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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
MONTHLY EM&A REPORT NO.6
(JUNE 2014)**

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Checked by:

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15 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
Monthly EM&A Report (No. 6) for June 2014 for the CWSF at
Tseung Kwan O Area 137**

Reference is made to your submission of the revised draft Monthly EM&A Report for June 2014 for the CWSF at TKO Area 137 received by E-mail on 15 July 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 sincerely,

Tony Cheng
Independent Environmental Checker

c.c.	CEDD	Attn: Ms. Ruth Tso	Fax No.: 2714 0113
	CHEC	Attn: Mr. S W Sung	Fax No.: 2247 4108

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EXECUTIVE SUMMARY

This monthly Environmental Monitoring and Audit (EM&A) report No.6 was 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 documented the findings of EM&A Works conducted during the operation phase of TKO CWSF in June 2014.

Site Activities

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

- Operation of CWSF's;
- Disposal of sorted construction waste to landfills and public fill reception facilities; and
- Routine maintenance of mechanical sorting plants and associated facilities.

Environmental Monitoring Progress

The summary of the monitoring activities in this monitoring month is listed below:

- 24-hour TSP Monitoring: 5 Occasions at 1 designated location
- 1-hour TSP Monitoring: 14 Occasions at 1 designated location
- Weekly-site inspection: 5 Occasions

Air Quality Monitoring

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

Weekly Site Inspection

In general, performance on environmental mitigation measures implemented was found to be satisfactory during the weekly site inspections in this reporting month. The major findings observed during site inspections are presented in the Section 5.0.

Environmental Complaints, Notification of summons and successful prosecutions

No complaint, notification of summons or successful prosecutions with respect to environmental issues was received in this reporting month.

Future Key Issues

Based on the site inspections and forecast of engineering works in the coming month, key issues to be considered are as follows:

- Air quality impact due to site works;
- Maintain all drainage and desilting facilities properly;
- Remove the stagnant water or provide pesticide for the stagnant water in the permanent desilting chambers, if any;
- Sufficient drip trays for all oil drums / chemical containers;
- Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste;
- Maintain good site practice and waste management to minimize environmental impacts at the site; and
- Follow-up improvements on waste management issues.

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) works 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 m³ 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 in 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 are shown in Appendix E.

2.4 Project Organization and Management Structure

The organization chart is shown in Appendix A.

2.5 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		2762 5602	
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 WORK PROGRESS IN THIS REPORTING MONTH

As informed by the Contractor, the activities in the reporting month include:

- Operation of CWSF's;
- Disposal of sorted construction waste to landfills and public fill reception facilities; and
- Routine maintenance of mechanical sorting plants and associated facilities.

4.0 AIR QUALITY MONITORING

4.1 Monitoring Requirement

TSP levels were monitored in the reporting month in accordance with the EM&A Manual. Table 4.4 shows the Action and Limit Levels for the environmental monitoring works.

4.2 Monitoring Equipment

Both 1-hour and 24-hour TSP air quality monitoring was performed using a GMWS2310 High Volume Air Sampler (HVS) located at each of the designated monitoring station. Table 4.1 summarizes the equipment used in the air quality monitoring programme. A copy of the calibration certificates for the HVS and calibrator are attached in Appendix B1.

Table 4.1 Air Quality Monitoring Equipment

Equipment	Model and Make
HVS	Greasby GMWS2310
Calibrator	Tisch TE-5025A

4.3 Monitoring Parameters, Frequency and Duration

Table 4.2 summarizes the monitoring parameters, monitoring duration and frequencies of air quality monitoring.

Table 4.2 Monitoring parameters, duration, frequency of air quality monitoring

Parameter	Duration	Frequency
24-hr TSP	24 hr	Once every six days
1-hr TSP	1 hr	Three times per day every six days

4.4 Monitoring Locations

The location for the air quality monitoring station TKO2 is provided in Table 4.3 and depicted in Figure 1.

Table 4.3 Air quality monitoring location

Monitoring station	Location
TKO2	Combined Reception & Exit Office in Area B1



4.5 Monitoring Methodology

Both 1-hr and 24-hr air quality monitoring (High Volume Sampler)

Instrumentation

High volume sampler, as HVS, (Greasby GMWS2310) complete with appropriate sampling inlets were employed for both 1-hour and 24-hour TSP monitoring. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

Installation

The installation of HVS refers to the requirement stated in EM&A Manual.

Operation/Analytical Procedures

Operating/analytical procedures for the operation of HVS are as below:

- Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 0.6m³/min and 1.7m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50. The flow rate was indicated on the flow rate chart.
- For TSP sampling, fiberglass filters (GA-55) were used.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated 5 minutes to establish thermal equilibrium before placing any filter media at designated air monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holder frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The programmable timer will be set for a sampling month of 1 hour or 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number.).
- After sampling, the filter was transferred from the filter holder of the HVS to a sealed plastic bag and sent to the laboratory for weighting. The elapsed time was also recorded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of 25°C ± 3°C and the relative humidity (RH) <50% ±5%.
- All measurement procedures in Section 2.3 of the EM&A Manual were followed during the reporting month.

Maintenance & Calibration

- HVS and their accessories should be maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVS should be calibrated at bi-monthly intervals.

Wind Data Monitoring

Wind data (wind speed and wind direction) were directly extracted from Tseung Kwan O Station of Hong Kong Observatory. All wind data during this reporting month are shown in Appendix C.

4.6 Action and Limit Levels

Table 4.4 shows the Action and Limit levels for 24-hr TSP and 1-hr TSP monitoring.

Table 4.4 Action and Limit Levels for 24-hr TSP and 1-hr TSP

Monitoring Location	24-hr TSP (µg/m ³)		1-hr TSP (µg/m ³)	
	Action Level	Limit Level	Action Level	Limit Level
TKO-2	260	260	383	500

4.7 Event-Action Plans

Please refer to Appendix D for details.

4.8 Results

Monitoring data of both 1-hr and 24-hr TSP monitoring carried out in this reporting month are summarized in Appendix B2. Graphical presentation of 1-hour and 24-hour TSP monitoring results for the reporting month is shown in Appendix B3. Wind data included wind speed and wind direction was extracted from Tseung Kwan O Station of Hong Kong Observatory during this reporting month and is presented in Appendix C.

No exceedance of Action and Limit Level of 1-hr TSP and 24-hour TSP monitoring results was recorded during the reporting month.

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.

5.0 WEEKLY SITE INSPECTIONS

Weekly site inspections were carried out by ET to monitor the timely implementation of proper environmental pollution control and mitigation measures for the Project. In this reporting month, five weekly site inspections were conducted (06, 09, 18, 23 and 30 June 2014). The details of weekly site inspections are summarized in Table 5.1.

