



Ocean Park Master Redevelopment Project

Monthly Environmental Monitoring & Audit Report – October 2008





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Part 1 Project Overview

Executive Summary

This is the combined monthly EM&A Report for Ocean Park Master Redevelopment Project, which includes Contract CI-05 "Site Formation, Funicular Tunnel and Miscellaneous Work", CW02 "The Astounding Asia" and CI07 "Entry Plaza, Aqua City and Grand Aquarium". This report presents the results of EM&A works conducted in the reporting month of October 2008 (from 26 September 2008 to 25 October 2008).

A summary of monitoring and audit activities conducted in the reporting period is listed below:

1-hour TSP monitoring 15 sessions for monitoring station AM1, 16

sessions for monitoring stations AM2 and AM3A

24-hour TSP monitoring 5 sessions for air quality monitoring stations AM1,

AM2 and AM3A.

Daytime noise monitoring 4 sessions for all noise monitoring stations,

Evening or night time noise monitoring 3 sessions for all noise monitoring stations,

Holiday time noise monitoring 0 sessions,

Terrestrial ecology monitoring 0 session,

Coral monitoring 1 session for Site 1-4,

1 session for Site 5 and Control Station,

Environmental Site Inspection 4 sessions (including IEC audit)

No exceedance was recorded on the 1-hour TSP monitoring, 24-hour TSP monitoring, daytime & evening time noise, terrestrial ecology monitoring and coral monitoring.

No non-compliance from IEC, summons or prosecution related to environmental issues was made against the Ocean Park Master Redevelopment Project in the reporting period of October 2008.



1. Introduction

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/A.

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 below.

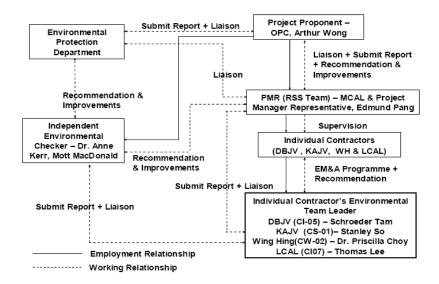
Contract No.	Contract Title	Contractor	Construction Commencement
CI-05	Site Formation, Funicular Tunnel and Miscellaneous Works	Dragages- Bouygues JV	12 March 2007
CS-01	Back of House for Marine Mammal Veterinary Hospital	Kaden – ATAL JV	26 March 2007 and Construction phase has ceased in mid-October 2008.
CW-02	Astounding Asia	W. Hing Construction Co. Ltd	1 August 2007
CI-07	Entry Plaza, Aqua City and Grand Aquarium	Leighton Contractors (Asia) Ltd.	15 August 2008

The Contractors will conduct environmental monitoring and audits during the construction stage and produce contract specific monthly EM&A reports. The RSS will prepare a combined monthly EM&A report for the project. This is the combined monthly EM&A Report including the IEC audit findings, Cl05, CW02 and Cl07 Monthly EM&A Report. This report presents the results of EM&A works conducted in the reporting month of October 2008 (from 26 September 2008 to 25 October 2008).

2. Project Organisation

The structure of the environmental management team is shown in below figure.

Figure 1.1 Management Organization





3. Construction Works Undertaken during the Reporting Month

In the reporting month, the construction activities summarise as follows.

CI-05

Waterfront

- Waterfront Terminus Construction (e.g. retaining wall, base slab, column, platform slab, track and pad footing.
- External U/G drainage & utilities and roadwork.

Tai Shue Wan

 Conveyor Belt and Barging Point Operation

Summit

- Tunnel Internal Structure (e.g. Wall and Upper Slab, Cable Trench, Walkway Slab, Air Duct Wall, etc)
- Tunnel E&M
- Drill and Blast for Summit Site Formation
- Excavation at Summit
- Soil nail works at the North Haul Road
- Summit Terminus & FS Tank Building (e.g. Foundation Works and Superstructure Works)
- Crusher and Conveyor Belts Operation

Government Entrusted Works

- Excavation, Trail Pit Excavation, Construction of Manhole, Laying of Sewer and OPC Water Main, Road Surface Reinstatement and Backfilling at NLS Road Entrusted Work.
- Excavation, Construction of Manhole, Pipe Laying, Road Surface Reinstatement, Backfilling at Wong Chuk Hang Road.

CS-01

 Construction phase has ceased in mid-October 2008.

CW-02

- Builder's and Finishing, E&M Works and Fitting out Works at Astounding Asia Restaurant,
- R.C. Works for MVAC culvert, underground drainage works, E&M Works, fitting out works and structure Work for Artificial Rockworks at New Panda Habitat,
- Tree transplanting works and excavation works at Bird Theatre,
- External Drainage, Services Pipelines, Ducting Works and Road Formation and structure paving.

CI-07



- Trim and make good formation level at Grand Aquarium area
- Forming haul road and surface water diversion at Grand Aquarium
- Site clearance (break up & removal of surface hard features) and shallow excavation work at Entry Plaza
- Rock-fill and plate load test at Entry Plaza
- Tree transplanting
- Site office set up
- Underground drainage at Existing Coach Bus Parking Area
- Trial pit excavation

4. Permits and License Status

4.1. Environmental Permit

The Environmental Impact Assessment (EIA) Report of the Project has been approved by the Environmental Protection Department (EPD) (Register No.: AEIAR-101/2006) on 12 July 2006. Subsequently, EPD issued Environmental Permit (EP) for the construction and operation of the project. Table below is a full list of the EPs.

EP No.	Issue Date	Key Variation
EP-249/2006	28 July 2006	First EP
EP-249/2006/A	25 September 2006	 Enhance the roosting habitat for freshwater birds by enlarging Pond 35 and its surrounds with a total area of no less than 120 squares meters and no construction works and discharge from construction sites shall be allowed within Pond 35 after enhancement. Filling of Pond 37 at the Lowland Area. Submission of the as-built drawings showing the enhancement works of Pond 35.



4.2. CNP

Table below shows a list of CNP within the reporting month.

Permit number	Starting Date	Expired Date	Valid Time	Location	Contract No.	Status
CI-05 (DBJV)					•	
GW-RS0061-08	21-Aug-08	20-Feb-09	PME 00:00 - 07:00 hours & 19:00 - 24:.00 hours (Not being a general holiday) 07:00 - 23:00 (General holidays) PCW 00:00 - 07:00 hours & 19:00 - 24:00 hours (Not being a general holidays) 07:00 - 23:00 (General holidays) One group of equipment shall be used.	Summit (At the top of Nam Long Shan Road)	CI-05	Valid
GW-RS0144-08	17-Sep-08	16-Feb-09	PME 19:00 - 23:00 hours (not being a general holidays) 07:00 - 19:00 (General holidays) PCW 19:00 - 23:00 hour (Niot being a general holidays) 07:00 - 19:00 (General holidays) One group of equipment shall be allowed in above time	Nam Long Shan Road near Chan Nam Cheong Memorial School	CI-05	Valid
GW-RS0234-08	15-Apr-08	14-Oct-08	PME 19:00 - 23:00 hours (Not being a general holidays) 07:00 - 19:00 hours (General holidays)	Summit Terminus	CI-05	Surrender ed
GW-RS0339-08	11-Jun-08	10-Dec-08	PME 19:00 - 23:00 hours (Not being a general holidays) 07:00 - 19:00 hours (General holidays)	Waterfront (near Giant Panda Habitat) - Funicular Tunnel	CI-05	Valid
GW-RS0340-08	11-Jun-08	10-Dec-08	PME 00:00 - 07:00 hours and 19:00 - 24:00 (Not being a general holiday) 00:00 - 24:00 hours (General holidays)	Summit (at the top of Nam Long Shan Road) - Funicular Tunnel	CI-05	Valid



Permit number	Starting Date	Expired Date	Valid Time	Location	Contract No.	Status
GW-RS0387-08	11-Jun-08	9-Dec-08	PME 00:00 - 07:00 hours and 19:00 - 24:00 (Not being a general holiday) 00:00 - 24:00 hours (General holidays) PCW 00:00 - 07:00 hours & 19:00 - 24:00 hours (Not being a general holidays) 00:00 - 24:00 hours (General holidays)	Crusher, Conveyor and Barging Point	C105	Valid
GW-RS0453-08	15-Jul-08	14-Dec-08	PME 00:00- 07:00 hours & 19:00 - 23:00 hours (not being a general holidays) 00:00 - 24:00 (General holidays) PCW 00:00- 07:00 hours & 19:00 - 23:00 hour (Not being a general holidays) 00:00 - 24:00 hours (General holidays) One group of equipment shall be allowed in above time Group C & D shall not operated between 23:00-07:00 on the next day	Upper Portion of Nam Long Shan Hill Road	C105	Valid
GW-RS0584-08	21-Aug-08	20-Feb-09	PME 00:00 - 07:00 hours & 19:00 - 24:.00 hours (Not being a general holiday) 07:00 - 23:00 (General holidays) PCW 00:00 - 07:00 hours & 19:00 - 24:00 hours (Not being a general holidays) 07:00 - 23:00 (General holidays) One group of equipment shall be used.	Summit (At the top of Nam Long Shan Road)	CI-05	Valid
CS-01 (KAJV)	•					
GW-RS0175-08	10-Apr-08	9-Oct-08	PME 19:00 - 23:00 hours (Not being a general holidays) 07:00 - 19:00 hours (General holidays) PCW 19:00 - 21:00 hours (Not being a general holidays) 07:00 - 19:00 hours (General holidays) One group of equipment shall be allowed in above time.	Summit (At top of Nam Long Shan Road)	CS-01	Expired (constructi on works had ceased in mid- October)
CW-02 (W. Hing)			,			
GW-RS0619-08	2-Sep-08	1-Mar-08	PME 19:00 - 23:00 hours (Not being a general holidays) 07:00 - 19:00 hours (General holidays)	Ocean Park, Wong Chuk Hang	CW-02	Valid



4.3. Other Permits & Licenses

Tables below show lists of other permits & license for individual contracts.

<u>CI-05</u>

Permit /Ref/ No	Valid Period		Section	Status		
Notification of Construction Work under APCO						
001017998	-	-	Waterfront	Notified		
001018054	-	-	Summit	Notified		
Effluent Discharge Licer	ise					
EP820/W9/XW232	20-Jun -07	30-Jun-12	Summit	Valid		
EP820/W9/XW234	13-Jul-07	31-Jul-12	Waterfront	Valid		
Specific Process Licens	е					
L-11-044 (1)	20-Sep-07	19-Sep-12	Conduct Specified Process in the premises at Ocean Park MRP Contract CI-05 (at top of Nam Long Shan Road)	Valid		
Registration as Chemica	al Waste Produc	er				
WPN5213-199-D2373- 01	7-May-07	-	For disposal of chemical wastes, mainly spent lubricants	Registered		
Construction Waste Disp	oosal Charging	Scheme				
7004888	-	-	Waterfront + Summit	Issued		

CS-01

Permit/Ref/No	Valid Period		Section	Status				
Notification of Constru	Notification of Construction Work under APCO							
001018953	-	-	Vet Hospital	Notified				
Effluent Discharge Lice	ense							
EP820/W2/XC041	31-May-07	30-Jun-12	Vet Hospital	Valid				
Registration as Chemic	cal Waste Produ	icer						
WPN5213-199-K2880- 01	19-Mar-07	-	Used battery, used lubricating oil and lubricating oil / gasoline / diesel contaminated soil.	Registered				
Construction Waste Disposal Charging Scheme								
7005185	-	-	Vet Hospital	Issued				

CW-02

Permit/Ref/No	Valid Period		Section	Status			
Notification of Cons	Notification of Construction Work under APCO						
001022480	11-July-07	-	Astounding Asia	Notified			
Effluent Discharge I	License						
EP820/W9/XW240	12-Oct-07	31-Oct-12	Astounding Asia	Valid			
Registration as Che	mical Waste Produce	er					
5213-199-W2894-	20-Aug-07	-	Form Oil, Lubricant oil, paint,	Registered			
18	-		solvent and diesel.				
Construction Waste Disposal Charging Scheme							
7005864	-	-	Astounding Asia	Issued			

<u>CI-07</u>

Permit/Ref/No	Valid Period		Section	Status			
Notification of Cons	struction Work under	APCO					
001032366	15-Aug-08	-	Entry Plaza, Aqua City & Grand Aquarium	Notified			
Effluent Discharge	Effluent Discharge License						
Apply on 20 Aug 2008							
Construction Waste Disposal Charging Scheme							
700757619	-	-	Entry Plaza, Aqua City & Grand Aquarium	Issued			



5. EP Submissions Status

Environmental submissions to EPD since the commencement of construction works at Ocean Park, i.e. from 12 March 2007 to 25 October 2008 are as below,

Contract	Submissions
CI-05	Notification of Commencement Date
	 Management Organisation Chart
	 Construction Programme
	Drainage Proposal
	Silt Curtain Proposal
	 Waste Management Plan
	 Baseline Air Quality and Noise Monitoring Report
	 Transplantation Proposal for Uncommon Species
	 Baseline Coral Survey Report
	 As-built Drawings of Pond 35
	 Detailed Compensatory Planting As-built Drawing
CI-05, CS01,	 Combined Monthly EM&A Report (September 2008)
CW-02 & CI07	 Quarterly EM&A Report (Jul to Sep 2008)
City Bus Limited	 Written Notice on Completion of TPH Contaminated
	Soil Disposal
	 Written Notice on Completion of Solidification
	Treatment of Heavy Metals Contaminated
	As-built Remediation Plan
Hong Kong	 Confirmation Letter to confirm that Land
School of	Contamination remediation Works within HKSM has
Motoring Ltd.	been completed



6. Materials Management

Section 6.17 in the EIA report specified the disposal of materials to the public fill reception facilities should be considered as last resorts with the preferred approach to reuse the material within the project and/or other projects.

