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Our Ref: PD/PW/GOV/151/006479

13 May 2011

By Hand

Environment Protection Department
Environmental Compliance Division
Regional Office (South)
2/F Chinachem Exchange Square
1 Hoi Wan Street
Quarry Bay
Hong Kong

Attention: Mr. Peter Tang

Dear Sir,

Ocean Park Master Redevelopment Project
Quarterly Environmental Monitoring & Audit Report
(from January to March 2011)

Further to our discussions, please find enclosed one hard copy of the Quarterly EM & A Report (from January 2011 to March 2011). The report has been certified by the Project ET Leader and verified by IEC.

Yours faithfully,
For and on behalf of
Ocean Park Corporation

Lindsay Pickles
Project Development Director

LP/ec

Encl + CD

cc Master File (w/e)
OPC - Mr. Arthur Wong, PMR (w/e)
Aecom / PMR - Mr. Mike Wong (w/e)
EPD - Ms. Mable Chan (with two hard copies and one soft copy)
AFCD - Dr. Cheung Ka Hong (w/e)

Ocean Park Master Redevelopment Project

Quarterly Environmental Monitoring & Audit Report –

from January to March 2011

Certified by _____ **on** 13-May-11
Lindsay Pickles (ETL)

Verified by Independent Environmental Checker on 12-May-11
IEC Certificate attached in the submission? Yes

Ocean Park Master Redevelopment Project

Quarterly EM&A Report for January to March 2011

Submitted by Ocean Park Corporation on 11-05-2011

This is to verify that

Quarterly EM&A Report for January to March 2011

Submitted by Ocean Park Corporation

On 11-05-2011

Has been verified by the undersigned.

Signed

Dr Anne F Kerr
Independent Environmental Checker (IEC)
Retained by Ocean Park Corporation
pursuant to Environmental Permit No. EP-249/2006/B

Date 12 May 2011

Ocean Park Master Redevelopment Project

Quarterly Environmental Monitoring & Audit Report – from January 2011 to March 2011

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EXECUTIVE SUMMARY

This is the sixteenth combined Quarterly Environmental Monitoring and Audit (EM&A) report for the Project "Master Redevelopment Project of Ocean Park". This report summarizes the EM&A works performed in the period between 26 December 2010 and 25 March 2011.

On completion of the works and opening of the Entry Plaza, Aqua City and Grand Aquarium to the public on 27 January 2011, the construction works under CI07 have been completed, and as advised to EPD on 1 April 2011 (PD/PW/GOV/151/006107), no further construction monitoring will be carried out.

Environmental monitoring for the Parks Operations has commenced upon the opening of Aqua City and with the commencement of the Symbio Show on 27 January 2011.

Environmental Monitoring – Construction Works

Environmental Monitoring and Audit Progress
A summary of monitoring and audit activities for the construction works conducted in the reporting quarter is listed below:

1-hour Total Suspended Particulates (TSP) monitoring	19 sessions for all Air Quality Stations
24-hour TSP monitoring	6 sessions for all Air Quality Stations
Daytime noise monitoring	5 sessions for all stations
Evening and night time noise monitoring	0 session for all stations
Holiday daytime noise monitoring	0 session for all stations
Terrestrial ecology monitoring	0 session
Coral monitoring	1 session for Site 1-5 and Control Station C
Environmental site inspection	7 sessions (include IEC audit)

Air Quality
The measured 24-hour TSP concentrations in the reporting quarter were below the Action and Limit Levels in the reporting quarter.

Noise
All measured noise levels during daytime were below the Action and Limited levels in the reporting quarter.

Terrestrial Ecology
Terrestrial ecology monitoring had ceased since September 2008. Hence, terrestrial ecology monitoring was not required in the reporting quarter. Please note that all the terrestrial ecology monitoring have been completed in August 2008 according to the requirement under the EM&A Manual.

Coral Monitoring
The fifth coral monitoring survey was conducted on 19 February 2011 for Site 1-5 & Control Station in the reporting quarter. The results showed that there was no exceedance of Action and Limit Levels.

Environmental Monitoring – Symbio Show

Monitoring was carried out from 27 January 2011 to 25 February 2011, with the 1st months results being report.

Air Quality monitoring was conducted at the agreed designated air quality monitoring station (AQMS) located at the rooftop of the Administrative Building in Ocean Park.

No exceedance of A/L Level is monitored during the reporting period.

Noise monitoring was conducted at five designated noise monitoring locations in accordance with the approved EM&A Manual.

Noise Monitoring results indicated that the background corrected Lagoon Night Show Noise Levels have complied with the Limit Levels at all monitoring stations during all monitoring dates.

The background corrected Daily Operational Noise Levels have complied with the Limit Levels at most of the monitoring stations during most of the monitoring dates. Noise exceedances were recorded at AON1 (Open Area adjacent to Police Training School) and AON5 (Hau Yuen) due to the noise from the bus terminus and high background noise from the visitors and traffic during public holidays.

Environmental Complaints and Prosecutions

No complaint, non-compliance from IEC, summons or prosecution related to environmental issues was made against the Project within the reporting quarter.

1. INTRODUCTION

Background

1.1 The "Master Redevelopment Project of Ocean Park" (hereinafter known as the "Project") is implemented by the Ocean Park Corporation at its existing site of Ocean Park and Nam Long Shan, Aberdeen. The Project involves both reconstruction/modification of existing facilities and expansion of the Park, and therefore under Environmental Permit, EP-249/2006/B.

1.2 The construction works of the project consists of various contracts. Details of the contracts, which are required to perform the EM&A programme, are shown in Table 1.1 below.

Table 1.1 Details of the Contracts

Contract No.	Contract Title	Contractor	Construction Commencement
CI-05	Site Formation, Funicular Tunnel and Miscellaneous Works	Dragages-Bouygues JV	12 March 2007
CS-01	Vet Hospital	Kaden – ATAL JV	26 March 2007
CW-02	Astounding Asia	W. Hing Construction Co. Ltd.	1 August 2007
CI-07	Entry Plaza, Aqua City and Grand Aquarium	Leighton Construction (Asia) Limited	15 August 2008
CS-02	Rainforest	W. Hing Construction Co. Ltd.	11 May 2009
CS-03	Thrill Mountain & Polar Adventure	Kaden – ATAL JV	2 November 2009

1.3 The contractors will conduct environmental monitoring and audits during the construction stage and produce contract specific monthly & quarterly EM&A reports. The RSS would prepare a combined quarterly EM&A for the whole project. This is the combined quarterly EM&A Report including the IEC audit findings for CI07, CS02 and CS03 EM&A Works together with the Environmental Monitoring for the Park's Operation and the Symbio Show. This report presents the results of EM&A works conducted in the reporting quarter from 26 December 2010 to 25 March 2011 for construction works and in the reporting month of 27 January 2011 – 25 February 2011, for Operational Monitoring.

Project Organization and Contacts of Key Management

1.4 An organization structure and the line of communication were set up for the Project between the Project Proponent, Project Manager's Representative (PMR), Independent Environmental Checker (IEC), the Contractor and the Environmental Team (ET). The project organization and contact details of key management are shown in Figure 1.1 and Appendix A respectively.

Construction Activities during the Reporting Quarter

1.5 The site activities during the reporting quarter are summarized in Table 1.2.

Table 1.2 Summary of Works undertaken in the Reporting Quarter

Item	Work Activity	Month		
		Jan 11	Feb 11	Mar 11
Waterfront (CI-05), Construction phase had ceased in early-June 2009				
	N/A	-	-	-

Item	Work Activity	Month		
		Jan 11	Feb 11	Mar 11
Vet Hospital (CS-01), Construction phase had ceased in mid-October 2008				
	N/A	-	-	-
Astounding Asia (CW-02), Construction phase had ceased in mid-February 2010				
	N/A	-	-	-
Entry Plaza, Aqua City and Grand Aquarium (CI-07) – Construction Phase ceased in January 2011				
1.	Finishing Works at Entry Plaza;	✓	-	-
2.	Finishing Works at Area X;	✓	-	-
3.	External access works, external wall finishing, testing and commissioning for the T20 tank at Grand Aquarium	✓	-	-
4.	Minor Finishing works at Carousel Plaza;	✓	-	-
5.	Works at Phase 1A of Aqua City for area development	✓	-	-
Rainforest (CS-02)				
1.	Rockwork installation, steelwork erection wiring pipe work, E&M equipment installation, metal works, and finishing works at Exhibition House.	✓	✓	✓
2.	Rapid Ride trough construction, equipment installation, road works, steelworks and cladding for ancillary building.	✓	✓	✓
3.	Tree planting, reservoir construction, paving works, painting for steelworks and finishing works at the external area	✓	✓	✓
Thrill Mountain and Polar Adventure (CS-03)				
1.	Construction of queue area and pools for South Pole & North	✓	✓	✓
2.	Erection of Structural steelworks at Floorless Coaster	✓	✓	✓
3.	Construction of Bobsled Station	✓	✓	✓
4.	Finishing works for Polar Adventure Building	✓	✓	✓
5.	Construction of Road works for EVA Access	✓	✓	✓
6.	Installation of Chiller Plant at South Pole Roof	✓	✓	✓
7.	Apply water proofing for water tank at Summit Reservoir	✓	✓	✓
8.	Construction of superstructure for Floorless Coaster. Install waterproofing & base slab at Thrill Mountain toilet	✓	✓	✓
9.	Excavation and construction of footings for Construction of drainage system and watermain for external works for Thrill Mountain	✓	✓	✓
10.	Dispose of existing stockpile	✓	✓	✓

1.6 Layout plans of the Project are provided in Figure 1.2 to Figure 1.3, Figure 1.4 and Figure 1.5. Figure 1.2 shows the layout plan of CW-02 Astounding Asia. Figure 1.3 shows the layout plan of CI-07 Entry Plaza, Aqua City and Grand Aquarium. Figure 1.4 shows the layout plan of CS-02 Rainforest and Figure 1.5 shows the layout plan of CS-03 Thrill Mountain and Polar Adventure.

1.7 The status of submissions until 25 March 2011 as specified in the Environmental Permit No. EP-249/2006/B is presented in Table 1.3.

Table 1.3 Status of Environmental Submissions

EP-249/2006/B Condition	Submission	Revision	Status
Contract CI05			
1.12	Notification of Commencement Date of construction stage	Dated 14 February 2007	Submitted to EPD on 15 February 2007
2.3	Management Organization	Dated 15 December 2006	Submitted to the EPD on 29 December 2006.
2.4	Construction Programme	2 Dated 14 February 2007	Submitted to the EPD on 15 February 2007
2.13	Drainage Proposal	A2 Dated 26 April 2007	Placed in EIAO Register Office for public information on 30 May 2007
2.14	Silt Curtain Proposal	B Dated 30 January 2007	Placed in EIAO Register Office for public information on 1 March 2007
2.18	As-built Drawing for Enhancement Works for Pond 35	A Dated 17 July 2007	Placed in EIAO Register Office for public information on 7 August 2007
2.20a	Transplantation Proposal for Uncommon Plant Species	D Dated 27 August 2007	Placed in EIAO Register Office for public information on 25 September 2007
2.20b	Detailed Compensatory Planting As-built Drawing	A Dated 4 October 2007	Placed in EIAO Register Office for public information on 30 October 2007
2.21	Waste Management Plan	D Dated 27 August 2007	Placed in EIAO Register Office for public information on 25 September 2007
3.3	Baseline Air Quality and Noise Monitoring Report	B Dated 28 February 2007	Submitted to the EPD on 5 March 2007
3.3	Baseline Coral Survey Report	A Dated 13 June 2007	Submitted to the EPD on 18 June 2007
All Contract (including CW02, CI07, CS02 & CS03)			
3.1 and under Section 13.14 of EM&A Manual	Quarterly EM&A Report for October to December 2009	A Dated 18 February 2010	Submitted to the EPD on 22 February 2010
3.4	Monthly EM&A Report for January 2010	A Dated 1 March 2010	Submitted to the EPD on 5 March 2010
3.4	Monthly EM&A Report for February 2010	A Dated 17 March 2010	Submitted to the EPD on 22 March 2010