Table 5.1 Key Findings of Weekly ET Site Audits in this reporting month

Date	Key Findings	Action(s) Taken recommended by ET	Action(s) Taken by the Contractor	Rectification Status by ET
06 June 2014	<i>No finding was observed during the weekly site inspection.</i>			
09 June 2014	<i>No cover was provided at the output of sorting plant at Portion A to prevent dust emission during operation. (New item)</i>	<i>To cover the sorting plant properly to avoid dust emission.</i>	---	<i>Follow-up</i>
18 June 2014	<i>No cover was provided at the output of sorting plant at Portion A to prevent dust emission during operation. (Previous item)</i>	<i>To cover the sorting plant properly to avoid dust emission.</i>	<i>Tarpaulin sheets were used to cover the output of sorting plant at Portion A to prevent dust emission during operation.</i>	<i>Closed</i>
	<i>Tussock near platform at Portion A was found overgrown. (New item)</i>	<i>To clear the overgrown grass to avoid mosquito breeding.</i>	---	<i>Follow-up</i>
23 June 2014	<i>Tussock near platform at Portion A was found overgrown. (Previous item)</i>	<i>To clear the overgrown grass to avoid mosquito breeding.</i>	<i>Tussock near platform at Portion A was cleared.</i>	<i>Closed</i>
30 June 2014	<i>No finding was observed during the weekly site inspection.</i>			

6.0 Review of Environmental Monitoring Procedures

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.

7.0 Assessment of Environmental Monitoring Results

All monitoring results were audited against the A/L levels and any exceedances would be validated.

The monitoring results in this reporting month were comparable with the established action and limit levels.

8.0 Advice on the Solid and Liquid Waste Management Status

As advised by the Contractor, there were disposal of sorted inert and non-inert waste in the reporting month. The actual amounts of different types of waste generated by the activities of the Project in the month are shown in Table 8.1.

Table 8.1 Actual Amounts of Waste Generated in this reporting month

Waste Type	Actual Amount	Disposal Locations
Public fill collected (ton)	32137	-
Sorted inert material (ton)	9327	TKO Fill Bank
Sorted non-inert material (ton)	22770	SENT Landfill
Recycling (Metal) ('000kg)	0	Recycling companies
C&D waste (e.g paper / cardboard packaging and plastic) ('000kg)	0	SENT Landfill
Chemical waste ('000kg)	0	Chemical Waste Treatment Centre

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.

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.

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.

9.0 Status of Environmental Licensing and Permitting

All permits/licenses valid in this reporting month are summarized in Table 9.1.

Table 9.1 Summary of environmental licensing and permit status

Description	Permit No.	Valid Month		Details
		From	To	
Amended Environmental Permit	EP-134/2002/K	04/02/13	---	<ul style="list-style-type: none"> ▪ Site clearance ▪ Construction of a temporary storm water system ▪ Stockpiling of 6 million m3 of public fill ▪ Setting up two barging points for transporting the stockpiled public fill by barges ▪ 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 ▪ Construction of operation of a construction and Demolition Material Sorting Facility (C&DMSF) ▪ Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin ▪ Remove the temporary fill bank

Description	Permit No.	Valid Month		Details
		From	To	
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	WT00018 592-2014	13/05/14	31/05/19	Wastewater arising from construction site (Sedimentation Tank & Desilting Tank)
Billing Account for Disposal of Construction Waste	7019200	---	---	---
Notification Pursuant to Section 3(3) of the Air Pollution Control (Construction Dust) Regulations	368928	---	---	---

10.0 ENVIRONMENTAL NON-CONFORMANCE

10.1 Summary of air quality, noise and marine water quality

No Action and Limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded in this reporting month.

10.2 Summary of Environmental Complaints

No complaint was received in this reporting month.

10.3 Summary of Notification of Summons and successful Prosecution

There was no notification of summons and successful prosecution respect to environmental issues registered in this reporting month.

11.0 IMPLEMENTATION STATUS

11.1 Implementation Status of Environmental Mitigation Measures

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

11.2 Implementation Status of Event and Action Plan

Since no exceedance of Action and Limit level of air quality monitoring results was recorded for this reporting month, no further action was required.

11.3 Implementation Status of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No complaint, notification of summon and successful prosecution was received in this reporting month. A summary of environmental complaints, notifications of summons and successful prosecutions was given in Table 11.1 and further details of the complaint could be found in the Complaint Log (Appendix J).

Table 11.1 Summary of Environmental Complaints and Prosecutions

Complaints logged		Summons served		Successful prosecution received	
June 2014	Cumulative	June 2014	Cumulative	June 2014	Cumulative
0	0	0	0	0	0



12.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Impact monitoring of air quality was carried out at a designated location in accordance with the EM&A Manual in this reporting month.

No Action and Limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded in this reporting month.

No complaint, prosecutions and notifications of summons was received in this reporting month.

According to the ET weekly site inspections carried out in this reporting month, the Contractor generally implemented sufficient dust mitigation measures, including operation of the mist spraying systems, dampening of haul roads and stockpiling areas.

Recommendations

According to the environmental site inspections performed in the reporting month, 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 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.



13.0 FUTURE KEY ISSUES

13.1 Work Programme for the Coming Month

As informed by the Contractor, the activities to be conducted by them in the next month included:

- Operation of CWSF's;
- Disposal of sorted construction waste to landfills and public fill reception facilities;
- Routine maintenance of mechanical sorting plants and associated facilities.
- Construction of wheel washing bay
- Construction of site office

13.2 Key Issues for the Coming Month

Key issues to be considered in the coming month include:

- Chemical and waste management;
- Treatment of runoff and wastewater prior to discharge;
- Dust generated from loading and unloading activities; and
- Dust generated from dump trucks traffic.

Mitigation measures to be required in the coming month:

Air Quality

- 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

- 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

- 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.



13.3 Monitoring Schedule for the Coming Month

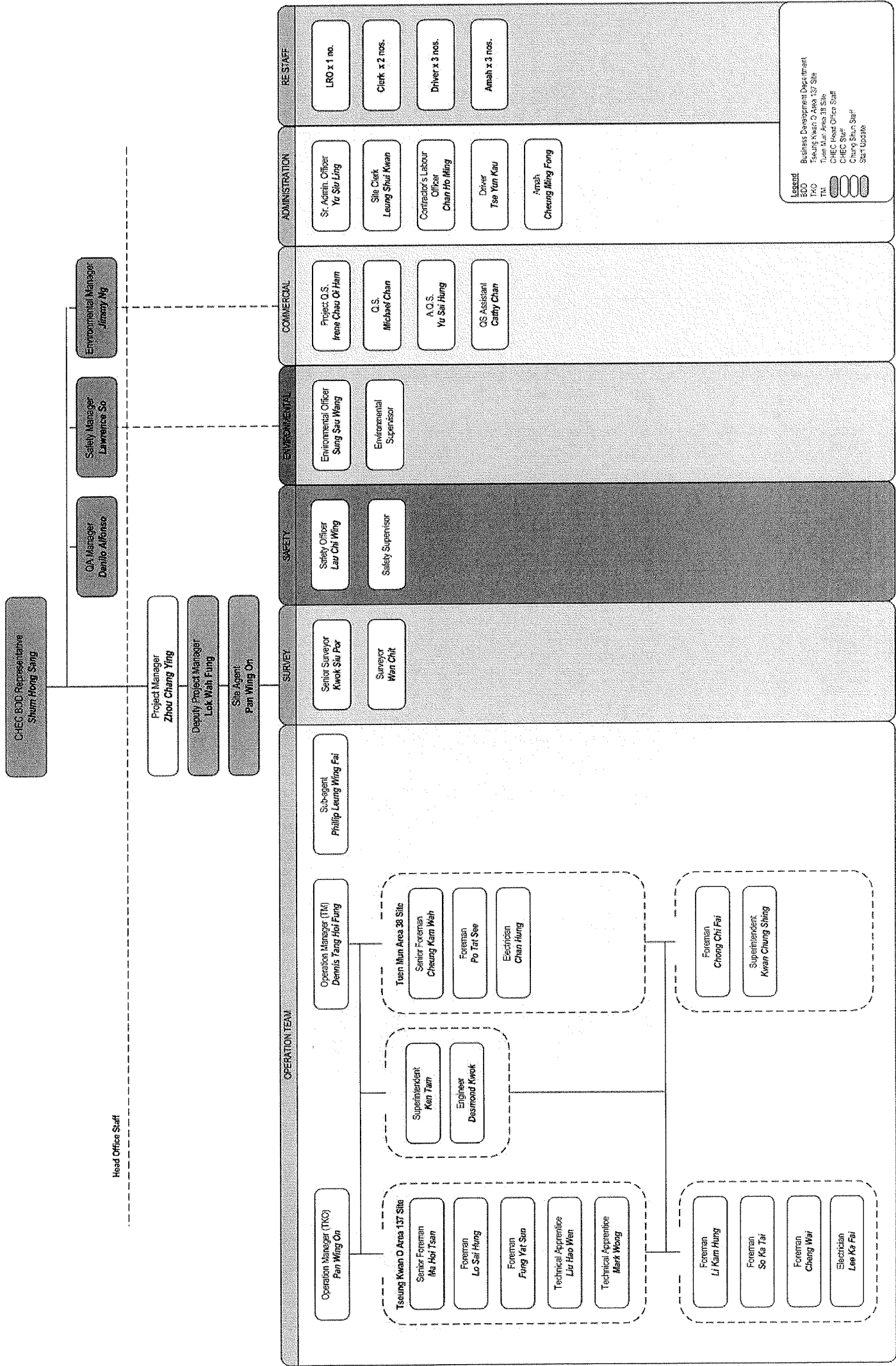
The proposed EM&A program of the coming month is attached in Appendix I.

