

Highways Department

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**Agreement No. HMW  
5/2009 (EP) Traffic  
Improvements to Tuen  
Mun Road Town Centre  
Section**

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Quarterly Environmental  
Monitoring and Audit  
Summary Report  
(November 2013 to  
January 2014)

Final



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## Executive Summary

This is the fourteenth quarterly Environmental Monitoring and Audit (EM&A) summary report prepared by Ove Arup & Partners Hong Kong Limited (Arup), the designated Environmental Team (ET), for the Project "Traffic Improvements to Tuen Mun Road Town Centre Section". This report presents the results of EM&A works conducted for the period from 1 November 2013 to 31 January 2014.

### Environmental Monitoring Works – Breaches of Action and Limit Levels

#### *Air Quality*

All 24-hour TSP measurements during the reporting period were below the Action and Limit Level. No exceedance of Action and Limit Level was found.

One complaint regarding air quality was received in the reporting period. After the investigation, it is concluded that the no abnormal construction activities were observed within the site area.

#### *Noise*

Totally 2 Limit Level exceedances (0 in November, 2 in December 2013 and 0 in January 2014) of noise monitoring were recorded during the reporting period. Based on the on-site observations and interpretation from the results, noise exceedances were not related to the construction activities. No particular remedial work is required.

No Action Level exceedance was recorded in the reporting period.

Construction works were carried out during the restricted hours, the conditions stipulated in CNPs of related construction works were strictly followed by the Contractor. No non-compliance was recorded.

#### *Landscape and Visual Audit*

In the reporting period, landscape and visual site audit in accordance with the requirements stipulated in the EM&A manual were conducted. Total 521 trees were felled and the pruning of the transplanted trees was carried out during the reporting period, no substantial change of LR, LCA and VSR was noted.

#### *Waste Disposal*

Inert C&D materials with actual amount of 2,360.77 m<sup>3</sup> were generated and disposed of at public fills at Tuen Mun Area 38 in the reporting period. 268 m<sup>3</sup> general refuse were generated and disposed of at WENT landfill during the reporting period.

### Environmental Auditing

The environmental site audits were conducted on a weekly basis. No non-conformance to the environmental requirements was identified during the reporting period.

### Complaint Log

One environmental complaint regarding air quality was recorded during the reporting period. After the investigations, it is concluded that the complaint was attributable to the Contract. The corresponding mitigation measure due to the complaint was recommended to be carried out by the Contractor.

### Notifications of Summons and Successful Prosecutions

No summonses or prosecution related to the environmental issues were made against the Project in the reporting period.

# 1 Project Information

## 1.1 Project Background and Programme

Ove Arup & Partners Hong Kong Limited (Arup) was appointed by Highways Department (HyD) as the Environmental Team (ET) for *Agreement No. CE22/2005 (HY) Supplementary Agreement 1 Traffic Improvements to Tuen Mun Road Town Centre Section* (the Project) under Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section. The Project was commenced on August 2010 and to be completed on January 2014. Location of the works area is indicated in **Figure 1.1**.

The Project involves widening the following sections of TMR from dual-two carriageway to dual-three carriageway:

- Wong Chu Road Section, (from Wong Chu Road Interchange to Tuen Hing Road);
- Tuen Mun Town Plaza Section, (from Yan Oi Town Square to Tuen Hing Road).

The Project is a designated project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499). Environmental Monitoring and Audit (EM&A) work is required in accordance with the conditions stipulated in the Environmental Permit (EP) (EP-342/2009/C) and the EM&A Manual of the Project.

The rolling construction programme during the reporting period is attached in **Appendix A**. The major construction activities carried out by the Contractor in the reporting period are summarized in **Table 1.1**.

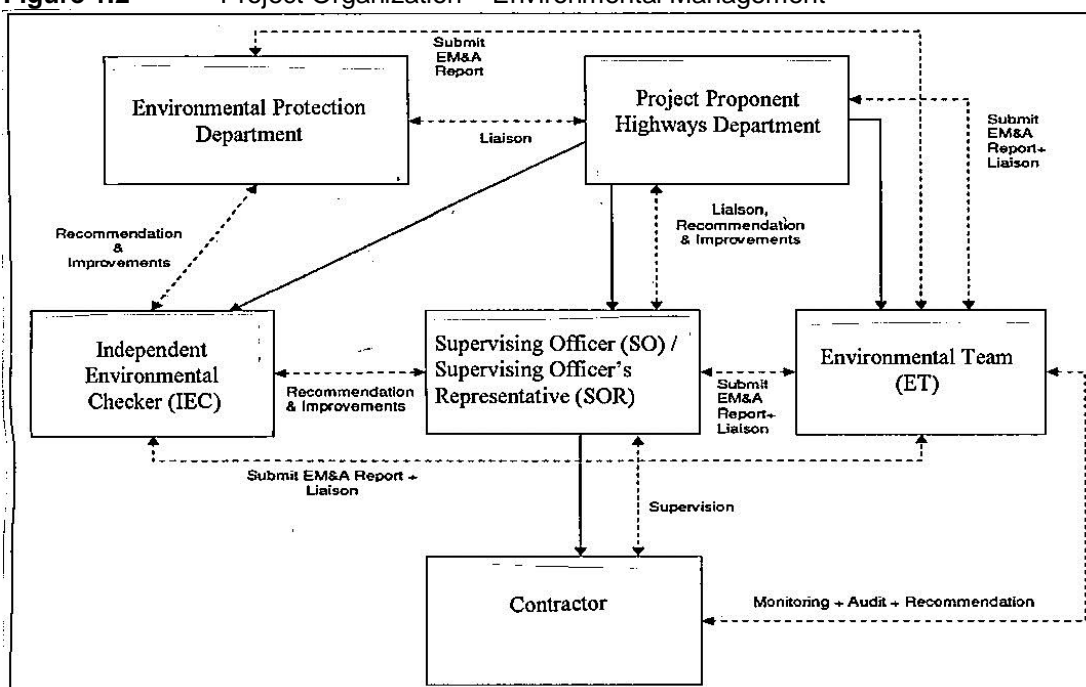
**Table 1.1** Construction activities in the reporting period

Locations	Major Works Undertaken
All area	Footbridge construction, noise barrier construction; piling works, underground utilities and drainage diversion, Erection of noise barrier/ enclosure steelworks

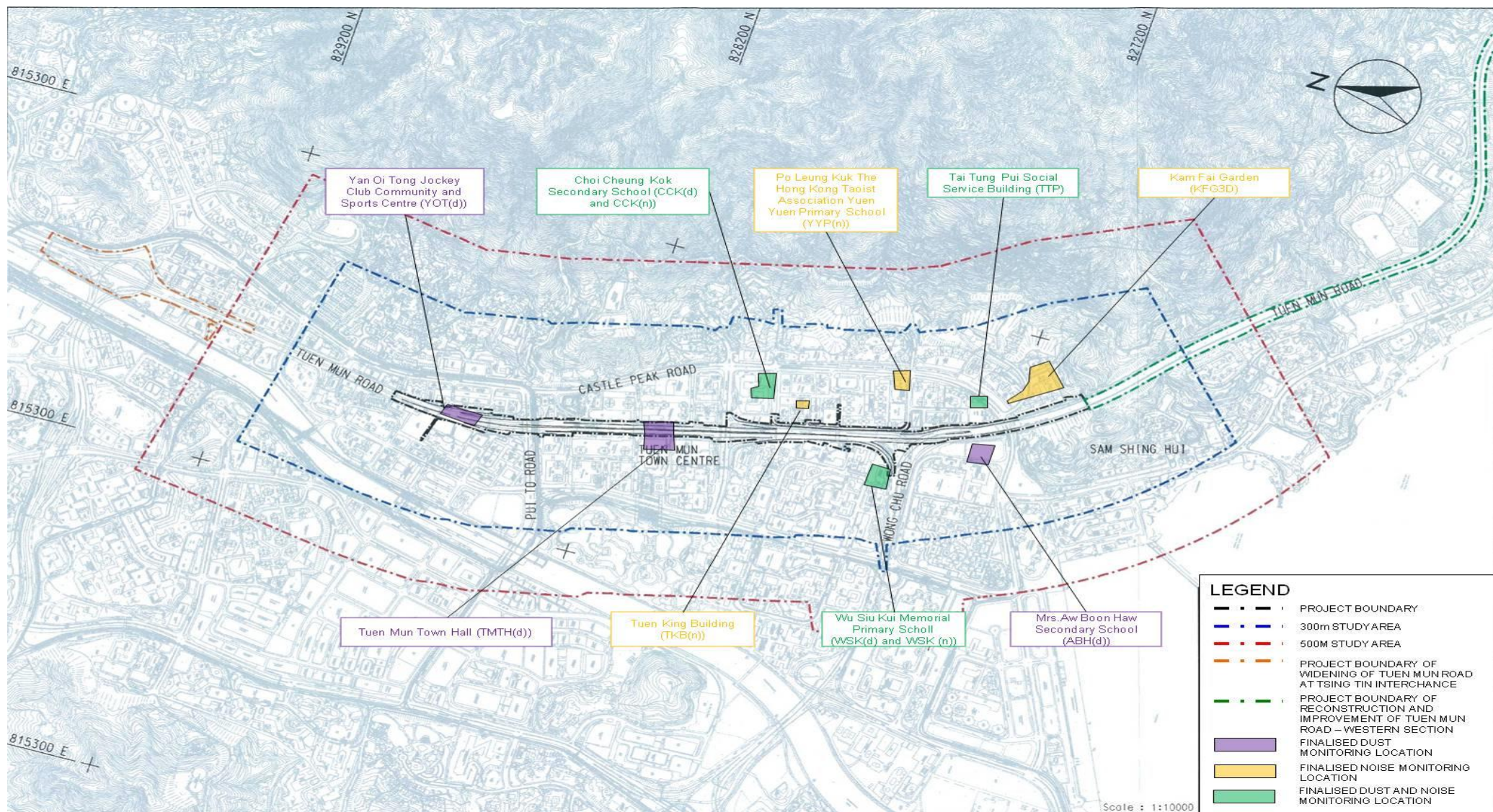
## 1.2 Project Organization

The Project organization structure in relation to the environmental management is shown in **Figure 1.2**. Contacts of key environmental staff of the Project are shown in **Table 1.2**.

**Figure 1.2** Project Organization – Environmental Management



**Figure 1.1** Location of works area and air, noise environmental monitoring stations



**Table 1.2** Contacts of key environmental staff

Organization	Name	Telephone
<b>Environmental Protection Department</b>		
Environmental Protection Officer (Strategic Assessment)22	Thomas To	2835 1103
<b>Project Proponent</b>		
Highways Department: Senior Engineer	Peter Law	2762 3539
<b>Supervising Officer / Supervising Officer's Representative</b>		
AECOM Asia Co. Ltd.: Chief Resident Engineer	Patrick Lee	2969 9200
<b>Independent Environmental Checker</b>		
ENVIRON Hong Kong Limited: Independent Environmental Checker	David Yeung	3743 0717
<b>Environmental Team</b>		
Ove Arup & Partners Hong Kong Ltd: Environmental Team Leader	Coleman Ng	2268 3097
<b>Contractor</b>		
China Harbour Engineering Company Limited		
Site Agent	W.S. Ng	2403 0529
Environmental Officer	Marko Chan	2403 0527

## 2 EM&A Requirements

### 2.1 Monitoring Parameters

Air quality monitoring shall be measured in terms of the TSP levels for 24-hour periods. For noise monitoring, construction noise shall be measured in terms of the A-weighted equivalent continuous sound pressure level ( $L_{eq}$ ). Furthermore, the monitoring of the implementation of the landscape and visual mitigation measures shall be checked to ensure that they are fully required. **Table 2.1 and Figure 1.1** show the names and locations of the monitoring locations. The monitoring parameters, frequency and performance limits are summarised in **Table 2.2**.

**Table 2.1** Summary of air and noise monitoring stations

ID	Premise
<b>Air</b>	
AM1	Chung Sing Benevolent Society Mrs. Aw Boon Haw Secondary School
AM2	Tung Wah Group of Hospitals Tai Tung Pui Social Service Building
AM3	Shun Tak Fraternal Association Wu Siu Kui Memorial Primary School
AM4	The Chinese Manufacturers' Association Of Hong Kong Choi Cheung Kok Secondary School
AM5	Tuen Mun Town Hall
AM6	Yan Oi Tong Jockey Club Community and Sports Centre
<b>Noise</b>	
N1	Kam Fai Garden
N2	Tung Wah Group of Hospitals Tai Tung Pui Social Service Building
N3	Po Leung Kuk The Hong Kong Taoist Association Yuen Yuen Primary School
N4	Shun Tak Fraternal Association Wu Siu Kui Memorial Primary School
N5	Tuen King Building
N6	The Chinese Manufacturers' Association Of Hong Kong Choi Cheung Kok Secondary School

**Table 2.2** Monitoring parameters, frequency, locations and performance limits

Monitoring	Parameters	Frequency	Location	Action Level	Limit Level
Air	1-hour TSP	3 times every 6 days <sup>(Note 1)</sup>	AM1	290 µg/m <sup>3</sup>	500 µg/m <sup>3</sup>
			AM2	291 µg/m <sup>3</sup>	
			AM3	287 µg/m <sup>3</sup>	
			AM4	292 µg/m <sup>3</sup>	
			AM5	286 µg/m <sup>3</sup>	
			AM6	290 µg/m <sup>3</sup>	
	24-hour TSP	Once every 6 days	AM1	146 µg/m <sup>3</sup>	260 µg/m <sup>3</sup>
			AM2	151 µg/m <sup>3</sup>	
			AM3	150 µg/m <sup>3</sup>	
			AM4	150 µg/m <sup>3</sup>	
			AM5	146 µg/m <sup>3</sup>	
			AM6	147 µg/m <sup>3</sup>	
Noise	0700 - 1900 hour on normal weekdays - $L_{eq(30min)}$	Once per week	N1, N2 & N5	When one documented complaint is received	75 dB(A)
			N3, N4 & N6		70/65 <sup>(Note 3)</sup>
	0700 - 2300 hours on holiday; and 1900 - 2300 hours on all other days - $L_{eq(5min)}$ <sup>(Note 2)</sup>	--	N1, N2, N3, N4, N5 & N6		--
					2300 - 0700 hours of next day - $L_{eq(5min)}$ <sup>(Note 2)</sup>
Landscape and Visual	Landscape resources (LR), landscape character area(LCA) and view sensitive receiver (VSR) <sup>(Note 4)</sup>	Twice site audit per month	Entire site area	N/A	N/A

**Notes:**

- 1-hr TSP monitoring would be required in case of receiving complaints
- If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.
- For normal day-time working hours, the noise criteria are 70 dB(A) and 65 dB(A) for normal reaching periods and examination period respectively.
- The details of each LR, LCA and VSR are summarized in **Appendix F**.

## 2.2 Environmental Quality Performance Limits

All the monitoring results will be checked against the Action and Limit levels described in the Baseline Monitoring Report, of which they are summarised in **Table 2.1**.

## 2.3 Environmental Mitigation Measures

The environmental mitigation measures carried out were basically followed the requirements described in the EIA Report. Major mitigation measures during the construction phase in relation air quality, noise, water quality, ecology, waste management as well as landscape and visual are summarised in **Appendix B**.

# 3 Implementation Status

## 3.1 Implementation Status of Mitigation Measures

Environmental site inspections were carried out on a weekly basis to monitor environmental issues on the construction sites to ensure that all mitigation measures were implemented timely and properly. Key mitigation measures observed were: vehicles were washed to remove any dusty materials from its body and wheels before leaving a construction site, quiet powered mechanical equipment (QPME) were used as well as sufficient waste disposal points were provided and regular collection for disposal.



**Table 3.1** summaries the site inspections in the reporting period and corresponding follow-up status by the Contractor.

**Table 3.1** Key findings of weekly environmental site audit in the reporting period

Monitoring Parameter	Location	Inspection Date	Key Observations & Recommendations	Contractor's Follow-Up Status
Air Quality	Under S1 Bridge	21-Nov-13	Tarpaulin cover should be provided for temporary storage of stockpile.	Tarpaulin cover has been provided. Closed on 28 Nov 13.
Water Quality	On Ting Circuit	19-Dec-13	The Contractor was reminded to remove the silt and stagnant water accumulated in the U-channel.	The reminder has been noted. Closed on 24 Dec 13.
	Chi Lok Footbridge	16-Jan-14	The Contractor was reminded to clear the silt accumulated in the U-channel regularly.	The reminder has been noted. Closed on 23 Jan 13.
Noise	Harvest Garden	7-Nov-13	The Contractor was reminded to ensure that all waste water is pumped out and treated prior to discharge.	The reminder has been noted. Closed on 14 Nov 13.
Waste / Chemical Management	All sites	7-Nov-13	The Contractor was reminded to practice good housekeeping and ensure that all sites are tidy.	The reminder has been noted. Closed on 14 Nov 13.
	All sites	7-Nov-13	The Contractor was reminded to ensure that all drip trays are plugged.	The reminder has been noted. Closed on 14 Nov 13.
	S1 Bridge	14-Nov-13	The Contractor was reminded to maintain proper housekeeping of the site.	The reminder has been noted. Closed on 21 Nov 13.
	Tsing Hoi Circuit	5-Dec-13	The Contractor was reminded to provide adequate rubbish bins within the site area.	The reminder has been noted. Closed on 19 Dec 13.
	All Areas	24-Dec-13	The Contractor was reminded to dispose of the general refuse prior to public holiday to avoid accumulation.	The reminder has been noted. Closed on 30 Dec 13.
	Tsing Hoi Circuit	9-Jan-14	Drip tray should be provided for chemical placing.	The reminder has been noted. Closed on 16 Jan 14.
	All Areas	23-Jan-14	The Contractor was reminded to dispose of the general refuse prior to public holiday to avoid accumulation.	The reminder has been noted. Closed on 30 Jan 14.

## 4 Environmental Monitoring Results

### 4.1 Air Monitoring Results and Observations

#### 4.1.1 Air Quality Monitoring Results

Monitoring of 24-hour TSP were conducted at monitoring stations AM1, AM2, AM3, AM4, AM5 and AM6 in the reporting period. All monitoring data and graphical presentation of the monitoring results are provided in **Appendix C** and are summarised in **Table 4.1**. Wind

data obtained from the Hong Kong Observatory – Tuen Mun anemometer station during the reporting period is presented in **Appendix D**.

