AECOM

Highways Department

Agreement No. CE 20/2009 (EP)

Environmental Team for the Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling

(Stage 1) Between Island House Interchange and Tai Hang - Investigation

Quarterly EM&A Summary Report for August 2011 – October 2011

[11/2011]

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29 November 2011
By Fax (2805 5028) and Post

Attn.: Mr. Tony Wong

Dear Sir,

Widening of Tolo Highway between Island House Interchange and Tai Hang
Environmental Permit No.: EP-324/2008
Condition 3.3 – Submission of Quarterly EM&A Summary Report for August 2011 to October 2011 (Stage 1)

We refer to the Quarterly EM&A Summary Report for August 2011 to October 2011 for the captioned Project submitted by ET via email on 14 November 2011. We confirm we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Independent Environmental Checker

c.c. HyD – Mr. Raymond T W Kong / Mr. Dennis Wong /Mr. William Chiang (Fax: 2761 4864)
ETL, AECOM – Mr. Y T Tang (Fax: 2317 7609)

TABLE OF CONTENTS

List of Tables

Figures

List of Appendices

EXECUTIVE SUMMARY

The proposed widening of Tolo Highway and Fanling Highway between Island House Interchange and Fanling (the Project) is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) and is governed by an Environmental Permit (EP-324/2008)(EP). The Project aims to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). The construction works of Stage 1 were commenced on 23 November 2009 and will tentatively be completed in December 2013; while construction programme of Stage 2 is currently under review. This report focuses on Stage 1 of the Project only.

The construction phase of Stage 1 under the EP and the Environmental Monitoring and Audit (EM&A) programme for Stage 1 of the Project commenced on 23 November 2009. The impact environmental monitoring and audit includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 August 2011 and 31 October 2011. As informed by the Contract 1 Contractor (CSHK), construction activities in the reporting period were:-

- Temporary shoring, sheetpiling and excavation;
- Bored piling;
- Pre-bored H-piles construction;
- Pipe pile wall construction;
- Pile cap construction;
- Bridge construction;
- Tree felling and transplanting of trees;
- At-grade road construction;
- Demolition of central dividers;
- Retaining wall construction;
- Slope works;
- Site investigation;
- Installation of noise barrier;
- Road paving;
- Bridge jacking;
- Soil nails works;
- Noise barrier footing construction and panel installation; and
- Drainage works.

The construction works carried out by the Contract 2 Contractor (GCL) in the reporting period were:-

- Condition survey of existing structures;
- Excavation of trial trenches to locate existing utilities;
- Ground investigation and predrilling;
- Construction of haul road;
- Extension of box culvert and subway;
- Piling and structural works of bridges;
- Construction of pilecap / spread footing of noise barrier / semi noise enclosure;
- Slope works, including installation of soil nails;
- Retaining wall construction;
- Noise barrier construction;
- Modification of existing bridge structures;
- Entrusted watermains works; and
- Sewer Installation.

Environmental Monitoring Works

A summary of monitoring and audit activities conducted in the reporting quarter is listed below:-

24-hour TSP monitoring	16 sessions
1-hour TSP monitoring	48 sessions
Daytime Noise monitoring	13 regular sessions
Environmental Site inspection	13 sessions (Contract 1) / 13 sessions (Contract 2)

Breaches of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Level was recorded for both 1-hour and 24-hour TSP monitoring in the reporting period.

Breaches of Action and Limit Levels for Noise

No Action/Limit Level exceedance of construction noise monitoring was recorded in the reporting quarter.

Complaint, Notification of Summons and Successful Prosecution

One (1) air quality related complaint was followed up by Environmental Team in the reporting quarter. Investigation was carried out. The findings, proposed mitigation measures and follow-up site visit findings were submitted to all relevant parties. Summary of investigation is described in Section 8.2

No notification of summons and successful prosecution was received in the reporting quarter.

1 INTRODUCTION

Background

1.1. Tolo Highway and Fanling Highway are expressways in the North East New Territories connecting Sha Tin, Tai Po and Fanling. These highways form a vital part of the strategic Route 9, which links Hong Kong Island to Shenzhen. At present, this section of Route 9 is dual 3-lane carriageway. However, at several major interchanges along this section of Route 9, the highway is only dual-2 lane. Severe congestion is a frequent occurrence during peak periods, particularly in the Kowloon bound direction.