- END OF REPORT -



Appendix A

Organization Chart





Appendix B1

Calibration Certificates for Impact Air Quality Monitoring Equipment



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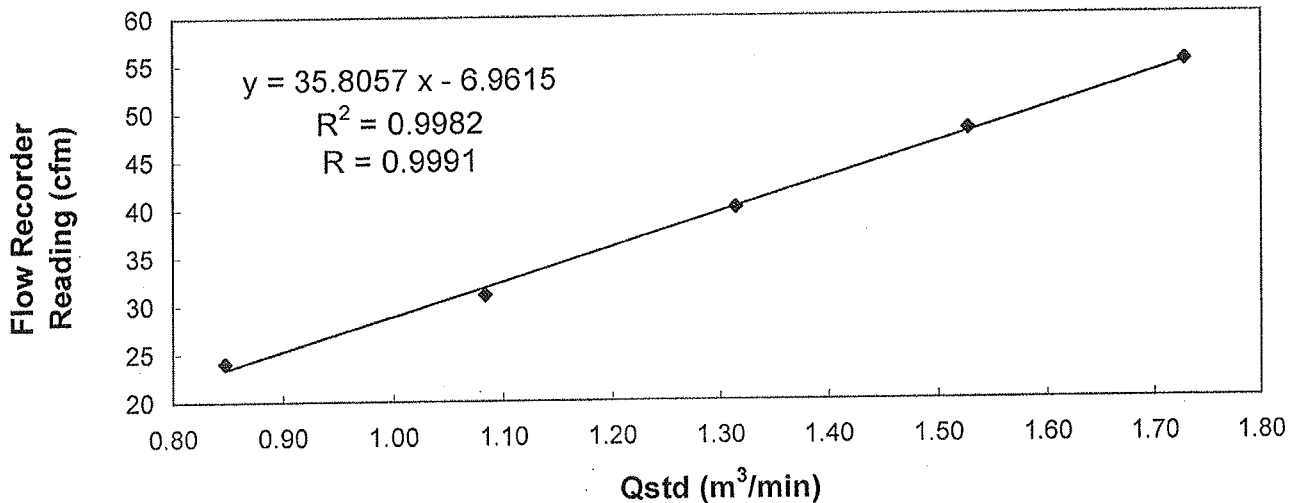
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Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW Date of Calibration : 25 April 2014
Serial No. : 2485 (ET / EA / 003 / 28) Calibration Due Date : 24 June 2014
Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :	Flow recorder reading (cfm)	55	48	40	31	24
	Qstd (Actual flow rate, m ³ /min)	1.73	1.53	1.31	1.08	0.85
	Pressure : 761.31 mm Hg	Temp. : 296 K				


Sampler 2485 Calibration Curve
Site: TKO CWSF - TKO2



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies* / does-not-comply* with the specified requirements and is deemed acceptable* / unacceptable* for use.

Calibrated by : 
TANG, Chung Hang
(Site Technician)

Checked by : 
LAW, Sau Yee
(Senior Environmental Officer)



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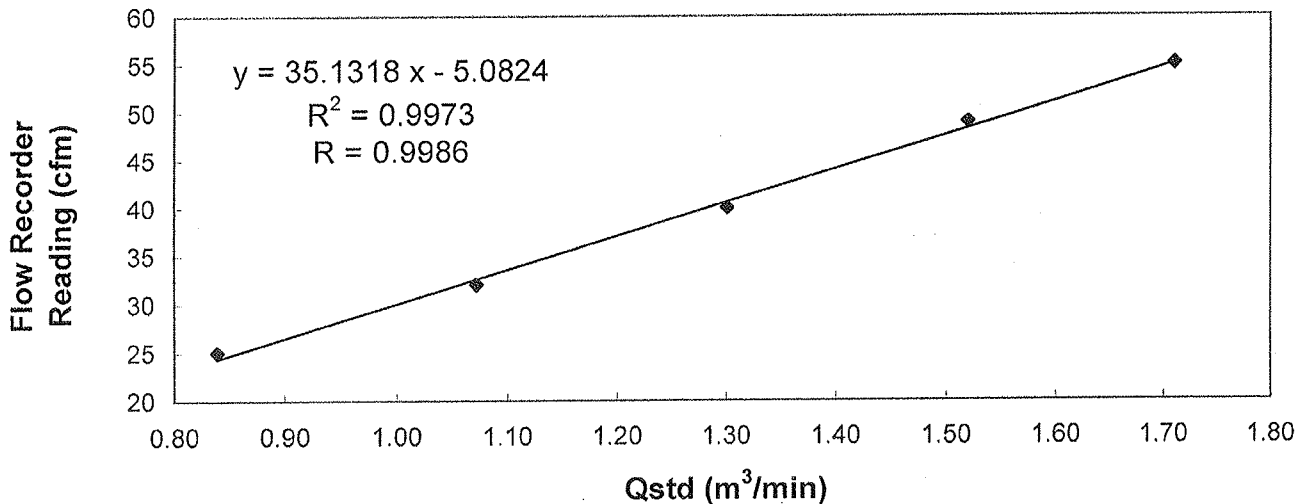
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Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW Date of Calibration : 25 June 2014
Serial No. : 2485 (ET / EA / 003 / 28) Calibration Due Date : 24 August 2014
Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results	Flow recorder reading (cfm)	55	49	40	32	25
	Qstd (Actual flow rate, m ³ /min)	1.71	1.52	1.30	1.07	0.84
	Pressure : 763.56 mm Hg	Temp. : 303 K				

Sampler 2485 Calibration Curve
Site: TKO CWSF - TKO2



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies* / ~~does not comply*~~ with the specified requirements and is deemed acceptable* / unacceptable* for use.

