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# **China Harbour Engineering Co., Ltd.**

**CONTRACT NO. CV/2013/09**  
**TEMPORARY CONSTRUCTION WASTE**  
**SORTING FACILITIES, 2014-2016**  
**AT TSEUNG KWAN O AREA 137 (TKO CWSF)**  
**QUARTERLY EM&A SUMMARY REPORT**  
**NO.2**  
**(FROM APRIL TO JUNE 2014)**

Prepared by:

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Issue Date: 14 July 2014

Report No.: ENA41261

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21 July 2014

By E-mail and Fax No.: 2695 3944

ETS-Testconsult Limited  
8/F, Block B  
Veristrong Industrial Centre  
34-36 Au Pui Wan Street  
Fo Tan, Hong Kong

Attention: Mr. C. L. Lau

Dear Mr. Lau,

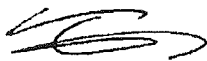
**Re: Contract No. CV/2013/09  
Temporary Construction Waste Sorting Facilities, 2014 – 2016  
Quarterly EM&A Summary Report No. 2 (April to June 2014) for the CWSF at  
TKO Area 137**

Reference is made to your submission of the revised draft Quarterly EM&A Summary Report (April to June 2014) for the CWSF at TKO Area 137 received by E-mail on 21 July 2014.

We are pleased to inform you that we have no further 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 sincerely,



Tony Cheng  
Independent Environmental Checker

c.c. CEDD  
CHEC

Attn: Ms. Ruth Tso  
Attn: Mr. S W Sung

Fax No.: 2714 0113  
Fax No.: 2247 4108

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### **EXECUTIVE SUMMARY**

This is the Quarterly Environmental Monitoring and Audit (EM&A) Summary Report No.2 prepared by ETS-Testconsult Ltd (ET) for the "Contract No: CV/2013/09 – Temporary Construction Waste Sorting Facilities (CWSF), 2014-2016, at Tseung Kwan O (TKO) Area 137" (The Project).

This report documents the findings of EM&A Works conducted during the operation phase of CWSF at TKO Area 137 from April to June 2014.

#### **Site Activities**

As informed by the Contractor, the site activities in this reporting quarter were as below:

- |                   |  |
|-------------------|--|
| <i>April 2014</i> | <ul style="list-style-type: none"><li>• <i>Operation of CWSF's;</i></li><li>• <i>Disposal of sorted construction waste to landfills and public fill reception facilities;</i></li><li>• <i>Routine maintenance of mechanical sorting plants and associated facilities; and</i></li><li>• <i>Construction of the Secondary office for the Engineer.</i></li></ul> |
| <i>May 2014</i>   | <ul style="list-style-type: none"><li>• <i>Operation of CWSF's;</i></li><li>• <i>Disposal of sorted construction waste to landfills and public fill reception facilities;</i></li><li>• <i>Routine maintenance of mechanical sorting plants and associated facilities.</i></li></ul>   |
| <i>June 2014</i>  | <ul style="list-style-type: none"><li>• <i>Operation of CWSF's;</i></li><li>• <i>Disposal of sorted construction waste to landfills and public fill reception facilities; and</i></li><li>• <i>Routine maintenance of mechanical sorting plants and associated facilities.</i></li></ul>   |

#### **Air Quality Monitoring**

No exceedance of Action and Limit levels was recorded for 1-hr and 24-hr TSP monitoring in this quarter.

#### **Environmental Complaints, Notification of summons and successful prosecutions**

No complaint, notification of summon and successful prosecution with respect to environmental issues was received in this quarter.



## 1.0 INTRODUCTION

China Harbour Engineering Co., Ltd. (CHEC) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for the "Contract No: CV/2013/09 – Temporary Construction Waste Sorting Facilities (CWSF), 2014-2016, at Tseung Kwan O (TKO) Area 137" (The Project).

An Environmental Permit (No.: EP-134/2002/K) was granted to the Project on 04 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 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 TKO Area 137 for the month 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.

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 Area 137 are under the governance of the EP.

According to the updated EM&A Manual for "Contract CV/2004/13 – Temporary Construction Waste Sorting Facilities at Tseung Kwan O Area 137 and Tuen Mun Area 38" (the EM&A Manual), air quality monitoring (1-hr and 24-hr TSP) and site inspections are necessary to carry out until the completion of the contract month of the Project. The EM&A programme, or any part of it., will be terminated upon approval from the ER, IEC and EPD.

In accordance with the Section 25.40(1) of the Particular Specification of the Project, baseline monitoring for air quality was not required. However, the baseline conditions as well as action and limit levels of the Project was established based on the baseline data collected by Fill Bank at TKO Area 137.

This report presents a summary of the environmental monitoring and inspection works carried out by the ET for the temporary CWSF at TKO Area 137 from April to June 2014

## 2.0 PROJECT INFORMATION

### 2.1 Site Description

TKO CWSF is located at TKO Area 137 which is located at the southern end of Wan Po Road. CHEC shall comply with all control measures in accordance with the PS for the execution of the Works within the TKO CWSF (Portion A, B1, B2, B3 and B4 of the site).

### 2.2 Work Programme

Details of work programme in this quarter are shown in Appendix D.

### 2.3 Project Organization and Management Structure

The project organization chart is shown in Appendix A.

### 2.4 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.



Table 2.1 Contact Details of Key Personnel

Organization	Name of Key Staff	Project Role	Tel. No.	Fax No.
CEDD	Ms Ruth Tso	Engineer's Representative	2762 5307	2714 0113
	Mr H C Tang			
IEC (ENVIRON)	Mr Tony Cheng	IEC	3465 2888	3465 2899
Contractor (CHEC)	Mr. Simon Pan	Contractor's Agent	2247 4168	2247 4108
ET (ETL)	Mr C. L. Lau	ET Leader	2946 7791	2695 3944

### 3.0 SUMMARY OF EM&A REQUIREMENTS

#### 3.1 EM&A Programme

The EM&A programme required environmental monitoring for air quality, noise and marine water quality and environmental site inspections for air quality, noise, marine water quality, landscape and visual, and waste management. 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 Plans;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

The advice on implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 5 of the Report.

#### 3.2 Monitoring Stations and Parameters

The EM&A Manual designates several locations to monitor environmental impacts in terms of air quality, noise and water quality due to the Project. The description and detailed locations of monitoring stations for air quality, noise and marine water quality are shown in Figures 1, 2 and 3 and relevant sections of this Report.

#### 3.3 Monitoring Methodology and Calibration Details

All monitoring works were conducted and monitoring equipment was calibrated in according with the EM&A Manual.

#### 3.4 Environmental Quality Performance Limits (Action/Limit Levels)

The environmental quality performance limits, i.e. Action/Limit Levels (AL Levels) were derived from the baseline monitoring results. If the measured environmental quality parameters exceed the AL Levels, the respective action plan will be implemented. The event action plan is given in Appendix C.

#### 3.5 Environmental Mitigation Measures

Relevant mitigation measures were recommended in the EM&A Manual for the Contractor to implement. A list of mitigation measures is given in Appendix E.