According to EIA recommendations and CI05-WMP, the materials were reused in other projects specified as below:

- NW-SW (Swire Sita), the soil materials were reused as the topsoil of landfill. This
 would be delivered by trucks to subcontractor's barges at Yau Tong. The delivery
 was started in September 2007 and excavated materials were delivered to the
 site within the reporting period.
- Central Reclamation Phase III, the excavated materials were reused as forming an access road. This would be delivered by barges from the Contractor's of Central Reclamation Phase III. The delivery was started in November 2007 and excavated materials were delivered to the site within the reporting period.
- Hung Wan Quarry at Zhuhai, it was proposed to EPD on 8 November 2007 and rock materials were not delivered to Zhuhai within the reporting month for reuse purpose. This would be delivered by barges.
- Tai Shing Quarry, Jiangmen Mainland of China, the rock materials would be exported as usable materials by DBJV subcontractor's barges to the Tai Shing Quarry for reused. The rock materials would be exported as goods in compliance with the Import and Export Ordinance. The delivery was started in May 2008. Rock materials were delivered to Tai Shing Quarry within the reporting month.
- DSD-HKWDT, the excavated materials were reused for marine works in the Western Portal. This would be delivered by barges. The delivery was started in August 2008 and excavated materials were delivered to the site within the reporting period.
- Tin Shan Quarry, Mainland of China, the rock materials would be exported as usable materials by DBJV subcontractor's barges to the Tin Shan Quarry for reused. The rock materials would be exported as goods in compliance with the Import and Export Ordinance. The delivery was started in Oct 2008. Rock materials were delivered to Tin Shan Quarry within the reporting month.

The amounts of different types of materials generated by the activities of the Project in the month are shown in following table. The total materials quantities of the project showed that the reuse of materials was maximized and the disposal to the public filling facilities was minimized. Mitigation measures under the Waste Management Plan (WMP) revision D have been implemented during the reporting period.



Materials Type	Disposal Locations	<u>CI-05</u>	<u>CW-02</u>	<u>CI-07</u>	Total
C& D Waste	SENT	113.46 tonnes	94.93 tonnes	26.00 tonnes	234.39 tonnes
	TKOSF	409.88 tonnes	18.22 tonnes	-	428.10 tonnes
	TMSF	-		-	0 tonne
Excavated	QBBP	1,301.28	2120.15	3,157.00	6,578.43
Material		tonnes	tonnes	tonnes	tonnes
(mainly soil)	TKOFB	8.64 tonnes			8.64 tonnes
	Alternative	217,720.38		5,187.00	222,907.38
	site (Central Reclamation Phase III)	tonnes		tonnes	tonnes
	Alternative	33,461.00			33,461.00
	site (Swire Sita)	tonnes			tonnes
	Alternative	6,748.00			6,748.00
	site (HKWDT, DSD Project)	tonnes			tonnes
Rock Material	Alternative	1,479.00			1,479.00
	site (Tai Shing Quarry, Jiangmen –	tonnes			tonnes
	Mainland of China)				
	Alternative	47,380.00			47,380.00
	site (Tin Shan	tonnes			tonnes
	Quarry –				
	Mainland of				
	China)				
Chemical Waste	Collected by licensed	0.00 L			0.00 L
	collector	,			3
General Waste	Collected by licensed collector	78.0m ³			78.0m ³

7. Environmental Monitoring and Results

7.1. Requirements

Under EP-249/2006/A 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. The environmental monitoring including air quality and noise, terrestrial ecology and coral were conducted by the Contract of CI-05 within the reporting period.

The items below would not be described in Part 1 report and would be described in CI-05 monthly EM&A report (i.e. Part 2 of the report).

- Methodology and Criteria
- Action and Limit Levels
- Event and Action Plan



7.2. Monitoring Locations

Air Quality (TSP)

The locations of the air monitoring stations are presented in the table below. The figure was shown in the CI-05 Monthly EM&A Report.

Air Quality Monitoring Stations	Identity/Description
AM1	Whisker's Theatre, Ocean Park
AM2	San Wai Village, Wong Chuk Hang
АМЗА	Open Area of PMR & OPC temporary Site Offices (from 14 September 2007)

Construction Noise

The locations of the noise monitoring stations are presented in the table below. The figure was shown in the CI-05 Monthly EM&A Report.

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

Terrestrial Ecology

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 shown in figure 1.3 of Part 2 of the report.

Coral

The locations of the coral monitoring stations are presented in the table below. The figure was shown in the CI-05 Monthly EM&A Report.

Coral Impact Monitoring Stations	Identity/Description
Site 1	Seaside near the Lowland
Site2 to Site 5	Around Headland
Control Station	Between Near Round Island and Chung Hom Kok



7.3. Monitoring Results

Air Quality (TSP)

The monitoring data reported below was provided by the CI-05 Contractor's Environmental Team Leader.

Monitoring Period	1-hr TSP (μg/m³)					
	AM1	AM2	АМЗА			
26 September 08 to 24 October 08	53-232	60-177	101-400			

Note: No 1-hr TSP was carried out on 6 October 2008 due to power supply failure.

Monitoring Period	24-hr TSP (μg/m³)					
	AM1	AM2	AM3A			
27 September 08 to 21 October 08	48-240	32-69	37-100			

Construction Noise

The monitoring data reported below was provided by the CI-05 Contractor's Environmental Team Leader.

Monitoring Period	, Leq (30min), dB(A)			
Period	CN1	CN2	CN3	CN4
29 September 08 to 20 October 08	66.2-67.8	57.1-61.4	55.9-62.2	66.7-71.0

Monitoring Period	Evening time Noise Level, Leq (15min), dB(A)						
Period	CN3	CN4					
2 September 08 to 22 October 08	51.6-51.9	51.7-52.2	51.2-51.6	50.8-52.1			

Note: No evening time noise measurement was taken on 2 October 2008 due to typhoon and heavy rain.

Terrestrial Ecology

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.

Coral

No impact subtidal ecology monitoring was conducted in the reporting period of October 2008 since there was no exceedance recorded at all monitoring stations and control site and the monitoring frequency has been revised to once in every quarter until the end of construct ion period. The next scheduled monitoring would be in November 2008.



7.4. Exceedances

No exceedance was recorded on the 1-hour TSP monitoring, 24-hour TSP monitoring, daytime & evening time noise monitoring, terrestrial ecology and coral monitoring for the reporting period.



8. Site Audit

8.1. IEC Site Audit

IEC conducted monthly site audit on CI-05, CW-02 and CI-07 on 24 October 2008. Audit checklists are attached in Appendix A of Part I.

CI-05 Observations:

Tai Shue Wan

 Silt curtain system enclosing the discharge point at Tai Shue Wan was still damaged. (the silt curtain system was reinstated on 26/10/2008)

Summit Phase 1

- Dust screen was damaged. The Contractor was reminded to fix the dust screen on a regular basic.
- Dust generation was observed at the Crusher and the Crusher Conveyor area was generally dusty. The Contractor was reminded to provide water spray continuously to suppress dusts.

Summit Terminus and Adit Portal

 Haul roads were generally dusty. The Contractor shall provide water spray to suppress dusts.

CS-01 Observations:

Construction phase has ceased in mid-October 2008.

CW-02 Observations:

- Unpaved areas were dry and dusty. The Contractor shall provide water spray to suppress dust dry weather.
- Construction waste and general refuse were mixed in a stockpile. The Contractor was reminded to sort the C&D wastes and general refuses before leaving the site.
- Construction materials were stockpiled around a tree. The Contractor was reminded to remove the stockpiles.

CI-07 Observations:

 Unpaved areas and haul roads were dry. The Contractor shall provide water spray to suppress dust dry weather.

8.2. Non-Compliance

No non-compliances were recorded in October 2008.

9. Implementation status of Environmental Mitigation Measures

Please see Part 2, Part 3 and Part 4 of the individual contractual reports for the details of the implementation of environmental mitigation measures.



10. Summary of Complaint, Summon or Prosecution

There was no complaint, summon or prosecution in the reporting month.



11. Future Issues

Key Issues to be considered in the coming month include:

CI-05

- Noise from operating equipment and machinery on-site
- Maintenance of the silt curtain.
- Construction waste management at the demolition works area.
- Avoid accumulation of stagnant / muddy water on-site.
- To implement dust suppression measures on dry surfaces.
- Provision of treatment to turbid water from activities on-site before discharge.

CS-01

 Construction phase had ceased in mid-October 2008.

CW-02

- Dust generation from excavation, slopes, stockpiles and underground drainage works.
- Noise from operation equipment and machinery on-site.
- Storage of chemicals / fuel and chemical waste / waste oil on site.
- Sorting of C&D materials at source.
- Ensure proper collection and disposal of rubbish generated on • site.
- Larviciding against mosquito breeding in stagnant water should be carried out at least on a weekly basis.
- Ensure the operation of sedimentation tank in collecting the rainstorm.

CI-07

- Dust generating from breaking existing concrete / bitumen paving and excavation work
- Dust generating from temporary stockpile, unpaved areas, loading dusty materials and haul road
- Noise generating form operation of construction plants
- Water generating from wheel washing, underground water and surface run-off
- Storage of diesel drums on site
- Sorting C&D materials on site.



12. Conclusion and Recommendation

12.1. Conclusion

Environmental impact monitoring was performed in October 2008. All monitoring results in the reporting month were checked and reviewed.

No exceedance was recorded on the 1-hour TSP monitoring, 24-hour TSP monitoring, daytime & evening time noise, terrestrial ecology monitoring and coral monitoring during the reporting period.

No non-compliance from IEC, complaints, summons or prosecution related to environmental issues was made against the Ocean Park Master Redevelopment Project in the reporting period of October 2008.

12.2. Recommendation

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

Air Quality Impact

- To prohibit any open burning on site.
- To regular maintain the machinery and vehicles on site.
- To follow up any exceedance caused by the construction works.
- To implement dust suppression measures on dry surfaces.

Noise Impact

- To inspect the noise sources from inside and outside of the site.
- To follow up any exceedance caused by the construction works.
- To space out noisy equipment and position as far away as possible from sensitive receivers.
- To have regular maintenance of vessels and equipment used.

Water Quality Impact

- To minimize water discharge runoff into nearby water body.
- To treat site surface runoffs and wastewater generated from various construction activities with wastewater treatment system (comprised of chemical coagulation, sedimentation and pH control)
- To review and implement temporary site drainage management plan.
- Silt removal facilities, channels, manholes and wastewater treatment system should be frequently cleaned the deposited silt and grit to maintain in proper condition.
- To review the adequacy of the desilting facilities' capacity.

Waste/Chemical Management

- To check for any accumulation of waste materials or rubbish on site.
- To avoid any discharge of chemical waste or oil directly from the site.
- To regularly and properly collect, store and dispose of all waste types, including floating refuses around the silt curtain.