1.2. The objective of the Project "Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling" is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

1.3. The Project is a designated project and is governed by an Environmental Permit (EP-324/2008)(EP).

1.4. The scope of the Project comprises mainly:

(i) Widening of a 5.7 km section of Tolo Highway and 3.0 km section of Fanling Highway between Island House Interchange and Wo Hop Shek Interchange from the existing dual 3-lane to dual 4-lane, including construction of new vehicular bridges;

(ii) Widening of interchange sections at Island House Interchange, Tai Po North Interchange, and Lam Kam Road Interchange from dual 2-lane to dual 3-lane, except Sha Tin bound carriageway at Tai Po North Interchange, which is widened from 3-lane to 4-lane, including realignment of various slip roads;

(iii) Modification and reconstruction of highways, vehicular bridges, underpasses and footbridges.

1.5. The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). The construction works of Stage 1 commenced on 23 November 2009 and will tentatively be completed in December 2013; while construction programme of Stage 2 is currently under review. This report focuses on Stage 1 of the Project only.

1.6. The construction works for Stage 1 of the Project will be implemented under 2 works contracts (Contract 1 and Contract 2). Contract 1 covers the section of Tolo Highway between Island House Interchange and Ma Wo, Contract 2 covers the section of Tolo Highway between Ma Wo and Tai Hang.

1.7. Hyder-Arup-Black and Veatch Joint Venture (HABVJV) are appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Tolo project under Agreement No. CE 58/2000 Supplementary Agreement No. 3 (SA3) (i.e. the Engineer for the Contracts).

1.8. China State Construction Engineering (Hong Kong) Ltd. (CSHK) was commissioned as the Contractor of Contract 1 of Stage 1 of the Project, while Gammon Construction Limited (GCL) was commissioned as the Contractor of Contract 2 of Stage 1 of the Project.

1.9. AECOM Asia Co. Ltd. was employed by Highways Department as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for Stage 1 of the Project and Mott MacDonald Hong Kong Ltd. acts as the Independent Environmental Checker (IEC) for the Contracts.

1.10. The construction phase of Stage 1 under the EP commenced on 23 November 2009.

1.11. According to the updated EM&A Manual of Stage 1 of the Project, there is a need of an EM&A programme including air quality and noise monitoring. The EM&A programme for Stage 1 of the Project commenced on 23 November 2009.

Scope of Report

1.12. This is the eighth Quarterly EM&A Summary Report under the Agreement No. CE 20/2009 (EP) - Widening of Tolo Highway between Island House Interchange and Tai Hang – Investigation. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for Stage 1 of the Project from 1 August 2011 to 31 October 2011.

Project Organization

1.13. The project organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
ER of Stage 1, Contract 1 (Hyder-Arup-Black & Veatch Joint Venture)	Chief Resident Engineer /TOLO1	James Tsang	9038 8797	2667 4000
ER of Stage 1, Contract 2 (Hyder-Arup-Black & Veatch Joint Venture)	Chief Resident Engineer /TOLO2	Paul Appleton	9097 5833	2653 2348
IEC of Stage 1 (Mott MacDonald Hong Kong Limited)	Independent Environmental Checker	Terence Kong	2828 5919	2827 1823
Contractor of Stage 1, Contract 1 (China State Construction Engineering (Hong Kong) Limited)	Site Agent	David Lau (1 Aug 2011 – 4 Sep 2011)	9499 0818	2667 5666
		S Y Tse (5 Sep 2011 – to date)	9078 0458	2667 5666
	Environmental Officer	Michael Tsang	9277 4956	2667 5666
Contractor of Stage 1, Contract 2 (Gammon Construction Limited)	Site Agent	Edmond Chan	9483 8885	2559 3410
	Environmental Officer	Ir Thomson Chang	9213 6569	2559 3410
ET of Stage 1 (AECOM Asia Company Limited)	ET Leader	Y T Tang	3922 9393	2371 7609