**Table 4.1** Summary of 24-hour TSP monitoring results in the reporting period

Location	Average 24-hour TSP Concentration, $\mu\text{g}/\text{m}^3$ (Range)			
	Nov 13	Dec 13	Jan 14	Mean
AM1	11.7 (4 - 24)	17.3 (5 - 40)	29.2 (19 - 37)	20.0 (4 - 40)
AM2	17.1 (10 - 26)	35.9 (21 - 45)	22.2 (10 - 44)	24.9 (10 - 45)
AM3	16.7 (7 - 30)	22.1 (19 - 26)	26.5 (12 - 39)	22.1 (7 - 39)
AM4	17.0 (9 - 26)	25.1 (16 - 42)	27.3 (18 - 40)	23.4 (9 - 42)
AM5	11.6 (8 - 19)	25.7 (14 - 36)	20.8 (15 - 27)	19.5 (8 - 36)
AM6	19.9 (7 - 64)	28.4 (19 - 43)	18.9 (12 - 24)	22.2 (7 - 64)

All 24-hour TSP measurements during the reporting period were below the Action/Limit Level. No exceedance of action and limit level was found.

#### 4.1.2 General Observations

Major construction works including site clearance, site hoarding construction, ground investigation and underground utilities diversion were implemented during the reporting period.

## 4.2 Noise Monitoring Results and Observations

### 4.2.1 Noise Monitoring Results

#### Non-restricted Hours

Monitoring of the construction noise level was conducted during non-restricted hours in the reporting period at monitoring locations N1, N2, N3, N4, N5 and N6. All monitoring data and graphical presentation of the monitoring results are provided in **Appendix E** and are summarised in **Table 4.2**.

**Table 4.2** Summary of impact noise monitoring in the reporting period

Location	Noise Level, $L_{\text{eq}}(30\text{min})$ , dB(A) (Range)			
	Nov 13	Dec 13	Jan 14	Mean
N1	70 (69 - 71)	71 (70 - 71)	70 (69 - 70)	70 (69 - 71)
N2	71 (70 - 71)	70 (69 - 71)	70 (69 - 70)	70 (69 - 71)
N3	66 (65 - 66)	66 (66 - 67)	66 (64 - 67)	66 (64 - 67)
N4	65 (64 - 66)	65 (65 - 66)	65 (65 - 66)	65 (64 - 66)
N5	70 (69 - 70)	70 (69 - 70)	69 (69 - 70)	69 (69 - 70)
N6	68 (68 - 69)	68 (68 - 69)	68 (67 - 68)	68 (67 - 69)

### Restricted Hours

In the reporting period, the construction works and activities such as mobilization of materials and plants etc were carried out during restricted hours. The granted Construction Noise Permits (CNPs) were issued by EPD for the related activities before the works commencement, the Contractor strictly followed the conditions stipulated in the CNPs. There was no non-compliance recorded during the reporting period.

#### 4.2.2 Exceedance of Limit and Action Levels for Construction Noise

No Action Level exceedance was recorded in the reporting period.

Two Limit Level exceedances, were recorded in the reporting period.

Based on the field observations, it was revealed that the exceedances were mainly caused by traffic vehicles along Tuen Mun Road. It was therefore concluded that the noise exceedances were not related to the construction activities. The details of the limit level exceedances had been presented in the corresponding monthly EM&A report (Nov 2013 to Jan 2014).

#### 4.2.3 General Observations

The construction site had been under normal operation during the noise monitoring period and no unusual operation was observed. Traffic noise had been noticed at the monitoring location during the noise monitoring period.

### 4.3 Landscape and Visual Monitoring Audit Results

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In the reporting period, landscape and visual site audit in accordance with the requirements stipulated in the EIA Report was conducted during the routine monthly site audit. The details of each LR, LCA and VSR are summarized in **Appendix F**. The implementation and maintenance of landscape and visual mitigation measures, listed in EIA Report, were checked during the site audit. During the reporting period, no substantial change of LR, LCA and VSR was noted, no non-compliance has been triggered, total 521 trees were felled and the pruning of the transplanted trees was carried out in accordance with the Specification for Tree Protection and Transplanting Works in Landscape Plan. The summary reports are presented in the corresponding monthly EM&A report (Nov 2013 to Jan 2014).

## 5 Waste Disposal

The amounts of different types of waste generated by the activities of the Project in the reporting period are shown in **Table 5.1**. It is anticipated that the amount of different types of waste will be increased in the forth-coming month due to the increasing of the scale of construction works, attention should be paid and the mitigation measures recommended in the EIA Report should be implemented and maintained. No liquid waste was generated in the reporting period.

**Table 5.1** Amounts of waste generated in reporting period

Waste Type	Amount				Disposal Locations
	Nov 13	Dec 13	Jan 14	Total	
Inert C&D Materials	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	Broken concrete (Note 1)
	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	Reused in the Contract
	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	Reused in other Projects
	623.776 m <sup>3</sup>	825.319 m <sup>3</sup>	911.677 m <sup>3</sup>	2,360.772 m <sup>3</sup>	Disposal of at public fill at Tuen Mun Area 38
Chemical Waste	0 kg	0 kg	0 kg	0 kg	N/A
Paper / cardboard packaging	0 kg	0 kg	0 kg	0 kg	Recycler
Plastic	0 kg	0 kg	0 kg	0 kg	
Metal	0 kg	0 kg	0 kg	0 kg	
General Refuse	112.125 m <sup>3</sup>	78 m <sup>3</sup>	78 m <sup>3</sup>	268.125 m <sup>3</sup>	Disposal of at WENT landfill

Notes:

1. Broken concrete for recycling into aggregates.

## 6 Environmental Performance

### 6.1 Non-Compliance Record

There was no non-compliance received in the reporting period.

### 6.2 Review of Reasons of Non-Compliance

No Action and Limit Level exceedance was recorded for impact air quality monitoring in the reporting period.

No Action Level exceedance of noise monitoring was recorded from the monitoring data during the reporting period.

Two Limit Level exceedances of noise, were recorded in the reporting period. Based on the field observations, it was revealed that the exceedances were mainly caused by traffic vehicles along Tuen Mun Road. It was therefore concluded that the noise exceedances were not related to the construction activities. The details of the limit level exceedances had been presented in the corresponding monthly EM&A report (Nov 2013 to Jan 2014).

### 6.3 Notification of Summons and Successful Prosecution

No summons or prosecutions related to environmental issues were received or made against the Project in the reporting period.

### 6.4 Complaint Record

One environmental complaint regarding air quality was recorded during the reporting period.

The complaint was received by ICC on 30 Dec 13 related to the dust disturbance from nearby construction sites at Tuen Mun Road (near Chi Lok Garden).

As confirmed by the Contractor and Supervising Officer's Representative, the roof works was carried out in the nearby on the noise enclosure. It is anticipated that the nuisance was mainly due to the construction activities. As no other construction sites were in operation during the complaint period, it is concluded that the complaint was work-related under the Project.

In accordance with the Action/Event Plan, additional 1-hr TSP monitoring was undertaken on 6 and 8 Jan 14 at the closest air monitoring station AM4 (The Chinese Manufacturers' Association Of Hong Kong Choi Cheung Kok Secondary School). The monitoring results are summarized as follow:

Date	Time	1- hr TSP (ug/m <sup>3</sup> )
6 Jan 14	13:10 – 14:10	55
	14:10 – 15:10	56
	15:10 – 16:10	49
8 Jan 14	13:30 – 14:30	68
	14:30 – 15:30	52
	15:30 – 16:30	58

The monitoring results are well below the Action Level (294 ug/m<sup>3</sup>) and Limit Level (500 ug/m<sup>3</sup>). ET's on-site observations during the monitoring also suggested that no abnormal construction activities were observed within the site area.

Nevertheless, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance.

1. Well-maintain the machines condition to minimize exhaust emission;
2. Spray water while loading, unloading or transfer operation of the dusty materials; and
3. Provide the covering of the dusty materials and stockpiles.

The updated statistical summary of complaint is presented in **Table 6.1**. The updated complaint logs (C042) of the Project in the reporting period are shown in **Appendix G**.

**Table 6.1** Summary of complaints for the contract

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
02/08/10 – 31/10/10	0	0	-	-	-
01/11/10 – 30/11/10	1	1	Noise	Yes (Ref.: C001)	Closed on 30 Nov 10.
01/12/10 – 31/01/11	0	1	-	-	-
01/02/11 – 28/02/11	1	2	Noise	Yes (Ref.: C002)	Closed on 2 Mar 11.
01/03/11 – 31/03/11	0	2	-	-	-
01/04/11 – 30/04/11	2	4	Water	Yes (Ref.: C003)	Closed on 16 Apr 11.
			Noise	Yes (Ref.: C004)	Closed on 16 May 11.
01/05/11 – 31/05/11	1	5	Water	Yes (Ref.: C005)	Closed on 10 Jun 11.
01/06/11 – 30/06/11	1	6	Air	Yes (Ref.: C006)	Closed on 23 Jun 11.
	1	7	Noise	Yes (Ref.: C007)	Closed on 24 Jun 11.
	1	8	Water	Yes	Closed on

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
				(Ref.: C008)	4 Jul 11.
	1	9	Air	Yes (Ref.: C009)	Closed on 14 Jul 11.
01/07/11 – 31/07/11	1	10	Noise	Yes (Ref.: C010)	Closed on 4 Aug 11.
	1	11	Water	Yes (Ref.: C011)	Closed on 4 Aug 11.
01/08/11 – 31/08/11	0	11	-	-	-
01/09/11 – 30/09/11	1	12	Noise	Yes (Ref.: C012)	Closed on 29 Sep 11.
	1	13	Water	Yes (Ref.: C013)	Closed on 14 Oct 11.
	1	14	Water	Yes (Ref.: C014)	Closed on 14 Oct 11.
01/10/11 – 31/10/11	1	15	Water	Yes (Ref.: C015)	Closed on 28 Oct 11.
01/11/11 – 30/11/11	1	16	Noise	Yes (Ref.: C016)	Closed on 24 Nov 11.
	1	17	Noise	Yes (Ref.: C017)	Closed on 30 Nov 11.
01/12/11 – 31/12/11	0	17	-	-	-
01/01/12 – 31/01/12	1	18	Water	Yes (Ref.: C018)	Closed on 6 Feb 12.
	1	19	Water	Yes (Ref.: C019)	Closed on 6 Feb 12.
01/02/12 – 29/02/12	0	19	-	-	-
01/03/12 – 31/03/12	1	20	Water	Yes (Ref.: C020)	Closed on 22 Mar 12.
	1	21	Noise	Yes (Ref.: C021)	Closed on 28 Mar 12.
	1	22	Noise	Yes (Ref.: C022)	Closed on 5 Apr 12.
	1	23	Water	Yes (Ref.: C023)	Closed on 5 Apr 12.
01/04/12 – 30/04/12	0	23	-	-	-
01/05/12 – 31/05/12	1	24	Water	Yes (Ref.: C024)	Closed on 24 May 12.
	1	25	Noise	Yes (Ref.: C025)	Closed on 7 Jun 12.
	1	26	Noise	Yes (Ref.: C026)	Closed on 7 Jun 12.
01/06/12 – 30/06/12	0	26	-	-	-
01/07/12 – 31/07/12	0	26	-	-	-
01/08/12 – 31/08/12	0	26	-	-	-

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
01/09/12 – 30/09/12	0	26	-	-	-
01/10/12 – 31/10/12	0	26	-	-	-
01/11/12 – 30/11/12	1	27	Noise	Yes (Ref.: C027)	Closed on 8 Nov 12.
	1	28	Noise	Yes (Ref.: C028)	Closed on 8 Nov 12.
01/12/12 – 31/12/12	1	29	Noise	Yes (Ref.: C029)	Closed on 31 Dec 12.
	1	30	Noise	Yes (Ref.: C030)	Closed on 31 Dec 12.
	1	31	Noise	Yes (Ref.: C031)	Closed on 31 Dec 12.
01/01/13 – 31/01/13	0	31	-	-	-
01/02/13 – 28/02/13	1	32	Noise	Yes (Ref.: C032)	Closed on 15 Feb 13.
	1	33	Noise	Yes (Ref.: C033)	Closed on 15 Feb 13.
	1	34	Noise	Yes (Ref.: C034)	Closed on 15 Feb 13.
	1	35	Noise	Yes (Ref.: C035)	Closed on 15 Feb 13.
01/03/13 – 31/03/13	0	35	-	-	-
01/04/13 – 30/04/13	1	36	Noise	Yes (Ref.: C036)	Closed on 9 May 13.
01/05/13 – 31/05/13	0	36	-	-	-
01/06/13 – 30/06/13	1	37	Noise	Yes (Ref.: C037)	Closed on 11 July 13.
01/07/13 – 31/07/13	1	38	Noise	Yes (Ref.: C038)	Closed on 25 July 13.
01/08/13 – 31/08/13	1	39	Noise	Yes (Ref.: C039)	Closed on 29 Aug 13.
01/09/13 – 30/09/13	1	40	Noise	Yes (Ref.: C040)	Closed on 26 Sep 13.
	1	41	Noise	Yes (Ref.: C041)	Closed on 26 Sep 13.
01/10/13 – 31/10/13	0	41	-	-	-
01/11/13 – 30/11/13	0	41	-	-	-
01/12/13 – 31/12/13	1	42	Air	Yes (Ref.: C042)	Closed on 10 Jan 14.
01/01/14 – 31/01/14	0	42	-	-	-

## 7 Conclusions and Recommendations

### 7.1 Conclusions

The construction phase of the Project was commenced on 2 August 2010. The EM&A programme has been implemented since then, including air quality, noise, landscape and visual and environmental site audits.

No Action and Limit Level exceedance was recorded for impact air quality monitoring in the reporting period.

No Action Level exceedance of noise monitoring was recorded from the monitoring data during the reporting period.

Two Limit Level exceedances, were recorded in the reporting period. Based on the field observations, it was revealed that the exceedances were mainly caused by traffic vehicles along Tuen Mun Road. It was therefore concluded that the noise exceedances were not related to the construction activities.

No summons or prosecution related to environmental issues was received in the reporting period.

In accordance with the requirements stipulated in the EM&A manual, landscape and visual site audit was conducted regularly during the reporting period. Total 521 trees were felled and the pruning of the transplanted trees was carried out. No substantial change of LR, LCA and VSR was noted.

Weekly environmental site audit was carried out during the reporting period. The major environmental concerns were related to air quality, noise, water quality, waste management and tree maintenance.

### 7.2 Recommendations

Impact monitoring will be continued to carry out in the following month and followed by the requirement stipulated in the EM&A manual. Attention will be paid to environmental issues identified in EIA Report and weekly site audit. Mitigation measures recommended in EIA Report and Implementation Schedule of Mitigation Measure will be fully implemented.

Construction noise is one of the key environmental issues especially in restricted hours. The conditions stipulated in CNPs should be strictly followed when the construction works were carried out during the restricted hours.

Construction dust is another key environmental issue. The implemented construction dust mitigation measures including covering of exposed slope / soil with tarpaulin sheet etc., should be maintained and improved as necessary. Adequate water spraying should be provided for the unpaved area to minimize dust disturbance.

Water quality impact is also key environmental issue. The drainage system should be well maintained. The solid and liquid waste management should be strictly followed in accordance with the requirements described in the EIA report.

The retained trees should be protected and fenced properly. The Contractor was reminded to avoid trunks damage during construction works and, take the proper remedial measures immediately when damage was observed.

Moreover, the corresponding mitigation measures due to the complaints were recommended to carry out by the Contractor and are presented in Section 6.4. The Contractor was reminded to implement proper mitigation measure to minimize any environmental nuisance.