### 4.0 AIR QUALITY MONITORING RESULTS

No exceedance of Action and Limit levels was recorded for 1-hr and 24-hr TSP monitoring in this quarter. The trend of air quality during the reporting quarter is present in Appendix B. Wind data included wind speed and wind direction were extracted from Tseung Kwan O Station of Hong Kong Observatory and presented in Appendix G.



Besides the construction 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 Area 137.

Table 4.1 presents the number of exceedances recorded in each month of the reporting quarter. The number of monitoring event included regular monitoring events and additional ones.

Table 4.1 Summary of Number of Exceedances for 1-hr and 24-hr TSP Monitoring

Monitoring Parameter	Level of Exceedance	April 2014	May 2014	June 2014
24-hr TSP	No of monitoring events	5	5	5
	Action Level	0	0	0
	Limit Level	0	0	0
1-hr TSP	No of monitoring events	16	16	14
	Action Level	0	0	0
	Limit Level	0	0	0

## 5.0 INSPECTION RESULTS

### 5.1 Implementation Status of Environmental Mitigation Measures

ET conducted weekly site inspections to monitor the Contractor's implementation of environmental mitigation measures. After each site inspection, the Contractor was notified of ET's observations and recommendations. A corrective action plan detailing the environmental observations was prepared by ET and the Contractor then completed this plan to propose/report their remedial works.

Air quality was the major environmental issue in the reporting quarter. The Contractor generally implemented most of the environmental mitigation measures in the reporting quarter. Dump truck traffic, dumping and manual sorting of inert waste were the major dust sources of the Project. Generally, the Contractor implemented adequate dust mitigation measures in the reporting quarter including dampening of haul roads, water spraying on the truckloads, operation of automatic mist spraying systems and etc.

Dump truck traffic and construction activities near the site egress were the major noise sources. As the Fill Bank was remote from the nearby NSRs, the noise impact was minimal. The powered mechanical equipment were generally operated and maintained properly.

Furthermore, the Contractor should also regularly inspect and maintain the oil interceptor at the car park to ensure it properly functions.

Although there were a few observations regarding insufficient of drip tray and accumulated of stagnant water in the drip tray, the Contractor rectified most of these problems. Besides, the Contractor should provide tarpaulin sheets before repairing and maintenance works and also carry out proper cleaning activities immediately after such works.

### 5.2 Status of Environmental Licensing and Permitting

The status of licences and permits is summarized in Table 5.1.

Table 5.1 Summary of Environmental Licensing and Permit Status

Description	Permit No.	Valid Month		Section
		From	To	
Amended Environmental Permit	EP-134/2002/K	04/02/13	---	<ul style="list-style-type: none"> <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 month of May 2004 to December 2004 for transporting the stockpiled public fill by barge</li> <li>▪ Construction of 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</li> </ul>
Chemical Waste Producer	5213-839-C1186-22	16/01/14	---	Spent Lubricating Oil, Spent Flammable Liquid, Spent Battery containing Heavy Metals and Surplus Paint
Effluent Discharge License	WT000185 92-2014	13/05/14	31/05/19	Wastewater arising from construction site (Sedimentation Tank & Desilting Tank)
Notification Pursuant to Section 3(3) of the Air Pollution Control (Construction Dust) Regulations	368928	---	---	---
Billing Account for Disposal of Construction Waste	7019200	---	---	---

### 5.3 Advice on Solids and Liquid Waste Management Status

Table 5.2 summarizes data on waste disposal in this reporting quarter.

Table 5.2 Estimated Waste Disposal in the Reporting Quarter

Waste Type	April 2014	May 2014	June 2014
Public fill collected (ton)	26659	33774	32137
Sorted inert material (ton)	7917	15213	9327
Sorted non-inert material (ton)	19815	21807	22770
Recycling (Metal) ('000kg)	0	0	0
C&D waste (e.g paper / cardboard packaging and plastic) ('000kg)	0	0	0
Chemical waste ('000kg)	0	0	0

## 6.0 NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

### 6.1 Summary of Non-compliance

No exceedances on 1-hour and 24-hour TSP monitoring results were recorded in this quarter.





## 6.2 Review of the Reasons for and the Implications of Non-compliance

Since there was no exceedance recorded in this quarter, the review of the reasons for the non-compliance was not required.

## 6.3 Summary of Actions Taken

Since there was no exceedance recorded in this quarter, no further action was not required to be taken.

## 6.4 Summary of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No complaint, notification of summon and successful prosecution was received. A summary of environmental complaints and prosecutions was given in Table 6.1.

Table 6.1 Summary of Environmental Complaints and Prosecutions

<i>Period</i>	<i>Complaints logged</i>	<i>Summon served</i>	<i>Successful Prosecution</i>
<i>April 2014</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>May 2014</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>June 2014</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Cumulative</i>	<i>0</i>	<i>0</i>	<i>0</i>

## 7.0 COMMENTS, CONCLUSIONS AND RECOMMENDATION

No exceedance of Action and Limit levels was recorded for 1-hour and 24-hour TSP monitoring in this quarter.

No complaint, notification of summons and successful prosecution with respect to environmental issues was received in this quarter.

According to the ET weekly site inspection and IEC site audits carried out in this quarter, it was indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was up to standard. The Contractor generally implemented sufficient dust mitigation measures, including operation of the mist spraying systems and dampening of haul roads.

According to the environmental site inspections performed in this quarter, 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;
- Conduct road sweeping on all paved haul roads and public roads especially outside and near the site egress by the road sweeper. Undertake water spraying on stockpiling area by water bowsers;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit;
- Operate mist spraying systems and automatic water sprinklers in the Fill Bank;
- Implement the dust mitigation measures for the site 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.

### **Noise**

- Conduct noisy activities at a farther location from the NSRs.



**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 hoarding/chaining fences in accordance with agreed design at proper location.

