Civil Engineering and Development Department

Contract No. KL/2008/02

Kai Tak Development- Decommissioning and Decontamination works at South Apron of the Former Kai Tak Airport

Environmental Monitoring and Audit Monthly Report

(version 1.0)

April 2009

Approved By

(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
CEDD	Civil Engineering & Development Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
HVS	High Volume Sampler
IEC	Independent Environmental Checker
RE	Resident Engineer
RH	Relative Humidity
TSP	Total Suspended Particulates
QA/QC	Quality Assurance / Quality Control
WMP	Waste Management Plan

EXECUTIVE SUMMARY

Introduction

1. This is the 9th Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the Kai Tak Development- Decommissioning and Decontamination Works at the South Apron of the Former Kai Tak Airport with Contract No. KL/2008/02. This report documents the findings of EM&A Works conducted in April 2009.

2. The site activities undertaken in the reporting month included:

- Backfilling of water foam tank;
- Demolition of Guard house; and
- Biopile treatment and 2nd soil sampling for cleanup progress monitoring.

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed in accordance with the updated EM&A Manual and the monitoring results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

4. Summary of the non-compliance of the reporting month is tabulated in Table I.

Table I Summary Table for Non-compliance Recorded in the Reporting Month

Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
	Action Level	Limit Level	Action Level	Limit Level	
1-hr TSP	0	0	0	0	N/A
24-hr TSP	0	0	0	0	N/A
Water Quality	N/A	N/A	N/A	N/A	N/A
Ambient VOC Monitoring					
Parameter	**No. of Exceedance (Limit Level)**				
TPH	0				N/A
Ethylbenzene	0				N/A
Xylenes	0				N/A

Site Boundary at Area 5 (AM1a)

1-hour TSP Monitoring

5. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

6. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

China Harbour Site Office near Po Hong Centre (AM2a)

1-hour TSP Monitoring

7. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

8. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Public Work Central Laboratory(AM3)

1-hour TSP Monitoring

9. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

10. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Water Quality Monitoring

11. Water quality monitoring was conducted on 23 April in accordance with Updated EM&A Manual. No water discharge was observed from the centralized wastewater treatment unit (Idle) and two manholes (A and B). No black or red rainstorm and typhoon No. 3 or above were recorded in the reporting month.

Ambient VOC Monitoring

12. Ambient VOC Monitoring was conducted in the reporting month (24 April 2009). No Limit Level exceedance was recorded.

Environmental Licenses and Permits

13. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project. No Construction Noise Permit (CNP) and Water Discharge License (WDL) were issued to the Project by EPD in the reporting month.

14. Registration of Chemical Waste Producer (License: 5213-247-K2822-02).

Key Information in the Reporting Month

15. Summary of key information in the reporting month is tabulated in Table II.

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N/A	N/A	---
Status of submissions under EP	1	Monthly EM&A Report for March 09	Submitted to EPD on 15 April 2009 (EP condition 4.3)	Verified by IEC	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Future Key Issues:

Major site activities for the coming months include:

- Concrete reinstatement of water foam tank;
- Tree trimming, Biopile Treatment; and
- 3rd soil sampling for cleanup progress monitoring.

1. INTRODUCTION

Background

1.1 The Decommissioning of the Former Kai Tak Airport Other than the North Apron (hereinafter referred to as "the Project") is a Designated Project under Item 1 of Part II Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO): "Decommissioning of airports, including fueling and fuel storage, the aircraft maintenance and repair facilities". An Environmental Impact Assessment (EIA) Study for the Project has been undertaken in accordance with the EIA Study Brief (No. ESB-160/2006) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM). An EIA Report was approved by the Environmental Protection Department (EPD) on 19 December 2007.

1.2 In order to make available the remaining former Kai Tak Airport site for the Kai Tak Development (KTD), the Decommissioning of the Former Kai Tak Airport Other than the North Apron (hereinafter called 'the Project') is proposed to demolish remaining existing structures / buildings and remove abandoned facilities of the former Kai Tak Airport within the Project boundary; identify and clean up contaminated areas associated with the previous airport operation within the Project boundary; and implement appropriate mitigation measures to ensure the site would be safe and free of hazards for the planned future use. The general layout of the Project site is shown in **Figure 1.1**.

1.3 An Environmental Permit (EP) No. EP-285/2008 was issued on 8 January 2008 for the decommissioning designated project to Civil Engineering and Development Department (CEDD) as the Permit Holder. Cinotech Consultants Ltd. was commissioned by CEDD to undertake the Environmental Monitoring and Audit works for the Former Kai Tak Airport other than North Apron.

1.4 Cinotech Consultants Ltd. was designated as the Environmental Team (ET) to undertake the EM&A works for the Project under EP condition 2.1. An updated EM&A Manual including water quality monitoring plan (Final Version) was prepared by Cinotech and submitted to EPD on 25 March 2009 under EP condition 2.6. The Baseline Environmental Monitoring Report (Part I) and (Part II) were prepared by Cinotech and issued on 30th July 2008 and 2nd February 2009 respectively under EP condition 4.2. This is the 9th monthly EM&A report summarizing the EM&A works for the Project in April 2009.

Project Organizations

1.5 Different parties with different levels of involvement in the project organization include:

- Project Proponent – Civil Engineering and Development Department (CEDD)
- Engineer (E) / Engineer's Representative (ER) – Maunsell Consultants Asia Ltd
- Environmental Team (ET) – Cinotech Consultants Limited.
- Independent Environmental Checker (IEC) – Nature & Technologies (HK) Limited
- Environmental Protection Department (EPD) – Environmental Regulations Enforcer
- Contractor –Kin Wing Construction Co., Ltd

1.6 The responsibilities of respective parties are detailed in Sections 1.4.1 to 1.4.9 of the approved EM&A Manual of the Project.

1.7 The key contacts of the Project are shown in Table 1.1 and the organization chart is shown in **Figure 1.2**.

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.	Fax No.
CEDD	Permit Holder	Mr. Patrick Chan	Senior Engineer	23011464	23694980
MCAL	Engineer	Mr. Johnny Leung	Resident Engineer	27980771	27980783
		Mr. Patrick Ko	Assistant Resident Engineer		
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089	31071388
		Ms. Ivy Tam	Project Coordinator & Audit Team Leader	2151 2090	
		Mr. Henry Leung	Monitoring Team Leader	2151 2087	
Nature & Technologies	Independent Environmental Checker	Ir Dr Gabriel C K Lam	Independent Environmental Checker	2877 3122	25110922
Kin Wing	Contractor	Mr. Eric Wong	Site Agent	2637 5066	27259316
		Mr. W.P Wong	General Foreman		

Construction Programme

1.8 The site activities undertaken in the reporting month included:

- Backfilling of water foam tank;
- Demolition of Guard house; and
- Biopile treatment and 2nd soil sampling for cleanup progress monitoring.

Summary of EM&A Requirements

1.9 The EM&A programme requires air quality monitoring, water quality monitoring and environmental site audit for decommissioning activities. The EM&A requirements for each parameter are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study final report; and
- Environmental requirements in contract documents.

1.10 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 3 of this report.

1.11 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely air quality and audit works for the Project in April 2009. The summary of EM&A activities, the non-compliance events and complaints received in the reporting month are presented in **Appendix M** in accordance with EP condition 4.3.

2. AIR QUALITY

Monitoring Requirements

2.1 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality. **Appendix A(1-2)** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

2.2 Three designated monitoring stations, AM1a, AM2a and AM3 were selected for impact dust monitoring. Table 2.1 describes the air quality monitoring locations, which are also depicted in **Figure 2.1**

Table 2.1 Locations for Air Quality Monitoring

Monitoring Stations	Locations
AM1a	Site Boundary Area 5
AM2a	Works Area near Po Hong Centre
AM3	Public Works Central Laboratory Building

Monitoring Equipment

2.3 Table 2.2 summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates are attached in **Appendix B**.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Qty.
HVS Samplers	GMWS 2310 HVS, Model GS-2310105-1	3
Calibrator	Tisch Environmental, Inc.; Model no. TE-5025A	1

Monitoring Parameters, Frequency and Duration

2.4 Table 2.3 summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting period is shown in **Appendix C**.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

Parameters	Frequency
1-hr TSP	Three times / 6 days
24-hr TSP	Once / 6 days

Monitoring Methodology and QA/QC Procedure

Instrumentation

2.5 Graseby GMW Model GS2310 TSP High Volume Sampler (HVS) was employed for 1-hour & 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in section 5.11-5.14 of the Updated EM&A Manual.

Operating/Analytical Procedures

2.6 Reference is made to the following for installation of the HVS:

- A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
- No two samplers were placed less than 2 meters apart.
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
- A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
- No furnaces or incineration flues were nearby.
- Airflow around the sampler was unrestricted.
- The sampler was more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

2.7 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m^3/min. and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

2.8 For TSP sampling, fiberglass filters (G810) were used [Note: these filters have a collection efficiency of > 99% for particles of 0.3 mm diameter].

2.9 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.

2.10 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.

2.11 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

2.12 The shelter lid was closed and secured with the aluminum strip.

2.13 The timer was then programmed. 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).

2.14 After sampling, the filter was removed and sent to the laboratory for weighing. The elapsed time was also recorded.

2.15 Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

2.16 The following maintenance/calibration was required for the HVS:

- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers were calibrated at bi-monthly intervals using GMW-25 Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

Site Boundary at Area 5 (AM1a)

1-hour TSP Monitoring

2.17 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. The results of 1-hour TSP were ranged between 53.5μg/m^3 and 456.0μg/m^3. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

2.18 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. The results of 24-hour TSP were ranged between 41.2μg/m^3 and 114.6μg/m^3. No Action/Limit Level exceedance was recorded.

China Harbour Site Office near Po Hong Centre (AM2a)

1-hour TSP Monitoring

2.19 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. The results of 1-hour TSP were ranged between 65.8μg/m^3 and 308.1μg/m^3. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

2.20 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. The results of 24-hour TSP were ranged between 29.7μg/m^3 and 108.9μg/m^3. No Action/Limit Level exceedance was recorded.

Public Work Central Laboratory (AM3)

1-hour TSP Monitoring

2.21 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. The results of 1-hour TSP were ranged between 42.1μg/m^3 and 259.9μg/m^3. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

2.22 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. The results of 24-hour TSP were ranged between 19.9μg/m^3 and 73.1μg/m^3. No Action/Limit Level exceedance was recorded.

2.23 Wind data was obtained from the Meteorological Observations for King's Park Automatic Weather Station. These wind data for the reporting month is summarized in **Appendix F.**

2.24 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices D and E** respectively.

2.25 In accordance with Condition 5.1 of the EP, all environmental monitoring data will be made available to the public via internet access at the website http://www.ktd200802.com/.

Biopiling System Discharge Emissions Monitoring

Monitoring Requirements

2.26 Ambient VOC monitoring shall be measured by a PID and shall be conducted in monthly interval. **Appendix A (3)** shows limit levels for ambient VOC monitoring at site boundary.

Monitoring Locations

2.27 Downwind to the exhaust of treatment facility was selected for ambient VOC monitoring. **Figure 2.2** describes the VOC monitoring locations.

Information and Methodology of Testing Laboratory

2.28 Material Lab was responsible to carry out the air sampling and testing for the parameters, Ethylbenzene, Xylenes and TPH.

2.29 TPH, Ethylbenzene and xylenes in the air sample were collected by means of adsorption on carbon molecular sieves and determinded by GC/MSD using thermal desorption technique.

Monitoring Parameters, Frequency and Duration

2.30 Ambient VOC monitoring shall be measured by a PID and shall be conducted in monthly interval. Air sampling was conducted on 24 April 2009 during the reporting month. The testing parameters included Ethylbenzene, Xylenes and TPH.

Results and Observations

2.31 The testing results are presented in Table 2.4 and the laboratory reports are provided in **Appendix N.**

Table 2.4 Testing Results on Analysis of Air

Testing Item	Concentration, $\mu g/m^3$
Ethylbenzene	<10
Xylenes	<10
TPHs	<500

3. WATER QUALITY

Monitoring Requirements

3.1 Monitoring parameters include Suspended Solid (SS), turbidity, oil and grease, Chemical Oxygen Demand (COD) and Total Petroleum Hydrocarbon (TPH), BTEX (benzene, toluene, ethylbenzene, and xylenes) and selected metals (Lead, Arsenic and Copper) will be monitored at the proposed monitoring locations (two manholes) monthly. Parameters included in possible future WPCO licence, will also be included. i.e flow rate (m3/day) and pH (pH units) in accordance with EM&A Manual.

3.2 The chemical testing of water samples collected in the monitoring programme should be undertaken by a Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory.

Monitoring Locations

3.3 The coordinates of the proposed monitoring locations (two manholes) are summarized in Table 3.1 and shown on Figure 3.1. Most of the surface runoff within the site area will discharge to the two manholes (A and B) and then to the box culverts.

Table 3.1 Water Quality Monitoring Stations

Monitoring Stations		Coordinates	
		Northing	Easting
Manholes	**A** (Area 3B-On side of Zone E)	819998.125	839271.250
	B (Area 3B-On side of Zone C)	819962.623	839306.750

Monitoring Equipment

3.4 For water quality monitoring, the following equipments will be supplied by the ET.

Turbidity

3.5 Turbidity will be measured in situ by the nephelometric method. The instrument will be portable and weatherproof using a DC power source complete with cable, sensor and comprehensive operation manuals. The equipment will be capable of measuring turbidity between 0-1000 NTU. The probe cable will not be less than 25m in length.

Suspended Solids (SS)

3.6 A water sampler, consisting of a transparent PVC or glass cylinder of a capacity of not less than two litres which can be effectively sealed with cups at both ends will be used (Kahlsico Water Sampler 13SWB203 or an approved similar instrument). The water sampler will have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is the selected water depth.

3.7 Water samples will be collected in high density polythene bottles, packed in ice and

delivered to HOKLAS accredited laboratory for analysis as soon as possible after collection.

Water Sampling for Laboratory Analysis

3.8 A water sampler will be used to collect samples for laboratory analysis.

Position System

3.9 A hand held Global Positioning System (GPS) will be used to ensure that the correction location has been selected prior to sample collection.

Sample Container and Storage

3.10 Following collection, water samples for laboratory analysis will be stored in high density polythene bottles with appropriate preservatives added, packed in ice (cooled to 4°C without being frozen), delivered to the laboratory and analysed as soon as possible.

Calibration of In Situ Instruments

3.11 All in situ monitoring instruments will be checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring.

3.12 For the on-site calibration of field equipment, the BS 1427:1993, "Guide to Field and on-site test methods for the analysis of waters" will be observed.

3.13 Sufficient stocks of spare parts will be maintained for replacements when necessary. Backup monitoring equipment will also be made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.

Monitoring Parameters and Frequency

3.14 Table 3.2 summarizes the monitoring parameters, monitoring period and frequencies of the water quality monitoring at two manholes and centralized wastewater treatment unit. As the treated effluent from the centralized wastewater treatment unit will be reused on site and no water discharge from the centralized wastewater treatment unit is anticipated. Thus, water quality monitoring will be applied only after every Black or Red rainstorm and Typhoon No. 3 or above. For the two manholes (A and B), water sampling will be carried out monthly and after every Black or Red rainstorm and Typhoon No. 3 or above.

Table 3.2 Water Quality Monitoring Parameters and Frequency

Monitoring Stations	Parameters, unit	Frequency
Manholes (A and B)	• pH (pH unit) • Flow rate (m3/day) • Turbidity, NTU • SS, mg/L • Oil and grease • COD • TPH • BTEX • Arsenic • Lead • Copper	• *Monthly • *After every Black or Red rainstorm and Typhoon No. 3 or above.
Centralized Wastewater Treatment Unit	• pH (pH unit) • Flow rate (m3/day) • Turbidity, NTU • SS, mg/L • Oil and grease • COD • TPH • BTEX • Arsenic • Lead • Copper	• *After every Black or Red rainstorm and Typhoon No. 3 or above.

* Water Sampling only when there is discharge

Laboratory Analytical Methods

3.15 Analysis, including SS, will be carried out in a HOKLAS or other international accredited laboratory. The following table shows the standard test methods of the proposed determinants for laboratory analysis.

Table 3.3 Methods for Laboratory Analysis for Water Samples

Parameters (Unit)		**Proposed Method**	**Detection Limit/ Limit of Reporting**
SS		APHA 17ed 2540 D	0.5mg/L
Oil and Grease		In-house Method SOP 024	0.2mg/L
Oxygen Demand (Chemical)		APHA 19e 5220 B	1 mg O2/L
TPH	TPH (C6-C9)	USEPA 8260	0.02 mg/L
	TPH (C10-C14)		0.025 mg/L
	TPH (C15-C28)		
	TPH (C29-C36)		
BTEX	benzene	USEPA 8260	0.001 mg/L
	toluene		
	ethylbenzene		
	xylenes		
Arsenic		In-house method SOP053 (ICP-ES) & 076 (ICP-MS)	0.0002 mg/L
Lead		In-house method SOP053 (ICP-ES) & 076 (ICP-MS)	0.0002 mg/L
Copper		In-house method SOP053 (ICP-ES) & 076 (ICP-MS)	0.0002 mg/L

Notes:
APHA = American Public Health Association: Standard Methods for the Examination of Water and Wastewater Ed 19

3.16 The testing laboratory will be HOKLAS accredited (or if not, approved by the ER) and comprehensive quality assurance and control procedures in place in order to ensure quality and consistency in results.