## 8 Reference

- [1] AECOM Asia Co. Ltd. December 2008. Agreement No. CE 22/2005 (HY) Supplementary No. 1 Traffic Improvements to Tuen Mun Road Town Centre Section – Environmental Monitoring & Audit Manual.
- [2] Ove Arup & Partners Hong Kong Limited. July 2010. Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section – Baseline Monitoring Report (Revision\_4)
- [3] Ove Arup & Partners Hong Kong Limited. Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section – Monthly Environmental Monitoring and Audit Report – November 2013 (Final)
- [4] Ove Arup & Partners Hong Kong Limited. Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section – Monthly Environmental Monitoring and Audit Report – December 2013 (Final)
- [5] Ove Arup & Partners Hong Kong Limited. Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section – Monthly Environmental Monitoring and Audit Report – January 2014 (Final)

Appendix A

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**Construction  
Programme**

**Design and Build of Traffic Improvement to Tuen Mun Road Town Centre Section**

Activity ID	Activity Name	Activity % Complete	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	Total Float	2013				2014
										Oct 45	Nov 46	Dec 47	Jan 48	
<b>Preliminaries and General Requirements</b>														
<b>Preliminaries and General Requirements</b>														
<b>Contract Key Dates</b>														
<b>Project Completion</b>														
KD1090	Completion of Section IB of Works (Extended up to 7-Nov-13)	0%	0	0		29-Jan-14*		07-Nov-13	-83					
KD1130	Completion of Section III of Works (Extended up to 3-Dec-13)	0%	0	0		11-Dec-13*		03-Dec-13	-8					◆ Completion of Section III of Works (Extended up to 3-Dec-13)
KD1140	Completion of Section IIIA of Works Extended up to 3-Dec-13)	0%	0	0		03-Dec-13*		03-Dec-13	0					◆ Completion of Section IIIA of Works Extended up to 3-Dec-13)
<b>Procurement</b>														
<b>Material Procurement and Fabrication</b>														
<b>Procurement and Fabrication</b>														
<b>Material Procurement and Fabrication</b>														
MP1120	Noise Barrier/Enclosure steel structure for Scheme C Area	100%	176	0	23-Dec-12 A	08-Oct-13 A								
MP1160	Noise Barrier/Enclosure wall panel for Scheme B Area	98.68%	140	2	28-Sep-12 A	22-Oct-13	28-Sep-12	30-Jan-14	83					
MP1170	Noise Barrier/Enclosure wall panel for Scheme C Area	87.8%	125	15	16-Apr-13 A	07-Nov-13	16-Apr-13	30-Jan-14	70					
MP1180	Noise Barrier/Enclosure wall panel for Scheme D Area	100%	112	0	15-May-13 A	04-Oct-13 A								
MP1190	Noise Barrier/Enclosure wall panel for Scheme E Area	97.66%	145	3	06-Mar-13 A	24-Oct-13	06-Mar-13	29-Oct-13	5					
MP1210	Noise Barrier/Enclosure roof panel for Scheme B Area	69.52%	237	72	28-Sep-12 A	16-Jan-14	28-Sep-12	30-Jan-14	13					
MP1220	Noise Barrier/Enclosure roof panel for Scheme C Area	96.8%	163	5	16-Apr-13 A	26-Oct-13	16-Apr-13	14-Jan-14	66					
MP1230	Noise Barrier/Enclosure roof panel for Scheme D Area	100%	161	0	27-May-13 A	30-Sep-13 A								
MP1240	Noise Barrier/Enclosure roof panel for Scheme E Area	84.19%	236	37	20-Feb-13 A	03-Dec-13	20-Feb-13	03-Dec-13	1					
<b>Section 1 of Works</b>														
<b>Establishment Works in Portion 1</b>														
<b>Establishment Works</b>														
<b>Establishment Works in Portion 1</b>														
SEC11090	Establishment Works	72.05%	365	102	30-Sep-12 A	29-Jan-14	29-Jul-13	07-Nov-13	-83					
<b>Section II of Works</b>														
<b>Scheme A (CH29405 - CH29050)</b>														
<b>Wall and Roof Panel Installation</b>														
<b>Stage 4 Steel Frame &amp; Panel</b>														
RA1532	Install roof cladding & translucent roof panel NE02 S/B	95%	38	2	16-Jul-13 A	22-Oct-13	29-Jan-14	30-Jan-14	83					■ Install roof cladding & translucent roof panel NE02 S/B
RA1550	Install green and transparent wall panel NE04	98%	57	1	11-May-13 A	22-Oct-13	27-Jan-14	28-Jan-14	81					■ Install green and transparent wall panel NE04
RA1790	Install green and transparent wall panel NE05	97%	39	1	14-Apr-13 A	23-Oct-13	28-Jan-14	29-Jan-14	81					■ Install green and transparent wall panel NE05
RA1800	Install green and transparent wall panel NE01	94%	21	1	15-Apr-13 A	24-Oct-13	29-Jan-14	30-Jan-14	81					■ Install green and transparent wall panel NE01
RA1810	Install green and transparent wall panel NE02	100%	46	0	22-Jun-13 A	23-Oct-13 A	02-Feb-14	02-Feb-14						■ Install green and transparent wall panel NE02
<b>Roadworks</b>														
<b>Stage 3 Central Median Area</b>														
RA1480	Roadworks central barrier CH29050 to CH29400	70%	58	18	04-Feb-13 A	09-Nov-13	30-Dec-13	20-Jan-14	59					■ Roadworks central barrier CH29050 to CH29400
<b>Stage 5 Road Re-surface</b>														
RA1570	Existing road re-surfacing CH29050 to CH29400	80%	45	9	16-Mar-13 A	20-Nov-13	21-Jan-14	30-Jan-14	59					■ Existing road re-surfacing CH29050 to CH29400
<b>Scheme B (CH29050 - CH28520)</b>														
<b>Wall and Roof Panel Installation</b>														
<b>Stage 3 Steel Frame &amp; Panel</b>														
RB1690	Install roof cladding & translucent roof panel NE06 & 07 N/B & S/B	86%	68	10	09-Jun-13 A	31-Oct-13	04-Nov-13	15-Nov-13	13					■ Install roof cladding & translucent roof panel NE06 & 07 N/B & S/B
RB1694	Install translucent roof panel NE10 to 14 S/B	99.5%	67	0	18-Dec-12 A	21-Oct-13	30-Jan-14	30-Jan-14	85					■ Install translucent roof panel NE10 to 14 S/B
RB1702	Install roof cladding & translucent roof panel NE10 to 14 N/B	99.5%	74	0	18-Dec-12 A	21-Oct-13	30-Jan-14	30-Jan-14	85					■ Install roof cladding & translucent roof panel NE10 to 14 N/B
RB1710	Planting for green roof NE06 & NE07	15%	74	63	27-Sep-13 A	16-Jan-14	15-Nov-13	30-Jan-14	13					■ Planting for green
RB1720	Install green and transparent wall panel NE06 & 07	33%	28	19	25-Sep-13 A	11-Nov-13	09-Jan-14	30-Jan-14	66					■ Install green and transparent wall panel NE06 & 07
RB2180	Install green and transparent wall panel NE10 to 14	98.6%	132	2	16-Nov-12 A	22-Oct-13	29-Jan-14	30-Jan-14	83					■ Install green and transparent wall panel NE10 to 14
<b>Roadworks</b>														
<b>Stage 1 Both Bound Road Verge</b>														
RB1400	Roadworks N/B verge CH28600 to CH28950 (L=350m.)	70%	88	26	11-Mar-13 A	20-Nov-13	30-Dec-13	30-Jan-14	59					■ Roadworks N/B verge CH28600 to CH28950 (L=350m.)
<b>Stage 2 Central Median</b>														
RB1650	Roadworks central barrier CH28500 to CH29000 (L=500m.)	90%	83	8	31-Aug-12 A	30-Oct-13	21-Jan-14	30-Jan-14	77					■ Roadworks central barrier CH28500 to CH29000 (L=500m.)
<b>Scheme C (CH28520 - CH28200)</b>														
<b>Foundation Works</b>														
<b>Stage 1 NE15 East Side, Tsing Hoi Circuit Re-alignment &amp; S/B Foundation</b>														
RC1735	Water diversion along Tsing Hoi Circuit (by others)	91.84%	49	4	12-Apr-12 A	24-Oct-13	09-Nov-13	14-Nov-13	18					■ Water diversion along Tsing Hoi Circuit (by others)
<b>NB Structural Steel Post/Column Erection</b>														
<b>Stage 3 Central Median &amp; N/B Foundation</b>														

■ Remaining Level of Effort    ■ Critical Remaining Work  
■ Actual Work    ◆ Milestone  
■ Remaining Work

**TMR-TCS 3MRP (20 Oct 2013)**

Date	Revision	Checked	Approved
20-Aug-13	WP04 (Updated up to 20-8-13)	YKC	
20-Sep-13	WP04 (Updated up to 20-9-13)	YKC	
20-Oct-13	WP04 (Updated up to 20-10-13)	YKC	

**Design and Build of Traffic Improvement to Tuen Mun Road Town Centre Section**

Activity ID	Activity Name	Activity % Complete	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	Total Float	2013				2014
										Oct 45	Nov 46	Dec 47	Jan 48	
RC1690	Erection NE16 N/B steel column	100%	18	0	30-Dec-12 A	05-Oct-13 A	10-Jan-14	10-Jan-14		Erection NE16 N/B steel column				
<b>Stage 4 Steel Frame &amp; Panel</b>														
RC1447	Erection NE16 roof beam (Tuen Hing Rd to Siu On Bridge) NB & SB	100%	50	0	03-Feb-13 A	10-Oct-13 A	08-Jan-14	08-Jan-14		Erection NE16 roof beam (Tuen Hing Rd to Siu On Bridge) NB & SB				
RC1449	Erection NE16 roof beam (Siu On Bridge to NE17) NB & SB	100%	36	0	01-Mar-13 A	08-Oct-13 A	10-Jan-14	10-Jan-14		Erection NE16 roof beam (Siu On Bridge to NE17) NB & SB				
<b>Wall and Roof Panel Installation</b>														
<b>Stage 4 Steel Frame &amp; Panel</b>														
RC1465	Install roof translucent roof panel NE15	100%	21	0	16-Apr-13 A	10-Oct-13 A	02-Feb-14	02-Feb-14		Install roof translucent roof panel NE15				
RC1466	Install roof translucent roof panel NE16 (Tuen Hing Rd to Siu On Bridge) NB & SB	98%	90	2	03-Apr-13 A	22-Oct-13	08-Jan-14	10-Jan-14	66	Install roof translucent roof panel NE16 (Tuen Hing Rd to Siu On Bridge) NB & SB				
RC1470	Install roof cladding & translucent roof panel NE16 (Siu On Bridge to NE17) NB & SB	94%	57	3	05-Jul-13 A	26-Oct-13	10-Jan-14	14-Jan-14	66	Install roof cladding & translucent roof panel NE16 (Siu On Bridge to NE17) NB & SB				
RC1480	Install translucent roof panel NE17 NB & SB	91%	41	4	10-Oct-13 A	24-Oct-13	27-Jan-14	30-Jan-14	81	Install translucent roof panel NE17 NB & SB				
RC1484	Green roof planting for NE16	100%	112	0	02-Sep-13 A	04-Oct-13 A	02-Feb-14	02-Feb-14		Green roof planting for NE16				
RC1495	Install green and transparent wall panel NE15	100%	42	0	17-Apr-13 A	09-Oct-13 A	02-Feb-14	02-Feb-14		Install green and transparent wall panel NE15				
RC1865	Install green and transparent wall panel NE16	86%	109	15	21-May-13 A	07-Nov-13	13-Jan-14	30-Jan-14	70	Install green and transparent wall panel NE16				
RC1875	Install green and transparent wall panel NE17	79%	80	17	18-Aug-13 A	08-Nov-13	11-Jan-14	30-Jan-14	68	Install green and transparent wall panel NE17				
<b>Roadworks</b>														
<b>Stage 1 NE15 East Side, Tsing Hoi Circuit Re-alignment &amp; S/B Foundation</b>														
RC1150	Roadworks T5 alignment	80.15%	60	12	04-Mar-13 A	02-Nov-13	26-Oct-13	09-Nov-13	6	Roadworks T5 alignment				
<b>Stage 3 Central Median &amp; N/B Foundation</b>														
RC1680	Roadworks N/B verge CH28250 to CH28400	20%	75	60	02-Sep-13 A	31-Dec-13	28-Aug-13	09-Nov-13	-43	Roadworks N/B verge CH28250 to CH28400				
RC1685	Roadworks central barrier CH28150 to CH28500	70%	117	35	07-Jan-13 A	29-Nov-13	27-Sep-13	09-Nov-13	-18	Roadworks central barrier CH28150 to CH28500				
<b>Stage 5 Road Re-surface</b>														
RC1520	Existing road re-surfacing CH28150 to CH29500 (L=350m.)	10%	75	68	02-Oct-13 A	25-Mar-14	09-Nov-13	30-Jan-14	-43	Existing road re-surfacing CH28150 to CH29500 (L=350m.)				
<b>TCSS and Fire Fighting System</b>														
<b>TCSS and Fire Fighting System</b>														
<b>TCSS and Fire Fighting System</b>														
TCSS100	Section 2 TCSS installation	81.58%	692	128	11-Mar-11 A	25-Mar-14	11-Mar-11	30-Jan-14	-43	Section 2 TCSS installation				
TCSS101	Section 2 Street lighting & Fire Fighting system installation	81.58%	692	128	11-Mar-11 A	25-Mar-14	11-Mar-11	30-Jan-14	-43	Section 2 Street lighting & Fire Fighting system installation				
<b>Section III of Works</b>														
<b>Scheme D (CH28200 - CH27785)</b>														
<b>NB Structural Steel Post/Column Erection</b>														
<b>Stage 4 NE18, NE21 &amp; NE23 Foundation</b>														
RD3000	Erect NE23 steel column	90%	36	4	03-Sep-13 A	24-Oct-13	25-Oct-13	29-Oct-13	4	Erect NE23 steel column				
RD3020	Erect NE18 S/B steel column	100%	21	0	12-Apr-13 A	04-Oct-13 A	10-Jan-14	10-Jan-14		Erect NE18 S/B steel column				
RD3030	Erect NE18 N/B steel column	100%	21	0	23-Mar-13 A	04-Oct-13 A	10-Jan-14	10-Jan-14		Erect NE18 N/B steel column				
<b>Wall and Roof Panel Installation</b>														
<b>Stage 6 Steel Frame &amp; Panel</b>														
RD1600	Install roof cladding & translucent roof panel NE18 N/B & S/B	65.89%	69	24	11-Sep-13 A	16-Nov-13	03-Nov-14	01-Dec-14	308	Install roof cladding & translucent roof panel NE18 N/B & S/B				
RD1602	Install roof cladding & translucent roof panel NE20	94%	53	3	14-Jun-13 A	24-Oct-13	23-Jan-14	27-Jan-14	78	Install roof cladding & translucent roof panel NE20				
RD1610	Install roof cladding & translucent roof panel NE26	85%	98	15	09-Sep-13 A	06-Nov-13	16-Nov-13	03-Dec-13	23	Install roof cladding & translucent roof panel NE26				
RD1620	Planting for green roof NE18	0%	51	51	16-Nov-13	18-Jan-14	01-Dec-14	02-Feb-15	308	Planting for green roof NE18				
RD1625	Planting for green roof NE20	90%	36	4	27-Sep-13 A	28-Oct-13	27-Jan-14	30-Jan-14	78	Planting for green roof NE20				
RD1630	Install green and transparent wall panel NE18	67%	52	17	31-Aug-13 A	09-Nov-13	10-Jan-14	30-Jan-14	68	Install green and transparent wall panel NE18				
RD1635	Install green and transparent wall panel NE20	86%	24	3	15-Jun-13 A	24-Oct-13	27-Jan-14	30-Jan-14	82	Install green and transparent wall panel NE20				
RD3095	Install absorptive transparent wall panel NE19	63%	52	19	12-Aug-13 A	12-Nov-13	11-Nov-13	03-Dec-13	19	Install absorptive transparent wall panel NE19				
RD3100	Install absorptive & transparent wall panel NE21	0%	18	18	05-Nov-13	25-Nov-13	13-Nov-13	03-Dec-13	7	Install absorptive & transparent wall panel NE21				
RD3120	Install absorptive & transparent wall panel NE24	95%	35	2	14-May-13 A	22-Oct-13	02-Dec-13	03-Dec-13	36	Install absorptive & transparent wall panel NE24				
RD3150	Install absorptive & transparent wall panel NE26	64%	48	17	11-Aug-13 A	09-Nov-13	13-Nov-13	03-Dec-13	21	Install absorptive & transparent wall panel NE26				
<b>Roadworks</b>														
<b>Stage 3 Central Median Foundation</b>														
RD1860	Roadworks along central median CH27800 to CH28250	80%	113	23	22-Aug-12 A	15-Nov-13	04-Oct-13	31-Oct-13	-13	Roadworks along central median CH27800 to CH28250				
<b>Stage 7 Road Re-surface</b>														
RD1640	Existing road re-surfacing CH27800 to CH28200 (L=400m.)	0%	75	75	15-Nov-13	18-Feb-14	01-Nov-13	30-Jan-14	-13	Existing road re-surfacing CH27800 to CH28200 (L=400m.)				
<b>Modification of Existing Wong Chu Road Flyover</b>														
<b>Construction of Vehicular Bridge S1</b>														
S1B1090	Modification of existing Wong Chu Road flyover	100%	120	0	18-Mar-13 A	04-Oct-13 A	03-Dec-13	03-Dec-13		Modification of existing Wong Chu Road flyover				
<b>Scheme E (CH27785 - CH27000)</b>														
<b>Wall and Roof Panel Installation</b>														
<b>Stage 4 Steel Frame &amp; Panel</b>														
RE1140	Install transparent roof panel NE27	95%	146	7	12-Jun-13 A	03-Dec-13	25-Nov-13	03-Dec-13	1	Install transparent roof panel NE27				
RE1150	Install green and transparent wall panel NE27	96%	85	3	27-Jun-13 A	28-Nov-13	29-Nov-13	03-Dec-13	5	Install green and transparent wall panel NE27				
<b>Roadworks</b>														

█ Remaining Level of Effort    █ Critical Remaining Work  
█ Actual Work    ◆ Milestone  
█ Remaining Work

**TMR-TCS 3MRP (20 Oct 2013)**

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20-Aug-13	WP04 (Updated up to 20-8-13)	YKC	
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**Design and Build of Traffic Improvement to Tuen Mun Road Town Centre Section**

