Highways Department

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

Quarterly Environmental Monitoring and Audit Summary Report (August to October 2011)

Final

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Executive Summary

This is the fifth 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 August to 31 October 2011.

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.

Noise

Totally 12 limit level exceedances (3 in August, 7 in September and 2 in October 2011) of noise monitoring were recorded during the reporting period. Based on the on-site observations and interpretation from the results, noise exceedance was not related to the construction activities. No particular remedial work is required.

However, one noise complaint (In September 2011), hence, one Action Level exceedence, 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 514 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 11,431.88 m^3 were generated and disposed of at public fills at Tuen Mun Area 38 in the reporting period. 463.125 m^3 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

Four environmental complaints (3 in September and 1 in October 2011) regarding the construction noise and water quality were recorded during the reporting period. After the investigation, it is concluded that all complaints were attributable to the Contract. The corresponding mitigation measures due to the complaints were recommended to carry out by the Contractor. Nevertheless, the Contractor was reminded to implement proper mitigation measure as stipulated in EM&A Manual to minimize any environmental implication.

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/A) 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	Site clearance, ground investigation, footbridge construction, noise barrier construction; pilling works, underground utilities and drainage diversion

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

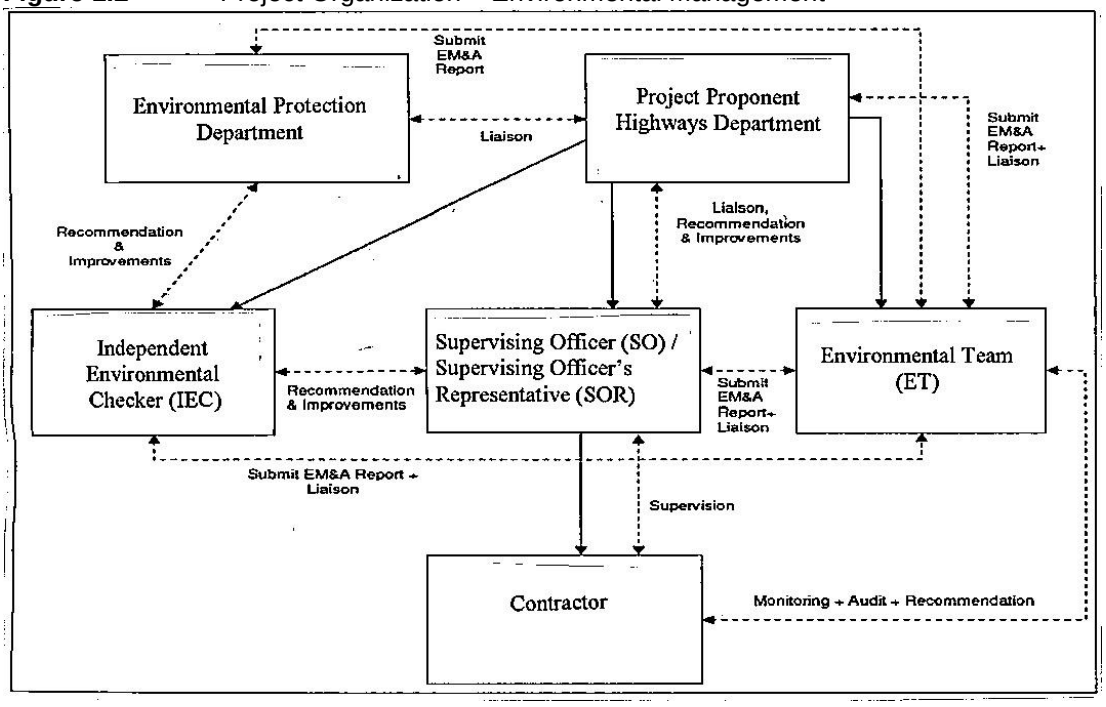


Figure 1.1 Location of works area and air, noise environmental monitoring stations

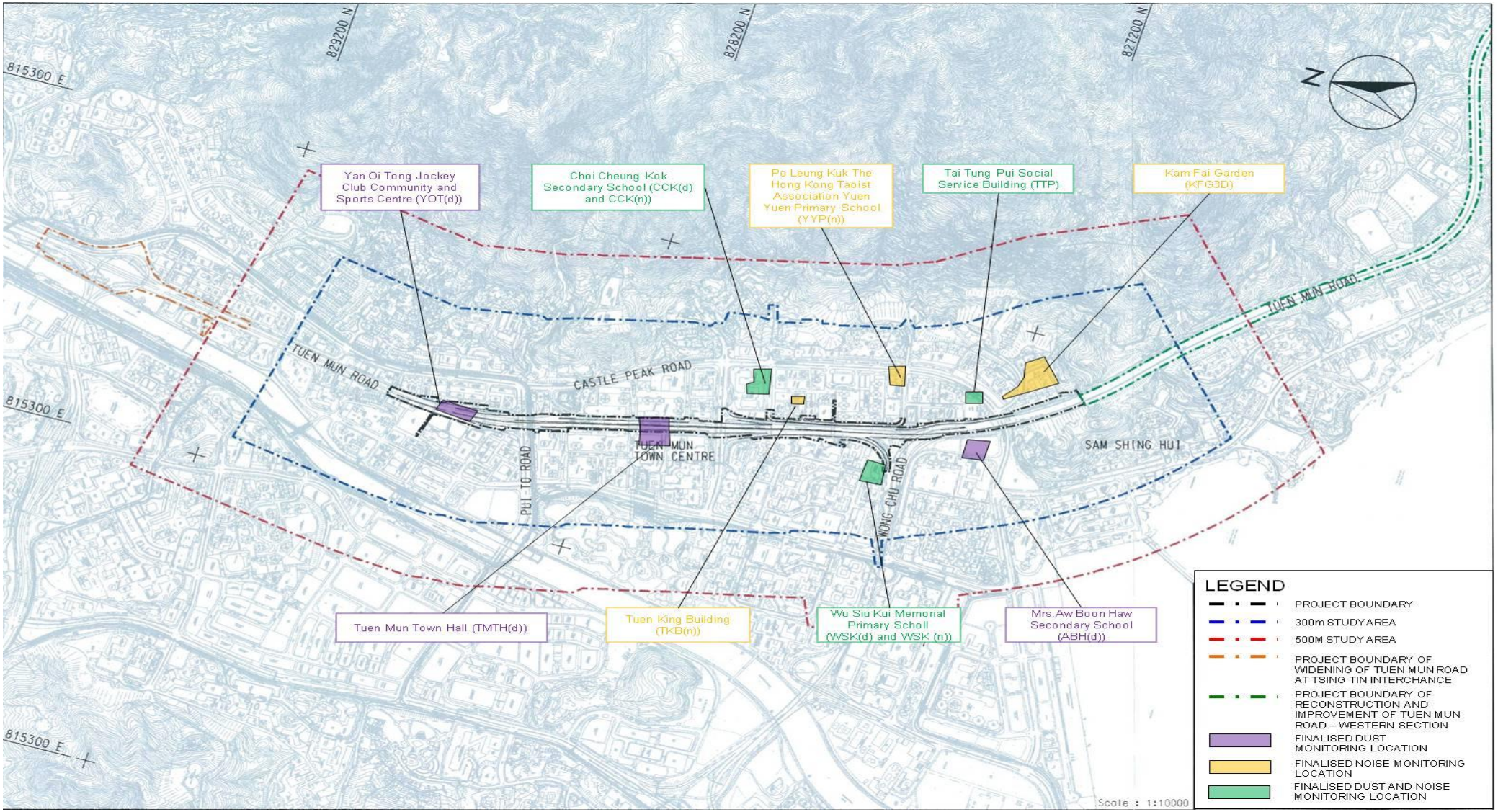


Table 1.2 Contacts of key environmental staff

Organization	Name	Telephone
Environmental Protection Department		
Environmental Protection Officer (Strategic Assessment)22	Thomas To	2835 1103
Project Proponent		
Highways Department: Senior Engineer	Kenneth Chan	2762 3422
Supervising Officer / Supervising Officer's Representative		
AECOM Asia Co. Ltd.: Chief Resident Engineer	Patrick Lee	2969 9200
Independent Environmental Checker		
ENVIRON Hong Kong Limited: Independent Environmental Checker	David Yeung	3743 0717
Environmental Team		
Ove Arup & Partners Hong Kong Ltd: Environmental Team Leader	Coleman Ng	2268 3097
Contractor		
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
Air	
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
Noise	
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 (Note 1)	AM1	290 μg/m³	500 μg/m³
			AM2	291 μg/m³	
			AM3	287 μg/m³	
			AM4	292 μg/m³	
			AM5	286 μg/m³	
			AM6	290 μg/m³	
	24-hour TSP	Once every 6 days	AM1	146 μg/m³	260 μg/m³
			AM2	151 μg/m³	
			AM3	150 μg/m³	
			AM4	150 μg/m³	
			AM5	146 μg/m³	
			AM6	147 μg/m³	
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 (Note 3)
	0700 - 2300 hours on holiday; and 1900 – 2300 hours on all other days - $L_{eq(5min)}$ (Note 2)	--	N1, N2, N3, N4, N5 & N6		--
	2300 – 0700 hours of next day - $L_{eq(5min)}$ (Note 2)				--
Landscape and Visual	Landscape resources (LR), landscape character area(LCA) and view sensitive receiver (VSR) (Note 4)	Twice site audit per month	Entire site area	N/A	N/A

Notes:
1. 1-hr TSP monitoring would be required in case of receiving complaints
2. 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.
3. 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.
4. 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	Rosedale Garden	3 Aug 11	It was noted that the waste cement bags debris will be removed soon. Nevertheless, the Contractor was reminded to provide the tarpaulin covering prior to disposal.	The reminder has been noted. Closed on 10 Aug 11.
	Tsing Hoi Circuit		Water spraying/tarpaulin covering should be provided for the exposed soils/stockpiles to minimize dust disturbance.	Water spraying and tarpaulin covering were provided. Closed on 10 Aug 11.
	Tsing Hoi Playground		Dark smoke emission from the air-compressor was observed. The Contractor should fix the machine immediately and keep good maintenance of the machine to avoid reoccurrence.	Dark smoke was not observed. Closed on 10 Aug 11.
	Tuen Hi Road	18 Aug 11	The Contractor was reminded to improve the conditions of the tarpaulin cover for the cement bags storage area to minimize dust disturbance.	The reminder has been noted. Closed on 25 Aug 11.
	Yan Oi Tong Circuit	25 Aug 11	The cement mixing area should be sheltered on the top and 3-side entirely. The cement bags (more than 20kg) placed on the central medium should be covered by tarpaulin.	Tarpaulin was provided. Closed on 1 Sep 11.
	Yan Ching Bridge & Chi Lok Fa Yuen		The stockpiles should be covered by tarpaulin to avoid dust disturbance.	Tarpaulin was provided. Closed on 1 Sep 11.
	Yan Ching Street, Tuen Fat Road (near New Town Mansion)	1 Sept 11	The contractor was reminded to provide tarpaulin covering of the exposed soil and stockpiles after works completed.	The reminder has been noted. Closed on 8 Sept 11.
	Central Median (near Yan Ching Street)	15 Sept 11	Loading of cement bags was observed. The contractor was reminded to provide 3-side with top enclosed area for cement bags placing.	The reminder has been noted. Closed on 22 Sept 11.
	General (entire site area)		The contractor was reminded to provide water spraying on the exposed soils/ haul roads to minimize dust disturbance.	The reminder has been noted. Closed on 22 Sept 11.

Monitoring Parameter	Location	Inspection Date	Key Observations & Recommendations	Contractor's Follow-Up Status
Air Quality	Tuen Hi Road	22 Sept 11	The contractor should provide adequate water spraying during the rock transfer operation to suppress dust disturbance.	Adequate water spraying has been provided. Closed on 29 Sept 11.
	Area Under Wong Chi Road flyover	30 Sept 11	The waste cement bags should be properly covered by tarpaulin or other means prior to disposal.	Tarpaulin has been provided. Closed on 7 Oct 11.
	Rosedale Garden & Tuen Fat Road	6 Oct 11	Dark smoke emission from mobile crane (Rosedale Garden), generator and piling machine (Tuen Fat Road) was observed. The contractor should take maintenance of the machines.	No further dark smoke was observed. Closed on 13 Oct 11.
	Tuen Fat Road (area near Tuen Yan Street and New Town Mansion)		The waste cement bags should be covered by tarpaulin to avoid dust disturbance prior to disposal.	Tarpaulin has been provided. Closed on 13 Oct 11.
	Tuen Fat Road (near Tuen Yan Street)	13 Oct 11	Dark smoke emission from generator was observed. The contractor should take maintenance of the machine.	No further dark smoke was observed. Closed on 20 Oct 11.
	Kam Fai Garden	20 Oct 11	The contractor should enhance the maintenance of the air-compressor to avoid dark smoke emission.	No further dark smoke was observed. Closed on 27 Oct 11.
	Tsing Sin playground		The contractor was reminded to improve the conditions of the 3-sides with top enclosure for the cement mixing area to minimize dust nuisance.	The reminder has been noted. Closed on 27 Oct 11.
Water Quality	Hoi Wing Road	10 Aug 11	The Contractor was reminded to use the upper outlet instead of lower outlet of the desilting tank for discharge of the treated silty water.	The reminder has been noted. Closed on 17 Aug 11.
	Tsing Sin Playground		The Contractor should provide adequate mitigation measures (i.e providing sand bags bunding, additional water pumps and desilting tanks) for collection of runoff, especially during heavy rainfall, to avoid silty water flooding onto public area.	Adequate mitigation measures were provided. Closed on 17 Aug 11.
	Yan Ching Street	25 Aug 11	Improper pipes connection of sedimentation tank was observed which affect the tank's performance. The Contractor was reminded to enhance the workers knowledge in order to operate the wastewater treatment facilities properly.	The reminder has been noted. Closed on 1 Sep 11.

Monitoring Parameter	Location	Inspection Date	Key Observations & Recommendations	Contractor's Follow-Up Status
Water Quality	Tuen Fat Road (near Waldorf Garden)	1 Sept 11	Water leakage from water barriers and spillage to public area was observed. The contractor was reminded to fix the leakage as soon as possible.	The reminder has been noted. Closed on 8 Sept 11.
	Tuen Fat Road (near Waldorf Garden)		Water leakage from sedimentation tank was observed. The contractor was reminded to fix the leakage as soon as possible. In addition the contractor was also reminded to enhance the workers' awareness of the sedimentation tank's pipe connection in order to enhance the performance.	The reminder has been noted. Closed on 8 Sept 11.
	Yan Oi Tong Circuit	22 Sept 11	The contractor should increase the height of sand bags bunding near the site entrance to prevent muddy water overflow onto public area.	Sand bags bunding has been increased. Closed on 29 Sept 11.
	Yan Ching Street	30 Sept 11	The contractor was reminded to review the capacity of sedimentation tank whether the tank has sufficient capacity cater the wastewater generated from the works and enhance the tank capacity if necessary to ensure the effluent is comply with the WPCO requirements.	The reminder has been noted. Closed on 7 Oct 11.
	Yan Ching Bridge and Tuen Fat Road	13 Oct 11	Damaged sand bags should be replaced as soon as possible.	Sand bags have been replaced. Closed on 20 Oct 11.
	Tsing Hoi Circuit		Muddy water overflowing to public area during pilling operation was observed. The contractor should enhance the bunding to avoid reoccurrence.	The height of bunding has been increased. Closed on 20 Oct 11.
	Tsing Sin playground	20 Oct 11	The contractor was reminded to increase the height of the sand bags bunding at the site boundary to prevent muddy water flooding.	The reminder has been noted. Closed on 27 Oct 11.
	Yan Oi Tong Circuit	27 Oct 11	The contractor should improve the performance of the desilting tank to meet the WPCO requirement regarding the discharge water quality.	The performance of desilting tank has been improved. Closed on 3 Nov 11.
Noise	Tsing Sin Playground	25 Aug 11	The Contractor should implement noise mitigation measures such as erect mobile noise barrier, install acoustic blanket on the breaking machine head to minimize the noise nuisance during road surface breaking operation.	Noise mitigation measures were implemented. Closed on 1 Sep 11.
	Chi Lok Fa Yuen	8 Sept 11	The contractor was reminded to replace the damaged acoustic jacket of the hydraulic breaker head.	The reminder has been noted. Closed on 15 Sept 11.
		22 Sept 11	The contractor was advised to provide acoustic jacket for the breaker head during rock breaking works.	The reminder has been noted. Closed on 29 Sept 11.

Monitoring Parameter	Location	Inspection Date	Key Observations & Recommendations	Contractor's Follow-Up Status
Landscape and Visual	Yan Oi Tong Circuit	3 Aug 11	Fencing should be provided for the retained trees protection. The Construction materials should not be placed too close to the retained trees.	Fencing was provided. Closed on 10 Aug 11.
	Yan Ching Bridge	18 Aug 11	Retained trees should be surrounded by fencing for protection from the construction works.	Fencing was provided. Closed on 25 Aug 11.
	Yan Ching Street	8 Sept 11	Construction materials should not be placed within the retained trees protection area.	Construction material has been properly placed. Closed on 15 Sept 11.
	Area Under Wong Chi Road flyover	30 Sept 11	The contractor should provide the fence for the retained trees protection.	Fences have been provided. Closed on 7 Oct 11.
	Tuen Fat Road (near New Town Mansion)	6 Oct 11	Fence with sufficient space should be provided for the retained trees protection.	Fence has been provided with enough space. Closed on 13 Oct 11.
Waste / Chemical Management	Yan Oi Tong Circuit & Yan Ching Street	3 Aug 11	Drip tray should be provided for chemicals placing.	Drip tray was provided. Closed on 10 Aug 11.
	Rosedale Garden & Yan Ching Bridge	18 Aug 11	Drip tray should be provided for the placing of chemical containers on the ground.	Drip tray was provided. Closed on 25 Aug 11.
	Rosedale Garden		The Contractor should implement on-site sorting for the general wastes.	On-site sorting was implemented. Closed on 25 Aug 11.
	Kam Fai Garden	25 Aug 11	Drip tray should be provided for chemicals placing.	Drip tray was provided. Closed on 1 Sep 11.
	Tuen Fat Road (near Waldorf Garden)	1 Sept 11	The waste batteries should be collected and placed in the designated chemical waste storage area for licence collector collection.	The waste batteries have been collected. Closed on 8 Sept 11.
	Tuen Fat Road (near Waldorf Garden)		Drip tray should be provided for the chemical drums placing (near Tuen Hing Road flyover).	Drip tray has been provided. Closed on 8 Sept 11.
	Yan Ching Bridge, Rosedale Garden	8 Sept 11	Chemical drums should be placed on the drip tray.	Drip tray has been provided. Closed on 15 Sept 11.
	Yan Oi Tong Circuit	15 Sept 11	Drip tray should be provided for chemical containers placing.	Drip tray has been provided. Closed on 22 Sept 11.

Monitoring Parameter	Location	Inspection Date	Key Observations & Recommendations	Contractor's Follow-Up Status
Waste / Chemical Management	Kam Fai Garden	22 Sept 11	The contractor was reminded to provide bunding to prevent the soil dropping onto the pedestrian walk.	The reminder has been noted. Closed on 29 Sept 11.
	Yan Oi Tong Circuit	30 Sept 11	The contractor should replace/ repair the damaged drip tray of air compressor.	The drip tray of air compressor has been fixed. Closed on 7 Oct 11.
	Chi Lok Fa Yuen		The waste oil containers and batteries scattered on site was observed. The contractor should treat these materials as chemical waste and stored in designated chemical waste storage area.	The waste oil containers and batteries have been stored in designated chemical waste storage area. Closed on 7 Oct 11.
	Tuen Fat Road (near Waldorf Garden)	6 Oct 11	Drip tray should be provided for chemical drums placing.	Drip trays have been provided. Closed on 13 Oct 11.
	General	13 Oct 11	Drip tray should be provided for chemical drums placing.	Drip trays have been provided. Closed on 20 Oct 11.
	Junction of Hoi Wing Road & Castle Peak Road	20 Oct 11	Drip tray should be provided for placing of chemical containers.	Drip trays have been provided. Closed on 27 Oct 11.
	Kam Fai Garden		The contractor should rectify the leaked oil on the ground under the air-compressor as soon as possible.	Leaked oil has been cleared and drip tray has been provided. Closed on 27 Oct 11.
	Tsing Sin playground		The contractor was reminded to dispose of the wasted cement bags and other wastes to avoid accumulation.	The reminder has been noted. Closed on 27 Oct 11.
	Yan Oi Tong Circuit & Kam Fai Garden	27 Oct 11	Drip trays should be provided for chemical containers placing.	Drip trays have been provided. Closed on 3 Nov 11.
	Pui To Road		The contractor was reminded to dispose of the general waste to avoid accumulation.	The reminder has been noted. Closed on 3 Nov 11.
	Kam Fai Garden		The contractor was reminded to remove the accumulated water in the drip tray.	The reminder has been noted. Closed on 3 Nov 11.

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, μg/m³ (Range)			
	Aug 11	Sep 11	Oct 11	Mean
AM1	21 (12 – 43)	33 (26 – 54)	38 (10 – 65)	30 (10 – 65)
AM2	27 (11 – 73)	38 (30 – 52)	43 (8 – 69)	36 (8 – 73)
AM3	27 (13 – 55)	30 (22 – 39)	55 (14 – 95)	37 (13 – 95)
AM4	26 (11 – 48)	37 (21 – 56)	48 (15 – 85)	36 (11 – 85)
AM5	27 (13 – 51)	42 (16 – 72)	45 (8 – 88)	37 (8 – 88)
AM6	18 (11 – 34)	42 (35 – 52)	46 (12 – 87)	34 (11 – 87)

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, $L_{eq(30min)}$, dB(A) (Range)			
	Aug 11	Sep 11	Oct 11	Mean
N1	75 (73 – 77)	77 (77 – 78)	75 (74 – 76)	76 (73 – 78)
N2	75 (74 – 76)	76 (74 – 77)	74 (72 – 76)	75 (72 – 77)
N3	67 (66 – 68)	68 (68 – 68)	67 (66 – 68)	67 (66 – 68)

Location	Noise Level, $L_{eq(30min)}$, dB(A) (Range)			
	Aug 11	Sep 11	Oct 11	Mean
N4	66 (66 – 67)	66 (64 – 67)	66 (65 – 67)	66 (64 – 67)
N5	70 (69 – 71)	72 (71 – 72)	70 (68 – 72)	70 (68 – 72)
N6	69 (68 – 71)	70 (69 – 71)	69 (68 – 69)	69 (68 – 71)

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

Totally 12 limit level exceedances (3 in August, 7 in September and 2 in October 2011) for noise measurement during non-restricted hours in the reporting period and are summarized in **Table 4.3**.

