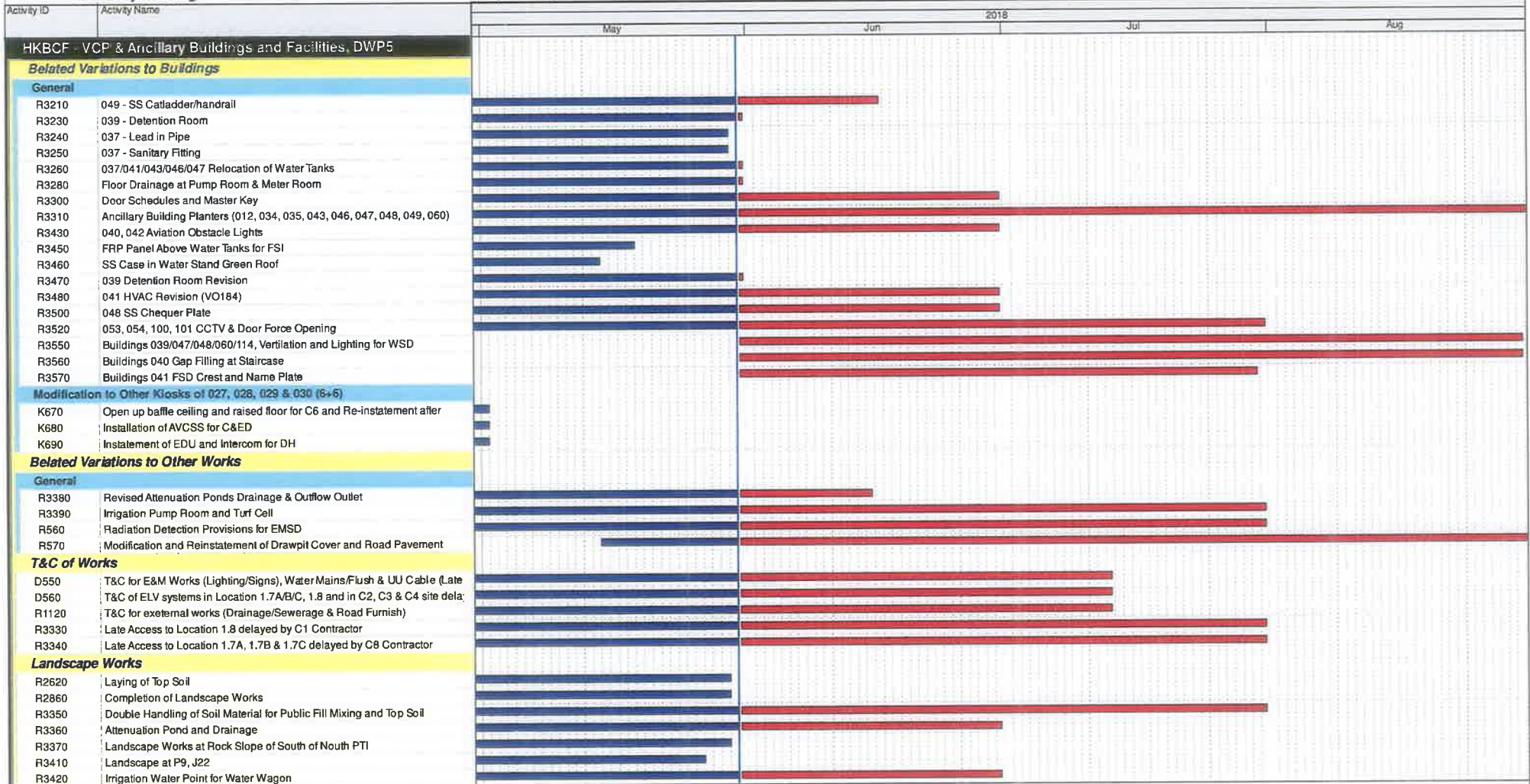
The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and is set against a black rectangular background that has horizontal lines above and below it.

Report No.: 0165/15/ED/1057

---

### **Appendix C**

### **Construction Programme**



■ Actual Work    ◆ Milestone  
■ Remaining Work  
■ Critical

**3MRP, AS OF 31 May 2018**  
**VEHICLE CLEARANCE PLAZAS AND ANCILLARY BUILDINGS AND FACILITIES**

Date	Revision	Checked	Approved
31-Mar-18	3MRP, updated as of 31 Mar. 2018	ZJ	
30-Apr-18	3MRP, updated as of 31 Apr. 2018	ZJ	
31-May-18	3MRP, updated as of 31 May 2018	ZJ	

Activity ID	Activity Name
<b>Hong Kong-Zhuhai_Macao Bridge Hong Kong Boundary Crossing F</b>	
<b>Key Dates</b>	
<b>Interface Activities</b>	
<b>Site and Facility Inspection</b>	
JS1200	Pre Site and Facility Inspection by Contractor at Location 4 - Deg2
JS1210	Joint Site and Facility Inspection with Interface Contractor at Location 4 - Deg2
JS1620	Pre Site and Facility Inspection by Contractor at Location 14 - Deg2
JS1630	Joint Site and Facility Inspection with Interface Contractor at Location 14 - Deg2
JS1760	Pre Site and Facility Inspection by Contractor at Location 18 - Deg1
JS1770	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg1
JS1780	Pre Site and Facility Inspection by Contractor at Location 18 - Deg2
JS1790	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg2
<b>Access Dates</b>	
AD1000	Location 1(PCB (001) Basement)-Deg1 (270d)
AD1010	Location 1(PCB (001) Basement)-Deg2 (380d)
AD1020	Location 1(PCB (001) ELV Room (Grid Line E3))-Deg1 (270d)
AD1030	Location 1(PCB (001) ELV Room (Grid Line E3))-Deg2 (380d)
AD1040	Location 2(PCB (001) First Floor Main Server Room)-Deg1 (330d)
AD1050	Location 2(PCB (001) First Floor Main Server Room)-Deg2 (380d)
AD1060	Location 2(PCB (001) First Floor Main Server Room) - For Server Installation - Deg2 (330d)
AD1070	Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3)) - Deg1 (330d)
AD1080	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) - Deg1 (330d)
AD1090	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) - Deg2 (380d)
AD1130	Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)-Deg2 (500d)
AD1150	Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,14)
AD1170	Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)-Deg2 (480d)
AD1190	Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)-Deg2 (480d)
AD1200	Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room) - For Server installation - Deg2 (480d)
AD1220	Location 4(Outbd Cargo Exam Bldg (023))-Deg2 (680d)
AD1240	Location 4a(Outbd Cargo Exam Bldg (023))-Deg2 (630d)
AD1270	Location 6(Common Utility Enclosure & Staff Subway)-Deg1 (400d)
AD1290	Location 7(Common Utility Enclosure & Staff Subway)-Deg1 (270d)
AD1300	Location 8(Inbd Private Car Annex (025))-Deg1 (430d)
AD1310	Location 8(Inbd Private Car Annex (025))-Deg2 (580d)
AD1320	Location 8(Inbd Private Car Annex (025) Canopy)-Deg1 (430d)
AD1330	Location 8(Inbd Private Car Annex (025) Canopy)-Deg2 (580d)
AD1340	Location 9(Outbd Private Car Annex (032))-Deg1 (520d)
AD1350	Location 9(Outbd Private Car Annex (032))-Deg2 (660d)
AD1360	Location 9(Outbd Private Car Annex (032) Canopy)-Deg1 (520d)
AD1370	Location 9(Outbd Private Car Annex (032) Canopy)-Deg2 (660d)
AD1501	Location 12(Inbd Private Car Kiosks(027))-Deg1 (400d) Phase 2
AD1510	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 1
AD1511	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 2
AD1521	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg1 (400d) Phase 2