Activity ID	Activity Name	Activity % Complete	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	Total Float	2013				2014	
										Oct 45	Nov 46	Dec 47	Jan 48		
<b>Stage 3 NE27 S/B Foundation</b>															
RE1202	Roadworks S/B verge CH27550 to CH27750	40%	50	30	15-Apr-13 A	23-Nov-13	21-Oct-13	25-Nov-13	1						
<b>TCSS and Fire Fighting System</b>															
<b>TCSS and Fire Fighting System</b>															
TCSS102	Section 3 TCSS installation	84.85%	644	98	13-Jan-11 A	18-Feb-14	13-Jan-11	30-Jan-14	-13						
TCSS103	Section 3 Street lighting & Fire Fighting system installation	84.85%	644	98	13-Jan-11 A	18-Feb-14	13-Jan-11	30-Jan-14	-13						
<b>Section III G of Works</b>															
<b>Landscaping Works in Portion 4</b>															
<b>Landscaping Works</b>															
<b>Landscaping Works</b>															
3G1010	Compensatory planting works at Location No.2 (3 nos.)	0%	12	12	06-Nov-13	21-Nov-13	08-Oct-13	23-Oct-13	-21						
3G1040	Compensatory planting works at Location No.6 (2 nos. tree pot)	0%	12	12	14-Nov-13	29-Nov-13	16-Oct-13	31-Oct-13	-21						
3G1050	Compensatory planting works at Location No.8 (2 nos. tree pot)	0%	12	12	22-Nov-13	09-Dec-13	24-Oct-13	08-Nov-13	-21						
3G1060	Compensatory planting works at Location No.9 (2 nos. tree pot)	0%	12	12	02-Dec-13	17-Dec-13	01-Nov-13	18-Nov-13	-21						
3G1070	Compensatory planting works at Location No.10 (9 nos.)	0%	18	18	10-Dec-13	02-Jan-14	11-Nov-13	04-Dec-13	-21						
3G1140	Compensatory planting works at Location No.17 (3 nos.)	0%	12	12	26-Dec-13	10-Jan-14	27-Nov-13	12-Dec-13	-21						
3G1160	Compensatory planting works at Location No.18A (9 nos.)	0%	18	18	03-Jan-14	28-Jan-14	05-Dec-13	30-Dec-13	-21						
3G1220	Compensatory planting works at Location No.22 (10 nos.)	0%	18	18	21-Jan-14	13-Feb-14	23-Dec-13	15-Jan-14	-21						
<b>Establishment Works</b>															
<b>Establishment Works</b>															
3G1360	Establishment Work(Nos.1A,2,4-6,8-10,12,13,13A-B,14-18,18A-C,20,20A, 21,22,24,;	98.63%	365	5	25-Feb-12 A	24-Oct-13	20-Feb-13	24-Feb-13	-242						
<b>Section IV of Works</b>															
<b>Preservation and Protection of Trees</b>															
<b>Preservation and Protection of Existing Trees</b>															
<b>Preservation and Protection of Existing Trees</b>															
S4-1000	Preservation and protection of trees	86.86%	982	129	26-Feb-10 A	26-Mar-14	27-Aug-13	30-Jan-14	-44						
<b>Schedule of Milestones</b>															
<b>Schedule of Milestones</b>															
<b>Design of Permanent Works</b>															
<b>Schedule of Milestones</b>															
CC02002	2.15-Submission of Operation and Maintenance Manuals for all the works=2%	0%	0	0		12-Dec-13		02-Feb-15	418						
CC02002	2.16-Acceptance of Operation and Maintenance Manuals for all the works=1%	0%	0	0		11-Jan-14		02-Feb-15	388						
CC02005	2.48-Completion of the whole of the activities under this Cost Centre Part to the satisfi	0%	0	0		11-Jan-14		02-Feb-15	388						
<b>Establishment Works in Portion 1</b>															
<b>Schedule of Milestones</b>															
CC06001	6.1.1 to 12 month of Establishment Work period of Section IB	72.05%	365	102	29-Sep-12 A	29-Jan-14	29-Sep-12	07-Nov-13	-83						
CC06002	6.2-On completion of Section IB of the Works to the satisfaction of the Supervising Of	0%	0	0		29-Jan-14		07-Nov-13	-83						
<b>Earthworks, Drainage Works, Roadworks and Landscape Hardworks on Portion 2</b>															
<b>Schedule of Milestones</b>															
CC08001	8.1.1 to 5 base course plan area of the roadworks in Portion 2	92.96%	634	45	02-Jul-11 A	03-Dec-13	03-Jul-11	14-Oct-13	-50						
CC08001	8.2.1 to 5 wearing course of the total plan area of the roadworks in Portion 2	88.28%	705	83	26-May-11 A	10-Jan-14	27-May-11	18-Nov-13	-53						
CC08002	8.3.1 to 5 length of sewer and drain pipes in Portion 2	93.21%	657	45	07-Jun-11 A	03-Dec-13	08-Jun-11	14-Oct-13	-50						
CC08002	8.4.1 to 5 number of Manholes, Gullies, Catchpits, Other Chambers and Drawpits in	93.21%	657	45	07-Jun-11 A	03-Dec-13	08-Jun-11	14-Oct-13	-50						
CC08003	8.5.1 to 5 number of Traffic Signs in Portion 2	82.79%	707	122	06-Aug-11 A	18-Feb-14	07-Aug-11	23-Dec-13	-57						
CC08003	8.6.1 to 5 number of Sign Gantries in Portion 2	82.79%	707	122	06-Aug-11 A	18-Feb-14	07-Aug-11	23-Dec-13	-57						
CC08004	8.8.1 to 5 length of road kerbs in Portion 2	87.65%	669	83	02-Jul-11 A	10-Jan-14	03-Jul-11	18-Nov-13	-53						
CC08004	8.9.1 to 5 area of footpaths in Portion 2	87.65%	669	83	02-Jul-11 A	10-Jan-14	03-Jul-11	18-Nov-13	-53						
<b>Landscape Softworks in Portion 2</b>															
<b>Schedule of Milestones</b>															
CC19001	19.2.1 to 10 plan area of Landscape Softworks in Portion 2	0%	90	90	05-Nov-13	02-Feb-14	05-Nov-13	02-Feb-14	0						
<b>Establishment Works in Portion 2</b>															
<b>Schedule of Milestones</b>															
CC20001	20.1.1 to 12 Establishment Work period of Section IIB. (total 12 months)	0%	365	365	04-Dec-13	03-Dec-14	04-Dec-13	03-Dec-14	0						
<b>Earthworks, Drainage Works, Roadworks and Landscape Hardworks in Portion 3A</b>															
<b>Schedule of Milestones</b>															
CC23001	23.1.1 to 5 base course of the total plan area of the roadworks in Portion 3A	97.48%	382	10	18-May-12 A	29-Oct-13	19-May-12	14-Oct-13	-15						
CC23001	23.2.1 to 5 wearing course of the total plan area of the roadworks in Portion 3A	83.91%	277	45	25-Jun-12 A	03-Dec-13	26-Jun-12	18-Nov-13	-15						
CC23003	23.5.1 to 5 total number of Traffic Signs in Portion 3A	73.23%	309	83	04-Sep-12 A	10-Jan-14	05-Sep-12	23-Dec-13	-18						
CC23003	23.6.1 to 5 total number of Sign Gantries in Portion 3A	73.23%	309	83	04-Sep-12 A	10-Jan-14	05-Sep-12	23-Dec-13	-18						

█ Remaining Level of Effort    █ Critical Remaining Work  
█ Actual Work    ◆ Milestone  
█ Remaining Work

**TMR-TCS 3MRP (20 Oct 2013)**

Date	Revision	Checked	Approved
20-Aug-13	WP04 (Updated up to 20-8-13)	YKC	
20-Sep-13	WP04 (Updated up to 20-9-13)	YKC	
20-Oct-13	WP04 (Updated up to 20-10-13)	YKC	

**Design and Build of Traffic Improvement to Tuen Mun Road Town Centre Section**

Activity ID	Activity Name	Activity % Complete	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	Total Float	2013				2014
										Oct 45	Nov 46	Dec 47	Jan 48	
CC23004	23.8.1 to 5 total length of road kerbs in Portion 3	97.48%	382	10	18-May-12 A	29-Oct-13	19-May-12	14-Oct-13	-15					
CC23004	23.9.1 to 5 total area of footpaths in Portion 3A	97.48%	382	10	18-May-12 A	29-Oct-13	19-May-12	14-Oct-13	-15					
CC23005	23.10-On completion of Section III of the Works to the satisfaction of the Supervising	0%	0	0		12-Dec-13		02-Feb-15	418					◆ 23.10-On completion of Section III of the Works to the satisf
<b>Noise Barrier and Noise Enclosure in Portion 3A</b>														
<b>Schedule of Milestones</b>														
CC24006	24.7.1 to 10 of the length of noise enclosures in Portion 3A	100%	1	0	25-Nov-12 A	20-Oct-13 A								
CC24007	24.8.1 to 20 panel and roof area (including absorptive, reflective, green wall and fire t	87.1%	138	18	12-Jun-13 A	06-Nov-13	12-Jun-13	03-Dec-13	27					
CC24009	24.9-On completion of Section III of the Works to the satisfaction of the Supervising C	0%	0	0		12-Dec-13		02-Feb-15	418					◆ 24.9-On completion of Section III of the Works to the satisf
<b>Provisioning Works for TCSS Installation in Portion 3A</b>														
<b>Schedule of Milestones</b>														
CC25001	25.1-On completion of all provisioning works for TCSS installation in Portion 3A=100%	0%	0	0		12-Dec-13		02-Feb-15	418					◆ 25.1-On completion of all provisioning works for TCSS install
<b>Fire Fighting System in Portion 3A</b>														
<b>Schedule of Milestones</b>														
CC26001	26.1-On completion of all fire fighting systems in Portion 3A=100%	0%	0	0		12-Dec-13		02-Feb-15	418					◆ 26.1-On completion of all fire fighting systems in Portion 3A=
<b>Widening of Wong Chu Road and Vehicular Bridge S1</b>														
<b>Schedule of Milestones</b>														
CC27004	27.7-On completion of associated finishes, bridge furnitures, lightings, parapets, railin	0%	0	0		12-Dec-13		02-Feb-15	418					◆ 27.7-On completion of associated finishes, bridge furnitures,
CC27004	27.8-On completion of Widening of Wong Chu Road and Vehicular Bridge S1 to the :	0%	0	0		12-Dec-13		02-Feb-15	418					◆ 27.8-On completion of Widening of Wong Chu Road and Vel
<b>Landscape Softworks in Portion 3A</b>														
<b>Schedule of Milestones</b>														
CC29001	29.2.1 to 10 Landscape Softworks in Portion 3A	50%	90	45	05-Sep-13 A	03-Dec-13	05-Sep-13	03-Dec-13	0					
CC29002	29.3-On completion of Section IIIA of the Works to the satisfaction of the Supervising	0%	0	0		04-Dec-13		02-Feb-15	426					◆ 29.3-On completion of Section IIIA of the Works to the satisfaction of th
<b>Establishment Works in Portion 3A</b>														
<b>Schedule of Milestones</b>														
CC30001	30.1.1 to 12 Establishment Work period of Section IIIB. (total 12 months)	0%	365	365	04-Dec-13	03-Dec-14	04-Dec-13	03-Dec-14	0					
<b>Earthworks and Roadworks in Portion 3B</b>														
<b>Schedule of Milestones</b>														
CC31001	31.1-On completion of Section III of the Works to the satisfaction of the Supervising C	0%	0	0		12-Dec-13		02-Feb-15	418					◆ 31.1-On completion of Section III of the Works to the satisf

█ Remaining Level of Effort    █ Critical Remaining Work  
█ Actual Work    ◆ Milestone  
█ Remaining Work

**TMR-TCS 3MRP (20 Oct 2013)**

Date	Revision	Checked	Approved
20-Aug-13	WP04 (Updated up to 20-8-13)	YKC	
20-Sep-13	WP04 (Updated up to 20-9-13)	YKC	
20-Oct-13	WP04 (Updated up to 20-10-13)	YKC	

Appendix B

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**Environmental  
Mitigation Measures**

## Environmental Mitigation Measures

The environmental mitigation measures carried out were basically followed the requirements described in the EIA Report. Major mitigation measures during the construction phase in relation to the air quality, noise, water quality, ecology, waste management as well as landscape and visual are summarised as follows:

### Air Quality (Dust) related

- Skip hoist for material transport should be totally enclosed by impervious sheeting;
- Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site;
- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;
- Where a site boundary adjoins a road, streets or other accessible to the public, hording of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;
- Every stack of more than 20 bags of cement should be covered entirely by impervious sheeting places in an area sheltered on the top and the 3 sides;
- All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet;
- The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading;
- The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle; and
- Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.

### Construction Noise related

Mitigation measures are implemented in three levels, namely Level 1, which involves adoption of quiet PME; Level 2, which involves provision of movable noise barrier; and Level 3, which involves scheduling of construction activities.

#### Level 1 – Adoption of Quiet PME

- Quieter PME to be used in the assessment are given in **Table A**.

**Table A** Listing of Quiet PME items

Powered Mechanical Equipment (PME)	Identification Code / BS5228	Maximum SWL, dB(A)
Excavator	C8/33	102
Crane	C7/114	101
Truck	C3/59	105
Concrete Truck	C6/35	100
Poker Vibrator	CNP 173	102
Asphalt Paver	C8/24	101
Roller, vibratory	C3/115	102



**Level 2 – Use of Movable Noise Barrier**

- Use of movable noise barrier (3m high or above) is proposed to be provided for the PMEs operated in the vicinity of the NSRs given in **Table B** during the construction phase.

**Table B** NSRs – with movable noise barrier

NSR	Description
FEC	Far East Consortium Tuen Mun Central Building
FM	Forward Mansion
HTB	Hing Tai Building
TMTP1	Tuen Mun Town Plaza
WG2	Waldorf Garden
CMA*	CMA Choi Cheung Kok Secondary School
LWF*	Yan Oi Tong Madam Lau Wong Fat Primary School
TMF	Tuen Mun Fa Yuen
LCK*	Lui Cheung Kwong Lutheran College
CLFY1	Chi Lok Fa Yuen
TFH	On Ting Estate ( Ting Fuk House)
LCKP*	Lui Cheung Kwong Lutheran Primary School
TTP	Tung Wah Group of Hospitals Tai Tung Pui Social Service Building
CSBS*	CSBS Mrs. Aw Boon Haw Secondary School
KFG3D	Kam Fai Garden

Remark: NSR with asterisk means educational institution.

**Level 3 – Scheduling of Construction Activities**

- It is proposed that site clearance and the following activities not to be undertaken in the vicinity of the NSR LCK at stage 2 (Ch. 28050 – 28200 of TMR) so as to reduce construction noise impact during normal teaching hours.
  - Truck would not operate concurrently with other PMEs during tree transplanting and noise barrier foundation work.
  - Tree Transplanting would not be undertaken concurrently with Bulk Excavation and Utilities Diversion.
  - Construction of Storm Water Drain would not be undertaken concurrently with Noise Barrier/Enclosure Foundation.
  - Construction of Sub-base and Road Base would not be undertaken concurrently with Noise Barrier/Enclosure Installation.
  - Road Surfacing, Construction of Road kerbs, Central Dividers, Parapets, and Installation of Crash Cushion and Sign Gantry would not be undertaken concurrently.
  - Installation of Gantry and Directional Lighting, and Street Lighting would not be undertaken concurrently.
- In order to avoid or reduce the construction noise problems at the schools during examination, the Contractor of the Project is suggested to liaison with all the relevant schools (CMA, LWF, LCK, LCKP and CSBS) to check out their examination periods and

activities at the beginning of the work programme. Thus, the Contractor can make good planning and arrangement of works and provide sufficient mitigation plans to alleviate the noise impacts.

- Good Site Practice:
  - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.
  - Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.
  - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.
  - Mobile plant should be sited as far away from NSRs as possible.
  - Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.

### **Water Quality related**

#### **Construction Runoff and Drainage**

The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion, and also to retain and reduce any suspended solids prior to discharge. These practices include the following items:

- Before commencing any site formation work, all sewer and drainage connections should be sealed to prevent debris, soil, sand etc. from entering public sewers/drains.
- Silt removal facilities such as silt traps or sedimentation facilities should be provided to remove silt particles from runoff to meet the requirements of the TM standards under the WPCO. The design of silt removal facilities should be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures should be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms.
- Careful programming of the works to minimise surface excavations for the road improvement works during the wet season. If excavation of soil cannot be avoided during the wet season, exposed slope surfaces should be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms are summarized in ProPECC PN 1/94.
- Exposed soil surfaces should be protected by paving or fill material as soon as possible to reduce the potential of soil erosion.
- Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. These materials should not be placed near water courses.

#### **General Construction Activities**

Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering the nearby local stormwater drainage system. Stockpiles of cement and other construction materials should be kept covered when not being used.

- Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event.

### **Sewage Effluents**

Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site. A licensed contractor would be responsible for appropriate disposal and maintenance of these facilities.

### **Waste Management related**

#### **Good Site Practices**

Adverse impacts related to waste management are not expected to arise, provided that good site practices are adhered to. Recommendations for good site practices during the construction activities include:

- Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;
- Training of site personnel in proper waste management and chemical handling procedures;
- Provision of sufficient waste disposal points and regular collection for disposal;
- Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;
- Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and
- A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).

#### **Waste Reduction Measures**

Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:

- Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;
- Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce;
- Any unused chemicals or those with remaining functional capacity shall be recycled;
- Use of reusable non-timber formwork to reduce the amount of C&D material;
- Prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill;
- Proper storage and site practices to minimise the potential for damage or contamination of construction materials; and
- Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.

In addition to the above measures, specific mitigation measures are recommended below for the identified waste arising to minimise environmental impacts during handling, transportation and disposal of these wastes.

#### **Construction and Demolition Material**

In order to minimise the impact resulting from collection and transportation of inert C&D material for off-site disposal, it is recommended that the excavated fill material shall be re-used on-site as backfill material as far as possible. The surplus excavated material should be disposed of at the designated public fill reception facility, as agreed with the Secretary of the Public Fill Committee, for other beneficial uses. C&D waste would require disposal to the designated landfill site. In order to monitor the disposal of C&D materials at the public fill reception facility and landfill and to control fly-tipping, a trip-ticket system should be included (see ETWB TCW No. 31/2004 for details).

### **Chemical Wastes**

After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTC or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.

### **General Refuse**

General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.

### **Ecology related**

Following EIAO-TM Annex 16 guidelines, mitigation measures are discussed in this section to avoid, minimise and compensate for identified ecological impacts.

#### **Avoid**

Construction activities should be confined to developed areas of low ecological value. There should be no direct impact on other habitats within the Study Area.

#### **Minimise**

Noise mitigation measures, including installation of noise-emitting construction plant away from egretry, careful scheduling of noisy works with high disturbance impact to avoid breeding season of ardeid species (i.e. mid March to August) to prevent impacts on nesting activities of Little Egret, operation of well-maintained machinery, and use of noise reduction facilities could be implemented to mitigate noise impacts arising from construction activities such as road widening and road paving. Temporary noise barrier should also be used to reduce the level of noise during construction. Noise impact would be minimised during operation phase as permanent noise barrier has been proposed to be constructed. These measures could minimise disturbance to habitats within and adjacent to the proposed Works Area.

In order to minimise the impact of construction dust to the vegetation and associated wildlife within and around the proposed Works Area, practical measures such as regular watering, complete coverage of dusty material storage piles, and the use of minimum practical height for dropping excavated material should be implemented.

Standard good site practice measures should be implemented and should include:

- Placement of equipment in designated Works Areas within the existing disturbed land.
- Construction activities should be restricted to the proposed Works Area.
- The proposed Works Area should be reinstated immediately after completion of the works.
- Open burning on proposed works site is illegal, and will be strictly enforced.

- Waste skips should be provided to collect general refuse and construction wastes, which should be disposed regularly and properly off-site.
- Soil contaminated by fuel leaked from construction plants should be removed and treated.

Mitigation measures should be implemented to prevent and minimise the indirect impacts to the nearby Tuen Mun River Channel by controlling construction site runoff and drainage from the proposed Works Area. Site runoff could be directed towards regularly cleaned and maintained sand traps, silt traps and where appropriate, oil/grease separators to minimise risk of sedimentation and pollution to the river channel. Debris and rubbish generated on-site should be collected, handled and disposed properly.

