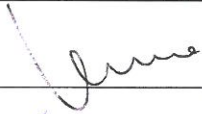



Environmental Protection Department

Contract No. HY/2012/06

**Widening of Fanling Highway
– Tai Hang to Wo Hop Shek
Interchange****Monthly EM&A Report
for November 2013**

[12/2013]

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| | | |
|---|--------|------------------------|
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EXECUTIVE SUMMARY

The proposed widening of Tolo Highway and Fanling Highway between Island House Interchange and Fanling (the Project) is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). An Environmental Impact Assessment (EIA) Report (the approved EIA Report) together with an Environmental Monitoring and Audit (EM&A) Manual (the approved EM&A Manual) were completed and approved under the EIAO on 14 July 2000 (Register Number: EIA-043/2000).

The objective of the Project “Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling” is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). Stage 2 would be implemented under two works contracts. Contract No. HY2012/06 “Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange” and the entrusted portion to CEDD under Contract No. CV/2012/09 “Liantang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 3”. This report focuses on Contract No. HY2012/06 “Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange” in Stage 2 of the Project only.

The construction phase of the Contract under the EP and the Environmental Monitoring and Audit (EM&A) programme of the contract commenced on 21 November 2013. The impact environmental monitoring and audit includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 25 to 30 November 2013. As informed by the Contractor, construction activities in the reporting period were:-

- Site clearance;
- Ground investigation; and
- Construction of site accommodation.

Reporting Change

There was no reporting change required in the reporting month.

Breaches of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Level was recorded for 1-hour and 24-hour TSP monitoring in the reporting month.

Breaches of Action and Limit Levels for Noise

No Action Level exceedance of construction noise was recorded in the reporting month, since no noise complaints related to 0700 – 1900 hours on normal weekdays was received and followed by Environmental Team in the reporting month.

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

Complaint, Notification of Summons and Successful Prosecution

No complaint, notification of summons and successful prosecution was received in the reporting month.

Future Key Issues

Key issues to be considered in the coming month included:-

- Properly store and label oils and chemicals on site;
- Chemical, chemical waste and waste management;
- Collection of construction waste should be carried out regularly;
- Properly maintain all drainage facilities and wheel washing facilities on site;
- Exposed slopes should be covered up properly if no temporary work will be conducted;
- Quieter powered mechanical equipment should be used;
- Suppress dust generated from excavation activities and haul road traffic; and
- Tree protective measures for all retained trees should be well maintained.

1 INTRODUCTION

1.1 Background

- 1.1.1. Tolo Highway and Fanling Highway are the expressways in the North East New Territories (NENT) connecting Sha Tin, Tai Po and Fanling. These highways form a vital part of the strategic Route 9, which links Hong Kong Island to the boundary at Shenzhen. At present, this section of Route 9 is a dual 3-lane carriageway. However, at several major interchanges along this section of Route 9, the highway is a dual-2 lane carriageway only. Severe congestion is a frequent occurrence during the peak periods, particularly in the Kowloon-bound direction.
- 1.1.2. The objective of the Project “Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling” is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.
- 1.1.3. The Project is a designated project and is governed by an Environmental Permit (EP-324/2008)(EP) issued by EPD on 23 December 2008. Subsequently, EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012.
- 1.1.4. The scope of the Project comprises mainly:-
- (i) Widening of a 5.7 km section of Tolo Highway and 3.0 km section of Fanling Highway between Island House Interchange and Wo Hop Shek Interchange from the existing dual 3-lane to dual 4-lane, including construction of new vehicular bridges;
 - (ii) Widening of interchange sections at Island House Interchange, Tai Po North Interchange, and Lam Kam Road Interchange from dual 2-lane to dual 3-lane, except Sha Tin bound carriageway at Tai Po North Interchange, which is widened from 3-lane to 4-lane, including realignment of various slip roads;
 - (iii) Modification and reconstruction of highways, vehicular bridges, underpasses and footbridges.
- 1.1.5. The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). Stage 2 would be implemented under two works contracts. Contract No. HY/2012/06 “Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange” and the entrusted portion to CEDD under Contract No. CV/2012/09 “Liantang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 3”. This report focuses on Contract No. HY2012/06 “Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange” in Stage 2 of the Project only.
- 1.1.6. Hyder-Arup-Black and Veatch Joint Venture (HABVJV) are appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Tolo project under Agreement No. CE 58/2000 Supplementary Agreement No. 3 (SA3) (i.e. the Engineer for the Contract).
- 1.1.7. China State Construction Engineering (Hong Kong) Ltd. (CSHK) was commissioned as the Contractor of the Contract.
- 1.1.8. AECOM Asia Co. Ltd. was commissioned by China State Construction Engineering (Hong Kong) Limited as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for the Contract and Mott MacDonald Hong Kong Ltd. acts as the Independent Environmental Checker (IEC) for the Contract.
- 1.1.9. The construction phase of the Contract under the EP commenced on 21 November 2013.
- 1.1.10. According to the updated EM&A Manual of Stage 2 of the Project, there is a need of an EM&A programme including air quality and noise monitoring. The EM&A programme for Stage 2 of the Project commenced on 21 November 2013.

1.2 Scope of Report

1.2.1 This is the first monthly EM&A Report under the Contract No. HY/2012/06 “Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for the Contract in November 2013.

1.3 Project Organization

1.3.1 The project organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

| Party | Position | Name | Telephone | Fax |
|---|-----------------------------------|---------------|-----------|-----------|
| ER (Hyder-Arup-Black & Veatch Joint Venture) | Chief Resident Engineer | Edwin Chung | 6115 0818 | 2638 0950 |
| IEC (Mott MacDonald Hong Kong Limited) | Independent Environmental Checker | Terence Kong | 2828 5919 | 2827 1823 |
| Contractor (China State Construction Engineering (Hong Kong) Limited) | Site Agent | Edward Ho | 9183 3827 | 2672 2501 |
| | Environmental Officer | Michael Tsang | 9277 4956 | 2672 2501 |
| | | C C Chow | 9679 6315 | 2672 2501 |
| ET (AECOM Asia Company Limited) | ET Leader | Y W Fung | 3922 9393 | 3922 9797 |

1.4 Summary of Construction Works

1.4.1 The construction phase for the Contract under the EP commenced on 21 November 2013.

1.4.2 Details of the construction works carried out by the Contractor in this reporting period are listed below:-

- Site clearance;
- Ground investigation; and
- Construction of site accommodation.

1.4.3 The Construction Programme is shown in Appendix B.

1.4.4 The general layout plan of the Project site showing the contract areas is shown in Figure 1.1.

1.4.5 The environmental mitigation measures implementation schedule are presented in Appendix C.

1.5 Summary of EM&A Programme Requirements

1.5.1 The EM&A programme required environmental monitoring for air quality, noise and environmental site inspections for air quality, water quality, noise, waste management, ecology, and landscape and visual impact. The EM&A requirements for each parameter described in the following sections include:-

- All monitoring parameters;
- Monitoring schedules for the reporting month and forthcoming months;
- Action and Limit levels for all environmental parameters;
- Event / Action Plan;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirement in contract documents.

2 AIR QUALITY MONITORING

2.1 Monitoring Requirements

2.1.1 In accordance with the updated EM&A Manual, baseline 1-hour and 24-hour TSP levels at one air quality monitoring station was established. Impact 1-hour TSP monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was carried out for at least once every 6 days. The Action and Limit level of the air quality monitoring is provided in Appendix D.

2.2 Monitoring Equipment

2.2.1 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at each designated monitoring station. The HVS meets all the requirements of the updated EM&A Manual. Portable direct reading dust meters were used to carry out the 1-hour TSP monitoring. Brand and model of the equipment is given in Table 2.1.

Table 2.1 Air Quality Monitoring Equipment

| Equipment | Brand and Model |
|---|--|
| Portable direct reading dust meter (1-hour TSP) | Sibata Digital Dust Monitor (Model No. LD-3 and LD-3B) |
| High Volume Sampler (24-hour TSP) | Tisch Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. TE-5170) |

2.3 Monitoring Locations

2.3.1 The monitoring station was set up at the proposed location in accordance with updated EM&A Manual. Table 2.2 describes details of the monitoring station. The locations are shown in Figure 1.2a.

Table 2.2 Locations of Impact Air Quality Monitoring Station

| Location | Monitoring Station |
|-----------|-------------------------------------|
| AM2 (SR2) | Fanling Government Secondary School |

2.4 Monitoring Parameters, Frequency and Duration

2.4.1 Table 2.3 summarizes the monitoring parameters, frequency and duration of impact TSP monitoring.

Table 2.3 Air Quality Monitoring Parameters, Frequency and Duration

| Parameter | Frequency and Duration |
|-------------|---|
| 24-hour TSP | Once every 6 days |
| 1-hour TSP | 3 times every 6 days while the highest dust impact was expected |

2.5 Monitoring Methodology

2.5.1 24-hour TSP Monitoring

- (a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.
- (i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
 - (ii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
 - (iii) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
 - (iv) A minimum of 2 meters separation from any supporting structure, measured horizontally.
 - (v) No furnace or incinerator flues nearby.
 - (vi) Airflow around the sampler was unrestricted.
 - (vii) Permission was obtained to set up the samplers and access to the monitoring stations.
 - (viii) A secured supply of electricity was obtained to operate the samplers.
 - (ix) The sampler was located more than 20 meters from any dripline.
 - (x) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
 - (xi) Flow control accuracy was kept within $\pm 2.5\%$ deviation over 24-hour sampling period.
- (b) Preparation of Filter Papers
- (i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
 - (ii) All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ± 3 °C; the relative humidity (RH) was < 50% and not variable by more than $\pm 5\%$. A convenient working RH was 40%.
 - (iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.
- (c) Field Monitoring
- (i) The power supply was checked to ensure the HVS works properly.
 - (ii) The filter holder and the area surrounding the filter were cleaned.
 - (iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
 - (iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
 - (v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
 - (vi) Then the shelter lid was closed and was secured with the aluminum strip.
 - (vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
 - (viii) A new flow rate record sheet was set into the flow recorder.
 - (ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.1 m³/min, and complied with the range specified in the updated EM&A Manual (i.e. 0.6-1.7 m³/min).
 - (x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
 - (xi) The initial elapsed time was recorded.
 - (xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
 - (xiii) The final elapsed time was recorded.

- (xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
 - (xv) It was then placed in a clean plastic envelope and sealed.
 - (xvi) All monitoring information was recorded on a standard data sheet.
 - (xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.
- (d) Maintenance and Calibration
- (i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
 - (ii) 5-point calibration of the HVS was conducted using TE-5025A Calibration Kit prior to the commencement of baseline monitoring. Bi-monthly 5-point calibration of the HVS will be carried out during impact monitoring.
 - (iii) Calibration certificate of the HVSs are provided in Appendix E.

2.5.2 1-hour TSP Monitoring

(a) Measuring Procedures

The measuring procedures of the 1-hour dust meter were in accordance with the Manufacturer's Instruction Manual as follows:-

- (i) Turn the power on.
- (ii) Close the air collecting opening cover.
- (iii) Push the "TIME SETTING" switch to [BG].
- (iv) Push "START/STOP" switch to perform background measurement for 6 seconds.
- (v) Turn the knob at SENSI ADJ position to insert the light scattering plate.
- (vi) Leave the equipment for 1 minute upon "SPAN CHECK" is indicated in the display.
- (vii) Push "START/STOP" switch to perform automatic sensitivity adjustment. This measurement takes 1 minute.
- (viii) Pull out the knob and return it to MEASURE position.
- (ix) Push the "TIME SETTING" switch the time set in the display to 3 hours.
- (x) Lower down the air collection opening cover.
- (xi) Push "START/STOP" switch to start measurement.

(b) Maintenance and Calibration

- (i) The 1-hour TSP meter was calibrated at 1-year intervals against a continuous particulate TEOM Monitor, Series 1400ab. Calibration certificates of the Laser Dust Monitors are provided in Appendix E.
- (ii) 1-hour validation checking of the TSP meter against HVS is carried out yearly at the air quality monitoring locations.

2.6 Monitoring Schedule for the Reporting Month

2.6.1 The schedule for environmental monitoring in November 2013 is provided in Appendix F.

2.7 Monitoring Results

2.7.1 The baseline condition of air quality in the Contract site was reviewed in October 2013. A baseline monitoring of air quality, in terms of 1-hour Total Suspended Particulates (TSP) and 24-hour TSP, was carried out from 12 October 2013 to 29 October 2013. As the Fanling Government Secondary School did not open on the public holidays, therefore no monitoring were conducted on 13, 14, 20 and 27 October 2013, the baseline monitoring of air quality has been conducted for 14 days. The baseline monitoring report was submitted by ETL and approved by the ER and the IEC on 6 November 2013. Action Levels for air quality were established and are summarized in Table 2.4, Table 2.5 and Appendix D.

2.8 Results and Observations

2.8.1 The monitoring results for 1-hour TSP and 24-hour TSP are summarized in Table 2.4 and 2.5 respectively. Detailed impact air quality monitoring results are presented in Appendix G.

Table 2.4 Summary of 1-hour TSP Monitoring Results in the Reporting Period

| Location | Average ($\mu\text{g}/\text{m}^3$) | Range ($\mu\text{g}/\text{m}^3$) | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) |
|---|--------------------------------------|------------------------------------|---|--|
| AM2 (Fanling Government Secondary School) | 82.3 | 81.7 – 83.1 | 317.8 | 500 |

Table 2.5 Summary of 24-hour TSP Monitoring Results in the Reporting Period

| Location | Average ($\mu\text{g}/\text{m}^3$) | Range ($\mu\text{g}/\text{m}^3$) | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) |
|---|--------------------------------------|------------------------------------|---|--|
| AM2 (Fanling Government Secondary School) | 105 | 105 | 200.7 | 260 |

2.8.2 The major dust source during the monitoring mainly from nearby traffic emission.

2.8.3 All 1-hour and 24-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting month.

2.8.4 The event action plan is annexed in Appendix J.

2.8.5 Weather information including wind speed and wind direction is annexed in Appendix H. The information was obtained from Hong Kong Observatory Tai Po and Tai Mei Tuk Automatic Weather Station.

3 NOISE MONITORING

3.1 Monitoring Requirements

3.1.1 In accordance with the EM&A Manual, impact noise monitoring was conducted for at least once per week during the construction phase of the Contract. The Action and Limit level of the noise monitoring is provided in Appendix D.

3.2 Monitoring Equipment

3.2.1 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in Table 3.1.

Table 3.1 Noise Monitoring Equipment

| Equipment | Brand and Model |
|------------------------------|-----------------|
| Integrated Sound Level Meter | B&K 2238 |
| Acoustic Calibrator | Rion NC-73 |

3.3 Monitoring Locations

3.3.1 Monitoring stations M2 and M3 were set up at the proposed locations in accordance with updated EM&A Manual. Figure 1.2a-b shows the locations of the monitoring stations. Table 3.2 describes the details of the monitoring stations.

Table 3.2 Locations of Impact Noise Monitoring Stations

| Monitoring Station | Location | Description |
|--------------------|-------------------------------------|---|
| M2 | West Tai Wo | 1.2m from the ground floor free-field of the Residential |
| M3 | Fanling Government Secondary School | 1m from the exterior of the roof top façade of the school |

3.4 Monitoring Parameters, Frequency and Duration

3.4.1 Table 3.3 summarizes the monitoring parameters, frequency and duration of impact noise monitoring.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

| Parameter | Frequency and Duration |
|--|------------------------|
| 30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays. L_{eq} , L_{10} and L_{90} would be recorded. | At least once per week |

3.5 Monitoring Methodology

3.5.1 Monitoring Procedure

- (a) Façade measurement was made at monitoring station M3, while free-field measurement was made at monitoring station M2.
- (b) The sound level meter was set on a tripod at a height of 1.2 m above the ground for free-field measurements at monitoring station M2.
- (c) The battery condition was checked to ensure the correct functioning of the meter.
- (d) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:-
 - (i) frequency weighting: A
 - (ii) time weighting: Fast
 - (iii) time measurement: $L_{eq(30\text{-minutes})}$ during non-restricted hours i.e. 07:00 – 1900 on normal weekdays; $L_{eq(5\text{-minutes})}$ during restricted hours i.e. 19:00 – 23:00 and 23:00 – 07:00 of normal weekdays, whole day of Sundays and Public Holidays
- (e) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- (f) During the monitoring period, the L_{eq} , L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- (g) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.
- (h) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s.