Table 4.3 Summary of exceedance of Limit Levels for construction noise in the reporting period

Location (Note 1)	No. of exceedance of Limit Level			
	Aug 11	Sep 11	Oct 11	Total
N1	1	4	1	6
N2	1	2	1	4
N6	1	1	0	2

Notes:
1. No Limit Level exceedance was recorded at monitoring location N4 and N5 during 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 exceedance was not related to the construction activities. The details of the limit level exceedances had been presented in the corresponding monthly EM&A report (Aug to Oct 2011).

One environmental complaint (In September 2011) regarding noise nuisance was recorded in the reporting period. Therefore, one Action Level exceedance of construction noise was recorded in the reporting period.

Summary of above exceedance investigation of the Project is provided in the following Section 6.4 and **Appendix G**.

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

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 514 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 (Aug to Oct 2011).

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				
	Aug 11	Sep 11	Oct 11	Total	Disposal Locations
Inert C&D Materials	0 m^3	0 m^3	0 m^3	0 m^3	Broken concrete (Note 1)
	0 m^3	268.125 m^3	390 m^3	658.125 m^3	Reused in the Contract
	175.500 m^3	0 m^3	0 m^3	175.500 m^3	Reused in other Projects
	3,310.125 m^3	4,543.5 m^3	3,578.25 m^3	11,431.88 m^3	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	320 kg	0 kg	284 kg	604 kg	Recycler
Plastic	0 kg	0 kg	0 kg	0 kg	
Metal	0 kg	0 kg	0 kg	0 kg	
General Refuse	151.125 m^3	214.5 m^3	97.5 m^3	463.125 m^3	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

Totally 12 limit level exceedances (3 in Aug, 7 in September and 2 in October 2011)of noise monitoring were recorded from the monitoring data at locations N1, N2, N3 and N6 during the reporting period, which triggered the Event and Action Plan for remedial action. Based on the on-site observations and interpretation from the results, it was revealed that the exceedances were mainly caused by traffic noise along Tuen Mun Road and was not related to the construction activities. No particular remedial work is required.

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

Four environmental complaints (3 in September and 1 in October 2011) regarding the construction noise and water quality were recorded during the reporting period.

The **first** complaint was received by ICC on 10 Sep 11 regarding the noise nuisance during the demolition of parapet walls at Tuen Mun Road near Yan Oi Tong Circuit.

The complainant expressed that the demolition of parapet walls at Tuen Mun Road near Yan Oi Tong Circuit was started too early in the morning and caused inconvenience, and requested to delay the works starting time to 10:00.

As confirmed by the Contractor and Supervising Officer's Representative, the demolition of parapet walls was carried out at Tuen Mun Road near Yan Oi Tong Circuit. 1 unit of breaking machine was employed and the works was started around 08:00 during the weekday. It is recognized that the works starting time is complied with the noise control ordinance (i.e. allow the construction works between 07:00 ~ 19:00).

As advised by the Contractor, noise insulating fabric had been installed along the site boundary (facing to the sensitive receivers) and acoustic fabric had been wrapped around the breaking machine head to minimize the noise nuisance. In addition, the Contractor also advised that the works starting time had been started at 09:00 (i.e. 1 hour later) after complaint received.

Site investigation conducted by ET on 15 Sep and 22 Sep 11 revealed that the mitigation measures were implemented by the Contractor. In addition, in accordance with the Action/Event Plan, additional noise monitoring was undertaken on 17 Sep 11 at the noise monitoring location N6 (The Chinese Manufacturer's Association of Hong Kong Choi Cheung Kok Secondary School), comparison is made between the monitoring results against the corresponding baseline noise level. Based on the interpretation from the results, the construction noise is 63dB(A) which below the daytime noise limit level 70dB(A).

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

1. Well-maintain the machines condition to minimize noise nuisance;
2. Relocate operating machinery as far as possible from nearby sensitive receivers;
3. Machines that may be in intermittent use should be shut down between work periods or should be throttled down;
4. Optimize the working programme to minimize the work activities as far as possible;
5. Improve the working practices to minimize the noise nuisance during the working activities as far as possible;
6. Provide temporary / mobile noise barrier for the noisy activities as far as possible; and
7. Enhance the workers awareness by regular training to minimize noise nuisance during construction works.

The **second** complaint was received by ICC on 17 Sept regarding the muddy water spillage to the pedestrian walks near Chi Lok Fa Yuen and affected passing pedestrians.

As confirmed by the Contractor and Supervising Officer's Representative, removal works of pipe ducts was carried out at the site near Chi Lok Fa Yuen during the complaint period. During the transferring of pipe ducts, muddy water was spilled to the pedestrian walks and affected passing pedestrians. Therefore, it is concluded that the complaint was work-related under the Project.

As advised by the Contractor and Supervising Officer's Representative, the work had been immediately stopped and the workers were reminded to pay attention during replacement

activities to avoid water spillage after the complaint was received. Based on the weekly site inspections on 22 Sep and 30 Sep 11, the site condition was satisfactory and no water spillage was observed.

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

1. Improve the working practices to minimize the nuisance during the replacement activities as far as possible; and
2. Enhance the workers awareness by regular training to minimize nuisance during the replacement activities.

The **third** complaint was received by ICC on 25 Sep 11 regarding the muddy water overflowed to Tuen Mun Road and affected the travelling vehicles.

As confirmed by the Contractor and Supervising Officer's Representative, the complaint was related to muddy water overflowing from the construction site onto TMR near the Tuen Mun Town Plaza and affected the travelling vehicles on 25 Sep 11.

The muddy water overflowing to TMR was occurred due to the damaging of sandbags bunding at some portion along the temporary drainage. As advised by the Supervising Officer's Representative, the Contractor had replaced the damaged sandbags after receiving the complaint. Weekly site inspections by ET on 30 Sep 11 and 6 Oct 11 revealed that the site condition was satisfactory and no muddy water overflow was observed.

Based on the above information, it is therefore concluded that the complaint was work related under the Project. The Contractor was reminded to take necessary resources to ensure well maintenance the temporary drainage system and prevent re-occurrence.

In view of this, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance.

1. Review and enhance the drainage system capacity;
2. Routine inspection and maintenance for the drainage system and treatment facilities such as silt traps or sedimentation tanks etc. to ensure proper and efficient operation at all times and particularly during rainstorms;
3. Careful programming of the works to minimize exposed surface area;
4. Covering the stockpiles as well as the exposed or idle slope by tarpaulin or similar fabric to minimize muddy water generation;
5. Stockpiles should not be placed near the drainage or water courses;
6. Increase the height of the bundings along the site area to prevent water overflow as far as possible; and
7. Provision of adequate pumping system for surface runoff collection especially during heavy rainfall.

The **fourth** complaint was received by ICC on 7 Oct 11 regarding the muddy water overflowed to Tuen Mun Road and affected the travelling vehicles.

As confirmed by the Contractor and Supervising Officer's Representative, the complaint was related to muddy water overflowing from the construction site onto TMR near the Tuen Mun Town Plaza and affected the travelling vehicles on 7 Oct 11.

Small amount of muddy water spillage to TMR was occurred due to the damaging of tarpaulin cover on the drilling rig during operation. As advised by the Supervising Officer's Representative, the Contractor had replaced the damaged cover, ensuring the tarpaulin

cover is in good working order and cover the entire casing and shaft after receiving the complaint. Weekly site inspections by ET on 13 Oct 11 and 27 Oct 11 revealed that both the site condition and the tarpaulin cover were satisfactory and no muddy water spillage was observed.

Based on the above information, it is therefore concluded that the complaint was work related under the Project. The Contractor was reminded to take necessary resources to ensure well maintenance the temporary drainage system and prevent re-occurrence.

In view of this, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance.

1. Routine inspection and maintenance for the tarpaulin cover on the drilling rig to ensure proper and efficient operation at all times and particularly during rainstorms.

The recommendations that advised by ET had been noted by the Contractor and would be implemented as far as possible. The updated statistical summary of complaint is presented in **Table 6.1**. The updated complaint logs (C005 to C0015) 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 (Ref.: C008)	Closed on 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	-	-	-

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
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.

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.

Totally 12 limit level exceedances (3 in August, 7 in September and 2 in October 2011) of noise monitoring were recorded during the reporting period. Based on the field observations and interpretation of the results, the noise exceedance the exceedances were mainly caused by traffic vehicles along Tuen Mun Road. It was concluded that the exceedance were not project related and no particular remedial work is required. One noise complaint (In September 2011), hence, one Action Level exceedence, was recorded in the reporting period.

Four environmental complaints (3 in September and 1 in October 2011) regarding construction noise and water quality were recorded in the reporting period. After the investigations, it is concluded that the complaints were attributable to the Contract. The corresponding mitigation measures due to the complaints were recommended to carry out by the Contractor. Nevertheless, the Contractor was reminded to implement proper mitigation measure as stipulated in EM&A Manual to minimize any environmental implication.

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 514 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 – August 2011 (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 – September 2011 (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 – October 2011 (Final)

Appendix A

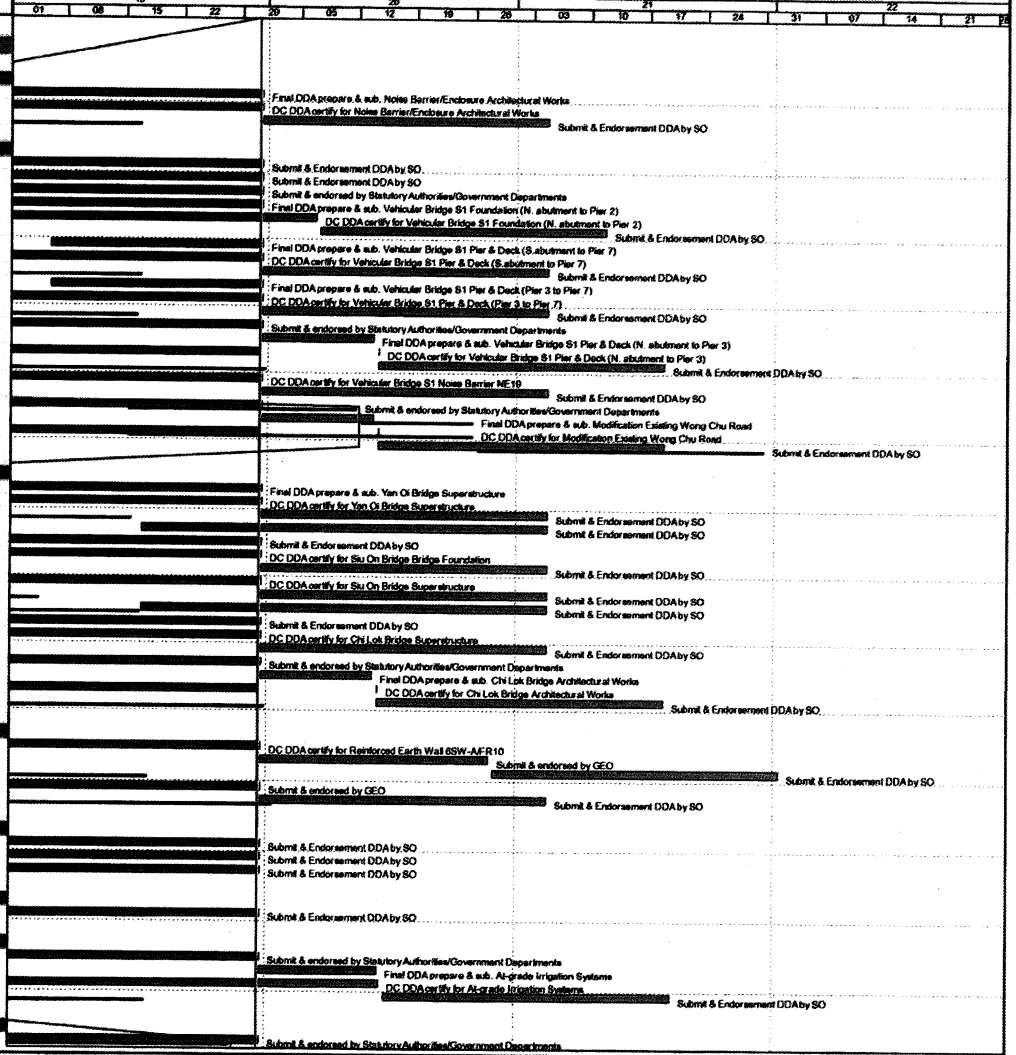
Construction Programme

HY/2009/03

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

25-Aug-11?

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish
	Design of Permanent Works						
	Pakage of Noise Barrier / Enclosure						
	Detailed Design Approval (DDA)						
DDANB1735	Final DDA prepare & sub. Noise Barrier/Enclosure Architectural Works	14	0	22-Jul-11 A	31-Aug-11	06-Feb-13	06-Feb-13
DDANB1740	DC DDA certify for Noise Barrier/Enclosure Architectural Works	42	0	01-Jun-11 A	31-Aug-11	06-Feb-13	06-Feb-13
DDANB1750	Submit & Endorsement DDA by SO	35	35	31-Aug-11	04-Oct-11	06-Feb-13	13-Mar-13
	Package of Vehicular Bridge S1						
	Detailed Design Approval (DDA)						
DDAS11030	Submit & Endorsement DDA by SO	35	0	12-May-11,	31-Aug-11	28-Sep-11	28-Sep-11
DDAS11070	Submit & Endorsement DDA by SO	35	0	05-May-11,	31-Aug-11	23-Aug-11	23-Aug-11
DDAS11080	Submit & endorsed by Statutory Authorities/Government Departments	28	0	28-May-11,	31-Aug-11	18-Nov-11	16-Nov-11
DDAS11085	Final DDA prepare & sub. Vehicular Bridge S1 Foundation (N. abutment to Pier 2)	49	0	29-Jan-11 A	31-Aug-11	25-Nov-11	25-Nov-11
DDAS11100	DC DDA certify for Vehicular Bridge S1 Foundation (N. abutment to Pier 2)	7	7	27-May-11,	06-Sep-11	18-Nov-11	25-Nov-11
DDAS11110	Submit & Endorsement DDA by SO	35	35	07-Sep-11	11-Oct-11	25-Nov-11	30-Dec-11
DDAS11135	Final DDA prepare & sub. Vehicular Bridge S1 Pier & Deck (S.abutment to Pier 7)	14	0	06-Aug-11 A	31-Aug-11	01-Nov-11	01-Nov-11
DDAS11140	DC DDA certify for Vehicular Bridge S1 Pier & Deck (S.abutment to Pier 7)	42	0	01-Jun-11 A	31-Aug-11	01-Nov-11	01-Nov-11
DDAS11150	Submit & Endorsement DDA by SO	35	35	31-Aug-11	04-Oct-11	01-Nov-11	06-Dec-11
DDAS11175	Final DDA prepare & sub. Vehicular Bridge S1 Pier & Deck (Pier 3 to Pier 7)	14	0	06-Aug-11 A	31-Aug-11	29-Dec-11	29-Dec-11
DDAS11180	DC DDA certify for Vehicular Bridge S1 Pier & Deck (Pier 3 to Pier 7)	42	0	31-May-11,	31-Aug-11	29-Dec-11	29-Dec-11
DDAS11190	Submit & Endorsement DDA by SO	35	35	31-Aug-11	04-Oct-11	29-Dec-11	02-Feb-12
DDAS11210	Submit & endorsed by Statutory Authorities/Government Departments	28	0	16-Jun-11 A	31-Aug-11	21-Mar-12	21-Mar-12
DDAS11215	Final DDA prepare & sub. Vehicular Bridge S1 Pier & Deck (N. abutment to Pier 3)	14	14	31-Aug-11	13-Sep-11	21-Mar-12	04-Apr-12
DDAS11220	DC DDA certify for Vehicular Bridge S1 Pier & Deck (N. abutment to Pier 3)	42	0	16-Jun-11 A	14-Sep-11	04-Apr-12	04-Apr-12
DDAS11230	Submit & Endorsement DDA by SO	35	35	14-Sep-11	18-Oct-11	04-Apr-12	09-May-12
DDAS11260	DC DDA certify for Vehicular Bridge S1 Noise Barrier NE19	42	0	27-Apr-11 A	31-Aug-11	18-Oct-11	18-Oct-11
DDAS11270	Submit & Endorsement DDA by SO	35	35	31-Aug-11	04-Oct-11	18-Oct-11	22-Nov-11
DDAS11290	Submit & endorsed by Statutory Authorities/Government Departments	28	0	01-Jun-11 A	31-Aug-11	19-Oct-11	19-Oct-11
DDAS11295	Final DDA prepare & sub. Modification Existing Wong Chu Road	14	14	31-Aug-11	13-Sep-11	20-Oct-11	02-Nov-11
DDAS11300	DC DDA certify for Modification Existing Wong Chu Road	42	0	01-Jun-11 A	14-Sep-11	02-Nov-11	02-Nov-11
DDAS11310	Submit & Endorsement DDA by SO	35	35	14-Sep-11	18-Oct-11	03-Nov-11	07-Dec-11
	Package of Footbridge and Associated Lift						
	Detailed Design Approval (DDA)						
DDAFB1070	Final DDA prepare & sub. Yan Oi Bridge Superstructure	7	0	18-May-11,	31-Aug-11	12-Oct-11	12-Oct-11
DDAFB1080	DC DDA certify for Yan Oi Bridge Superstructure	120	0	14-Mar-11 A	31-Aug-11	12-Oct-11	12-Oct-11
DDAFB1090	Submit & Endorsement DDA by SO	35	35	31-Aug-11	04-Oct-11	12-Oct-11	16-Nov-11
DDAFB1140	Submit & Endorsement DDA by SO	35	35	17-Aug-11 A	04-Oct-11	22-Mar-12	26-Apr-12
DDAFB2060	Submit & Endorsement DDA by SO	35	0	19-Jul-11 A	31-Aug-11	03-Nov-11	03-Nov-11
DDAFB3030	DC DDA certify for Siu On Bridge Bridge Foundation	67	0	08-Apr-11 A	31-Aug-11	23-Jul-12	23-Jul-12
DDAFB3040	Submit & Endorsement DDA by SO	35	35	31-Aug-11	04-Oct-11	23-Jul-12	27-Aug-12
DDAFB3060	DC DDA certify for Siu On Bridge Superstructure	84	0	08-Apr-11 A	31-Aug-11	21-Jul-12	21-Jul-12
DDAFB3090	Submit & Endorsement DDA by SO	35	35	31-Aug-11	04-Oct-11	22-Jul-12	25-Aug-12
DDAFB3140	Submit & Endorsement DDA by SO	35	35	17-Aug-11 A	04-Oct-11	06-Oct-12	11-Nov-12
DDAFB4040	Submit & Endorsement DDA by SO	35	0	08-Apr-11 A	31-Aug-11	16-Sep-11	16-Sep-11
DDAFB4060	DC DDA certify for Chi Lok Bridge Superstructure	135	0	01-Feb-11 A	31-Aug-11	14-Dec-11	14-Dec-11
DDAFB4090	Submit & Endorsement DDA by SO	35	35	31-Aug-11	04-Oct-11	14-Dec-11	18-Jan-12
DDAFB4110	Submit & endorsed by Statutory Authorities/Government Departments	28	0	16-Jun-11 A	31-Aug-11	25-Jan-12	25-Jan-12
DDAFB4120	Final DDA prepare & sub. Chi Lok Bridge Architectural Works	14	14	31-Aug-11	13-Sep-11	25-Jan-12	06-Feb-12
DDAFB4130	DC DDA certify for Chi Lok Bridge Architectural Works	42	0	16-Jun-11 A	14-Sep-11	06-Feb-12	06-Feb-12
DDAFB4140	Submit & Endorsement DDA by SO	35	35	14-Sep-11	18-Oct-11	06-Feb-12	14-Mar-12
	Package of Geotechnical Works						
	Detailed Design Approval (DDA)						
DDAGE1120	DC DDA certify for Reinforced Earth Wall 65W-AFR10	140	0	27-Jan-11 A	31-Aug-11	07-Sep-11	07-Sep-11
DDAGE1130	Submit & endorsed by GEO	28	28	31-Aug-11	27-Sep-11	07-Sep-11	05-Oct-11
DDAGE1140	Submit & Endorsement DDA by SO	35	35	28-Sep-11	01-Nov-11	05-Oct-11	09-Nov-11
DDAGE1170	Submit & endorsed by GEO	28	0	12-Jun-11 A	31-Aug-11	05-Oct-11	05-Oct-11
DDAGE1180	Submit & Endorsement DDA by SO	35	35	31-Aug-11	04-Oct-11	05-Oct-11	09-Nov-11
	Package of Drainage Works						
	Detailed Design Approval (DDA)						
DDADG1030	Submit & Endorsement DDA by SO	35	0	26-Oct-10 A	31-Aug-11	12-Dec-11	12-Dec-11
DDADG1070	Submit & Endorsement DDA by SO	35	0	30-Oct-10 A	31-Aug-11	11-Feb-12	11-Feb-12
DDADG1110	Submit & Endorsement DDA by SO	35	0	04-Jan-11 A	31-Aug-11	19-Aug-11	19-Aug-11
	Package of Provisional Works for TCSS Installation						
	Detailed Design Approval (DDA)						
DDATS1030	Submit & Endorsement DDA by SO	35	0	09-Dec-10 A	31-Aug-11	19-Aug-11	19-Aug-11
	Package of At-Grade Irrigation System						
	Detailed Design Approval (DDA)						
DDAIS1010	Submit & endorsed by Statutory Authorities/Government Departments	28	0	24-Jul-11 A	31-Aug-11	06-Jul-14	06-Jul-14
DDAIS1015	Final DDA prepare & sub. At-grade Irrigation Systems	15	15	31-Aug-11	14-Sep-11	07-Jul-14	21-Jul-14
DDAIS1020	DC DDA certify for At-grade Irrigation Systems	42	15	24-Jul-11 A	14-Sep-11	05-Jul-14	21-Jul-14
DDAIS1030	Submit & Endorsement DDA by SO	35	35	15-Sep-11	19-Oct-11	21-Jul-14	25-Aug-14
	Package of Landscaping Works						
	Detailed Design Approval (DDA)						
DDALW1010	Submit & endorsed by Statutory Authorities/Government Departments	28	0	24-Jul-11 A	31-Aug-11	07-Jul-14	07-Jul-14



