# Sang Hing Civil Contractors Co. Ltd.

# Contract No. CV/2010/05

# Temporary Construction Waste Sorting Facilities, 2011 - 2013

Monthly EM&A Report No. 36 (for the month December 2013 at Tseung Kwan O Area 137)

January 2014

	Name	Signature	
Prepared & Checked:	Joanne Ko	Josnopo.	
Reviewed, Approved & Certified:	Fung Yiu Wah (ETL)	h	

Version:	0	Date:	15 January 2014
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This report is prepared for Sang Hing Civil Contractors Co. Ltd. and is given for its sole benefit in relation to and pursuant to the construction phase of the Temporary Construction Waste Sorting Facility (CWSF), 2011 - 2013 and may not be disclosed to, quoted to or relied upon by any person other than Sang Hing Civil Contractors Co. Ltd. without our prior written consent. No person (other than Sang Hing Civil Contractors Co. Ltd.) into whose possession a copy of this report comes may rely on this report without our express written consent and Sang Hing Civil Contractors Co. Ltd. may not rely on it for any purpose other than as described above.

AECOM Asia Co. Ltd.

15/F, Grand Central Plaza, Tower 1, 138 Shatin Rural Committee Road, Shatin, NT, Hong Kong Tel: (852) 3922 9000 Fax: (852) 2317 7609 www.aecom.com



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15 January 2014

By E-mail and Fax No.: 2317 7609

AECOM Asia Company Limited 11/F Grand Central Plaza, Tower 2 138 Shatin Rural Committee Road Shatin, Hong Kong

Attention: Mr. Y W FUNG

Dear Mr. Fung,

Re:

Contract No. CV/2010/05

Temporary Construction Waste Sorting Facilities, 2011 – 2013 Monthly EM&A Report (No.36) for Tseung Kwan O Area 137 for December 2013

Reference is made to your submission of the final draft Monthly EM&A Report for December 2013 for Tseung Kwan O Area 137 received by E-mail on 14 January 2014.

We are pleased to inform you that we have no comment on the captioned report.

Thank you very much for your attention and please do not hesitate to contact our Jason Lai or the undersigned should you have any queries.

Yours faithfully,

Tony Cheng

Independent Environmental Checker

c.c.

CEDD SHCCCL

Attn: Ms. Ruth Tso Attn: Mr. P H Chan Fax No.: 2714 0113 Fax No.: 2623 9772

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### **EXECUTIVE SUMMARY**

#### Introduction

This is the thirty-sixth monthly Environmental Monitoring and Audit (EM&A) report prepared by AECOM Asia Company Limited for Contract no. CV/2010/05 "Temporary Construction Waste Sorting Facilities, 2011 - 2013" (the Project). This report documents the findings of EM&A Works conducted during the period between 1 and 26 December 2013 for the temporary CWSF Tseung Kwan O Area 137.

As advised by the Contractor (Sang Hing Civil Contractors Co. Ltd.), the project was commenced on 29 December 2010. The activities in the reporting period were:

- Operation and maintenance of Construction Waste Sorting Facilities (CWSFs) at TKO Area 137 including Site Charging and Disposal Recording System; and
- Disposal of sorted waste at designated Landfills and Public Fill reception facilities.

# **Environmental Monitoring Works**

# Air Quality

1-hr TSP Monitoring

All the monitoring data complied with the AL levels in the reporting period. The 1-hr TSP monitoring results remained at an acceptable level during the construction and operation of the temporary CWSF.

24-hr TSP Monitoring

All the monitoring data complied with the AL levels in the reporting period. The 24-hr TSP monitoring results remained at an acceptable level during the construction and operation of the temporary CWSF.

# **Complaints, Non-compliance and Prosecutions**

No complaint, non-compliance or prosecution was received in the reporting period.

### **Permits and Licences**

No new permit or license was obtained in the reporting period.

# **Environmental Site Inspection**

There were 4 site inspections conducted in the reporting period. No adverse observation was made during the reporting period.

### **Reporting Change**

There was no reporting change required in the reporting period.

# **Future Key Issues**

The weather is expected to be windy and dry in the forthcoming month and as such, the Contractor should provide preventive measures to prevent surface runoff, such as bunding around the site boundaries, and to confirm that a functional temporary drainage system is in place around the site. The Contractor should also maintain sufficient dust suppression measures for vehicle movement along haul roads and during sorting activities. It is recommended to implement sufficient mitigation measures to eliminate dust generation from dumping and sorting activities.

It is also recommended to implement all necessary preventive measures to avoid oil leakage on ground/soil, such as provision of drip trays for all oil drums/chemical containers and placement of tarpaulin sheets on the ground during maintenance of equipment on site. In the event of any oil leakage problem, the Contractor should properly remove the leaked oil and handle the contaminated soil as chemical waste.

# 1. INTRODUCTION

# **Background**

- 1.1 AECOM Asia Company Limited was commissioned by Sang Hing Civil Contractors Co. Ltd. to undertake the Environmental Monitoring and Audit (EM&A) works for the Temporary Construction Waste Sorting Facilities, 2011 2013 (hereafter called "the Project").
- 1.2 An Environmental Permit (No.: EP-134/2002/K) was granted to the Project on 4 February 2013. The scale and scope of this project as stated in the EP include:
  - Site clearance:
  - Construction of a temporary storm water system;
  - Stockpiling of 6 million m<sup>3</sup> of public fill;
  - Setting up two barging points: one at the Tseung Kwan O Basin (TKO Basin) and one at the Construction and Demolition Material Sorting Facility (C&DMSF) for transporting the stockpiled public fill by barges;
  - Setting up a temporary barging point at the existing Explosives Off-loading Barging Point located in the south-eastern part of Area 137 for the period of May 2004 to December 2004 for transporting the stockpiled public fill by barge;
  - · Construction and operation of a C&DMSF;
  - Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin; and
  - Remove the temporary fill bank.
- 1.3 Under the EP, construction and operation of the construction and demolition material sorting facility is within the scope. Therefore, the said activities in the temporary CWSF in TKO 137 are under the governance of the EP.
- 1.4 According to the updated EM&A Manual for Tseung Kwan O Area 137 (which refer the EM&A Manual for "Contract CV/2004/13 Temporary Construction Waste Sorting Facilities at Tseung Kwan O Area 137 and Tuen Mun Area 38"), environmental monitoring (1-hr and 24-hr air quality monitoring) and site inspections are necessary to carry out until the completion of the contract period. The EM&A programme, or any part of it, will be terminated upon approval from the ER, IEC and EPD.

# **Scope of Report**

1.5 This is the thirty-sixth monthly Environmental Monitoring and Audit (EM&A) Report under Contract CV/2010/05 – Temporary Construction Waste Sorting Facilities, 2011 - 2013. This report presents a summary of the environmental monitoring and inspection works, list of activities, and mitigation measures carried out by the ET for the temporary CWSF at TKO 137 between 1 and 26 December 2013.

### **Project Organization**

- 1.6 The project organization is shown in Appendix A.
- 1.7 The key personnel contact names and numbers are summarised in Table 1.1

TABLE 1.1	CONTACT INFORMATION OF KEY PERSOI	JNFI
		41466

Party	Position	Name	Telephone	Fax
CEDD	Engineer	Ms. Ruth Tso	2762 5307	2714 0113
IEC (ENVIRON)	IEC	Mr. Tony Cheng	3465 2888	3465 2899
Contractor (Sang Hing Civil	Project Director	Mr. P Y Cheng	9023 4821	2403 1162
Contractors Co. Ltd.)	Site Agent	Mr. P H Chan	9042 9777	2623 9772
ET (AECOM)	ET Leader	Mr. Fung Yiu Wah	3922 9366	3922 9797

# **Summary of Construction / Operation Activities**

- 1.8 The Project commenced on 29 December 2010. As informed by the Contractor, the activities during this reporting period included:
  - Operation and maintenance of Construction Waste Sorting Facilities (CWSFs) at TKO Area 137 including Site Charging and Disposal Recording System; and
  - Disposal of sorted waste at designated Landfills and Public Fill reception facilities.
- 1.9 The general layout plan of the Project sites showing the contract areas are shown in Figure 1.1.
- 1.10 The works programme is provided in Appendix B.

# **Summary of EM&A Requirements**

- 1.11 Air quality monitoring is required under the updated EM&A Manual for Tseung Kwan O Area 137 (which refer the EM&A Manual for "Contract CV/2004/13 Temporary Construction Waste Sorting Facilities at Tseung Kwan O Area 137 and Tuen Mun Area 38") of the Project. The description and detailed monitoring requirements for air quality are provided in Section 2 of this Report.
- 1.12 Environmental site inspection is required by the ET on a weekly basis. Detailed inspection requirements are provided in Section 3 of this Report.

