Civil Engineering and Development Department

EP-344/2009 – New Sewage Pumping Stations Serving KTD and EP-337/2009 – New Distributor Roads Serving the Planned KTD

Contract No. KL/2010/03 Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities

Monthly EM&A Report

December 2011

(version 2.0)

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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EXECUTIVE SUMMARY

Introduction

1. This is the 2nd Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for "Contract No. KL/2010/03-Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities" (Hereafter referred to as "the Project"). This contract comprises two Schedule 2 designated projects (DPs), namely the new sewage pumping station PS1A serving the planned KTD and the new distributor road D2 serving the planned KTD. The two DPs are part of the designated projects under Environmental Permit No.: EP-344/2009 ("New sewage pumping stations serving Kai Tak Development) and EP-337/2009 ("New distributor roads serving the planned Kai Tak Development") respectively. This report documents the findings of EM&A Works conducted in December 2011.

2. With reference to the same principle of EIA report of the Project, air quality monitoring stations within 500m and noise monitoring stations within 300m from the boundary of this Project are considered as relevant monitoring locations. In such regard, the relevant air quality and noise monitoring locations are tabulated in Table I (see Figure 2 and 3 for their locations).

Table I – Air Quality and Noise Monitoring Stations for this Project

Locations	Monitoring Stations In accordance with EM&A Manual	Alternative Monitoring Stations
Air Quality Monitoring Stations		
AM1 - Rhythm Garden	No	AM1(A) - Kai Tak Operational Base
AM2 - Lee Kau Yan Memorial School	Yes	N/A
AM6 – Site 1B4 (Planned)	N/A	
Noise Monitoring Stations		
M1 - Buddhist Chi King Primary School	Yes	N/A
M2 - S.K.H. Kowloon Bay Kei Lok Primary School	Yes	N/A
M3 - Cognitio College	Yes	M3(A) - Kai Tak Operational Base
M4 - Lee Kau Yan Memorial School	No	N/A
M9 – Site 1B1 (Planned)	N/A	
M10 – Site 1B4 (Planned)		

3. According to the Environmental Monitoring and Audit Manual (EM&A Manual) of the Kai Tak Development (KTD) Schedule 3 Environmental Impact Assessment (EIA) Report, the impact monitoring at the designated monitoring stations as required in KTD EM&A Manual under two EPs, have been conducted in Contract No. KLN/2010/04 – Environmental Monitoring Works for Kai Tak Development under Schedule 3 of KTD, which is on-going starting from December 2010. The impact monitoring data under Contract No. KLN/2010/04 will be adopted for the Project. Therefore, this report presents the air quality and noise monitoring works extracted from Contract No. KLN/2010/04.

4. The major site activities undertaken in the reporting month included:
   - BC6 construction including excavation, steel fixing, formwork erection and concreting;
   - Completion of sheet piling works and excavation with ELS at PS1A;
   - Hoarding and fencing erection;
   - Trial pit excavation at Portion N; and
   - Relocation of existing earth bund from Area 1H2 to Portion N.

Environmental Monitoring Works

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

6. Summary of the non-compliance in the reporting month for the Project is tabulated in Table II.

Table II Non-compliance Record for the Project in the Reporting Month

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A

1-hour & 24-hour TSP Monitoring

7. All 1-hour & 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise

8. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Licenses and Permits

9. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, Environmental Permits No. EP-344/2009 and EP-337/2009 were issued on 23 April 2009.

10. Registration of Chemical Waste Producer (License: 5213-286-P1079-04).

11. Water Discharge License (License No.: WT00011274-2011 and WT00011276-2011)

Key Information in the Reporting Month

12. Summary of key information in the reporting month is tabulated in Table III.

Table III 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	---
Reporting Changes	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Future Key Issues

13. The future key environmental issues in the coming month include:
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Watering for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site;
- Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site;
- Runoff from exposed slope;
- Wastewater and runoff discharge from site;
- Regular removal of silt, mud and sand along u-channels and sedimentation tanks; and
- Review and implementation of temporary drainage system for the surface runoff.

1. INTRODUCTION

Background

1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 2 infrastructure works at North Apron Area of Kai Tak Airport for Public Housing and Government Office Developments is one of the construction stages of KTD. It contains various Schedule 2 DPs including new distributor roads serving the planned KTD and new sewage pumping stations serving the planned KTD. The general layout of the Project is shown in **Figure 1.**

1.2 Two Environmental Permits (EPs) No. EP-344/2009 and EP-337/2009 were also issued on 23 April 2009 for new sewage pumping stations serving the planned KTD and new distributor roads serving the planned KTD respectively to Civil Engineering and Development Department as the Permit Holder.

1.3 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. An EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 April 2009.

1.4 Cinotech Consultants Limited (Cinotech) was commissioned by Peako Engineering Co., Ltd. (the Contractor) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2010/03 - Kai Tak Development – Stage 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities. The construction work under KL/2010/03 comprises the construction of Road D2 & Sewage Pumping Station PS1A which forms a part of the works under two EPs (EP-337/2009 and EP-344/2009).

1.5 Cinotech Consultants Limited was commissioned by Peako Engineering Co., Ltd. to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The construction commencement of this Contract was on 24th October 2011 for Sewage Pumping Station PS1A. This is the 2nd Monthly EM&A report summarizing the EM&A works for the Project in December 2011.

Project Organizations

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

- Project Proponent – Civil Engineering and Development Department (CEDD).
- The Engineer and the Engineer's Representative (ER) – Ove Arup & Partners (ARUP).
- Environmental Team (ET) – Cinotech Consultants Limited (CCL).
- Independent Environmental Checker (IEC) – EDMS Consultants Ltd. (EDMS).
- Contractor – Peako Engineering Co., Ltd. (Peako).

1.7 The key contacts of the Project are shown in Table 1.1.

Table 1.1 Key Project Contacts

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. Alfred Lee	Engineer	2301 1449	2301 1277
ARUP	Engineer's Representative	Mr. Michael Chan	SRE	2756 8132	2756 8236
		Ms. Gloria Kwok	RE		
Cinotech	Environmental Team	Dr. Priscilla Choy	Environmental Team Leader	2151 2089	3107 1388
		Ms. Ivy Tam	Project Coordinator and Audit Team Leader	2151 2090	
EDMS	Independent Environmental Checker	Mr. Adi Lee	Independent Environmental Checker	2230 7165	3007 8556
Peako	Contractor	Mr. C.P. Lam	Project Manager	27730511	

Construction Activities undertaken during the Reporting Month

1.8 The site activities undertaken in the reporting month included:

- BC6 construction including excavation, steel fixing, formwork erection and concreting;
- Completion of sheet piling works and excavation with ELS at PS1A;
- Hoarding and fencing erection;
- Trial pit excavation at Portion N; and
- Relocation of existing earth bund from Area 1H2 to Portion N.

1.9 The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in Table 1.2.

Table 1.2 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures

Construction Works	Major Environmental Impact	Control Measures
As mentioned in Section 1.8	Noise, dust impact, water quality and waste generation	Sufficient watering of the works site with active dust emitting activities Properly cover the stockpiles On-site waste sorting and implementation of trip ticket system Appropriate desilting/sedimentation

		devices provided on site for treatment before discharge Use of quiet plant and well-maintained construction plant Provide movable noise barrier Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement

Summary of EM&A Requirements

1.10 The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. 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 requirements and mitigation measures, as recommended in the EM&A Manual under the two EPs.

1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.

1.12 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely air quality and noise levels and audit works for the Project in December 2011.

2. AIR QUALITY

Monitoring Requirements

2.1 According to EM&A Manual under the two EPs, 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality for this Project. For regular impact monitoring, a sampling frequency of at least once in every six days at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

2.2 Three designated monitoring stations were selected for air quality monitoring programme. Impact dust monitoring was conducted at two air quality monitoring stations, namely Kai Tak Operational Base (AM1(A)) and Lee Kau Yan Memorial School (AM2) in the reporting month. Table 2.1 describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Stations	Locations	Location of Measurement
AM1(A)	Kai Tak Operational Base	Rooftop (about 9/F) Area
AM2	Lee Kau Yan Memorial School	Rooftop (about 8/F) Area
#AM6	PA 15	Site 1B4 (Planned)

Remarks: # The impact monitoring at these locations will only be carried out until existence of the sensitive receiver at the 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	Quantity
Calibrator	G25A	1
1-hour TSP Dust Meter	Laser Dust Monitor – Model LD3 & 3B	4
HVS Sampler	GMWS 2310 c/w of TSP sampling inlet	2
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	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 month is shown in **Appendix D**.

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

1-hour TSP Monitoring

Measuring Procedures

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

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

2.6 The following maintenance/calibration was required for the direct dust meters:

- Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

2.7 High volume (HVS) samplers (Model GMWS-2310 Accu-Vol) completed with appropriate sampling inlets were employed for 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 2.5 of the updated EM&A Manual.

Operating/Analytical Procedures

2.8 Operating/analytical procedures for the operation of HVS were as follows:

- 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.

2.9 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.

2.10 For TSP sampling, fiberglass filters have a collection efficiency of > 99% for particles of 0.3 μm diameter were used.

2.11 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.

2.12 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.

2.13 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.

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

2.15 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).

2.16 After sampling, the filter was removed and sent to the HOKLAS laboratory (Wellab Ltd.) for weighing. The elapsed time was also recorded.

2.17 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

2.18 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 G25A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

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

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

2.21 The air temperature, precipitation and the relative humidity data was obtained from Hong Kong Observatory where the wind speed and wind direction were recorded by the installed Wind Anemometer set at rooftop (about 9/F) of Kai Tak Operational Base. The location is shown in **Figure 4**. This weather information for the reporting month is summarized in **Appendix C.**

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

2.23 The summary of exceedance record in reporting month is shown in **Appendix H**. No exceedance was recorded for the air quality monitoring.

2.24 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Station	Major Dust Source
AM1(A) – Kai Tak Operational Base	Road Traffic Dust Exposed site area and open stockpiles Excavation works Site vehicle movement
AM2 – Lee Kau Yan Memorial School	Road Traffic Dust Exposed site area and open stockpiles Excavation works Site vehicle movement Other construction site (Tung Tau Estate Ph.9) which behind Lee Kau Yan Memorial School

Table 2.4 Summary Table of Air Quality Monitoring Results during the reporting month

Parameter	Date	Concentration (µg/m3)	Action Level, µg/m3	Limit Level, µg/m3
AM1(A) – Kai Tak Operational Base				
1-hr TSP	5-Dec-11	107.4	342	500
	5-Dec-11	82.4		
	5-Dec-11	122.7		
	9-Dec-11	72.6		
	9-Dec-11	79.7		
	9-Dec-11	92.7		
	15-Dec-11	154.6		
	15-Dec-11	158.4		
	15-Dec-11	164.7		
	21-Dec-11	137.4		
	21-Dec-11	143.2		
	21-Dec-11	153.0		
	24-Dec-11	100.6		
	24-Dec-11	107.4		
	24-Dec-11	99.1		
	30-Dec-11	65.9		
	30-Dec-11	56.3		
	30-Dec-11	61.4		
24-hr TSP	5-Dec-11	31.2	159	260
	10-Dec-11	76.2		
	16-Dec-11	79.3		
	22-Dec-11	68.5		
	28-Dec-11	40.8		
AM2 – Lee Kau Yan Memorial School				
1-hr TSP	5-Dec-11	114.4	346	500
	5-Dec-11	131.6		
	5-Dec-11	135.3		
	9-Dec-11	95.3		
	9-Dec-11	100.3		

	9-Dec-11	111.3		
	15-Dec-11	165.4		
	15-Dec-11	175.9		
	15-Dec-11	173.3		
	21-Dec-11	156.2		
	21-Dec-11	164.4		
	21-Dec-11	141.8		
	24-Dec-11	104.4		
	24-Dec-11	88.9		
	24-Dec-11	109.9		
	30-Dec-11	92.3		
	30-Dec-11	111.8		
	30-Dec-11	106.0		
24-hr TSP	5-Dec-11	51.2	157	260
	10-Dec-11	86.2		
	16-Dec-11	88.2		
	22-Dec-11	73.0		
	28-Dec-11	55.5		

3. NOISE

Monitoring Requirements

3.1 According to EM&A Manual under the two EPs, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities within KTD. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

3.2 Six designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at four designated monitoring stations (M1, M2, M3, M4(A)) in the reporting month. **Figure 3** shows the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
M1	Buddhist Chi King Primary School	7/F Sport Area
M2	S.K.H. Kowloon Bay Kei Lok Primary School	7/F Podium
M3(A)	Kai Tak Operational Base	Rooftop (about 9/F) Area
M4	Lee Kau Yan Memorial College	Rooftop (about 7/F) Area
#M9	Site 1B1 (Planned)	-
#M10	Site 1B4 (Planned)	-

Remarks: # The impact monitoring at these locations will only be carried out until existence of the sensitive receiver at the building.

Monitoring Equipment

3.3 Table 3.2 summarizes the noise monitoring equipment. Copies of calibration certificates are provided in **Appendix B**.

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	SVAN 955 & 957	4
Calibrator	B&K 4231 and SVAN 30A	3

Monitoring Parameters, Frequency and Duration

3.4 Table 3.3 summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency	Measurement
M1 M2 M3 M4(A)	L_{10}(30 min.) dB(A) L_{90}(30 min.) dB(A) L_{eq}(30 min.) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade

Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - time measurement : 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L_{eq}, L_{90} and L_{10} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused temporarily during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

3.5 The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.

3.6 The sound level meter and calibrator were checked and calibrated at yearly intervals.

3.7 Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

3.8 Noise monitoring at the four designated locations was conducted as scheduled in the reporting month.

3.9 The summary of exceedance record in reporting month is shown in **Appendix H**. No exceedance was recorded for the noise monitoring.

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3.10 The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in Table 3.4.