2015		2016				2017				2018				2019			
Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
22-Oct-17, Hong Kong-Zhuhai_Macao Bridge																	
23-Jun-17, Site and Facility Inspection																	
Pre Site and Facility Inspection by Contractor at Location 4 - Deg2																	
Joint Site and Facility Inspection with Interface Contractor at Location 4 - Deg2																	
Pre Site and Facility Inspection by Contractor at Location 14 - Deg2																	
Joint Site and Facility Inspection with Interface Contractor at Location 14 - Deg2																	
Pre Site and Facility Inspection by Contractor at Location 18 - Deg1																	
Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg1																	
Pre Site and Facility Inspection by Contractor at Location 18 - Deg2																	
Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg2																	
24-Aug-17, Access Dates																	
Location 1(PCB (001) Basement)-Deg1 (270d), 31-May-17																	
Location 1(PCB (001) Basement)-Deg2 (380d), 15-Jun-17																	
Location 1(PCB (001) ELV Room (Grid Line E3))-Deg1 (270d), 31-May-17																	
Location 1(PCB (001) ELV Room (Grid Line E3))-Deg2 (380d), 15-Jun-17																	
Location 2(PCB (001) First Floor Main Server Room)-Deg1 (330d), 31-May-17																	
Location 2(PCB (001) First Floor Main Server Room)-Deg2 (380d), 15-Jun-17																	
Location 2(PCB (001) First Floor Main Server Room) - For Server Installation - Deg2 (330d), 31-May-17																	
Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3)) - Deg1 (330d), 31-May-17																	
Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) - Deg1 (330d), 31-May-17																	
Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) - Deg2 (380d), 15-Jun-17																	
Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)-Deg2 (500d), 31-May-17																	
Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,14), 31-May-17																	
Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)-Deg2 (480d), 31-May-17																	
Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)-Deg2 (480d), 31-May-17																	
Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room) - For Server installation - Deg2 (480d), 31-May-17																	
Location 4(Outbd Cargo Exam Bldg (023))-Deg2 (680d), 31-May-17																	
Location 4a(Outbd Cargo Exam Bldg (023))-Deg2 (630d), 31-May-17																	
Location 6(Common Utility Enclosure & Staff Subway)-Deg1 (400d), 31-May-17																	
Location 7(Common Utility Enclosure & Staff Subway)-Deg1 (270d), 31-May-17																	
Location 8(Inbd Private Car Annex (025))-Deg1 (430d), 31-May-17																	
Location 8(Inbd Private Car Annex (025))-Deg2 (580d), 31-May-17																	
Location 8(Inbd Private Car Annex (025) Canopy)-Deg1 (430d), 31-May-17																	
Location 8(Inbd Private Car Annex (025) Canopy)-Deg2 (580d), 31-May-17																	
Location 9(Outbd Private Car Annex (032))-Deg1 (520d), 31-May-17																	
Location 9(Outbd Private Car Annex (032))-Deg2 (660d), 31-May-17																	
Location 9(Outbd Private Car Annex (032) Canopy)-Deg1 (520d), 31-May-17																	
Location 9(Outbd Private Car Annex (032) Canopy)-Deg2 (660d), 31-May-17																	
Location 12(Inbd Private Car Kiosks(027))-Deg1 (400d) Phase 2, 31-May-17																	
Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 1, 31-May-17																	
Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 2, 31-May-17																	
Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg1 (400d) Phase 2, 31-May-17																	

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

- █ Actual Level of Effort ▼ summary
- █ Primary Baseline
- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◇ Baseline Milestone
- ◆ Milestone

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev.: 0	WC	LC
10-Mar-17	Rev.: 1.0a	WC	LC
5-May-17	Rev.: 1.0b	WC	LC





Activity ID	Activity Name
	Detailed Design Specification
	Construction Design and Management
	Supply/Manufacture Mock-up Items
	Supply/Manufacture prototypes
	Software Design, Coding and Testing
	Coding
	Software System Integration
	Prototype & Software Simulation Tests
	Procurement - Phase 1 / Section I
	Supply/Manufacture products for FAT
	Factory Acceptance Test (FAT)
	Supply/Manufacture Equipment
	Delivery and Bench Acceptance Test for Phase 1/ Section I
	Installation - Phase 1 / Section I
	Location 1(PCB (001) Basement)
EM1920	L1(001)B/F - Cable Laying and termination at Location 1 and Location 2
	Location 1(PCB (001) ELV Room (Grid Line E3))
EM1940	L1(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2
	Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3))
EM1960	L2(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2
	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5))
EM1080	L2(001)Health Ctrl Rm - Cable Laying and termination at Location 1 and Location 2
EM1100	L2(001)Health Ctrl Rm - Cable Splicing and Testing and Labeling
EM1120	L2(001)Health Ctrl Rm - Intercom and PA system Installation
EM1140	L2(001)Health Ctrl Rm - Intercom and PA system tuning
	Location 2(PCB (001) First Floor Main Server Room)
EM1000	L2(001)Main Server Rm - Cable Laying and termination at Location 1 and Location 2
EM1020	L2(001)Main Server Rm - Cable Splicing and Testing and Labeling
EM1040	L2(001)Main Server Rm - AVCSS Network and Server Installation
EM1060	L2(001)Main Server Rm - AVCSS Network and Server Tuning
	Location 3(Inbd Cargo Exam Bldg (037) MDF Room)
	Location 3(Inbd Cargo Exam Bldg (037) ELV Room)
	Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,14
EM2020	L3(037)Inspec Offices - Cable Laying and termination in Location 3 and Location 3a
EM2040	L3(037)Inspec Offices - Cable Splicing and Testing and Labeling
EM2060	L3(037)Inspec Offices - AVCSS SURCON WS and 55" LCD Installation
EM2080	L3(037)Inspec Offices - VTS WS Installation
EM2100	L3(037)Inspec Offices - SURCON and WS Tuning
	Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)
EM1160	L3(037)PLF Ctrl Rm - Cable Laying and termination in Location 3 and Location 3a
EM1180	L3(037)PLF Ctrl Rm - Cable Splicing and Testing and Labeling
EM1200	L3(037)PLF Ctrl Rm - AVCSS SYSSCON WS and 55" TV Wall Installation
EM1220	L3(037)PLF Ctrl Rm - AVCSS SYSSCON WS Tuning

2015				2016				2017				2018				2019			
Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
<p>▼ 01-Sep-17, Installation - Phase 1 / Section I</p> <p>▼ 22-Jun-17, Location 1(PCB (001) Basement)</p> <p>    L1(001)B/F - Cable Laying and termination at Location 1 and Location 2</p> <p>▼ 22-Jun-17, Location 1(PCB (001) ELV Room (Grid Line E3))</p> <p>    L1(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2</p> <p>▼ 22-Jun-17, Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3))</p> <p>    L2(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2</p> <p>▼ 18-Aug-17, Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5))</p> <p>    L2(001)Health Ctrl Rm - Cable Laying and termination at Location 1 and Location 2</p> <p>    L2(001)Health Ctrl Rm - Cable Splicing and Testing and Labeling</p> <p>    L2(001)Health Ctrl Rm - Intercom and PA system Installation</p> <p>    L2(001)Health Ctrl Rm - Intercom and PA system tuning</p> <p>▼ 21-Aug-17, Location 2(PCB (001) First Floor Main Server Room)</p> <p>    L2(001)Main Server Rm - Cable Laying and termination at Location 1 and Location 2</p> <p>    L2(001)Main Server Rm - Cable Splicing and Testing and Labeling</p> <p>    L2(001)Main Server Rm - AVCSS Network and Server Installation</p> <p>    L2(001)Main Server Rm - AVCSS Network and Server Tuning</p> <p>▼ 07-Aug-17, Location 3(Inbd Cargo Exam Bldg (037) MDF Room)</p> <p>    L3(037)Inspec Offices - Cable Laying and termination in Location 3 and Location 3a</p> <p>    L3(037)Inspec Offices - Cable Splicing and Testing and Labeling</p> <p>    L3(037)Inspec Offices - AVCSS SURCON WS and 55" LCD Installation</p> <p>    L3(037)Inspec Offices - VTS WS Installation</p> <p>    L3(037)Inspec Offices - SURCON and WS Tuning</p> <p>▼ 07-Aug-17, Location 3(Inbd Cargo Exam Bldg (037) ELV Room)</p> <p>    L3(037)PLF Ctrl Rm - Cable Laying and termination in Location 3 and Location 3a</p> <p>    L3(037)PLF Ctrl Rm - Cable Splicing and Testing and Labeling</p> <p>    L3(037)PLF Ctrl Rm - AVCSS SYSSCON WS and 55" TV Wall Installation</p> <p>    L3(037)PLF Ctrl Rm - AVCSS SYSSCON WS Tuning</p>																			

Programme No.: HZMB-DWP  
 Data Date: 14-Aug-15

<ul style="list-style-type: none"> <li>Actual Level of Effort</li> <li>Primary Baseline</li> <li>Actual Work</li> <li>Remaining Work</li> <li>Critical Remaining Work</li> <li>◇ Baseline Milestone</li> <li>◆ Milestone</li> </ul>	<ul style="list-style-type: none"> <li>summary</li> </ul>
---	---

Hong Kong-Zhuhai-Macao Bridge  
 Hong Kong Boundary Crossing  
 Facilities - Automatic Vehicle  
 Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC

Activity ID	Activity Name
<b>Location 3a(Inbdcargo Exam Bldg (037) ROCARS Room)</b>	
EM1240	L3a(037) ROCARS Rm - Cable Laying and termination in Location 3 and Location 3a
EM1260	L3a(037) ROCARS Rm - Cable Splicing and Testing and Labeling
EM1280	L3a(037) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation
EM1300	L3a(037) ROCARS Rm - VTS WS Installation
EM1320	L3a(037) ROCARS Rm - VID WS Installation
EM1340	L3a(037) ROCARS Rm - SURCON and SYSCON and WS Tuning
<b>Location 3a(Inbdcargo Exam Bldg (037) Main Server Room)</b>	
EM2120	L3a(037)Main Server Rm - Cable Laying and termination in Location 3 and Location 3a
EM2140	L3a(037)Main Server Rm - Cable Splicing and Testing and Labeling
EM2160	L3a(037)Main Server Rm - AVCSS Server Installation
EM2180	L3a(037)Main Server Rm - VTS Server Installation
EM2200	L3a(037)Main Server Rm - Servers Tuning
<b>Location 4(Outbd cargo Exam Bldg (023) MDF Room)</b>	
<b>Location 4a(Outbd cargo Exam Bldg (023) ROCARS Room)</b>	
EM2240	L4a(023)ROCARS Rm - Cable Splicing and Testing and Labeling
EM2260	L4a(023)ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation
EM2280	L4a(023)ROCARS Rm - VTS WS Installation
EM2300	L4a(023)ROCARS Rm - SYSCON and SURCON and WS Tuning
<b>Location 5(Common Utility Enclosure &amp; Staff Subway)</b>	
EM2341	L5(CUE) - Cable Laying between Location 5 and Location 6
EM2361	L5(CUE) - Cable Laying between Location 5 and Location 7
EM2380	L5(CUE) - Cable Splicing and Testing and Labeling
<b>Location 6(Common Utility Enclosure &amp; Staff Subway)</b>	
EM2400	L6(CUE) - Cable Laying between Location 5 and Location 6
EM2420	L6(CUE) - Cable Splicing and Testing and Labeling
<b>Location 7(Common Utility Enclosure &amp; Staff Subway)</b>	
EM2440	L7(CUE) - Cable Laying between Location 5 and Location 7
EM2460	L7(CUE) - Cable Splicing and Testing and Labeling
<b>Location 12(Inbdcargo Private Car Kiosks,GV Kiosks (027,028,029))</b>	
<b>Inbdcargo Private Car Kiosks(027) - 9 nos (Phase 1)</b>	
EM1500	L12(027)(9nos P1) - Cable Splicing and Testing and Labeling
EM1520	L12(027)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos)
EM1541	L12(027)(9nos P1) - XDB installation (18 nos)
EM1542	L12(027)(9nos P1) - ODB installation (5 nos)
EM1543	L12(027)(9nos P1) - ODB installation (2 nos)
EM1544	L12(027)(9nos P1) - ODB installation (2 nos)
EM1560	L12(027)(9nos P1) - Loop installation (45 nos)
<b>Inbdcargo Goods Vehicle Kiosks(028) - 5 nos (Phase 1)</b>	
EM1620	L12(028)(5nos P1) - Cable Laying and termination
EM1640	L12(028)(5nos P1) - Cable Splicing and Testing and Labeling
EM1660	L12(028)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos)
EM1681	L12(028)(5nos P1) - XDB installation (10 nos)
EM1682	L12(028)(5nos P1) - ODB installation (3 nos)
EM1683	L12(028)(5nos P1) - ODB installation (2 nos)

2015			2016				2017				2018				2019		
Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

Legend:

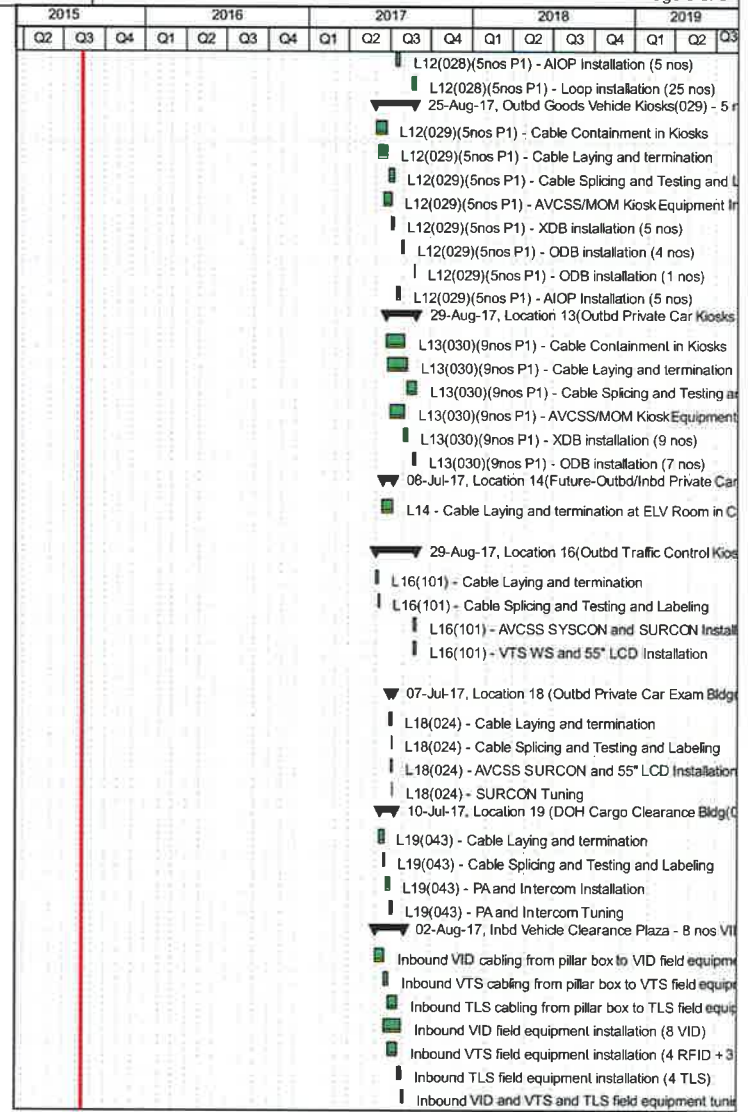
- Actual Level of Effort
- Primary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Baseline Milestone
- Milestone

summary

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC

Activity ID	Activity Name
EM1700	L12(028)(5nos P1) - AIOP Installation (5 nos)
EM1720	L12(028)(5nos P1) - Loop installation (25 nos)
<b>Outbd Goods Vehicle Kiosks(029) - 5 nos (Phase 1)</b>	
EM1740	L12(029)(5nos P1) - Cable Containment in Kiosks
EM1760	L12(029)(5nos P1) - Cable Laying and termination
EM1780	L12(029)(5nos P1) - Cable Splicing and Testing and Labeling
EM1800	L12(029)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos)
EM1821	L12(029)(5nos P1) - XDB installation (5 nos)
EM1822	L12(029)(5nos P1) - ODB installation (4 nos)
EM1823	L12(029)(5nos P1) - ODB installation (1 nos)
EM1840	L12(029)(5nos P1) - AIOP Installation (5 nos)
<b>Location 13(Outbd Private Car Kiosks (030)) - 9 nos (Phase 1)</b>	
EM2520	L13(030)(9nos P1) - Cable Containment in Kiosks
EM2540	L13(030)(9nos P1) - Cable Laying and termination
EM2560	L13(030)(9nos P1) - Cable Splicing and Testing and Labeling
EM2580	L13(030)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos)
EM2601	L13(030)(9nos P1) - XDB installation (9 nos)
EM2602	L13(030)(9nos P1) - ODB installation (7 nos)
<b>Location 14(Future-Outbd/Inbd Private Car Kiosks) - 6+6 nos</b>	
EM1440	L14 - Cable Laying and termination at ELV Room in CUE
<b>Location 15(Inbd Traffic Control Kiosk (100))</b>	
<b>Location 16(Outbd Traffic Control Kiosk (101))</b>	
EM2760	L16(101) - Cable Laying and termination
EM2780	L16(101) - Cable Splicing and Testing and Labeling
EM2800	L16(101) - AVCSS SYSCON and SURCON Installation
EM2820	L16(101) - VTS WS and 55" LCD Installation
<b>Location 17(Inbd Private Car Exam Bldg(033) Operational Office)</b>	
<b>Location 18 (Outbd Private Car Exam Bldg(024) Operational Office)</b>	
EM2940	L18(024) - Cable Laying and termination
EM2960	L18(024) - Cable Splicing and Testing and Labeling
EM2980	L18(024) - AVCSS SURCON and 55" LCD Installation
EM3000	L18(024) - SURCON Tuning
<b>Location 19 (DOH Cargo Clearance Bldg(043))</b>	
EM1360	L19(043) - Cable Laying and termination
EM1380	L19(043) - Cable Splicing and Testing and Labeling
EM1400	L19(043) - PA and Intercom Installation
EM1420	L19(043) - PA and Intercom Tuning
<b>Inbd Vehicle Clearance Plaza - 8 nos VID, 7 nos VTS, 4 nos TLS</b>	
EM3020	Inbound VID cabling from pillar box to VID field equipment
EM3040	Inbound VTS cabling from pillar box to VTS field equipment
EM3060	Inbound TLS cabling from pillar box to TLS field equipment
EM3080	Inbound VID field equipment installation (8 VID)
EM3100	Inbound VTS field equipment installation (4 RFID + 3 Cameras)
EM3120	Inbound TLS field equipment installation (4 TLS)
EM3140	Inbound VID and VTS and TLS field equipment tuning



Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

- Actual Level of Effort
- Primary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Baseline Milestone
- Milestone

summary

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC

Activity ID	Activity Name	2015			2016			2017			2018			2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
EM3160	Outbound VID cabling from pillar box to VID field equipment															
EM3180	Outbound VTS cabling from pillar box to VTS field equipment															
EM3200	Outbound TLS cabling from pillar box to TLS field equipment															
EM3220	Outbound VID field equipment installation (8 VID)															
EM3240	Outbound VTS field equipment installation (3 RFID + 3 Cameras)															
EM3260	Outbound TLS field equipment installation (4 TLS)															
EM3280	Outbound VID and VTS and TLS field equipment tuning															
<b>Outbd Vehicle Clearance Plaza - 8 nos VID, 6 nos VTS, 4 nos TLS</b>																
▼ 02-Aug-17, Outbd Vehicle Clearance Plaza - 8 nos V																
	Outbound VID cabling from pillar box to VID field equipment															
	Outbound VTS cabling from pillar box to VTS field equipment															
	Outbound TLS cabling from pillar box to TLS field equipment															
	Outbound VID field equipment installation (8 VID)															
	Outbound VTS field equipment installation (3 RFID + 3 Cameras)															
	Outbound TLS field equipment installation (4 TLS)															
	Outbound VID and VTS and TLS field equipment tuning															
<b>Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (037)</b>																
UD1000	(UUD1.1 [CUE-037]) - Cable laying and termination															
<b>(UUD1.2) between Inbd Cargo Exam Bldg South (037[S]) and DOH Cargo Clearance B</b>																
UD1060	(UUD1.2 [037[S]-043]) - Cable laying and termination															
<b>Underground Ducting (UUD6) between CUE and Shuttle Bus Kiosk (006) and Inbd Priv</b>																
<b>(UUD9.1) btw IB Cargo Exam Bldg South(037[S]) &amp; IB PC Exam Bldg(033) &amp; IB Traffic</b>																
UD1040	(UUD9.1 [037[S]-033-100) - Cable laying and termination															
<b>(UUD2) between Inbd Cargo Exam Bldg North (037[N]) to Inbd VCP</b>																
UD1010	(UUD2 [037[N]-IB VCP]) - Cable laying and termination															
<b>(UUD9.3) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza</b>																
UD1070	(UUD9.3 [033-IB VCP[W]) - Cable laying and termination															
<b>(UUD9.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza</b>																
UD1020	(UUD9.2 [033-IB VCP[E]) - Cable laying and termination															
<b>Underground Ducting (UUD7) between PCB(001) and Inbd Coach Kiosks(010)</b>																
<b>Underground Ducting (UUD3.1) between CUE and Outbd Cargo Exam Bldg (023)</b>																
UD1030	(UUD3.1 [CUE-023]) - Cable laying and termination															
<b>(UUD3.2) btw OB Car Exam Bldg(023) &amp; OB PC Exam Bldg(024) &amp; OB Traffic Control I</b>																
UD1050	(UUD3.2 [023-024-101]) - Cable laying and termination															
<b>Underground Ducting (UUD8) between CUE and Outbd PCA (032)</b>																
UD1100	(UUD8 [CUE-032]) - Cable laying and termination															
<b>(UUD4.1) between Outbd PC Exam Bldg (024) and Outbd Vehicle Clearance Plaza</b>																
UD1080	(UUD4.1 [024-OB VCP]) - Cable laying and termination															
<b>(UUD5) between Outbd Car Exam Bldg (023[S]) and Outbd Vehicle Clearance Plaza</b>																
UD1090	(UUD5 [023[S]-OB VCP]) - Cable laying and termination															
<b>Initial On-Site Test and Commissioning / Pre-SAT (Phase 1 / Section I)</b>																
<b>Site Acceptance Test (Phase 1 / Section I)</b>																
<b>Security Risk Assessment and Audit</b>																
<b>Operability Period Test (Phase 1 / Section I)</b>																
<b>Completion (Phase 1 /Section I)</b>																
<b>Training and Document (Phase 1 /Section I)</b>																
<b>Operation (Phase 1 /Section I)</b>																
<b>Engineering Support for Phase 1 / Section I</b>																
<b>Procurement - Phasa 2 / Section II</b>																
<b>Delivery and Bench Acceptance Test for Phase 2/Section II</b>																
<b>Installation - Phase 2 / Section II</b>																
▼ 30-Aug-17, Installation - Phase 2 / Section II																

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

- Actual Level of Effort
- Primary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Baseline Milestone
- Milestone

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev.: 0	WC	LC
10-Mar-17	Rev.: 1.0a	WC	LC
5-May-17	Rev.: 1.0b	WC	LC

Contract No.: HY/2013/06		Detail Work Programme		Page 7 of 8												
Activity ID	Activity Name															
		2015			2016			2017			2018			2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Location 8(Inbd Private Car Annex (025)) (Phase 2)</b>		<ul style="list-style-type: none"> <li>EM3370 L8(025) - Cable Containment in Kiosks</li> <li>EM3380 L8(025) - Cable Laying and termination</li> <li>EM3400 L8(025) - Cable Splicing and Testing and Labeling</li> </ul>														
<b>Location 9(Outbd Private Car Annex (032)) (Phase 2)</b>		<ul style="list-style-type: none"> <li>EM3500 L9(032) - Cable Containment in Kiosks</li> <li>EM3520 L9(032) - Cable Laying and termination</li> </ul>														
<b>Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section II)</b>		<ul style="list-style-type: none"> <li>Site Acceptance Test (Phase 2 / Section II)</li> <li>Operability Period Test (Phase 2 / Section II)</li> <li>Completion (Phase 2 / Section II)</li> <li>Engineering Support for Phase 2 / Section II</li> <li>Procurement for Phase2 / Section III</li> <li>Delivery and Bench Acceptance Test for Phase2 / Section III</li> <li>Installation - Phase 2 / Section III</li> </ul>														
<b>Location 10,11,12,13 (Vehicle Clearance Kiosks)</b>		<ul style="list-style-type: none"> <li><b>Location 12 Inbd Private Car Kiosks (027) - 12 nos (Phase 2)</b> <ul style="list-style-type: none"> <li>EM4440 L12(027)(12nos P2) - Cable Laying and termination</li> <li>EM4460 L12(027)(12nos P2) - Cable Splicing and Testing and Labeling</li> <li>EM4480 L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)</li> </ul> </li> <li><b>Location 13 Outbd Private Car Kiosks (030) - 12 nos (Phase 2)</b> <ul style="list-style-type: none"> <li>EM4560 L13(030)(12nos P2) - Cable Containment in Kiosks</li> </ul> </li> <li><b>Location 12 Outbd Goods Vehicle Kiosks (029) - 3 nos (Phase 2)</b> <ul style="list-style-type: none"> <li>EM4880 L12(029)(3nos P2) - Cable Laying and termination</li> <li>EM4900 L12(029)(3nos P2) - Cable Splicing and Testing and Labeling</li> <li>EM4920 L12(029)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)</li> <li>EM4940 L12(029)(3nos P2) - ODB &amp; XDB Installation (3 nos)</li> <li>EM4960 L12(029)(3nos P2) - AIOP Installation (3 nos)</li> <li>EM4980 L12(029)(3nos P2) - Loop Installation (15 nos)</li> </ul> </li> <li><b>Location 11 Outbd Coach Kiosks (009) - 4 nos (Phase 2)</b></li> <li><b>Location 12 Inbd Goods Vehicle Kiosks (028) - 3 nos (Phase 2)</b> <ul style="list-style-type: none"> <li>EM4720 L12(028)(3nos P2) - Cable Laying and termination</li> <li>EM4740 L12(028)(3nos P2) - Cable Splicing and Testing and Labeling</li> <li>EM4760 L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)</li> <li>EM4780 L12(028)(3nos P2) - ODB &amp; XDB Installation (3 nos)</li> <li>EM4800 L12(028)(3nos P2) - AIOP Installation (3 nos)</li> <li>EM4820 L12(028)(3nos P2) - Loop Installation (15 nos)</li> <li>EM4840 L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)</li> <li>EM5120 L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete</li> </ul> </li> <li><b>Location 10 Shuttle Bus Kiosks (006) - 4 nos (Phase 2)</b> <ul style="list-style-type: none"> <li>EM4000 L10(006)(4nos P2) - Cable Containment in Kiosks</li> </ul> </li> <li><b>Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-1</b></li> <li><b>Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-2</b></li> </ul>														
<b>Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section III)</b>		<ul style="list-style-type: none"> <li>09-Oct-17, Installation - Phase 2 / Section III</li> <li>09-Oct-17, Location 10,11,12,13 (Vehicle Clearance Kiosks)</li> <li>09-Oct-17, Location 12 Inbd Private Car Kiosks</li> <li>L12(027)(12nos P2) - Cable Laying and termination</li> <li>L12(027)(12nos P2) - Cable Splicing and Testing and Labeling</li> <li>L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)</li> <li>01-Sep-17, Location 13 Outbd Private Car Kiosks</li> <li>L13(030)(12nos P2) - Cable Containment in Kiosks</li> <li>31-Aug-17, Location 12 Outbd Goods Vehicle Kiosks</li> <li>L12(029)(3nos P2) - Cable Laying and termination</li> <li>L12(029)(3nos P2) - Cable Splicing and Testing and Labeling</li> <li>L12(029)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)</li> <li>L12(029)(3nos P2) - ODB &amp; XDB Installation (3 nos)</li> <li>L12(029)(3nos P2) - AIOP Installation (3 nos)</li> <li>L12(029)(3nos P2) - Loop Installation (15 nos)</li> <li>24-Aug-17, Location 12 Inbd Goods Vehicle Kiosks</li> <li>L12(028)(3nos P2) - Cable Laying and termination</li> <li>L12(028)(3nos P2) - Cable Splicing and Testing and Labeling</li> <li>L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)</li> <li>L12(028)(3nos P2) - ODB &amp; XDB Installation (3 nos)</li> <li>L12(028)(3nos P2) - AIOP Installation (3 nos)</li> <li>L12(028)(3nos P2) - Loop Installation (15 nos)</li> <li>L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)</li> <li>L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete</li> <li>30-Aug-17, Location 10 Shuttle Bus Kiosks (006)</li> <li>L10(006)(4nos P2) - Cable Containment in Kiosks</li> </ul>														