# 2. AIR QUALITY

# **Monitoring Requirements**

2.1 In accordance with the updated EM&A Manual for Tseung Kwan O Area 137 (referred "Contract CV/2004/13 - Temporary Construction Waste Sorting Facilities at Tseung Kwan O Area 137 and Tuen Mun Area 38") of the Project, ET is required to conduct 1-hr and 24-hr TSP monitoring at the temporary CWSF in TKO 137 during the construction and operation periods to ensure the activities in the Project does not generate dust which exceeds the acceptable level. Appendix C shows the Action and Limit Levels for the environmental monitoring works.

### **Monitoring Equipment**

2.2 High volume sampler (HVS - Model GS-2310 Accu-vol) complete with the appropriate sampling inlets was installed for 24-hr TSP sampling. The HVS is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50 Appendix B). A portable dust meter was used for the 1-hr TSP monitoring. Table 2.1 summarises the equipment used.

TABLE 2.1 AIR QUALITY MONITORING EQUIPMENT

Equipment	Model
HVS	GS 2310 Accu-vol system
Calibrator	GMW 25
1-hour TSP Dust Meter	Laser Dust Monitor – Model LD-3 / LD-3B
Calibrator – Dust Meter	Rupprecht & Patashnick TEOM®

# Monitoring Parameter, Frequency and Schedule

2.3 The monitoring parameters and frequency are summarised in Table 2.2. The monitoring schedule for the reporting period is shown in Appendix D.

TABLE 2.2 FREQUENCY OF AIR QUALITY MONITORING

Parameters Frequency	
24-hour TSP	Once/week
1-hour TSP	Three times/week

# **Monitoring Locations**

2.4 The location for the air quality monitoring station TKO2 is provided in Table 2.3 and depicted in Figure 2.1.

TABLE 2.3 AIR QUALITY MONITORING STATIONS

Station ID	Identity/Description
TKO2	Combined Reception & Exit Office in Area B1

# **Monitoring Methodology**

# 24-hour TSP Monitoring

Operating/Analytical Procedures

- 2.5 Operating/analytical procedures for the operation of HVS are as follows:
  - The sampler was placed on a horizontal platform with appropriate supporting structure such that:
    - no two samplers were placed less than 2 metres apart.
    - the distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
    - a minimum of 2 metres separation from walls, parapets and penthouses was required for the rooftop samplers.
    - a minimum of 2 metres separation from any supporting structure, measured horizontally was required.
    - airflow around the sampler was unrestricted.
    - no furnaces or incineration flues were operating near the sampler.
    - the sampler was more than 20 metres from the dripline.
    - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
  - Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
  - For TSP sampling, fibreglass filters (G810) were used [Note: these filters have a collection efficiency of > 99% for particles of 0.3 mm diameter].
  - After sampling, the filter was transferred from the filter holder of the HVS to a sealable plastic bag and sent to the laboratory for weighing. The elapsed time was also recorded.
  - Before weighing, all filters were conditioned for 24 hours before weighing under temperature of 25°C ±3°C and the relative humidity (RH) < 50% ±5%, preferably 40%.
  - All measurement procedures in section 4.3 to 4.9 of the EM&A Manual were followed during the reporting period.

# Maintenance

- 2.6 Proper maintenance would be provided for the HVS:
  - The HVS motors and their accessories have been properly maintained. Appropriate maintenance such as routine motor brushes replacement (time interval for replacement is about 500 hours) and electrical wiring checking have been conducted to ensure that the equipment and necessary power supply were in good working condition.

# 1-hour TSP Monitoring

# Measuring Procedures

- 2.7 The sampler was placed with appropriate supporting structure. The requirements of the location of the sampler were the same as HVS and were presented in Section 2.5 of this report.
- 2.8 The measuring procedures of the 1-hour dust meter were in accordance with the Manufacturer's Instruction Manual as follows:
  - Set POWER to "ON", push BATTERY button, make sure that the meter's indicator is in the range with a red line and allow the instrument to stand for about 3 minutes (Then, the air sampling inlet has been capped).
  - Push the knob at MEASURE position.

- Push "O-ADJ" button. (Then meter's indication is 0).
- Push the knob at SENSI ADJ position and set the meter's indication to S value described on the Test Report using the trimmer for SENSI ADJ.
- Pull out the knob and return it to MEASURE position.
- Push "START" button.
- All measurement procedures in section 4.3 to 4.9 of the approved EM&A Manual were followed during the impact monitoring period.

### Maintenance

2.9 Air suction inlet was normally closed unless in operation. Regular cleaning of the air suction inlet was provided.

### Wind Data

2.10 Wind data was obtained from Hong Kong Observatory on monthly basis.

#### **Calibration Details**

### 24-hour TSP Monitoring

- 2.11 The HVS was calibrated upon installation on site and prior to commissioning. Subsequent calibration would be provided at 2-month intervals using GMW-25 Calibration Kit. The flow rate of the HVS with mass flow controller was calibrated using an orifice calibrator. Five-point calibration was adopted.
- 2.12 The HVS was calibrated on 18 December 2013. Calibration details are provided in Appendix E. The next calibration due date is 18 February 2014.

# 1-hour TSP Monitoring

- 2.13 The 1-hour TSP meters were checked at 3-month intervals to confirm normal operation of the equipment and calibrated at 1-year interval throughout all stages of the air quality impact monitoring.
- 2.14 The 1-hour TSP meters were calibrated on 18 May 2013 and the next calibration will be conducted by 17 May 2014.

# **Results and Observations**

- 2.15 In the reporting period, all the 1-hr and 24-hr TSP monitoring events were carried out in accordance with the schedule.
- 2.16 The actual monitoring program for December 2013 is presented in Appendix D. All monitoring data and graphical presentations of the monitoring results are provided in Appendix F. Table 2.4 lists out all 1-hr TSP monitoring results and Table 2.5 lists out all the 24-hr TSP monitoring results.

TABLE 2.4 SUMMARY OF 1-HR TSP MONITORING RESULTS

	TKO2			Monitorina	
Date	1 <sup>st</sup> 1-hr TSP (μg/m³)	2 <sup>nd</sup> 1-hr TSP (μg/m³)	3 <sup>rd</sup> 1-hr TSP (μg/m³)	Exceedance <sup>1</sup>	Monitoring Status
5-Dec-13	84.6	84.4	84.0	X	Regular
11-Dec-13	80.9	81.1	82.3	X	Regular
17-Dec-13	83.4	83.7	83.9	X	Regular
24-Dec-13	83.4	83.8	83.1	X	Regular

<sup>1.</sup> L – limit level exceedance; A - action level exceedance; X – not an exceedance

### TABLE 2.5 SUMMARY OF 24-HR TSP MONITORING RESULTS

Date	TK	O2	Monitoring Status
	24-hr TSP (μg/m³)	Exceedance <sup>1</sup>	
4-Dec-13	68.6	X	Regular
10-Dec-13	27.3	X	Regular
16-Dec-13	14.5	X	Regular
23-Dec-13	42.0	Х	Regular

<sup>1.</sup> L – limit level exceedance; A - action level exceedance; X – not an exceedance

- 2.17 There was no exceedance of 1-hour TSP and 24-hour TSP monitoring recorded in the reporting period.
- 2.18 Besides the site activities inside the Project site, other potential dust sources included the dump truck traffic, dumping and manual sorting of inert waste inside the Fill Bank of TKO 137.
- 2.19 Wind data, including wind speed and wind direction, are annexed in Appendix G.

### 3. ENVIRONMENTAL SITE INSPECTION

- 3.1 Environmental site inspections are required to inspect the construction activities and operation of the temporary CWSF in order to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented.
- 3.2 There were 4 site inspections conducted in the reporting period for the temporary CWSF at TKO 137 on 2, 9, 16, and 23 December 2013.

# **Site Inspections**

3.3 Site inspections were carried out by ET to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. After the site inspection, the Contractor was notified of the ET's observations and recommendations. A corrective action plan detailing the environmental observations had also been prepared by the ET. The Contractor then completed this plan to propose/report their remedial works. This corrective action plan submission procedure was adopted for each subsequent ET's inspection to notify all the relevant parties of the Contractor's follow up actions. The site inspection summaries are attached in Appendix H. Particular observations are described as follows:

# Air Quality

- Automatic wheel washing facilities were installed at the site egress of the Project.
- Vehicles were travelling below the speed limit in the temporary CWSF. There were sufficient speed limit signs on site to advise the drivers.
- Besides the afore-said issues, it was recommended to provide sufficient water-spraying for all dusty activities and dampen the site haul road more frequently in the dry season.

# Noise

The major noise source was vehicle movement in the temporary CWSF. Since the nearby NSRs
were remote from the temporary CWSF, the noise impact was minimal. There was no specific
observation noted regarding noise issue.

