

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

(November 2013 to January 2014)

Certified by: Fredrick Leong 

Position: Environmental Team Leader

Date: 13 February 2014



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Dear Sir,

14 February 2014
By Fax (2805 5028) & Post

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/A
Quarterly EM&A Summary Report for November 2013 to January 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 November 2013 to January 2014 for the Project received on 11, 12 and 14 February 2014 submitted by ET via email. We confirm we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

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
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EXECUTIVE SUMMARY

This report documents the findings of EM&A works conducted in the quarter between 6 November 2013 and 31 January 2014.

The impact stage EM&A programme for the Project includes air quality, noise and water quality 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 22 exceedance events were recorded. Only 1 Limit Level exceedance of Turbidity and 1 Limit Level exceedance of Suspended Solids were concluded to be related to the project. Necessary remedial actions have been taken.

No environmental non-compliance was noted. One environmental complaint, which was concluded as an invalid complaint under this Project after investigations, was received. No environmental related prosecution or notification of summons was received. No changes to the construction works which may affect the EM&A programme are recorded in the reporting quarter.

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 a VEP (EP-324/2008/A) was subsequently granted on 31 January 2012.

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/A 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:

- Hoarding and fencing erection, initial survey and base slab demolition;
- Trial Pit excavation
- Site clearance and tree felling;
- Excavation works and base slab demolition;
- Pre-drilling works, Bored pile wall construction and Catch Fan;
- Box culvert extension works – Flow diversion of existing stream, base and wall slab construction;
- Cable detection and trail trenches;
- Erection of site office; and
- Construction of haul road and temporary soil platform for geotechnical works.

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	2472 7228	2472 0132
		Resident Engineer (Environmental)	Mr. Perry Yam	2674 2273	--
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
		Environmental Officer	Mr. Victor Huang	2638 6115	
		Environmental Officer	Mr. Sam Lam	2638 6147	
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 of November 2013 to January 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, Noise and Water quality have been monitored. The specific parameters, monitoring frequency and the respective Action and Limit Levels are given in **Table 2.1** and the locations of the monitoring and control stations are shown in the **Figure 2**.

Table 2.1 Monitoring Parameter

Parameter	Unit	Action Level	Limit Level	Frequency
Air Quality				
1 hour TSP	µg/m ³	292.7	500	Three times every 6 days
24 hour TSP	µg/m ³	170.3	260	Once every 6 days
Construction Noise				
Leq 30min	dB(A)	When one documented valid complaint is received	75	Once every Week
Water Quality				
Depth		--	--	Three occasions per week
Temperature	°C	--	--	Three occasions per week
Salinity	ppt	--	--	Three occasions per week
pH	--	--	--	Three occasions per week
DO	mg/L	6.7	4mg/L or 40% saturation at 15 degree Celsius	Three occasions per week

Parameter	Unit	Action Level	Limit Level	Frequency
DO Saturation	%	--	--	Three occasions per week
Turbidity	NTU	81.9NTU or 120% of upstream control station's Tby of the same day	91.9NTU or 130% of upstream control station's Tby of the same day	Three occasions per week
SS	mg/L	42.6 mg/L or 120% of upstream control station's SS of the same day	46.8 mg/L or 130% of upstream station's SS of the same day and specific sensitive receiver water quality requirements	Three occasions per week

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 to the specification in the EM&A Manual in the reporting quarter. Meteorological data for the reporting quarter has 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 given in **Table 3.1**.

Table 3.1 Summary of Monitoring Data in the Reporting Quarter

Monitoring Location	Minimum	Maximum	Average
Air Quality			
1 hour Total Suspended Particulate			
SR77	23.7µg/m ³	358.6µg/m ³	199.4µg/m ³
24 hour Total Suspended Particulate			
SR77	83.0µg/m ³	283.0µg/m ³	172.0µg/m ³
Construction Noise			
SR77	57.8dB(A)	73.5dB(A)	66.3dB(A)
Water Quality			
DO			
I5	4.4mg/L	10.1mg/L	8.0mg/L
Baseline Data	6.6mg/L	8.8mg/L	8.0mg/L
30% disturbance due to human activity	4.6mg/L	6.2mg/L	5.6mg/L
Turbidity			
I5	6.3NTU	48.7NTU	22.2NTU
Baseline Data	12.4NTU	91.5NTU	26.1NTU
30% disturbance due to human activity	16.1NTU	118.9NTU	34.0NTU
SS			
I5	2mg/L	31.5mg/Lm	10.5mg/L
Baseline Data	6.5mg/L	46.5mg/L	16.4mg/L
30% disturbance due to human activity	8.5mg/L	60.5mg/L	21.3mg/L

3.1.2 The minimum recorded dissolved oxygen in the reporting quarter is 4.4mg/L which is lower than the 30% disturbance of the minimum value (4.6mg/L). However, respective investigation has been conducted and concluded the exceedance would not be project related.

3.1.3 The other recorded water quality monitoring levels during the reporting quarter were not exceed the 30% disturbance over the baseline level for quarterly average.

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. 1 Limit Level exceedance of Turbidity and 1 Limit Level exceedance of Suspended Solids are concluded to be related to the project. Other exceedances were considered not 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
Air Quality			
1 hour Total Suspended Particulate	Action Level	0	0
	Limit Level	0	0
24 hour Total Suspended Particulate	Action Level	10	0
	Limit Level	3	0
Construction Noise			
Leq 30min	Action Level	0	0
	Limit Level	0	0
Water Quality			
DO	Action Level	2	0
	Limit Level	0	0
Turbidity	Action Level	1	0
	Limit Level	1	1
SS	Action Level	1	0
	Limit Level	2	1

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

- cover of exposed slopes near the river,
- cover of open stockpile of construction materials,
- adequate watering along the haul road to mitigate the construction dust impact,
- building a river diversion structure at the river channel to protect the river from potential site runoff,
- fill up the leakage and strengthen the river diversion works to avoid future leakage, and

- pay attention on accidental site runoff, including construction of additional protection structure if necessary, to minimize the risk of site runoff.

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 2021m³ of excavated material has been generated. 1427m³ of inert C&D materials was disposed of at public fill to Tuen Mun Area 38, while 503m³ of inert C&D materials were reused on site. 220kg of general refuse was disposed of at North East New Territories (NENT) Landfill. 10kg of plastics and no paper/cardboard packaging, plastics and metals were collected by recycling contractor in the reporting quarter. No 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 were recorded in the reporting quarter. One environmental complaint was received in the reporting quarter regarding water quality of Ma Wat River. Investigations have been conducted and the complaint was considered as invalid under this Project. 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**.
- 5.1.2 No changes to the construction works which may affect the EM&A programme are recorded in the reporting quarter.

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 22 exceedance events have been recorded. Only 1 Limit Level exceedance of Turbidity and 1 Limit Level exceedance of Suspended Solids were concluded to be related to the project. Necessary remedial actions have been taken.
- 6.1.3 No environmental non-compliances were noted. One environmental complaint, which was concluded as an invalid complaint under this Project after investigations, was received. No environmental related prosecution or notification of summons were received. No changes to the construction works which may affect the EM&A programme are recorded in the reporting quarter.