Remaining Level of Effort
Actual Level of Effort
Primary Bas...
Actual Work

3 Months Rolling Programme (cutoff: 31-08-11)

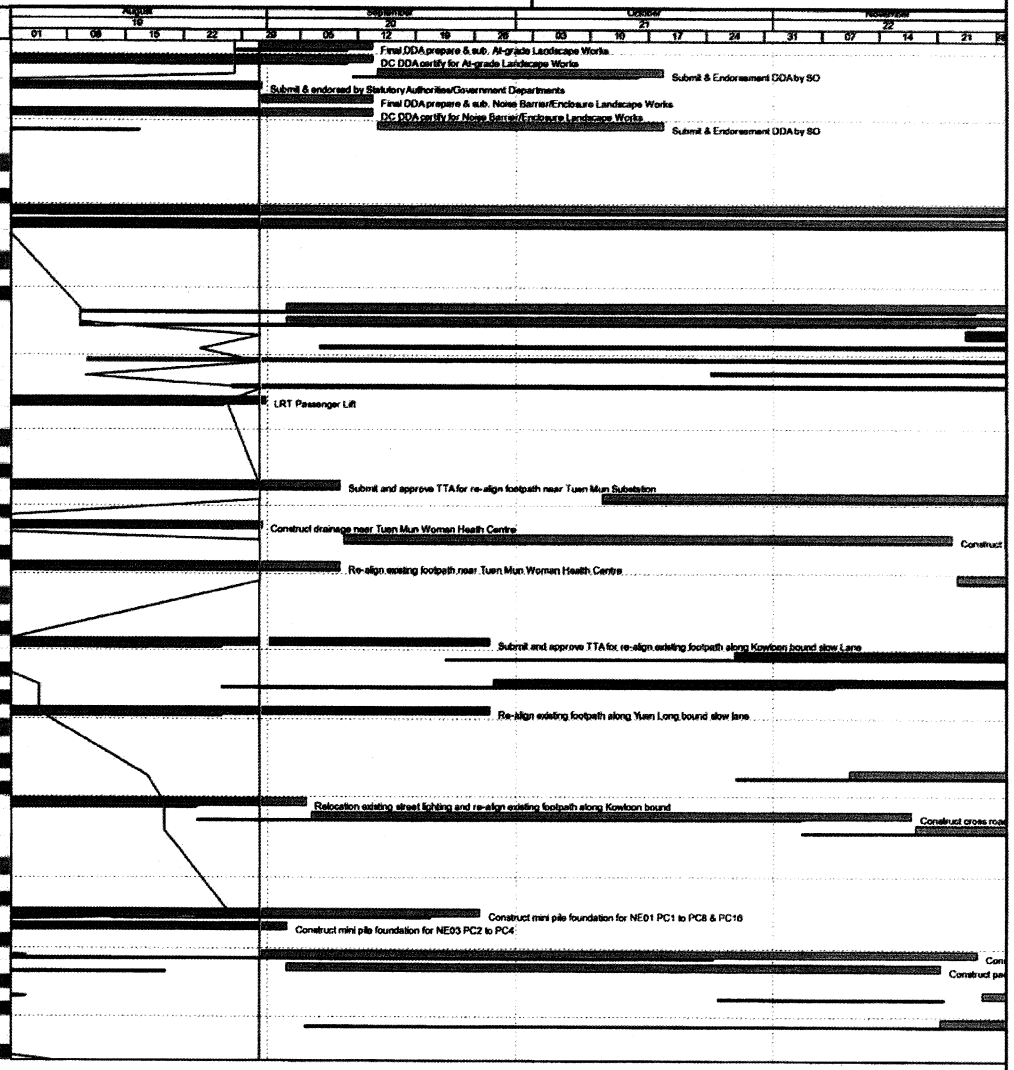
Date	Revision	Checked	Approved
10-Aug-11	1107	Tim	
25-Aug-11	1108	Tim	

HY/2009/03

25-Aug-11?

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

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish
DDALW1015	Final DDA prepare & sub. At-grade Landscape Works	14	14	31-Aug-11	13-Sep-11	07-Jul-14	21-Jul-14
DDALW1020	DC DDA certify for At-grade Landscape Works	42	14	24-Jul-11 A	13-Sep-11	07-Jul-14	21-Jul-14
DDALW1030	Submit & Endorsement DDA by SO	35	35	14-Sep-11	18-Oct-11	21-Jul-14	25-Aug-14
DDALW1050	Submit & endorsed by Statutory Authorities/Government Departments	26	0	01-Jul-11 A	31-Aug-11	29-Mar-12	29-Mar-12
DDALW1055	Final DDA prepare & sub. Noise Barrier/Enclosure Landscape Works	14	14	31-Aug-11	13-Sep-11	29-Mar-12	12-Apr-12
DDALW1060	DC DDA certify for Noise Barrier/Enclosure Landscape Works	42	14	01-Jul-11 A	13-Sep-11	29-Mar-12	12-Apr-12
DDALW1070	Submit & Endorsement DDA by SO	35	35	14-Sep-11	18-Oct-11	12-Apr-12	17-May-12
Project General Submission							
Trail Green Panel							
GB1640	Site trial for green wall panel	365	217	05-Mar-11 A	03-Apr-12	08-Aug-12	13-Mar-13
GB1600	Trail piles & test for friction piles	365	217	05-Mar-11 A	03-Apr-12	08-Aug-12	13-Mar-13
Procurement							
Material Procurement and Fabrication							
MP1040	Yan Ching Bridge span	90	90	03-Sep-11	20-Dec-11	08-Sep-11	28-Dec-11
MP1050	Yan Ching Bridge Passenger Lift	90	90	03-Sep-11	20-Dec-11	13-Oct-11	03-Feb-12
MP1080	Chi Lok Bridge span	90	90	24-Nov-11	14-Mar-12	23-Nov-11	14-Mar-12
MP1100	Noise Barrier/Enclosure steel structure for Scheme A Area	441	441	07-Sep-11	05-Mar-13	09-Jan-12	23-Feb-13
MP1110	Noise Barrier/Enclosure steel structure for Scheme B Area	505	459	10-Aug-11 A	18-Mar-13	08-Dec-11	18-Mar-13
MP1120	Noise Barrier/Enclosure steel structure for Scheme C Area	466	466	24-Oct-11	23-May-13	22-Oct-11	10-May-13
MP1130	Noise Barrier/Enclosure steel structure for Scheme D Area	556	461	27-Aug-11 A	17-Apr-13	16-Jan-12	26-Apr-13
MP1280	LRT Passenger Lift	90	1	11-May-11,	31-Aug-11	12-Oct-11	13-Oct-11
Section 1 of Works							
Improvement Works at Tuen Hing Road / Castle Peak Road							
Temporary Traffic Arrangement							
SEC11320	Submit and approve TTA for re-align footpath near Tuen Mun Substation	120	10	13-May-11,	09-Sep-11	18-Sep-11	27-Sep-11
SEC11330	Submit and approve TTA for re-align central median	120	120	11-Oct-11	07-Feb-12	27-Oct-11	23-Feb-12
Drainage Works							
SEC11420	Construct drainage near Tuen Mun Women Health Centre	101	0	25-Feb-11 A	31-Aug-11	15-Sep-11	15-Sep-11
SEC11430	Construct drainage near Tuen Mun Substation	60	60	10-Sep-11	22-Nov-11	28-Sep-11	08-Dec-11
Roadworks							
SEC11130	Re-align existing footpath near Tuen Mun Women Health Centre	60	9	02-Jul-11 A	09-Sep-11	16-Sep-11	27-Sep-11
SEC11140	Re-align existing footpath near Tuen Mun Substation	60	60	23-Nov-11	07-Feb-12	09-Dec-11	23-Feb-12
Improvement Works at Fu Fat Lane / Castle Peak Road							
Temporary Traffic Arrangement							
SEC11340	Submit and approve TTA for re-align existing footpath along Kowloon bound slow Lane	120	27	28-Apr-11 A	27-Sep-11	01-Sep-11	27-Sep-11
SEC11350	Submit and approve TTA for re-align central median	120	120	27-Oct-11	23-Feb-12	27-Oct-11	23-Feb-12
Drainage Works							
SEC11450	Construct drainage along Kowloon bound slow lane	60	60	28-Sep-11	08-Dec-11	28-Sep-11	08-Dec-11
Roadworks							
SEC11170	Re-align existing footpath along Yuen Long bound slow lane	60	23	16-Jun-11 A	27-Sep-11	31-Aug-11	27-Sep-11
Improvement Works at Hoi Wing Road / Castle Peak Road							
Temporary Traffic Arrangement							
SEC11360	Submit and approve TTA for re-align central median	120	120	10-Nov-11	08-Mar-12	14-Nov-11	12-Mar-12
Roadworks							
SEC11210	Relocation existing street lighting and re-align existing footpath along Kowloon bound	45	5	30-Jun-11 A	05-Sep-11	03-Sep-11	08-Sep-11
SEC11220	Construct crees road duct and construct new slip road along Kowloon bound	60	60	06-Sep-11	17-Nov-11	09-Sep-11	21-Nov-11
SEC11230	Construct new road island at Kowloon bound	30	30	18-Nov-11	22-Dec-11	22-Nov-11	26-Dec-11
Section II of Works							
Stage 1 Kowloon Bound Road Verge & T1							
Foundation Works							
RA1030	Construct mini pile foundation for NE01 PC1 to PC8 & PC16	140	22	01-Apr-11 A	26-Sep-11	03-Dec-11	31-Dec-11
RA1730	Construct mini pile foundation for NE03 PC2 to PC4	97	3	01-Feb-11 A	03-Sep-11	16-Nov-11	22-Nov-11
Pile Cap / Footing							
RA1060	Construct pile cap NE01 PC1 to PC8 & PC16	72	72	31-Aug-11	26-Nov-11	31-Dec-11	29-Mar-12
RA1100	Construct ped footing NE03 FT1 & pile cap PC2 to PC4	84	84	03-Sep-11	21-Nov-11	22-Nov-11	11-Feb-12
NE/Structural Steel Post/Column Erection							
RA1110	Erect NE01 S/B steel column	24	24	26-Nov-11	23-Dec-11	29-Mar-12	02-May-12
Drainage Works							
RA1430	Construct drainage S/B verge CH29270 to CH29400 and T1 alignment	77	77	21-Nov-11	24-Feb-12	11-Feb-12	17-May-12
Stage 2 Both bound Road Verge near Yan Ching Bridge							
Pile Cap / Footing							



Remaining Level of Effort
Actual Level of Effort
Primary Bas...
Actual Work

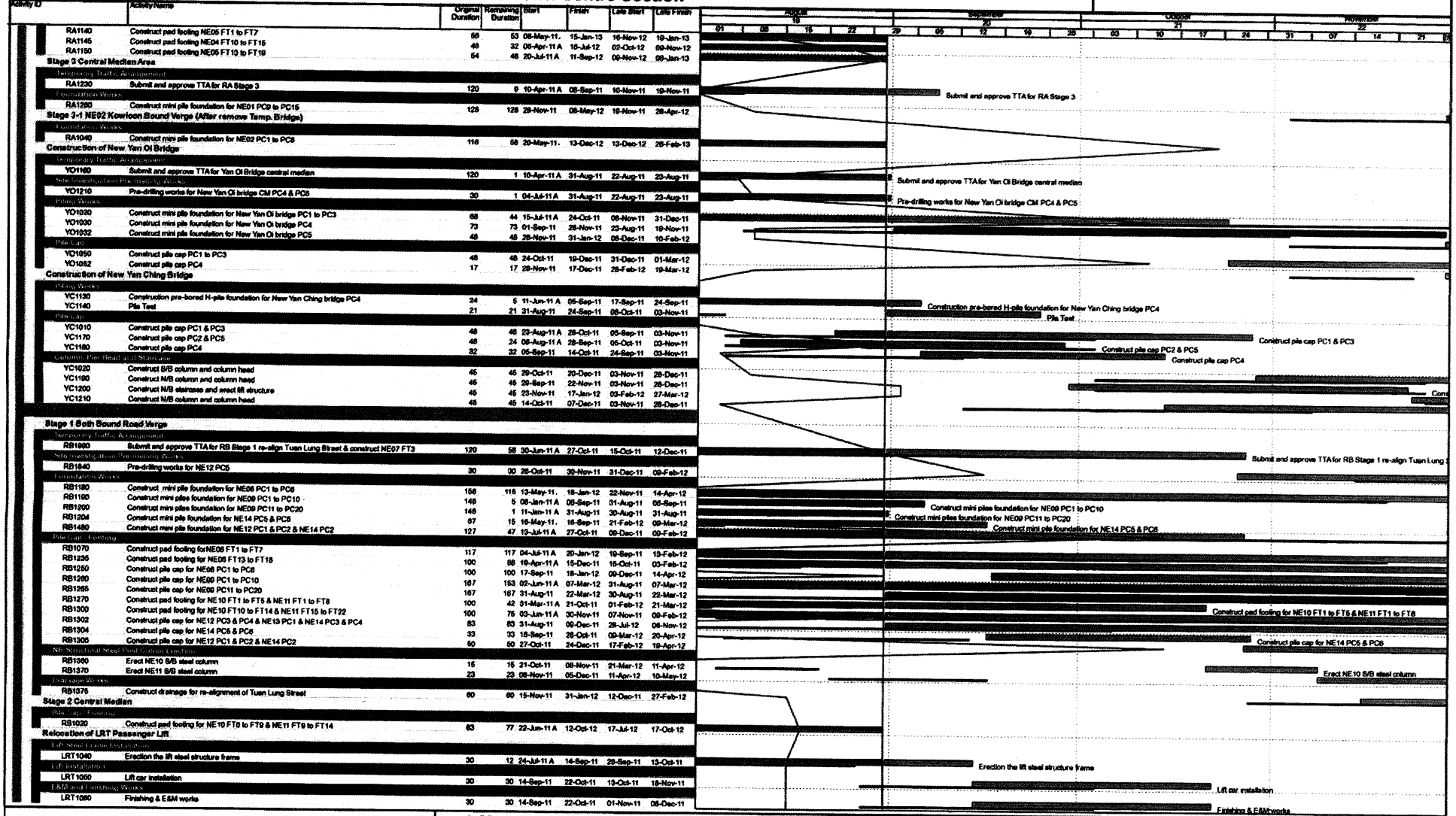
3 Months Rolling Programme (cutoff: 31-08-11)

Date	Revision	Checked	Approved
10-Aug-11	1107	Tim	
25-Aug-11	1108	Tim	

HY/2009/03

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

25-Aug-11



Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish
RA1140	Construct pad footing NE05 FT1 to FT7	59	53	08-May-11,	15-Jan-13	16-Nov-12	19-Jan-13
RA1145	Construct pad footing NE04 FT10 to FT15	46	32	05-Apr-11 A	16-Jul-12	02-Oct-12	09-Nov-12
RA1150	Construct pad footing NE05 FT10 to FT19	54	46	20-Jul-11 A	11-Sep-12	09-Nov-12	08-Jan-13
Stage 3 Central Median Area							
Temporary Traffic Arrangement							
RA1230	Submit and approve TTA for RA Stage 3	120	9	10-Apr-11 A	08-Sep-11	10-Nov-11	19-Nov-11
Foundation Works							
RA1250	Construct mini pile foundation for NE01 PC9 to PC15	128	128	28-Nov-11	08-May-12	19-Nov-11	28-Apr-12
Stage 3-1 NE02 Kowloon Bound Verge (After remove Temp. Bridge)							
Foundation Works							
RA1040	Construct mini pile foundation for NE02 PC1 to PC8	116	58	20-May-11,	13-Dec-12	13-Dec-12	28-Feb-13
Construction of New Yan Oi Bridge							
Temporary Traffic Arrangement							
YO1160	Submit and approve TTA for Yan Oi Bridge central median	120	1	10-Apr-11 A	31-Aug-11	22-Aug-11	23-Aug-11
Site Investigation/Pre-drilling Works							
YO1210	Pre-drilling works for New Yan Oi bridge CM PC4 & PC5	30	1	04-Jul-11 A	31-Aug-11	22-Aug-11	23-Aug-11
Piling Works							
YO1020	Construct mini pile foundation for New Yan Oi bridge PC1 to PC3	68	44	15-Jul-11 A	24-Oct-11	08-Nov-11	31-Dec-11
YO1030	Construct mini pile foundation for New Yan Oi bridge PC4	73	73	01-Sep-11	28-Nov-11	23-Aug-11	19-Nov-11
YO1032	Construct mini pile foundation for New Yan Oi bridge PC5	46	46	26-Nov-11	31-Jan-12	06-Dec-11	10-Feb-12
Pile Cap							
YO1050	Construct pile cap PC1 to PC3	46	46	24-Oct-11	19-Dec-11	31-Dec-11	01-Mar-12
YO1052	Construct pile cap PC4	17	17	28-Nov-11	17-Dec-11	28-Feb-12	19-Mar-12
Construction of New Yan Ching Bridge							
Piling Works							
YC1130	Construction pre-bored H-pile foundation for New Yan Ching bridge PC4	24	5	11-Jun-11 A	06-Sep-11	17-Sep-11	24-Sep-11
YC1140	Pile Test	21	21	31-Aug-11	24-Sep-11	06-Oct-11	03-Nov-11
Pile Cap							
YC1010	Construct pile cap PC1 & PC3	46	46	23-Aug-11 A	28-Oct-11	05-Sep-11	03-Nov-11
YC1170	Construct pile cap PC2 & PC5	46	24	08-Aug-11 A	28-Sep-11	06-Oct-11	03-Nov-11
YC1180	Construct pile cap PC4	32	32	05-Sep-11	14-Oct-11	24-Sep-11	03-Nov-11
Column, Pier Head and Staircase							
YC1020	Construct S/B column and column head	45	45	29-Oct-11	20-Dec-11	03-Nov-11	28-Dec-11
YC1190	Construct N/B column and column head	45	45	29-Sep-11	22-Nov-11	03-Nov-11	28-Dec-11
YC1200	Construct N/B staircase and erect lift structure	45	45	23-Nov-11	17-Jan-12	03-Feb-12	27-Mar-12
YC1210	Construct N/B column and column head	45	45	14-Oct-11	07-Dec-11	03-Nov-11	28-Dec-11
Stage 1 Both Bound Road Verge							
Temporary Traffic Arrangement							
RB1000	Submit and approve TTA for RB Stage 1 re-align Tuen Lung Street & construct NE07 FT3	120	58	30-Jun-11 A	27-Oct-11	15-Oct-11	12-Dec-11
Site Investigation/Pre-drilling Works							
RB1840	Pre-drilling works for NE12 PC5	30	30	26-Oct-11	30-Nov-11	31-Dec-11	09-Feb-12
Foundation Works							
RB1180	Construct mini pile foundation for NE08 PC1 to PC8	158	115	13-May-11,	18-Jan-12	22-Nov-11	14-Apr-12
RB1190	Construct mini piles foundation for NE09 PC1 to PC10	148	5	08-Jun-11 A	05-Sep-11	31-Aug-11	06-Sep-11
RB1200	Construct mini piles foundation for NE09 PC11 to PC20	148	1	11-Jun-11 A	31-Aug-11	30-Aug-11	31-Aug-11
RB1204	Construct mini pile foundation for NE14 PC5 & PC6	97	15	16-May-11,	16-Sep-11	21-Feb-12	09-Mar-12
RB1480	Construct mini pile foundation for NE12 PC1 & PC2 & NE14 PC2	127	47	13-Jul-11 A	27-Oct-11	09-Dec-11	09-Feb-12
Pile Cap Footing							
RB1070	Construct pad footing forNE08 FT1 to FT7	117	117	04-Jul-11 A	20-Jan-12	19-Sep-11	13-Feb-12
RB1235	Construct pad footing for NE06 FT13 to FT18	100	88	19-Apr-11 A	15-Dec-11	16-Oct-11	03-Feb-12
RB1250	Construct pile cap for NE08 PC1 to PC8	100	100	17-Sep-11	18-Jan-12	09-Dec-11	14-Apr-12
RB1260	Construct pile cap for NE09 PC1 to PC10	167	153	02-Jun-11 A	07-Mar-12	31-Aug-11	07-Mar-12
RB1265	Construct pile cap for NE09 PC11 to PC20	167	167	31-Aug-11	22-Mar-12	30-Aug-11	22-Mar-12
RB1270	Construct pad footing for NE10 FT1 to FT5 & NE11 FT1 to FT8	100	42	31-Mar-11 A	21-Oct-11	01-Feb-12	21-Mar-12
RB1300	Construct pad footing for NE10 FT10 to FT14 & NE11 FT15 to FT22	100	75	03-Jun-11 A	30-Nov-11	07-Nov-11	09-Feb-12
RB1302	Construct pile cap for NE12 PC9 & PC4 & NE13 PC1 & NE14 PC3 & PC4	83	83	31-Aug-11	09-Dec-11	28-Jul-12	06-Nov-12
RB1304	Construct pile cap for NE14 PC5 & PC6	33	33	15-Sep-11	28-Oct-11	09-Mar-12	20-Apr-12
RB1305	Construct pile cap for NE12 PC1 & PC2 & NE14 PC2	60	60	27-Oct-11	24-Dec-11	17-Feb-12	19-Apr-12
NB Structural Steel Roof Canopy Section							
RB1060	Erect NE10 S/B steel column	16	16	21-Oct-11	08-Nov-11	21-Mar-12	11-Apr-12
RB1370	Erect NE11 S/B steel column	23	23	08-Nov-11	05-Dec-11	11-Apr-12	10-May-12
Drainage Works							
RB1375	Construct drainage for re-alignment of Tuen Lung Street	60	60	15-Nov-11	31-Jan-12	12-Dec-11	27-Feb-12
Stage 2 Central Median							
Pile Cap Footing							
RB1020	Construct pad footing for NE10 FT6 to FT9 & NE11 FT9 to FT14	83	77	22-Jun-11 A	12-Oct-12	17-Jul-12	17-Oct-12
Relocation of LRT Passenger Lift							
Lift Steel Frame Installation							
LRT1040	Erection the lift steel structure frame	30	12	24-Jul-11 A	14-Sep-11	28-Sep-11	13-Oct-11
Lift Installation							
LRT1050	Lift car installation	30	30	14-Sep-11	22-Oct-11	13-Oct-11	18-Nov-11
E&M and Finishing Works							
LRT1060	Finishing & E&M works	30	30	14-Sep-11	22-Oct-11	01-Nov-11	06-Dec-11

