Contractor's Transmittal Form

(For PMR's Information or Record Purpose)

Ocean Park Master Redevelopment Project
Contract No. CI07 – Entry Plaza, Aqua City and Grand Aquarium

To: The Project Manager's Representative – Mr. Mike M W Wong

CTF Submission Title:
CI07/EP/CTF/AW/01688
Monthly EM &A Report December 2010 and January 2011

Submitted pursuant to GCC/SCC/GS/PS Clause: PS 26.02

Details: ☑ Please refer to attachment ☑ Please see below

Attached is the Monthly EM&A Report December 2010 and January 2011 for your information and record.

From : Contractor's Representative	**Remarks:**
Name: Tim Douglass Designation: Project Director Signature: p.p Date: 18-Feb-2011	

Distribution:

Wing Chung Au

Outgoing Reference:13280

OCEAN PARK REDEVELOPMENT PROJECT

CONTRACT NO. CI07

ENTRY PLAZA, AQUA CITY AND GRAND AQUARIUM

Monthly EM&A Report – Jan 2011

Prepare & Reviewed by:	Authorised by:
Au Wing Chung Design Planning and Interface Manager	Tim Douglass Contractor's Representative

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

Introduction

This is the thirty (**the last**) Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Leighton Contractors (Asia) Limited for the Ocean Park Redevelopment Project Contract No. CI07 – Entry Plaza, Aqua City and Grand Aquarium (hereinafter called the Project). The Project was commenced on 15 August 2008. Leighton Contractors (Asia) Limited was instructed by the Project Manager Representative to takeover the contract CI05 noise and air quality monitoring works at the Waterfront effective from 1 March 2009. This document reports the results of the EM&A works conducted in Nov 2010 (26 Dec 2010 to 31 Jan 2010).

The major site activities undertaken in the reporting month included:

- Snagging, handover and take over at Entry Plaza and Aqua City;
- External areas, area development and soft landscaping;
- Final commissioning at Grand Aquarium.

Environmental Audit and Monitoring Works

Environmental monitoring and audit works for the Project was performed as stipulated in the Contractor's EM&A Manual. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked. No non-compliance was observed during the site audits.

Monitoring of 1-hour & 24-hour Total Suspended Particulates (TSP) and noise were performed and the results were checked and reviewed. No exceedance was recorded. Summary of monitoring and audit activities conducted and the events and action taken in the reporting month are tabulated in the below tables.

A summary of monitoring and audit activities conducted in the reporting period

Parameter	Frequency
1-hour TSP monitoring	19 sessions for all air quality monitoring stations
24-hour TSP monitoring	6 sessions for all air quality monitoring stations
Daytime noise monitoring	5 sessions for all noise monitoring stations
Evening and night time noise monitoring	0 sessions for all noise monitoring stations
Holiday time noise monitoring	0 session for all noise monitoring stations

Parameter	Frequency
Joint environmental site inspection	0 sessions (including IEC audit)

Summary table for events recorded in the reporting period

Parameter	No. of Events		No. of Events Due to the Project	Action Taken
	Action Level	Limit Level		
1-hr TSP	0	0	0	N.A.
24-hr TSP	0	0	0	N.A.
Noise	0	0	0	N.A.

Environmental Licenses and Permits

Construction Waste Disposal Billing Account was opened and total 26,430 Chits were obtained for construction waste disposal.

Site Effluent Discharge Licence was issued for site effluent via sedimentation tank discharged into communal storm water drain.

A notification pursuant to Section 3(1) of the Air Pollution Control (Construction Dust) Regulation was made to EPD prior the commencement of the Project.

Chemical Waste Producer Registration was issued for chemical waste disposal by the licenced collector.

Construction Noise Permit for generator, winch (3), scissor platform (4), hand-held battery drill (4), forklift, articulated boom (2), mobile crane, dumper, crane lorry (2), grout mixer (2), grout pump (2), excavator and dump truck, during restricted hours was issued and had superseded the previous construction noise permit.

Complaints and Prosecutions

No complaint or prosecution related to the project was received during the reporting month.

Future Key Issues

Key issue to be considered in January is:

- Project completion and grand opening for Entry Plaza, Aqua City and Grand Aquarium.

1. INTRODUCTION

1.1 Background

The "Repositioning and Long Term Operation Plan of Ocean Park" is being implemented by the Ocean Park Corporation at the existing site of Ocean Park and Nam Long Shan, Aberdeen. The purpose of this project is to upgrade and expand the existing Ocean Park to meet anticipated visitor demands and to position Ocean Park as a premium tourist attraction and a regional leader in themed recreational and educational park experience. The site layout plan is illustrated in Figure 1.1.

An environmental impact assessment (EIA) report for "Repositioning and Long Term Operation Plan of Ocean Park" (Report No. 121/2006 and Register No. AEIAR-101/2006) has been prepared in 2006 and the Environmental Monitoring and Audit Manual (EM&A Manual) was also included as part of the EIA report in the register. An Environmental Permit (EP) No. EP-249/2006 was issued on 28 July 2006 for the above project to Ocean Park Corporation as Permit Holder and a varied EP No. EP-249/2006/A was subsequently issued on 23 October 2006 for the above project to Ocean Park Corporation as Permit Holder.

Leighton Contractors (Asia) Limited (the Contractor) was commissioned by the Ocean Park Corporation to undertake the construction of the Ocean Park Redevelopment Project Contract No. CI07 – Entry Plaza, Aqua City and Grand Aquarium (hereinafter call the Project).

The works to be executed under Contract CI07 include the following major items:

- **Entry Plaza Phase 1 and Aqua City**
  - demolition of existing structures, site formation and slope works for roadwork new building structures and car park;
  - construction of the Entry Plaza and Aqua City building structures and foundation, and installation of builders' works and architectural finishes;
  - construction of one- to three-storey buildings on the Entry Plaza podium, including animal habitats and back of house, ticketing, turnstiles, guest relations, security, banking and other offices, back of house, food and beverage and retail functions;
  - construction of back-of-house facilities on the ground floor and mezzanine floor of the Entry Plaza;
  - construction of at-grade drop-off and pick-up for cars, taxis, coaches and buses, parking for coaches and private cars, including meter-gate system, shelters, street furniture and amenities;

- installation of building services, including mechanical ventilation and air-conditioning installation, electrical installation, extra low-voltage installation (such as closed-circuit television, security alarm and public address system), control and monitoring installation, plumbing and drainage installation, fire-services installation, irrigation system installation, gas-supply installation, lift and escalator installation and miscellaneous works;

- construction of a section of Ocean Park Road and associated footpaths; provision of road drainage, utilities, street furniture, street lightings, and soft and hard landscape works;

- light-emitting-diode screen and its support to be integrated with the tensile-membrane long-span metallic structure;

- construction of Aqua City Lagoon and associated site formation, hardscape, waterproofing and water circulation facilities, including pipe works, pump system, filtration and aeration system;

- construction of guest-route paving and railing, utilities and services works and associated civil-engineering works;

- soft and hard landscape works (including water features, fountains, external seating, on-grade as well as podium planter areas, artificial rockworks, street appurtenances, lighting, irrigation, themed elements, including statues, murals and other objects);

- balustrade, skylight, glass wall, window, louver, cladding and canopy, retail/food carts and kiosks, timber trellis and structures; facilitating works for the special features, including power supply, foundation works, civil and structural works, electrical and mechanical works, architectural finishes works and miscellaneous works;

- provision of new and diversion/decommissioning of existing drainage, sewerage, water mains and underground utilities necessary for the operation of Ocean Park;

- provision of temporary toilet facilities and relocation of the Guest Relations Office in Portion EP2, the temporary toilet and Guest Relation Office must be operational prior to removal of the existing facilities;

- construction of all ancillary works, including civil, geotechnical and utilities works;

- installation of the Carousel ride, and

- coordination of the works with the installation of 13 sculptures to be supplied and

installed by other contractors; provision of all attendance, labour, plant and equipment necessary in relation to the installation of the sculptures;

- maintenance of a fixed number of temporary car-park spaces for guests' use during different construction stages;

- construction of ramp structures connecting from Wong Chuk Hang Road to the Entry Plaza building structure and to the Cable Car Plaza, and

- soft and hard landscape works (including on-grade planter areas, street appurtenances, lighting, irrigation and themed elements).

- **Grand Aquarium:**

  - construction of the Grand Aquarium, including life support systems, building structures and foundation, installation of builders' works and architectural finishes;

  - fitting-out packages, including finishes, fixed furniture, decorations, lighting, audio/visual equipment, artworks and building services;

  - coordination of the works with the installation and joint sealing of the acrylic viewing panels to be supplied and installed by other contractors; provision of all attendance, labour, plant and equipment necessary in relation to the installation of the acrylic viewing panels, and

  - construction of the Transformer Room Building, including coordination works with Hong Kong Electric Company Limited for installation.

- **General**

  - erection of hoardings with graphics;

  - tree transplanting and felling and protection to remaining trees;

  - management and maintenance of temporary holding nursery;

  - installation of civil provisions for parkwide information-technology systems and all operational equipment, such as background music system, public-address system, closed-circuit television, management information system, building information system, security and turnstiles;

  - construction of parkwide irrigation and drainage system for planting area;

– supply and installation of all escalators and elevators;

– design and built all temporary works with necessary statutory submissions, including:
  - temporary support to excavations greater than 2 metres in depth;
  - temporary cut or fill slopes greater than 2 metres high;
  - falsework and temporary platforms, structures and the like required;
  - temporary platforms, structures and the like required for supporting drilling equipment and construction plant; and
  - excavation and lateral supports for all Entry Plaza Phase 2 and Aqua City Phase 2 works; and

– design and built works as specified in Contract CI07, with necessary statutory submissions, including:
  - artificial rockwork, including concrete foundations, internal structural supporting systems and fixing details for the lagoon and Otter Exhibit;
  - glass-reinforced concrete/glass-reinforced gypsum/glass-reinforced plastic/shotcrete works and associated supporting structures;
  - tensile-membrane long-span metallic canopy structure, including the metal frame, marquee supporting light-emitting-diode screen and walkway at the Entry Plaza;
  - Ocean Park super logo and associated support structure over the tensile-membrane canopy and lift L-1 cone structure;
  - themed metalwork, entrance gates and balustrades;
  - exhibit glazing at the River Otter viewing;
  - glass canopy, metal canopy over escalators;
  - vertical green-wall system;
  - water features circulations, filtration, control and water dynamic;
  - lagoon and waterfall filtration and circulation systems;
  - metal modular shelving and associated stairway and platforms;
  - glass curtain wall for the Grand Aquarium shell;
  - Grand Aquarium fibre-glass tank and working platform;
  - Grand Aquarium movable gantry and hoisting system;
  - Grand Aquarium hydraulic platform;
  - queue display indicating system for the Ticketing Office; and
  - other items as specified in the Particular Specification and/or Drawings.

1.2 Project Organizations

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

- The Project Manager and Project Environmental Team – AECOM Asia Co. Ltd.
- Contractor - Leighton Contractors (Asia) Ltd.

- Contractor's Environmental Team (CET)
- Independent Environmental Checker (IEC) - Mott MacDonald HK Ltd.

The responsibilities of respective parties are provided in the Contractor's EM&A Manual.

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

Table 1.1 Key Project Contacts

Party	Name	Role	Phone No.	Fax No.
Project ET	Mr. S K Lo	Project Manager Representative (PMR)	2871 5888	2552 1256
	Miss Lindsay Pickles	Project Development Director	2910 3109	2814 0179
Contractor	Tim Douglass	Contractor's Representative	3665 2670	2580 6600
	Au Wing Chung	Design Planning and Interface Manager	3665 2670	2580 6600
Contractor's ET	Kelven Yip	Environmental Engineer	3665 2608	2580 6600
IEC	Miss Florence Yuen	Independent Environmental Checker (IEC) Representative	2828 5757	2827 1823

1.3 Construction Programme

The site activities undertaken in the reporting month were:

- Handover of Entry Plaza, Aqua City and Grand Aquarium
- Soft and Grand Opening to the public of all facilities.

1.4 Summary of EM&A Requirements

The EM&A programme requires construction phase environmental site audit. The duties and responsibilities comprise the following:

- monitor various environmental parameters, if necessary, as specified in the EM&A Manual;
- analyze the environmental monitoring and audit data;
- review the EM&A programme to confirm the adequacy of mitigation measures implemented and the validity of the EIA predictions and to identify any adverse environmental impacts arising;

- carry out site inspection to investigate and audit the Contractor's site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and effect proactive action to pre-empt problems;
- audit and prepare EM&A reports on the site environmental conditions;
- report the environmental audit results to the Contractor;
- recommend appropriate mitigation measures to the Contractor in case of exceedance of Action and Limit Levels in accordance with the Event and Action Plans; and
- adhere to the procedures for carrying out complaint investigation in accordance with the EM&A Manual.

This report presents the environmental monitoring and audit works for the Project in January 2011.

2. AIR QUALITY MONITORING

2.1 Monitoring Requirements

24-hour & 1-hour TSP monitoring was conducted to monitor the air quality. Appendix A shows the established Action/Limit Levels for the air quality monitoring works.

2.2 Monitoring Equipment

High volume samplers (HVS - Model GMWS-2310 Accu-Vol) complete with the appropriate sampling inlets were installed for 24-hour and 1-hour TSP sampling. The HVS composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50 Appendix B). Table 2.1 summarises the equipment that was used in the dust-monitoring programme.

Table 2.1 TSP Monitoring Equipment

Equipment	Model
HVS	GMWS 2310 c/w of TSP sampling inlet
Calibration Kit	Tisch TE-5025 A
Dust Trak	TSI-8250

2.3 Monitoring Parameters, Frequency and Duration

The monitoring parameters and frequency are summarised in Table 2.2. The monitoring schedule for the coming month is shown in Appendix B.

Table 2.2 Air Quality Monitoring Parameters and Frequency

Location	Parameter	Duration	Frequency
AM1	1-hour TSP	1 hour	3 times every 6 days*
	24-hour TSP	24 hours	Once every six days
AM2	1-hour TSP	1 hour	3 times every 6 days*
	24-hour TSP	24 hours	Once every six days
AM3A	1-hour TSP	1 hour	3 times every 6 days*
	24-hour TSP	24 hours	Once every six days

*Notes: * denotes three 1-hr TSP monitoring in three days.*

2.4 Monitoring Locations

In accordance with the EM&A Manual, three air quality monitoring stations, as shown in Figure 1.2, were selected for 1-hour and 24-hour TSP sampling. Table 2.3 describes the location of the air quality monitoring stations.

Table 2.3 Location of Air Quality Monitoring Stations

Air Quality Monitoring Stations	Identity / Description
AM1	Whisker's Theatre, Ocean Park
AM2	San Wai Village, Wong Chuk Hang
AM3A	Open areas of PMR & OPC temporary site offices

2.5 Monitoring Methodology

24-hour / 1-hour TSP Monitoring

Installation

The HVSs were installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.

- A horizontal platform with appropriate support to secure the samplers against gusty wind

was provided.
- No two HVSs were placed less than 2 meters apart.
- The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
- A minimum of 2 meters separation from walls, parapets and penthouses was required for rooftop samplers.
- No furnace or incinerator flues were nearby.
- Airflow around the sampler was unrestricted.
- Permission was obtained to set up the samplers and to obtain access to the monitoring stations.

Preparation of Filter Papers by ETS-Testconsult Limited.

- Glass fibre filters, G810 were labeled and sufficient filters that were clean and without pinholes were selected.
- All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.

