

Meinhardt Infrastructure and Environment Limited

**Entrusted Portion of Widening of Tolo  
Highway / Fanling Highway between Island  
House Interchange and Fanling Stage 2**

Quarterly EM&A Report

(May 2014 to July 2014)

Certified by: Fredrick Leong 

Position: Environmental Team Leader

Date: 13 August 2014



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13 August 2014  
By Fax (2805 5028) & Post

Dear Sir,

**Attn: Mr. James Penny**

**EM&A for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2 (between Tai Hang to Wo Hop Shek Interchange) – Entrusted Works  
Environmental Permit No. EP-324/2008/B  
Quarterly EM&A Summary Report for May 2014 to July 2014 for the portion of Stage 2 works entrusted to CEDD under Contract No. CV/2012/09**

We refer to the Quarterly EM&A Summary Report for May 2014 to July 2014 for the Project received on 11 and 13 May 2014 submitted by ET via email. We confirm we have no comment.

Yours faithfully  
for MOTT MACDONALD HONG KONG LIMITED

A handwritten signature in blue ink that reads "Terence Kong".

Terence Kong  
Independent Environmental Checker

c.c. HyD – Mr. Chung Lok Chin (Fax: 2714 5198) / Ms. Jackei Yin (Fax: 2761 4864)  
CEDD/BCP – Mr. Chris Wong / Mr. Desmond Lam (Fax: 2714 0103)  
AECOM – Mr. Alan Lee (Fax: 3922 9797)  
Meinhardt Infrastructure and Environment Limited – Mr. Fredrick Leong (Fax: 2540 1580)

Date	Revision	Prepared By	Checked By	Approved By
13 August 2014	0	Ivan TING Cindy KWOK	Fredrick LEONG	Helen COCHRANE

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## EXECUTIVE SUMMARY

This report documents the findings of EM&A works conducted in the quarter between 1 May 2014 and 31 July 2014.

The impact stage EM&A programme for the Project includes air quality and noise monitoring.

The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting quarter.

In the reporting quarter, a total of 2 exceedance events were recorded. The exceedances were concluded not to be project related. No necessary remedial actions have been taken.

No environmental non-compliance was noted. No environmental complaint was received. No environmental related prosecution or notification of summons was received in the reporting quarter.

The box culvert works have been partially completed by the end of March 2014 except the last construction activity, i.e. installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled in November 2015 after the utilities diversions were completed, and therefore the construction works were temporary suspended. The 4-week post construction water quality monitoring will be conducted after the installation of the base slab finishes, hence the completion of the box culvert works.

As such, impact monitoring for water quality was not necessary in the reporting quarter due to temporary suspension of the construction works and is anticipated to be resumed in November 2015 during the course of remaining box culvert works.

## **1 INTRODUCTION AND PROJECT INFORMATION**

### **1.1 Background**

1.1.1 The Project is a Designated Project under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). An Environmental Impact Assessment (EIA) Report together with an Environmental Monitoring and Audit (EM&A) Manual were approved on 14 July 2000 (Register Number: EIA-043/2000). The Project is governed by an Environmental Permit (EP) (EP-324/2008) which was granted on 23 December 2008. A variation of EP (VEP) was applied and the VEP (EP-324/2008/A) was subsequently granted on 31 January 2012. An additional VEP has been applied on 24 February 2014 and the VEP (EP-324/2008/B) was subsequently granted on 17 March 2014.

1.1.2 Chun Wo Construction & Engineering Co Ltd (Chun Wo) was commissioned by the Civil Engineering and Development Department (CEDD) as the Civil Contractor for the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. Meinhardt Infrastructure & Environment Ltd (MIEL) has been appointed by Chun Wo as the Environmental Team (ET) to fulfill the corresponding EM&A requirements pursuant to Environmental Permit No. EP-324/2008/B in accordance with the Updated EM&A Manual (dated October 2013) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. The EM&A programme commenced in 5 November 2013.

1.1.3 **Figure 1** shows the works areas for the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2.

