



大成環境科技拓展有限公司

**ENVIRONMENTAL PIONEERS & SOLUTIONS LIMITED**

豐盛創建環保科技集團附屬公司 Subsidiary of FSE Environmental Technologies Group  
豐盛創建成員 Member of FSE Holdings

**Proposed Road Improvement Works in  
West Kowloon Reclamation Development – Phase 1  
Quarterly Environmental Monitoring & Audit Report  
01/05/2016 – 31/07/2016**

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## **Executive Summary**

This is the quarterly Environmental Monitoring and Audit (EM&A) Report for Proposed Road Improvement Works in West Kowloon Reclamation Development – Phase 1. The project commenced on 6<sup>th</sup> February 2016. This report documents the finding of EM&A Works conducted from 1<sup>st</sup> May 2016 to 31<sup>st</sup> July 2016.

### Environmental Monitoring and Audit Progress

Air Quality Monitoring

Noise Monitoring

Waste Management

Landscape and Visual Impact

Environmental Site Inspection

### Environmental Exceedance / Non-conformance / Compliant / Summons and Successful Prosecution

No exceedance of action level and limit level was recorded for TSP. Eight exceedances were recorded at NM2 and sixteen exceedances were recorded at NM4 for noise.

### Variation in Construction Method

No variation in construction method from the proposed construction programme was made and affected the EM&A.

## **1 Introduction**

### **1.1 The Project**

This is a road improvement project in West Kowloon Reclamation Development (WKRd) for completing the developments and the commissioning of the new transport facilities.

Apart from the additional traffic impacts arising from the major development and transport facilities in WKRd, several major junctions in the area are currently operating with insufficient capacity causing serious congestion to some existing major road corridors such as Jordan Road (JRD), Ferry Street (FST) and Canton Road (CRD).

To enhance the road network of the area, Transport Department commissioned the “West Kowloon Reclamation Development Traffic Study” which identified and recommended Core and Additional Schemes together with the improvement works at the junction of CRD/FST/JRD. Implementation of these schemes would enable most of the key road junctions in the study area to operate with spare capacity, and the traffic queue length would also be reduced avoiding blockage to the upstream junctions

The Environmental Team (ET), Environmental Pioneers & Solutions Limited (EPSL), was appointed by Vibro Construction Co. Ltd. to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the Proposed Road Improvement Works in West Kowloon Reclamation Development – Phase 1. The project proponent is Highways Department. This is a Designated Project under the Environmental Impact Assessment Ordinance (Cap.499). The No. of Environment Permit is EP-455/2013.

The construction works and EM&A programme of this project was commenced on 6<sup>th</sup> February 2016. The construction programme and project layout plan are shown in **Appendix A**.

## 1.2 Construction Programme and Activities

A summary of the major construction activities undertaken in this reporting period is shown as follows.

### May 2016

- Portion I – UU Diversion Works
- Portion HA – Trial Trench Works
- Portion HA – Pre-drilling Works
- Portion HA – Man-hole Construction Works
- Portion HA – UU Diversion Works
- Portion J – ELS Works
- Portion J – Construction of Retaining Wall
- Portion J – Tree Felling Works
- Portion Q – Common Trench Excavation
- Portion Q – Excavation Works

### June 2016

- Portion I – Underground Investigation Works
- Portion I – Utilities Diversion Works
- Portion HA – Underground Investigation Works
- Portion HA – Utilities Diversion Works
- Portion J – Utilities Diversion Works
- Portion J – Construction of Retaining Walls
- Portion Q – Road Works (excavation, drainage construction and utilities diversion)

### July 2016

- Portion I – UU Diversion Works
- Portion HA – Trial Trench Works
- Portion HA – Pre-drilling Works
- Portion HA – Man-hole Construction Works
- Portion HA – Tree Transplant Works
- Portion HA – UU Diversion Works
- Portion J – ELS Works
- Portion J – Construction of Retaining Wall
- Portion Q – Construction of CCTV Highmast Footing
- Portion Q – Common Trench Excavation
- Portion Q – Drainage Construction Works

### **1.3 Project Organization**

The project organization chart and contact details are shown in **Appendix B**.

## **2 EM&A Requirements for Monitoring Parameters**

### **Air Quality Monitoring**

According to the EM&A Manual Section 3.2 & 3.4, the construction air quality impact shall be evaluated by conducting 1-hr and 24-hr Total Suspended Particulates measurements. 1-hr TSP sampling shall be conducted at a frequency of at least 3 times in every 6 days. 24-hr TSP sampling shall be conducted at a frequency of at least once in every 6 days. The wind speed and wind direction shall be recorded in accordance with the EM&A Manual Section 3.4.3.

### **Noise Monitoring**

According to the EM&A Manual Section 4.2 & 4.4, construction noise level shall be measured in terms of the A-weight equivalent continuous sound pressure level (Leq). Leq 30min shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. One set of 30-min measurement shall be carried out at each monitoring location every week.

### **Waste Management**

According to the EM&A Manual Section 6.2, relevant licences/ permits shall be applied for waste disposal and handling. Waste disposal record/ recycling receipts shall be kept for tracking of waste movement.

### **Landscape and Visual**

According to the EM&A Manual Section 7.2, inspection and audit for the implementation of mitigation measures shall be conducted once every two weeks by the Registered Landscape Architect. The adequacy of tree preservation, status of tree planting and removal shall also be monitored.

### 3 Air Quality Monitoring

#### 3.1 Monitoring Locations

According to the EM&A Manual Section 3.5, four impact monitoring locations have been established for air quality monitoring, which are summarized in Table 3.1.1. The details of monitoring location plan are shown in **Appendix C**.

Table 3.1.1 Air Quality Monitoring Locations

ID No.	Monitoring Location	Description	Parameter
AM1	Marine Department New Yau Ma Tei Public Cargo Working Area Administrative Building	Ground Floor Face to Hoi Po Road	1-hr TSP
AM2	Garden Building	Ground Floor Face to Canton Road	1-hr TSP
AM3	The Cullinan I	Ground Floor Face to Nga Cheung Road	1-hr TSP
AM4	Lai Chack Middle School	Ground Floor Face to Canton Road	1-hr TSP
AM1	Marine Department New Yau Ma Tei Public Cargo Working Area Administrative Building	Rooftop Face to Hoi Po Road	24-hr TSP
AM2	Garden Building	Ground Floor Face to Canton Road	24-hr TSP
AM3-A	International Commerce Centre (Works Area 4)	Ground Floor Near to International Commerce Centre Roundabout on Nga Cheung Road and	24-hr TSP

## 3.2 Monitoring Results

1-hr TSP monitoring was conducted at four monitoring locations. The monitoring results are summarized in Table 3.2.1. 24-hr TSP monitoring was conducted at three monitoring locations. The monitoring results are summarized in Table 3.2.2. Detailed impact monitoring data of 1-hr TSP, 24-hr TSP and meteorological data are shown in **Appendix D**.

Table 3.2.1 Summary of average 1-hr TSP monitoring data

Month	Monitoring Locations	Average 1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	Range 1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
May 16	AM1	64	25 – 111	288	500
	AM2	92	72 – 109	299	500
	AM3	56	21 – 89	299	500
	AM4	90	82 – 106	303	500
June 16	AM1	49	28 – 76	288	500
	AM2	50	30 – 86	299	500
	AM3	46	28 – 73	299	500
	AM4	67	44 – 99	303	500
July 16	AM1	44	27 – 62	288	500
	AM2	32	16 – 62	299	500
	AM3	39	28 – 57	299	500
	AM4	43	17 – 67	303	500



Table 3.2.2 Summary of average 24-hr TSP monitoring data

	<b>Monitoring Locations</b>	<b>Average 24-hr TSP (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Range 24-hr TSP (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Action Level (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Limit Level (<math>\mu\text{g}/\text{m}^3</math>)</b>
May 16	AM1	55	37 – 68	157	260
	AM2	57	21 – 92	183	260
	AM3-A	95	50 – 144	177	260
June 16	AM1	39	18 – 72	157	260
	AM2	44	28 – 56	183	260
	AM3-A	58	27 – 90	177	260
July 16	AM1	28	15 – 42	157	260
	AM2	81	36 – 152	183	260
	AM3-A	61	40 – 90	177	260

In accordance with the established action and limited levels for impact monitoring, there was no exceedance recorded in the reporting period.

During the monitoring period, vehicle emissions were identified as one of the dust sources for AM1, AM2, AM3, AM4 and AM3-A. TSP levels of AM2 and AM4 may be affected by the construction activities from other construction sites near Canton Road. TSP level of AM3-A may be affected by construction activities from other construction sites near Nga Cheung Road.

### 3.3 Baseline Review

The comparisons of baseline result, measured result and action and limit levels of 1-hr TSP monitoring and 24-hr TSP monitoring are shown in Table 3.3.1 and Table 3.3.2 for reviewing the baseline data.

Table 3.3.1 Comparisons of Baseline, Impact and Action & Limit Levels of 1-hr TSP

Location	Baseline Level ( $\mu\text{g}/\text{m}^3$ )	Established Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )	Average Impact Monitoring Level (reporting Quarter) ( $\mu\text{g}/\text{m}^3$ )
AM1	58	288	500	52
AM2	76	299	500	58
AM3	76	299	500	47
AM4	82	303	500	67

Table 3.3.2 Comparisons of Baseline, Impact and Action & Limit Levels of 24-hr TSP

Location	Baseline Level ( $\mu\text{g}/\text{m}^3$ )	Established Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )	Average Impact Monitoring Level (reporting Quarter) ( $\mu\text{g}/\text{m}^3$ )
AM1	42	157	260	41
AM2	81	183	260	61
AM3-A	72	177	260	71

The impact monitoring levels of 1-hr TSP and 24-hr TSP obtained from May 2016 to July 2016 were much lower than the action levels established by baseline monitoring data for AM1, AM2, AM3/AM3-A and AM4. The impact monitoring results presented that no dust impacts obviously caused by the construction site and affected by the background environmental conditions. The baseline results are still applicable and valid. Need not to repeat the measurement of baseline monitoring, unless the exceedance of action level of TSP is recorded.

## 4 Noise Monitoring

### 4.1 Monitoring Locations

According to the EM&A Manual Section 4.5, five impact monitoring locations have been established for noise impact monitoring during the construction phase of the project, which are summarized in Table 4.1.1. The details of monitoring location plan are shown in **Appendix C**.

Table 4.1.1 Noise Monitoring Locations

Identification No.	Noise Monitoring Location	Description	Measurement Type
NM1	Sorrento - Tower 1	Ground Level * Face to Nga Cheung Road	Façade
NM2	Yau Ma Ti Catholic Primary School (Hoi Wang Road)	Ground Floor Face to Hoi Ting Road	Façade
NM3	The Cullinan I	Ground Floor Face to Nga Cheung Road	Façade
NM4	Lai Chack Middle School	Ground Floor Face to Canton Road	Façade
NM5	Yue Tak Building	Ground Floor Face to Jordan Road	Façade

\*Remark:

Noise monitoring at NM1 was amended to the podium level started from June 2016.

### 4.2 Monitoring Results

Noise impact monitoring was conducted at five monitoring locations. The monitoring results are summarized in Table 4.2.1. Detailed impact monitoring data of noise are shown in **Appendix E**.

Table 4.2.1 Summary of average noise monitoring data

Monitoring Locations	Monitoring Date	Baseline Level (dB(A))	L <sub>Aeq</sub> * <sup>1</sup> (dB(A))	Action Level (dB(A))	Limit Level (dB(A))	Exceedance
NM1	4/5/2016	75.1	74.8	When one documented complaint is received	75 dB(A)	No
	10/5/2016		74.7			No
	16/5/2016		74.6			No
	21/5/2016		74.3			No
	27/5/2016		73.6			No
	2/6/2016		68.4			No
	7/6/2016		66.2			No
	13/6/2016		67.2			No
	18/6/2016		67.3			No
	24/6/2016		66.4			No
	29/6/2016		67.2			No
	5/7/2016		65.8			No
	11/7/2016		66.1			No
	15/7/2016		66.1			No
	21/7/2016		65.7			No
	27/7/2016		66.2			No
NM2	4/5/2016	66.5	70.1	When one documented complaint is received	70 dB(A) * <sup>2</sup>	Yes
	10/5/2016		72.4		70 dB(A) * <sup>2</sup>	Yes
	16/5/2016		70.3		70 dB(A) * <sup>2</sup>	Yes
	21/5/2016		67.9		70 dB(A) * <sup>2</sup>	No
	27/5/2016		70.6		70 dB(A) * <sup>2</sup>	Yes
	2/6/2016		68.9		70 dB(A) * <sup>2</sup>	No
	7/6/2016		69.5		70 dB(A) * <sup>2</sup>	No
	13/6/2016		69.7		70 dB(A) * <sup>2</sup>	No
	18/6/2016		70.9		70 dB(A) * <sup>2</sup>	Yes
	24/6/2016		71.3		70 dB(A) * <sup>2</sup>	Yes
	29/6/2016		70.8		65 dB(A) * <sup>3</sup>	Yes
	5/7/2016		65.5		70 dB(A) * <sup>2</sup>	No
	11/7/2016		66.9		70 dB(A) * <sup>2</sup>	No
	15/7/2016		67.7		70 dB(A) * <sup>2</sup>	No
	21/7/2016		74.0		70 dB(A) * <sup>2</sup>	Yes
	27/7/2016		67.8		70 dB(A) * <sup>2</sup>	No

NM3	4/5/2016	74.5	74.9	When one documented complaint is received	75 dB(A)	No
	10/5/2016		75.0			No
	16/5/2016		74.1			No
	21/5/2016		74.2			No
	27/5/2016		74.5			No
	2/6/2016		74.2			No
	7/6/2016		74.9			No
	13/6/2016		74.8			No
	18/6/2016		74.3			No
	24/6/2016		74.6			No
	29/6/2016		73.5			No
	5/7/2016		74.1			No
	11/7/2016		73.5			No
	15/7/2016		74.1			No
	21/7/2016		73.4			No
	27/7/2016		74.1			No
NM4	4/5/2016	73.3	73.7	When one documented complaint is received	70 dB(A) * <sup>2</sup>	Yes
	10/5/2016		73.5		70 dB(A) * <sup>2</sup>	Yes
	16/5/2016		74.2		70 dB(A) * <sup>2</sup>	Yes
	21/5/2016		73.2		70 dB(A) * <sup>2</sup>	Yes
	27/5/2016		73.6		70 dB(A) * <sup>2</sup>	Yes
	2/6/2016		72.9		70 dB(A) * <sup>2</sup>	Yes
	7/6/2016		73.2		65 dB(A) * <sup>3</sup>	Yes
	13/6/2016		72.6		70 dB(A) * <sup>2</sup>	Yes
	18/6/2016		74.1		70 dB(A) * <sup>2</sup>	Yes
	24/6/2016		72.4		70 dB(A) * <sup>2</sup>	Yes
	29/6/2016		73.5		70 dB(A) * <sup>2</sup>	Yes
	5/7/2016		73.6		70 dB(A) * <sup>2</sup>	Yes
	11/7/2016		73.3		70 dB(A) * <sup>2</sup>	Yes
	15/7/2016		74.4		70 dB(A) * <sup>2</sup>	Yes
	21/7/2016		74.0		70 dB(A) * <sup>2</sup>	Yes
	27/7/2016		75.1		70 dB(A) * <sup>2</sup>	Yes
NM5	4/5/2016	71.8	72.5	When one documented complaint is	75 dB(A)	No
	10/5/2016		70.3			No
	16/5/2016		72.3			No

	21/5/2016		70.8	received		No
	27/5/2016		71.2			No
	2/6/2016		70.1			No
	7/6/2016		69.9			No
	13/6/2016		70.8			No
	18/6/2016		69.1			No
	24/6/2016		72.2			No
	29/6/2016		71.3			No
	5/7/2016		69.4			No
	11/7/2016		72.6			No
	15/7/2016		71.1			No
	21/7/2016		72.3			No
	27/7/2016		71.0			No

Remark:

\*<sup>1</sup> Measured result would be rounded down before comparison with the limit level

\*<sup>2</sup> 70dB(A) for schools during normal teaching periods

\*<sup>3</sup> 65dB(A) for schools examination periods

In accordance with the established action and limited levels for impact monitoring, No exceedances were recorded at NM1, NM3 and NM5, eight exceedances were recorded at NM2 and sixteen exceedances were recorded at NM4.