EP-249/2006/B Condition	Submission	Revision	Status
3.4	Monthly EM&A Report for March 2010	A Dated 21 March 2010	Submitted to the EPD on 26 March 2010
3.1 and under Section 13.14 of EM&A Manual	Quarterly EM&A Report for January to March 2010	A Dated 23 April 2010	Submitted to the EPD on 28 April and re-submit on 17 may 2010
3.4	Monthly EM&A Report for April 2010	A Dated 31 May 2010	Submitted to the EPD on 3 June 2010
3.4	Monthly EM&A Report for May 2010	A Dated 21 June 2010	Submitted to the EPD on 22 June 2010
3.4	Monthly EM&A Report for June 2010	A Dated 14 July 2010	Submitted to the EPD on 15 July 2010
3.1 and under Section 13.14 of EM&A Manual	Quarterly EM&A Report for April to June 2010	A Dated 16 July 2010	Submitted to the EPD on 16 July 2010
3.4	Monthly EM&A Report for July 2010	A Dated 11 August 2010	Submitted to the EPD on 13 August 2010
3.4	Monthly EM&A Report for August 2010	A Dated 9 September 2010	Submitted to the EPD on 13 September 2010
3.4	Monthly EM&A Report for September 2010	A Dated 11 October 2010	Submitted to the EPD on 13 October 2010
3.1 and under Section 13.14 of EM&A Manual	Quarterly EM&A Report for July to September 2010	A Dated 11 October 2010	Submitted to the EPD on 13 October 2010
3.4	Monthly EM&A Report for October 2010	A Dated 10 November 2010	Submitted to the EPD on 10 November 2010
3.4	Monthly EM&A Report for November 2010	A Dated 14 December 2010	Submitted to the EPD on 14 December 2010
3.4	Monthly EM&A Report for December 2010	A Dated 24 February 2011	Submitted to the EPD on 24 February 2011
3.1 and under Section 13.14 of EM&A Manual	Quarterly EM&A Report for October to December 2010	A Dated 16 March 2011	Submitted to the EPD on 17 March 2011
3.4	Monthly EM&A Report for January 2011	A Dated 4 March 2011	Submitted to the EPD on 4 March 2011
3.4	Monthly EM&A Report for February 2011	A Dated 4 April 2011	Submitted to the EPD on 4 April 2011
3.4	Monthly EM&A Report for March 2011	A Dated 28 April 2011	Submitted to the EPD on 28 April 2011
CityBus Limited			
2.5	Written Notice on Completion of Total Petroleum Hydrocarbon (TPH) Contaminated Soil Disposal	Dated 17 January 2007	Submitted to the EPD on 22 January 2007

EP-249/2006/B Condition	Submission	Revision	Status
2.6	Written Notice on Completion of Solidification Treatment of Heavy Metals Contaminated Soil	Dated 17 January 2007	Submitted to the EPD on 22 January 2007.
2.8	As-built Remediation Plan	Dated 14 March 2007	Submitted to the EPD on 16 March 2007
Hong Kong School of Motoring Ltd.			
2.10	Confirmation letter to confirm that land contamination remediation works within HKSM has been completed	Dated 13 April 2007	Submitted to EPD on 13 April 2007.
Environmental Permit Conditions			
2.24	Glare Impact Assessment Report	Dated 9 June 2010	Submitted to EPD on 11 June 2010.
2.25	Noise Review Study Report	Dated 14 October 2010	Submitted to EPD on 19 October 2010.
2.29	Air Quality Sampling Plan	Dated 14 October 2010	Submitted to EPD on 25 November 2010.
2.31	Air Quality Monitoring Programme	Dated 13 April 2011	Submitted to 28 April 2011

2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Locations

2.1 Under EP-249/2006/B condition 3.2, impact environmental monitoring, including sampling, measurements and necessary remedial action should be conducted in accordance with the requirements of the EM&A Manual, which as been updated to include operational monitoring or the Ocean Park Symbio Show.

2.2 For the construction works, the locations of air quality, noise and ecology monitoring and their control station(s) if applicable; are depicted in **Figure 1.6** and **Figure 1.7**. **Appendix B** gives the details of the monitoring programme for January 2011.

2.3 Construction works at the Entry Plaza, Aqua City and Grand Aquarium under CI07 have been completed in January 2011 and, as advised to EPD on 1 April 2011 (PD/PW/GOV/151/006107), no further construction monitoring will be undertaken.

2.4 The contracts at the Summit, CS02 for the Rainforest and CS03 for the Thrill Mountain and Polar Adventure are still underway. However, other than ongoing Coral Survey, no construction monitoring will be undertaken for those works, only auditing works. The audits will continue to be carried out by the Contractors ET and OPC's ET and verified by the IEC.

Terrestrial Ecology

2.5 Monitoring of the health and condition of the transplanted plant species of conservation interest should be conducted at least once a month during the first 12 month after transplantation. Proposed monitoring location would be next to the Contract CI-05 site office.

Coral

2.6 The locations of the coral monitoring stations are presented in the table below and as shown in the figure 2.1 of the Coral Survey Report (Part 4 of this report).

Coral Impact Monitoring Stations	Identity/Description
Site 1	Seaside near the Lowland
Site 2 to Site 5	Around Headland
Control Station	Between Near Round Island and Chung Hom Kok

Ocean Park Symbio Show

2.7 Operational Stage Monitoring for Ocean Park Symbio Show for Environmental Monitoring for the Symbio Show commenced on the 27 January 2011.

2.8 Air Quality monitoring was conducted at the agreed designated air quality monitoring station (AQMS) located at the rooftop of the Administrative Building in Ocean Park as presented in the Table below.

AQMS ID	Location	Sampling Height (m above ground)
AM1	Rooftop of Administrative Building (Former Staff Quarters) in Ocean Park)	10

2.9 One 24-hr average RSP sample was collected on each scheduled day for monitoring by a High Volume Sampler (HVS) following the USEPA method, EPA IO-2.1. Calibration of the equipment has followed the requirements set out in EPA IO-2.1.

2.10 Noise monitoring was conducted at five designated noise monitoring locations in accordance with the approved EM&A Manual. Alternative noise monitoring had been proposed because of accessibility problem, as set out in the Table below.

Monitoring Noise Monitoring Stations	Description	Location	With or without Façade Correction
AON1	Open Area adjacent to Police Training School	1.2m above street level	Without façade correction
AON2	Old canteen building, Ocean Park	1.2m above street level	With façade correction
AON3	Orchid Valley	1.2m above street level near the entrance gate	Without façade correction
AON4	Manly Villa	1.2m above street level near the entrance	With façade correction
AON5	Hau Yuen	1.2m above street level outside boundary wall	With façade correction

2.11 Six consecutive measurements of LAeq, 5 min reading were carried out to calculate the LAeq, 30 min noise level during the Lagoon Show.

2.12 Six consecutive measurements of LAeq, 5 min reading were carried out to calculate the LAeq, 30 min noise level before the lagoon night show, ie during daily operation of the Ocean Park without the Lagoon Show.

2.13 Three consecutive measurements of LAeq, 5 min reading were carried out to calculate the LAeq, 15 min noise level after the lagoon night show, ie without operation of the Ocean Park to establish the background noise levels.

2.14 Any significant influencing factors on the measured noise levels were taken into account in accordance with standard acoustical principles and practices. The corrected noise level due to the lagoon night show and the operation of Ocean Park was computed based on the background noise level and measured noise level.

Monitoring Methodology and Calibration Details

2.15 All monitoring works were conducted and monitoring equipment was regularly calibrated in accordance with the EM&A Manual. The calibration certificates were provided in the Monthly EM&A report. Summary of calibration are attached in **Appendix C**.

Environmental Quality Performance Limits (Action and Limit Levels)

2.16 The environmental quality performance limits, i.e. Action and Limit levels (AL Levels) were derived from the baseline monitoring results and/or other approaches as detailed in the EM&A Manual. Should the measured environmental quality parameters exceed the AL Levels, the respective action plans would be implemented. The AL Levels for each environmental parameter are given in **Appendix D**.

Environmental Mitigation Measures

2.17 Relevant mitigation measures as recommended in the Project EIA Report had been stipulated in the EM&A Manual and EMIS for the Contractor to adopt. A list of mitigation measures is given in **Appendix G**.

3. MONITORING RESULTS

Construction Monitoring Results

3.1 All measured 1-hour and 24-hour TSP concentrations were below the Action and Limit (AL) Level in January in the reporting quarter. Graphical presentations of the air quality monitoring results are provided in **Appendix E**.

Noise

3.2 Noise monitoring was carried out for daytime (0700-1900) at four stations in January in the reporting quarter. No Holiday-time noise monitoring noise and Evening-time noise were scheduled in the reporting quarter. Graphical presentations of the noise monitoring results are provided in **Appendix F**.

3.3 All measured noise levels during daytime were below the AL levels.

Terrestrial Ecology

3.4 According to the requirement in the EM&A Manual, the monitoring of transplanted plants at the receptor has been completed in August 2008. No further monitoring is recommended and regular inspection would be carried out.

Marine Ecology

3.5 One subtidal monitoring was conducted in the reporting quarter and the results showed that there was no exceedance of Action and Limit Levels. Details of results are shown in **Appendix J.**

Operational Stage Monitoring for Ocean Park Symbio Show

3.6 For Air Quality Monitoring, 24-hr average Respirable Suspended Particulates (RSP) monitoring was conducted at a designated monitoring station on the rooftop of the Administrative Building in OP (AM1) on 28 January and 4, 12 and 20 February 2011. All Monitored 24-hour average RSP concentrations measured at AM1 complied with the Action/Limit (A/L) Level. No exceedance of A/L Level is monitored during the reporting period.

Monitoring Location	Monitoring Date	24-hr RSP Concentration (μ gm-^{3})	Action/Limit Level (μ gm-^{3})
AM1	28 January 2011	63	180
(Rooftop of Administrative	4 February 2011	88	180
Building (Old Staff Quarters in	12 February 2011	101	180
Ocean Park)	20 February 20	36	180

3.7 Noise Monitoring results indicated that the background corrected Lagoon Night Show Noise Levels have complied with the Limit Levels at all monitoring stations during all monitoring dates.

3.8 The background corrected Daily Operational Noise Levels have complied with the Limit Levels at most of the monitoring stations during most of the monitoring dates. Noise exceedances were recorded at AON1 (Open Area adjacent to Police Training School) and AON5 (Hau Yuen) due to the noise from the bus terminus and high background noise from the visitors and traffic during public holidays as indicated in the summary below.

Date	Noise Monitoring Station	Measured Noise Level, dB(A)		Daily Operational Noise Level, (Background Corrected) [(a)], Leq (30 min) dB(A)	Limit Level Leq (30 min) dB(A)
		Daily Operational Noise Level Leq (30 min) dB(A)	Background Noise Level, Leq (15 min) dB(A		
30 Jan 2011 (Public holiday)	AON1	67.4	65.4	65.9	60
	AON5	59.9	57.1	56.6	55
6 Feb 2011 (Public holiday)	AON1	65.8	63.3	65.2	60
	AON5	58.1	54.5	55.7	55
20 Feb 2011 (Public holiday)	AON1	67.4	65.5	63.3	60

Note:
(a) :The Background corrected Noise Levels were either measured in front of a façade or with façade correction of 3dB(A).

Summary of Daily Operational Noise Exceedance during this Reporting Period

4. AUDIT RESULTS FOR CONSTRUCTION PHASE

Implementation Status of Environmental Mitigation Measures

4.1 This was the sixteenth quarter of Ocean Park Master Redevelopment Project including Contract CI07, CS02 and CS03. The major activities were summarized in Table 1.2. The Contractor and sub-Contractor had implemented most of the mitigation measures to minimize the environmental impacts due to construction activities. Regarding a few minor observations as noted during ET's site inspections, the Contractor and sub-Contractor rectified all the problems and no major environmental impact was induced.

