

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 February 2012 – April 2012**

[05/2012]

	Name	Signature
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Reviewed, Approved & Certified:	Y T Tang	

Version:	Rev. 0	Date: 30 May 2012
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Disclaimer

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30 May 2012
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/A
Condition 3.3 – Submission of Quarterly EM&A Summary Report for February 2012 to
April 2012 (Stage 1)**

We refer to the Quarterly EM&A Summary Report for February 2012 to April 2012 for the captioned Project submitted by ET via email on 28 and 30 May 2012. We confirm we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

A handwritten signature in black ink, appearing to read 'Terence Kong'.

Terence Kong
Independent Environmental Checker

c.c. HyD – Mr. Raymond T W Kong / Mr. Dennis Wong / Mr. William Chiang
ETL, AECOM – Mr. Y T Tang

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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) issued by EPD on 23 December 2008. Subsequently, EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012.

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 EPs 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 February 2012 and 30 April 2012. As informed by the Contract 1 Contractor (CSHK), construction activities in the reporting period were:-

- Site investigation;
- Temporary shoring, sheetpiling and excavation;
- Pre-bored H-piles construction;
- Pipe pile wall construction;
- Pile cap construction;
- Bridge construction;
- Tree felling & transplantation;
- At-grade road construction;
- Demolition of central dividers;
- Retaining wall construction;
- Slope works;
- Soil nails works;
- Noise barrier footing construction and panel installation;
- Road paving; 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	15 sessions
1-hour TSP monitoring	45 sessions
Daytime Noise monitoring	12 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 quarter.

Breaches of Action and Limit Levels for Noise

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

There were two (2) noise related complaint 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. Two (2) Action Level exceedance of construction noise were recorded in the reporting quarter. Summary of investigation is described in Section 8.4.

Complaint, Notification of Summons and Successful Prosecution

There were two (2) noise related complaints 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 8.4.

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) issued by EPD on 23 December 2008. Subsequently, EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012.
- 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 EPs 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 ninth 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 February 2012 and 30 April 2012.

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	S Y Tse	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 (1 Feb 2012 – 15 Mar 2012)	9483 8885	2559 3410
		John Chan (16 Mar 2012 – to date)	9460 4038	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 EPs 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:-
- Site investigation;
 - Temporary shoring, sheetpiling and excavation;
 - Pre-bored H-piles construction;
 - Pipe pile wall construction;
 - Pile cap construction;
 - Bridge construction;
 - Tree felling & transplanted;
 - At-grade road construction;
 - Demolition of central dividers;
 - Retaining wall construction;
 - Slope works;
 - Soil nails works;
 - Noise barrier footing construction and panel installation;
 - Road paving; and
 - Drainage works.
- 1.15. 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.
- 1.16. The Construction Programmes are shown in Appendix B.
- 1.17. The general layout plan of the Project site showing the contract areas is shown in Figure 1.1.
- 1.18. 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 EPs (EP-324/2008 and EP-324/2008/A) 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 AM4A), in accordance with the updated EM&A Manual.
- 3.2. The weather was mostly sunny, with several cloudy and rainy 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		
		Feb 12	Mar 12	Apr 12
1-hr TSP	AM1A	15	15	15
	AM2	15	15	15
	AM3	15	15	15
	AM4A	15	15	15
24-hr TSP	AM1A	5	5	5
	AM2	5	5	5
	AM3	5	5	5
	AM4A	5	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			
			Feb 12	Mar 12	Apr 12	
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	
	AM4A	Action	0	0	0	
		Limit	0	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	
AM4A		Action	0	0	0	
		Limit	0	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 (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		
		Feb 12	Mar 12	Apr 12
	NM1A	4	4	4
	NM2	4	4	4
	NM3	4	4	4
	NM4	4	4	4
	NM5	4	4	4
	NM6	4	4	4
	NM7	4	4	4

Table 4.2 Summary of Number of Monitoring Exceedances for Construction Noise

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			Feb 12	Mar 12	Apr 12
	NM1A		0	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. Two (2) Action Level exceedance of construction noise were recorded in the reporting quarter
- 4.5. There were two (2) noise related complaint 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 8.4.

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 soil stockpile was observed stored up at S15. The Contractor was reminded to cover up the exposed soil stockpile with tarpaulin sheet to minimize the fugitive dust arising.

5.2.2. Cement was observed on the ground at W8. The Contractor was reminded to clear it up or spray water on the cement.

Noise

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

Water Quality

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

Chemical and Waste Management

5.2.5. Oil stains were observed on the bare ground near NB1b and TB2. Oil leakage was observed on ground from the power pack placed at jacking pit. The Contractor was reminded to provide drip tray to retain any leaked oil. Oil stain on ground should be cleared and disposed of as chemical waste.