Calibrated by : MAK Kei Wai
MAK, Kei Wai
(Assistant Supervisor)

Checked by : LAW Sau Yee
LAW, Sau Yee
(Senior Environmental Officer)



TISCH ENVIRONMENTAL, INC.
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AIR POLLUTION MONITORING EQUIPMENT
ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 13, 2013 Rootmeter S/N 0438320 Ta (K) - 296
 Operator Tisch Orifice I.D. - 2511 Pa (mm) - 753.11

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER	ORFICE
					DIFF Hg (mm)	DIFF H2O (in.)
1	NA	NA	1.00	1.4400	3.2	2.00
2	NA	NA	1.00	1.0110	6.4	4.00
3	NA	NA	1.00	0.9030	7.9	5.00
4	NA	NA	1.00	0.8630	8.8	5.50
5	NA	NA	1.00	0.7110	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9934	0.6898	1.4125	0.9957	0.6915	0.8866
0.9892	0.9784	1.9976	0.9915	0.9807	1.2539
0.9871	1.0931	2.2334	0.9894	1.0957	1.4019
0.9860	1.1425	2.3424	0.9883	1.1452	1.4703
0.9808	1.3794	2.8251	0.9831	1.3827	1.7732
Qstd slope (m) = 2.05038			Qa slope (m) = 1.28391		
intercept (b) = -0.00442			intercept (b) = -0.00277		
coefficient (r) = 0.99995			coefficient (r) = 0.99995		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

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

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

For subsequent flow rate calculations:

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

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



ET/ZA/004/11

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ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 28, 2014 Rootmeter S/N 0438320 Ta (K) - 298
 Operator Tisch Orifice I.D. - 2774 Pa (mm) - 751.84

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER	ORFICE
					DIFF Hg (mm)	DIFF H2O (in.)
1	NA	NA	1.00	1.4550	3.2	2.00
2	NA	NA	1.00	1.0180	6.4	4.00
3	NA	NA	1.00	0.9110	8.0	5.00
4	NA	NA	1.00	0.8680	8.8	5.50
5	NA	NA	1.00	0.7180	12.9	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9850	0.6770	1.4066	0.9957	0.6843	0.8903
0.9809	0.9635	1.9892	0.9915	0.9740	1.2591
0.9786	1.0743	2.2240	0.9893	1.0859	1.4078
0.9777	1.1263	2.3326	0.9883	1.1386	1.4765
0.9723	1.3541	2.8132	0.9828	1.3688	1.7807
Qstd slope (m) = 2.07732			Qa slope (m) = 1.30078		
intercept (b) = -0.00541			intercept (b) = -0.00343		
coefficient (r) = 0.99989			coefficient (r) = 0.99989		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

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}



Appendix B2

Impact Air Quality Monitoring Results

Summary of 24-hr TSP Monitoring Results

Monitoring Station : TKO2

Start Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)	Action Level (260µg/m ³ Exceedance)	Limit Level (260µg/m ³ Exceedance)
		Date	Time	Initial	Final		Initial	Final		Initial	Final			
04/06/14	10:00	05/06/14	10:00	6385.33	6409.33	24.00	1.1161	1.1161	1.1161	2.7703	3.0885	198	No	No
10/06/14	08:00	11/06/14	08:00	6411.33	6435.33	24.00	1.1161	1.1161	1.1161	2.7582	2.9140	97	No	No
16/06/14	10:20	17/06/14	10:20	6439.33	6463.33	24.00	1.1161	1.1161	1.1161	2.7467	2.8671	75	No	No
22/06/14	08:00	23/06/14	08:00	6465.33	6489.33	24.00	1.1719	1.1719	1.1719	2.7634	2.9006	81	No	No
28/06/14	09:00	29/06/14	09:00	6492.33	6516.33	24.00	1.1409	1.1409	1.1409	2.7637	2.9066	87	No	No

Summary of 1-hr TSP Monitoring Results

Monitoring Station : TKO2

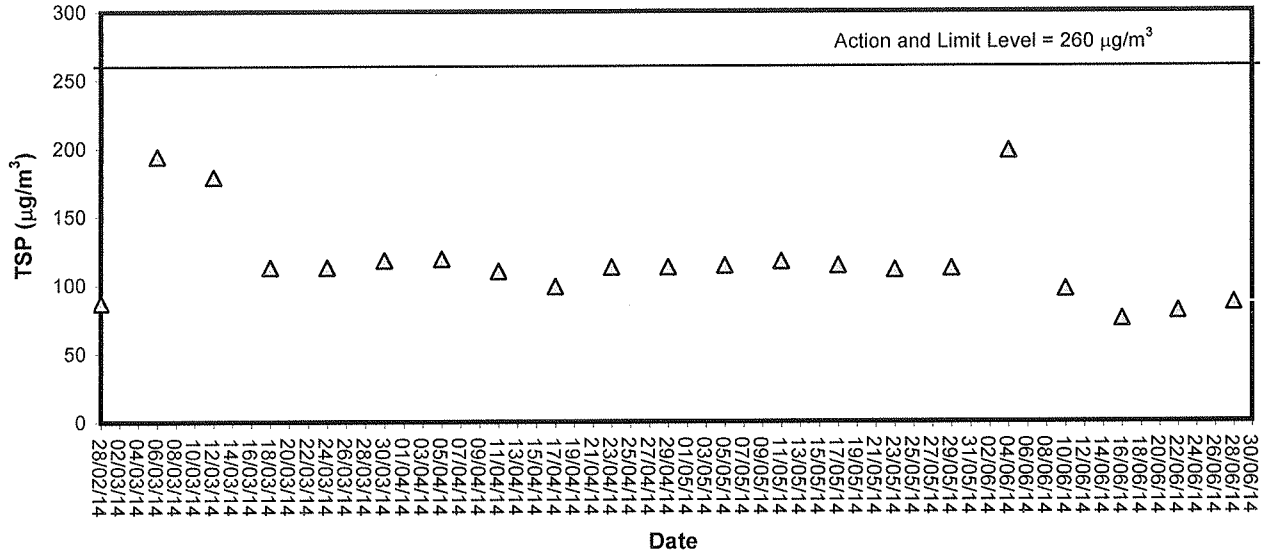
Start Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)	Action Level (383µg/m ³ Exceedance)	Limit Level (500µg/m ³ Exceedance)
		Date	Time	Initial	Final		Initial	Final		Initial	Final			
04/06/14	08:49	04/06/14	09:49	6384.33	6385.33	1.00	1.1161	1.1161	1.1161	2.7695	2.7868	258	No	No
06/06/14	10:04	06/06/14	11:04	6409.33	6410.33	1.00	1.1161	1.1161	1.1161	2.7704	2.7869	246	No	No
09/06/14	13:00	09/06/14	14:00	6410.33	6411.33	1.00	1.1161	1.1161	1.1161	2.7557	2.7701	215	No	No
11/06/14	08:46	11/06/14	09:46	6435.33	6436.33	1.00	1.1161	1.1161	1.1161	2.7673	2.8743	254	No	No
11/06/14	11:27	11/06/14	12:27	6436.33	6437.33	1.00	1.1161	1.1161	1.1161	2.7713	2.7871	236	No	No
13/06/14	11:18	13/06/14	12:18	6437.33	6438.33	1.00	1.1161	1.1161	1.1161	2.7695	2.7863	251	No	No
16/06/14	08:50	16/06/14	09:50	6438.33	6439.33	1.00	1.1161	1.1161	1.1161	2.7749	2.7906	234	No	No
18/06/14	16:17	18/06/14	17:17	6463.33	6464.33	1.00	1.1440	1.1440	1.1440	2.7482	2.7641	232	No	No
20/06/14	14:46	20/06/14	15:46	6464.33	6465.33	1.00	1.1440	1.1440	1.1440	2.7583	2.7726	208	No	No
23/06/14	08:50	23/06/14	09:50	6489.33	6490.33	1.00	1.1161	1.1161	1.1161	2.7606	2.7768	242	No	No
25/06/14	13:00	25/06/14	14:00	6490.33	6491.33	1.00	1.0840	1.0840	1.0840	2.7447	2.7603	240	No	No
27/06/14	11:00	27/06/14	12:00	6491.33	6492.33	1.00	1.1409	1.1409	1.1409	2.7704	2.7860	228	No	No
30/06/14	08:05	30/06/14	09:05	6516.33	6517.33	1.00	1.0840	1.0840	1.0840	2.7297	2.7467	261	No	No
30/06/14	09:20	30/06/14	10:20	6517.33	6518.33	1.00	1.0840	1.0840	1.0840	2.7611	2.7771	246	No	No