4.2 IEC's audits were carried on monthly basis (i.e. on 14 January 2011, 16 February 2011 and 23 March 2011). No non-compliance was issued for CI07, CS02 and CS03. Observations details were provided in the Monthly EM&A report.

4.3 The updated implementation status of environmental mitigation measures (EMIS) is given in **Appendix G**.

CI05 (Construction phase had ceased in early-June 2009)

CS01 (Construction phase had ceased in mid-October 2008)

CW02 (Construction phase had ceased in mid-February 2010)

4.4 ***CI07***

4.4.1 January 2011

(a) No particular observations for this month.

4.5 ***CS02***

4.5.1 January 2011

(a) General refuse were accumulated around the site. Recommend to remove and dispose ASAP.
(b) Over 20 cement bags were placed on bare ground. Recommend to cover with tarpaulin sheets.
(c) Access road was dry and dusty. Recommend to provide water spray.

4.5.2 February 2011

(a) Drip trays of diesel drums were accumulated with sand and mud.
(b) Waste were accumulated around a waste ship.

4.5.3 March 2011

(a) Two oil drums were placed on bare ground. Drip try should be provided to avoid oil spillage.
(b) Paved access road was dry and dusty.
(c) Drip tray with air compressor was accumulated with rocks. Should be cleared to ensure effectiveness.

4.6 ***CS03***

4.6.1 January 2011

(a) General refuse were scattered around the site. Recommend to collect in waste ship and dispose as soon as possible.
(b) An oil drum was not placed in drip today.
(c) Drip tray of a gen set was accumulated with rocks. Recommend to clear the rocks to ensure effectiveness.

4.6.2 February 2011

(a) A stockpile of C&D material was not covered with tarpaulin sheets or other means.
(b) A few oil drums were not provided with drip trays. Oil stain was observed on bare ground.

4.6.3 March 2011

(a) Drip tray with a number of oil drums was accumulated with oil and waste. The Contractor is reminded to remove them as chemical waste and ensure effectiveness of the drip tray.
(b) Stockpiles of backfill materials which are idle should be covered with tarpaulin sheets or other means to suppress duct.

Status of Environmental Licensing and Permitting

4.7 Environmental licenses and permits including Environmental Permit for the Project, construction noise permits, chemical waste producer and effluent discharge license were in place and valid during the reporting quarter. A summary status of licences and permits is given in **Appendix H**.

Advice on Materials Management Status

4.8 **Table 4.1** summarises the estimated amounts of different types of materials generated from the Project during the reporting quarter as below:

Table 4.1 Estimated Amounts of Different Types of Materials Generation from January 2011 to March 201.

Materials Type	Estimated Amount (tonnes)			Disposal Locations
	Jan 11	Feb 11	Mar 11	
C&D waste	181.84 tones	153.45 tones	99.35 tones	SENT Landfill
	--	--	--	TKOSF
Excavated Material (mainly soil)	2,646.27 tones	1,057.41 tones	1,819.48 tonnes	QBBP / CWPFBP
	--	--	--	TKOFB
Chemical waste	N/A	400 litres	400 litres	Collected by licensed collector
General waste	--	--	--	Collected by licensed collector

Notes: All figures are in tonnes unless specific.

5. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

Summary of Exceedances – Construction Phase

5.1 As there was no exceedance during the reporting quarter, thus no further action was required.

Summary of Exceedances – Operational Phase

5.2 For Air Quality Monitoring, no exceedance was reported during this quarter. As agreed with EPD, the number of monitoring stations will be increased and additional monitoring and analysis will be carried out.

5.3 Noise Monitoring results indicated that the background corrected Lagoon Night Show Noise Levels have complied with the Limit Levels at all monitoring stations during all monitoring dates.

5.4 The background corrected Daily Operational Noise Levels have complied with the Limit Levels at most of the monitoring stations during most of the monitoring dates. Noise exceedances were recorded at AON1 (Open Area adjacent to Police Training School) and AON5 (Hau Yuen) due to the noise from the bus terminus and high background noise from the visitors and traffic during public holidays as indicated in the summary below.

6. ENVIRONMENTAL COMPLAINTS

Complaints Log

6.1 No complaints were received during the reporting period.

Complaints Handling Procedure

6.2 All complaints will be handled in accordance with the EM&A Manual. The complaint handling procedure and the complaint log are provided in Appendix I.

7. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

7.1 No summon or prosecution related to environmental issues was made against the Project within the reporting quarter.

8. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

8.1 During this quarter, no complaints were received.

8.2 No summons and prosecutions related to environmental issues were made against the Project in the reporting quarter.

8.3 The implemented EM&A programme ensured that any environmental impacts to the receivers would be readily detected and timely actions could be taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of the Project. Weekly site inspections ensured that the EIA recommendations were effectively implemented.

Construction Phase

8.4 For the construction phase, the CET carried out air quality, noise monitoring, terrestrial ecology monitoring, coral monitoring and weekly site inspection in accordance with the EM&A Manual. No exceedance, non-compliance was recorded during this quarter.

8.5 No exceedance of Action and Limit Level for 1-hour TSP, 24-hour TSP and Day-time noise monitoring was recorded in the reporting quarter.

8.6 In the reporting quarter, no terrestrial ecology monitoring was conducted. According to the requirement in the EM&A Manual, the last two terrestrial ecology monitoring had been completed in August 2008. No further monitoring is recommended and regular inspection would be carried out.

8.7 In the reporting quarter, one coral monitoring was conducted and the results showed that there was no exceedance of Action and Limit Levels.

Operational Phase

8.8 For the operational phase, Daily operational noise and lagoon night show noise monitoring was carried out at five designated monitoring stations during this reporting period. Out of the 5 stations, noise exceedances were recorded at AON1 (Open Area adjacent to Police Training School) and AON5 (Hau Yuen) due to noise emanating from the bus terminus and high background noise from visitors and traffic during the public holidays

8.9 Recommendation has been given to continue with noise monitoring at the same stations using the same frequency and approach during the second to the twelfth months of the operation of the open-air night show.

8.10 To satisfy potentials concerns over RSP concentrators, recommendation has been given to 3 more AQ monitoring stations. Weekly monitoring will be conducted at all monitoring locations in the 2nd month of the operation of the Symbio Show. If the monitored results are within the AQO, the frequency will be reduced to monthly for the remaining 11 months

Appendix A

APPENDIX A – CONTACTS OF KEY ENVIRONMENTAL PERSONNEL

Company	Contact Person	Position	Telephone No.
Ocean Park Corporation Operations	Frankie Hau	Environmental Health & Safety Manager	39232639
Ocean Park Corporation Construction	Lindsay Pickles	Project Director	29103109
AECOM Asia Company Ltd.	Mike Wong	Project Manager Representative (PMR)	28715895
Mott MacDonald Hong Kong Ltd	Dr. Anne Kerr	Independent Environmental Checker	28285757
Leighton Contractors (Asia) Ltd (for Contract CI07)	Au Wing Chung	Contractor's Environmental Coordinator	93198198
W. Hing Construction Co., Ltd. (for Contract CS02)	Leo Wong	Environmental Officer	6193 4097
Kaden – ATEL JV (for Contract CS03)	Winson Chung	Contractor's Asst. ETL	93261588

Appendix B

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

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

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C103766

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Calibrator

Manufacturer : Rion

Model No. : NC-73

Serial No. : 10786708

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C103766.

The equipment is supplied by

Co. Name : Envirotech Services Co.

Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

Date of Issue : 13 July 2010

Certified by : K C Lee

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c o 4 F, Tsing Shan Wan Exchange Building 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: caltab@suncreation.com Website: www.suncreation.com

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C103852

Certificate of Calibration

This is to certify that the equipment

Description : Precision Sound Level Meter

Manufacturer : Rion

Model No. : NA-27

Serial No. : 00201194

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C103852.

The equipment is supplied by

Co. Name : Envirotech Services Co.

Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

Date of Issue : 15 July 2010

Certified by : K C Lee

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C102904

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Meter

Manufacturer : Rion

Model No. : NL-31

Serial No. : 00410224

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C102904.

The equipment is supplied by

Co. Name : Envirotech Services Co.

Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

Date of Issue : 31 May 2010

Certified by : K C Lee

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4 F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C103778

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Meter

Manufacturer : Rion

Model No. : NL-31

Serial No. : 00320533

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C103778.

The equipment is supplied by

Co. Name : Envirotech Services Co.

Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

Date of Issue : 13 July 2010

Certified by : K C Lee

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c o 4 F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C105886

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Meter

Manufacturer : Rion

Model No. : NL-31

Serial No. : 00983400

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C105886.

The equipment is supplied by

Co. Name : Envirotech Services Co.

Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

Date of Issue : 26 October 2010

Certified by : K C Lee

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

Appendix D

Ocean Park Redevelopment Project
Monthly EM&A Report – January, February and March 2011

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

Monitoring Location	24-hr TSP (μg/m^3)		1-hr TSP TSP (μg/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 D.2 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700 – 1900 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A)*
1900-2300 on all days and 0700-2300 on general holidays (including Sundays)		60/65/70 dB(A)**
2300-0700 on all days		45/50/55 dB(A)**

* Reduced to 70dB(A) for schools or institution and 65dB(A) during school examination periods

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

Table D.3 Action and Limit Levels for Entertainment Noise

Identification No.	Action Level	Limit Level
ON1	When one documented complaint is received from any one of the sensitive receivers	60dB(A)
ON2		60dB(A)
ON3		55dB(A)
ON4		55dB(A)
ON5		55dB(A)

