

**Highways Department**

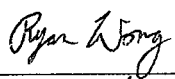

Agreement No. CE 20/2009 (EP)

**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 2011 - April 2011**

[5/2011]

	Name	Signature
Prepared & Checked:	Ryan Wong	
Reviewed & Approved:	Y T Tang	

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**Disclaimer**

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27 May 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 February 2011 to  
April 2011 (Stage 1)**

We refer to the Quarterly EM&A Summary Report for February 2011 to April 2011 for the captioned Project submitted by ET via email on 16 & 26 May 2011. 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 Yip / Mr. C K Chan / 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). 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 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 2011 and 30 April 2011. As informed by the Contract 1 Contractor (CSHK), construction activities in the reporting period were:

- Temporary shoring, sheetpiling and excavation;
- Pipe pile wall construction;
- Pre-bored H-piles construction;
- Pile cap construction;
- Bridge Construction;
- Bored piling;
- Tree felling and transplanting of trees;
- Installation of soil nails;
- Demolition of central dividers;
- Retaining wall construction;
- At-grade road construction;
- Demolition of bridges; and
- Slope works.

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

- 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;
- Entrusted watermains works;
- Retaining wall construction;
- Noise barrier construction;
- Modification of existing bridge structures; 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	17 sessions
1-hour TSP monitoring	51 sessions
Daytime Noise monitoring	13 regular sessions
Environmental Site inspection	12 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) environmental complaint was followed up by Environmental Team in the reporting quarter.

The complaint was about construction noise generated on public holiday. Investigation was carried out. The findings and the proposed mitigation measures were submitted to all relevant parties. Summary of investigation is described in Section 8.3.1.

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 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 to undertake the 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 sixth Quarterly Environmental Monitoring and Audit (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 2011 to 30 April 2011.

### Project Organization

- 1.13. The project organization 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	26674000
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) Ltd.)	Site Agent	David Lau	9499 0818	2667 5666
	Environmental Officer	Michael Tsang	9277 4956	2667 5666
Contractor of Stage 1, Contract 2 (Gammon Construction Ltd.)	Site Agent	Edmond Chan	9483 8885	2559 3410
	Environmental Officer	Ir Thomson Chang	9213 6569	2559 3410
ET of Stage 1 (AECOM)	ET Leader	Y T Tang	2893 1551	2891 0305

### 1.14. Summary of Construction Works

- 1.15. 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;
  - Pipe pile wall construction;
  - Pre-bored H-piles construction;
  - Pile cap construction;
  - Bridge Construction;
  - Bored piling;
  - Tree felling and transplanting of trees;
  - Installation of soil nails;
  - Demolition of central dividers;
  - Retaining wall construction;
  - At-grade road construction;
  - Demolition of bridges; and
  - Slope works.
- 1.16. The construction works carried out by the Contract 2 Contractor (GCL) in the reporting period were:
- 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;
  - Entrusted watermains works;
  - Retaining wall construction;
  - Noise barrier construction;
  - Modification of existing bridge structures; and
  - Sewer installation.
- 1.17. The Construction Programmes are shown in Appendix B.
- 1.18. The general layout plan of the Project site showing the contract areas is shown in Figure 1.1.
- 1.19. The 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. The monitoring locations are depicted in Figure 2.1.
- 2.5. 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)**

- 2.6. 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(A), AM2, AM3 and AM4), while the environmental quality performance limits of noise monitoring were defined in the EM&A Manual.
- 2.7. The environmental quality performance limits of air quality and noise monitoring and are given in Appendix D.