Summary of Construction Works

1.14. The construction phase of Stage 1 under the EP commenced on 23 November 2009. Details of the construction works carried out by the Contract 1 Contractor (CSHK) in this reporting period are listed below:-

- Temporary shoring, sheetpiling and excavation;
- Bored piling;
- Pre-bored H-piles construction;
- Pipe pile wall construction;
- Pile cap construction;
- Bridge construction;
- Tree felling and transplanting of trees;
- At-grade road construction;
- Demolition of central dividers;
- Retaining wall construction;
- Slope works;
- Site investigation;
- Installation of noise barrier;
- Road paving;
- Bridge Jacking;
- Soil Nails Works;
- Noise Barrier Footing Construction and Panel Installation; and
- Drainage works.

The construction works carried out by the Contract 2 Contractor (GCL) in the reporting period were:-

- Condition survey of existing structures;
- Excavation of trial trenches to locate existing utilities;
- Ground investigation and predrilling;
- Construction of haul road;
- Extension of box culvert and subway;
- Piling and structural works of bridges;
- Construction of pilecap / spread footing of noise barrier / semi noise enclosure;
- Slope works, including installation of soil nails;
- Retaining wall construction;
- Noise barrier construction;
- Modification of existing bridge structures;
- Entrusted watermains works; and
- Sewer Installation.

1.15. The Construction Programmes are shown in Appendix B.

1.16. The general layout plan of the Project site showing the contract areas is shown in Figure 1.1.

1.17. The environmental mitigation measures implementation schedule are presented in Appendix C.

2 ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters

2.1. The updated EM&A Manual designated 4 air quality monitoring stations and 7 noise monitoring stations to monitor environmental impacts on air quality and noise due to Stage 1 of the Project.

2.2. For air quality, monitoring locations AM2 (Shan Tong New Village) and AM3 (Riverain Bayside) were set up at the proposed locations in accordance with updated EM&A Manual. However, for monitoring locations: Dynasty View and Tai Po Garden, proposed in the updated EM&A Manual, as approval could not be obtained from the owner's corporation of the premises, impact air quality monitoring was conducted at alternative monitoring locations: AM1 (Ha Wun Yiu) and AM4 (Tai Kwong Secondary School). The monitoring station at 13 Ha Wun Yiu (AM1) was relocated to Fan Sin Temple, 3 Sheung Wun Yiu (AM1A) in February 2010.

2.3. For noise, monitoring stations NM3 (Wong Shiu Chi Middle School), NM6 (PLK Tin Ka Ping Primary School) and NM7 (Riverain Bayside) were set up at the proposed locations in accordance with updated EM&A Manual. However, for monitoring locations: Tai Po Garden, Dynasty View, Hong Kong Teachers' Association Lee Heng Kwei Secondary School and Grand Palisades, proposed in the updated EM&A Manual, as approval of access could not be obtained from the owner's corporation of the premises or the principal of the education institutes, impact noise monitoring was conducted at alternative monitoring locations: NM1 (Tai Kwong Secondary School), NM2 (Ha Wun Yiu), NM4 (Uptown Plaza) and NM5 (The Paragon).

2.4. As Tai Kwong Secondary School was closed down with effect from 1 September 2011, air quality (AM4) and noise (NM1) monitoring stations were relocated to 168 Shek Kwu Lung Village, naming AM4A and NM1A respectively, starting from 1 September 2011. The same air quality Action and Limit of AM4 were adopted for AM4A. For the measured construction noise level, the same noise Action Level of NM1 was adopted for NM1A, whereas Limit Level for residential noise sensitive receiver was adopted for NM1A.

2.5. The monitoring locations used during the reporting period are depicted in Figure 2.1.

2.6. The updated EM&A Manual also required environmental site inspections for air quality, noise, water quality, chemical, waste management, ecology and landscape and visual impact.

Environmental Quality Performance Limits (Action/Limit Levels)

2.7. The environmental quality performance limits (i.e. Action/Limit Levels) of air quality monitoring were derived from the baseline air quality monitoring results at the respective monitoring stations (AM1, AM2, AM3 and AM4), while the environmental quality performance limits of noise monitoring were defined in the EM&A Manual.