Appendix E

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

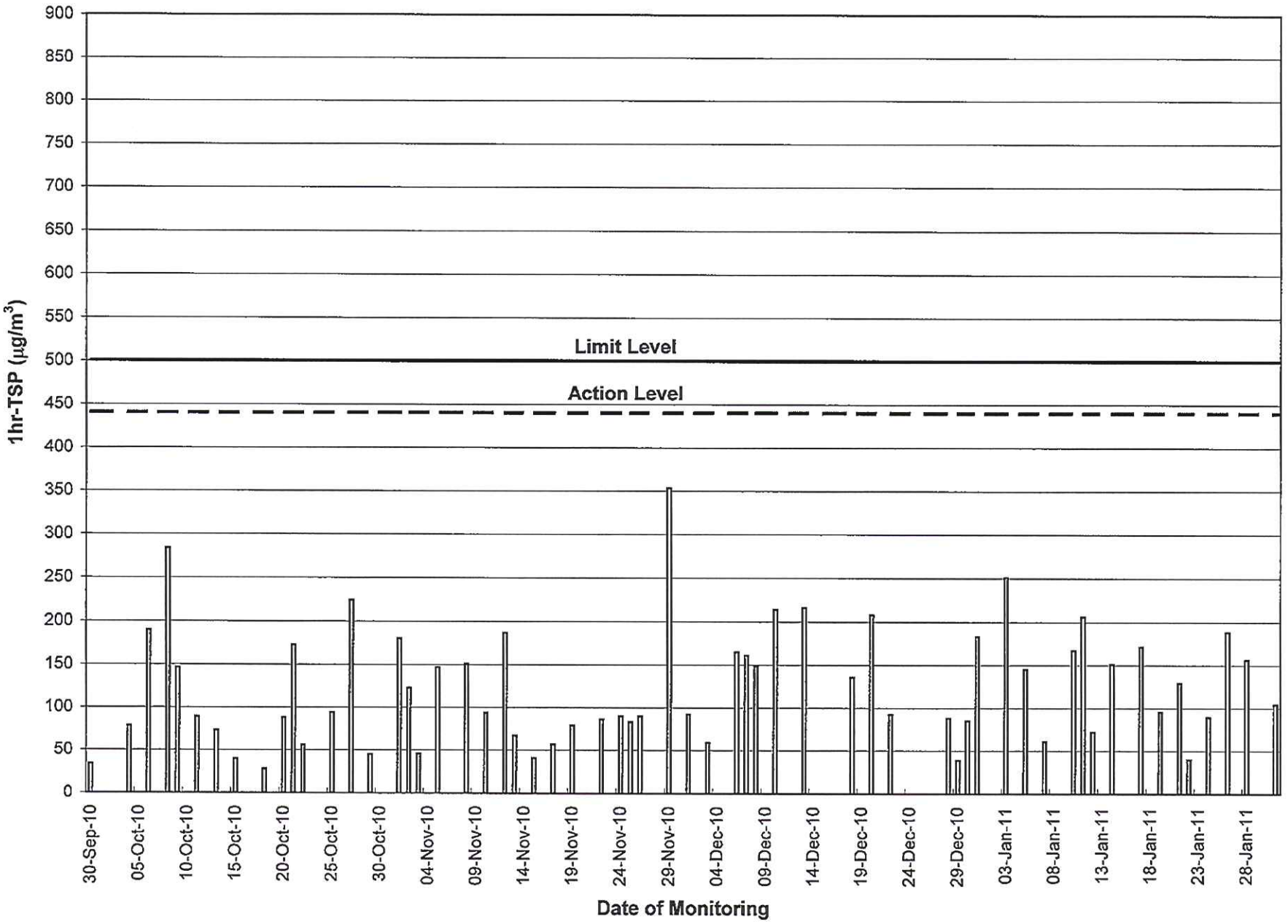


Figure C.2 1-hr TSP monitoring results of Monitoring Station AM2

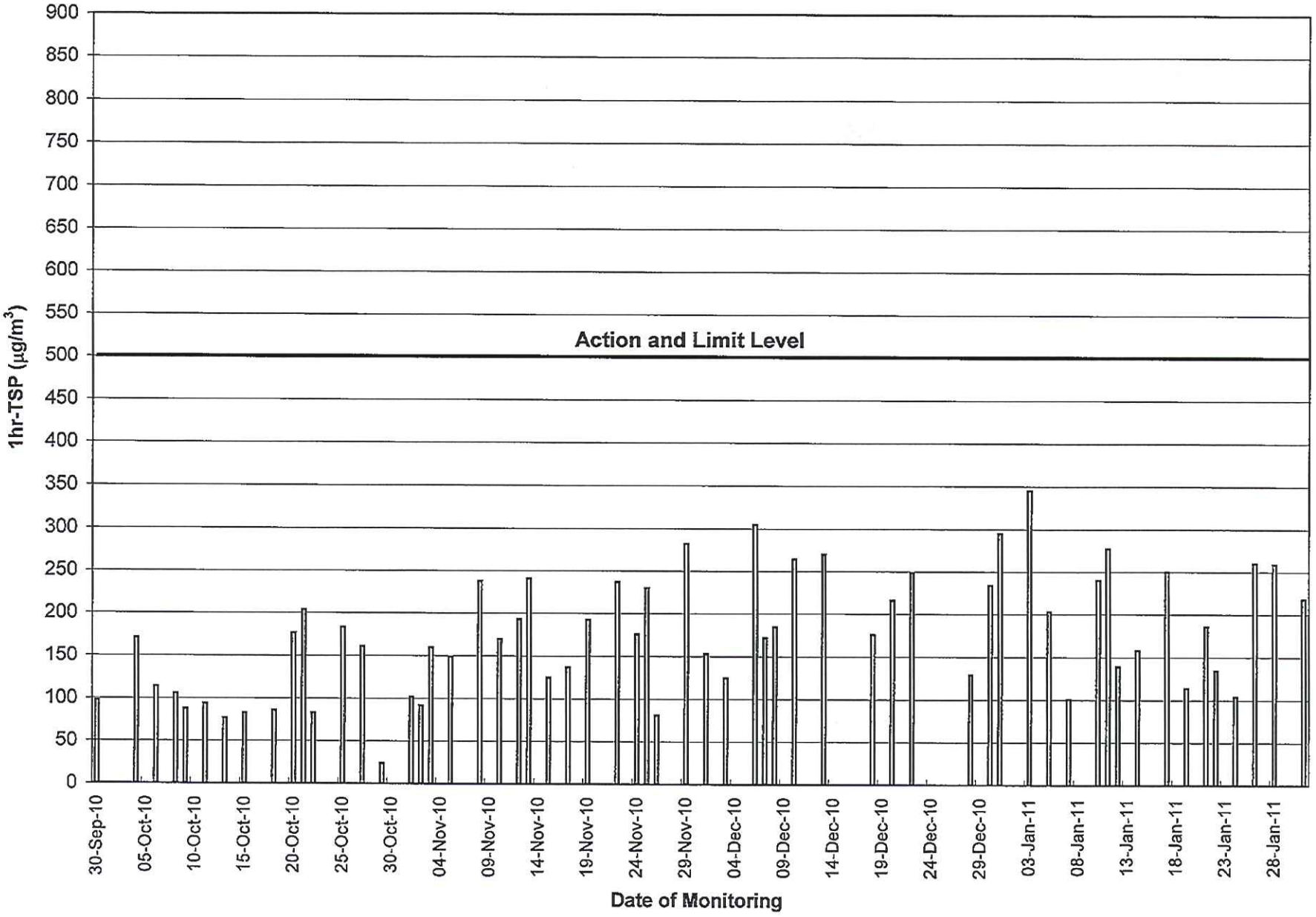


Figure C.3 1-hr TSP monitoring results of Monitoring Station AM3A

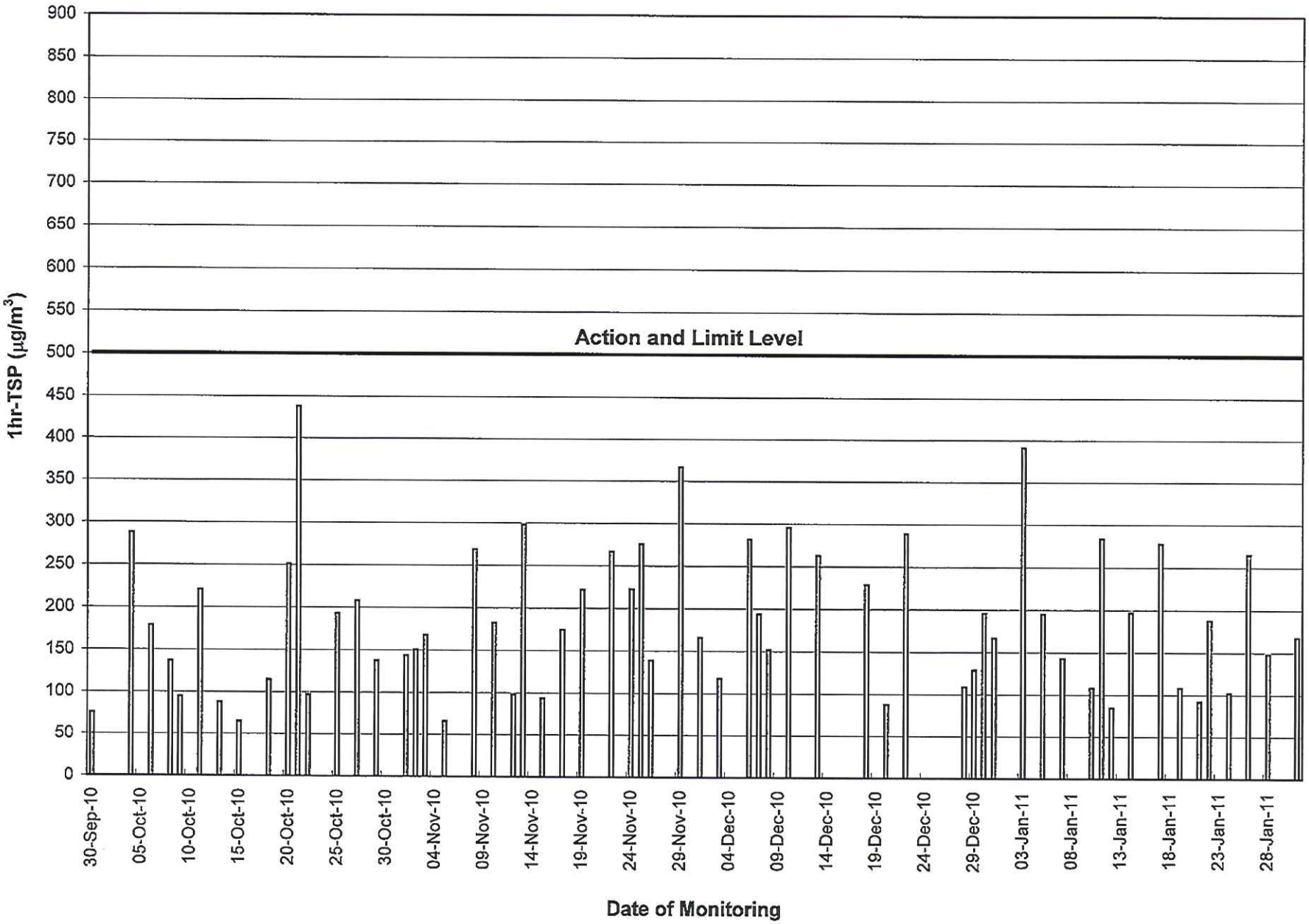
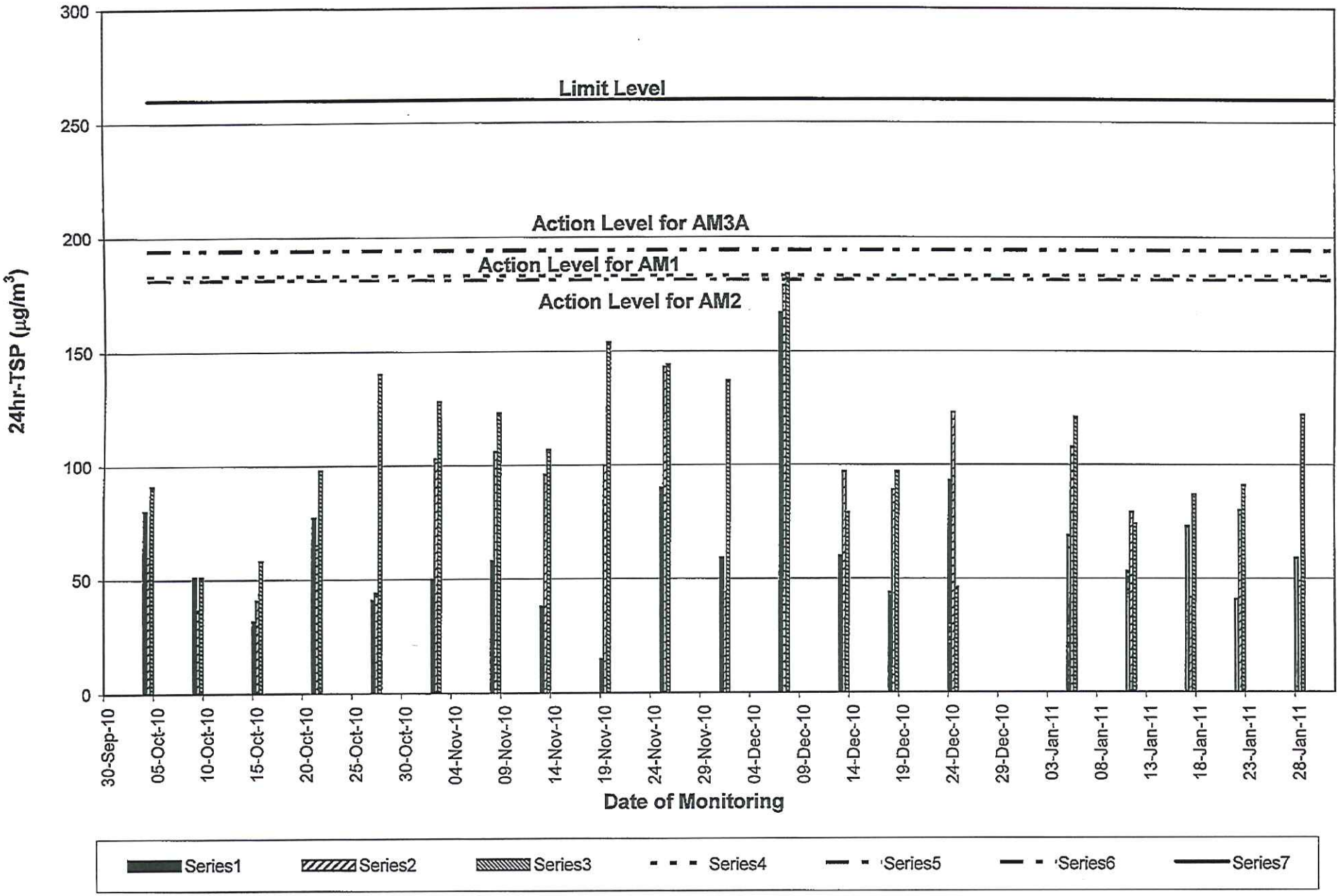
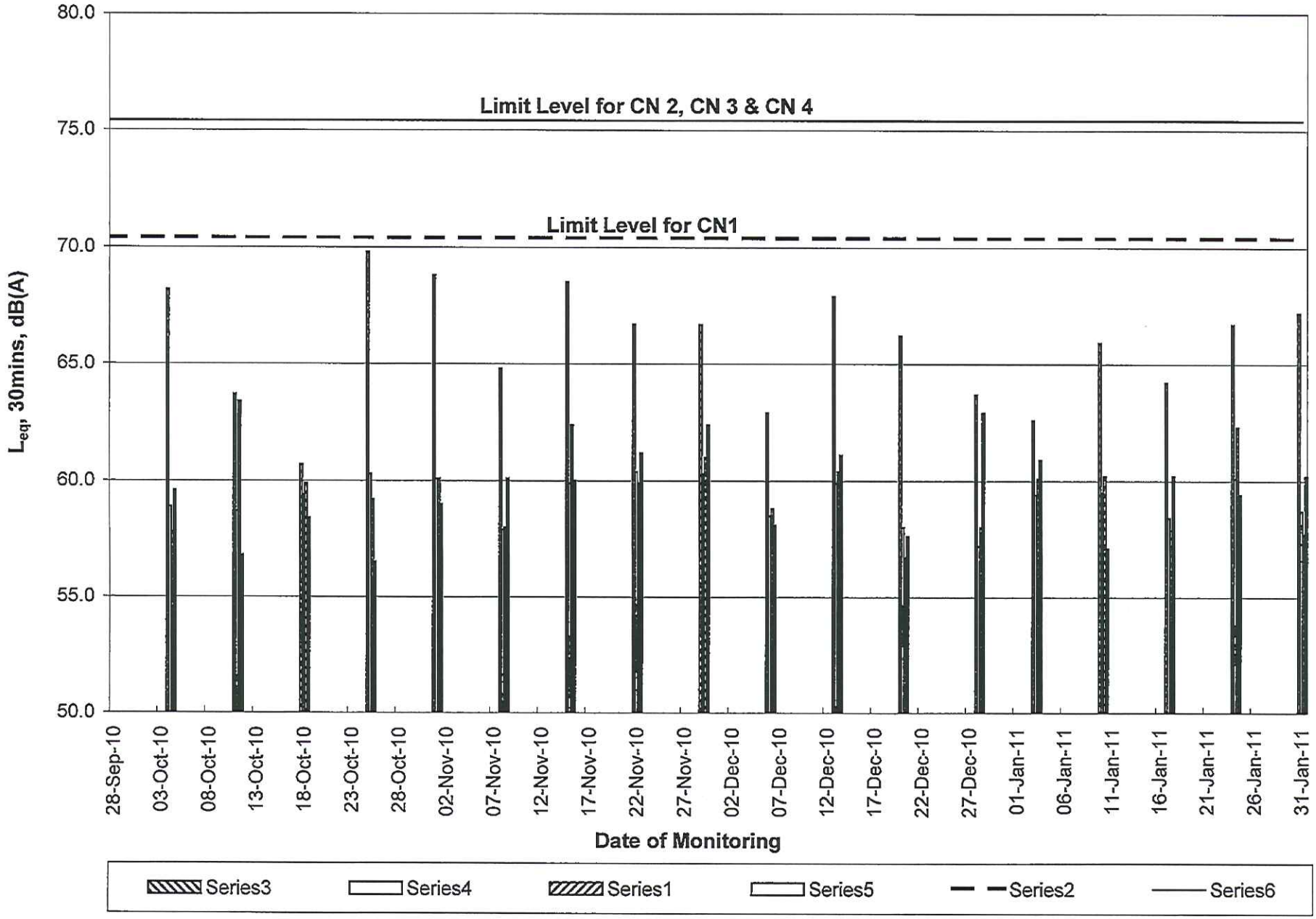