### **1.2 Construction Programme and Activities**

1.2.1 The construction programme is presented in **Appendix A**. The major construction activities undertaken in the reporting quarter are summarized below:

- Cable detection and trial trenches;
- Tree Felling Works;
- Pre-drilling works and piling works;
- Bored pile and bored pile wall construction;
- Construction of haul road and temporary soil platform for geotechnical works;
- Slope upgrading works;
- Noise barrier installation;
- Mini pile construction;
- Extension of box culvert ID04, ID05 and BC01;
- Water Pipe Installation;
- Diversion of DN1400;
- Filling Works;

- Laying diameter 1050mm storm drains;
- Pile Cap;
- Piling works for Bridge E;
- Receiving & Jacking Pit;
- Retaining Structure;
- Road works at Fanling Highway;
- Sewer works; and
- Soil nail construction.

### 1.3 Project Organisation

1.3.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project, together with the general enquiry hotline, are summarised in **Table 1.1**.

**Table 1.1 Contact Information of Key Personnel**

Party	Role	Position	Name	Telephone	Fax
AECOM	Engineer's Representative	Senior Resident Engineer	Mr. Alan Lee	2171 3303	2171 3498
		Resident Engineer (Environmental)	Mr. Perry Yam	2171 3350	
Mott MacDonald	Independent Environmental Checker (IEC)	IEC	Mr. Terence Kong	2828 5919	2827 1823
Chun Wo	Contractor	Site Agent	Mr. Daniel Ho	2638 6144	2638 7077
		Senior Environmental Officer	Mr. Sam Lam	2638 6168	
		Environmental Officer	Mr. Victor Huang	2638 6181	
Meinhardt	Environmental Team (ET)	ET Leader	Mr. Fredrick Leong	2859 1739	2540 1580
Enquiry Hotline	General Enquiry	--	Ms Helena Mak	6355 1731	--

### 1.4 Purpose of the Report

1.4.1 This is the Quarterly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period between 1 May 2014 and 31 July 2014.

## 2 SUMMARY OF EM&A REQUIREMENTS

### 2.1 Monitoring Requirements

2.1.1 In accordance with the Updated EM&A Manual, environmental parameters including Air Quality and Noise have been monitored. The specific parameters, monitoring frequency and the respective Action and Limit Levels are given in **Table 2.1** and the location of the monitoring station is shown in the **Figure 2**.

**Table 2.1 Monitoring Parameter**

Parameter	Unit	Action Level	Limit Level	Frequency
<b>Air Quality</b>				
1 hour TSP	µg/m <sup>3</sup>	292.7	500	Three times every 6 days
24 hour TSP	µg/m <sup>3</sup>	170.3	260	Once every 6 days
<b>Construction Noise</b>				
Leq 30min	dB(A)	When one documented valid complaint is received	75	Once every Week

#### *Temporary Suspension of Box Culvert Works and Water Quality Monitoring*

2.1.2 The box culvert works have been partially completed by the end of March 2014 except the last construction activity, i.e. installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled in November 2015 after the utilities diversions were completed, and therefore the construction works are temporary suspended. The 4-week post construction water quality monitoring will be conducted after the installation of the base slab finishes, hence the completion of the box culvert works.

2.1.3 As such, impact monitoring for water quality was not necessary in the reporting quarter due to temporary suspension of the construction works and is anticipated to be resumed in November 2015 during the course of remaining box culvert works.

### 2.2 Environmental Mitigation Measures

2.2.1 Environmental mitigation measures have been recommended in the EM&A Manual and are given in **Appendix C**. The implementation status for the reporting quarter is also given in the Appendix.

## 3 SUMMARY OF EM&A Monitoring Data

### 3.1 Monitoring Data

3.1.1 Monitoring has been conducted in accordance with the specification in the EM&A Manual in the reporting quarter. Meteorological data for the reporting quarter have been extracted from Hong Kong Observatory and are given in **Appendix D**. Monitoring data with graphical presentation for the reporting quarter have been given in **Appendix E**. A summary on the monitoring results has also been given in **Table 3.1**.