Appendix B3

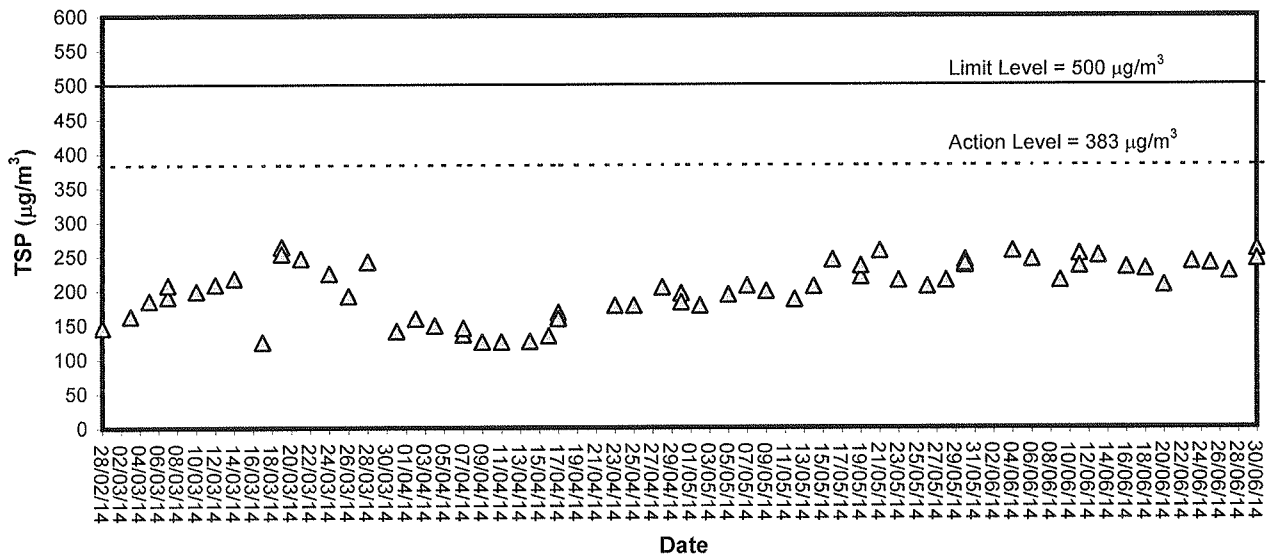
Graphical Plots of Impact Air Quality Monitoring Data



24-hour TSP level at TKO2



1-hour TSP level at TKO2





Appendix C

Weather Condition

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
Mean	*****	31.4	28.1	25.7	25.0	96	85	67
Maximum	*****	34.7	30.3	27.9	26.6	100	96	88
Minimum	*****	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
Mean	-----	190	5.5
Total	332.5	---	-----
Maximum	70.5	---	9.3
Minimum	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



Appendix D

Event-Action Plans

EVENT ACTION PLAN FOR AIR QUALITY EXCEEDANCE

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

EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

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



Appendix E

Works Programme





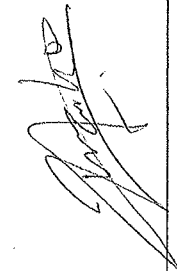
Appendix F

Weekly ET's Site Inspection Record



CEDD Contract No.: CV/2013/09
Temporary Construction Waste Sorting Facilities, 2014-2016 - **TKO CWSF**

Inspection Date : 6-6-14
 Time : 10:00
 Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy
 Wind : Calm / Light / Breeze / Strong
 Temperature : 24
 Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:			
Name:	W. Y. Lam	W. Lam	Tung Ching
Title	Team Lead	SS	ET

CEDD Contract No.: CV/2013/09
Temporary Construction Waste Sorting Facilities, 2014-2016 - TKO CWSF

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	✓			
▪ Water sprays shall be provided and used to dampen materials.	✓			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	✓			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	✓			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	✓			
▪ The designated site main haul road shall be paved or regular watering.	✓			
▪ Frequent watering of work site shall be at least three times per day.	✓			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	✓			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	✓			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
▪ Open burning should be prohibited.	✓			
▪ 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.	✓			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓			
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	✓			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	✓			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	✓			
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪ Air compressors and hand held breakers should have noise labels.	✓			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	✓			

Temporary Construction Waste Sorting Facilities, 2014-2016 - TKO CWSF

	Implementation Stages*	Remark
Water Quality		
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	✓	
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	✓	
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	✓	
▪ Manholes should be covered and sealed.	✓	
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓	
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	✓	
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	✓	
▪ The stormwater intercepting system shall be effective to collect runoff and remove suspended solids before discharge.	✓	
▪ 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.	✓	
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓	
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	✓	
▪ 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.	✓	
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	✓	
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	✓	
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	✓	
▪ Oil interceptor shall be provided at work shop.	✓	
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	✓	
▪ The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	✓	
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	✓	
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	✓	
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	✓	
▪ 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.	✓	
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	✓	
▪ A waste collection vessel shall be deployed to remove floating debris.	✓	

CEDD Contract No.: CV/2013/09
Temporary Construction Waste Sorting Facilities, 2014-2016 - TKO CWSF


Environmental Checklist	Implementation Stages*		Remark
	Yes	No / N/A	
Landscape and Visual			
<ul style="list-style-type: none"> ▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided. ▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD. ▪ Surface of outer slopes of the fill bank shall preferably be hydrosseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed. ▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare. 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ 	<ul style="list-style-type: none"> 	
Other Environmental Factors			
<ul style="list-style-type: none"> ▪ C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal. ▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. ▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly. ▪ All generators, fuel and oil storage are within bundle areas. ▪ Oil leakage from machinery, vehicle and plant is prevented. ▪ The Environmental Permit should be displaced conspicuously on site. ▪ 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. ▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce. 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 	<ul style="list-style-type: none"> 	

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
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Remark

No defective work or observation was recorded during the weekly site inspection.