Appendix A **Independent Environmental Checker's Site Inspection Records**

Ocean Park Master Redevelopment Project **Contract P007 Independent Environmental Checker**

MONTHLY SITE INSPECTION CHECKLIST

Inspection	n Date	24/10/2008	Time	09:30			Inspected	і Ву	EM: K	C	
									IEC: Flor	ence Yue	n
Site Loca	ition	C105							Contract	ог:	
		CS01							CI05: 4	s. Tam	
		CW02								v/A	
		C107							CW02:		
										N, C. L	a wa
<u> </u>											
Weather											
Condition	Sun	ny Fine	Overcast	1	Orizzle		Rain		Storm		Hazy
Temperatu	re 28°	C	Humidity	1	ligh		Moderate	:	Low		
Wind	Calm	1 Light	Breeze		Strong		Direction				
					Clo	se-out	N/A	Yes	No	Photo/R	omarke
					on	last	or	103	140	FIIOLO/IN	CIIIAIKS
						mments Y/N	not obs				
	Construction	on Noise									
S2.18	Is a valid C during restri	onstruction Noise Pected hours?	ermit (CNP) obtaine	d for work	s	,		V			
S2.26	Good Site P	ractices:									
		operating plants	well-maintained an	d service	d	-		/			
	Are silen	cers or mufflers utiliz	ed on construction	eauipment'	? [
	Are they	properly maintained?	,	,,							
	• Is the mo	bile plant sited far en	ough from NSRs?					<u></u>			
	Are inter	mittently used mad	chines and plants	shut down			<u> </u>	<u> </u>			
	between	work periods?	minos and plants	ond: down	` <u> </u>		ļ	V			
	 Is the pla any, orier 	ant known to emit no nted to direct noise av	ise strongly in one way from the NSRs?	direction, i	f		/				
,	 Is the s wherever 	stockpile or other practicable, in scree	structures utilized ning noise from the	effectively works?	,		V				
S2.27	Are suitable	quiet plants adopted	?								
S2.28		barriers used for bo	th movable PME and	d stationary	,		. /	- · ·			
	PME?				L. <u>.</u>		V				
S2.29	Do the scre reduction?	ening materials use	d achieve the pred	icted noise				-			
\$2.30	Are the nois	y works avoided du ol?	ring examination pe	eriod of the	•						
	Blasting No.	ise									

S2.32	 Are the NSRs informed of the blasting work in advance? 	
	 Is sufficient time allowed for alerting all the potential NSRs prior to every blasting work? 	
	Are proper procedures put in place to alert and minimise any startling effect on the staff working in Ocean Park?	
	Is the optimal amount of charge used evaluated for noise reduction?	
	Landscape and Visual	
S3.10	Consideration on existing surrounding vegetation: • Are temporary tree nurseries set up?	
	Is "no-intrusion zones" implemented?	
	Is the existing vegetation protected from damage?	
	Are hill fire prevention measures taken?	
	Is dust and erosion controlled for exposed soil?	
	·	
	 Are the irrigation networks set up throughout the Establishment Period? 	
	• Is Quarterly Report on existing trees to be retained or transplanted prepared by the Contractor?	
S3.11	Consideration on appearance and view:	
33,11	Is the appearance of hoardings suitable?	
	 Is the appearance of construction workers, plants/machines suitable? 	
	Are the screening and alignment of the temporary barging	
	point and conveyor system suitable?	
-	Are the selected security floodlights suitable	
	Ecology	
S4.5	Transplantation:	
04.0	Is the transplantation work supervised by a qualified botanist/horticulturalist in the ET?	
	 Are the transplanted plant species of conservation interest monitored during the first 12 months after transplantation? 	
047	-	
S4.7	Construction: • Is the runoff entering watercourses avoided by control	
	measure, especially during heavy rain?	
	 Is the site runoff directed to regularly cleaned and maintained silt traps (or oil separators)? 	
	Are sediment traps included in drainage to collect and control construction run-off?	i i
	Is suitable size silt traps or oil interceptor used?	
	Is vegetation survey carried out to determine the feasibility	
	and suitability of individual plants for transplantation?	
	 Are the trees located within the works area preserved suitably? 	
	• Are individual plants of conservation interest transplanted prior to the construction phase?	

	 Are the equipments and stockpiles placed in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats? 		<u>CW023P106</u> 0970
	 Are construction activities restricted to the work areas demarcated? 	V	
	 Are waste skips provided to collect general refuse and construction wastes? 		
	 Are the wastes disposed of timely and properly off-site? 		
	 Is open burning on works sites prohibited? 		
	 Are native plant species made use of as far as possible on newly formed land? 		
	Construction Waste		
S5.4	 Good Site Practices Are arrangements made for collection and effective disposal of all wastes generated? 	V .	
	 Are the waste management and chemical handling procedures followed? 		
	Are sufficient waste disposal points provided?		
	Are the wastes disposed of regularly?		
	 Are appropriate measures taken to minimise windblown litter and dust during transportation of waste by either covering trucks or transporting wastes in enclosed containers? 		
	 Are the drainage systems, sumps and oil interceptors regularly cleaned and maintained? 		
S5.5	Waste Reduction Measures:		
	 Is the C&D waste from demolition and decommissioning of existing facilities sorted to recover recyclable materials? 		
·	 Are different types of wastes segregated and stored in different containers, skips or stockpiles to enhance reuse or recycling and the proper disposal? 		
	 Are aluminium cans segregated in labelled bins and collected by individual collectors for recycling? 		
	 Are proper storage and site practices maintained to minimise the potential for damage or contamination of construction material? 		<u>.</u>
	 Are the construction materials planned and stocked carefully to avoid unnecessary generation of waste? 		
S5.7	General Refuse Is the general refuse stored in enclosed bins or compaction units separate from C&D material?		<u>CW022P106</u> 0968
	Is the general refuse removed regularly by a waste collector?		
S5.8	C&D Material		
	 Are the excavated materials from site formation of the expansion areas and tunnel construction for the funicular system reused on-site as backfilling material and for landscape works? 		
	 Are the surplus rock and other inert C&D material disposed of at the public fill sites? 		

	Is a waste management plan prepared?	
	<u> </u>	
	 Is a recording system present for the record of amount of wastes generated, recycled and disposed? 	
	 Is the trip-ticket system required in ETWB TCW No.31/2004 followed on site? 	
	followed off site?	
	Chemical Wastes Is chemical wastes generated from the works? And if yes,	
00.0		
	 Is the Contractor registered as a Chemical Waste Producer? 	
	 Are good quality containers used for separating and storing chemical wastes? 	
	 Are appropriate labels securely attached on each chemical waste container to indicate their corresponding chemical 	
	characteristics?	
	 Is the Contractor licensed to transport and dispose of the chemical wastes? 	
	Land Contamination	
S6.11	• Is the contact of construction workers with contaminated	
	materials minimised by using bulk earth-moving excavator equipment?	
	Are appropriate cloth, personal protective equipment,	
	hygiene and washing facilities provided to minimise exposure to any contaminated material?	
	Is stockpiling of contaminated excavated materials avoided?	
	 Is the use of contaminated soil for landscaping without proper treatment prohibited? 	
	 Are vehicles containing excavated materials covered properly to limit potential dust emissions or contaminated wastewater 	
	runoff?	
-	Is the speed of the trucks carrying contaminated materials	
	controlled?	
	Are the necessary waste disposal permits obtained from	
	appropriate authorities in according with Waste Disposal (Chemical Waste) (General) Regulation?	
	, , , ,	
	 Are silt removal facilities provided with retention time for silt/sand traps of 5 minutes under maximum flow conditions? 	
	Are the records maintained for quantity of wastes generated	
	and disposal of?	
	Remediation Process	
S6.12	 Is biopile covered by tarpaulin or low permeable sheet to avoid dust emission? 	
	Is vented air from biopile treated by blower and carbon	
	adsorption system before released to the atmosphere?	
	• Are the materials which may generate airborne dust	
	emissions adequately wetted prior to and during the loading, unloading and handling operations?	
	•	
	 Are silencers installed at biopile blower to minimise noise impact? 	
	 Are quiet plants such as generator and blower used for biopile? 	

	 Are the mixing process and other associated material handling activities properly scheduled to minimise potential noise impact? 		
	Are impermeable liners placed at the bottom of biopile?		
	 Is leachate collection sump construction along the perimeter of biopile? 		
	 Is the lachate recycled back to the biopile or truck away to Chemical Waste Treatment Centre for disposal? 		
	 Is the mixing of contaminated soils and cement/water/other additive(s) undertaken at a solidification plant to minimise the potential for leaching? 		
	 Is a concrete bund construction along the perimeter of the solidification/stabilisation area to prevent runoff? 		
	 Are the loading, unloading, handling, transfer and storage of cement carried out in an enclose system? 		
	 Are the contaminated soils transported by roll-off trucks (contrainerisation)? 		
	 Is temporary hoarding provided around the treatment area to minimise the visual impact? 		
	Air Quality		
\$7.23	Good Site Practices Is watering carried out regularly with complete coverage to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather?		CW02@P1060964 C105@P1060929& C105@P1060943
	 Is watering frequently carried out for particularly dusty construction areas, temporary stockpiles and areas close to ASRs? 		<u>CI-7 OP1-60956</u>
	 Are the aggregate or dusty material storage piles covered with their side enclosed to reduce emissions? Or if this is not practicable, is watering applied to aggregate fines? 		
	 Is open stockpiles avoided or covered and placed far enough from the ASRs? 		
	 Is the dropping height of material restricted to minimise the fugitive dust from unloading/loading? 		
	 Is tarpaulin used to cover all dusty vehicle loads transported to, from and within the site? 		<u> </u>
	 Are vehicle wheel and body washing facilities available at the exit points of the site? 		· · · · · · · · · · · · · · · · · · ·
	 Are wind shield and dust extraction units or similar dust mitigation measures provided at the loading points? If dust generation is likely during the process, particularly in dry seasons, is water sprinklers provided at the loading site? 	V	CI 05 @ 11060944
	 Do the vehicles comply with the recommended speed limit of 10 km/h on unpaved roads? 		
	Are dusty activities rescheduled during high-wind conditions?		<u>CI.05@P106095</u> 4
	 Are the routing of vehicles and positioning of construction plants at maximum possible distance from the ASRs? 	V-	
	 Is suitable buffer zone provided and work areas fenced off with hoarding (not less than 2.4m from ground level)? 		
S7.24	Drilling & Blasting		

	 Is watering carried out on the exposed area after blasting? 		
	Is vacuum extraction drilling method used?		
	Is vacuum extraction drilling method used?		
	Is the blasting process carefully sequenced?		
	 Is the firing of explosive carried out in the morning prior to opening of the Park? 		
		· · · · · · · · · · · · · · · · · · ·	
S7.25	Crushing Plant Is water sprayed on the crusher?		
	Are fabric filters installed for the crushing plant?		
	 Is chute or dust curtain used for controlling dust when transferring materials from crusher to the conveyors? 		
S7.26	Barging Point & Conveyor Belt System • Are the conveyors placed within enclosed structures?		
	 Is profiled steel cladding provided at two sides of loading point? 		
	Are dust suppression sprays installed and operated at the feeding inlet and outlet?		
	 Is the barging point placed within an enclosed structure incorporating an enclosed chute for material transfer to the barge? 		
	 Is a flexible curtain hanged on the enclosed chute to prevent dust emission when excavated materials/rocks transported into the barge? 		
	Water Quality		
S8.3	Site Run-off and Drainage		
00.0	 Are all sewer and drainage connections sealed to prevent debris, soil, sand etc. from entering public sewer before commencing any site formation work? 		
	 Are temporary ditches provided to facilitate runoff discharge into appropriate watercourses, via appropriate sized silt retention pond? 		
	 Are cut-off ditches provided for all major site clearance/excavation works where soils would be exposed to control runoff from the areas? 		
	 Are channels, earth/concrete bunds and sand bags deployed to direct surface runoff? 		p
	 Are catchpits and perimeter channels constructed in advance of relevant site formation works? 		
	 Are the boundaries of earthworks marked and surrounded by dykes or embankments for flood protection? 		
	 Are sand/silt traps and sediment basins provided to remove sand/silt particles from runoff? 		
	 Are silt removal facilities, channels and manholes maintained and deposited silt/grit removed regularly to ensure that these facilities are functioning properly at all times? 		
	Are exposed soil surfaces covered?		
	 Is the water pumped out from foundation excavations discharged into silt removal facilities? 		
	Are exposed soil areas minimised to reduce potential for increased siltation and contamination of runoff?		

	 Are earthwork final surfaces well compacted and is subsequent permanent work or surface protection performed immediately? 	
	 Is the rainwater pumped out from trenches or excavation directed to silt removal facilities before discharge? 	
	 Are open stockpiles of construction materials or construction wastes of more than 50m³ covered with tarpaulin during rainstorm? 	
	In case of an excavation in rainy seasons: Is temporary exposed slope/soil surfaces covered by tarpaulin as far as practicable?	
	 Are intercepting channels provided to prevent storm runoff from washing across exposed soil surfaces? 	
	 Are surface protection measures and arrangements implemented to prepare for arrival of a rainstorm? 	
S8.4	Coral Sites • Are enhanced (with the use of flocculants added) sand/silt removal facilities employed for treatment of runoff from the major excavation at the Summit?	
	Is a silt curtain system used to enclose the construction phase discharge point at Tai Shue Wan?	CI05(1)P1060952
	 Are debris and refuse collected, handled and disposed of properly to avoid entering any nearby water bodies and public drainage system? 	
	 Are stockpiles of cement and other construction materials kept covered when not being used? 	
	 Are oils and fuels used and stored in designated areas which have pollution prevention facilities (Fuel tanks and storage areas provided with locks and sited on sealed areas, within bunds of a capacity equality to 110% of the storage capacity of the largest tank)? 	
	 Are temporary sanitary facilities, such as portable chemical toilets, employed on-site where necessary to hand sewage from the workforce? Is a licensed contractor employed for disposal of waste matter and maintenance of these facilities? 	
	 Is a reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law? 	
	Are aluminium cans recovered from the waste stream and collected separate labelled bins?	
	Are office wastes reduced through the recycling of paper?	
	 Are training provided to workers on site cleanliness & waste management procedure? 	
	Cultural Heritage	
S10.6	If there is any work planned within one metre of the grave, is a one metre buffer zone provided around the grave and is the grave demarcated by temporary fence?	
S11.3	Hazard to Life Good Site Practices:	
	 Is the area around the magazine free of vegetation? 	