Remaining Level of Effort | Primary Bas...
Actual Level of Effort | Actual Work

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10-Aug-11	1107	Tim	
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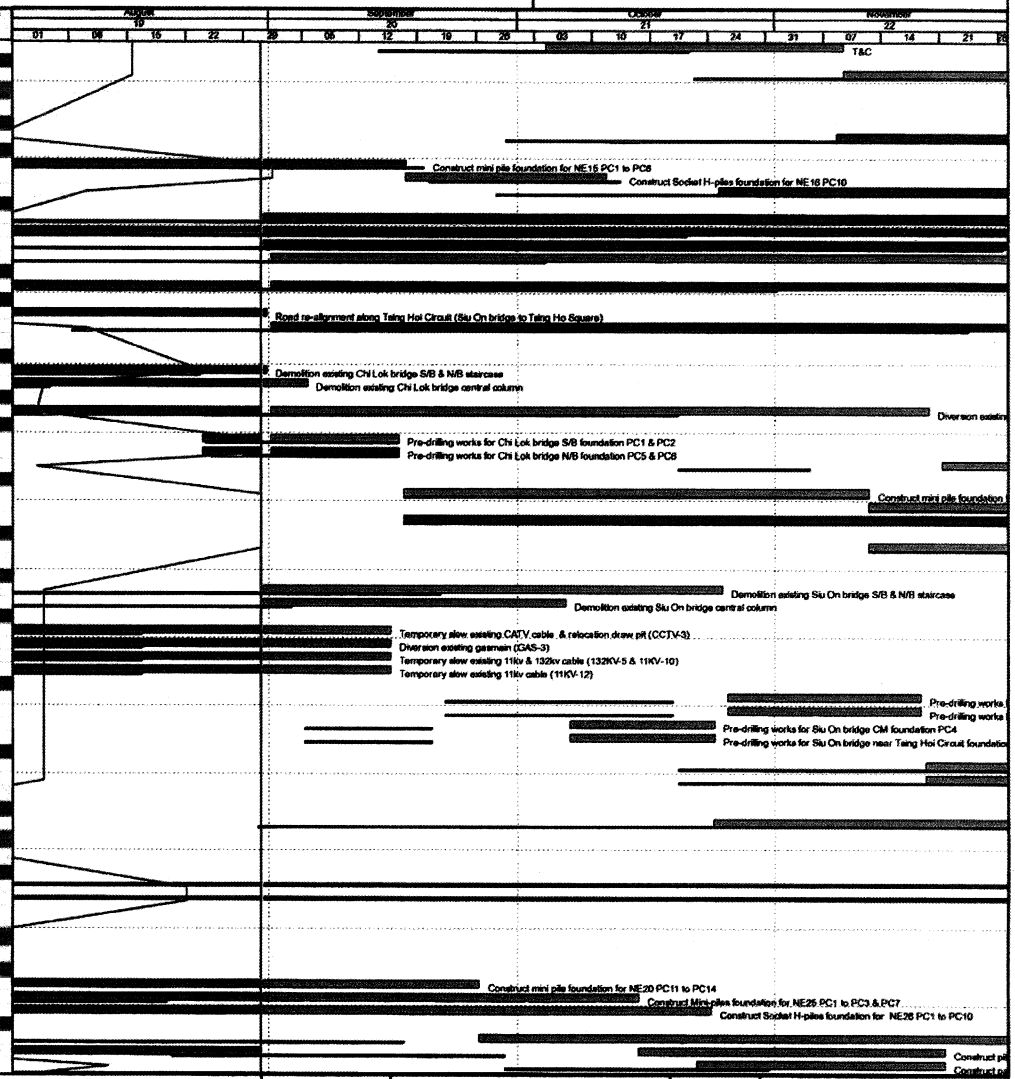
Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish
LRT1080	T&C	20	30	04-Oct-11	09-Nov-11	01-Nov-11	06-Dec-11
Demolition of Existing LRT Lift							
LRT1070	Remove Existing LRT lift	35	35	09-Nov-11	20-Dec-11	06-Dec-11	19-Jan-12
Stage 1 NE15 East Side, Tsing Hoi Circuit Re-alignment & S/B Foundation							
Utilities Diversion							
RC1540	Relocation existing fire hydrant (WS-9) for NE16 PC8 & PC9	60	60	08-Nov-11	20-Jan-12	31-Oct-11	12-Jan-12
Foundation Works							
RC1200	Construct mini pile foundation for NE15 PC1 to PC5	120	16	26-Apr-11 A	17-Sep-11	30-Aug-11	17-Sep-11
RC1205	Construct Socket H-piles foundation for NE16 PC10	16	16	17-Sep-11	11-Oct-11	29-Dec-11	20-Jan-12
RC1740	Construct mini pile foundation for NE17 PC6 to PC9	64	64	26-Oct-11	10-Jan-12	12-Oct-11	26-Dec-11
Pile Cap Footing							
RC1075	Construct pad footing NE16 FT1 to FT7	117	117	31-Aug-11	20-Jan-12	22-Aug-11	12-Jan-12
RC1080	Construct pad footing NE16 FT27 to FT34 (with retaining FR91)	130	87	12-May-11	13-Dec-11	22-Aug-11	05-Dec-11
RC1270	Construct pile cap NE15 PC1 to PC5 & NE16 PC10	117	117	31-Aug-11	20-Jan-12	30-Aug-11	20-Jan-12
RC1750	Construct pad footing NE16 FT11 to FT15 & NE17 FT1 to FT5	77	77	01-Sep-11	02-Dec-11	19-Nov-11	24-Feb-12
Drainage Works							
RC1025	Construct drainage along Tsing Hoi Circuit (Tsing Ho Square to Tsing Sin Street)	100	78	04-Jul-11 A	01-Dec-11	20-Aug-11	21-Nov-11
Roadworks							
RC1030	Road re-alignment along Tsing Hoi Circuit (Siu On bridge to Tsing Ho Square)	90	1	11-Mar-11 A	31-Aug-11	19-Aug-11	20-Aug-11
RC1035	Road re-alignment along Tsing Hoi Circuit (Tsing Ho Square to Tsing Sin Street)	90	90	01-Sep-11	17-Dec-11	20-Aug-11	07-Dec-11
Construction of New Chi Lok Bridge							
Demolition of Existing Chi Lok Bridge							
CL1010	Demolition existing Chi Lok bridge S/B & N/B staircase	45	1	02-Jul-11 A	31-Aug-11	30-Aug-11	31-Aug-11
CL1020	Demolition existing Chi Lok bridge central column	90	5	02-Jul-11 A	05-Sep-11	20-Aug-14	25-Aug-14
Utilities Diversion							
CL1220	Diversion existing watermain (WS-10) for FT12(55), FT12(59), FT15(60) & MP2(61)	60	60	04-Jul-11 A	19-Nov-11	19-Sep-12	08-Dec-12
Site Investigation/Pre-drilling Works							
CL1030	Pre-drilling works for Chi Lok bridge S/B foundation PC1 & PC2	21	14	24-Aug-11 A	16-Sep-11	26-Sep-11	13-Oct-11
CL1090	Pre-drilling works for Chi Lok bridge N/B foundation PC5 & PC8	21	14	24-Aug-11 A	16-Sep-11	31-Aug-11	16-Sep-11
CL1250	Pre-drilling works for Chi Lok bridge near Tsing Hoi Circuit PC3	14	14	21-Nov-11	06-Dec-11	09-Aug-14	25-Aug-14
Piling Works							
CL1040	Construct mini pile foundation for Chi Lok bridge S/B PC1 & PC2	45	45	17-Sep-11	12-Nov-11	13-Oct-11	07-Dec-11
CL1045	Construct mini pile foundation for Chi Lok bridge S/B PC3	27	27	12-Nov-11	14-Dec-11	12-Dec-11	16-Jan-12
CL1050	Construct mini pile foundation for Chi Lok bridge N/B PC5 & PC8	67	67	17-Sep-11	07-Dec-11	16-Sep-11	07-Dec-11
Pile Cap							
CL1060	Construct S/B pile cap PC1 & PC2 (2 nos.)	33	33	12-Nov-11	21-Dec-11	07-Dec-11	18-Jan-12
Construction of New Siu On Bridge							
Demolition of Existing Siu On Bridge							
SO1010	Demolition existing Siu On bridge S/B & N/B staircase	45	45	31-Aug-11	25-Oct-11	08-Jun-12	02-Aug-12
SO1020	Demolition existing Siu On bridge central column	30	30	31-Aug-11	05-Oct-11	11-Oct-12	16-Nov-12
Utilities Diversion							
SO1150	Temporary slew existing CATV cable & relocation draw pit (CCTV-3)	60	14	06-Jun-11 A	15-Sep-11	30-Aug-12	14-Sep-12
SO1170	Diversion existing gasmain (GAS-3)	60	14	06-Jun-11 A	15-Sep-11	30-Aug-12	14-Sep-12
SO1180	Temporary slew existing 11kv & 132kv cable (132KV-5 & 11KV-10)	60	14	06-Jun-11 A	15-Sep-11	30-Aug-12	14-Sep-12
SO1220	Temporary slew existing 11kv cable (11KV-12)	60	14	06-Jun-11 A	15-Sep-11	17-Jul-12	02-Aug-12
Site Investigation/Pre-drilling Works							
SO1030	Pre-drilling works for Siu On bridge S/B foundation PC1 to PC3	21	21	26-Oct-11	18-Nov-11	15-Sep-12	11-Oct-12
SO1100	Pre-drilling works for Siu On bridge N/B foundation PC5 to PC7	21	21	26-Oct-11	18-Nov-11	02-Aug-12	27-Aug-12
SO1200	Pre-drilling works for Siu On bridge CM foundation PC4	14	14	07-Oct-11	24-Oct-11	16-Nov-12	03-Dec-12
SO1210	Pre-drilling works for Siu On bridge near Tsing Hoi Circuit foundation PC3	14	14	07-Oct-11	24-Oct-11	09-Aug-14	25-Aug-14
Piling Works							
SO1040	Construct mini pile foundation for Siu On bridge S/B PC1 PC3	85	85	19-Nov-11	03-Mar-12	12-Oct-12	23-Jan-13
SO1050	Construct mini pile foundation for Siu On bridge N/B PC5 to PC7	73	73	19-Nov-11	18-Feb-12	27-Aug-12	23-Nov-12
Construction of Retaining Wall 6SW-A/FR93							
Temporary Traffic Arrangement							
RW1040	Submit and approve TTA for construction 6SW-A/FR93	120	120	24-Oct-11	21-Feb-12	04-Oct-12	31-Jan-13
TCSS and Fire Fighting System							
TCSS and Fire Fighting System							
TCS81000	Section 2 TCS8 installation	692	597	11-Mar-11 A	05-Sep-13	11-Mar-11	24-Aug-13
TCS81010	Section 2 Street lighting & Fire Fighting system installation	692	597	11-Mar-11 A	05-Sep-13	11-Mar-11	24-Aug-13
Section III of Works							
Stage 1 N/B Foundation							
Foundation Works							
RD1250	Construct mini pile foundation for NE20 PC11 to PC14	67	21	09-Apr-11 A	26-Sep-11	20-Jan-12	17-Feb-12
RD1260	Construct Mini-piles foundation for NE25 PC1 to PC3 & PC7	112	38	02-Apr-11 A	15-Oct-11	09-Feb-12	24-Mar-12
RD1670	Construct Socket H-piles foundation for NE26 PC1 to PC10	142	43	24-Dec-10 A	24-Oct-11	24-Sep-11	16-Nov-11
Pile Cap Footing							
RD1270	Construct pile cap NE20 PC11 to PC14	67	67	26-Sep-11	14-Dec-11	17-Feb-12	11-May-12
RD1530	Construct pile cap NE25 PC1 to PC3 & PC7	33	30	30-Jul-11 A	21-Nov-11	24-Mar-12	04-May-12
RD1535	Construct pad footing NE25 FT4 to FT6	25	25	22-Oct-11	21-Nov-11	02-May-12	01-Jun-12



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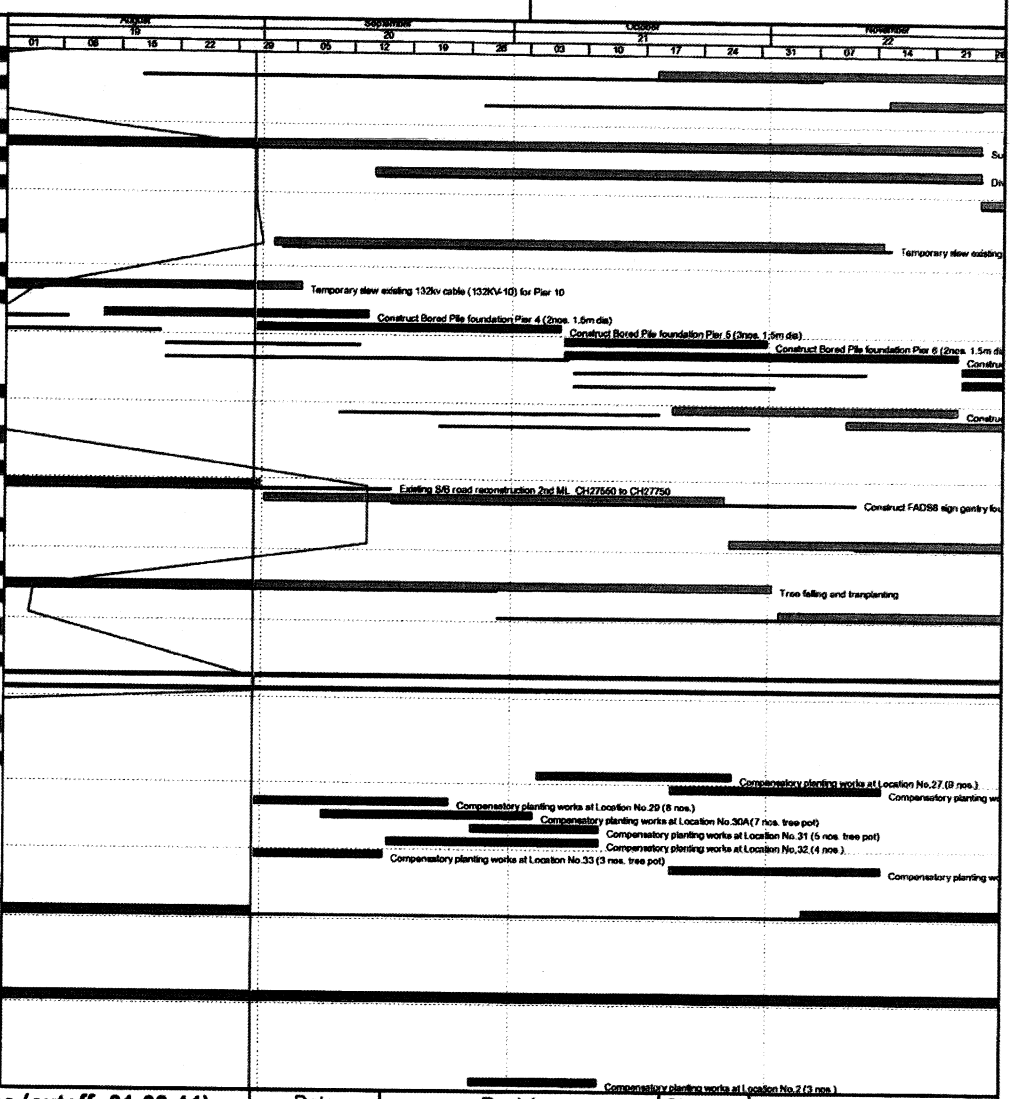
	Drainage Works						
RD1300	Construct drainage N/B verge CH27950 to CH28150	87	87	18-Oct-11	06-Jan-12	06-Mar-12	01-Jun-12
	Roadworks						
RD1310	Roadworks N/B verge CH27960 to CH28150	60	60	15-Nov-11	16-Jan-12	09-Apr-12	09-Jun-12
	Stage 2 S/B Foundation						
	Temporary Traffic Arrangement						
RD1060	Submit and approve TTA for S/B foundation	120	87	29-Jul-11 A	26-Nov-11	08-Sep-11	05-Dec-11
	Utilities Diversion						
RD1070	Divert existing 150 watermain	60	60	14-Sep-11	26-Nov-11	22-Sep-11	05-Dec-11
	Foundation Works						
RD1010	Construct Socket H-piles foundation for NE26 PC11 to PC14	36	36	28-Nov-11	11-Jan-12	06-Dec-11	19-Jan-12
	Stage 4 NE18, NE21 & NE23 Foundation						
	Utilities Diversion						
RD3080	Temporary slew existing 132kv cable (132KV-9) for NE18 FT13 to FT18	60	60	02-Sep-11	14-Nov-11	17-Oct-12	29-Dec-12
	Construction of Vehicular Bridge S1						
	Utilities Diversion						
S1B1000	Temporary slew existing 132kv cable (132KV-10) for Pier 10	90	5	19-Apr-11 A	05-Sep-11	20-Aug-14	25-Aug-14
	Piling Works						
S1B2000	Construct Bored Pile foundation Pier 4 (2nos. 1.5m dia)	20	12	13-Aug-11 A	13-Sep-11	23-Aug-11	06-Sep-11
S1B3010	Construct Bored Pile foundation Pier 5 (3nos. 1.5m dia)	30	30	31-Aug-11	06-Oct-11	23-Aug-11	28-Sep-11
S1B3020	Construct Bored Pile foundation Pier 6 (2nos. 1.5m dia)	20	20	07-Oct-11	31-Oct-11	26-Sep-11	24-Oct-11
S1B3030	Construct Bored Pile foundation Pier 7 (4nos. 1.5m dia)	40	40	07-Oct-11	23-Nov-11	26-Sep-11	16-Nov-11
S1B3040	Construct Bored Pile foundation Pier 8 (3nos. 1.5m dia)	30	30	24-Nov-11	30-Dec-11	10-Nov-11	21-Dec-11
S1B3050	Construct Bored Pile foundation Pier 9 (2nos. 1.5m dia)	20	20	24-Nov-11	16-Dec-11	17-Nov-11	10-Dec-11
	Pile Cap						
S1B4000	Construct pile cap Pier 4	30	30	20-Oct-11	23-Nov-11	22-Mar-12	02-May-12
S1B4010	Construct pile cap Pier 5	30	30	10-Nov-11	14-Dec-11	19-May-12	26-Jun-12
	Stage 1 Road Re-construction						
	Roadworks						
RE5030	Existing S/B road reconstruction 2nd ML CH27550 to CH27750	87	1	29-Jun-11 A	31-Aug-11	03-Nov-11	04-Nov-11
RE5040	Construct FAD88 sign gantry foundation in central median	45	45	01-Sep-11	26-Oct-11	04-Nov-11	29-Dec-11
	Stage 2 NE27 Central Median Foundation						
	Pre-Cast Footing						
RE1060	Construct pad footing NE27 FT16 to FT30	115	115	27-Oct-11	16-Mar-12	29-Dec-11	22-May-12
	Construction of Reinforced Earth Wall 6SW-A/FR1B						
	Tree Felling and Transplanting						
REW1030	Tree felling and tranplanting	90	51	13-Jun-11 A	01-Nov-11	08-Sep-11	09-Nov-11
	REW6SW-A/FR1B						
REW1000	Temporary works for RE wall construction	120	120	02-Nov-11	27-Mar-12	09-Nov-11	04-Apr-12
	TCSS and Fire Fighting System						
	TCSS and Fire Fighting System						
TCS61020	Section 3 TCS8 installation	644	581	13-Jan-11 A	17-Aug-13	13-Jan-11	24-Aug-13
TCS61030	Section 3 Street lighting & Fire Fighting system installation	644	581	13-Jan-11 A	17-Aug-13	13-Jan-11	24-Aug-13
	Section IIC of Works						
	Landscaping Works						
	Landscaping Works						
3C1010	Compensatory planting works at Location No.27 (9 nos.)	18	18	04-Oct-11	27-Oct-11	28-Jun-11	21-Jul-11
3C1020	Compensatory planting works at Location No.28 (8 nos.)	18	18	20-Oct-11	14-Nov-11	14-Jul-11	08-Aug-11
3C1030	Compensatory planting works at Location No.29 (8 nos.)	18	18	31-Aug-11	23-Sep-11	25-May-11	17-Jun-11
3C1050	Compensatory planting works at Location No.30A (7 nos. tree pot)	16	16	08-Sep-11	03-Oct-11	06-Jul-11	29-Jul-11
3C1060	Compensatory planting works at Location No.31 (5 nos. tree pot)	12	12	26-Sep-11	11-Oct-11	22-Jul-11	08-Aug-11
3C1090	Compensatory planting works at Location No.32 (4 nos.)	16	16	16-Sep-11	11-Oct-11	10-Jun-11	05-Jul-11
3C1100	Compensatory planting works at Location No.33 (3 nos. tree pot)	12	12	31-Aug-11	15-Sep-11	28-Jun-11	13-Jul-11
3C1150	Compensatory planting works at Location No.34C (5 nos.)	16	16	20-Oct-11	14-Nov-11	14-Jul-11	08-Aug-11
	Establishment Works						
	Establishment Works						
3C1170	Establiment Works (Nos. 26, 27, 28, 29, 30, 30A, 31, 31A, 31B, 32, 33, 33B, 34, 34A, 34B, 3	365	210	28-Feb-11 A	01-Jun-12	31-Jul-11	25-Feb-12
	Section IIE of Works						
	Landscaping Works						
	Establishment Works						
3E1080	Establiment Works (Nos. 46, 46A, 46B, 47A, 47C, 47D, 47E & 47F)	365	210	28-Feb-11 A	27-Mar-12	31-Jul-11	25-Feb-12
	Section IIG of Works						
	Landscaping Works						
	Landscaping Works						
3G1010	Compensatory planting works at Location No.2 (3 nos.)	12	12	26-Sep-11	11-Oct-11	28-Mar-11	12-Apr-11