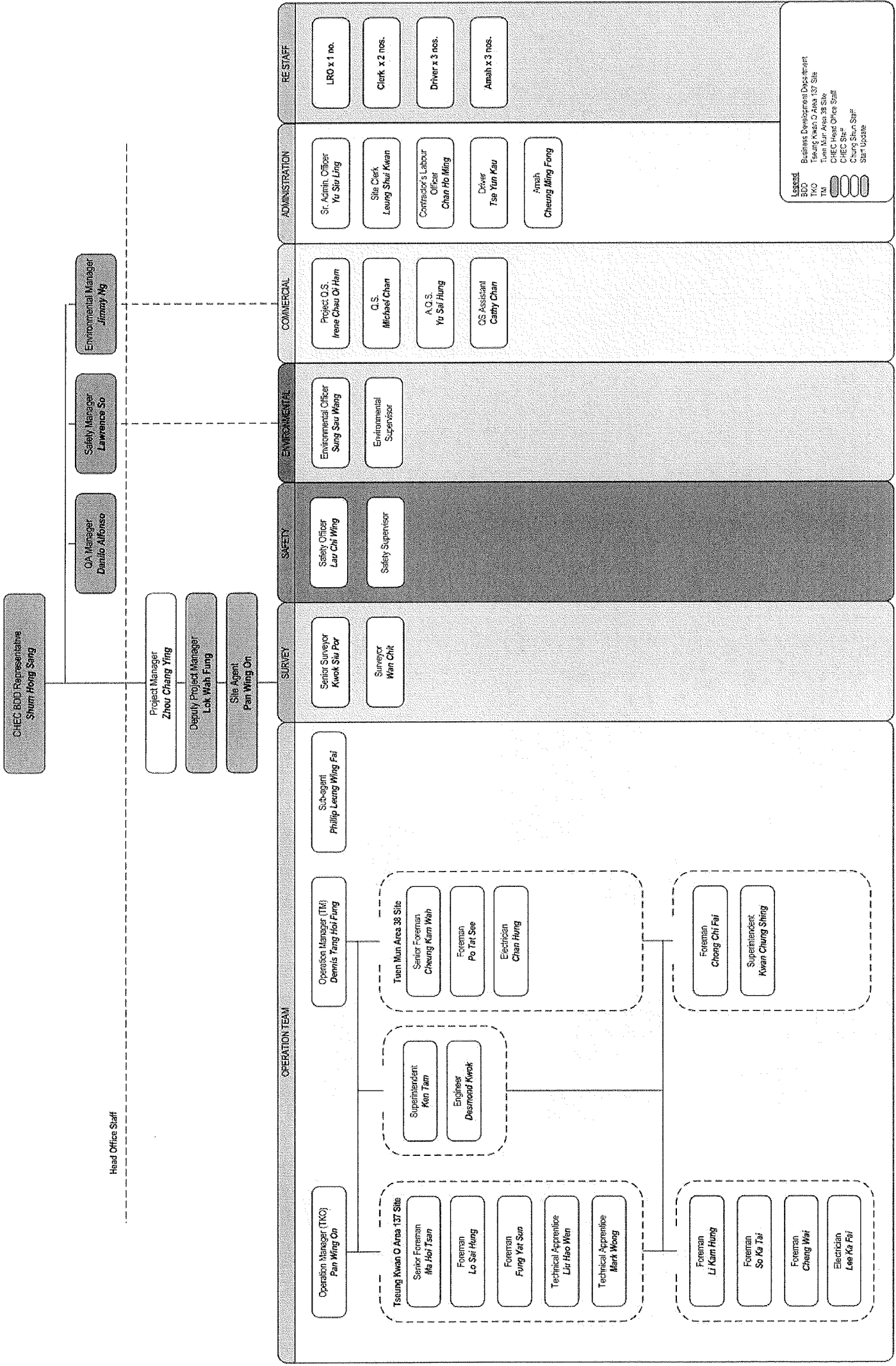
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## Appendix

### A

## Organization Chart





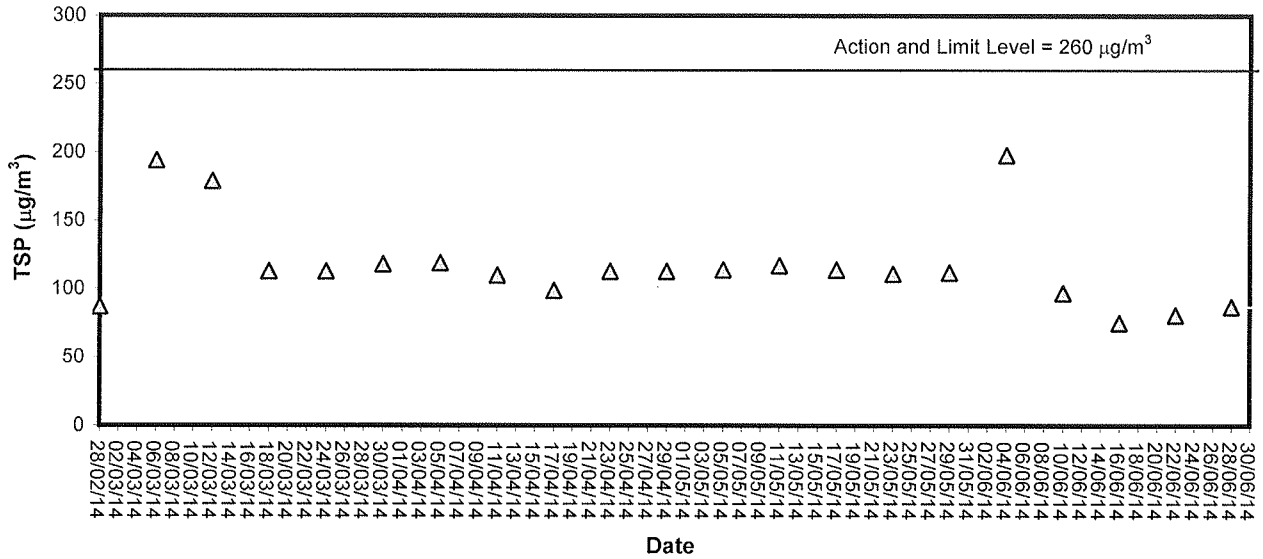
## Appendix

### B

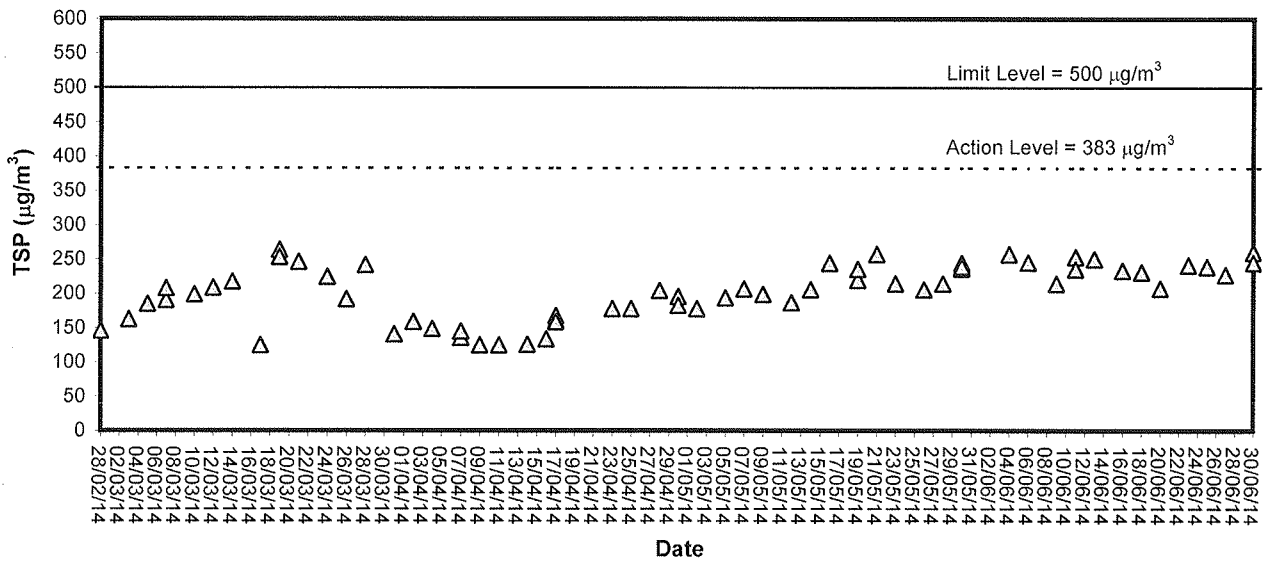
## Graphical Plots of Air Quality Monitoring Data