3.17 The ET will provide the ER with one copy of the relevant chapters of the "Standard Methods for the Examination of Water and Wastewater" updated edition and any other relevant document for his reference upon request.

Action and Limit Levels

3.18 In accordance with the approved EIA report, the limits given in the TM-DSS cover the physical, chemical and microbial quality of effluents. Any effluent discharge during the decommissioning works should comply with the standards for effluents discharged into the inshore waters of the Victoria Harbour WCZ, as shown in Table 9a of the TM-DSS. The Flow rate of the effluent will be measured during the sampling to determine the limit level of the monitoring parameters.

Event and Action plan for water quality

3.19 When the monitoring results of the water quality parameters at any proposed monitoring stations exceed the water quality criteria, the action in accordance with the Action Plan in Table 3.4 will be carried out.

Table 3.4 Event and Action Plan for Water Quality

Event	ET	IEC	ER	CONTRACTOR
Limit Level Exceedance	1. Repeat measurement on next of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	1. Check monitoring data submitted by ET and Contractor's working methods. 2. Discuss with ET and Contractor on possible mitigation measures; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Supervise the implementation of mitigation measures.	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Ensure mitigation measures are properly implemented; 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level	1. Take immediate action to avoid further exceedance 2. Discuss with ET, IEC and ER and propose mitigation measures to ER and IEC within 3 working days; 3. Implement the agreed mitigation measures; 4. Resubmit proposals of mitigation measures if problem still not under control; 5. As directed by the Supervising Officer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.

Results and Observations

3.20 Water quality monitoring was conducted on 23 April in accordance with Updated EM&A Manual. No water discharge was observed from the centralized wastewater treatment unit (Idle) and two manholes (A and B).

3.21 No black or red rainstorm and typhoon No. 3 or above were recorded in the reporting month.

4. ENVIRONMENTAL AUDIT

Site Audits

4.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix G**.

4.2 Site audits were conducted on 4th, 9th, 16th, 23rd and 29th April 2009. No non-compliance was observed during the site audits.

Review of Environmental Monitoring Procedures

4.3 The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

Air Quality Monitoring

- The monitoring team recorded all observations around the monitoring stations within and outside the construction site.
- The monitoring team recorded the temperature and weather conditions on the monitoring days.

Status of Environmental Licensing and Permitting

4.4 All permits/licenses obtained for the Project are summarized in Table 4.1.

Status of Waste Management

4.5 The decommissioning of underground fuel tanks and pipework by purging with water was conducted by the Government Flying Service and certified in May 2008. These underground fuel tanks and pipework includes:

- underground distribution pipework connecting Fuel Oil Pump Room to 7 nos. of Fuel Oil Dispensing Units at airfield;
- two 6,000-litre underground fuel tanks; and
- three 60,000-litre underground fuel tanks.

4.6 Waste generated by the activities of the Project in this reporting month includes:

- 0.03 x10^3 $m^3$of Hard Rock and Large Broken Concrete.

4.7 The amount of wastes generated by the activities of the Project in April 09 is shown in **Appendix L**.

Table 4.1 Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-285/2008	8/1/08	N/A	Decontamination, demolition and removal of buildings/structures and abandoned facilities within the former Kai Tak Airport other than the North Apron.	Valid
Registration of Chemical Waste Producer				
5213-247-K2822-02	---	N/A	Chemical waste types: Spent lubricating oil and oil contaminated materials	Valid

Implementation Status of Environmental Mitigation Measures

4.8 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations are summarized in Table 4.2.

Table 4.2 Observations and Recommendations of Site Inspections

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	9/04/09	Reminders: Properly maintain the tarpaulin sheet at the solidification facility.	The situation was found not rectified/ improved during the audit session on 16 April 2009.
	16/04/09	Reminders: Properly maintain the tarpaulin sheet at the solidification facility and LDPE at Biopile areas.	The situation was found rectified/ improved during the audit session on 23 April 2009.
Waste / Chemical Management	03/04/09	Observations: C&D waste was observed accumulated at Area5. The Contractor was reminded to clear them as soon as possible.	The situation was found rectified/ improved during the audit session on 9 April 2009.
	03/04/09	Observations: Oil leakage was observed from the plant equipment at inside the hangar. The Contractor was reminded to clear them and dispose as chemical waste.	The situation was found rectified/ improved during the audit session on 9 April 2009.
	03/04/09	Reminders: Keep clear the silt and sediment at the edge of Biopile areas 1 and 2 and near the underground water tank.	The situation was found not rectified/ improved during the audit session on 9 April 2009.

Parameters	Date	Observations and Recommendations	Follow-up
	9/04/09	Reminders: Keep clear the silt and sediment at the edge of Biopile areas 1 and 2.	The situation was found not rectified/ improved during the audit session on 16 April 2009.
	16/04/09	Reminders: Keep clear the silt and sediment at the edge of Biopile areas 1 and 2.	The situation was found not rectified/ improved during the audit session on 23 April 2009.
	23/04/09	Reminders: Keep clear the silt and sediment at the edge of Biopile areas 1 and 2.	The situation was found rectified/ improved during the audit session on 29 April 2009.
Land Contamination	16/04/09	Reminders: Properly maintain the tarpaulin sheet at the solidification facility and LDPE at Biopile areas.	The situation was found rectified/ improved during the audit session on 23 April 2009.

Table 4.3 Observations and Recommendations of Site Audits Followed Up for Previous Month

Parameters	Date	Observations and Recommendations	Follow-up
Waste / Chemical Management	27/03/09	Reminders: Keep clear the silt and sediment at the edge of Biopile areas 1 and 2 and near the underground water tank (especially during the rains).	The situation was found not rectified/ improved during the audit session on 3 April 2009.

Non-compliance Recorded during Site Inspections

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

Summary of Mitigation Measures Implemented

4.10 The Contractor has implemented the mitigation measures as recommended in the EIA and the updated EM&A Manual in the reporting month except those mitigation measures not applicable at this stage.

4.11 According to the Approved EM&A Manual, mitigation measures are required to be implemented. An updated summary of the EMIS is provided in **Appendix H**.

Implementation Status of Event Action Plans

4.12 The Event Action Plans for air quality is presented in **Appendix I.**

Summary of Complaints and Prosecutions

4.13 No environmental prosecution and complaint was received in the reporting month.

4.14 There was no environmental complaint and no prosecution received since the commencement of the Project. The Complaint Log is attached in **Appendix J**.

5. FUTURE KEY ISSUES

Key Issues for the Coming Month

5.1 Key environmental issues in the coming month include:

- Construction noise from reinstatement works;
- Dust generation from reinstatement works,
- Wastewater and runoff discharge from site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Watering for dry unpaved area and exposed stockpile;
- Accumulation of general and construction waste on site;
- Fugitive emissions of dust or any air pollutants from the biopile(s);
- Runoff from the stockpiled soils at the biopile(s); and
- Connecting the vented air from the biopile(s) to blower and carbon adsorption system.

Monitoring Schedule for the Next Month

5.2 The tentative environmental monitoring schedules for the next month are shown in **Appendix C.**

Construction Program for the Next Month

5.3 The tentative construction program for the Project is provided in **Appendix K.**

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

6.1 Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.

1-hr TSP Monitoring

6.2 All 1-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hr TSP Monitoring

6.3 All 24-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Water Quality Monitoring

6.4 Water quality monitoring was conducted on 23 April in accordance with Updated EM&A Manual. No water discharge was observed from the centralized wastewater treatment unit (Idle) and two manholes (A and B). No black or red rainstorm and typhoon No. 3 or above were recorded in the reporting month.

Ambient VOC Monitoring

6.5 Ambient VOC Monitoring was conducted in the reporting month (24 April 2009). No Limit Level exceedance was recorded.

Complaint and Prosecution

6.6 No environmental prosecution and complaint was received in the reporting month.

Recommendations

6.7 According to the environmental audit performed in the reporting month, the following recommendations were made:

Dust Impact

- To implement dust suppression measures on all haul roads, stockpiles, dry surfaces and excavation works.
- To implement dust control measures for the dust generation work such as cement mixing and excavation works.
- To ensure water spray being applied for the dust emissive works, such as loading and unloading of soil materials and excavation works.
- To cover soil stockpiles and exposed slope surface by impervious tarpaulin sheets or other means.
- To ensure that all vehicles carrying dusty material are properly covered before leaving

the site.

- To maintain the machinery and vehicles in a good working condition on site.
- To ensure that all vehicles use wheel washing facility or equivalent measures before leaving the site.

Noise Impact

- To inspect the noise sources inside the site.
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers.
- To review the works sequence of site activities so as to reduce the number of noisy equipment in concurrent operation.
- To employ quiet powered mechanical equipment if possible.

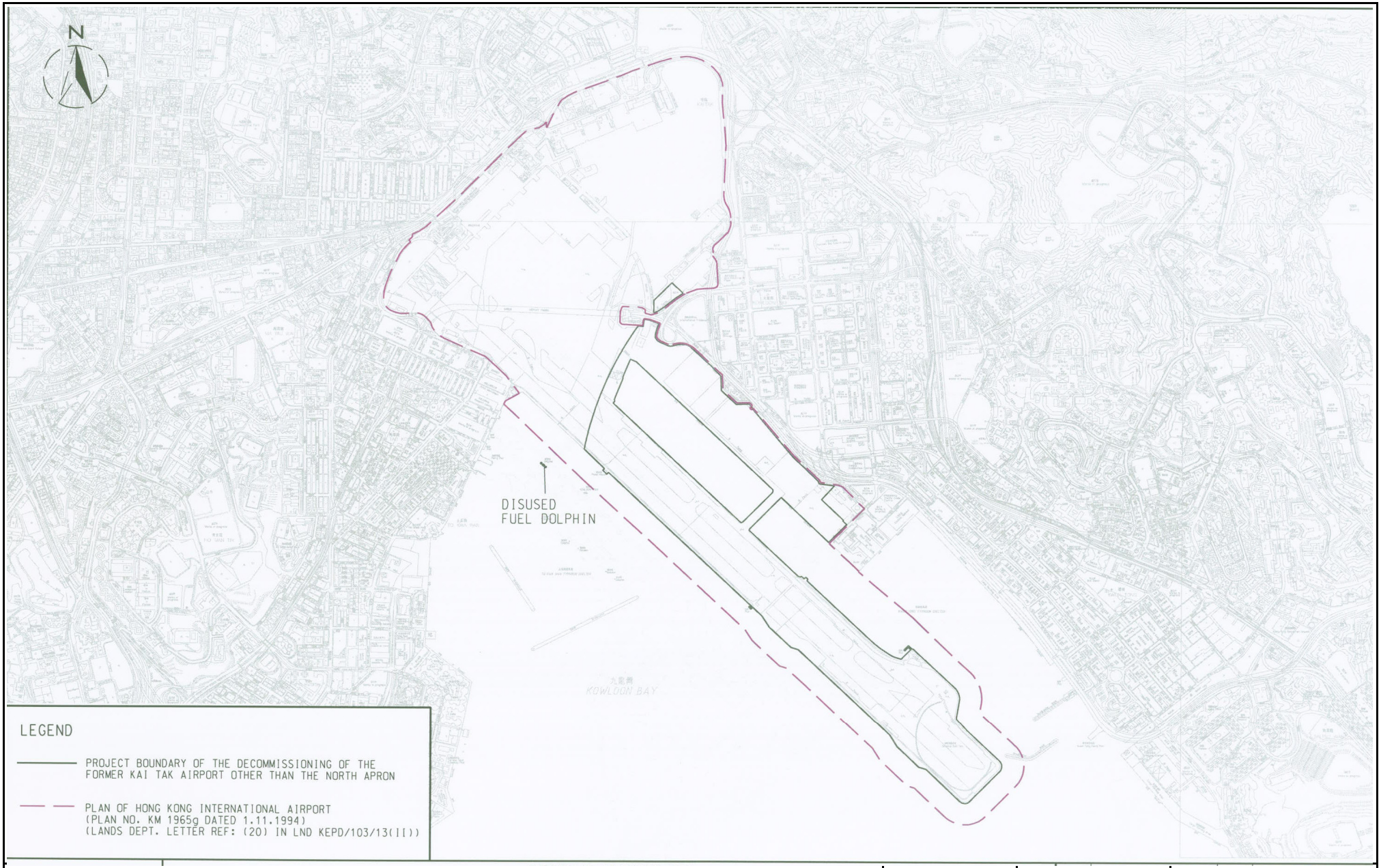
Water Impact

- To prevent contaminated surface runoff discharge into drainage system.
- To ensure properly maintenance for de-silting facilities
- To review the capacity of de-silting facilities for discharge.
- To identify any wastewater discharges from site.
- To avoid accumulation of stagnant and ponding water on site.

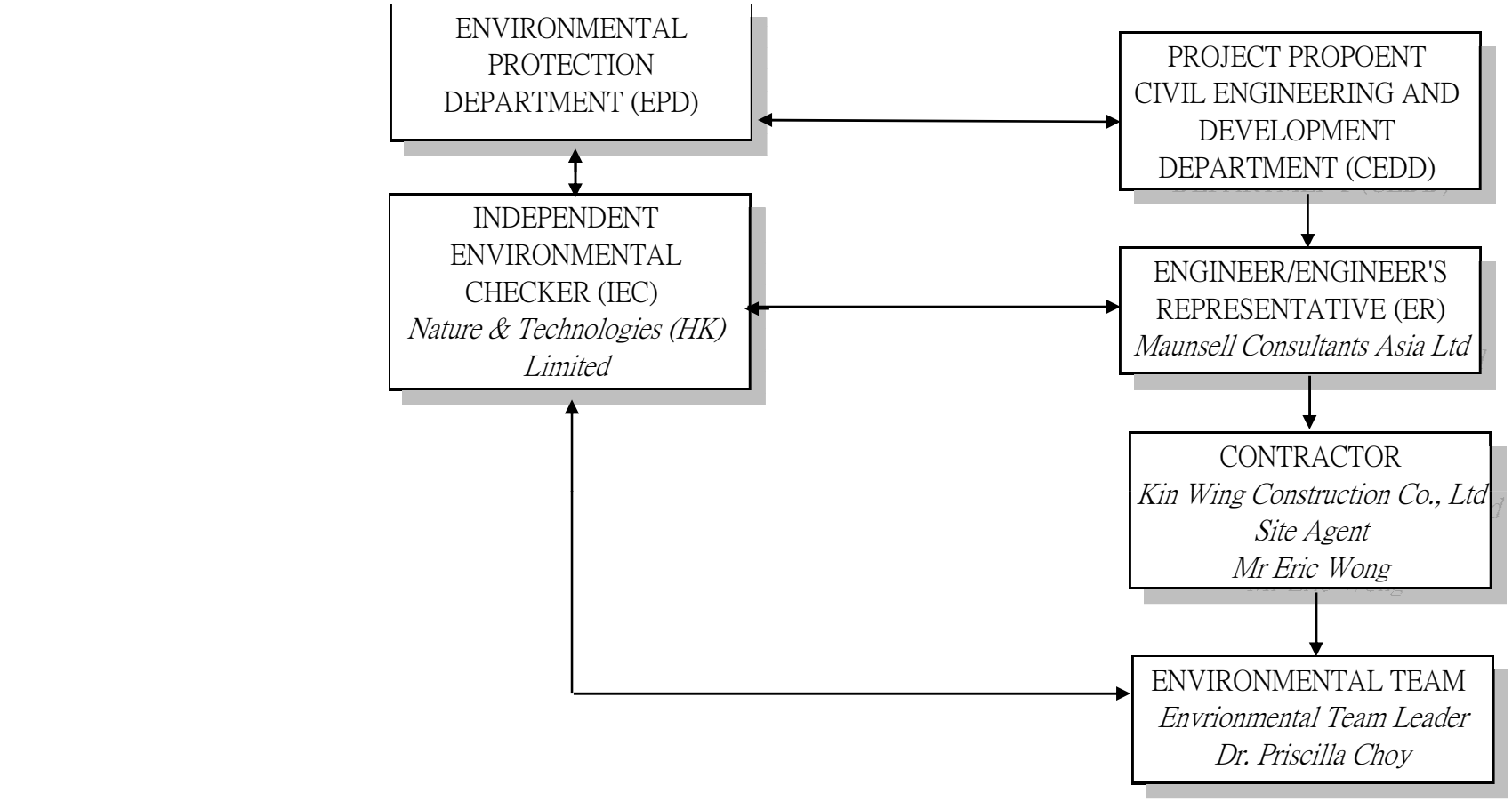
Waste/Chemical Management

- To check for any accumulation of waste materials or rubbish on site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To avoid improper handling or storage of oil drum on site.