Figure C.4 24-hr TSP monitoring results of Monitoring Station AM1, AM2 & AM3A



Appendix F

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



Appendix G

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	N.A.
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.

LEIGHTON

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

LEIGHTON

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	N.A.
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

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.

LEIGHTON

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 H

Appendix H Licenses and Permits

CNP

Permit number	Starting Date	Expired Date	Valid Time	Location
CI07 (LCAL)				
GS-RS0917-10	30/10/2010	29/04/2011	For generator, which (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 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.	Ocean Park Wong Chuk Hang
CS02 (W. Hing)				
GW-RS1042-10	09/12/2010	03/06/2011	Notice of Issue of Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	
CS03 (KAJV)				
GW-RS0642-10	02/08/2010	31/01/2011	Construction Noise Permit for Top of Nam Long Shan Rd., Ocean Park, 180 Wong Chuk Hang, Hong Kong	
GW-RS0932-10	01/12/2010	31/05/2011	Construction Noise Permit for Top of Nam Long Shan Rd., Ocean Park, 180 Wong Chuk Hang, Hong Kong	
GW-RS0933-10	23/11/2010	09/05/2011	Construction Noise Permit for Top of Nam Long Shan Rd., Ocean Park, 180 Wong Chuk Hang, Hong Kong	
GW-RS0036-11	11/2/2011	31/7/2011	As above	

Other Permits & Licences

CW02

CI07

Permit/Ref/No	Valid Period		Section	Status
Notification of Construction Work under APCO				
001032366	-	-	Entry Plaza	Notified
Effluent Discharge License				
EP820/W2/XW246	5 Sep 08	30 Sep 13	Entry Plaza	Valid
Registration as Chemical Waste Producer				
5213-199-L2174-28	22 Sep 08	-	Form Oil, Lubricant oil, paint, solvent and diesel.	Registered
Construction Waste Disposal Charging Scheme				
7007576	-	-	Entry Plaza	Issued

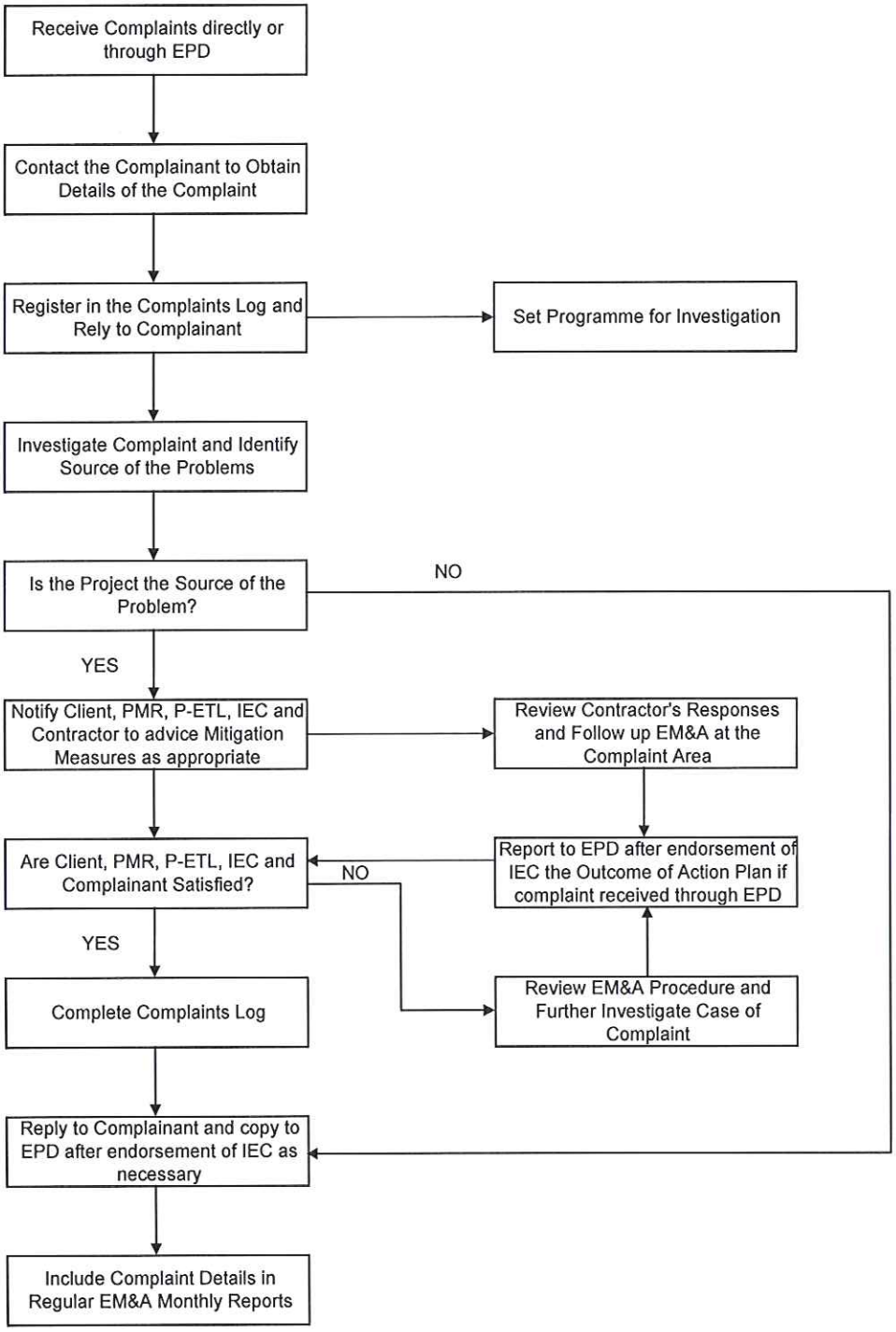
CS02

Permit/Ref/No	Valid Period		Section	Status
Notification of Construction Work under APCO				
305349	N/A	N/A	Rainforest	Notified
Effluent Discharge License				
WT00004136-2009	12-Oct-07	30-Jun-14	Rainforest	Valid
Registration as Chemical Waste Producer				
WPN5214-176-W1150-03	13-May-09	N/A	Form Oil, Lubricant oil, paint, solvent and diesel.	Registered
Construction Waste Disposal Billing Account with EPD				
WFG07578	N/A	N/A	Rainforest	Issued

CS03

Permit/Ref/No	Valid Period		Section	Status
Notification of Construction Work under APCO				
311433	N/A	N/A	Thrill Mountain and Polar Adventure	Notified
Effluent Discharge License				
WT00005926-2010	N/A	N/A	Thrill Mountain and Polar Adventure	Valid
Registration as Chemical Waste Producer				
WPN5213-176-K2880-02	25-Nov-09	N/A	Form Oil, Lubricant oil, paint, solvent and diesel.	Registered
Construction Waste Disposal Billing Account with EPD				
7009695	N/A	N/A	Thrill Mountain and Polar Adventure	Issued

Appendix I


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. CS02 - Rainforest
Contract No. CS03 - Thrill Mountain & Polar Adventure
Quarterly EM&A Report – January, February and March 2011

There was no Complaint Record Register during these three months

Appendix J

Appendix J Coral Monitoring Results for the Reporting Quarter

Impact coral monitoring was conducted in February 2011 following the change in monitoring frequency to be on a quarterly basis until the end of construction works as recommended in approved EM&A Manual.