### 24-hour TSP level at TKO2



### 1-hour TSP level at TKO2





## Appendix

### C

## Event-Action Plans

## EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

EVENT	ACTION				Contractor
	ET Leader	IC(E)	ER		
	<b>ACTION LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Inform ER, IC(E) and Contractor</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET</li> <li>2. Check contractor's working method</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practise</li> <li>2. Amend working methods if appropriate</li> </ol>	
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Inform IC(E) and Contractor</li> <li>3. Repeat measurements to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Discuss with IC(E) and Contractor on remedial actions</li> <li>6. If exceedance continues, arrange meeting with IC(E) and ER.</li> <li>7. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET</li> <li>2. Check the Contractor's working method</li> <li>3. Discuss with ET and Contractor on possible remedial measures</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures</li> <li>5. Supervise implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify the Contractor</li> <li>3. Ensure remedial measures properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial actions to IC(E) within 3 working days of notification</li> <li>2. Implement the agreed proposals</li> <li>3. Amend proposal if appropriate</li> </ol>	
	<b>LIMIT LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Inform ER, Contractor and EPD</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET</li> <li>2. Check Contractor's working method</li> <li>3. Discuss with ET and Contractor on possible remedial measures</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures</li> <li>5. Supervise implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify the Contractor</li> <li>3. Ensure remedial measures properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification</li> <li>3. Implement the agreed proposals</li> <li>4. Amend proposal if appropriate.</li> </ol>	



## EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

EVENT	ACTION			Contractor
	ET Leader	IC(E)	ER	
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Notify IC(E), ER, EPD and Contractor</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Carry out analysis of contractor's working procedures to determine possible mitigation to be implemented</li> <li>6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET and Contractor on the potential remedial actions</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</li> <li>3. Supervise the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. In consultation with the IC(E), agree with the Contractor on the remedial measures to be implemented</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. If exceedances continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedances</li> <li>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification</li> <li>3. Implement the agreed proposals</li> <li>4. Resubmit proposals if problem still not under control</li> <li>5. Stop the relevant activity of works as determined by the ER until the exceedance is abated</li> </ol>

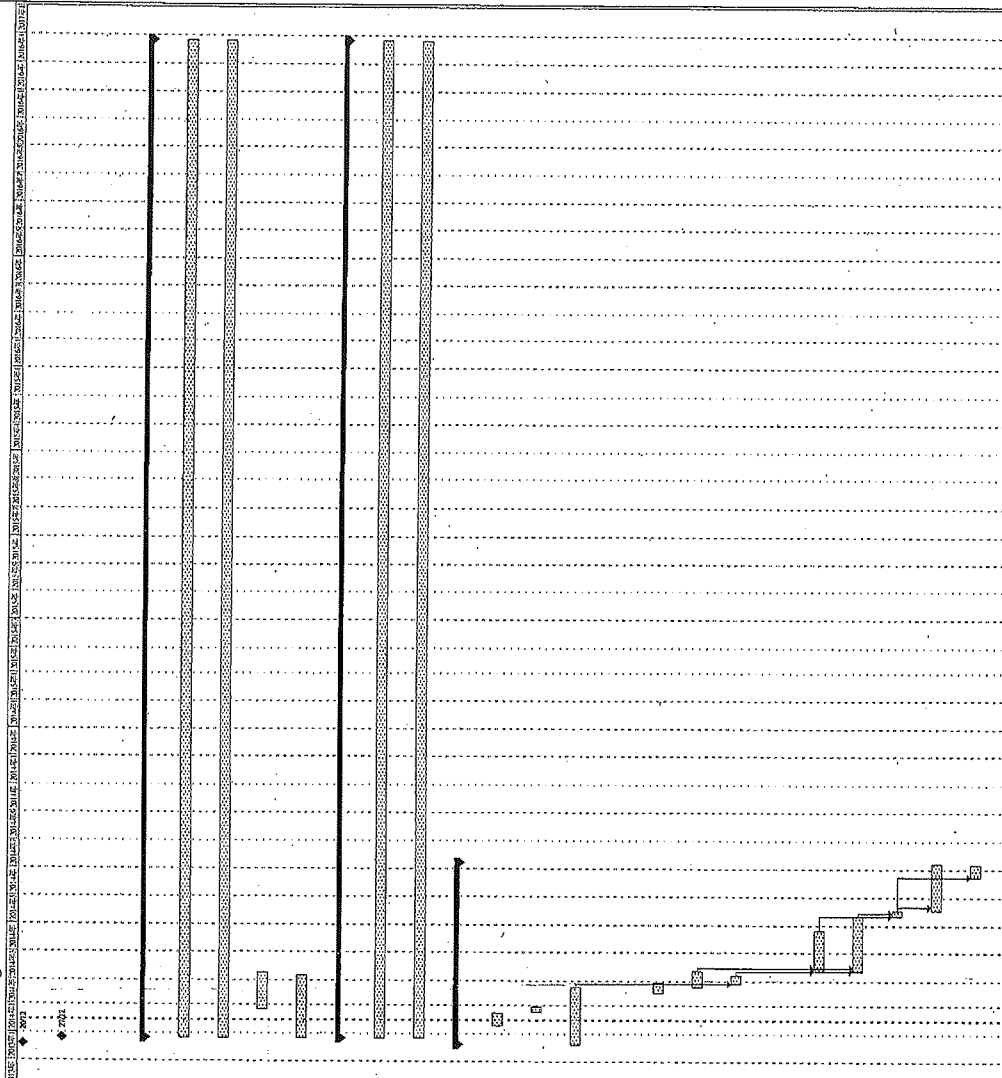


## Appendix

### D

## Work Programme

CV/2013/09 - Temporary Construction Waste Sorting Facilities, 2014 - 2016  
Master Programme