•	Is the control of (small) fires planned and provided through the following?			
	- Weekly checking of fire fighting equipment and the on-site fire water tank level.	V		
	 Daily checking of all critical safety equipment on vehicle, including the fire extinguishers. 	V		
	- Maintaining back-up means of fighting fire on the explosive vehicles.	V		
	 Providing safety training for drivers and other personnel present during explosive delivery with regard to operating fire hydrants and fighting of explosive fires. 	 i/		
•	Is the magazine secured against unauthorised entry and theft of explosive through the following?			
	 Maintaining a list of persons authorised to enter the magazine and ensuring the list is available to the magazine security guard. 	V		
	 Activating an alarm system that limits times at which explosive can be removed from the magazine and connecting the system to central security station. 			
	- Incorporating "Duress code" function in the alarm system.			
	- Maintaining alarm system in good condition.			
	Is the magazine security guard located separately from the		\equiv	
	magazine complex?			
•	Is the communication maintained in emergency with the following measures?			
	 Providing non-hazardous electronic equipment for persons working within 60 m of detonators. 	V		
	- Ensuring availability of phone numbers for all key personnel.			
•	If there is a typhoon signal no. 3 or above, or black rainstorm signal, are all operations at magazine and transport ceased?			
•	Is the risk of detonators explosion on vehicle reduced during transit through the following?			
	- Ensuring that magazine within vehicle is lined.	<u>\</u>		
	- Limiting off-site transport to 5 to 6 a.m. each day.			
	- Escorting vehicles with separate security vehicle when using the public road.	i		
	 Ensuring that UN 1.4B packaging of detonators remains intact until handed over at blasting site. 	i		
•	Is the fuel isolation switch available on vehicle to prevent fire spreading in case a fire breaks out?			 · · · · · · · · · · · · · · · · · · ·
•	Is an experienced driver with accident-free record employed for explosive vehicle and security escort?	i		
	Are the drivers checked for health before employing?			
•	Are the vehicles regularly checked to maintain in good condition to reduce chance of accident due to breaking down?	<u></u>		
•	Is the truck fuel fire escalating to cause explosion avoided through the following means?			
	- Ensuring that the Contractor is aware of the potential hazards to site.	W		

		·	
	- Maintaining appropriate fire fighting equipment.		
	- Requiring the Contractor to plan and make emergency arrangements.		
•	Is spare/redundant fire fighting equipment provided?		
•	Can communications be maintained between two vehicles (drivers and security) during the trip to prevent collision of two explosive vehicles in case of an accident?		
•	Are the processes of checking of condition of drivers to suspend any driver of concern carried out?		
Р	roject specific measures:		-
•	Is the speed of vehicle limited along the Ocean Park portion of Nam Long Shan Road within 100 m of the explosives magazine to 25 km/hr?		
•	Is other contractors' use of the Ocean Park Internal service road restricted during delivery of explosives, i.e. 6 to 7 a.m?		 -
•	Is the Ocean Park guard required to call to the magazine guard on an hourly basis when explosives are stored in magazines?		
•	Is the evacuation of part or all of Ocean Park Headland Area arranged in case of the explosive magazine being engulfed in fire?		
•	Is the risk to the public from accidental initation during charging and blasting limited by the following means?		
	- Closing the Ocean Park from commencement of charging holes until completion of blasting each day.		
	- Arranging for relevant authorities to post notices to mariners — warning them of blasting operations and advising them to stay away from a strip 100m wide immediately to the east of Headland from commencement of charge holes until completion of blasting each day (i.e. 9 a.m).		
	 Not operating amusement rides in the event of accidental explosion until confirmed free of critical damage. 		
•	If unexploded explosives are found in blasthole(s), is the opening of Ocean Park delayed or is part of the Ocean Park delayed when there are unspent explosives?		
•	Is the opportunity for arson/deliberate initiation of explosive reduced with the following means?		
	- Paying attention to the security alert status from the Government.		
	- Developing a security plan to address high alert level.		
•	is an emergency plan developed to address uncontrolled fire in magazine area?		
•	Is the transfer of explosives between 5 to 6 a.m agreed by Mines Division?		
•	Is the road surface along the explosive transportation route maintained?		
•	Are the contractor's driver and security escort tested in respect of safety plan? Is the route driven before the driver undertakes the first delivery of explosives?		
•	Is adequate space provided for the explosive vehicle to manoeuvre without reversing close to the magazine to limit		

	the likelihood of vehicle accident?	
	Is lighting for explosive vehicles provided on temporary road(s)?	
S11.4	 Is ammonium nitrate emulsion (ANE) delivered outside of Park opening times? 	

Note: Construction phase of Contract CS o 1 had reased in mid - October 2008.

IEC Representative	Environmental Manager	Contractor's Representative CS01	
	(()

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Observations for last month

Items (1) and (3) were closed.

Observations for this month

- (1) Unpared areas were dry and dusty.
- (2) Construction waste and general refuse were mixed in a stochpile
- (3) Construction materials were stochild paround a tree.

IEC Representative

Environmental Manager

Contractor's Representative

CW02

Florence Yulen

(ANDY /ECNIS

WELLEY LO.

Observations for last month

Items 2, 3 and 5 were closed.

Observations for this month

Tai Shue Wan

Silt curtain system endosing the discharge point at Tai Shue Wan
was still danaged.

Crusher Area

- 2) Dust ecreen was danaged.
- (3) Dust generation was observed at the Crusher and the Cousher Conveyor area was generally dusty. Summit Termines and Adit Portal
- (4) Haul roads were generally duety.

IEC Representative

Environmental Manager

Contractor's Representative

CI05

(Florence Yuen

Glorene Yven

Keclan

SCHROGOER JAM

Observation for this month

(Unpared areas and hauls roads were day. The Contractor shall provide water spray to suppress dust during dry weather

IEC Representative

Glorence Yuen

1 Florence Yuen

Environmental Manager

Contractor's Representative

CI07

(LAM WAT CHUNG)





OCEAN PARK MASTER REDEVELOPMENT PROJECT

CONTRACT NO. CI05

SITE FORMATION, FUNICULAR TUNNEL AND MISCELLANEOUS WORKS

Monthly EM&A Report - October 2008

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03 Nov 2008

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EXECUTIVE SUMMARY

This is the twentieth monthly Environmental Monitoring and Audit (EM&A) report prepared by Dragages Bouygues JV (DBJV), the Contractor Environmental Team (CET), for the Ocean Park Master Redevelopment Project Contract Cl05 – Site Formation, Funicular Tunnel and Miscellaneous Works. This report presents the results of EM&A works conducted in the reporting month of October 2008 (from 26 September 2008 to 25 October 2008).

In the reporting month, the following construction activities took place:

Waterfront

- Waterfront Terminus Construction (e.g. Retaining Wall, Base Slab, Column, Platform Slab, Track and Pad Footing)
- External U/G Drainage & Utilities and Roadworks

Summit

- Tunnel Internal Structure (e.g. Wall and Upper Slab, Cable trench, Walkway Slab, Air Duct Wall and etc.)
- Tunnel E&M
- Drill and Blast for Summit Site Formation
- Excavation at Summit
- Summit Terminus & FS Tank Building (e.g. Foundation Works and Superstructure Works)
- Crusher and Conveyor Belts Operation

Tai Shue Wan

Conveyor Belt and Barging Point Operation

Government Entrusted Works

- Excavation, Trial Pit Excavation, Construction of Manhole, Laying of Sewer and OPC watermain, Road Surface Reinstatement and Backfilling at Nam Long Shan Road Entrusted Work; and
- Excavation, Construction of Manhole, Pipe Laying, Road Surface Reinstatement and Backfilling at Wong Chuk Hang Road.

The total disposal volume to the Government facilities, including the barging point, public fill and the sorting facilities in the reporting month of October 2008, was 1301.28 tonnes, 8.64 tonnes and 409.88 tonnes while the volume to the landfills was 113.46 tonnes. Besides the total disposal volume to the alternative dumpsites - the Contractor of Central Reclamation Phase III by barge was 217,720.38 tonnes. No internal transfer of excavated materials within the reporting month of October 2008. In addition, 6,748.00 tonnes was sent to HKW Drainage Tunnel for reuse.

Apart from the above, DBJV has been a source to provide the excavated material (mainly rock with small quantity of soil) to Tai Shing and Tin Sang Quarry. The volume within the reporting month of October 2008 was 1,479.00 tonnes and 32,766.00 tonnes respectively.

Monitoring of 1-hour & 24-hour Total Suspended Particulates (TSP) and noise were performed and the results were checked and reviewed. Site inspections were conducted on weekly basis. The implementation of the environmental mitigation measures, Event and Action Plans and environmental complaint handling procedures were also checked.

Environmental Monitoring Works

Environmental Monitoring and Audit Progress

A summary of monitoring and audit activities conducted in the reporting period is listed below:

1-hour TSP monitoring 15 sessions for monitoring station AM1; 16 sessions for

monitoring stations AM2 and AM3A

24-hour TSP monitoring 5 sessions for air quality monitoring stations AM1, AM2 and

AM3A

Daytime noise monitoring 4 sessions for all noise monitoring stations
Evening and night time noise monitoring 3 sessions for all noise monitoring stations
Holiday time noise monitoring 0 session for all noise monitoring stations

Terrestrial ecology monitoring 0 session
Subtidal monitoring 0 session

Joint environmental site inspection 4 sessions (include the IEC audit)

Air Quality

The air quality monitoring results obtained in the reporting period of October 2008 were audited for the compliance of the Action and Limit levels proposed in the Project Baseline Air Quality and Noise Monitoring Report (rev. B), which were issued in March 2007 and the audit finding showed no exceedance was recorded.

Noise

The noise monitoring results obtained in the reporting period of October 2008 were audited for the compliance of the Action and Limit levels proposed in the Project Baseline Air Quality and Noise Monitoring Report (rev. B), which were issued in March 2007 and the audit finding showed that no exceedance was recorded.

Terrestrial Ecology

No terrestrial monitoring has been required to conduct in the reporting period of October 2008 since all the scheduled monitoring have been completed as require under the EM&A Manual.

Subtidal Monitoring

No impact subtidal ecology monitoring was conducted in the reporting period of October 2008 since there was no exceedance recorded at all monitoring stations and control site and the monitoring frequency has been revised to once in every quarter until the end of construction period. The next scheduled monitoring should be in November 2008.

Environmental Licensing and Permitting

Permits granted to the Project include the Environmental Permit for the Project, Construction Noise Permits, Effluent Discharge License and Chemical Waste Producer. Information of these permits is provided in Table 6.1.

Implementation Status of Environmental Mitigation Measures

Water hoses and water truck were deployed for the haul road watering and spraying at summit areas; water sprinklers were in operation in the necessary working areas. The Contractor was reminded to keep watering the haul road and working area surfaces once the surfaces are dry, especially during the dry weather.

Anti-mosquito agent has been applied in the required Works Areas and cleaned up stagnant water regularly in order to reduce the possibility of mosquito breeding.

The updated temporary drainage system, including the drainage channels and wheel washing bay for Summit has been installed and in use. The vehicle drivers were reminded to wash the vehicles before leaving the site.

Movable noise panels have stored on site and will use wherever necessary.

Chemical waste store was set and the disposal of chemical waste would be followed the procedures in WMP.

The disposal of C&D wastes by using both the Chits and trip tickets have been implemented in October 2008. Most of the C&D materials were disposed of to the alternative dumpsite. Disposal to the temporary public filling barging point would be the last resort. The C&D waste was disposed of to the sorting facilities or landfill.

General wastes were collected by a waste skip near the temporary site office in a regular basis. The frontline staff was reminded to keep good housekeeping in order to avoid waste accumulation.

Environmental Non-conformance

One public complaint, no warning, no summons or prosecution related to environmental issues was made against the Ocean Park Master Redevelopment Project Contract CI05 in the reporting period of October 2008.

Future Key Issues

Key issues to be considered in the coming month include:

- Noise from operating equipment and machinery on-site.
- Construction waste management at temporary construction waste area.
- Avoid accumulation of stagnant / muddy water on-site.
- To implement dust suppression measures on dry surfaces.
- Provision of treatment to turbid water (control the SS level) from activities on-site before discharge.

1. INTRODUCTION

Purpose

1.1 The purpose of this report is to present the EM&A work carried out during October 2008 (from 26 September 2008 to 25 October 2008) with respect to Ocean Park Master Redevelopment Project Contract No. Cl05 - Site Formation, Funicular Tunnel and Miscellaneous Works.