Results for February 2011

Site 1

Code	Coral Species	Area (cm^2)	Sedimentation (%, mm)				Bleaching (%)				Mortality (%)			
			21 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	21 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	21 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011
A1	*Platygyra carnosus*	1200	0, 0	0, 0	0, 0	0, 0	0	0	0	0	0	0	0	0
A2	*Favites abdita*	400	5, 1	5, 1	0, 0▼	2, 1▼	0	0	0	0	2	2	2	2
A3	*Plesiastrea versipora*	600	0, 0	0, 0	0, 0	0, 0	0	0	0	0	0	0	0	0
A4	*Leptastrea purpurea*	6200	0, 0	4, 1▲	5, 1▲	5, 1▲	0	0	0	0	0	0	0	0
A5	*Platygyra carnosus*	3200	1, 1	1, 1	0, 0▼	3, 1▲	0	0	0	0	0	0	0	0
A6	*Platygyra carnosus*	2600	0, 0	0, 0	0, 0	0, 0	0	0	0	0	0	0	0	0
A7	*Favia speciosa*	500	2, 1	4, 1▲	5, 1▲	3, 1▲	0	0	0	0	5	5	5	5
A8	*Platygyra carnosus*	1500	2, 1	1, 1▼	0, 0▼	2, 1	0	0	0	0	0	0	0	0
A9	*Leptastres purpurea*	700	4, 1	5, 1▲	4, 1	5, 1▲	0	0	0	0	0	0	0	0
A10	*Platygyra carnosus*	2000	0, 0	1, 1▲	0, 0	1, 1▲	0	0	0	0	0	0	0	0

Site 2

Code	Coral Species	Area (cm^2)	Sedimentation (%, mm)				Bleaching (%)				Mortality (%)			
			29 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	29 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	29 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011
B1	*Platygyra carnosus*	1300	2, 1	2, 1	0, 0▼	2, 1	0	0	0	0	0	0	0	0
B2	*Plesiastrea versipora*	650	4, 1	2, 1▼	0, 0▼	2, 1▼	0	0	0	0	0	0	0	0
B3	*Psammocora superficialis*	4400	5, 1	8, 1▲	5, 1	5, 1	0	0	0	0	3	3	3	3
B4	*Favia speciosa*	800	0, 0	2, 1▲	0, 0	0, 0	0	0	0	0	2	2	2	2
B5	*Plesiastrea versipora*	1000	2, 1	2, 1	0, 0▼	2, 1	0	0	0	0	2	2	2	2
B6	*Platygyra carnosus*	1500	0, 0	0, 0	0, 0	1, 1▲	0	0	0	0	0	0	0	0
B7	*Hydnophora exesa*	1600	1, 1	1, 1	0, 0▼	1, 1	0	0	0	0	0	0	0	0
B8	*Plesiastrea versipora*	1300	0, 0	0, 0	0, 0	0, 0	0	0	0	0	0	0	0	0
B9	*Favia speciosa*	450	1, 1	4, 1▲	4, 1▲	4, 1▲	0	0	0	0	2	2	2	2
B10	*Psammocora superficialis*	400	0, 0	0, 0	0, 0	0, 0	0	0	0	0	0	0	0	0

Site 3

Code	Coral Species	Area (cm^2)	Sedimentation (%, mm)				Bleaching (%)				Mortality (%)			
			28 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	28 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	28 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011
C1	*Porites sp*	100	2, 1	4, 1▲	2, 1	4, 1▲	0	0	0	0	3	3	3	3
C2	*Porites sp*	210	3, 1	4, 1▲	3, 1	5, 1▲	0	0	0	0	5	5	5	5
C3	*Goniopora stutchburyi*	410	5, 1	2, 1▼	0, 0▼	0, 0▼	0	0	0	0	7	7	7	7
C4	*Pavona decussata*	240	4, 1	2, 1▼	4, 1	2, 1▼	0	0	0	0	0	0	0	0
C5	*Pavona decussata*	210	3, 1	3, 1	0, 0▼	0, 0▼	0	0	0	0	1	1	1	1
C6	*Pavona decussata*	200	3, 1	3, 1	0, 0▼	0, 0▼	0	0	0	0	0	0	0	0
C7	*Montipora peltiformis*	960	3, 1	3, 1	0, 0▼	5, 1▲	0	0	0	0	0	0	0	0
C8	*Goniopora stutchburyi*	140	1, 1	1, 1	1, 1	1, 1	0	0	0	0	0	0	0	0
C9	*Porites sp*	300	3, 1	5, 1▲	3, 1	5, 1▲	0	0	0	0	0	0	0	0
C10	*Cyphastrea serailia*	600	4, 1	4, 1	4, 1	4, 1	0	0	0	0	0	0	0	0

Site 4

Code	Coral Species	Area (cm^2)	Sedimentation (%, mm)				Bleaching (%)				Mortality (%)			
			28 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	28 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	28 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011
E1	*Goniopora stutchburyi*	290	5, 1	3, 1▼	0, 0▼	3, 1▼	0	0	0	0	0	0	0	0
E2	*Coscinaraea sp.*	620	0, 0	3, 1▲	0, 0	2, 1▲	0	0	0	0	0	0	0	0
E3	*Goniopora stutchbury*	300	4, 1	4, 1	0, 0▼	3, 1▼	0	0	0	0	3	3	3	3
E4	*Goniopora stutchbury*	130	3, 1	3, 1	0, 0▼	3, 1	0	0	0	0	0	0	0	0
E5	*Goniopora stutchbury*	460	6, 1	8, 1▲	0, 0▼	6, 1	0	0	0	0	4	4	4	4
E6	*Goniopora stutchbury*	380	10, 1	5, 1▼	0, 0▼	5, 1▼	0	0	0	0	8	8	8	8
E7	*Goniopora stutchbury*	120	3, 1	8, 1▲	0, 0▼	5, 1▲	0	0	0	0	0	0	0	0
E8	*Goniopora stutchbury*	230	4, 1	4, 1	0, 0▼	4, 1	0	0	0	0	2	2	2	2
E9	*Goniopora stutchbury*	170	3, 1	5, 1▲	0, 0▼	5, 1▲	0	0	0	0	0	0	0	0
E10	*Goniopora stutchbury*	540	7, 1	8, 1▲	5, 1▼	5, 1▼	0	0	0	0	3	3	3	3

Site 5

Code	Coral Species	Area (cm^2)	Sedimentation (%, mm)				Bleaching (%)				Mortality (%)			
			29 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	29 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	29 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011
D1	*Psammocora sp.*	800	6, 1	6, 1	0, 0▼	3, 1▼	0	0	0	0	3	3	3	3
D2	*Montipora peltiformis*	600	4, 1	4, 1	0, 0▼	1, 1▼	0	0	0	0	0	0	0	0
D3	*Goniopora stutchburyi*	450	2, 1	0, 0▼	0, 0▼	4, 1▲	0	0	0	0	0	0	0	0
D4	*Cyphastera serailia*	100	3, 1	5, 1▲	0, 0▼	3, 1	0	0	0	0	0	0	0	0
D5	*Montipora cf. turgescens*	320	4, 1	3, 1▼	4, 1	4, 1	0	0	0	0	0	0	0	0
D6	*Montipora peltiformis*	480	10, 1	10, 1	4, 1▼	5, 1▼	0	0	0	0	20	20	20	20
D7	*Montipora peltiformis*	500	8, 1	5, 1▼	4, 1▼	5, 1▼	0	0	0	0	2	2	2	2
D8	*Montipora peltiformis*	410	6, 1	5, 1▼	8, 1▲	6, 1	0	0	0	0	0	0	0	0
D9	*Montipora peltiformis*	200	5, 1	8, 1▲	5, 1	5, 1	0	0	0	0	5	5	5	5
D10	*Goniopora stutchburyi*	510	7, 1	10, 1▲	5, 1▼	7, 1	0	0	0	0	5	5	5	5

Control Site C

Code	Coral Species	Area (cm^2)	Sedimentation (%, mm)				Bleaching (%)				Mortality (%)			
			21 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	21 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011	21 Nov 09 (baseline)	Aug 2010	Nov 2010	Feb 2011
F1	*Goniastrea aspera*	450	2, 1	1, 1▼	0, 0▼	2, 1	0	0	0	0	0	0	0	0
F2	*Favites pentagona*	2100	2, 1	5, 1▲	0, 0▼	2, 1	0	0	0	0	2	2	2	2
F3	*Favites pentagona*	1000	0, 0	1, 1▲	0, 0	1, 1▲	0	0	0	0	5	5	5	5
F4	*Favites pentagona*	1300	2, 1	3, 1▲	0, 0▼	2, 1	0	0	0	0	0	0	0	0
F5	*Cyphastrea seraill*	2100	0, 0	1, 1▲	0, 0	1, 1▲	0	0	0	0	0	0	0	0
F6	*Porites sp*	2100	5, 1	5, 1	0, 0▼	5, 1	0	0	0	0	2	2	2	2
F7	*Plesiastrea versipora*	3000	2, 1	2, 1	0, 0▼	2, 1	0	0	0	0	0	0	0	0
F8a	*Favites pentagona*	680	0, 0	1, 1▲	0, 0	0, 0	0	0	0	0	0	0	0	0
F9	*Favites pentagona*	2600	0, 0	2, 1▲	0, 0	0, 0	0	0	0	0	0	0	0	0
F10	*Favia rotumana*	600	0, 0	0, 0	0, 0	0, 0	0	0	0	0	0	0	0	0

The coral monitoring at the 5 Sites and 1 Control Site has been conducted since April 2007. The continuous monitoring has revealed little change in health status of the tagged colonies in terms of sedimentation, bleaching and mortality.

In the monitoring surveys conducted in February 2011, from all the 5 Monitoring Sites 1 to 5 and the Control Site C, the change in level of sedimentation on the tagged colonies was minor (< 5%) when compared with the baseline data in November 2009 and previous survey in August 2010.

All sites including Control Site C showed decrease in sedimentation, this small change in sedimentation was likely as a result of reduced rainfall and thus hillstream runoff during the period of monitoring. No increment in level of blenching or partial mortality suggested the all tagged corals were in good condition and healthy.

The data from this monitoring survey showed no significant enhancement in sedimentation, bleaching or mortality in all the 5 Monitoring Sites 1 to 5 and the Control Site C. Hence, no adverse impact by the construction activity on the coral community was evidenced.

Overall, the healthy status of the tagged coral colonies was normal, with low levels of sedimentation. Neither action/limit level of sedimentation, bleaching or mortality was exceeded in the monitoring survey conducted in February 2011.