3.11 Noise monitoring results and graphical presentations are shown in **Appendix G**.

3.12 The major noise source identified at the designated noise monitoring stations are as follows:

Monitoring Stations	Locations	Major Noise Source
M1	Buddhist Chi King Primary School	Traffic Noise Site vehicle movement Excavation works
M2	S.K.H. Kowloon Bay Kei Lok Primary School	
M3(A)	Kai Tak Operational Base	Traffic Noise Site vehicle movement Excavation works
M4	Lee Kau Yan Memorial School	Traffic Noise Site vehicle movement Excavation works

Table 3.4 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Station	Baseline Noise Level, dB (A)	Noise Limit Level, dB (A)
M1	64.4 (at 0700 – 1900 hrs on normal weekdays)	70* (at 0700 – 1900 hrs on normal weekdays)
M2	61.3 (at 0700 – 1900 hrs on normal weekdays)	
M3(A)	65.8 (at 0700 – 1900 hrs on normal weekdays)	75 (at 0700 – 1900 hrs on normal weekdays)
M4	76.7 (at 0700 – 1900 hrs on normal weekdays)	70* (at 0700 – 1900 hrs on normal weekdays)

(*) Noise Limit Level is 65 dB(A) during school examination periods.

Table 3.5 Summary Table of Noise Monitoring Results during the Reporting Month

Date	Measured Noise Level, Leq(30min) dB (A)	Baseline Level dB (A)	Construction Noise Level (1) : Leq(30min) dB (A)
M1 - Buddhist Chi King Primary School			
8-Dec-11	65.7	64.4	59.8
13-Dec-11	66.1		61.2
22-Dec-11	63.6		63.6 Measured ≦ Baseline
30-Dec-11	64.0		64.0 Measured ≦ Baseline
M2 - S.K.H. Kowloon Bay Kei Lok Primary School			
8-Dec-11	64.2	61.3	61.1
13-Dec-11	65.2		62.9
22-Dec-11	64.8		62.2
30-Dec-11	65.4		63.3
M3(A) – Kai Tak Operational Base			
5-Dec-11	63.8	65.8	63.8 Measured ≦ Baseline
15-Dec-11	62.8		62.8 Measured ≦ Baseline
21-Dec-11	64.2		64.2 Measured ≦ Baseline
28-Dec-11	63.6		63.6 Measured ≦ Baseline
M4 – Lee Kau Yan Memorial College			
5-Dec-11	74.8	76.7	74.8 Measured ≦ Baseline
15-Dec-11	76.1		76.1 Measured ≦ Baseline
21-Dec-11	73.3		73.3 Measured ≦ Baseline
28-Dec-11	74.6		74.6 Measured ≦ Baseline

(1) The noise level due to the construction work (CNL) was calculated by the following formula:

$$CNL = 10 \log (10^{MNL/10} - 10^{BNL/10})$$

Remarks: MNL = Measured Noise Level BNL = Baseline Noise Level

4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

4.1 The EM&A data was compared with the EIA predictions as summarized in 4.1 to 4.3.

Table 4.1 Comparison of 1-hr TSP data with EIA predictions

Station	Predicted 1-hr TSP conc.		
	Scenario1 (Mid 2009 to Mid 2013), µg/m3	Scenario2 (Mid 2013 to Late 2016), µg/m3	Reporting Month (Dec 11), µg/m3
AM1(A) – Kai Tak Operational Base (Alternative station for Rhythm Garden)	192	298	108.4
AM2 – Lee Kau Yan Memorial School	290	312	126.6

Table 4.2 Comparison of 24-hr TSP data with EIA predictions

Station	Predicted 24-hr TSP conc.		
	Scenario1 (Mid 2009 to Mid 2013), µg/m3	Scenario2 (Mid 2013 to Late 2016), µg/m3	Reporting Month (Dec 11), µg/m3
AM1(A) – Kai Tak Operational Base (Alternative station for Rhythm Garden)	121	156	59.2
AM2 – Lee Kau Yan Memorial School	145	169	70.8

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Stations	Predicted Mitigated Construction Noise Levels during Normal Working Hour ($L_{eq\ (30min)}$ dB(A))	Reporting Month (Dec 11), $L_{eq\ (30min)}$ dB(A)
M1 - Buddhist Chi King Primary School	51 – 68	59.8 - 64.0
M2 - S.K.H. Kowloon Bay Kei Lok Primary School	51 – 70	61.1 - 63.3
M3(A) - Kai Tak Operational Base (Alternative station for Cognitio College)	47 – 75	62.8 - 64.2
M4 - Lee Kau Yan Memorial School	47 – 74	73.3 - 76.1

4.2 The 1-hour and 24-hour average TSP concentration in the reporting month were well below the prediction in the approved Environmental Impact Assessment (EIA) Report and no Action/Limit Level exceedance was recorded.

4.3 The noise monitoring results in the reporting month was also within the range of predicted mitigated construction noise levels in the EIA report.

4.4 The discrepancy between the EM&A data and EIA predictions is considered due to road traffic noise from Prince Edward Road East which is the major noise source during the monitoring.

5. LANDSCAPE OF VISUAL

Monitoring Requirements

5.1 According to EM&A Manual of the Kai Tak Development EIA Study, ET shall monitor and audit the contractor's operation during the construction period on a weekly basis, and to report on the contractor's compliance.

Results and Observations

5.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix I**.

5.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.

5.4 Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in **Appendix J** shall be performed.

6. ENVIRONMENTAL AUDIT

Site Audits

6.1 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 I**.

6.2 Site audits were conducted on1st, 8th, 14th, 22nd and 29th December 2011 in the reporting month. IEC site inspections were conducted on 14th December 2011. No non-compliance was observed during the site audits.

Review of Environmental Monitoring Procedures

6.3 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.

Noise Monitoring

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
- Major noise sources were identified and recorded. Other intrusive noise attributing to the result was trimmed off by pausing the monitoring temporarily.

Status of Environmental Licensing and Permitting

6.4 All permits/licenses obtained for the Project are summarized in Table 6.1.

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-344/2009	23/4/09	N/A	Construction of a new sewage pumping station serving the planned Kai Tak development with installed capacity of more than 2,000 m^3 per day and a boundary of which is less than 150m from an existing or planned residential area or educational institution.	Valid

Permit No.	Valid Period		Details	Status
	From	To		
EP-337/2009	23/4/09	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
Effluent Discharge License				
WT-00011274-2011	-	31/12/16	Industrial discharge (near Kai Tak Tunnel)	Valid
WT-00011276/2011	-	31/12/16	Industrial discharge (near Concorde Road)	Valid
Registration of Chemical Waste Producer				
5213-286-P1079-04	-	N/A	Chemical Waste Types: Spent lubricating oil, spent solvent and spent battery containing heavy metals	Valid
Construction Noise Permit (CNP)				
NIL	N/A	N/A	N/A	N/A

Status of Waste Management

6.5 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix M**.

6.6 In respect of the dump truck cover, the Contractor is advised to take record photos and inspection to ensure that all dump trucks have fully covered the skip before leaving the site.

Implementation Status of Environmental Mitigation Measures

6.7 During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in Table 6.2.

Table 6.2 Observations and Recommendations of Site Inspections

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	08/12/2011	Clear the stagnant water with chemical oil at the drip tray for the generator near BC6.	Rectification/improvement was observed during the follow-up audit session.
Air Quality	01/12/2011	To provide water spray for loading and unloading works at Box Culvert BC6.	Rectification/improvement was observed during the follow-up audit session.
	14/12/2011	To provide water spray for rock-breaking works to avoid dust generation at Box Culvert BC6.	Rectification/improvement was observed during the follow-up audit session.
	22/12/2011	To provide dust mitigation measures for the open stockpiles near the site	Rectification/improvement was observed during the

Parameters	Date	Observations and Recommendations	Follow-up
		office.	follow-up audit session.
Waste/Chemical Management	01/12/2011	To clear the oil waste on drip tray and store the chemical waste properly at PS1A.	Rectification/improvement was observed during the follow-up audit session.
	14/12/2011	To clear the general refuse at Box Culvert BC6.	Rectification/improvement was observed during the follow-up audit session.
Permits/Licences	22/12/2011	To display the environmental permits on site properly.	Rectification/improvement was observed during the follow-up audit session.

Summary of Mitigation Measures Implemented

6.8 The monthly IEC audit was carried out on 14th December 2011 in reporting month, the observations were recorded and they are presented as follows:.

14th December 2011

Observations:

- Site entrance of pumping station – copy of environmental permit should be posted at the site entrance of works area of designated project.
- Pumping station – fugitive dust emission was observed during excavation works. The works area should be watered properly and frequently to avoid fugitive dust emission.
- At box culvert – scattered construction waste and general refused were observed at the box culvert. Site tidiness should be maintained and house-keeping practices should be carried out properly.
- At box culvert – Rocks/concrete breaking works was observed. Water spraying should be provided during breaking works.

Follow up from last site walk:

- Dusty stockpiles have been covered. (Closed)
- Unpaved area of pumping station still dry. (Refer to item 2 of this inspection)
- No loading/unloading of dusty materials was carried out. (Closed)
- Pumps have been provided to pump out water from water ponds. (Closed)

6.9 An updated summary of the EMIS is provided in **Appendix K**.

Implementation Status of Event Action Plans

6.10 The Event Action Plans for air quality, noise and landscape and visual are presented in **Appendix J**.

1-hr TSP Monitoring

6.11 No Action/Limit Level exceedance was recorded in the reporting month.

24-hr TSP Monitoring

6.12 No Action/Limit Level exceedance was recorded in the reporting month.

Construction Noise

6.13 No Action/Limit Level exceedance was recorded for construction noise.

Landscape and visual

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

Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution

6.15 The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix L**.

7. FUTURE KEY ISSUES

7.1 Major site activities undertaken for the coming two months include:

- BC6 construction including excavation, steel fixing, formwork erection and concreting; and
- Excavation with ELS at PS1A.

Key Issues for the Coming Month

7.2 Key environmental issues in the coming month include:

- Runoff from exposed slope;
- Wastewater and runoff discharge from site;
- Regular removal of silt, mud and sand along u-channels and sedimentation tanks;
- Review and implementation of temporary drainage system for the surface runoff;
- Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site;
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Watering for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site.

7.3 The tentative program of major site activities and the impact prediction and control measures for the coming two months, i.e. January to February 2012 are summarized as follows:

Construction Works	Major Impact Prediction	Control Measures
As mentioned in Section 7.1	Air quality impact (dust)	a) Frequent watering of haul road and unpaved/exposed areas; b) Frequent watering or covering stockpiles with tarpaulin or similar means; and c) Watering of any earth moving activities.
	Water quality impact (surface run-off)	d) Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; e) Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; f) Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and g) Provision of measures to prevent discharge into the stream.
	Noise Impact	h) Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; i) Controlling the number of plants use on site; j) Regular maintenance of machines; and k) Use of acoustic barriers if necessary.

Monitoring Schedule for the Next Month

7.4 The tentative environmental monitoring schedules for the next month are shown in **Appendix D**.

8. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

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

1-hr TSP Monitoring

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

24-hr TSP Monitoring

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

Construction Noise Monitoring

8.4 All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Landscape and visual

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

Complaint and Prosecution

8.6 No environmental complaints and environmental prosecution were received in the reporting month.

Recommendations

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

Air Quality Impact

- To prohibit any open burning on site.
- To regularly maintain the quality of machinery and vehicles on site.
- To implement dust suppression measures on all haul roads, stockpiles, dry surfaces and excavation works.
- To provide hoarding along the entire length of that portion of the site boundary.

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 provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.

Water Impact

- To prevent any surface runoff discharge into any stream course.
- To review and implement temporary drainage system.
- To identify any wastewater discharges from site.
- To ensure properly maintenance for de-silting facilities.
- To clear the silt and sediment in the sedimentation tanks.
- To review the capacity of de-silting facilities for discharge.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.
- 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 ensure the performance of sorting of C&D materials at source (during generation);
- To carry out inspection of dump truck at site exit to ensure inert and non-inert C&D materials are properly segregated before removing off 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.

Landscape and Visual

- To protect the existing trees to be retained.
- To transplant the trees unavoidably affected by the works.
- To control of night-time lighting.
- To provide decorative screen hoarding.
- To complete landscape works at site area as early as possible.

FIGURES

Title	EP-344/2009 – New Sewage Pumping Stations Serving KTD and EP-337/2009 – New Distributor Roads Serving the Planned KTD	Scale N.T.S	Project No. MA11038
		Date Sep-11	Figure 1
	Site Layout Plan		CINOTECH

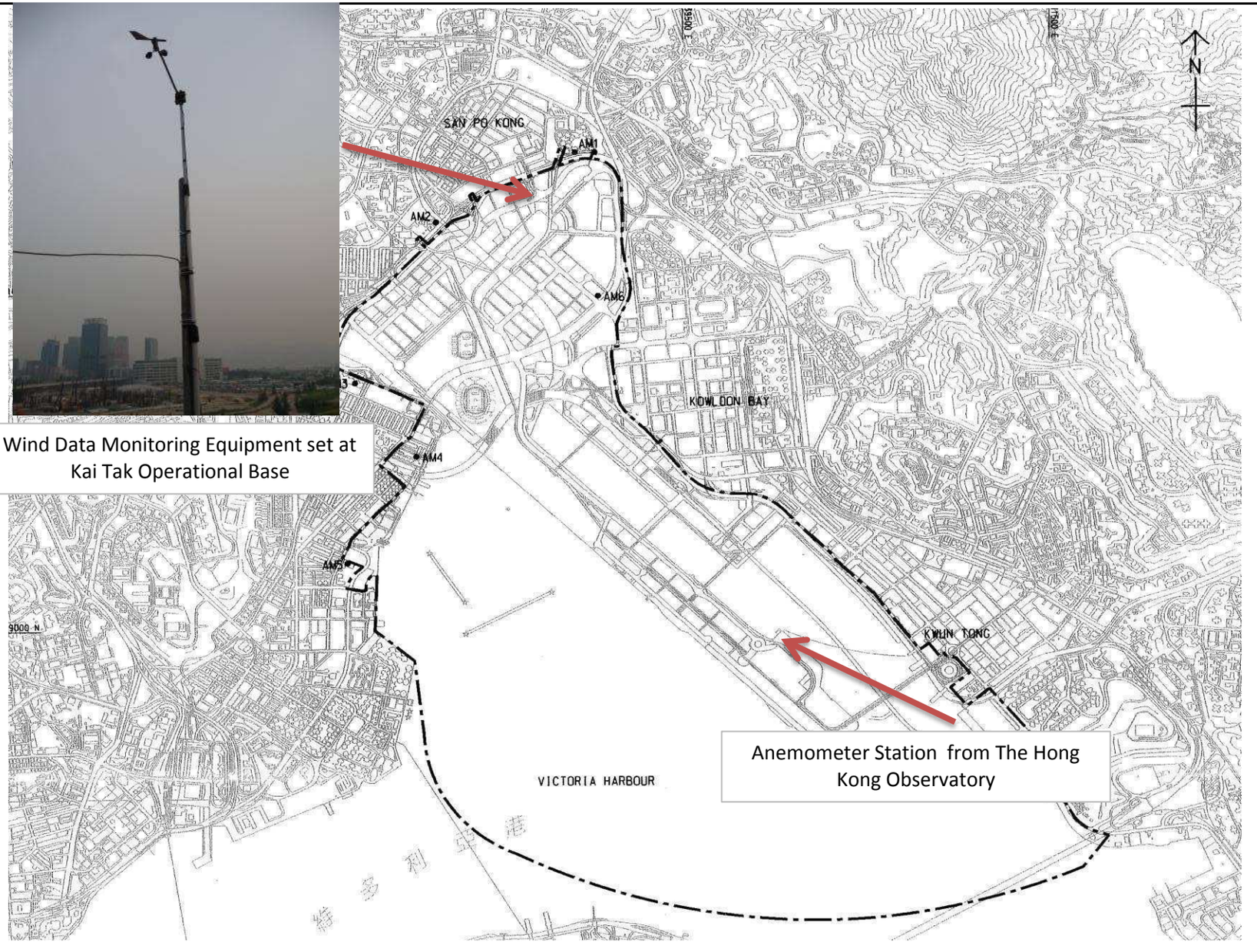
Title	EP-344/2009 – New Sewage Pumping Stations Serving KTD and EP-337/2009 – New Distributor Roads Serving the Planned KTD	Scale N.T.S	Project No. MA11038
	Location of Air Quality Monitoring Stations	Date Nov 11	Figure 2