Field Monitoring

- The power supply was checked to ensure the HVS works properly.
- The filter holder and the area surrounding the filter were cleaned.
- The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
- The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
- The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges.
- Then the shelter lid was closed and was secured with the aluminum strip.
- The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
- A new flow rate record sheet was set into the flow recorder.
- The flow rate of the HVS was checked and adjusted at around 1.1 m^3/min. The range specified in the EM&A Manual was between 0.6-1.7 m^3/min.
- The programmable timer was set for a sampling period of 24 hrs $\pm$ 1 hr or 1 hr + 0.25 hr, and the starting time, weather condition and the filter number were recorded.
- The initial elapsed time was recorded.
- At the end of sampling, the sampled filter was removed carefully and folded in half-length so that only surfaces with collected particulate matter were in contact.
- It was then placed in a clean plastic envelope and sealed.
- All monitoring information was recorded on a standard data sheet.

- Filters were sent to *ETS-Testconsult Ltd.* for analysis.

Maintenance & Calibration

- The HVSs and their accessories are maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVSs are calibrated at bi-monthly intervals using GMW-25 Calibration Kit throughout all stages of the air quality monitoring. Calibration details are provided in Appendix E.

2.6 Results and Observations

The air quality monitoring results of 1-hr TSP and 24-hr TSP of the reporting month are summarized in Tables 2.4 and 2.5. All monitoring data and graphical presentation of the monitoring results are provided in Appendix C.

All measured 1-hour & 24-hour TSP concentrations were below the Action and Limit (AL) Levels in the reporting month.

Table 2.4 Monitoring Results of 1-hr TSP

Date of Monitoring	1-hr TSP ($\mu g/m^3$)		
	AM1	AM2	AM3A
28-Dec-10	88	129	109
29-Dec-11	39	120	129
30-Dec-10	85	234	196
31-Dec-10	183	295	167
3-Jan-11	251	345	391
5-Jan-11	145	203	195
7-Jan-11	61	101	143
10-Jan-11	167	240	108
11-Jan-11	206	277	284
12-Jan-11	72	139	85
14-Jan-11	151	158	197
17-Jan-11	171	250	278
19-Jan-11	95	114	108
21-Jan-11	129	186	92
22-Jan-11	40	134	188

Date of Monitoring	1-hr TSP (μg/m³)		
	AM1	AM2	AM3A
24-Jan-11	89	104	102
26-Jan-11	188	260	265
28-Jan-11	156	259	148
31-Jan-11	104	218	168

*Notes: * Exceedance of Limit Level*
 # Exceedance of Action Level
- No Monitoring Due to Power Shortage

Table 2.5 Monitoring Results of 24-hr TSP

Date of Monitoring	24-hr TSP (μg/m³)		
	AM1	AM2	AM3A
30-Dec-11	97	158	140
5-Jan-11	69	108	121
11-Jan-11	53	79	74
17-Jan-11	73	42	87
22-Jan-11	41	80	91

*Notes: * Exceedance of Limit Level*
 # Exceedance of Action Level
- No Monitoring Due to Power Shortage

3. NOISE MONITORING

3.1 Monitoring Requirements

Noise monitoring was conducted at four monitoring stations as specified in the EM&A Manual. Appendix A shows the established Action and Limit Levels for noise.

3.2 Monitoring Equipment

Integrating Sound Level Meters were employed for noise monitoring. They were Type 1 sound level meters capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x). They comply with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). Portable electronic wind speed indicator capable of measuring the wind speed in m/s was employed to check the wind speed. Table 3.1 details the noise monitoring equipment used.

Table 3.1 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL 31
Calibrator	Rion NC-73
Portable Wind Speed Indicator	TSI Model 8340-M Air Velocity Meter

3.3 Monitoring Parameters, Frequency and Duration

Noise monitoring was conducted per monitoring day during the daytime. Monitoring to be conducted in the evening and/or night-time only when construction works is in progress. The monitoring period, duration, parameters and frequency of noise measurement are presented in Table 3.2. The monitoring schedule for the coming month is provided in Appendix B.

Table 3.2 Noise Monitoring Parameters, Period and Frequency

Time Period	Duration (min)	Parameters	Frequency
Daytime (0700 to 1900)	30	L_{eq}	Once a week
*Evening (1900 to 2300)	5		
*Night-time (2300 to 0700 of next day)	5		

Notes: * denotes Noise monitoring to be conducted only when construction work is in progress.

3.4 Monitoring Locations

In accordance with the EM&A Manual, noise monitoring was conducted at four designated

monitoring stations as shown in Figure 1.2. Table 3.3 describes the locations of these monitoring stations.

Table 3.3 Noise Monitoring Locations

Noise Monitoring Stations	Identity / Description
CN1	Open Area adjacent to Police Training School
CN2	Project Development Office, Ocean Park
CN3	Rinniped House, Ocean Park
CN4	Manly Villa

3.5 Monitoring Methodology

Field Monitoring

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. For reference, a correction of +3dB(A) was made to the free field measurements.
- 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 / 5 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), 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 a portable wind meter.
- During the monitoring period, the L_{eq} was recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.
- Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

- The microphone head of the sound level meter and calibrator is cleaned with soft cloth at quarterly intervals.
- The meters and calibrators are sent *to Hong Kong Calibration Ltd* to check and calibrate

at yearly intervals. Calibration details are provided in Appendix E.

3.6 Results and Observations

Noise monitoring was conducted at the 4 designated monitoring stations during daytime in the reporting month. The monitoring was carried out as scheduled in the reporting month and the monitoring results are summarized in Table 3.4. All monitoring data and graphical presentation of the monitoring results are provided in Appendix D.

No exceedance of limit level during daytime recorded in the reporting month.

Table 3.4 Monitoring Results of Daytime Noise

Date of Monitoring	Noise Level, L_{eq} (30-min), dB(A)			
	CN1	CN2	CN3	CN4
3-Jan-11	62.6	59.4	60.1	60.9
10-Jan-11	65.9	59.5	60.2	57.1
17-Jan-11	64.2	58.4	57.9	60.2
24-Jan-11	66.7	60.1	62.3	59.4
31-Jan-11	67.2	58.7	57.7	60.2

*Notes: * Exceedance of Limit Level*
 # Exceedance of Action Level

Table 3.5 Monitoring Results of Evening Time Noise

Date of Monitoring	Noise Level, L_{eq} (5-min), dB(A)			
	CN1	CN2	CN3	CN4
N/A				

*Notes: * Exceedance of Limit Level*
 # Exceedance of Action Level

4 ENVIRONMENTAL AUDIT

4.1 Environmental Site Audit

Environmental site audits were carried out on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

Site audits for the Project in the reporting month were conducted on 3, 10, 17 and 24 Dec 2010. No non-compliance was observed during the site audits. The summaries of site audits are attached in Appendix J.

During site inspections in the reporting month, no non-conformance was identified.

4.2 Status of Environmental Licensing and Permitting

All valid permits/licenses obtained for the Project are summarized in Table 4.2.

Table 4.2 Summary of Environmental Licensing and Permit Status

Permit No,	Valid Period		Details	Status
	From	To		
Environmental Permit				
EP-249/2006/A	23/10/2006	N.A.	Expansion of the existing Ocean Park and reconstruction / modification of its existing facilities.	Valid
Site Effluent Discharge Licence				
EP820/W2/XW246	05/09/2008	30/09/2013	Discharge of site effluent arising from construction site (Contract CI07) at sedimentation tank into communal storm water drain	Valid
Chemical Waste Producer Registration				
5213-199-L2174-28	22/09/2008	N.A.	Waste Disposal (Chemical Waste) (General) Regulation – Registration of Waste Producer	Valid
Construction Noise Permit				
GW-RS0390-10	18/05/2010	17/11/2010	For generator, winch (3), dumper, scissor platform (6), hand-held battery drill (4), forklift, mobile crane, grout mixer (2), grout pump (2), crane lorry (2), excavator, dump truck, water pump and wastewater	Superseded

Permit No,	Valid Period		Details	Status
	From	To		
			treatment plant operation from 19:00 to 23:00 (any day not being a general holiday) and 07:00 to 23:00 (general holiday including Sunday); for water pump and wastewater treatment plant operation for any day 23:00 to 07:00 on next day	
GW-RS0917-10	30/10/2010	29/04/2011	For generator, winch (3), dumper, scissor platform (4), hand-held battery drill (4), forklift, mobile crane, grout mixer (2), grout pump (2), crane lorry (2), excavator, dump truck and articulated boom operation from 19:00 to 23:00 (any day not being a general holiday) and 07:00 to 23:00 (general holiday including Sunday); for water pump and wastewater treatment plant operation for any day 23:00 to 07:00 on next day	Valid
Other				
Ref. no. 001032366	N.A.	N.A.	Notification Pursuant to Section 3(1) of the Air Pollution Control (Construction Dust) Regulation	Valid
Account No. 7007576	N.A.	N.A.	Construction Waste Disposal Billing Account with EPD	Valid

4.3 Status of Waste Management

The amount of waste generated by the construction activities of the Project in the reporting month is attached in Appendix K.

The following materials are recycled/reused on site:

- Broken concrete and bitumen are reused for hard paving for temporary access road;
- Reinforcement in the broken concrete are cut and recycled, and

4.4 Implementation Status of Environmental Mitigation Measures

According to the Environmental Permit and the EM&A Manual, the mitigation measures detailed in the documents are required to be implemented. An updated summary of the EMIS is provided in Appendix F.

4.5 Summary of Exceedances

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

4.6 Implementation Status of Event Action Plans

The Event Action Plans for air quality and construction noise are presented in Appendix G.

4.7 Summary of Complaints and Prosecutions

No complaint or prosecution related to the project was received during the reporting month.

The environmental complaint flow diagram and complaint log of the project are presented in Appendix H.

5 FUTURE KEY ISSUES

5.1 Key Issues for the Coming Month

Since this is the last report as a result of the completion and grand opening to the public, there will be no key issues for the coming months.

5.2 Construction Programme

The tentative construction programme for the Project is provided in Appendix I.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

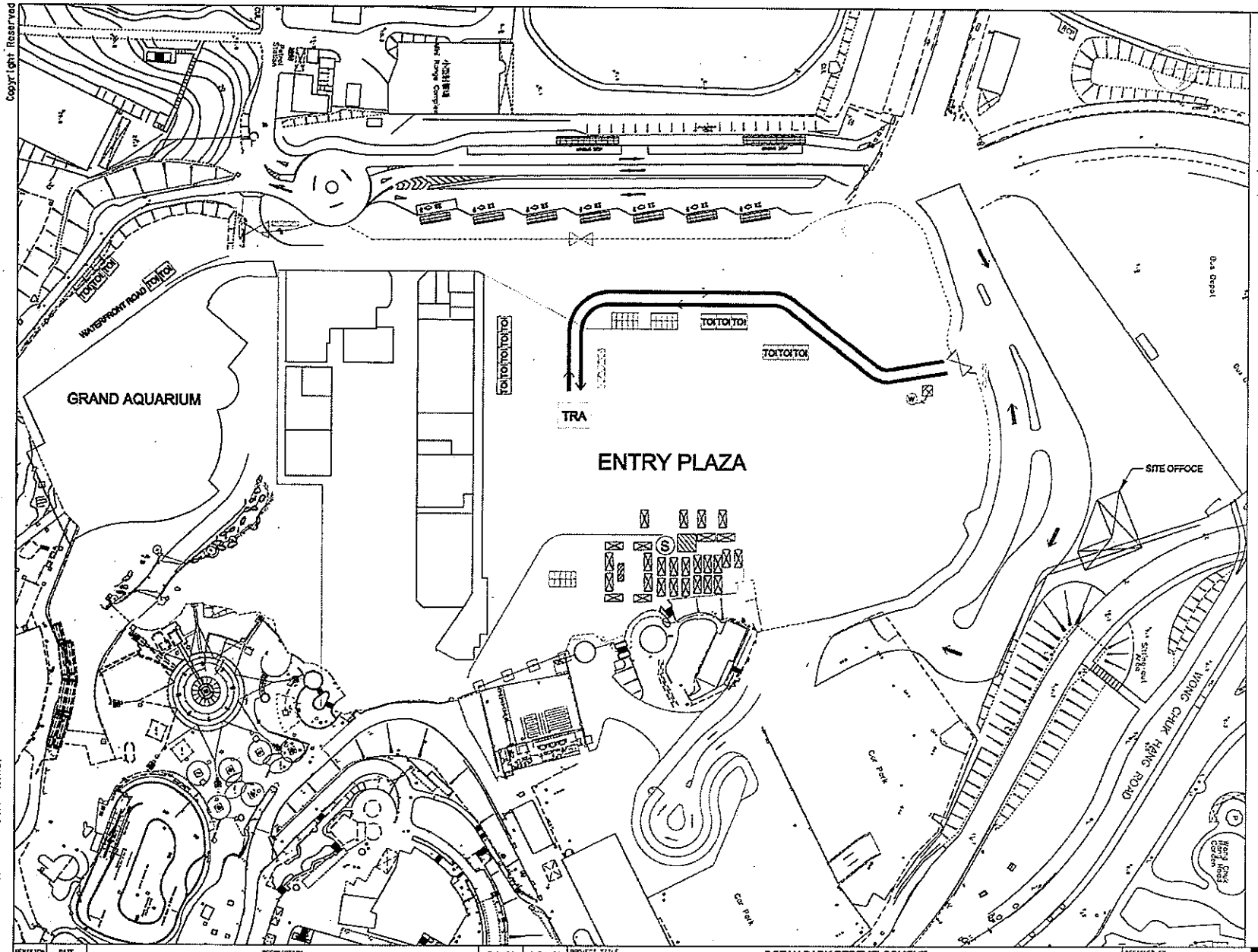
No non-compliance was observed during the site audits and no exceedance of environmental monitoring was reported in the reporting month.

No complaint or prosecution related to the project was received during the reporting month.

6.2 Recommendations

Nil.

Figure 1.1 – Site Layout Plan



LEGENDS :

- EXISTING CHAINLINK FENCE / HOARDING
- SITE ENTRANCE
- SPILL KIT
- NOTICE BOARD (INCLUDING EMERGENCY TELEPHONE LIST)
- TEMPORARY DRAIN FOR WASTE / GROUND WATER
- TEMPORARY DRAIN WITH TREATMENT
- TOI CHEMICAL TOILET
- ACCESS GIVEN
- CHEMICAL WASTE STORE
- TRA TEMPORARY RESTING AREA
- RECYCLE BINS
- WASTE SKIP
- D.G. STORE
- CONTAINER
- SEDIMENTATION TANK
- W WASTE WATER DISCHARGE POINT

UPDATED TO AUG 10

REVISION	DATE	DESCRIPTION	ENG. BY	AUTH. BY
K	11/08/10	MINOR REVISED		
J	03/06/10	MINOR REVISED		
H	29/03/10	MINOR REVISED		
G	14/01/10	MINOR REVISED		
F	02/11/09	MINOR REVISED		

PROJECT TITLE: OCEAN PARK REDEVELOPMENT
CONTRACT No. CI07
ENTRY PLAZA, AQUA CITY & GRAND AQUARIUM

DRAWING TITLE: ENVIRONMENTAL FACILITIES LAYOUT PLAN (G/F)

DESIGNED BY	KELVEN YIP
DRAWN BY	CF.WOO
CHECKED BY	KELVEN YIP
SCALE @ A3	N.T.S.