5.2.6. Stockpile of empty cement bags and general refuse were found under TB1 near Gate 3. The Contractor was reminded to remove the empty cement bags and general refuse regularly and disposed of properly.

5.2.7. Drain hole of drip tray was unplugged on Bridge 10A. Drain hole of drip tray should be sealed up to prevent chemical oil leakage from the chemical container.

5.2.8. Construction materials were found accumulated on the Bridge 10A. The Contractor was reminded to clear the construction materials on site. (Reminder)

Landscape and Visual Impact

5.2.9. Sand was observed accumulated around the retained trees and retained trees were not fenced off at jacking pit. The Contractor was reminded to setup a tree protection zone and provide proper protective measure to the retained trees on site.

5.2.10. Construction waste was found placed near the retained tree under TB1 near Gate 3. The Contractor was reminded to remove the construction waste and provide proper protective measure to the retained tree.

Miscellaneous

5.2.11. Stagnant water was found accumulated on ground at jacking pit, inside the drip tray near TB2 and on Bridge 10A and inside the u-channel at Gate 3. The Contractor was reminded to remove the stagnant water to avoid mosquito breeding and dispose of the stagnant water inside the drip tray as chemical waste.

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

Air Quality

- 5.3.1. Mud trails were found on ground at the exit point near NLKP 9 and Gate 2. The Contractor was reminded to clear up the mud trails and provide measure to ensure the vehicles bodies and wheels were kept clean of deposited silt before leaving the site.
- 5.3.2. Dusty construction material was found placed on ground at W65b. The Contractor was reminded to remove the dusty construction material to avoid fugitive dust spreading.
- 5.3.3. Exposed slope near Bridge 15 AP4 was incompletely covered with tarpaulin sheet. The Contractor was reminded to cover up the exposed slope with tarpaulin sheet completely or provide shotcreting to prevent generation of silty surface run-off.
- 5.3.4. Access roads were found dry at TW4. The Contractor was reminded to provide frequent water spraying on the access roads to avoid fugitive dust emission.
- 5.3.5. The Contractor was reminded to provide regular water spraying or tarpaulin sheet coverage to the exposed soil surfaces/slopes at NB42 to minimize dust impacts. (Reminder)

Noise

- 5.3.6. Sound insulation material wrapping at the breaking tip at W65b should be improved. The Contractor was advised to completely wrap the breaking tip of the breaker with sound insulation materials.
- 5.3.7. Noise Emission Label(NEL) was found missing for the generator employed in W56b. The Contractor should affix the NEL to the generator within the works area.

Water Quality

- 5.3.8. Desilting facility near Bridge 15 AP4 should be improved. The Contractor was recommended to install additional inlet pipe to the sedimentation tank for the wastewater collection from the desilting pit to prevent overflowing of untreated water from the desilting pit in coming wet season.
- 5.3.9. Mud and silt accumulated inside the u-channel and mud trails were observed on ground at Bridge 15 AP4. The Contractor was recommended to clear the mud and silt inside the u-channel and provide sufficient sand bags/bundings to intercept the muddy surface run-off before discharge. Mud trail on ground should be cleared and regularly review the drainage system to ensure the drainage system is properly maintained.
- 5.3.10. Muddy water was found discharging to the public drainage and loose sand bags were observed in the catchpit at W51. The Contractor was recommended to provide additional sand bags/bundings with shotcreting around the sump pit and additional sand bags/bundings to the inlet and outlet of the catchpit. Also, the Contractor was recommended to provide geotextile coverage on site boundary to prevent seepage of surface run-off generated from works area. Temporary exposed slopes/surface should cover up with tarpaulin sheet to minimize the generation of silty run-off. Deposited silt and debris inside drainage in W51 should be cleared. Muddy run-off should be diverted to desilting facility and closely monitor the drainage system to ensure the drainage system is properly maintained. No substandard surface run-off from construction site shall be discharge to public drains.
- 5.3.11. Muddy surface run-off was observed discharging outside the site area and sand bags/bundings provided at the boundary of the work areas were insufficient at TW1, Link Bridge 3 and Link Bridge 1 North Abutment. The Contractor should clear the mud on ground and provide sufficient sand bags/bundings at the boundaries. Muddy run-off should be directed to sedimentation tank to avoid generation of muddy run-off overflowing outside the works area.