In order to prevent and minimise the chance of bird collision during operation phase, falcon sticker, tinted materials, embedded opaque stripes and superimposed patterns of thin opaque stripes are methods that could be used during the design of noise barrier.

### **Compensate**

Compensatory planting is recommended as the current roadside plantation must be removed to give way to the works. Species of choice should be composed of similar native species and the felling and planting ratio should be no less than 1:1 in terms of quality and quantity.

### **Landscape and Visual related**

- Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.
- Existing trees to be retained on site should be carefully protected during construction.
- Trees unavoidably affected by the works should be transplanted where practical.
- Compensatory tree planting should be provided to compensate for felled trees.
- Control of night-time lighting.
- Erection of decorative screen hoarding compatible with the surrounding setting.

**Summary of Implementation Schedule of Mitigation Measures**

EIA Ref #	EM&A Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
<b>Noise Control</b>						
3.8.1	2.8.1	<p>Good site practice and management can significantly reduce the noise impact of construction site activities on nearby NSRs</p> <ul style="list-style-type: none"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works;</li> <li>• machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>• plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs;</li> <li>• mobile plant should be sited as far away from NSRs as possible; and</li> <li>• material stockpiles and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓
3.8.4	2.8.3	Use of quieter mechanical equipment	Works Sites / During Construction Phase	✓	✓	✓
3.8.9	2.8.4	<p>Provision of movable noise barrier in the vicinity of the following NSRs</p> <ul style="list-style-type: none"> <li>• FEC (Far East Consortium Tuen Mun Central Building)</li> <li>• FM (Forward Mansion)</li> <li>• HTB (Hing Tai Building)</li> <li>• TMTP1 (Tuen Mun Town Plaza)</li> <li>• WG2 (Waldorf Garden)</li> <li>• CMA (CMA Choi Cheung Kok Secondary School)</li> <li>• LWF (Yan Oi Tong Madam Lau Wong Fat Primary School)</li> <li>• TMF (Tuen Mun Fa Yuen)</li> <li>• LCK (Lui Cheung Kwong Lutheran College)</li> </ul>	Works Sites from the listed NSRs / During Construction Phase	N/O	N/O	N/O

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
		<ul style="list-style-type: none"> <li>• CLFY1 (Chi Lok Fa Yuen)</li> <li>• TFH (On Ting Estate (Ting Fuk House))</li> <li>• LCKP (Lui Cheung Kwong Lutheran Primary School)</li> <li>• TTP (Tung Wah Group of Hospitals Tai Tung Pui Social Service Building)</li> <li>• CSBS (CSBS Mrs. Aw Boon Haw Secondary School)</li> <li>• KFG3D (Kam Fai Garden)</li> </ul>				
3.8.12	2.8.5	<p>Site clearance and the following activities not to be undertaken in the vicinity of the NSR LCK so as to reduce construction noise impact during normal teaching hours.</p> <ul style="list-style-type: none"> <li>• truck would not operate concurrently with other PME's during tree transplanting and noise barrier foundation work.</li> <li>• tree transplanting would not be undertaken concurrently with bulk excavation and utilities diversion.</li> <li>• construction of storm water drain would not be undertaken concurrently with noise barrier/enclosure foundation.</li> <li>• construction of sub-base and road base would not be undertaken concurrently with noise barrier/enclosure installation.</li> <li>• road surfacing, construction of road kerbs, central dividers, parapets, and installation of crash cushion and sign gantry would not be undertaken concurrently.</li> <li>• installation of gantry and directional lighting, and street lighting would not be undertaken concurrently.</li> </ul>	Work site in the vicinity of Lui Cheung Kwong Lutheran College (LCK) / Stage 2 (Ch. 28050 – 28200 of TMR) during Construction Phase	✓	✓	✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
3.8.13	2.8.6	Liaise with all the relevant schools to check out their examination periods and activities in the beginning of the work programme in order to make good planning and arrangement of works and provide sufficient mitigation plans to alleviate noise impacts.	CMA Choi Cheung Kok Secondary School (CMA), Yan Oi Tong Madam Lau Wong Fat Primary School (LWF), Lui Cheung Kwong Lutheran College (LCK), Lui Cheung Kwong Lutheran Primary School (LCKP) and CSBS Mrs. Aw Boon Haw Secondary School (CSBS) / During Construction Phase	✓	✓	✓

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
		<b><i>Air Quality Control</i></b>				
4.8.1	3.11.2	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. <ul style="list-style-type: none"> <li>• skip hoist for material transport should be totally enclosed by impervious sheeting</li> <li>• every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓
				✓	✓	✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance



EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
		<ul style="list-style-type: none"> <li>the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores</li> <li>where a site boundary adjoins a road, streets or other accessible to the public, hording of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit</li> <li>every stack of more than 20 bags of cement should be covered entirely by impervious sheeting places in an area sheltered on the top and the 3 sides</li> <li>all dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet</li> <li>the height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading</li> <li>the load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle</li> <li>instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.</li> </ul>		✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
		<b>Water Quality Control</b>				
5.8.2	4.3.2	Construction run-off and Drainage <ul style="list-style-type: none"> <li>Silt removal facilities such as silt traps or sedimentation facilities should be provided to remove silt particles from runoff to meet the requirements of the TM standards under the WPCO. The design of silt removal facilities should be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures should be inspected monthly and maintained to ensure proper and efficient operation at</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
		<p>all times and particularly during rainstorms.</p> <ul style="list-style-type: none"> <li>Careful programming of the works to minimise surface excavations for the road improvement works during the wet season. If excavation of soil cannot be avoided during the wet season, exposed slope surfaces should be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms are summarized in ProPECC PN 1/94.</li> <li>Exposed soil surfaces should be protected by paving or fill material as soon as possible to reduce the potential of soil erosion.</li> <li>Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. These materials should not be placed near water courses.</li> </ul>		✓	✓	✓
5.8.3 - 5.8.4	4.3.3	<p>General Construction Activities</p> <ul style="list-style-type: none"> <li>Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering the nearby local stormwater drainage system.</li> <li>Stockpiles of cement and other construction materials should be kept covered when not being used.</li> <li>Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event</li> </ul>	Works Sites / During Construction Phase	Rdr	Rdr	Rdr
				✓	✓	✓
				✓	✓	✓
5.8.5	4.3.4	<p>Sewage from Construction Workforce</p> <ul style="list-style-type: none"> <li>Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site. A licensed contractor would be responsible for appropriate disposal and maintenance of these facilities</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
		<b>Waste Management</b>				
6.6.1	5.2.2	<p><i>Good Site Practices</i></p> <ul style="list-style-type: none"> <li>Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.</li> <li>Training of site personnel in proper waste management and chemical waste handling procedures.</li> <li>Provision of sufficient waste disposal points and regular collection for disposal.</li> <li>Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.</li> <li>Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.</li> <li>A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓
6.6.5	5.2.6	<p><i>Chemical Wastes</i></p> <ul style="list-style-type: none"> <li>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>Spent chemicals should be collected by a licensed collector for disposal at the CWTC or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
6.6.6	5.2.7	<p><i>General Refuse</i></p> <ul style="list-style-type: none"> <li>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material.</li> <li>A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material.</li> <li>An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓
6.6.2	5.2.3	<p><i>Waste Reduction Measures</i></p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.</li> <li>Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.</li> <li>Any unused chemicals or those with remaining functional capacity shall be recycled.</li> <li>Use of reusable non-timber formwork to reduce the amount of C&amp;D material.</li> <li>Prior to disposal of C&amp;D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill.</li> <li>Proper storage and site practices to minimise the potential for damage or contamination of construction materials.</li> <li>Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
6.6.4	5.2.5	<p><i>Construction and Demolition (C&amp;D) Material</i></p> <ul style="list-style-type: none"> <li>The excavated fill material shall be re-used on-site as backfill material as far as possible.</li> <li>The surplus excavated material should be disposed of at the designated public fill reception facility, as agreed with the Secretary of the Public Fill Committee, for other beneficial uses.</li> <li>C&amp;D waste would require disposal to the designated landfill site.</li> <li>In order to monitor the disposal of C&amp;D materials at the public fill reception facility and landfill and to control fly-tipping, a trip-ticket system should be included. One may make reference to ETWB TCW No. 31/2004 for details.</li> </ul>	Works Sites / During Construction Phase	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
		<b>Ecology</b>				
7.9.2	6.2.2	Construction activities should be confined to developed areas of low ecological value, and there should be no direct impact on other habitats within the Study Area.	Works Sites / During Construction Phase	✓	✓	✓
7.9.3	6.2.3	Noise mitigation measures, including installation of noise-emitting construction plant away from egret, careful scheduling of noisy works with high disturbance impact to avoid breeding season of ardeid species (i.e. mid March to August) to prevent impacts on nesting activities of Little Egret, operation of well-maintained machinery, careful programming of works and use of noise reduction facilities could be implemented to mitigate noise impacts arising from construction activities such as road widening and road paving. Temporary noise barrier should also be used to reduce the level of noise during construction. Noise impact would be minimised during operation phase as permanent noise barrier has been proposed to be constructed. The use of low noise road surfacing could also reduce the level of noise during operation.	Works Sites / During Construction Phase	✓	✓	✓
7.9.4	6.2.4	In order to minimise the impact of construction dust to the vegetation and associated wildlife within and around the proposed Works Area, the following mitigation measures should be implemented: <ul style="list-style-type: none"> <li>regular watering</li> <li>complete coverage of dusty material storage piles</li> <li>the use of minimum practical height for dropping excavated material</li> </ul>	Works Sites / During Construction Phase	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
7.9.6	6.2.6	To minimise the indirect impacts to the nearby Tuen Mun River Channel, the following mitigation measures should be implemented: <ul style="list-style-type: none"> <li>Site runoff could be directed towards regularly cleaned and maintained sand traps, silt traps and where appropriate</li> <li>Oil/grease separators to minimise risk of sedimentation and pollution to the river channel.</li> <li>Debris and rubbish generated on-site should be collected, handled and disposed properly.</li> </ul>	Works Sites / During Construction Phase	✓ N/O ✓	✓ N/O ✓	✓ N/O ✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
7.9.5	6.2.5	Standard good site practice measures should be implemented and should include: <ul style="list-style-type: none"> <li>• Placement of equipment in designated Works Areas within the existing disturbed land.</li> <li>• Construction activities should be restricted to the proposed Works Area.</li> <li>• The proposed Works Area should be reinstated immediately after completion of the works.</li> <li>• Open burning on proposed works site is illegal, and will be strictly enforced.</li> <li>• Waste skips should be provided to collect general refuse and construction wastes, which should be disposed regularly and properly off-site.</li> <li>• Soil contaminated by fuel leaked from construction plants should be removed and treated.</li> </ul>	Works Sites / During Construction Phase	✓ ✓ ✓ ✓ ✓ N/O	✓ ✓ ✓ ✓ ✓ N/O	✓ ✓ ✓ ✓ ✓ N/O
7.9.7	6.2.7	To minimise the chance of bird collision during operation phase, falcon sticker, tinted materials, embedded opaque stripes and superimposed patterns of thin opaque stripes are methods that could be used during the design of noise barrier.	Works Sites / During Operation Phase	N/O	N/O	N/O
7.9.8	6.2.8	Compensatory planting is recommended as the current roadside plantation must be removed to give way to the works. Species of choice should be composed of similar native species and the felling and planting ratio should be no less than 1:1 in terms of quantity.	Works Sites / During Operation Phase	N/O	N/O	N/O

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
<b><i>Landscape and Visual</i></b>						
Table 8.8	7.3.1	CM1 Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Works Sites / During Construction Phase	✓	✓	✓
Table 8.8	7.3.1	CM2 Existing trees to be retained on site should be carefully protected during construction.		✓	✓	✓
Table 8.8	7.3.1	CM3 Trees unavoidably affected by the works should be transplanted where practical.		✓	✓	✓
Table 8.8	7.3.1	CM4 Compensatory tree planting should be provided to compensate for felled trees.		✓	✓	✓
Table 8.8	7.3.1	CM5 Control of night-time lighting.		✓	✓	✓
Table 8.8	7.3.1	CM6 Erection of decorative screen hoarding compatible with the surrounding setting.		✓	✓	✓

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance



EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
		<b><i>Land Contamination</i></b>				
9.8.3	8.2.2	<p>To minimize construction workers' potential contact with the contaminated materials</p> <ul style="list-style-type: none"> <li>The use of bulk earth-moving excavator equipment would minimise construction workers' potential contact with the contaminated materials;</li> <li>Exposure to any contaminated materials can be minimised by the wearing of appropriate clothing and personal protective equipment such as gloves (when interacting directly with suspected contaminated material), providing adequate hygiene and washing facilities and preventing smoking and eating during such activities;</li> <li>Stockpiling of contaminated soil should be avoided as far as possible. If this cannot be avoided, the stockpile of contaminated materials should be segregated from the uncontaminated ones. Moreover, the contaminated materials should be properly covered with waterproof material (e.g. tarpaulin sheet) to avoid leaching of contaminants, especially during rainy season.</li> <li>Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates should be sealed to prevent any leakage during transport or during wet conditions;</li> <li>Only licensed waste haulers should be used to collect and transport any contaminated material to an appropriate disposal site and procedures should be developed to ensure that illegal disposal of waste does not occur;</li> <li>Necessary waste disposal permits should be obtained, as required, from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 35), as required;</li> <li>Records of the quantities of wastes generated and disposed of should be maintained; Adequate washing facilities should be provided on site; and</li> <li>In accordance with good construction practice, silt traps should be used to reduce the impact to drainage caused by suspended solids arising from disturbed ground,</li> </ul>	Excavation zones / During excavation	N/O	N/O	N/O

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 13	Dec 13	Jan 14
		or any construction materials such as cement and gravel. Groundwater should be disposed of in accordance with the Water Pollution Control Ordinance (Cap 358).				

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

Appendix C

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**Impact Air Monitoring  
Results**

**Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Mrs Aw Boon Haw Secondary School (AM1) - 24 hour TSP**

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM1
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
124049	Nov-13	6-Nov-13	AM1	Fine	Normal Operation	765.0	765.0	20.0	20.0	40.0	40.0	2.8339	2.8482	0.0143	1.1911	1.1881	1.1896	15001.30	15025.30	1440.00	1713.02	8.3
124055	Nov-13	12-Nov-13	AM1	Fine	Normal Operation	761.0	761.0	23.0	23.0	40.0	40.0	2.835	2.8427	0.0077	1.2029	1.2029	1.2029	15025.30	15049.30	1440.00	1732.18	4.4
124062	Nov-13	18-Nov-13	AM1	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8254	2.8408	0.0154	1.1932	1.1932	1.1932	15049.30	15073.30	1440.00	1718.21	9.0
124068	Nov-13	23-Nov-13	AM1	Fine	Normal Operation	765.0	764.0	17.0	17.0	40.0	40.0	2.8266	2.8670	0.0404	1.2033	1.2025	1.2029	15073.30	15097.30	1440.00	1732.18	23.3
124074	Nov-13	29-Nov-13	AM1	Fine	Normal Operation	767.0	768.0	17.0	16.0	40.0	40.0	2.8156	2.8389	0.0233	1.2094	1.2085	1.2090	15097.30	15121.30	1440.00	1740.89	13.4
124080	Dec-13	5-Dec-13	AM1	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8943	2.9130	0.0187	1.2110	1.2140	1.2125	15121.30	15145.30	1440.00	1746.00	10.7
124086	Dec-13	11-Dec-13	AM1	Fine	Normal Operation	765.0	764.0	15.0	15.0	40.0	40.0	2.891	2.9147	0.0237	1.2033	1.2025	1.2029	15145.30	15169.30	1440.00	1732.18	13.7
124092	Dec-13	17-Dec-13	AM1	Fine	Normal Operation	767.0	768.0	16.0	16.0	40.0	40.0	2.892	2.9617	0.0697	1.2137	1.2129	1.2133	15169.30	15193.30	1440.00	1747.15	39.9
123405	Dec-13	23-Dec-13	AM1	Fine	Normal Operation	764.0	765.0	14.0	14.0	40.0	40.0	2.881	2.9115	0.0305	1.2132	1.2140	1.2136	15193.30	15217.30	1440.00	1747.58	17.5
123411	Dec-13	27-Dec-13	AM1	Fine	Normal Operation	766.0	765.0	13.0	13.0	40.0	40.0	2.8933	2.9018	0.0085	1.2151	1.2159	1.2155	15217.30	15241.30	1440.00	1750.32	4.9
123417	Jan-14	2-Jan-14	AM1	Fine	Normal Operation	765.0	768.0	16.0	16.0	40.0	40.0	2.8802	2.9139	0.0337	1.2190	1.2182	1.2186	15241.30	15265.30	1440.00	1754.78	19.2
123423	Jan-14	8-Jan-14	AM1	Fine	Normal Operation	766.0	766.0	18.0	18.0	40.0	40.0	2.8884	2.9529	0.0645	1.2022	1.2046	1.2034	15265.30	15289.30	1440.00	1732.90	37.2
123429	Jan-14	14-Jan-14	AM1	Fine	Normal Operation	761.0	758.0	13.0	13.0	40.0	40.0	2.8915	2.9392	0.0477	1.1987	1.1987	1.1987	15289.30	15313.30	1440.00	1726.13	27.6
123439	Jan-14	20-Jan-14	AM1	Fine	Normal Operation	761.0	760.0	16.0	16.0	40.0	40.0	2.8716	2.9090	0.0374	1.2055	1.2030	1.2043	15313.30	15337.30	1440.00	1734.12	21.6
123445	Jan-14	25-Jan-14	AM1	Fine	Normal Operation	764.0	764.0	17.0	17.0	40.0	40.0	2.8988	2.9617	0.0629	1.1989	1.1980	1.1985	15337.30	15361.30	1440.00	1725.77	36.4
123451	Jan-14	30-Jan-14	AM1	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.9114	2.9684	0.0570	1.1992	1.1992	1.1992	15361.30	15385.30	1440.00	1726.85	33.0

<b>Average (ug/m<sup>3</sup>)</b>	20.0
<b>Max (ug/m<sup>3</sup>)</b>	39.9
<b>Min (ug/m<sup>3</sup>)</b>	4.4