3.5.2 Maintenance and Calibration

- (a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.
- (b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.
- (c) Calibration certificates of the sound level meters and acoustic calibrators are provided in Appendix E.

3.6 Monitoring Schedule for the Reporting Month

3.6.1 The schedule for environmental monitoring in November 2013 is provided in Appendix F.

3.7 Monitoring Results

3.7.1 The monitoring results for construction noise are summarized in Table 3.4 and the monitoring data is provided in Appendix I.

Table 3.4 Summary of Construction Noise Monitoring Results in the Reporting Period

| | Average, dB(A), $L_{eq(30\text{ mins})}$ | Range, dB(A), $L_{eq(30\text{ mins})}$ | Limit Level, dB(A), $L_{eq(30\text{ mins})}$ |
|-----|---|---|---|
| M2* | 66.0 | 66.0 | 75 |
| M3# | 64.4 | 64.4 | 65/70 |

*+3dB(A) Façade correction included

Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

- 3.7.2 There was no noise complaint related to 0700 – 1900 hours on normal weekdays was received and followed up by Environmental Team in the reporting period. Hence, no Action Level exceedance was recorded.
- 3.7.3 No noise monitoring result exceeding the Limit Level was recorded at all monitoring stations in the reporting month.
- 3.7.4 Major noise sources during the noise monitoring mainly from nearby traffic noise and general school activities.
- 3.7.5 The event action plan is annexed in Appendix J.

4 ENVIRONMENTAL SITE INSPECTION AND AUDIT

4.1 Site Inspection

4.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract. In the reporting month, 1 site inspection was carried out on 26 November 2013 for the Contract. While no specific observation was recorded, recommendations on remedial actions were given to the Contractor for precautionary purpose.

4.2 Advice on the Solid and Liquid Waste Management Status

4.2.1 The Contractor has registered as chemical waste producers for the Contract. C&D material sorting was carried out on site. Sufficient numbers of receptacles were available for general refuse collection.

4.2.2 As advised by the Contractor, 25m³ of inert C&D material was disposed as public fill to Tuen Mun 38 (of which 0m³ was broken concrete), while 20m³ of general refuse was disposed at NENT landfill. 0kg of paper/cardboard packaging, 0kg of plastics and 0kg of metals were collected by recycling contractor in the reporting month. 0m³ and 0m³ of inert C&D materials were reused on site and reused in NENT for backfilling purpose respectively. 0kg of chemical waste was collected by licensed contractor in the reporting period.

4.2.3 The Contractor was advised to maintain on site waste sorting and recording system and maximize reuse / recycle of C&D wastes.

4.3 Environmental Licenses and Permits

4.3.1 The environmental licenses and permits for Stage 1 of the Project and valid in the reporting month is summarized in Table 4.1.

Table 4.1 Summary of Environmental Licensing and Permit Status

| Statutory Reference | License/ Permit | License or Permit No. | Valid Period | | License/ Permit Holder | Remarks |
|---------------------|--|-----------------------|--------------|-----------|------------------------|---|
| | | | From | To | | |
| EIAO | Environmental Permit | EP-324/2008/A | 31/01/2012 | N/A | HyD | -- |
| WPCO | Discharge License (Site) | - | - | - | - | In progress (Application submitted on 28-8-2013) |
| WDO | Chemical Waste Producer Registration | 5213-722-C3822-01 | 5/09/2013 | N/A | CSHK | Chemical waste produced in Contract HY/2012/06 |
| WDO | Billing Account for Disposal of Construction Waste | 7009328 | 08/09/2009 | N/A | CSHK | Waste disposal in Contract HY/2008/09 |
| NCO | Construction Noise Permit | GW-RN0648-13 | 10/11/2013 | 20/4/2014 | CSHK | Tree Felling at South of Fanling Highway between Yuen Leng and Hong Lok Yuen (0900 to 1800 hours on Sunday) |

4.4 Implementation Status of Environmental Mitigation Measures

4.4.1 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in Appendix C.

4.5 Summary of Exceedances of the Environmental Quality Performance Limit

4.5.1 All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting period.

4.5.2 For construction noise, no Action and Limit Level exceedance was recorded at all monitoring stations in the reporting period.

4.6 Summary of Complaints, Notification of Summons and Successful Prosecutions.

4.6.1 The Environmental Complaint Handling Procedure is annexed in Figure 4.1.

4.6.2 No complaint, notification of summons or prosecution was received in the reporting period.

4.6.3 Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix K.

5 FUTURE KEY ISSUES

5.1 Construction Programme for the Coming Months

5.1.1 The major construction works for the Contract in December 2013 will be:-

- Site clearance;
- Ground investigation; and
- Tree felling and transplantation.

5.2 Key Issues for the Coming Month

5.2.1 Key issues to be considered in December 2013:-

- Properly store and label oils and chemicals on site;
- Chemical, chemical waste and waste management;
- Collection of construction waste should be carried out regularly;
- Properly maintain all drainage facilities and wheel washing facilities on site;
- Exposed slopes should be covered up properly if no temporary work will be conducted;
- Quieter powered mechanical equipment should be used;
- Suppress dust generated from excavation activities and haul road traffic; and
- Tree protective measures for all retained trees should be well maintained.

5.3 Monitoring Schedule for the Coming Month

5.3.1 The tentative schedule for environmental monitoring in December 2013 is provided in Appendix F.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

- 6.1.1 The construction phase and EM&A programme of the Contract commenced on 21 November 2013.
- 6.1.2 1-hour TSP, 24-hour TSP and noise monitoring were carried out in the reporting period.
- 6.1.3 All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting period.
- 6.1.4 No Action and Limit Level exceedance for construction noise was recorded at all monitoring stations in the reporting month.
- 6.1.5 One environmental site inspection was carried out in November 2013. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.
- 6.1.6 No complaint, notification of summons or prosecution was received in the reporting period.

6.2 Recommendations

- 6.2.1 According to the environmental site inspection performed in the reporting month, while no specific observation was recorded, the following recommendations on remedial actions were provided to the Contractor for precautionary purpose:

Air Quality Impact

- All vehicles should be washed to remove any dusty materials before leaving the site.
- Haul roads should be sufficiently dampened to minimize fugitive dust generation.
- Wheel washing facilities should be properly maintained to ensure properly functioning.

Construction Noise Impact

- Noisy operations should be oriented to a direction away from sensitive receivers as far as possible.

Water Quality Impact

- Stagnant water accumulated in drip trays should be removed.
- Silt accumulated at public drain should be cleaned up.
- Silty effluent should be treated/desilted before discharged. Untreated effluent should be prevented from entering public drain channel.

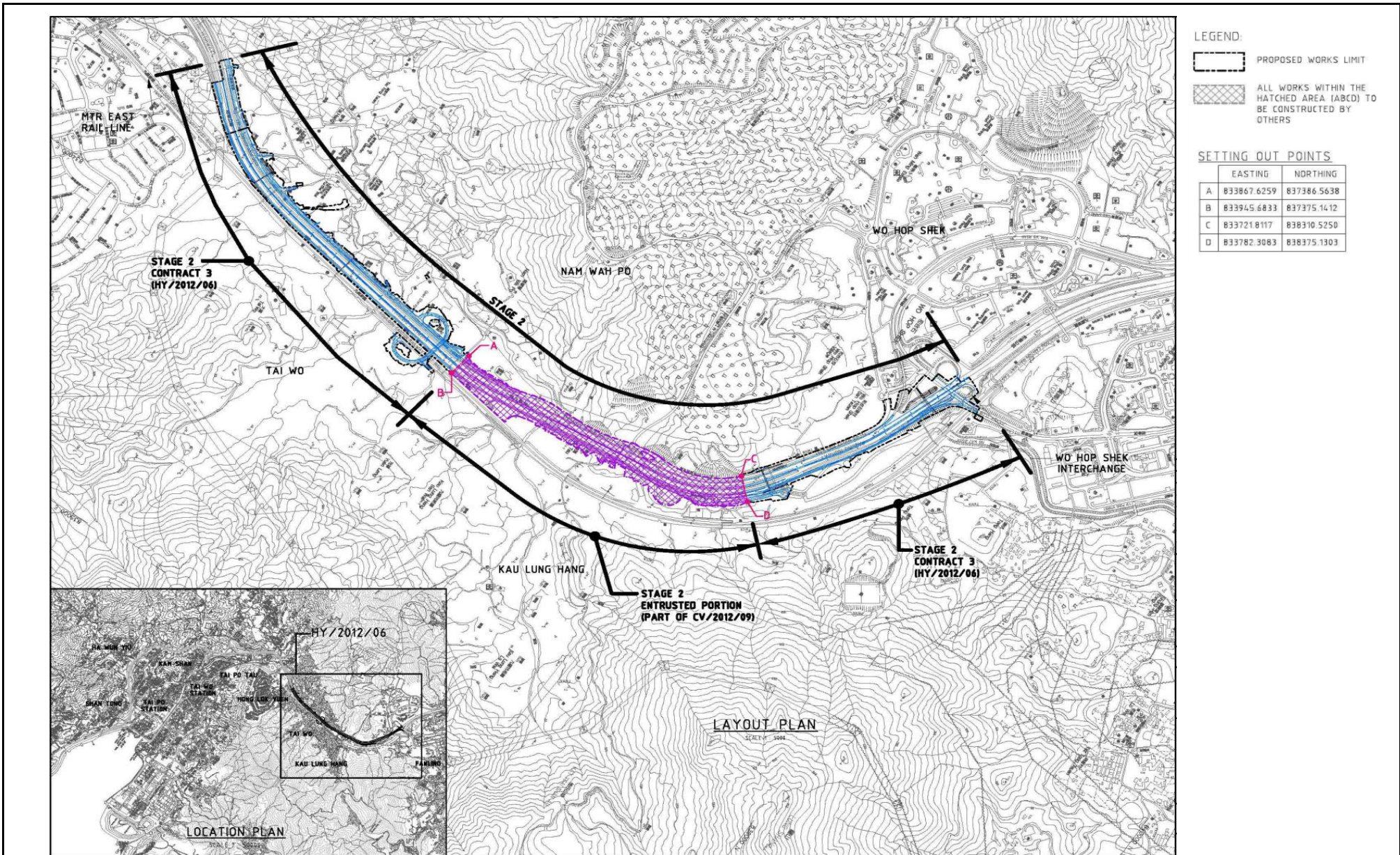
Chemical and Waste Management

- C&D material should be sorted and removed timely.
- All plants on site should be properly maintained to prevent oil leakage.
- Oil stains on soil surface and empty chemical containers should be cleared and disposed of as chemical waste.

Landscape and Visual Impact

- All retained trees should be properly fenced off at the works area.

FIGURES

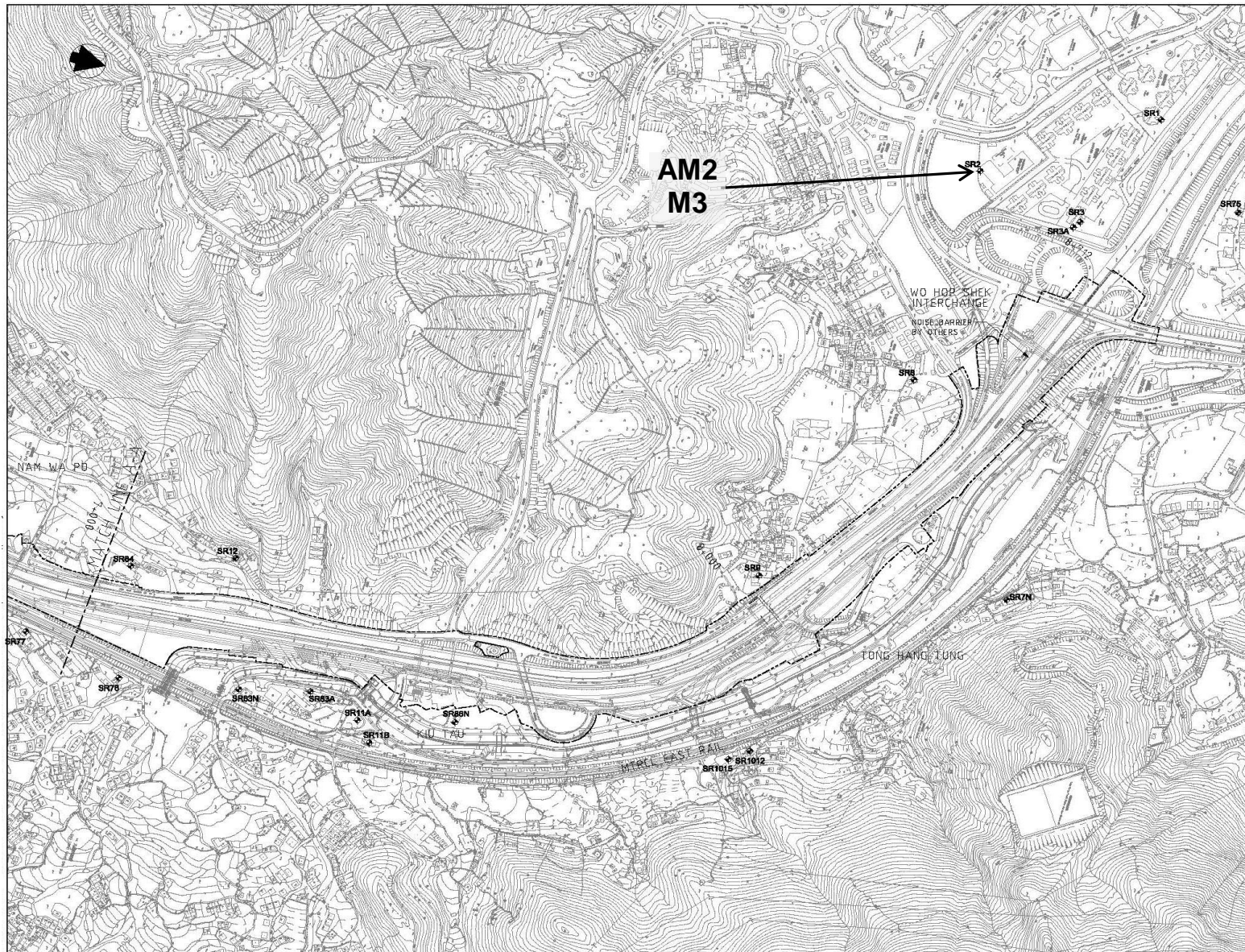


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CONTRACT NO. HY/2012/06
 WIDENING OF FANLING HIGHWAY
 - TAI HANG TO WO HOP SHEK INTERCHANGE