### Water Quality

- The Contractor was reminded to maintain the U-channels properly and prevent them from being blocked by sands and stones.
- The Contractor was reminded to remove the stagnant water in the water tank at B1 to prevent mosquito breeding.

# Chemical and Waste Management

 The Contractor provided waste skips to collect general refuse and would dispose of them regularly to the SENT Landfill.

# Landscape and Visual

 Hoarding was erected at the site egress and aligned along the site boundary in connection with the Fill Bank at TKO 137.

# **Review of Environmental Monitoring Procedures**

- 3.4 The monitoring works conducted by the ET were inspected regularly. The observations for the monitoring works were recorded and summarised as follows:
  - The monitoring team recorded the observations around the monitoring stations within and outside of the construction site.
  - The monitoring team recorded the temperature, air pressure and general weather condition on the monitoring day.

# **Assessment of Environmental Monitoring Results**

- 3.5 All monitoring results were audited against the A/L levels and any exceedances would be validated.
- 3.6 The monitoring results in this reporting period were comparable with the established action and limit levels.

# Advice on the Solid and Liquid Waste Management Status

3.7 As advised by the Contractor, there were disposal of sorted inert material, sorted non-inert material and general refuse. No disposal of papers, metals and C&D materials was made in the reporting period. The actual amounts of different types of waste generated by the activities of the Project in the month are shown in Table 3.1.

TABLE 3.1 ACTUAL AMOUNTS OF WASTE GENERATED IN THE REPORTING PERIOD

Waste Type	Actual Amount	Disposal Locations
Public fill collected	24,042.69 ton	-
Sorted waste (inert material)	17,226.27 ton	TKO Fill Bank
Sorted waste (non-inert material)	14,863.55 ton	SENT Landfill
C&D Material	0 m <sup>3</sup>	TKO Fill Bank
General refuse	4.62 m <sup>3</sup>	SENT Landfill
Recycling (Metals)	0 ton	Recycling companies
Recycling (Papers)	0 kg	Recycling companies
Chemical waste	200 L	Dunwell Ind. (Holdings) Ltd.
Empty paint can	20 kg	Dunwell Ind. (Holdings) Ltd.

- 3.8 The Contractor should provide sufficient drip trays for all the oil drums/chemical containers. Besides, these drip trays should be covered by tarpaulin sheet to minimize rainfall accumulation.
- 3.9 The Contractor should use suitable containers with proper labels to store chemical wastes inside a designated chemical waste store in accordance with Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. The Contractor should also advise their workers of the proper procedures in handling the chemical waste. All the trip tickets for chemical waste disposal were properly kept in the site office. Disposal of chemical waste was undertaken in the reporting month.
- 3.10 The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials using for this cleaning works as chemical waste.

#### **Environmental Licences and Permits**

3.11 No new environmental license and permit was obtained in the reporting month.

3.12 The status of all permits/licences obtained/in use during the reporting period are summarised in Table 3.2.

TABLE 3.2 SUMMARY OF ENVIRONMENTAL LICENSING AND PERMIT STATUS

Description	Permit No.	Valid I	Period	Remarks
		From	То	
Environmental Permit	EP- 134/2002/K	04/02/13	-	<ul> <li>(Valid)</li> <li>Site clearance</li> <li>Construction of a temporary storm water system</li> <li>Stockpiling of 6 million m³ of public fill</li> <li>Setting up two barging points for transporting the stockpiled public fill by barges</li> <li>Setting up a temporary barging point at the existing Explosive Off-loading Barging Point for the period of May 2004 to December 2004 for transporting the stockpiled public fill by barge</li> <li>Construction and operation of a Construction and Demolition Material Sorting Facility (C&amp;DMSF)</li> <li>Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin</li> <li>Remove the temporary fill bank</li> </ul>
Waste Billing Account	7012248	26/1/11		Whole Construction Site for Contract CV/2010/05
Registration as a Chemical Waste Producer	5213-839- S3565-02	31/1/11		(Registered)
Effluent Discharge License	WT00010087 -2011	16/9/11	30/9/16	(Valid)

# **Implementation Status of Environmental Mitigation Measures**

3.14 An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix I. Most of the necessary mitigation measures were implemented properly. Any deficiencies were noted in the remarks of the schedule.

# **Summary of Exceedances of the Environmental Quality Performance Limit**

- 3.15 There was no exceedance of 1-hour TSP and 24-hour TSP monitoring recorded in the reporting period.
- 3.16 The event action plans are attached in Appendix J.

# Summary of Complaints, Notifications of Summons and Successful Prosecutions

- 3.17 No complaint, notification of summons and prosecutions was received in the reporting period.
- 3.18 A summary of environmental complaints and prosecutions was given in Table 3.3 and the cumulative statistics of complaints, summons and successful prosecutions is presented in Appendix K.

TABLE 3.3 SUMMARY OF ENVIRONMENTAL COMPLAINTS AND PROSECUTIONS

Complain	its logged	Summor	s served	Successful Prosecutions			
December 2013	Cumulative	December 2013	Cumulative	December 2013	Cumulative		
0	1	0	1	0	1		

# 4. FUTURE KEY ISSUES

4.1 The following mitigation measures are required:

# Air Quality Impact

- To prohibit any open burning on site;
- To provide adequate water spraying on haul roads and working platforms:
- To operate and maintain automatic wheel washing facilities properly;
- To dampen the fill material prior to unloading or movement:
- To provide road sweeping on all paved haul roads and the public roads outside site egress;
- To provide proper maintenance for equipment and vehicles on site;
- To ensure implementation of the dust mitigation measures for the construction activities, if any;
- To maintain proper operation of the mist spraying systems:
- To ensure vehicle speed below 10 km/hr in the temporary CWSF;
- To investigate any other dust sources around the air sensitive receivers; and
- To follow up any exceedance, if any, caused by the temporary CWSF operation.

# Noise Impact

- To identify the noise sources inside and outside of the site:
- To follow up any exceedance caused by the temporary CWSF operation:
- To switch off equipment if not in use;
- To operate silent equipment; and
- To re-schedule the work activities in the event of valid noise exceedance.

# Water Quality Impact

- To operate and maintain the wastewater treatment facility for the site toilet;
- To provide covers for the drip trays to avoid stagnant water ponding due to rainfall;
- To ensure cleanliness of oil interceptor bypass tank and all the drainage channels;
- To maintain the existing silt trap to ensure sufficient treatment of wheel wash water frequently;
- To maintain the drainage system in the temporary CWSF; and
- To avoid formation of any stagnant water or provide insecticide to avoid mosquito breeding in the temporary CWSF.

# Chemical and Waste Management

- To remove waste from the site regularly;
- To properly store and handle chemical wastes on site;
- To implement trip ticket system for all the imported public fill and general refuse disposal;
- To provide and manage sufficiently sized drip trays for diesel drums or chemical containers;
- To maintain proper housekeeping at the workshop area;
- To provide all the preventive measures during equipment maintenance:
- To remove the oil stains in the event of leakage and handle all the materials using for this cleaning works as chemical waste; and
- To identify C&D material by packaging, labelling, storage, transportation and disposal in accordance with statutory regulations.

# 5. CONCLUSIONS AND RECOMMENDATIONS

#### **Conclusions**

- 5.1 Environmental monitoring of air quality (1-hr TSP and 24-hr TSP) for the Project was performed in December 2013. There was no exceedance of 1-hour and 24-hour TSP monitoring recorded in the reporting period.
- 5.2 Environmental site inspections were conducted 4 times in the reporting period. No adverse observation was made during the reporting period.
- 5.3 No complaint, non-compliance, notifications of summons or prosecutions was received in the reporting period.

#### Recommendations

5.4 According to the environmental site inspections performed in the reporting period, the following recommendations were provided:

### Air Quality

- Ensure the frequency of water spraying on haul roads, unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke;
- Provide water spraying onto the truckloads during inspection of fill material;
- Conduct road sweeping on the public road and the main haul roads outside and near the site egress by the road sweeper;
- Undertake water spraying on stockpiling area by water bowers;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit;
- Operate mist spraying systems and automatic water sprinklers in the temporary CWSF;
- Implement the dust mitigation measures for the construction activities;
- Designate proper haul roads to ensure effective water spraying; and
- Ensure all vehicles to be washed before leaving the site egress by provision, operation and maintenance of automatic wheel washing facilities.

# Construction / Operational Noise

Conduct noisy activities at a farther location from the NSR.

# Water Quality

- Maintain the drainage system, including the trapezoidal channels;
- Operate and maintain the treatment system for the site toilet; and
- Remove the stagnant water or provide pesticide for the stagnant water in the permanent desilting chambers, if any.