The noise source for causing exceedances at NM2 was from other construction site, Design and Construction of West Kowloon Government Offices (DCWKGO), which located at No.11 Hoi Ting Road. The construction site of DCWKGO is located between Portion J and the NM2 and close to the NM2. The NM2 was directly affected by the noise generated from the construction site of DCWKGO. The exceedances were not caused by this project construction works.

The noise source for causing exceedances at NM4 was from the traffic of Canton Road. The NM4 was directly affected by the noise generated from the traffic. The recorded monitoring results at the NM4 were near the baseline noise level. The exceedances were not caused by this project construction works.

During the monitoring period, traffic noise was identified as one of the noise source for NM1, NM2, NM3, NM4 and NM5. Noise levels of NM1 and NM3 may be influenced by the construction activities from other construction sites near Nga Cheung Road. Noise level of NM2 may be influenced by construction activities from other

construction sites near Hoi Ting Road. Noise levels of NM4 and NM5 may be influenced by the construction activities from other construction sites near Canton Road.

## 5 Solid and Liquid Waste Management Status

With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in Table 5.1. During this reporting month, inert C&D materials and general refuse were generated and disposed. No mixed waste was generated. No chemical waste was generated and collected by licensed collector. No paper, plastic and metal was recycled.

Table 5.1 Quantities of Waste Disposed from the Project

Reporting Month	Quantity						
	C&D Materials (inert) <sup>(a)</sup>	C&D Materials (non-inert) <sup>(b)</sup>					
		General Refuse	Mixed Waste	Chemical Waste	Recycled materials		
					Paper/ cardboard	Plastics	Metals
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
May 2016	2028.43	47.78	0	0	0	0	0
June 2016	2058.16	81.13	0	0	0	0	0
July 2016	5031.54	17.12	0	0	0	0	0
Total	9118.13	146.03	0	0	0	0	0
Notes:							
(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil.							
(b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes. Steel metal generated from the Project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.							

Waste materials were generated during this reporting period, such as excavated waste, demolition waste and general refuse. Contractor handled, stored and disposed in accordance with good waste management practice and EPD's regulation and requirements.

## **6 Landscape and Visual Impact**

In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented to minimize the landscape and visual impacts during the construction works.

Bi-weekly site inspections were conducted by representatives of the Engineer, Contractor and ET on 13<sup>th</sup> and 27<sup>th</sup> May 2016, 10<sup>th</sup> and 24<sup>th</sup> June 2016, 12<sup>th</sup> and 29<sup>th</sup> July 2016. The observations, reminders and recommendations made during the site inspections are summarized in Section 8.2.

The implementation status of the proposed mitigation measures for landscape and visual impacts is given in **Appendix F**.

## **7 Environmental Site Inspection**

Site audit was carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

Joint weekly inspections were conducted by representatives of the Contract Administrator, Engineer, Contractor and ET on 3<sup>rd</sup>, 9<sup>th</sup>, 18<sup>th</sup>, 23<sup>rd</sup> and 30<sup>th</sup> May 2016, 6<sup>th</sup>, 13<sup>th</sup>, 22<sup>nd</sup> and 27<sup>th</sup> June 2016, 4<sup>th</sup>, 11<sup>th</sup>, 20<sup>th</sup> and 25<sup>th</sup> July 2016. Observations were recorded and summarized in Section 8.2.

During site inspection in the reporting month, no non-compliance was identified.

Updated status summary of the Environmental Mitigation Implementation Schedule is provided in **Appendix F**.



## **8 Environmental Non-Conformance**

### **8.1 Summary of Environmental Exceedances**

No exceedance of action level and limit level was recorded for TSP.

No exceedance was recorded for noise at NM1, NM3 and NM5. Eight exceedances were recorded at NM2 and sixteen exceedances were recorded at NM4.

### **8.2 Summary of Environmental Non-Compliance**

No environmental non-compliance was recorded in the reporting month.

### **8.3 Summary of Environmental Complaint**

No environmental compliance was recorded in the reporting month.

### **8.4 Summary of Notification of Summons and Successful Prosecution**

There was no successful environmental prosecution or notification of summons received since the Project commencement.

The cumulative log for environmental exceedance, non-compliance, complaint and summon and successful prosecution since the commencement of the Project is presented in **Appendix G**.

## **9 Comment, Recommendations and Conclusions**

### **9.1 Comment**

The recommended mitigation measures accordance with the EM&A Manual had been effectively implemented to minimize the environmental impacts due to the construction. The contractor had implemented the mitigation measures to control the dust and noise impacts. No dust and noise impacts obviously affected to the environment and sensitive receivers. The environmental performance during the reporting period was considered satisfactory.

### **9.2 Recommendations**

According to the environmental audit performed in the reporting month, the following recommendation was made:

- To properly collect and remove the demolished waste;
- To remove the general waste and keep the site area clean and tidy;
- To separate the waste container from the material storage area and properly sort the waste before disposal;
- To remove the waste and keep the site area clean and tidy;
- To remove the stagnant water for prevention and control of mosquito;
- To properly store the chemical waste in chemical waste storage area;
- To remove the waste for keeping the site clean and tidy;
- To regularly remove the sediment;
- To properly maintain the wastewater treatment plant and wastewater collection facilities such as soak away pit;
- To remove the stagnant water;
- To provide and maintain the Tree Protection Zone (TPZ) for the retained trees;
- To remove excess soil and set up robust fence;
- No works were allowed to undertake within the TPZ.
- To properly maintain the TPZ.
- To frequently remove the stagnant water during wet season for prevention and control of mosquito and keeping the site clean and tidy;
- To frequently collect the general waste for keeping the site areas clean and tidy;
- To properly cover and protect the slope;
- To frequently implement the water spraying and cover the exposed surface as possible;

- To set up the pumps and drainage system for collecting and directing the water from the underground areas;
- To remove the sand and silt from the drip tray and also relocate the generator for preventing close to the slope;
- To remove the cement and properly store the dusty materials;
- To replace the tarpaulin sheets and properly protect the slope;
- To provide sandbags along the edge of the excavation area such to prevent the dust from entering the neighbouring roads;
- To remove the waste materials as these materials fall within the site area;
- No properly maintain the TPZ;
- To provide TPZ with robust fence at the dripline of all retained and to-be-transplanted trees;
- To provide sufficient stabilization system and mulching to the transplanted trees.
- To remove the ties;
- To conduct crown pruning for the existing tree which next to T24.

### 9.3 Conclusions

This is the quarterly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during 1<sup>st</sup> May 2016 to 31<sup>st</sup> July 2016 in accordance with the EM&A Manual.

No exceedance of action level and limit level was recorded for TSP. Eight exceedances were recorded at NM2 and sixteen exceedances were recorded at NM4 for noise. No Non-compliance event, environmental complaint, notification of summons and successful prosecution against the Project were received in this reporting month.

13 nos. of environmental site inspections and 6 nos. of landscape and visual inspections were carried out in this reporting month. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.

ET has reminded the contractor to provided environmental pollution control measures, waste management measures and good site practice

The ET will keep tracking of the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all the necessary mitigation measures.

## Appendix A: Construction Programme and Project Layout Plan

ID	Task Name	Duration	Start	Finish	2015				2016				2017			
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
1	<b>Road Improvement Works in West Kowloon Reclamation Development</b>	<b>956 d</b>	<b>Mon 23/3/15</b>	<b>Thu 2/11/17</b>												
2	<b>West Kowloon Highway South Bound near Western Harbour Tunnel at Portion I</b>	<b>956 d</b>	<b>Mon 23/3/15</b>	<b>Thu 2/11/17</b>												
3	Site Clearance, tree felling	320 d	Mon 23/3/15	Fri 5/2/16												
4	Underground investigation, utilities diversion and piling construction	250 d	Sat 6/2/16	Wed 12/10/16												
5	Pile cap, Pier and Bridge Deck construction	180 d	Thu 13/10/16	Mon 10/4/17												
6	E&M installation and roadworks	76 d	Tue 11/4/17	Sun 25/6/17												
7	Street furniture installation	130 d	Mon 26/6/17	Thu 2/11/17												
8																
9																
10	<b>Canton road at Portion Q</b>	<b>956 d</b>	<b>Mon 23/3/15</b>	<b>Thu 2/11/17</b>												
11	Site Clearance, tree felling	320 d	Mon 23/3/15	Fri 5/2/16												
12	Road works at Canton road footpath and utilities diversion	100 d	Sat 6/2/16	Sun 15/5/16												
13	Construction of sign gantry	50 d	Mon 16/5/16	Mon 4/7/16												
14	Road works at Ferry Street and Jordan road	236 d	Tue 5/7/16	Sat 25/2/17												
15	Road works at Wui Cheung road	250 d	Sun 26/2/17	Thu 2/11/17												
16																
17																
18	<b>Lin Cheung Road North Bound at Portion HA</b>	<b>912 d</b>	<b>Mon 23/3/15</b>	<b>Tue 19/9/17</b>												
19	Site Clearance, tree felling	320 d	Mon 23/3/15	Fri 5/2/16												
20	Underground investigation, utilities diversion and piling construction	250 d	Sat 6/2/16	Wed 12/10/16												
21	Pile cap, Pier and Bridge Deck construction	180 d	Thu 13/10/16	Mon 10/4/17												
22	E&M installation and roadworks	42 d	Tue 11/4/17	Mon 22/5/17												
23	Street furniture installation	120 d	Tue 23/5/17	Tue 19/9/17												
24																
25																
26	<b>Lin Cheung Road South Bound at Portion J</b>	<b>730 d</b>	<b>Mon 23/3/15</b>	<b>Tue 21/3/17</b>												
27	Site Clearance, tree felling	320 d	Mon 23/3/15	Fri 5/2/16												
28	Construction of retaining walls and utilities diversion	140 d	Sat 6/2/16	Fri 24/6/16												
29	Site formation and roadworks	140 d	Sat 25/6/16	Fri 11/11/16												
30	Street furniture installation	130 d	Sat 12/11/16	Tue 21/3/17												

Task



Critical Task



Progress



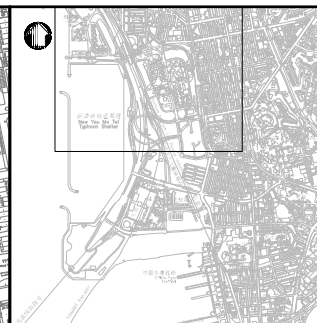
Milestone



Summary







LOCATION PLAN

LEGEND:

- AM1/NM1  
(AIR MONITORING STATION/NOISE MONITORING STATION)
- WORKS BOUNDARY

Rev	Description	By	Date

Consultant  
**PARSONS  
BRINCKERHOFF**

漢  
綠 **CINOTECH**

Project title  
AGREEMENT NO. CE 44/2011 (HY)  
PROPOSED ROAD IMPROVEMENT WORKS IN  
WEST KOWLOON RECLAMATION DEVELOPMENT  
- PHASE 1 INVESTIGATION,  
DESIGN AND CONSTRUCTION

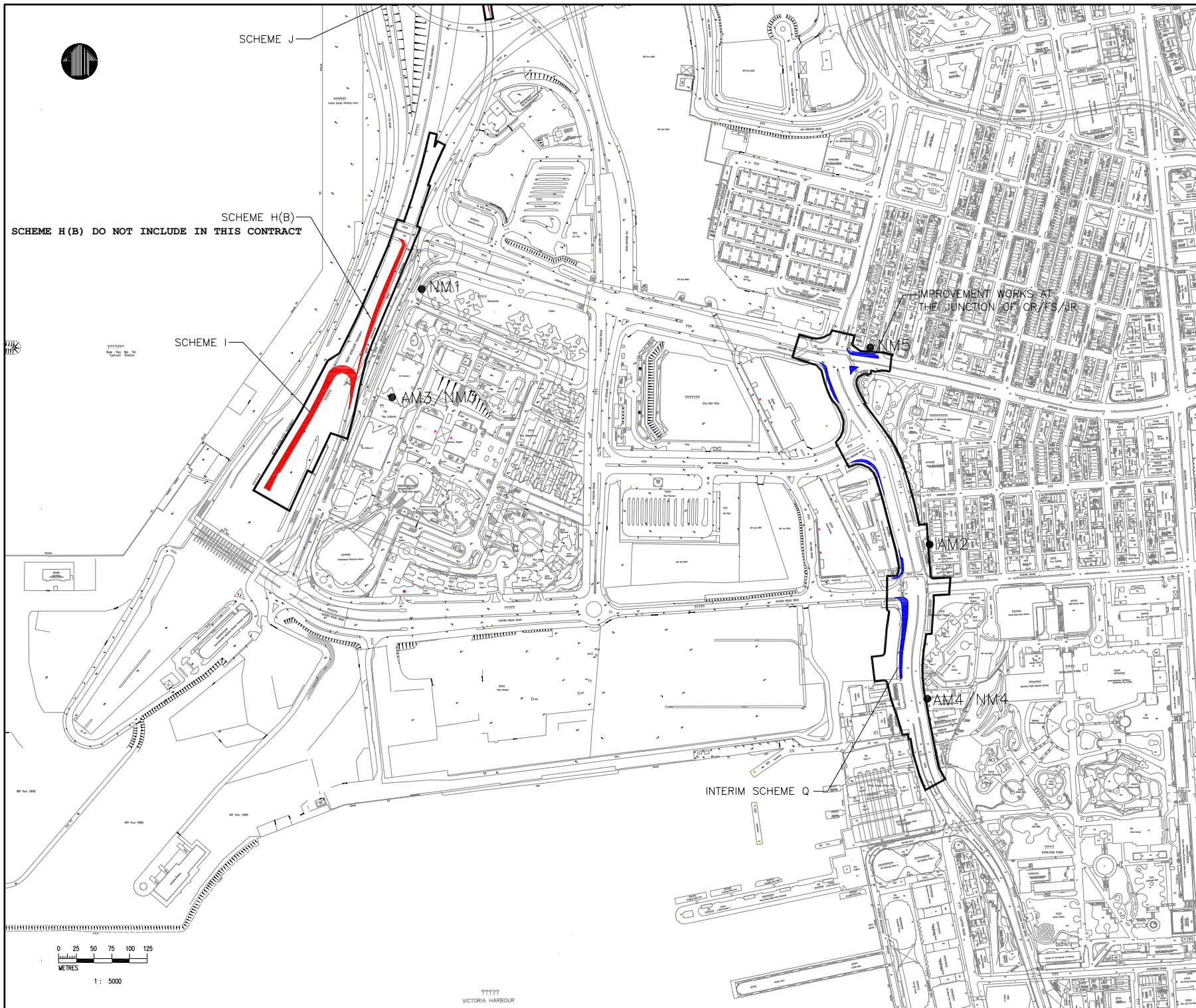
Drawing title  
**LOCATION OF MONITORING  
STATIONS (PAGE 1 OF 2)**