Layout Plan



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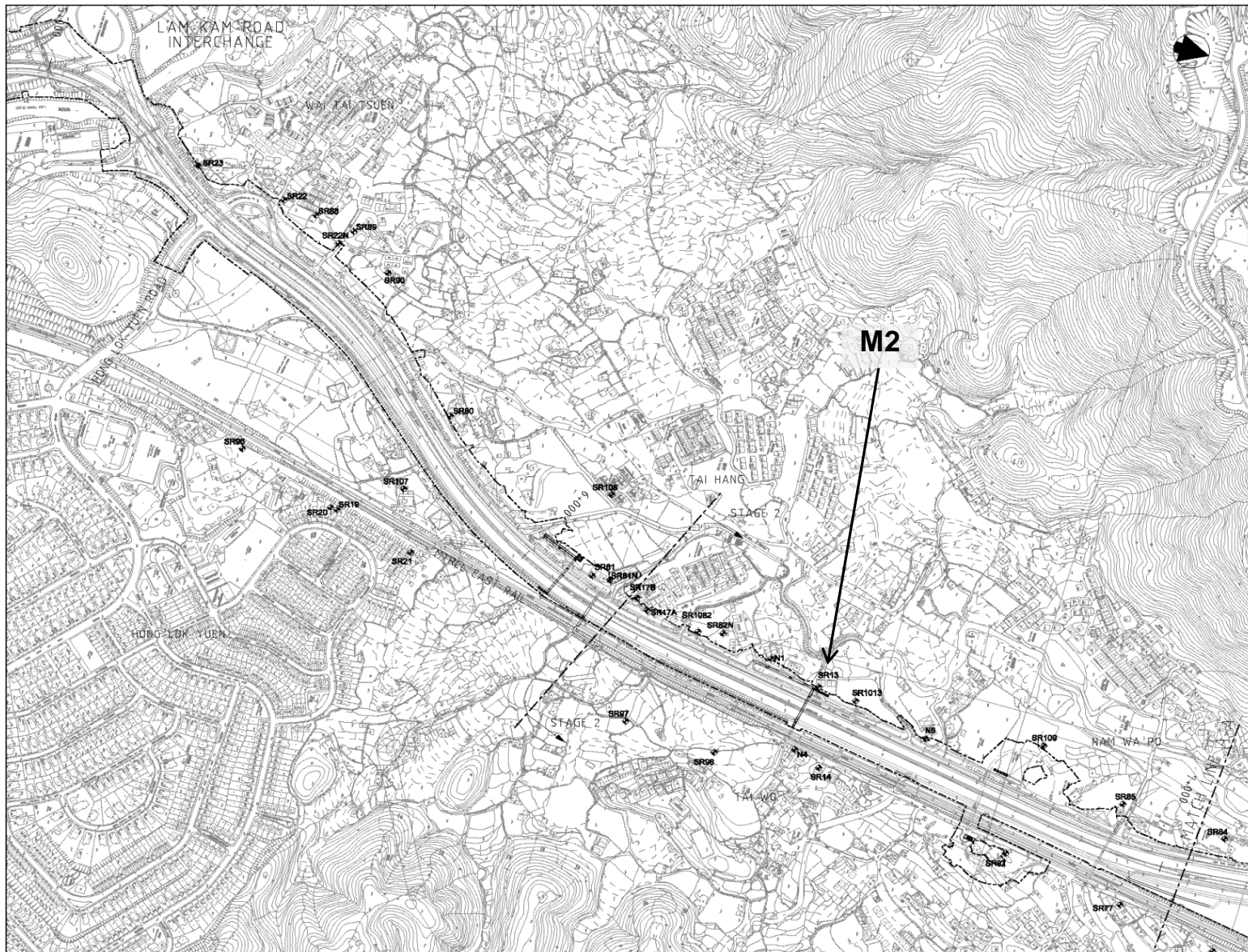
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Locations of Monitoring Station

Date: Dec 2013

Figure 1.2a



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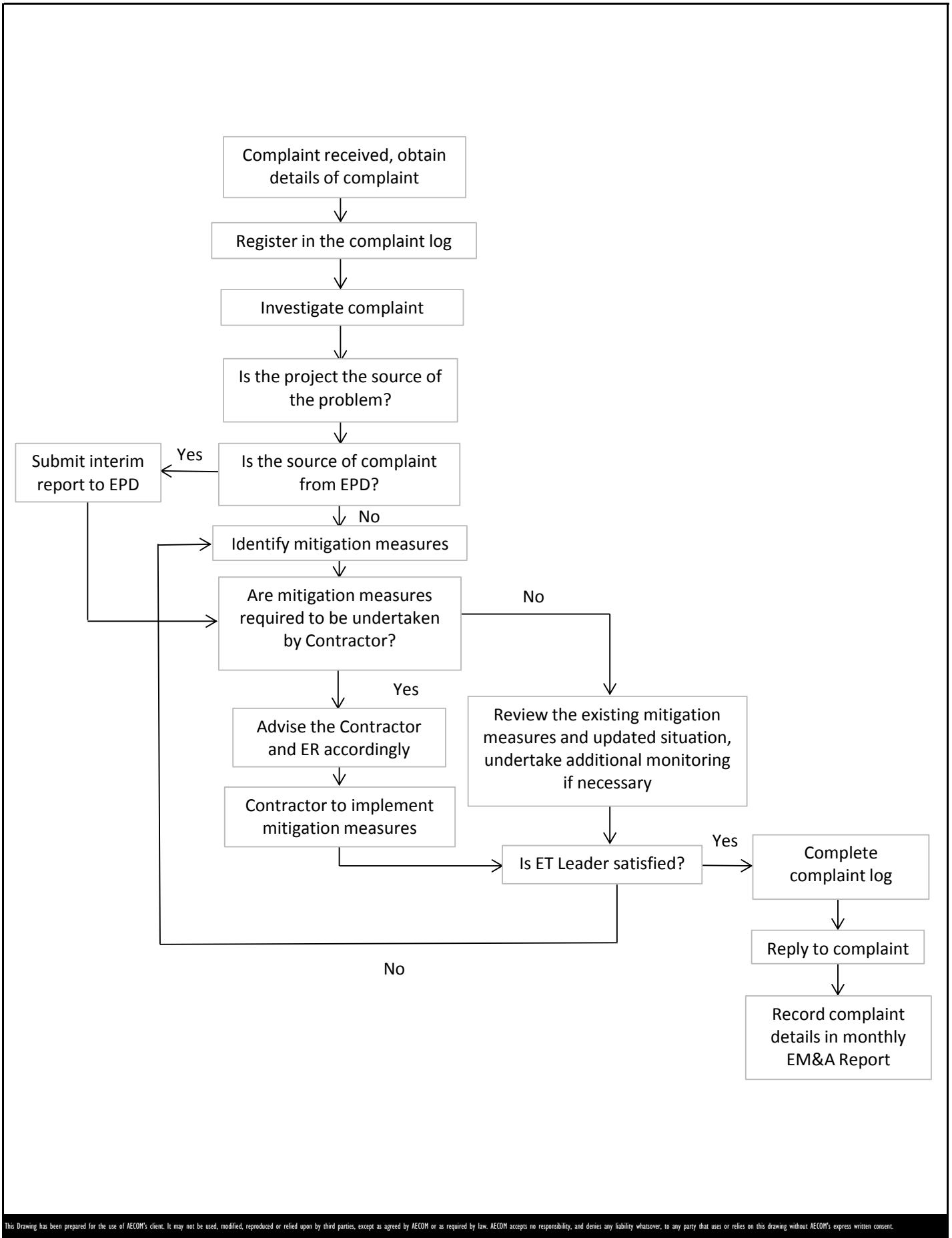
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Locations of Monitoring Station

Date: Dec 2013

Figure 1.2b



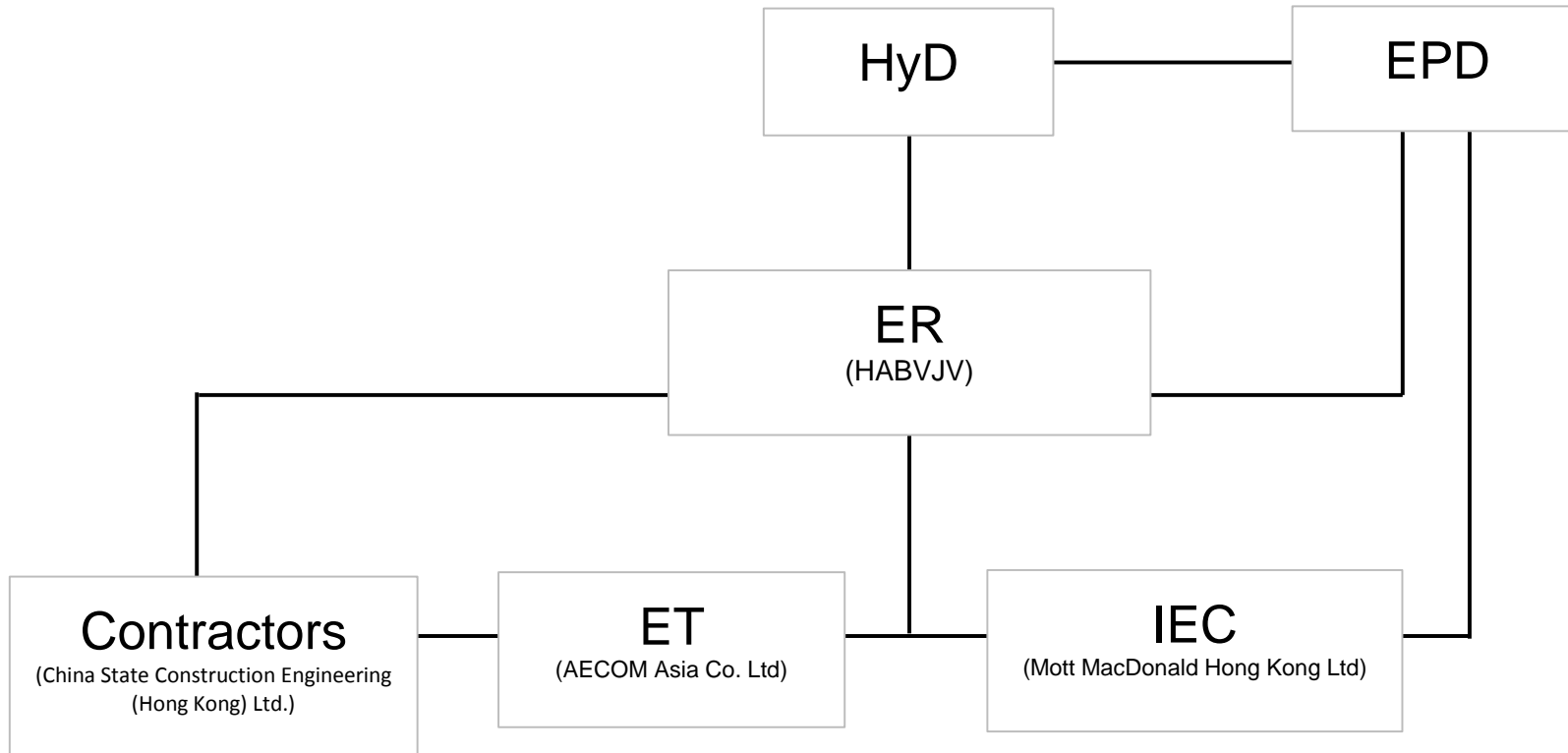
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CONTRACT NO. HY/2012/06
 WIDENING OF FANLING HIGHWAY
 - TAI HANG TO WO HOP SHEK INTERCHANGE



Environmental Complaint Handling Procedure

**APPENDIX A
PROJECT ORGANIZATION STRUCTURE**



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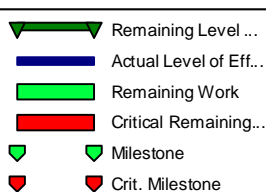
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 WIDENING OF FANLING HIGHWAY
 - TAI HANG TO WO HOP SHEK INTERCHANGE