NO	REMARK	DATE	START DATE	END DATE	NUMBER OF DAYS
0	Date of Commencement of Contract	0 工作日	2013/12/20	2013/12/20	0
1	Commencement of operation of Temporary Construction Waste Sorting Facility	0 工作日	2013/12/27	2013/12/27	0
2	Section 1	1096 工作日	2013/12/27	2016/12/26	1096
3	Contractor's accommodation	1096 工作日	2013/12/27	2016/12/26	1096
4	Operation of Temporary Construction Waste Sorting Facility	1096 工作日	2013/12/27	2016/12/26	1096
5	Provision of Engineer's Secondary Site Office at TKO	42 工作日	2014/1/27	2014/3/9	42
6	Installation of Wheel Washing Bay	70 工作日	2013/12/27	2014/3/6	70
7	Section 2	1096 工作日	2013/12/27	2016/12/26	1096
8	Contractor's accommodation	1096 工作日	2013/12/27	2016/12/26	1096
9	Operation of Temporary Construction Waste Sorting Facility	1096 工作日	2013/12/27	2016/12/26	1096
10	Section 3	200 工作日	2013/12/20	2014/7/7	200
11	Erection of chain link fence at C3 zone	14 工作日	2014/1/10	2014/1/23	14
12	Removal of existing hoardings	6 工作日	2014/1/25	2014/1/30	6
13	Design with ICE certificate and method statement for platform, concrete footing and relocation of mechanical sorting plant (VGF)	64 工作日	2013/12/20	2014/2/21	64
14	Diversion of utilities (Watermaas, electricity and CCTV etc.)	13 工作日	2014/2/15	2014/2/27	13
15	Demolish of existing pre-sorting station and roof cover	18 工作日	2014/2/22	2014/3/11	18
16	Construction of concrete footing for mechanical sorting plant (VGF)	10 工作日	2014/2/26	2014/3/7	10
17	Relocation of mechanical sorting plant (VGF)	45 工作日	2014/3/12	2014/4/25	45
18	Relocation and reconstruction of platform	60 工作日	2014/3/12	2014/5/10	60
19	Trial Run for mechanical sorting plant (VGF)	7 工作日	2014/5/11	2014/5/17	7
20	Site clearance of temporary stockpile area	51 工作日	2014/5/18	2014/7/7	51
21	Erection of chain link fence at site boundary	14 工作日	2014/6/23	2014/7/6	14



## **Appendix**

### **E**

## **Implementation Schedule of Environmental Mitigation Measures (EMIS)**



Environmental Protection Measures		Location	Implementation Status			
			Implemented	Partially implemented	Not implemented	Not Applicable
<b>Water Quality</b>						
<ul style="list-style-type: none"> <li>Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.</li> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> <li>The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained regularly.</li> <li>A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.</li> <li>A buffer distance of at least 20m shall be maintained between the boundary of the C&amp;DMFS and the seafront.</li> <li>The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.</li> <li>The material shall be properly covered to prevent washed away especially before rainstorm.</li> <li>The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.</li> <li>A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.</li> <li>Obtain Discharge License</li> <li>Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.</li> <li>The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.</li> <li>A waste collection vessel shall be deployed to remove floating debris.</li> </ul>		<p>All areas ✓</p> <p>All areas ✓</p> <p>All areas ✓</p> <p>Along the seafront ✓</p> <p>C&amp;DMFS ✓</p> <p>All areas ✓</p> <p>All areas ✓</p> <p>Temporary Slopes ✓</p> <p>Wheel Washing facility ✓</p> <p>Site Office ✓</p> <p>Barge Handling Area (BHA) ✓</p> <p>Barge Handling Area (BHA) ✓</p> <p>Barge Handling Area (BHA) ✓</p>				
<b>Landscape and Visual</b>						
<ul style="list-style-type: none"> <li>Construction of lighting to avoid spillage and glare</li> <li>Hydroseeding</li> <li>Hoarding erection</li> <li>Damage to surrounding area avoided</li> </ul>		<p>All areas ✓</p> <p>Completed slopes ✓</p> <p>Site boundary ✓</p> <p>All areas ✓</p>				
<b>Other Environmental Factors</b>						
<ul style="list-style-type: none"> <li>C&amp;D waste sorted from mixed C&amp;D material shall be transfer to SENT landfill for disposal.</li> <li>Plan and stock construction materials carefully to minimise generation of waste.</li> <li>Any unused materials or those with remaining functional capacity should be recycled.</li> <li>All generators, fuel and oil storage are within bunded areas.</li> <li>Oil leakage from machinery, vehicle and plant is prevented.</li> <li>Bund chemical storage area to 110% capacity.</li> <li>Prevent disposal of hazardous materials to air, soil and water body</li> <li>Provide rubbish skips at all work areas</li> <li>Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.</li> </ul>		<p>All areas ✓</p> <p>All areas ✓</p> <p>All areas ✓</p> <p>All areas ✓</p> <p>All areas ✓</p> <p>All areas ✓</p> <p>All areas ✓</p> <p>All areas ✓</p> <p>All areas ✓</p> <p>All areas ✓</p>				



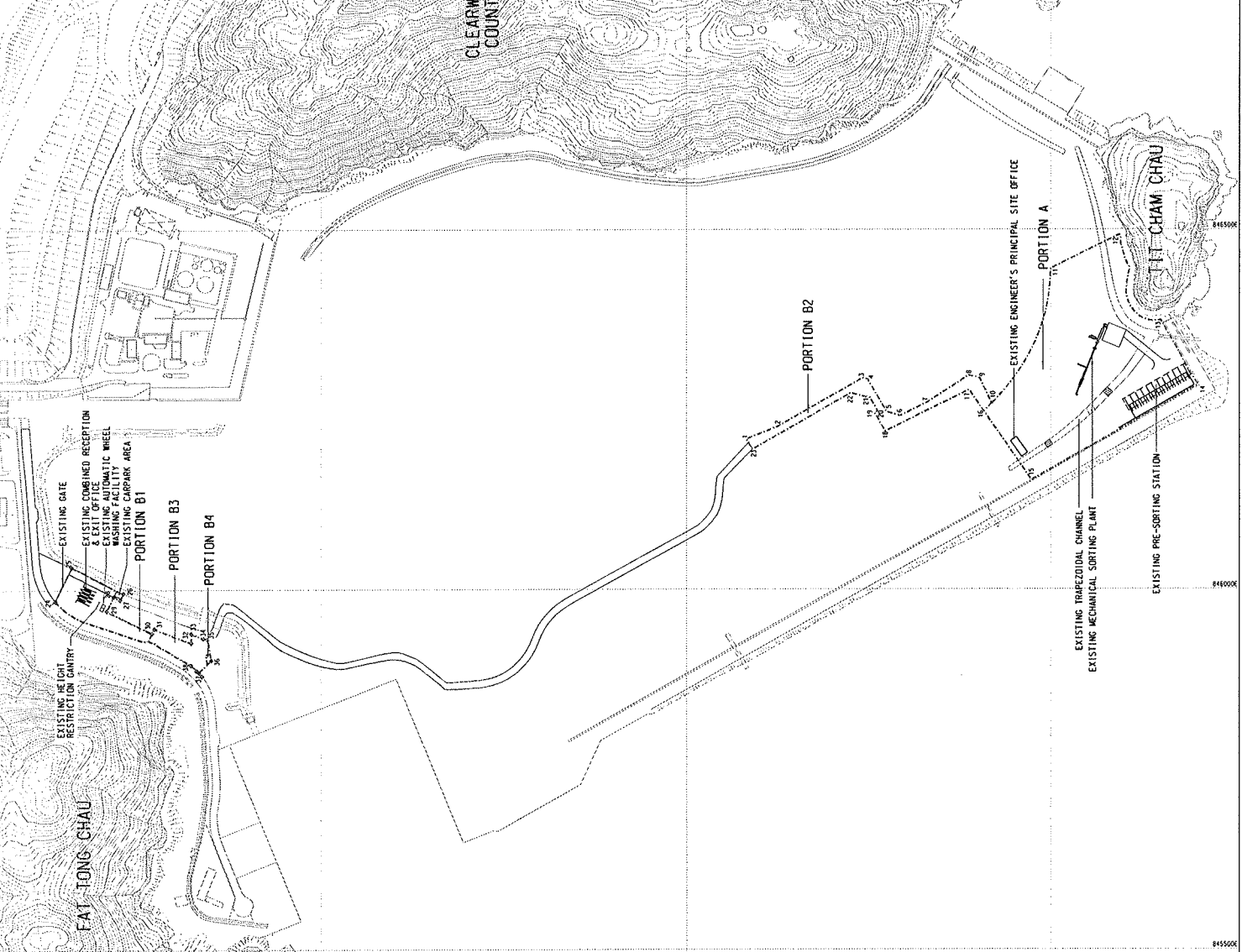
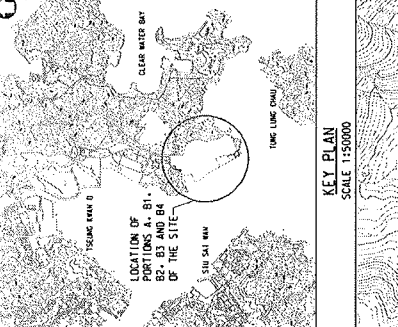
## **Appendix**