**Table 3.1 Summary of Monitoring Data in the Reporting Quarter**

Monitoring Location	Minimum	Maximum	Average
<b>Air Quality</b>			
1 hour Total Suspended Particulate			
SR77	34.6µg/m <sup>3</sup>	178.9µg/m <sup>3</sup>	96.6µg/m <sup>3</sup>
24 hour Total Suspended Particulate			
SR77	14.7µg/m <sup>3</sup>	402.1µg/m <sup>3</sup>	102.8µg/m <sup>3</sup>
<b>Construction Noise</b>			
SR77	58.5dB(A)	64.0dB(A)	60.0dB(A)

3.1.2 The maximum recorded 24-hour Total Suspended Particulate in the reporting quarter is 402.1µg/m<sup>3</sup> which is higher than the limit level of 260µg/m<sup>3</sup>. However, respective investigation has been conducted and concluded the exceedances would not be project related.

### 3.2 Summary of Monitoring Exceedances

3.2.1 The number of exceedances event recorded in the reporting quarter is summarized in **Table 3.2**.

3.2.2 Investigations for the exceedances events in the reporting quarter have been completed. The exceedances were considered not to be related to the construction works. The respective investigation reports have been presented in the respective Monthly EM&A Reports.

**Table 3.2 Summary of Exceedance Events in the Reporting Quarter**

Parameter		Number of Exceedances Events	Number of Project Related Exceedance Events
<b>Air Quality</b>			
1 hour Total Suspended Particulate	Action Level	0	0
	Limit Level	0	0
24 hour Total Suspended Particulate	Action Level	1	0
	Limit Level	1	0
<b>Construction Noise</b>			
Leq 30min	Action Level	0	0
	Limit Level	0	0

3.2.3 The Contractor has been reminded to strengthen the mitigation measures including:

- Water spraying should be properly implemented whenever necessary for the unpaved roads, access roads and construction areas;
- All vehicles should be washed to remove any dusty materials before leaving the construction site;
- Wheel washing facilities should be properly maintained to ensure proper functioning;
- Silty effluent should be treated/desilted before discharged. Untreated effluent should be prevented from entering public drain channel;
- Channels or earth bunds or sand bag barriers should be provided on site to prevent surface runoff and stormwater should be properly directed to silt removal facilities;

- Temporarily exposed slopes and stockpiles of dusty materials should be covered by tarpaulin or similar fabric during rainy seasons; and
- All chemicals stored on site should be provided with drip trays.

## 4 WASTE MANAGEMENT

- 4.1.1 The Contractor has registered as a chemical waste producer of the Project. The C&D materials and waste sorting were carried out on-site. Receptacles were provided for general refuse collection.
- 4.1.2 During the reporting quarter, a total of 9,492m<sup>3</sup> of excavated material has been generated. 7,182m<sup>3</sup> of inert C&D materials was disposed of at public fill to Tuen Mun Area 38, while 1,369m<sup>3</sup> of inert C&D materials was reused on site. 540m<sup>3</sup> of general refuse was disposed of at North East New Territories (NENT) Landfill. 5m<sup>3</sup> of plastics and no paper/cardboard packaging and metals were collected by recycling contractor in the reporting quarter. 21m<sup>3</sup> of chemical waste was collected by licensed contractor in the reporting quarter. Details of the waste management data are presented in **Appendix F**.

## 5 ENVIRONMENTAL NON-CONFORMANCE

- 5.1.1 No environmental non-compliance was recorded in the reporting quarter. No environmental complaints were received in the reporting quarter. Investigations for the exceedances have been conducted. No environmental related prosecution or notification of summons was received in the reporting quarter. The summary for the non-compliance, complaints and prosecutions is provided in **Appendix G**.

## 6 CONCLUSION, COMMENTS AND RECOMMENDATIONS

- 6.1.1 The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting quarter.
- 6.1.2 In the reporting quarter, a total of 2 exceedance events have been recorded. No exceedances were concluded to be project related. No necessary remedial actions have been taken.
- 6.1.3 No environmental non-compliances were noted. No environmental complaint was received. No environmental related prosecution or notification of summons were received in the reporting quarter.
- 6.1.4 The box culvert works have been partially completed by the end of March 2014 except the last construction activity, i.e. installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled in November 2015 after the utilities diversions were completed, and therefore the construction works are temporary suspended. The 4-week post construction water quality monitoring will be conducted after the installation of the base slab finishes, hence the completion of the box culvert works.

- 6.1.5 As such, impact monitoring for water quality was not necessary in the reporting quarter due to temporary suspension of the construction works and is anticipated to be resumed in November 2015 during the course of remaining box culvert works.