Project Organization Structure

**APPENDIX B
CONSTRUCTION PROGRAMMES**

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2013 | | 2014 | |
|--|---|-------------------|-----------|------------|-------------|------|------------|-------------------------|---|
| | | | | | | Nov | Dec | Jan | Feb |
| | | | | | | | | | |
| HY/2012/06: Works Programme Rev.2 (1311) | | | | | | | | | |
| KEY DATES | | | | | | | | | |
| KD03c | KD-3c (165d) - Comprises all works in SA324A | 0 | | 29-Dec-13* | 0 | | 29-Dec-13* | ♥ | KD-3c (165d) - Comprises all works in S |
| SITE POSSESSIONS | | | | | | | | | |
| Site Areas for Site Offices | | | | | | | | | |
| POSSA301 | Site Area SA301 (0d) | 0 | 20-Nov-13 | | 2276 | | ♥ | Site Area SA301 (0d) | |
| Site Areas under Zone 2 | | | | | | | | | |
| POSSA328 | Site Area SA328 (90d) | 0 | 20-Nov-13 | | -35 | | ♥ | Site Area SA328 (90d) | |
| POSSA329 | Site Area SA329 (90d) | 0 | 20-Nov-13 | | -35 | | ♥ | Site Area SA329 (90d) | |
| POSSA327 | Site Area SA327 (180d) | 0 | 14-Jan-14 | | 2 | | | | ♥ Site Area SA327 (180d) |
| POSSA325 | Site Area SA325 (180d) | 0 | 14-Jan-14 | | 2 | | | | ♥ Site Area SA325 (180d) |
| POSSA326 | Site Area SA326 (180d) | 0 | 14-Jan-14 | | 2 | | | | ♥ Site Area SA326 (180d) |
| Tai Wo Service Road West | | | | | | | | | |
| Existin Houses Site Formation Works (SA320A, SA322A,SA322B) | | | | | | | | | |
| POSSA320A | Site Area SA320A (120d) | 0 | 20-Nov-13 | | 8 | | ♥ | Site Area SA320A (120d) | |
| POSSA322A | Site Area SA322A (180d) | 0 | 14-Jan-14 | | 0 | | | | ♥ Site Area SA322A (180d) |
| POSSA322B | Site Area SA322B (180d) | 0 | 14-Jan-14 | | 0 | | | | ♥ Site Area SA322B (180d) |
| Area of Shrine (SA324) | | | | | | | | | |
| POSSA324 | Site Area SA324 (180d) | 0 | 14-Jan-14 | | 0 | | | | ♥ Site Area SA324 (180d) |
| Village Site Areas of TWSWR | | | | | | | | | |
| POSSA321 | Site Area SA321 (120d) | 0 | 20-Nov-13 | | 8 | | ♥ | Site Area SA321 (120d) | |
| POSSA322 | Site Area SA322 (120d) | 0 | 20-Nov-13 | | 8 | | ♥ | Site Area SA322 (120d) | |
| Area of Existing NB & SB Road | | | | | | | | | |
| POSSA320 | Site Area SA320 (0d) | 0 | 20-Nov-13 | | -107 | | ♥ | Site Area SA320 (0d) | |
| POSSA320B | Site Area SA320B (0d) | 0 | 20-Nov-13 | | 8 | | ♥ | Site Area SA320B (0d) | |
| Site Areas under Zone 4 | | | | | | | | | |
| POSSA342A | Site Area SA342A (90d) | 0 | 20-Nov-13 | | -35 | | ♥ | Site Area SA342A (90d) | |
| POSSA341 | Site Area SA341 (90d) | 0 | 20-Nov-13 | | 43 | | ♥ | Site Area SA341 (90d) | |
| POSSA342 | Site Area SA342 (90d) | 0 | 20-Nov-13 | | -35 | | ♥ | Site Area SA342 (90d) | |
| POSSA340 | Site Area SA340 (0d) | 0 | 20-Nov-13 | | -35 | | ♥ | Site Area SA340 (0d) | |
| POSSA346 | Site Area SA346 (0d) | 0 | 20-Nov-13 | | -54 | | ♥ | Site Area SA346 (0d) | |
| POSSA345 | Site Area SA345 (0d) | 0 | 20-Nov-13 | | 2276 | | ♥ | Site Area SA345 (0d) | |
| POSSA343A | Site Area SA343A (180d) | 0 | 14-Jan-14 | | 0 | | | | ♥ Site Area SA343A (180d) |
| POSSA343 | Site Area SA343 (180d) | 0 | 14-Jan-14 | | 0 | | | | ♥ Site Area SA343 (180d) |
| MAJOR PRELIMINARIES | | | | | | | | | |
| PR.1090 | Application of Expressway Works Permit by Engineer | 30 | 20-Nov-13 | 19-Dec-13 | 26 | | | | Application of Expressway Works Permit by Eng |
| PR.1015 | Working Drawings/Contract Documents from Engineer | 0 | 20-Nov-13 | | -96 | | ♥ | | Working Drawings/Contract Documents from Engineer |
| PR.1100 | Approval of Tree Felling from Engineer and Relevant Parties | 28 | 18-Dec-13 | 14-Jan-14 | -91 | | | | Approval of Tree Felling from |
| Major Technical Submissions | | | | | | | | | |
| TS.1170 | Submission of Tree Survey Report | 28 | 20-Nov-13 | 17-Dec-13 | -91 | | | | Submission of Tree Survey Report |
| TS.1180 | Condition Reports of Existing Man Ching Lun Tong | 28 | 18-Dec-13 | 14-Jan-14 | -21 | | | | Condition Reports of Existir |
| TS.1210 | Condition Reports of Existing Boundary Wall | 28 | 10-Jan-14 | 06-Feb-14 | 0 | | | | Condition |
| TS.1190 | Condition Reports of Shrine | 28 | 15-Jan-14 | 11-Feb-14 | -21 | | | | Conc |
| Engineer's Approval | | | | | | | | | |
| EA.2030 | Proposed & Approval of Filling Materials by Engineer | 48 | 20-Nov-13 | 22-Jan-14 | -96 | | | | Proposed & Approva |
| EA.2000 | Approval for Box Culvert Extension related | 14 | 13-Dec-13 | 31-Dec-13 | -80 | | | | Approval for Box Culvert Extension rela |
| EA.1020 | Approval of Design for Fall Arrest System | 14 | 09-Jan-14 | 22-Jan-14 | 2212 | | | | Approval of Design fr |
| EA.1030 | Approval of Design for Translucent Panel System | 14 | 24-Jan-14 | 06-Feb-14 | 2197 | | | | Approva |
| EA.1040 | Approval of Design for Corrugated Roof & Decking System | 14 | 24-Jan-14 | 06-Feb-14 | 2197 | | | | Approva |
| MAJOR DESIGN WORKS | | | | | | | | | |
| Contractor's Design | | | | | | | | | |
| DS.1060 | Method/Design for Irrigation System | 90 | 20-Nov-13 | 10-Mar-14 | 380 | | | | |
| DS.1070 | Method/Design for Box Culvert Extension related | 20 | 20-Nov-13 | 12-Dec-13 | -80 | | | | Method/Design for Box Culvert Extension related |
| DS.1020 | Contractor's Method for Fall Arrest System | 50 | 20-Nov-13 | 08-Jan-14 | -58 | | | | Contractor's Method for Fall Arre |
| DS.1030 | Contractor's Design for Translucent Panel System | 65 | 20-Nov-13 | 23-Jan-14 | -67 | | | | Contractor's Design |
| DS.1040 | Contractor's Method for Corrugated Roof & Decking System | 65 | 20-Nov-13 | 23-Jan-14 | 480 | | | | Contractor's Method |
| DS.1050 | Contractor's Method Batch Noise Barrier | 90 | 20-Nov-13 | 10-Mar-14 | -99 | | | | |
| DS.1000 | Contractor's Method/Design for Irrigation Systems | 65 | 05-Jan-14 | 10-Mar-14 | 527 | | | | |
| UU Design | | | | | | | | | |
| DS.1080 | Design agreement bet. CRE & CLP Alignment Design | 200 | 20-Nov-13 | 11-Sep-14 | -96 | | | | |
| DS.1090 | Design Agreement bet. CRE & Gasmain Alignment Design | 323 | 20-Nov-13 | 17-Feb-15 | -96 | | | | |
| DS.1100 | Design Agreement bet. CRE & PCCW/NWT/TNT/CATV | 374 | 20-Nov-13 | 04-May-15 | -96 | | | | |
| Major Procurements/Manufacturing | | | | | | | | | |
| PRO.1000 | Procurement for Water Main Materials | 129 | 20-Nov-13 | 28-Mar-14 | -71 | | | | |
| PRO.1020 | Bridge Works: Movement Joints | 150 | 20-Nov-13 | 07-Jul-14 | -96 | | | | |
| PRO.1030 | Bridge Works: Bearings | 150 | 20-Nov-13 | 07-Jul-14 | -54 | | | | |
| PRO.1050 | Procurement of Filling Materials (Rocks or Sand) | 30 | 23-Jan-14 | 03-Mar-14 | -96 | | | | |
| Lead Time for Express Way Permit/Change Access/Exit Points | | | | | | | | | |
| HW.1035 | Processing time allowance for Gazetting Express Wai Changes ... | 156 | 23-Nov-13 | 27-Apr-14 | -107 | | | | |
| CONSTRUCTION WORKS | | | | | | | | | |
| WORKS IN ZONE 2 (CH5880 to CH6930) | | | | | | | | | |
| ZONE 2: PHASE I: SOUTH BUFFER ZONE 1 (CH6700 to CH6930) | | | | | | | | | |
| Works for Proposed TWR West NB | | | | | | | | | |



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Contract No. HY/2012/06
Widening of Fanling Highway - Tai Hang to Wo Hop Shek Interchange
3 Months Rolling Programme



| Date | Revision | C... | Ap... |
|---------|----------------------|------|-------|
| 17-O... | Initial Work Prog... | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2013 | | 2014 | |
|---|--|-------------------|-----------|------------|-------------|------|-----------------------|--|--|
| | | | | | | Nov | Dec | Jan | Feb |
| Z2.P1.0210 | Site clearance | 12 | 20-Nov-13 | 05-Dec-13 | -28 | | Site clearance | | |
| Z2.P1.0320 | Existing trees felling | 25 | 15-Jan-14 | 15-Feb-14 | -69 | | | | |
| Z2.P1.0430 | Trial pit excavation | 45 | 24-Jan-14 | 21-Mar-14 | -51 | | | | |
| Temporary Works Construction | | | | | | | | | |
| Z2.P1.1050 | For diversion of existing TWR west n/b to temporary road | 23 | 17-Feb-14 | 15-Mar-14 | -69 | | | | |
| KAU LUNG HANG VEHICULAR BRIDGE | | | | | | | | | |
| Offsite Beam Fabrication | | | | | | | | | |
| Z2.KLH.1180 | Pre-stress beam fabrication (30 beams) | 200 | 30-Dec-13 | 17-Oct-14 | 150 | | | | |
| DECK WORK 1 | | | | | | | | | |
| Z2.KLH.1075 | Initial Site Survey & Mobilization | 42 | 20-Nov-13 | 15-Jan-14 | 3 | | | Initial Site Survey & Mobilization | |
| Z2.KLH.1080 | Site clearance | 25 | 30-Dec-13 | 29-Jan-14 | 9 | | | Site clearance | |
| Z2.KLH.1090 | Existing trees felling | 33 | 15-Jan-14 | 26-Feb-14 | -29 | | | | |
| Z2.KLH.1100 | Trial pit excavation | 14 | 30-Jan-14 | 17-Feb-14 | 9 | | | | |
| West Abutment, Pier VBP1, VBP2 | | | | | | | | | |
| Z2.KLH.1000 | Pre-drilling work | 20 | 18-Feb-14 | 13-Mar-14 | -29 | | | | |
| DECK WORK 2 | | | | | | | | | |
| Pier VBP5 | | | | | | | | | |
| Z2.KLH.1190 | Trial pit excavation | 12 | 25-Nov-13 | 09-Dec-13 | 139 | | Trial pit excavation | | |
| Z2.KLH.1200 | Pre-drilling work | 5 | 07-Dec-13 | 12-Dec-13 | 139 | | Pre-drilling work | | |
| DECK WORK 3 | | | | | | | | | |
| Z2.KLH.1270 | Site clearance | 16 | 20-Nov-13 | 10-Dec-13 | 4 | | Site clearance | | |
| RAMP R1 | | | | | | | | | |
| Z2.KLH.1400 | Site clearance | 16 | 25-Nov-13 | 13-Dec-13 | -29 | | Site clearance | | |
| Z2.KLH.1410 | Existing trees felling | 22 | 15-Jan-14 | 12-Feb-14 | -56 | | | | Existing trees felling |
| Z2.KLH.1420 | Trial pit excavation | 11 | 21-Jan-14 | 05-Feb-14 | -56 | | | | Trial pit excavation |
| Z2.KLH.1430 | Pre-drilling work | 45 | 06-Feb-14 | 01-Apr-14 | -56 | | | | Pre-drilling work |
| NAM WAH PO FOOTBRIDGE DEMOLITION WORKS | | | | | | | | | |
| Portion of Footpath - TWR West & Deck Level of TWSR West | | | | | | | | | |
| Z2.NWP.0500 | Site Clearance | 20 | 20-Nov-13 | 14-Dec-13 | -17 | | Site Clearance | | |
| Z2.NWP.1000 | Modification of Existing Planter for Pier of Temporary Footbridge | 25 | 16-Dec-13 | 18-Jan-14 | -17 | | | Modification of Existing Planter | |
| Z2.NWP.1010 | Removal of Existing Staircase Portion | 26 | 20-Jan-14 | 21-Feb-14 | -17 | | | | Removal of Existing Staircase Portion |
| ZONE 2: Phase II : NON- SOUTH BUFFER ZONE 1 (CH5880 to CH6700) | | | | | | | | | |
| SA324A (Section 3c of Works) | | | | | | | | | |
| Z2.P2N.1570 | Pre-Handover Inspection | 7 | 16-Dec-13 | 24-Dec-13 | 0 | | | Pre-Handover Inspection | |
| Z2.P2N.1580 | Handover inspection | 1 | 27-Dec-13 | 27-Dec-13 | 0 | | | Handover inspection | |
| Area About Existing Extended Box Culvert ID3 | | | | | | | | | |
| Noise Barrier Crossing of Existing Box Culvert ID3 | | | | | | | | | |
| Z2.P2N.1355 | Site Clearance | 7 | 30-Dec-13 | 07-Jan-14* | -80 | | | Site Clearance | |
| Z2.P2N.1358 | Trial Pit | 10 | 08-Jan-14 | 18-Jan-14 | -80 | | | Trial Pit | |
| Z2.P2N.1360 | Pre-drilling work | 20 | 20-Jan-14 | 14-Feb-14 | -80 | | | | Pre-drilling work |
| SA321, SA320A, SA322 | | | | | | | | | |
| Z2.P2N.1390 | Site clearance | 14 | 20-Nov-13 | 07-Dec-13 | 6 | | Site clearance | | |
| Z2.P2N.1400 | Existing trees felling | 30 | 09-Dec-13 | 17-Jan-14 | 6 | | | Existing trees felling | |
| Z2.P2N.1410 | Trial pits excavation | 30 | 18-Jan-14 | 26-Feb-14 | 6 | | | | Trial pits excavation |
| Extension of Existing Culvert ID1 | | | | | | | | | |
| Z2.P2N.1430 | Submission of method statement to Engineer | 46 | 20-Nov-13 | 20-Jan-14 | -89 | | | Submission of method statement | |
| Z2.P2N.1440 | Consent from Engineer | 28 | 21-Jan-14 | 26-Feb-14 | -89 | | | | Consent from Engineer |
| SA322B, SA322A, SA324 | | | | | | | | | |
| Within SA324 | | | | | | | | | |
| Z2.P2N.1660 | Site clearance | 9 | 14-Jan-14 | 23-Jan-14 | 0 | | | Site clearance | |
| Z2.P2N.1670 | Existing trees felling | 21 | 24-Jan-14 | 20-Feb-14 | 0 | | | | Existing trees felling |
| Extension of Existing Culvert ID2 | | | | | | | | | |
| Z2.P2N.1790 | Consent from Engineer | 20 | 20-Nov-13 | 14-Dec-13 | 20 | | Consent from Engineer | | |
| Z2.P2N.1780 | Submission of method statement to Engineer | 46 | 21-Jan-14 | 19-Mar-14 | -67 | | | | Submission of method statement |
| SECTION 3a Works | | | | | | | | | |
| SA322A (RE-SITE Houses) & SA322B | | | | | | | | | |
| General | | | | | | | | | |
| Z2.P2N.1010 | Submission of contractor's design for site formation | 28 | 21-Nov-13 | 30-Dec-13 | 0 | | | Submission of contractor's design for site formation | |
| Z2.P2N.1030 | Submission of DIA & SIA report to DSD | 14 | 10-Dec-13 | 30-Dec-13 | 0 | | | Submission of DIA & SIA report to DSD | |
| Z2.P2N.1040 | Consent from DSD | 21 | 31-Dec-13 | 24-Jan-14 | 0 | | | Consent from DSD | |
| Z2.P2N.1020 | Approval of contractor's Design by Engineer | 14 | 09-Jan-14 | 24-Jan-14 | 0 | | | Approval of contractor's Design by Engineer | |
| Z2.P2N.1050 | Temporary access road construction | 21 | 14-Jan-14 | 10-Feb-14 | 0 | | | Temporary access road construction | |
| Z2.P2N.1060 | Site clearance | 10 | 14-Jan-14 | 24-Jan-14 | 0 | | | Site clearance | |
| Z2.P2N.1045 | Condition survey of existing villiage houses | 9 | 14-Jan-14 | 23-Jan-14 | 1 | | | Condition survey of existing villiage houses | |
| Z2.P2N.1070 | SA322A: Tree Removal Works | 14 | 27-Jan-14 | 13-Feb-14 | 0 | | | | SA322A: Tree Removal Works |
| Z2.P2N.1080 | Site fomration works (Demolition of existing villiage houses with ...) | 46 | 03-Feb-14 | 28-Mar-14 | 0 | | | | Site fomration works (Demolition of existing villiage houses with ...) |
| Noise Barrer | | | | | | | | | |
| Z2.P2N.1120 | Pre-drilling work for proposed noise barrier | 17 | 03-Feb-14 | 21-Feb-14 | 1 | | | | Pre-drilling work for proposed noise barrier |
| Z2.P2N.1130 | Mini-pile installation for proposed noise barrier (LHS of northern...) | 58 | 14-Feb-14 | 12-May-14 | 1 | | | | Mini-pile installation for proposed noise barrier (LHS of northern...) |
| SA325, SA326 & SA327 | | | | | | | | | |
| Z2.P2N.1150 | Site clearance | 20 | 14-Jan-14 | 08-Feb-14 | 2 | | | Site clearance | |
| Z2.P2N.1160 | Existing trees felling | 50 | 10-Feb-14 | 15-Apr-14 | 2 | | | | Existing trees felling |
| DSD Trunk Sewer & Associated Manhole Construction | | | | | | | | | |
| Z2.2UU.1000 | DSD: Determination of sewer, drainage pipe and watermain ali... | 113 | 20-Nov-13 | 23-Apr-14 | -15 | | | | DSD: Determination of sewer, drainage pipe and watermain ali... |
| Along Existing MTRC Railway Track | | | | | | | | | |
| Z2.P2.1120 | Trial pits excavation | 34 | 05-Dec-13 | 18-Jan-14 | 19 | | | Trial pits excavation | |
| Z2.P2.1130 | Existing trees felling | 59 | 20-Jan-14 | 03-Apr-14 | 19 | | | | Existing trees felling |
| Tai Hang Footbridge Construction | | | | | | | | | |
| Physical Construction Works | | | | | | | | | |
| Pre-Drilling Works | | | | | | | | | |

- Remaining Level ...
- Actual Level of Eff...
- Remaining Work
- Critical Remaining...
- Milestone
- Crit. Milestone

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Contract No. HY/2012/06

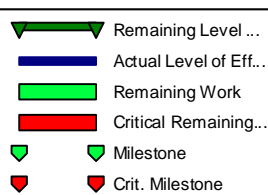
Widening of Fanling Highway - Tai Hang to Wo Hop Shek Interchange