LEIGHTON 禮頓

DRAWING NO.: H2458/E/0020

DATE: 01/11/2008

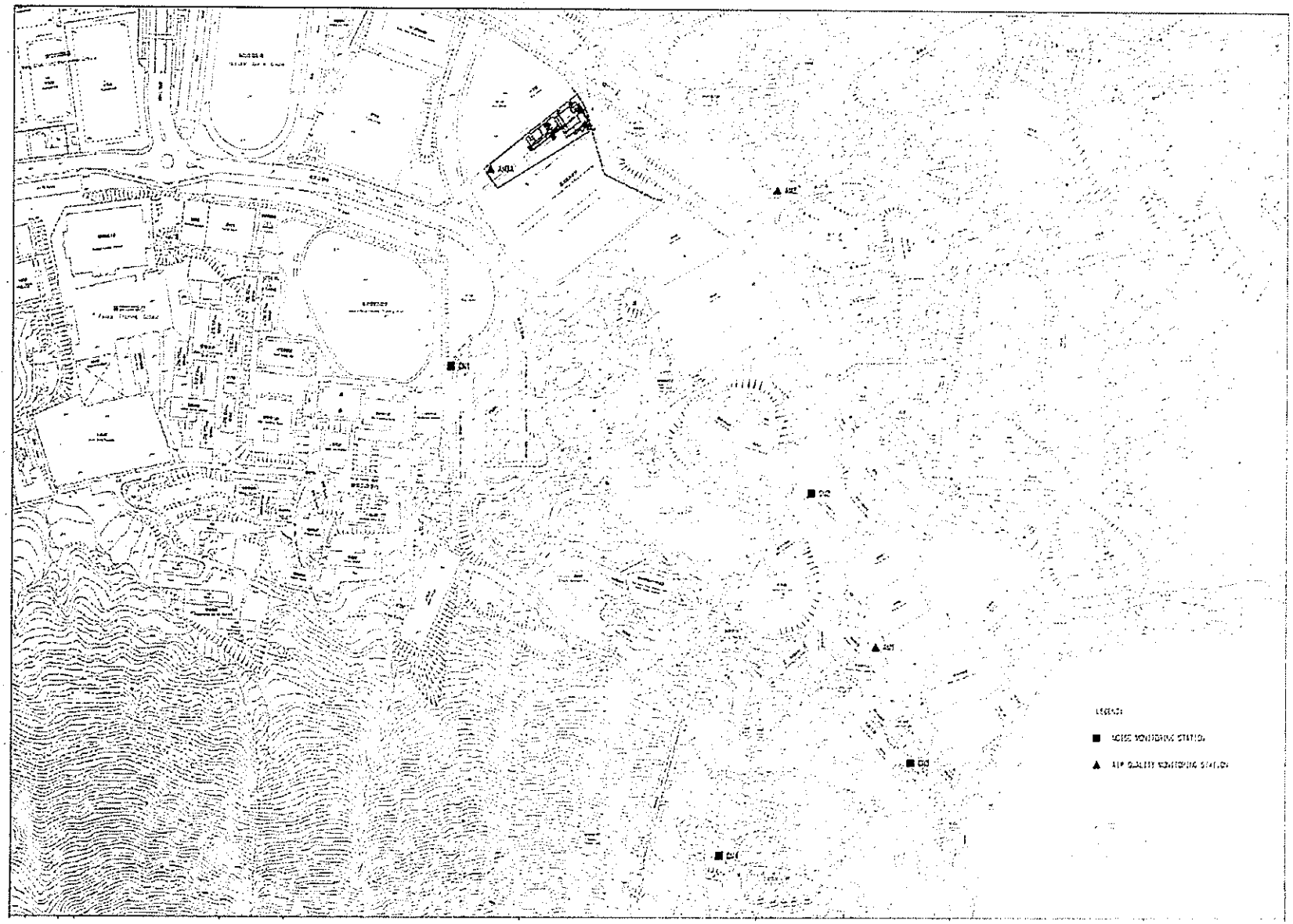
REVISION: K

A3 420mm x 297mm

Print By :$USER$ Filename :$FILE$ Time :$TIME$ Date :$DATE$

..\E0020\E0020K.dgn 8/11/2010 5:13:47 PM

Figure 1.2 – Locations of Air Quality and Noise Monitoring Stations



REV.	DESCRIPTION	DATE

海洋公園
OCEAN PARK

OCEAN PARK REDEVELOPMENT

CONTRACT NO.E107
ENTRY PLAZA, AQUA CITY & GRAND AQUARIUM

AIR QUALITY AND NOISE MONITORING STATIONS LOCATION PLAN

CONSULTANT
MAUNSELL | AECOM
Maunsell Consultants Asia Ltd.
茂盛(亞洲)工程顧問有限公司
In association with :
AEDAS EDAW LEVETT & BAILEY

LEIGHTON CONTRACTORS (ASIA) LTD.

SCALE	DATE
N.T.S.	27/03/2009
DRAWN BY	CHECKED BY
F. LO	T. LEE
DWG NO.	REV.
H2458/E/0172	0

Date : 27/3/2009 Time : 15:33:39 PM

Appendix A – Action and Limit Levels

Table B.1 Action and Limit Levels for 1-hour average TSP and 24-hour average TSP Monitoring

Monitoring Location	24-hr TSP ($\mu g/m^3$)		1-hr TSP ($\mu g/m^3$)	
	Action Level	Limit Level	Action Level	Limit Level
AM1	183	260	440	500
AM2	181	260	500	500
AM3/AM3A	194	260	500	500

Table B.2 Action and Limit Levels for Daytime, Evening & Night-time Noise Monitoring

Time Period	Action	Limit
0700-1900 hrs on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A) *
1900-2300 hrs on normal weekdays; and 0700-1900 hrs on holidays		60/65/70 dB(A) **
2300-0700 hrs of next day		45/50/55 dB(A) **

* reduce to 70dB(A) for school and 65dB(A) during school examination periods, if applicable

** to be selected based on the Area Sensitivity Rating of A/B/C, and the conditions of the CNP(s) must be followed

Appendix B – Environmental Monitoring Schedules

Contract No.: C107
Ocean Park Redevelopment Project – Entry Plaza, Aqua City & Grand Aquarium – Environmental Monitoring

Time Schedule for Impact 1-hour TSP Monitoring (1-TSP), Impact 24-hour TSP Monitoring (24-TSP) and Impact Daytime Noise Monitoring (NM-Daytime)

January 2011

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 Holiday
2	3 1-TSP NM - Daytime	4	5 1-TSP 24-TSP	6	7 1-TSP	8
9	10 1-TSP NM - Daytime	11 1-TSP 24-TSP	12 1-TSP	13	14 1-TSP	15
16	17 1-TSP 24-TSP NM - Daytime	18	19 1-TSP	20	21 1-TSP	22 1-TSP 24-TSP
23	24 1-TSP NM - Daytime	25	26 1-TSP	27	28 1-TSP 24-TSP	29
30	31 1-TSP NM - Daytime					

Appendix C – Air Quality Monitoring Results

Annex E1 Air Quality Monitoring Data (1-hr TSP)

1-hr TSP Monitoring Results at Station AM1

Monitoring Period				Filter Weight (g)		Flow Rate (m^3/min)		Elapse Time (hour)		Sampling Time (hours)	Concentration ($\mu g/m^3$)	Weather Condition	Particulate weight (g)	Average flow (m^3/min)	Total volume (m^3)
From		To													
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final						
28-Dec-10	13:00	28-Dec-10	14:00	2.8283	2.8328	0.8	0.8	15648.64	15649.64	1	88	cloudy	0.0045	0.8	51
29-Dec-11	9:00	29-Dec-11	10:00	2.7802	2.7822	0.8	0.8	15649.64	15650.64	1	39	fine	0.0020	0.8	51
30-Dec-10	9:00	30-Dec-10	10:00	2.7982	2.8025	0.8	0.8	15650.64	15651.64	1	85	fine	0.0043	0.8	51
31-Dec-10	13:50	31-Dec-10	14:50	2.8420	2.8450	0.8	0.8	15675.64	15676.64	1	183	fine	0.0030	0.8	47
3-Jan-11	9:00	3-Jan-11	10:00	2.8305	2.8448	1.0	1.0	15676.64	15677.64	1	251	fine	0.0143	1.0	57
5-Jan-11	9:00	5-Jan-11	10:00	2.8211	2.8294	1.0	1.0	15677.64	15678.64	1	145	fine	0.0083	1.0	57
7-Jan-11	13:00	7-Jan-11	14:00	2.8748	2.8781	0.9	0.9	15702.64	15703.64	1	61	fine	0.0033	0.9	54
10-Jan-11	9:00	10-Jan-11	10:00	2.8392	2.8483	0.9	0.9	15703.64	15704.64	1	167	fine	0.0091	0.9	54
11-Jan-11	9:00	11-Jan-11	10:00	2.8249	2.8361	0.9	0.9	15704.64	15705.64	1	206	fine	0.0112	0.9	54
12-Jan-11	13:05	12-Jan-11	14:05	2.8425	2.8468	1.0	1.0	15729.64	15730.64	1	72	fine	0.0043	1.0	60
14-Jan-11	9:00	14-Jan-11	10:00	2.8555	2.8645	1.0	1.0	15730.64	15731.64	1	151	fine	0.0090	1.0	60
17-Jan-11	9:00	17-Jan-11	10:00	2.8674	2.8776	1.0	1.0	15731.64	15732.64	1	171	cloudy	0.0102	1.0	60
19-Jan-11	14:10	19-Jan-11	15:10	2.8365	2.8422	1.0	1.0	15756.64	15757.64	1	95	cloudy	0.0057	1.0	60
21-Jan-11	9:00	21-Jan-11	10:00	2.8400	2.8477	1.0	1.0	15757.64	15758.64	1	129	fine	0.0077	1.0	60
22-Jan-11	9:00	22-Jan-11	10:00	2.8322	2.8346	1.0	1.0	15758.64	15759.64	1	40	fine	0.0024	1.0	60
24-Jan-11	11:00	24-Jan-11	12:00	2.8324	2.8377	1.0	1.0	15783.64	15784.64	1	89	fine	0.0053	1.0	60
26-Jan-11	9:00	26-Jan-11	10:00	2.7842	2.7954	1.0	1.0	15784.64	15785.64	1	188	fine	0.0112	1.0	60
28-Jan-11	9:00	28-Jan-11	10:00	2.8273	2.8366	1.0	1.0	15785.64	15786.64	1	156	fine	0.0093	1.0	60
31-Jan-11	9:00	31-Jan-11	10:00	2.8239	2.8301	1.0	1.0	15810.64	15811.64	1	104	fine	0.0062	1.0	60

1-hr TSP Monitoring Results at Station AM2

Monitoring Period				Filter Weight (g)		Flow Rate (m^3/min)		Elapse Time (hour)		Sampling Time (hours)	Concentration ($\mu g/m^3$)	Weather Condition	Particulate weight (g)	Average flow (m^3/min)	Total volume (m^3)
From		To													
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final						
28-Dec-11	13:00	28-Dec-11	14:00	2.7696	2.7763	0.9	0.9	15455.48	15456.48	1	129	cloudy	0.0067	0.9	52
29-Dec-10	9:00	29-Dec-10	10:00	2.7892	2.7954	0.9	0.9	15456.48	15457.48	1	120	fine	0.0062	0.9	52
30-Dec-10	9:00	30-Dec-10	10:00	2.7939	2.8060	0.9	0.9	15457.48	15458.48	1	234	fine	0.0121	0.9	52
31-Dec-10	13:15	31-Dec-10	14:15	2.8105	2.8258	0.9	0.9	15482.48	15483.48	1	295	fine	0.0153	0.9	52
3-Jan-11	9:00	3-Jan-11	10:00	2.8039	2.8235	0.9	0.9	15483.48	15484.48	1	345	fine	0.0196	0.9	57
5-Jan-11	9:00	5-Jan-11	10:00	2.8278	2.8399	1.0	1.0	15484.48	15485.48	1	203	fine	0.0121	1.0	60
7-Jan-11	13:00	7-Jan-11	14:00	2.8535	2.8595	1.0	1.0	15509.48	15510.48	1	101	fine	0.0060	1.0	60
10-Jan-11	9:00	10-Jan-11	10:00	2.8546	2.8689	1.0	1.0	15510.45	15511.48	1	240	fine	0.0143	1.0	60
11-Jan-11	9:00	11-Jan-11	10:00	2.8557	2.8722	1.0	1.0	15511.48	15512.48	1	277	fine	0.0165	1.0	60
12-Jan-11	13:10	12-Jan-11	14:10	2.8677	2.8760	1.0	1.0	15536.48	15537.48	1	139	fine	0.0083	1.0	60

Remarks: 1. Bold value indicated an Action Level exceedance

2. Bold & Italic value indicated an Limit Level exceedance

3. x - denotes no measurement due to power supply failure

4. * - denotes measurement by using Dust Trak

Annex E1 Air Quality Monitoring Data (1-hr TSP)

1-hr TSP Monitoring Results at Station AM2

Monitoring Period				Filter Weight (g)		Flow Rate (m^3/min)		Elapse Time (hour)		Sampling Time (hours)	Concentration ($\mu g/m^3$)	Weather Condition	Particulate weight (g)	Average flow (m^3/min)	Total volume (m^3)
From		To													
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final						
14-Jan-11	9:00	14-Jan-11	10:00	2.8697	2.8791	1.0	1.0	15537.48	15538.48	1	158	fine	0.0094	1.0	60
17-Jan-11	9:00	17-Jan-11	10:00	2.8049	2.8198	1.0	1.0	15538.48	15539.48	1	250	cloudy	0.0149	1.0	60
19-Jan-11	13:45	19-Jan-11	14:45	2.8457	2.8525	1.0	1.0	15563.48	15564.48	1	114	cloudy	0.0068	1.0	60
21-Jan-11	9:00	21-Jan-11	10:00	2.8604	2.8715	1.0	1.0	15564.48	15565.48	1	186	fine	0.0111	1.0	60
22-Jan-11	9:00	22-Jan-11	10:00	2.8468	2.8548	1.0	1.0	15565.48	15566.48	1	134	fine	0.0080	1.0	60
24-Jan-11	9:50	24-Jan-11	10:50	2.7958	2.802	1.0	1.0	15590.48	15591.48	1	104	fine	0.0062	1.0	60
26-Jan-11	9:00	26-Jan-11	10:00	2.7701	2.7856	1.0	1.0	15591.48	15592.48	1	260	fine	0.0155	1.0	60
28-Jan-11	9:00	28-Jan-11	10:00	2.8499	2.8653	1.0	1.0	15592.48	15593.48	1	259	fine	0.0154	1.0	60
31-Jan-11	9:00	31-Jan-11	10:00	2.8318	2.8448	1.0	1.0	15617.48	15618.48	1	218	fine	0.0130	1.0	60

1-hr TSP Monitoring Results at Station AM3A

Monitoring Period				Filter Weight (g)		Flow Rate (m^3/min)		Elapse Time (hour)		Sampling Time (hours)	Concentration ($\mu g/m^3$)	Weather Condition	Particulate weight (g)	Average flow (m^3/min)	Total volume (m^3)
From		To													
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final						
28-Dec-10	13:00	28-Dec-10	14:00	2.7998	2.8081	1.3	1.3	17793.98	17794.98	1	109	cloudy	0.0083	1.3	76
29-Dec-10	9:00	29-Dec-10	10:00	2.8318	2.8416	1.3	1.3	17794.98	17795.98	1	129	fine	0.0098	1.3	76
30-Dec-10	9:00	30-Dec-10	10:00	2.8368	2.8517	1.3	1.3	17795.98	17796.98	1	196	fine	0.0106	1.1	76
31-Dec-10	13:25	31-Dec-10	14:25	2.8156	2.8275	1.2	1.2	17820.98	17821.98	1	167	fine	0.0119	1.2	72
3-Jan-11	9:00	3-Jan-11	10:00	2.8474	2.8796	1.4	1.4	17821.98	17822.98	1	391	fine	0.0322	1.4	82
5-Jan-11	9:00	5-Jan-11	10:00	2.8347	2.8507	1.4	1.4	17822.98	17823.98	1	195	fine	0.0160	1.4	82
7-Jan-11	13:00	7-Jan-11	14:00	2.8343	2.8461	1.4	1.4	17847.98	17848.98	1	143	fine	0.0118	1.4	82
10-Jan-11	9:00	10-Jan-11	10:00	2.8579	2.8668	1.4	1.4	17848.98	17849.98	1	108	fine	0.0089	1.4	82
11-Jan-11	9:00	11-Jan-11	10:00	2.8187	2.8421	1.4	1.4	17849.98	17850.98	1	284	fine	0.0234	1.4	82
12-Jan-11	13:25	12-Jan-11	14:25	2.8548	2.8618	1.4	1.4	17874.98	17875.98	1	85	fine	0.0070	1.4	82
14-Jan-11	9:00	14-Jan-11	10:00	2.8607	2.8769	1.4	1.4	17875.98	17876.98	1	197	fine	0.0162	1.4	82
17-Jan-11	9:00	17-Jan-11	10:00	2.8728	2.8957	1.4	1.4	17876.98	17877.98	1	278	cloudy	0.0229	1.4	82
19-Jan-11	13:55	19-Jan-11	14:55	2.8413	2.8502	1.4	1.4	17901.98	17902.98	1	108	cloudy	0.0089	1.4	82
21-Jan-11	9:00	21-Jan-11	10:00	2.8581	2.8657	1.4	1.4	17902.98	17903.98	1	92	fine	0.0076	1.4	82
22-Jan-11	9:00	22-Jan-11	10:00	2.8721	2.8876	1.4	1.4	17903.98	17904.98	1	188	fine	0.0155	1.4	82
24-Jan-11	9:55	24-Jan-11	10:55	2.8007	2.8091	1.4	1.4	17928.98	17929.98	1	102	fine	0.0084	1.4	82
26-Jan-11	9:00	26-Jan-11	10:00	2.8278	2.8496	1.4	1.4	17929.98	17930.98	1	265	fine	0.0218	1.4	82
28-Jan-11	9:00	28-Jan-11	10:00	2.8076	2.8198	1.4	1.4	17930.98	17931.98	1	148	fine	0.0122	1.4	82
31-Jan-11	9:00	31-Jan-11	10:00	2.7984	2.8122	1.4	1.4	17955.98	17956.98	1	168	fine	0.0138	1.4	82