Drawing no.	CE44/T/ST/EM03			Rev.	2
Drawn	MC	Date	AUG13	Checked	KS
Scale	A3 1:5000	Status	PRELIMINARY	Approved	LC

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 路政署  
**HIGHWAYS DEPARTMENT**  
主要工程管理部  
MAJOR WORKS PROJECT MANAGEMENT OFFICE





LOCATION PLAN

LEGEND:

- AM1/NM1  
(AIR MONITORING STATION/NOISE MONITORING STATION)
- WORKS BOUNDARY

Rev	Description	By	Date

Consultant  
**PARSONS BRINCKERHOFF**

漢綠 CINOTECH

Project title  
AGREEMENT NO. CE 44/2011 (HY)  
PROPOSED ROAD IMPROVEMENT WORKS IN WEST KOWLOON RECLAMATION DEVELOPMENT – PHASE 1 INVESTIGATION, DESIGN AND CONSTRUCTION

Drawing title  
LOCATION OF MONITORING STATIONS (PAGE 2 OF 2)

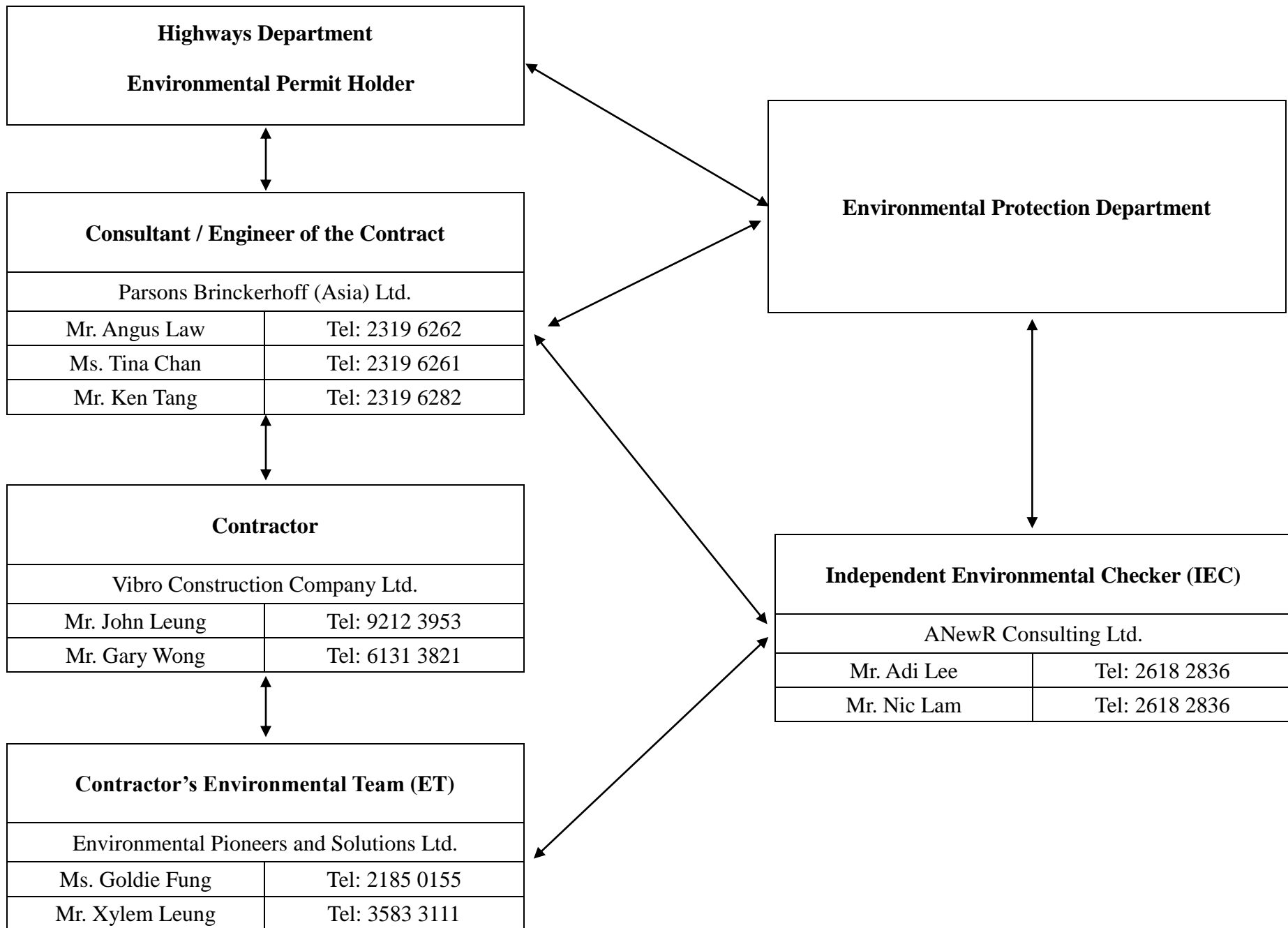
Drawing no.	CE44/T/ST/EM04	Rev.	2
Drawn	MC	Date	AUG13
Checked	KS	Approved	LC
Scale	A3 1:5000	Status	PRELIMINARY

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HIGHWAYS DEPARTMENT  
主要工程管理部  
MAJOR WORKS PROJECT MANAGEMENT OFFICE

## Appendix B: Project Organization Chart

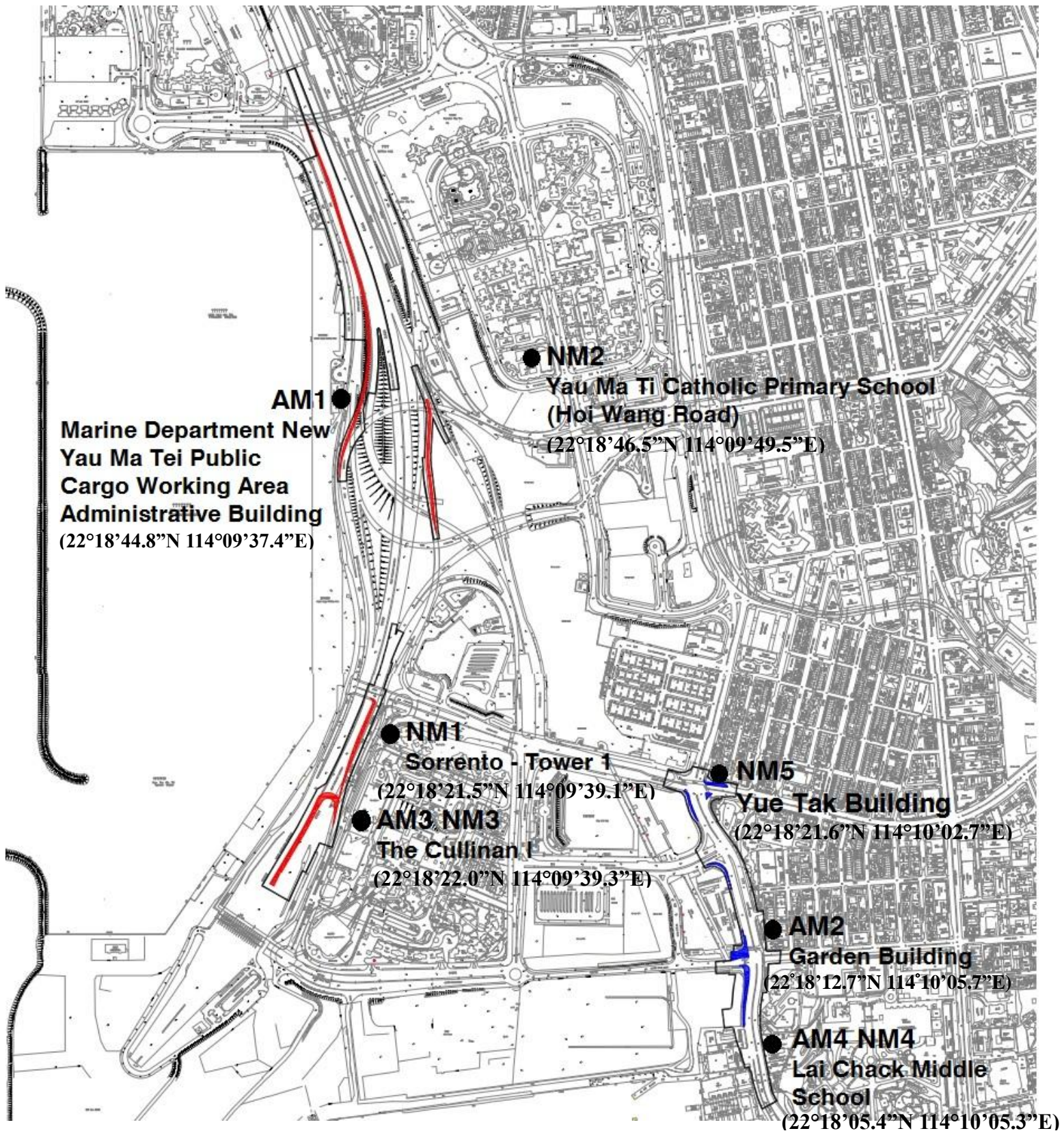








↔ Line of communication






## Appendix C: Monitoring Locations

## Locations for 1-hr TSP and Noise monitoring



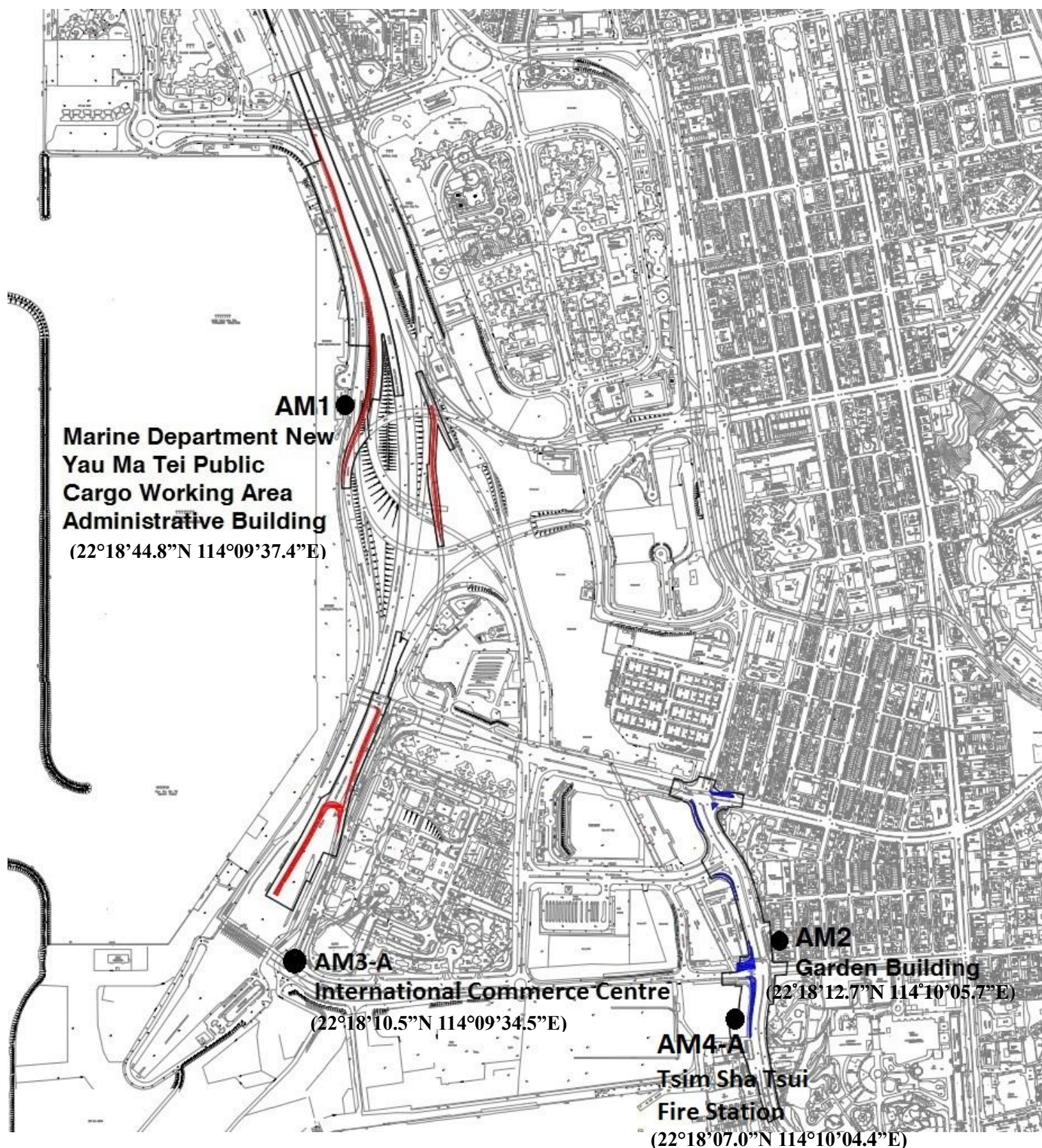


Monitoring Location	Photo Record
<p>AM1</p> <p>Marine Department New Yau Ma Tei Public Cargo Working Area Administrative Building</p>	
<p>AM2</p> <p>Garden Building</p>	
<p>AM3</p> <p>The Cullinan I</p>	
<p>AM4</p> <p>Lai Chack Middle School</p>	

Monitoring Location	Photo Record
<p>NM1</p> <p>Sorrento - Tower 1</p>	
<p>NM2</p> <p>Yau Ma Ti Catholic Primary School (Hoi Wang Road)</p>	
<p>NM3</p> <p>The Cullinan I</p>	
<p>NM4</p> <p>Lai Chack Middle School</p>	
<p>NM5</p> <p>Yue Tak Building</p>	



## Locations for 24-hr TSP monitoring



Monitoring Location	Photo Record
<p>AM1</p> <p>Marine Department New Yau Ma Tei Public Cargo Working Area Administrative Building</p>	 <p>A photograph of a grey, box-like monitoring station with a white door and a small display screen. It is situated on a paved rooftop area next to a white door. A date stamp '2016/11/07' is visible in the bottom right corner.</p>
<p>AM2</p> <p>Garden Building</p>	 <p>A photograph of a grey monitoring station outdoors. It has a white door and a small display screen. A date stamp '2016/05/18' is visible in the bottom right corner.</p>
<p>AM3-A</p> <p>International Commerce Centre (Contractor Work Area 4)</p>	 <p>A photograph of a grey monitoring station in a construction area. It is surrounded by red and white safety barriers. A date stamp '2015/12/17' is visible in the bottom right corner.</p>