CINOTECH

Title	EP-344/2009 – New Sewage Pumping Stations Serving KTD and EP-337/2009 – New Distributor Roads Serving the Planned KTD	Scale N.T.S	Project No. MA11038
	Location of Noise Monitoring Stations	Date Nov-11	Figure 3

CINOTECH

Wind Data Monitoring Equipment set at Kai Tak Operational Base



Anemometer Station from The Hong Kong Observatory

Title: EP-344/2009 – New Sewage Pumping Stations Serving KTD and EP-337/2009 – New Distributor Roads Serving the Planned KTD	Scale: N.T.S	Project No.: MA11038	CINOTECH
Location of Wind Data Monitoring Equipment	Date: Nov 11	Figure: 4	

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
AM1(A) – Kai Tak Operational Base	342	500
AM2 – Lee Kau Yan Memorial School	346	

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

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM1(A) – Kai Tak Operational Base	159	260
AM2 – Lee Kau Yan Memorial School	157	

Table A-3 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed. *70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods, respectively.

APPENDIX B
COPIES OF CALIBRATION CERTIFCATES

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA0040/58/0008

Station: AM1(A) - Kai Tak Operational Base Operator: WK

Date: 1-Dec-11 Next Due Date: 31-Jan-12

Equipment No.: A-01-58 Serial No. 2357

Ambient Condition			
Temperature, Ta (K)	291.4	Pressure, Pa (mmHg)	766.5

Orifice Transfer Standard Information					
Equipment No.:	A-04-01	Slope, mc	0.0568	Intercept, bc	-0.0432
Last Calibration Date:	9-Oct-11	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	8-Oct-12	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	12.0	3.52	62.70	7.5	2.78
2	10.5	3.29	58.70	6.7	2.63
3	8.2	2.91	51.96	5.2	2.32
4	5.3	2.34	41.92	3.3	1.84
5	3.0	1.76	31.73	1.9	1.40

By Linear Regression of Y on X

Slope , mw = 0.0452 **Intercept, bw =** -0.0364

Correlation coefficient* = 0.9998

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.52**

Remarks:

Conducted by: WK Tang Signature: Date: 1/12/2011

Checked by: LFW Signature: Date: 1 December 2011

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA0040/59/0008

Station: AM2 - Lee Kau Yan Memorial School Operator: WK

Date: 1-Dec-11 Next Due Date: 31-Jan-12

Equipment No.: A-01-59 Serial No. 2354

Ambient Condition			
Temperature, Ta (K)	291.8	Pressure, Pa (mmHg)	766.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-01	Slope, mc	0.0568	Intercept, bc	-0.0432
Last Calibration Date:	9-Oct-11	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	8-Oct-12	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	12.8	3.63	64.67	8.0	2.87
2	10.7	3.32	59.19	6.7	2.63
3	8.5	2.96	52.84	5.2	2.31
4	5.3	2.34	41.88	3.1	1.79
5	3.3	1.84	33.21	2.1	1.47

By Linear Regression of Y on X

Slope , mw = 0.0453 **Intercept, bw =** -0.0668

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.43

Remarks:

Conducted by: Wk. Tang Signature: Wkwa. Date: 1/12/2011

Checked by: AN Signature: Date: 1 December 2011

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Website: www.wellab.com.hk

TEST REPORT

Description	Calibration Orifice	**Manufacturer**	Thermo Andersen
Serial No.	1536	**Temperature,Ta (K)**	298
Model No.	G25A	**Pressure, Pa (mmHg)**	762.3
Date	9 October 2011		

Plate	Diff.Vol (m^3)	Diff.Time (min)	Diff.Hg (mm)	Diff.H_2O (in.)
1	1.00	1.3760	3.4	2.00
2	1.00	0.9740	6.4	4.00
3	1.00	0.8730	7.9	5.00
4	1.00	0.8320	8.6	5.50
5	1.00	0.6890	12.8	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9985	0.7257	1.4163
0.9946	1.0211	2.0030
0.9926	1.1370	2.2394
0.9917	1.1919	2.3487
0.9861	1.4313	2.8326

Y axis= SQRT[H_2O(Pa/760)(298/Ta)]

Qstd Slope (m) = 2.00766
Intercept (b) = -0.04318
Coefficient (r) = 0.99999

Va	(X axis) Qa	(Y axis)
0.9955	0.7235	0.8842
0.9916	1.0181	1.2505
0.9896	1.1336	1.3981
0.9887	1.1884	1.4664
0.9832	1.4270	1.7685

Y axis= SQRT[H_2O(Ta/Pa)]

Qa Slope (m) = 1.25716
Intercept (b) = -0.02696
Coefficient (r) = 0.99999

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=I/m{[SQRT(H_2O(Pa/760)(298/Ta))]-b}
Qa=I/m{[SQRT H_2O(Ta/Pa)]-b}

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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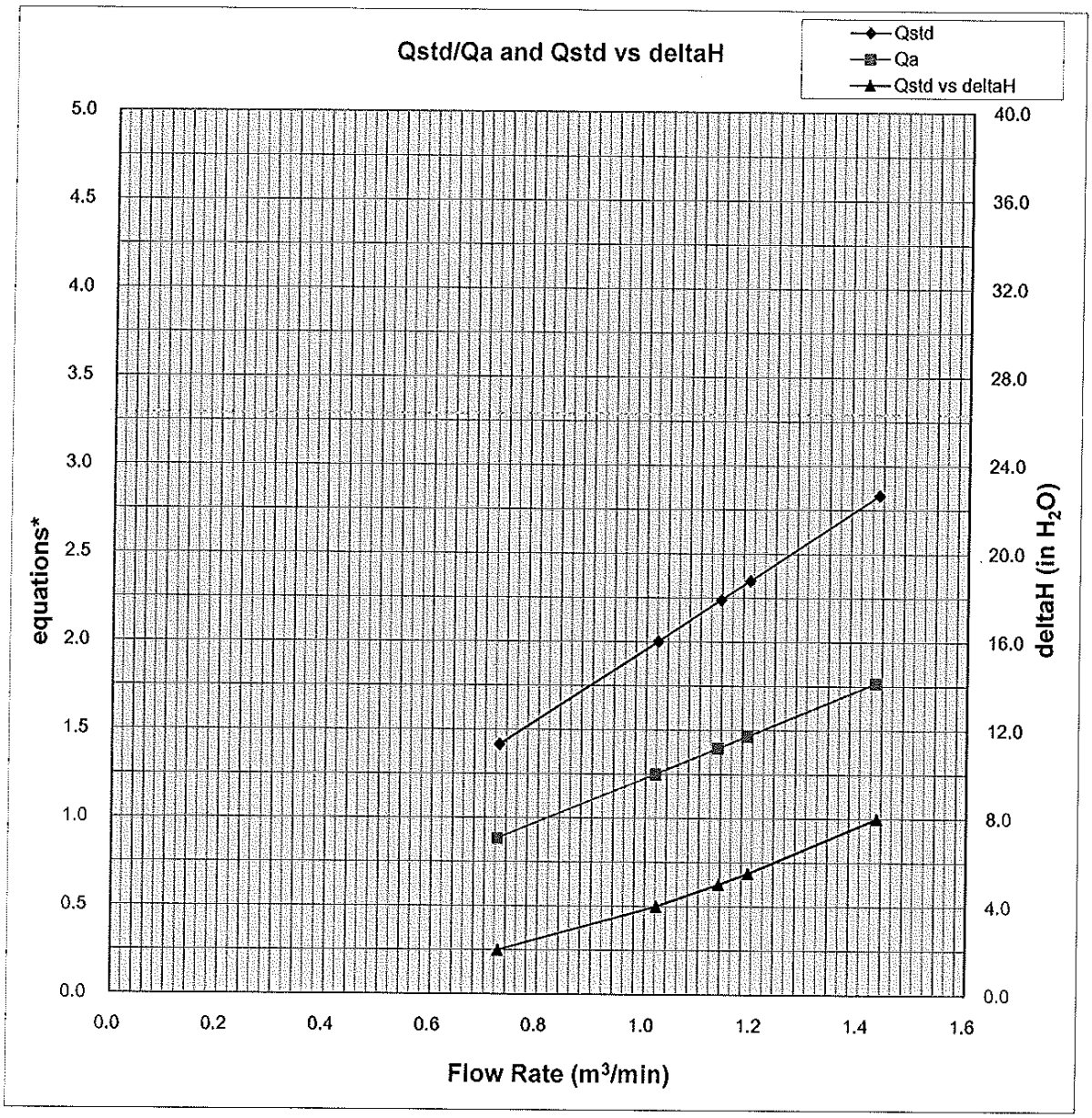
TEST REPORT



Y-axis equations:

Qstd series: SQRT[ΔH(Pa/Pstd)(Tstd/Ta)]

Qa series: SQRT[ΔH(Ta/Pa)]

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. Henry Leung**

Test Report No.:	C/111101/2
Date of Issue:	2011-11-03
Date Received:	2011-11-01
Date Tested:	2011-11-01
Date Completed:	2011-11-03
Next Due Date:	2012-01-02
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 853944
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 685 CPM
Equipment No.	: A-02-04

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 64%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0031

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

ATTN: **Mr. Henry Leung**

Test Report No.:	C/111101/1
Date of Issue:	2011-11-03
Date Received:	2011-11-01
Date Tested:	2011-11-01
Date Completed:	2011-11-03
Next Due Date:	2012-01-02
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 014750
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 790 CPM
Equipment No.	: A-02-06

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 64%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0031

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

ATTN: **Mr. Henry Leung**

Test Report No.:	C/111109/1
Date of Issue:	2011-11-11
Date Received:	2011-11-09
Date Tested:	2011-11-09
Date Completed:	2011-11-11
Next Due Date:	2012-01-10
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 541146
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 625 CPM
Equipment No.	: A-02-07

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 68%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0030

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/111028/3
Date of Issue:	2011-10-31
Date Received:	2011-10-28
Date Tested:	2011-10-28
Date Completed:	2011-10-31
Next Due Date:	2011-12-30
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 66%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0030

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT:	**Cinotech Consultants Limited** **Room 1710, Technology Park,** **18 On Lai Street,** **Shatin, NT, Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/10/111106A 2011-11-07 2011-11-06 2011-11-06 2011-11-07 2012-05-06
ATTN:	**Miss Mei Ling Tang**	Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Weather Monitor II
Manufacturer	: Davis Instruments
Model No.	: 7440
Serial No.	: MC20813A11

Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 48%

Test Specifications:

1. Performance check of anemometer
2. Performance check of wind direction sensor

Methodology:

In-house method with reference anemometer (RS232 Integral Vane Digital Anemometer)

PREPARED AND CHECKED BY:
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TEST REPORT

Test Report No.:	C/10/111106A
Date of Issue:	2011-11-07
Date Received:	2011-11-06
Date Tested:	2011-11-06
Date Completed:	2011-11-07
Next Due Date:	2012-05-06

Results:

1. Performance check of anemometer

Air Velocity, m/s		Difference D (m/s)
Instrument Reading (V1)	Reference Value (V1)	D = V1 – V2
2.00	2.00	0.00

2. Performance check of wind direction sensor

Wind Direction (°)		Difference D (°)
Instrument Reading (W1)	Reference Value (W2)	D = W1 - W2
0.0	0.0	0
45.1	45.0	0.1
90.2	90.5	-0.3
135.0	135.0	0
180.3	180.0	0.3
225.2	225.0	0.2
270.4	270.0	0.4
315.3	315.0	0.3
359.7	360.0	-0.3

**********END OF REPORT**********

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/110117/1
Date of Issue:	2011-01-17
Date Received:	2011-01-14
Date Tested:	2011-01-14
Date Completed:	2011-01-17
Next Due Date:	2012-01-16

ATTN: **Mr. Henry Leung**

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 14302
Microphone No.	: 17204
Equipment No.	: N-08-04

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 58%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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Shatin, NT, Hong Kong

ATTN: **Mr. Henry Leung**

Test Report No.:	C/N/110124/1
Date of Issue:	2011-01-24
Date Received:	2011-01-21
Date Tested:	2011-01-21
Date Completed:	2011-01-24
Next Due Date:	2012-01-23
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 14303
Microphone No.	: 17204
Equipment No.	: N-08-05

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 55%.