Remarks: 1. Bold value indicated an Action Level exceedance

2. Bold & Italic value indicated an Limit Level exceedance

3. x - denotes no measurement due to power supply failure

4. * - denotes measurement by using Dust Trak

Figure C.1 1-hr TSP monitoring results of Monitoring Station AM1

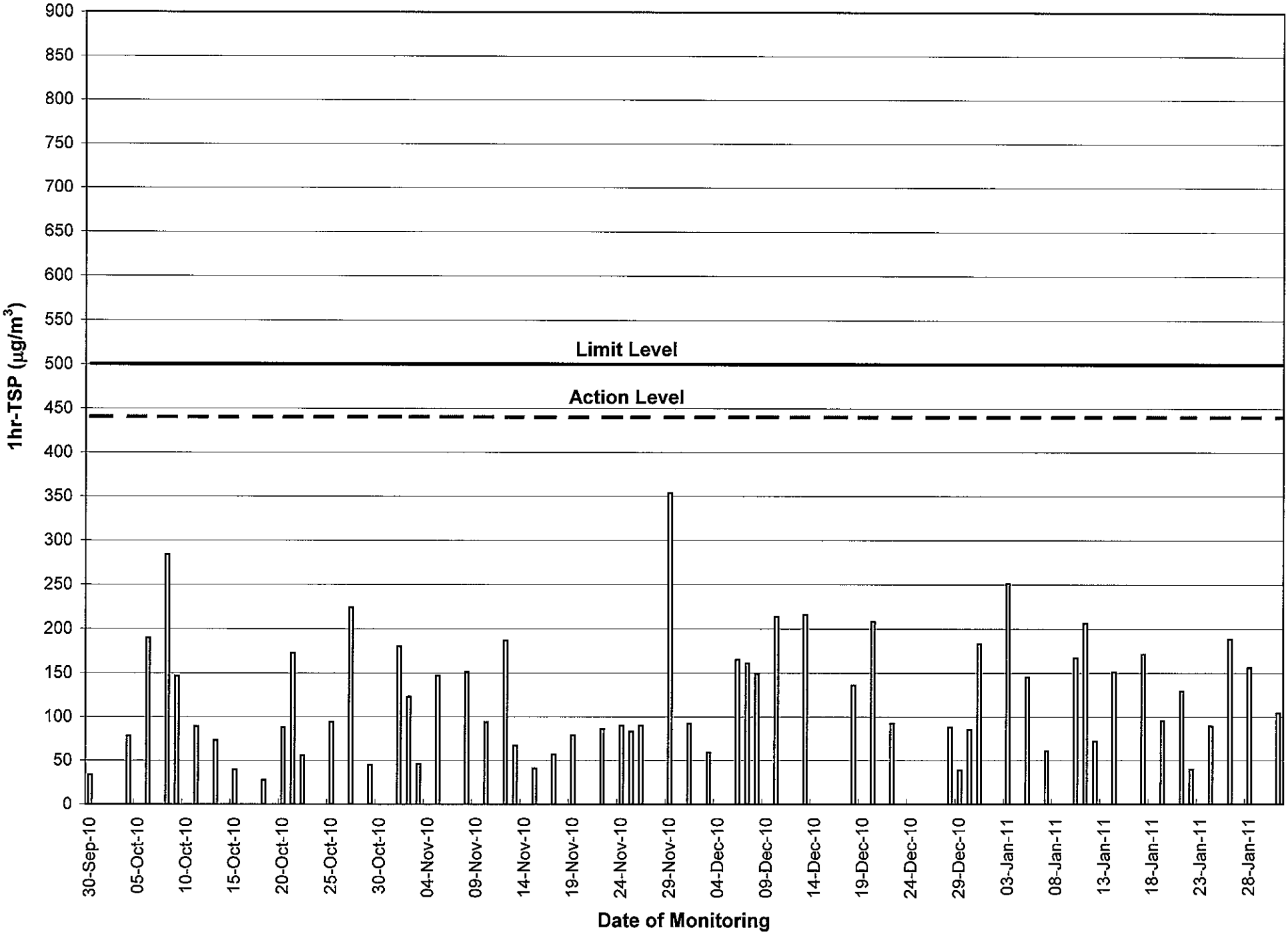


Figure C.2 1-hr TSP monitoring results of Monitoring Station AM2

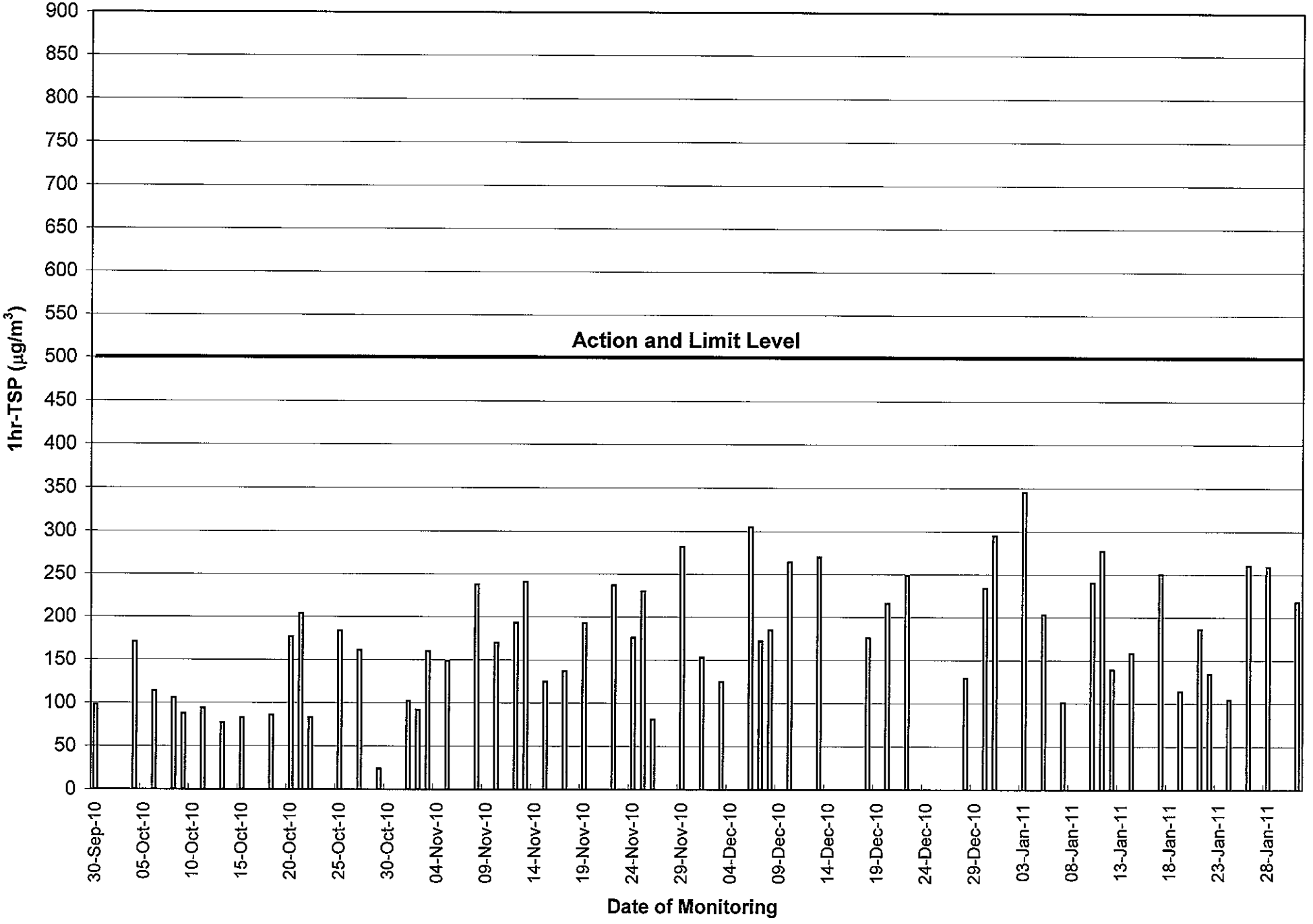
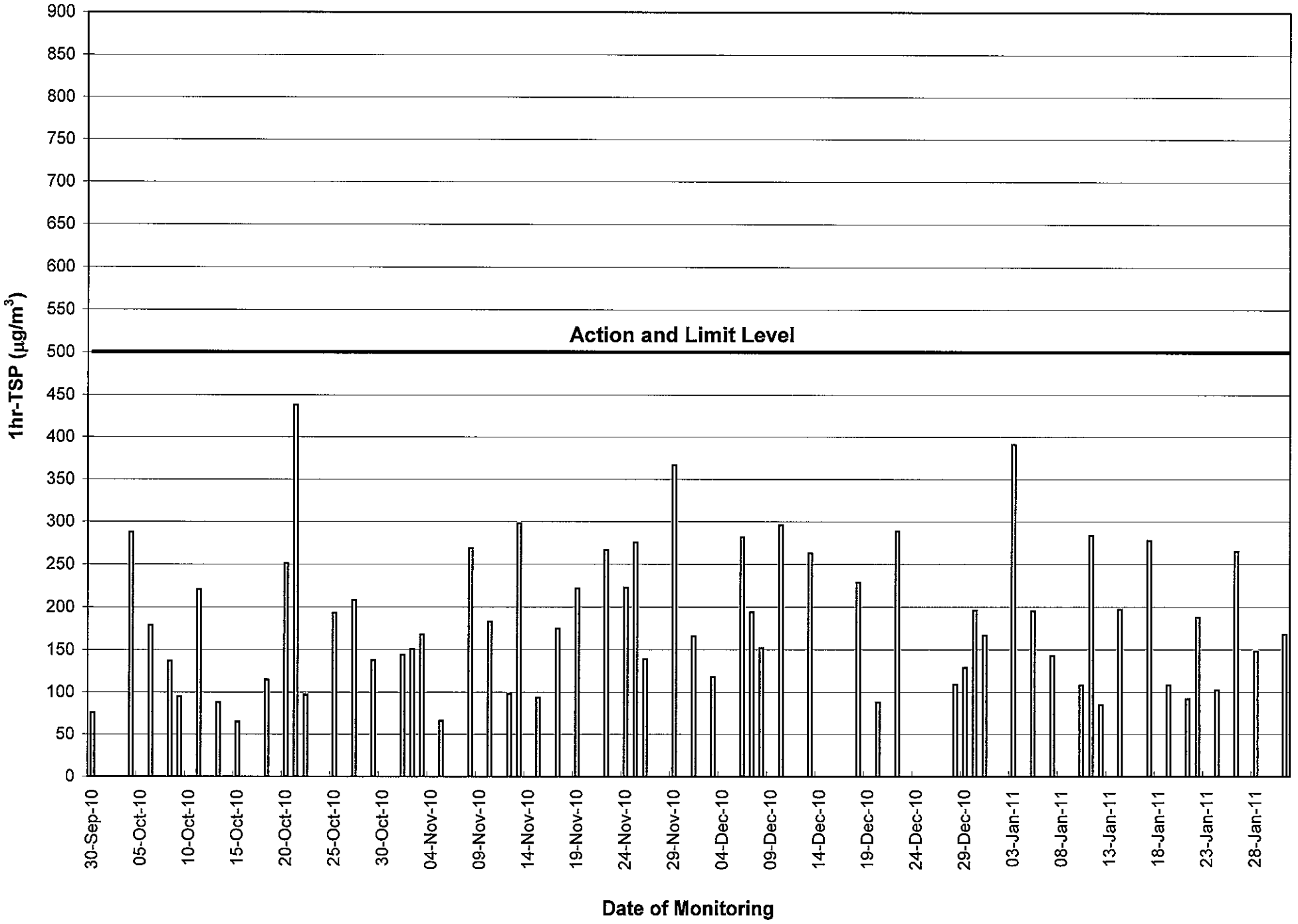


Figure C.3 1-hr TSP monitoring results of Monitoring Station AM3A



Annex D2 Air Quality Monitoring Data (24-hr TSP)

24-hr TSP Monitoring Results at Station AM1

Monitoring Period				Filter Weight (g)		Flow Rate (m^3/min)		Elapse Time (hour)		Sampling Time (hours)	Concentration (µg/m^3)	Weather Condition	Particulate weight (g)	Average flow (m^3/min)	Total volume (m^3)
From		To													
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final						
30-Dec-11	13:45	31-Dec-11	13:45	2.7953	2.9132	0.8	0.8	15651.64	15675.64	24	97	fine	0.1179	0.8	1221
5-Jan-11	15:30	6-Jan-11	15:30	2.8298	2.9204	0.9	0.9	15678.64	15702.64	24	69	sunny	0.0906	0.8	1307
11-Jan-11	11:20	12-Jan-11	11:20	2.8608	2.9365	1.0	1.0	15705.64	15729.64	24	53	fine	0.0757	1.0	1433
17-Jan-11	12:00	18-Jan-11	12:00	2.8668	2.9721	1.0	1.0	15732.64	15756.64	24	73	cloudy	0.1053	1.0	1433
22-Jan-11	12:00	23-Jan-11	12:00	2.8456	2.9045	1.0	1.0	15759.64	15783.64	24	41	fine	0.0589	1.0	1433
28-Jan-11	13:20	29-Jan-11	13:20	2.8034	2.8877	1.0	1.0	15786.64	15810.64	24	59	fine	0.0843	1.0	1433