Background

- 1.2 Ocean Park planned to upgrade and expand the existing area to meet the anticipated visitor demands and to position Ocean Park as a premium tourist attraction and a regional leader in the themed recreational and educational park experience.
- 1.3 The redevelopment works of Ocean Park will involve
 - Civil infrastructure works including road works (including modifying sections of Ocean Park Road, which is a local distributor, around the existing bus terminus as shown in Figure 1.1), drain works, tunnelling and geotechnical works, bulk excavation and slope works, retaining structures, site clearance, decommissioning and demolition works, funicular railway, modify to bus terminus, taxi stands and associated facilities.
 - Utilities works including power supply distribution, electrical substations, freshwater and saltwater reservoirs, water supply distribution, gas supply distribution, telecommunications network and distribution, landscape irrigation network, etc.
 - Primary life support system works for animal keeping.
 - Area development works including service roads, EVAs, external escalators, bridges and elevated walkways, external lighting.
 - Parkwide systems works including signage, background music system, toilets facilities, guard sheds, first aid facilities, communications systems, CCTV systems and waste facilities.
 - Landscape or theming works including exterior building facade treatment works, themed concrete
 pavement/ hardscape, soft landscaping, water and faux rockwork features, visual intrusion screens,
 area props and artwork, etc.
 - Works for the attractions venues including animal exhibits, marine animal, terrestrial animal, aviaries, bird exhibits, individual life support systems for animal exhibits; and others non-animal related attractions, e.g. shipwreck play area, bamboo maze, etc.
 - Installation of rides including thrill rides, round rides, water rides, kids rides, interactive rides, transportation rides, etc.
 - Works for the venues including event halls, outdoor live show area, cinemas and bandstands.
 - Works for the merchandise / retail facilities including souvenir stores, novelty stores, games arcade, photo shops, etc.
 - Works for the food and beverage facilities including restaurants, bakery, food carts and kiosks.
 - Back of house facilities including offices, break areas, warehouses, centralized facilities, operational facilities, etc.

Project Organisation

- 1.4 Under the requirement of EM&A Manual and Environmental Permit, the environmental management team should be set up and the structure of the team is shown in Figure 1.1.
- 1.5 Meanwhile the contacts of key environmental personnel for this project are shown in Appendix L.

Construction Works undertaken during the Reporting Month

- 1.6 The major construction activities undertaken in October 2008 included Waterfront Terminus Construction (Retaining wall, Base slab, Column, Platform slab, Track and pad footing); External U/G Drainage & Utilities and Roadworks.
- 1.7 At Summit and Tunnel, Tunnel Internal Structure (e.g. Wall and Upper Slab, Cable Trench, Walkway Slab, Air Duct Wall, etc.); Tunnel E&M, Drill and Blast for Summit Site Formation; Excavation at Summit; Soil nail works at the North Haul Road; Summit Terminus & FS Tank Building (e.g. Foundation Works and Superstructure Works) and Crusher and Conveyor Belts Operation
- 1.8 At Tai Shue Wan, Conveyor Belt and Barging Point Operation.
- 1.9 The entrusted works including Excavation, Trial Pit Excavation, Construction of Manhole, Laying of Sewer and OPC watermain, Road Surface Reinstatement and Backfilling at Nam Long Shan Road Entrusted Work; and Excavation, Construction of Manhole, Pipe Laying, Road Surface Reinstatement, Backfilling at Wong Chuk Hang Road.
- 1.10 Layout plan of the Project is provided in Figures 1.2 and 1.3.
- 1.11 The amounts of different types of material generated by the activities of the Project in the reporting month are shown in Table 1.1.

Table 1.1 Amounts of Material Generated in the reporting of October 2008

Material Type	Delivery / Disposal Location	Estimated Amount (tonnes unless specified)
C&D waste	SENT	113.46
Cad waste	TKOSF	409.88
C&D material	QBBP	1,301.28
	Central Reclamation Phase III *	217,720.38
	TKOFB	8.64
	Tai Shing Quarry (Jiangmen) * #	1,479.00
	Tin Sang Quarry	32,766.00
	DSD-HKWDT *	6,748.00
Chemical waste	Collected by licensed collector	0.00L
General waste	Collected by licensed collector	78.00m ³

Notes:

- * denotes alternative dumpsite as disposal location.
- denotes the main portion of excavated material to Mainland China was rock materials.

Compliance with EP conditions

1.12 A summary of the reporting requirement of compliance with EP conditions of Contract Cl05 of the Project as of October 2008 was listed in Table 1.2.

Table 1.2 Environmental Permit Submission

Environmental Permit Submission	EP-249/2006/A Condition No.	Status
Management Organization	2.3	Submitted on 15 December 2006.
Construction Programme	2.4	Submitted on 14 February 2007.
Drainage Proposal	2.13	Deposited in the EIAO Register Office for public inspection on 30 May 2007.
Silt Curtain Proposal	2.14	Deposited in the EIAO Register Office for public inspection on 01 March 2007.
Transplantation Proposal	2.20 (a)	Deposited in the EIAO Register Office for public inspection on 25 September 2007.
As-built drawing of transplantation	2.20 (b)	Deposited in the EIAO Register Office for public inspection on 31 October 2007.
Waste Management Plan	2.21	Deposited in the EIAO Register Office for public inspection on 25 September 2007.
Baseline Air Quality and Noise Monitoring Report	3.2	Submitted on 28 February 2007.
Baseline Coral Survey Report	3.2	Submitted on 16 June 2007.
Monthly EM&A Report for Sep '08	4.2	Submitted on 14 October 2008.

Summary of EM&A Requirements

- 1.13 The EM&A programme requires environmental monitoring for air quality, noise, terrestrial ecology, subtidal and waste management. The EM&A requirements for each parameter are described in subsequent sections, including:
 - · All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event-Action Plans;
 - Environmental mitigation measures and their implementation schedule;
 - Environmental requirements in contract documents.
- 1.14 The environmental licensing and permits are described in Section 6.
- 1.15 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of the Report.

2. AIR QUALITY MONITORING

Monitoring Requirements

2.1 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.

Monitoring Equipment

2.2 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	

Monitoring Parameters, Frequency and Duration

2.3 The monitoring parameters and frequency are summarised in Table 2.2. The monitoring schedule for the reporting 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.

Monitoring Locations

2.4 In accordance with the EM&A Manual, three air quality monitoring stations, as shown in Figure 1.4, 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

Monitoring Methodology

24-hour / 1-hour TSP Monitoring

Installation

- 2.5 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 flowrate record sheet was set into the flow recorder.
- The flow rate of the HVS was checked and adjusted at around 1.1 m³/min. The range specified in the EM&A Manual was between 0.6-1.7 m³/min.
- The programmable timer was set for a sampling period of 24 hrs <u>+</u> 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 G.

Results and Observations

- 2.6 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.
- 2.7 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	1-hr TSP (μg/m³)		
Monitoring	AM1	AM2	АМ3А
26-Sep-08	73	69	210
27-Sep-08	55	73	193
29-Sep-08	132	97	119
02-Oct-08	232	177	348
03-Oct-08	53	76	134
06-Oct-08	-	61	124
08-Oct-08	64	67	150
09-Oct-08	73	89	142
10-Oct-08	134	111	400
13-Oct-08	82	89	263
15-Oct-08	98	137	225
17-Oct-08	73	87	107
20-Oct-08	115	115	234
21-Oct-08	72	60	144
22-Oct-08	102	97	101
24-Oct-08	174	152	253

Notes:

* Exceedance of Limit Level

Exceedance of Action Level

No monitoring due to bad weather

Table 2.5 Monitoring Results of 24-hr TSP

Date of	24-hr TSP (μg/m³)			
Monitoring	AM1	AM2	АМ3А	
27-Sep-08	58	48	72	
03-Oct-08	240	37	37	
09-Oct-08	48	32	52	
15-Oct-08	66	69	100	
21-Oct-08	52	55	71	

Notes:

Exceedance of Limit Level

Exceedance of Action Level

3. NOISE MONITORING

Monitoring Requirements

3.1 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.

Monitoring Equipment

3.2 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 (Leq) and percentile sound pressure level (Lx). 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

Monitoring Parameters, Frequency and Duration

3.3 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 reporting 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		
*Evening (1900 to 2300)	5	L_{ea}	Once a week
*Night-time (2300 to 0700 of next day)	5	— 6 4	

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

Monitoring Locations

3.4 In accordance with the EM&A Manual, noise monitoring was conducted at four designated monitoring stations as shown in Figure 1.4. 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

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 : Atime 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 G.

Results and Observations

- 3.5 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.
- 3.6 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, Leq (30-min), dB(A)			
	CN1	CN2	CN3	CN4
29-Sep-08	65.6	57.1	56.6	66.7
06-Oct-08	66.2	60.6	55.9	67.1
13-Oct-08	67.8	61.4	62.2	71.0
20-Oct-08	66.4	59.7	61.1	70.1

Notes: * Exceedance of Limit Level

Exceedance of Action Level

Table 3.5 Monitoring Results of Evening Noise

Date of		Noise Level, Leq (15-min), dB(A)										
Monitoring	CN1	CN2	CN3	CN4								
02-Oct-08	Х	Х	Х	Х								
08-Oct-08	51.6	52.1	51.6	50.8								
15-Oct-08	51.8	51.7	51.2	51.2								
22-Oct-08	51.9	52.2	51.6	52.1								

Notes: *

- * Exceedance of Limit Level
- # Exceedance of Action Level
- x denotes no measurement due to typhoon and heavy raining

4. TERRESTRIAL ECOLOGY



5. SUBTIDAL MONITORING

Monitoring Requirement

- 5.1 Even though the conclusion in the EIA stated that adverse impact on coral communities would not be expected during the construction phase of the Project, coral monitoring shall be conducted as a precautionary measure.
- 5.2 Appendix A shows the established Action/Limit Levels for the subtidal monitoring works.

Monitoring Parameters, Frequency, Schedule

- 5.3 Subtidal monitoring is required to be conducted as follows:
 - once per month in the first two months in Site 1, Site 2, Site 3, Site 4 and Control Site C.
 - twice a month at first three months in Site 5 and Control Site C.
 - once per month for the next three months in Site 5 and Control Site C.
 - If there is no exceedance, the monitoring frequency would be adjusted to once every three months (i.e. quarterly) until the end of the Contract No Cl05 of the Project.

Monitoring Locations

In accordance with the EM&A Manual, subtidal monitoring would be conducted at Tai Shue Wan and Chung Hom Kok. The monitoring locations are shown in Figure 5.1.

Monitoring Procedures

- 5.5 Monitor the tagged corals (ten nos. at each station) for sedimentation, bleaching and mortality.
- In the event that there is no exceedance record, the monitoring frequency shall be revised to once in every quarter until the end of the construction phase of Cl05.
- 5.7 In the event that there is an exceedance of Action Level record, more frequent monitoring to be carried out until the exceedance stops.
- 5.8 In the event that there is an exceedance of Limit Level record, the Contractor shall suspend all works until an effective solution is identified.

Results and Observations

5.9 No impact subtidal ecology monitoring was conducted in the reporting period of October 2008 since there was no exceedance recorded at all monitoring stations and control site and the monitoring frequency has been revised to once in every quarter until the end of construction period. The next scheduled monitoring would be in November 2008.

6. ENVIRONMENTAL AUDIT

Site Environmental Audit

6.1 Site audit would be carried out once per week to monitor environmental issues on the construction sites to ensure that all mitigation measures were implemented timely and properly.

Review of Environmental Monitoring Procedures

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

Air Quality Monitoring

- The monitoring team recorded all observations around the monitoring stations within and outside of the construction site.
- The monitoring team recorded the temperature, air pressure and weather conditions on the monitoring day.

Noise Monitoring

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

Terrestrial Monitoring

 No monitoring has been required for the coming reporting months since the last monitoring (i.e. the twelfth monitoring) has been conducted in the reporting month of August 2008 according to the requirement under the EM&A Manual.

Subtidal Monitoring

No impact subtidal ecology monitoring was conducted in the reporting period of October 2008 since
there was no exceedance recorded at all monitoring stations and control site and the monitoring
frequency has been revised to once in every quarter until the end of construction period. The next
scheduled monitoring would be in November 2008.