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

█ Actual Level of Effort ▼ summary  
█ Primary Baseline  
█ Actual Work  
█ Remaining Work  
█ Critical Remaining Work  
◇ Baseline Milestone  
◆ Milestone

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC

Activity ID: Activity Name

2015			2016				2017				2018				2019	
Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2

- Site Acceptance Test (Phase 2 / Section III)
- Operability Period Test (Phase 2 / Section III)
- Completion (Phase 2 / Section III)
- Operation (Phase 2 / Section III)
- Defect Liability Period (DLP)
- Document Submission (Phase 2 / Section III)

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

- Actual Level of Effort
- Primary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Baseline Milestone
- Milestone

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	ILC
10-Mar-17	Rev: 1.0a	WC	ILC
5-May-17	Rev: 1.0b	WC	ILC

## **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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is centered between two thick, horizontal black bars.

Report No.: 0165/15/ED/1057

---

### **Appendix D**

#### **Event / Action Plan**

**Appendix D –**

**Event / Action Plan for Air Quality and Noise Monitoring and Water Quality Monitoring and Ecological Monitoring**

Event / Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
<b>Action Level</b>				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures;  2. Inform IEC and ER;  3. Repeat measurement to confirm finding;  4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET;  2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice;  2. Amend working methods if appropriate.



Event	Action			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>4. Repeat measurements to confirm findings;</li> <li>5. Increase monitoring frequency to daily;</li> <li>6. Discuss with IEC and Contractor on remedial actions required;</li> <li>7. If exceedance continues, arrange meeting with IEC and ER;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial to ER within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>

Event	Action			
	ET	IEC	ER	Contractor
<b>Limit Level</b>				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures;  2. Inform ER, Contractor and EPD;  3. Repeat measurement to confirm finding;  4. Increase monitoring frequency to daily;  5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET;  2. Check Contractor's working method;  3. Discuss with ET and Contractor on possible remedial measures;  4. Advise the ER on the effectiveness of the proposed remedial measures;  5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing;  2. Notify Contractor;  3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance;  2. Submit proposals for remedial actions to IEC within 3 working days of notification;  3. Implement the agreed proposals;  4. Amend proposal if appropriate.

Event	Action			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedances abated.</li> </ol>

Event / Action Plan for Construction Noise Monitoring

Event	Action			
	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify IEC and Contractor;</li> <li>2. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>3. Report the results of investigation to the IEC,ER and Contractor;</li> <li>4. Discuss with the Contractor and formulate remedial measures;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analysed results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC;</li> <li>2. Implement noise mitigation proposals.</li> </ol>

Event	Action			
	ET	IEC	ER	Contractor
Limit Level	<ol style="list-style-type: none"> <li>1. Inform IEC, ER, EPD and Contractor;</li> <li>2. Identify source;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

### Event / Action Plan for Water Quality

Event	ET Leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in situ measurement on next day of exceedance to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, contractor and ER</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of noncompliance in writing</li> <li>2. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of noncompliance in writing</li> <li>2. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the noncompliance in writing</li> <li>2. Rectify unacceptable practice</li> <li>3. Amend working methods if appropriate</li> </ol>
Action level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in situ measurement to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, Contractor and ER</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor</li> <li>6. Ensure mitigation measures are implemented</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Action level</li> <li>8. Repeat measurement on next day of exceedance to confirm findings</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method</li> <li>2. Discuss with ET and Contractor on possible remedial actions</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly</li> <li>4. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of noncompliance in writing</li> <li>2. Discuss with IEC on the proposed mitigation measures</li> <li>3. Make agreement on mitigation measures to be implemented</li> <li>4. Ensure mitigation measures are properly implemented</li> <li>5. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the Engineer and confirm notification of the noncompliance in writing</li> <li>2. Rectify unacceptable practice</li> <li>3. Check all plant and equipment and consider changes of working methods</li> <li>4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER within 3 working days of notification</li> <li>5. Implement the agreed mitigation measures</li> <li>6. Amend working methods if appropriate</li> </ol>

<b>Event</b>	<b>ET Leader</b>	<b>IEC</b>	<b>ER</b>	<b>Contractor</b>
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, Contractor, ER and EPD</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor</li> <li>6. Ensure mitigation measures are implemented</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit level</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method</li> <li>2. Discuss with ET and Contractor on possible remedial actions</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly</li> <li>4. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures</li> <li>3. Request Contractor to critically review the working methods</li> <li>4. Ensure mitigation measures are properly implemented</li> <li>5. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the noncompliance in writing</li> <li>2. Rectify unacceptable practice</li> <li>3. Check all plant and equipment and consider changes of working methods</li> <li>4. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER</li> <li>5. Implement the agreed mitigation measures</li> <li>6. Amend working methods if appropriate</li> </ol>
Limit level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, contractor, ER and EPD</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor</li> <li>6. Ensure mitigation measures are implemented</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method</li> <li>2. Discuss with ET and Contractor on possible remedial actions</li> <li>3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the ER accordingly</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures</li> <li>3. Request Contractor to critically review the working methods</li> <li>4. Make agreement on the mitigation measures to be implemented</li> <li>5. Ensure mitigation measures are properly implemented</li> <li>6. Assess the effectiveness of the implemented mitigation measures</li> <li>7. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the noncompliance in writing</li> <li>2. Take immediate action to avoid further exceedance</li> <li>3. Rectify unacceptable practice</li> <li>4. Check all plant and equipment and consider changes of working methods</li> <li>5. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER</li> <li>6. Implement the agreed mitigation measures</li> <li>7. Resubmit proposals of mitigation measures if problem still not under control</li> <li>8. As directed by the engineer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level</li> </ol>

## Event / Action Plan for Ecological Monitoring

Event	ET Leader	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Repeat statistical data analysis to confirm findings;</li> <li>2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&amp;A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences;</li> <li>3. Identify source(s) of impact;</li> <li>4. Inform the IEC, ER/SOR and Contractor;</li> <li>5. Check monitoring data.</li> <li>6. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor;</li> <li>2. Discuss monitoring results and finding with the ET and the Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss monitoring with the IEC and any other measures proposed by the ET;</li> <li>2. If ER/SOR is satisfied with the proposal of any other measures, ER/SOR to signify the agreement in writing on the measures to be implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER/SOR and confirm notification of the non-compliance in writing;</li> <li>2. Discuss with the ET and the IEC and propose measures to the IEC and the ER/SOR;</li> <li>3. Implement the agreed measures.</li> </ol>



Event	ET Leader	IEC	ER	Contractor
Limit Level	<ol style="list-style-type: none"> <li>1. Repeat statistical data analysis to confirm findings;</li> <li>2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&amp;A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences;</li> <li>3. Identify source(s) of impact;</li> <li>4. Inform the IEC, ER/SOR and Contractor of findings;</li> <li>5. Check monitoring data;</li> <li>6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.</li> <li>7. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, ER/SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or consider to control/temporarily stop relevant construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor;</li> <li>2. Discuss monitoring results and findings with the ET and the Contractor;</li> <li>3. Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>4. Review proposals for additional monitoring and any other mitigation measures submitted by ET and Contractor and advise ER/SOR of the results and findings accordingly.</li> <li>5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise ER/SOR the results and findings accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>2. If ER/SOR is satisfied with the proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, ER/SOR to signify the agreement in writing on such proposals and any other mitigation measures.</li> <li>3. Supervise the implementation of additional monitoring and/or any other mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER/SOR and confirm notification of the non-compliance in writing;</li> <li>2. Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary.</li> <li>4. Implement the agreed additional dolphin monitoring and/or any other mitigation measures.</li> </ol>

## **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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is centered between two thick, horizontal black bars.