2.8. The environmental quality performance limits of air quality and noise monitoring and are given in Appendix D.

Environmental Mitigation Measures

2.9. Relevant environmental mitigation measures were stipulated in the Particular Specification and EP (EP-324/2008) for the Contractor to adopt. A list of environmental mitigation measures and their implementation statuses are given in Appendix C.

3 AIR QUALITY MONITORING

3.1. Air quality monitoring, including 1-hour and 24-hour TSP, was conducted at least 3 times every 6 days and at least once every 6 days respectively at the 4 monitoring stations (AM1A, AM2, AM3 and AM4/AM4A), in accordance with the updated EM&A Manual.

3.2. The weather was mostly sunny, with several cloudy in the reporting quarter. The major dust source in the reporting period included construction activities from Stage 1 of the Project, as well as nearby traffic emissions.

3.3. The number of monitoring events and exceedances recorded in each month of the reporting quarter are presented in Table 3.1 and Table 3.2 respectively.

Table 3.1 Summary of Number of Monitoring Events for 1-hr & 24-hr TSP Concentration

Monitoring Parameter	Location	No. of monitoring events		
		Aug 11	Sep 11	Oct 11
1-hr TSP	AM1A	18	15	15
	AM2	18	15	15
	AM3	18	15	15
	AM4	18	N/A	N/A
	AM4A	N/A	15	15
24-hr TSP	AM1A	6	5	5
	AM2	6	5	5
	AM3	6	5	5
	AM4	6	N/A	N/A
	AM4A	N/A	5	5

Table 3.2 Summary of Number of Exceedances for 1-hr & 24-hr TSP Monitoring

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			Aug 11	Sep 11	Oct 11
1-hr TSP	AM1A	Action	0	0	0
		Limit	0	0	0
	AM2	Action	0	0	0
		Limit	0	0	0
	AM3	Action	0	0	0
		Limit	0	0	0
	AM4	Action	0	N/A	N/A
		Limit	0	N/A	N/A
	AM4A	Action	N/A	0	0
		Limit	N/A	0	0
		Total	***0***	***0***	***0***
24-hr TSP	AM1A	Action	0	0	0
		Limit	0	0	0
	AM2	Action	0	0	0
		Limit	0	0	0
	AM3	Action	0	0	0
		Limit	0	0	0
	AM4	Action	0	N/A	N/A
		Limit	0	N/A	N/A
	AM4A	Action	N/A	0	0
		Limit	N/A	0	0
		Total	***0***	***0***	***0***

3.4. All 1-hour and 24-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting quarter.

3.5. The graphical plots of the impact air quality monitoring results are provided in Appendix E.

4 CONSTRUCTION NOISE MONITORING

4.1. Construction noise monitoring was conducted at the 7 monitoring stations (NM1/NM1A, NM2, NM3, NM4, NM5, NM6 and NM7) for at least once per week during 07:00 – 19:00 in the reporting quarter.

4.2. The major noise sources during the noise monitoring included construction activities of Stage 1 of the Project and nearby traffic noise. In addition, for NM3 and NM6, general school activities are also a major noise source during the noise monitoring.

4.3. The number of construction noise monitoring events and exceedances are summarized in Table 4.1 and Table 4.2 respectively.

Table 4.1 Summary of Number of Monitoring Events for Construction Noise

Monitoring Parameter	Location	No. of monitoring events		
		Aug 11	Sep 11	Oct 11
Construction Noise	NM1	5	N/A	N/A
	NM1A	N/A	4	4
	NM2	5	4	4
	NM3	5	4	4
	NM4	5	4	4
	NM5	5	4	4
	NM6	5	4	4
	NM7	5	4	4

Table 4.2 Summary of Number of Monitoring Exceedances for Construction Noise

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			Aug 11	Sep 11	Oct 11
Construction Noise	NM1	Limit	0	N/A	N/A
	NM1A		N/A	0	0
	NM2		0	0	0
	NM3		0	0	0
	NM4		0	0	0
	NM5		0	0	0
	NM6		0	0	0
	NM7		0	0	0
		Total	***0***	***0***	***0***

4.4. All measured construction noise levels were below the Limit level and the graphical plots of the trends of the monitoring results are provided in Appendix F. No Action/Limit exceedance of construction noise monitoring was recorded in the reporting quarter.