#### **Environmental Mitigation Measures**

- 2.8. Relevant environmental mitigation measures were stipulated in the Particular Specification and EP (EP-324/2008) for the Contractor to adopt. A list of 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), in accordance with the updated EM&A Manual.
- 3.2. The weather was either sunny or cloudy in the reporting quarter. The major dust source of the construction work area included concrete breaking, soil nail installation and excavation 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 11	Mar 11	Apr 11
1-hr TSP	AM1A	15	18	18
	AM2	15	18	18
	AM3	15	18	18
	AM4	15	18	18
24-hr TSP	AM1A	5	6	6
	AM2	5	6	6
	AM3	5	6	6
	AM4	5	6	6

**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 11	Mar 11	Apr 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	0	0	
		Limit	0	0	0	
			<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>
	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	0	0	
		Limit	0	0	0	
			<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

- 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 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, 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 source during the noise monitoring included construction activities of Stage 1 of the Project, nearby traffic noise and general school activities.
- 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 11	Mar 11	Apr 11
Construction Noise	NM1	4	5	4
	NM2	4	5	4
	NM3	4	5	4
	NM4	4	5	4
	NM5	4	5	4
	NM6	4	5	4
	NM7	4	5	4

**Table 4.2 Summary of Number of Monitoring Exceedances for Construction Noise**

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			Feb 11	Mar 11	Apr 11
Construction Noise	NM1	Limit	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
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	

- 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 exceedance of construction noise monitoring was recorded in the reporting quarter.
- 4.5. There was one (1) noise related complaint followed up by Environmental Team in the reporting period. It was about construction noise generated on public holiday. Investigation was carried out. The findings and the proposed mitigation measures were submitted to all relevant parties. Summary of investigation is described in Section 8.3.1.

## 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, 12 and 13 site inspections were carried out for Contract 1 and Contract 2 of the Project respectively.

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

### ***Air Quality***

5.2.1. The bags of cement behind the grout mixer at Bridge 10A were placed on ground without cover. The Contractor was reminded to cover the bags of cement.

### ***Noise***

5.2.2. Noise emission label was missing on an air compressor at West abutment of Bridge 10A. The Contractor was reminded to attach the noise emission label on the body of the air compressor.

### ***Water Quality***

5.2.3. Leaves were accumulated inside the u-channel along Wall 10 and Wall 17. The Contractor was reminded to clear the leaves inside the u-channel more frequently.

### ***Chemical and Waste Management***

5.2.4. Two chemical containers were placed on ground without drip tray at Bridge 10A. The Contractor was reminded to provide drip tray to all chemicals on site.

### ***Landscape and Visual Impact***

5.2.5. Ropes to hang clothes were found tied on retained trees at Bridge 10A. The Contractor was reminded to untie the ropes and not to hang anything on the retained trees in the future.

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

### ***Air Quality***

5.3.1. Dusty material was observed on ground at W38 and dusty material from soil nailing works was accumulated at Bridge 18 C35. The Contractor was reminded to clear up the dusty material in a timely manner.

5.3.2. Dark smoke was observed emitted from a drill rig at Bridge 13A Pier 2. The Contractor was reminded to properly maintain the plants on site.

5.3.3. Mud trails were observed on ground at the vehicle site entrance of W73. The Contractor was reminded to properly wash the vehicles before they leave the site.

5.3.4. Cement powder was scattered on ground at Bridge 13A. The Contractor was advised to clean up the cement powder and properly handle them in the future.

5.3.5. Stockpiles of dusty material at Area B were not properly covered. The Contractor was reminded to cover the stockpiles with tarpaulin sheets.

### ***Noise***

5.3.6. The flap of an air compressor at NLKP 7 was opened during operation. The Contractor was reminded to close the flaps of mechanical equipments during operation.

### ***Water Quality***

5.3.7. Seepage of muddy water was observed from the gaps of concrete blocks under the piling area at Bridge 13A Pier2. To prevent muddy water from running off to the adjacent stream, the Contractor was

requested to align a bunding at the foot of the concrete blocks to divert the seeped water to desilting facility.

- 5.3.8. The sand bag bunding at the bottom of the concrete blocks at Bridge 13A Pier2 was covered up by shotcrete layer which rendered the sand bags ineffective to prevent untreated water from running off to the adjacent stream. The Contractor was advised to provide an effective bunding to divert the untreated water to desilting facility.
- 5.3.9. Leaves were observed accumulated inside the u-channel at W38. The Contractor was reminded to remove the leaves from the u-channel regularly.