Chemical and Waste Management

- 5.3.12. Oil stains were observed on the ground at NLKP 7. The Contractor was reminded to clear the oil stains.
- 5.3.13. Two chemical containers were placed on ground without drip tray at W38. The Contractor was reminded to provide drip tray to the chemical containers on site.
- 5.3.14. Vegetation wastes were found accumulated along the site boundary at W56. The Contractor was reminded to clear up the vegetation wastes to keep the site in a tidy condition.
- 5.3.15. Waste was observed inside the drip tray at TW4. The Contractor was reminded to clear the waste accumulated inside the drip tray.
- 5.3.16. The Contractor was reminded to clear the construction waste regularly on Lam Kam Bridge. (Reminder)

Landscape and Visual Impact

- 5.3.17. Metal wire was found tied onto the retained tree at RWB12B. The Contractor was reminded to remove the metal wire and do not use the retained tree as a physical support.

Miscellaneous

- 5.3.18. Stagnant water with silt and weeds were observed inside the u-channel at S34 and accumulated inside the drip trays of chemical containers on Lam Kam Bridge Pier 2 and TW2. The Contractor was reminded to remove the stagnant water with silt and weeds inside the drainage channel to maintain the drainage system properly. Also, sand bags should be provided to intercept the silt to prevent muddy water discharge to the public drainage. Stagnant water accumulated inside the drip trays should be disposed of as chemical waste.

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), 111m³ of inert C&D material was disposed as public fill to Tuen Mun 38 (of which 3m³ was broken concrete), while 319m³ of general refuse were disposed at NENT landfill. 22,074kg of metal, 337kg of paper/cardboard and 6,183kg of plastic were collected by recycling contractor in the reporting quarter. 8,759m³ and 8,670m³ of inert C&D materials were reused on site and in NENT for backfilling respectively. 1,200kg of chemical waste was collected by licensed contractor in the reporting period.
- 6.1.3 As advised by the Contract 2 Contractor (GCL), 895m³ of inert C&D material were disposed to Tuen Mun 38 and 2,495m³ 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. Two (2) Action Level and no Limit Level exceedance of construction noise were recorded in the reporting quarter.
- 7.3. There were two (2) 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. No notification of summons and prosecution was received in the reporting quarter.
- 8.3. There were two (2) noise related complaints followed up by Environmental Team in the reporting quarter.
- 8.4. EPD refer a complaint about construction noise was generated from the construction site of Widening of Tolo Highway near Ma Wo Tsuen on 22 February 2012 starting from 8:30a.m. As informed by the Contractor (Gammon Construction Ltd) and confirmed by the Engineer of the Project, excavation of base at retaining wall W56 and fixing rebar of base slab at bay 11 at retaining wall W38 were being carried out on 22 February 2012. The Contractor was reminded to carry out mitigation measures, including informing the nearby residents in advance for any noisy works to be carried out in the morning; erecting temporary noise barriers fitted with noise absorbing materials at W56 and other noisy construction works areas near Ma Wo Tsuen in the future; and regularly review the adequacy and effectiveness of noise mitigation measure. Erection of temporary noise barrier at W56 was implemented by the Contractor to minimize the noise impact from the works area on 7 March 2012.

ICC refer a complaint about noise nuisance generated by heavy machinery from the construction site of Widening of Tolo Highway opposite to Wai Tau Tsuen near Tai Wo Service Road West and Fanling Highway at the early morning on 20 March 2012. As informed by the Contractor (Gammon Construction Ltd) and confirmed by the Engineer of the Project, erection of overhead falsework was being carried out between New Lam Kam Flyover and Tai Wo Service Road West from 1:00 a.m. to 5:00 a.m. on 20 March 2012, a valid CNP(GW-RN0021-12) was granted for the mentioned works. The noise was potentially generated from the safety alarm system of aerial platform. The noise nuisance in the midnight is considered as project related. Light alarm was adopted, instead of the sound alarm, since 21 March 2012. The Contractor was advised to implement the noise mitigation measures, including strictly comply with the requirements of the approved CNP for night-time works; adopt light alarm during implement night-time works; and better scheduling of noisy construction activities to minimize disturbance to nearby residents. Follow-up site visit was conducted on 5 April 2012 to confirm the implementation of mitigation measure. Light alarm was adopted for safety alarm system of the aerial platform.

- 8.5. 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.
- 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 were two (2) noise related complaint followed up by Environmental Team in the reporting quarter. Two (2) Action Level and no Limit Level exceedance of construction noise were recorded 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.
- 9.8. No notification of summons and prosecution was received in the reporting quarter.