## Appendix D: TSP Monitoring Data

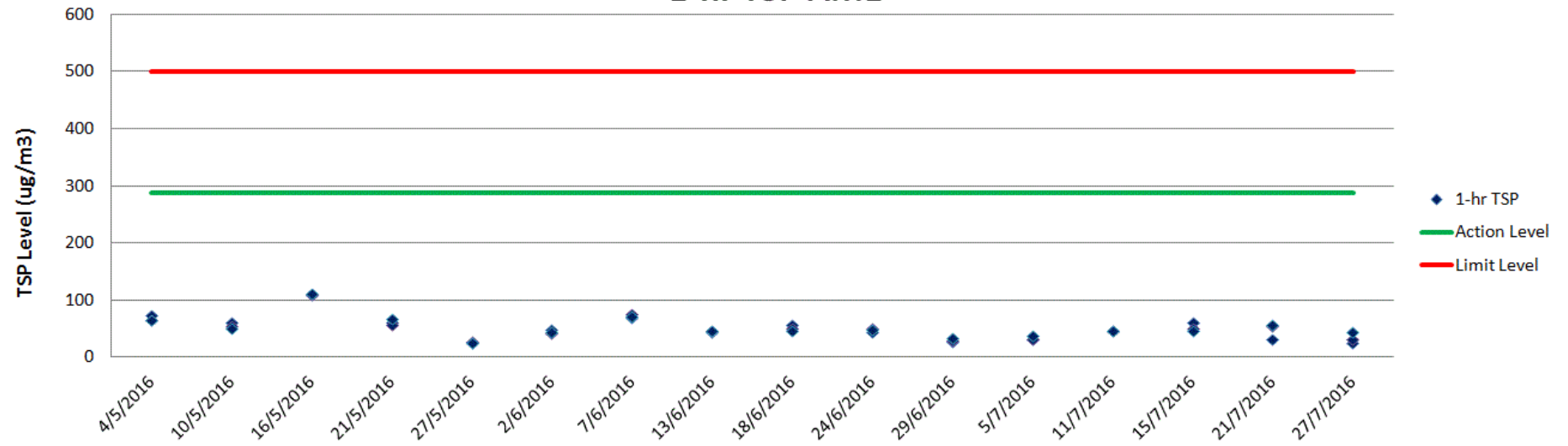


# 1-hr TSP Monitoring Result for AM1

Date	Weather	Temperature (°C) *	Wind Direction *	Wind Speed (m/s) *	Sampling Time			Reading (μ g/m <sup>3</sup> )			
					1	2	3	1	2	3	Average
4/5/2016	Overcast	24.0 - 28.3	SE	0.0 - 4.2	15:15	16:16	17:17	75	65	65	68
10/5/2016	Overcast	23.0 - 27.0	SE	0.0 - 4.2	13:56	14:57	15:58	61	56	52	56
16/5/2016	Overcast	22.0 - 27.0	W	0.0 - 4.2	14:51	15:52	16:53	109	109	111	110
21/5/2016	Overcast	24.3 - 28.1	W	0.0 - 4.4	9:29	10:30	11:31	61	57	67	62
27/5/2016	Overcast	26.0 - 28.8	SE	1.6 - 6.1	10:20	11:21	12:22	25	28	25	26
2/6/2016	Sunny	29.0 - 32.9	W	0.0 - 5.0	13:49	14:50	15:51	49	43	45	46
7/6/2016	Cloudy	26.0 - 31.0	SE	0.0 - 4.2	14:33	15:34	16:35	70	76	72	73
13/6/2016	Cloudy	28.0 - 31.4	W	0.8 - 4.7	11:15	12:16	13:17	45	46	47	46
18/6/2016	Cloudy	28.0 - 31.0	W	0.3 - 3.3	10:25	11:26	12:27	58	52	46	52
24/6/2016	Sunny	28.1 - 33.2	NW	0.0 - 4.4	13:52	14:53	15:54	45	51	50	49
29/6/2016	Sunny	27.0 - 32.0	SE	0.0 - 5.2	13:06	14:07	15:08	28	31	35	31
5/7/2016	Sunny	25.3 - 31.0	SE	0.0 - 5.8	14:14	15:15	16:16	33	32	39	35
11/7/2016	Cloudy	25.3 - 31.0	W	0.0 - 5.0	13:50	14:51	15:52	47	47	47	47
15/7/2016	Sunny	28.0 - 32.1	W	0.0 - 5.0	9:17	10:18	11:19	62	52	47	54
21/7/2016	Sunny	27.3 - 32.3	W	0.0 - 4.4	15:06	16:07	17:08	32	55	58	48
27/7/2016	Sunny	27.3 - 32.8	SW	0.0 - 4.2	13:06	14:07	15:08	27	33	44	35

\*Remark: Data of temperature, wind direction and wind speed was extracted from King's Park Meteorological Station of HKO

## 1-hr TSP AM1

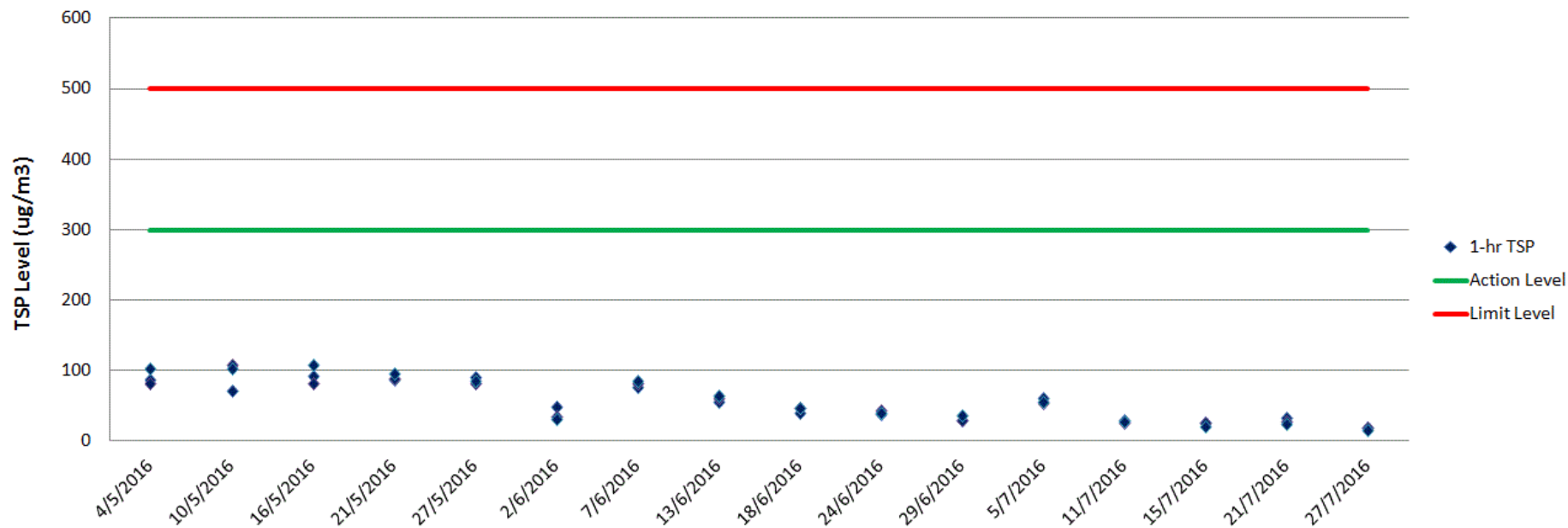


## 1-hr TSP Monitoring Result for AM2

Date	Weather	Temperature (°C) *	Wind Direction *	Wind Speed (m/s) *	Sampling Time			Reading (μ g/m³)			
					1	2	3	1	2	3	Average
4/5/2016	Overcast	24.0 - 28.3	SE	0.0 - 4.2	10:56	11:57	12:58	88	82	104	91
10/5/2016	Overcast	23.0 - 27.0	SE	0.0 - 4.2	10:54	11:55	12:56	72	109	103	95
16/5/2016	Overcast	22.0 - 27.0	W	0.0 - 4.2	10:59	12:00	13:01	93	83	109	95
21/5/2016	Overcast	24.3 - 28.1	W	0.0 - 4.4	11:05	12:06	13:07	88	89	97	91
27/5/2016	Overcast	26.0 - 28.8	SE	1.6 - 6.1	10:52	11:53	12:54	92	83	86	87
2/6/2016	Sunny	29.0 - 32.9	W	0.0 - 5.0	13:15	14:16	15:17	50	36	32	39
7/6/2016	Cloudy	26.0 - 31.0	SE	0.0 - 4.2	8:59	10:00	11:01	78	82	86	82
13/6/2016	Cloudy	28.0 - 31.4	W	0.8 - 4.7	15:00	16:01	17:02	56	62	65	61
18/6/2016	Cloudy	28.0 - 31.0	W	0.3 - 3.3	14:00	15:01	16:02	41	48	47	45
24/6/2016	Sunny	28.1 - 33.2	NW	0.0 - 4.4	14:00	15:01	16:02	38	44	40	41
29/6/2016	Sunny	27.0 - 32.0	SE	0.0 - 5.2	14:00	15:01	16:02	30	30	37	32
5/7/2016	Sunny	25.3 - 31.0	SE	0.0 - 5.8	9:23	10:24	11:25	62	54	56	57
11/7/2016	Cloudy	25.3 - 31.0	W	0.0 - 5.0	9:38	10:39	11:40	30	26	29	28
15/7/2016	Sunny	28.0 - 32.1	W	0.0 - 5.0	9:40	10:41	11:42	26	27	21	25
21/7/2016	Sunny	27.3 - 32.3	W	0.0 - 4.4	9:56	10:57	11:58	34	28	25	29
27/7/2016	Sunny	27.3 - 32.8	SW	0.0 - 4.2	10:30	11:31	12:32	20	20	16	19

\*Remark: Data of temperature, wind direction and wind speed was extracted from King's Park Meteorological Station of HKO

## 1-hr TSP AM2

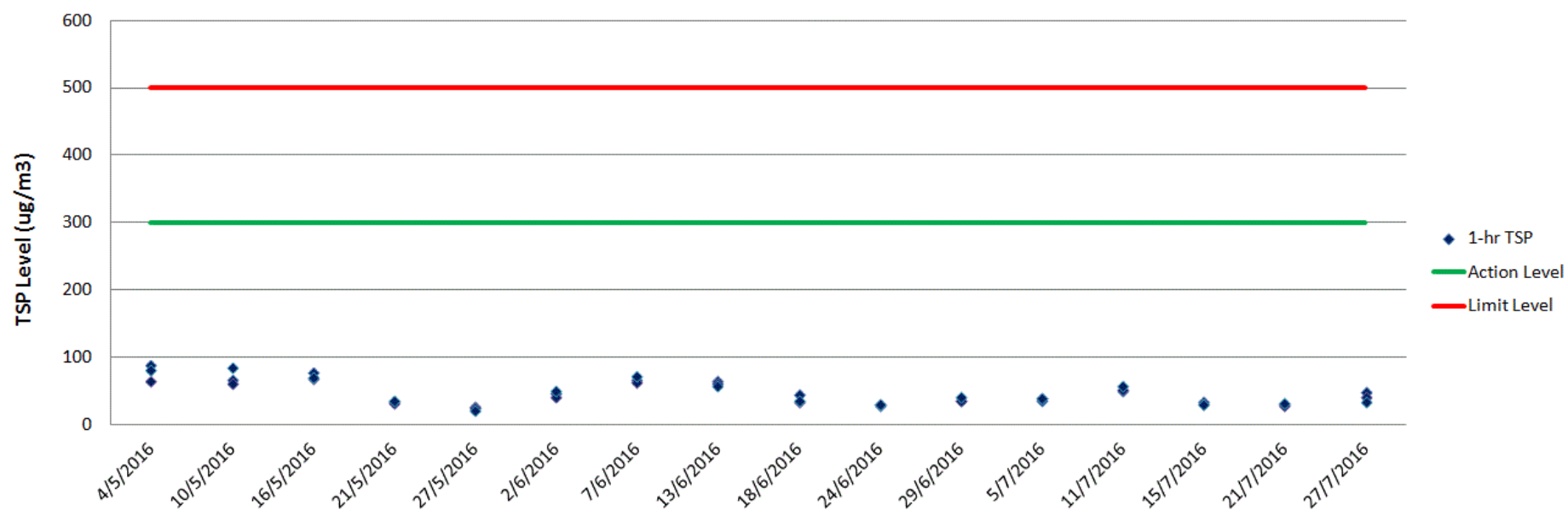


1-hr TSP Monitoring Result for AM3

Date	Weather	Temperature (°C) *	Wind Direction *	Wind Speed (m/s) *	Sampling Time			Reading (μ g/m³)			
					1	2	3	1	2	3	Average
4/5/2016	Overcast	24.0 - 28.3	SE	0.0 - 4.2	15:46	16:47	17:48	89	64	81	78
10/5/2016	Overcast	23.0 - 27.0	SE	0.0 - 4.2	15:10	16:11	17:12	67	60	86	71
16/5/2016	Overcast	22.0 - 27.0	W	0.0 - 4.2	15:31	16:32	17:33	78	69	71	73
21/5/2016	Overcast	24.3 - 28.1	W	0.0 - 4.4	10:10	11:11	12:12	33	31	35	33
27/5/2016	Overcast	26.0 - 28.8	SE	1.6 - 6.1	10:50	11:51	12:52	26	24	21	24
2/6/2016	Sunny	29.0 - 32.9	W	0.0 - 5.0	14:38	15:39	16:40	47	40	50	46
7/6/2016	Cloudy	26.0 - 31.0	SE	0.0 - 4.2	15:18	16:19	17:20	67	62	73	67
13/6/2016	Cloudy	28.0 - 31.4	W	0.8 - 4.7	11:18	12:19	13:20	64	60	57	60
18/6/2016	Cloudy	28.0 - 31.0	W	0.3 - 3.3	10:32	11:33	12:34	44	34	35	38
24/6/2016	Sunny	28.1 - 33.2	NW	0.0 - 4.4	14:09	15:10	16:11	28	29	30	29
29/6/2016	Sunny	27.0 - 32.0	SE	0.0 - 5.2	13:16	14:17	15:18	36	35	41	37
5/7/2016	Sunny	25.3 - 31.0	SE	0.0 - 5.8	14:50	15:51	16:52	36	39	40	38
11/7/2016	Cloudy	25.3 - 31.0	W	0.0 - 5.0	14:34	15:35	16:36	50	52	57	53
15/7/2016	Sunny	28.0 - 32.1	W	0.0 - 5.0	10:04	11:05	12:06	33	30	31	31
21/7/2016	Sunny	27.3 - 32.3	W	0.0 - 4.4	15:40	16:41	17:42	30	28	32	30
27/7/2016	Sunny	27.3 - 32.8	SW	0.0 - 4.2	13:36	14:37	15:38	48	41	34	41

\*Remark: Data of temperature, wind direction and wind speed was extracted from King's Park Meteorological Station of HKO