Report No.: 0165/15/ED/1057

### **Appendix E**

#### **Waste Flow Table**



**Monthly Summary of Waste Flow Table for 2018 (year)**

Name of Person completing the Record: Marko Chan

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
		(see Note 1)						(see Note 2)		
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000m <sup>3</sup> )
Jan	9.366	0	0	0.684	8.682	0	0	0	0	1.584
Feb	2.092	0	0	0	2.092	0	0	0	0	2.062
Mar	2.471	0	0	0	2.471	0	0	0	0	3.125
Apr	49.459	0	0	42.544	6.915	0	0	0	0	3.086
May	15.066	0	0	13.123	1.943	0	0	0	0	2.165
Jun										
Jul										
Aug										
Sept										
Oct										
Nov										
Dec										
<b>Total</b>	<b>78.454</b>	<b>0.000</b>	<b>0.000</b>	<b>56.351</b>	<b>22.103</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>12.022</b>

Notes:

- (1) Broken concrete for recycling into aggregates.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

ATAL Technologies Ltd.  
 Contract: HY/2013/06 HKBCF- Automatic Vehicle Clearance Support System  
 Location: Artificial Island of HKBCF (C3 Area)

**Monthly Summary Waste Flow Table for 2018**

Month	Inert C&D Waste disposal / 鹽性廢物 (in tonnes) (see Note 1)						Non-inert C&D Waste disposal 非鹽性廢物 (in tonnes)		Waste to be recycled and returned / 可再循環利用或回收的廢物								Total Quantity Generated 總生產量	
	Reused in the Work Package (e.g. backfilling) 再用於工程 (如回填)		Reused in other Projects 再用於其他工程		Inert Waste (e.g. soil, broken concrete, rubble, fill material etc.) 鹽性廢物 (如泥, 石矢頭, 石, 填料等)		Others (e.g. general refuse, broken formwork etc) 其他 (如垃圾, 廢板枋等)		Metals 金屬		Plastic 塑膠		Paper/cardboard packaging 廢紙/包裝紙類		Chemical Waste 化學廢物			
	(b)		(c)		(d)		(e)		(in tonnes)		(in tonnes)		(in tonnes)		(in litre)		(a)=(b+c+d+e)	
	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量
January	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.100	0.030	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.100
February	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050
March	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050
April	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050
<b>May</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.030</b>	<b>0.030</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.030</b>	<b>0.030</b>
June																		
July																		
August																		
September																		
October																		
November																		
December																		
<b>Total</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.280</b>	<b>0.280</b>	<b>0.060</b>	<b>0.060</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.280</b>	<b>0.280</b>

 Notes: (1) The quantiles of C&D Materials, in tonne, was calculated by multiply the estimated volume, in m3, with the density of the soil, which is 1.5 gcm<sup>-3</sup>.

## **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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and is set against a black rectangular background that has horizontal lines above and below the text.

Report No.: 0165/15/ED/1057

---

### **Appendix F**

#### **Environmental Licenses and Permits**

**Environmental Permit / Licences Summary for Contract No. HY/2013/03**

(update: 04/06/2018)

Item	Permit/Licence Registration	Permit No.	Work Area	Application Date	Issue Date	Valid Date		Status	Remark
						From	To		
1	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/H	HKBCF	16-Jan-15	19 Jan 15	19 Jan 15	Nil	Superseded	
2	Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	Ref No. 387703	Main Site Area	15-Apr-15	15-Apr-15	15-Apr-15	Nil	Valid	
3	Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	Ref No. 387735	Works Area WA3	15-Apr-15	15-Apr-15	15-Apr-15	Nil	Valid	
4	Billing A/C for Construction Waste Disposal Pursuant to Section 6 & 9 of the Waste Disposal (Charges for Disposal of Construction waste) Regulation	A/C No. 7022228	Main Site Area, WA3 & 4	15-Apr-15	06-May-15	06-May-15	Nil	Valid	
5	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0477-15	Works Area WA3	20-Apr-15	04-May-15	18-May-15	17-Nov-15	Expired	
6	Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation	5213-951-C1186-28	Main Site Area	28-Apr-15	01-Jun-15	01-Jun-15	Nil	Valid	
7	Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation	5213-974-C3597-03	Works Area WA4	28-Apr-15	01-Jun-15	01-Jun-15	Nil	Valid	
8	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00022180-2015	Works Area WA3	29-Apr-15	04-Aug-15	03-Aug-15	31-Aug-20	Valid	
9	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00022391-2015	Main Site Area	06-May-15	04-Sep-15	04-Sep-15	30-Sep-20	Superseded	
10	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0566-15	Box Culvert D	08-May-15	22-May-15	08-Jun-15	07-Nov-15	Expired	
11	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0674-15	CUE	05-Jun-15	19-Jun-15	19-Jun-15	18-Aug-15	Expired	
12	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/I	HKBCF	30-Jun-15	17-Jul-15	17-Jul-15	Nil	Superseded	
13	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0020-15	Drill Tower	06-Jul-15	20-Jul-15	01-Aug-15	30-Nov-15	Expired	
14	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0999-15	CUE	28-Aug-15	11-Sep-15	14-Sep-15	10-Dec-15	Superseded	
15	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1065-15	Portion A1	15-Sept-15	29-Sep-15	30-Sep-15	31-Dec-15	Superseded	

16	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1203-15	CUE	20-Oct-15	03-Nov-15	02-Nov-15	31-Jan-16	Superseded	
17	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-121	South of Brothers (CMP2)	26-Oct-15	17-Dec-15	18-Dec-15	17-Jan-16	Expired	
18	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1315-15	Portion G	12-Nov-15	26-Nov-15	28-Nov-15	28-Feb-16	Expired	
19	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0029-15	Drill Tower	27-Nov-15	11-Dec-15	14-Dec-15	13-Apr-16	Expired	
20	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1388-15	Main Site Area	27-Nov-15	16-Dec-15	21-Dec-15	18-Mar-16	Superseded	
21	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0035-16	Main Site Area	31-Dec-15	14-Jan-16	18-Jan-16	17-Mar-16	Superseded	
22	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-161	South of Brothers (CMP2)	31-Dec-15	15-Jan-16	20-Jan-16	19-Feb-16	Expired	
23	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-177	South of Brothers (CMP2)	26-Jan-16	11-Feb-16	20-Feb-16	19-Mar-16	Expired	
24	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/J	HKBCF	18-Feb-16	25-Feb-16	25-Feb-16	Nil	Superseded	
25	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0009-16	Portion G	02-Mar-16	16-Mar-16	21-Mar-16	20-Jul-16	Expired	
26	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0244-16	Main Site Area	03-Mar-16	17-Mar-16	18-Mar-16	18-Jun-16	Expired	
27	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0249-16	Main Site Area	03-Mar-16	17-Mar-16	19-Mar-16	18-Jun-16	Superseded	
28	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0269-16	Floating Concrete Batching Plant	03-Mar-16	17-Mar-16	19-Mar-16	18-Jun-16	Superseded	
29	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-202	East of Sha Chau (CMP Vd)	09-Mar-16	18-Mar-16	24-Mar-16	23-Apr-16	Expired	
30	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/K	HKBCF	24-Mar-16	11-Apr-16	11-Apr-16	Nil	Valid	
31	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0348-16	Main Site Area	29-Mar-16	12-Apr-16	15-Apr-16	14-Jul-16	Superseded	
32	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-007	East of Sha Chau (CMP Vd)	08-Apr-16	19-Apr-16	24-Apr-16	23-May-16	Expired	
33	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-029	East of Sha Chau (CMP Vd)	09-May-16	19-May-16	24-May-16	23-Jun-16	Expired	

34	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-040	East of Sha Chau (CMP Vd)	31-May-16	13-Jun-16	14-Jun-16	13-Jul-16	Expired	
35	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0607-16	Main Site Area	02-Jun-16	16-Jun-16	19-Jun-16	18-Sep-16	Superseded	
36	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0629-16	Floating Concrete Batching Plant	02-Jun-16	16-Jun-16	19-Jun-16	18-Dec-16	Superseded	
37	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0639-16	Main Site Area	02-Jun-16	16-Jun-16	15-Jul-16	14-Oct-16	Superseded	
38	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-062	East of Sha Chau (CMP Vd)	30-Jun-16	12-Jul-16	14-Jul-16	13-Aug-16	Expired	
39	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0020-16	Portion A, G & H	13-Jul-16	27-Jul-16	28-Jul-16	24-Jan-17	Superseded	
40	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-075	East of Sha Chau (CMP Vd)	27-Jul-16	05-Aug-16	14-Aug-16	31-Aug-16	Expired	
41	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-088	East of Sha Chau (CMP Vd)	16-Aug-16	26-Aug-16	01-Sep-16	30-Sep-16	Expired	
42	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0933-16	Main Site Area	18-Aug-16	01-Sep-16	05-Sep-16	31-Dec-16	Expired	
43	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0960-16	Main Site Area	06-Sep-16	15-Sep-16	19-Sep-16	18-Dec-16	Expired	
44	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-105	East of Sha Chau (CMP Vd)	15-Sep-16	27-Sep-16	01-Oct-16	31-Oct-16	Expired	
45	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0028-16	Portion A, G, H & N	15-Sep-16	29-Sep-16	03-Oct-16	02-Apr-17	Expired	
46	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00025384-2016	Main Site Area	09-Mar-16	10-Nov-16	10-Nov-16	30-Sep-20	Valid	
47	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-132	East of Sha Chau (CMP Vd)	03-Nov-16	30-Nov-16	05-Dec-16	04-Jan-17	Expired	
48	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-140	East of Sha Chau (CMP Va) or South of Brothers (CMP2)	14-Nov-16	30-Nov-16	30-Nov-16	29-Dec-16	Expired	
49	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-146	East of Sha Chau (CMP Va) or South of Brothers (CMP2)	28-Nov-16	16-Dec-16	16-Dec-16	29-Dec-16	Expired	
50	Construction Noise Permit	GW-RS1267-16	Main Site Area	02-Dec-16	16-Dec-16	19-Dec-16	18-Mar-17	Expired	