FIGURES

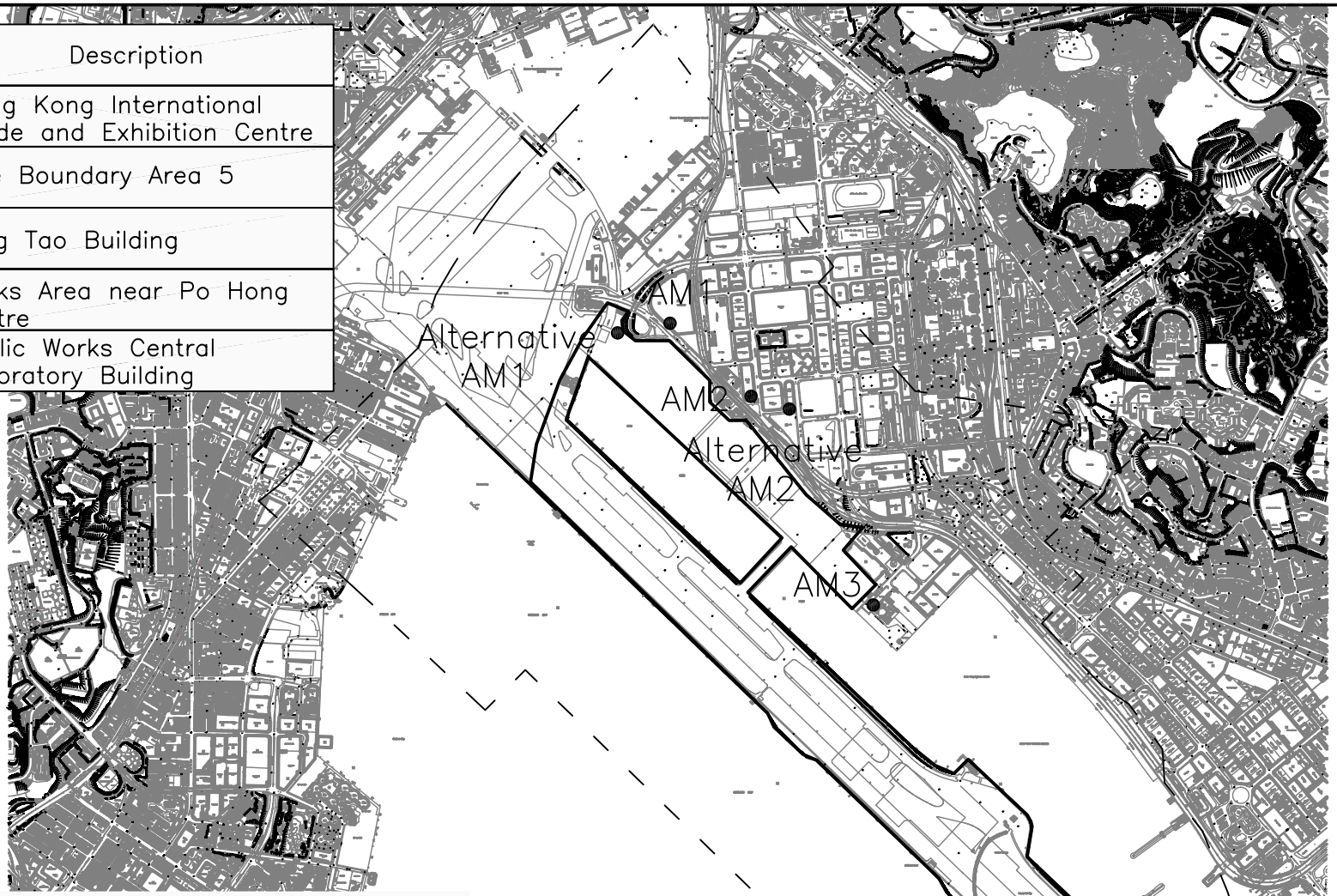


Contract No. KL/2008/02 KAI TAK DEVELOPMENT- DECOMMISSIONING AND DECONTAMINATION WORKS AT THE SOUTH APRON OF THE FORMER KAI TAK AIRPORT	Scale N.T.S	Project No. MA8017	CINOTECH
Layout Plan of Project Site	Date Jan-09	Figure 1.1	



Title: Contract No. KL/2008/02 KAI TAK DEVELOPMENT- DECOMMISSIONING AND DECONTAMINATION WORKS AT THE SOUTH APRON OF THE FORMER KAI TAK AIRPORT Project Organization Chart	Scale: N.T.S	Project No.: MA8017	CINOTECH
	Date: Jan-09	Figure: 1.2	

Monitoring Location	Description
AM1	Hong Kong International Trade and Exhibition Centre
Alternative AM1	Site Boundary Area 5
AM2	Sing Tao Building
Alternative AM2	Works Area near Po Hong Centre
AM3	Public Works Central Laboratory Building



Legend

- Construction Dust Monitoring Location
- Project Boundary of the Decommissioning of the Former Kai Tak Airport other than North Apron
- 500m Study Area from Project Boundary

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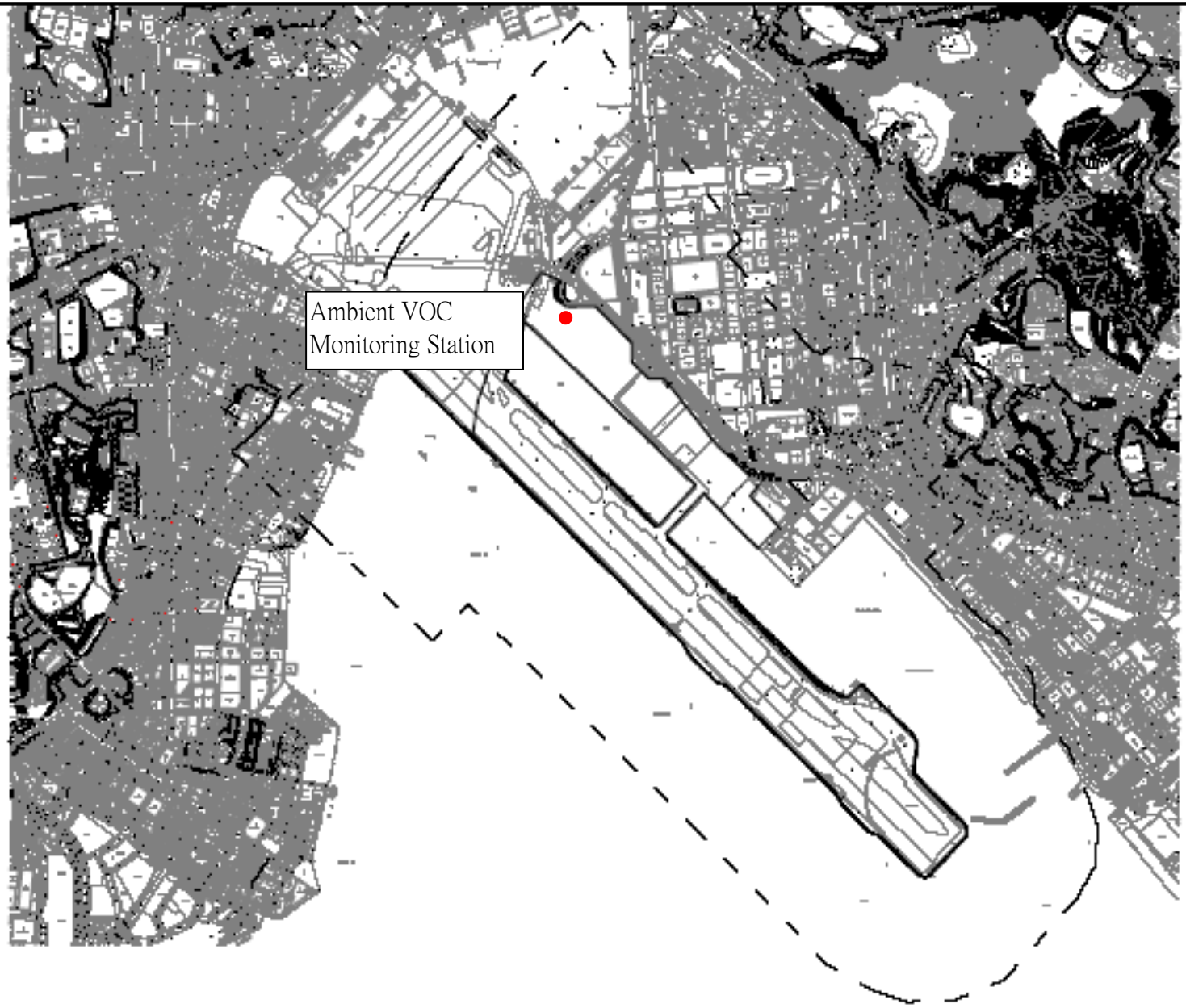
Contract No. KL/2008/02 Kai Tak Development – Decommissioning and Decontaimination works at the South Apron of the Former Kai Tak Airport

Construction Dust Monitoring Locations

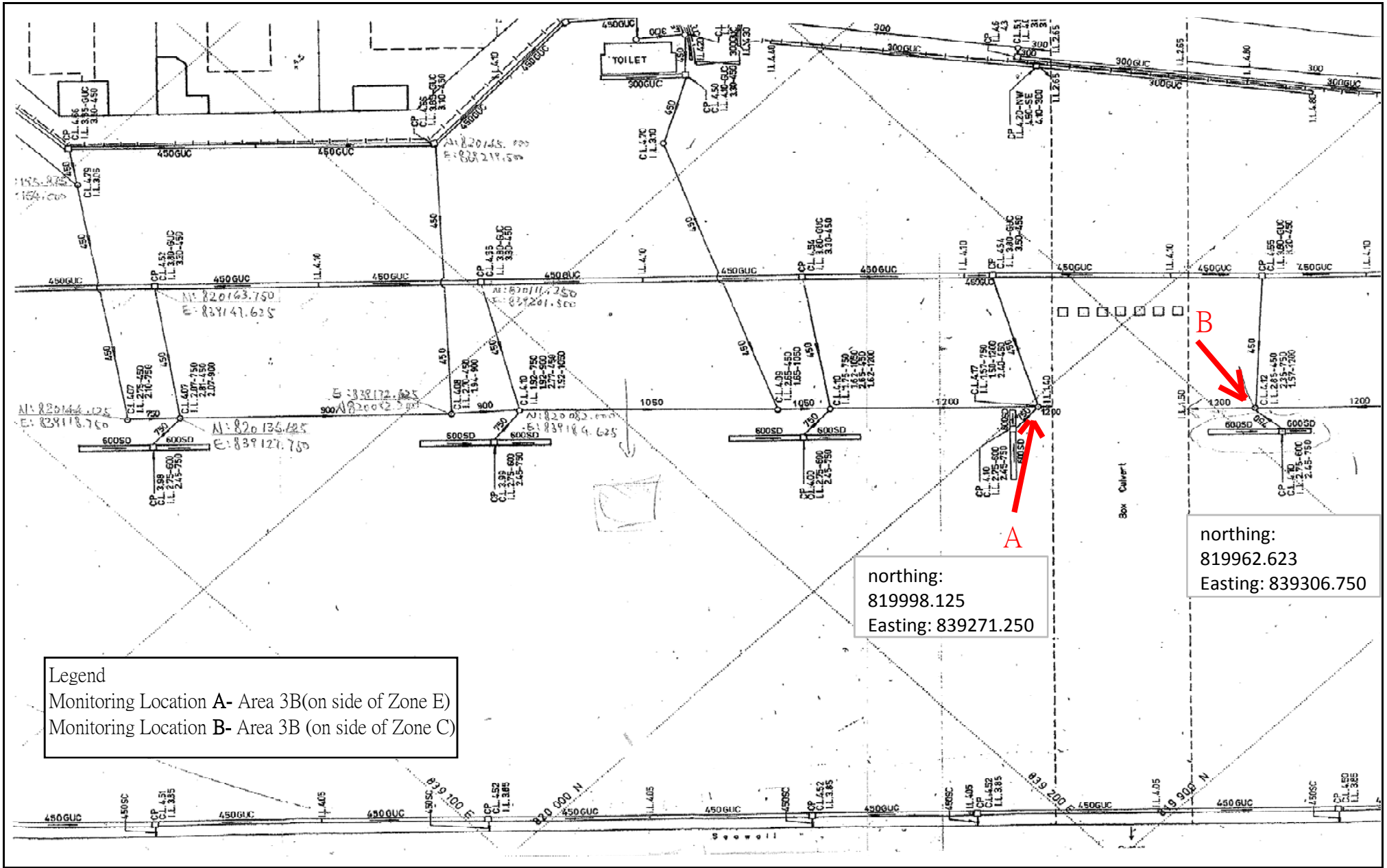
SCALE	N.T.S.	DATE	JUL 08
CHECK	TL	DRAWN	CM
JOB No.	MA8017	FIGURE NO. Fig 2.1	REV –

F:/PROJECT/MA8017/DRAWING/construction dust monitoring locations_80715



Title	Contract No. KL/2008/02 KAI TAK DEVELOPMENT- DECOMMISSIONING AND DECONTAMINATION WORKS AT THE SOUTH APRON OF THE FORMER KAI TAK AIRPORT	Scale: N.T.S	Project No.: MA8017
	Ambient VOC Monitoring Station	Date: Mar-09	Figure: 2.2

CINOTECH



Title	Contract No. KL/2008/02 KAI TAK DEVELOPMENT- DECOMMISSIONING AND DECONTAMINATION WORKS AT THE SOUTH APRON OF THE FORMER KAI TAK AIRPORT	Scale: N.T.S	Project No.: MA8017
	Locations of Water Quality Monitoring Stations	Date: Apr-09	Figure: 3.1

CINOTECH

APPENDIX A
ACTION AND LIMIT LEVELS

Appendix A - Action and Limit Levels

Table A-1 Action and Limit Levels for 1-Hour TSP

Location	Action Level, μg/m^3	Limit Level, μg/m^3
AM1a	463	500
AM2a	324	
AM3	317	

Table A-2 Action and Limit Levels for 24-Hour TSP

Location	Action Level, μg/m^3	Limit Level, μg/m^3
AM1a	235	260
AM2a	168	
AM3	156	

Table A-3 Limit Levels for Ambient VOC Monitoring at Site Boundary

Parameter	Limit Level
TPH	1300 μg/m^3
Ethylbenzene	1300 μg/m^3
Xylenes	22000 μg/m^3

APPENDIX B
COPIES OF CALIBRATION CERTIFCATES

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA8017/13/0002

Station: AM1a - Site Boundary of Area 5 (24hrs) Operator: WK

Date: 9-Feb-09 Next Due Date: 8-Apr-09

Equipment No.: A-01-13 Serial No. 1352

Ambient Condition			
Temperature, Ta (K)	292.2	Pressure, Pa (mmHg)	767.8

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0575	Intercept, bc	0.0395
Last Calibration Date:	10-Mar-08	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	9-Mar-09	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.5	3.44	59.18	8.4	2.94
2	8.6	2.98	51.08	6.5	2.59
3	6.8	2.65	45.35	4.9	2.25
4	4.7	2.20	37.58	3.2	1.82
5	3.3	1.84	31.38	2.0	1.44

By Linear Regression of Y on X

Slope , mw = 0.0547 **Intercept, bw =** -0.2494

Correlation coefficient* = 0.9982

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.28**

Remarks:

Conducted by: W.K. Tang Signature: Date: 9/2/09

Checked by: [illegible] Signature: Date: 9 Feb 2009

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA8017/13/0003

Station: AM1a - Site Boundary of Area 5 (24hrs) Operator: WK

Date: 8-Apr-09 Next Due Date: 7-Jun-09

Equipment No.: A-01-13 Serial No. 1352

Ambient Condition			
Temperature, Ta (K)	296.3	Pressure, Pa (mmHg)	764.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0575	Intercept, bc	0.0395
Last Calibration Date:	6-Mar-09	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	5-Mar-10	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.1	3.50	60.15	9.0	3.02
2	9.9	3.16	54.34	7.1	2.68
3	7.7	2.79	47.84	5.3	2.31
4	5.4	2.34	39.95	3.3	1.83
5	3.2	1.80	30.60	2.0	1.42

By Linear Regression of Y on X

Slope , mw = 0.0548 **Intercept, bw =** -0.2982

Correlation coefficient* = 0.9980

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.18**

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 8/4/09

Checked by: HY Signature: Date: 8 April 2009

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA8017/12/0005

Station: Works Area near Po Hong Centre Operator: WK

Date: 17-Feb-09 Next Due Date: 16-Apr-09

Equipment No.: A-01-12 Serial No. 1801

Ambient Condition			
Temperature, Ta (K)	291.8	Pressure, Pa (mmHg)	766

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0575	Intercept, bc	0.0395
Last Calibration Date:	10-Mar-08	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	9-Mar-09	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.3	3.56	61.19	8.9	3.03
2	10.4	3.27	56.21	6.8	2.65
3	7.8	2.83	48.59	5.0	2.27
4	5.2	2.31	39.55	3.3	1.84
5	3.1	1.79	30.38	1.7	1.32