4.5. There was no noise related complaints followed up by Environmental Team in the reporting period. Hence, no Action/Limit Level exceedance was recorded.

5 ENVIRONMENTAL SITE INSPECTION AND AUDIT

5.1. Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for Stage 1 of the Project. In the reporting quarter, 13 site inspections were carried out for each of Contract 1 and Contract 2 of the Project.

5.2. Particular observations and reminder during the site inspections for Contract 1 are described below:-

Air Quality

5.2.1. Exposed slopes near work area NB1 and at S17 were not completely covered by tarpaulin sheet. The Contractor was reminded to fully cover the exposed slopes with tarpaulin sheet

5.2.2. Cement was observed on the ground at Wall 4-7. The Contractor was reminded to clean up or spray water on the cement.

5.2.3. Soil stockpile at site entrance 24 was observed dry. The Contractor was reminded to implement dust suppression measure on the soil stockpile.

Noise

5.2.4. No adverse observation was identified in the reporting quarter.

Water Quality

5.2.5. To avoid any silty surface run-off overflowing outside the works area, the Contractor was reminded to provide sand bags/bunds at the site boundaries at Wall 8 riverbank works area to intercept the surface run-off from works areas, especially during rainstorm.

5.2.6. Tarpaulin sheet coverage on the exposed slopes at NB21 was found incomplete. The Contractor was reminded to fully cover up the exposed slopes with tarpaulin sheet to avoid any soil erosion, especially during rainstorm.

Chemical and Waste Management

5.2.7. Waste inside the waste skip placed near work area W8 was found mixing with some recyclable waste. The contractor was reminded to sort the recyclable waste and clean up regularly.

5.2.8. Oil stains were observed on the bridge surface at Bridge 11A. The Contractor was reminded to clear the oil stains.

Landscape and Visual Impact

5.2.9. Concrete blocks were found placed near the retained tree in work area TB1. The Contractor was reminded to remove the concrete blocks and provide proper protection measures to the retained trees in works area.

Miscellaneous

5.2.10. No adverse observation was identified in the reporting quarter.

5.3. Particular observations during the site inspections for Contract 2 are described below:-

Air Quality

5.3.1. Grouting mixing process was found carrying out in an area without shelter at work area 15AP1. The contractor was reminded to cover up with tarpaulin sheet on the top and the 3 sides.

5.3.2. Exposed soil stockpile was found on site without covering in work area NB41, S28, Bridge 15ASA and NLKP Pier 10. The Contractor was reminded to cover up the stockpile with tarpaulin sheet to avoid soil erosion.

5.3.3. Stockpile of soil at work area NB42 was found without dust suppression measure. The Contractor was reminded to spray water frequently or cover up with tarpaulin sheet especially in the coming dry season. **(Reminder)**

5.3.4. Access roads in works area W38 and NB41 was found dry. The Contractor was reminded to provide regular water spraying on access roads within works area to minimize the dust impacts.

Noise

5.3.5. Noise Emission Label (NEL) was found missing for the air compressor at 18A. The Contractor was reminded to affix NEL to the air compressor.

Water Quality

5.3.6. Deposited silt was observed inside the wheel washing bay at Gate G11. The Contractor was reminded to properly maintain the wheel washing bays with regular clearance of deposited silt.

5.3.7. A sedimentation tank placed near the AquaSed at Gate G11 was almost full of silty water. The Contractor was reminded to treat the silty water before discharge and provide mitigation measures to avoid overflowing of untreated water and mosquito breeding.

5.3.8. Muddy run-off was found discharging to public drainage at 15AP4 and at work area W51. Muddy water was found accumulated on the ground under NLKP Pier 5. The Contractor was requested to construct bunds to divert the muddy run-off to desilting facility and closely monitor the drainage system to ensure the drainage system is working properly and well maintained. Muddy water accumulated on ground should be cleared to prevent muddy water flowing to nearby public drainage.

5.3.9. Silty water and deposited silt was observed inside the u-channel along the site boundaries of works area W38, sump pit of the u-channel near work area W73 and desilting pit at 15AP4. Debris and weeds was found accumulated inside the drainage channels near work area W53 and 15AP3 repsectively. The Contractor was recommended to properly maintain the drainage systems/channels with regular clearance of deposited silt, weeds and debris.