# 1-hr TSP AM3

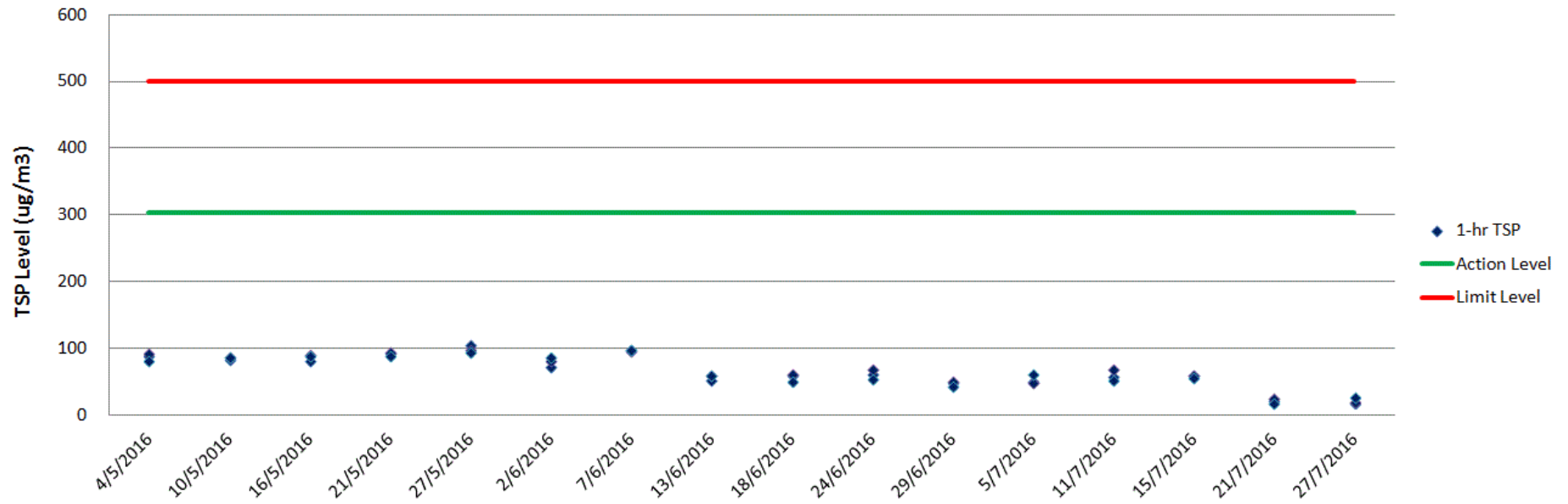


1-hr TSP Monitoring Result for AM4

Date	Weather	Temperature (°C) *	Wind Direction *	Wind Speed (m/s) *	Sampling Time			Reading (μ g/m³)			
					1	2	3	1	2	3	Average
4/5/2016	Overcast	24.0 - 28.3	SE	0.0 - 4.2	10:58	11:59	13:00	89	92	82	88
10/5/2016	Overcast	23.0 - 27.0	SE	0.0 - 4.2	10:56	11:57	12:58	83	86	87	85
16/5/2016	Overcast	22.0 - 27.0	W	0.0 - 4.2	10:59	12:00	13:01	82	89	89	87
21/5/2016	Overcast	24.3 - 28.1	W	0.0 - 4.4	11:07	12:08	13:09	92	93	89	91
27/5/2016	Overcast	26.0 - 28.8	SE	1.6 - 6.1	10:55	11:56	12:57	106	98	95	100
2/6/2016	Sunny	29.0 - 32.9	W	0.0 - 5.0	9:01	10:02	11:03	72	81	87	80
7/6/2016	Cloudy	26.0 - 31.0	SE	0.0 - 4.2	13:02	14:03	15:04	98	96	99	98
13/6/2016	Cloudy	28.0 - 31.4	W	0.8 - 4.7	15:06	16:07	17:08	53	59	59	57
18/6/2016	Cloudy	28.0 - 31.0	W	0.3 - 3.3	13:05	14:06	15:07	59	61	51	57
24/6/2016	Sunny	28.1 - 33.2	NW	0.0 - 4.4	13:00	14:01	15:02	62	67	55	61
29/6/2016	Sunny	27.0 - 32.0	SE	0.0 - 5.2	13:00	14:01	15:02	49	50	44	48
5/7/2016	Sunny	25.3 - 31.0	SE	0.0 - 5.8	9:25	10:26	11:27	51	48	62	54
11/7/2016	Cloudy	25.3 - 31.0	W	0.0 - 5.0	13:57	14:58	15:59	58	67	53	59
15/7/2016	Sunny	28.0 - 32.1	W	0.0 - 5.0	14:01	15:02	16:03	60	59	57	59
21/7/2016	Sunny	27.3 - 32.3	W	0.0 - 4.4	13:53	14:54	15:55	22	25	17	21
27/7/2016	Sunny	27.3 - 32.8	SW	0.0 - 4.2	13:51	14:52	15:53	18	18	27	21

\*Remark: Data of temperature, wind direction and wind speed was extracted from King's Park Meteorological Station of HKO

## 1-hr TSP AM4



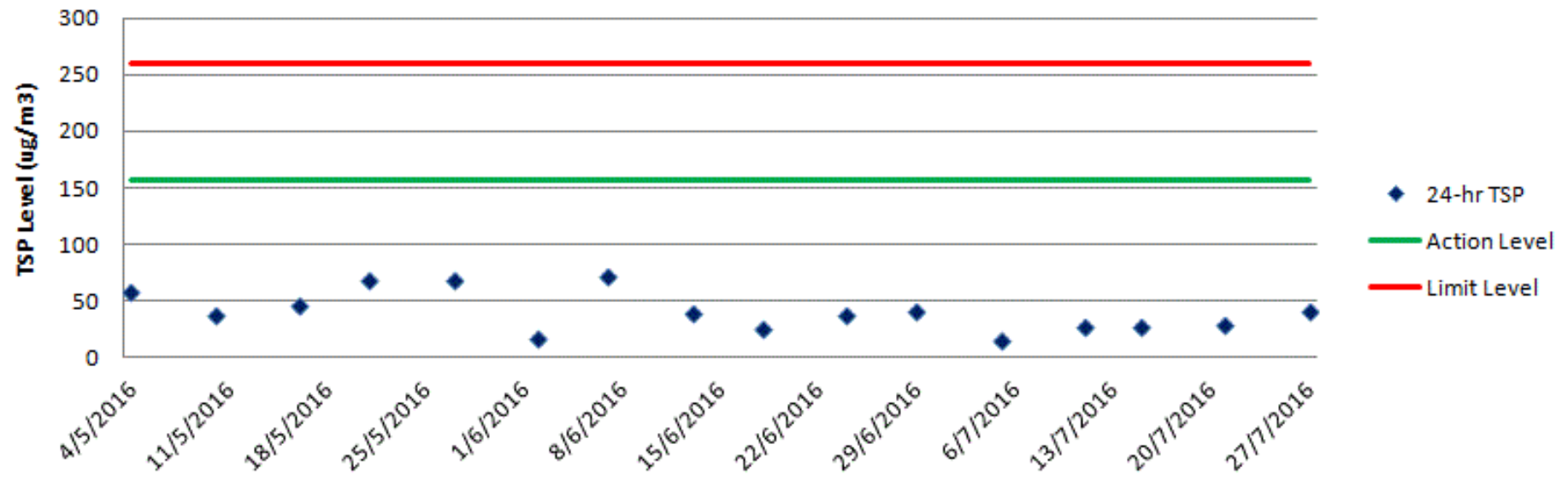


## 24-hr TSP Monitoring Result for AM1

Sampling ID & Paper No.	Temperature (°C) *	Wind Diection *	Wind Speed (m/s) *	Sampling Date	Wt. of paper (g)			Flow Rate (CFM)			Total Volume (m <sup>3</sup> )	TSP Concentration (µg/m <sup>3</sup> )
					Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Avg Flow Rate		
AM10504 200577	23.0 - 28.4	SE	0.0 - 4.2	04/05/16	2.8076	2.9405	0.1329	56	56	56.0	2283.47	58
AM10510 200576	22.8 - 27.7	W	0.0 - 4.2	10/05/16	2.8235	2.9074	0.0839	56	56	56.0	2283.47	37
AM10516 201023	22.0 - 27.1	NE	0.3 - 4.2	16/05/16	2.8005	2.9059	0.1054	56	56	56.0	2283.47	46
AM10521 201024	24.3 - 28.1	W	0.0 - 4.4	21/05/16	2.8163	2.9708	0.1545	56	56	56.0	2283.47	68
AM10527 201025	25.5 - 28.6	SE	1.7 - 6.1	27/05/16	2.8263	2.9823	0.1560	56	56	56.0	2283.47	68
AM10602 201041	29.0 - 33.0	SW	0.0 - 4.2	02/06/16	2.8384	2.8781	0.0397	55	55	55.0	2242.69	18
AM10607 200498	25.9 - 31.1	SE	0.0 - 4.2	07/06/16	2.8134	2.9756	0.1622	55	55	55.0	2242.69	72
AM10613 201026	28.0 - 31.3	NW	0.8 - 4.7	13/06/16	2.8320	2.9210	0.0890	55	55	55.0	2242.69	40
AM10618 201024	27.2 - 31.0	SW	0.0 - 3.3	18/06/16	2.8386	2.8948	0.0562	55	55	55.0	2242.69	25
AM10624 201025	28.1 - 33.2	SE	0.0 - 4.2	24/06/16	2.8291	2.9127	0.0836	55	55	55.0	2242.69	37
AM10629 201049	27.0 - 32.1	S	0.0 - 5.0	29/06/16	2.8283	2.9227	0.0944	55	55	55.0	2242.69	42
AM10705 201062	25.3 - 31.0	SE	0.0 - 5.8	05/07/16	2.8095	2.8430	0.0335	55	55	55.0	2242.69	15
AM10711 201059	25.3 - 31.0	W	0.0 - 5.0	11/07/16	2.8193	2.8801	0.0608	55	55	55.0	2242.69	27
AM10715 201060	28.0 - 32.1	W	0.0 - 5.0	15/07/16	2.8160	2.8757	0.0597	55	55	55.0	2242.69	27
AM10721 201063	27.3 - 32.3	W	0.0 - 4.4	21/07/16	2.7963	2.8592	0.0629	55	55	55.0	2242.69	28
AM10727 201292	27.3 - 32.8	SW	0.0 - 4.2	27/07/16	2.7414	2.8349	0.0935	55	55	55.0	2242.69	42

\*Remark: Data of temperature, wind direction and wind speed was extracted from King's Park Meteorological Station of HKO

## 24-hr TSP AM1

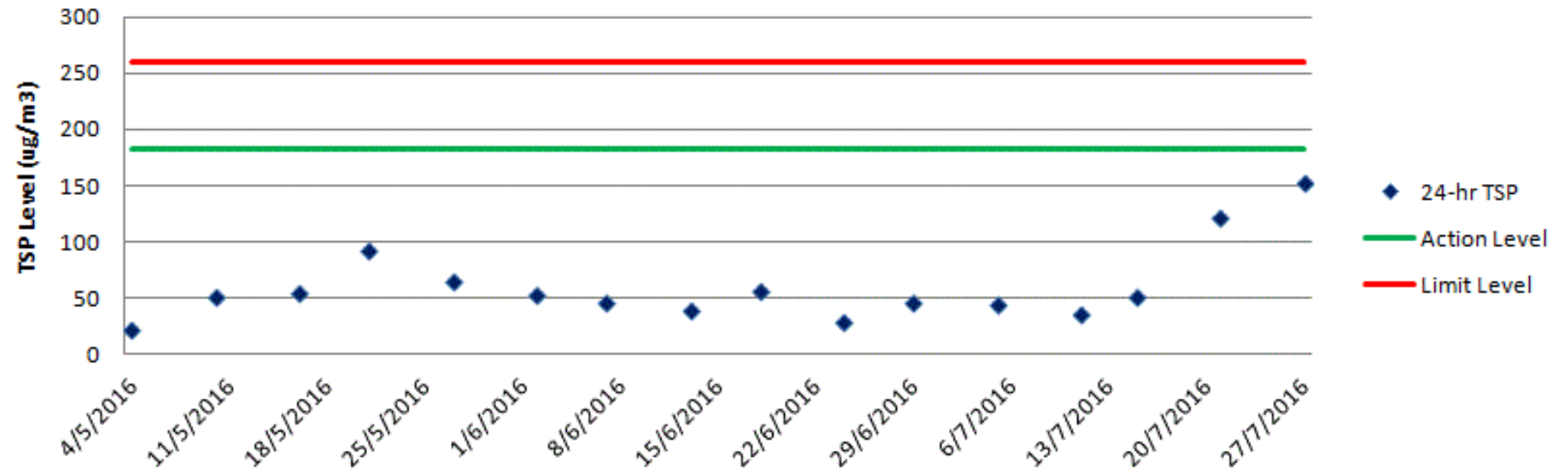


## 24-hr TSP Monitoring Result for AM2

Sampling ID & Paper No.	Temperature (°C) *	Wind Diection *	Wind Speed (m/s) *	Sampling Date	Wt. of paper (g)			Flow Rate (CFM)			Total Volume (m³)	TSP Concentration (µg/m3)
					Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Avg Flow Rate		
AM20504 200582	23.0 - 28.4	SE	0.0 - 4.2	04/05/16	2.7916	2.8378	0.0462	55	55	55.0	2242.69	21
AM20510 200580	22.8 - 27.7	W	0.0 - 4.2	10/05/16	2.8104	2.9245	0.1141	55	55	55.0	2242.69	51
AM20516 201036	22.0 - 27.1	NE	0.3 - 4.2	16/05/16	2.8500	2.9741	0.1241	55	55	55.0	2242.69	55
AM20521 201037	24.3 - 28.1	W	0.0 - 4.4	21/05/16	2.8575	3.0636	0.2061	55	55	55.0	2242.69	92
AM20527 201039	25.5 - 28.6	SE	1.7 - 6.1	27/05/16	2.8371	2.9839	0.1468	55	55	55.0	2242.69	65
AM20602 201038	29.0 - 33.0	SW	0.0 - 4.2	02/06/16	2.8488	2.9663	0.1175	55	55	55.0	2242.69	52
AM20607 201051	25.9 - 31.1	SE	0.0 - 4.2	07/06/16	2.8188	2.9218	0.1030	55	55	55.0	2242.69	46
AM20613 201053	28.0 - 31.3	NW	0.8 - 4.7	13/06/16	2.8130	2.9000	0.0870	55	55	55.0	2242.69	39
AM20618 201030	27.2 - 31.0	SW	0.0 - 3.3	18/06/16	2.8610	2.9858	0.1248	55	55	55.0	2242.69	56
AM20624 201054	28.1 - 33.2	SE	0.0 - 4.2	24/06/16	2.8397	2.9035	0.0638	55	55	55.0	2242.69	28
AM20629 201056	27.0 - 32.1	S	0.0 - 5.0	29/06/16	2.8341	2.9364	0.1023	55	55	55.0	2242.69	46
AM20705 201055	25.3 - 31.0	SE	0.0 - 5.8	05/07/16	2.8309	2.9373	0.1064	60	60	60.0	2446.58	43
AM20711 201066	25.3 - 31.0	W	0.0 - 5.0	11/07/16	2.7955	2.8836	0.0881	60	60	60.0	2446.58	36
AM20715 201065	28.0 - 32.1	W	0.0 - 5.0	15/07/16	2.7915	2.9174	0.1259	60	60	60.0	2446.58	51
AM20721 201068	27.3 - 32.3	W	0.0 - 4.4	21/07/16	2.7949	3.0911	0.2962	60	60	60.0	2446.58	121
AM20727 201052	27.3 - 32.8	SW	0.0 - 4.2	27/07/16	2.8134	3.1841	0.3707	60	60	60.0	2446.58	152

\*Remark: Data of temperature, wind direction and wind speed was extracted from King's Park Meteorological Station of HKO