3 Months Rolling Programme



| Date | Revision | C... | Ap... |
|---------|----------------------|------|-------|
| 17-O... | Initial Work Prog... | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2013 | | 2014 | |
|--|---|-------------------|-------------|-----------|-------------|------|-----|------|-----|
| | | | | | | Nov | Dec | Jan | Feb |
| Z2.THF.1140 | Near MTRC rail track | 16 | 20-Nov-13 | 10-Dec-13 | -10 | | | | |
| Tai Wo Footbridge Construction | | | | | | | | | |
| Demolition of Designated Portion of Existing Tai Wo Footbridge | | | | | | | | | |
| Portion Above Existing Tai Wo Service Road West | | | | | | | | | |
| Z2.TWF.1030 | Modification of existing planter or road kerb line | 17 | 18-Dec-13 | 11-Jan-14 | 10 | | | | |
| Z2.TWF.1040 | Temporary steel ramp construction | 68 | 13-Jan-14 | 09-Apr-14 | 10 | | | | |
| Construction Works of New Tai Wo Footbridge | | | | | | | | | |
| Pre-drilling Works | | | | | | | | | |
| Near MTRC Rail Track | | | | | | | | | |
| Z2.TWF.1150 | Trial pit excavation | 12 | 25-Nov-13 | 09-Dec-13 | 173 | | | | |
| Z2.TWF.1160 | Tree felling | 10 | 10-Dec-13 | 20-Dec-13 | 173 | | | | |
| Z2.TWF.1170 | Pre-drilling work | 7 | 23-Dec-13 | 03-Jan-14 | 173 | | | | |
| WORKS IN ZONE 4 (CH7925 to CH87020) | | | | | | | | | |
| Existing Verge Bet. TWSR West & NB Highway | | | | | | | | | |
| Z4.TWS.1020 | Tree felling | 24 | 15-Jan-14 | 14-Feb-14 | -60 | | | | |
| Z4.TWS.1030 | Site clearance | 7 | 15-Feb-14 | 24-Feb-14 | -60 | | | | |
| TWSR East & Existing Petrol Station | | | | | | | | | |
| DN600 & DN1200 Mild Steel Water Pipes Laying | | | | | | | | | |
| Z4.TWS.1300 | Material submission | 8 | 20-Nov-13 A | 29-Nov-13 | -77 | | | | |
| Z4.TWS.1310 | Consent from Engineer | 14 | 30-Nov-13 | 13-Dec-13 | -99 | | | | |
| Z4.TWS.1320 | Lead time for mild steel pipe delivery | 120 | 14-Dec-13 | 12-Apr-14 | -99 | | | | |
| Works Along Petrol Station | | | | | | | | | |
| Z4.TWS.1150 | Consent from Engineer | 14 | 20-Nov-13 | 03-Dec-13 | -37 | | | | |
| Z4.TWS.1260 | Trial pit excavation | 37 | 20-Nov-13 | 09-Jan-14 | -19 | | | | |
| Z4.TWS.1170 | Temporary access road construction | 10 | 04-Dec-13 | 14-Dec-13 | -29 | | | | |
| Z4.TWS.1200 | Construction of temporary filling platform by placing of concrete ... | 34 | 16-Dec-13 | 30-Jan-14 | -29 | | | | |
| Z4.TWS.1112 | SA342 & SA342A: Site Clearance | 60 | 10-Jan-14 | 25-Mar-14 | -65 | | | | |
| Z4.TWS.1280 | Determination of water pipes alignment | 14 | 10-Jan-14 | 27-Jan-14 | -19 | | | | |
| Z4.TWS.1250 | Tree felling | 56 | 15-Jan-14 | 25-Mar-14 | -65 | | | | |
| Z4.TWS.1160 | Removal of existing high mast lighting | 17 | 03-Feb-14 | 21-Feb-14 | 124 | | | | |
| Z4.TWS.1190 | Provision of temporary footbridge and diversion of existing pede... | 30 | 03-Feb-14 | 10-Mar-14 | -1 | | | | |
| Existing Pit -Near RW76 (Exising Nullah) | | | | | | | | | |
| Z4.PT.1000 | Site clearance & Tree Survey | 23 | 20-Nov-13 | 18-Dec-13 | -41 | | | | |
| Z4.PT.1010 | Tree felling | 12 | 15-Jan-14 | 29-Jan-14 | -59 | | | | |
| Z4.PT.1015 | Tree Transplant | 30 | 15-Jan-14 | 21-Feb-14 | -41 | | | | |
| Retaining Wall Construction | | | | | | | | | |
| Z4.RW.1000 | RW76 | 45 | 30-Jan-14 | 26-Mar-14 | -59 | | | | |
| Wo Hop Shek Footbridge Construction | | | | | | | | | |
| Pre-Construction Works at WHS West Side | | | | | | | | | |
| Z4.WHS.1020 | Construction of temporary access road | 30 | 03-Dec-13 | 11-Jan-14 | -16 | | | | |
| Z4.WHS.1030 | Transplant or Tree felling | 25 | 13-Jan-14 | 13-Feb-14 | -16 | | | | |
| Z4.WHS.1040 | Temporary works platform filling | 25 | 14-Feb-14 | 15-Mar-14 | -16 | | | | |
| Construction of Wo Hop Shek Foot Bridge | | | | | | | | | |
| Pre-Drilling Works | | | | | | | | | |
| Other Areas | | | | | | | | | |
| Z4.WHS.1090 | Near existing slip road of Jockey Club Road | 15 | 03-Feb-14 | 19-Feb-14 | -29 | | | | |
| Temporary Diversion Road Construction | | | | | | | | | |
| Temp. Rd. for Existg Petrol Station & Tai Wo Service Rd East nr Pro. HKY Footbridge | | | | | | | | | |
| Z4.TTA.1010 | Tree felling at existing verge area | 30 | 15-Jan-14 | 21-Feb-14 | 40 | | | | |



Project File: HY/2012/06: Works Programme Rev.2 (1311)
 Data Date: 20-Nov-13
 Page 3 of 3

Contract No. HY/2012/06
Widening of Fanling Highway - Tai Hang to Wo Hop Shek Interchange
3 Months Rolling Programme



| Date | Revision | C... | Ap... |
|---------|----------------------|------|-------|
| 17-O... | Initial Work Prog... | | |
| | | | |
| | | | |

**APPENDIX C
IMPLEMENTATION SCHEDULE OF
ENVIRONMENTAL MITIGATION MEASURES
(EMIS)**

Appendix C - Implementation Schedule of Environmental Mitigation Measures (EMIS)

Air Quality – Schedule of Recommended Mitigation Measures

| Impact | Mitigation Measures | Timing | Implementation Status |
|---------------------------------|---|---------------------|------------------------------|
| Air Quality during construction | Restricting heights from which materials are dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading. | During construction | # |
| | All stockpiles of excavated materials or spoil of more than 50m ³ shall be enclosed, covered or dampened during dry or windy conditions. | | # |
| | Effective water sprays shall be used to control potential dust emission sources such as unpaved haul roads and active construction areas. | | # |
| | All spraying of materials and surfaces shall avoid excessive water usage. | | # |
| | Vehicles that have the potential to create dust while transporting materials shall be covered, with the cover properly secured and extended over the edges of the side and tail boards. | | # |
| | Materials shall be dampened, if necessary, before transportation. | | # |
| | Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks. | | # |
| | Vehicle washing facilities shall be provided to minimise the quantity of material deposited on public roads. | | # |

Noise – Schedule of Recommended Mitigation Measures

| Impact | Mitigation Measures | Timing | Implementation Status |
|---------------------------|---|---------------------|-----------------------|
| Noise during construction | Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant. | During construction | # |
| | Reduce the number of equipment and their percentage on-time. | | # |
| | 3.5 m and 5.5 m high temporary noise barrier at culvert construction work area (Figure 2a of the Environmental Permit). | | # |
| | 3 m high temporary noise barrier along the northern edge of Bridge 12 at ground level (Figure 2b of the Environmental Permit). | | # |
| | 2 m high temporary noise barrier along the northern edge of Bridge 12 at bridge level (Figure 2b of the Environmental Permit). | | # |
| | 2.5 m high temporary noise barrier along Tai Wo Service Road West (Figure 2c of the Environmental Permit). | | # |
| | 3.5m and 7m high temporary noise barrier along Tai Wo Services Road West near Tai Hang (Figure 2c of the Environmental Permit). | | # |
| | 7 m high temporary noise barrier along Tai Wo Service Road West near Tai Wo Footbridge work area (Figure 2d of the Environmental Permit). | | # |
| | 7 m high temporary noise barrier near Kiu Tau Footbridge work area (Figure 2d of the Environmental Permit). | | # |
| | 2.5 m high temporary noise barrier near river diversion work area (Figure 2e of the Environmental Permit). | | # |

Water Quality – Schedule of Recommended Mitigation Measures

| Impact | Mitigation Measures | Timing | Implementation Status |
|-----------------------------------|--|---------------------|-----------------------|
| Water quality during construction | Demolition and reconstruction of bridges <ul style="list-style-type: none"> - Prevent off-site migration through use of sheet piles. - Minimise duration of works as far as practical. - All sewer and drainage connections should be sealed to prevent debris, soil, sand, etc, from entering public sewers/drains. - Site surface runoff should be settled to remove sand/silt before it is discharged into the existing storm drains. | During construction | # |
| | Road Widening Works, Earthworks and Culvert Extension Works <ul style="list-style-type: none"> - Wastewater generated from any concrete batching washdown of equipment or similar activities should be discharged into foul sewers, after the removal of settleable solids, and pH adjustment as necessary. All sewage discharges from the study area should meet the TM standards and approval from EPD through the licensing process is required. - Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained. - Runoff from exposed working areas, unfinished slopes and from unlined temporary channels should be directed to stilling basins and/or silt traps before discharging to the drainage outfalls. - Regular inspections of stilling basins and/or silt traps is required to ensure that sediment is not conveyed into the existing drainage system. - Open stockpiles should be covered with a tarpaulin cover. - During the wet season, any exposed top soils should be covered with a tarpaulin, shotcreted or hydroseeded. - Sand and silt from wash-water from vehicle washing should be settled out before discharging into storm drains. - Fuels should be stored in bunded areas such that spillage can be easily collected. | | # |

Waste – Schedule of Recommended Mitigation Measures

| Impact | Mitigation Measures | Timing | Implementation Status |
|--------------------------------------|---|---------------------|-----------------------|
| Waste management during construction | General Waste - Transport of wastes off site as soon as possible. - Maintenance of accurate waste records. - Minimisation of waste generation for disposal (via reduction/recycling/re-use). - No on-site burning will be permitted. - Use of re-useable metal hoardings/signboards. | During construction | V |
| | Vegetation from site clearance - Segregation of materials to facilitate disposal. - Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas. | | V |
| | Demolition Wastes - Segregation of materials to facilitate disposal. - Appropriate stockpile management. | | # |
| | Excavated Materials - Segregation of materials to facilitate disposal / reuse. - Appropriate stockpile management. - Re-use of excavated material on or off site (where possible). - Special handling and disposal procedures in the event that contaminated materials are excavated. | | # |
| | Construction Wastes - Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles). - Appropriate stockpile management. - Planning to reduce over ordering and waste generation. - Recycling and re-use of materials where possible (e.g. metal, wood from formwork) - For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal. | | # |
| | Bentonite Slurries - Bentonite slurries should be reused as far as possible. - Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94. | | # |

| | | | |
|--|---|--|---|
| | <p>Chemical Wastes</p> <ul style="list-style-type: none"> - Storage within locked, covered and bunded area. - The storage area shall not be located adjacent to sensitive receivers e.g. drains. - Minimise waste production and recycle oils/solvents where possible. - A spill response procedure shall be in place and absorption material available for minor spillages. - Use appropriate and labelled containers. - Educate site workers on site cleanliness/waste management procedures. - If chemical wastes are to be generated, the contractor must register with EPD as a chemical waste producer. - The chemical wastes shall be collected by a licensed chemical waste collector. | | # |
| | <p>Municipal Wastes</p> <ul style="list-style-type: none"> - Waste shall be stored within a temporary refuse collection facility, in appropriate containers prior to collection and disposal. - Regular, daily collections are required by an approved waste collector. | | # |

Ecology – Schedule of Recommended Mitigation Measures

| Impact | Mitigation Measures | Timing | Implementation Status |
|-----------------------------|--|---------------------|-----------------------|
| Ecology during construction | Accurate Delineation of Works Area - Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats. - Individual trees which fall within the works areas but which work plans do not require removal are to be retained and fenced off to maximise protection. | During construction | # |
| | Vegetation Clearance - No fires shall be lit within the works area for the purpose of burning cleared vegetation. - The Contractor shall give consideration to mulching the cleared vegetation for recycling within the works area / adjacent land. | | # |
| | Dust generation There are a number of measures which shall be taken as specified in the Air Pollution Control (Construction Dust) Regulation on 'Dust Control Requirements, including the following key measures to be applied during construction: - Vehicle washing facilities to be provided at every discernible or designated vehicle exit point; - All temporary site access roads shall be sprayed with water to suppress dust as necessary; - All dusty materials should be sprayed with water immediately prior to any handling; and - All debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area. | | # |
| | Surface Run-off In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include: - Bund and cover stock piles to avoid run-off; - Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical; - All vehicle maintenance to be undertaken within a bunded area; and - Maximise vegetation retention on-site to maximise absorption (minimise transport). | | # |

Landscape and Visual Impact – Schedule of Recommended Mitigation Measures

| Impact | Mitigation Measures | Timing | Responsibility |
|--|--|---------------------|----------------|
| Landscape & Visual during construction | Preservation of Existing Vegetation - Trees identified for retention within the project limit would be protected during the works; - The tree transplanting and planting works shall be implemented by approved Landscape Contractors. | During construction | # |
| | Temporary Works Areas - Where feasible the works areas would be screened using hoarding and existing vegetation would be retained where possible to reduce the landscape and visual impacts arising from the construction activity. The landscape of these works areas would be restored following the completion of the construction phase. | | # |
| | Hoarding - A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs. | | # |
| | Top Soils - The works will result in disturbance to extensive areas of topsoil. Topsoil worthy of retention should be stockpiled for use following completion of the civil engineering works. It should either be temporarily vegetated with hydroseeded grass or turned over on a regular basis. | | # |
| | Protection of Important Landscape Features - Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected. | | # |

Legend:

V = implemented;

x = not implemented;

@ = partially implemented;

N/A = not applicable - No such work was undertaken or no such material was used on site;

= to be implemented.