### **F**

#### **Site General Layout plan**

NOTES:  
 1. ALL CO-ORDINATES REFER TO THE AUTOMATIC DATUM 1980 AND IN METRES.  
 2. THE LOCATIONS OF THE FACILITIES ARE INDICATIVE ONLY.  
 3. EXACT ARRANGEMENT TO BE VERIFIED ON SITE.

LEGEND:  
 --- SITE BOUNDARY  
 --- ACCESS TO FACILITY (MAINTAINED BY OTHERS)



**SETTING-OUT DETAILS**

POINT	CO-ORDINATES
	EASTINGS (m) NORTHINGS (m)
1	846210.074 814417.766
2	846227.224 814373.802
3	846294.417 814298.688
4	846292.593 814251.854
5	846248.007 814226.051
6	846242.295 814206.922
7	846250.595 814170.209
8	846298.127 814113.316
9	846294.216 814098.291
10	846446.051 814000.000
11	846492.982 813904.335
12	846573.801 813846.314
13	846284.337 813765.696
14	846152.649 814026.516
15	846248.340 814093.895
16	846278.077 814113.267
17	846220.131 814227.581
18	846246.142 814242.287
19	846267.029 814248.610
20	846273.871 814274.227
21	846195.514 814409.375
22	845984.885 815365.516
23	846031.387 815342.802
24	845992.295 815271.503
25	845986.195 815276.019
26	845980.840 815284.397
27	845970.933 815294.155
28	845939.819 815232.050
29	845946.153 815288.907
30	845926.557 815172.683
31	845939.801 815172.683
32	845932.655 815167.317
33	845931.499 815155.241
34	845902.187 815150.051
35	845885.555 815167.179
36	845895.608 815179.263

**REVISION**

NO.	DATE	REVISION	BY	CHKD.
01	14.02.2013	ISSUED FOR TENDERS	H. C. TANG	S. Y. WEE
02	26.02.2013	REVISED	H. C. TANG	S. Y. WEE
03	26.02.2013	REVISED	H. C. TANG	S. Y. WEE
04	26.02.2013	REVISED	H. C. TANG	S. Y. WEE
05	26.02.2013	REVISED	H. C. TANG	S. Y. WEE

Project: TSEUNG KWAN O AREA 137  
 Temporary Construction Waste Sorting Facility - General Layout of Existing Facilities  
 1:2500 OR AS SHOWN  
 CIVIL ENGINEERING OFFICE  
 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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 8410006





## **Appendix**

### **G**

#### **Weather Condition**

## Extract of Meteorological Observations for Tseung Kwan O Automatic Weather Station, April 2014

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. (%)
Apr 1	*****	20.1	19.4	18.7	19.0	100	98	93
Apr 2	*****	19.5	18.7	18.0	18.3	100	97	90
Apr 3	*****	19.7	18.7	18.1	18.5	100	99	96
Apr 4	*****	22.3	19.3	17.2	16.8	100	86	61
Apr 5	*****	24.3	19.4	15.9	14.5	96	76	38
Apr 6	*****	20.3	18.3	16.8	16.4	98	89	65
Apr 7	*****	19.5	18.4	17.2	16.4	93	88	78
Apr 8	*****	20.4	19.0	18.2	18.5	100	97	89
Apr 9	*****	26.3	21.1#	18.3	19.7#	100	93#	68
Apr 10	*****	23.4	21.2	19.7	18.9	97	87	72
Apr 11	*****	25.4	21.9	19.8	19.1	95	85	69
Apr 12	*****	28.0	23.3	20.7	19.9	97	82	58
Apr 13	*****	29.3	24.4	20.5	21.3	99	84	64
Apr 14	*****	23.1	21.7	21.1	19.2	99	86	73
Apr 15	*****	22.7	21.1	19.8	16.9	92	77	63
Apr 16	*****	22.7	21.2	20.3	18.4	93	84	72
Apr 17	*****	28.1	23.4	20.8	20.7	98	86	62
Apr 18	*****	27.6	23.7	20.6	21.0	99	86	66
Apr 19	*****	27.0	23.6	21.5	21.7	99	90	74
Apr 20	*****	28.9	24.2	21.4	21.9	99	88	66
Apr 21	*****	23.4	22.4	21.9	21.6	98	95	90
Apr 22	*****	28.3	24.2	22.0	22.1	98	89	69
Apr 23	*****	23.6	21.6	20.7	21.1	99	97	93
Apr 24	*****	21.3	20.8	20.4	20.4	99	97	94
Apr 25	*****	22.4	21.8	21.0	21.4	100	98	92
Apr 26	*****	24.5	21.7	19.9	21.1	99	97	85
Apr 27	*****	29.7	24.2	19.3	20.5	100	81	55
Apr 28	*****	29.2	24.3	21.2	18.1	95	70	46
Apr 29	*****	25.9	23.2	21.0	20.0	96	83	66
Apr 30	*****	23.6	22.1	20.7	20.1	97	89	78
<b>Mean</b>	*****	24.4	21.6#	19.8	19.5#	98	88#	73
<b>Maximum</b>	*****	29.7	24.4#	22.0	22.1#	100	99#	96
<b>Minimum</b>	*****	19.5	18.3#	15.9	14.5#	92	70#	38