24-hr TSP Monitoring Results at Station AM2

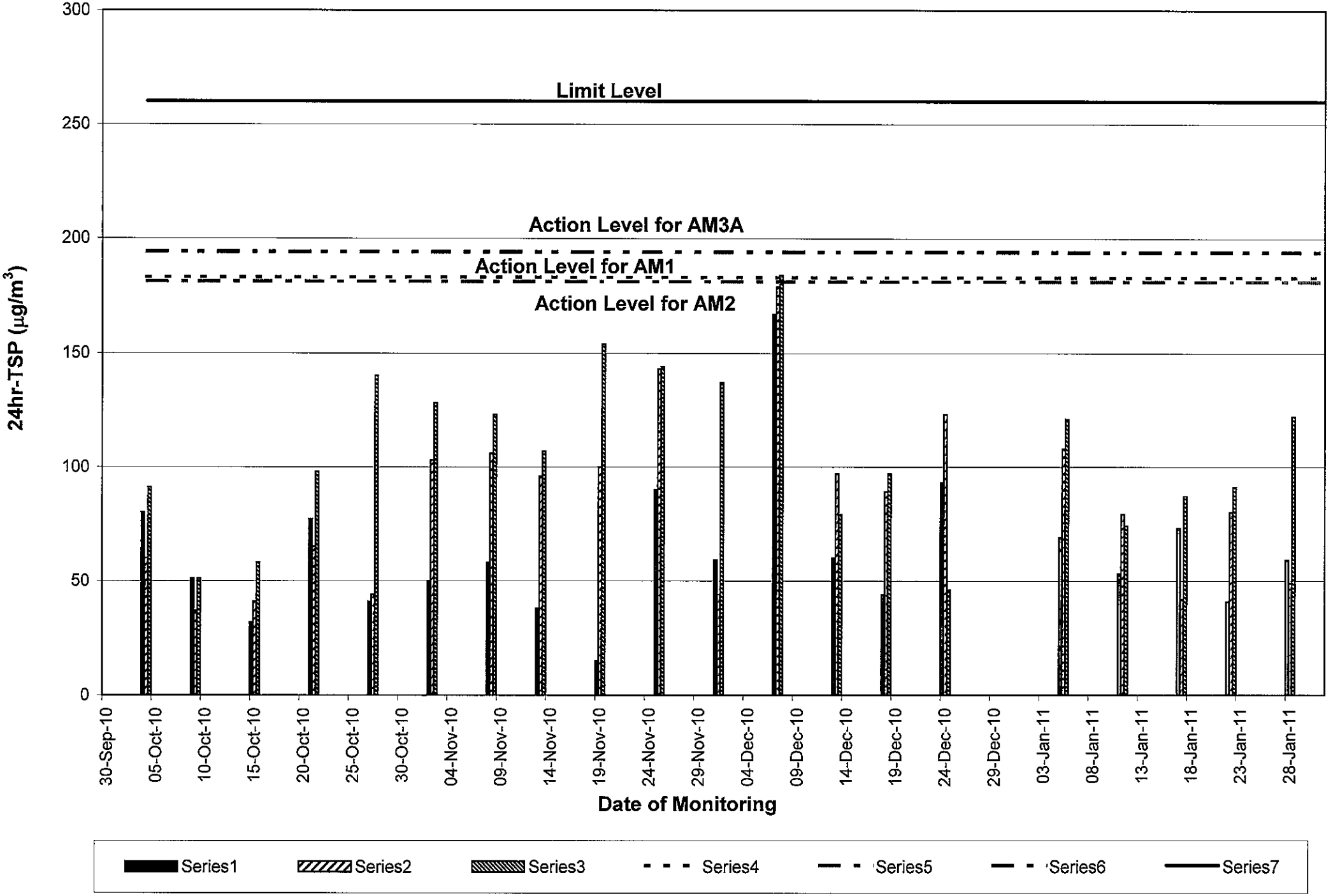
Monitoring Period				Filter Weight (g)		Flow Rate (m^3/min)		Elapse Time (hour)		Sampling Time (hours)	Concentration (µg/m^3)	Weather Condition	Particulate weight (g)	Average flow (m^3/min)	Total volume (m^3)
From		To													
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final						
30-Dec-11	13:10	31-Dec-11	13:10	2.8273	3.0140	0.8	0.8	15458.48	15482.48	24	158	fine	0.1867	0.8	1180
5-Jan-11	15:00	6-Jan-11	15:00	2.8362	2.9910	1.0	1.0	15485.48	15509.48	24	108	sunny	0.1548	1.0	1429
11-Jan-11	11:00	12-Jan-11	11:00	2.8237	2.9359	1.0	1.0	15512.48	15536.48	24	79	fine	0.1122	1.0	1429
17-Jan-11	10:20	18-Jan-11	10:20	2.8482	2.9085	1.0	1.0	15539.48	15563.48	24	42	cloudy	0.0603	1.0	1429
22-Jan-11	11:40	23-Jan-11	11:40	2.8558	2.9705	1.0	1.0	15566.48	15590.48	24	80	fine	0.1147	1.0	1429
28-Jan-11	13:00	29-Jan-11	13:00	2.8298	2.8997	0.9	0.9	15593.48	15617.48	24	49	fine	0.0699	0.9	1429

24-hr TSP Monitoring Results at Station AM3A

Monitoring Period				Filter Weight (g)		Flow Rate (m^3/min)		Elapse Time (hour)		Sampling Time (hours)	Concentration (µg/m^3)	Weather Condition	Particulate weight (g)	Average flow (m^3/min)	Total volume (m^3)
From		To													
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final						
30-Dec-11	13:20	31-Dec-11	13:20	2.8085	3.0641	1.3	1.3	17796.98	17820.98	24	140	fine	0.2556	1.3	1827
5-Jan-11	15:10	6-Jan-11	15:10	2.8446	3.0825	1.4	1.4	17823.98	17847.98	24	121	sunny	0.2379	1.4	1974
11-Jan-11	11:05	12-Jan-11	11:05	2.8552	3.0022	1.4	1.4	17850.98	17874.98	24	74	fine	0.1470	1.4	1974
17-Jan-11	10:30	18-Jan-11	10:30	2.8435	3.0143	1.4	1.4	17877.98	17901.98	24	87	cloudy	0.1708	1.4	1974
22-Jan-11	11:50	23-Jan-11	11:50	2.8199	3.0003	1.4	1.4	17904.98	17928.98	24	91	fine	0.1804	1.4	1974
28-Jan-11	13:10	29-Jan-11	13:10	2.7657	3.0072	1.4	1.4	17931.98	17955.98	24	122	fine	0.2415	1.4	1974

Remarks: 1. Bold value indicated an Action Level exceedance
2. Bold & Italic value indicated an Limit Level exceedance
3. x - denotes no measurement due to power supply failure
4. * - not 24 hrs due to power supply failure

Figure C.4 24-hr TSP monitoring results of Monitoring Station AM1, AM2 & AM3A



Appendix D – Noise Monitoring Results

Annex F1 Noise Monitoring Data (Daytime Noise)

Daytime Noise Monitoring Results at Station CN1

Date	Weather Condition	Measured Noise Level for 30 mins., dB(A)				Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	Leq	L10	L90			
3-Jan-11	Cloudy	8:45	62.6	65.0	57.1	60.2	70	N
10-Jan-11	Fine	14:00	65.9	67.8	58.9	60.2	70	N
17-Jan-11	Fine	10:35	64.2	67.9	59.8	60.2	70	N
24-Jan-11	Cloudy	10:35	66.7	69.1	54.6	60.2	70	N
31-Jan-11	Sunny	9:40	67.2	69.8	63.4	60.2	70	N

Daytime Noise Monitoring Results at Station CN2

Date	Weather Condition	Measured Noise Level for 30 mins., dB(A)				Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	Leq	L10	L90			
3-Jan-11	Cloudy	10:10	59.4	61.3	56.3	61.0	75	N
10-Jan-11	Fine	10:30	59.5	61.4	53.9	61.0	75	N
17-Jan-11	Fine	10:50	58.4	60.2	54.4	61.0	75	N
24-Jan-11	Cloudy	11:10	60.1	61.2	55.6	61.0	75	N
31-Jan-11	Sunny	11:00	58.7	60.2	55.3	61.0	75	N

Daytime Noise Monitoring Results at Station CN3

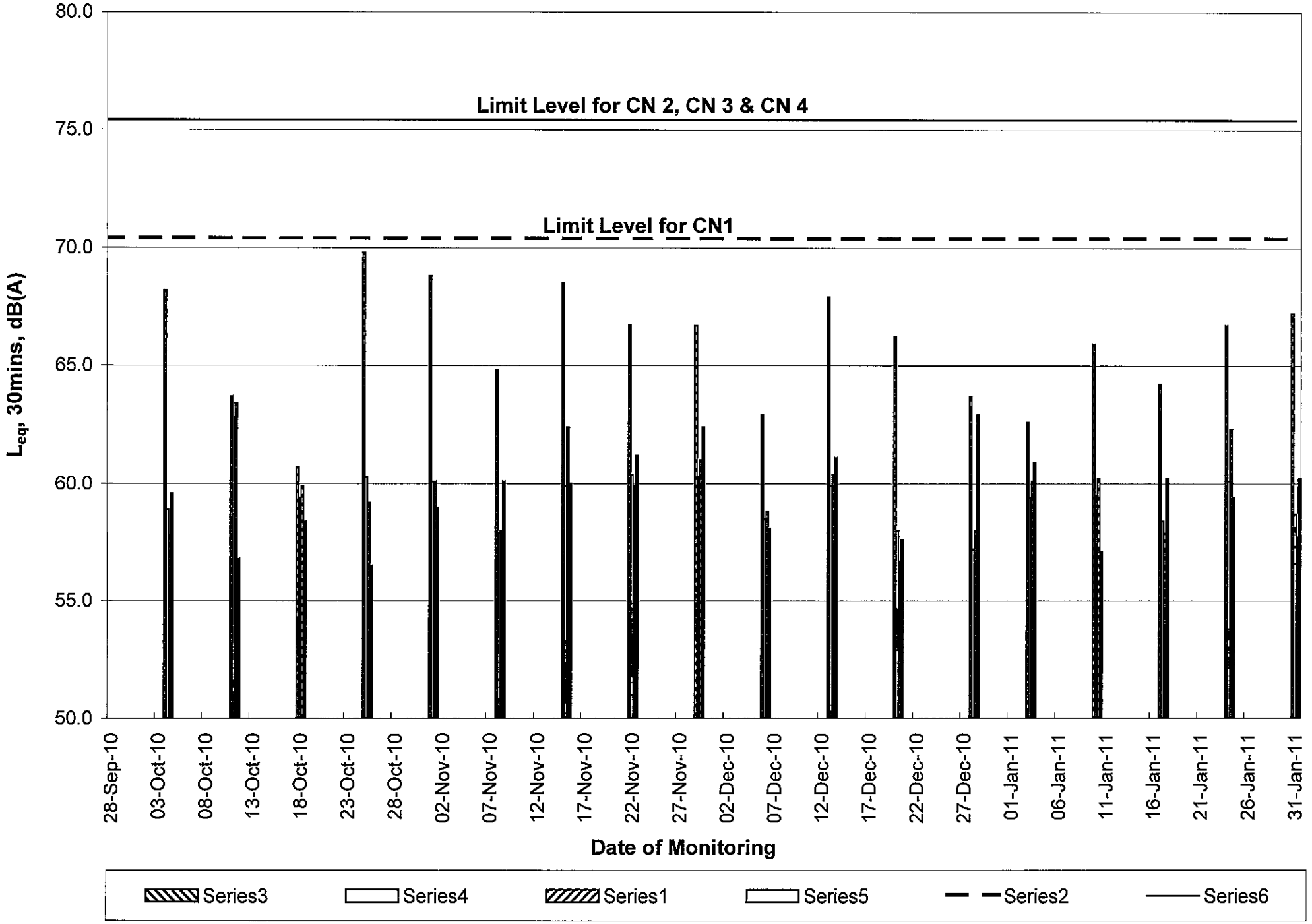
Date	Weather Condition	Measured Noise Level for 30 mins., dB(A)				Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	Leq	L10	L90			
3-Jan-11	Cloudy	10:45	60.1	61.8	56.8	56.3	75	N
10-Jan-11	Fine	11:05	60.2	62.3	55.8	56.3	75	N
17-Jan-11	Fine	11:25	57.9	59.6	54.0	56.3	75	N
24-Jan-11	Cloudy	11:45	62.3	64.1	53.4	56.3	75	N
31-Jan-11	Sunny	11:35	57.7	59.8	53.4	56.3	75	N

Daytime Noise Monitoring Results at Station CN4

Date	Weather Condition	Measured Noise Level for 30 mins., dB(A)				Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	Leq	L10	L90			
3-Jan-11	Cloudy	9:30	60.9	62.2	56.9	56.9	75	N
10-Jan-11	Fine	13:25	57.1	58.8	54.8	56.9	75	N
17-Jan-11	Fine	11:20	60.2	62.4	57.8	56.9	75	N
24-Jan-11	Cloudy	10:00	59.4	60.8	55.1	56.9	75	N
31-Jan-11	Sunny	10:20	60.2	62.4	56.5	56.9	75	N

Remarks: Bold & Italic value indicated an Limit Level exceedance

Fig D.1 - Daytime Noise Monitoring Results of Monitoring Stations CN1, CN2, CN3 & CN4



Appendix E – Calibration Details

CALIBRATION DETAILS

Air Quality Monitoring Equipments

Monitoring Location	AM1	AM2	AM3A
High Volume Sample/Dust Trak Serial No.	1174	1177	9998
Sampler Identification	ET / EA / 003 / 08	ET / EA / 003 / 07	ET / EA / 003 / 12
Date of Calibration	03 Sep 2010	03 Sep 2010	03 Sep 2010
Calibration Due Date	02 Nov 2010	02 Nov 2010	02 Nov 2010
Result	Good	Good	Good

Monitoring Location	AM1	AM2	AM3A
High Volume Sample/Dust Trak Serial No.	1174	1177	9998
Sampler Identification	ET / EA / 003 / 08	ET / EA / 003 / 07	ET / EA / 003 / 12
Date of Calibration	03 Nov 2010	03 Nov 2010	03 Nov 2010
Calibration Due Date	02 Jan 2011	02 Jan 2011	02 Jan 2011
Result	Good	Good	Good

Noise Monitoring Equipments

Monitoring Location	CN1, CN2, CN3 & CN4
Sound Level Meter Brand Name and Model	Rion NL-31
Serial No.	00110024
Date of Calibration	22 April 2010
Calibration Due Date	21 April 2011
Result	Good

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 03 September 2010

Serial No. : 1174 (ET / EA / 003 / 08)

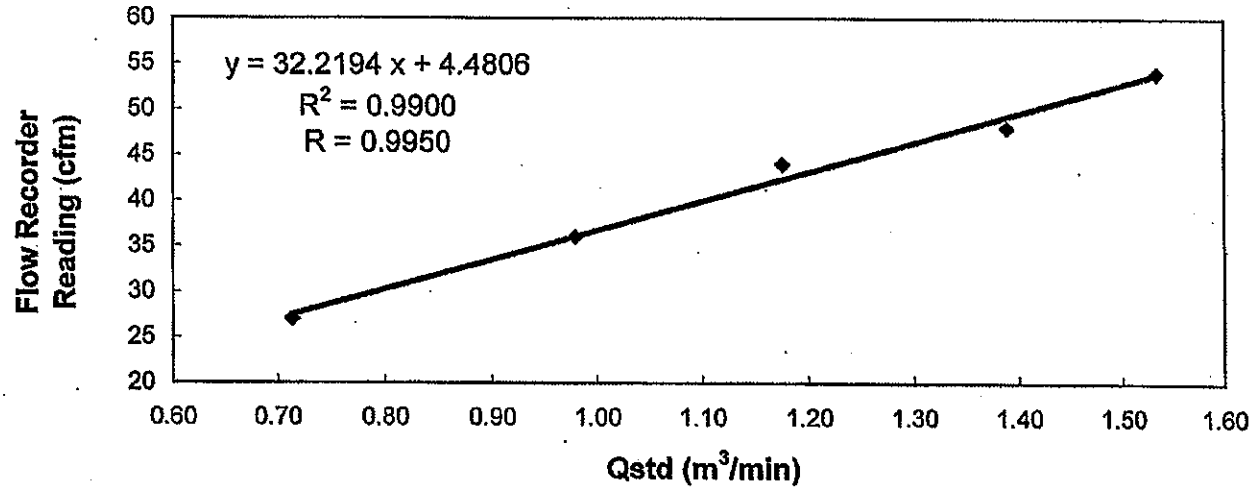
Calibration Due Date : 02 November 2010

Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	54	48	44	36	27
Qstd (Actual flow rate, m^3/min)	1.53	1.39	1.18	0.98	0.71
Pressure : 761.31 mm Hg		Temp. : 300 K			