**APPENDIX D
SUMMARY OF ACTION AND LIMIT LEVELS**

Appendix D - Summary of Action and Limit Levels

Table 1 – Action and Limit Levels for 1-hour TSP

| Location | Action Level | Limit Level |
|----------|-------------------------|-----------------------|
| AM1 | 317.8 µg/m ³ | 500 µg/m ³ |

Table 2 – Action and Limit Levels for 24-hour TSP

| Location | Action Level | Limit Level |
|----------|-------------------------|-----------------------|
| AM1 | 200.7 µg/m ³ | 260 µg/m ³ |

Table 3 – Action and Limit Levels for Construction Noise (0700-1900 hrs of normal weekdays)

| Location | Action Level | Limit Level |
|----------|---|-------------|
| M2 | When one documented complaint, related to 0700 – 1900 hours on normal weekdays, is received from any one of the sensitive receivers | 75 dB(A) |
| M3* | | 65/70 dB(A) |

*Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period

**APPENDIX E
CALIBRATION CERTIFICATES OF
MONITORING EQUIPMENTS**



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE.
 VILLAGE OF CLEVES, OH 45002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 20, 2013 Rootsometer S/N 0438320 Ta (K) - 297
 Operator Tisch Orifice I.D. - 0988 Pa (mm) - 751.84

| PLATE OR Run # | VOLUME START (m3) | VOLUME STOP (m3) | DIFF VOLUME (m3) | DIFF TIME (min) | METER | ORFICE |
|----------------------|-------------------------|------------------------|------------------------|-----------------------|--------------------|----------------------|
| | | | | | DIFF Hg (mm) | DIFF H2O (in.) |
| 1 | NA | NA | 1.00 | 1.3900 | 3.2 | 2.00 |
| 2 | NA | NA | 1.00 | 0.9720 | 6.4 | 4.00 |
| 3 | NA | NA | 1.00 | 0.8670 | 7.9 | 5.00 |
| 4 | NA | NA | 1.00 | 0.8270 | 8.7 | 5.50 |
| 5 | NA | NA | 1.00 | 0.6800 | 12.6 | 8.00 |

DATA TABULATION

| Vstd | (x axis) Qstd | (y axis) | Va | (x axis) Qa | (y axis) |
|------------------------------------|------------------|----------|---------------------------|----------------|----------|
| 0.9884 | 0.7110 | 1.4090 | 0.9957 | 0.7163 | 0.8889 |
| 0.9842 | 1.0125 | 1.9926 | 0.9915 | 1.0201 | 1.2570 |
| 0.9821 | 1.1327 | 2.2278 | 0.9894 | 1.1412 | 1.4054 |
| 0.9811 | 1.1863 | 2.3365 | 0.9884 | 1.1952 | 1.4740 |
| 0.9759 | 1.4352 | 2.8179 | 0.9832 | 1.4459 | 1.7777 |
| Qstd slope (m) = 1.94727 | | | Qa slope (m) = 1.21935 | | |
| intercept (b) = 0.02332 | | | intercept (b) = 0.01471 | | |
| coefficient (r) = 0.99998 | | | coefficient (r) = 0.99998 | | |
| y axis = SQRT[H2O(Pa/760)(298/Ta)] | | | y axis = SQRT[H2O(Ta/Pa)] | | |

CALCULATIONS

$$Vstd = \text{Diff. Vol} [(Pa - \text{Diff. Hg}) / 760] (298 / Ta)$$

$$Qstd = Vstd / \text{Time}$$

$$Va = \text{Diff Vol} [(Pa - \text{Diff Hg}) / Pa]$$

$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

$$Qstd = 1/m \{ [\text{SQRT}(\text{H2O}(\text{Pa}/760)(298/\text{Ta}))] - b \}$$

$$Qa = 1/m \{ [\text{SQRT} \text{H2O}(\text{Ta}/\text{Pa})] - b \}$$

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.07a
 Sensitivity Adjustment Scale Setting: 557 CPM

Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K_o: 12500
 Last Calibration Date*: 18 May 2013

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 557 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 557 CPM

| Hour | Date (dd-mm-yy) | Time | Ambient Condition | | Concentration ¹ (mg/m ³) Y-axis | Total Count ² | Count/ Minute ³ X-axis |
|------|--------------------|---------------|-------------------|-------------|--|--------------------------|---|
| | | | Temp (°C) | R.H. (%) | | | |
| 1 | 18-05-13 | 12:30 - 13:30 | 28.1 | 78 | 0.04714 | 1887 | 31.45 |
| 2 | 18-05-13 | 13:30 - 14:30 | 28.1 | 78 | 0.04932 | 1970 | 32.83 |
| 3 | 18-05-13 | 14:30 - 15:30 | 28.2 | 77 | 0.05156 | 2056 | 34.27 |
| 4 | 18-05-13 | 15:30 - 16:30 | 28.1 | 78 | 0.05083 | 2026 | 33.77 |

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015
 Correlation coefficient: 0.9978

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.08a
 Sensitivity Adjustment Scale Setting: 702 CPM
 Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 18 May 2013

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 702 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 702 CPM

| Hour | Date (dd-mm-yy) | Time | Ambient Condition | | Concentration ¹ (mg/m ³) Y-axis | Total Count ² | Count/ Minute ³ X-axis |
|------|--------------------|---------------|----------------------|-------------|--|-----------------------------|---|
| | | | Temp (°C) | R.H. (%) | | | |
| 1 | 18-05-13 | 12:30 - 13:30 | 28.1 | 78 | 0.04714 | 1764 | 29.40 |
| 2 | 18-05-13 | 13:30 - 14:30 | 28.1 | 78 | 0.04932 | 1846 | 30.77 |
| 3 | 18-05-13 | 14:30 - 15:30 | 28.2 | 77 | 0.05156 | 1935 | 32.25 |
| 4 | 18-05-13 | 15:30 - 16:30 | 28.1 | 78 | 0.05083 | 1899 | 31.65 |

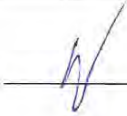
Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0016
 Correlation coefficient: 0.9976

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.09a
 Sensitivity Adjustment Scale Setting: 797 CPM
 Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 18 May 2013

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 797 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 797 CPM

| Hour | Date (dd-mm-yy) | Time | Ambient Condition | | Concentration ¹ (mg/m ³) Y-axis | Total Count ² | Count/ Minute ³ X-axis |
|------|--------------------|---------------|-------------------|-------------|--|-----------------------------|---|
| | | | Temp (°C) | R.H. (%) | | | |
| 1 | 18-05-13 | 12:30 - 13:30 | 28.1 | 78 | 0.04714 | 1885 | 31.42 |
| 2 | 18-05-13 | 13:30 - 14:30 | 28.1 | 78 | 0.04932 | 1965 | 32.75 |
| 3 | 18-05-13 | 14:30 - 15:30 | 28.2 | 77 | 0.05156 | 2059 | 34.32 |
| 4 | 18-05-13 | 15:30 - 16:30 | 28.1 | 78 | 0.05083 | 2024 | 33.73 |


- Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015
 Correlation coefficient: 0.9973

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.10a
 Sensitivity Adjustment Scale Setting: 753 CPM
 Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 18 May 2013

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 753 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 753 CPM

| Hour | Date (dd-mm-yy) | Time | Ambient Condition | | Concentration ¹ (mg/m ³) Y-axis | Total Count ² | Count/ Minute ³ X-axis |
|------|--------------------|---------------|-------------------|-------------|--|--------------------------|---|
| | | | Temp (°C) | R.H. (%) | | | |
| 1 | 18-05-13 | 12:30 - 13:30 | 28.1 | 78 | 0.04714 | 1886 | 31.43 |
| 2 | 18-05-13 | 13:30 - 14:30 | 28.1 | 78 | 0.04932 | 1968 | 32.80 |
| 3 | 18-05-13 | 14:30 - 15:30 | 28.2 | 77 | 0.05156 | 2061 | 34.35 |
| 4 | 18-05-13 | 15:30 - 16:30 | 28.1 | 78 | 0.05083 | 2026 | 33.77 |


Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015
 Correlation coefficient: 0.9983

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.11a
 Sensitivity Adjustment Scale Setting: 799 CPM
 Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 18 May 2013

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 799 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 799 CPM

| Hour | Date (dd-mm-yy) | Time | Ambient Condition | | Concentration ¹ (mg/m ³) Y-axis | Total Count ² | Count/ Minute ³ X-axis |
|------|--------------------|---------------|-------------------|-------------|--|-----------------------------|---|
| | | | Temp (°C) | R.H. (%) | | | |
| 1 | 18-05-13 | 12:15 - 13:15 | 28.1 | 78 | 0.04685 | 1871 | 31.18 |
| 2 | 18-05-13 | 13:15 - 14:15 | 28.1 | 78 | 0.04941 | 1979 | 32.98 |
| 3 | 18-05-13 | 14:15 - 15:15 | 28.2 | 77 | 0.05127 | 2055 | 34.25 |
| 4 | 18-05-13 | 15:15 - 16:15 | 28.1 | 78 | 0.05060 | 2021 | 33.68 |

- Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015
 Correlation coefficient: 0.9976

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3B
 Equipment No.: A.005.14a
 Sensitivity Adjustment Scale Setting: 786 CPM
 Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 18 May 2013

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 786 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 786 CPM

| Hour | Date (dd-mm-yy) | Time | Ambient Condition | | Concentration ¹ (mg/m ³) Y-axis | Total Count ² | Count/ Minute ³ X-axis |
|------|--------------------|---------------|-------------------|-------------|--|-----------------------------|---|
| | | | Temp (°C) | R.H. (%) | | | |
| 1 | 18-05-13 | 12:15 - 13:15 | 28.1 | 78 | 0.04685 | 2005 | 33.42 |
| 2 | 18-05-13 | 13:15 - 14:15 | 28.1 | 78 | 0.04941 | 2121 | 35.35 |
| 3 | 18-05-13 | 14:15 - 15:15 | 28.2 | 77 | 0.05127 | 2194 | 36.57 |
| 4 | 18-05-13 | 15:15 - 16:15 | 28.1 | 78 | 0.05060 | 2167 | 36.12 |

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0014
 Correlation coefficient: 0.9987

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013



CERTIFICATE OF CALIBRATION

Certificate No.: 13CA0709 03 Page 1 of 2

Item tested

| | | | |
|-----------------------|----------------------------|---|------------|
| Description: | Sound Level Meter (Type 1) | , | Microphone |
| Manufacturer: | B & K | , | B & K |
| Type/Model No.: | 2238 | , | 4188 |
| Serial/Equipment No.: | 2255677 / N.009.02 | , | 2250455 |
| Adaptors used: | - | , | - |

Item submitted by

Customer Name: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of receipt: 09-Jul-2013

Date of test: 10-Jul-2013

Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|---------------------------------|----------|------------|--------------|---------------|
| Multi function sound calibrator | B&K 4226 | 2288444 | 22-Jun-2014 | CIGISMEC |
| Signal generator | DS 360 | 33873 | 15-Apr-2014 | CEPREI |
| Signal generator | DS 360 | 61227 | 15-Apr-2014 | CEPREI |

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 60 ± 10 %
Air pressure: 1000 ± 5 hPa

Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of $\pm 20\%$.
- 3, The acoustic calibration was performed using a B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responses of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 10-Jul-2013

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 13CA0709 03 Page 2 of 2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

| Test: | Subtest: | Status: | Expanded Uncertainty (dB) | Coverage Factor |
|-------------------------|--|---------|---------------------------|-----------------|
| Self-generated noise | A | Pass | 0.3 | 2.1 |
| | C | Pass | 1.0 | |
| | Lin | Pass | 2.0 | |
| Linearity range for Leq | At reference range , Step 5 dB at 4 kHz | Pass | 0.3 | 2.2 |
| | Reference SPL on all other ranges | Pass | 0.3 | |
| | 2 dB below upper limit of each range | Pass | 0.3 | |
| | 2 dB above lower limit of each range | Pass | 0.3 | |
| Linearity range for SPL | At reference range , Step 5 dB at 4 kHz | Pass | 0.3 | |
| | A | Pass | 0.3 | |
| | C | Pass | 0.3 | |
| Time weightings | Lin | Pass | 0.3 | |
| | Single Burst Fast | Pass | 0.3 | |
| | Single Burst Slow | Pass | 0.3 | |
| Peak response | Single 100µs rectangular pulse | Pass | 0.3 | |
| R.M.S. accuracy | Crest factor of 3 | Pass | 0.3 | |
| Time weighting I | Single burst 5 ms at 2000 Hz | Pass | 0.3 | |
| | Repeated at frequency of 100 Hz | Pass | 0.3 | |
| Time averaging | 1 ms burst duty factor 1/10 ³ at 4kHz | Pass | 0.3 | |
| | 1 ms burst duty factor 1/10 ⁴ at 4kHz | Pass | 0.3 | |
| Pulse range | Single burst 10 ms at 4 kHz | Pass | 0.4 | |
| Sound exposure level | Single burst 10 ms at 4 kHz | Pass | 0.4 | |
| Overload indication | SPL | Pass | 0.3 | |
| | Leq | Pass | 0.4 | |

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

| Test: | Subtest | Status | Expanded Uncertainty (dB) | Coverage Factor |
|-------------------|------------------------|--------|---------------------------|-----------------|
| Acoustic response | Weighting A at 125 Hz | Pass | 0.3 | |
| | Weighting A at 8000 Hz | Pass | 0.5 | |

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

Date:

Fung Chi Yip
10-Jul-2013

- End -

Checked by:

Date:

Lam Tze Wai
10-Jul-2013

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 13CA0325 01-03

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: Rion Co., Ltd.
Type/Model No.: NC-73
Serial/Equipment No.: 10186482 / N.004.09
Adaptors used: -

Item submitted by

Customer: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of receipt: 25-Mar-2013

Date of test: 26-Mar-2013

Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|-------------------------|----------|------------|--------------|---------------|
| Lab standard microphone | B&K 4180 | 2412857 | 29-May-2013 | SCL |
| Preamplifier | B&K 2673 | 2239857 | 17-Dec-2013 | CEPREI |
| Measuring amplifier | B&K 2610 | 2346941 | 17-Dec-2013 | CEPREI |
| Signal generator | DS 360 | 61227 | 29-May-2013 | CEPREI |
| Digital multi-meter | 34401A | US36087050 | 10-Dec-2013 | CEPREI |
| Audio analyzer | 8903B | GB41300350 | 29-May-2013 | CEPREI |
| Universal counter | 53132A | MY40003662 | 29-May-2013 | CEPREI |

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 60 ± 10 %
Air pressure: 1000 ± 10 hPa

Test specifications

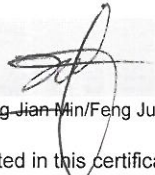
- 1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:


Huang Jian Min/Feng Jun Qi

Date: 26-Mar-2013

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

**APPENDIX F
EM&A MONITORING SCHEDULES**

**Contract No. HY/2012/06
Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange
Impact Monitoring and Audit Schedule for November 2013**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|--------|---------|--------------------------------|----------|--------|----------|
| | | | | | 1-Nov | 2-Nov |
| | | | | | | |
| 3-Nov | 4-Nov | 5-Nov | 6-Nov | 7-Nov | 8-Nov | 9-Nov |
| | | | | | | |
| 10-Nov | 11-Nov | 12-Nov | 13-Nov | 14-Nov | 15-Nov | 16-Nov |
| | | | | | | |
| 17-Nov | 18-Nov | 19-Nov | 20-Nov | 21-Nov | 22-Nov | 23-Nov |
| | | | | | | |
| 24-Nov | 25-Nov | 26-Nov | 27-Nov | 28-Nov | 29-Nov | 30-Nov |
| | | | 1-hr TSP 24-hr TSP Noise | | | |

Contract No. HY/2012/06
Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange
Tentative Impact Monitoring and Audit Schedule for December 2013

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|--------------------------------|--------------------------------|-----------|----------|--------------------------------|-------------|
| 1-Dec | 2-Dec | 3-Dec | 4-Dec | 5-Dec | 6-Dec | 7-Dec |
| | | 1-hr TSP 24-hr TSP Noise | | | | |
| 8-Dec | 9-Dec | 10-Dec | 11-Dec | 12-Dec | 13-Dec | 14-Dec |
| | 1-hr TSP 24-hr TSP Noise | | | | | Air Quality |
| 15-Dec | 16-Dec | 17-Dec | 18-Dec | 19-Dec | 20-Dec | 21-Dec |
| | | | | | 1-hr TSP 24-hr TSP Noise | |
| 22-Dec | 23-Dec | 24-Dec | 25-Dec | 26-Dec | 27-Dec | 28-Dec |
| | | 1-hr TSP 24-hr TSP Noise | | | | |
| 29-Dec | 30-Dec | 31-Dec | | | | |
| | 1-hr TSP 24-hr TSP Noise | | | | | |