## 24-hr TSP AM2

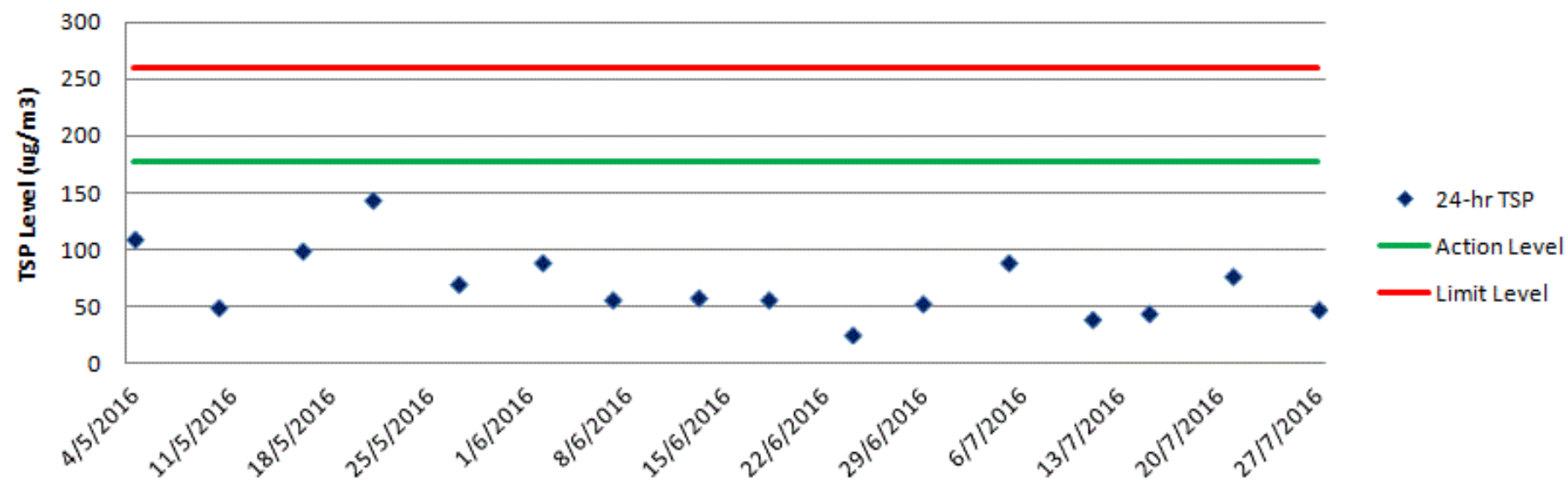


## 24-hr TSP Monitoring Result for AM3-A

Sampling ID & Paper No.	Temperature (°C) *	Wind Diection *	Wind Speed (m/s) *	Sampling Date	Wt. of paper (g)			Flow Rate (CFM)			Total Volume (m³)	TSP Concentration (µg/m³)
					Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Avg Flow Rate		
AM3-A0504 201021	23.0 - 28.4	SE	0.0 - 4.2	04/05/16	2.7970	3.0459	0.2489	55	55	55.0	2242.69	111
AM3-A0510 201035	22.8 - 27.7	W	0.0 - 4.2	10/05/16	2.8615	2.9736	0.1121	55	55	55.0	2242.69	50
AM3-A0516 201034	22.0 - 27.1	NE	0.3 - 4.2	16/05/16	2.8605	3.0847	0.2242	55	55	55.0	2242.69	100
AM3-A0521 201033	24.3 - 28.1	W	0.0 - 4.4	21/05/16	2.8473	3.1704	0.3231	55	55	55.0	2242.69	144
AM3-A0527 201032	25.5 - 28.6	SE	1.7 - 6.1	27/05/16	2.8504	3.0088	0.1584	55	55	55.0	2242.69	71
AM3-A0602 201044	29.0 - 33.0	SW	0.0 - 4.2	02/06/16	2.8313	3.0342	0.2029	55	55	55.0	2242.69	90
AM3-A0607 201046	25.9 - 31.1	SE	0.0 - 4.2	07/06/16	2.8185	2.9482	0.1297	55	55	55.0	2242.69	58
AM3-A0613 201045	28.0 - 31.3	NW	0.8 - 4.7	13/06/16	2.8300	2.9627	0.1327	55	55	55.0	2242.69	59
AM3-A0618 201042	27.2 - 31.0	SW	0.0 - 3.3	18/06/16	2.8456	2.9731	0.1275	55	55	55.0	2242.69	57
AM3-A0624 201050	28.1 - 33.2	SE	0.0 - 4.2	24/06/16	2.8193	2.8808	0.0615	55	55	55.0	2242.69	27
AM3-A0629 201043	27.0 - 32.1	S	0.0 - 5.0	29/06/16	2.8308	2.9512	0.1204	55	55	55.0	2242.69	54
AM3-A0705 201061	25.3 - 31.0	SE	0.0 - 5.8	05/07/16	2.7982	3.0000	0.2018	55	55	55.0	2242.69	90
AM3-A0711 201057	25.3 - 31.0	W	0.0 - 5.0	11/07/16	2.8313	2.9212	0.0899	55	55	55.0	2242.69	40
AM3-A0715 201058	28.0 - 32.1	W	0.0 - 5.0	15/07/16	2.8120	2.9146	0.1026	55	55	55.0	2242.69	46
AM3-A0721 201064	27.3 - 32.3	W	0.0 - 4.4	21/07/16	2.7961	2.9723	0.1762	55	55	55.0	2242.69	79
AM3-A0727 201291	27.3 - 32.8	SW	0.0 - 4.2	27/07/16	2.7549	2.8656	0.1107	55	55	55.0	2242.69	49

\*Remark: Data of temperature, wind direction and wind speed was extracted from King's Park Meteorological Station of HKO

## 24-hr TSP AM3-A



## Appendix E: Noise Monitoring Data

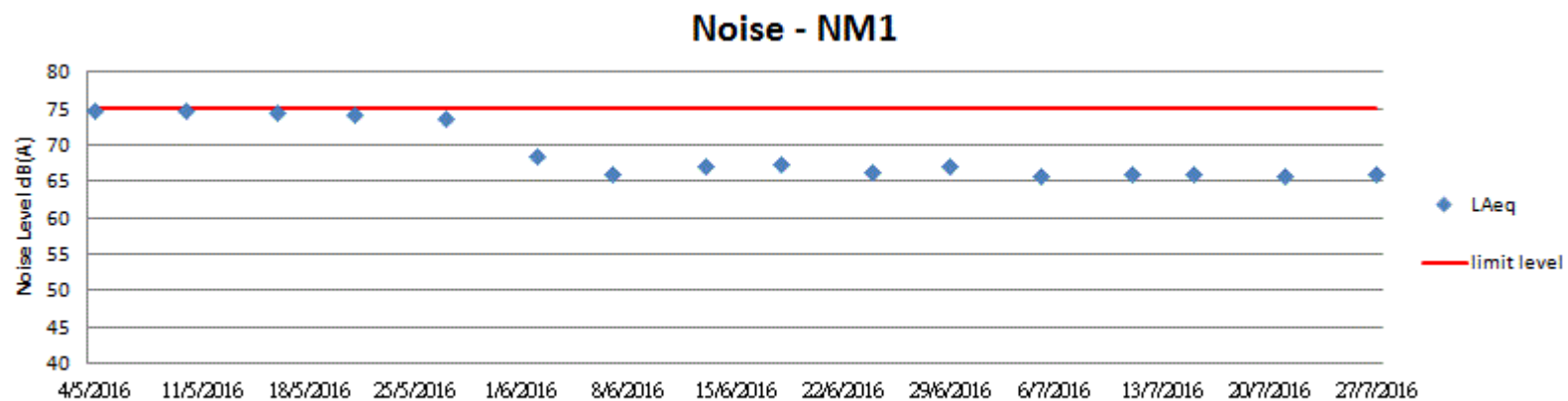
Noise Monitoring Result for NM1

Location	NM1				
Date	4/5/2016	10/5/2016	16/5/2016	21/5/2016	27/5/2016
Weather Condition	Sunny	Cloudy	Sunny	Cloudy	Cloudy
Start Time	16:30	15:55	16:42	10:59	13:10
Measurement Period	30min	30min	30min	30min	30min
Baseline Level	75.1				
L <sub>Aeq</sub>	74.8	74.7	74.6	74.3	73.6
L <sub>10</sub>	77.7	77.6	77.5	77.0	76.2
L <sub>90</sub>	69.6	69.8	69.4	69.2	67.4

Location	NM1					
Date	2/6/2016	7/6/2016	13/6/2016	18/6/2016	24/6/2016	29/6/2016
Weather Condition	Sunny	Cloudy	Cloudy	Cloudy	Sunny	Sunny
Start Time	15:33	15:49	13:50	13:02	17:11	13:43
Measurement Period	30min	30min	30min	30min	30min	30min
Baseline Level	75.1					
L <sub>Aeq</sub>	68.4	66.2	67.2	67.3	66.4	67.2
L <sub>10</sub>	71.5	67.6	68.6	68.9	67.7	68.7
L <sub>90</sub>	64.3	64.0	64.8	65.1	64.2	64.8



Location	NM1				
Date	5/7/2016	11/7/2016	15/7/2016	21/7/2016	27/7/2016
Weather Condition	Sunny	Cloudy	Sunny	Sunny	Sunny
Start Time	16:30	15:39	16:07	16:59	15:18
Measurement Period	30min	30min	30min	30min	30min
Baseline Level	75.1				
L <sub>Aeq</sub>	65.8	66.1	66.1	65.7	66.2
L <sub>10</sub>	67.3	67.6	67.6	66.9	67.8
L <sub>90</sub>	63.8	63.3	63.5	63.6	63.7



# Noise Monitoring Result for NM2

Location	NM2					NM2 (Re-measurement)*	
Date	4/5/2016	10/5/2016	16/5/2016	21/5/2016	27/5/2016	10/5/2016	27/5/2016
Weather Condition	Sunny	Cloudy	Sunny	Cloudy	Cloudy	Cloudy	Cloudy
Start Time	9:00	9:00	9:00	9:00	9:00	9:35	9:35
Measurement Period	30min	30min	30min	30min	30min	30min	30min
Baseline Level	66.5					66.5	
L <sub>Aeq</sub>	70.1	72.4	70.3	67.9	70.6	71.8	70.2
L <sub>10</sub>	73.6	76.5	75.0	70.1	72.8	74.9	72.7
L <sub>90</sub>	63.5	70.9	67.9	64.3	66.2	68.7	67.4

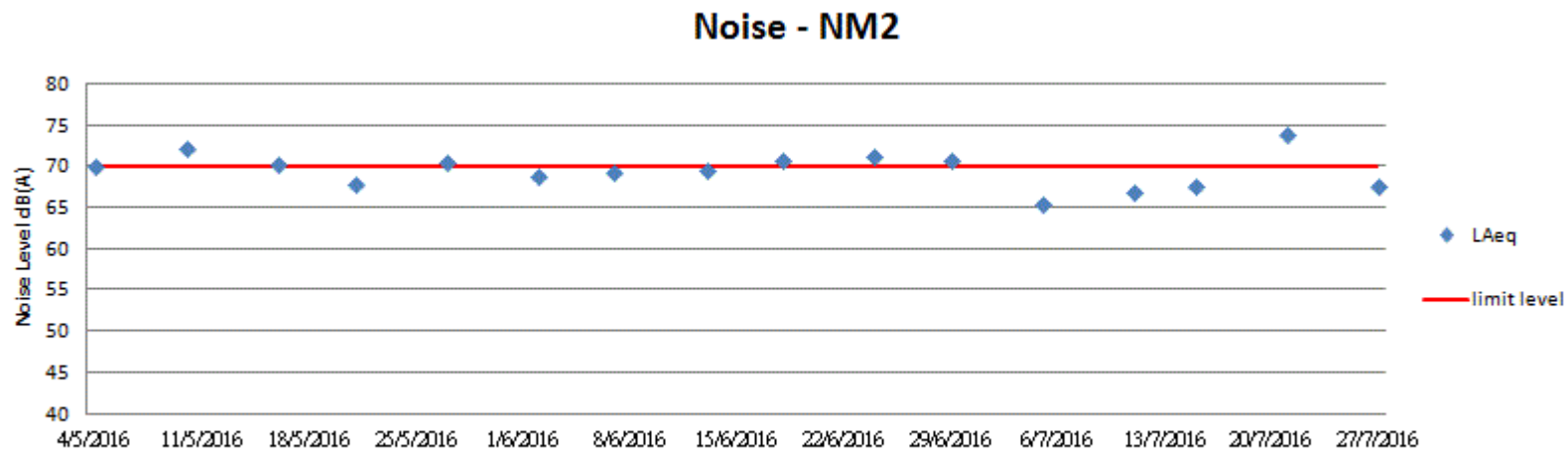
\* Repeat noise measurement when exceedance is recorded. The result is used to confirm the findings and it would not be showed on the graph plot

Location	NM2						NM2 (Re-measurement)*				
Date	2/6/2016	7/6/2016	13/6/2016	18/6/2016	24/6/2016	29/6/2016	2/6/2016	7/6/2016	18/6/2016	24/6/2016	29/6/2016
Weather Condition	Sunny	Cloudy	Cloudy	Cloudy	Sunny	Sunny	Sunny	Sunny	Cloudy	Sunny	Sunny
Start Time	14:21	9:00	9:00	9:00	9:00	15:20	15:00	9:35	9:35	9:35	16:00
Measurement Period	30min	30min	30min	30min	30min	30min	30min	30min	30min	30min	30min
Baseline Level	66.5						66.5				
L <sub>Aeq</sub>	68.9	69.5	69.7	70.9	71.3	70.8	70.9	72.4	71.8	70.2	69.4
L <sub>10</sub>	70.5	74.5	72.2	75.0	74.6	73.8	72.4	74.9	74.7	74.1	73.0
L <sub>90</sub>	66.5	62.5	65.6	61.0	65.1	64.5	66.7	64.2	62.3	64.8	64.1

\* Repeat noise measurement when exceedance is recorded. The result is used to confirm the findings and it would not be showed on the graph plot

Location	NM2					NM2 (Re-measurement)*
Date	5/7/2016	11/7/2016	15/7/2016	21/7/2016	27/7/2016	21/7/2016
Weather Condition	Sunny	Cloudy	Sunny	Sunny	Sunny	Sunny
Start Time	11:30	9:01	9:00	9:00	9:00	9:35
Measurement Period	30min	30min	30min	30min	30min	30min
Baseline Level	66.5					66.5
L <sub>Aeq</sub>	65.5	66.9	67.7	74.0	67.8	74.6
L <sub>10</sub>	66.2	68.3	69.3	77.7	67.2	78.1
L <sub>90</sub>	61.8	63.5	63.4	65.0	62.2	64.7

\* Repeat noise measurement when exceedance is recorded. The result is used to confirm the findings and it would not be showed on the graph plot

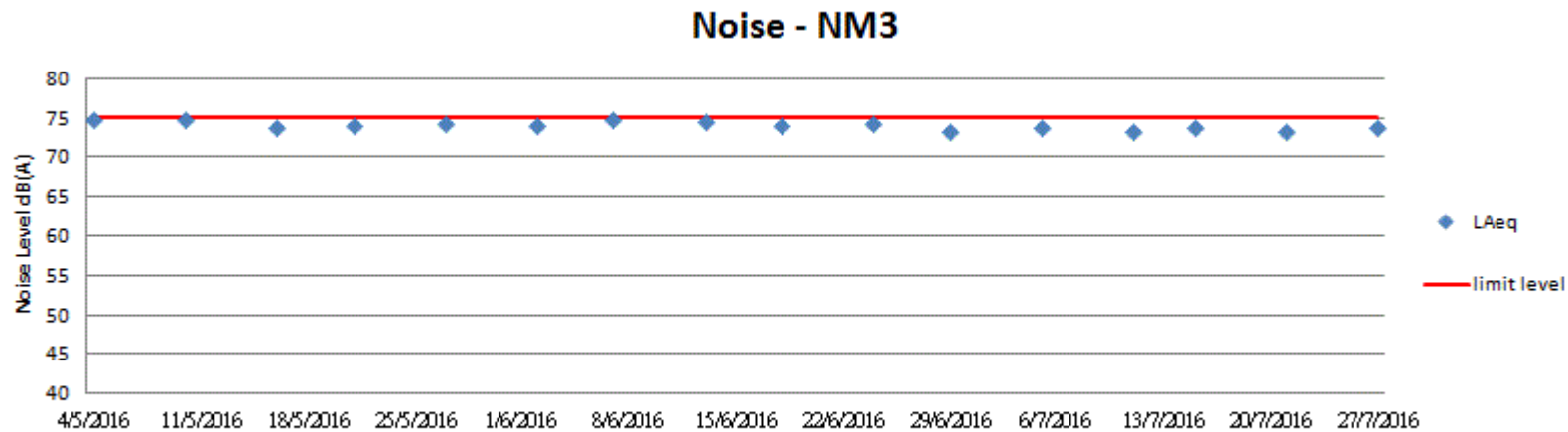


Noise Monitoring Result for NM3

Location	NM3				
Date	4/5/2016	10/5/2016	16/5/2016	21/5/2016	27/5/2016
Weather Condition	Sunny	Cloudy	Sunny	Cloudy	Cloudy
Start Time	15:56	15:21	17:16	10:27	13:49
Measurement Period	30min	30min	30min	30min	30min
Baseline Level	74.5				
L <sub>Aeq</sub>	74.9	75.0	74.1	74.2	74.5
L <sub>10</sub>	76.7	76.9	76.8	77.2	78.1
L <sub>90</sub>	72.1	71.5	70.4	70.5	72.4