Status of Environmental Licensing and Permitting

6.3 All permits/licences obtained as of October 2008 are summarised in Table 6.1.

Table 6.1 Summary of Environmental Licensing and Permit Status

Permit No.	Valid	Period	Section/Description	Status
remit No.	From	То	Section/Description	Status
Environmental Permit				
EP-249/2006/A	23-Oct-06	N/A	Add a new condition before Condition 2.18 in Part C stated that "To compensate for the loss of roosting site for freshwater birds due to the filling of Pond 37 at Lowland area; complete the enhancement works for Pond 35 and to avoid disturbing the roosting site for freshwater birds, no construction works and discharge from the construction site(s) shall be allowed with the existing freshwater ponds at Tai Shue Wan area".	Valid
			Renumber Conditions 2.19 to 2.25 in Part C of the EP.	
Construction Noise Po				
GW-RS0234-08	15 Apr 08	14 Oct 08	Concrete lorry mixer; Poker, vibrating, hand-held (electric); and Crane, tower.	Surrendered
GW-RS0339-08	11 Jun 08	10 Dec 08	Concrete pump, lorry mounted; Concrete lorry mixer; Poker, vibrating, hand-held (electric) and Generator, silenced, 75dB(A) at 7m	Valid
GW-RS0340-08	11 Jun 08	10 Dec 08	Concrete lorry mixer; Concrete pump, lorry mounted; Poker, vibrating, hand-held (electric) and Generator, silenced, 75dB(A) at 7m	Valid
GW-RS0387-08	11 Jun 08	09 Dec 08	Crushing Plant; Dump trucks; Conveyor belt and Excavator, tracked.	Valid
GW-RS0453-08	15 Jul 08	14 Dec 08	Breaker, min-robot mounted; Excavator, mini-robot mounted; Light goods vehicle, GVW \leq 5.5 tonnes; Air compressor, with noise emission label showing SWL \leq 100dB(A); Breaker, hand-held (electric), mass \leq 10kg; Concrete lorry mixer; Compactor, vibratory; Mini-compacting roller; Welding generator and Lorry with crane.	Valid
GW-RS0584-08	21 Aug 08	20 Feb 09	Generator, silenced, 75dB(A) at 7m; Excavator, tracked; Dump truck; Emulsion pump truck; Light tower; and Crawler crane.	Valid
GW-RS0618-08	17 Sep 08	16 Feb 09	Breaker, mini-robot mounted; Excavator, mini-robot mounted; Light goods vehicle, gross vehicle weight ≤ 5.5 tonnes; Air compressor, with noise emission label showing a sound power level of ≤ 100dB(A); Breaker, hand-held (electric), mass ≤ 10kg; Compactor, vibratory; Mini-compacting roller; Welding generator; and Lorry with crane.	Valid
GW-RS0657-08	19 Sep 08	04 Feb 09	Crane, mobile (diesel); Lorry with crane, 5.5 tonne < GVW ≤ 38 tonnes; and Excavator, tracked	Valid
GW-RS0682-08	15 Oct 08	14 Apr 09	Concrete lorry mixer; Poker, vibrating, hand-held (electric); and Crane, tower.	Valid

Table 6.1 Summary of Environmental Licensing and Permit Status

Permit No.	Valid	Period	Section/Description	Status
Permit No.	From	То	Section/Description	Status
GW-RS0750-08	01 Nov 08	30 Apr 08	Crane, mobile (500 tonnes); Crane mobile (300 tonnes); Crane, mobile (90 tonnes); Crane, mobile (50 tonnes); and Lorry, with crane, 5.5 tonnes < gross vehicle weight ≤ 38 tonnes	Valid
GW-RS0751-08	28-Oct-08	27-Jan-09	Crane, mobile (500 tonnes); Crane mobile (300 tonnes); Crane, mobile (90 tonnes); Crane, mobile (50 tonnes); and Lorry, with crane, 5.5 tonnes < gross vehicle weight ≤ 38 tonnes	Valid
Chemical Waste Produc	cer Registrati	on		
WPN5213-199-D2373-01	07-May-07	N/A	For disposal of chemical wastes, mainly spent lubricants	Valid
Effluent Discharge Lice	nse			
EP820/W9/XW232	20-Jun-07	30-Jun-12	For discharge of industrial trade effluent arising from construction site at Summit and Tunnel	Valid
EP820/W9/XW234	13-Jul-07	31-Jul-12	For discharge of industrial trade effluent arising from construction site at Waterfront	Under variation
Specific Process Licens	se			
L-11-044 (1)	20-Sep-07	19-Sep-12	Conduct Specified Process, viz., Mineral Works, in the premises at "Ocean Park Master Redevelopment Project Contract Cl05 – Site Formation, Funicular Tunnel and Miscellaneous Works, Ocean Park, Aberdeen, Hong Kong (at top of Nam Long Shan Road)"	Valid
Notification of Construc	ction Works (ınder APCO		
Waterfront sent on 31-Ja	n-07 (ref. 001	017998)		
Summit sent on 05-Feb-0	07 (ref. 001018	8054)		
Billing Account under (Construction	Waste Dispos	sal Charging Scheme	
7004888	03-Jan-07	18-Dec-08	For disposal of C&D waste to public fills, sorting facilities and landfills	In use

Implementation Status of Environmental Mitigation Measures

The weekly joint site inspections have conducted on 03, 10, 17 and 22 October 2008. The IEC has taken the monthly audit on 24 October 2008 and the observations and recommendations that were made have summarized in the following paragraphs.

Land Based Water Quality Mitigation Measures

The silt curtain system enclosing the discharge point at Tai Shue Wan was damaged, however the replacement work has been conducted and completed by the end of October 2008.

Air Quality Mitigation Measures

- 6.6 In general, the crushing plant and the stockpile area was dusty and the dust depression should be enhanced during the operation.
- 6.7 Replacement of the dust screen should be undertaken asap.
- 6.8 The haul roads within the site area were generally dry and dusty. Frequently watering is required.

Noise

6.9 No violation was observed during site inspections in the reporting month of October 2008.

Ecology

6.10 No violation was observed during site inspections in the reporting month of October 2008.

Waste / Chemical Management

6.11 No violation was observed during the site inspections in the reporting months of October 2008.

Landscape and Visual

6.12 No violation was observed during site inspections in the reporting month of October 2008.

Environmental Mitigation Implementation Schedule (EMIS)

6.13 According to the Environmental Permit, the mitigation measures detailed in the permits are required to be implemented. An updated summary of the EMIS is presented in Appendix H.

Implementation Status of Event/Action Plans

- 6.14 The Event and Action Plans for air quality, noise and subtidal monitoring are presented in Appendix I.
- 6.15 No exceedance of air quality (i.e. 1 hour & 24-hour TSP) was recorded during the reporting month of October 2008.
- 6.16 No exceedance of noise limit level during daytime and evening was recorded in the reporting month of October 2008.

Implementation Status of Environmental Complaint Handling Procedures

Summary of the Complaints and Prosecutions

- 6.17 Appendix J presents the environmental complaint flow diagram of the Project.
- 6.18 One complaint, no summons or prosecution related to environmental issues from EPD was received or made against the Project in October 2008.

7. FUTURE KEY ISSUES

Key Issues for the Coming Month

- 7.1 Key issues to be considered in the coming month include:
 - Noise from operating equipment and machinery on-site.
 - Maintenance of silt curtains.
 - Construction waste management at the demolition work areas.
 - Avoid accumulation of stagnant / muddy water on-site.
 - To implement dust suppression measures on dry surfaces.
 - Provision of treatment to turbid water from activities on-site before discharge.

Monitoring Schedules for the Next Month

7.2 The environmental monitoring schedules for the next month are shown in Appendix B.

Construction Program for the Next 3 Months

7.3 The construction programme for the next 3 months is shown in Appendix K.

8. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 8.1 Environmental impact monitoring was performed in October 2008. All monitoring results in the reporting month were checked and reviewed.
- 8.2 No exceedances of Action and Limit Level for daytime noise, evening noise, 24-hour TSP and 1-hour TSP were recorded in the reporting month of October 2008.
- 8.3 No impact subtidal ecology monitoring was conducted in the reporting period of October 2008 since there was no exceedance recorded at all monitoring stations and control site and the monitoring frequency has been revised to once in every quarter until the end of construction period. The next scheduled monitoring would be in November 2008.
- 8.4 No monitoring is required to conduct in the coming reporting months since the last (i.e. the twelfth) terrestrial ecology monitoring has been conducted in the reporting month of August 2008 according to the requirements under the EM&A Manual.
- 8.5 One complaint from public and no summons or prosecution related to environmental issues from EPD was made against the Master Redevelopment Project in the reporting period.

Recommendations

8.6 According to the environmental audit performed in the reporting month, the following recommendations are made:

Air Quality Impact

- To prohibit any open burning on site.
- To regularly maintain the machinery and vehicles on site.
- To follow up any exceedance caused by the construction works.
- To implement dust suppression measures on dry surfaces.

Noise Impact

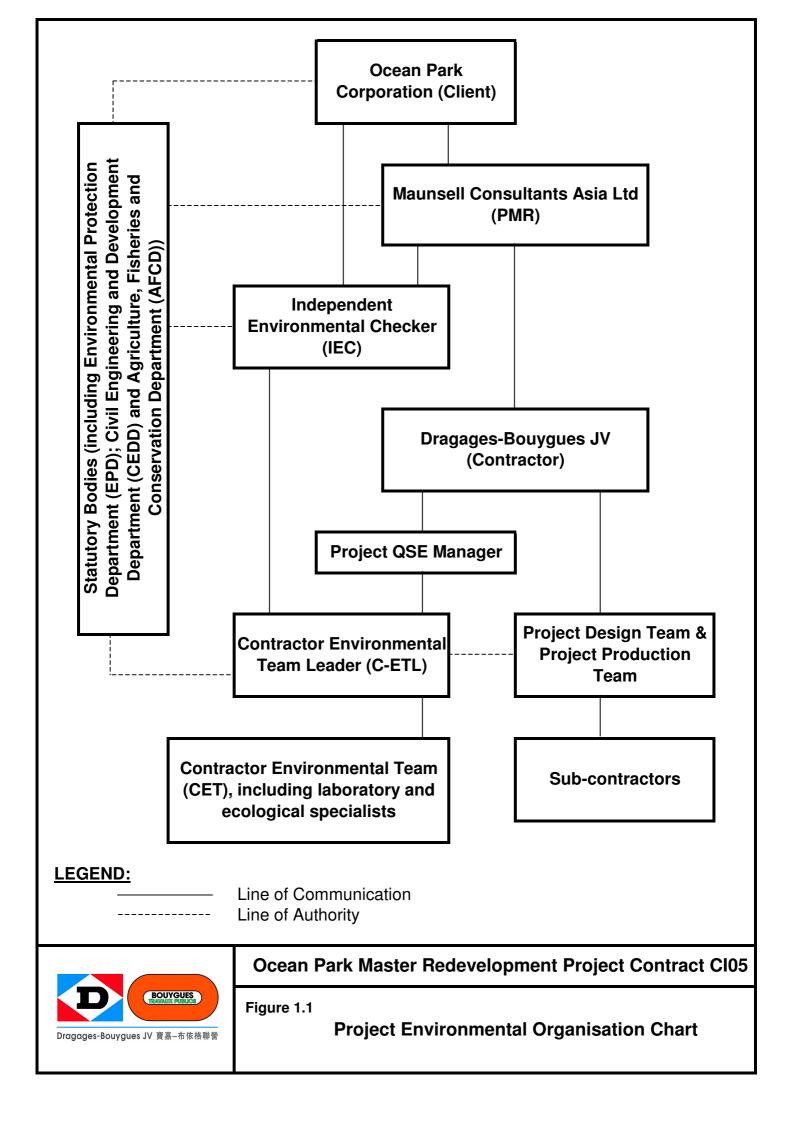
- To inspect the noise sources from inside and outside of the site.
- To follow up any exceedance caused by the construction works.
- To space out noisy equipment and position as far away as possible from sensitive receivers.
- To have regular maintenance of vessels and equipment used.