	Pursuant to Section 8(6) of the Noise Control Ordinance								
51	Specified Process Licence for Tar and Bitumen Works Pursuant to Section 14 of the Air Pollution Control Ordinance	L-15-039(1)	Temporary Asphalt Mixing Facility	05-Dec-16	16-Mar-17	16-Mar-17	15-Mar-19	Valid	
52	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1329-16	Main Site Area	09-Dec-16	23-Dec-16	01-Jan-17	30-Apr-17	Superseded	
53	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-161	East of Sha Chau (CMP Vd)	15-Dec-16	04-Jan-17	05-Jan-17	04-Feb-17	Expired	
54	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-170	East of Sha Chau (CMP Vd)	12-Jan-17	24-Jan-17	05-Feb-17	04-Mar-17	Expired	
55	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0205-17	Main Site Area	01-Mar-17	15-Mar-17	19-Mar-17	18-Jun-17	Expired	
56	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-190	East of Sha Chau (CMP Vd)	01-Mar-17	17-Mar-17	20-Mar-17	19-Apr-17	Expired	
57	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0008-17	Box Culvert B	06-Apr-17	20-Apr-17	21-Apr-17	19-Jul-17	Expired	
58	Permit issued Under the Dumping at Sea Ordinance	EP/MD/18-005	East of Sha Chau (CMP Vd)	10-Apr-17	24-Apr-17	25-Apr-17	24-May-17	Expired	
59	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0382-17	Main Site Area	10-Apr-17	25-Apr-17	27-Apr-17	24-Jul-17	Expired	
60	Permit issued Under the Dumping at Sea Ordinance	EP/MD/18-018	East of Sha Chau (CMP Vd)	19-May-17	01-Jun-17	02-Jun-17	01-Jul-17	Expired	
61	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0516-17	Main Site Area	31-May-17	14-Jun-17	19-Jun-17	18-Sep-17	Expired	
62	Permit issued Under the Dumping at Sea Ordinance	EP/MD/18-037	East of Sha Chau (CMP Vd)	19-Jun-17	06-Jul-17	07-Jul-17	06-Aug-17	Expired	
63	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0632-17	Main Site Area	07-Jul-17	21-Jul-17	25-Jul-17	24-Nov-17	Superseded	
64	Permit issued Under the Dumping at Sea Ordinance	EP/MD/18-052	East of Sha Chau (CMP Vd)	25-Jul-17	07-Aug-17	09-Aug-17	31-Aug-17	Expired	
65	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0771-17	Main Site Area	28-Aug-17	11-Sep-17	19-Sep-17	18-Jan-18	Expired	
66	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0778-17	Main Site Area	28-Aug-17	11-Sep-17	14-Sep-17	13-Mar-18	Superseded	
67	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0834-17	Main Site Area	12-Sep-17	26-Sep-17	28-Sep-17	27-Mar-18	Superseded	
68	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0901-17	Main Site Area	25-Sep-17	11-Oct-17	13-Oct-17	12-Apr-18	Valid	

69	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0271-17	Main Site Area	15-Mar-18	29-Mar-18	13-Apr-18	12-Oct-18	Valid	
----	--	--------------	----------------	-----------	-----------	-----------	-----------	-------	--

**Environmental License/ Permits /Notification Register**

LCAL H2642

**Contract: HY/2013/06 – Hong Kong Zhuhai and Macao Bridge - HKBCF – Automatic Vehicle Clearance Support System**

Date: 30 May 2018									
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
1	HZMB-HK Boundary Crossing Facilities	31 July 2015	WFG14980	Disposal of Construction Waste Billing Account	7023015	20 August 2015	--	EPD	
2	HZMB-HK Boundary Crossing Facilities	14 Nov 2017	EP831/N09/R S1037-17	Construction Noise Permit	GW-RS1037-17	1 Dec 2017	30 May 2018	EPD	

## **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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is centered between two thick, horizontal black bars.

Report No.: 0165/15/ED/1057

### **Appendix G**

#### **Implementation Schedule for Environmental Mitigation Measures (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



Report No.: 0165/15/ED/1057

### Appendix G – Implementation Schedule of Environmental Mitigation Measures (EMIS)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
<b>Air Quality</b>				
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	All construction sites	V
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: <ul style="list-style-type: none"> <li>• Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</li> <li>• Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>• A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones.</li> <li>• The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</li> <li>• Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</li> </ul>	All construction sites	V
S5.5.6.2	A2	<ul style="list-style-type: none"> <li>• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</li> <li>• The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials,</li> <li>• Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</li> <li>• Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li> <li>• Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</li> <li>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>• 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</li> </ul>	All construction sites	V
S5.5.6.2	A2	<ul style="list-style-type: none"> <li>• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high</li> </ul>	All construction sites	N/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



Report No.: 0165/15/ED/1057

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		level alarm which is interlocked with the material filling line and no overfilling is allowed; <ul style="list-style-type: none"> <li>• 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; and</li> <li>• Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site r part of the construction site where the exposed earth lies</li> </ul>		
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	All construction sites	V
S5.5.6.4	A4	4) Engineer to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to the relevant latest Practice Notes issued by EPD.	All construction sites	V
S5.5.6.4	A5	5) Implement regular dust monitoring under EM&A programme during the construction stage.	Selected Representative dust monitoring station	V (Conducted by Contract No. HY/2013/01 and HY/2011/03)
S5.5.7.1	A6	The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant; <ul style="list-style-type: none"> <li>• Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system;</li> <li>• All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP;</li> <li>• Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system;</li> <li>• The materials which may generate airborne dusty emissions should be wetted by water spray system;</li> <li>• All receiving hoppers should be enclosed on three sides up to 3m above unloading point;</li> <li>• All conveyor transfer points should be totally enclosed;</li> <li>• All access and route roads within the premises should be paved and wetted; and</li> <li>• Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body</li> </ul>	Selected Representative dust monitoring station	N/A
S5.5.2.7	A7	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: <ul style="list-style-type: none"> <li>• All road surface within the barging facilities will be paved;</li> <li>• Dust enclosures will be provided for the loading ramp;</li> <li>• Vehicles will be required to pass through designated wheels wash facilities; and</li> <li>• Continuous water spray at the loading points</li> </ul>	All construction sites	V
<b>Construction Nose (Air borne)</b>				
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the following: <ul style="list-style-type: none"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during</li> </ul>	All construction sites	V

# 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



Report No.: 0165/15/ED/1057

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.		
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	All construction sites	V
S6.4.12	N3	3) Install movable noise barriers (typically density@14kg/m acoustic mat or full enclosure close to noisy plants including compressor, generators, saw.	For plant items listed in Appendix 6D of the EIA report at all construction sites	N/A
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	For plant items listed in Appendix 6D of the EIA report at all construction site	V
S6.4.14	N5	5) Sequencing operation of construction plants where practicable	All construction sites where practicable	V
S5.1	N6	6) Implement a noise monitoring under EM&A programme.	Selected representative noise monitoring station	V (Conducted by Contract No. HY/2013/01)
<b>Sediment</b>				
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	All construction sites	V
<b>Waste Management (Construction Waste)</b>				
S8.3.8	WM1	<b>Construction and Demolition Material</b> The following mitigation measures should be implemented in handling the waste: • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to E7WBTC (Works) No. 19/2005 - "Environmental Management on Construction Sites" to encourage on-site sorting of C&D	All construction sites	V

# 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



Report No.: 0165/15/ED/1057

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>materials and to minimize their generation during the course of construction.</p> <ul style="list-style-type: none"> <li>In addition, disposal of the C&amp;D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation</li> </ul>		
S8.3.9- S8.3.11	WM2	<p><u>C&amp;D Waste</u></p> <ul style="list-style-type: none"> <li>Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.</li> <li>The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.</li> </ul>	All construction sites	V
S8.2.12- S8.3.15	WM3	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> <li>Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation.</li> <li>The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.</li> <li>Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.</li> </ul>	All construction sites	V
S8.3.16	WM4	<p><u>Sewage</u></p> <ul style="list-style-type: none"> <li>Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state which will not deter the workers from utilizing these portable</li> </ul>	All construction sites	V