# Chemical and Waste Management

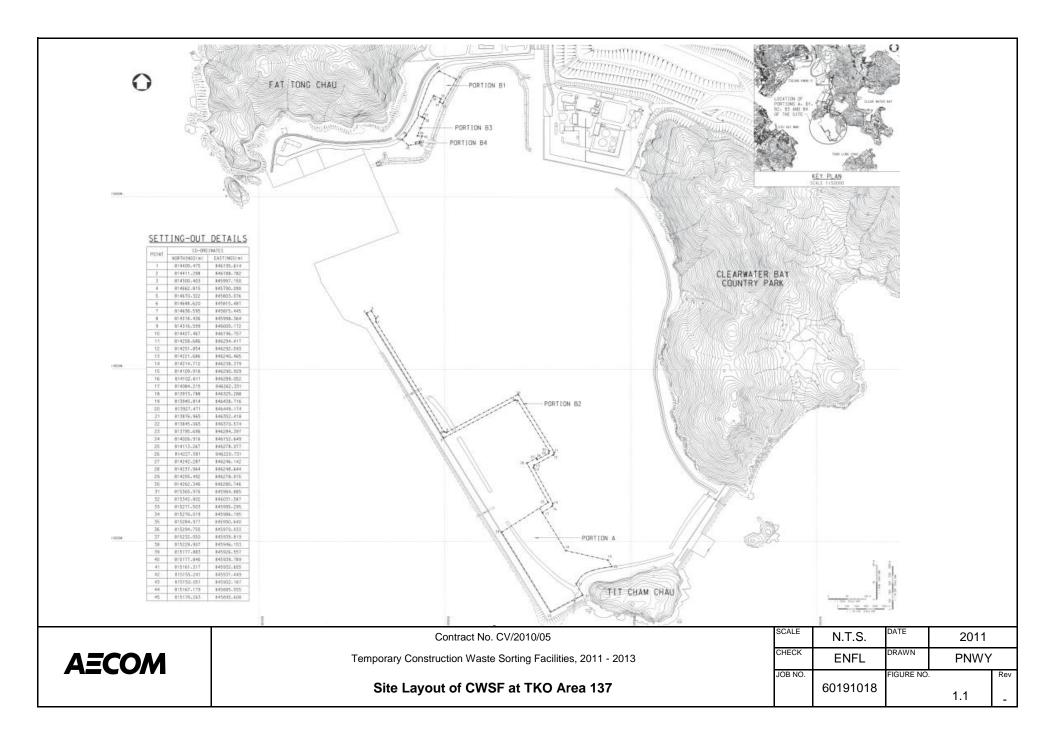
- Remove waste materials from site regularly to avoid accumulation;
- Handle and store chemical wastes properly;
- Remove unwanted material in the existing stockpiles and avoid further dumping of such material;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain good housekeeping at the workshop area;
- Ensure sufficient tarpaulin sheets are provided to cover drip trays;

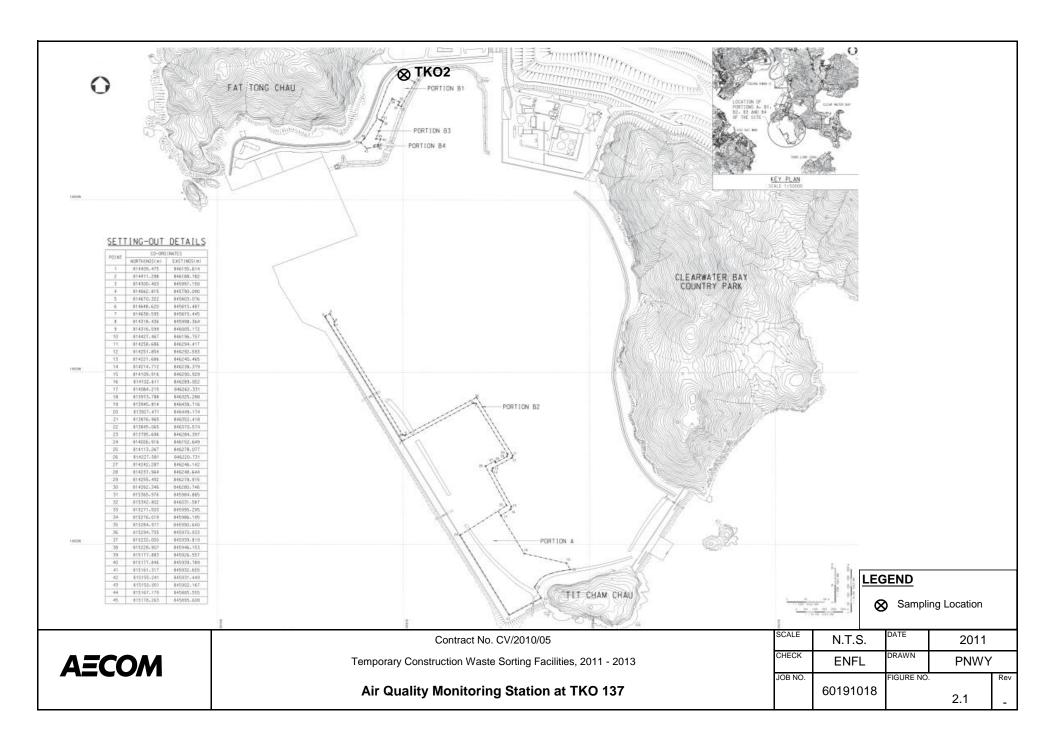
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any, and
- Provide a proper chemical waste store.

# Landscape and Visual

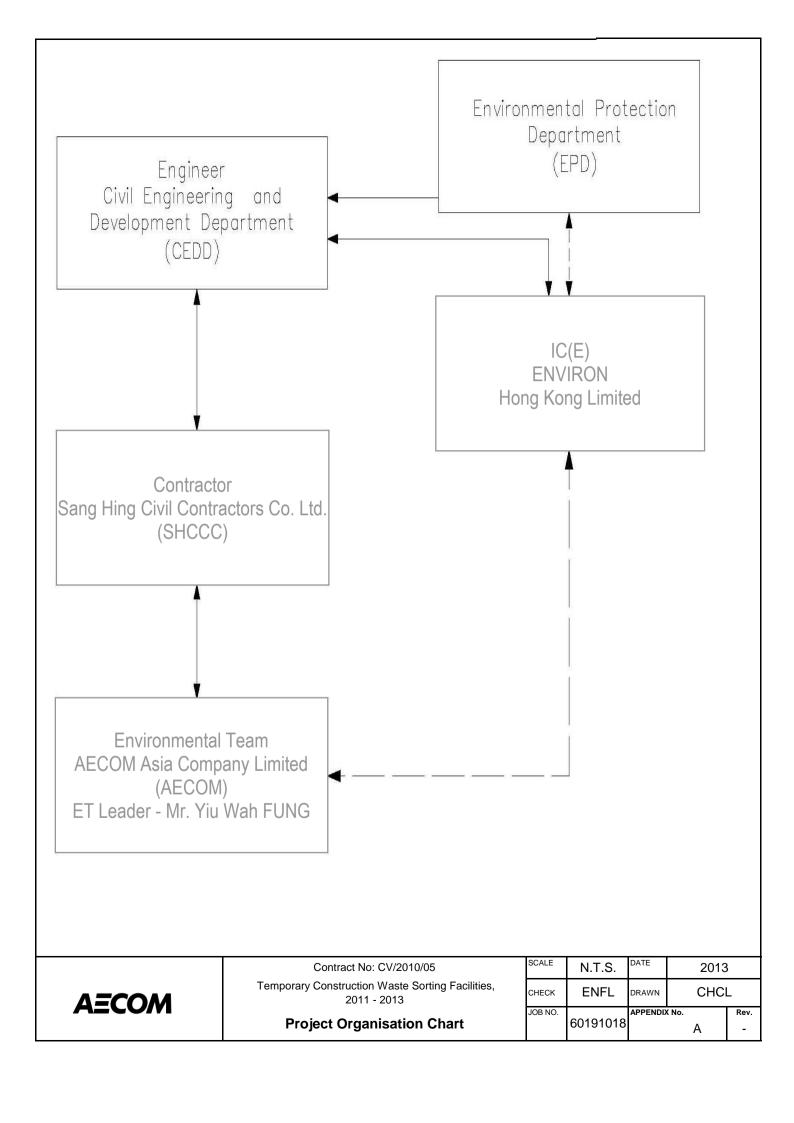
• Erect all the site hoardings/chaining fences in accordance with agreed design at proper location.







# APPENDIX A PROJECT ORGANIZATION CHART



# APPENDIX B CONSTRUCTION PROGRAMME

#### Revised Master Programme (MP 12)

SANG HING CIVIL CONTRACTORS CO. LTD.