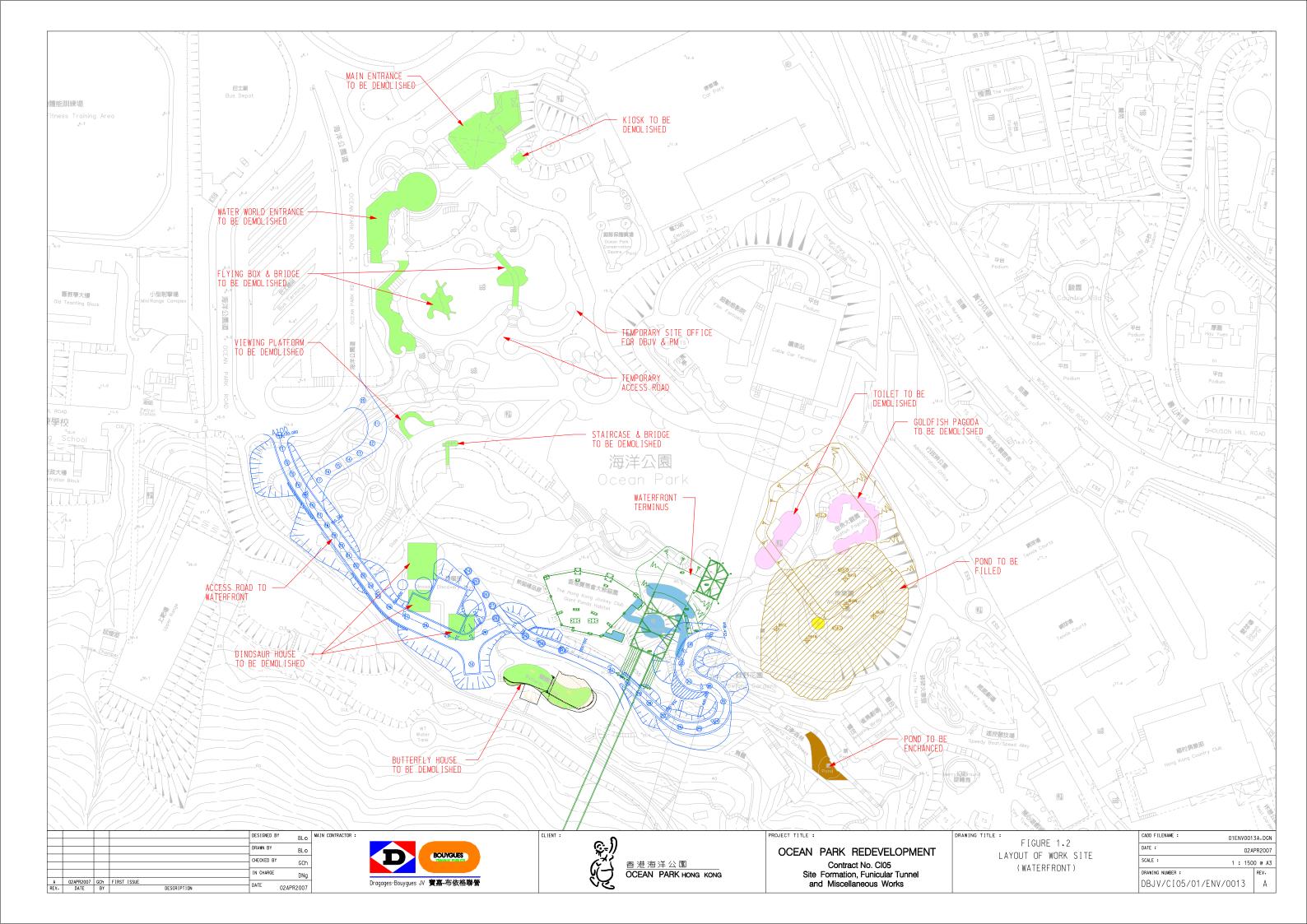
Waste/Chemical Management

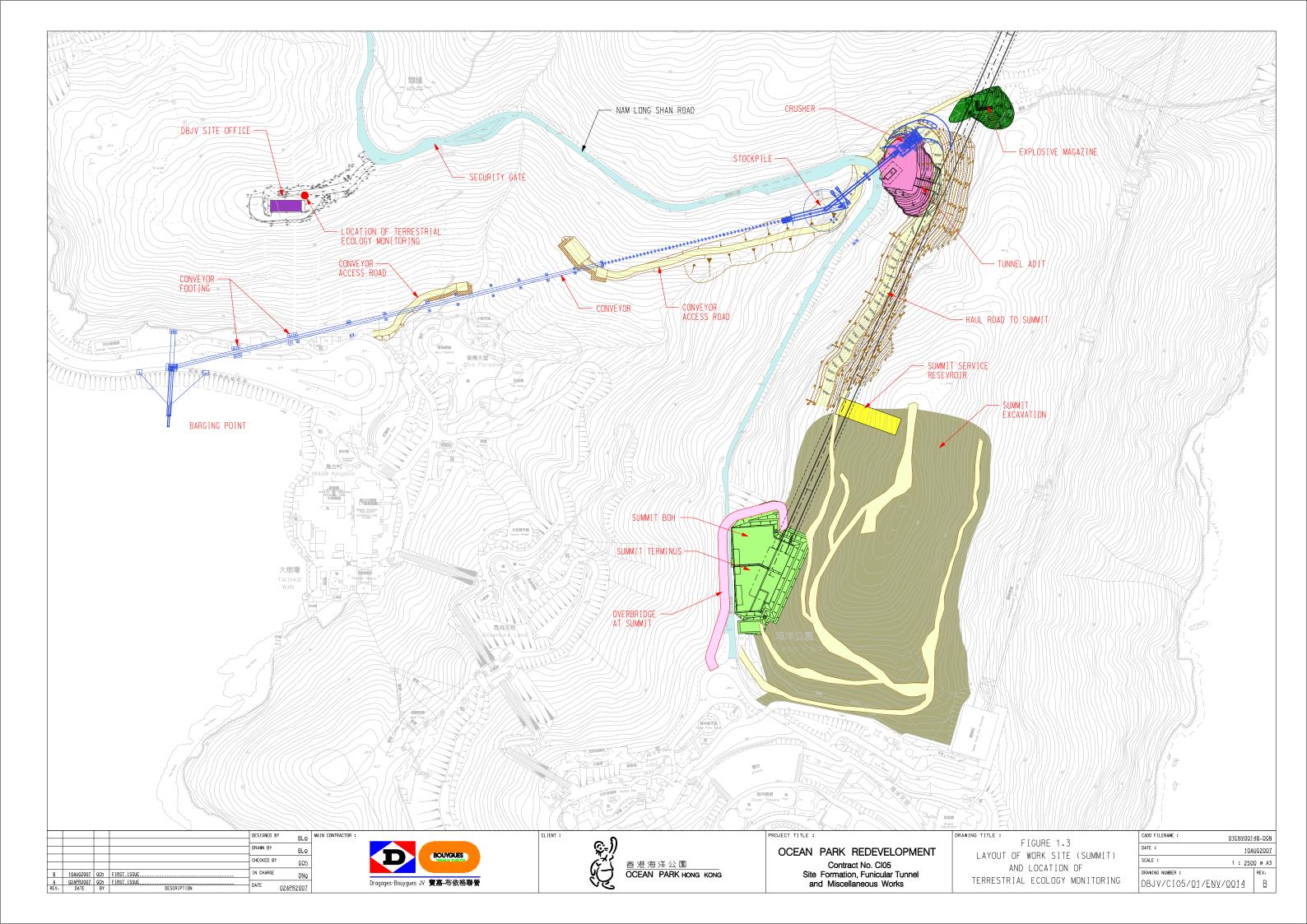
- To check for any accumulation of waste materials or rubbish on site.
- To avoid any discharge of chemical waste or oil directly from the site.
- To regularly and properly collect, store and dispose of all waste types.

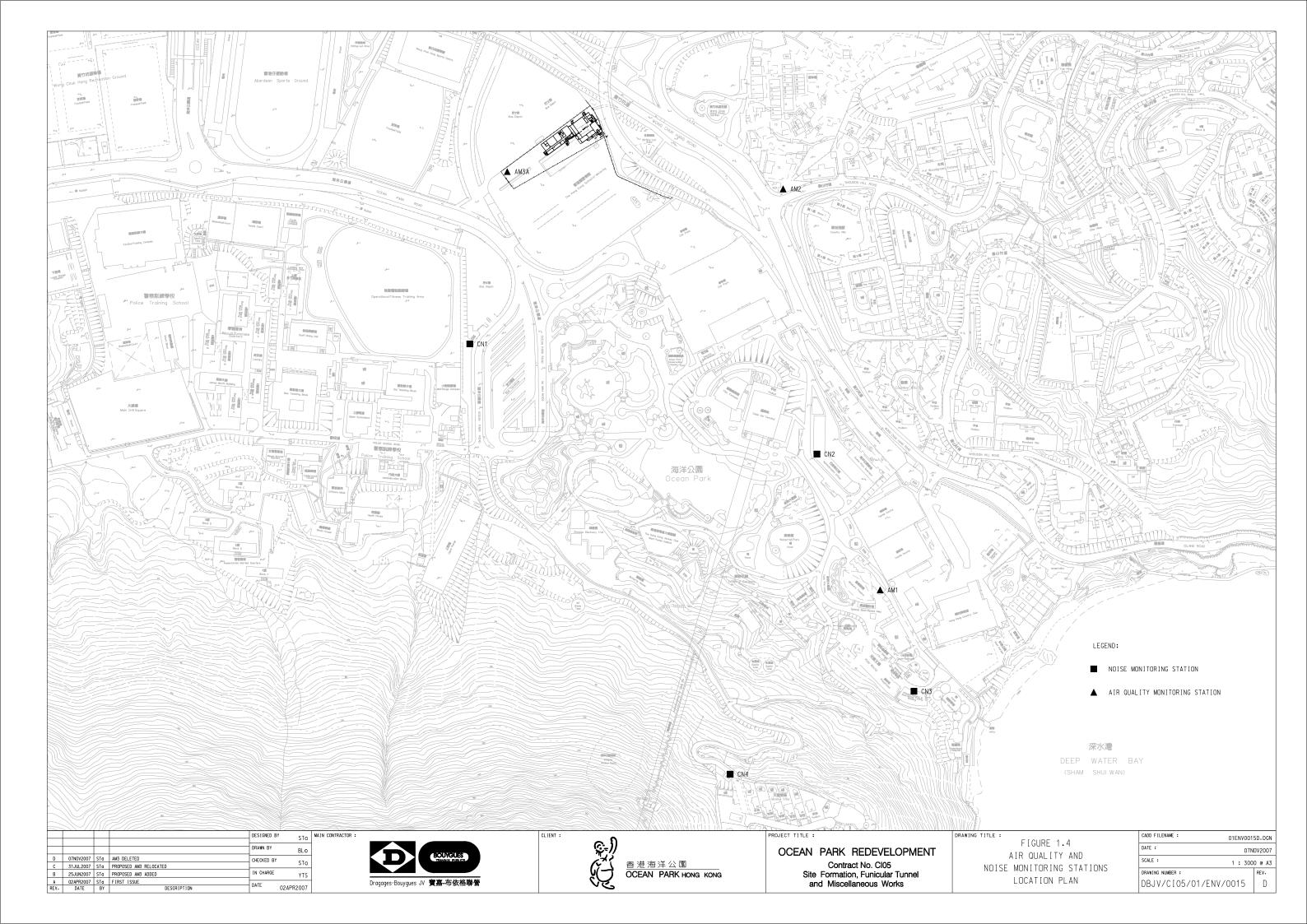
Water Quality Impact

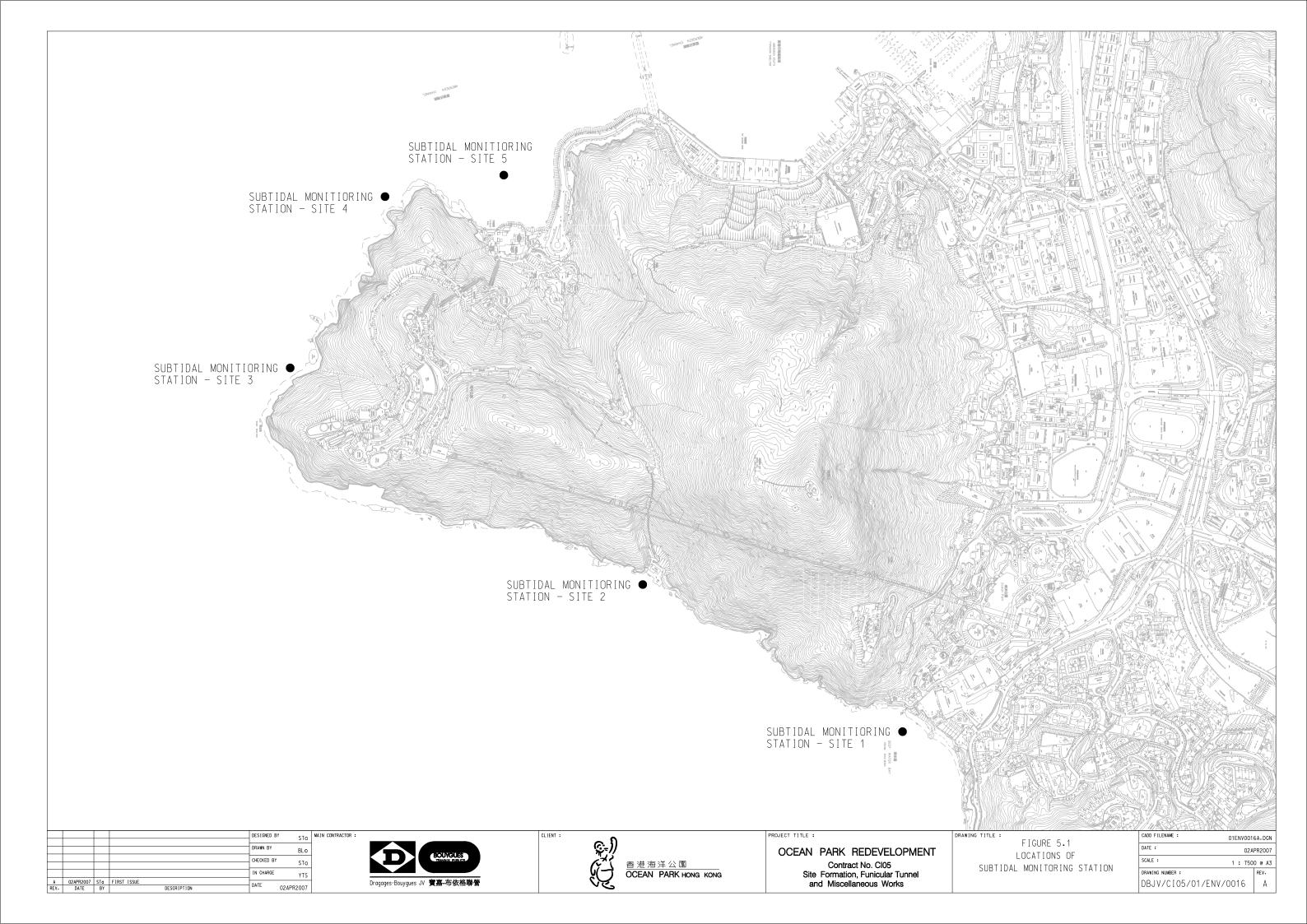
- To minimize water discharge and surface runoff into nearby water body.
- To treat site surface runoffs and wastewater generated from various construction activities with wastewater treatment system (comprised of chemical coagulation, sedimentation and pH control).
- To review and implement temporary site drainage management plan.
- Silt removal facilities, channels, manholes and wastewater treatment system should be frequently cleaned the deposited silt and grit to maintain in proper condition.
- To review the adequacy of the desilting facilities' capacity.