Chemical and Waste Management

5.3.10. Drain hole was found damaged on a drip tray at work area W56. The Contractor was reminded to repair the drain hole of the drip tray.

5.3.11. Oil stains were observed on the ground at W56. The Contractor was reminded to clear the oil stains and treat the contaminated soil as chemical waste.

5.3.12. Parts of equipment were found stored up at W66. The Contractor was reminded to clear up the plants to suitable area or place them onto tarpaulin sheet to avoid contamination to the soil from the oil leaked from parts.

5.3.13. Recyclable waste such as steel was found mixing with general refuse inside the waste skip at W66. The Contractor was reminded to sort out the recyclable waste and clear the waste skip regularly.

5.3.14. General refuse and C&D materials were found accumulated inside the u-channel at Slope 41. The Contractor was reminded to remove them from the u-channel and maintain the site in a clean and tidy condition.

5.3.15. Stockpiles of empty cement bags were observed at W38 works area and Gate 15. The Contractor was reminded to clear the empty cement bags regularly and disposed of them properly.

Landscape and Visual Impact

5.3.16. No adverse observation was identified in the reporting quarter.

Miscellaneous

5.3.17. Stagnant water was accumulated on the bridge at NLKP Pier 5, inside the drip tray near Gate 7 and inside the bay of base slab of retaining wall under construction near work area W73. The Contractor was reminded to clear the stagnant water to prevent mosquito breeding.

6 ADVICE ON THE SOLID AND LIQUID WASTE MANAGEMENT STATUS

6.1.1 The Contract 1 Contractor (CSHK) and the Contract 2 Contractor (GCL) are registered as chemical waste producers for Stage 1 of the Project. C&D material sorting was carried out on site. Sufficient numbers of receptacles were available for general refuse collection.

6.1.2 As advised by the Contract 1 Contractor (CSHK), 136m^3 of inert C&D material was disposed as public fill to Tuen Mun 38(of which 48m^3 was broken concrete), while 430m^3 of general refuse were disposed at NENT landfill. 60,747kg of metal, 470kg of paper/cardboard and 3,626kg of plastic were collected by recycling contractor in the reporting quarter. 20,973m^3 and 19,580m^3 of inert C&D materials were reused on site and in NENT for backfilling respectively. 2,400kg of chemical waste was collected by licensed contractor in the reporting period.

6.1.3 As advised by the Contract 2 Contractor (GCL), 593.9m^3 of inert C&D material were disposed to Tuen Mun 38 and 315m^3 of general refuse was disposed to NENT landfill in the reporting period.

6.1.4 The Contract 1 Contractor (CSHK) and the Contract 2 Contractor (GCL) are advised to maintain on site waste sorting and recording system and maximize reuse / recycle of C&D wastes.

7 SUMMARY OF NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY

7.1. There was no 1-hour TSP and 24-hour TSP monitoring exceedance recorded in the reporting quarter.

7.2. No Action/Limit Level exceedance of construction noise monitoring was recorded in the reporting quarter.

7.3. There was no noise related complaint followed up by Environmental Team in the reporting period.

8 ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

8.1. A 24-hour complaint hotline at 6628 8366 has been established for Stage 1 (both Contract 1 and Contract 2) of the Project. Also a 24-hour hotline at 8201 6669 is established for Contract 1 of the Project. The hotline numbers are displayed at the site entrances, fencings and project signboards, as well as printed on publications for the public, such as newsletters.

8.2. One (1) air quality related complaint was followed up by Environmental Team in the reporting quarter.

EPD referred a complaint from Mr. Lai about dust emission from construction site of the Tolo Highway widening works near Ma Wo on 9 September 2011. As informed by the Contract 2 (HY2009/08 - Between Ma Wo and Tai Hang)'s Contractor, Gammon Construction Ltd, of Stage 1 of the Project and confirmed by the Engineer of the Project, no substantial dusty construction activity was being carried out on that day at the work area nearby the residential flat of the complainant. The dust was likely from the haul road of the construction site without sufficient dust suppression measure. Although the 24-hour TSP monitoring at the nearest monitoring station (Sheung Wan Yiu, AM1A) on 6 September 2010 was 30.4 ug/m3, which was below the action level of 176.6 ug/m3, the Contractor was recommended and agreed the mitigation measures as follows:

- Frequently watering the haul road above Ma Wo subway;
- Watering the dry soil during excavation for W45 near the subway;
- Erect canvas to control the cement flying in the open air during shotcreting; and
- Nominate a direct labour to monitor the agreed measures like water spraying etc.