(03.09.2012)









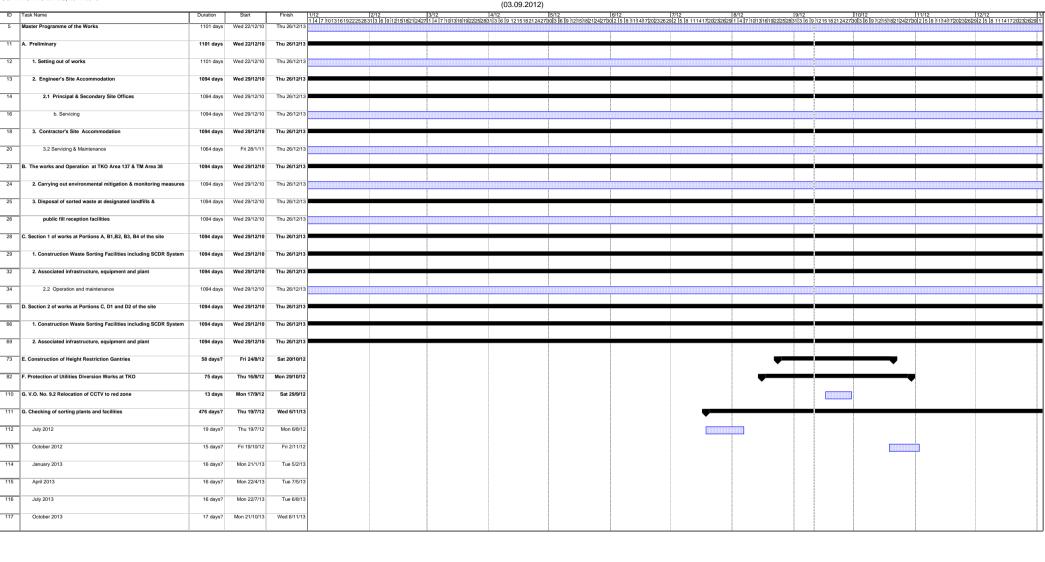








(03.09.2012)



Project: 3-month Rolling Programme for Contract No. CV/2010/05

Page 1 of 1

Milestone

External Tasks

Project Summary External Milestone

Deadline



#### Revised Master Programme (MP 12)

SANG HING CIVIL CONTRACTORS CO. LTD.

(03.09.2012)















# APPENDIX C ACTION AND LIMIT LEVELS FOR AIR QUALITY

# **Action and Limit Levels for Air Quality**

# Action and Limit Levels for Air Quality at TKO 137

Parameter	Action Level (μg/m³)	Limit Level (μg/m³)				
24-hour TSP	260	260				
1-hour TSP	383	500				

# **APPENDIX D**

# **MONITORING SCHEDULE FOR DECEMBER 2013**

# Contract No. : CV/2010/05 Temporary Construction Waste Sorting Facilities, 2011 - 2013 Tentative Impact Monitoring Schedule - December 2013

Location	Parameter Sun	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
Location	i arameter	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
TKO2	Air - 1hr																															
IROZ	Air - 24hr																															
TKO137	Inspection																															

The schedule can be changed due to unforeseen circumstances (adverse weather, etc)

TKO2 Combined reception & exit office

# APPENDIX E CALIBRATION CERTIFICATES

# AECOM Asia Company Limited TSP High Volume Sampler Field Calibration Report

Station	TKO2 (Combine	d Reception & Ex	kit Office)	Operator:	Shum Ka	am Yuen	
Cal. Date:	18-Dec-13			Next Due Date:	18-Fe	eb-14	
Equipment No.:	A-001-71T	_		Serial No.	102	268	-
			Ambient	Condition			
Temperatu	re Ta (K)	288		Pa (mmHg)		756.9	
Temperata	το, τα (ιν)	200	, 1000010,	(			
			Orifice Transfer S	tandard Information			
Serial	l No:	988	Slope, mc	. 1.94727		ept, bc	0.02332
Last Calibra	ation Date:	20-May-13		mc x Qstd + bc	= [DH x (Pa/760) x	(298/Ta)] <sup>1/2</sup>	
Next Calibra	ation Date:	20-May-14		Qstd = {[DH x (	Pa/760) x (298/Ta)]	<sup>1/2</sup> -bc} / mc	
			Calibration	of TSP Sampler			1000
		(	Orfice	or Tor Sampler	HV	S Flow Recorder	
Resistance Plate No.	DH (orifice), in. of water		60) x (298/Ta)] <sup>1/2</sup>	Qstd (m³/min) X -	Flow Recorder Reading (CFM)	Continuous Flow Reading IC (CFI	
18	8.8		3.01	1.53	43.0	43.65	
13	6.4		2.57	1.31	36.0	36.54	
10	4.5		2.15	1.09	29.0	29.44	E.
7	3.2		1.82	0.92	24.0	24.36	
5	2.6		1.64	0.83	22.0	22.33	
By Linear Regre Slope, mw = Correlation Coe	30.6884 fficient* =	_	<b>9979</b> brate.	Intercept, bw =	-3.6	230	
From the TCD Fi	old Calibration C	urve, take Qstd =		Calculation			
		e "Y" value accor					
r form the regres	Sion Equation, th	o i raido dossi	ug .c				
		mw	x Qstd + bw = IC	x [(Pa/760) x (298/	Ta)] <sup>1/2</sup>		
Therefore, Set Po	oint; IC = ( mw x	Qstd + bw ) x [( 7	60 / Pa ) x ( Ta / 29	98 )] <sup>1/2</sup> =	,	35.73	
Remarks:					\q		la .
nomano.							
X)						0	
OC Poviower: X	Dring		Signature:			Date: 21-12	=-15



TISCH ENVIROMENTAL, 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 - Ma Operator		Rootsmeter Orifice I.I		438320 0988	Ta (K) - Pa (mm) -	297 - 751.84
PLATE OR Run #	VOLUME START (m3) NA NA	VOLUME STOP (m3) NA NA	DIFF VOLUME (m3) 1.00 1.00	DIFF TIME (min) 1.3900 0.9720	METER DIFF Hg (mm) 3.2 6.4	ORFICE DIFF H2O (in.) 2.00 4.00
3 4 5	NA NA NA	NA NA NA	1.00 1.00 1.00	0.8670 0.8270 0.6800	7.9 8.7 12.6	5.00 5.50 8.00

### DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9884 0.9842 0.9821 0.9811 0.9759	0.7110 1.0125 1.1327 1.1863 1.4352	1.4090 1.9926 2.2278 2.3365 2.8179		0.9957 0.9915 0.9894 0.9884 0.9832	0.7163 1.0201 1.1412 1.1952 1.4459	0.8889 1.2570 1.4054 1.4740 1.7777
Qstd slor intercept coefficie y axis =	(b) = ent (r) =	1.94727 0.02332 0.99998 	 [a)]	Qa slope intercept coefficie y axis =	= $(b)$	1.21935 0.01471 0.99998 

### CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)

Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]

Qa = Va/Time

For subsequent flow rate calculations:

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

# **EQUIPMENT CALIBRATION RECORD**

Mode Equip Sensi Opera	facturer/Brand: If No.: If No.: If No.: It with the state of the state	_Rup Cyb Ser	oprecht & Pa erport (Pui ies 1400AB		TEOM®	M)		
	Calibration Date*:	Sen		00C1436		K <sub>o</sub> : _1250	)	
*Remar	ks: Recommend	ed interva	l for hardwa	re calibra	tion is 1	year		
Calibra	tion Result							
	tivity Adjustment tivity Adjustment						PM PM	
Hour	Date (dd-mm-yy)	Т	ime	Amb Cond Temp (°C)	pient dition R.H. (%)	Concentration <sup>1</sup> (mg/m <sup>3</sup> ) <b>Y-axis</b>	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis
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
Slope Correla	2. Total Count 3. Count/minut ar Regression of (K-factor): ation coefficient: y of Calibration F	was logge e was cald Y or X	d by Laser	Dust Moni Γotal Cour	tor	shnick TEOM <sup>®</sup>		
QC Re	viewer: _ <i>YW F</i>	ung	Signa	ture:	4/	Date	e: _20 May	/ 2013

#### **EQUIPMENT CALIBRATION RECORD**

Operate	Type: Manufacturer/Brand: Model No.: Equipment No.: Sensitivity Adjustment Scale Setting:			ī,	A.005.08 702 CP				
	or:				Mike Sh	ek (MSF	(M)		
Standard	d Equipment								
Venue: Cyberp			ort (Pui 1400AB		ondary				
	io: ilibration Date*:	Se	ensor		10AB2198 200C1436		K <sub>o</sub> : _12	500	
Remark	s: Recommend	ed interv	al for	hardwa	are calibra	tion is 1	year		
Calibrati	on Result								
	rity Adjustment rity Adjustment						702 702	CPM CPM	
Hour	Date (dd-mm-yy)		Time		Amb Cond Temp (°C)		Concentration <sup>1</sup> (mg/m <sup>3</sup> ) <b>Y-axis</b>	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> <b>X-axis</b>
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 lote:	18-05-13	15:30	-	16:30	28.1	78	0.05083 tashnick TEOM®	1899	31.65
Slope (h	2. Total Count 3. Count/minut Regression of (-factor): ion coefficient:	was logg e was ca	ged balcula	y Laser	Dust Mon	itor			
Validity	of Calibration F	Record:	_1	7 May 2	2014		4		
Remarks:									