Name	Title	Signature	Date
Linda Law	Senior Environmental Officer		06 June 2014



CEDD Contract No.: CV/2013/09
Temporary Construction Waste Sorting Facilities, 2014-2016 - TKO CWSF

Inspection Date : 9/6/14
 Time : 10:30
 Weather : Sunny (Fine) / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy
 Wind : Calm / (Light) / Breeze / Strong
 Temperature : 31°C
 Humidity : High / Moderate / (Low)

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:			
Name:	W. Y. LAM	SUN-SUNNY WIKONTSUNY	Slak Jai Wai
Title	JUNIOR	EMERSON S.S.	E.T

Environmental Checklist	Implementation Stages*		Remark
	Yes	No / N/A	
Fugitive Dust Emission			
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√		Item 1
▪ Water sprays shall be provided and used to dampen materials.	√		
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√		
▪ All vehicles shall be restricted to a maximum speed of 10 km per hour.	√		
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√		
▪ The designated site main haul road shall be paved or regular watering.	√		
▪ Frequent watering of work site shall be at least three times per day.	√		
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√		
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√		
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	√		
▪ Open burning should be prohibited.	√		
▪ 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.	√		
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√		
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	√		
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√		
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√		
Noise Impact			
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√		
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√		
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√		
▪ Air compressors and hand held breakers should have noise labels.	√		
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√		
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√		

Environmental Checklist	Implementation Stages*		Remark
	Yes	No	
Water Quality			
Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	✓		
The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	✓		
Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	✓		
Manholes should be covered and sealed.	✓		
Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓		
A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	✓		
A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	✓		
The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	✓		
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.	✓		
Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓		
Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	✓		
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.	✓		
The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcore to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	✓		
Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	✓		
Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	✓		
Oil interceptor shall be provided at work shop.	✓		
Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	✓		
The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	✓		
All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	✓		
Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	✓		
Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	✓		
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.	✓		
Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	✓		
A waste collection vessel shall be deployed to remove floating debris.	✓		

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
Landscape and Visual					
▪	The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪	The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪	Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪	The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors					
▪	C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪	Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪	All generators, fuel and oil storage are within bundle areas.	√			
▪	Oil leakage from machinery, vehicle and plant is prevented.	√			
▪	The Environmental Permit should be displaced conspicuously on site.	√			
▪	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.	√			
▪	To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
1	No cover was provided at the output of sorting plant at Portion A to prevent dust emission during operation.	To cover the sorting plant properly to avoid dust emission.	140609_001	Yes	09/06/14

Remark

Name	Title	Signature	Date
Linda Law	Senior Environmental Officer	<i>Linda Law</i>	09 June 2014



Photos

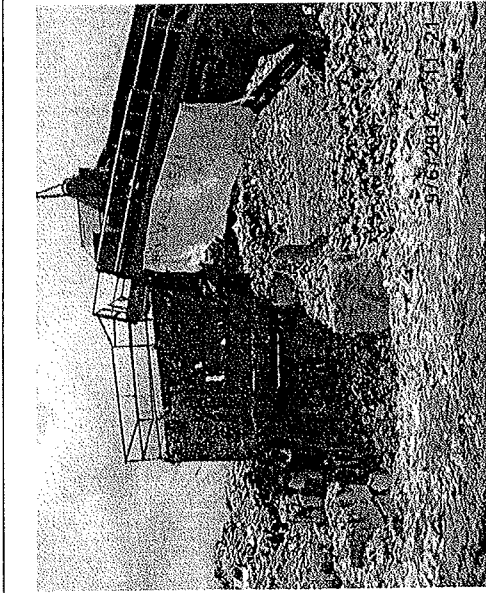

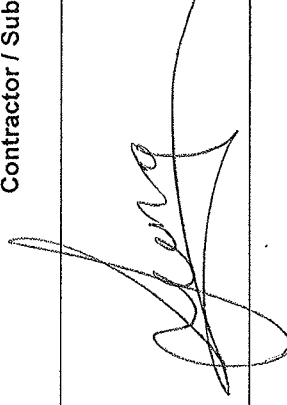



Photo 140609_001 (Portion A)



CEDD Contract No.: CV/2013/09
Temporary Construction Waste Sorting Facilities, 2014-2016 - TKO CWSF

Inspection Date : 18.6.14
 Time : 10:00
 Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy
 Wind : Calm / Light / Breeze / Strong
 Temperature : 29
 Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:			
Name:	W. Y. LAM.	S. W. - JUNG	Tung Chyng Wai
Title	Team Lead	Site Officer	E.T



Environmental Checklist		Implementation Stages*		Remark
		Yes	No	
Fugitive Dust Emission				
▪	Dust control / mitigation measures shall be provided to prevent dust nuisance.	√		
▪	A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√		
▪	Water sprays shall be provided and used to dampen materials.	√		
▪	Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√		
▪	All vehicles shall be restrict to a maximum speed of 10 km per hour.	√		
▪	Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√		
▪	The designated site main haul road shall be paved or regular watering.	√		
▪	Frequent watering of work site shall be at least three times per day.	√		
▪	Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√		
▪	Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√		
▪	All plant and equipment should be well maintained e.g. without black smoke emission.	√		
▪	Open burning should be prohibited.	√		
▪	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.	√		
▪	Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√		
▪	When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	√		
▪	The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√		
▪	The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√		
Noise Impact				
▪	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√		
▪	Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√		
▪	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√		
▪	Air compressors and hand held breakers should have noise labels.	√		
▪	Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√		
▪	Noisy equipment and mobile plant shall always be site away from NSRs.	√		



Temporary Construction Waste Sorting Facilities, 2014-2016 - TKO CWSF

Environmental Checklist	Implementation Stages*		Remark
	Yes	No / N/A	
Water Quality			
Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	✓		
The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	✓		
Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	✓		
Manholes should be covered and sealed.	✓		
Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓		
A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	✓		
A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	✓		
The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	✓		
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.	✓		
Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓		
Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	✓		
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.	✓		
The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcore to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	✓		
Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	✓		
Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	✓		
Oil interceptor shall be provided at work shop.	✓		
Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	✓		
The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	✓		
All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	✓		
Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	✓		
Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	✓		
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.	✓		
Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	✓		
A waste collection vessel shall be deployed to remove floating debris.	✓		




Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
Landscape and Visual					
▪	The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪	The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪	Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪	The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors					
▪	C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪	Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪	All generators, fuel and oil storage are within bundle areas.	√			
▪	Oil leakage from machinery, vehicle and plant is prevented.	√			
▪	The Environmental Permit should be displaced conspicuously on site.	√			
▪	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.	√			
▪	To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
1	Follow up action to item 1 on 09/06/14, tarpaulin sheets was used to cover the output of sorting plant at Portion A to prevent dust emission during operation.	---	140618_001	No	--
2	Tussock near platform at Portion A was found overgrown.	To clear the overgrown grass to avoid mosquito breeding.	140618_002	Yes	23/06/14