Location	NM3					
Date	2/6/2016	7/6/2016	13/6/2016	18/6/2016	24/6/2016	29/6/2016
Weather Condition	Sunny	Cloudy	Cloudy	Cloudy	Sunny	Sunny
Start Time	14:37	16:39	13:00	14:00	16:25	12:57
Measurement Period	30min	30min	30min	30min	30min	30min
Baseline Level	74.5					
L <sub>Aeq</sub>	74.2	74.9	74.8	74.3	74.6	73.5
L <sub>10</sub>	77.2	77.7	77.9	77.0	76.1	76.4
L <sub>90</sub>	70.1	69.7	69.7	70.5	71.0	68.5

Location	NM3				
Date	5/7/2016	11/7/2016	15/7/2016	21/7/2016	27/7/2016
Weather Condition	Sunny	Cloudy	Sunny	Sunny	Sunny
Start Time	15:06	14:51	15:00	16:08	14:30
Measurement Period	30min	30min	30min	30min	30min
Baseline Level	74.5				
L <sub>Aeq</sub>	74.1	73.5	74.1	73.4	74.1
L <sub>10</sub>	77.2	76.1	76.8	75.8	75.4
L <sub>90</sub>	69.1	70.0	70.4	70.4	73.0



# Noise Monitoring Result for NM4

Location	NM4					NM4 (Re-measurement) *				
Date	4/5/2016	10/5/2016	16/5/2016	21/5/2016	27/5/2016	4/5/2016	10/5/2016	16/5/2016	21/5/2016	27/5/2016
Weather Condition	Sunny	Cloudy	Sunny	Cloudy	Sunny	Sunny	Cloudy	Sunny	Cloudy	Cloudy
Start Time	13:01	13:02	13:01	13:34	13:02	13:35	13:35	13:35	14:10	13:35
Measurement Period	30min	30min	30min	30min	30min	30min	30min	30min	30min	30min
Baseline Level	73.3					73.3				
L <sub>Aeq</sub>	73.7	73.5	74.2	73.2	73.6	73.9	74.5	73.8	74.1	73.5
L <sub>10</sub>	78.9	79.8	77.6	79.1	79.9	78.8	80.1	79.5	79.5	78.7
L <sub>90</sub>	66.9	66.4	66.2	64.8	65.8	66.8	67.1	65.7	63.8	65.8

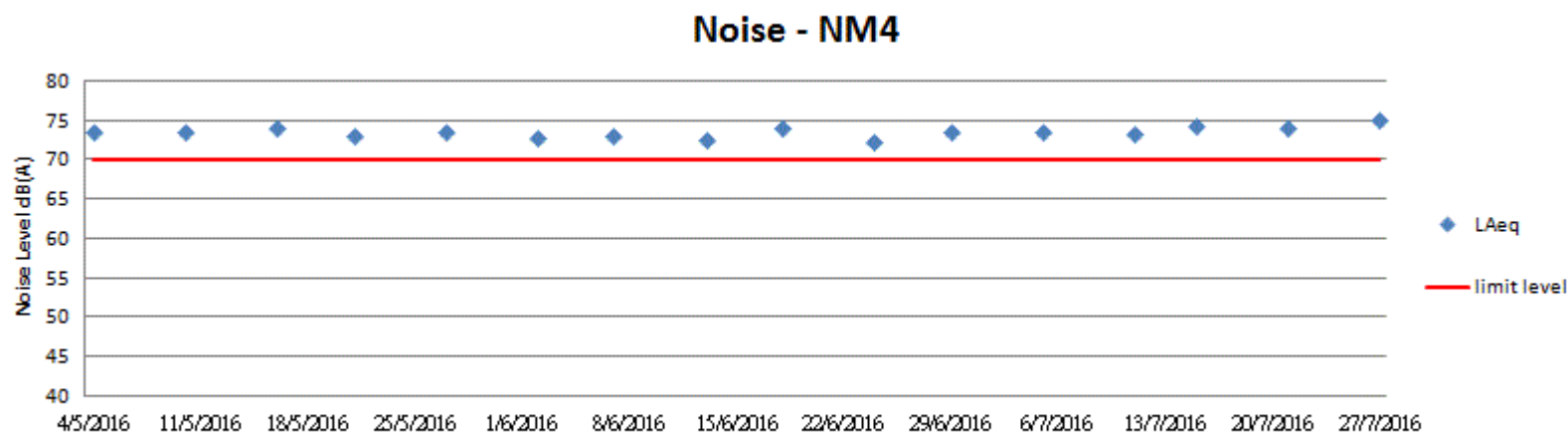
\* Repeat noise measurement when exceedance is recorded. The result is used to confirm the findings and it would not be showed on the graph plot

Location	NM4						NM4 (Re-measurement) *					
Date	2/6/2016	7/6/2016	13/6/2016	18/6/2016	24/6/2016	29/6/2016	2/6/2016	7/6/2016	13/6/2016	18/6/2016	24/6/2016	29/6/2016
Weather Condition	Sunny	Cloudy	Cloudy	Cloudy	Sunny	Sunny	Sunny	Cloudy	Cloudy	Cloudy	Sunny	Sunny
Start Time	9:45	14:10	15:44	10:00	13:00	10:20	10:16	14:41	16:16	10:31	13:31	10:51
Measurement Period	30min	30min	30min	30min	30min	30min	30min	30min	30min	30min	30min	30min
Baseline Level	73.3						73.3					
L <sub>Aeq</sub>	72.9	73.2	72.6	74.1	72.4	73.5	73.6	74.2	72.8	72.6	74.6	71.9
L <sub>10</sub>	74.3	75.1	74.4	76.1	74.8	75.5	74.9	76.3	74.3	75.8	77.1	73.8
L <sub>90</sub>	67.1	68.5	66.2	67.1	66.0	67.4	68.1	66.7	67.6	67.2	67.9	67.0

\* Repeat noise measurement when exceedance is recorded. The result is used to confirm the findings and it would not be showed on the graph plot

Location	NM4					NM4 (Re-measurement) *				
Date	5/7/2016	11/7/2016	15/7/2016	21/7/2016	27/7/2016	5/7/2016	11/7/2016	15/7/2016	21/7/2016	27/7/2016
Weather Condition	Sunny	Cloudy	Sunny	Sunny	Sunny	Sunny	Cloudy	Sunny	Sunny	Sunny
Start Time	9:43	10:00	10:25	11:00	11:00	10:25	10:41	10:57	11:31	11:31
Measurement Period	30min	30min	30min	30min	30min	30min	30min	30min	30min	30min
Baseline Level	73.3					73.3				
L <sub>Aeq</sub>	73.6	73.3	74.4	74.0	75.1	74.1	73.9	74.1	73.4	74.4
L <sub>10</sub>	78.2	77.0	77.1	76.7	79.0	77.9	77.7	78.2	77.1	78.3
L <sub>90</sub>	66.2	66.9	68.4	70.4	70.8	67.0	65.2	67.9	68.4	68.7

\* Repeat noise measurement when exceedance is recorded. The result is used to confirm the findings and it would not be showed on the graph plot



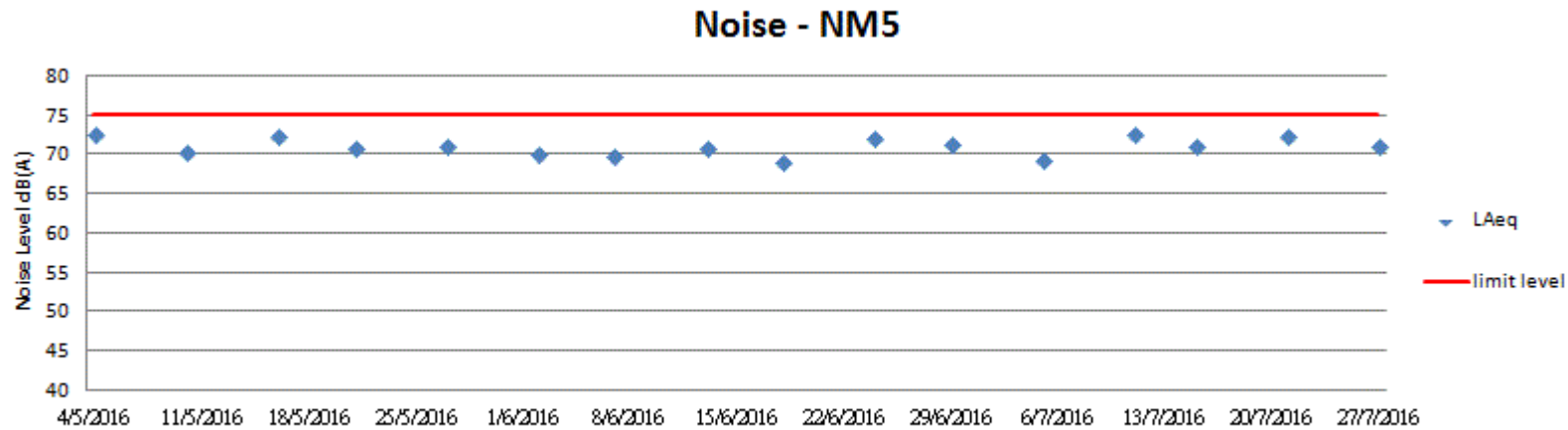
Noise Monitoring Result for NM5

Location	NM5				
Date	4/5/2016	10/5/2016	16/5/2016	21/5/2016	27/5/2016
Weather Condition	Sunny	Cloudy	Sunny	Cloudy	Sunny
Start Time	10:46	10:38	10:42	11:12	10:48
Measurement Period	30min	30min	30min	30min	30min
Baseline Level	71.8				
L <sub>Aeq</sub>	72.5	70.3	72.3	70.8	71.2
L <sub>10</sub>	75.3	72.4	75.1	72.5	72.9
L <sub>90</sub>	66.2	63.2	67.2	65.6	66.1

Location	NM5					
Date	2/6/2016	7/6/2016	13/6/2016	18/6/2016	24/6/2016	29/6/2016
Weather Condition	Sunny	Cloudy	Cloudy	Cloudy	Sunny	Sunny
Start Time	11:30	13:02	17:02	11:00	14:00	13:00
Measurement Period	30min	30min	30min	30min	30min	30min
Baseline Level	71.8					
L <sub>Aeq</sub>	70.1	69.9	70.8	69.1	72.2	71.3
L <sub>10</sub>	73.2	72.8	73.9	72.0	73.8	73.9
L <sub>90</sub>	68.6	67.2	65.5	64.8	65.6	66.0



Location	NM5				
Date	5/7/2016	11/7/2016	15/7/2016	21/7/2016	27/7/2016
Weather Condition	Sunny	Cloudy	Sunny	Sunny	Sunny
Start Time	9:00	11:30	11:31	13:00	10:20
Measurement Period	30min	30min	30min	30min	30min
Baseline Level	71.8				
L <sub>Aeq</sub>	69.4	72.6	71.1	72.3	71.0
L <sub>10</sub>	74.1	75.8	74.3	76.9	74.1
L <sub>90</sub>	66.1	64.1	66.9	68.2	65.3



## Appendix F: Environmental Mitigation Implementation Schedule

## Implementation Schedule for Environmental Mitigation Measures

<b>EIA Ref.</b>	<b>EM&amp;A Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measure &amp; Main Concerns to address</b>	<b>Who to Implement the measure</b>	<b>Location of the measure</b>	<b>When to implement the measure</b>	<b>What requirements or standard for the measure to achieve</b>	<b>Implementation Status</b>
Air Quality Impact (Construction Phase)								
4.8	A1	housekeeping to minimize dust generation, e.g. by properly handling and storing dusty materials	To minimize dust generation	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	✓
4.8	A2	Adopt dust control measures, such as dust suppression using water spray on exposed soil (at least 8 times per day), in areas with dusty construction activities and during material handling	To minimize dust generation due to erosion	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	*
4.8	A3	Store cement bags in shelter with 3 sides and the top covered by impervious materials if the stack exceeds 20 bags	To prevent leakage of cement	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	N/A
4.8	A4	Maintain a reasonable height when dropping excavated materials to limit dust generation	To minimize dust generation during movement of excavated materials	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	✓
4.8	A5	Limit vehicle speed within site to 10km/hr and confine vehicle movement in haul road	To minimize dust generation due to traffic movement	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	✓

4.8	A6	Minimize exposed earth after completion of work in a certain area by hydroseeding, vegetating, soil compacting or covering with bitumen	To minimize dust generation due to erosion	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	✓
4.8	A7	Provide wheel washing at site exit to clean the vehicle body and wheel	To prevent dust from being brought offsite	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	✓
4.8	A8	Hard pave the area at site exit with concrete, bitumen or hardcores	To prevent dust from being brought offsite	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	✓
4.8	A9	Cover materials on trucks before leaving the site to prevent debris from dropping during traffic movement or being blown away by wind	To prevent falling of debris during traffic movement and by wind	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	*
4.8	A11	Regular maintenance of plant equipment to prevent black smoke emission	To minimize black smoke emission	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	✓
4.8	A12	Throttle down or switch off unused machines or machine in intermittent use	To minimize unnecessary emission	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	✓
4.8	A13	Carry out regular site inspection to audit the implementation of mitigation measures	To check the implementation status and effectiveness of mitigation measures	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM, APCO	✓

4.8	A14	Carry out air quality monitoring throughout the construction period	To monitor construction dust level	HyD's Contractor	At representative ASRs	Prior to and throughout construction phase	EIAO-TM	✓
Noise Impact (Construction Phase)								
3.8	N1	Adopt good site practice, such as regular maintenance of plant equipment, throttle down unused machines	To minimize construction noise level	HyD's Contractor	Whole construction site	Throughout construction phase	NCO,EIAO-TM	✓
3.8	N2	Use Quality Powered Mechanical Equipment (QPME) which produces lower noise level (e.g. Excavator/Loader (EPD-01431), Asphalt Paver (EPD-01226), Road Roller (EPD-00244) and Mobile Crane (EPD-01477))	To minimize construction noise level	HyD's Contractor	Whole construction site	Throughout construction phase	NCO,EIAO-TM	N/A
3.8	N3	Erect movable noise barrier at significant noise source(e.g. Concrete Pump, Concrete Lorry Mixer, Excavator/Loader, Road Sweeper, Asphalt Paver, Road Roller, Lorry, Breaker and Poker)	To lower noise transmission	HyD's Contractor	Whole construction site	Throughout construction phase	NCO,EIAO-TM	N/A
3.8	N5	Regular maintenance of plant equipment to prevent noise emission due to impair	To prevent noise emission due to impair	HyD's Contractor	Whole construction site	Throughout construction phase	NCO,EIAO-TM	✓
3.8	N6	Position mobile noisy equipment in location and direction away from NSR	To minimize noise transmission to NSR	HyD's Contractor	Whole construction site	Throughout construction phase	NCO,EIAO-TM	N/A