#### **EQUIPMENT CALIBRATION RECORD**

	facturer/Brand:		_	Laser Du SIBATA	ıst Moni	tor		
Mode	ment No.:		_	LD-3 A.005.11	3			
	tivity Adjustment	Scale Setti		799 CPM				
Opera			_	Mike She		Л)		
Standa	rd Equipment							
Equip	ment:	Rupr	orecht & Pa	tashnick	TEOM®			
Venue	e:	Cybe	erport (Pui \	Ying Seco	ndary So	chool)		
Mode	l No.:		es 1400AB					
Serial	No:	Cont		DAB21989				
Last (	Calibration Date*:	Sens	sor: <u>120</u> 1ay 2013	00C1436	59803	K <sub>o</sub> : <u>12500</u>		
	ks: Recommend			re calibra	tion is 1 v	/ear		
01 929#/AED-01/9800A		- Interval	Tor Hardwar	- Calibra				
Calibra	tion Result							
	tivity Adjustment tivity Adjustment					799 CP		
Hour	Date	Tir	me	Amb	pient	Concentration <sup>1</sup>	Total	Count/
	(dd-mm-yy)			Cond		(mg/m <sup>3</sup> )	Count <sup>2</sup>	Minute <sup>3</sup>
				Temp	R.H.	Y-axis		X-axis
	10.05.10	40.45	10.15	(°C)	(%)	0.04005	1071	04.40
1	18-05-13		- 13:15	28.1	78	0.04685	1871	31.18
3	18-05-13 18-05-13	13:15 14:15	- 14:15 - 15:15	28.1 28.2	78 77	0.04941 0.05127	1979 2055	32.98
4	18-05-13	15:15	- 15.15 - 16:15	28.1	78	0.05727	2033	34.25 33.68
Note:			1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 /			shnick TEOM®	2021	
	<ol> <li>Total Count</li> <li>Count/minut</li> </ol>	was logged e was calc	d by Laser [	<b>Dust Mon</b>	itor	STITION TEOM		
	ar Regression of	Y or X						
	(K-factor):		0.0015					
	ation coefficient:		0.9976		=======================================			
Validit	y of Calibration F	Record:	_17 May 20	014				
Remark	s:	3						
					1./			
QC Re	eviewer: _YW F	ung	_ Signat	ture:	4	Date	e: _20 May	y 2013

#### **EQUIPMENT CALIBRATION RECORD**

Model				Laser Du SIBATA LD-3B A.005.16		tor		
	ment No.: ivity Adjustment	Scale Settin		521 CPI				
Opera	tor:			Mike She	k (MSKN	Л)		
Standa	rd Equipment							
Equip	mont:	Dunn	echt & Pa	toobniek '	TEOM®			
Equipr Venue			port (Pui \			chool)		
Model			1400AB	ring deco	nuary of	Shoon		
Serial		Contro		DAB21989	99803			
Serial	140.	Senso		00C14365		K <sub>o</sub> : 12500	)	
Last C	alibration Date*:		y 2013	70011000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
*Remar	ks: Recommend	ed interval fo	or hardwai	re calibra	tion is 1	year		
Calibra	tion Result							
	ivity Adjustment ivity Adjustment						PM PM	
Hour	Date	Tim	ne	Amb	pient	Concentration <sup>1</sup>	Total	Count/
	(dd-mm-yy)			Cond	dition	(mg/m <sup>3</sup> )	Count <sup>2</sup>	Minute <sup>3</sup>
				Temp	R.H.	Y-axis		X-axis
				(°C)	(%)			
1	27-07-13	11:00 -	12:00	27.3	75	0.04734	1893	31.55
2	27-07-13	12:00 -	13:00	27.3	75	0.04789	1915	31.92
3	27-07-13	13:00 -	200 20000000000000000000000000000000000	27.4	74	0.04953	1976	32.93
4	27-07-13	14:00 -	15:00	27.4	75	0.04867	1949	32.48
	2. Total Count 3. Count/minu ar Regression of (K-factor):	was logged te was calcu	by Laser I	Dust Mon	itor	ashnick TEOM <sup>®</sup>		
	ation coefficient:	-	0.9934					
Validit	y of Calibration F	Record:	26 July 20	014				
Remark	s:			4	-			
							7	
QC Re	eviewer: _YWI	-ung	Signa	ture:	4	Dar	te: _29 Jul	ly 2013

#### APPENDIX F

AIR QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATION

## **APPENDIX F: Air Quality Monitoring Results**

### 1-hour TSP Monitoring Results at Station TKO2

	Start	1st Hour	2nd Hour	3rd Hour
	Time	Conc.	Conc.	Conc.
Date	(hh:mm)	(µg/m³)	(µg/m³)	(µg/m³)
5-Dec-13	10:16	84.6	84.4	84.0
11-Dec-13	14:00	80.9	81.1	82.3
17-Dec-13	9:55	83.4	83.7	83.9
24-Dec-13	13:30	83.4	83.8	83.1
			Min	80.9
			Max	84.6

Remarks:

Action Level:  $383 \mu g/m^3$ Limit Level:  $500 \mu g/m^3$ 

### **APPENDIX F: Air Quality Monitoring Results**

#### 24-hour TSP Monitoring Results at Station TKO2

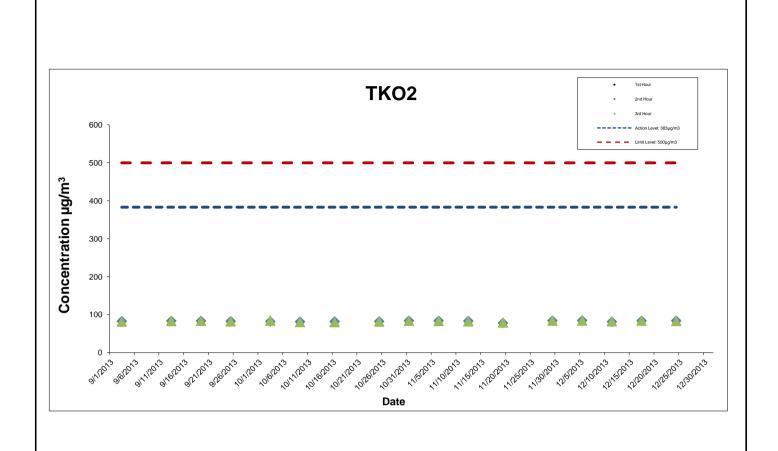
Date	Start Time	Filter W	eight (g)	Flow Rate	(m³/min.)	Elaps	e Time	Sampling	Conc.	Weather	Air	Atmospheric	Particulate	Av. flow	Total vol.
	(hh:mm)	Initial	Final	Initial	Final	Initial	Final	Time(hrs.)	(µg/m <sup>3</sup> )	Condition	Temp. (°C)	Pressure(hPa)	weight(g)	(m <sup>3</sup> /min)	(m <sup>3</sup> )
4-Dec-13	15:00	2.6833	2.8164	1.35	1.35	13537.71	13561.71	24.00	68.6	Sunny	19.2	1018.2	0.1331	1.35	1941.1
10-Dec-13	16:00	2.7355	2.7884	1.35	1.35	13561.71	13585.71	24.00	27.3	Fine	20.1	1014.5	0.0529	1.35	1941.1
16-Dec-13	16:00	2.6782	2.7064	1.35	1.35	13585.71	13609.71	24.00	14.5	Fine	13.6	1015.0	0.0282	1.35	1941.1
23-Dec-13	16:00	2.6567	2.7382	1.35	1.35	13609.71	13633.73	24.00	42.0	Fine	14.6	1022.5	0.0815	1.35	1941.1
	•		•	•		•		Min	14.5			•		•	•

Max

68.6

Remarks:

Action Level:  $260 \mu g/m^3$ Limit Level:  $260 \mu g/m^3$ 

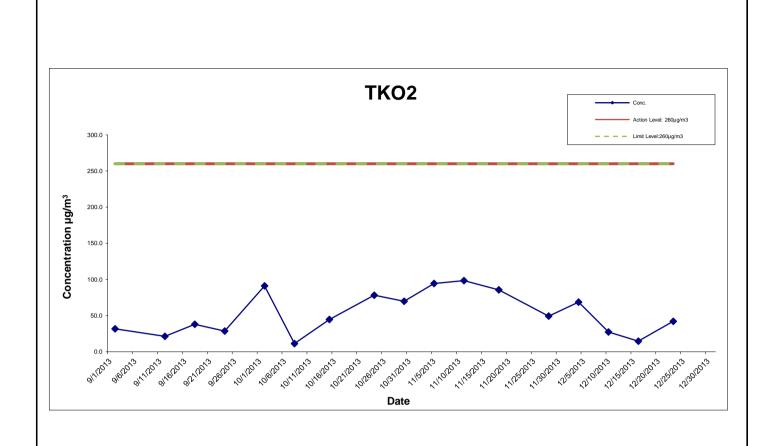


**AECOM** 

Contract No: CV/2010/05 Temporary CWSF, 2011 - 2013

Graphical Presentation of 1-hour TSP Monitoring Results

SCALE	N.T.S.	DATE	2013	3
CHECK	ENFL	DRAWN	JCYI	<
JOB NO.		<b>APPEND</b>	IX No.	Rev.
	60191018		_	_



**AECOM** 

Contract No: CV/2010/05 Temporary CWSF, 2011 - 2013

Graphical Presentation of 24-hour TSP Monitoring Results

SCALE	N.T.S.	DATE	2013	3
CHECK	ENFL	DRAWN	JCY	<
JOB NO.		APPEND	IX No.	Rev.
	60191018	I	F	-

### APPENDIX G

#### **WIND DATA**

# Extract of Meteorological Observations for Tseung Kwan O Automatic Weather Station, December 2013

Date	Mean Pressure at M.S.L.	Air	Temperatur	e	Mean Dew Point Temperature	Rela	ative Humio	dity
	(hPa)	Max.	Mean	Min.	(deg C)	Max.	Mean	Min.
	, ,	(deg C)	(deg C)	(deg C)		(%)	(%)	(%)
1-Dec	*****	22.8	15.5	11.2	6.0	81	57	23
2-Dec	*****	23.7	16.1	10.9	6.9	86	59	23
3-Dec	*****	23.2	17.6	12.7	11.3	86	68	42
4-Dec	*****	24.3	17.2	11.9	7.9	91	58	27
5-Dec	*****	22.9	16.4	12.2	6.4	78	53	33
6-Dec	*****	23.4	16.4	11.5	6.2	77	54	23
7-Dec	*****	24.1	17.4	13.2	11.4	93	70	42
8-Dec	*****	21.4	18.8	15.6	14.8	94	78	58
9-Dec	*****	27	21.3#	17.3	13.2#	84	62#	39
10-Dec	*****	22.9	19.6	17	12.2	80	63	46
11-Dec	*****	21.5	18.3	16.1	10.8	83	62	44
12-Dec	*****	18.8	17.3	15.7	10	72	62	46
13-Dec	*****	20.8	18.5	16.8	13.8	87	74	63
14-Dec	*****	20.1	18.4	16.7	15.1	97	82	70
15-Dec	*****	17.3	16.5#	15.7	15.7#	98	95#	92
16-Dec	*****	***	***	****	***	***	***	***
17-Dec	*****	12.8	***#	10.2	***#	99	***#	90
18-Dec	*****	15.1	10.4	7.2	4.6	94	69	47
19-Dec	*****	17.3	11.5	8.2	4.6	78	63	41
20-Dec	*****	17.5	13.3	9.7	5.8	75	61	43
21-Dec	*****	16.4	13.4	11.2	5.8	78	61	46
22-Dec	*****	17.6	12.3	9.3	4.4	84	60	37
23-Dec	*****	20.2	13.2	7.8	5.3	88	62	32
24-Dec	*****	19.7	13.4	9.4	5.9	86	62	38
25-Dec	*****	19.6	13.9	11	6.9	81	64	41
26-Dec	*****	18.8	14.1	9.6	0.3	65	41	22
27-Dec	*****	16.9	12	8.9	-1.6	55	39	26
28-Dec	*****	16	10.2	5.6	-0.6	75	49	31
29-Dec	*****	16.5	10.6	6.2	-0.5	83	49	25
30-Dec	*****	18.9	11.3	6.6	2.7	83	60	20
31-Dec	*****	21.3	12.8	7.8	3.6	85	58	20
Mean	*****	20	15.0#	11.4	7.2#	83	62#	41
Maximum	*****	27	21.3#	17.3	15.7#	99	95#	92
Minimum	*****	12.8	10.2#	5.6	-1.6#	55	39#	20

## Extract of Meteorological Observations for Tseung Kwan O Automatic Weather Station, December 2013

	Total	Prevailing	Mean
Date	Rainfall	Wind	Wind Speed
	(mm)	Direction	(km/h)
		(degrees)	
1-Dec	0.0	90	4.2
2-Dec	0.0	130	3.9
3-Dec	0.0	20	7.0
4-Dec	0.0	350	5.4
5-Dec	0.0	60	4.4
6-Dec	0.0	340	4.9
7-Dec	0.0	350	3.6
8-Dec	0.0	20	4.9
9-Dec	0.0	350	5.8
10-Dec	0.0	70	7.9
11-Dec	0.0	70	6.4
12-Dec	0.0	30	8.0
13-Dec	0.0	70	6.1
14-Dec	7.5	50	7.7
15-Dec	12.5#	030#	8.4#
16-Dec	****	***	****
17-Dec	8.0#	340#	4.8#
18-Dec	0.0	340	9.7
19-Dec	0.0	60	7.5
20-Dec	0.0	70	6.0
21-Dec	0.0	340	6.3
22-Dec	0.0	70	4.8
23-Dec	0.0	80	4.3
24-Dec	0.0	80	4.7
25-Dec	0.0	80	4.2
26-Dec	0.0	60	10.6
27-Dec	0.0	20	9.0
28-Dec	0.0	80	5.4
29-Dec	0.0	70	5.6
30-Dec	0.0	330	3.9
31-Dec	0.0	200	3.9
Mean		070#	6.0#
Total	28.0#		
Maximum	12.5#		10.6#
Minimum	0.0#		3.6#

<sup>\*\*\*</sup> 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 H

ET'S SITE INSPECTION SUMMARY

#### **Site Inspection Summary**

Inspection Information

Date:	2 December 2013
Time:	10:30
Site:	Tseung Kwan O Area 137
Inspection No.:	307

Date.	2 December 2013
Time:	10:30
Site:	Tseung Kwan O Area 137
Inspection No.:	307
Non-compliance	
Nil	
Observations	
Follow up Ob	<u>oservation</u>
Nil.	
New Observ	ations ations
Nil.	
Pomorko	
Remarks	

#### **Site Inspection Summary**

Inspection Information

Date:	9 December 2013
Time:	15:00
Site:	Tseung Kwan O Area 137
Inspection No.:	309

Time:	15:00					
Site:	Tseung Kwan O Area 137					
Inspection No.:	309					
Non-compliance						
N I I						
Nil						
Observations						
Follow up O	bservation					
Nil.						
New Observ	rations					
Nil.						
Remarks						
NIII						

#### **Site Inspection Summary**

Inspection Information

Date:	16 December 2013			
Time:	10:15			
Site:	Tseung Kwan O Area 137			
Inspection No.:	311			

Date.	10 December 2013							
Time:	10:15							
Site:	Tseung Kwan O Area 137							
Inspection No.:	311							
Non-compliance								
Nil								
Observations								
Follow up Ol	bservation							
Nil.								
New Observ	vations							
	<u>utions</u>							
Nil.								
Remarks								

# EM&A Environmental Inspection Record Contract No.: CV/2010/05 Temporary Construction Waste Sorting Facilities, 2011 - 2013



#### **Site Inspection Summary**

Inspection Information

Date:	3 December 2013			
Time:	10:30			
Site:	Tseung Kwan O Area 137			
Inspection No.:	313			

	<b>D</b> 410.	20 2000111201 2010				
	Time:	10:30				
	Site:	Tseung Kwan O Area 137				
	Inspection No.:	313				
	Non-compliance					
	Nil					
1	Observations					
	Follow up Ol	<u>bservation</u>				
	Nil.					
	<u>New Observ</u> Nil.	<u>ations</u>				
	Remarks					
	A PL					

#### APPENDIX I

IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES (EMIS)

Contract No.: CV/2010/05 – Temporary Construction Waste Sorting Facilities, 2011 - 2013 Environmental Monitoring and Audit