<b>Action Level (ug/m<sup>3</sup>)</b>	146
<b>Limit Level (ug/m<sup>3</sup>)</b>	260

**Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Tai Tung Pui Social Service Building (AM2) - 24 hour TSP**

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM2
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
124050	Nov-13	6-Nov-13	AM2	Fine	Normal Operation	765.0	765.0	20.0	20.0	40.0	40.0	2.8278	2.8433	0.0155	1.0723	1.0723	1.0723	9155.10	9179.10	1440.00	1544.11	10.0
124057	Nov-13	12-Nov-13	AM2	Fine	Normal Operation	761.0	761.0	23.0	23.0	40.0	40.0	2.832	2.8714	0.0394	1.0611	1.0611	1.0611	9179.10	9203.10	1440.00	1527.98	25.8
124063	Nov-13	18-Nov-13	AM2	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8244	2.8645	0.0401	1.0727	1.0718	1.0723	9203.10	9227.10	1440.00	1544.04	26.0
124069	Nov-13	23-Nov-13	AM2	Fine	Normal Operation	765.0	764.0	17.0	17.0	40.0	40.0	2.8131	2.8305	0.0174	1.0797	1.0788	1.0793	9227.10	9251.10	1440.00	1554.12	11.2
124075	Nov-13	29-Nov-13	AM2	Fine	Normal Operation	767.0	768.0	17.0	16.0	40.0	40.0	2.8179	2.8371	0.0192	1.0816	1.0850	1.0833	9251.10	9275.10	1440.00	1559.95	12.3
124081	Dec-13	5-Dec-13	AM2	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8822	2.9242	0.0420	1.0727	1.0718	1.0723	9275.10	9299.10	1440.00	1544.04	27.2
124087	Dec-13	11-Dec-13	AM2	Fine	Normal Operation	765.0	764.0	15.0	15.0	40.0	40.0	2.8915	2.9610	0.0695	1.0848	1.0838	1.0843	9299.10	9323.10	1440.00	1561.39	44.5
124093	Dec-13	17-Dec-13	AM2	Fine	Normal Operation	767.0	768.0	16.0	16.0	40.0	40.0	2.8894	2.9573	0.0679	1.0841	1.0850	1.0846	9323.10	9347.10	1440.00	1561.75	43.5
123406	Dec-13	23-Dec-13	AM2	Fine	Normal Operation	764.0	765.0	14.0	14.0	40.0	40.0	2.8738	2.9415	0.0677	1.0864	1.0873	1.0869	9347.10	9371.10	1440.00	1565.06	43.3
123412	Dec-13	27-Dec-13	AM2	Fine	Normal Operation	766.0	765.0	13.0	13.0	40.0	40.0	2.9028	2.9360	0.0332	1.0909	1.0899	1.0904	9371.10	9395.10	1440.00	1570.18	21.1
123418	Jan-14	2-Jan-14	AM2	Fine	Normal Operation	765.0	768.0	16.0	16.0	40.0	40.0	2.8755	2.9065	0.0310	1.0822	1.0850	1.0836	9395.10	9419.10	1440.00	1560.38	19.9
123424	Jan-14	8-Jan-14	AM2	Fine	Normal Operation	766.0	766.0	18.0	18.0	40.0	40.0	2.8692	2.8973	0.0281	1.2189	1.2189	1.2189	9419.10	9443.10	1440.00	1755.22	16.0
123430	Jan-14	14-Jan-14	AM2	Fine	Normal Operation	761.0	758.0	13.0	13.0	40.0	40.0	2.8962	2.9278	0.0316	1.2264	1.2237	1.2251	9443.10	9467.10	1440.00	1764.07	17.9
123440	Jan-14	20-Jan-14	AM2	Fine	Normal Operation	761.0	760.0	16.0	16.0	40.0	40.0	2.8945	2.9725	0.0780	1.2191	1.2182	1.2187	9467.10	9491.10	1440.00	1754.86	44.4
123446	Jan-14	25-Jan-14	AM2	Fine	Normal Operation	764.0	764.0	17.0	17.0	40.0	40.0	2.8894	2.9322	0.0428	1.2195	1.2195	1.2195	9491.10	9515.10	1440.00	1756.08	24.4
123452	Jan-14	30-Jan-14	AM2	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.8864	2.9047	0.0183	1.2204	1.2213	1.2209	9515.10	9539.10	1440.00	1758.02	10.4

<b>Average (ug/m<sup>3</sup>)</b>	24.9
<b>Max (ug/m<sup>3</sup>)</b>	44.5
<b>Min (ug/m<sup>3</sup>)</b>	10.0

<b>Action Level (ug/m<sup>3</sup>)</b>	151
<b>Limit Level (ug/m<sup>3</sup>)</b>	260

**Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Wu Siu Kui Primary School (AM3) - 24 hour TSP**

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM3
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
124051	Nov-13	6-Nov-13	AM3	Fine	Normal Operation	765.0	765.0	20.0	20.0	40.0	40.0	2.8296	2.8409	0.0113	1.1054	1.1054	1.1054	13321.39	13345.39	1440.00	1591.78	7.1
124058	Nov-13	12-Nov-13	AM3	Fine	Normal Operation	761.0	761.0	23.0	23.0	40.0	40.0	2.8246	2.8432	0.0186	1.0951	1.0951	1.0951	13345.39	13369.39	1440.00	1576.94	11.8
124064	Nov-13	18-Nov-13	AM3	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8379	2.8802	0.0423	1.1058	1.1050	1.1054	13369.39	13393.39	1440.00	1591.78	26.6
124070	Nov-13	23-Nov-13	AM3	Fine	Normal Operation	765.0	764.0	17.0	17.0	40.0	40.0	2.8182	2.8317	0.0135	1.1123	1.1114	1.1119	13393.39	13417.39	1440.00	1601.06	8.4
124076	Nov-13	29-Nov-13	AM3	Fine	Normal Operation	767.0	768.0	17.0	16.0	40.0	40.0	2.8079	2.8557	0.0478	1.1141	1.1172	1.1157	13417.39	13441.39	1440.00	1606.54	29.8
124082	Dec-13	5-Dec-13	AM3	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8909	2.9275	0.0366	1.1058	1.1050	1.1054	13441.39	13465.39	1440.00	1591.78	23.0
124088	Dec-13	11-Dec-13	AM3	Fine	Normal Operation	765.0	764.0	15.0	15.0	40.0	40.0	2.8746	2.9063	0.0317	1.1170	1.1161	1.1166	13465.39	13489.39	1440.00	1607.83	19.7
124094	Dec-13	17-Dec-13	AM3	Fine	Normal Operation	767.0	768.0	16.0	16.0	40.0	40.0	2.897	2.9339	0.0369	1.1164	1.1172	1.1168	13489.39	13513.39	1440.00	1608.19	22.9
123407	Dec-13	23-Dec-13	AM3	Fine	Normal Operation	764.0	765.0	14.0	14.0	40.0	40.0	2.8947	2.9364	0.0417	1.1184	1.1193	1.1189	13513.39	13537.39	1440.00	1611.14	25.9
123413	Dec-13	27-Dec-13	AM3	Fine	Normal Operation	766.0	765.0	13.0	13.0	40.0	40.0	2.8854	2.9162	0.0308	1.1226	1.1217	1.1222	13537.39	13561.39	1440.00	1615.90	19.1
123419	Jan-14	2-Jan-14	AM3	Fine	Normal Operation	765.0	768.0	16.0	16.0	40.0	40.0	2.895	2.9540	0.0590	1.1146	1.1172	1.1159	13561.39	13585.39	1440.00	1606.90	36.7
123425	Jan-14	8-Jan-14	AM3	Fine	Normal Operation	766.0	766.0	18.0	18.0	40.0	40.0	2.8753	2.9457	0.0704	1.2558	1.2558	1.2558	13585.39	13609.39	1440.00	1808.35	38.9
123431	Jan-14	14-Jan-14	AM3	Fine	Normal Operation	761.0	758.0	13.0	13.0	40.0	40.0	2.8767	2.8988	0.0221	1.2627	1.2602	1.2615	13609.39	13633.39	1440.00	1816.49	12.2
123441	Jan-14	20-Jan-14	AM3	Fine	Normal Operation	761.0	760.0	16.0	16.0	40.0	40.0	2.8827	2.9120	0.0293	1.2559	1.2551	1.2555	13633.39	13657.39	1440.00	1807.92	16.2
123447	Jan-14	25-Jan-14	AM3	Fine	Normal Operation	764.0	764.0	17.0	17.0	40.0	40.0	2.9201	2.9846	0.0645	1.2563	1.2563	1.2563	13657.39	13681.39	1440.00	1809.07	35.7
123453	Jan-14	30-Jan-14	AM3	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.8675	2.9021	0.0346	1.2571	1.2580	1.2576	13681.39	13705.39	1440.00	1810.87	19.1

<b>Average (ug/m<sup>3</sup>)</b>	22.1
<b>Max (ug/m<sup>3</sup>)</b>	38.9
<b>Min (ug/m<sup>3</sup>)</b>	7.1

<b>Action Level (ug/m<sup>3</sup>)</b>	150
<b>Limit Level (ug/m<sup>3</sup>)</b>	260

**Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Choi Cheung Kok Secondary School (AM4) - 24 hour TSP**

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM4
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
124052	Nov-13	6-Nov-13	AM4	Fine	Normal Operation	765.0	765.0	20.0	20.0	40.0	40.0	2.829	2.8425	0.0135	1.1081	1.1081	1.1081	14203.12	14227.12	1440.00	1595.66	8.5
124059	Nov-13	12-Nov-13	AM4	Fine	Normal Operation	761.0	761.0	23.0	23.0	40.0	40.0	2.8186	2.8357	0.0171	1.0979	1.0979	1.0979	14227.12	14251.12	1440.00	1580.98	10.8
124065	Nov-13	18-Nov-13	AM4	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8298	2.8675	0.0377	1.1085	1.1076	1.1081	14251.12	14275.12	1440.00	1595.59	23.6
124071	Nov-13	23-Nov-13	AM4	Fine	Normal Operation	765.0	764.0	17.0	17.0	40.0	40.0	2.8157	2.8567	0.0410	1.1148	1.1140	1.1144	14275.12	14299.12	1440.00	1604.74	25.5
124077	Nov-13	29-Nov-13	AM4	Fine	Normal Operation	767.0	768.0	17.0	16.0	40.0	40.0	2.8179	2.8444	0.0265	1.1165	1.1196	1.1181	14299.12	14323.12	1440.00	1609.99	16.5
124083	Dec-13	5-Dec-13	AM4	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8769	2.9093	0.0324	1.1085	1.1076	1.1081	14323.12	14347.12	1440.00	1595.59	20.3
124089	Dec-13	11-Dec-13	AM4	Fine	Normal Operation	765.0	764.0	15.0	15.0	40.0	40.0	2.898	2.9422	0.0442	1.1194	1.1185	1.1190	14347.12	14371.12	1440.00	1611.29	27.4
124095	Dec-13	17-Dec-13	AM4	Fine	Normal Operation	767.0	768.0	16.0	16.0	40.0	40.0	2.8763	2.9084	0.0321	1.1188	1.1196	1.1192	14371.12	14395.12	1440.00	1611.65	19.9
123408	Dec-13	23-Dec-13	AM4	Fine	Normal Operation	764.0	765.0	14.0	14.0	40.0	40.0	2.8966	2.9638	0.0672	1.1208	1.1217	1.1213	14395.12	14419.12	1440.00	1614.60	41.6
123414	Dec-13	27-Dec-13	AM4	Fine	Normal Operation	766.0	765.0	13.0	13.0	40.0	40.0	2.8716	2.8977	0.0261	1.1249	1.1241	1.1245	14419.12	14443.12	1440.00	1619.28	16.1
123420	Jan-14	2-Jan-14	AM4	Fine	Normal Operation	765.0	768.0	16.0	16.0	40.0	40.0	2.9065	2.9715	0.0650	1.1171	1.1196	1.1184	14443.12	14467.12	1440.00	1610.42	40.4
123426	Jan-14	8-Jan-14	AM4	Fine	Normal Operation	766.0	766.0	18.0	18.0	40.0	40.0	2.8802	2.9185	0.0383	1.1699	1.1699	1.1699	14467.12	14491.12	1440.00	1684.66	22.7
123432	Jan-14	14-Jan-14	AM4	Fine	Normal Operation	761.0	758.0	13.0	13.0	40.0	40.0	2.8776	2.9273	0.0497	1.1775	1.1748	1.1762	14491.12	14515.12	1440.00	1693.66	29.3
123442	Jan-14	20-Jan-14	AM4	Fine	Normal Operation	761.0	760.0	16.0	16.0	40.0	40.0	2.8825	2.9127	0.0302	1.1701	1.1692	1.1697	14515.12	14539.12	1440.00	1684.30	17.9
123448	Jan-14	25-Jan-14	AM4	Fine	Normal Operation	764.0	764.0	17.0	17.0	40.0	40.0	2.8793	2.9257	0.0464	1.1705	1.1705	1.1705	14539.12	14563.12	1440.00	1685.52	27.5
123454	Jan-14	30-Jan-14	AM4	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.8756	2.9195	0.0439	1.1714	1.1723	1.1719	14563.12	14587.12	1440.00	1687.46	26.0

<b>Average (ug/m<sup>3</sup>)</b>	23.4
<b>Max (ug/m<sup>3</sup>)</b>	41.6
<b>Min (ug/m<sup>3</sup>)</b>	8.5

<b>Action Level (ug/m<sup>3</sup>)</b>	150
<b>Limit Level (ug/m<sup>3</sup>)</b>	260

**Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Tuen Mun Town Hall (AM5) - 24 hour TSP**

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM5
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
124053	Nov-13	6-Nov-13	AM5	Fine	Normal Operation	765.0	765.0	20.0	20.0	40.0	40.0	2.8301	2.8429	0.0128	1.1721	1.1721	1.1721	13989.27	14013.27	1440.00	1687.82	7.6
124060	Nov-13	12-Nov-13	AM5	Fine	Normal Operation	761.0	761.0	23.0	23.0	40.0	40.0	2.8166	2.8315	0.0149	1.1622	1.1622	1.1622	14013.27	14037.27	1440.00	1673.57	8.9
124066	Nov-13	18-Nov-13	AM5	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8189	2.8387	0.0198	1.1725	1.1717	1.1721	14037.27	14061.27	1440.00	1687.82	11.7
124072	Nov-13	23-Nov-13	AM5	Fine	Normal Operation	765.0	764.0	17.0	17.0	40.0	40.0	2.8274	2.8582	0.0308	1.1787	1.1779	1.1783	14061.27	14085.27	1440.00	1696.75	18.2
124078	Nov-13	29-Nov-13	AM5	Fine	Normal Operation	767.0	768.0	17.0	16.0	40.0	40.0	2.8212	2.8413	0.0201	1.1804	1.1834	1.1819	14085.27	14109.27	1440.00	1701.94	11.8
124084	Dec-13	5-Dec-13	AM5	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8781	2.9290	0.0509	1.1725	1.1717	1.1721	14109.27	14133.27	1440.00	1687.82	30.2
124090	Dec-13	11-Dec-13	AM5	Fine	Normal Operation	765.0	764.0	15.0	15.0	40.0	40.0	2.8981	2.9596	0.0615	1.1831	1.1823	1.1827	14133.27	14157.27	1440.00	1703.09	36.1
124096	Dec-13	17-Dec-13	AM5	Fine	Normal Operation	767.0	768.0	16.0	16.0	40.0	40.0	2.8711	2.9250	0.0539	1.1826	1.1834	1.1830	14157.27	14181.27	1440.00	1703.52	31.6
123409	Dec-13	23-Dec-13	AM5	Fine	Normal Operation	764.0	765.0	14.0	14.0	40.0	40.0	2.8882	2.9119	0.0237	1.1846	1.1854	1.1850	14181.27	14205.27	1440.00	1706.40	13.9
123415	Dec-13	27-Dec-13	AM5	Fine	Normal Operation	766.0	765.0	13.0	13.0	40.0	40.0	2.8697	2.8983	0.0286	1.1885	1.1877	1.1881	14205.27	14229.27	1440.00	1710.86	16.7
123421	Jan-14	2-Jan-14	AM5	Fine	Normal Operation	765.0	768.0	16.0	16.0	40.0	40.0	2.8978	2.9283	0.0305	1.1809	1.1834	1.1822	14229.27	14253.27	1440.00	1702.30	17.9
123427	Jan-14	8-Jan-14	AM5	Fine	Normal Operation	766.0	766.0	18.0	18.0	40.0	40.0	2.8917	2.9264	0.0347	1.2309	1.2309	1.2309	14253.27	14277.27	1440.00	1772.50	19.6
123433	Jan-14	14-Jan-14	AM5	Fine	Normal Operation	761.0	758.0	13.0	13.0	40.0	40.0	2.8564	2.8907	0.0343	1.2379	1.2354	1.2367	14277.27	14301.27	1440.00	1780.78	19.3
123443	Jan-14	20-Jan-14	AM5	Fine	Normal Operation	761.0	760.0	16.0	16.0	40.0	40.0	2.8584	2.9037	0.0453	1.2311	1.2302	1.2307	14301.27	14325.27	1440.00	1772.14	25.6
123449	Jan-14	25-Jan-14	AM5	Fine	Normal Operation	764.0	764.0	17.0	17.0	40.0	40.0	2.8862	2.9348	0.0486	1.2315	1.2315	1.2315	14325.27	14349.27	1440.00	1773.36	27.4
123455	Jan-14	30-Jan-14	AM5	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.8758	2.9020	0.0262	1.2323	1.2331	1.2327	14349.27	14373.27	1440.00	1775.09	14.8

<b>Average (ug/m<sup>3</sup>)</b>	19.5
<b>Max (ug/m<sup>3</sup>)</b>	36.1
<b>Min (ug/m<sup>3</sup>)</b>	7.6

<b>Action Level (ug/m<sup>3</sup>)</b>	146
<b>Limit Level (ug/m<sup>3</sup>)</b>	260