Sampler 1174 Calibration Curve
Site: Ocean Park (AM-1)



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

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

Calibrated by : _____
Kwan, King Ming
(Technician)

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

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 03 November 2010

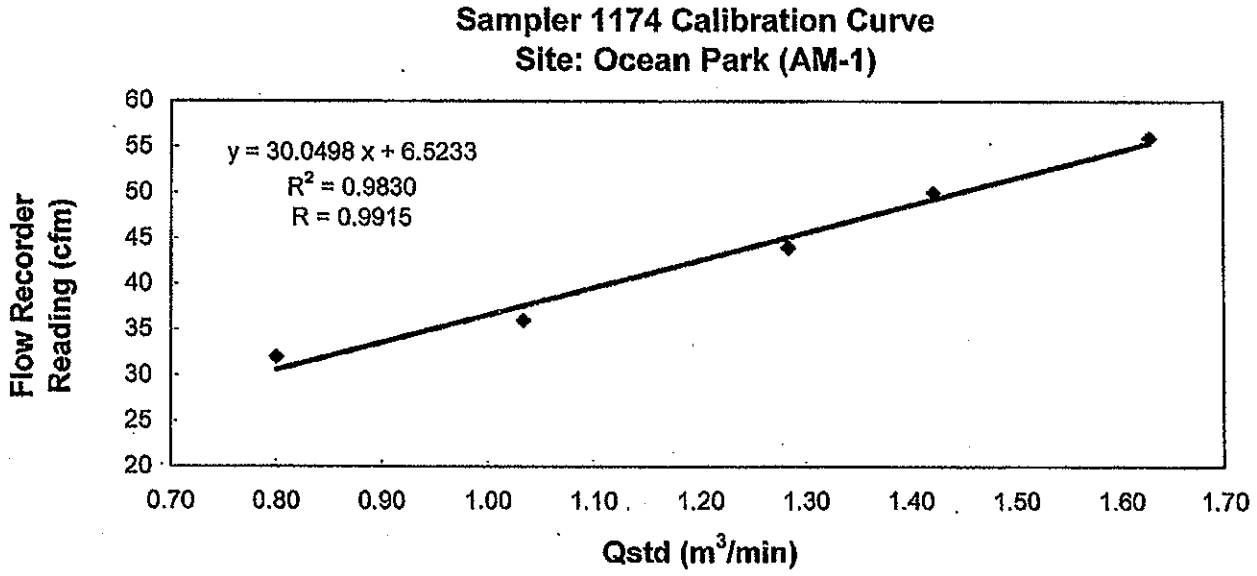
Serial No. : 1174 (ET / EA / 003 / 08)

Calibration Due Date : 02 January 2011

Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	56	50	44	36	32
Qstd (Actual flow rate, m^3/min)	1.63	1.42	1.28	1.03	0.80
Pressure : 761.31 mm Hg		Temp. : 297 K			



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

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

Calibrated by : _____
Kwan, King Ming
(Site Technician)

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

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 03 September 2010

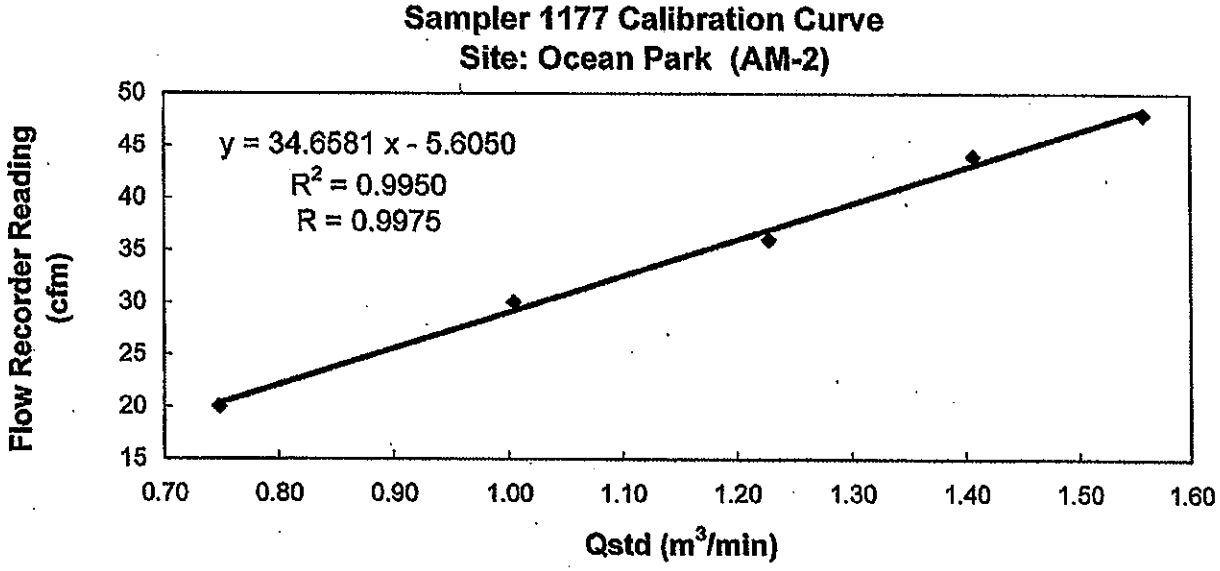
Serial No. : 1177 (ET / EA / 003 / 07)

Calibration Due Date : 02 November 2010

Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	48	44	36	30	20
Qstd (Actual flow rate, m^3/min)	1.56	1.41	1.23	1.00	0.75
Pressure : 761.31 mm Hg		Temp. : 300 K			



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

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

Calibrated by : KWAN, King Ming (Technician)

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

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 03 November 2010

Serial No. : 1177 (ET / EA / 003 / 07)

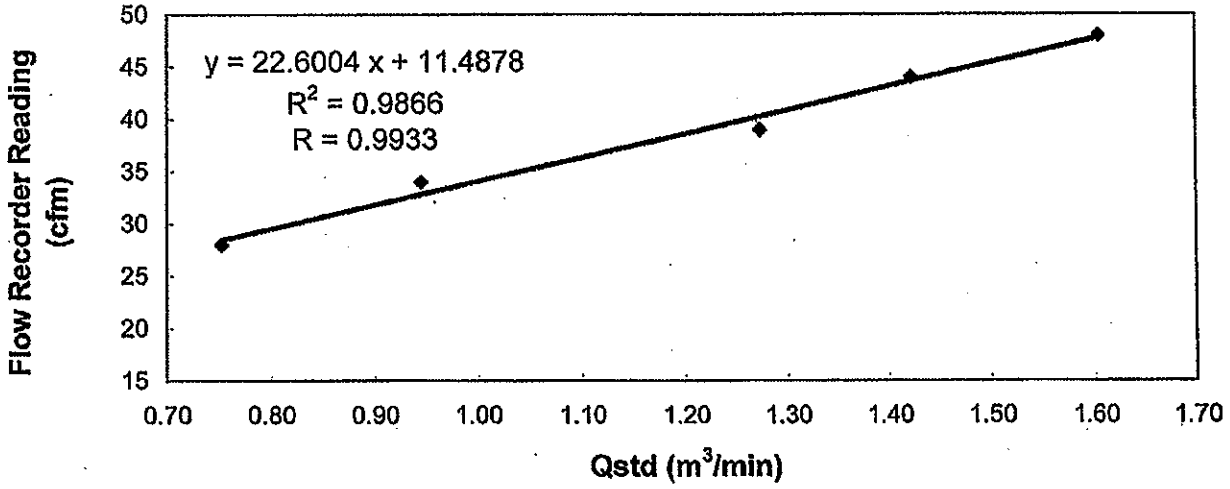
Calibration Due Date : 02 January 2011

Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	48	44	39	34	28
Qstd (Actual flow rate, m^3/min)	1.61	1.42	1.27	0.94	0.75
Pressure : 761.31 mm Hg		Temp. : 297 K			

Sampler 1177 Calibration Curve
Site: Ocean Park (AM-2)



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

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

Calibrated by : _____
KWAN, King Ming
(Site Technician)

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

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 03 September 2010

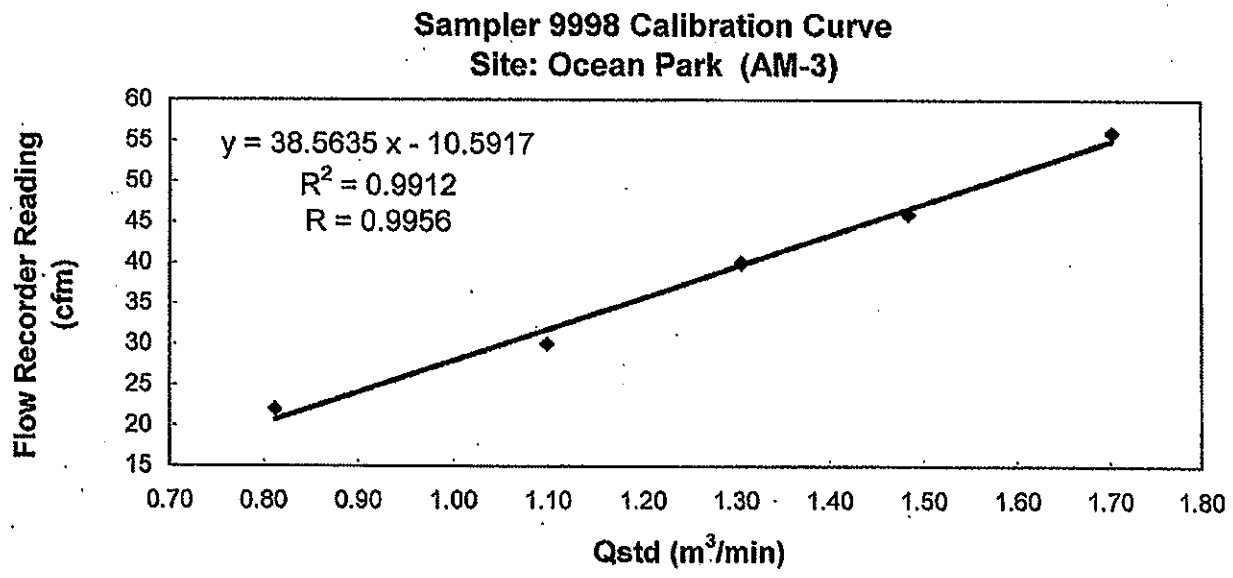
Serial No. : 9998 (ET / EA / 003 / 12)

Calibration Due Date : 02 November 2010

Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	56	46	40	30	22
Qstd (Actual flow rate, m^3/min)	1.70	1.48	1.31	1.10	0.81
Pressure : 761.31 mm Hg		Temp. : 300 K			



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

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

Calibrated by : KWAN, King Ming (Technician)

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

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 03 November 2010

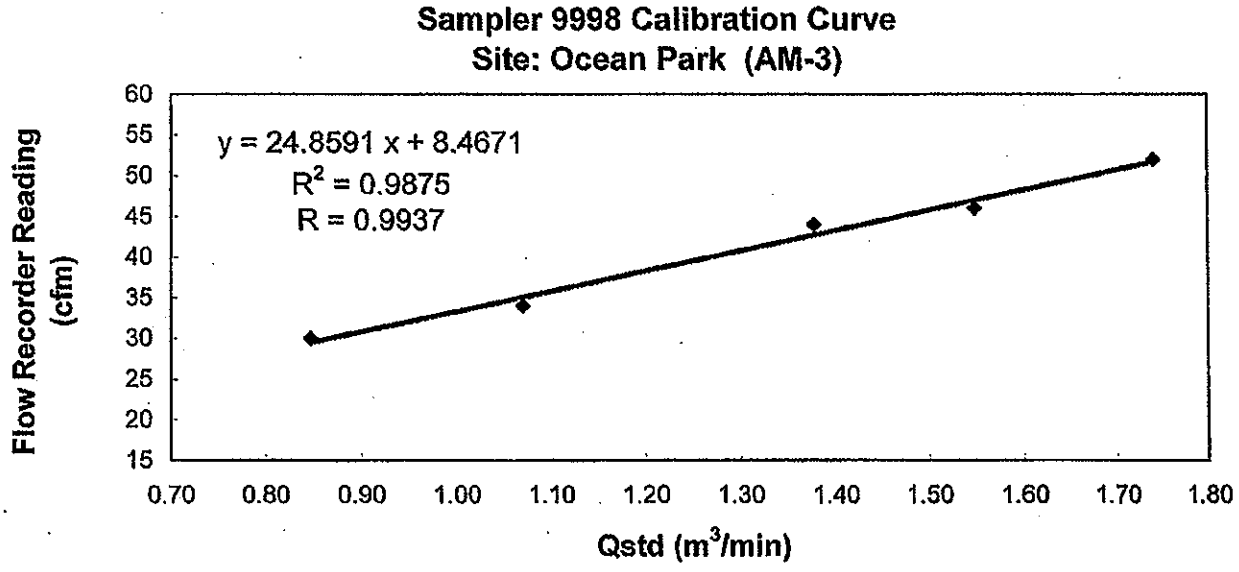
Serial No. : 9998 (ET / EA / 003 / 12)

Calibration Due Date : 02 January 2011

Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	52	46	44	34	30
Qstd (Actual flow rate, m^3/min)	1.74	1.55	1.38	1.07	0.85
Pressure : 761.31 mm Hg		Temp. : 300 K			



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

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

Calibrated by : _____
KWAN, King Ming
(Site Technician)

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

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. 05083

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q02020 **Date of receipt :** 8-Sep-10

Item Tested

Description : Precision Integrating Sound Level Meter (ET/EN/003/13)

Manufacturer : Rion

Model : NL-31 **Serial No. :** 00593620

Test Conditions

Date of Test : 14-Sep-10 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S017A	Multi-Function Generator	00804	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : P. F. Wong

Approved by : Dorothy Cheuk

Date: 14-Sep-10

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 6B, 24/F., Wah Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 6601 Fax: 2425 6646

Calibration Certificate

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L_A	Fast	94.0	93.7
		Slow		93.7
	L_C	Fast		93.7
	Lp	Fast		93.8
30 – 120	L_A	Fast	94.0	93.7
		Slow		93.7
	L_C	Fast		93.7
	Lp	Fast		93.7
30 – 120	L_A	Fast	114.0	113.5
		Slow		113.5
	L_C	Fast		113.5
	Lp	Fast		113.5

IEC 651 Type 1 Spec. : ± 0.7 dB
Uncertainty : ± 0.1 dB

2. Level Stability : 0.1 dB

IEC 651 Type 1 Spec. : ± 0.3 dB
Uncertainty : ± 0.1 dB

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	113.9	+0.2	± 0.7 dB
130	104.0	103.9	+0.2	
120	94.0	93.7(Ref.)	- -	
110	84.0	83.6	-0.1	
100	74.0	73.7	0.0	
90	64.0	63.7	0.0	
80	54.0	53.7	0.0	

Uncertainty : ± 0.1 dB

Calibration Certificate

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.6	-0.1	± 0.4 dB
	94.0	93.7 (Ref.)	--	
	95.0	94.7	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-40.2	- 39.4 dB, ± 1.5 dB
63 Hz	-26.8	- 26.2 dB, ± 1.5 dB
125 Hz	-16.7	- 16.1 dB, ± 1 dB
250 Hz	-9.2	- 8.6 dB, ± 1 dB
500 Hz	-3.6	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.5	+ 1.2 dB, ± 1 dB
4 kHz	+1.5	+ 1.0 dB, ± 1 dB
8 kHz	-0.6	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-0.6	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	40.0	± 0.5 dB
$1/10^2$	40.0	40.1	
$1/10^3$	40.0	40.2	± 1.0 dB
$1/10^4$	40.0	40.2	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 004 hPa.
4. The internal calibration reference of UUT was drifted from 94.0 dB to 94.5 dB

---------- END ----------

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. **01767** Page 1 of 2 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q00732 **Date of receipt :** 15-Apr-10

Item Tested

Description : Acoustic Calibrator (ET/ EN/ 002/ 07)
Manufacturer : Castle
Model : GA607 **Serial No. :** 038641

Test Conditions

Date of Test : 22-Apr-10 **Supply Voltage :** --
Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.
Ref. Document/Procedure : F06, F20, Z02.