Environmental Mitigation Implementation Schedule

Environmental Protection Measures	Location	Implementation Status			
		Sep 13	Oct 13	Nov 13	Dec 13
Air Quality					
Sufficient watering	Tipping hall (barging point), stockpiled	$\sqrt{}$	V	V	V
	materials, access road, All unpaved haul				
	roads, exposed site areas		,	,	
Truck speed below 10 km/hr	All areas	√	V	V	V
Trucks fitted with power-operated dump bed cover	All areas	√	√	√	√
Watering for truck loads after removal of tarpaulin cover	Site egress	<b>V</b>	$\checkmark$	$\sqrt{}$	$\sqrt{}$
Provision of vehicle washing facilities	Site egress	<b>V</b>	$\checkmark$	$\sqrt{}$	$\sqrt{}$
Prohibition of open burning	All areas	$\sqrt{}$	$\checkmark$	$\sqrt{}$	$\sqrt{}$
Provision of top and side covers for conveyor belts	C&DMSF	V	V	V	√
Buffer zone of at least 20m between construction waste sorting facility	Seafront	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	V
and the seafront					
Buffer zone of at least 100m between public stockpiling and the nearest	Northern site boundary	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$
ASR	·				
Noise					
Noisy equipment and activities should be sited by the Contractor as far	All areas	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$
away from sensitive receivers as is practical					
Replace noisy plant with quieter alternatives	All areas	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	√
Idle equipment should be turned off or throttled down	All areas	$\sqrt{}$	√	$\sqrt{}$	√
Quieter power units of stationary and earth moving plant with partial or	All areas	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$
full enclosures or vibratory isolation					
Properly maintain powered mechanical equipment	All areas	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$
Schedule noisy activities to reduce duration and severity of noise	All areas	V	√	√	V
nclude contract clauses for environmental protection	All areas	V	√	√	V
Water Quality					
Obtain discharge license	Site offices	V	√	√	V
Provide proper sewage treatment and disposal facilities in the form of	All areas	V	√	√	√
chemical toilets for site workers					
Include contract specifications for environmental protection	All areas	V	V	V	V
Provide proper drainage for collection of surface runoff	All areas	V	√	<b>√</b>	√
Provision of buffer distance of at least 20m between C&DMSF and the	C&DMSF	V	√	√	V
seafront					
Provision of sand & silt settling tank	Vehicle washing facility	V	<b>√</b>	<b>√</b>	V

#### Remarks:

Implemented Partially implemented Not implemented Not Applicable @ **X** N/A

Contract No.: CV/2010/05 – Temporary Construction Waste Sorting Facilities, 2011 - 2013 Environmental Monitoring and Audit

Environmental Protection Measures	Location		Implementation Status				
		Sep 13	Oct 13	Nov 13	Dec 13		
Sand and silt removal facility provided for storm water to be treated	All areas	V	√	√	V		
before discharge							
Construction of temporary storm water system	Perimeter of Fill Bank	V	$\sqrt{}$	V	V		
Regular removal of sand and silt	All channels	V	$\sqrt{}$	V	V		
Construction Waste							
Segregate different categories of waste	All areas	@	$\sqrt{}$	V	V		
Register chemical and maintenance wastes	All areas	V	$\sqrt{}$	$\sqrt{}$	V		
Do not connect chemical material storage areas to the foul or storm	Works yards	V	$\sqrt{}$	V	V		
water drainage system	-						
Store and label dangerous goods	All areas	V	$\checkmark$	$\sqrt{}$	V		
Prevent disposal of hazardous materials to air, soil, water bodies	All areas	V	$\sqrt{}$	$\sqrt{}$	V		
Provide refuse containers at all work areas	All areas	V	$\sqrt{}$	$\sqrt{}$	V		
Human waste discharged into septic tanks or tankered away	All areas	V	$\sqrt{}$	V	V		
Landscape and Visual							
Is the night-time lighting controlled to minimize glare to sensitive	All areas	√	√	V	V		
receivers							
Is hydroseeding process conducted and maintained properly	All areas	N/A	N/A	N/A	N/A		

#### Remarks:

Implemented Partially implemented Not implemented Not Applicable @ **X** N/A

# APPENDIX J EVENT ACTION PLAN

#### **Event and Action Plan for Air Quality**

EVENT	ACTION							
EVENT	ET	IEC	ER	CONTRACTOR				
ACTION LEVEL								
1. Exceedance	Identify source, investigate the cause	Check monitoring data submitted by	Notify Contractor.	Rectify any				
for one	of exceedance and propose remedial	ET;		unacceptable practice;				
sample	measures;	2. Check Contractor's working		2. Amend working				
	2. Inform IEC and ER;	method.		methods if appropriate.				
	3. Repeat measurement to confirm							
	finding;							
	4. Increase monitoring frequency to							
	daily, if ET assessment indicates that							
	exceedance is due to contractor's							
	construction works.							

2. Exceedance	1. Identify source, investigate the cause	Check monitoring data submitted by	Confirm receipt of notification	Submit proposals for
for two or	of exceedance and propose remedial	ET;	of exceedance in writing;	remedial actions to IEC
more	measures;	2. Check Contractor's working	2. Notify Contractor;	within three working
consecutive	2. Inform IEC and ER;	method;	3. Ensure remedial measures	days of notification;
samples	3. Repeat measurements to confirm	3. Discuss with ET and Contractor on	properly implemented.	2. Implement the agreed
	findings;	possible remedial measures;		proposals;
	4. Increase monitoring frequency to	4. Advise the ER on the effectiveness		3. Amend proposal if
	daily, if ET assessment indicates that	of the proposed remedial measures;		appropriate.
	exceedance is due to contractor's	5. Supervise Implementation of		
	construction works;	remedial measures.		
	<ol><li>Discuss with IEC and Contractor on remedial actions required;</li></ol>			
	6. If exceedance continues, arrange			
	meeting with IEC and ER;			
	7. If exceedance stops, cease additional			
	monitoring.			

			EL

- Exceedance for one sample
- Identify source, investigate the cause of exceedance and propose remedial measures;
- 2. Inform IEC, ER and EPD;
- Repeat measurement to confirm finding;
- Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works;
- Assess effectiveness of Contractor's remedial actions and keep IEC, ER and EPD informed of the results.

- Check monitoring data submitted by ET;
- Check Contractor's working method;
- Discuss with ET and Contractor on possible remedial measures;
- Advise the ER on the effectiveness of the proposed remedial measures;
- 5. Supervise implementation of remedial measures.

- Confirm receipt of notification of exceedance in writing;
- 2. Notify Contractor;
- Ensure remedial measures properly implemented.
- Take immediate action to avoid further exceedance;
- Submit proposals for remedial actions to IEC within three working days of notification;
- Implement the agreed proposals;
- Amend proposal if appropriate.

- Exceedance for two or more consecutive samples
- 1. Notify Contractor, IEC, ER and EPD;
- Identify source, investigate the cause of exceedance and propose remedial measures;
- Repeat measurement to confirm findings;
- Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works;
- Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;
- Arrange meeting with IEC and ER to discuss the remedial actions to be taken;
- Assess effectiveness of Contractor's remedial actions and keep IEC, ER and EPD informed of the results;
- 8. If exceedance stops, cease additional monitoring.

- Discuss amongst ER, ET, and Contractor on the potential remedial actions;
- Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;
- Supervise the implementation of remedial measures.

- Confirm receipt of notification of exceedance in writing;
- 2. Notify Contractor;
- In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;
- Ensure remedial measures properly implemented:
- 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.

- Take immediate action to avoid further exceedance;
- Submit proposals for remedial actions to IEC within three working days of notification;
- Implement the agreed proposals;
- Resubmit proposals if problem still not under control;
- Stop the relevant portion of works as determined by the ER until the exceedance is abated.

#### APPENDIX K

CUMULATIVE STATISTICS ON COMPLAINTS, SUMMONS AND SUCCESSFUL PROSECUTIONS

# Appendix K Cumulative Statistics on Complaints, Summons and Successful Prosecutions

### **Cumulative statistics on complaints**

	Date	Subject	Status	Total no.	Total no. recorded
	Received			recorded	for the Contract
					CV/2010/05
Environmental	Mid April	The complainant	Closed	1	1
complaint	2013	expressed that			
		there was no vehicle			
		washing facility at			
		TKO 137. A site			
		inspection was			
		conducted by EPD			
		on 16 April and the			
		vehicle washing			
		facility was found to			
		be in normal			
		operation.			

#### **Cumulative statistics on summons**

	Date	Subject	Status	Total no.	Total no. recorded
	Received			recorded	for the Contract
					CV/2010/05
EPD	8 July 2011	It was about the Contractor	Closed	1	1
Summons		(Sang Hing Civil Contractors			
		Company Limited), being the			
		main contractor of the			
		Contract, failed to make an			
		application to the Director of			
		Environmental Protection to			
		establish a waste billing			
		account solely in respect of			
		the Contract within 21 days			
		after being awarded the			
		Contract.			

### **Cumulative statistics on prosecutions**

	Date	Subject	Status	Total no.	Total no.
	Received			recorded	recorded for the
					Contract
					CV/2010/05
EPD's	9 August	It was about the Contractor	Closed	1	1
Successful	2011	(Sang Hing Civil Contractors			
Prosecutions		Company Limited), being the			
		main contractor of the			
		Contract, failed to make an			
		application to the Director of			
		Environmental Protection to			
		establish a waste billing			
		account solely in respect of			
		the Contract within 21 days			
		after being awarded the			
		Contract.			