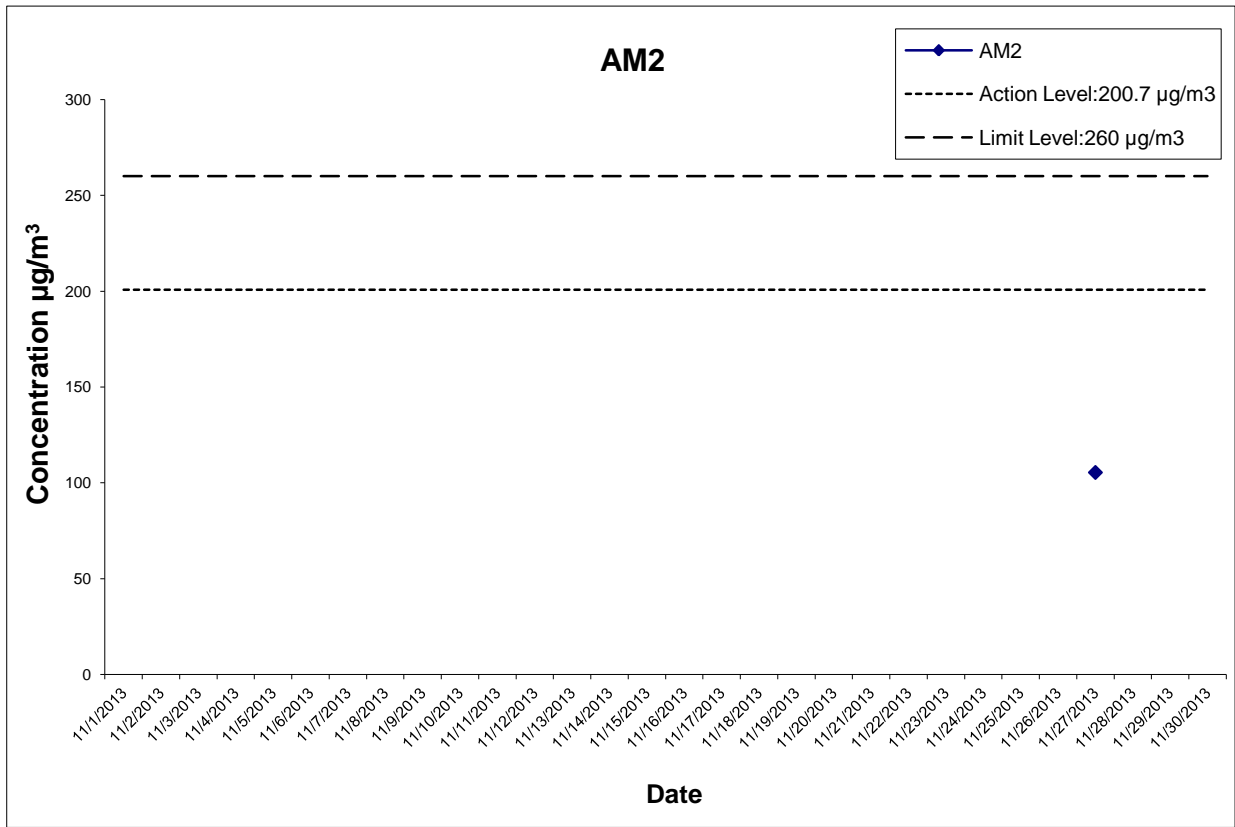
The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

**APPENDIX G
IMPACT AIR QUALITY MONITORING
RESULTS AND THEIR GRAPHICAL
PRESENTATION**

Appendix G
Impact Air Quality Monitoring Results

24-hour TSP Monitoring Results at Station AM2 (Fanling Government Secondary School)

| Date | Weather Condition | Air Temp. (°C) | Atmospheric Pressure(hPa) | Flow Rate (m ³ /min.) | | Av. flow (m ³ /min) | Total vol. (m ³) | Filter Weight (g) | | Particulate weight(g) | Elapse Time | | Sampling Time(hrs.) | Conc. (µg/m ³) | Actino Level (µg/m ³) | Limit Level (µg/m ³) |
|-----------|-------------------|----------------|---------------------------|----------------------------------|-------|--------------------------------|------------------------------|-------------------|--------|-----------------------|-------------|---------|---------------------|----------------------------|-----------------------------------|----------------------------------|
| | | | | Initial | Final | | | Initial | Final | | Initial | Final | | | | |
| 27-Nov-13 | Cloudy | 20.1 | 1018.1 | 1.314 | 1.314 | 1.314 | 1892.2 | 2.7111 | 2.9106 | 0.1995 | 3201.02 | 3225.02 | 24.00 | 105 | 200.7 | 260 |
| | | | | | | | | | | | | | Average | 105.0 | | |
| | | | | | | | | | | | | | Min | 105.0 | | |
| | | | | | | | | | | | | | Max | 105.0 | | |



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CONTRACT NO. HY/2012/06
 WIDENING OF FANLING HIGHWAY
 - TAI HANG TO WO HOP SHEK INTERCHANGE

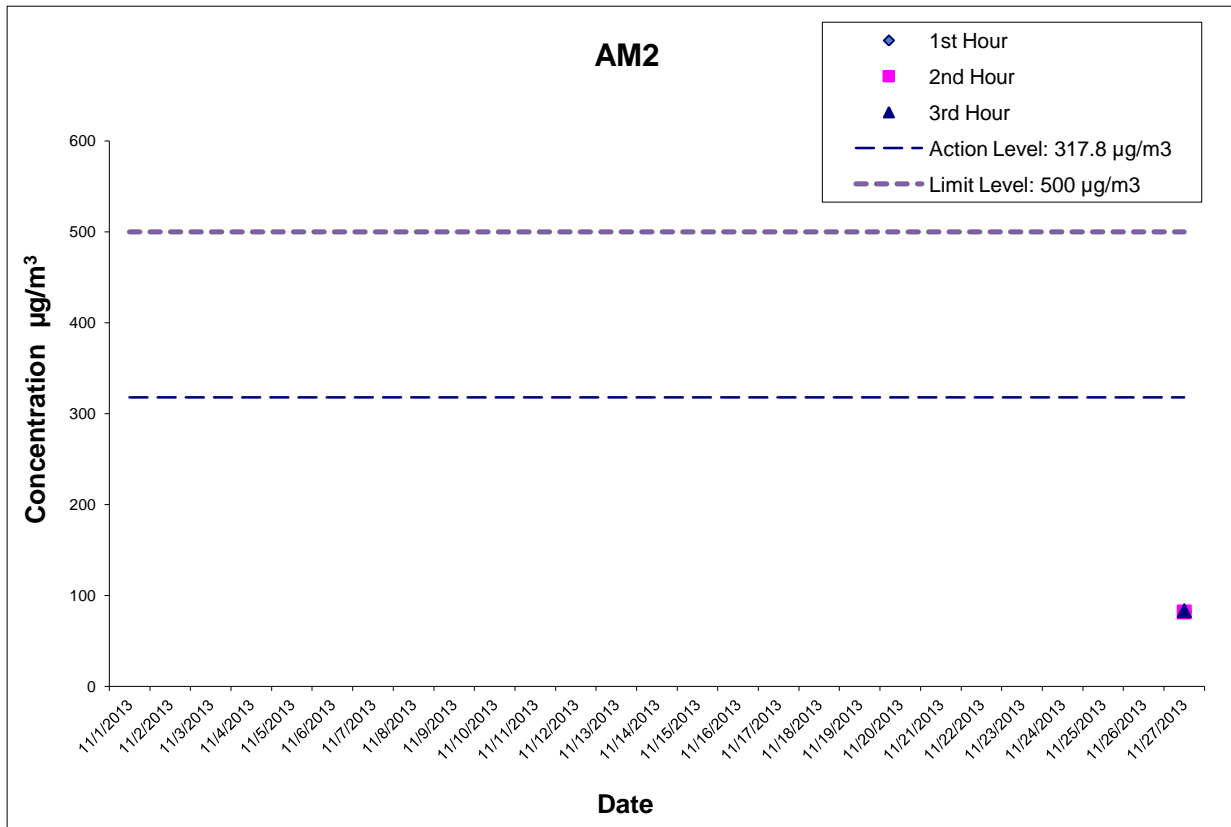


Graphical Presentation of Impact 24-hour TSP Monitoring Results

Appendix G
Impact Air Quality Monitoring Results

1-hour TSP Monitoring Results at Station AM2
(Fanling Government Secondary School)

| Date | Start Time (hh:mm) | 1st Hour Conc. ($\mu\text{g}/\text{m}^3$) | 2nd Hour Conc. ($\mu\text{g}/\text{m}^3$) | 3rd Hour Conc. ($\mu\text{g}/\text{m}^3$) |
|-----------|--------------------|---|---|---|
| 27-Nov-13 | 11:07 | 82.0 | 81.7 | 83.1 |
| | | | Average | 82.3 |
| | | | Min | 81.7 |
| | | | Max | 83.1 |



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CONTRACT NO. HY/2012/06
 WIDENING OF FANLING HIGHWAY
 - TAI HANG TO WO HOP SHEK INTERCHANGE



Graphical Presentation of Impact 1-hour TSP Monitoring Results

**APPENDIX H
METEOROLOGICAL DATA FOR THE
REPORTING MONTH**

**Extract of Meteorological Observations for Tai Po Automatic Weather Station,
November 2013**

| Date | Mean Pressure at M.S.L. (hPa) | Air Temperature | | | Mean Dew Point Temperature (deg C) | Relative Humidity | | |
|----------------|-------------------------------|-----------------|--------------|--------------|------------------------------------|-------------------|----------|----------|
| | | Max. (deg C) | Mean (deg C) | Min. (deg C) | | Max. (%) | Mean (%) | Min. (%) |
| 1-Nov | 1013.7 | 28.3 | 24.7 | 20.7 | 18.2 | 89 | 68 | 50 |
| 2-Nov | 1011.4 | 27.3 | 25.6 | 22.7 | 18.5 | 75 | 65 | 57 |
| 3-Nov | 1012.8 | 27.1 | 25.5 | 23.6 | 19.4 | 80 | 69 | 62 |
| 4-Nov | 1017.4 | 24.8 | 22.6 | 20.7 | 19.4 | 98 | 83 | 69 |
| 5-Nov | 1018.7 | 23.8 | 22 | 20.2 | 19.9 | 98 | 88 | 77 |
| 6-Nov | 1017.9 | 26.4 | 23.6 | 21.4 | 20.3 | 92 | 82 | 66 |
| 7-Nov | 1017.2 | 26.2 | 23.9 | 22 | 20.4 | 94 | 81 | 68 |
| 8-Nov | 1016 | 27.4 | 24.1 | 21.8 | 19.5 | 90 | 76 | 58 |
| 9-Nov | 1014.5 | 27.7 | 25.4 | 21.3 | 20.8 | 96 | 77 | 64 |
| 10-Nov | 1014.4 | 26.6 | 25.7 | 24.7 | 22.7 | 93 | 83 | 76 |
| 11-Nov | 1013.8# | 25.2 | 24.2# | 23.1 | 21.2# | 88 | 83# | 77 |
| 12-Nov | 1012.8 | 23.1 | 21.8 | 20.9 | 20.6 | 98 | 93 | 83 |
| 13-Nov | 1014.2 | 21.3 | 19.1 | 17.8 | 17.4 | 98 | 90 | 80 |
| 14-Nov | 1017.3 | 23.3 | 19.8 | 17.9 | 15.7 | 89 | 77 | 65 |
| 15-Nov | 1018.3 | 23.9 | 20.3 | 16.5 | 15 | 85 | 72 | 56 |
| 16-Nov | 1018.1 | 24.4 | 20.6 | 16.9 | 13.8 | 80 | 66 | 48 |
| 17-Nov | 1018.4 | 23.8 | 20.1 | 16 | 11.8 | 76 | 59 | 46 |
| 18-Nov | 1020.3 | 23.4 | 19.9 | 17 | 9.1 | 76 | 51 | 31 |
| 19-Nov | 1020.9 | 21.1 | 19.5 | 16.6 | 11.7 | 84 | 62 | 43 |
| 20-Nov | 1019.4 | 20.5 | 19.5 | 18.1 | 13.6 | 78 | 69 | 60 |
| 21-Nov | 1018.3 | 23.1 | 20 | 17.4 | 13.1 | 78 | 65 | 46 |
| 22-Nov | 1018.5 | 23.1 | 20.5 | 17.2 | 16.2 | 94 | 77 | 58 |
| 23-Nov | 1017 | 23.7 | 21.9 | 20.8 | 16.4 | 87 | 71 | 59 |
| 24-Nov | 1014 | 25.6 | 22.2 | 19.3 | 19.1 | 97 | 83 | 68 |
| 25-Nov | 1015 | 22.1 | 18.3 | 15.5 | 8.8 | 82 | 56 | 29 |
| 26-Nov | 1016.8 | 21.2 | 18.1 | 13.6 | 12.2 | 82 | 69 | 51 |
| 27-Nov | 1018.1 | 23.4 | 19.4 | 14.1 | 15.1 | 94 | 77 | 60 |
| 28-Nov | 1023.8 | 17.9 | 15 | 11.6 | 7.1 | 96 | 64 | 30 |
| 29-Nov | 1024.3 | 17.4 | 14.1 | 11.2 | -1.8 | 57 | 35 | 19 |
| 30-Nov | 1021.7 | 19.6 | 14.1 | 9.1 | 4.1 | 64 | 52 | 29 |
| Mean | 1017.2# | 23.8 | 21.0# | 18.3 | 15.2# | 86 | 71# | 56 |
| Maximum | 1024.3# | 28.3 | 25.7# | 24.7 | 22.7# | 98 | 93# | 83 |
| Minimum | 1011.4# | 17.4 | 14.1# | 9.1 | -1.8# | 57 | 35# | 19 |

**Extract of Meteorological Observations for Tai Po Automatic Weather Station,
November 2013**

| Date | Total Rainfall (mm) | Prevailing Wind Direction (degrees) | Mean Wind Speed (km/h) |
|----------------|------------------------------------|--|---|
| 1-Nov | ***** | *** | ***** |
| 2-Nov | ***** | *** | ***** |
| 3-Nov | ***** | *** | ***** |
| 4-Nov | ***** | *** | ***** |
| 5-Nov | ***** | *** | ***** |
| 6-Nov | ***** | *** | ***** |
| 7-Nov | ***** | *** | ***** |
| 8-Nov | ***** | *** | ***** |
| 9-Nov | ***** | *** | ***** |
| 10-Nov | ***** | *** | ***** |
| 11-Nov | ***** | *** | ***** |
| 12-Nov | ***** | *** | ***** |
| 13-Nov | ***** | *** | ***** |
| 14-Nov | ***** | *** | ***** |
| 15-Nov | ***** | *** | ***** |
| 16-Nov | ***** | *** | ***** |
| 17-Nov | ***** | *** | ***** |
| 18-Nov | ***** | *** | ***** |
| 19-Nov | ***** | *** | ***** |
| 20-Nov | ***** | *** | ***** |
| 21-Nov | ***** | *** | ***** |
| 22-Nov | ***** | *** | ***** |
| 23-Nov | ***** | *** | ***** |
| 24-Nov | ***** | *** | ***** |
| 25-Nov | ***** | *** | ***** |
| 26-Nov | ***** | *** | ***** |
| 27-Nov | ***** | *** | ***** |
| 28-Nov | ***** | *** | ***** |
| 29-Nov | ***** | *** | ***** |
| 30-Nov | ***** | *** | ***** |
| Mean | ----- | *** | ***** |
| Total | ***** | --- | ----- |
| Maximum | ***** | --- | ***** |
| Minimum | ***** | --- | ***** |

*** unavailable

missing (less than 24 hourly observations a day)