Test Results

All results were within the IEC 942 Class 1 specification.
The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Due Date	Traceable to
S014	Spectrum Analyzer	93091	18-Jun-10	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR
S041	Universal Counter	94005	6-Aug-10	SCL-HKSAR
S206	Sound Level Meter	93966	5-Aug-10	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : P.F. Wong **Approved by :** Alan Chu

Date: 23-Apr-10

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 68-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

1. Level Accuracy

UUT Setting (dB)	Measured Value (dB)	IEC 942 Class 1 Spec.
94	93.88	± 0.3 dB

Uncertainty : ± 0.2 dB

2. Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	IEC 942 Class 1 Spec.
1	1.000	± 2 %

Uncertainty : $\pm 3.6 \times 10^{-6}$

3. Level Stability : 0.0 dB
IEC 942 Class 1 Spec.: ± 1 dB
Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 2.5 %
IEC 942 Class 1 Spec. : < 3 %
Uncertainty : ± 2.3 % of rdg.

Remark : 1. UUT : Unit-Under-Test
2. The above measured values were the mean of 3 measurements.
3. The uncertainty claimed is for a confidence probability of not less than 95%.
4. Atmospheric Pressure : 1 003 hPa.

---------- END ----------

Appendix F – Environmental Mitigation Implementation Schedule

Ocean Park Redevelopment Project CI07 - Entry Plaza, Aqua City and Grand Aquarium

LEIGHTON

Environmental Mitigation Implementation Schedule - Air Emission

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in response to a specified legal requirements	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
1		yes	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.	Superintendent/ Supervisor/Foremen	Weekly Environmental Inspection Checklist	08/08 - 11/10	OK
2		yes	Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.	Superintendent/ Supervisor/Foremen	Weekly Environmental Inspection Checklist	08/08 - 11/10	OK
3		yes	Use of frequent watering for particularly dusty construction areas, temporary stockpiles and areas close to ASRs.	Superintendent/ Supervisor/Foremen	Weekly Environmental Inspection Checklist	08/08 - 11/10	OK
4		yes	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08 - 11/10	OK
5		yes	Restricting heights from which materials are dropped, as far as practicable to minimise the fugitive dust arising from unloading/loading.	Superintendent/ Supervisor/Foremen Subcontractor		08/08 - 11/10	OK
6		yes	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08 - 11/10	OK
7		yes	Use of vehicle wheel and body washing facilities at the exit points of the site.	Superintendent/ Supervisor/Foremen Project Environmental Co-ordinator Subcontractor	Weekly Environmental Inspection Checklist	08/08 - 11/10	OK
8		yes	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.	Superintendent/ Supervisor/Foremen Project Environmental Co-ordinator		08/08 - 11/10	OK

Environmental Mitigation Implementation Schedule - Air Emission

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in response to a specified legal requirements	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
9		yes	Dusty activities should be re-scheduled if high-wind conditions are encountered.	Superintendent/ Supervisor/Foremen Project Environmental Co-ordinator		08/08 - 11/10	OK
10		yes	Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.	Superintendent/ Supervisor/Foremen Project Environmental Co-ordinator		08/08 - 11/10	OK
11		yes	Implementation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	Project Environmental Co-ordinator		08/08 - 11/10	OK
12		yes	The works areas shall be fenced off with hoarding. The height of hoarding should not be less than 2.4 m from ground level	Superintendent/ Supervisor/Foremen	Weekly Environmental Inspection Checklist	08/08 - 11/10	OK

LEIGHTON

Environmental Mitigation Implementation Schedule - Noise

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in response to a specified legal requirements	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
1		yes	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program	Superintendent/ Supervisor/Foremen Project Environmental Coordinator Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
2		yes	Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	N.A.
3		yes	Mobile plant, if any, should be sited as far from NSRs as possible	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
4		yes	Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
5		yes	Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
6		yes	Quiet Plant considered for at Entry Plaza construction for Site Clearance, Demolition, Realignment of Ocean Park Road, Drainage Diversion, Sewerage Diversion, Site Formation & Excavation, Piling Works and Superstructure Construction where calculated noise levels exceed limits	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
7		yes	Quiet Plant considered for Aqua City construction during - Site Clearance, Demolition, Slopeworks, Site Formation & Excavation, Piling Works and Superstructure Construction where calculated noise levels exceed limits	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
8		yes	Moveable noise barriers considered for at Entry Plaza construction for Site Clearance, Demolition, Realignment of Ocean Park Road, Drainage Diversion, Sewerage Diversion, Site Formation & Excavation, Piling Works and Superstructure Construction where calculated noise levels exceed limits	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	N.A.
9		yes	Moveable barriers considered for Aqua City construction during - Site Clearance, Demolition, Slopeworks, Site Formation & Excavation, Piling Works and Superstructure Construction where calculated noise levels exceed limits	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	N.A.

Ocean Park Redevelopment Project CI07 - Entry Plaza, Aqua City and Grand Aquarium

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Environmental Mitigation Implementation Schedule - Water

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in response to a specified legal requirements	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
1		Yes	Before commencing any site formation work, all sewer and drainage connections should be sealed to prevent debris, soil, sand etc. from entering public sewers/drains.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08 to 09/08	OK
2		Yes	Temporary ditches should be provided to facilitate run-off discharge into appropriate watercourses, via appropriately sized/ designed silt retention pond or similar structure. No site run-off should enter artificial ponds. Cut-off ditches should be provided for all major site clearance/ excavation works where soils would be exposed so that instances of uncontrolled run-off from exposed areas would be minimized. As well as channels, earth/ concrete bunds and/ or sand bags, as appropriate, should be deployed to direct surface run-off towards channels. Catchpits and perimeter channels should be constructed in advance of relevant site formation works.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08 to 11/10	OK
3		Yes	Boundaries of earthworks should be marked and surrounded by dykes or embankments for flood protection, as necessary.	Superintendent/ Supervisor/Foremen land surveyor		08/08 to 11/10	OK
4		Yes	Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the Technical Memorandum standard under the Water Pollution Control Ordinance. The design of silt removal facilities should be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures should be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms.	Superintendent/ Supervisor/Foremen project environmental co-ordinator	Weekly Environmental Inspection Checklist	08/08 to 11/10	OK
5		Yes	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08 to 11/10	OK
6		Yes	Exposed soil surfaces should be covered,	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08 to 11/10	OK
7		Yes	Water pumped out from foundation excavations should be discharged into silt removal facilities.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08 to 11/10	OK

Environmental Mitigation Implementation Schedule - Water

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in response to a specified legal requirements	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
8		Yes	If excavation cannot be avoided during rainy seasons, temporarily exposed slope/soil surfaces should be covered by a tarpaulin or other means, as far as practicable, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Interceptiong channels should be provided (e.g. along the crest/ edge of the excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be inplace to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. Other measures that need to be implemented before, during and after rainstorms are summarized in ProPECC PN 1/94.	Superintendent/ Supervisor/Foremen project environmental co-ordiantor Subcontractor	Weekly Environmental Inspection Checklist	08/08 to 11/10	N.A.
9		Yes	Exposed soil areas should be minimized to reduce potential for increased siltation and contamination of runoff.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08 to 11/10	OK
10		Yes	Earthwork final surfaces should be well compacted and subsequent permanent work or surface protection should be immediately performed. Appropriate intercepting channels should be provided where necessary. Rainwater pumped out from trenches or excavations should be directed to silt removal facilities before discharge.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08 to 11/10	OK
11		Yes	Open stockpiles of construction materials or construction wastes on-site of more than $50m^3$ should be covered with tarpaulin or similar fabric during rainstorms	Superintendent/ Supervisor/Foremen Subcontractor		08/08 to 11/10	OK
12		Yes	Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby water bodies and public drainage system. Stockpiles of cement and other construction materials should be kept covered when not being used.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08 to 11/10	OK
13		Yes	Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor would be responsible for appropriate disposal of waste matter and maintenance of these facilities.	Superintendent/ Supervisor/Foremen project environmental co-ordinator Subcontractor	Weekly Environmental Inspection Checklist	08/08 to 11/10	OK

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Environmental Mitigation Implementation Schedule - Ecological Resources

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in response to a specified legal requirements	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
1		Yes	All excavation works carried out close to water bodies shall be carefully controlled to avoid runoff entering watercourses, especially during periods of heavy rain.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
2		Yes	Site runoff shall be directed towards regularly cleaned and maintained silt traps and where appropriate, oil/grease separators to minimise risk of sedimentation and pollution.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
3		Yes	Suitable size / capacity silt traps and oil/grease interceptors shall be used.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	N.A.
4		Yes	Coral monitoring shall be implemented (by others)	Project Environmental Coordinator		08/08-11/10	N.A.
5		Yes	Noise mitigation measures including the use of quiet excavation methods, quiet construction plant and temporary noise barriers shall be implemented to minimise disturbance to habitats adjacent to the works areas	Superintendent/ Supervisor/Foremen Project Environmental Coordinator/ Engineer Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
6		Yes	Vegetation survey and subsequent transplantation of locally uncommon or restricted species (i.e. Long Tentacle Orchid, Sword-leaved Orchid, Green-flowered Rattlesnake-Plantain, Cycad-fern Balloon Flower and Chinese Lily) shall be carried out to determine the feasibility and suitability of individual plants for transplantation to protect plant species of conservation interest	Project Environmental Coordinator/ Engineer		08/08-11/10	OK
7		Yes	Receptor sites shall be identified.	Superintendent/ Supervisor/Foremen Project Environmental Coordinator		08/08-11/10	OK
8		Yes	Transplantation shall be supervised by a suitably qualified botanist/ horticulturist to protect plant species of conservation interest	Project Environmental Coordinator		08/08-11/10	OK
9		Yes	A detailed transplantation methodology shall be formulated during the detailed design stage based on the information collected during the detailed vegetation survey to protect plant species of conservation interest				N.A.

Environmental Mitigation Implementation Schedule - Ecological Resources

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in response to a specified legal requirements	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
10		Yes	Equipment or stockpile shall only be in designated works areas wherever practicable.	Superintendent/ Supervisor/Foremen		08/08-11/10	OK
11		Yes	Access routes shall be selected as far as practicable on existing disturbed land.	Superintendent/ Supervisor/Foremen Project Environmental Coordinator Subcontractor		08/08-11/10	N.A.
12		Yes	Construction activities shall be restricted to designated works areas.	Superintendent/ Supervisor/Foremen	Weekly Environmental Inspection Checklist	08/08-11/10	OK
13		Yes	The works areas shall be reinstated immediately after completion of works.	Superintendent/ Supervisor/Foremen Subcontractor		08/08-11/10	OK
14		Yes	Waste skips shall be provided to collect general refuse and construction wastes.	Superintendent/ Supervisor/Foremen Project Environmental Coordinator	Weekly Environmental Inspection Checklist	08/08-11/10	OK
15		Yes	The wastes shall be disposed of timely and properly off-site.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
16		Yes	Drainage arrangements shall include sediment traps to collect and control construction run-off	Superintendent/ Supervisor/Foremen Engineer	Weekly Environmental Inspection Checklist	08/08-11/10	OK
17		Yes	Open burning on works sites is illegal, and shall be strictly enforced.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK

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Environmental Mitigation Implementation Schedule - Archaeological and Historical Resources

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in response to a specified legal requirements	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
1		Yes	If any works are planned within one metre of the grave, a one metre buffer zone will be provided around the grave, demarcated by a temporary fence.	Superintendent/ Supervisor/Foremen		08/08-11/10	N.A.

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Environmental Mitigation Implementation Schedule - Waste Management

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in response to a specified legal requirements	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
1		Yes	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site (Good site practices)	Superintendent/ project environmental coordinator		08/08-11/10	OK
2		Yes	Training of site personnel in proper waste management and chemical handling procedures	project environmental coordinator		08/08-11/10	OK
3		Yes	Provision of sufficient waste disposal points and regular collection of waste	Site supervisor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
4		Yes	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
5		Yes	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	project environmental coordinator	EMP	08/08-11/10	OK
6		Yes	Waste reduction measures: Sort C&D waste from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	Superintendent/ Supervisor/Foremen project environmental coordinator Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
7		Yes	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
8		Yes	Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	Superintendent/ Supervisor/Foremen project environmental coordinator Subcontractor		08/08-11/10	OK
9		Yes	Proper storage and site practices to minimise the potential for damage or contamination of construction materials	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
10		Yes	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	Superintendent/ Supervisor/Foremen Subcontractor		08/08-11/10	OK

Environmental Mitigation Implementation Schedule - Waste Management

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in response to a specified legal requirements	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
11		Yes	General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material	Superintendent/ Supervisor/Foremen project environmental coordinator Subcontractor		08/08-11/10	OK
12		Yes	In order to minimise impacts resulting from collection and transportation of C&D material for off-site disposal, the excavated materials arising from site formation should be reused on-site as backfilling material and for landscaping works as far as practicable. In addition, volcanic rock generated from the tunnelling works should be subject to beneficial re-use. Other mitigation requirements are listed below: - A Waste Management Plan should be prepared . - A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used - In order to monitor the disposal of C&D and solid wastes at public filling facilities and landfills, and to control fly-tipping, trip ticket systems will be adopted.	Engineer project environmental coordinator	Weekly Environmental Inspection Checklist	08/08-11/10	OK
13		Yes	Chemical waste: Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes* .	project environmental coordinator	Weekly Environmental Inspection Checklist	08/08-11/10	OK
14		Yes	Chemical waste: Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	Superintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	OK
15		Yes	Chemical waste:The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, either to the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation	Superintendent/ Supervisor/Foremen		08/08-11/10	OK

Appendix G – Event and Action Plans

Event/Action Plan for Air Quality Monitoring

Event / Action Level	Action			
	CET	Contractor	PMR	IEC
Exceedance for one sample	1. Identify source. 2. Notify IEC, PMR and Contractor. 3. Conduct additional monitoring to investigate the causes. 4. Report the investigation results and if exceedance is due to contractor's construction works to the IEC, PMR and Contractor. 5. Increase monitoring frequency to once per 2 days for 24-hour TSP and daily for 1-hour TSP until exceedance stops if exceedances are considered related to contractor's construction works and report the results to IEC, PMR and Contractor.	1. Take immediate action to avoid further exceedance and rectify any unacceptable practice. 2. Submit air mitigation proposal to IEC and PMR for agreement if CET indicated that exceedance is related to the construction works. 3. Implement agreed proposal within a time scale agreed with PMR and IEC.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to submit air mitigation proposal. 4. Ensure remedial measures are properly implemented.	1. Review monitoring data and investigation report submitted by CET. 2. Review Contractor's air mitigation proposal and advise the PMR accordingly. 3. Supervise and confirm in writing the implementation of remedial measures.
Exceedance for two or more consecutive samples	1. Identify source. 2. Notify EPD, IEC, PMR and Contractor. 3. Conduct additional monitoring to investigate the causes. 4. Report the investigation results and if exceedances are due to contractor's construction works to EPD, IEC, PMR and Contractor within 3 working days after additional monitoring. 5. Increase monitoring frequency to daily for 24-hour TSP and 1-hour TSP if exceedances are considered related to contractor's construction works until exceedance stops, and report the results to EPD, IEC, PMR and Contractor. 6. If exceedances continue after 1-week monitoring events, request PMR to arrange meeting with PMR, IEC and contractor to discuss remedial actions.	1. Take immediate action to avoid further exceedance and rectify any unacceptable practice. 2. In consultation with the IEC, submit air mitigation proposal to IEC and PMR for agreement within 3 working days of notification if ET indicated that exceedances are related to construction works. 3. Implement agreed proposal within a time scale agreed with PMR and IEC. 4. Amend working methods if appropriate.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to submit air mitigation proposal. 4. Ensure remedial measures are properly implemented.	1. Review monitoring data and investigation report submitted by CET. 2. Discuss amongst PMR, CET and Contractor in order to formulate air mitigation proposal. 3. Review Contractor's air mitigation proposal and advise the PMR accordingly. 4. Supervise and confirm in writing the implementation of remedial measures.