By Linear Regression of Y on X

Slope , mw = 0.0535 **Intercept, bw =** -0.3009

Correlation coefficient* = 0.9977

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.88**

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 17/2/09

Checked by: KW Signature: Date: 17 Feb 2009

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA8017/12/0006

Station: Works Area near Po Hong Centre Operator: WK

Date: 16-Apr-09 Next Due Date: 15-Jun-09

Equipment No.: A-01-12 Serial No. 1801

Ambient Condition			
Temperature, Ta (K)	297.1	Pressure, Pa (mmHg)	756.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0575	Intercept, bc	0.0395
Last Calibration Date:	6-Mar-09	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	5-Mar-10	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.5	3.53	60.75	8.7	2.95
2	10.4	3.22	55.35	6.7	2.59
3	7.9	2.81	48.15	5.2	2.28
4	5.0	2.23	38.17	3.1	1.76
5	3.3	1.82	30.88	1.8	1.34

By Linear Regression of Y on X

Slope , mw = 0.0524 **Intercept, bw =** -0.2629

Correlation coefficient* = 0.9987

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.97

Remarks:

Conducted by: WK. Tang Signature: Date: 16/4/09

Checked by: [illegible] Signature: Date: 16 April 2009

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA8017/45/0005

Station	Public Works Central Laboratory	Operator:	WK
Date:	17-Feb-09	Next Due Date:	16-Apr-09
Equipment No.:	A-01-45	Serial No.	1309

Ambient Condition			
Temperature, Ta (K)	291.8	Pressure, Pa (mmHg)	766

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0575	Intercept, bc	0.0395
Last Calibration Date:	10-Mar-08	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	9-Mar-09	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ Y-axis
1	11.7	3.47	59.67	7.8	2.83
2	9.8	3.18	54.55	6.4	2.57
3	7.5	2.78	47.63	5.1	2.29
4	5.3	2.34	39.93	3.3	1.84
5	3.0	1.76	29.87	2.0	1.43

By Linear Regression of Y on X

Slope , mw = **0.0473** **Intercept, bw =** **0.0003**

Correlation coefficient* = **0.9983**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

mw x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.03**

Remarks:

Conducted by: wk Tang Signature: Kwai Date: 17/2/09

Checked by: [illegible] Signature: [illegible] Date: 17 Feb 2009

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA8017/45/0006

Station	Public Works Central Laboratory	Operator:	WK
Date:	16-Apr-09	Next Due Date:	15-Jun-09
Equipment No.:	A-01-45	Serial No.	1309

Ambient Condition			
Temperature, Ta (K)	297.1	Pressure, Pa (mmHg)	756.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0575	Intercept, bc	0.0395
Last Calibration Date:	6-Mar-09	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	5-Mar-10	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.5	3.39	58.24	7.9	2.81
2	9.8	3.13	53.71	6.8	2.61
3	7.6	2.75	47.22	5.0	2.23
4	5.0	2.23	38.17	3.1	1.76
5	3.2	1.79	30.40	1.8	1.34

By Linear Regression of Y on X

Slope , mw = 0.0532 **Intercept, bw =** -0.2727

Correlation coefficient* = 0.9997

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.06

Remarks:

Conducted by: wk Tang Signature: Kwan Date: 16/4/09

Checked by: [illegible] Signature: [illegible] Date: 16 April 2009

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

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 06, 2009 Rootsmeter S/N 9833640 Ta (K) - 296
Operator Tisch Orifice I.D. - 0999 Pa (mm) - 747.20

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H20 (in.)
1	NA	NA	1.00	1.3890	3.2	2.00
2	NA	NA	1.00	0.9850	6.3	4.00
3	NA	NA	1.00	0.8810	7.8	5.00
4	NA	NA	1.00	0.8410	8.6	5.50
5	NA	NA	1.00	0.6950	12.5	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9917	0.7139	1.4113		0.9957	0.7168	0.8874
0.9876	1.0026	1.9959		0.9916	1.0067	1.2549
0.9854	1.1185	2.2315		0.9894	1.1231	1.4030
0.9844	1.1706	2.3405		0.9884	1.1753	1.4715
0.9792	1.4090	2.8227		0.9832	1.4147	1.7747
Qstd slope (m) =		2.03154		Qa slope (m) =		1.27212
intercept (b) =		-0.03970		intercept (b) =		-0.02496
coefficient (r) =		0.99999		coefficient (r) =		0.99999
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}

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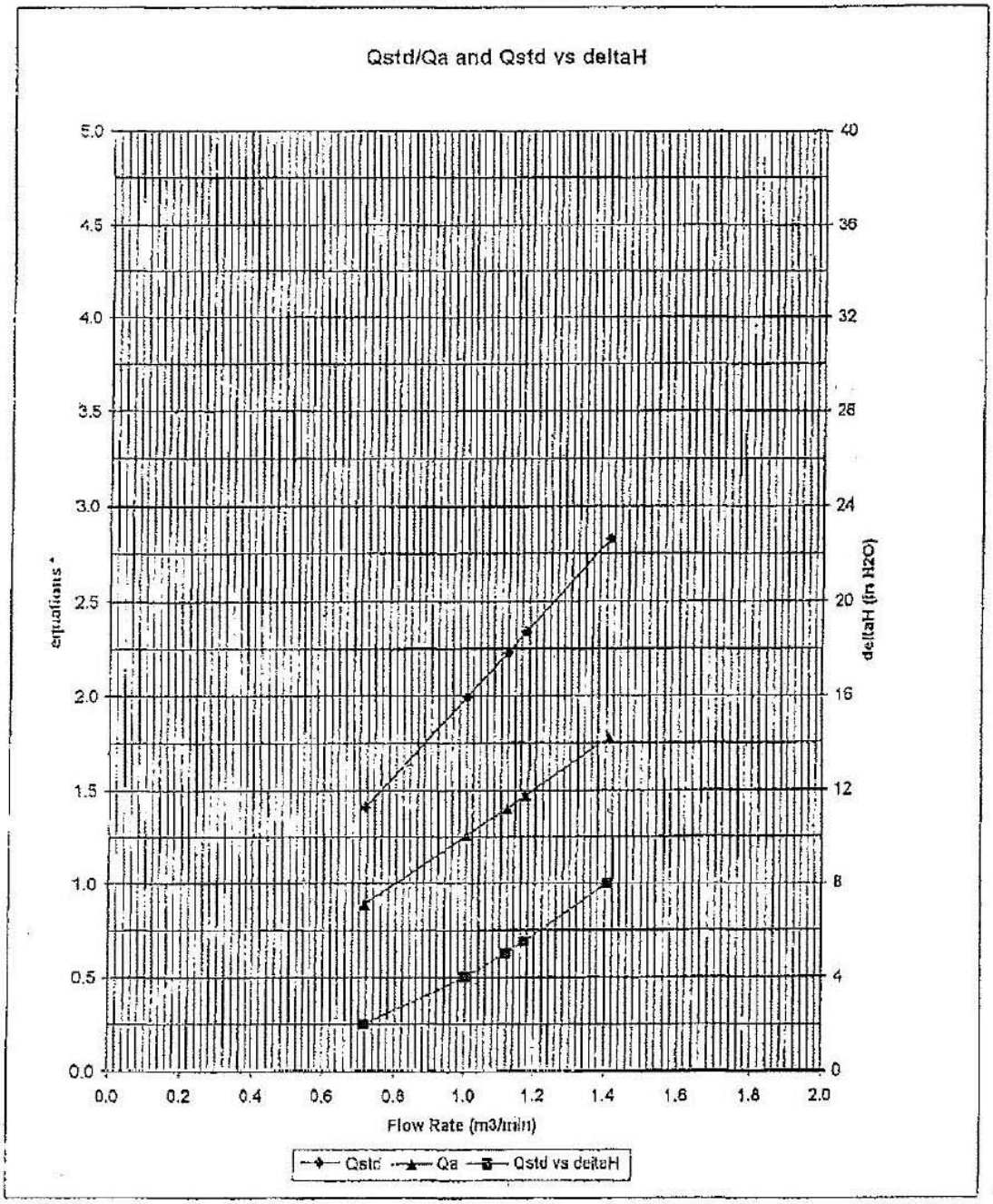
877.263.7610 TOLL FREE
513.467.9009 FAX
WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT



* y-axis equations:

Qstd series: $\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$

Qa series: $\sqrt{(\Delta H\ (Ta\ /\ Pa))}$

APPENDIX C
ENVIRONMENTAL MONITORING SCHEDULES

Contract No. KL/2008/02

Kai Tak Development-Decommissioning and Decontamination Works at the South Apron of the Former Kai Tak Airport

Impact Environmental Monitoring Schedule for April 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29-Mar	30-Mar	31-Mar	1-Apr	2-Apr	3-Apr	**4-Apr**
	1 hr TSP			1 hr TSP 24 hr TSP	1 hr TSP	
5-Apr	6-Apr	7-Apr	8-Apr	9-Apr	**10-Apr**	**11-Apr**
	1 hr TSP		1 hr TSP 24 hr TSP	1 hr TSP		
12-Apr	**13-Apr**	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr
		24 hr TSP	1 hr TSP	1 hr TSP	1 hr TSP	
19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr
	24 hr TSP	1 hr TSP		1 hr TSP Water Quality	1 hr TSP VOC Monitoring	24 hr TSP
26-Apr	27-Apr	28-Apr	29-Apr	30-Apr	**1-May**	**2-May**
	1 hr TSP	1 hr TSP	1 hr TSP	24 hr TSP		

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

Contract No. KL/2008/02

Kai Tak Development-Decommissioning and Decontamination Works at the South Apron of the Former Kai Tak Airport

Tentative Impact Environmental Monitoring Schedule for May 2009

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

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

APPENDIX D
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION AND WIND DATA

Appendix D - 1-hour TSP Monitoring Results

Station AM1a (Site Boundary Area 5)

Date	Sampling Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure (Pa)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
					Initial	Final		Initial	Final		Initial	Final			
2-Apr-09	09:00	Cloudy	290.9	769.3	2.8427	2.8731	0.0304	6168.1	6169.1	1.0	1.22	1.22	1.22	73.3	414.8
3-Apr-09	16:30	Cloudy	291.7	765.2	2.8199	2.8532	0.0333	6193.1	6194.1	1.0	1.22	1.22	1.22	73.0	456.0
6-Apr-09	09:00	Cloudy	290.0	765.9	2.8301	2.8388	0.0087	6194.1	6195.1	1.0	1.22	1.22	1.22	73.2	118.8
8-Apr-09	10:00	Sunny	292.9	766.3	4.2037	4.2076	0.0039	6195.1	6196.1	1.0	1.22	1.22	1.22	72.9	53.5
9-Apr-09	11:45	Sunny	294.5	766.5	2.8900	2.9056	0.0156	6220.1	6221.1	1.0	1.22	1.22	1.22	73.4	212.6
15-Apr-09	14:35	Sunny	296.9	759.6	2.8302	2.8593	0.0291	6245.1	6246.1	1.0	1.21	1.21	1.21	72.8	399.5
16-Apr-09	09:00	Cloudy	296.5	756.9	2.8576	2.8754	0.0178	6246.1	6247.1	1.0	1.21	1.21	1.21	72.8	244.6
17-Apr-09	09:00	Cloudy	297.3	758.7	2.8271	2.8401	0.0130	6247.1	6248.1	1.0	1.21	1.21	1.21	72.8	178.7
21-Apr-09	15:30	Sunny	300.3	756.8	2.8410	2.8666	0.0256	6272.1	6273.1	1.0	1.21	1.21	1.21	72.4	353.8
23-Apr-09	09:00	Cloudy	295.2	761.8	2.8334	2.8610	0.0276	6273.1	6274.1	1.0	1.22	1.22	1.22	73.1	377.5
24-Apr-09	09:00	Cloudy	296.4	759.6	2.8282	2.8567	0.0285	6274.1	6275.1	1.0	1.22	1.21	1.22	72.9	390.9
27-Apr-09	15:00	Cloudy	296.5	763.4	2.8873	2.9108	0.0235	6299.1	6300.1	1.0	1.22	1.22	1.22	73.0	321.7
28-Apr-09	09:00	Sunny	294.9	765.9	2.8486	2.8805	0.0319	6300.1	6301.1	1.0	1.22	1.22	1.22	73.3	435.1
29-Apr-09	09:00	Sunny	294.1	765.8	2.8069	2.8265	0.0196	6301.1	6302.1	1.0	1.22	1.22	1.22	73.4	267.0
														Min	53.5
														Max	456.0
														Average	301.7

Station AM2a (Works Area near Po Hong Centre)

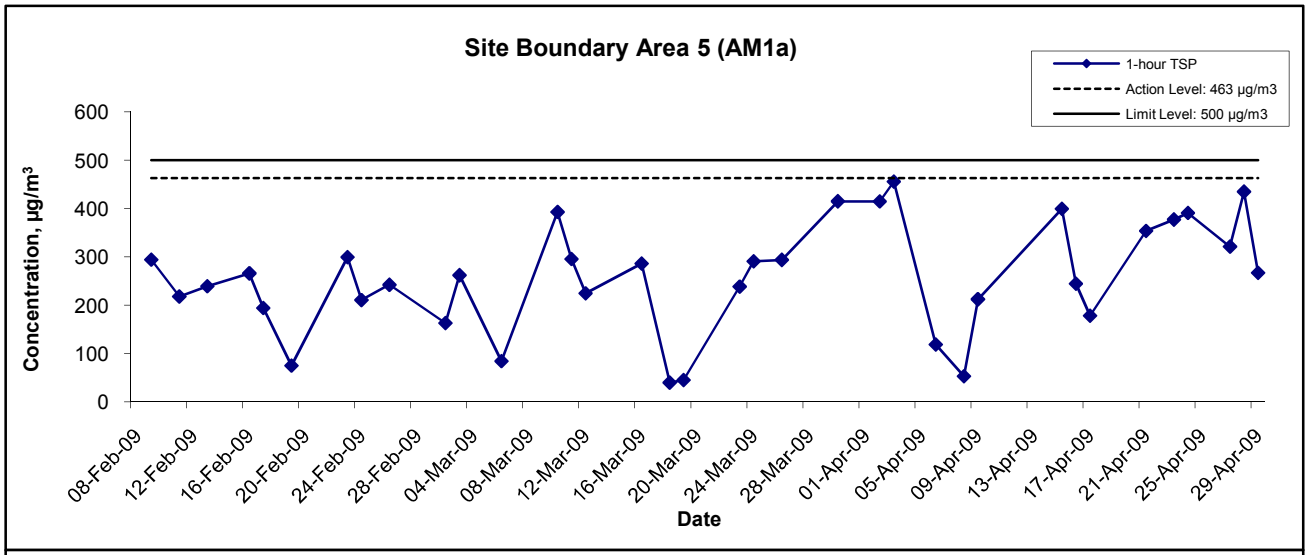
Date	Sampling Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure (Pa)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
					Initial	Final		Initial	Final		Initial	Final			
2-Apr-09	09:00	Cloudy	290.9	769.3	2.8602	2.8808	0.0206	19196.0	19197.0	1.0	1.22	1.22	1.22	73.4	280.8
3-Apr-09	15:30	Cloudy	291.7	765.2	2.8282	2.8412	0.0130	19221.0	19222.0	1.0	1.22	1.22	1.22	73.1	177.8
6-Apr-09	09:00	Cloudy	290.0	765.9	2.8610	2.8717	0.0107	19222.0	19223.0	1.0	1.22	1.22	1.22	73.3	145.9
8-Apr-09	11:00	Sunny	293.1	766.1	4.2179	4.2227	0.0048	19223.0	19224.0	1.0	1.22	1.22	1.22	73.0	65.8
9-Apr-09	15:00	Sunny	294.5	766.5	2.8396	2.8533	0.0137	19248.0	19249.0	1.0	1.21	1.21	1.21	72.9	188.0
15-Apr-09	15:15	Sunny	297.1	759.4	2.8235	2.8356	0.0121	19273.0	19274.0	1.0	1.21	1.20	1.21	72.3	167.3
16-Apr-09	09:00	Cloudy	296.5	756.9	2.8414	2.8614	0.0200	19274.0	19275.0	1.0	1.20	1.20	1.20	72.3	276.8
17-Apr-09	09:00	Cloudy	297.3	758.7	2.8182	2.8408	0.0226	19275.0	19276.0	1.0	1.22	1.22	1.22	73.3	308.1
21-Apr-09	15:00	Sunny	300.2	756.8	2.8058	2.8210	0.0152	19300.0	19301.0	1.0	1.22	1.22	1.22	73.0	208.4
23-Apr-09	09:00	Cloudy	295.2	761.8	2.8199	2.8381	0.0182	19301.0	19302.0	1.0	1.23	1.23	1.23	73.7	246.9
24-Apr-09	09:00	Cloudy	296.4	759.6	2.8204	2.8323	0.0119	19302.0	19303.0	1.0	1.23	1.22	1.22	73.5	161.9
27-Apr-09	16:00	Cloudy	296.7	763.2	2.8468	2.8527	0.0059	19327.0	19328.0	1.0	1.23	1.23	1.23	73.6	80.2
28-Apr-09	09:00	Sunny	294.9	765.9	2.8360	2.8506	0.0146	19328.0	19329.0	1.0	1.23	1.23	1.23	73.9	197.5
29-Apr-09	09:00	Sunny	294.1	765.8	2.8059	2.8156	0.0097	19329.0	19330.0	1.0	1.23	1.23	1.23	74.0	131.1
														Min	65.8
														Max	308.1
														Average	188.3