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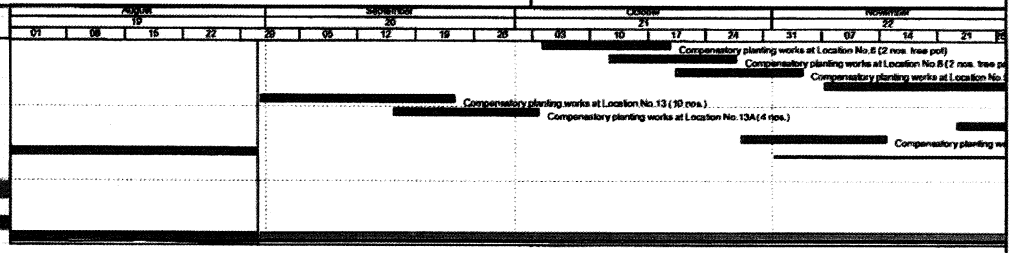
3G1040	Compensatory planting works at Location No.8 (2 nos. tree pot)	12	12	04-Oct-11	19-Oct-11	05-Apr-11	20-Apr-11
3G1050	Compensatory planting works at Location No.8 (2 nos. tree pot)	12	12	12-Oct-11	27-Oct-11	13-Apr-11	28-Apr-11
3G1060	Compensatory planting works at Location No.9 (2 nos. tree pot)	12	12	20-Oct-11	04-Nov-11	21-Apr-11	06-May-11
3G1070	Compensatory planting works at Location No.10 (9 nos.)	18	18	07-Nov-11	30-Nov-11	09-May-11	01-Jun-11
3G1090	Compensatory planting works at Location No.13 (10 nos.)	18	18	31-Aug-11	23-Sep-11	02-Mar-11	25-Mar-11
3G1100	Compensatory planting works at Location No.13A (4 nos.)	12	12	16-Sep-11	03-Oct-11	18-Mar-11	04-Apr-11
3G1120	Compensatory planting works at Location No.14 (5 nos. tree pot)	12	12	23-Nov-11	08-Dec-11	25-May-11	08-Jun-11
3G1130	Compensatory planting works at Location No.15 (6 nos. tree pot)	12	12	28-Oct-11	14-Nov-11	29-Apr-11	16-May-11
3G1320	Compensatory planting works at Location No.41B (25 nos.)	30	0	06-Jan-11 A	16-Jul-12	13-Jan-12	13-Jan-12
Section IV of Works							
Preservation and Protection of Existing Trees							
Preservation and Protection of Existing Trees							
84-1000	Preservation and protection of trees	962	561	26-Feb-10 A	24-Jul-13	04-Oct-11	24-Aug-13



Remaining Level of Effort
Actual Level of Effort
Primary Bas...
Actual Work

3 Months Rolling Programme (cutoff: 31-08-11)

Date	Revision	Checked	Approved
10-Aug-11	1107	Tim	
25-Aug-11	1108	Tim	

Appendix B

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 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 arised 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 *		
				Aug 11	Sep 11	Oct 11
		Noise Control				
3.8.1	2.8.1	Good site practice and management can significantly reduce the noise impact of construction site activities on nearby NSRs	Works Sites / During Construction Phase			
		• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works;		✓	Rdr	✓
		• machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;		✓	✓	✓
		• plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs;		✓	✓	✓
		• mobile plant should be sited as far away from NSRs as possible; and		✓	✓	✓
		• material stockpiles and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.		✓	✓	✓
3.8.4	2.8.3	Use of quieter mechanical equipment	Works Sites / During Construction Phase	✓	✓	✓
3.8.9	2.8.4	Provision of movable noise barrier in the vicinity of the following NSRs • 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)	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 *		
				Aug 11	Sep 11	Oct 11
		• 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)				
3.8.12	2.8.5	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. • 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.	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 *		
				Aug 11	Sep 11	Oct 11
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 *		
				Aug 11	Sep 11	Oct 11
		Air Quality Control				
4.8.1	3.11.2	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation.	Works Sites / During Construction Phase			
		• 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		✓	✓	✓

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 *		
				Aug 11	Sep 11	Oct 11
		• 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		Rdr	Rdr	Obs
		• all dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet		Obs	Obs	✓
		• 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		✓	✓	✓
		• 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.		✓	✓	✓

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 *		
				Aug 11	Sep 11	Oct 11
		Water Quality Control				
5.8.2	4.3.2	Construction run-off and Drainage • 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	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 *		
				Aug 11	Sep 11	Oct 11
		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.		✓	✓	✓
5.8.3 - 5.8.4	4.3.3	General Construction Activities	Works Sites / During Construction Phase			
		• Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering the nearby local stormwater drainage system.		Obs	Rdr	Rdr
		• 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		✓	✓	✓
5.8.5	4.3.4	Sewage from Construction Workforce	Works Sites / During Construction Phase			
		• 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		✓	✓	✓

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 *		
				Aug 11	Sep 11	Oct 11
		Waste Management				
6.6.1	*5.2.2*	*Good Site Practices*	Works Sites / During Construction Phase			
		• 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 waste 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.		Obs	✓	✓
		• A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).		✓	✓	✓
6.6.5	*5.2.6*	*Chemical Wastes*	Works Sites / During Construction Phase			
		• 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.		✓	✓	✓

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 *		
				Aug 11	Sep 11	Oct 11
6.6.6	*5.2.7*	*General Refuse*	Works Sites / During Construction Phase			
		• 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.		✓	✓	✓
6.6.2	*5.2.3*	*Waste Reduction Measures*	Works Sites / During Construction Phase			
		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, 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.		✓	✓	✓
		• 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.		✓	✓	✓
		• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.				

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 *		
				Aug 11	Sep 11	Oct 11
6.6.4	*5.2.5*	*Construction and Demolition (C&D) Material*	Works Sites / During Construction Phase			
		• 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. One may make reference to ETWB TCW No. 31/2004 for details.		✓	✓	✓

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 *		
				Aug 11	Sep 11	Oct 11
		Ecology				
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 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, careful programming of works and use of noise reduction facilities could be implemented to mitigate noise impacts arised 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: • regular watering • complete coverage of dusty material storage piles • the use of minimum practical height for dropping excavated material	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: • 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.	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 *		
				Aug 11	Sep 11	Oct 11
7.9.5	6.2.5	Standard good site practice measures should be implemented and should include:	Works Sites / During Construction Phase			
		• 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.		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 *		
				Aug 11	Sep 11	Oct 11
		Landscape and Visual				
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.		Obs	Obs	Obs
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 *		
				Aug 11	Sep 11	Oct 11
		Land Contamination				
9.8.3	8.2.2	To minimize construction workers' potential contact with the contaminated materials • The use of bulk earth-moving excavator equipment would minimise construction workers' potential contact with the contaminated materials; • 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; • 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. • 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; • 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; • 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; • Records of the quantities of wastes generated and disposed of should be maintained; Adequate washing facilities should be provided on site; and • 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,	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 *		
				Aug 11	Sep 11	Oct 11
		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

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^3/min)		Average Flow Rate (m^3/min)	Elapse Time		Sampling Time	Total vol. (m^3)	(ug/m^3) AM1
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130402	Aug-11	1-Aug-11	AM1	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7868	2.8231	0.0363	1.4845	1.4845	1.4845	11497.30	11521.30	1440.00	2137.68	17.0
130150	Aug-11	6-Aug-11	AM1	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7646	2.7989	0.0343	1.4845	1.4845	1.4845	11521.30	11545.30	1440.00	2137.68	16.0
130156	Aug-11	12-Aug-11	AM1	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7316	2.8234	0.0918	1.4845	1.4845	1.4845	11545.30	11569.30	1440.00	2137.68	42.9
130405	Aug-11	18-Aug-11	AM1	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7844	2.8250	0.0406	1.4845	1.4845	1.4845	11569.30	11593.30	1440.00	2137.68	19.0
130411	Aug-11	24-Aug-11	AM1	Fine	Normal Operation	754.0	755.0	29.0	28.0	50.0	50.0	2.7784	2.8049	0.0265	1.4856	1.4895	1.4876	11593.30	11617.30	1440.00	2142.07	12.4
101896	Aug-11	30-Aug-11	AM1	Fine	Normal Operation	750.0	749.0	30.0	30.0	50.0	50.0	2.7783	2.8135	0.0352	1.4782	1.4771	1.4777	11617.30	11641.30	1440.00	2127.82	16.5
130424	Sep-11	5-Sep-11	AM1	Fine	Normal Operation	755.0	755.0	29.0	29.0	50.0	50.0	2.7668	2.8247	0.0579	1.4867	1.4867	1.4867	11641.30	11665.30	1440.00	2140.85	27.0
130430	Sep-11	9-Sep-11	AM1	Fine	Normal Operation	757.0	757.0	29.0	29.0	50.0	50.0	2.7871	2.8535	0.0664	1.4890	1.4890	1.4890	11665.30	11689.30	1440.00	2144.16	31.0
130436	Sep-11	15-Sep-11	AM1	Rainy	Normal Operation	754.0	753.0	28.0	28.0	50.0	50.0	2.7565	2.8113	0.0548	1.4884	1.4872	1.4878	11689.30	11713.30	1440.00	2142.43	25.6
130442	Sep-11	21-Sep-11	AM1	Fine	Normal Operation	757.0	757.0	25.0	25.0	50.0	50.0	2.7519	2.8694	0.1175	1.5004	1.5004	1.5004	11713.30	11737.30	1440.00	2160.58	54.4
130448	Sep-11	27-Sep-11	AM1	Fine	Normal Operation	754.0	752.0	27.0	28.0	50.0	50.0	2.7419	2.8047	0.0628	1.4912	1.4861	1.4887	11737.30	11761.30	1440.00	2143.66	29.3
130455	Oct-11	3-Oct-11	AM1	Cloudy	Normal Operation	756.0	758.0	22.0	23.0	50.0	50.0	2.7608	2.8447	0.0839	1.5011	1.5006	1.5009	11761.30	11785.30	1440.00	2161.22	38.8
130462	Oct-11	8-Oct-11	AM1	Fine	Normal Operation	760.0	759.0	26.0	26.0	50.0	50.0	2.7405	2.7610	0.0205	1.4942	1.4931	1.4937	11785.30	11809.30	1440.00	2150.86	9.5
130470	Oct-11	14-Oct-11	AM1	Cloudy	Normal Operation	757.0	759.0	25.0	25.0	50.0	50.0	2.7379	2.8496	0.1117	1.4937	1.4959	1.4948	11809.30	11833.30	1440.00	2152.51	51.9
130476	Oct-11	20-Oct-11	AM1	Fine	Normal Operation	761.0	760.0	24.0	24.0	50.0	50.0	2.7241	2.8641	0.1400	1.5010	1.4999	1.5005	11833.30	11857.30	1440.00	2160.65	64.8
130943	Oct-11	26-Oct-11	AM1	Fine	Normal Operation	762.0	762.0	23.0	23.0	50.0	50.0	2.7378	2.7942	0.0564	1.5050	1.5050	1.5050	11857.30	11881.30	1440.00	2167.20	26.0

Average (ug/m^3)	30.1
Max (ug/m^3)	64.8
Min (ug/m^3)	9.5

Action Level (ug/m^3)	146
Limit Level (ug/m^3)	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^3/min)		Average Flow Rate (m^3/min)	Elapse Time		Sampling Time	Total vol. (m^3)	(ug/m^3) AM2
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130403	Aug-11	1-Aug-11	AM2	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.78	2.8244	0.0444	1.4914	1.4914	1.4914	5651.10	5675.10	1440.00	2147.62	20.7
130151	Aug-11	6-Aug-11	AM2	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.757	2.8136	0.0566	1.4914	1.4914	1.4914	5675.10	5699.10	1440.00	2147.62	26.4
130157	Aug-11	12-Aug-11	AM2	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7513	2.7816	0.0303	1.4914	1.4914	1.4914	5699.10	5723.10	1440.00	2147.62	14.1
130406	Aug-11	18-Aug-11	AM2	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7858	2.8093	0.0235	1.4914	1.4914	1.4914	5723.10	5747.10	1440.00	2147.62	10.9
130412	Aug-11	24-Aug-11	AM2	Fine	Normal Operation	754.0	755.0	29.0	28.0	50.0	50.0	2.7709	2.8100	0.0391	1.4924	1.4960	1.4942	5747.10	5771.10	1440.00	2151.65	18.2
130419	Aug-11	30-Aug-11	AM2	Fine	Normal Operation	750.0	749.0	30.0	30.0	50.0	50.0	2.763	2.9196	0.1566	1.4857	1.4846	1.4852	5771.10	5795.10	1440.00	2138.62	73.2
130425	Sep-11	5-Sep-11	AM2	Fine	Normal Operation	755.0	755.0	29.0	29.0	50.0	50.0	2.7619	2.8379	0.0760	1.4935	1.4935	1.4935	5795.10	5819.10	1440.00	2150.64	35.3
130431	Sep-11	9-Sep-11	AM2	Fine	Normal Operation	757.0	757.0	29.0	29.0	50.0	50.0	2.7728	2.8369	0.0641	1.4956	1.4956	1.4956	5819.10	5843.10	1440.00	2153.66	29.8
130437	Sep-11	15-Sep-11	AM2	Rainy	Normal Operation	754.0	753.0	28.0	28.0	50.0	50.0	2.7547	2.8242	0.0695	1.4950	1.4939	1.4945	5843.10	5867.10	1440.00	2152.01	32.3
130443	Sep-11	21-Sep-11	AM2	Fine	Normal Operation	757.0	757.0	25.0	25.0	50.0	50.0	2.7493	2.8630	0.1137	1.5060	1.5060	1.5060	5867.10	5891.10	1440.00	2168.64	52.4
130449	Sep-11	27-Sep-11	AM2	Fine	Normal Operation	754.0	752.0	27.0	28.0	50.0	50.0	2.7592	2.8469	0.0877	1.4976	1.4929	1.4953	5891.10	5915.10	1440.00	2153.16	40.7
130456	Oct-11	3-Oct-11	AM2	Cloudy	Normal Operation	756.0	758.0	22.0	23.0	50.0	50.0	2.7414	2.8256	0.0842	1.4601	1.4596	1.4599	5915.10	5939.10	1440.00	2102.18	40.1
130463	Oct-11	8-Oct-11	AM2	Fine	Normal Operation	760.0	759.0	26.0	26.0	50.0	50.0	2.7333	2.7508	0.0175	1.4538	1.4528	1.4533	5939.10	5963.10	1440.00	2092.75	8.4
130471	Oct-11	14-Oct-11	AM2	Cloudy	Normal Operation	757.0	759.0	25.0	25.0	50.0	50.0	2.7192	2.8639	0.1447	1.4533	1.4553	1.4543	5963.10	5987.10	1440.00	2094.19	69.1
130477	Oct-11	20-Oct-11	AM2	Fine	Normal Operation	761.0	760.0	24.0	24.0	50.0	50.0	2.7361	2.8482	0.1121	1.4600	1.4590	1.4595	5987.10	6011.10	1440.00	2101.68	53.3
130483	Oct-11	26-Oct-11	AM2	Fine	Normal Operation	762.0	762.0	23.0	23.0	50.0	50.0	2.7294	2.8214	0.0920	1.4636	1.4636	1.4636	6011.10	6035.10	1440.00	2107.58	43.7

Average (ug/m^3)	35.5
Max (ug/m^3)	73.2
Min (ug/m^3)	8.4

Action Level (ug/m^3)	151
Limit Level (ug/m^3)	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^3/min)		Average Flow Rate (m^3/min)	Elapse Time		Sampling Time	Total vol. (m^3)	(ug/m^3) AM3
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
101889	Aug-11	1-Aug-11	AM3	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7941	2.8258	0.0317	1.5007	1.5007	1.5007	9817.39	9841.39	1440.00	2161.01	14.7
130152	Aug-11	6-Aug-11	AM3	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7561	2.7915	0.0354	1.5007	1.5007	1.5007	9841.39	9865.39	1440.00	2161.01	16.4
130158	Aug-11	12-Aug-11	AM3	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7515	2.7858	0.0343	1.5007	1.5007	1.5007	9865.39	9889.39	1440.00	2161.01	15.9
130407	Aug-11	18-Aug-11	AM3	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7939	2.8212	0.0273	1.5007	1.5007	1.5007	9889.39	9913.39	1440.00	2161.01	12.6
130414	Aug-11	24-Aug-11	AM3	Fine	Normal Operation	754.0	755.0	29.0	28.0	50.0	50.0	2.768	2.8710	0.1030	1.5019	1.5058	1.5039	9913.39	9937.39	1440.00	2165.54	47.6
130420	Aug-11	30-Aug-11	AM3	Fine	Normal Operation	750.0	749.0	30.0	30.0	50.0	50.0	2.7533	2.8722	0.1189	1.4944	1.4933	1.4939	9937.39	9961.39	1440.00	2151.14	55.3
130426	Sep-11	5-Sep-11	AM3	Fine	Normal Operation	755.0	755.0	29.0	29.0	50.0	50.0	2.7708	2.8479	0.0771	1.5030	1.5030	1.5030	9961.39	9985.39	1440.00	2164.32	35.6
130432	Sep-11	9-Sep-11	AM3	Fine	Normal Operation	757.0	757.0	29.0	29.0	50.0	50.0	2.7722	2.8225	0.0503	1.5053	1.5053	1.5053	9985.39	10009.39	1440.00	2167.63	23.2
130438	Sep-11	15-Sep-11	AM3	Rainy	Normal Operation	754.0	753.0	28.0	28.0	50.0	50.0	2.7493	2.7978	0.0485	1.5047	1.5035	1.5041	10009.39	10033.39	1440.00	2165.90	22.4
130444	Sep-11	21-Sep-11	AM3	Fine	Normal Operation	757.0	757.0	25.0	25.0	50.0	50.0	2.7545	2.8407	0.0862	1.5168	1.5168	1.5168	10033.39	10057.39	1440.00	2184.19	39.5
130450	Sep-11	27-Sep-11	AM3	Fine	Normal Operation	754.0	752.0	27.0	28.0	50.0	50.0	2.7492	2.8143	0.0651	1.5075	1.5024	1.5050	10057.39	10081.39	1440.00	2167.13	30.0
130458	Oct-11	3-Oct-11	AM3	Cloudy	Normal Operation	756.0	758.0	22.0	23.0	50.0	50.0	2.7572	2.8356	0.0784	1.5434	1.5429	1.5432	10081.39	10105.39	1440.00	2222.14	35.3
130465	Oct-11	8-Oct-11	AM3	Fine	Normal Operation	760.0	759.0	26.0	26.0	50.0	50.0	2.7367	2.7676	0.0309	1.5367	1.5356	1.5362	10105.39	10129.39	1440.00	2212.06	14.0
130472	Oct-11	14-Oct-11	AM3	Cloudy	Normal Operation	757.0	759.0	25.0	25.0	50.0	50.0	2.7289	2.8978	0.1689	1.5362	1.5383	1.5373	10129.39	10153.39	1440.00	2213.64	76.3
130478	Oct-11	20-Oct-11	AM3	Fine	Normal Operation	761.0	760.0	24.0	24.0	50.0	50.0	2.7379	2.9482	0.2103	1.5433	1.5422	1.5428	10153.39	10177.39	1440.00	2221.56	94.7
130484	Oct-11	26-Oct-11	AM3	Fine	Normal Operation	762.0	762.0	23.0	23.0	50.0	50.0	2.7229	2.8436	0.1207	1.5472	1.5472	1.5472	10177.39	10201.39	1440.00	2227.97	54.2