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

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PATRICK TSE
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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited** **Room 1710, Technology Park,** **18 On Lai Street,** **Shatin, NT, Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/N/100902/1 2011-09-03 2011-09-02 2011-09-02 2011-09-03 2012-09-02
ATTN:	**Mr. Henry Leung**	Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 21139
Microphone No.	: 43690
Equipment No.	: N-08-06

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 62%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

ATTN: **Mr. Henry Leung**

Test Report No.:	C/N/110906/3
Date of Issue:	2011-09-07
Date Received:	2011-09-06
Date Tested:	2011-09-06
Date Completed:	2011-09-07
Next Due Date:	2012-09-06
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 66%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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Test Report No.:	C/N/110902-3
Date of Issue:	2011-09-03
Date Received:	2011-09-02
Date Tested:	2011-09-02
Date Completed:	2011-09-03
Next Due Date:	2012-09-02

ATTN: **Mr. Henry Leung**

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2412367
Equipment No.	: N-02-03

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 62%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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ATTN: **Mr. Henry Leung**

Test Report No.:	C/N/110923/2
Date of Issue:	2011-09-24
Date Received:	2011-09-23
Date Tested:	2011-09-23
Date Completed:	2011-09-24
Next Due Date:	2012-09-23
Page:	1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 10929
Equipment No.	: N-09-01

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 59%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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Shatin, NT, Hong Kong

ATTN: **Mr. Henry Leung**

Test Report No.:	C/N/111104/1
Date of Issue:	2011-11-05
Date Received:	2011-11-04
Date Tested:	2011-11-04
Date Completed:	2011-11-05
Next Due Date:	2012-11-04
Page:	1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 10965
Equipment No.	: N-09-02

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 60%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

APPENDIX C
WEATHER INFORMATION

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 December 2011	14.9 – 21.8	57 – 86	0
2 December 2011	13.4 – 17.8	51 – 67	0
3 December 2011	11.8 – 19.4	35 – 65	0
4 December 2011	14.4 – 20.2	49 – 80	0
5 December 2011	18.1 – 20.2	68 – 94	1.2
6 December 2011	17.6 – 21.8	74 – 97	1.2
7 December 2011	20.4 – 24.5	69 – 88	0
8 December 2011	15.7 – 22.9	55 – 80	0
9 December 2011	13.4 – 16.3	52 – 66	Trace
10 December 2011	11.0 – 15.9	33 – 57	0
11 December 2011	9.6 – 16.3	37 – 49	0
12 December 2011	11.7 – 18.6	38 – 54	0
13 December 2011	14.1 – 20.7	49 – 66	Trace
14 December 2011	17.7 – 21.6	60 – 68	0
15 December 2011	17.5 – 22.2	52 – 70	0
16 December 2011	15.1 – 19.0	52 – 62	0
17 December 2011	14.4 – 17.8	58 – 74	Trace
18 December 2011	13.6 – 18.6	57 – 84	Trace
19 December 2011	14.0 – 19.2	58 – 84	0

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 December 2011	16.7 – 18.7	57 – 86	Trace
21 December 2011	17.2 – 22.0	56 – 84	0
22 December 2011	16.1 – 20.5	51 – 86	0
23 December 2011	12.6 – 17.7	55 – 70	0
24 December 2011	10.6 – 15.6	31 – 58	0
25 December 2011	10.3 – 15.9	36 – 62	0
26 December 2011	13.9 – 17.9	48 – 75	0
27 December 2011	15.1 – 18.0	66 – 84	0
28 December 2011	15.1 – 20.6	68 – 88	0
29 December 2011	16.1 – 20.7	69 – 90	0
30 December 2011	16.5 – 19.6	69 – 86	Trace
31 December 2011	14.8 – 19.8	64 – 95	0.4

* The above information was extracted from the daily weather summary by Hong Kong Observatory.

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Speed m/s	Direction
1-Dec-2011	0:00	1.9	WNW
1-Dec-2011	1:00	1.8	WNW
1-Dec-2011	2:00	1.5	WNW
1-Dec-2011	3:00	1.4	NW
1-Dec-2011	4:00	1.4	WNW
1-Dec-2011	5:00	1.6	WNW
1-Dec-2011	6:00	1.4	WNW
1-Dec-2011	7:00	1.5	WNW
1-Dec-2011	8:00	1.7	WNW
1-Dec-2011	9:00	1.9	WNW
1-Dec-2011	10:00	2	WNW
1-Dec-2011	11:00	2.2	WNW
1-Dec-2011	12:00	2.5	W
1-Dec-2011	13:00	2.4	W
1-Dec-2011	14:00	2.3	W
1-Dec-2011	15:00	2.5	WNW
1-Dec-2011	16:00	2.3	WNW
1-Dec-2011	17:00	2.1	W
1-Dec-2011	18:00	1.8	WNW
1-Dec-2011	19:00	1.4	NNW
1-Dec-2011	20:00	1.3	NNW
1-Dec-2011	21:00	1.5	NNW
1-Dec-2011	22:00	1.7	WNW
1-Dec-2011	23:00	1.3	WNW
2-Dec-2011	0:00	1.1	WNW
2-Dec-2011	1:00	1	WSW
2-Dec-2011	2:00	1.1	WNW
2-Dec-2011	3:00	1.1	WNW
2-Dec-2011	4:00	1.1	WNW
2-Dec-2011	5:00	1.2	WNW
2-Dec-2011	6:00	1	NW
2-Dec-2011	7:00	0.9	SW
2-Dec-2011	8:00	0.9	W
2-Dec-2011	9:00	1	W
2-Dec-2011	10:00	1.6	WNW
2-Dec-2011	11:00	1.6	WSW

II. Mean Wind Speed and Wind Direction

2-Dec-2011	12:00	1.8	WSW
2-Dec-2011	13:00	1.9	SW
2-Dec-2011	14:00	1.9	WSW
2-Dec-2011	15:00	1.8	SW
2-Dec-2011	16:00	1.8	WSW
2-Dec-2011	17:00	1.6	SW
2-Dec-2011	18:00	1.5	WSW
2-Dec-2011	19:00	1.2	WNW
2-Dec-2011	20:00	1.2	WNW
2-Dec-2011	21:00	1.3	NE
2-Dec-2011	22:00	1.2	NE
2-Dec-2011	23:00	1.2	NE
3-Dec-2011	0:00	1.2	NE
3-Dec-2011	1:00	1.2	NE
3-Dec-2011	2:00	1.1	NE
3-Dec-2011	3:00	1.2	NE
3-Dec-2011	4:00	1.3	E
3-Dec-2011	5:00	1.3	NNE
3-Dec-2011	6:00	1.2	N
3-Dec-2011	7:00	1.2	NNE
3-Dec-2011	8:00	1.1	N
3-Dec-2011	9:00	1.1	N
3-Dec-2011	10:00	1.8	N
3-Dec-2011	11:00	1.6	N
3-Dec-2011	12:00	1.7	N
3-Dec-2011	13:00	2	N
3-Dec-2011	14:00	2	NNW
3-Dec-2011	15:00	2.1	N
3-Dec-2011	16:00	1.9	N
3-Dec-2011	17:00	1.9	N
3-Dec-2011	18:00	1.7	N
3-Dec-2011	19:00	1.7	N
3-Dec-2011	20:00	1.6	NNW
3-Dec-2011	21:00	1.5	N
3-Dec-2011	22:00	1.6	N
3-Dec-2011	23:00	1.6	N
4-Dec-2011	0:00	1.9	N

II. Mean Wind Speed and Wind Direction

4-Dec-2011	1:00	2.1	N
4-Dec-2011	2:00	2	N
4-Dec-2011	3:00	2.1	N
4-Dec-2011	4:00	2.3	NW
4-Dec-2011	5:00	2.3	NNW
4-Dec-2011	6:00	2.7	NNW
4-Dec-2011	7:00	2.3	NNW
4-Dec-2011	8:00	2.4	W
4-Dec-2011	9:00	2.6	W
4-Dec-2011	10:00	2.6	WSW
4-Dec-2011	11:00	2.5	NW
4-Dec-2011	12:00	2.6	WNW
4-Dec-2011	13:00	2.7	WNW
4-Dec-2011	14:00	2.5	WNW
4-Dec-2011	15:00	2.6	WNW
4-Dec-2011	16:00	2.5	WNW
4-Dec-2011	17:00	2.5	N
4-Dec-2011	18:00	2.4	NNW
4-Dec-2011	19:00	2.3	ENE
4-Dec-2011	20:00	1.8	SE
4-Dec-2011	21:00	1.9	ENE
4-Dec-2011	22:00	1.8	ESE
4-Dec-2011	23:00	1.8	E
5-Dec-2011	0:00	1.7	E
5-Dec-2011	1:00	1.9	SE
5-Dec-2011	2:00	1.7	SE
5-Dec-2011	3:00	2	SE
5-Dec-2011	4:00	1.9	SE
5-Dec-2011	5:00	2.3	SE
5-Dec-2011	6:00	1.9	SE
5-Dec-2011	7:00	1.9	SSE
5-Dec-2011	8:00	1.7	SE
5-Dec-2011	9:00	3	S
5-Dec-2011	10:00	2.8	SSW
5-Dec-2011	11:00	2.5	SSW
5-Dec-2011	12:00	3.1	SSW
5-Dec-2011	13:00	3.4	SSW

II. Mean Wind Speed and Wind Direction

5-Dec-2011	14:00	3	SE
5-Dec-2011	15:00	3.3	SE
5-Dec-2011	16:00	3.2	SSE
5-Dec-2011	17:00	3	SE
5-Dec-2011	18:00	2.4	SSE
5-Dec-2011	19:00	2.5	SE
5-Dec-2011	20:00	2.7	SE
5-Dec-2011	21:00	2.4	SE
5-Dec-2011	22:00	2.3	SE
5-Dec-2011	23:00	2.3	SE
6-Dec-2011	0:00	1.8	ESE
6-Dec-2011	1:00	1.9	SE
6-Dec-2011	2:00	2.1	SSE
6-Dec-2011	3:00	2.3	S
6-Dec-2011	4:00	2.2	SSW
6-Dec-2011	5:00	1.9	SSW
6-Dec-2011	6:00	2.2	SSW
6-Dec-2011	7:00	1.9	SSW
6-Dec-2011	8:00	2.1	SSW
6-Dec-2011	9:00	2.2	SSE
6-Dec-2011	10:00	2.7	S
6-Dec-2011	11:00	2.5	SSW
6-Dec-2011	12:00	2.5	S
6-Dec-2011	13:00	2.5	S
6-Dec-2011	14:00	2.2	S
6-Dec-2011	15:00	2.2	S
6-Dec-2011	16:00	1.7	SSE
6-Dec-2011	17:00	1.5	SSW
6-Dec-2011	18:00	1.7	S
6-Dec-2011	19:00	1.6	S
6-Dec-2011	20:00	1.6	SSW
6-Dec-2011	21:00	1.6	S
6-Dec-2011	22:00	1.8	SSW
6-Dec-2011	23:00	1.4	S
7-Dec-2011	0:00	1.1	ESE
7-Dec-2011	1:00	1.2	ESE
7-Dec-2011	2:00	1	ESE

II. Mean Wind Speed and Wind Direction

7-Dec-2011	3:00	1	SE
7-Dec-2011	4:00	1.1	SE
7-Dec-2011	5:00	1.3	WSW
7-Dec-2011	6:00	1.2	SSW
7-Dec-2011	7:00	1	SSW
7-Dec-2011	8:00	1	SSW
7-Dec-2011	9:00	0.9	SSW
7-Dec-2011	10:00	1.2	SSW
7-Dec-2011	11:00	1.5	SE
7-Dec-2011	12:00	2	SSE
7-Dec-2011	13:00	1.8	SE
7-Dec-2011	14:00	1.8	SE
7-Dec-2011	15:00	2	SE
7-Dec-2011	16:00	1.6	SE
7-Dec-2011	17:00	1.3	SE
7-Dec-2011	18:00	1.3	ESE
7-Dec-2011	19:00	1.1	ESE
7-Dec-2011	20:00	1.2	ESE
7-Dec-2011	21:00	1	SE
7-Dec-2011	22:00	1.1	S
7-Dec-2011	23:00	1	S
8-Dec-2011	0:00	1.2	S
8-Dec-2011	1:00	1.2	SSE
8-Dec-2011	2:00	0.9	S
8-Dec-2011	3:00	0.8	S
8-Dec-2011	4:00	1	SSE
8-Dec-2011	5:00	0.9	SE
8-Dec-2011	6:00	1	NE
8-Dec-2011	7:00	1.1	E
8-Dec-2011	8:00	1.1	E
8-Dec-2011	9:00	1.4	E
8-Dec-2011	10:00	1.4	NE
8-Dec-2011	11:00	1.3	ENE
8-Dec-2011	12:00	1.6	NE
8-Dec-2011	13:00	1.2	NE
8-Dec-2011	14:00	1.2	NE
8-Dec-2011	15:00	1.5	SSE

II. Mean Wind Speed and Wind Direction

8-Dec-2011	16:00	1.7	SSE
8-Dec-2011	17:00	1.9	SE
8-Dec-2011	18:00	1.5	SSE
8-Dec-2011	19:00	1.2	SE
8-Dec-2011	20:00	1.1	SSE
8-Dec-2011	21:00	0.9	SE
8-Dec-2011	22:00	1.2	SSE
8-Dec-2011	23:00	1.2	ESE
9-Dec-2011	0:00	1.2	ENE
9-Dec-2011	1:00	1.3	SSE
9-Dec-2011	2:00	1.2	SE
9-Dec-2011	3:00	1.3	NE
9-Dec-2011	4:00	1	SE
9-Dec-2011	5:00	1.1	SE
9-Dec-2011	6:00	0.9	SE
9-Dec-2011	7:00	1.1	SE
9-Dec-2011	8:00	1.2	SE
9-Dec-2011	9:00	1.5	E
9-Dec-2011	10:00	1.6	ENE
9-Dec-2011	11:00	1.8	NE
9-Dec-2011	12:00	1.8	ENE
9-Dec-2011	13:00	1.9	NE
9-Dec-2011	14:00	1.5	NE
9-Dec-2011	15:00	1.4	NE
9-Dec-2011	16:00	1.6	NE
9-Dec-2011	17:00	1.8	ENE
9-Dec-2011	18:00	1.5	E
9-Dec-2011	19:00	0.8	SE
9-Dec-2011	20:00	0.7	ESE
9-Dec-2011	21:00	0.9	ESE
9-Dec-2011	22:00	1.1	E
9-Dec-2011	23:00	1.4	E
10-Dec-2011	0:00	1.4	ESE
10-Dec-2011	1:00	1.7	E
10-Dec-2011	2:00	1.5	ESE
10-Dec-2011	3:00	1.9	ESE
10-Dec-2011	4:00	1.7	E