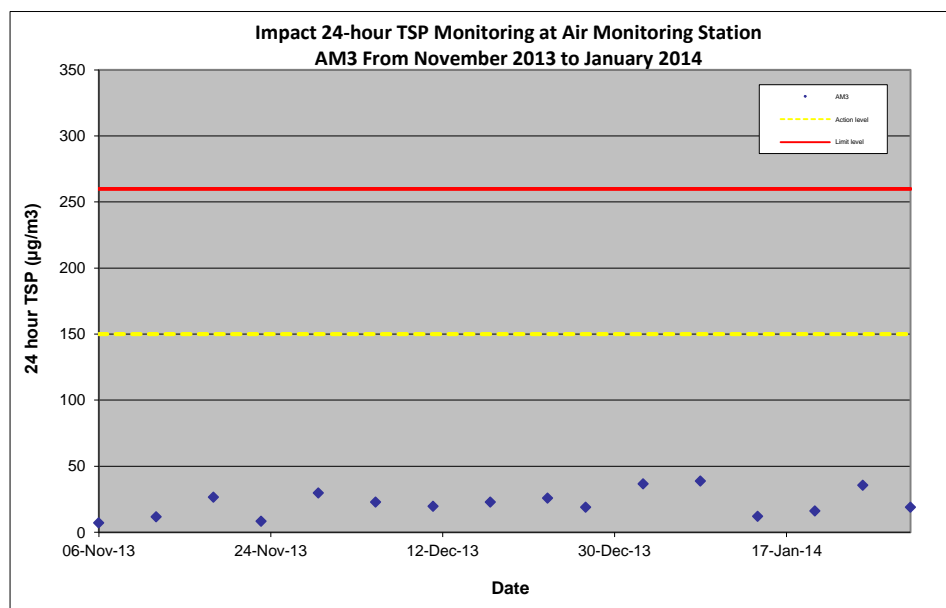
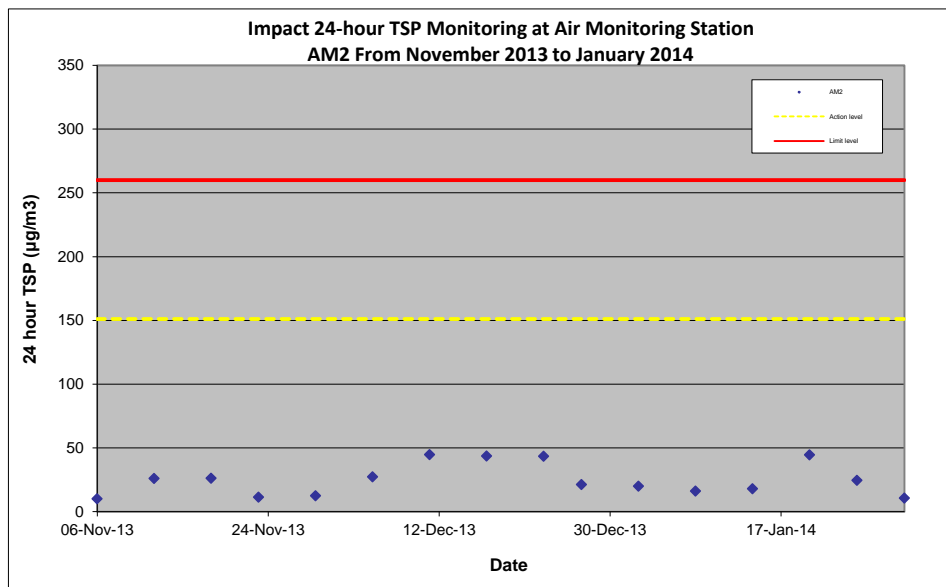
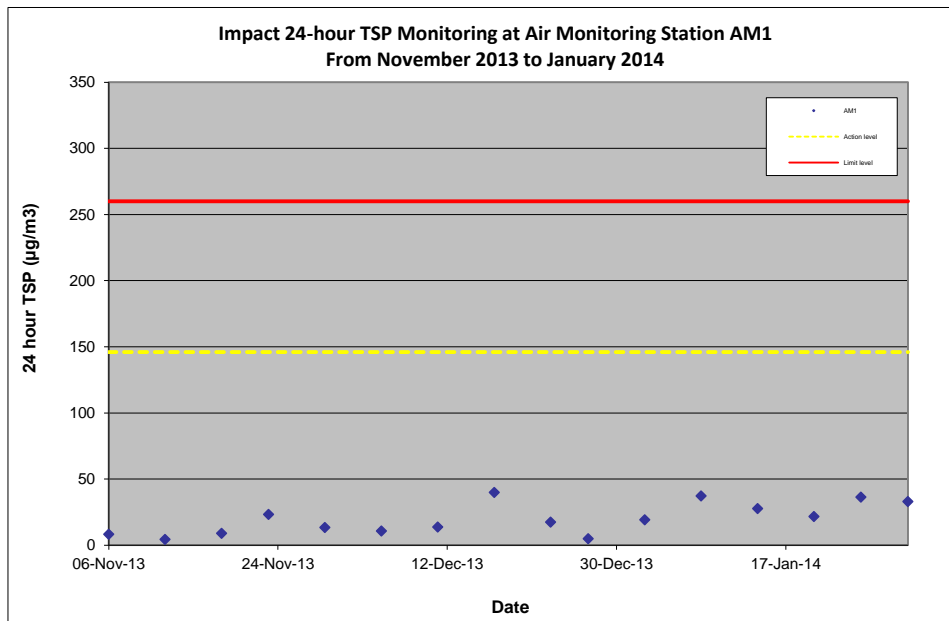


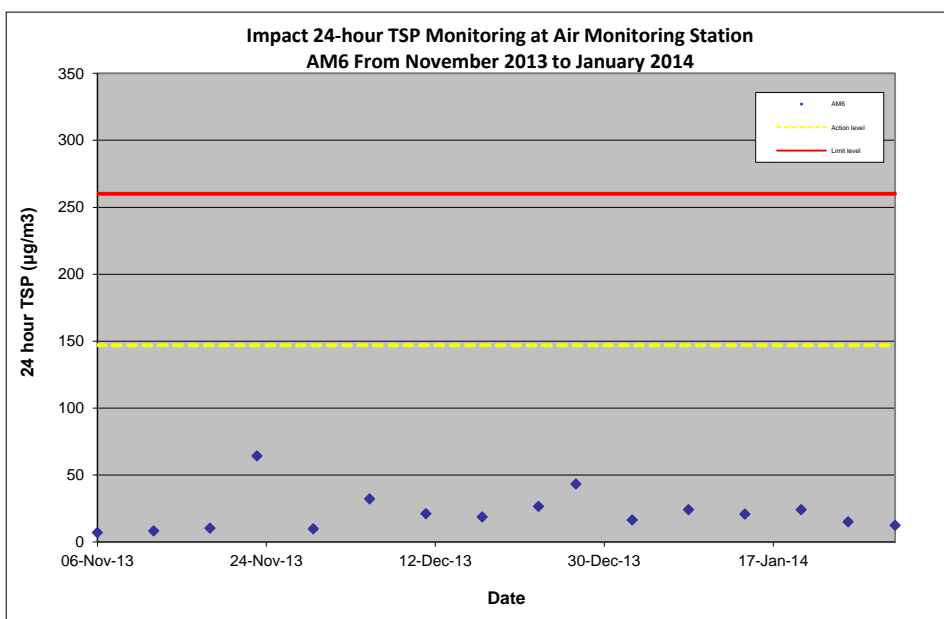
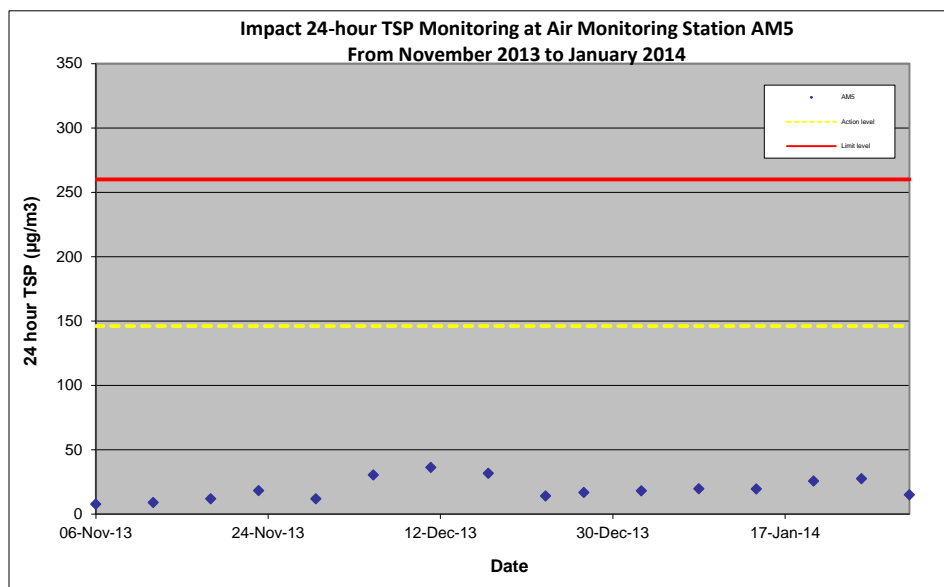
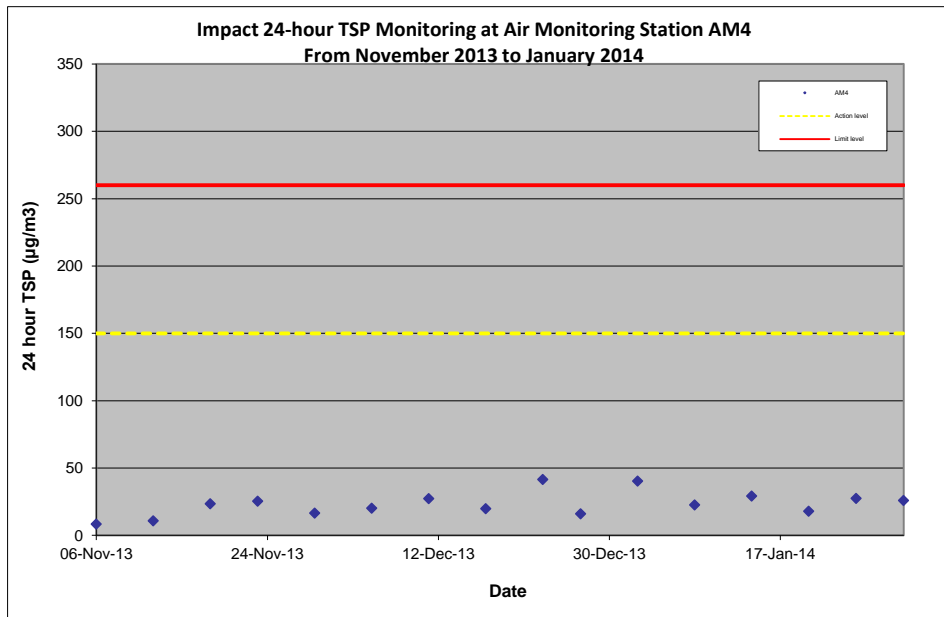
**Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Yan Oi Tong Community and Sports Centre (AM6) - 24 hour TSP**

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time (mins.)	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM6
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
124054	Nov-13	6-Nov-13	AM6	Fine	Normal Operation	765.0	765.0	20.0	20.0	40.0	40.0	2.8434	2.8554	0.0120	1.1917	1.1917	1.1917	10322.80	10346.80	1440.00	1716.05	7.0
124061	Nov-13	12-Nov-13	AM6	Fine	Normal Operation	761.0	761.0	23.0	23.0	40.0	40.0	2.8266	2.8405	0.0139	1.1813	1.1813	1.1813	10346.80	10370.80	1440.00	1701.07	8.2
124067	Nov-13	18-Nov-13	AM6	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8287	2.8463	0.0176	1.1922	1.1913	1.1918	10370.80	10394.80	1440.00	1716.12	10.3
124073	Nov-13	23-Nov-13	AM6	Fine	Normal Operation	765.0	764.0	17.0	17.0	40.0	40.0	2.8327	2.9435	0.1108	1.1987	1.1978	1.1983	10394.80	10418.80	1440.00	1725.48	64.2
124079	Nov-13	29-Nov-13	AM6	Fine	Normal Operation	767.0	768.0	17.0	16.0	40.0	40.0	2.8311	2.8480	0.0169	1.2004	1.2036	1.2020	10418.80	10442.80	1440.00	1730.88	9.8
124085	Dec-13	5-Dec-13	AM6	Fine	Normal Operation	763.0	762.0	19.0	19.0	40.0	40.0	2.8907	2.9458	0.0551	1.1922	1.1913	1.1918	10442.80	10466.80	1440.00	1716.12	32.1
124091	Dec-13	11-Dec-13	AM6	Fine	Normal Operation	765.0	764.0	15.0	15.0	40.0	40.0	2.8788	2.9154	0.0366	1.2034	1.2025	1.2030	10466.80	10490.80	1440.00	1732.25	21.1
124097	Dec-13	17-Dec-13	AM6	Fine	Normal Operation	767.0	768.0	16.0	16.0	40.0	40.0	2.876	2.9086	0.0326	1.2027	1.2036	1.2032	10490.80	10514.80	1440.00	1732.54	18.8
123410	Dec-13	23-Dec-13	AM6	Fine	Normal Operation	764.0	765.0	14.0	14.0	40.0	40.0	2.903	2.9492	0.0462	1.2048	1.2057	1.2053	10514.80	10538.80	1440.00	1735.56	26.6
123416	Dec-13	27-Dec-13	AM6	Fine	Normal Operation	766.0	765.0	13.0	13.0	40.0	40.0	2.8825	2.9578	0.0753	1.2090	1.2082	1.2086	10538.80	10562.80	1440.00	1740.38	43.3
123422	Jan-14	2-Jan-14	AM6	Fine	Normal Operation	765.0	768.0	16.0	16.0	40.0	40.0	2.8814	2.9099	0.0285	1.2010	1.2036	1.2023	10562.80	10586.80	1440.00	1731.31	16.5
123428	Jan-14	8-Jan-14	AM6	Fine	Normal Operation	766.0	766.0	18.0	18.0	40.0	40.0	2.8978	2.9427	0.0449	1.2947	1.2947	1.2947	10586.80	10610.80	1440.00	1864.37	24.1
123434	Jan-14	14-Jan-14	AM6	Fine	Normal Operation	761.0	758.0	13.0	13.0	40.0	40.0	2.8578	2.8970	0.0392	1.3034	1.3003	1.3019	10610.80	10634.80	1440.00	1874.66	20.9
123444	Jan-14	20-Jan-14	AM6	Fine	Normal Operation	761.0	760.0	16.0	16.0	40.0	40.0	2.8866	2.9317	0.0451	1.2949	1.2939	1.2944	10634.80	10658.80	1440.00	1863.94	24.2
123450	Jan-14	25-Jan-14	AM6	Fine	Normal Operation	764.0	764.0	17.0	17.0	40.0	40.0	2.8832	2.9113	0.0281	1.2954	1.2954	1.2954	10658.80	10682.80	1440.00	1865.38	15.1
123456	Jan-14	30-Jan-14	AM6	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.8822	2.9054	0.0232	1.2965	1.2975	1.2970	10682.80	10706.80	1440.00	1867.68	12.4

<b>Average (ug/m<sup>3</sup>)</b>	22.2
<b>Max (ug/m<sup>3</sup>)</b>	64.2
<b>Min (ug/m<sup>3</sup>)</b>	7.0

<b>Action Level (ug/m<sup>3</sup>)</b>	147
<b>Limit Level (ug/m<sup>3</sup>)</b>	260





Appendix D

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**Wind Data**

**Wind Monitoring Data - Nov 2013**

Date	Wind Direction (degree)	Wind Speed (km/h)
6-Nov-13	80	18.7
12-Nov-13	100	48
18-Nov-13	80	24.3
23-Nov-13	80	35.6
29-Nov-13	30	28.6

Source extracted from Hong Kong Observatory (HKO)

**Wind Monitoring Data - Dec 2013**

Date	Wind Direction (degree)	Wind Speed (km/h)
5-Dec-13	30	18.6
11-Dec-13	60	26.7
17-Dec-13	20	26.5
23-Dec-13	30	20.3
27-Dec-13	30	36.5

Source extracted from Hong Kong Observatory (HKO)

**Wind Monitoring Data - Jan 2014**

Date	Wind Direction (degree)	Wind Speed (km/h)
6-Jan-14	70	33.8
13-Jan-14	30	28.1
22-Jan-14	30	18.6
28-Jan-14	70	20.1

Source extracted from Hong Kong Observatory (HKO)

Appendix E

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**Impact Noise  
Monitoring Results**

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 5 November 2013**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	9:55-10:25	71	75	74	68	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40-11:10	71	75	74	69	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:20-11:50	65	70	67	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:40-9:10	64	70	66	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:00-13:30	69	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	13:50-14:20	68	70	71	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 11 November 2013**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	10:00-10:30	70	75	73	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:45-11:15	71	75	73	68	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30-12:00	66	70	67	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:30-9:00	65	70	66	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	70	75	72	68	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:30-15:00	68	70	70	67	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 21 November 2013**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	09:45 - 10:15	70	75	73	68	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	70	75	73	68	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	66	70	68	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	66	70	67	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	69	70	71	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 27 November 2013**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	9:50-10:20	69	75	72	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	70	75	73	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	66	70	68	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	65	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:00-13:30	70	75	73	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	13:50-14:20	68	70	71	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 6 December 2013**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	9:50-10:20	71	75	73	68	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	70	75	72	68	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	66	65	68	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	65	70	67	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:00-13:30	69	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	13:50-14:20	68	70	71	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level  
 (#): Limit Level of 65 dB(A) is adopted for N3 due to school examination hours

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 12 December 2013**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	10:00-10:30	70	75	72	68	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:45-11:15	71	75	73	68	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30-12:00	66	70	68	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:30-9:00	65	65	67	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	70	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:30-15:00	68	65	71	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level  
 (#): Limit Level of 65 dB(A) is adopted for N4 and N6 due to school examination hours