## Extract of Meteorological Observations for Tseung Kwan O Automatic Weather Station, April 2014

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Apr 1	9.5	***	*****
Apr 2	23.5	***	*****
Apr 3	44.5	***	*****
Apr 4	0.0	***	*****
Apr 5	0.0	***	*****
Apr 6	10.5	***	*****
Apr 7	0.0	***	*****
Apr 8	37.5	***	*****
Apr 9	0.0#	***#	*****#
Apr 10	0.0	030	7.5
Apr 11	0.0	020	6.6
Apr 12	0.0	070	5.3
Apr 13	0.0	180	3.6
Apr 14	0.0	030	6.0
Apr 15	0.0	060	8.3
Apr 16	0.0	020	6.3
Apr 17	0.0	190	4.0
Apr 18	0.0	190	4.0
Apr 19	0.0	030	3.8
Apr 20	0.0	170	2.3
Apr 21	2.0	010	5.4
Apr 22	0.0	020	4.1
Apr 23	30.0	050	6.6
Apr 24	5.0	020	7.0
Apr 25	3.5	020	5.8
Apr 26	2.5	020	5.7
Apr 27	0.0	350	4.0
Apr 28	0.0	020	6.7
Apr 29	0.0	020	6.1
Apr 30	1.0	030	6.2
<b>Mean</b>	-----	020#	5.5#
<b>Total</b>	169.5#	---	-----
<b>Maximum</b>	44.5#	---	8.3#
<b>Minimum</b>	0.0#	---	2.3#

\*\*\* 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 Tseung Kwan O Automatic Weather Station, May 2014

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. (%)
May 1	*****	24.6	22.0	20.1	20.0	98	89	76
May 2	*****	27.2	23.4	21.6	19.8	90	81	61
May 3	*****	27.4	23.8	21.3	19.5	95	78	54
May 4	*****	22.4	21.6	20.9	21.1	99	96	87
May 5	*****	24.4	20.9	18.8	19.5	100	92	69
May 6	*****	19.5	18.8	17.6	17.5	97	92	80
May 7	*****	20.3	19.5	18.8	19.1	99	98	92
May 8	*****	24.0	21.5	20.3	21.3	100	98	95
May 9	*****	22.6	21.4	20.6	21.0	100	98	94
May 10	*****	26.2	23.2	21.3	22.2	97	94	84
May 11	*****	24.9	23.5	22.3	22.8	99	96	90
May 12	*****	28.5	25.1	23.2	23.8	98	93	78
May 13	*****	28.3	26.2	24.6	25.1	99	94	85
May 14	*****	30.3	28.1	26.8	25.0	89	83	75
May 15	*****	30.7	28.5	26.8	25.4	93	83	74
May 16	*****	29.5	27.5	26.1	26.1	96	92	82
May 17	*****	30.2	27.6	26.5	25.8	95	90	78
May 18	*****	30.7	27.7	26.2	25.6	96	89	73
May 19	*****	31.5	28.2	24.3	25.1	96	84	67
May 20	*****	31.1	26.4	22.8	24.5	98	90	71
May 21	*****	29.1	26.0	23.1	24.5	100	92	77
May 22	*****	29.2	28.0	26.9	25.3	94	85	78
May 23	*****	27.5	26.3	24.9	25.4	98	95	88
May 24	*****	30.7	26.7	24.6	25.1	98	92	73
May 25	*****	32.9	28.5	26.0	25.6	98	85	63
May 26	*****	33.2	29.2	25.8	25.1	97	79	62
May 27	*****	34.4	29.7	26.3	25.3	95	79	57
May 28	*****	33.2	29.4	26.2	24.5	93	76	56
May 29	*****	33.6	29.4	27.2	24.9	90	78	56
May 30	*****	33.3	29.4	26.5	24.8	93	77	59
May 31	*****	33.5	29.3	26.2	25.4	95	81	62
<b>Mean</b>	*****	28.5	25.7	23.7	23.4	96	88	74
<b>Maximum</b>	*****	34.4	29.7	27.2	26.1	100	98	95
<b>Minimum</b>	*****	19.5	18.8	17.6	17.5	89	76	54

## Extract of Meteorological Observations for Tseung Kwan O Automatic Weather Station, May 2014

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
May 1	2.0	010	7.3
May 2	0.0	020	8.3
May 3	1.0	050	9.7
May 4	12.5	030	6.2
May 5	22.0	060	6.8
May 6	1.0	020	5.5
May 7	5.5	020	4.7
May 8	99.0	360	4.2
May 9	99.0	010	5.1
May 10	11.0	050	3.5
May 11	147.0	010	4.5
May 12	65.5	180	4.0
May 13	129.0	180	4.4
May 14	1.5	190	7.9
May 15	5.5	210	6.6
May 16	35.0	210	4.5
May 17	12.0	190	5.2
May 18	3.5	210	5.3
May 19	1.5	200	6.8
May 20	35.5	200	5.5
May 21	32.5	200	5.0
May 22	0.0	190	6.5
May 23	47.0	200	5.5
May 24	0.0	020	4.9
May 25	3.5	180	4.6
May 26	0.0	190	6.3
May 27	0.0	190	5.9
May 28	0.0	190	7.2
May 29	0.0	200	8.2
May 30	0.0	240	6.2
May 31	0.0	240	5.3
<b>Mean</b>	-----	190	5.8
<b>Total</b>	772.0	---	-----
<b>Maximum</b>	147.0	---	9.7
<b>Minimum</b>	0.0	---	3.5

\*\*\* 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 Tseung Kwan O Automatic Weather Station, June 2014

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. (%)
Jun 1	*****	34.3	30.1	27.1	25.1	93	76	55
Jun 2	*****	34.5	30.3	27.9	24.6	87	72	54
Jun 3	*****	32.9	29.2	27.0	25.2	90	79	63
Jun 4	*****	34.4	29.7	26.3	25.0	96	77	52
Jun 5	*****	33.5	28.8	26.6	26.1	97	86	63
Jun 6	*****	30.4	26.3	24.4	25.2	98	94	82
Jun 7	*****	28.6	25.8	24.1	24.7	99	94	77
Jun 8	*****	31.4	27.3	25.3	25.4	99	90	68
Jun 9	*****	30.0	27.0	24.5	24.1	97	85	70
Jun 10	*****	29.7	27.3	25.5	24.2	95	84	69
Jun 11	*****	28.9	27.5	26.0	23.7	93	80	68
Jun 12	*****	31.3	27.5	25.1	21.9	87	72	52
Jun 13	*****	32.3	27.5	22.5	19.7	94	65	36
Jun 14	*****	34.7	29.1	25.8	20.7	80	62	40
Jun 15	*****	29.9	26.8	24.8	24.8	97	89	69
Jun 16	*****	31.8	28.7	25.1	25.9	98	86	71
Jun 17	*****	31.6	29.1	27.1	26.4	96	86	72
Jun 18	*****	32.3	29.1	26.9	26.1	97	85	65
Jun 19	*****	32.3	28.6	25.8	26.5	99	89	71
Jun 20	*****	29.9	27.9	24.7	26.6	99	93	81
Jun 21	*****	29.3	27.7	25.6	26.4	97	92	83
Jun 22	*****	28.1	26.2	25.1	25.4	99	96	88
Jun 23	*****	28.9	26.7	25.1	25.7	100	95	83
Jun 24	*****	29.7	27.1	25.3	26.0	99	93	79
Jun 25	*****	29.3	27.3	25.9	26.1	99	93	79
Jun 26	*****	33.0	29.0	26.1	26.1	99	85	61
Jun 27	*****	33.1	29.4	26.5	25.9	98	82	62
Jun 28	*****	32.9	29.0	26.4	25.3	97	82	58
Jun 29	*****	32.5	28.4	26.0	25.8	98	87	65
Jun 30	*****	31.3	28.1	26.3	26.1	98	89	72
<b>Mean</b>	*****	31.4	28.1	25.7	25.0	96	85	67
<b>Maximum</b>	*****	34.7	30.3	27.9	26.6	100	96	88
<b>Minimum</b>	*****	28.1	25.8	22.5	19.7	80	62	36