II. Mean Wind Speed and Wind Direction

10-Dec-2011	5:00	1.6	ESE
10-Dec-2011	6:00	1.6	SE
10-Dec-2011	7:00	1.5	SSW
10-Dec-2011	8:00	1.8	SSW
10-Dec-2011	9:00	1.9	SE
10-Dec-2011	10:00	1.9	S
10-Dec-2011	11:00	1.9	ESE
10-Dec-2011	12:00	2.1	E
10-Dec-2011	13:00	2.1	ENE
10-Dec-2011	14:00	1.8	NE
10-Dec-2011	15:00	1.6	NNE
10-Dec-2011	16:00	1.9	NNE
10-Dec-2011	17:00	1.7	NE
10-Dec-2011	18:00	1.5	NE
10-Dec-2011	19:00	1.5	NE
10-Dec-2011	20:00	1.5	SE
10-Dec-2011	21:00	1.5	SE
10-Dec-2011	22:00	1.1	E
10-Dec-2011	23:00	1.2	ESE
11-Dec-2011	0:00	1.3	ESE
11-Dec-2011	1:00	1.4	SE
11-Dec-2011	2:00	1.4	SE
11-Dec-2011	3:00	1.3	ESE
11-Dec-2011	4:00	1.8	ESE
11-Dec-2011	5:00	1.7	W
11-Dec-2011	6:00	1.8	WNW
11-Dec-2011	7:00	1.6	W
11-Dec-2011	8:00	1.6	NW
11-Dec-2011	9:00	1.8	N
11-Dec-2011	10:00	1.9	N
11-Dec-2011	11:00	2	N
11-Dec-2011	12:00	2	N
11-Dec-2011	13:00	2.1	NE
11-Dec-2011	14:00	2.4	NE
11-Dec-2011	15:00	2.5	N
11-Dec-2011	16:00	1.8	NE
11-Dec-2011	17:00	1.9	SE

II. Mean Wind Speed and Wind Direction

11-Dec-2011	18:00	1.6	SE
11-Dec-2011	19:00	1.5	SE
11-Dec-2011	20:00	1.6	SE
11-Dec-2011	21:00	1.4	SE
11-Dec-2011	22:00	1	NNW
11-Dec-2011	23:00	1.2	E
12-Dec-2011	0:00	1.3	E
12-Dec-2011	1:00	1.6	E
12-Dec-2011	2:00	1.6	ENE
12-Dec-2011	3:00	1.3	E
12-Dec-2011	4:00	1.1	WNW
12-Dec-2011	5:00	1.3	WNW
12-Dec-2011	6:00	1.2	N
12-Dec-2011	7:00	1.3	E
12-Dec-2011	8:00	1.4	E
12-Dec-2011	9:00	1.5	SE
12-Dec-2011	10:00	1.6	SE
12-Dec-2011	11:00	1.4	SE
12-Dec-2011	12:00	1.7	W
12-Dec-2011	13:00	1.6	NW
12-Dec-2011	14:00	1.6	ESE
12-Dec-2011	15:00	1.5	E
12-Dec-2011	16:00	1.6	ENE
12-Dec-2011	17:00	1.9	NE
12-Dec-2011	18:00	1.7	NE
12-Dec-2011	19:00	1.7	NW
12-Dec-2011	20:00	1.5	W
12-Dec-2011	21:00	1.5	WNW
12-Dec-2011	22:00	1.8	WNW
12-Dec-2011	23:00	1.8	W
13-Dec-2011	0:00	1.6	SSW
13-Dec-2011	1:00	1.5	SW
13-Dec-2011	2:00	1.6	SW
13-Dec-2011	3:00	1.6	W
13-Dec-2011	4:00	1.7	SSW
13-Dec-2011	5:00	1.7	NE
13-Dec-2011	6:00	1.5	NE

II. Mean Wind Speed and Wind Direction

13-Dec-2011	7:00	1.5	NE
13-Dec-2011	8:00	1.7	ESE
13-Dec-2011	9:00	2	SE
13-Dec-2011	10:00	2.1	NE
13-Dec-2011	11:00	2.1	ESE
13-Dec-2011	12:00	2.4	NE
13-Dec-2011	13:00	2.2	NE
13-Dec-2011	14:00	2.2	ESE
13-Dec-2011	15:00	2.1	ENE
13-Dec-2011	16:00	2.1	ESE
13-Dec-2011	17:00	1.7	ESE
13-Dec-2011	18:00	1.8	ESE
13-Dec-2011	19:00	1.6	ESE
13-Dec-2011	20:00	1.3	SE
13-Dec-2011	21:00	1.2	ESE
13-Dec-2011	22:00	1.1	ESE
13-Dec-2011	23:00	1.3	ESE
14-Dec-2011	0:00	1.3	E
14-Dec-2011	1:00	1	ESE
14-Dec-2011	2:00	1.1	SSW
14-Dec-2011	3:00	1	SSW
14-Dec-2011	4:00	1	SSW
14-Dec-2011	5:00	1	SSW
14-Dec-2011	6:00	1	SSW
14-Dec-2011	7:00	1.2	S
14-Dec-2011	8:00	1.3	SE
14-Dec-2011	9:00	1.7	SE
14-Dec-2011	10:00	1.8	SE
14-Dec-2011	11:00	2.1	SE
14-Dec-2011	12:00	2.6	SE
14-Dec-2011	13:00	2.2	N
14-Dec-2011	14:00	2.1	N
14-Dec-2011	15:00	2.2	SE
14-Dec-2011	16:00	2.1	SE
14-Dec-2011	17:00	1.9	SE
14-Dec-2011	18:00	1.7	ENE
14-Dec-2011	19:00	1.5	ENE

II. Mean Wind Speed and Wind Direction

14-Dec-2011	20:00	1.3	ENE
14-Dec-2011	21:00	1.8	ENE
14-Dec-2011	22:00	1.7	ENE
14-Dec-2011	23:00	1.7	NE
15-Dec-2011	0:00	1.7	ENE
15-Dec-2011	1:00	1.8	ENE
15-Dec-2011	2:00	1.8	NE
15-Dec-2011	3:00	2	NE
15-Dec-2011	4:00	1.7	NE
15-Dec-2011	5:00	1.7	NE
15-Dec-2011	6:00	1.8	NE
15-Dec-2011	7:00	1.8	NE
15-Dec-2011	8:00	1.9	NE
15-Dec-2011	9:00	2.2	N
15-Dec-2011	10:00	2.4	N
15-Dec-2011	11:00	2.5	N
15-Dec-2011	12:00	2.5	N
15-Dec-2011	13:00	2.4	ENE
15-Dec-2011	14:00	2.5	ENE
15-Dec-2011	15:00	2.2	ENE
15-Dec-2011	16:00	2.1	ENE
15-Dec-2011	17:00	1.9	NNE
15-Dec-2011	18:00	1.9	E
15-Dec-2011	19:00	1.6	E
15-Dec-2011	20:00	1.7	ENE
15-Dec-2011	21:00	1.7	ENE
15-Dec-2011	22:00	1.5	ENE
15-Dec-2011	23:00	1.8	ENE
16-Dec-2011	0:00	1.5	E
16-Dec-2011	1:00	1.5	NE
16-Dec-2011	2:00	1.4	N
16-Dec-2011	3:00	1.3	N
16-Dec-2011	4:00	1.5	NE
16-Dec-2011	5:00	1.7	N
16-Dec-2011	6:00	1.4	ENE
16-Dec-2011	7:00	1.5	E
16-Dec-2011	8:00	1.7	E

II. Mean Wind Speed and Wind Direction

16-Dec-2011	9:00	1.8	E
16-Dec-2011	10:00	1.8	ENE
16-Dec-2011	11:00	2	ENE
16-Dec-2011	12:00	2.4	ENE
16-Dec-2011	13:00	2.6	NE
16-Dec-2011	14:00	2.2	NE
16-Dec-2011	15:00	2.1	NE
16-Dec-2011	16:00	2.1	NE
16-Dec-2011	17:00	2	NE
16-Dec-2011	18:00	1.6	N
16-Dec-2011	19:00	1.7	NNE
16-Dec-2011	20:00	1.5	NNE
16-Dec-2011	21:00	1.5	N
16-Dec-2011	22:00	1.4	SSE
16-Dec-2011	23:00	1.3	SSE
17-Dec-2011	0:00	1.6	ESE
17-Dec-2011	1:00	1.7	SSE
17-Dec-2011	2:00	1.7	SE
17-Dec-2011	3:00	1.6	SSE
17-Dec-2011	4:00	1.6	SSE
17-Dec-2011	5:00	1.6	SSE
17-Dec-2011	6:00	1.5	SSE
17-Dec-2011	7:00	1.6	SSE
17-Dec-2011	8:00	1.9	SSE
17-Dec-2011	9:00	2.2	E
17-Dec-2011	10:00	2.6	ENE
17-Dec-2011	11:00	3.1	ENE
17-Dec-2011	12:00	3	ENE
17-Dec-2011	13:00	3	N
17-Dec-2011	14:00	2.9	N
17-Dec-2011	15:00	2.8	NNE
17-Dec-2011	16:00	2.9	ENE
17-Dec-2011	17:00	2.5	NE
17-Dec-2011	18:00	2.3	N
17-Dec-2011	19:00	2	N
17-Dec-2011	20:00	2.1	ENE
17-Dec-2011	21:00	1.9	NE

II. Mean Wind Speed and Wind Direction

17-Dec-2011	22:00	1.9	N
17-Dec-2011	23:00	1.6	N
18-Dec-2011	0:00	1.4	N
18-Dec-2011	1:00	1.4	N
18-Dec-2011	2:00	1.3	NE
18-Dec-2011	3:00	1.4	N
18-Dec-2011	4:00	1.5	N
18-Dec-2011	5:00	1.5	N
18-Dec-2011	6:00	1.5	ENE
18-Dec-2011	7:00	1.3	ENE
18-Dec-2011	8:00	1.6	ENE
18-Dec-2011	9:00	2	ENE
18-Dec-2011	10:00	2.7	ENE
18-Dec-2011	11:00	2.9	ENE
18-Dec-2011	12:00	2.7	NE
18-Dec-2011	13:00	2.8	N
18-Dec-2011	14:00	2.8	NW
18-Dec-2011	15:00	2.8	NE
18-Dec-2011	16:00	2.6	E
18-Dec-2011	17:00	2.3	SE
18-Dec-2011	18:00	2	SSE
18-Dec-2011	19:00	1.7	SE
18-Dec-2011	20:00	1.5	N
18-Dec-2011	21:00	1.5	WNW
18-Dec-2011	22:00	1.3	ENE
18-Dec-2011	23:00	1.6	ENE
19-Dec-2011	0:00	1.6	ENE
19-Dec-2011	1:00	1.5	ENE
19-Dec-2011	2:00	1.4	ENE
19-Dec-2011	3:00	1.4	ENE
19-Dec-2011	4:00	1.4	ENE
19-Dec-2011	5:00	1.5	ENE
19-Dec-2011	6:00	1.2	NE
19-Dec-2011	7:00	1.4	ENE
19-Dec-2011	8:00	1.6	NE
19-Dec-2011	9:00	1.9	ENE
19-Dec-2011	10:00	2.5	ENE

II. Mean Wind Speed and Wind Direction

19-Dec-2011	11:00	2.6	NE
19-Dec-2011	12:00	2.8	E
19-Dec-2011	13:00	2.8	E
19-Dec-2011	14:00	2.7	E
19-Dec-2011	15:00	2.9	ENE
19-Dec-2011	16:00	2.5	ESE
19-Dec-2011	17:00	2.4	ENE
19-Dec-2011	18:00	2	SE
19-Dec-2011	19:00	1.5	SE
19-Dec-2011	20:00	1.4	E
19-Dec-2011	21:00	1	SE
19-Dec-2011	22:00	1.2	SSE
19-Dec-2011	23:00	1.2	SSE
20-Dec-2011	0:00	1	SSE
20-Dec-2011	1:00	1	SE
20-Dec-2011	2:00	1.1	SE
20-Dec-2011	3:00	1.1	SE
20-Dec-2011	4:00	1	E
20-Dec-2011	5:00	1.1	E
20-Dec-2011	6:00	1	E
20-Dec-2011	7:00	0.9	E
20-Dec-2011	8:00	1.6	E
20-Dec-2011	9:00	2.1	SSE
20-Dec-2011	10:00	2.5	SSE
20-Dec-2011	11:00	2.4	SE
20-Dec-2011	12:00	2.7	SE
20-Dec-2011	13:00	2.6	SE
20-Dec-2011	14:00	2.3	SE
20-Dec-2011	15:00	2.4	SE
20-Dec-2011	16:00	2.3	SE
20-Dec-2011	17:00	1.8	ENE
20-Dec-2011	18:00	1.3	ENE
20-Dec-2011	19:00	1.3	ENE
20-Dec-2011	20:00	1.3	SSE
20-Dec-2011	21:00	1.9	SSE
20-Dec-2011	22:00	1.6	SSE
20-Dec-2011	23:00	1.7	SSE