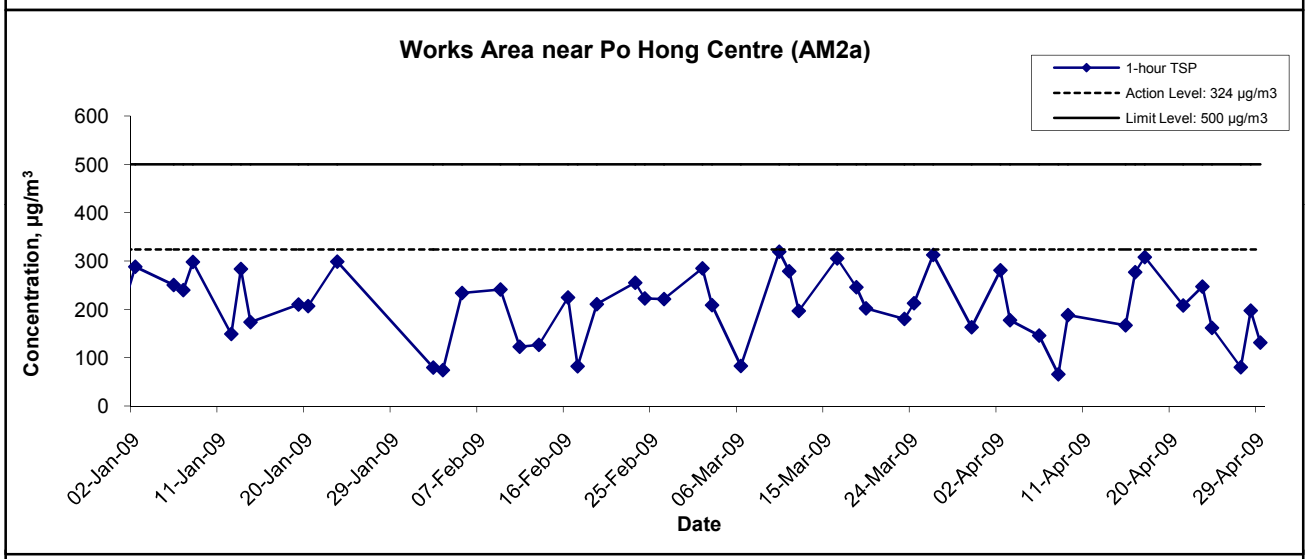
Appendix D - 1-hour TSP Monitoring Results

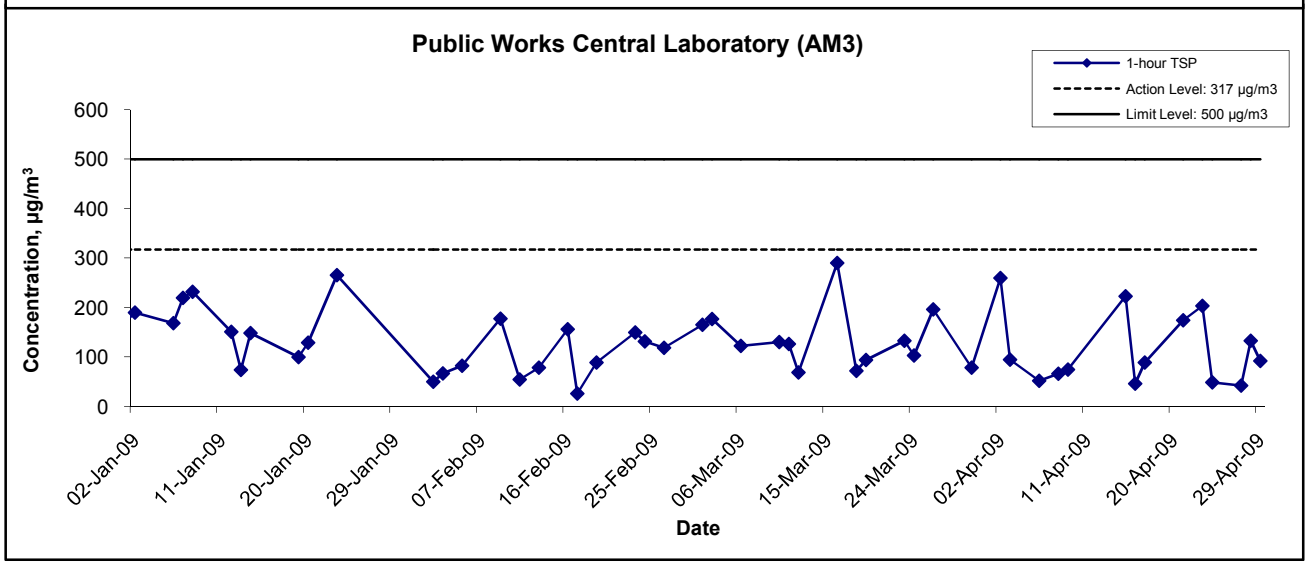
Station AM3 (Public Works Central Laboratory)

Date	Sampling Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure (Pa)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
					Initial	Final		Initial	Final		Initial	Final			
2-Apr-09	09:00	Cloudy	290.9	769.3	2.8255	2.8445	0.0190	2569.2	2570.2	1.0	1.22	1.22	1.22	73.1	259.9
3-Apr-09	16:00	Cloudy	291.7	765.2	2.8177	2.8246	0.0069	2594.2	2595.2	1.0	1.21	1.21	1.21	72.8	94.8
6-Apr-09	09:00	Cloudy	290.0	765.9	2.8445	2.8483	0.0038	2595.2	2596.2	1.0	1.22	1.22	1.22	73.0	52.0
8-Apr-09	09:00	Sunny	292.9	766.3	4.1993	4.2041	0.0048	2596.2	2597.2	1.0	1.21	1.21	1.21	72.7	66.0
9-Apr-09	14:00	Sunny	295.6	765.1	2.8596	2.8650	0.0054	2621.2	2622.2	1.0	1.21	1.21	1.21	72.3	74.7
15-Apr-09	15:00	Sunny	297.1	759.4	2.8103	2.8263	0.0160	2646.2	2647.2	1.0	1.20	1.20	1.20	71.9	222.6
16-Apr-09	09:00	Cloudy	296.5	756.9	2.8308	2.8341	0.0033	2647.2	2648.2	1.0	1.20	1.20	1.20	71.8	45.9
17-Apr-09	09:00	Cloudy	297.3	758.7	2.7917	2.7982	0.0065	2648.2	2649.2	1.0	1.22	1.22	1.22	73.4	88.6
21-Apr-09	16:00	Sunny	300.5	756.6	2.8563	2.8690	0.0127	2673.2	2674.2	1.0	1.22	1.22	1.22	72.9	174.2
23-Apr-09	09:00	Cloudy	295.2	761.8	2.8206	2.8356	0.0150	2674.2	2675.2	1.0	1.23	1.23	1.23	73.7	203.5
24-Apr-09	09:00	Cloudy	296.4	759.6	2.8505	2.8541	0.0036	2675.2	2676.2	1.0	1.23	1.22	1.22	73.5	49.0
27-Apr-09	15:30	Cloudy	296.5	763.4	2.8392	2.8423	0.0031	2700.2	2701.2	1.0	1.23	1.23	1.23	73.6	42.1
28-Apr-09	09:00	Sunny	294.9	765.9	2.8400	2.8498	0.0098	2701.2	2702.2	1.0	1.23	1.23	1.23	73.9	132.6
29-Apr-09	09:00	Sunny	294.1	765.8	2.8063	2.8131	0.0068	2702.2	2703.2	1.0	1.23	1.23	1.23	74.0	91.9
														Min	42.1
														Max	259.9
														Average	114.1

1-hr TSP Concentration Levels







Title: Contract No. KL/2008/02 Kai Tak Development – Decommissioning and Decontamination Works at the South Apron of the Former Kai Tak Airport Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S	Project No.: MA8017	CINOTECH
	Date: Apr 09	Appendix: D	

APPENDIX E
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION AND WIND DATA

Appendix E - 24-hour TSP Monitoring Results

Station AM1a (Site Boundary Area 5)

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure (Pa)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
2-Apr-09	Cloudy	291.7	768.7	2.8717	3.0374	0.1657	6169.1	6193.1	24.0	1.22	1.22	1.22	1756.2	94.4
8-Apr-09	Sunny	293.1	766.1	2.8546	3.0483	0.1937	6196.1	6220.1	24.0	1.23	1.23	1.23	1764.6	109.8
14-Apr-09	Sunny	296.9	766.9	2.8630	2.9353	0.0723	6221.1	6245.1	24.0	1.22	1.22	1.22	1755.5	41.2
20-Apr-09	Sunny	299.9	755.4	2.8530	3.0520	0.1990	6248.1	6272.1	24.0	1.21	1.21	1.21	1736.3	114.6
25-Apr-09	Cloudy	296.3	760.7	2.8490	3.0456	0.1966	6275.1	6299.1	24.0	1.22	1.22	1.22	1750.9	112.3
30-Apr-09	Sunny	295.9	765.4	2.8218	2.9190	0.0972	6302.1	6326.1	24.0	1.22	1.22	1.22	1756.6	55.3
													Min	41.2
													Max	114.6
													Average	87.9

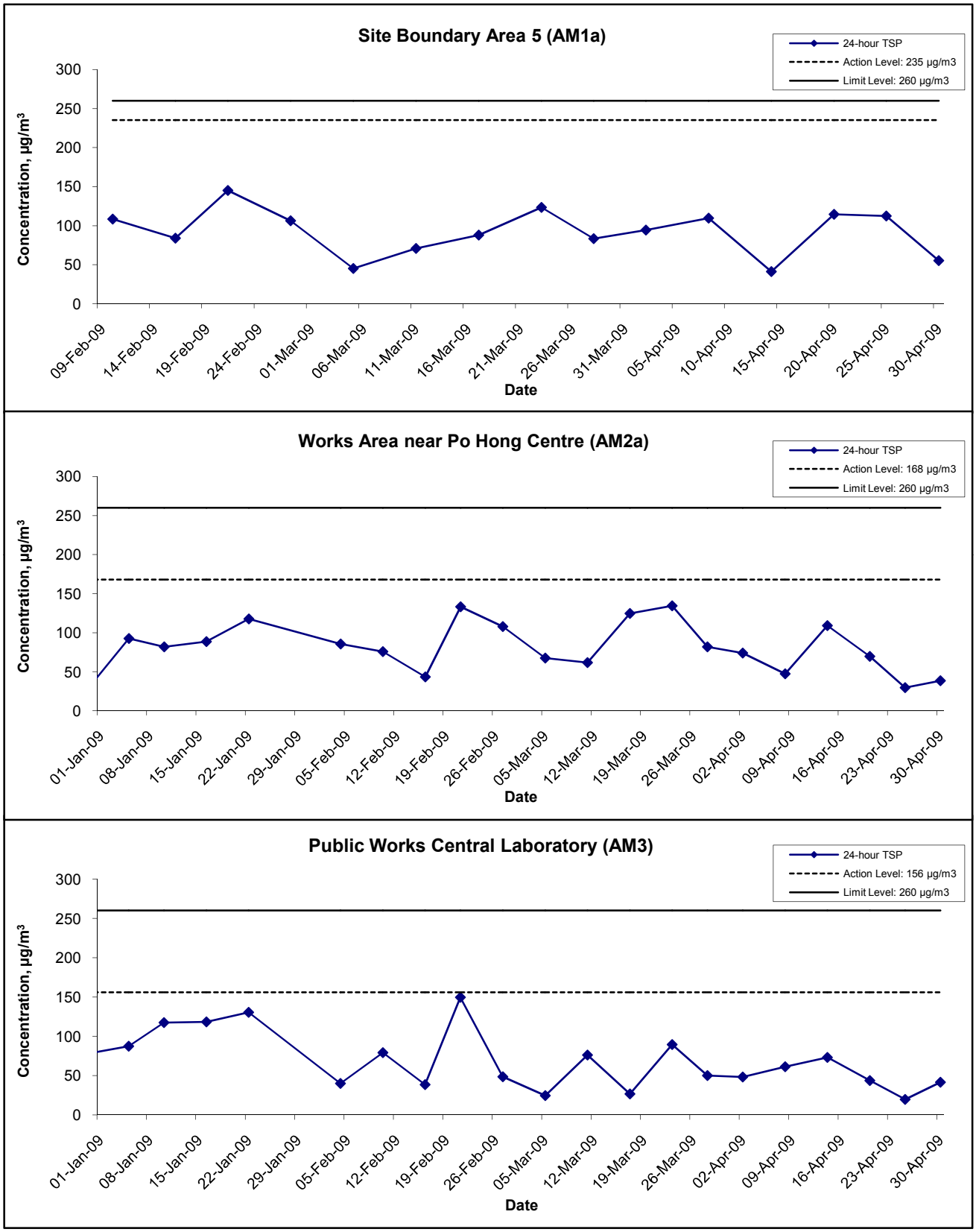
Station AM2a (Works Area near Po Hong Centre)

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure (Pa)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
2-Apr-09	Cloudy	291.7	768.7	2.8777	3.0076	0.1299	19197.0	19221.0	24.0	1.22	1.22	1.22	1758.3	73.9
8-Apr-09	Sunny	293.1	766.1	4.2052	4.2880	0.0828	19224.0	19248.0	24.0	1.22	1.22	1.22	1752.1	47.3
14-Apr-09	Sunny	296.9	766.9	2.8218	3.0116	0.1898	19249.0	19273.0	24.0	1.21	1.21	1.21	1743.0	108.9
20-Apr-09	Sunny	299.9	755.4	2.8134	2.9353	0.1219	19276.0	19300.0	24.0	1.22	1.22	1.22	1750.2	69.6
25-Apr-09	Cloudy	296.3	760.7	2.8415	2.8940	0.0525	19303.0	19327.0	24.0	1.23	1.23	1.23	1765.1	29.7
30-Apr-09	Cloudy	295.9	765.4	2.8520	2.9203	0.0683	19330.0	19354.0	24.0	1.23	1.23	1.23	1770.9	38.6
													Min	29.7
													Max	108.9
													Average	61.3

Station AM3 (Public Works Central Laboratory)

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure (Pa)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
2-Apr-09	Cloudy	291.7	768.7	2.8231	2.9076	0.0845	2570.2	2594.2	24.0	1.22	1.22	1.22	1751.3	48.2
8-Apr-09	Sunny	293.3	765.9	2.7870	2.8940	0.1070	2597.2	2621.2	24.0	1.21	1.21	1.21	1743.4	61.4
14-Apr-09	Sunny	296.9	766.9	2.8242	2.9510	0.1268	2622.2	2646.2	24.0	1.20	1.20	1.20	1733.8	73.1
20-Apr-09	Sunny	299.9	755.4	2.8510	2.9274	0.0764	2649.2	2673.2	24.0	1.22	1.22	1.22	1750.3	43.6
25-Apr-09	Cloudy	296.3	760.7	2.8296	2.8648	0.0352	2676.2	2700.2	24.0	1.23	1.23	1.23	1765.1	19.9
30-Apr-09	Sunny	295.9	765.4	2.8488	2.9225	0.0737	2703.0	2727.0	24.0	1.23	1.23	1.23	1770.9	41.6
													Min	19.9
													Max	73.1
													Average	48.0

24-hr TSP Concentration Levels



Title: Contract No. KL/2008/02 Kai Tak Development – Decommissioning and Decontamination Works at the South Apron of the Former Kai Tak Airport Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Apr 09	Project No.: MA8017 Appendix: E	CINOTECH

APPENDIX F
WIND DATA

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
2-Apr-2009	00:00	3.3	NE
2-Apr-2009	01:00	2.7	NE
2-Apr-2009	02:00	2.7	E
2-Apr-2009	03:00	1.6	E
2-Apr-2009	04:00	1.6	E
2-Apr-2009	05:00	1.0	E
2-Apr-2009	06:00	0.9	SE
2-Apr-2009	07:00	1.2	SE
2-Apr-2009	08:00	0.9	ESE
2-Apr-2009	09:00	0.6	ESE
2-Apr-2009	10:00	0.9	ESE
2-Apr-2009	11:00	1.8	SE
2-Apr-2009	12:00	1.8	SSE
2-Apr-2009	13:00	1.3	SSE
2-Apr-2009	14:00	1.6	ESE
2-Apr-2009	15:00	1.3	E
2-Apr-2009	16:00	1.6	E
2-Apr-2009	17:00	2.4	ENE
2-Apr-2009	18:00	1.6	ENE
2-Apr-2009	19:00	1.5	E
2-Apr-2009	20:00	1.2	E
2-Apr-2009	21:00	1.8	E
2-Apr-2009	22:00	1.6	ENE
2-Apr-2009	23:00	1.2	ENE
3-Apr-2009	00:00	2.2	ENE
3-Apr-2009	01:00	3.0	ENE
3-Apr-2009	02:00	2.5	ENE
3-Apr-2009	03:00	1.9	ENE
3-Apr-2009	04:00	1.9	ENE
3-Apr-2009	05:00	1.8	NE
3-Apr-2009	06:00	1.5	ENE
3-Apr-2009	07:00	3.3	NE
3-Apr-2009	08:00	3.9	ESE
3-Apr-2009	09:00	2.7	ENE
3-Apr-2009	10:00	1.9	ENE
3-Apr-2009	11:00	3.9	ESE
3-Apr-2009	12:00	4.0	ESE
3-Apr-2009	13:00	2.7	SE
3-Apr-2009	14:00	4.8	SE
3-Apr-2009	15:00	4.5	SSE
3-Apr-2009	16:00	3.6	SSE
3-Apr-2009	17:00	2.2	SE
3-Apr-2009	18:00	3.0	ENE
3-Apr-2009	19:00	3.1	SE
3-Apr-2009	20:00	2.7	SE
3-Apr-2009	21:00	3.4	N
3-Apr-2009	22:00	3.5	ENE
3-Apr-2009	23:00	2.7	ENE
6-Apr-2009	00:00	4.2	SE
6-Apr-2009	01:00	4.0	E
6-Apr-2009	02:00	2.7	E
6-Apr-2009	03:00	3.1	ENE
6-Apr-2009	04:00	2.8	NE
6-Apr-2009	05:00	1.8	N