3.8	N7	Use silencer or muffler on plant equipment and should be properly maintained	To minimize noise transmission	HyD's Contractor	Whole construction site	Throughout construction phase	NCO,EIAO-TM	✓
3.8	N8	Throttle down or switch off unused machines or machine in intermittent use between work	To minimize noise production	HyD's Contractor	Whole construction site	Throughout construction phase	NCO,EIAO-TM	✓
3.8	N9	Make good use of stockpiles or other structures for noise screening	To minimize noise transmission	HyD's Contractor	Whole construction site	Throughout construction phase	NCO,EIAO-TM	N/A
3.8	N10	Avoid carrying out noisy activities at the same time	To minimize noise production	HyD's Contractor	Whole construction site	Throughout construction phase	NCO,EIAO-TM	✓
3.8	N11	Reduce the percentage on-time for some noisy PMEs	To minimize noise production	HyD's Contractor	Whole construction site	Throughout construction phase	NCO,EIAO-TM	✓
3.8	N12	Carry out noise monitoring	To monitor construction noise level	HyD's Contractor	At representative NSRs	Prior to and throughout construction phase	EIAO-TM	✓
Water Impact (Construction Phase)								
5.8	W1	Recirculate settled water for ground boring and drilling during site investigation or rock/soil anchoring.	To minimize wastewater generation	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W2	Set up sedimentation tank for settling suspended solids in wastewater before discharge into storm drains. Sand/silt	To reduce the amount of suspended solid in wastewater	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	#

		removal facilities such as sand traps, silt traps and sedimentation basin should be provided with adequate capacity.						
5.8	W3	Pave the construction road between the wheel washing bay and the public road with backfall	To prevent soil and site runoff from leaving the site	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W4	Follow ProPECC PN 1/94 "Construction Site Drainage" as far as practicable	To minimize surface runoff and chance of erosion	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W5	Provide perimeter channels at site boundaries.	To stop offsite storm runoff from entering the site	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W6	Construct catchpits and perimeter channels prior to commencement of site formation works and earthworks.	To stop runoff from flowing across the site	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W7	Maintain silt removal facilities, channels, manholes before and after rainstorm.	To prevent failure that may lead to flooding	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	#
5.8	W8	Remove sediment from silt and grit at regular interval.	To prevent blockage the may lead to flooding	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W9	Consider environmental requirements when diverting or realigning drainage.	To ensure adequate hydraulic capacity of all drains	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓

5.8	W10	Maintain a minimum distance of 100m between discharge point of construction site runoff and the existing saltwater intakes. No effluent will be discharged into typhoon shelter. (for loations of seawater intakes, please refer to Figure 5.1 in EIA Report)	To prevent mixing	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W11	Arrange soil excavation works outside rainy seasons (April to September) as far as possible. If this cannot beachieved, the following measures should be implemented:	To minimize surface runoff and chance of erosion	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	
		-Cover temporary exposed slope surfaces with impermeable materials, e.g. tarpaulin						✓
		- Protect temporary access roads by crushed stone or gravel						N/A
		- Proved intercepting channels along crest/edge of excavation						N/A
		- Carry out adequate surface protection measures well before the arrival of a rainstorm						N/A
5.8	W12	Compact soil after earthwork. Provide permanent work or surface protection with appropriate drainage channels immediately after forming the final surfaces.	To prevent soil erosion under rainstorm	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W13	Prevent rainwater from entering trenches. Excavation of trenches should be dug and backfilled in short sections during rainy	To prevent soil erosion under rainstorm	HyD's Contractor	Whole Construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	N/A



		seasons. Remove silt in rainwater collected from the trenches or foundation excavations prior to discharge to storm drains.						
5.8	W14	Cover open stockpiles of construction materials (e.g. aggregates, sand and fill materials) with impermeable materials such as tarpaulin during rainstorms.	To prevent soil erosion under rainstorm	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W15	Cover and temporary seal manholes (including newly constructed ones) to prevent silt, construction materials or debris and surface runoff from entering foul sewers.	To prevent overloading of foul sewers	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W16	Remove waste from the site regularly.	To prevent waste accumulation	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
5.8	W17	Apply discharge license for effluent discharge. Treat the discharge to comply with the requirement in TM-DSS.	To ensure compliance with effluent discharge requirement	HyD's Contractor	Whole construction site	Throughout construction phase	WPCO,TM-DSS, EIAO-TM	✓
5.8	W18	Reuse treated effluent onsite, e.g. dust suppression, wheel washing and general cleaning.	To minimize wastewater generation	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	✓
5.8	W19	Monitor effluent water quality.	To ensure compliance with effluent discharge requirement	HyD's Contractor	Whole construction site	Throughout construction phase	WPCO, EIAO-TM	✓
5.8	W20	Register as chemical waste producer if chemical waste will be generated.	To control chemical waste	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal (Chemical Waste) (General)	✓

							Regulation, EIAO-TM	
5.8	W21	Perform maintenance of vehicles and equipment that have oil leakage and spillage potential on hard standings within a bunded area with sumps and oil interceptors.	To prevent oil leakage or spillage	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal (Chemical Waste) (General) Regulation, EIAO-TM	*
5.8	W22	<p>Dispose chemical waste in accordance to Waste Disposal Ordinance. Follow the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i> ,examples as follows:</p> <ul style="list-style-type: none"> <li>- Store chemical wastes with suitable containers to avoid leakage or spillage during storage, handling and transport</li> <li>- Label chemical waste containers according to the CoP to notify and warn the waste handlers</li> <li>- Store chemical wastes at designated safe location with adequate space</li> </ul>	To avoid accident in waste storage and handling	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	N/A

5.8	W23	Provide sufficient chemical toilets with regular maintenance by licensed chemical waste collector	To proper collection of taskforce waste	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	✓
Water Impact (Operational Phase)								
5.8	W24	Direct surface runoff for silt removal through silt trap before flowing to public storm water drainage system	To remove silt in surface runoff	HyD	Whole construction site	Throughout construction phase	WPCO, EIAO-TM	✓
5.8	W25	Regularly maintain the silt traps	To prevent blockage	HyD	Whole construction site	Throughout construction phase	WPCO, EIAO-TM	✓
Waste Management (Construction Phase)								
6.5	WM1	Allocate an area for waste sorting and storage of C&D materials into the following categories for reuse, recycle or disposal: - excavated material suitable for reuse - inert C&D material for disposal offsite - non-inert C&D materials for disposal at landfills - chemical waste - general refuse	To minimize waste generation	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	#
6.5	WM2	Adopt good site practice as follows: - Provide training to workers on site cleanliness, waste management (waste	To proper handling of waste	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	#

		reduction, reuse and recycle) and chemical handling procedures - Provide sufficient waste collection points and regular removal - Cover waste materials with tarpaulin or in enclosure during transportation - Maintain drainage systems, sumps and oil interceptors - Sort out chemical waste for proper handling and treatment						
6.5	WM3	Adopt waste reduction measures as follows: - Allocate area/containers for sorting, recovering and storing waste for reuse, recycle or disposal (e.g. demolition debris and excavated materials, general refuse like aluminium cans) - Allocate area for proper storage of construction materials to prevent contamination - Minimize wastage through careful planning and avoiding over-purchase of construction materials	To minimize waste generation	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	✓
6.5	WM4	Prepare and implement a site specific Waste Management Plan (WMP) as part of Environmental Management Plan (EMP) in accordance with ETWB TCW No. 19/25. Detail waste management method in the form of avoidance, reuse, recovery,	To provide guidance to waste management	HyD's Contractor	Whole construction site	Throughout construction phase	ETWB TCW No. 19/2005, EIAO-TM	✓

		recycling, storage, collection, treatment and disposal according to the recommendations on the EIA and EM&A Manual. It should be approved by the ER and						
6.5	WM5	Store waste materials properly as follows: - Avoid contamination by proper handling and storing waste - Prevent erosion by covering waste or applying water spray - Maintain and clean storage area regularly - Sort and stockpile different materials at designated location to enhance reuse	To properly store waste	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
6.5	WM6	Apply for relevant waste disposal permits in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28).	To properly dispose waste	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28), EIAO-TM	✓

6.5	WM7	Hire licensed waste disposal contractors for waste collection and removal. Dispose waste at licensed waste disposal facilities	To properly dispose waste	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	✓
6.5	WM8	Implement trip-ticket system for recording the amount of waste generated, recycled and disposed, including chemical wastes	To monitor movement of waste	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal (Chemical Waste) (General) Regulation, Waste Disposal Ordinance, EIAO-TM	✓
6.5	WM9	Provide wheel washing bay at site exit to clean the vehicle body and wheel	To prevent dust from being brought offsite	HyD's Contractor	Whole construction site	Throughout construction phase	ProPECC PN 1/94, EIAO-TM	✓
6.5	WM10	Reduce water content in wet spoil generated from piling work by mixing with dry materials. Only dispose treated spoil with less than 25% dry density to Public Fill Reception Facilities	To minimize load to reception facilities	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	✓
6.5	WM11	Dispose dry waste or waste with less than 70% water content by weight to landfill	To minimize load to reception facilities	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	✓
6.5	WM12	Follow the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</i> as follows: - Store chemical wastes with suitable	To avoid accident in waste storage and handling	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	✓

		<p>containers. Seal and maintain the container to avoid leakage or spillage during storage, handling and transport</p> <ul style="list-style-type: none"> <li>- Label chemical waste containers in both English and Chinese with instructions in accordance to Schedule 2 of the Waste Disposal (Chemical Waste) (General) Regulation</li> <li>- The container capacity should be smaller than 450 litres unless agreed by the EPD</li> </ul>						
6.5	WM13	<p>Comply with the requirement of the chemical storage area:</p> <ul style="list-style-type: none"> <li>- Store only chemical waste and label clearly the chemical characters of the waste</li> <li>- Have at least 3 sides enclosed and protected from rainfall with cover</li> <li>- Provide sufficient ventilation</li> <li>- Have impermeable floor and has bunds to contain 110% of the capacity of the largest container or 20% of the total volume of the stored waste in the area, whichever is larger</li> <li>- Adequately spaced incompatible materials</li> </ul>	To ensure proper storage of chemical waste	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	✓
6.5	WM14	<p>Transfer used lubricants, waste oils and other chemicals to oil recycling companies, if possible, and empty oil drums for reuse or refill. No direct or indirect discharge is permitted</p>	To ensure proper disposal of chemical waste	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal (Chemical Waste) (General) Regulation, EIAO-TM	N/A

6.5	WM15	Hire licensed chemical waste disposal contractors for waste collection and removal. Dispose chemical waste at the approved CWTC at Tsing Yi or other licensed facility	To ensure proper disposal of chemical waste	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal (Chemical Waste) (General) Regulation, EIAO-TM	N/A
6.5	WM16	Hire reputable waste collector to separately collect and dispose general refuse from other wastes. Cover the waste to prevent being blown away	To ensure proper disposal of general refuse	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal (Chemical Waste) (General) Regulation, EIAO-TM	✓
6.5	WM17	Provide recycling bins for sorting out recyclables for collection by recycling companies. Non-recyclables should be removed to designated landfills every day by licensed collectors to prevent environmental and health nuisance.	To ensure proper recycling and disposal of general refuse	HyD's Contractor	Whole construction site	Throughout construction phase	Waste Disposal Ordinance, EIAO-TM	✓
6.5	WM18	Organize training and reminders to site staff on waste minimization through avoidance and reduction, reusing and recycling	To ensure proper management of general refuse	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM	✓
6.5	WM19	Carry out testing to verify sediment quantity and quality	To verify the categories of sediment to be disposed in accordance with ETWB TC(W) No. 34/2002	HyD's GI Contractor	Drillholes CB1 to 5 as shown in Sediment Sampling and Testing Plan	Throughout construction phase	ETWB TC(W) No. 34/2002	N/A



Landscape and Visual								
7.9.3	CM1	Shorten the construction period	To minimize duration of landscape and visual impact	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM	N/A
7.9.3	CM2	Limit work within site area without encroaching into the landscape resources offsite.	To minimize landscape and visual impact	HyD's Contractor	Whole construction site	Throughout construction phase	EIAO-TM	✓
7.9.3	CM3	Protect retained trees from damage during construction work according to the recommended in the detailed tree assessment report and the approval of Tree Removal Application under ETWB TCW No. 3/2006 Tree Preservation	To maintain and minimize damage to existing greenery	HyD's Contractor	Whole construction site	Throughout construction phase	ETWB TCW 3/2006, EIAOTM	#
7.9.3	CM4	Transplant unavoidably affected trees wherever possible in accordance with ETWB TCW No. 3/2006 Tree Preservation. Maintain transplanted trees to ensure healthy development during the establishment period	To minimize tree loss and ensure survival of transplanted trees	HyD's Contractor	Whole construction site	Throughout construction phase	ETWB TCW 3/2006, EIAOTM	N/A
7.9.2.6	OM1	Carry out compensatory planting in areas proposed in the Tree Survey and Landscape and Greening Study Report in accordance to ETWB TCW 3/2006, which will be subjected to refinement in detailed design stage. Compensatory planting of a ratio no less than 1:1 in terms of quality and quantity will be provided for any potential tree	To compensate for loss greenery	HyD's Contractor	Whole construction site/Offsite	Construction phase	ETWB TCW 3/2006, EIAOTM	N/A

		felling within the site. Offsite planting may be required due to land constraint. 410 nos. of compensatory trees have been proposed						
7.9.2.6	OM2	Provide vertical greening at piers of elevated roads and shrub planting near amenity planting strips to soften the hard landscape (e.g. climber and shrub for hiding central divider and enclosures). Early comments from the ACABAS and relevant departments, implementation and maintenance agents shall be sought at the earlier stage.	To soften hard landscape	HyD's Contractor	Whole construction site	Construction phase	ETWB TCW 36/2004	N/A
7.9.2.6	OM3	Match the design and materials of road structure with the surrounding environment and with the schematic theme paving of the future West Kowloon Reclamation Development and the Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS)	To match with existing landscape character	HyD's Contractor	Whole construction site	Construction phase	ETWB TCW 36/2004	N/A

Remarks:

- ✓ Compliance of mitigation measure
- X Non-compliance of mitigation measure
- Non-compliance but rectified by the contractor
- \* Recommendation was made during site audit but improved/rectified by the contractor
- # Waiting for improving/rectifying by the contractor
- N/A Not Applicable

Appendix G: Cumulative Log for Environmental Exceedance, Complaints,  
Notification of Summons and Successful Prosecutions

**Cumulative Log for Environmental Exceedance, Complaints, Notification of Summons and Successful Prosecution**

Reporting Month	Number of Exceedance	Number of Environmental Complaints	Number of Notification of Summons	Number of Successful Prosecutions
February 2016	0	0	0	0
March 2016	0	0	0	0
April 2016	0	2	0	0
May 2016	7	0	0	0
June 2016	11	0	0	0
July 2016	6	0	0	0
Grand Total	24	2	0	0