II. Mean Wind Speed and Wind Direction

21-Dec-2011	0:00	1.4	SE
21-Dec-2011	1:00	1.3	SE
21-Dec-2011	2:00	1.5	SSW
21-Dec-2011	3:00	1.4	SSW
21-Dec-2011	4:00	1.3	SSE
21-Dec-2011	5:00	1.2	SSE
21-Dec-2011	6:00	1.3	SSE
21-Dec-2011	7:00	1.2	E
21-Dec-2011	8:00	1.5	E
21-Dec-2011	9:00	2	E
21-Dec-2011	10:00	2.2	E
21-Dec-2011	11:00	2.4	E
21-Dec-2011	12:00	2.4	E
21-Dec-2011	13:00	2.4	NE
21-Dec-2011	14:00	2.2	NE
21-Dec-2011	15:00	2.2	SE
21-Dec-2011	16:00	2.1	SE
21-Dec-2011	17:00	2.3	NNE
21-Dec-2011	18:00	1.9	NNE
21-Dec-2011	19:00	1.6	NNE
21-Dec-2011	20:00	1.5	NNE
21-Dec-2011	21:00	1.4	NE
21-Dec-2011	22:00	1.3	NE
21-Dec-2011	23:00	1.2	NE
22-Dec-2011	0:00	1.4	NE
22-Dec-2011	1:00	1.4	NE
22-Dec-2011	2:00	1.5	ESE
22-Dec-2011	3:00	1.5	NNE
22-Dec-2011	4:00	1.5	NNE
22-Dec-2011	5:00	1.5	NNE
22-Dec-2011	6:00	1.5	NNE
22-Dec-2011	7:00	1.8	NNE
22-Dec-2011	8:00	2.3	ENE
22-Dec-2011	9:00	2.2	ENE
22-Dec-2011	10:00	2	ENE
22-Dec-2011	11:00	2	ENE
22-Dec-2011	12:00	2.6	NNE

II. Mean Wind Speed and Wind Direction

22-Dec-2011	13:00	2.5	NE
22-Dec-2011	14:00	2.5	ENE
22-Dec-2011	15:00	2.7	ENE
22-Dec-2011	16:00	2.4	E
22-Dec-2011	17:00	2.1	ENE
22-Dec-2011	18:00	1.7	ENE
22-Dec-2011	19:00	1.4	ENE
22-Dec-2011	20:00	1.7	ENE
22-Dec-2011	21:00	2	ENE
22-Dec-2011	22:00	2	E
22-Dec-2011	23:00	2.2	W
23-Dec-2011	0:00	1.8	ENE
23-Dec-2011	1:00	1.8	E
23-Dec-2011	2:00	1.8	NW
23-Dec-2011	3:00	1.6	WNW
23-Dec-2011	4:00	1.8	NE
23-Dec-2011	5:00	1.7	NE
23-Dec-2011	6:00	1.6	ENE
23-Dec-2011	7:00	1.5	NE
23-Dec-2011	8:00	1.9	ENE
23-Dec-2011	9:00	2.2	SSE
23-Dec-2011	10:00	2.4	SSE
23-Dec-2011	11:00	2.5	NE
23-Dec-2011	12:00	2.5	NE
23-Dec-2011	13:00	2.6	ENE
23-Dec-2011	14:00	2.4	S
23-Dec-2011	15:00	2.3	SE
23-Dec-2011	16:00	2.2	SE
23-Dec-2011	17:00	2.2	S
23-Dec-2011	18:00	2	SSE
23-Dec-2011	19:00	1.7	SSE
23-Dec-2011	20:00	1.7	SSE
23-Dec-2011	21:00	1.4	SSE
23-Dec-2011	22:00	1.5	SSE
23-Dec-2011	23:00	1.3	SE
24-Dec-2011	0:00	1.7	SSE
24-Dec-2011	1:00	1.6	SE

II. Mean Wind Speed and Wind Direction

24-Dec-2011	2:00	1.6	SE
24-Dec-2011	3:00	1.7	SSE
24-Dec-2011	4:00	1.6	SW
24-Dec-2011	5:00	1.9	SW
24-Dec-2011	6:00	1.6	SW
24-Dec-2011	7:00	1.6	SW
24-Dec-2011	8:00	2.1	SW
24-Dec-2011	9:00	2.2	SW
24-Dec-2011	10:00	2.5	SW
24-Dec-2011	11:00	2.9	SW
24-Dec-2011	12:00	2.8	SW
24-Dec-2011	13:00	2.8	SW
24-Dec-2011	14:00	2.7	SW
24-Dec-2011	15:00	2.8	SW
24-Dec-2011	16:00	2.7	WSW
24-Dec-2011	17:00	2.5	WSW
24-Dec-2011	18:00	2.2	SW
24-Dec-2011	19:00	2	SW
24-Dec-2011	20:00	2.1	SW
24-Dec-2011	21:00	2.1	SE
24-Dec-2011	22:00	2.2	S
24-Dec-2011	23:00	2.2	SSE
25-Dec-2011	0:00	1.8	S
25-Dec-2011	1:00	1.6	SSE
25-Dec-2011	2:00	1.9	SSE
25-Dec-2011	3:00	1.5	SW
25-Dec-2011	4:00	1.6	SW
25-Dec-2011	5:00	1.8	SSW
25-Dec-2011	6:00	1.6	SW
25-Dec-2011	7:00	1.6	SW
25-Dec-2011	8:00	1.8	SSW
25-Dec-2011	9:00	2.3	SW
25-Dec-2011	10:00	2.7	SSW
25-Dec-2011	11:00	2.7	SW
25-Dec-2011	12:00	2.4	SW
25-Dec-2011	13:00	2.5	SSW
25-Dec-2011	14:00	2.5	SW

II. Mean Wind Speed and Wind Direction

25-Dec-2011	15:00	2.7	SSW
25-Dec-2011	16:00	2.5	SSW
25-Dec-2011	17:00	2.3	S
25-Dec-2011	18:00	1.8	SSW
25-Dec-2011	19:00	1.8	SW
25-Dec-2011	20:00	1.7	SW
25-Dec-2011	21:00	1.5	SSW
25-Dec-2011	22:00	1.5	SSW
25-Dec-2011	23:00	1.7	NE
26-Dec-2011	0:00	1.9	NE
26-Dec-2011	1:00	1.9	ENE
26-Dec-2011	2:00	1.8	ENE
26-Dec-2011	3:00	2	ENE
26-Dec-2011	4:00	1.7	ENE
26-Dec-2011	5:00	1.6	ENE
26-Dec-2011	6:00	1.4	ENE
26-Dec-2011	7:00	1.9	ENE
26-Dec-2011	8:00	1.7	ENE
26-Dec-2011	9:00	2.1	ENE
26-Dec-2011	10:00	2.2	ENE
26-Dec-2011	11:00	2.4	NNE
26-Dec-2011	12:00	2.5	N
26-Dec-2011	13:00	3	N
26-Dec-2011	14:00	2.8	NNE
26-Dec-2011	15:00	2.7	NNE
26-Dec-2011	16:00	2.4	NNE
26-Dec-2011	17:00	2.3	ENE
26-Dec-2011	18:00	1.8	NNE
26-Dec-2011	19:00	1.7	NNE
26-Dec-2011	20:00	1.8	N
26-Dec-2011	21:00	2.1	NNE
26-Dec-2011	22:00	1.9	NE
26-Dec-2011	23:00	1.8	NNE
27-Dec-2011	0:00	1.6	NNE
27-Dec-2011	1:00	1.5	WNW
27-Dec-2011	2:00	1.4	E
27-Dec-2011	3:00	1.5	E

II. Mean Wind Speed and Wind Direction

27-Dec-2011	4:00	1.4	E
27-Dec-2011	5:00	1.4	E
27-Dec-2011	6:00	1.3	NNE
27-Dec-2011	7:00	1.5	NNE
27-Dec-2011	8:00	1.9	NE
27-Dec-2011	9:00	2	E
27-Dec-2011	10:00	2.3	ESE
27-Dec-2011	11:00	2.5	ESE
27-Dec-2011	12:00	2.7	ESE
27-Dec-2011	13:00	2.3	ENE
27-Dec-2011	14:00	2.4	E
27-Dec-2011	15:00	2.4	N
27-Dec-2011	16:00	2.2	NNE
27-Dec-2011	17:00	2	NE
27-Dec-2011	18:00	1.8	NE
27-Dec-2011	19:00	1.8	NE
27-Dec-2011	20:00	2	S
27-Dec-2011	21:00	2	ENE
27-Dec-2011	22:00	1.9	NE
27-Dec-2011	23:00	1.9	ENE
28-Dec-2011	0:00	1.6	ENE
28-Dec-2011	1:00	1.5	ENE
28-Dec-2011	2:00	1.5	ENE
28-Dec-2011	3:00	1.4	ENE
28-Dec-2011	4:00	1.4	ENE
28-Dec-2011	5:00	1.3	ENE
28-Dec-2011	6:00	1	ENE
28-Dec-2011	7:00	1.2	ENE
28-Dec-2011	8:00	1.4	E
28-Dec-2011	9:00	1.9	E
28-Dec-2011	10:00	2.6	E
28-Dec-2011	11:00	2.5	NNE
28-Dec-2011	12:00	2.4	NNE
28-Dec-2011	13:00	2.7	ENE
28-Dec-2011	14:00	2.1	ENE
28-Dec-2011	15:00	2.2	ENE
28-Dec-2011	16:00	2	NE

II. Mean Wind Speed and Wind Direction

28-Dec-2011	17:00	2.2	ENE
28-Dec-2011	18:00	1.9	NE
28-Dec-2011	19:00	1.5	NE
28-Dec-2011	20:00	1.4	NE
28-Dec-2011	21:00	1.6	ENE
28-Dec-2011	22:00	1.4	NE
28-Dec-2011	23:00	1.5	ENE
29-Dec-2011	0:00	1.5	ENE
29-Dec-2011	1:00	1.7	ENE
29-Dec-2011	2:00	1.9	ENE
29-Dec-2011	3:00	2.1	ENE
29-Dec-2011	4:00	1.9	ENE
29-Dec-2011	5:00	1.7	ENE
29-Dec-2011	6:00	1.7	ENE
29-Dec-2011	7:00	1.5	ENE
29-Dec-2011	8:00	1.5	NNE
29-Dec-2011	9:00	1.8	NNE
29-Dec-2011	10:00	2.7	NE
29-Dec-2011	11:00	2.5	NE
29-Dec-2011	12:00	2.3	SE
29-Dec-2011	13:00	2.4	S
29-Dec-2011	14:00	2.2	SE
29-Dec-2011	15:00	2.3	ESE
29-Dec-2011	16:00	2.2	SE
29-Dec-2011	17:00	2.1	S
29-Dec-2011	18:00	1.7	ESE
29-Dec-2011	19:00	1.5	SE
29-Dec-2011	20:00	1.4	SE
29-Dec-2011	21:00	1.5	ESE
29-Dec-2011	22:00	1.6	SE
29-Dec-2011	23:00	1.8	SSE
30-Dec-2011	0:00	1.5	SE
30-Dec-2011	1:00	1.4	SE
30-Dec-2011	2:00	1.4	ESE
30-Dec-2011	3:00	1.5	SSE
30-Dec-2011	4:00	1.4	S
30-Dec-2011	5:00	1.3	S

II. Mean Wind Speed and Wind Direction

30-Dec-2011	6:00	1.2	ESE
30-Dec-2011	7:00	1.4	ESE
30-Dec-2011	8:00	1.7	ESE
30-Dec-2011	9:00	1.8	ESE
30-Dec-2011	10:00	1.9	ESE
30-Dec-2011	11:00	1.9	ESE
30-Dec-2011	12:00	2.3	ESE
30-Dec-2011	13:00	2.3	ESE
30-Dec-2011	14:00	2.2	ESE
30-Dec-2011	15:00	2.3	SE
30-Dec-2011	16:00	2.2	SE
30-Dec-2011	17:00	2	S
30-Dec-2011	18:00	1.9	ENE
30-Dec-2011	19:00	1.8	ENE
30-Dec-2011	20:00	1.6	ESE
30-Dec-2011	21:00	1.5	ESE
30-Dec-2011	22:00	1.6	ESE
30-Dec-2011	23:00	1.3	ESE
31-Dec-2011	0:00	2.4	SSE
31-Dec-2011	1:00	2.4	SSE
31-Dec-2011	2:00	2.4	SSE
31-Dec-2011	3:00	2.3	E
31-Dec-2011	4:00	2.4	NE
31-Dec-2011	5:00	2	SSE
31-Dec-2011	6:00	1.9	ESE
31-Dec-2011	7:00	1.8	S
31-Dec-2011	8:00	1.8	SE
31-Dec-2011	9:00	1.9	SSE
31-Dec-2011	10:00	1.8	SSE
31-Dec-2011	11:00	2	SE
31-Dec-2011	12:00	2.1	SE
31-Dec-2011	13:00	2.2	SSE
31-Dec-2011	14:00	2.2	SSE
31-Dec-2011	15:00	2.2	NNE
31-Dec-2011	16:00	2.1	ESE
31-Dec-2011	17:00	2.2	SSE
31-Dec-2011	18:00	2.4	ESE

II. Mean Wind Speed and Wind Direction

31-Dec-2011	19:00	2.4	ESE
31-Dec-2011	20:00	2.1	SSE
31-Dec-2011	21:00	1.8	S
31-Dec-2011	22:00	1.9	SE
31-Dec-2011	23:00	1.9	ESE

APPENDIX D
ENVIRONMENTAL MONITORING SCHEDULES

Contract No. KL/2010/03

Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities

Impact Air and Noise Monitoring Schedule for December 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			30-Nov	1-Dec	2-Dec	3-Dec
4-Dec	5-Dec	6-Dec	7-Dec	8-Dec	9-Dec	10-Dec
	1 hr TSP X3 Noise (M3(A) and M4) 24 hr TSP			Noise (M1 and M2)	1 hr TSP X3	24 hr TSP
11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec
		Noise (M1 and M2)		1 hr TSP X3 Noise (M3(A) and M4)	24 hr TSP	
18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec
			1 hr TSP X3 Noise (M3(A) and M4)	Noise (M1 and M2) 24 hr TSP		1 hr TSP X3
25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	
			Noise (M3(A) and M4) 24 hr TSP		1 hr TSP X3 Noise (M1 and M2)	

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

Air Quality Monitoring Station

AM1(A) - Kai Tak Operational Base
AM2 - Lee Kau Yan Memorial School

Noise Monitoring Station

M1 - Buddhist Chi King Primary School
M2 - S.K.H. Kowloon Bay Kei Lok Primary School
M3(A) - Kai Tak Operational Base
M4 - Lee Kau Yan Memorial School