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

**Extract of Meteorological Observations for Tai Mei Tuk Automatic Weather Station,
November 2013**

| Date | Mean Pressure at M.S.L. (hPa) | Air Temperature | | | Mean Dew Point Temperature (deg C) | Relative Humidity | | |
|----------------|-------------------------------|-----------------|--------------|--------------|------------------------------------|-------------------|----------|----------|
| | | Max. (deg C) | Mean (deg C) | Min. (deg C) | | Max. (%) | Mean (%) | Min. (%) |
| 1-Nov | ***** | 30.2 | 25.7 | 21.5 | **** | *** | *** | *** |
| 2-Nov | ***** | 28.5 | 26.2 | 24.4 | **** | *** | *** | *** |
| 3-Nov | ***** | 28.3 | 25.6 | 23.4 | **** | *** | *** | *** |
| 4-Nov | ***** | 26.4 | 22.7 | 20.7 | **** | *** | *** | *** |
| 5-Nov | ***** | 24.6 | 22.4 | 20.3 | **** | *** | *** | *** |
| 6-Nov | ***** | 28.3 | 24.3 | 21.7 | **** | *** | *** | *** |
| 7-Nov | ***** | 28.5 | 24.3 | 22.1 | **** | *** | *** | *** |
| 8-Nov | ***** | 29.5 | 24.7# | 22.4 | **** | *** | *** | *** |
| 9-Nov | ***** | 28.9 | 25.9# | 22.2 | **** | *** | *** | *** |
| 10-Nov | ***** | 26.4 | 25.4 | 24.4 | **** | *** | *** | *** |
| 11-Nov | ***** | 26.3 | 24.5 | 23 | **** | *** | *** | *** |
| 12-Nov | ***** | 22.9 | 22.0# | 21.3 | **** | *** | *** | *** |
| 13-Nov | ***** | 21.3 | 19.9 | 19 | **** | *** | *** | *** |
| 14-Nov | ***** | 24.2 | 20.4 | 18.2 | **** | *** | *** | *** |
| 15-Nov | ***** | 26.6 | 21.3 | 17 | **** | *** | *** | *** |
| 16-Nov | ***** | 26.2 | 21.7 | 17.4 | **** | *** | *** | *** |
| 17-Nov | ***** | 25.7 | 21.5 | 17.5 | **** | *** | *** | *** |
| 18-Nov | ***** | 25.2 | 21.1 | 18.6 | **** | *** | *** | *** |
| 19-Nov | ***** | 22.6 | 20 | 17.9 | **** | *** | *** | *** |
| 20-Nov | ***** | 21.4 | 19.5 | 18.4 | **** | *** | *** | *** |
| 21-Nov | ***** | 24.3 | 20.7 | 18.4 | **** | *** | *** | *** |
| 22-Nov | ***** | 25.2 | 20.8 | 17.6 | **** | *** | *** | *** |
| 23-Nov | ***** | 25.8 | 22.2 | 19.9 | **** | *** | *** | *** |
| 24-Nov | ***** | 28.3 | 22.9 | 20.1 | **** | *** | *** | *** |
| 25-Nov | ***** | 23.4 | 19.3 | 16 | **** | *** | *** | *** |
| 26-Nov | ***** | 22.8 | 19.5 | 16.4 | **** | *** | *** | *** |
| 27-Nov | ***** | 26.2 | 19.7 | 14.1 | **** | *** | *** | *** |
| 28-Nov | ***** | 18.8 | 15.2# | 11.9 | **** | *** | *** | *** |
| 29-Nov | ***** | 18.2 | 15.7# | 13.7 | **** | *** | *** | *** |
| 30-Nov | ***** | 21.1 | 16 | 11.5 | **** | *** | *** | *** |
| Mean | ***** | 25.2 | 21.8# | 19 | **** | *** | *** | *** |
| Maximum | ***** | 30.2 | 26.2# | 24.4 | **** | *** | *** | *** |
| Minimum | ***** | 18.2 | 15.2# | 11.5 | **** | *** | *** | *** |

**Extract of Meteorological Observations for Tai Mei Tuk Automatic Weather Station,
November 2013**

| Date | Total Rainfall (mm) | Prevailing Wind Direction (degrees) | Mean Wind Speed (km/h) |
|----------------|------------------------------------|--|---|
| 1-Nov | 0.0 | 50 | 9.2 |
| 2-Nov | 0.0 | 30 | 24.8 |
| 3-Nov | 0.0 | 40 | 30.7 |
| 4-Nov | 5.0 | 40 | 21.4 |
| 5-Nov | 4.0 | 40 | 14.0 |
| 6-Nov | 0.0 | 50 | 9.3 |
| 7-Nov | 0.0 | 90 | 14.3 |
| 8-Nov | 0.0 | 050# | 12.0# |
| 9-Nov | 0.0# | 060# | 26.0# |
| 10-Nov | 3.0 | 60 | 26.3 |
| 11-Nov | 0.0 | 90 | 39.5 |
| 12-Nov | 4.0# | 090# | 31.7# |
| 13-Nov | 0.5 | 50 | 11.3 |
| 14-Nov | 0.0 | 260 | 6.2 |
| 15-Nov | 0.0 | 40 | 8.6 |
| 16-Nov | 0.0 | 40 | 5.6 |
| 17-Nov | 0.0 | 40 | 10.0 |
| 18-Nov | 0.0 | 40 | 14.2 |
| 19-Nov | 0.0 | 50 | 13.9 |
| 20-Nov | 0.0 | 50 | 16.0 |
| 21-Nov | 0.0 | 50 | 11.7 |
| 22-Nov | 2.0 | 50 | 14.0 |
| 23-Nov | 0.0 | 90 | 18.1 |
| 24-Nov | 11.0 | 60 | 11.3 |
| 25-Nov | 0.0 | 50 | 14.3 |
| 26-Nov | 0.0 | 40 | 12.6 |
| 27-Nov | 1.0 | 40 | 15.4 |
| 28-Nov | 3.0# | 040# | 20.5# |
| 29-Nov | 0.0# | 040# | 19.1# |
| 30-Nov | 0.0 | 270 | 6.1 |
| Mean | ----- | 040# | 16.2# |
| Total | 33.5# | --- | ----- |
| Maximum | 11.0# | --- | 39.5# |
| Minimum | 0.0# | --- | 5.6# |

*** unavailable

missing (less than 24 hourly observations a day)

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

**APPENDIX I
IMPACT DAYTIME CONSTRUCTION NOISE
MONITORING RESULTS AND THEIR
GRAPHICAL PRESENTATION**

Appendix I Impact Daytime Construction Noise Monitoring Results

Location : M2 (West Tai Wo - Free Field)

Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

| Date | Measured Noise Level for 30-min, dB(A) | | | | Limit Level, dB(A) | Exceedance (Y/N) |
|-----------|--|------|------|------|--------------------|------------------|
| | Start Time | Leq* | L10* | L90* | | |
| 27-Nov-13 | 14:52 | 66.0 | 68.3 | 61.1 | 75 | N |
| | Min | 66.0 | 68.3 | 61.1 | | |
| | Max | 66.0 | 68.3 | 61.1 | | |
| | Average | 66.0 | -- | -- | | |

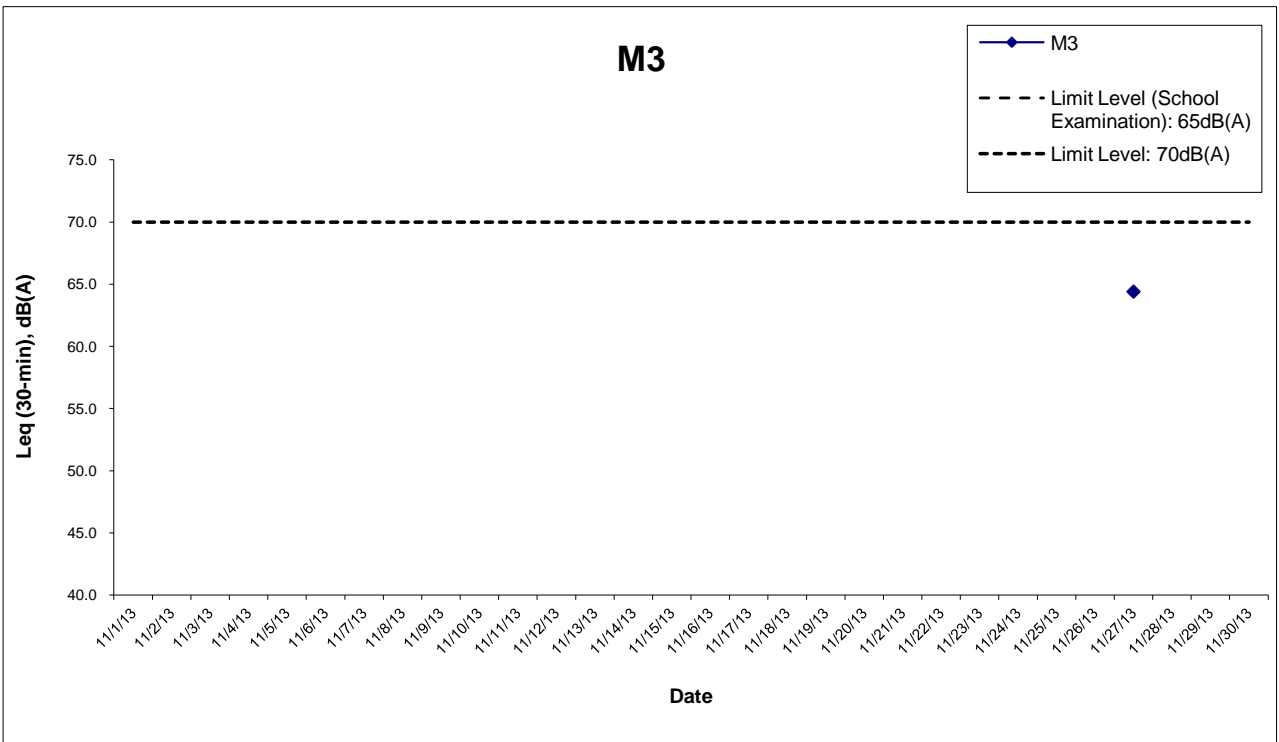
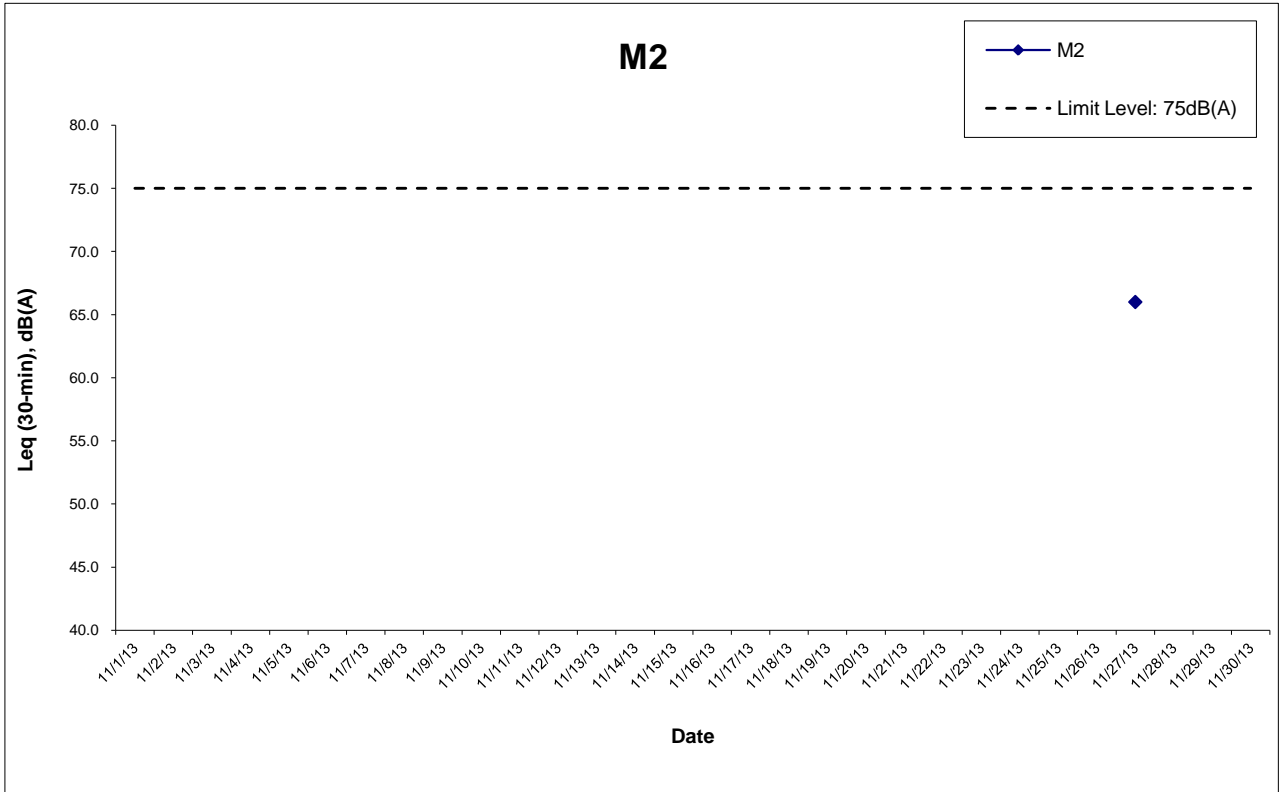
Location : M3 (Fanling Government Secondary School- Façade)

Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

| Date | Measured Noise Level for 30-min, dB(A) | | | | Limit Level, dB(A)^ | Exceedance (Y/N) |
|-----------|--|------|------|------|---------------------|------------------|
| | Start Time | Leq | L10 | L90 | | |
| 27-Nov-13 | 15:44 | 64.4 | 66.4 | 61.0 | 70 | N |
| | Min | 64.4 | 66.4 | 61.0 | | |
| | Max | 64.4 | 66.4 | 61.0 | | |
| | Average | 64.4 | -- | -- | | |

* +3dB(A) Façade effect correction included

^ Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.



Remark:

^ Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

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 WIDENING OF FANLING HIGHWAY
 - TAI HANG TO WO HOP SHEK INTERCHANGE



Graphical Presentation of Impact Daytime Construction Noise Monitoring Results

**APPENDIX J
EVENT ACTION PLAN**

Appendix J – Event Action Plan

Event / Action Plan for Air Quality

| Event | Action | | | |
|--|---|---|---|---|
| | ET Leader | IEC | ER | Contractor |
| Action Level | | | | |
| Exceedance for one sample | <ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. | <ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. | <ol style="list-style-type: none"> 1. Notify Contractor. | <ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate. |
| Exceedance for two or more consecutive samples | <ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC and ER; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. Discuss with IEC and Contractor on remedial actions required; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring. | <ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures. | <ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. | <ol style="list-style-type: none"> 1. Submit proposals for remedial actions to IEC within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate. |

Event / Action Plan for Air Quality

| Event Action Level | Action | | | |
|--|---|---|---|---|
| | ET Leader | IEC | ER | Contractor |
| Limit Level | | | | |
| Exceedance for one sample | <ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC, ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. | <ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. | <ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. | <ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate. |
| Exceedance for two or more consecutive samples | <ol style="list-style-type: none"> 1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase frequency to daily; 5. Analyse Contractor's working procedures to determine possible mitigation to be; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. | <ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly; 3. Supervise the implementation of remedial measures. | <ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. | <ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by ER until the exceedance is abated. |

Event / Action Plan for Noise Impact

| Event Limit Level | Action | | | |
|----------------------|---|--|--|--|
| | ET Leader | IEC | ER | Contractor |
| Action Level | <ol style="list-style-type: none"> 1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness. | <ol style="list-style-type: none"> 1. Review with analysed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures. | <ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. | <ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals. |
| Limit Level | <ol style="list-style-type: none"> 1. Notify, IEC, ER, EPD and the Contractor. 2. Identify the source. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform IEC, ER, and EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring. | <ol style="list-style-type: none"> 1. Discuss amongst ER, ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures. | <ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. | <ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated. |

**APPENDIX K
STATISTICS ON COMPLAINTS,
NOTIFICATION OF SUMMONS AND
SUCCESSFUL PROSECUTIONS**

Appendix K**Statistics on Complaints, Notifications of Summons and Successful Prosecutions**

| | Date Received | Subject | Status | Total no. followed up by ET in this month | Total no. followed up by ET since project commencement |
|-------------------------------------|--------------------------|----------------|---------------|--|---|
| Environmental complaints | - | - | - | 0 | 0 |
| Notification of summons | - | - | - | 0 | 0 |
| Successful Prosecutions | - | - | - | 0 | 0 |