Figure 1.1

Figure 1.1 Management Organization – Construction Phase

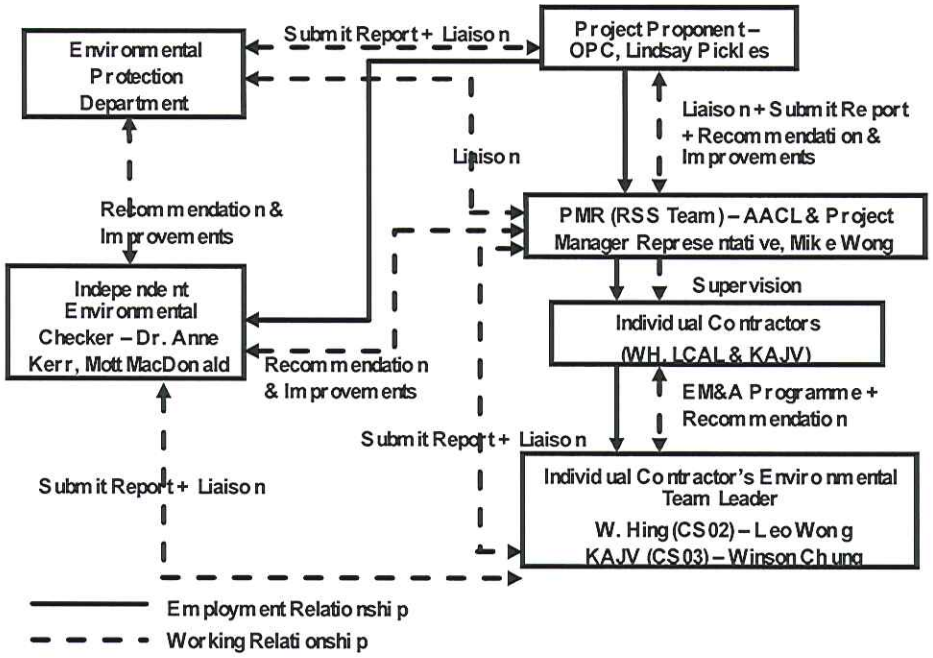
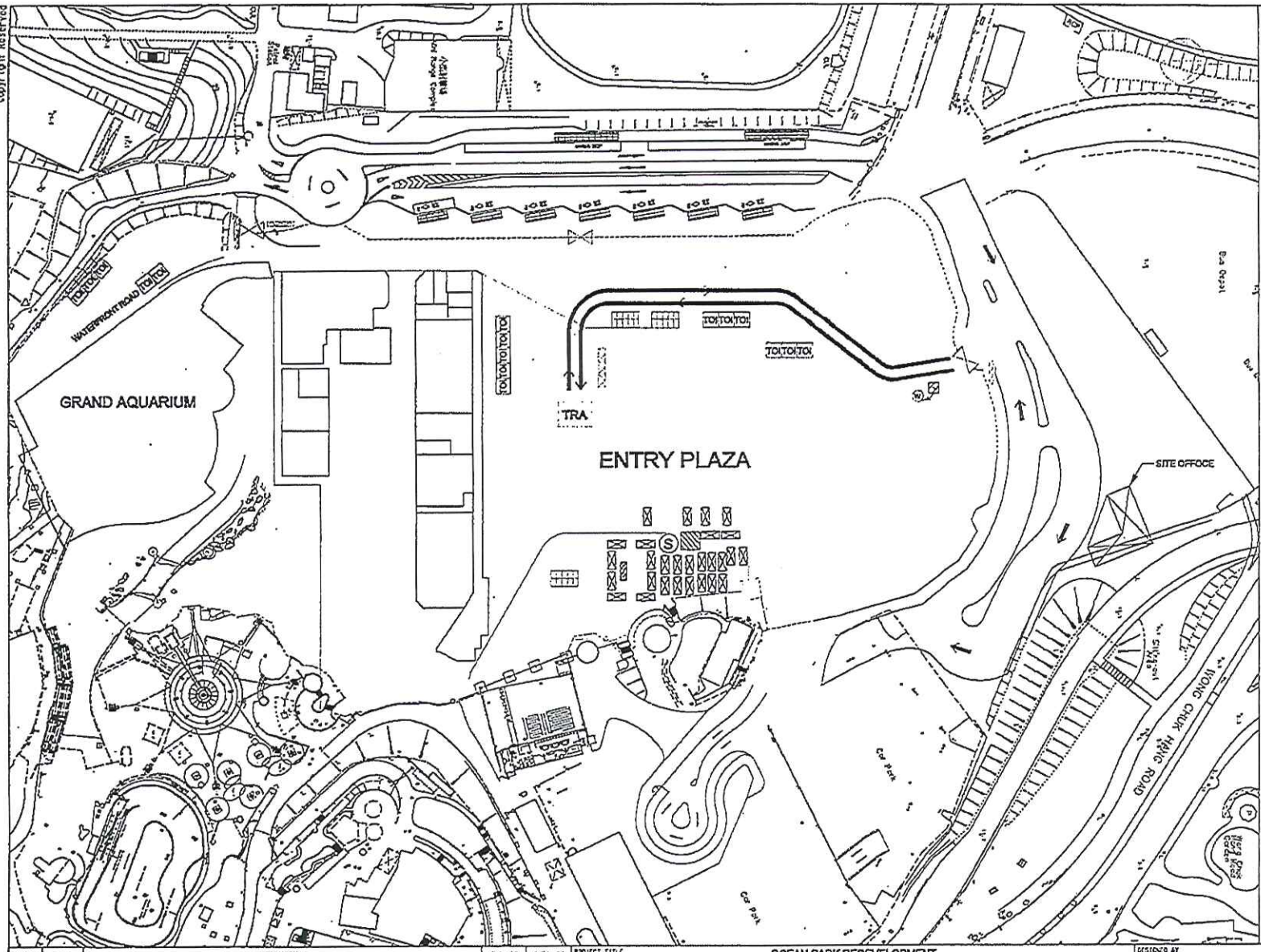


Figure 1.2



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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. C107
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.
DRAWING NO.	H2458/E/0020
DATE	01/11/2006
REVISION	K

LEIGHTON 禮頓

A3 420mm x 297mm

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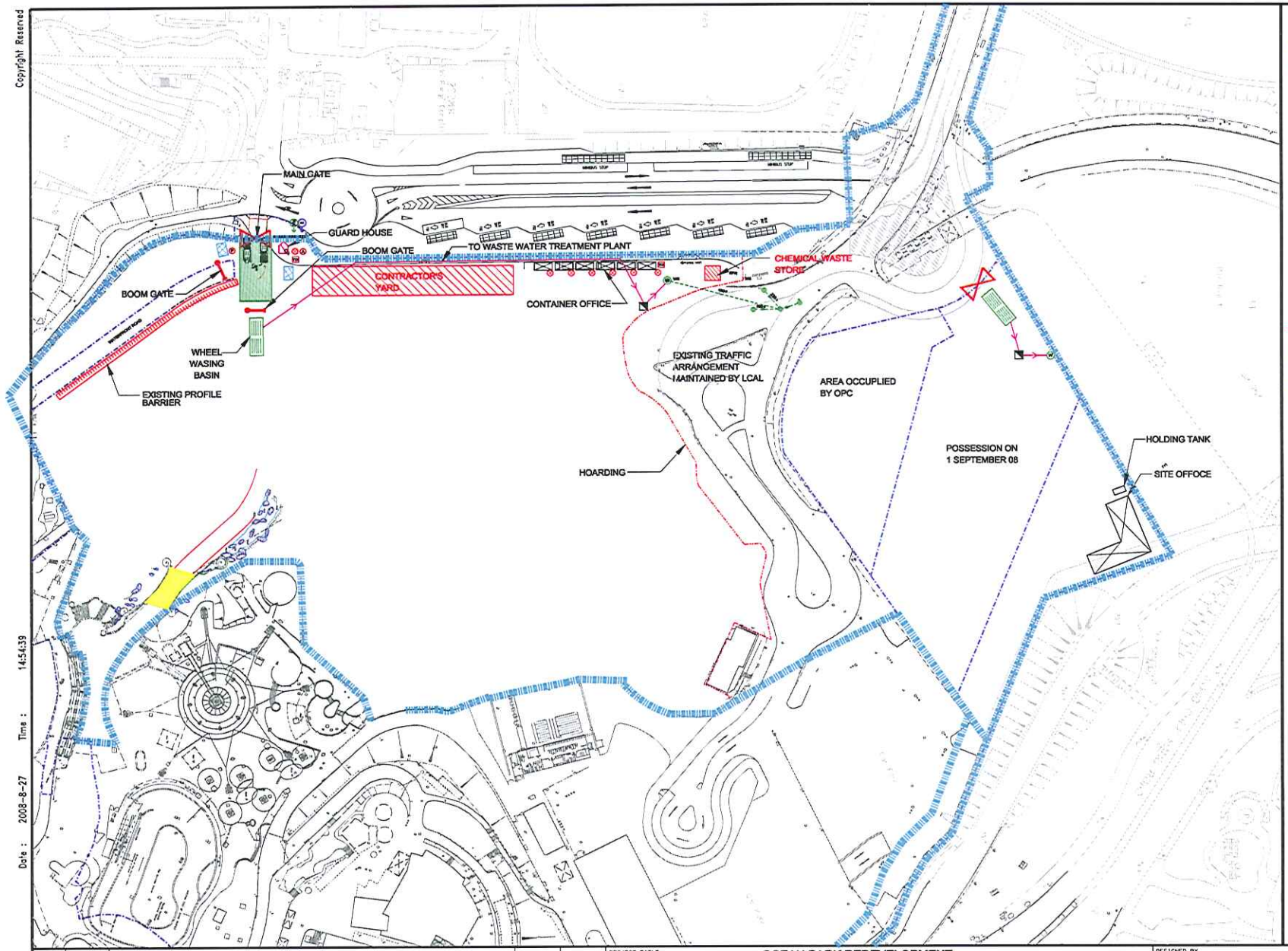
Filename :FILE$
Date :DATE$
Time :TIME$

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

Figure 1.3



LEGENDS :

- CI07 SITE BOUNDARY
- WHEEL WASING BASIN
- GUARD HOUSE
- MAIN GATE
- BOOM GATE
- BUFFER ZONE FOR SECURITY CHECK & TURN AROUND AREA
- FIRE EXTINGUISHER
- HELMET STORAGE AREA
- FIRST AID CENTRE
- NOTICE BOARD (INCLUDING EMERGENCY TELEPHONE LIST)
- WASTE WATER DISCHARGE POINT
- WASTE WATER TREATMENT POINT (AQUASED)
- U-CHANNEL / DRAIN
- EVA TO BE KEPT CLEAR
- TEMPORARY WATER SUPPLY
- TEMPORARY ELECTRICITY SUPPLY
- FLAGMAN LOCATION
- TOILET
- ACCESS GIVEN
- ACCESS DENIED
- CHEMICAL WASTE STORE