Contract No. KL/2010/03

Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities

Tentative Impact Air and Noise Monitoring Schedule for January 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jan	**2-Jan**	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan
		24 hr TSP		1 hr TSP X3 Noise (M3(A) and M4)	Noise (M1 and M2)	
8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan
	24 hr TSP		1 hr TSP X3 Noise (M3(A) and M4)	Noise (M1 and M2)		24 hr TSP
15-Jan	16-Jan	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan
		1 hr TSP X3 Noise (M3(A) and M4)	Noise (M1 and M2)		1 hr TSP X3 24 hr TSP	
22-Jan	**23-Jan**	**24-Jan**	**25-Jan**	26-Jan	27-Jan	28-Jan
				1 hr TSP X3 Noise (M3(A) and M4) 24 hr TSP	Noise (M1 and M2)	
29-Jan	30-Jan	31-Jan				

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

Air Quality Monitoring Station

AM1(A) - Kai Tak Operational Base
AM2 - Lee Kau Yan Memorial School

Noise Monitoring Station

M1 - Buddhist Chi King Primary School
M2 - S.K.H. Kowloon Bay Kei Lok Primary School
M3(A) - Kai Tak Operational Base
M4 - Lee Kau Yan Memorial School

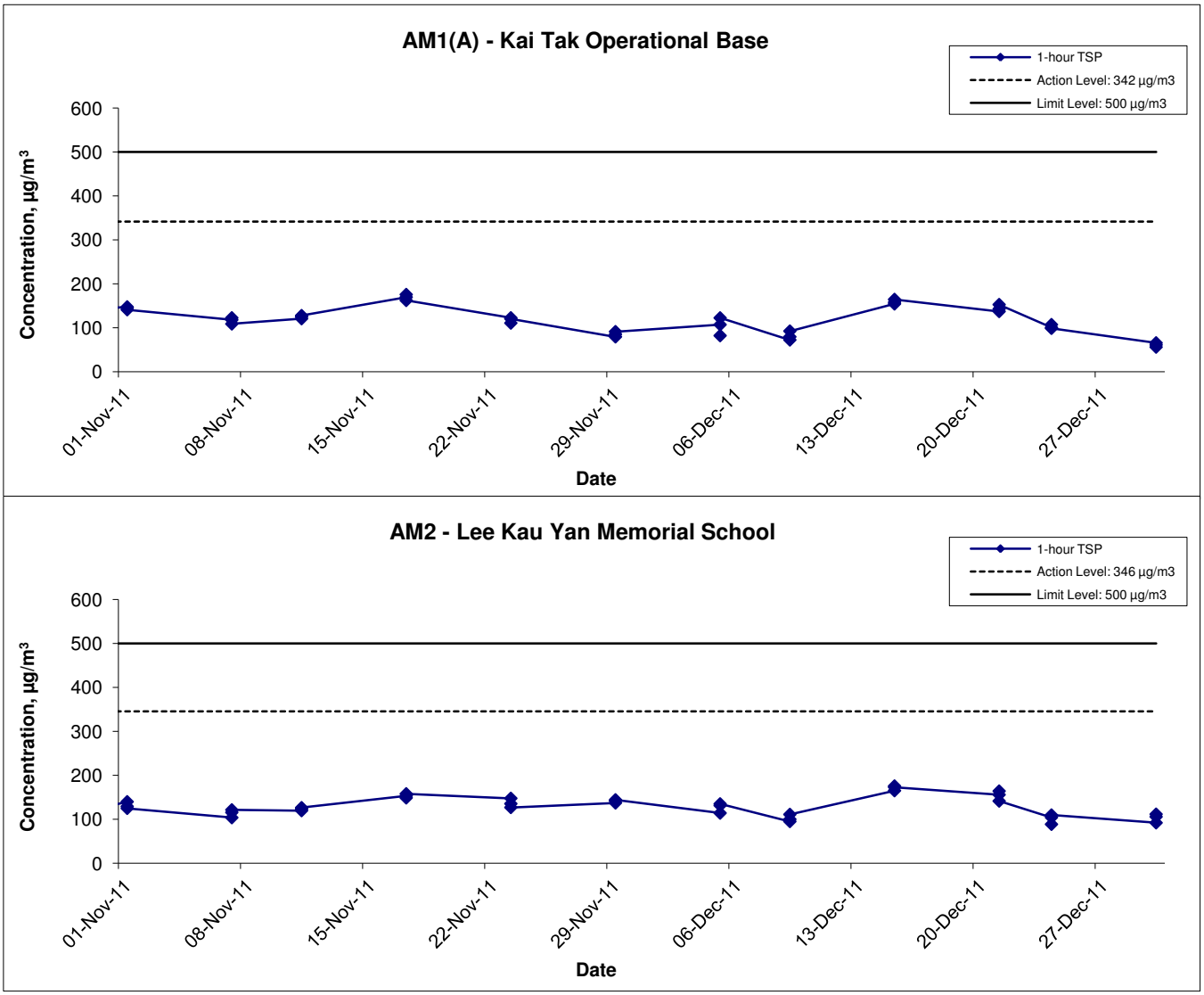
APPENDIX E
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix E - 1-hour TSP Monitoring Results

Location AM1(A) - Kai Tak Operational Base			
Date	Time	Weather	Particulate Concentration (µg/m^3)
5-Dec-11	14:00	Sunny	107.4
5-Dec-11	15:00	Sunny	82.4
5-Dec-11	16:00	Sunny	122.7
9-Dec-11	14:00	Fine	72.6
9-Dec-11	15:00	Fine	79.7
9-Dec-11	16:00	Fine	92.7
15-Dec-11	14:00	Sunny	154.6
15-Dec-11	15:00	Sunny	158.4
15-Dec-11	16:00	Sunny	164.7
21-Dec-11	14:00	Fine	137.4
21-Dec-11	15:00	Fine	143.2
21-Dec-11	16:00	Fine	153.0
24-Dec-11	14:00	Fine	100.6
24-Dec-11	15:00	Fine	107.4
24-Dec-11	16:00	Fine	99.1
30-Dec-11	14:00	Cloudy	65.9
30-Dec-11	15:00	Cloudy	56.3
30-Dec-11	16:00	Cloudy	61.4
		Average	108.9
		Maximum	164.7
		Minimum	56.3

Location AM2 - Lee Kau Yan Memorial School			
Date	Time	Weather	Particulate Concentration (µg/m^3)
5-Dec-11	14:00	Sunny	114.4
5-Dec-11	15:00	Sunny	131.6
5-Dec-11	16:00	Sunny	135.3
9-Dec-11	14:00	Fine	95.3
9-Dec-11	15:00	Fine	100.3
9-Dec-11	16:00	Fine	111.3
15-Dec-11	14:00	Sunny	165.4
15-Dec-11	15:00	Sunny	175.9
15-Dec-11	16:00	Sunny	173.3
21-Dec-11	14:00	Fine	156.2
21-Dec-11	15:00	Fine	164.4
21-Dec-11	16:00	Fine	141.8
24-Dec-11	14:00	Fine	104.4
24-Dec-11	15:00	Fine	88.9
24-Dec-11	16:00	Fine	109.9
30-Dec-11	14:00	Cloudy	92.3
30-Dec-11	15:00	Cloudy	111.8
30-Dec-11	16:00	Cloudy	106.0
		Average	126.6
		Maximum	175.9
		Minimum	88.9

1-hr TSP Concentration Levels



Title: Contract No. KL/2010/03 – Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S	Project No.: MA11038	CINOTECH
	Date: Dec 11	Appendix: E	

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - 24-hour TSP Monitoring Results

Location AM1(A) - Kai Tak Operational Base

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	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			
5-Dec-11	Sunny	291.9	768.5	3.1085	3.1630	0.0545	1873.0	1897.0	24.0	1.21	1.21	1.21	1746.6	31.2
10-Dec-11	Fine	284.4	772.4	3.2457	3.3808	0.1351	1897.0	1921.0	24.0	1.23	1.23	1.23	1773.4	76.2
16-Dec-11	Sunny	287.9	771.6	3.2374	3.3772	0.1398	1921.0	1945.0	24.0	1.22	1.22	1.22	1761.9	79.3
22-Dec-11	Fine	290.4	769.0	3.2594	3.3794	0.1200	1945.0	1969.0	24.0	1.22	1.22	1.22	1751.5	68.5
28-Dec-11	Fine	289.3	771.3	3.2614	3.3331	0.0717	1969.0	1993.0	24.0	1.22	1.22	1.22	1757.3	40.8
													Min	31.2
													Max	79.3
													Average	59.2

Location AM2 - Lee Kau Yan Memorial School

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	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			
5-Dec-11	Sunny	291.9	768.5	3.1055	3.1948	0.0893	1777.0	1801.0	24.0	1.21	1.21	1.21	1745.5	51.2
10-Dec-11	Fine	284.4	772.4	3.2362	3.3890	0.1528	1801.0	1825.0	24.0	1.23	1.23	1.23	1771.9	86.2
16-Dec-11	Sunny	287.9	771.6	3.2128	3.3680	0.1552	1825.0	1849.0	24.0	1.22	1.22	1.22	1760.6	88.2
22-Dec-11	Fine	290.4	769.0	3.2745	3.4023	0.1278	1849.0	1873.0	24.0	1.22	1.22	1.22	1750.3	73.0
28-Dec-11	Fine	289.3	771.3	3.2612	3.3587	0.0975	1873.0	1897.0	24.0	1.22	1.22	1.22	1756.1	55.5
													Min	51.2
													Max	88.2
													Average	70.8

APPENDIX G
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix G - Noise Monitoring Results

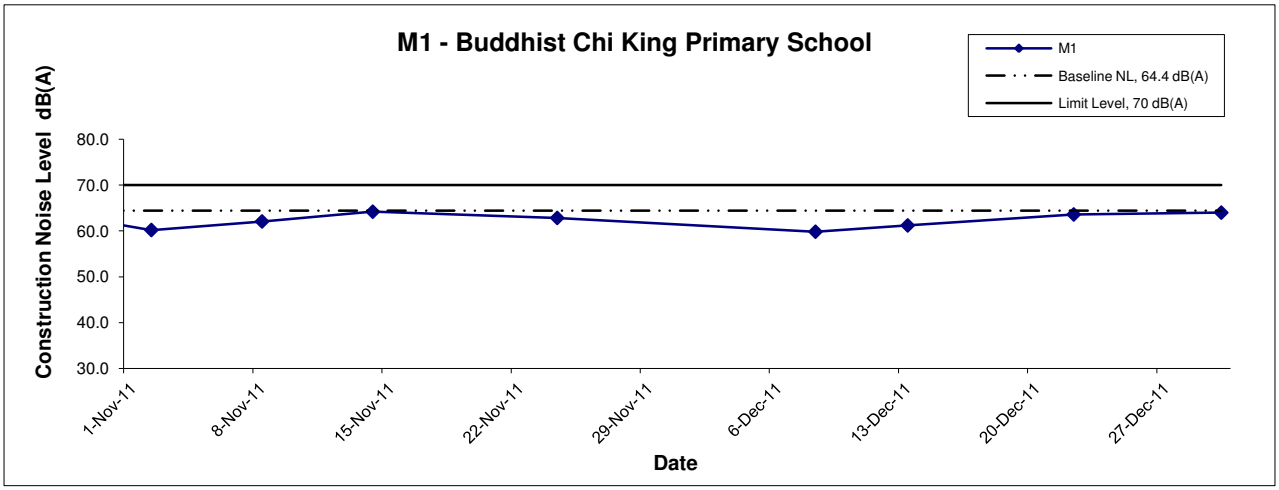
Location M1 - Buddhist Chi King Primary School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
8-Dec-11	14:00	Sunny	65.7	67.9	62.7	64.4	59.8
13-Dec-11	14:00	Fine	66.1	68.3	63.0		61.2
22-Dec-11	14:00	Fine	63.6	66.4	67.4		63.6 Measured ≦ Baseline
30-Dec-11	14:00	Cloudy	64.0	67.8	62.8		64.0 Measured ≦ Baseline

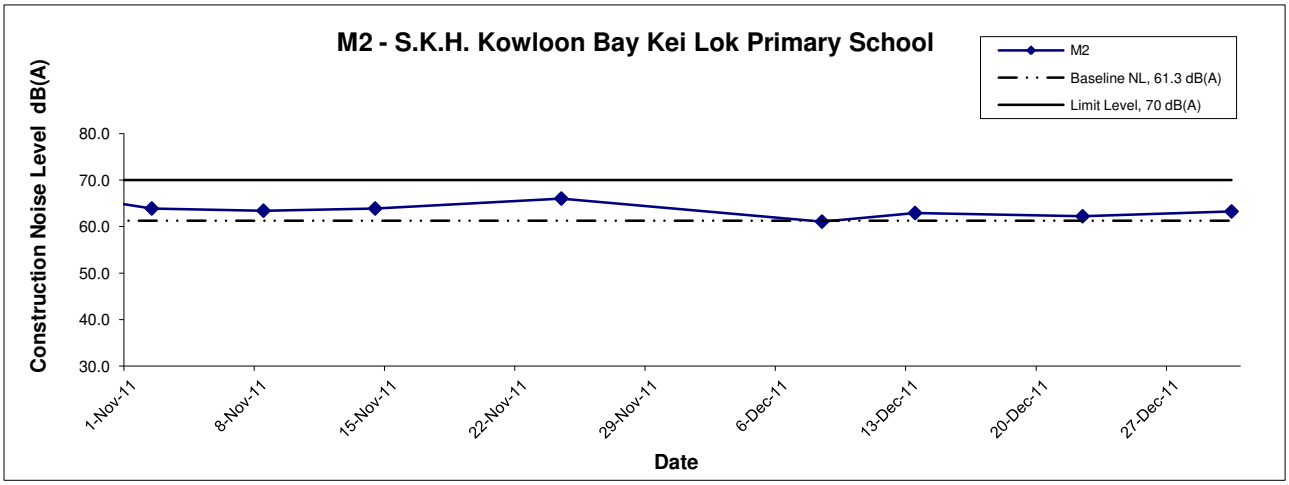
Location M2 - S.K.H. Kowloon Bay Kei Lok Primary School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
8-Dec-11	15:00	Sunny	64.2	67.3	62.7	61.3	61.1
13-Dec-11	15:00	Fine	65.2	68.1	63.9		62.9
22-Dec-11	15:00	Fine	64.8	66.8	62.5		62.2
30-Dec-11	15:00	Cloudy	65.4	67.9	63.3		63.3