Average (ug/m^3)	36.7
Max (ug/m^3)	94.7
Min (ug/m^3)	12.6

Action Level (ug/m^3)	150
Limit Level (ug/m^3)	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^3/min)		Average Flow Rate (m^3/min)	Elapse Time		Sampling Time	Total vol. (m^3)	(ug/m^3) AM4
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130147	Aug-11	1-Aug-11	AM4	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7586	2.7833	0.0247	1.5026	1.5026	1.5026	10699.12	10723.12	1440.00	2163.74	11.4
130153	Aug-11	6-Aug-11	AM4	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7369	2.7761	0.0392	1.5026	1.5026	1.5026	10723.12	10747.12	1440.00	2163.74	18.1
130159	Aug-11	12-Aug-11	AM4	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7552	2.7997	0.0445	1.5026	1.5026	1.5026	10747.12	10771.12	1440.00	2163.74	20.6
130408	Aug-11	18-Aug-11	AM4	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7804	2.8124	0.0320	1.5026	1.5026	1.5026	10771.12	10795.12	1440.00	2163.74	14.8
130415	Aug-11	24-Aug-11	AM4	Fine	Normal Operation	754.0	755.0	29.0	28.0	50.0	50.0	2.7684	2.8575	0.0891	1.5037	1.5075	1.5056	10795.12	10819.12	1440.00	2168.06	41.1
130421	Aug-11	30-Aug-11	AM4	Fine	Normal Operation	750.0	749.0	30.0	30.0	50.0	50.0	2.7587	2.8629	0.1042	1.4964	1.4953	1.4959	10819.12	10843.12	1440.00	2154.02	48.4
130427	Sep-11	5-Sep-11	AM4	Fine	Normal Operation	755.0	755.0	29.0	29.0	50.0	50.0	2.7694	2.8430	0.0736	1.5048	1.5048	1.5048	10843.12	10867.12	1440.00	2166.91	34.0
130433	Sep-11	9-Sep-11	AM4	Fine	Normal Operation	757.0	757.0	29.0	29.0	50.0	50.0	2.761	2.8120	0.0510	1.5071	1.5071	1.5071	10867.12	10891.12	1440.00	2170.22	23.5
130439	Sep-11	15-Sep-11	AM4	Rainy	Normal Operation	754.0	753.0	28.0	28.0	50.0	50.0	2.7437	2.8505	0.1068	1.5064	1.5053	1.5059	10891.12	10915.12	1440.00	2168.42	49.3
130445	Sep-11	21-Sep-11	AM4	Fine	Normal Operation	757.0	757.0	25.0	25.0	50.0	50.0	2.7632	2.8852	0.1220	1.5184	1.5184	1.5184	10915.12	10939.12	1440.00	2186.50	55.8
130452	Sep-11	27-Sep-11	AM4	Fine	Normal Operation	754.0	752.0	27.0	28.0	50.0	50.0	2.7435	2.7893	0.0458	1.5093	1.5042	1.5068	10939.12	10963.12	1440.00	2169.72	21.1
130459	Oct-11	3-Oct-11	AM4	Cloudy	Normal Operation	756.0	758.0	22.0	23.0	50.0	50.0	2.7529	2.8298	0.0769	1.5087	1.5081	1.5084	10963.12	10987.12	1440.00	2172.10	35.4
130467	Oct-11	8-Oct-11	AM4	Fine	Normal Operation	760.0	759.0	26.0	26.0	50.0	50.0	2.7393	2.7718	0.0325	1.5020	1.5010	1.5015	10987.12	11011.12	1440.00	2162.16	15.0
130473	Oct-11	14-Oct-11	AM4	Cloudy	Normal Operation	757.0	759.0	25.0	25.0	50.0	50.0	2.7319	2.8723	0.1404	1.5015	1.5037	1.5026	11011.12	11035.12	1440.00	2163.74	64.9
130479	Oct-11	20-Oct-11	AM4	Fine	Normal Operation	761.0	760.0	24.0	24.0	50.0	50.0	2.7325	2.9179	0.1854	1.5085	1.5075	1.5080	11035.12	11059.12	1440.00	2171.52	85.4
130485	Oct-11	26-Oct-11	AM4	Fine	Normal Operation	762.0	762.0	23.0	23.0	50.0	50.0	2.7323	2.8210	0.0887	1.5124	1.5124	1.5124	11059.12	11083.12	1440.00	2177.86	40.7

Average (ug/m^3)	36.2
Max (ug/m^3)	85.4
Min (ug/m^3)	11.4

Action Level (ug/m^3)	150
Limit Level (ug/m^3)	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^3/min)		Average Flow Rate (m^3/min)	Elapse Time		Sampling Time	Total vol. (m^3)	(ug/m^3) AM5
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130148	Aug-11	1-Aug-11	AM5	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.767	2.7965	0.0295	1.4616	1.4616	1.4616	10485.27	10509.27	1440.00	2104.70	14.0
130154	Aug-11	6-Aug-11	AM5	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7326	2.7776	0.0450	1.4616	1.4616	1.4616	10509.27	10533.27	1440.00	2104.70	21.4
130160	Aug-11	12-Aug-11	AM5	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7494	2.7850	0.0356	1.4616	1.4616	1.4616	10533.27	10557.27	1440.00	2104.70	16.9
130409	Aug-11	18-Aug-11	AM5	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7837	2.8116	0.0279	1.4616	1.4616	1.4616	10557.27	10581.27	1440.00	2104.70	13.3
130416	Aug-11	24-Aug-11	AM5	Fine	Normal Operation	754.0	755.0	29.0	28.0	50.0	50.0	2.7701	2.8783	0.1082	1.4626	1.4661	1.4644	10581.27	10605.27	1440.00	2108.66	51.3
130422	Aug-11	30-Aug-11	AM5	Fine	Normal Operation	750.0	749.0	30.0	30.0	50.0	50.0	2.7624	2.8526	0.0902	1.4560	1.4550	1.4555	10605.27	10629.27	1440.00	2095.92	43.0
130428	Sep-11	5-Sep-11	AM5	Fine	Normal Operation	755.0	755.0	29.0	29.0	50.0	50.0	2.7713	2.8283	0.0570	1.4637	1.4637	1.4637	10629.27	10653.27	1440.00	2107.73	27.0
130434	Sep-11	9-Sep-11	AM5	Fine	Normal Operation	757.0	757.0	29.0	29.0	50.0	50.0	2.7704	2.8319	0.0615	1.4657	1.4657	1.4657	10653.27	10677.27	1440.00	2110.61	29.1
130440	Sep-11	15-Sep-11	AM5	Rainy	Normal Operation	754.0	753.0	28.0	28.0	50.0	50.0	2.764	2.9163	0.1523	1.4651	1.4641	1.4646	10677.27	10701.27	1440.00	2109.02	72.2
130446	Sep-11	21-Sep-11	AM5	Fine	Normal Operation	757.0	757.0	25.0	25.0	50.0	50.0	2.7504	2.8874	0.1370	1.4760	1.4760	1.4760	10701.27	10725.27	1440.00	2125.44	64.5
130453	Sep-11	27-Sep-11	AM5	Fine	Normal Operation	754.0	752.0	27.0	28.0	50.0	50.0	2.7426	2.7767	0.0341	1.4677	1.4631	1.4654	10725.27	10749.27	1440.00	2110.18	16.2
130460	Oct-11	3-Oct-11	AM5	Cloudy	Normal Operation	756.0	758.0	22.0	23.0	50.0	50.0	2.7533	2.7714	0.0181	1.5208	1.5203	1.5206	10749.27	10773.27	1440.00	2189.59	8.3
130468	Oct-11	8-Oct-11	AM5	Fine	Normal Operation	760.0	759.0	26.0	26.0	50.0	50.0	2.7366	2.7717	0.0351	1.5140	1.5130	1.5135	10773.27	10797.27	1440.00	2179.44	16.1
130474	Oct-11	14-Oct-11	AM5	Cloudy	Normal Operation	757.0	759.0	25.0	25.0	50.0	50.0	2.7438	2.9009	0.1571	1.5135	1.5157	1.5146	10797.27	10821.27	1440.00	2181.02	72.0
130480	Oct-11	20-Oct-11	AM5	Fine	Normal Operation	761.0	760.0	24.0	24.0	50.0	50.0	2.7289	2.9218	0.1929	1.5207	1.5196	1.5202	10821.27	10845.27	1440.00	2189.02	88.1
130486	Oct-11	26-Oct-11	AM5	Fine	Normal Operation	762.0	762.0	23.0	23.0	50.0	50.0	2.7354	2.8256	0.0902	1.5246	1.5246	1.5246	10845.27	10869.27	1440.00	2195.42	41.1

Average (ug/m^3)	37.2
Max (ug/m^3)	88.1
Min (ug/m^3)	8.3

Action Level (ug/m^3)	146
Limit Level (ug/m^3)	260

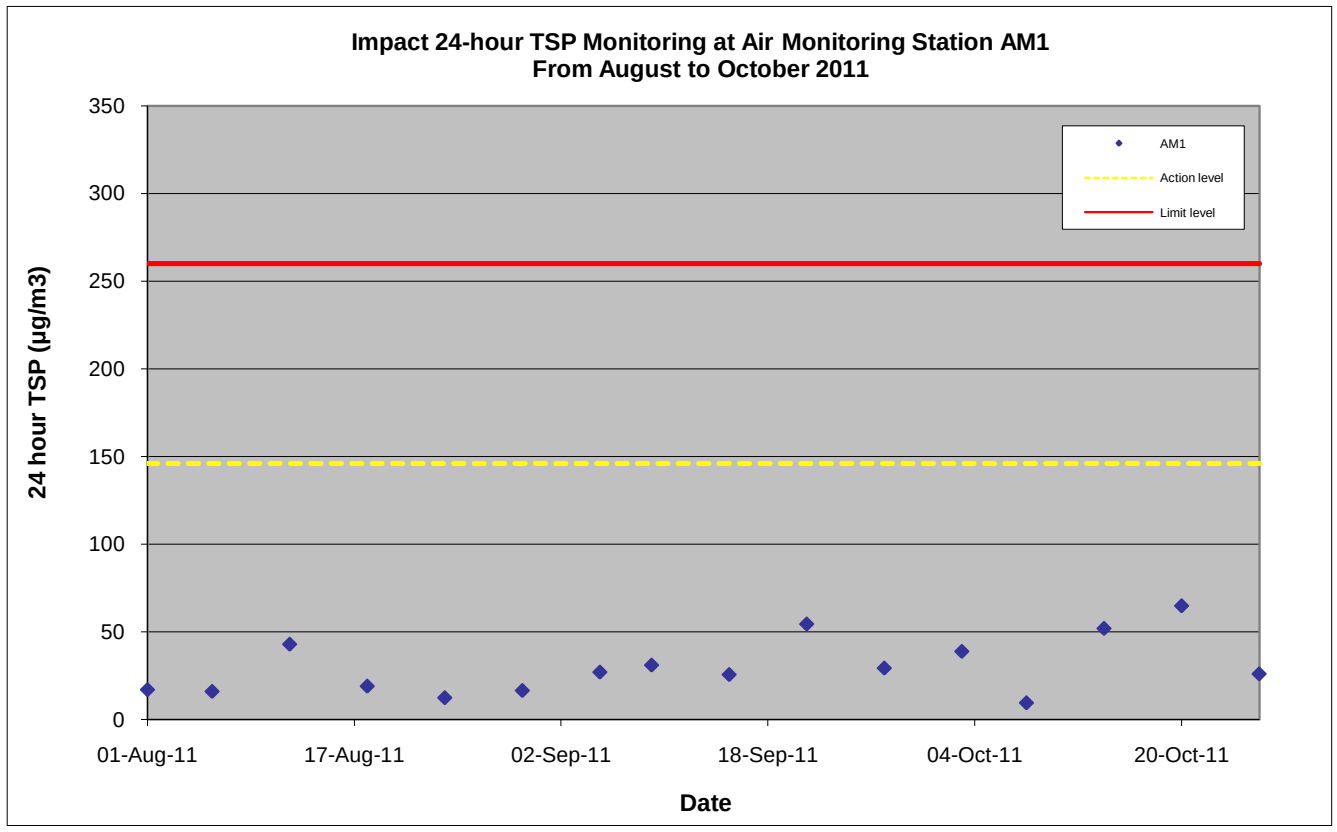
Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section

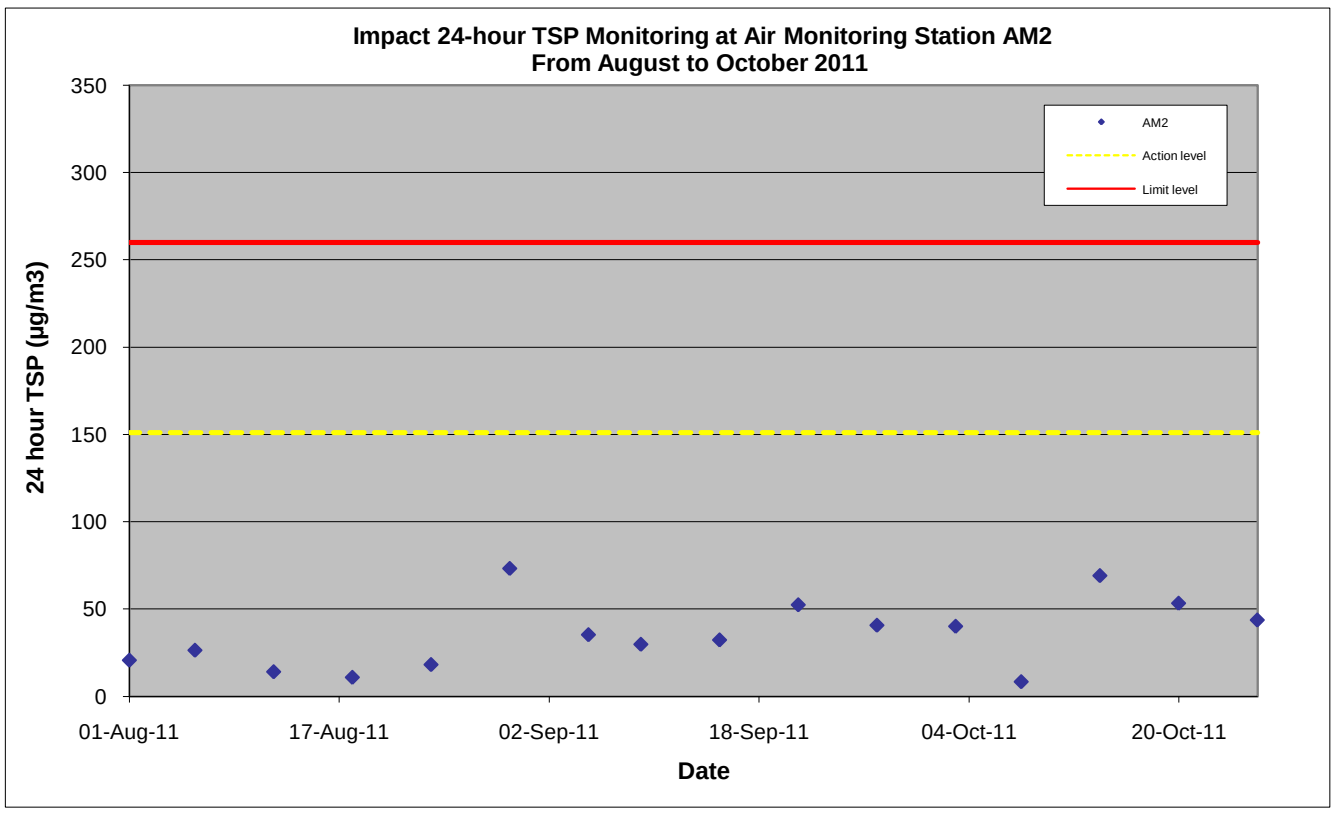
Impact Air Quality Monitoring Result at Yan Oi Tong Community and Sports Centre (AM6) - 24 hour TSP

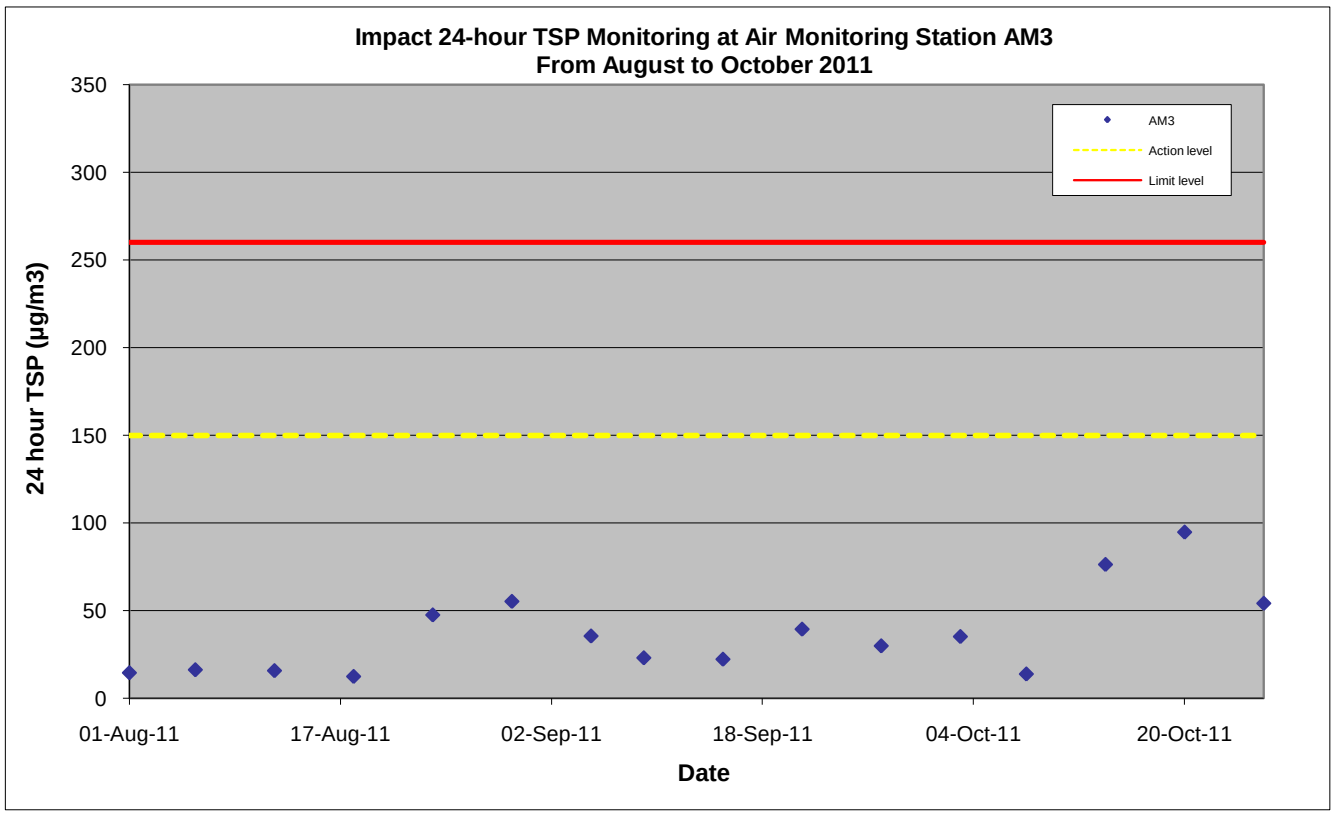
Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m^3/min)		Average Flow Rate (m^3/min)	Elapse Time		Sampling Time (mins.)	Total vol. (m^3)	(ug/m^3) AM6
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130149	Aug-11	1-Aug-11	AM6	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7543	2.7870	0.0327	1.4993	1.4993	1.4993	6818.80	6842.80	1440.00	2158.99	15.1
130155	Aug-11	6-Aug-11	AM6	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7332	2.7724	0.0392	1.4993	1.4993	1.4993	6842.80	6866.80	1440.00	2158.99	18.2
130404	Aug-11	12-Aug-11	AM6	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7743	2.8027	0.0284	1.4993	1.4993	1.4993	6866.80	6890.80	1440.00	2158.99	13.2
130410	Aug-11	18-Aug-11	AM6	Fine	Normal Operation	753.0	753.0	29.0	29.0	50.0	50.0	2.7868	2.8114	0.0246	1.4993	1.4993	1.4993	6890.80	6914.80	1440.00	2158.99	11.4
130417	Aug-11	24-Aug-11	AM6	Fine	Normal Operation	754.0	755.0	29.0	28.0	50.0	50.0	2.7702	2.8013	0.0311	1.5004	1.5042	1.5023	6914.80	6938.80	1440.00	2163.31	14.4
130423	Aug-11	30-Aug-11	AM6	Fine	Normal Operation	750.0	749.0	30.0	30.0	50.0	50.0	2.7662	2.8392	0.0730	1.4932	1.4921	1.4927	6938.80	6962.80	1440.00	2149.42	34.0
130429	Sep-11	5-Sep-11	AM6	Fine	Normal Operation	755.0	755.0	29.0	29.0	50.0	50.0	2.7736	2.8501	0.0765	1.5015	1.5015	1.5015	6962.80	6986.80	1440.00	2162.16	35.4
130435	Sep-11	9-Sep-11	AM6	Fine	Normal Operation	757.0	757.0	29.0	29.0	50.0	50.0	2.7689	2.8441	0.0752	1.5038	1.5038	1.5038	6986.80	7010.80	1440.00	2165.47	34.7
130441	Sep-11	15-Sep-11	AM6	Rainy	Normal Operation	754.0	753.0	28.0	28.0	50.0	50.0	2.7632	2.8642	0.1010	1.5031	1.5020	1.5026	7010.80	7034.80	1440.00	2163.67	46.7
130447	Sep-11	21-Sep-11	AM6	Fine	Normal Operation	757.0	757.0	25.0	25.0	50.0	50.0	2.7523	2.8664	0.1141	1.5150	1.5150	1.5150	7034.80	7058.80	1440.00	2181.60	52.3
130454	Sep-11	27-Sep-11	AM6	Fine	Normal Operation	754.0	752.0	27.0	28.0	50.0	50.0	2.7423	2.8347	0.0924	1.5059	1.5009	1.5034	7058.80	7082.80	1440.00	2164.90	42.7
130461	Oct-11	3-Oct-11	AM6	Cloudy	Normal Operation	756.0	758.0	22.0	23.0	50.0	50.0	2.7445	2.7711	0.0266	1.4868	1.4863	1.4866	7082.80	7106.80	1440.00	2140.63	12.4
130469	Oct-11	8-Oct-11	AM6	Fine	Normal Operation	760.0	759.0	26.0	26.0	50.0	50.0	2.7308	2.7682	0.0374	1.4804	1.4794	1.4799	7106.80	7130.80	1440.00	2131.06	17.5
130475	Oct-11	14-Oct-11	AM6	Cloudy	Normal Operation	757.0	759.0	25.0	25.0	50.0	50.0	2.7353	2.8971	0.1618	1.4799	1.4820	1.4810	7130.80	7154.80	1440.00	2132.57	75.9
130481	Oct-11	20-Oct-11	AM6	Fine	Normal Operation	761.0	760.0	24.0	24.0	50.0	50.0	2.7369	2.9232	0.1863	1.4867	1.4857	1.4862	7154.80	7178.80	1440.00	2140.13	87.1
130487	Oct-11	26-Oct-11	AM6	Fine	Normal Operation	762.0	762.0	23.0	23.0	50.0	50.0	2.7026	2.7872	0.0846	1.4904	1.4904	1.4904	7178.80	7202.80	1440.00	2146.18	39.4