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
6-Apr-2009	06:00	1.5	NE
6-Apr-2009	07:00	1.0	NE
6-Apr-2009	08:00	1.3	NE
6-Apr-2009	09:00	1.9	ENE
6-Apr-2009	10:00	2.1	ENE
6-Apr-2009	11:00	2.4	ENE
6-Apr-2009	12:00	2.1	NE
6-Apr-2009	13:00	3.0	NE
6-Apr-2009	14:00	1.3	NE
6-Apr-2009	15:00	1.5	ENE
6-Apr-2009	16:00	3.1	NE
6-Apr-2009	17:00	2.1	ENE
6-Apr-2009	18:00	2.5	ENE
6-Apr-2009	19:00	2.4	ENE
6-Apr-2009	20:00	2.1	ENE
6-Apr-2009	21:00	1.3	ENE
6-Apr-2009	22:00	1.3	NE
6-Apr-2009	23:00	1.0	ENE
8-Apr-2009	00:00	1.2	ENE
8-Apr-2009	01:00	1.8	ESE
8-Apr-2009	02:00	1.5	ENE
8-Apr-2009	03:00	0.9	NE
8-Apr-2009	04:00	0.7	NE
8-Apr-2009	05:00	1.0	NE
8-Apr-2009	06:00	1.0	N
8-Apr-2009	07:00	1.0	NE
8-Apr-2009	08:00	1.5	ENE
8-Apr-2009	09:00	1.8	ENE
8-Apr-2009	10:00	2.4	NE
8-Apr-2009	11:00	2.8	NE
8-Apr-2009	12:00	2.5	NE
8-Apr-2009	13:00	2.5	NE
8-Apr-2009	14:00	2.8	ENE
8-Apr-2009	15:00	3.7	ENE
8-Apr-2009	16:00	1.6	ENE
8-Apr-2009	17:00	1.8	NE
8-Apr-2009	18:00	2.4	ENE
8-Apr-2009	19:00	2.4	ENE
8-Apr-2009	20:00	1.6	NE
8-Apr-2009	21:00	1.9	ENE
8-Apr-2009	22:00	1.5	NE
8-Apr-2009	23:00	1.6	NE
9-Apr-2009	00:00	1.9	ENE
9-Apr-2009	01:00	2.4	NE
9-Apr-2009	02:00	1.9	NE
9-Apr-2009	03:00	1.6	NE
9-Apr-2009	04:00	1.0	NNE
9-Apr-2009	05:00	1.5	ENE
9-Apr-2009	06:00	0.7	ENE
9-Apr-2009	07:00	1.2	ENE
9-Apr-2009	08:00	2.2	NE
9-Apr-2009	09:00	3.2	NE
9-Apr-2009	10:00	3.1	ENE
9-Apr-2009	11:00	2.7	ENE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
9-Apr-2009	12:00	3.9	NNE
9-Apr-2009	13:00	3.0	NNE
9-Apr-2009	14:00	1.6	NE
9-Apr-2009	15:00	2.7	NE
9-Apr-2009	16:00	3.0	NE
9-Apr-2009	17:00	3.1	ENE
9-Apr-2009	18:00	1.9	NE
9-Apr-2009	19:00	1.8	NE
9-Apr-2009	20:00	1.0	NE
9-Apr-2009	21:00	1.2	NE
9-Apr-2009	22:00	0.9	ENE
9-Apr-2009	23:00	1.5	ENE
14-Apr-2009	00:00	1.2	ENE
14-Apr-2009	01:00	0.7	ENE
14-Apr-2009	02:00	1.0	E
14-Apr-2009	03:00	1.5	E
14-Apr-2009	04:00	0.4	ENE
14-Apr-2009	05:00	0.9	ENE
14-Apr-2009	06:00	0.3	ENE
14-Apr-2009	07:00	0.4	ENE
14-Apr-2009	08:00	1.6	ENE
14-Apr-2009	09:00	1.9	E
14-Apr-2009	10:00	1.6	E
14-Apr-2009	11:00	2.4	E
14-Apr-2009	12:00	2.1	ENE
14-Apr-2009	13:00	2.2	NE
14-Apr-2009	14:00	2.7	NE
14-Apr-2009	15:00	1.8	ENE
14-Apr-2009	16:00	1.3	NE
14-Apr-2009	17:00	1.3	ENE
14-Apr-2009	18:00	1.3	NE
14-Apr-2009	19:00	1.5	ENE
14-Apr-2009	20:00	1.5	ENE
14-Apr-2009	21:00	1.3	ENE
14-Apr-2009	22:00	1.5	ENE
14-Apr-2009	23:00	1.3	NNE
15-Apr-2009	00:00	1.3	NNE
15-Apr-2009	01:00	0.6	NNE
15-Apr-2009	02:00	0.9	NNE
15-Apr-2009	03:00	0.7	ENE
15-Apr-2009	04:00	1.5	ENE
15-Apr-2009	05:00	1.6	ENE
15-Apr-2009	06:00	1.3	E
15-Apr-2009	07:00	1.6	E
15-Apr-2009	08:00	1.6	E
15-Apr-2009	09:00	1.5	ENE
15-Apr-2009	10:00	1.2	ENE
15-Apr-2009	11:00	1.6	ENE
15-Apr-2009	12:00	1.8	NE
15-Apr-2009	13:00	1.6	NE
15-Apr-2009	14:00	1.5	ENE
15-Apr-2009	15:00	1.8	ENE
15-Apr-2009	16:00	2.2	ENE
15-Apr-2009	17:00	1.3	ENE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
15-Apr-2009	18:00	0.9	NE
15-Apr-2009	19:00	0.7	ENE
15-Apr-2009	20:00	0.6	ENE
15-Apr-2009	21:00	0.7	NE
15-Apr-2009	22:00	0.6	ENE
15-Apr-2009	23:00	0.1	NE
16-Apr-2009	00:00	0.3	ENE
16-Apr-2009	01:00	1.0	ENE
16-Apr-2009	02:00	1.0	ENE
16-Apr-2009	03:00	1.6	ENE
16-Apr-2009	04:00	1.5	ENE
16-Apr-2009	05:00	1.2	ENE
16-Apr-2009	06:00	0.3	ENE
16-Apr-2009	07:00	0.9	ENE
16-Apr-2009	08:00	1.0	ENE
16-Apr-2009	09:00	1.6	E
16-Apr-2009	10:00	2.4	E
16-Apr-2009	11:00	1.9	E
16-Apr-2009	12:00	2.5	E
16-Apr-2009	13:00	2.2	E
16-Apr-2009	14:00	2.1	NNE
16-Apr-2009	15:00	2.2	ENE
16-Apr-2009	16:00	1.8	ENE
16-Apr-2009	17:00	1.9	ENE
16-Apr-2009	18:00	1.3	ENE
16-Apr-2009	19:00	1.8	ENE
16-Apr-2009	20:00	1.6	ENE
16-Apr-2009	21:00	1.8	ENE
16-Apr-2009	22:00	1.3	ENE
16-Apr-2009	23:00	1.9	ENE
17-Apr-2009	00:00	1.5	ENE
17-Apr-2009	01:00	1.5	NE
17-Apr-2009	02:00	1	ENE
17-Apr-2009	03:00	1	ENE
17-Apr-2009	04:00	1.0	ENE
17-Apr-2009	05:00	2	ENE
17-Apr-2009	06:00	1.5	ENE
17-Apr-2009	07:00	1.3	NE
17-Apr-2009	08:00	2	NE
17-Apr-2009	09:00	1.8	NE
17-Apr-2009	10:00	3	NE
17-Apr-2009	11:00	3	ENE
17-Apr-2009	12:00	3.4	NE
17-Apr-2009	13:00	3.1	ENE
17-Apr-2009	14:00	2.7	NE
17-Apr-2009	15:00	3.0	NE
17-Apr-2009	16:00	2.8	NE
17-Apr-2009	17:00	2.2	NE
17-Apr-2009	18:00	1.8	NE
17-Apr-2009	19:00	1.9	NE
17-Apr-2009	20:00	2.2	ENE
17-Apr-2009	21:00	2.7	NE
17-Apr-2009	22:00	2.1	NE
17-Apr-2009	23:00	1.8	ENE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
20-Apr-2009	00:00	0.1	SW
20-Apr-2009	01:00	0.4	W
20-Apr-2009	02:00	0.3	SSW
20-Apr-2009	03:00	0.4	SSW
20-Apr-2009	04:00	0.1	SSW
20-Apr-2009	05:00	0.4	SSW
20-Apr-2009	06:00	0.4	WSW
20-Apr-2009	07:00	0.7	SW
20-Apr-2009	08:00	0.9	WSW
20-Apr-2009	09:00	2.1	SSW
20-Apr-2009	10:00	2.4	SSW
20-Apr-2009	11:00	3.3	SSW
20-Apr-2009	12:00	2.5	SSW
20-Apr-2009	13:00	2.8	SSW
20-Apr-2009	14:00	1.9	ENE
20-Apr-2009	15:00	1.3	WSW
20-Apr-2009	16:00	1.3	ENE
20-Apr-2009	17:00	1.2	WSW
20-Apr-2009	18:00	0.9	NE
20-Apr-2009	19:00	0.7	SW
20-Apr-2009	20:00	0.6	SW
20-Apr-2009	21:00	0.3	SW
20-Apr-2009	22:00	0.1	NE
20-Apr-2009	23:00	0.2	E
21-Apr-2009	00:00	0.3	ENE
21-Apr-2009	01:00	0.4	N
21-Apr-2009	02:00	0.1	NE
21-Apr-2009	03:00	0.4	ENE
21-Apr-2009	04:00	0.1	ENE
21-Apr-2009	05:00	0.3	ENE
21-Apr-2009	06:00	0.1	ENE
21-Apr-2009	07:00	0.3	ENE
21-Apr-2009	08:00	0.4	ENE
21-Apr-2009	09:00	0.6	NE
21-Apr-2009	10:00	1.3	ENE
21-Apr-2009	11:00	1.2	NE
21-Apr-2009	12:00	1.9	N
21-Apr-2009	13:00	1.9	N
21-Apr-2009	14:00	1.3	NE
21-Apr-2009	15:00	1.3	NE
21-Apr-2009	16:00	1.9	NE
21-Apr-2009	17:00	1.8	N
21-Apr-2009	18:00	0.9	ENE
21-Apr-2009	19:00	0.4	ENE
21-Apr-2009	20:00	0.3	N
21-Apr-2009	21:00	0.3	NNE
21-Apr-2009	22:00	0.4	NNE
21-Apr-2009	23:00	0.3	N
23-Apr-2009	00:00	1	NE
23-Apr-2009	01:00	1	N
23-Apr-2009	02:00	1	NNE
23-Apr-2009	03:00	0	NNE
23-Apr-2009	04:00	0	NE
23-Apr-2009	05:00	0	ENE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
23-Apr-2009	06:00	0	ENE
23-Apr-2009	07:00	0	ENE
23-Apr-2009	08:00	1.2	E
23-Apr-2009	09:00	1.6	ENE
23-Apr-2009	10:00	2.7	NE
23-Apr-2009	11:00	3.3	NNE
23-Apr-2009	12:00	3.3	NNE
23-Apr-2009	13:00	4.0	NNE
23-Apr-2009	14:00	2.4	NNE
23-Apr-2009	15:00	3.9	NNE
23-Apr-2009	16:00	3.1	NNE
23-Apr-2009	17:00	2.8	N
23-Apr-2009	18:00	2.4	NNE
23-Apr-2009	19:00	2.1	NNE
23-Apr-2009	20:00	2.5	NNE
23-Apr-2009	21:00	3.0	NNE
23-Apr-2009	22:00	3.7	NNE
23-Apr-2009	23:00	3.7	NNE
24-Apr-2009	00:00	3.4	NNE
24-Apr-2009	01:00	2.5	NNE
24-Apr-2009	02:00	2.4	N
24-Apr-2009	03:00	1.6	NNE
24-Apr-2009	04:00	1.6	N
24-Apr-2009	05:00	1.9	N
24-Apr-2009	06:00	1.5	N
24-Apr-2009	07:00	1.9	NNE
24-Apr-2009	08:00	2.5	NNE
24-Apr-2009	09:00	3.1	NNE
24-Apr-2009	10:00	4.5	NNE
24-Apr-2009	11:00	4.6	NNE
24-Apr-2009	12:00	2.5	NNE
24-Apr-2009	13:00	2.8	NNE
24-Apr-2009	14:00	2.7	NNE
24-Apr-2009	15:00	2.5	NNE
24-Apr-2009	16:00	2.4	NNE
24-Apr-2009	17:00	2.4	NNE
24-Apr-2009	18:00	3.9	NNE
24-Apr-2009	19:00	3.9	NE
24-Apr-2009	20:00	3.6	ENE
24-Apr-2009	21:00	2.8	ENE
24-Apr-2009	22:00	3.1	NE
24-Apr-2009	23:00	3.0	NE
25-Apr-2009	00:00	3.4	NE
25-Apr-2009	01:00	3.1	NE
25-Apr-2009	02:00	3.3	N
25-Apr-2009	03:00	2.7	NE
25-Apr-2009	04:00	2.8	NE
25-Apr-2009	05:00	2.8	N
25-Apr-2009	06:00	2.2	NE
25-Apr-2009	07:00	2.2	N
25-Apr-2009	08:00	2.1	NE
25-Apr-2009	09:00	3.1	NNE
25-Apr-2009	10:00	2.7	NNE
25-Apr-2009	11:00	2.5	NNE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
25-Apr-2009	12:00	2.5	NNE
25-Apr-2009	13:00	2.2	NE
25-Apr-2009	14:00	1.8	NNE
25-Apr-2009	15:00	1.6	NE
25-Apr-2009	16:00	2.2	NE
25-Apr-2009	17:00	1.2	ENE
25-Apr-2009	18:00	1.3	ENE
25-Apr-2009	19:00	1.3	NE
25-Apr-2009	20:00	1.2	ENE
25-Apr-2009	21:00	1.6	ENE
25-Apr-2009	22:00	0.9	ENE
25-Apr-2009	23:00	1.3	N
27-Apr-2009	00:00	0.1	NE
27-Apr-2009	01:00	0.3	NE
27-Apr-2009	02:00	0.3	NE
27-Apr-2009	03:00	0.3	NE
27-Apr-2009	04:00	0.3	NE
27-Apr-2009	05:00	0.6	NE
27-Apr-2009	06:00	0.3	NNE
27-Apr-2009	07:00	0.6	NNE
27-Apr-2009	08:00	0.7	NE
27-Apr-2009	09:00	0.7	ENE
27-Apr-2009	10:00	0.7	NE
27-Apr-2009	11:00	1.2	NNE
27-Apr-2009	12:00	1.9	NNE
27-Apr-2009	13:00	2.8	NNE
27-Apr-2009	14:00	2.8	NE
27-Apr-2009	15:00	3.1	NE
27-Apr-2009	16:00	2.4	NNE
27-Apr-2009	17:00	2.2	N
27-Apr-2009	18:00	1.8	NNE
27-Apr-2009	19:00	1.8	N
27-Apr-2009	20:00	1.3	NNE
27-Apr-2009	21:00	4.0	NNE
27-Apr-2009	22:00	0.4	NNE
27-Apr-2009	23:00	1.0	N
28-Apr-2009	00:00	0.9	NNE
28-Apr-2009	01:00	1.0	NNE
28-Apr-2009	02:00	1.2	NNE
28-Apr-2009	03:00	0.9	NNE
28-Apr-2009	04:00	0.6	NE
28-Apr-2009	05:00	0.1	NE
28-Apr-2009	06:00	0.4	NE
28-Apr-2009	07:00	0.7	NNE
28-Apr-2009	08:00	1.9	NE
28-Apr-2009	09:00	1.8	NNE
28-Apr-2009	10:00	1.9	NE
28-Apr-2009	11:00	2.1	NNE
28-Apr-2009	12:00	2.2	NNE
28-Apr-2009	13:00	2.1	NNE
28-Apr-2009	14:00	1.8	NNE
28-Apr-2009	15:00	1.2	NNE
28-Apr-2009	16:00	0.7	N
28-Apr-2009	17:00	0.9	NE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
28-Apr-2009	18:00	0.7	NNE
28-Apr-2009	19:00	0.7	NNE
28-Apr-2009	20:00	0.7	NNE
28-Apr-2009	21:00	1.5	NE
28-Apr-2009	22:00	1.8	NNE
28-Apr-2009	23:00	1.5	N
29-Apr-2009	00:00	1.2	NE
29-Apr-2009	01:00	0.7	NNE
29-Apr-2009	02:00	0.9	NE
29-Apr-2009	03:00	0.9	NE
29-Apr-2009	04:00	0.4	NE
29-Apr-2009	05:00	0.7	E
29-Apr-2009	06:00	0.6	ENE
29-Apr-2009	07:00	0.9	SE
29-Apr-2009	08:00	1.6	ESE
29-Apr-2009	09:00	1.6	ESE
29-Apr-2009	10:00	2.4	ESE
29-Apr-2009	11:00	2.8	NNE
29-Apr-2009	12:00	2.7	NE
29-Apr-2009	13:00	2.7	ESE
29-Apr-2009	14:00	2.2	E
29-Apr-2009	15:00	2.1	ENE
29-Apr-2009	16:00	1.8	ENE
29-Apr-2009	17:00	1.6	ENE
29-Apr-2009	18:00	1.5	ENE
29-Apr-2009	19:00	0.4	ENE
29-Apr-2009	20:00	0.4	ENE
29-Apr-2009	21:00	0.3	NE
29-Apr-2009	22:00	0.6	NE
29-Apr-2009	23:00	0.4	NE
30-Apr-2009	00:00	0.4	NE
30-Apr-2009	01:00	0.4	NNE
30-Apr-2009	02:00	0.7	NNE
30-Apr-2009	03:00	0.6	NNE
30-Apr-2009	04:00	1.9	NNE
30-Apr-2009	05:00	1.6	NNE
30-Apr-2009	06:00	1.8	NNE
30-Apr-2009	07:00	1.9	NNE
30-Apr-2009	08:00	1.9	NNE
30-Apr-2009	09:00	2.2	NNE
30-Apr-2009	10:00	2.2	NNE
30-Apr-2009	11:00	2.5	NNE
30-Apr-2009	12:00	3.3	NE
30-Apr-2009	13:00	3.3	NE
30-Apr-2009	14:00	3.0	NE
30-Apr-2009	15:00	2.1	NE
30-Apr-2009	16:00	2.1	NE
30-Apr-2009	17:00	1.6	NNE
30-Apr-2009	18:00	1.6	NNE
30-Apr-2009	19:00	1.5	NE
30-Apr-2009	20:00	1.3	NE
30-Apr-2009	21:00	1.5	NNE
30-Apr-2009	22:00	1.5	NE
30-Apr-2009	23:00	1.5	NNE