#### ***Chemical and Waste Management***

- 5.3.10. Oil stains were observed on ground at W49. The Contractor was reminded to remove the oil stains and properly maintain the vehicles and plants on site.
- 5.3.11. Soil nail installation controller was placed on ground without drip tray at Bridge 18 C35. The Contractor was reminded to provide drip tray to all soil nail installation controllers on site.
- 5.3.12. Two bottles of chemical were placed on ground without drip tray at W73. The Contractor was reminded to provide drip tray to all chemicals on site.
- 5.3.13. Oil stain was observed underneath a boring machine near the site entrance of W72B. The Contractor was reminded to clean up the oil stain and provide a tarpaulin sheet underneath all the equipments requiring repair and maintenance.
- 5.3.14. Non-inert C&D waste, general refuse and metal were found mixed inside a waste skip in Area B. The Contractor was reminded to sort the waste on site.

#### ***Landscape and Visual Impact***

- 5.3.15. No adverse observation was identified in the reporting period.
- 5.4. The Contractors (CSHK and GCL) have rectified all the observations as identified during environmental site inspections in the reporting quarter within agreed time frame.

## **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), 486m<sup>3</sup> of inert C&D material was disposed as public fill to Tuen Mun 38, while 423m<sup>3</sup> of general refuse were disposed at NENT landfill, 42493kg of metal, 454kg of paper/cardboard and 38kg of plastic were collected by recycling contractor in the reporting quarter. 104250m<sup>3</sup> and 21470m<sup>3</sup> of inert C&D materials were reused on site and in NENT for backfilling respectively.
- 6.1.3 As advised by the Contract 2 Contractor (GCL), 1200m<sup>3</sup> of inert C&D material were disposed to Tuen Mun 38 and 380m<sup>3</sup> 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 one (1) noise related complaint followed up by Environmental Team in the reporting period. It was about construction noise generated on public holiday. Investigation was carried out. The findings and the proposed mitigation measures were submitted to all relevant parties. Summary of investigation is described in Section 8.3.1.

## **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 prosecutions was received in the reporting quarter.
- 8.3. One (1) environmental complaint was followed up by Environmental Team in the reporting quarter.
- 8.3.1 EPD referred a public complaint about the noise generated from formwork construction on 6 March 2011 (Sunday) starting from 09:00am at the Tolo Highway Widening construction site opposite to Tak Nga Court affected the residents. As informed by the Contract 1 (HY2008/09 - Between Island House Interchange and Ma Wo) Contractor, China State Construction Engineering (Hong Kong) Limited, of Stage 1 of the Project, and confirmed by the Engineer of the Project, only water barrier laying work, general site cleanliness and tidiness works were carried out at the area close to Tak Nga Court on 6 March 2011. No activity likely to cause the noise nuisance was performed on the date at the area. The complaint could be project related and the Contract 1 Contractor (CSHK) was recommended the mitigated measures as follows:
- Strictly comply with the requirements of the approved CNP for works carried out in restricted hours;
  - Better scheduling of works to minimize noise nuisance;
  - Instruct the site workers to keep the noise from manual works to minimum; and
  - Foster better public relations with the sensitive receivers nearby.
- 8.4. 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.
- Better scheduling of construction works to minimize noise nuisance.

### ***Water Quality Impact***

- Stagnant water accumulated in drip trays should be removed.
- Silt, debris and leaves accumulated at public drains and perimeter u-channels should be cleaned up regularly.
- Silty effluent should be treated/desilted before discharged. Untreated effluent should be prevented from entering public drain channel.

### ***Chemical and Waste Management***

- C&D material should be sorted and removed timely.
- All plants and vehicles on site should be properly maintained to prevent 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. No Action/Limit Level exceedance of construction noise monitoring was recorded in the reporting quarter.
- 9.8. There was one (1) noise related complaint followed up by Environmental Team in the reporting period. It was about construction noise generated on public holiday. Investigation was carried out. The findings and the proposed mitigation measures were submitted to all relevant parties.

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