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 18 December 2013**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	9:50-10:20	71	75	73	68	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	71	75	73	68	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	66	70	69	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	66	70	68	65	67	Measured ≤ Baseline
N5	Tuen King Building	13:00-13:30	70	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	13:50-14:20	69	70	72	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 27 December 2013**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	9:55-10:25	70	75	73	68	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40-11:10	69	75	72	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:20-11:50	67	70	69	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:40-9:10	66	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:00-13:30	70	75	72	66	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	13:50-14:20	68	70	69	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 31 December 2013**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	10:00-10:30	71	75	73	68	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:45-11:15	71	75	73	68	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30-12:00	66	70	68	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:30-9:00	65	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	69	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:30-15:00	68	70	71	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level



**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 6 January 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	9:50-10:20	70	75	72	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	69	75	72	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	64	70	67	63	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	65	70	67	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:30-14:00	69	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:30-15:00	68	70	70	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 13 January 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	10:00-10:30	70	75	72	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:45-11:15	70	75	72	68	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30-12:00	66	70	67	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:30-9:00	66	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	70	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20-14:50	68	70	71	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 22 January 2014**

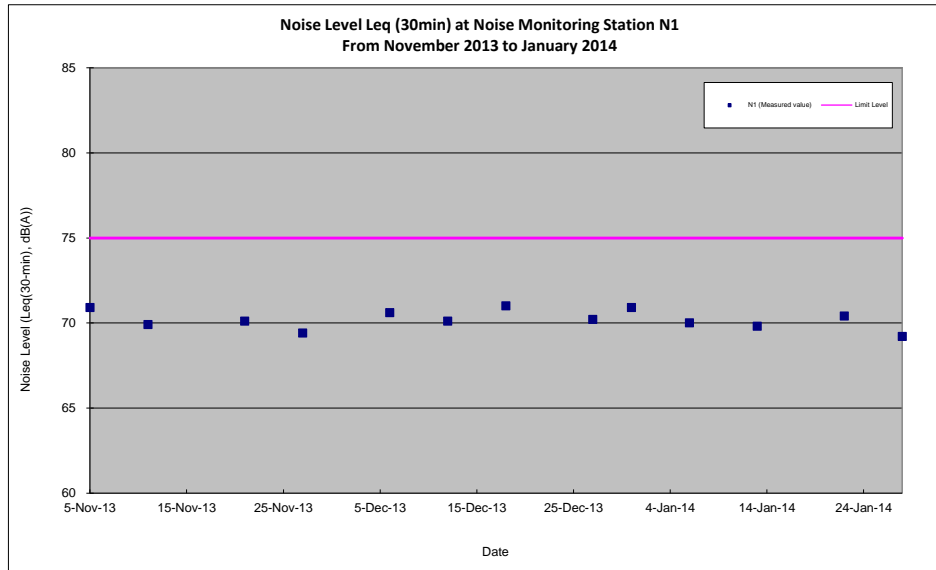
ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	9:50-10:20	70	75	73	68	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	70	75	72	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	67	70	69	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	66	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	69	75	71	66	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20-14:50	67	70	70	65	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

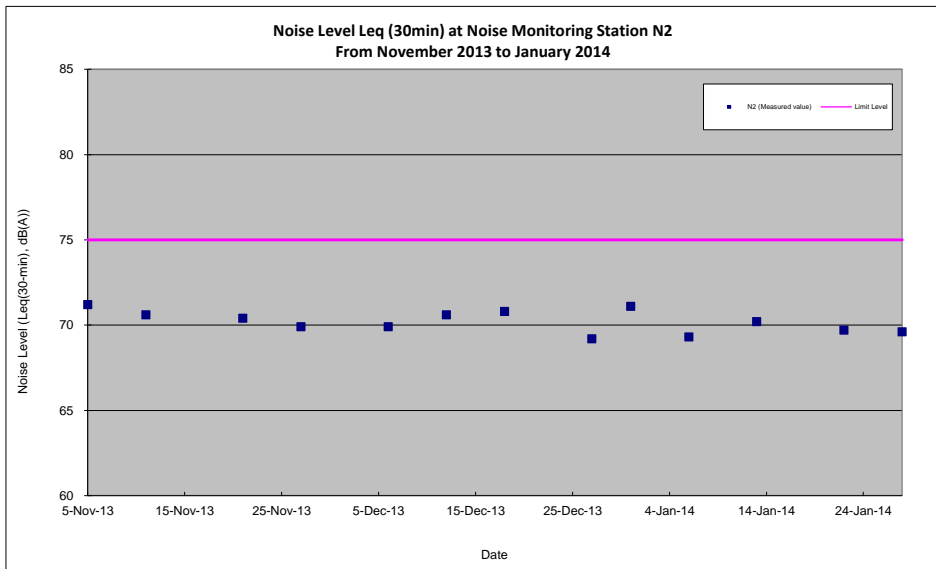
**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 28 January 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	9:55-10:25	69	75	72	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40-11:10	70	75	72	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:20-11:50	66	70	68	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:40-9:10	65	70	67	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	69	75	71	66	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20-14:50	68	70	70	66	69	Measured ≤ Baseline

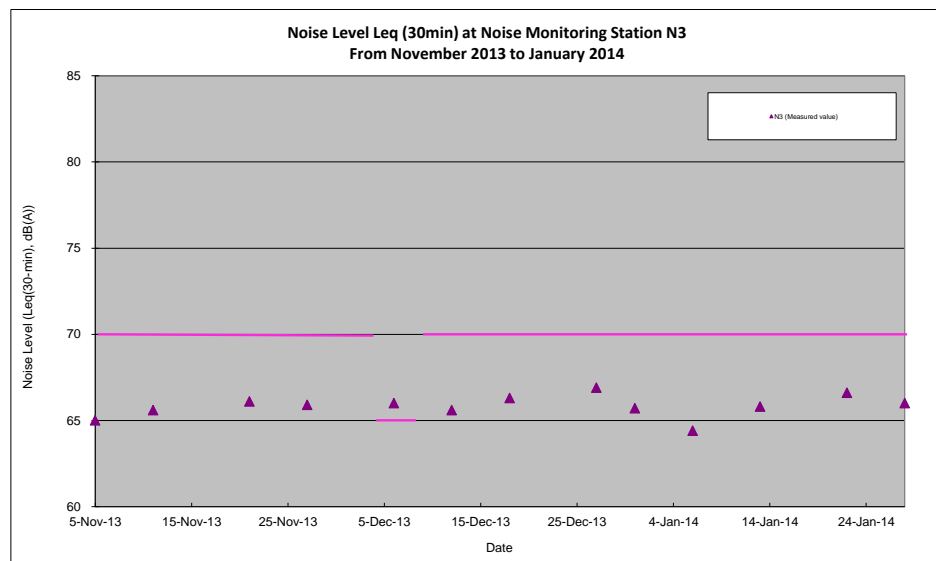
Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level



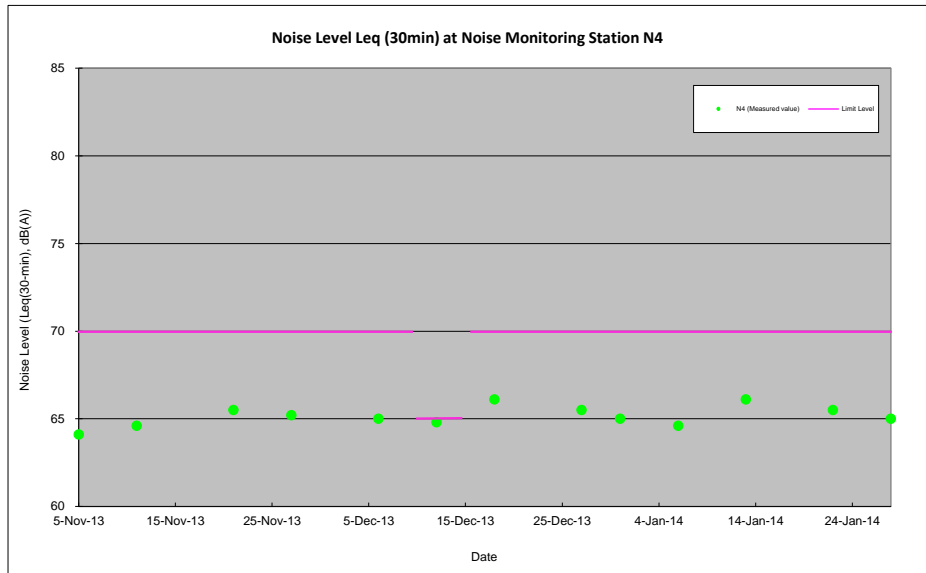
Note: For compliance comparison, please refer to above table and report.



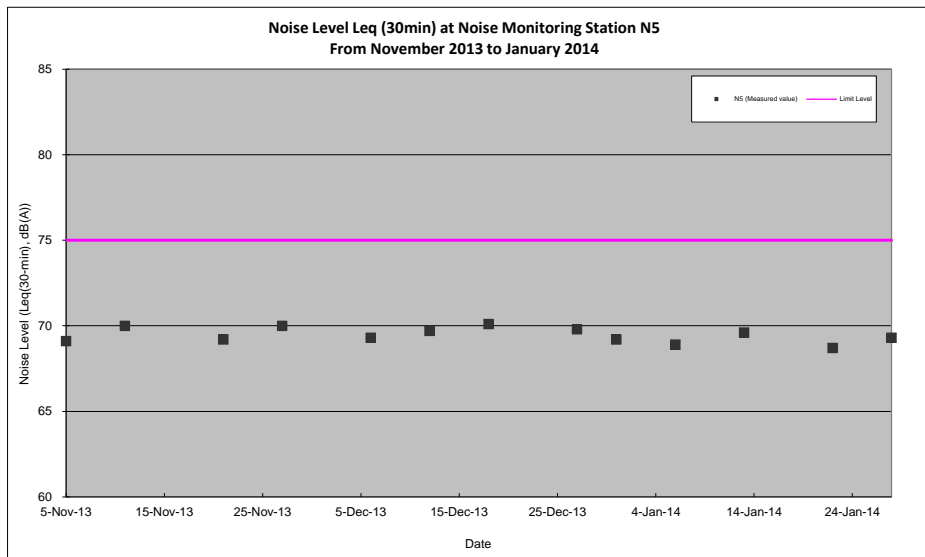
Note: For compliance comparison, please refer to above table and report.



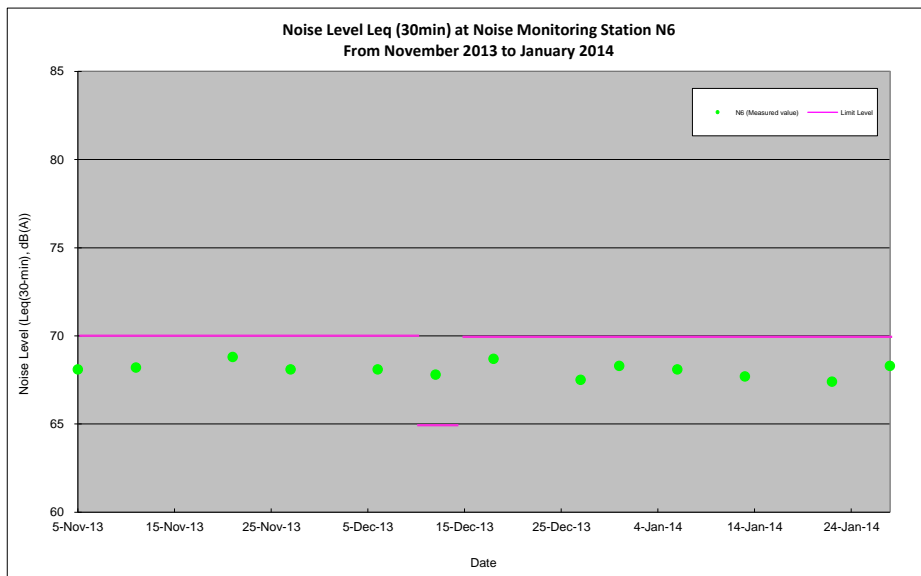
Note: For compliance comparison, please refer to above table and report.



Note: For compliance comparison, please refer to above table and report.



Note: For compliance comparison, please refer to above table and report.



Note: For compliance comparison, please refer to above table and report.

Appendix F

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**Details of LR, LCA and  
VSR**

### Landscape and Visual Impact Monitoring Locations

The landscape and visual conditions of the site and its vicinity shall be reviewed with regards to parameters assessed in the EIA Report, including landscape resources (LR), landscape character area (LCA) and view condition of visual sensitive receiver (VSR). The components of each assessed parameter of LR, LCA and VSR are summarised in **Tables A**.

**Table A** Parameters of landscape resources, landscape character areas and landscape sensitive receivers assessed during baseline site survey

ID No.	Names
<b>Landscape Resources</b>	
LR1	Tsing Sin Playground
LR2	Roadside Planting along Tuen Mun Road Adjacent to Kam Fai Garden
LR3	Street trees along Castle Peak Road – Castle Peak Bay
LR4	Street trees along Tuen Mun Road west of Chi Lok Fa Yuen and east of On Ting Estate
LR5	Street trees along Tuen Mun Road west of Waldorf Garden and CMA Choi Cheung Kok Prevocational School
LR6	Street trees along Tuen Mun Road near Tuen Mun Town Plaza
LR7	Street trees along Tuen Mun Road east of Yan Oi Tong
LR8	Trees at roadside planting areas near Yan Oi Tong Circuit
LR9	Trees at planting area near Tuen Mun Town Plaza
LR10	Trees at planting area near New Town Mansion
LR11	Trees at planting area near On Ting Estate
LR12	Tsing Hoi Playground
<b>Landscape Character Areas</b>	
LZ1	Tuen Mun Residential Urban Landscape
LZ2	Tuen Mun Mixed Modern Comprehensive Urban Development Landscape
LZ3	Tuen Mun 'Hui' Urban Landscape
<b>Visual Sensitive Receivers</b>	
C/R1	Tuen Mun Town Plaza, Waldorf Garden
C/R2	Tuen Cultural Centre, Tuen Mun Town Plaza
C/R3	Chelsea Height
GIC1	Tuen Mun Church and Tuen Mun Tseng Choi Street Joint-user Complex
GIC2	Sin Hing Tong Temple
GIC3	Semple Memorial Secondary School and Chung Shing Benevolent Society Mrs. Aw Boon Haw Secondary School
GIC4	Car park (Open)
GIC5	Yan Oi Tong Community & Sports Centre
GIC6	Tuen Mun Government Secondary School, Choi Cheung Kok Secondary School

ID No.	Names
GIC7	Madam Lau Wong Fat Primary School, Lui Cheung Kwong College, Leung Kau Kui College, Lui Cheung Kwong Primary School, Wu Siu Kui Primary School
GIC8	Sam Shing Temple
O1	San Hui Playground
O2	Tsing Sin Playground
O3	Siu Lun Sports Ground
O4	Hoi Sin Playground
R1	Residential Area of Tuen Mun San Hui
R2	Residential Area along Yan Oi Tong Circuit
R3	On Ting Estate and Siu On Court
R4	Residential Area along Tsing Hoi Circuit
R5	Handsome Court, Alpine Garden, Hoi Tak Garden and Harvest Garden, Kam Fai Garden
R6	Siu Lun Court
R7	Goodview Garden and Tsui Ning Garden
R8	Sam Shing Estate
R9	Hanford Garden
T1	Tuen Mun Road – Vehicular and Pedestrian

Appendix G

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**Complaint Log**

**Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section**  
**Complaint Log**

ET's Complaint Log Ref. no.	Incoming Complaint Ref no.	Name of Complainant	Date of Complaint receive	Complaint Date/ Period	Complaint Location	Area of Concern	Details of Complaint	Date of Complaint received by ET	ET's Investigation Date	Investigation / Mitigation Measures	Validity to the Project	Status																	
C042-TCS	A complaint was received by ICC on 30 Dec 13 and the Supervising Officer Representative was informed via the e-mail on same date.	Unknown	30 Dec 13	Not specified	Chi Lok Garden	Air quality	The complaint was related to the dust disturbance from nearby construction sites	3 Jan 14	3 ~ 10 Jan 14	<p>As confirmed by the Contractor and Supervising Officer's Representative, the roof works was carried out in the nearby on the noise enclosure. It is anticipated that the nuisance was mainly due to the construction activities. As no other construction sites were in operation during the complaint period, it is concluded that the complaint was work-related under the Project.</p> <p>In accordance with the Action/Event Plan, additional 1-hr TSP monitoring was undertaken on 6 and 8 Jan 14 at the closest air monitoring station AM4 (The Chinese Manufacturers' Association Of Hong Kong Choi Cheung Kok Secondary School). The monitoring results are summarized as follow:</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Time</th> <th>1- hr TSP (ug/m<sup>3</sup>)</th> </tr> </thead> <tbody> <tr> <td rowspan="3">6 Jan 14</td> <td>13:10 – 14:10</td> <td>55</td> </tr> <tr> <td>14:10 – 15:10</td> <td>56</td> </tr> <tr> <td>15:10 – 16:10</td> <td>49</td> </tr> <tr> <td rowspan="3">8 Jan 14</td> <td>13:30 – 14:30</td> <td>68</td> </tr> <tr> <td>14:30 – 15:30</td> <td>52</td> </tr> <tr> <td>15:30 – 16:30</td> <td>58</td> </tr> </tbody> </table> <p>The monitoring results are well below the Action Level (294 ug/m<sup>3</sup>) and Limit Level (500 ug/m<sup>3</sup>). ET's on-site observations during the monitoring also suggested that no abnormal construction activities were observed within the site area.</p> <p>Nevertheless, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance.</p> <ol style="list-style-type: none"> <li>1. Well-maintain the machines condition to minimize exhaust emission;</li> <li>2. Spray water while loading, unloading or transfer operation of the dusty materials; and</li> <li>3. Provide the covering of the dusty materials and stockpiles.</li> </ol>	Date	Time	1- hr TSP (ug/m <sup>3</sup> )	6 Jan 14	13:10 – 14:10	55	14:10 – 15:10	56	15:10 – 16:10	49	8 Jan 14	13:30 – 14:30	68	14:30 – 15:30	52	15:30 – 16:30	58	Yes	Closed on 10 Jan 14
Date	Time	1- hr TSP (ug/m <sup>3</sup> )																											
6 Jan 14	13:10 – 14:10	55																											
	14:10 – 15:10	56																											
	15:10 – 16:10	49																											
8 Jan 14	13:30 – 14:30	68																											
	14:30 – 15:30	52																											
	15:30 – 16:30	58																											