Follow-up site visit was conducted on 22 September 2011 to conform the implementation of mitigation measures. No fugitive dust was observed arising from the construction works area. Water spraying on haul road near Ma Wo was observed during the site audit and a worker was assigned for the water spraying works.

8.3. No notification of summons and prosecutions was received in the reporting quarter.

8.4. Cumulative statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix G.

9 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

Comments on Mitigation Measures

9.1. According to the environmental site inspections performed in the reporting quarter, the following recommendations were provided:-

Air Quality Impact

- All plants on site should be properly maintained to avoid dark smoke emission.
- All vehicles should be washed to remove any dusty materials before leaving the site.
- Haul roads should be sufficiently dampened to minimize fugitive dust generation.
- Wheel washing facilities should be properly maintained to ensure properly functioning.
- Temporary exposed slopes and open stockpiles should be properly covered.
- Enclosure should be erected for cement mixing operations.
- Ensure all vehicles to be washed before leaving the site.
- Provide water spraying to suppress fugitive dust for any dusty construction activity.

Construction Noise Impact

- Properly erect the temporary noise barriers in accordance with the Environmental Permit requirement.
- Noise barriers should be closely packed and properly aligned to ensure effective noise reduction.
- Noisy operations should be oriented to a direction away from sensitive receivers as far as possible.
- Sound insulation materials shall be wrapped at the breaker tip for concrete breaking works.
- Noise Emission Label (NEL) shall be affixed to the air compressor and hand-held breaker operating within works area.
- Better scheduling of construction works to minimize noise nuisance.

Water Quality Impact

- Silt, debris and leaves accumulated at public drains, wheel washing bays and perimeter u-channels and desilting facilities should be cleaned up regularly.
- Silty effluent should be treated/desilted before discharged. Untreated effluent should be prevented from entering public drain channel.
- Proper drainage channels/bunds should be provided at the site boundaries to collect/intercept the surface run-off from works areas.
- Exposed slopes and stockpiles should be covered up properly during rainstorm.
- Stagnant water accumulated within works area should be removed.

Chemical and Waste Management

- C&D materials and wastes should be sorted, recycled/treated and removed timely.
- All chemical containers and oil drums should be properly stored.
- All plants and vehicles on site should be properly maintained to prevent oil leakage.
- All drain holes of the drip trays utilized within works areas should be properly plugged to avoid any oil leakage.
- Oil stains on soil surface and empty chemical containers should be cleared and disposed of as chemical waste.

Landscape and Visual Impact

- All retained trees should be properly fenced off at the works area.

Recommendations on EM&A Programme

9.2. The impact air quality and noise monitoring programme ensured that any deterioration in environmental condition was readily detected and timely actions taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of Stage 1 of the Project. The weekly environmental site inspections ensured that all the environmental mitigation measures recommended in the ERR were effectively implemented.

9.3. The EM&A programme effectively monitored the environmental impacts from the construction activities and no particular recommendation was advised for the improvement of the programme.

Conclusions

9.4. The construction phase and EM&A programme of Stage 1 of the Project commenced on 23 November 2009.

9.5. Air quality and noise monitoring, weekly site inspections were carried out in the reporting quarter, in accordance with the updated EM&A manual.

9.6. All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Level in the reporting quarter.

9.7. There was no noise related complaints followed up by Environmental Team in the reporting period. No Action/Limit Level exceedance of construction noise monitoring was recorded in the reporting quarter.

9.8. One (1) environmental complaint was followed up by Environmental Team in the reporting period. Investigation was carried out. The findings, proposed mitigation measures and follow-up site visit findings were submitted to all relevant parties.

9.9. No notification of summons and prosecution was received in the reporting quarter.