Location M3(A) - Kai Tak Operational Base							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
5-Dec-11	14:00	Sunny	63.8	65.9	61.4	65.8	63.8 Measured ≦ Baseline
15-Dec-11	14:00	Sunny	62.8	65.7	60.8		62.8 Measured ≦ Baseline
21-Dec-11	14:00	Fine	64.2	66.6	61.5		64.2 Measured ≦ Baseline
28-Dec-11	14:00	Fine	63.6	67.0	62.7		63.6 Measured ≦ Baseline

Location M4 - Lee Kau Yan Memorial School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
5-Dec-11	15:00	Sunny	74.8	76.2	72.1	76.7	74.8 Measured ≦ Baseline
15-Dec-11	15:00	Sunny	76.1	77.6	74.4		76.1 Measured ≦ Baseline
21-Dec-11	15:00	Fine	73.3	75.0	72.6		73.3 Measured ≦ Baseline
28-Dec-11	15:00	Fine	74.6	75.7	72.3		74.6 Measured ≦ Baseline

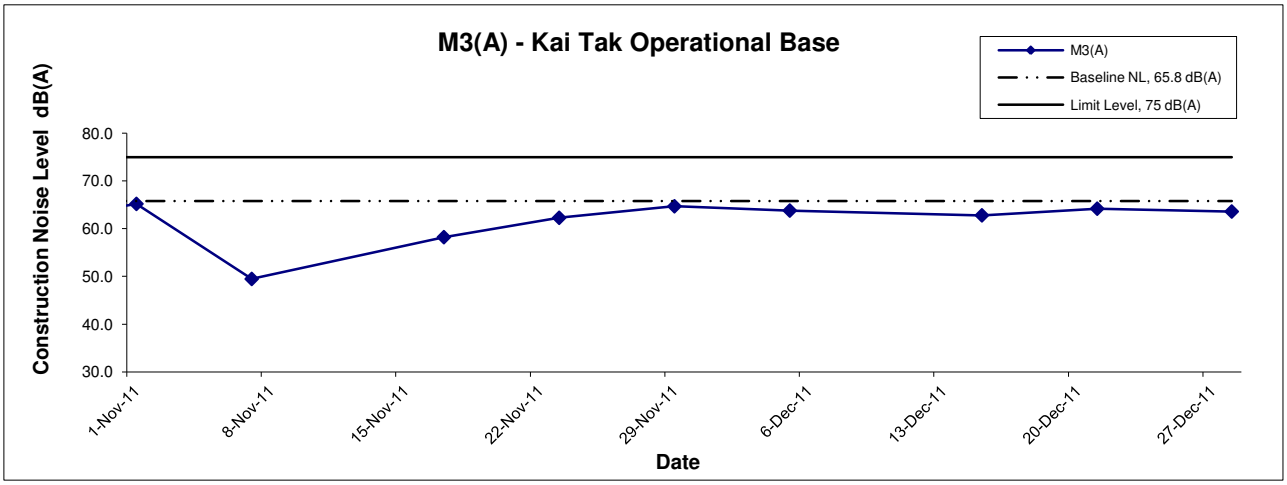
Noise Levels

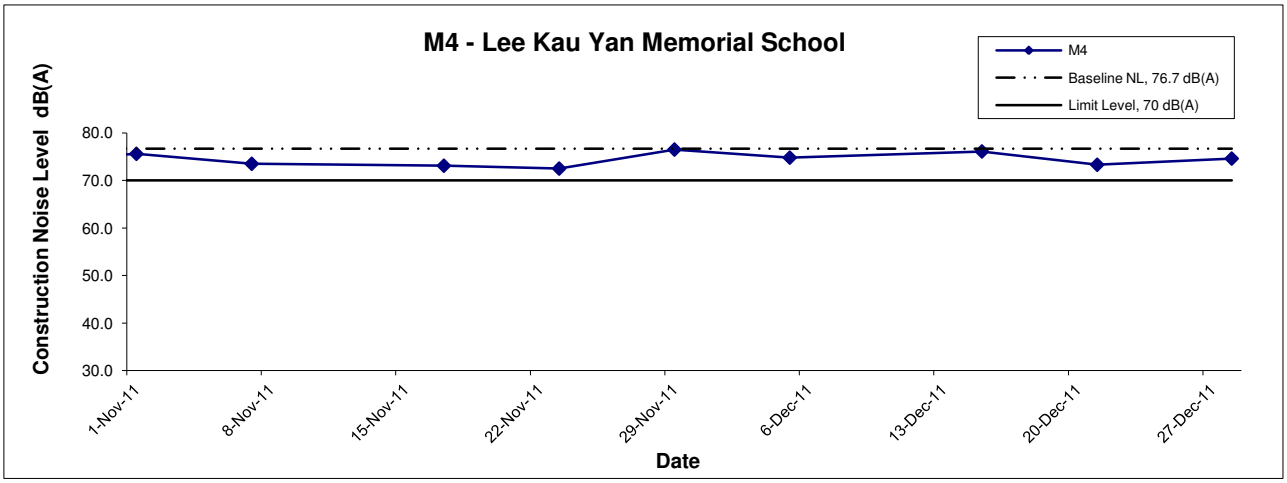




Title: Contract No. KL/2010/03 – Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Dec 11	Project No.: MA11038 Appendix: G	CINOTECH

Noise Levels





Title: Contract No. KL/2010/03 – Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Dec 11	Project No.: MA11038 Appendix: G	CINOTECH

APPENDIX H
SUMMARY OF EXCEEDANCE

Contract No. KL/2010/03
Kai Tak Development – Stage 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities

Appendix H – Summary of Exceedance

Exceedance Report for Contract No. KL/2010/03

(A) Exceedance Report for Air Quality
(NIL in the reporting month)

(B) Exceedance Report for Construction Noise
(NIL in the reporting month)

(C) Exceedance Report for Landscape and Visual
(NIL in the reporting month)

APPENDIX I
SITE AUDIT SUMMARY

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	111201
Date	1 December 2011
Time	09:30 – 11:00

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 site inspection.	
	B. Air Quality	
111201-R02	• To provide water spray for loading and unloading works at Box Culvert BC6.	C13
	C. Noise	
	• No environmental deficiency was identified during site inspection.	
	D. Waste / Chemical Management	
111201-R01	• To clear the oil waste on drip tray and store the chemical waste properly at Box Culvert PS1	E2i, 8
	E. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	F. Others	
	• Follow-up on previous site audit session (Ref. No. 111124), all environmental deficiencies were improved/ rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Johnny Fung		1 December 2011
Checked by	Dr. Priscilla Choy		1 December 2011

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	111208
Date	8 December 2011
Time	09:30 – 10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
111208-R01	• Properly cover the exposed slope at Box Culvert BC6.	B5
	B. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Noise	
	• No environmental deficiency was identified during site inspection.	
	D. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	E. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	F. Others	
	• Follow-up on previous site audit session (Ref. No. 111201), all environmental deficiencies were improved/ rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Ivy Tam		8 December 2011
Checked by	Dr. Priscilla Choy		8 December 2011

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	111214
Date	14 December 2011
Time	09:30 – 10:30

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 site inspection.	
	B. Air Quality	
111214-R01	• To provide water spray for rock-breaking works to avoid dust generation at Box Culvert BC6.	C13
	C. Noise	
	• No environmental deficiency was identified during site inspection.	
	D. Waste / Chemical Management	
111214-R02	• To clear the general refuse at Box Culvert BC6.	E1i
	E. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	F. Others	
	• Follow-up on previous site audit session (Ref. No. 111208), all environmental deficiencies were improved/ rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Johnny Fung		19 December 2011
Checked by	Dr. Priscilla Choy		19 December 2011

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	111222
Date	22 December 2011
Time	09:30 – 12:00

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 site inspection.	
	B. Air Quality	
111222-R01	• To provide dust mitigation measures for the open stockpiles near the site office.	C7
	C. Noise	
	• No environmental deficiency was identified during site inspection.	
	D. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	E. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	F. Permits /Licences	
111222-R02	• To display the environmental permits on site properly.	G5
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 111219), all environmental deficiencies were improved/ rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Ivy Tam		22 December 2011
Checked by	Dr. Priscilla Choy		22 December 2011

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	111229
Date	29 December 2011
Time	09:30 – 11:00

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 site inspection.	
	B. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Noise	
	• No environmental deficiency was identified during site inspection.	
	D. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	E. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	F. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 111222), all environmental deficiencies were improved/ rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Ivy Tam		29 December 2011
Checked by	Dr. Priscilla Choy		2 January 2012

APPENDIX J
EVENT ACTION PLANS

Appendix J - Event Action Plans

Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contactor, IEC and ER; 3. Repeat measurement to confirm finding.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
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; 7. If exceedance stops, cease additional monitoring.	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.	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. Amend proposal if appropriate.
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; 4. Assess effectiveness of Contractor's remedial actions and keep	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. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be	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 three

	EPD, IEC and ER informed of the results.	4. Advise the ER on the effectiveness of the proposed remedial measures.	implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	working days of notification; 4. Implement the agreed proposals.
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 identify source and investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, ER and 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; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	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. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	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 IEC within three working days of notification; 4. Implement the agreed proposals; 5. Submit further remedial actions if problem still not under control; 6. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

Appendix J - Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified)
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance;	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals;

	5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	(The above actions should be taken within 2 working days after the exceedance is identified)	measures to be implemented; 4. Supervise the implementation of remedial measures; 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. (The above actions should be taken within 2 working days after the exceedance is identified)	4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)

Appendix J - Event Action Plans

Event/Action Plan for Landscape and Visual

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	CONTRACTOR
Design Check	1. Check final design conforms to the requirements of EP and prepare report.	1. Check report. 2. Recommend remedial design if necessary	1. Undertake remedial design if necessary	
Non-conformity on one occasion	1. Identify Source 2. Inform IEC and ER 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source Inform IEC and	1. Check monitoring report	1. Notify Contractor 2. Ensure remedial measures are properly	1. Amend working methods 2. Rectify damage and

	ER 2. Increase monitoring frequency 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed 5. If non-conformity stops, cease additional monitoring	2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures.	implemented	undertake any necessary replacement

APPENDIX K
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

Appendix J - Event Action Plans

Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contactor, IEC and ER; 3. Repeat measurement to confirm finding.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
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; 7. If exceedance stops, cease additional monitoring.	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.	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. Amend proposal if appropriate.
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; 4. Assess effectiveness of Contractor's remedial actions and keep	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. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be	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 three

	EPD, IEC and ER informed of the results.	4. Advise the ER on the effectiveness of the proposed remedial measures.	implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	working days of notification; 4. Implement the agreed proposals.
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 identify source and investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, ER and 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; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	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. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	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 IEC within three working days of notification; 4. Implement the agreed proposals; 5. Submit further remedial actions if problem still not under control; 6. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

Appendix J - Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified)
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance;	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals;

	5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	(The above actions should be taken within 2 working days after the exceedance is identified)	measures to be implemented; 4. Supervise the implementation of remedial measures; 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. (The above actions should be taken within 2 working days after the exceedance is identified)	4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)

Appendix J - Event Action Plans

Event/Action Plan for Landscape and Visual

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	CONTRACTOR
Design Check	1. Check final design conforms to the requirements of EP and prepare report.	1. Check report. 2. Recommend remedial design if necessary	1. Undertake remedial design if necessary	
Non-conformity on one occasion	1. Identify Source 2. Inform IEC and ER 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source Inform IEC and	1. Check monitoring report	1. Notify Contractor 2. Ensure remedial measures are properly	1. Amend working methods 2. Rectify damage and

	ER 2. Increase monitoring frequency 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed 5. If non-conformity stops, cease additional monitoring	2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures.	implemented	undertake any necessary replacement

APPENDIX L
SUMMARIES OF ENVIRONMENTAL COMPLAINT, WARNING, SUMMON AND NOTIFICATION OF SUCCESSFUL PROSECUTION

Contract No. KL/2010/03
Kai Tak Development – Stage 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities

Appendix L – Summary of environmental complaint, warning, summon and notification of successful prosecution

Reporting Month: December 2011

Contract No. KL/2010/03

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

Remarks: No environmental complaint/warning/summon and prosecution were received in the reporting period.

APPENDIX M
WASTE GENERATED QUANTITY

Department: CEDD
Contract No.: KL/2010/03
Project : KAI TAK DEVELOPMENT – STAGE 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities

Peako 必高工程

Monthly Summary Waste Flow Table

As at 10 Jan 2012

Month	Total Quantity Generated (in m³)	Actual Quantities Inert C & D Materials Generated Monthly					Actual Quantities of C & D Wastes Generated Monthly					
		Broken Concrete (See Note 3) (in m³)	Reused in the Contract (in m³)	Reused in other Projects (in m³)	Disposed as Public Fill (in m³)	Imported Fill (in m³)	Metals (in kg)	Paper/ Cardboard packaging (in kg)	Plastics (see Note 2) (in kg)	Chemical Waste		Others, e.g. general refuse (in m³)
										Battery(No.)	Oil(in L)	
Jul'2011	0	0	0	0	0	0	0	0	0	0	0	0
Aug'2011	34.1	0	0	0	0	0	0	0	0	0	0	34.1
Sep'2011	5.93	0	0	0	0	0	0	0	0	0	0	5.93
Oct'2011	1.38	0	0	0	0	0	0	0	0	0	0	1.38
Nov'2011	1.92	0	0	0	0	0	0	0	0	0	0	1.92
Dec'2011	1.11	0	0	0	0	0	0	0	0	0	0	1.11
Jan'2012												
Feb'2012												
Mar'2012												
Apr'2012												
May'2012												
Jun'2012												
Jul'2012												
Aug'2012												
Sep'2012												
Oct'2012												
Nov'2012												
Dec'2012												
Total	44.44	0	0	0	0	0	0	0	0	0	0	44.44

Notes:
1 The performance targets are given in PS clause 25.20A(4)
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 plastic bottles/ containers, plastic sheets/ foam from packaging material.
4 The summary table shall be submitted to the Engineer's Representative monthly together with the Waste Flow Table for review and monitoring in accordance with the PS Clause 25.20