Remark

Name	Title	Signature	Date
Linda Law	Senior Environmental Officer		18 June 2014



Photos

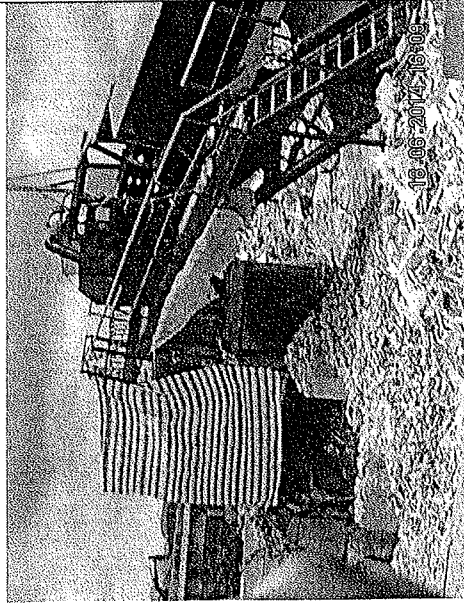


Photo 140618_001 (Portion A)

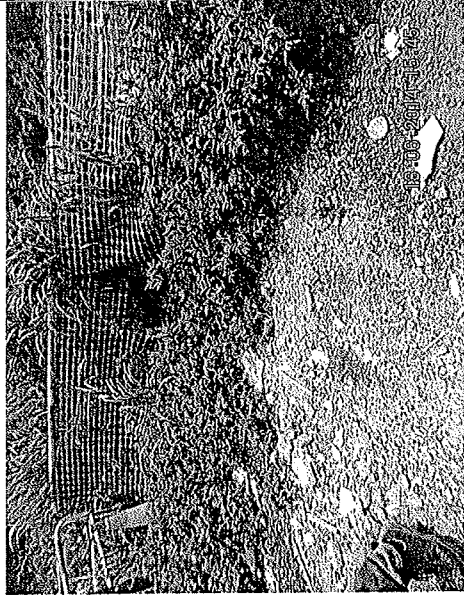


Photo 140618_002 (Near platform at Portion A)



Implementation Stages*		Remark
Fugitive Dust Emission		
✓		Dust control / mitigation measures shall be provided to prevent dust nuisance.
✓		A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.
✓		Water sprays shall be provided and used to dampen materials.
✓		Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.
✓		All vehicles shall be restricted to a maximum speed of 10 km per hour.
✓		Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.
✓		The designated site main haul road shall be paved or regular watering.
✓		Frequent watering of work site shall be at least three times per day.
✓		Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.
✓		Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.
✓		All plant and equipment should be well maintained e.g. without black smoke emission.
✓		Open burning should be prohibited.
✓		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.
✓		Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.
✓		When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.
✓		The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.
✓		The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.
Noise Impact		
✓		The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.
✓		Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.
✓		Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.
✓		Air compressors and hand held breakers should have noise labels.
✓		Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.
✓		Noisy equipment and mobile plant shall always be site away from NSRs.


Implementation Stages*		Remark
Water Quality		
Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√	
The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	√	
Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	√	
Manholes should be covered and sealed.	√	
Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√	
A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√	
A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafont.	√	
The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√	
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.	√	
Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√	
Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√	
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.	√	
The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√	
Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√	
Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√	
Oil interceptor shall be provided at work shop.	√	
Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√	
The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√	
All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√	
Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√	
Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√	
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.	√	
Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√	
A waste collection vessel shall be deployed to remove floating debris.	√	

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
Landscaping and Visual					
▪	The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪	The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪	Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪	The barging point and the C&DWSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors					
▪	C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪	Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪	All generators, fuel and oil storage are within bundle areas.	√			
▪	Oil leakage from machinery, vehicle and plant is prevented.	√			
▪	The Environmental Permit should be displaced conspicuously on site.	√			
▪	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.	√			
▪	To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
1	Follow up action to item 2 on 18/06/14, tussock near platform at Portion A was cleared.	---	140623_001	No	---

Remark

Name	Title	Signature	Date
Linda Law	Senior Environmental Officer		23 June 2014



Photos

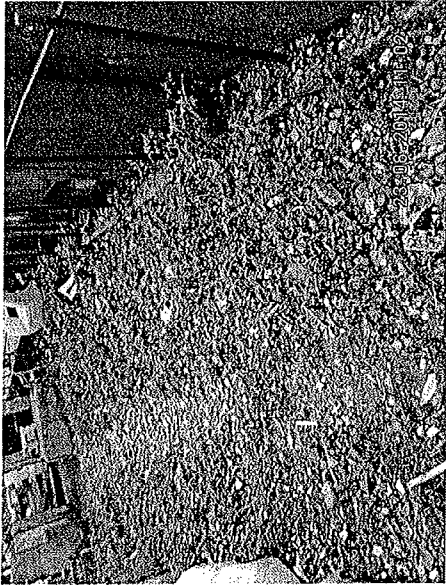


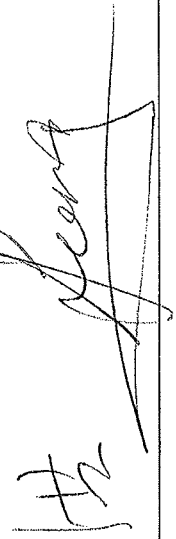
Photo 140623_001 (Near platform at Portion A)



CEDD Contract No.: CV/2013/09

Temporary Construction Waste Sorting Facilities, 2014-2016 - **TKO CWSF**

Inspection Date : 30/6/14
 Time : 10:30
 Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy
 Wind : Calm / Light / Breeze / Strong
 Temperature : 32°C
 Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:	(S.)		Shak
Name:	W. B. WONG	W. Kwan / S. S. Wong	Shak Tai Wan
Title	ALOW / P2	S.S. Env. Officer	E.T

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
<ul style="list-style-type: none"> ▪ Dust control / mitigation measures shall be provided to prevent dust nuisance. ▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed. ▪ Water sprays shall be provided and used to dampen materials. ▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions. ▪ All vehicles shall be restricted to a maximum speed of 10 km per hour. ▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. ▪ The designated site main haul road shall be paved or regular watering. ▪ Frequent watering of work site shall be at least three times per day. ▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site. ▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank. ▪ All plant and equipment should be well maintained e.g. without black smoke emission. ▪ Open burning should be prohibited. ▪ 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. ▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD. ▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides. ▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt. ▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m. 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 			
Noise Impact				
<ul style="list-style-type: none"> ▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. ▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works. ▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials. ▪ Air compressors and hand held breakers should have noise labels. ▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. ▪ Noisy equipment and mobile plant shall always be site away from NSRs. 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ 			

Environmental Checklist		Implementation Stages*		Remark
		Yes	No	
Water Quality				
▪	Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√		
▪	The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	√		
▪	Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	√		
▪	Manholes should be covered and sealed.	√		
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√		
▪	A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√		
▪	A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√		
▪	The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√		
▪	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.	√		
▪	Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√		
▪	Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√		
▪	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.	√		
▪	The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcore to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√		
▪	Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√		
▪	Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√		
▪	Oil interceptor shall be provided at work shop.	√		
▪	Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√		
▪	The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√		
▪	All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√		
▪	Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√		
▪	Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√		
▪	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.	√		
▪	Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√		
▪	A waste collection vessel shall be deployed to remove floating debris.	√		

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
Landscape and Visual					
▪	The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪	The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪	Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪	The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors					
▪	C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪	Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪	All generators, fuel and oil storage are within bundle areas.	√			
▪	Oil leakage from machinery, vehicle and plant is prevented.	√			
▪	The Environmental Permit should be displaced conspicuously on site.	√			
▪	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.	√			
▪	To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
---	---	---	---	---	---

Remark

No defective work or observation was observed during the weekly site inspection.