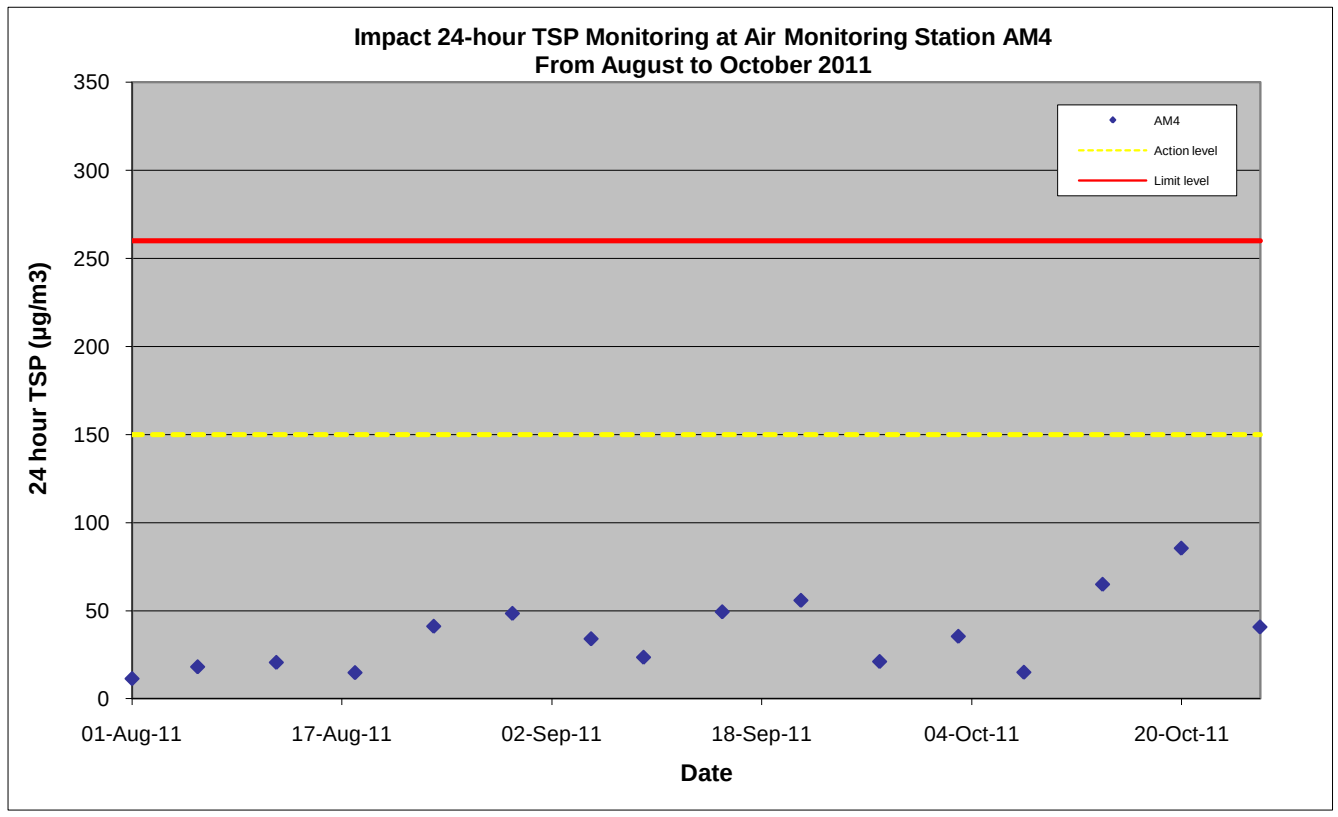
Average (ug/m^3)	34.4
Max (ug/m^3)	87.1
Min (ug/m^3)	11.4

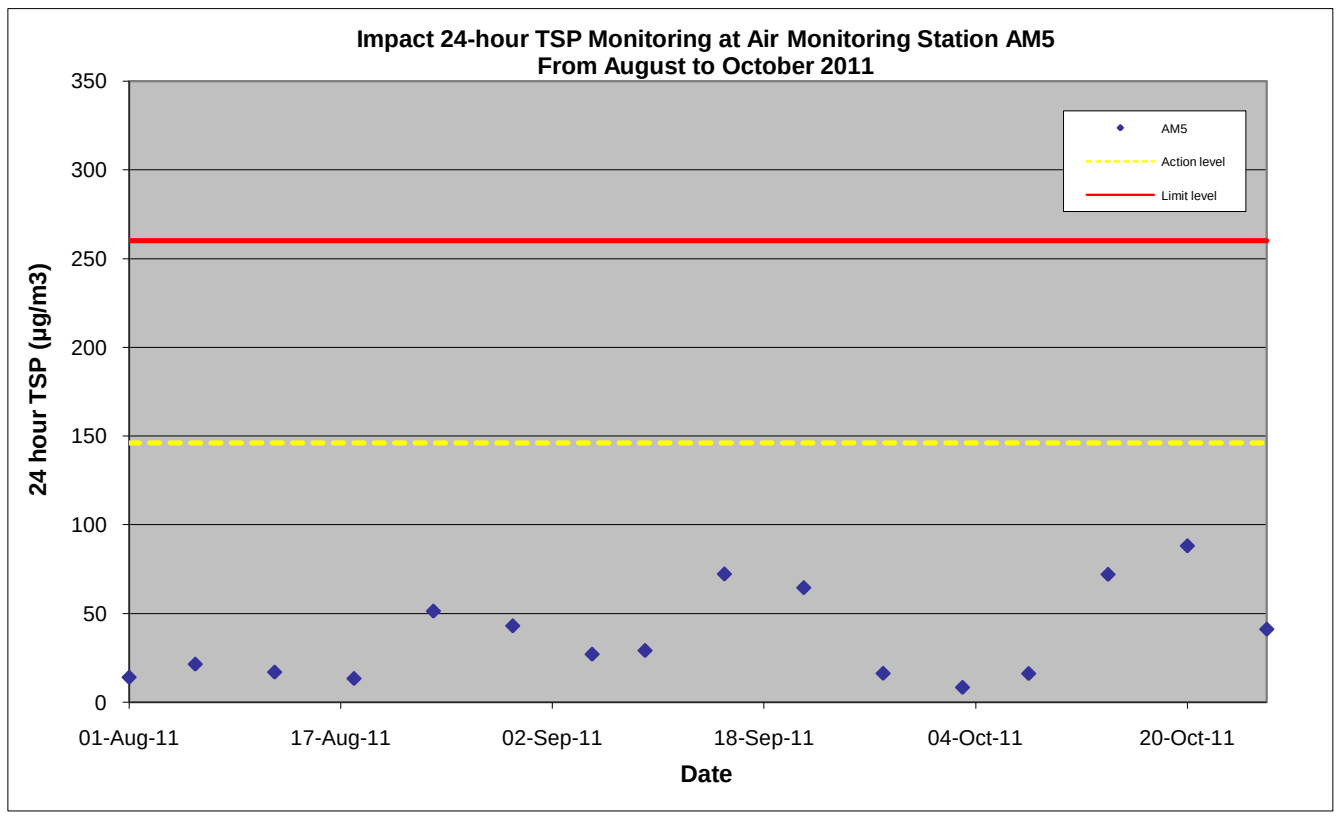
Action Level (ug/m^3)	147
Limit Level (ug/m^3)	260


Impact 24-hour TSP Monitoring at Air Monitoring Station AM1
From August to October 2011
24 hour TSP (µg/m3)
350
300
250
200
150
100
50
0
01-Aug-11
17-Aug-11
02-Sep-11
18-Sep-11
04-Oct-11
20-Oct-11
Date
AM1
Action level
Limit level


Impact 24-hour TSP Monitoring at Air Monitoring Station AM2
From August to October 2011
24 hour TSP (µg/m3)
350
300
250
200
150
100
50
0
01-Aug-11
17-Aug-11
02-Sep-11
18-Sep-11
04-Oct-11
20-Oct-11
Date
AM2
Action level
Limit level


Impact 24-hour TSP Monitoring at Air Monitoring Station AM3
From August to October 2011
24 hour TSP (µg/m3)
350
300
250
200
150
100
50
0
01-Aug-11
17-Aug-11
02-Sep-11
18-Sep-11
04-Oct-11
20-Oct-11
Date
AM3
Action level
Limit level


Impact 24-hour TSP Monitoring at Air Monitoring Station AM4
From August to October 2011
24 hour TSP (µg/m3)
350
300
250
200
150
100
50
0
01-Aug-11
17-Aug-11
02-Sep-11
18-Sep-11
04-Oct-11
20-Oct-11
Date
AM4
Action level
Limit level


Impact 24-hour TSP Monitoring at Air Monitoring Station AM5
From August to October 2011
24 hour TSP (µg/m3)
350
300
250
200
150
100
50
0
01-Aug-11
17-Aug-11
02-Sep-11
18-Sep-11
04-Oct-11
20-Oct-11
Date
AM5
Action level
Limit level

Impact 24-hour TSP Monitoring at Air Monitoring Station AM6
From August to October 2011
24 hour TSP (µg/m3)
350
300
250
200
150
100
50
0
01-Aug-11
17-Aug-11
02-Sep-11
18-Sep-11
04-Oct-11
20-Oct-11
Date
AM6
Action level
Limit level

Appendix D

Wind Data

Wind Monitoring Data - August 2011

Date	Wind Direction (degree)	Wind Speed (km/h)
1-Aug-11	200	7.1
6-Aug-11	220	14.5
12-Aug-11	180	12.8
18-Aug-11	120	9.8
24-Aug-11	220	15.1
30-Aug-11	290	23.9

Source extracted from Hong Kong Observatory (HKO)

Wind Monitoring Data - September 2011

Date	Wind Direction (degree)	Wind Speed (km/h)
5-Sep-11	160	6.8
9-Sep-11	100	27.6
15-Sep-11	100	24
21-Sep-11	20	24.6
27-Sep-11	90	19.4

Source extracted from Hong Kong Observatory (HKO)

Wind Monitoring Data - October 2011

Date	Wind Direction (degree)	Wind Speed (km/h)
3-Oct-11	30	43.5
8-Oct-11	80	33
14-Oct-11	70	19.5
20-Oct-11	70	21.3
26-Oct-11	50	29.5

Source extracted from Hong Kong Observatory (HKO)

Appendix E

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 - 2 August 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:45 - 10:15	74	75	77	71	76	Measured ≦ Baseline
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	75	75	77	71	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:40 - 12:10	66	70	68	64	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	68	65	67	Measured ≦ Baseline
N5	Tuen King Building	13:30 - 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 - 8 August 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:50 - 10:20	73	75	75	70	76	Measured ≦ Baseline
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	74	75	76	72	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:40 - 12:10	67	70	69	65	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	67	64	67	Measured ≦ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	71	67	70	Measured ≦ Baseline
N6	Choi Cheung kok Secondary School	14:10 - 14:40	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 - 19 August 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	10:00 - 10:30	74	75	77	71	76	Measured ≦ Baseline
N2	Tai Tung Pui Social Service Building	10:45 - 11:15	75	75	78	72	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:30 - 12:00	67	70	68	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	13:15 - 13:45	70	75	72	67	70	Measured ≦ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	69	70	71	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 - 25 August 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:50 - 10:20	75	75	77	72	76	Measured ≦ Baseline
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	74	75	77	72	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	68	70	69	66	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	67	70	69	65	67	Measured ≦ Baseline
N5	Tuen King Building	13:10 - 13:40	70	75	71	67	70	Measured ≦ Baseline
N6	Choi Cheung kok Secondary School	13:55 - 14:25	70	70	72	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 - 31 August 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:50 - 10:20	77	75	80	73	76	69
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	76	75	79	72	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	68	70	69	66	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	67	70	69	65	67	Measured ≦ Baseline
N5	Tuen King Building	13:15 - 13:45	71	75	73	69	70	63
N6	Choi Cheung kok Secondary School	14:00 - 14:30	71	70	72	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 - 6 September 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:45 - 10:15	78	75	81	73	76	74
N2	Tai Tung Pui Social Service Building	10:30 - 11:00	77	75	79	72	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:15 - 11:45	68	70	70	67	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	64	70	66	63	67	Measured ≦ Baseline
N5	Tuen King Building	13:10 - 13:40	72	75	74	70	70	66
N6	Choi Cheung kok Secondary School	14:30 - 15:00	70	70	72	69	69	62

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 - 16 September 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	10:00 - 10:30	77	75	80	73	76	71
N2	Tai Tung Pui Social Service Building	10:50 - 11:20	77	75	79	73	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:40 - 12:10	68	70	70	66	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	67	70	68	65	67	Measured ≦ Baseline
N5	Tuen King Building	13:15 - 13:45	72	75	73	69	70	65
N6	Choi Cheung kok Secondary School	14:00 - 14:30	70	70	72	68	69	62

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 September 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:50 - 10:20	77	75	80	74	76	71
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	75	75	78	72	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:15 - 11:45	68	70	70	67	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	67	70	69	65	67	Measured ≦ Baseline
N5	Tuen King Building	13:15 - 13:45	72	75	73	69	70	66
N6	Choi Cheung kok Secondary School	13:55 - 14:25	71	70	72	68	69	66

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 September 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:45 - 10:15	77	75	78	73	76	68
N2	Tai Tung Pui Social Service Building	10:30 - 11:00	74	75	76	72	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:10 - 11:40	68	70	69	66	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	68	64	67	Measured ≦ Baseline
N5	Tuen King Building	13:00 - 13:30	71	75	73	69	70	63
N6	Choi Cheung kok Secondary School	13:50 - 14:20	69	70	72	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 - 4 October 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:50 - 10:20	74	75	76	71	76	Measured ≦ Baseline
N2	Tai Tung Pui Social Service Building	10:30 - 11:00	72	75	74	69	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:30 - 12:00	68	70	70	67	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	65	70	67	64	67	Measured ≦ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	71	67	70	Measured ≦ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	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 - 15 October 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:45 - 10:15	75	75	77	72	76	Measured ≦ Baseline
N2	Tai Tung Pui Social Service Building	10:30 - 11:00	74	75	77	72	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	67	70	69	65	67	Measured ≦ Baseline
N5	Tuen King Building	13:10 - 13:40	68	75	71	67	70	Measured ≦ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	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 - 21 October 2011

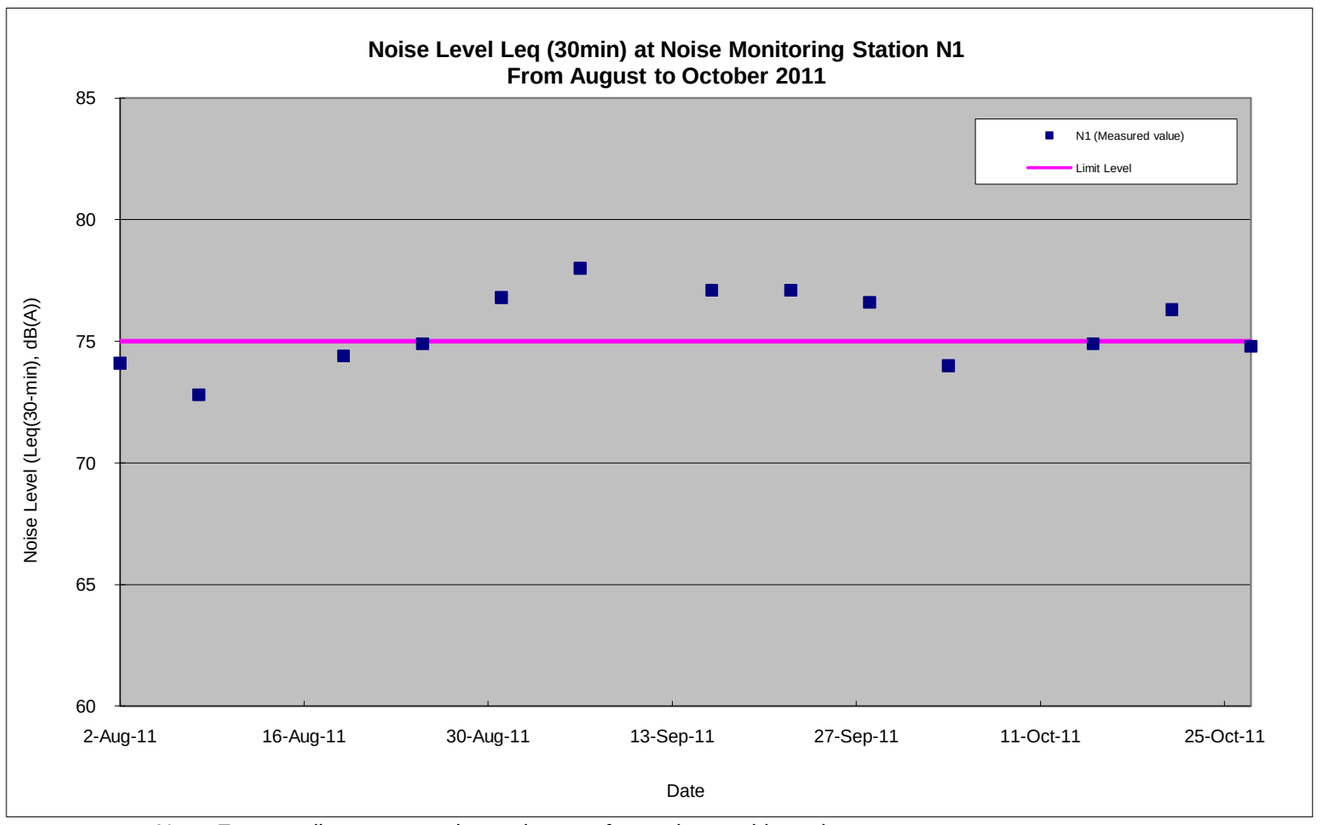
			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:50 - 10:20	76	75	79	73	76	65
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	76	75	78	73	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:20 - 11:50	66	70	68	64	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	67	70	70	66	67	Measured ≦ Baseline
N5	Tuen King Building	13:15 - 13:45	71	75	73	68	70	63
N6	Choi Cheung kok Secondary School	14:15 - 14:45	69	70	72	66	69	Measured ≦ Baseline

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

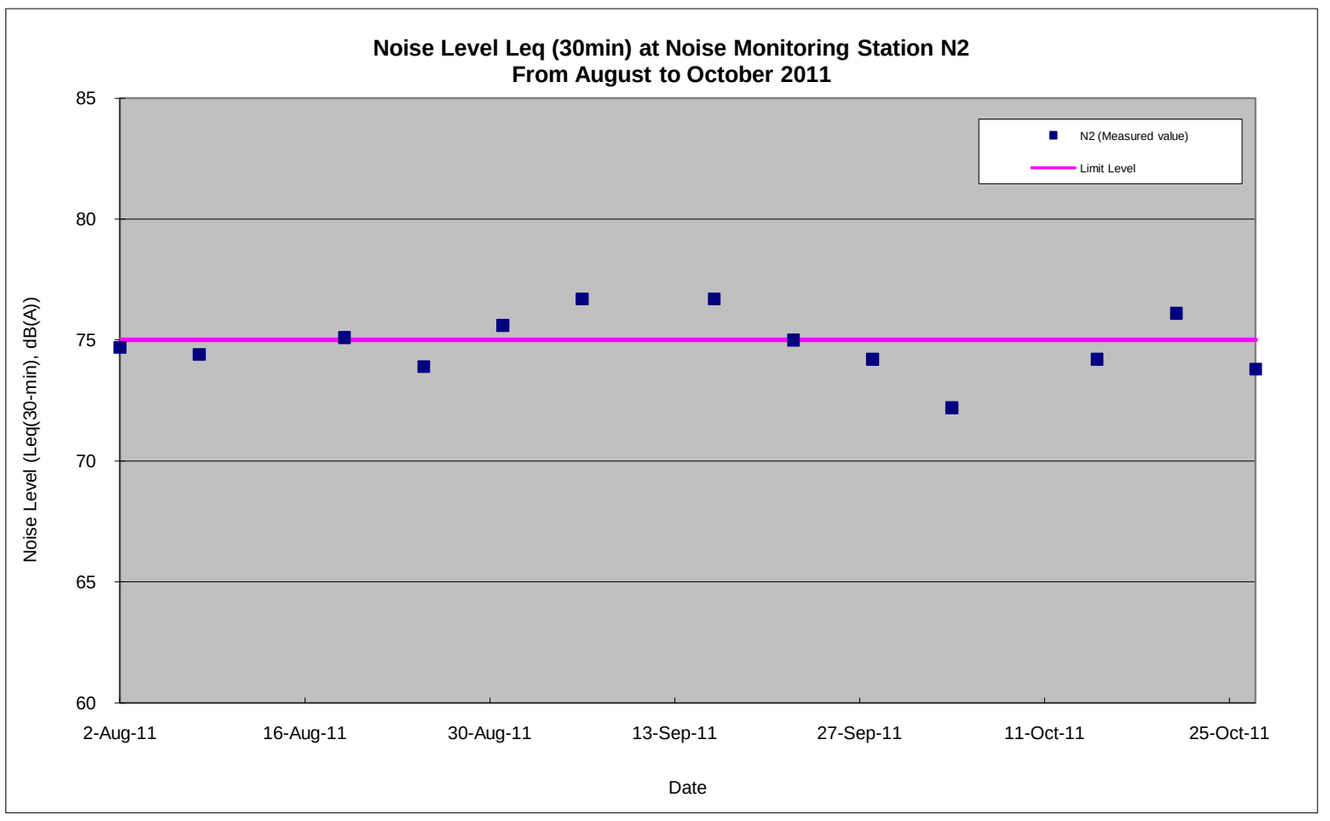
Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team
Day-time Noise Monitoring Results - 27 October 2011

			Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
ID	Premise	Time	L_{Aeq},30min	Limit	L_{10},5min	L_{90},5min	L_{Aeq},30min	L_{Aeq},30min
N1	Kam Fai Garden	09:50 - 10:20	75	75	77	72	76	Measured ≦ Baseline
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	74	75	76	72	78	Measured ≦ Baseline
N3	Yuen Yuen Primary School	11:30 - 12:00	68	70	70	67	69	Measured ≦ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	68	65	67	Measured ≦ Baseline
N5	Tuen King Building	13:10 - 13:40	72	75	73	70	70	66
N6	Choi Cheung kok Secondary School	14:00 - 14:30	69	70	71	67	69	Measured ≦ Baseline

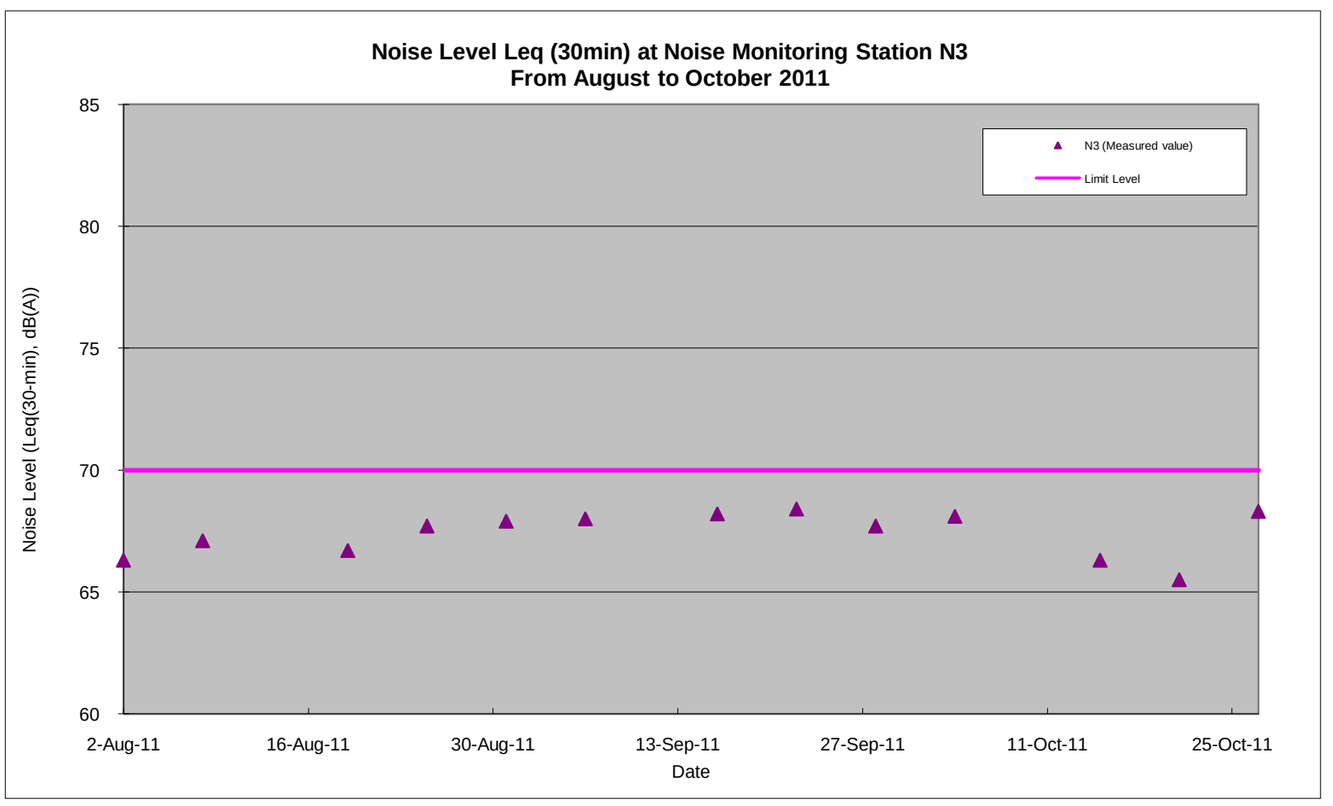
Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level



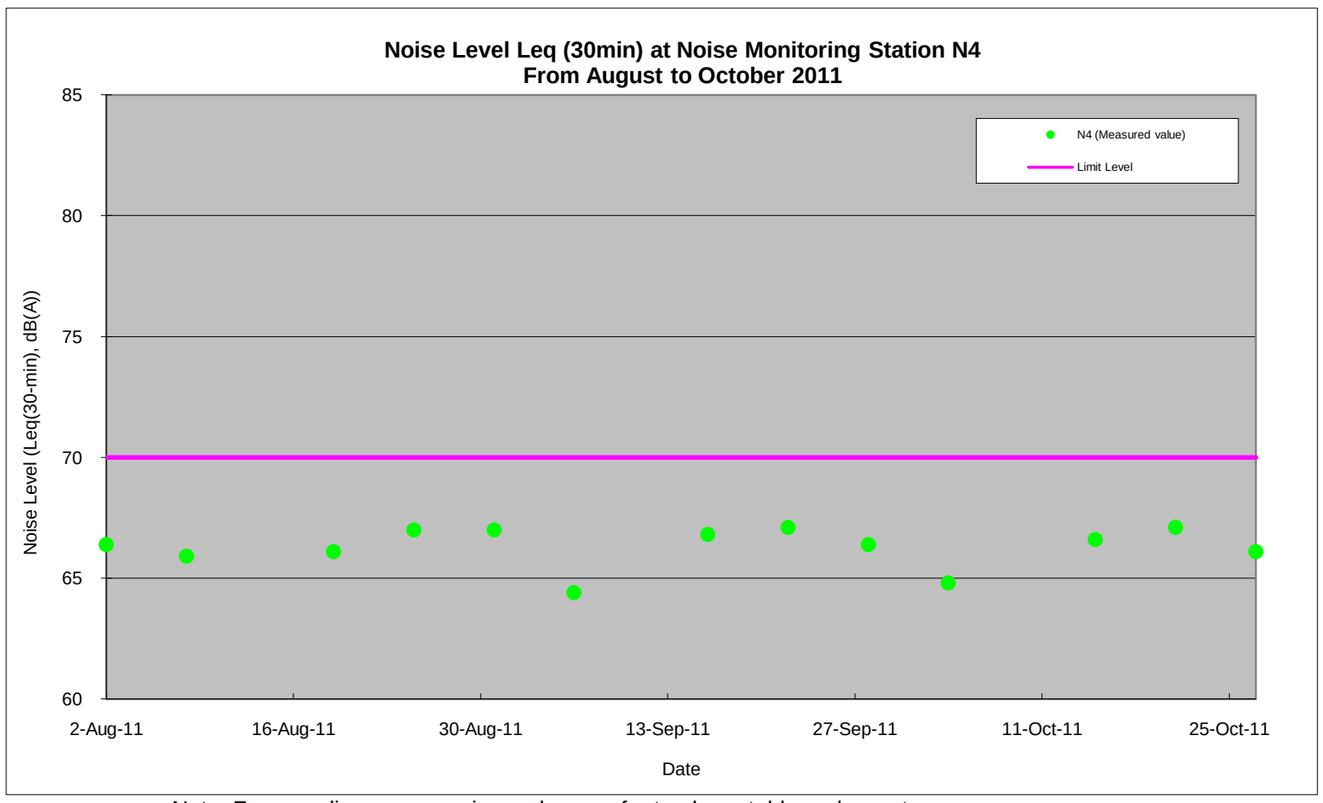
Note: For compliance comparison, please refer to above table and report.



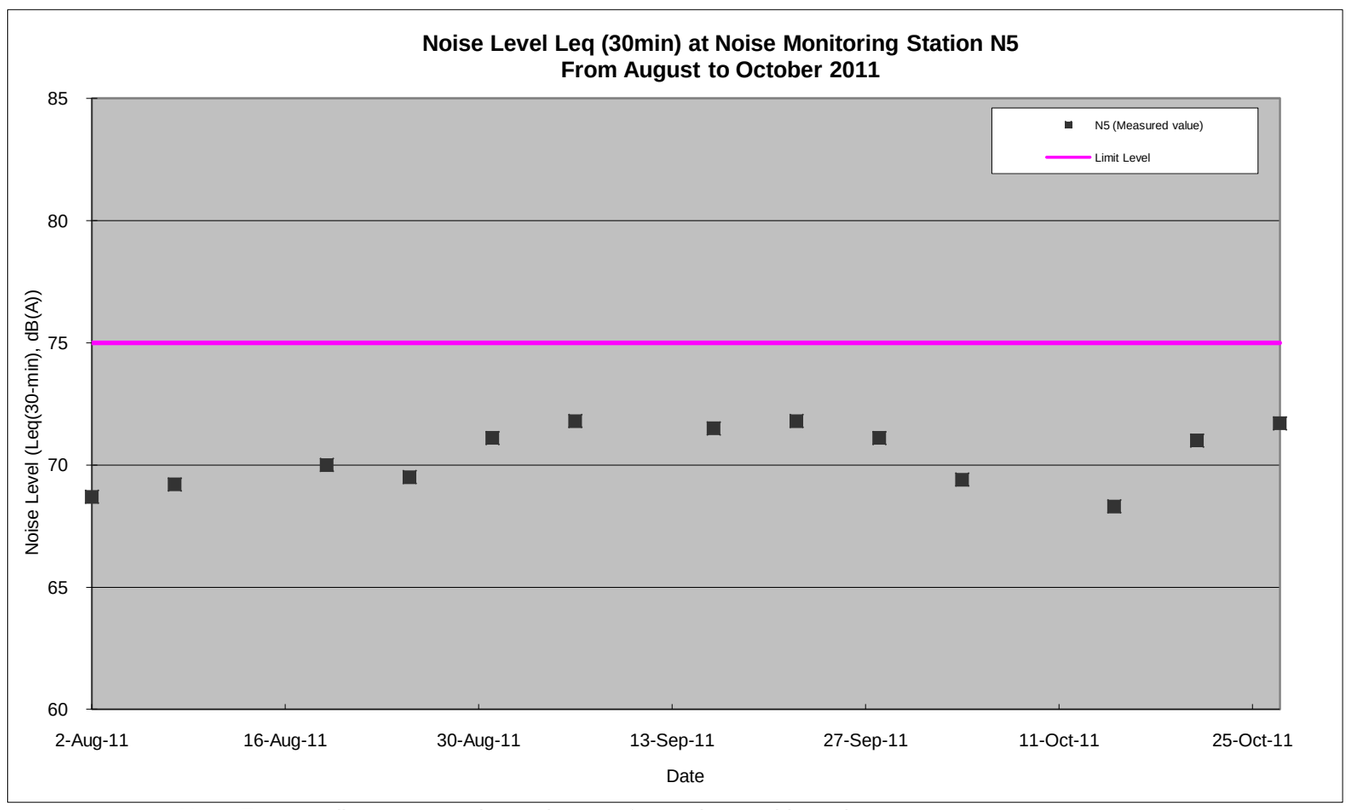
Note: For compliance comparison, please refer to above table and report.



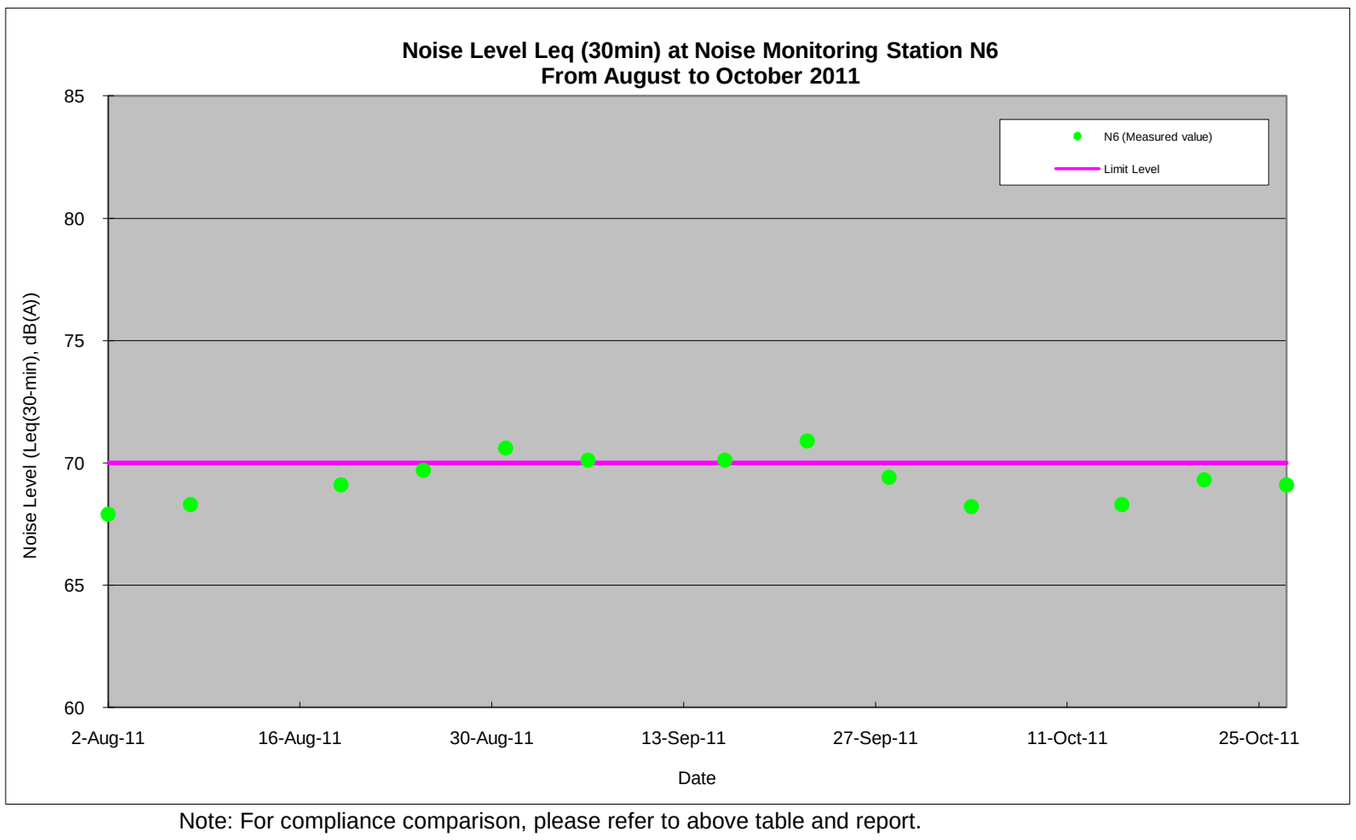
Note: For compliance comparison, please refer to above table and report.



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

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
Landscape Resources	
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
Landscape Character Areas	
LZ1	Tuen Mun Residential Urban Landscape
LZ2	Tuen Mun Mixed Modern Comprehensive Urban Development Landscape
LZ3	Tuen Mun ‘Hui’ Urban Landscape
Visual Sensitive Receivers	
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

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
C012-TCS	A complaint was received by ICC on 10 Sep 11 and the Supervising Officer Representative was informed on 14 Sep 11.	Ms Chan	10 Sep 11	Weekday morning	Yan Oi Tong Circuit	Noise	The complaint was related to the works starting time during the demolition of parapet walls at Tuen Mun Road near Yan Oi Tong Circuit.	15 Sep 11	15 ~ 29 Sep 11	The complainant expressed that the demolition of parapet walls at Tuen Mun Road near Yan Oi Tong Circuit was started too early in the morning and caused inconvenience, and requested to delay the works starting time to 10:00. As confirmed by the Contractor and Supervising Officer's Representative, the demolition of parapet walls was carried out at Tuen Mun Road near Yan Oi Tong Circuit. 1 unit of breaking machine was employed and the works was started around 08:00 during the weekday. It is recognized that the works starting time is complied with the noise control ordinance (i.e. allow the construction works between 07:00 ~ 19:00). As advised by the Contractor, noise insulating fabric had been installed along the site boundary (facing to the sensitive receivers) and acoustic fabric had been wrapped around the breaking machine head to minimize the noise nuisance. In addition, the Contractor also advised that the works starting time had been started at 09:00 (i.e. 1 hour later) after complaint received. Site investigation conducted by ET on 15 Sep and 22 Sep 11 revealed that the mitigation measures were implemented by the Contractor. In addition, in accordance with the Action/Event Plan, additional noise monitoring was undertaken on 17 Sep 11 at the noise monitoring locations N6 (The Chinese Manufacturer's Association of Hong Kong Choi Cheung Kok Secondary School), comparison is made between the monitoring results against the corresponding baseline noise level. Based on the interpretation from the results, the construction noise is 63dB(A) which below the daytime noise limit level 70dB(A). Nevertheless, ET recommended that the Contractor should undertake following mitigation measures to minimize the noise nuisance. 1. Well-maintain the machines condition to minimize noise nuisance; 2. Relocate operating machinery as far as possible from nearby sensitive receivers; 3. Machines that may be in intermittent use should be shut down between work periods or should be throttled down; 4. Optimize the working programme to minimize the work activities as far as possible; 5. Improve the working practices to minimize the noise nuisance during the working activities as far as possible; 6. Provide temporary / mobile noise barrier for the noisy activities as far as possible; and 7. Enhance the workers awareness by regular training to minimize noise nuisance during construction works.	Yes	Closed on 29 Sep 11

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
C013-TCS	A complaint was received by ICC on 17 Sept 11 and the Supervising Officer Representative was informed via the e-mail on 20 Sep 11.	Unknown	17 Sep 11	17 Sep 11	Chi Lok Fa Yuen	Water	The complaint was related to the muddy water spillage to the pedestrian walks near Chi Lok Fa Yuen and affected passing pedestrians.	8 Oct 11	8 Oct ~ 14 Oct 11	As confirmed by the Contractor and Supervising Officer's Representative, removal works of pipe ducts was carried out at the site near Chi Lok Fa Yuen during the complaint period. During the transferring of pipe ducts, muddy water was spilled to the pedestrian walks and affected passing pedestrians. Therefore, it is concluded that the complaint was work-related under the Project. As advised by the Contractor and Supervising Officer's Representative, the work had been immediately stopped and the workers were reminded to pay attention during replacement activities to avoid water spillage after the complaint was received. Based on the weekly site inspections on 22 Sep and 30 Sep 11, the site condition was satisfactory and no water spillage was observed. Nevertheless, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance. 1. Improve the working practices to minimize the nuisance during the replacement activities as far as possible; and 2. Enhance the workers awareness by regular training to minimize nuisance during the replacement activities.	Yes	Closed on 14 Oct 11

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
C014-TCS	A verbal complaint was received by ICC on 25 Sep 11 and the Supervising Officer Representative was informed via the e-mail on 26 Sep 11.	Mr. Wong	25 Sep 11	25 Sep 11 around 11:00 a.m.	Tuen Mun Road (Kowloon bound) near the Tuen Mun Town Plaza	Water	The complaint was related to the muddy water overflowed to Tuen Mun Road and affected the travelling vehicles.	8 Oct 11	8 Oct ~ 14 Oct 11	As confirmed by the Contractor and Supervising Officer's Representative, the complaint was related to muddy water overflowing from the construction site onto TMR near the Tuen Mun Town Plaza and affected the travelling vehicles on 25 Sep 11. The muddy water overflowing to TMR was occurred due to the damaging of sandbags bunding at some portion along the temporary drainage. As advised by the Supervising Officer's Representative, the Contractor had replaced the damaged sandbags after receiving the complaint. Weekly site inspections by ET on 30 Sep 11 and 6 Oct 11 revealed that the site condition was satisfactory and no muddy water overflow was observed. Based on the above information, it is therefore concluded that the complaint was work related under the Project. The Contractor was reminded to take necessary resources to ensure well maintenance the temporary drainage system and prevent re-occurrence. In view of this, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance. 1. Review and enhance the drainage system capacity; 2. Routine inspection and maintenance for the drainage system and treatment facilities such as silt traps or sedimentation tanks etc. to ensure proper and efficient operation at all times and particularly during rainstorms; 3. Careful programming of the works to minimize exposed surface area; 4. Covering the stockpiles as well as the exposed or idle slope by tarpaulin or similar fabric to minimize muddy water generation; 5. Stockpiles should not be placed near the drainage or water courses; 6. Increase the height of the bundings along the site area to prevent water overflow as far as possible; and 7. Provision of adequate pumping system for surface runoff collection especially during heavy rainfall.	Yes	Closed on 14 Oct 11

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
C015-TCS	A complaint was received by ICC on 7 Oct 11 and the Supervising Officer Representative was informed via the e-mail on 8 Oct 11.	Unknown	7 Oct 11	7 Oct 11around 9:00 a.m.	Tuen Mun Road (Kowloon bound) near the Tuen Mun Town Plaza	Water	The complaint was related to the muddy water overflowed to Tuen Mun Road and affected the travelling vehicles.	8 Oct 11	8 Oct ~ 28 Oct 11	As confirmed by the Contractor and Supervising Officer's Representative, the complaint was related to muddy water overflowing from the construction site onto TMR near the Tuen Mun Town Plaza and affected the travelling vehicles on 7 Oct 11. Small amount of muddy water spillage to TMR was occurred due to the damaging of tarpaulin cover on the drilling rig during operation. As advised by the Supervising Officer's Representative, the Contractor had replaced the damaged cover, ensuring the tarpaulin cover is in good working order and cover the entire casing and shaft after receiving the complaint. Weekly site inspections by ET on 13 Oct 11 and 27 Oct 11 revealed that both the site condition and the tarpaulin cover were satisfactory and no muddy water spillage was observed. Based on the above information, it is therefore concluded that the complaint was work related under the Project. The Contractor was reminded to take necessary resources to ensure well maintenance the temporary drainage system and prevent re-occurrence. In view of this, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance. 1. Routine inspection and maintenance for the tarpaulin cover on the drilling rig to ensure proper and efficient operation at all times and particularly during rainstorms.	Yes	Closed on 28 Oct 11