REVISION	DATE	DESCRIPTION	CHK. BY	AUTH. BY
A	27-8-08	CONTRACTOR'S YARD & CHEMICAL WASTE STORE ADDED		

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

DRAWING TITLE
PROPOSED SITE ACCESS / SECURITY ARRANGEMENT

DESIGNED BY
DRAWN BY
CHECKED BY
SCALE @ A3 1 : 1250

LEIGHTON

DRAWING NO. H2458/E/4003

DATE 12-8-2008

REV. A

A3 420mm x 297mm

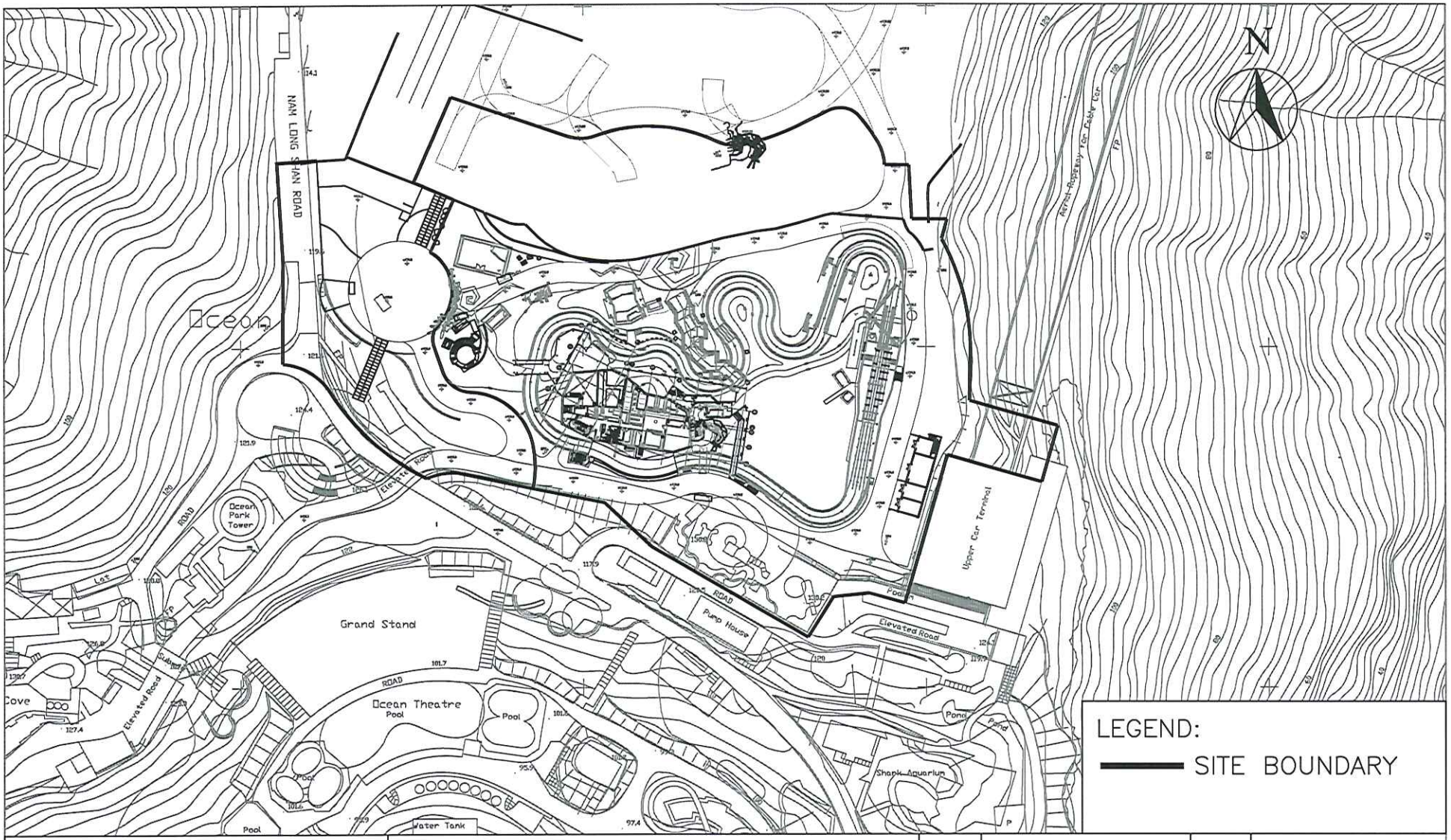
Date : 2008-8-27 Time : 14:54:39

CS Ho

Print By :

Filename : G:\DRAWINGS\JOB\H2458E Ocean Park CI07\4003\4003A.dgn

Figure 1.4



永興聯合建築有限公司
W. HING CONSTRUCTION CO. LTD.

CONTRACT NO. CS02

OCEAN PARK REDEVELOPMENT PROJECT – RAINFOREST

SITE LAYOUT PLAN

SCALE	A4 1:1500	DATE	JULY 2009
CHECK	Kan Kwok	DRAWN	HC LAU
JOB No.	CS02	DRAWING No.	CS02/SL/01
		REV	–

Figure 1.5

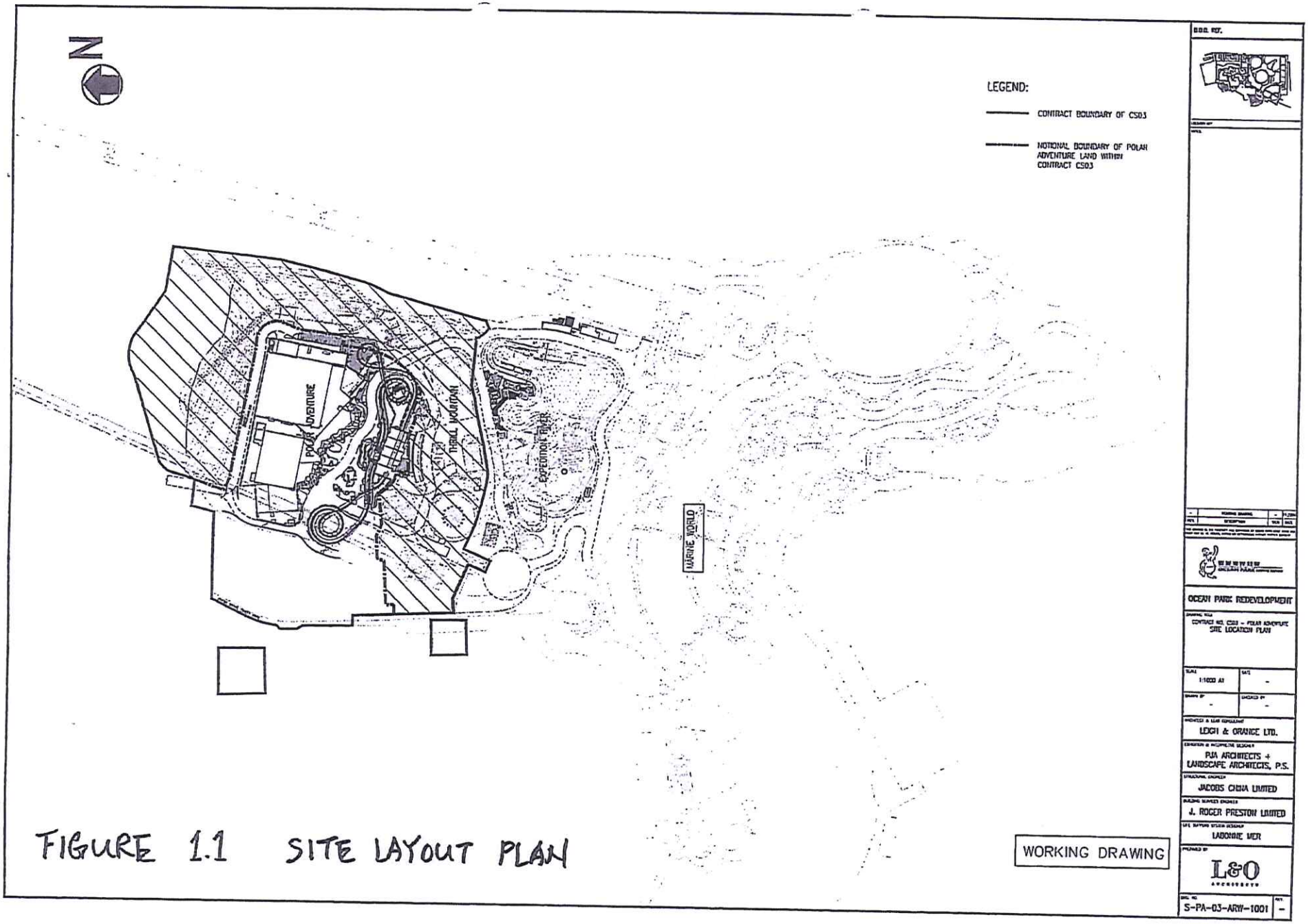
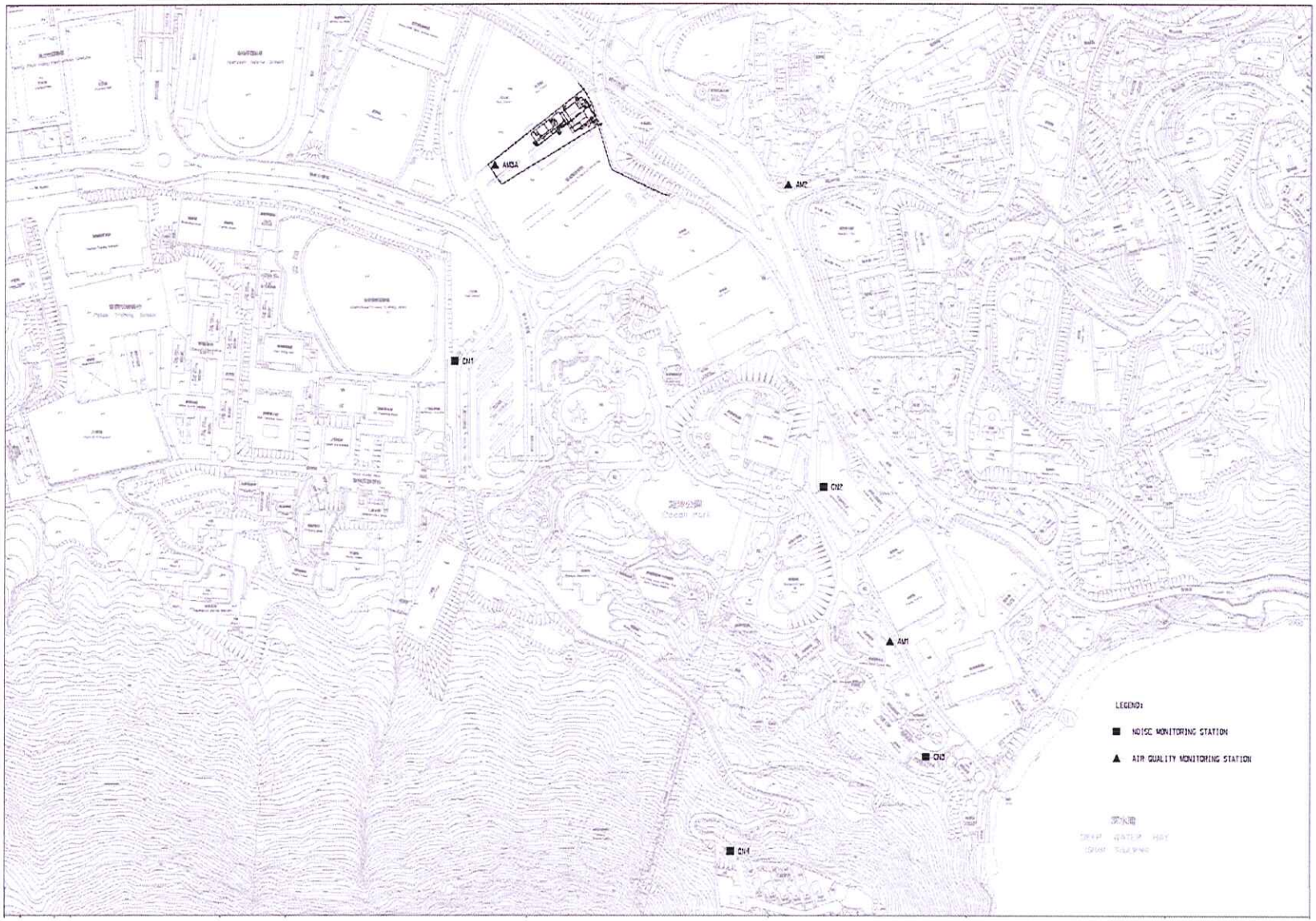


FIGURE 1.1 SITE LAYOUT PLAN

Figure 1.6



REV.	DESCRIPTION	DATE

OCEAN PARK REDEVELOPMENT

CONTRACT NO.C107
ENTRY PLAZA+AQUA CITY & GRAND AQUARIUM

AIR QUALITY AND NOISE MONITORING STATIONS LOCATION PLAN

CONSULTANT
MAUNSELL | AECOM
Maunsell Consultants Asia Ltd.
In association with:
AEDAS EDAW LIVETT & BAILEY

LEIGHTON CONTRACTORS (ASIA) LTD.

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

Date : 3/27/2009 Time : 5:33:59 PM

Filename = P:\Engineering Drawing\Submission Drawing\E0172\E0172.dgn

Figure 1.7

Dragages-Bouygues JV	CLIENT: OCEAN PARK HONG KONG	PROJECT TITLE: OCEAN PARK REDEVELOPMENT Contract No. CI05 Site Formation, Funicular Tunnel and Miscellaneous Works	DRAWING TITLE: FIGURE 5.1 LOCATIONS OF SUBTIDAL MONITORING STATION	DATE: 02APR2007 SCALE: 1 : 7500 @ A3 DRAWING NUMBER: DBJV/CI05/01/ENV/0016 REV: A