APPENDIX G
SITE AUDIT SUMMARY

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	90403
Date	3 April 2009
Time	15:15-16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	B. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Land Contamination	
	• No environmental deficiency was identified during the site inspection.	
	D. Construction Noise Impact	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
90403-O01	• C&D waste was observed accumulated at Area5. The Contractor was reminded to clear them as soon as possible.	E4ii.
90403-O02	• Oil leakage was observed from the plant equipment at inside the hangar. The Contractor was reminded to clear them and dispose as chemical waste.	E10
	F. Reminders	
90403-R03	• Keep clear the silt and sediment at the edge of Biopile areas 1 and 2 and near the underground water tank.	E7
	G. Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	H. Others	
	• Follow-up on previous audit (Ref. No.:90327), follow-up action is needed for the items (90327-R01).	

	Name	Signature	Date
Recorded by	Ivy Tam		3 April 2009
Checked by	Dr. Priscilla Choy		3 April 2009

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	90409
Date	9 April 2009
Time	14:30-15:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality • No environmental deficiency was identified during the site inspection. **B. Air Quality** • No environmental deficiency was identified during the site inspection. ***C. Land Contamination*** • No environmental deficiency was identified during the site inspection. ***D. Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***E. Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***F. Reminders***	
90409-R01	• Keep clear the silt and sediment at the edge of Biopile areas 1 and 2.	E7
90409-R02	• Properly maintain the tarpaulin sheet at the solidification facility.	A21i.
	G. Permit / Licenses • No environmental deficiency was identified during the site inspection. ***H. Others*** • Follow-up on previous audit (Ref. No.:90403), follow-up action is needed for the items (90403-R03).	

	Name	Signature	Date
Recorded by	Ivy Tam	Ivy	9 April 2009
Checked by	Dr. Priscilla Choy		9 April 2009

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	90416
Date	16 April 2009
Time	15:00-16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality • No environmental deficiency was identified during the site inspection. **B. Air Quality** • No environmental deficiency was identified during the site inspection. ***C. Land Contamination*** • No environmental deficiency was identified during the site inspection. ***D. Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***E. Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***F. Reminders***	
90416-R01	• Keep clear the silt and sediment at the edge of Biopile areas 1 and 2.	E7
90416-R02	• Properly maintain the tarpaulin sheet at the solidification facility and LDPE at Biopile areas.	A21i. and C4i.
	G. Permit / Licenses • No environmental deficiency was identified during the site inspection. ***H. Others*** • Follow-up on previous audit (Ref. No.:90409), follow-up action is needed for the items (90409-R01 and R02).	

	Name	Signature	Date
Recorded by	Ivy Tam		16 April 2009
Checked by	Dr. Priscilla Choy		16 April 2009

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	90423
Date	23 April 2009
Time	15:00-15:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
90423-R01	***A. Water Quality*** • No environmental deficiency was identified during the site inspection. **B. Air Quality** • No environmental deficiency was identified during the site inspection. ***C. Land Contamination*** • No environmental deficiency was identified during the site inspection. ***D. Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***E. Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***F. Reminders*** • Keep clear the silt and sediment at the edge of Biopile areas 1 and 2. ***G. Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***H. Others*** • Follow-up on previous audit (Ref. No.:90416), follow-up action is needed for the items (90416-R01).	E7

	Name	Signature	Date
Recorded by	Ivy Tam		23 April 2009
Checked by	Dr. Priscilla Choy		23 April 2009

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	90429
Date	29 April 2009
Time	14:00-14:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality • No environmental deficiency was identified during the site inspection. **B. Air Quality** • No environmental deficiency was identified during the site inspection. ***C. Land Contamination*** • No environmental deficiency was identified during the site inspection. ***D. Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***E. Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***F. Reminders*** • No environmental deficiency was identified during the site inspection. ***G. Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***H. Others*** • Follow-up on previous audit (Ref. No.:90423), all environmental deficiencies were improved/rectified by contractor.	

	Name	Signature	Date
Recorded by	Ivy Tam		29 April 2009
Checked by	Dr. Priscilla Choy		29 April 2009

APPENDIX H
ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

Appendix H Environmental Mitigation Implementation Schedule (EMIS)

Appendix H1 Implementation Schedule for Land Contamination Measures

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Excavation and decontamination works							
	• Personal protective equipment (PPE) shall be used by site workers during soil excavation / free product skimming.	Excavation zones / During excavation	Contractor			√	√	^
	• When free product is detected at groundwater surface during excavation, the free product shall be skimmed off, drummed properly, stored in a designated drum storage area with containment and collected by a licensed chemical waste collector for proper disposal.	Excavation zones / During excavation	Contactor			√		^
	• All contaminated soil within the Project area shall be excavated and treated on-site at a centralized decontamination works area located at the northern part of the south apron.	Excavation zones / During excavation	Contractor	√		√	√	^
	• After excavation, confirmation sampling and testing shall be conducted to ensure complete excavation of contaminated soils.	Excavation zones / During excavation	Contractor	√		√		^
	• Contaminated soils shall be sorted and handled with respect of their contamination.	Excavation zones / During excavation	Contractor			√		^

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	• Health and safety plan for excavation shall be followed.	Excavation zones / During excavation	Contractor			√		^
	• The following remediation processes shall be applied for different types of soil contamination: - Biopiling for TPH/VOCs/SVOC contamination; - Solidification/stabilization for metal contamination - Biopiling and solidification/stabilization for TPH and metal contamination	Decontamination works area / During excavation	Contractor	√		√	√	^
	<u>To minimise the potentially adverse environmental impacts arising from the handling of potentially contaminated materials.</u> ***Free Product Recovery*** • The skimmed free product should be drummed properly, stored in a designated drum storage area with containment and collected by a licensed chemical waste collector for proper disposal. The storage of skimmed free product should comply	Excavation zones and / During excavation, soil treatment Excavation zones and decontamination	Contractor Contractor	√		√ √		^

Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
			Des	De	Ex	Tre	
with the requirements in the Waste Disposal (Chemical Waste) (General) Regulation including the type of drum and containment measures.	works area/ During excavation, soil treatment						
Excavation and Transportation							
• Excavation profiles must be properly designed and executed.							^
• Stockpiling site(s) shall be lined with impermeable sheeting and bunded. Stockpiles shall be properly covered by impermeable sheeting to reduce dust emission. If this is not practicable due to frequent usage, regular misting shall be applied. Watering shall be avoided on stockpiles of contaminated soil to minimise contaminated runoff.							^
• Stockpiles of contaminated soil should be properly covered by impermeable sheeting to minimize contaminated runoff from the stockpiles.							^
• Excavation and stockpiling shall be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils.							^
• Supply of suitable clean backfill material is needed after excavation.							^
• Vehicles containing any excavated materials should be suitably covered to limit potential	Excavation zones and decontamination	Contractor	√			√	^

Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
			Des	De	Ex	Tre	
dust emissions or contaminated wastewater run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet conditions.	works area/ During excavation, soil treatment						
• Speed control for the trucks carrying contaminated materials should be enforced;							^
• Vehicle wheel and body washing facilities at the site's exist points shall be established and used.							^
Biopiling							
• To avoid fugitive emissions of dust or any air pollutants from the biopile(s) and to minimise runoff from the stockpiled soils, the stockpiled soils at the biopiles shall be covered by impermeable sheeting such that not longer than 5m of the biopile is exposed to open air.							*
• Impermeable sheeting shall be placed at the bottom of the biopiles and leachate collection sump shall be constructed along the perimeter of the biopiles to prevent leachate from contaminating the underlying soil/groundwater. All leachate generated from the operation of biopiling shall be collected and recycled to the biopile.							^
• The vented air from the biopile(s) shall be connected to blower and carbon adsorption system for treatment before release to the atmosphere. Exhaust air from the blower and carbon adsorption system shall be monitored	Excavation zones and decontamination	Contractor	√			√	^

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	for VOCs regularly.	works area/ During excavation, soil treatment						
	• Spend activated carbon of the carbon adsorption system shall be replaced at appropriate intervals such that the VOC emission rate from the system is acceptable.							^
	• Silencers shall be installed at the biopile blowers to minimise noise impact.			√			√	^
	• Contaminated runoff from biopile(s) shall be prevented by constructing a concrete bund along the perimeter of the biopiles.	Excavation zones and decontamination works area/ During design decommissioning, excavation and soil treatment						^
	Solidification / Stabilization							
	• Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact.							N/A
	• Mixing of contaminated soils and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching.							N/A
	• Runoff from the solidification / stabilization area should be prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area.							N/A

Appendix H2 Implementation Schedule for Waste Management Measures

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Good Site Practices Recommendations for good site practices during the decommissioning works include: • nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in proper waste management and chemical waste handling procedures; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • a recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Work site / During decommissioning	Contractor		√			^ * ^ ^ ^ ^

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: • sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals • segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • to encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force; • any unused chemicals or those with remaining functional capacity shall be recycled; • proper storage and site practices to minimise the potential for damage or contamination of construction materials; and • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	Work site / During design stage, decommissioning, excavation and soil treatment	Contractor	√	√	√	√	^ ^ N/A ^ N/A N/A

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Construction and Demolition Material • C&D material should be sorted on-site into inert C&D material (that is, public fill) and C&D waste. The inert C&D material would require disposal to the designated public fill reception facility. C&D material should be transported from the site by barge wherever possible to reduce environmental impacts associated with road transportation. C&D waste, such as steel and other metals should be re-used or recycled and, as a last resort, disposed of to landfill. It is recommended that a suitable area be designated to facilitate the sorting process and a temporary stockpiling area will be required for the separated materials	Work site / During decommissioning	Contractor		√			*
	• In order to monitor the disposal of public fill and C&D waste at the designated public fill reception facility and landfill, respectively, and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system	Work site / During decommissioning	Contractor and Independent Environmental Checker		√			^

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	General Refuse • General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. • Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem..	Work site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	^ ^
	Chemical Wastes • After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	^

- Des – Design, De – Decommissioning, Ex – Excavation, and Tre – Soil Treatment

Appendix H3 Implementation Schedule for Water Quality Measures

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
Decontamination Processes								
	Soil Excavation • During excavation, all exposed pits shall be whenever possible backfilled immediately or covered. Where it is unavoidable to transiently pile up soils next to the excavation pit, the transient pile shall be bottom-lined, bunded and covered with impervious membrane during rain event in order to avoid generation of contaminated runoff.	Work site / During excavation	Contractor			√		^
	• Final surfaces after excavation shall be well compacted and the subsequent permanent work or surface protection shall be carried out as soon as practical after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate intercepting channels and partial shelters shall be provided where necessary to prevent rainwater from collecting within trenches or footing excavations.	Work site / During excavation	Contractor			√		^

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Decontaminated Water and Wastewater from Wheel Washing • During excavation, dump trucks or excavators shall be decontaminated before they leave the site to ensure that no contaminated earth, mud or debris is deposited by them on roads. A wheel washing bay shall be provided at every site exit that equipped with an adequately sized centralized wastewater treatment unit. The wastewater treatment unit shall deploy suitable treatment processes to settle out sands/ silts with contaminants cohered and remove other contaminants in wheel washes and decontamination water. The polluting parameters in effluent of the wastewater treatment unit shall be in compliance with the discharge standards stipulated in the TM-DSS before the effluent being discharged into the storm drains. The installation and operation of the wastewater treatment unit shall be licensed and subject to the effluent monitoring as required under the WPCO which is under the ambit of regional office (RO) of EPD. In any case, discharge of wheel wash water shall be minimized and recycled where possible. The selection of construction road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent surface runoff from entering public road drains.	Work site / During excavation	Contractor			√		^

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Operation of Solidification / Stabilization Facility							
	• The solidification facility shall be sheltered and area of soil unloading / loading shall be provided with shed to avoid contaminated runoff. Excessive addition of water shall be avoided during the solidification process.	Decontamination works area / During soil treatment	Contractor				√	N/A
	• Any pit used for solidification area shall be shallower than the water table to minimize the leaching of the contaminated soils. An impermeable membrane / sheet shall be placed at the bottom of any solidification pit during the solidification process.	Decontamination works area / During soil treatment	Contractor				√	N/A
	• Any leachate generated from the solidification process shall be collected and treated in the centralized wastewater treatment unit before being discharged. The polluting parameters in effluent of the wastewater treatment unit shall be in compliance with the discharge standards stipulated in the TM-DSS before the effluent being discharged. The installation and operation of the wastewater treatment unit shall be licensed and subject to the effluent monitoring as required under the WPCO.	Decontamination works area / During soil treatment	Contractor				√	N/A

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Operation of Biopiling							^
	• Impermeable liner shall be placed at the bottom of the biopiles and leachate collection sump shall be constructed along the perimeter of the biopiles to prevent leachate from contaminating the underlying soil/ groundwater. Concrete bund shall be constructed along the perimeter of biopiles to prevent the runoff coming out from the contaminated soil. Biopiles after formation and during rain shall be covered by anchored low permeability geotextiles to prevent contaminated runoff. It is proposed that the exposed biopile section at any time shall not be more than 5 m in length.	Decontamination works area / During soil treatment	Contractor				√	
	• All leachate generated from the operation of biopiling shall be collected and recycled to the biopile to avoid effluent discharge.	Decontamination works area / During soil treatment	Contractor				√	N/A

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Groundwater Cleanup • Floating oil/free product (of TPH) has only been found in the apron area of the Ex-GFS site. It is proposed that where free product is detected at the groundwater surface at excavated area, only the free product shall be skimmed off from the water surface. The skimmed free product shall be drummed properly and collected by a licensed chemical waste collector for disposal. The storage of skimmed free product should comply with the requirements in the Waste Disposal (Chemical Waste) (General) Regulation including the type of drum and containment measures.	Work site / During excavation	Contractor			√		^
	TPH Removal • Petrol interceptor should be adopted, where appropriate, as the first tier of treatment to removal TPH contaminant from contaminated runoff and effluent discharge from the decontamination works area.	Work site / During the decommissioning, excavation and soil treatment	Contractor		√	√	√	N/A

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Failure of Centralized Wastewater Treatment Unit • In the event of wastewater treatment unit failure, all decontamination activities should be ceased to avoid emergency discharge.	Work site / During the decommissioning, excavation and soil treatment	Contractor		√	√	√	N/A
Demolition Works								
	• The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion.	Work site / During decommissioning	Contractor		√			N/A
	• There is a need to apply to EPD for a discharge licence under the WPCO for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge licence. All the runoff, wastewater or extracted groundwater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Regular monitoring of the treated effluent quality from the centralized wastewater treatment unit and stormwater discharges from major storm outfalls within the works areas will be conducted. Monitoring parameters should constantly include SS, turbidity, oil and grease, COD and less frequently include	Work site / During decommissioning	Contractor		√			N/A

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	TPH, BTEX and selected metals. Parameters included in the WPCO licence, will also be included in the monitoring programme. The chemical testing of water samples collected in the monitoring programme should be undertaken by a Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory. Detail monitoring programme / plan will be submitted at later stage for EPD's agreement.							
Sewage from Workforce								
	• Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor would be responsible for appropriate disposal of waste matter and maintenance of these facilities.	Work site / During the decommissioning, excavation and soil treatment	Contractor		√	√	√	N/A
Accumulation of Solid Waste and Accidental Spillage								
	• Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering into the adjacent harbour waters. Stockpiles of cement and other construction materials should be kept covered when not being used.	Work site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	*
	• Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to the nearby harbour waters, all	Work site / During the decommissioning, excavation and soil	Contractor		√	√	√	^

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event.	treatment						
Site Inspection								
	Regular site inspections shall be undertaken to inspect the works areas in order to ensure that the recommended mitigation measures are properly implemented.	Work site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	^

* Des - Design, De - Decommissioning, Ex – Excavation, and Tre - Soil Treatment

Appendix H4 Implementation Schedule for Air Quality Measures

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Good site practices to minimise dust and other air pollutants impacts during soil excavation, transportation, loading and unloading the excavated contaminated soils	Work site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	
	• Excavation profiles should be properly designed and executed.							^
	• The excavation area should be limited to as small in size as possible and backfilled with clean and/or treated soil shortly after excavation work.							^
	• The exposed excavated area shall be covered by the tarpaulin during night time.							^
	• The top layer soils shall be sprayed with fine misting of water immediately before the excavation.							^
	• Stockpiling site(s) shall be lined with impermeable sheeting and bunded. Stockpiles shall be properly covered by impermeable sheeting to reduce dust and other air pollutants emission.							^
	• Misting for the dusty material shall be carried out before being loaded into the vehicle.							^
	• Any vehicle with an open load carrying area shall have properly fitted side and tail boards.							^
	• Material having the potential to create dust shall not be loaded from a level higher than the side and tail boards and shall be dampened and covered by a clean tarpaulin.							