# 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

# MaterialLab

Report No.: 0165/15/ED/1057

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		toilets. Night soil should be collected by licensed collectors regularly.		
S8.3.17	WM5	<p><b>General Refuse</b></p> <ul style="list-style-type: none"> <li>General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.</li> <li>Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible.</li> <li>Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.</li> <li>Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.</li> </ul>	All construction sites	V
<b>Water Quality ( Construction Phase)</b>				
S9.11.1.1- S9.11.1.2	W1	<ul style="list-style-type: none"> <li>Mitigation during the marine works to reduce impacts to within acceptable levels have been recommended and will comprise a series of measures that restrict the method and sequencing of dredging/backfilling, as well as protection measures. Details of the measures are provided below and summarised in the Environmental Mitigation Implementation Schedule in EM&amp;A Manual</li> <li>Construction of seawalls to be advanced by at least 100-200m before the main reclamation dredging and filling can commence. It should be noted that the protection by advanced seawall is a dynamic process depending on the progress of the construction activities and the stage when such protection could be realised is illustrated in Figure 9.2 and detailed in Appendix 9D6 of the EIA Report. The part of the works where such measures can be undertaken for the majority of the time includes the following locations: <ul style="list-style-type: none"> <li>TMCLKL northern reclamation;</li> <li>TMCLKL southern reclamation (after formation of the nips);</li> <li>Reclamation dredging and filling for Portion B of HKBCF;</li> <li>Reclamation filling for Portion C of HKBCF;-</li> <li>Reclamation filling for Portion D of HKBCF;</li> <li>Reclamation filling for FSD berth of HKBCF; and</li> <li>Reclamation dredging and filling for Portion 1 of HKLR;</li> </ul> </li> <li>Export for dredged spoils from NWWCZ avoiding exerting high demand on the disposal facilities in the NWWCZ and, hence, minimise potential cumulative impacts;</li> <li>For the marine viaducts of HKLR, the bored piling will be undertaken within a metal casing;</li> <li>A maximum of 30% public fill shall be used for all backfilling below -2.5mPD for the southern reclamation of TMCLKL, HKBCF and HKLR projects;</li> <li>where public fill is proposed for filling below - 2.5mPD, the fine content in the public fill will be</li> </ul>	Marine-based works area	V

# 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



Report No.: 0165/15/ED/1057

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>controlled to 25%;</p> <ul style="list-style-type: none"> <li>• silt curtains (cage type) will be applied round all grab dredgers during the HKBCF, HKLR and TMCLKL southern reclamation works;</li> <li>• single layer silt curtains will be applied around all works;</li> <li>• when constructing Portion D of the HKBCF, one side of the seawall crossing the channel should be constructed first and prior to the other works. This would reduce the maximum flow speed across the channel and enhance the effectiveness of other mitigation measures such as silt curtain system;</li> <li>• during the first two months of dredging work for HKBCF and HKLR, the silt-removal efficiency of the silt-curtains shall be verified by examining the results of water quality monitoring points. The water quality monitoring points to be selected for the above shall be those close to the locations of the initial period of dredging work. Details in this regard shall be determined by the ENPO to be established, taking account of the Contractor's proposed actual locations of his initial period of dredging work.</li> <li>• a sheet piled wall shall be constructed north of the HKBCF island, in order to allow the use of silt curtains during Phase 2 works; and</li> <li>• silt curtain shall be fully maintained throughout the works.</li> </ul> <p>In addition, dredging operations should be undertaken in such a manner as to minimise resuspension of sediments. Standard good dredging practice measures should, therefore, be implemented including the following requirements which should be written into the dredging contract.</p> <ul style="list-style-type: none"> <li>• trailer suction hopper dredgers shall not allow mud to overflow;</li> <li>• use of Lean Material Overboard (LMOB) systems shall be prohibited;</li> <li>• mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted;</li> <li>• barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material;</li> <li>• any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes;</li> <li>• loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation;</li> <li>• excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved;</li> <li>• adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;</li> <li>• all vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and</li> <li>• the works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.</li> </ul>		
S9.11.1.3	W2	<p><u>Land Works</u> General construction activities on land should also be governed by standard good working practice.</p>	Land-based works area	V

# 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

# MaterialLab

Report No.: 0165/15/ED/1057

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>Specific measures to be written into the works contracts should include:</p> <ul style="list-style-type: none"> <li>• wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;</li> <li>• sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided;</li> <li>• storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks;</li> <li>• silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm;</li> <li>• temporary access roads should be surfaced with crushed stone or gravel;</li> <li>• rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;</li> <li>• measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;</li> <li>• open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms;</li> <li>• manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers;</li> <li>• discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;</li> </ul>		
S9.11.1.7	W2	<ul style="list-style-type: none"> <li>• all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit;</li> <li>• wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain;</li> <li>• the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel;</li> <li>• wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects;</li> <li>• vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal;</li> <li>• the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up</li> </ul>	Land-based works area	V

# 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



Report No.: 0165/15/ED/1057

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		immediately; • waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; • all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.		
S9.14	W3	Implement a water quality monitoring programme	Selected representative WQM stations	V (Conducted by Contract No. HY/2013/01)
<b>Ecology (Construction Phase)</b>				
S10.7	E4	• Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater	Land-based works areas	V
S10.7	E5	• Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time	Land-based works areas	V
S10.7	E6	• Dolphin Exclusion Zone • Dolphin watching plan	Marine works	V
S10.7	E7	• Decouple compressors and other equipment on working vessels • Proposal on design and implementation of acoustic decoupling measures applied during dredging and reclamation works • Avoidance of percussive piling	Marine works	V
S10.7	E8	• Control vessel speed • Skipper training • Predefined and regular routes for working vessels; avoid Brother Islands.	Marine Traffic	V
S10.10	E9	Vessel based dolphin monitoring	Northeast and Northwest Lantau	V (Conducted by Contract No. HY/2013/01)
<b>Fisheries</b>				
S11.7	F4	• Maritime Oil Spill Response Plan (MOSRP); • Contingency plan.	HKBCF	V
<b>Landscape &amp; Visual (Detailed Design Phase)</b>				
S14.3.3.1	LV1	General design measures include: • Roadside planting and planting along the edge of the HKBCF Island is proposed; • Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting; • Protection measures for the trees to be retained during construction activities; • Optimizing the sizes and spacing of the bridge columns; • Fine-tuning the location of the bridge columns to avoid visually-sensitive locations; • Providing planting area around peripheral of HKBCF for tree planting screening effect; • Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline; • For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport	HKBCF	V

# 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

# MaterialLab

Report No.: 0165/15/ED/1057

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF; and • Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF.		
<b>Landscape &amp; Visual (Construction Phase)</b>				
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts G1. Grass-hydroseed bare soil surface and stock pile areas. G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic. G3. Not applicable as this is for HKLR. G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF G5. Vegetation reinstatement and upgrading to disturbed areas G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed G7. Providing planting area around peripheral of HKBCF for tree planting screening effect; G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall. G9. Reserve of loose natural granite rocks for re-use, Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of the new coastline.	Building 026, 031, 037, 039, 041, 043, 046 and all areas at ground level	V
S14.3.3.3	LV3	<u>Mitigate Visual Impacts</u> V1. Minimize time for construction activities during construction period. V2. Not applicable for HKBCF.	Building 026, 031, 037, 039, 041, 043, 046 and all areas at ground level	V
<b>EM&amp;A</b>				
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual	All construction sites	V
S15.5 – S15.6	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	All construction sites	V

Legend: V = implemented; x = not implemented; N/A = not applicable

## **MATERIALAB CONSULTANTS LIMITED**

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

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

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is centered between two thick, horizontal black bars.

Report No.: 0165/15/ED/1057

### **Appendix H**

#### **Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions**

**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**

Report No.: 0165/15/ED/1057

## Appendix H –

## Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

For Contract No. HY/2013/03

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	0	0	0
From commencement date of construction to end of reporting month	14	0	0

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	0	0	0
From commencement date of construction to end of reporting month	0	0	0

## **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

**MaterialLab**

Report No.: 0165/15/ED/1057

### **Appendix I**

#### **Environmental Site Inspection Schedule**



**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



Report No.: 0165/15/ED/1057

**Contract No. HY/2013/03**  
**HZMB HKBCF – Vehicle Clearance Plazas and Ancillary Buildings and Facilities**  
**Weekly Environmental Site Inspection Schedule**

**Environmental Site Inspection Schedule for May 2018**

May-2018						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3 Environmental Site Inspection	4	5
6	7	8	9	10 Environmental Site Inspection	11	12
13	14	15	16	17 Environmental Site Inspection	18	19
20	21	22	23	24	25 Environmental Site Inspection	26
27	28	29	30	31 Environmental Site Inspection		

**Tentative Environmental Site Inspection Schedule for June 2018**

June-2018						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7 Environmental Site Inspection	8	9
10	11	12	13	14 Environmental Site Inspection	15	16
17	18	19	20 Environmental Site Inspection	21	22	23
24	25	26	27	28 Environmental Site Inspection	29	30

**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

**MaterialLab**

Report No.: 0165/15/ED/1057

**Contract No. HY/2013/06 (within Contract No. HY/2013/03 works area)  
 HZMB HKBCF – Automatic Vehicle Clearance Support System  
 Weekly Environmental Site Inspection Schedule**

**Environmental Site Inspection Schedule for May 2018**

May-2018						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3 Environmental Site Inspection	4	5
6	7	8	9	10 Environmental Site Inspection	11	12
13	14	15	16	17 Environmental Site Inspection	18	19
20	21	22	23	24	25 Environmental Site Inspection	26
27	28	29	30	31 Environmental Site Inspection		

**Tentative Environmental Site Inspection Schedule for June 2018**

June-2018						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7 Environmental Site Inspection	8	9
10	11	12	13	14 Environmental Site Inspection	15	16
17	18	19	20 Environmental Site Inspection	21	22	23
24	25	26	27	28 Environmental Site Inspection	29	30