Name	Title	Signature	Date
Linda Law	Senior Environmental Officer	<i>Linda Law</i>	30 June 2014



Appendix G

Implementation Schedule of Mitigation Measures



		Location	Implementation Status			
			Implemented	Partially implemented	Not implemented	Not Applicable
Water Quality						
▪	Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	All areas	√			
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	All areas	√			
▪	The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained regularly.	All areas	√			
▪	Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the month shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank.	Along the seafront	√			
▪	A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	C&DMSF	√			
▪	The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	All areas	√			
▪	The material shall be properly covered to prevent washed away especially before rainstorm.	All areas	√			
▪	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.	Temporary Slopes	√			
▪	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.	Wheel Washing facility	√			
▪	Obtain Discharge License	Site Office	√			
▪	Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	Barge Handling Area (BHA)	√			
▪	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.	Barge Handling Area (BHA)	√			
▪	A waste collection vessel shall be deployed to remove floating debris.	Barge Handling Area (BHA)	√			
Landscaping and Visual						
•	Construction of lighting to avoid spillage and glare	All areas	√			
•	Hydro-seeding	Completed slopes	√			
•	Hoarding erection	Site boundary	√			
•	Damage to surrounding area avoided	All areas	√			
Other Environmental Factors						
•	C&D waste sorted from mixed C&D material shall be transfer to SENT landfill for disposal.	All areas	√			
•	Plan and stock construction materials carefully to minimise generation of waste.	All areas	√			
•	Any unused materials or those with remaining functional capacity should be recycled.	All areas	√			
•	All generators, fuel and oil storage are within bunded areas.	All areas	√			
•	Oil leakage from machinery, vehicle and plant is prevented.	All areas	√			
•	Bund chemical storage area to 110% capacity.	All areas	√			
•	Prevent disposal of hazardous materials to air, soil and water body.	All areas	√			
•	Provide rubbish skips at all work areas	All areas	√			
•	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.	All areas	√			



Appendix H

Site General Layout plan



Appendix I

Monitoring Schedule for the Coming Month

**CEDD Contract No. CV/2013/09 –
 Temporary Construction Waste Sorting Facilities, 2014-2016**

TKO CWSF

**Time Schedule for Impact Air Monitoring (1-hr TSP & 24-hr TSP) and
 Weekly Site Inspection (Weekly SI)**

July 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2 <u>1-hr TSP</u>	3	4 <u>1-hr & 24 hr TSP</u>	5
6	7 <u>1-hr TSP</u> <u>Weekly SI (am)</u>	8	9 <u>1-hr TSP</u>	10 <u>24 hr TSP</u>	11 <u>1-hr TSP x 2</u>	12
13	14 <u>1-hr TSP</u> <u>Weekly SI (am)</u>	15	16 <u>1-hr & 24 hr TSP</u>	17	18 <u>1-hr TSP</u>	19
20	21 <u>1-hr TSP</u> <u>Weekly SI (am)</u>	22 <u>24 hr TSP</u>	23 <u>1-hr TSP x 2</u>	24	25 <u>1-hr TSP</u>	26
27	28 <u>1-hr & 24 hr TSP</u> <u>Weekly SI (am)</u>	29	30 <u>1-hr TSP</u>	31		



Appendix J

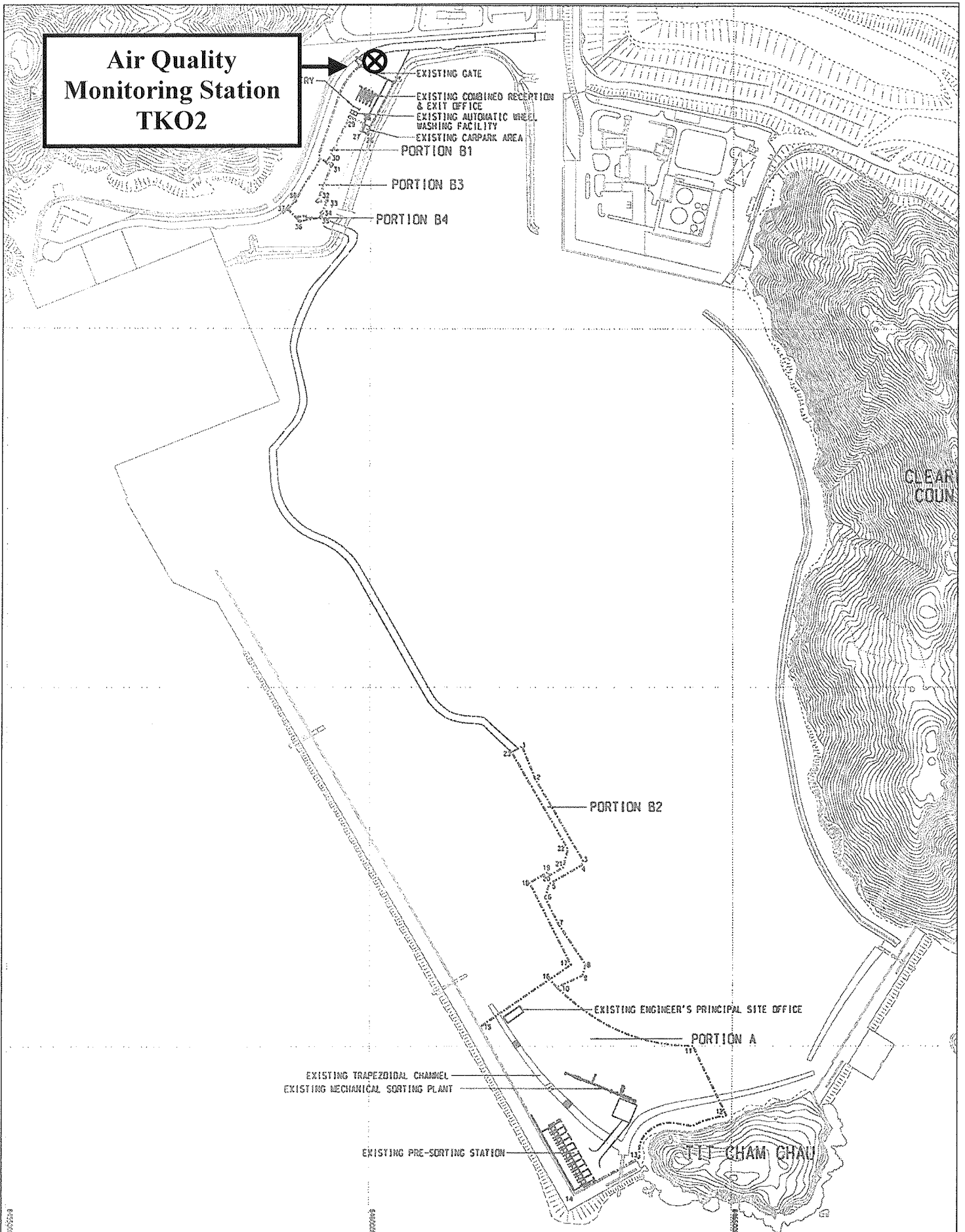
Complaint Log

Complaint Logs

Log Ref.	Location	Received Date	Details of Complaint	Investigation / Mitigation Action	Status
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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