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	• The tarpaulin shall be properly secured and shall extent at least 300 mm over the edges of the sides and tailboards. The material shall also be dampened if necessary before transportation.							^
	• The vehicles shall be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. On-site unpaved roads shall be compacted and kept free of lose materials.							^
	• Vehicle washing facilities should be provided at every vehicle exit point.							^
	• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.							^
	• Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.							^
	• Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.							N/A
	• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.							^

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Operation of solidification / Stabilization	Decontamination works area / During soil treatment	Contractor			√	√	
	• The solidification pit/area shall be provided with dust suppression measures.							N/A
	• Handling and mixing of cement shall follow Air Pollution Control (Construction Dust) Regulation to limit cement emission.							N/A
	• The bin should be covered during residence period after mixing process.							N/A
	Operation of biopiling							
	• During the course of biopile formation, the stockpiled soils at the biopiles shall be covered by tarpaulin or low permeable sheet to avoid fugitive emissions of dust or any air pollutants from the biopiles affecting the surrounding environment and to minimise runoff from the stockpiled soils. Biopile(s) shall be covered by impermeable sheeting (such that no longer than 5m of a biopile shall be exposed to open air) to avoid fugitive emissions of dust or any pollutants from the biopile(s).	Decontamination works area / During soil treatment	Contractor			√	√	^
	• Upon formation of a biopile, the biopile shall be covered by low permeable geotextiles to prevent dust emission and runoff.							^
	• During the operation of biopile, the biopiles shall be fully covered to control the extraction of VOCs.							N/A

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	• Carbon absorber with 99% control efficiency shall be installed for the biopiling system to treat the off-gas prior to discharge and the location of the exhaust of the carbon filter should be sited as far away as possible from the nearby ASRs. • Spent activated carbon of the carbon absorber shall be replaced regularly such that the VOC emission rate from the system is acceptable (i.e. the measured TVOC is below 20 ppm). The carbon adsorption system should also be monitored regularly to check the performance of the carbon filter. • Gas samples at the exhaust of the carbon filter for VOCs should be monitored regularly. The biopile operation shall be terminated when unacceptable air quality is monitored at the site boundary. Resumption of biopiling will only be allowed after confirmation and implementation of appropriate mitigation measures.							^ ^ ^

*Des - Design, De - Decommissioning, Ex – Excavation, and Tre - Soil Treatment

Appendix H5 Implementation Schedule for Noise Measures

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Good site practices to be implemented: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. • Mobile plant, if any, should be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Work Site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	^ ^ ^ ^ ^

* Des - Design, De - Decommissioning, Ex – Excavation, and Tre - Soil Treatment

Appendix H6 Implementation Schedule for Marine Ecological Measures

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
-	• As no significant ecological impact on marine habitats and associated wildlife is predicted, no necessary mitigation measure is considered as required in this assessment. The mitigation measures recommended in the water quality assessment to control water quality would serve also to protect marine ecological resources from indirect impacts and ensure no adverse impact on marine life would be resulted from the Project.	N/A	N/A					N/A

* Des - Design, De - Decommissioning, Ex – Excavation, and Tre - Soil Treatment

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable; • Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor;
# Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

APPENDIX I
EVENT ACTION PLANS

APPENDIX I - Event and Action Plan

Table I- 1 Event / Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1.Action Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and ER; 3. Repeat measurement to confirm finding.	1. Check monitoring data submitted by ET; and 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; and 2. Amend working methods if appropriate.
2. Action Level being exceeded by two or more consecutive sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and ER; 3. Increase monitoring frequency to daily; 4. Discuss with IEC and Contractor on remedial actions required; 5. Assess the effectiveness of Contractor's remedial actions; 6. If exceedance continues, arrange meeting with IEC and ER; and 7. If exceedance stops, cease additional monitoring	1. Checking monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; and 4. Advise the ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; and 5. Conduct meeting with ET and IEC if exceedance continues.	1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to ER and IEC within 3 working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal if appropriate
LIMIT LEVEL				
1.Limit Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, ER and EPD; 3. Repeat measurement to confirm finding; and 4. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; and 4. Advise the ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; and 5. Conduct meeting with ET and IEC if exceedance continues.	1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposals for remedial actions to ER and IEC within 3 working days of notification; and 4. Implement the agreed proposals.
2. .Limit Level being exceeded by two or more consecutive sampling	1. Notify IEC, ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Carry out analysis of Contractor's working procedures to investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, ER and	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ER, ET and Contractor on possible remedial measures; and	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of	1. Take immediate action to avoid further exceedance; 2. Discuss with ET, ER and IEC on proper remedial actions; 3. Submit proposals for remedial actions to ER and IEC within 3 working days of notification;

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	Contractor to discuss the remedial actions to be taken; 6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and ER informed of the results; and 7. If exceedance stops, cease additional monitoring	4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	remedial measures; and 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	4. Implement the agreed proposals; 5. Submit further proposals for remedial actions if problem still not under control; and 6. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

Table I-2 Event and Action Plan for Biopiling System Discharge Emissions Monitoring and Ambient VOC Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Exceedance for one sample	1. Identify source and investigate the causes of exceedance and propose remedial measures; 2. Inform Contactor, IEC and ER; 3. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Exceedance for two or more consecutive samples	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, ER and EPD; 3. Discuss with IEC and Contractor on remedial actions required; 4. Assess the effectiveness of Contractor's remedial actions; 5. If exceedance continues, arrange meeting with IEC and ER.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues and instruct the Contractor to slow down or stop the process until the exceedance is abated..	1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to ER and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Slow down or stop the process as determined by the ER until the exceedance is abated.

APPENDIX J
COMPLAINT LOG

APPENDIX J – COMPLAINT LOG

Reporting Month: April 2009

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

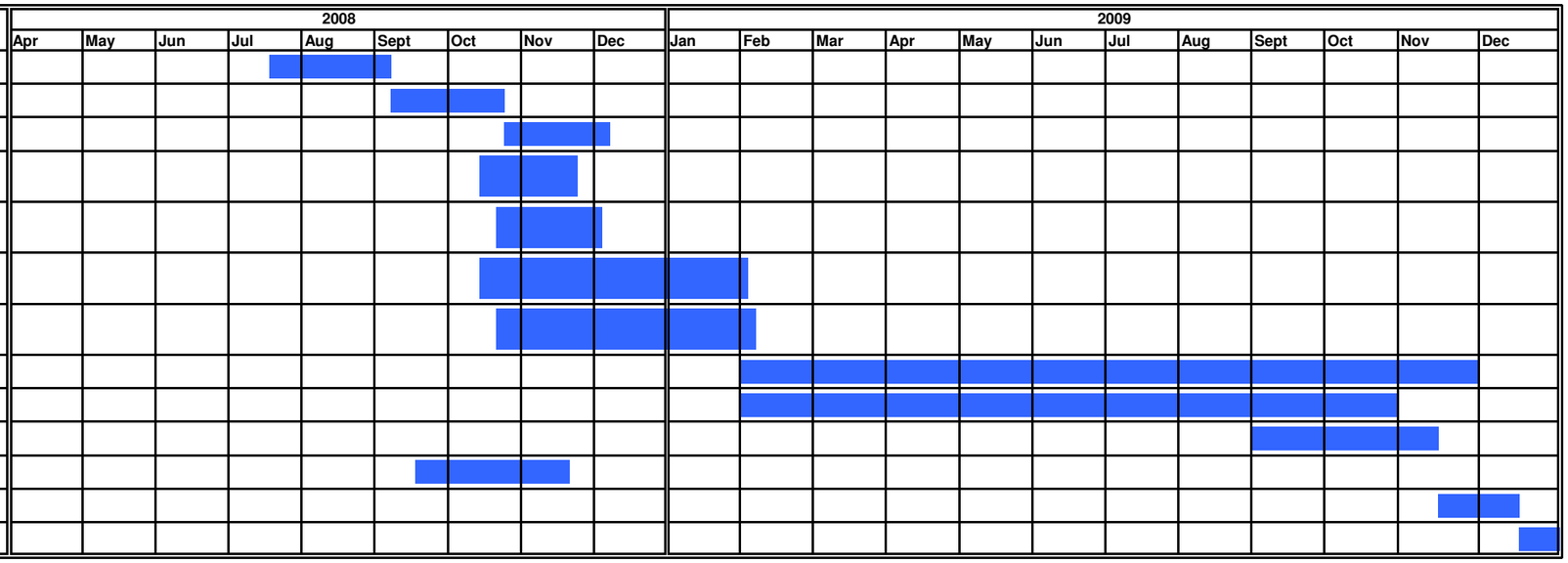
Remarks: No environmental complaint was received in the reporting month.

APPENDIX K
CONSTRUCTION PROGRAMME

CONTRACT NO. KL/2008/02
Kai Tak Development -
Decommissioning and Decontamination Works at the
South Apron of the Former Kai Tak Airport

Work Programme for Decontamination Works (Rev.2)

I.D No.	Activity Description	Duration (Day)	Early Start	Early Finish
1.	Demolition of existing fuel hydrant system	51	22-Jul-08	10-Sep-08
2.	Demolition of underground fuel tanks	44	11-Sep-08	24-Oct-08
3.	Demolition of foam water tank	47	25-Oct-08	10-Dec-08
4.	Excavation of Contaminated soil in Zone D, E, F, G, H, N, O, P, Q for cement solidification	42	15-Oct-08	25-Nov-08
5.	Confirmatory Sampling (i.e. base & sidewall) in Zone D, E, F, G, H, N, O, P, Q	41	22-Oct-08	1-Dec-08
6.	Excavation of Contaminated soil in Zone A, B, C, I, J, K, L, M for Biopiling	110	15-Oct-08	1-Feb-09
7.	Confirmatory Sampling (i.e. base & sidewall) in Zone A, B, C, I, J, K, L, M	110	22-Oct-08	8-Feb-09
8.	Operation and maintenance of Biopile System in Area 5	303	1-Feb-09	30-Nov-09
9.	Soil sampling for monthly cleanup progress monitoring	272	1-Feb-09	30-Oct-09
10.	Soil Sampling for Closure Assessment	76	1-Sep-09	15-Nov-09
11.	Cement Solidification Treatment Process	62	20-Sep-08	20-Nov-08
12.	Submission of Remediation Report	30	16-Nov-09	15-Dec-09
13.	Remove all plants and equipments for decontamination works	15	16-Dec-09	30-Dec-09



APPENDIX L
WASTE GENERATED QUANTITY

Appendix VIII

Name of Department: CEDD

Contract No.: KL/2008/02

Monthly Summary Waste Flow Table for 2009 (year)

(All quantities shall be rounded off to 3 decimal places.)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	0.170	0.100	0.070	0.000	0.000	3.308	0.000	0.000	0.000	0.000	0.000
Feb	0.030	0.000	0.030	0.000	0.000	5.900	0.000	0.000	0.000	0.000	0.000
Mar	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000
Apr	0.060	0.030	0.030	0.000	0.000	0.100	0.000	0.000	0.000	0.000	0.000
May	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
June	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Sub-total	0.260	0.130	0.130	0.000	0.000	9.314	0.000	0.000	0.000	0.000	0.000
July	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Aug	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Sept	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Oct	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Nov	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Dec	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Total	13.900	6.950	6.950	0.000	0.000	12.820	0.000	0.000	0.000	0.000	0.000

Forecast of Total Quantities of C & D Materials to be Generated from the Contract										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
18.704	7.000	7.000	0.000	0.000	16.500	11.000	0.000	0.000	0.250	0.200

Notes:

(1) The performance targets are given in the PS Clause 6(14)

(2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site

(3) Plastics refer to plastics bottles/containers, plastic sheets/foam from packaging materia

(4) The contractor shall also submit the lastest forecast of the total amount of C & D materials expected to be generated fro the Works, together with a breakdown of the nature where the tot amount of C & D materials expected to be generated from the Works is equal to or exceeding 50,000m^3 . (PS Clause 1.105(4)(b) refer

APPENDIX M
1-PAGE SUMMARY

APPENDIX M– 1-Page Summary
附錄 M - 1 頁摘要

Reporting Month: April 2009
報告月份: 2009 年 4 月

Summary of EM&A activities
環監活動摘要

Parameter 參數	**No. of Exceedance** 超標數字		**No. of Exceedance Due to the Project** 因計劃所超標的數字		**Action Taken** 行動進行
	Action Level 行動水平	**Limit Level** 限制水平	**Action Level** 行動水平	**Limit Level** 限制水平	
1- hr TSP 1 小時總懸浮粒子					
AM1a	0	0	0	0	N/A
AM2a	0	0	0	0	N/A
AM3	0	0	0	0	N/A
24-hr TSP 24 小時總懸浮粒子					
AM1a	0	0	0	0	N/A
AM2a	0	0	0	0	N/A
AM3	0	0	0	0	N/A
Water Quality Monitoring 水質監察					
Centralized Wastewater Treatment Unit 污水處理裝置	N/A	N/A	N/A	N/A	N/A
Manhole A 沙井一	N/A	N/A	N/A	N/A	N/A
Manhole B 沙井二	N/A	N/A	N/A	N/A	N/A
Ambient VOC Monitoring 揮發性有機化合物監察					
Parameter 參數	No. of Exceedance (Limit Level) 超標數字				
TPH 總石油烴	0				N/A
Ethylbenzene 乙苯	0				N/A
Xylenes 二甲苯	0				N/A

Summary of Complaints and non-compliance events
不符合規定的事件及接獲的投訴摘要

No non-compliance and complaint were received in the reporting month.
沒有接獲不符合規定的事件及投訴在這報告月份.

APPENDIX N
TESTING REPORT ON ANALYSIS OF AIR

FUGRO TECHNICAL SERVICES LIMITED
MateriaLab Division,
Fugro Development Centre,
5 Lok Yi Street, 17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun, N.T., Hong Kong.
Tel : +852-2450 8233
Fax : +852-2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk

MateriaLab

Report No. : 090830EN90182

Test Report on Analysis of Air

Information Supplied by Client

Client	:	Kin Wing Construction Co., Ltd.
Project	:	Kai Tak Development – Decommissioning and Decontamination Works at the South Apron of the Former Kai Tak Airport
Sample description	:	One sample of air
Sample location	:	Downwind to the exhaust of treatment facility
Test required	:	TPH, Ethylbezene and Xylenes

Laboratory Information

Lab sample ID	:	EN90182/1
Date of sampling	:	24/04/2009
Date test commenced	:	24/04/2009
Date test completed	:	29/04/2009
Test method used	:	TPH, Ethylbenzene and Xylenes in the air sample were collected by means of adsorption on carbon molecular sieves and determined by GC/MSD using thermal desorption technique.

Result :

Testing item	Concentration, $\mu g/m^3$
Ethylbenzene	< 10
Xylenes	< 10
TPHs	< 500

Tested by : M.L. Yung

Certified by :
Approved Signatory : HO Kin Man, John
Manager – Chemical & Environmental

Date : 30/4/2009

Note : This report refers only to the sample(s) tested.

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