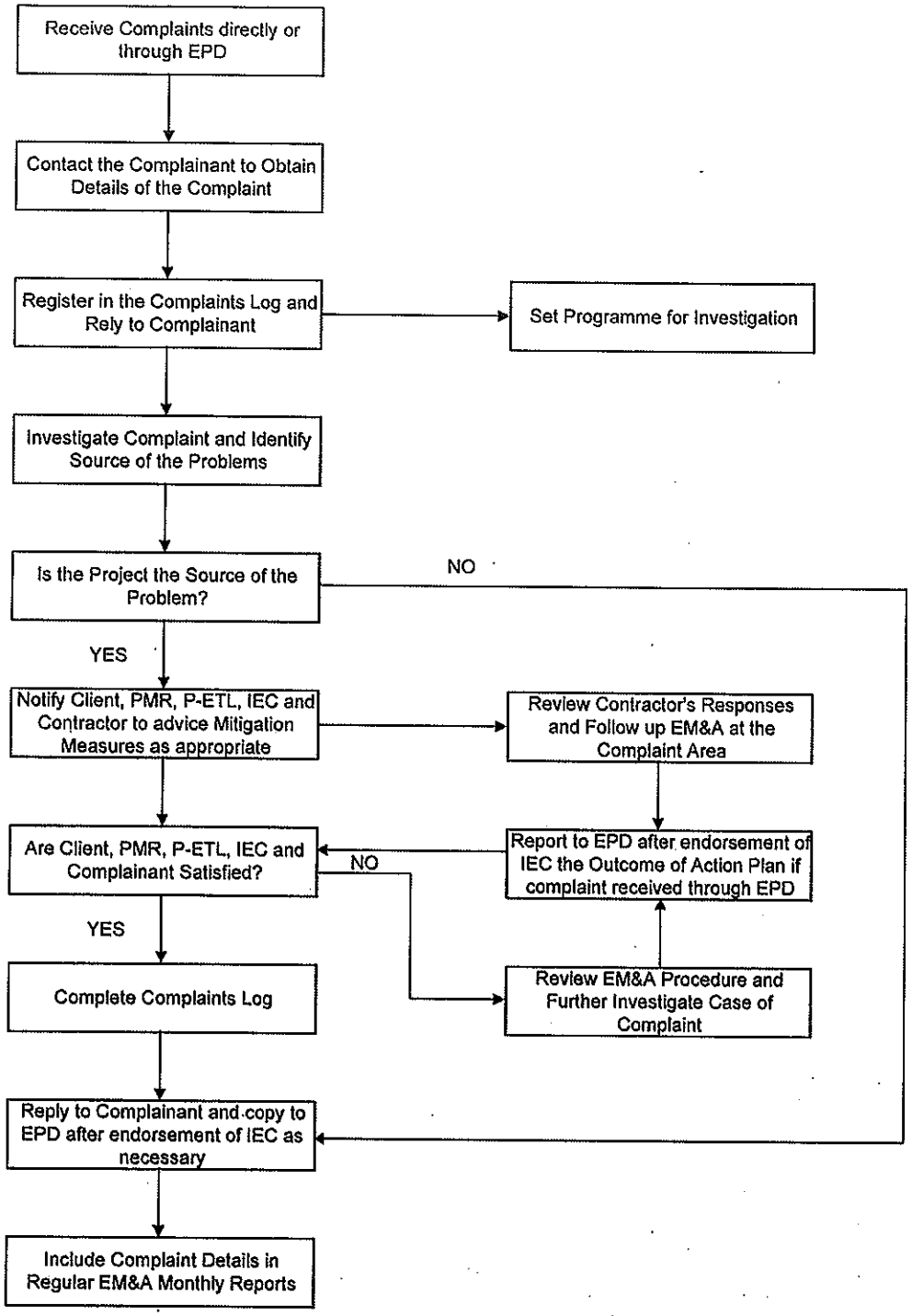
Event/Action Plan for Air Quality Monitoring

Event Limit Level	Action			
	CET	Contractor	PMR	IEC
Exceedance for one sample	1. Identify source. 2. Notify EPD, IEC, PMR and Contractor. 3. Conduct additional monitoring to investigate the causes. 4. Report the investigation results and if exceedances are due to contractor's construction works to EPD, IEC, PMR and Contractor within 3 working days after additional monitoring. 5. Increase monitoring frequency to daily if exceedances are considered related to contractor's construction works until exceedance stops, and report the results to EPD, IEC, PMR and Contractor.	1. Take immediate action to avoid further exceedance and rectify any unacceptable practice 2. In consultation with the IEC, submit air mitigation proposal to IEC and PMR for agreement within 3 working days of notification if CET indicated that exceedances are related to construction works 3. Implement agreed proposal within a time scale agreed with PMR and IEC. 4. Amend working methods if appropriate.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to submit air mitigation proposal. 4. Ensure remedial measures are properly implemented.	1. Review monitoring data and investigation report submitted by CET. 2. Discuss amongst PMR, CET and Contractor in order to formulate air mitigation proposal. 3. Review Contractor's air mitigation proposal and advise the PMR accordingly. 4. Supervise and confirm in writing the implementation of remedial measures.
Exceedance for two or more consecutive samples	1. Identify source. 2. Notify EPD, IEC, PMR and Contractor. 3. Conduct additional monitoring to investigate the causes. 4. Report the investigation results and if exceedances are due to contractor's construction works to EPD, IEC, PMR and Contractor within 3 working days after additional monitoring. 5. Increase monitoring frequency to daily if exceedances are considered related to contractor's construction works until exceedance stops, and report the results to EPD, IEC, PMR and Contractor. 6. If exceedances continue after 2 consecutive monitoring events, request PMR to arrange meeting with IEC and contractor to discuss remedial actions.	1. Take immediate action to avoid further exceedance and rectify any unacceptable practice. 2. In consultation with the IEC, submit air mitigation proposal to IEC and PMR for agreement within 3 working days of notification if CET indicated that exceedances are related to construction works. 3. Implement agreed proposal within a time scale agreed with PMR and IEC. 4. Amend working methods and proposal if appropriate. 5. Stop relevant portion(s) of works as required by PMR, CET and IEC.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to submit air mitigation proposal. 4. Ensure remedial measures are properly implemented. 5. If exceedances continue arrange meeting with Contractor, IEC and CET and to consider what portion(s) of works should be further mitigated or have to stop.	1. Review monitoring data and investigation report submitted by CET. 2. Discuss amongst PMR, CET and Contractor in order to formulate air mitigation proposal. 3. Review Contractor's air mitigation proposal and advise the PMR accordingly. 4. Supervise and confirm in writing the implementation of remedial measures.

Event/Action Plan for Regular Construction Noise Monitoring

Event	Action			
	CET	Contractor	PMR	IEC
Action Level Exceedance	1. Identify source. 2. Notify IEC, PMR and Contractor. 3. Conduct additional noise monitoring to investigate the causes. 4. Report the investigation results to the IEC, PMR and Contractor. 5. Discuss with Contractor for their formulation of remedial measures if the exceedance is related to construction works. 6. Conduct additional monitoring to check mitigation effectiveness.	1. Take immediate action to avoid further exceedance. 2. Submit noise mitigation proposals to ET, PMR and IEC. 3. Implement noise mitigation proposals.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Review the analysed results submitted by the CET. 2. Review the proposed remedial measures by the Contractor and advise the PMR accordingly. 3. Supervise and confirm in writing the implementation of remedial measures
Limit Level Exceedance	1. Identify source. 2. Notify EPD, IEC, PMR and Contractor. 3. Conduct additional noise monitoring and analyse Contractor's working procedures to determine possible cause of exceedance. 4. Provide interim report to EPD, IEC and PMR on the causes and proposed actions to be taken for the exceedances if exceedance is related to construction works. 5. Assess effectiveness by additional monitoring and report to EPD, IEC, PMR and Contractor the results. 6. If exceedance stops, cease additional monitoring.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to CET, PMR and IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant portion of works as determined by the PMR until the exceedance is abated.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Discuss amongst PMR, CET and Contractor on the potential remedial actions. 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the PMR accordingly. 3. Supervise and confirm in writing the implementation of remedial measures.

Appendix H – Compliant Flow Diagram and Complaint Log


Receive Complaints directly or through EPD
Contact the Complainant to Obtain Details of the Complaint
Register in the Complaints Log and Rely to Complainant
Set Programme for Investigation
Investigate Complaint and Identify Source of the Problems
Is the Project the Source of the Problem?
NO
YES
Notify Client, PMR, P-ETL, IEC and Contractor to advice Mitigation Measures as appropriate
Review Contractor's Responses and Follow up EM&A at the Complaint Area
Are Client, PMR, P-ETL, IEC and Complainant Satisfied?
NO
Report to EPD after endorsement of IEC the Outcome of Action Plan if complaint received through EPD
YES
Complete Complaints Log
Review EM&A Procedure and Further Investigate Case of Complaint
Reply to Complainant and copy to EPD after endorsement of IEC as necessary
Include Complaint Details in Regular EM&A Monthly Reports

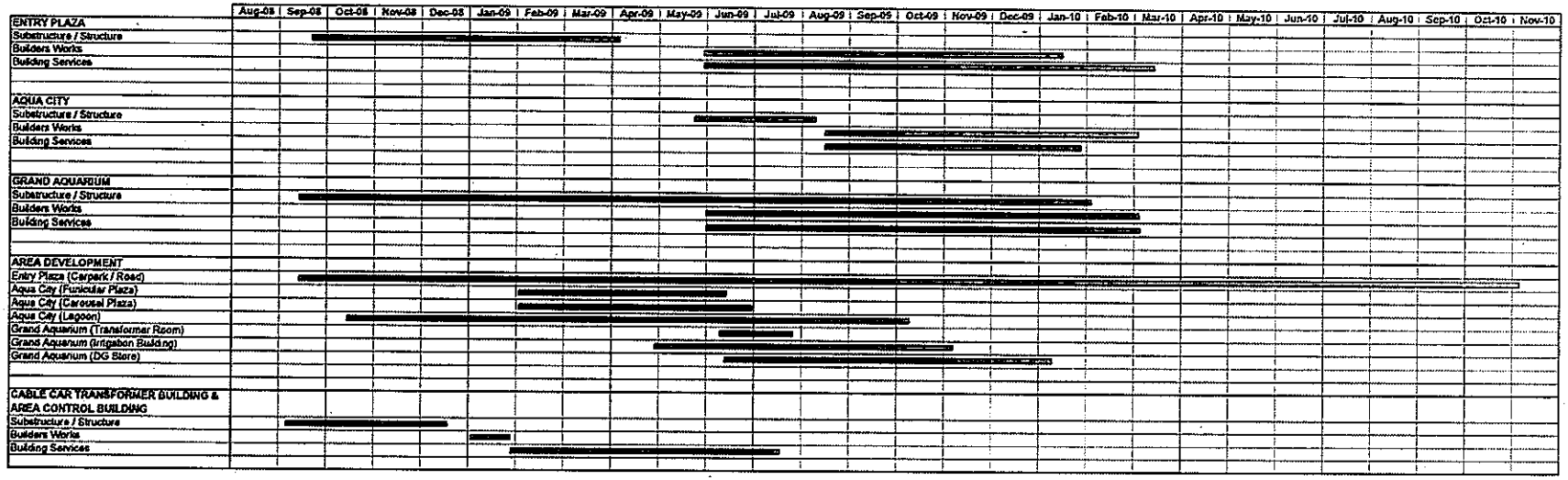
Ocean Park Redevelopment Project
Contract No. CI07 – Entry Plaza, Aqua City and Grand Aquarium
Monthly EM&A Report – ~~Nov~~ 201~~0~~ JAN

Complaint Record Register

Record ID	Data Received	Type (PMR / EPD / Public / Others)	Description	Project	Justified compliant?	Status (Open / Closed)
EC/CI07/001	17-Jun-09	Public thru EPD	Police Training School claimed that noise nuisance from CI07	CI07	N/A	The inspector of EPD came to the site and no significant observation was made, hence the complaint was closed.
EC/CI07/002	1-Sep-10	Public thru EPD	Manly Villa claimed that garbage disposal outside their access from CI07	CI07	N/A	OPMRP and LCAL team found that the garbage was from the vendors. The vendors were informed to dispose garbage properly and the complaint was closed.

Appendix I – Tentative Work Programme

CONTRACT CI07 - Entry Plaza, Aqua City & Grand Aquarium
Outline Programme
Updated to: 01-Sep-2008



Appendix J – Site Audit Summary

NIL

Appendix K – Summary of Amount of Waste Generated

Leighton Contractors (Asia) Limited

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Monthly Waste Flow Table

Contract: **Entry Plaza, Aqua City and Grand Aquarium** Contract No: **CI07 (H2458)** **Year: 2010**

Month	Actual Quantities of Inert Construction Waste Reused/Recycled			Actual Quantities of Construction Waste Recycled[1]						Actual Quantities of Disposed Material			
	Broken Concrete[2] Recycled	Re-used in Project	Re-used in Other Projects[3]	Metals Recycled	Paper Recycled	Cardboard Packaging Recycled	Plastic[4] Recycled	Timber	Toner Cartridge	Chemical Waste[6] to Licensed Facilities		Inert Construction Waste[7] to Public Fill	Construction Waste to Landfill
										Liquid	Solid		
	(tonnes)	(tonnes)	(tonnes)	(tonnnes)	(kg)	(kg)	(kg)	(Kg)	(Box)	(litres)	(kg)	(tonnes)	(tonnes)
Jan	0	0	0	15.55	132	0	0	0	0	0	0	2139	659
Feb	0	0	0	6.61	132	0	0	0	0	0	220	1815	513
Mar	0	0	0	3.92	288	0	0	0	0	0	100	4502	596
Q1 total	0	0	0	26.08	552	0	0	0	0	0	320	8456	1768
Apr	0	0	0	5.42	120	0	0	0	0	0	150	3227	552
May	0	0	0	0	340	0	0	0	0	0	310	4593	687
Jun	0	0	0	4.35	140	0	0	0	0	0	100	2975	612
Q2 total	0	0	0	9.77	600	0	0	0	0	0	560	10795	1851
Jul	0	0	0	9.73	382	0	0	0	0	0	0	1887	454
Aug	0	0	0	2.73	626	0	0	0	0	0	100	3033	402
Sep	0	0	0	10.91	886	0	0	0	0	3544	0	1646	459
Q3 total	0	0	0	23.37	1894	0	0	0	0	3544	100	6566	1315
Oct	0	0	0	0	306	0	0	0	0	0	0	1306	189
Nov	0	0	0	0	228	0	0	0	0	0	0	720	218
Dec	0	0	0	0	373	0	0	0	0	0	0	62.62	127.7
Q4 total	0	0	0	0	907	0	0	0	0	0	0	2088.62	534.7
Grand total	0	0	0	59.22	3953	0	0	0	0	3544	980	27905.62	5468.7

Note / Definition:

1. Provide further breakdown in Part D2 of Monthly Environmental Report.
2. Broken concrete for recycling into aggregates (eg Tuen Mun Area 38).
3. Other projects include third-parties (eg quarries).
4. Plastic refers to plastic bottles/containers, plastic sheets/foam from packaging material.
5. Examples of other waste recycled may include tyres and computer equipment
6. Chemical waste is split into 2 components: liquid waste (eg spent lubricating oil) and solid waste (eg spent batteries). Provide further breakdown in Part D1 of Monthly Environmental Report.
7. Inert construction waste is also known as public fill. It includes, for example, concrete, rubble, earth, boulder, sand, tile, masonry and used bentonite.