## Extract of Meteorological Observations for Tseung Kwan O Automatic Weather Station, June 2014

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Jun 1	0.0	190	7.0
Jun 2	0.0	190	9.3
Jun 3	0.0	190	6.8
Jun 4	0.0	190	5.6
Jun 5	9.0	230	5.3
Jun 6	16.0	200	3.4
Jun 7	4.0	190	3.4
Jun 8	70.5	200	4.3
Jun 9	0.0	010	8.4
Jun 10	0.5	020	6.8
Jun 11	0.0	070	6.1
Jun 12	0.0	070	6.2
Jun 13	0.0	020	6.7
Jun 14	0.0	060	6.0
Jun 15	9.0	240	4.4
Jun 16	9.0	190	7.0
Jun 17	9.5	230	6.6
Jun 18	15.5	230	6.3
Jun 19	19.5	190	5.4
Jun 20	51.5	230	4.7
Jun 21	19.0	190	5.0
Jun 22	22.5	190	3.1
Jun 23	26.5	190	2.8
Jun 24	17.0	230	3.8
Jun 25	17.0	240	3.6
Jun 26	0.5	190	5.0
Jun 27	0.0	200	4.1
Jun 28	0.0	200	4.1
Jun 29	5.5	020	5.8
Jun 30	10.5	110	6.6
<b>Mean</b>	-----	190	5.5
<b>Total</b>	332.5	---	-----
<b>Maximum</b>	70.5	---	9.3
<b>Minimum</b>	0.0	---	2.8

\*\*\* unavailable

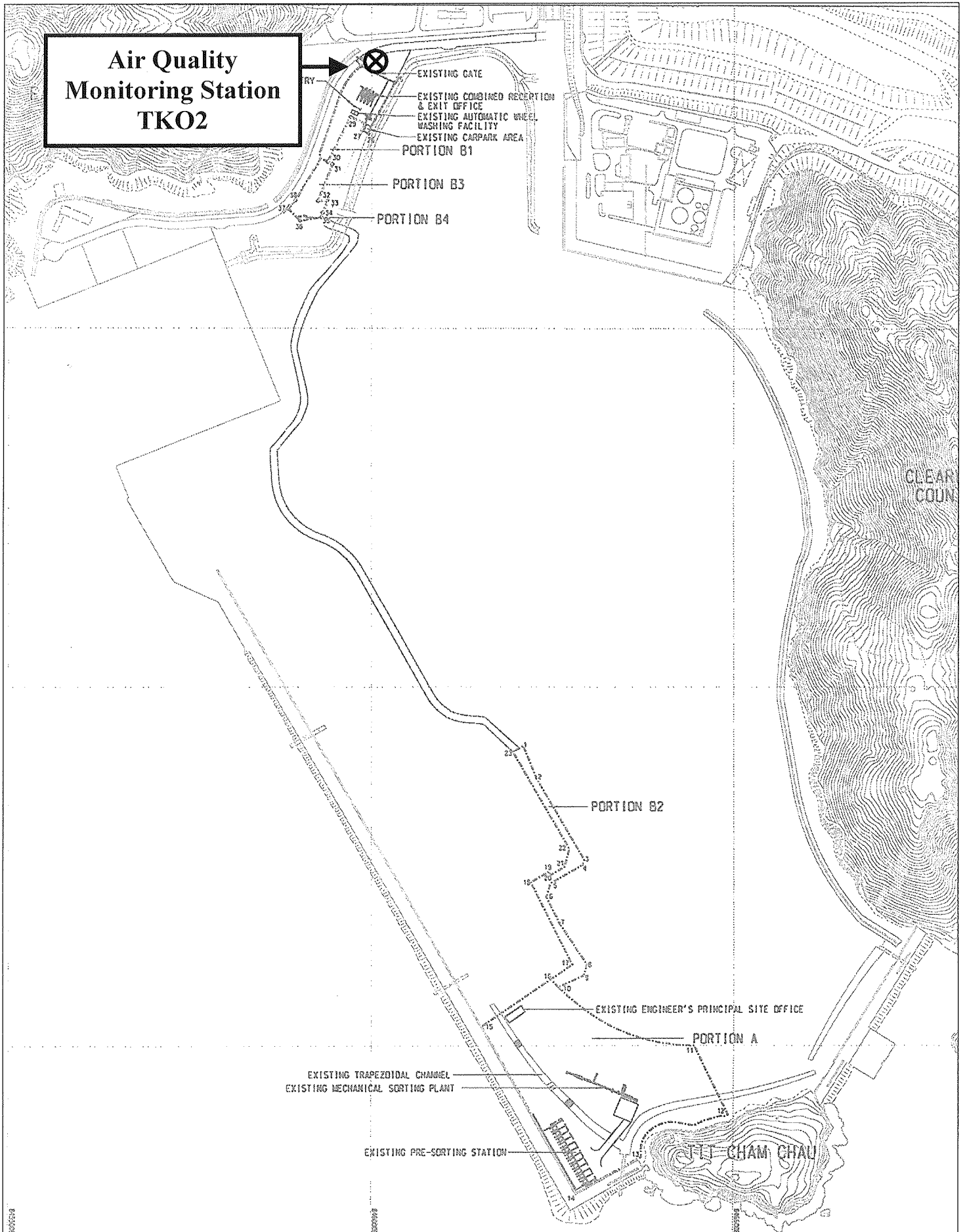
# missing (less than 24 hourly observations a day)

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



**Figure**





Contract No: CV/2013/09 – Temporary Construction Waste Sorting Facilities (CWSF), 2014-2016 at Tseung Kwan O (TKO) Area 137



東業德勤測試顧問有限公司  
 ETS-TESTCONSULT LIMITED

Figure 1 - Location of Air Quality Monitoring Station