APPENDIX A - ACTION AND LIMIT LEVELS

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

Monitoring	24-hr T	SP (μg/m³)	1-hr TSP (μg/m³)				
Location	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 A.2 Action and Limit Levels for Daytime, Evening & Night-time Noise Monitoring

Time Period	Action	Limit			
0700-1900 hrs on normal weekdays		75 dB(A) *			
1900-2300 hrs on normal weekdays; and 0700-1900 hrs on holidays	When one documented complaint is received from any one of the sensitive receivers	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

Table A.3 Action and Limit Levels for Subtidal Monitoring

Parameter	Action Level Definition	Limit Level Definition
Sedimentation	If during Impact Monitoring a 15% increase in the percentage of sediment cover on hard corals occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Action Level is exceeded.	If during the Impact Monitoring a 25% increase in the percentage of sediment cover occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Limit Level is exceeded.
Bleaching	If during Impact Monitoring a 15% increase in the percentage of bleaching (bleached white) on hard corals occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Action Level is exceeded.	If during the Impact Monitoring a 25% increase in the percentage of bleaching (bleached white) occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Limit Level is exceeded.
Mortality	If during Impact Monitoring a 15% increase in the percentage of partial mortality on hard corals occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Action Level is exceeded.	If during the Impact Monitoring a 25% increase in the percentage of partial mortality occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Limit Level is exceeded.

^{**} 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

From 26 October 2008 to 25 November 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27 1-hr TSP 24-hr TSP NM (D)	28	29 1-hr TSP NM (E)	30	31 1-hr TSP	1 1-hr TSP 24-hr TSP
2	3 1-hr TSP NM (D)	4	5 1-hr TSP NM (E)	6	7 1-hr TSP 24-hr TSP	8
9 SM (Sites 1 to 5 and Control Station C)	10 1-hr TSP NM (D)	11	12 1-hr TSP NM (E)	13 1-hr TSP 24-hr TSP	14 1-hr TSP	15
16	17 1-hr TSP NM (D)	18	19 1-hr TSP 24-hr TSP NM (E)	20	21 1-hr TSP	22
23	24 1-hr TSP NM (D)	25 1-hr TSP 24-hr TSP	26 1-hr TSP NM (E)	27	28 1-hr TSP	29
30						

Notes: NM (D) denotes Daytime Noise Monitoring.

NM (E) denotes Evening Noise Monitoring if construction work is in progress.

SM denotes Subtidal Monitoring.

Any update / change in the schedule due to weather or other safety factors will be reported in the monthly EM&A report.

APPENDIX C - AIR QUALITY MONITORING RESULTS

1-hr TSP Monitoring Results at Station AM1

	Monitorii	ng Period		Filter \	Neight	Flow	Rate	Elence Ti	me (hour)	Sampling			Particular	Average	Total
Fron	n	То		(9	g) _	(m³/	min)	Elapse II	me (nour)	Time	Concentration (μg/m³)	Weather Condition	weight	flow	volume
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final	(hours)	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		(g)	(m³/min)	(m³)
26-Sep-08	11:00	26-Sep-08	12:00	2.7634	2.7674	0.9	0.9	11885.81	11886.81	1	73	Fine	0.0040	0.9	54
27-Sep-08	9:00	27-Sep-08	10:00	2.8187	2.8215	0.9	0.9	11886.81	11887.81	1	55	Cloudy	0.0028	0.9	51
29-Sep-08	11:00	29-Sep-08	12:00	2.7972	2.8048	1.0	1.0	11911.81	11912.81	1	132	Cloudy	0.0076	1.0	58
02-Oct-08	9:00	02-Oct-08	10:00	2.7657	2.7776	0.9	0.9	11912.81	11913.81	1	232	Cloudy	0.0119	0.9	51
03-Oct-08	13:00	03-Oct-08	14:00	2.7010	2.7039	0.9	0.9	11913.81	11914.81	1	53	Fine	0.0029	0.9	54
06-Oct-08	х	06-Oct-08	х	х	х	х	х	х	х	х	х	Х	Х	х	х
08-Oct-08	9:00	08-Oct-08	10:01	2.7828	2.7864	0.9	0.9	11920.45	11921.48	1	64	Cloudy	0.0036	0.9	56
09-Oct-08	9:00	09-Oct-08	10:01	2.7915	2.7955	0.9	0.9	11921.49	11922.49	1	73	Cloudy	0.0040	0.9	54
10-Oct-08	13:00	10-Oct-08	14:00	2.7266	2.7345	1.0	1.0	11946.47	11947.47	1	134	Cloudy	0.0079	1.0	59
13-Oct-08	11:00	13-Oct-08	12:00	2.7685	2.7737	1.1	1.1	11947.47	11948.47	1	82	Cloudy	0.0052	1.1	64
15-Oct-08	9:00	15-Oct-08	10:00	2.7494	2.7552	1.0	1.0	11948.47	11949.47	1	98	Cloudy	0.0058	1.0	59
17-Oct-08	11:00	17-Oct-08	12:00	2.7134	2.7178	1.0	1.0	11973.48	11974.48	1	73	Fine	0.0044	1.0	61
20-Oct-08	9:00	20-Oct-08	10:00	2.7187	2.7260	1.1	1.1	11974.48	11975.48	1	115	Cloudy	0.0073	1.1	64
21-Oct-08	9:00	21-Oct-08	10:00	2.7464	2.7510	1.1	1.1	11975.48	11976.48	1	72	Cloudy	0.0046	1.1	64
22-Oct-08	10:40	22-Oct-08	11:40	2.7265	2.7330	1.1	1.1	12000.48	12001.48	1	102	Fine	0.0065	1.1	64
24-Oct-08	9:00	24-Oct-08	10:00	2.7535	2.7635	1.0	1.0	12001.48	12002.48	1	174	Fine	0.0100	1.0	58

Remarks: Bold value indicated an Action Level exceedance

Bold & Italic value indicated an Limit Level exceedance

X denotes no measurement due to power supply failure

- denotes no measurement due to Typhoon

APPENDIX C - AIR QUALITY MONITORING RESULTS (CONT'D)

1-hr TSP Monitoring Results at Station AM2

	Monitori	ng Period		Filter \	Weight	Flow		Elence Ti	me (hour)	Sampling			Particular	Average	Total volume
Fron	n	То		(9	g)	(m³/n	nin)	Elapse II	me (nour)	Time	Concentration (μg/m³)	Weather Condition	weight	flow	
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final	(hours)	(125)		(g)	(m³/min)	(m ³)
26-Sep-08	9:00	26-Sep-08	10:00	2.7631	2.7677	1.1	1.1	11649.03	11650.03	1	69	Fine	0.0046	1.1	67
27-Sep-08	9:00	27-Sep-08	10:00	2.8024	2.8073	1.1	1.1	11650.03	11651.03	1	73	Cloudy	0.0049	1.1	67
29-Sep-08	11:00	29-Sep-08	12:00	2.7100	2.7165	1.1	1.1	11675.03	11676.03	1	97	Cloudy	0.0065	1.1	67
02-Oct-08	9:00	02-Oct-08	10:00	2.7871	2.7983	1.1	1.1	11676.03	11677.03	1	177	Cloudy	0.0112	1.1	63
03-Oct-08	13:00	03-Oct-08	14:00	2.7853	2.7904	1.1	1.1	11677.03	11678.03	1	76	Fine	0.0051	1.1	67
06-Oct-08	11:00	06-Oct-08	12:00	2.8201	2.8243	1.1	1.1	11702.04	11703.04	1	61	Cloudy	0.0042	1.1	69
08-Oct-08	9:00	08-Oct-08	10:00	2.7633	2.7678	1.1	1.1	11703.04	11704.04	1	67	Cloudy	0.0045	1.1	67
09-Oct-08	9:00	09-Oct-08	10:00	2.7938	2.7999	1.1	1.1	11704.04	11705.04	1	89	Cloudy	0.0061	1.1	69
10-Oct-08	13:00	10-Oct-08	14:00	2.7630	2.7706	1.1	1.1	11729.04	11730.04	1	111	Cloudy	0.0076	1.1	69
13-Oct-08	11:00	13-Oct-08	12:00	2.7267	2.7344	1.4	1.4	11730.04	11731.04	1	89	Cloudy	0.0077	1.4	87
15-Oct-08	9:00	15-Oct-08	10:00	2.7256	2.7348	1.1	1.1	11731.04	11732.04	1	137	Cloudy	0.0092	1.1	67
17-Oct-08	11:00	17-Oct-08	12:00	2.7008	2.7066	1.1	1.1	11756.03	11757.03	1	87	Fine	0.0058	1.1	67
20-Oct-08	9:00	20-Oct-08	10:00	2.7421	2.7496	1.1	1.1	11757.03	11758.03	1	115	Cloudy	0.0075	1.1	65
21-Oct-08	9:00	21-Oct-08	10:00	2.7493	2.7533	1.1	1.1	11758.03	11759.03	1	60	Cloudy	0.0040	1.1	67
22-Oct-08	10:45	22-Oct-08	11:45	2.7528	2.7593	1.1	1.1	11783.03	11784.03	1	97	Fine	0.0065	1.1	67
24-Oct-08	9:00	24-Oct-08	10:00	2.7337	2.7439	1.1	1.1	11784.03	11785.03	1	152	Fine	0.0102	1.1	67

Remarks: Bold value indicated an Action Level exceedance

Bold & Italic value indicated an Limit Level exceedance

X denotes no measurement due to power supply failure

- denotes no measurement due to Typhoon

APPENDIX C – AIR QUALITY MONITORING RESULTS (CONT'D)

1-hr TSP Monitoring Results at Station AM3A

	Monitori	ng Period		Filter \	Neight	Flow		Elenee Ti	me (hour)	Sampling			Particular	Average	Total
From	1	То		(9	g) _	(m³/ı	min)	Elapse 11	me (nour)	Time	Concentration (μg/m³)	Weather Condition	weight	flow	volume
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final	al (hours)	(pg)		(g)	(m³/min)	(m³)
26-Sep-08	9:00	26-Sep-08	9:59	2.7521	2.7653	1.1	1.1	14111.21	14112.20	1	210	Fine	0.0132	1.1	63
27-Sep-08	9:00	27-Sep-08	10:00	2.7760	2.7886	1.1	1.1	14112.20	14113.20	1	193	Cloudy	0.0126	1.1	65
29-Sep-08	11:00	29-Sep-08	12:00	2.7750	2.7828	1.1	1.1	14137.21	14138.21	1	119	Cloudy	0.0078	1.1	65
02-Oct-08	10:00	02-Oct-08	11:00	2.8112	2.8333	1.1	1.1	14138.21	14139.21	1	348	Cloudy	0.0221	1.1	64
03-Oct-08	13:00	03-Oct-08	14:00	2.7471	2.7546	0.9	0.9	14139.21	14140.21	1	134	Fine	0.0075	0.9	56
06-Oct-08	10:50	06-Oct-08	11:50	2.7694	2.7768	1.0	1.0	14164.21	14165.21	1	124	Cloudy	0.0074	1.0	60
08-Oct-08	9:00	08-Oct-08	10:00	2.7515	2.7605	1.0	1.0	14165.21	14166.21	1	150	Cloudy	0.0090	1.0	60
09-Oct-08	9:00	09-Oct-08	10:00	2.8045	2.8130	1.0	1.0	14166.21	14167.21	1	142	Cloudy	0.0085	1.0	60
10-Oct-08	13:05	10-Oct-08	14:05	2.7771	2.8010	1.1	1.1	14191.21	14192.21	1	400	Cloudy	0.0239	1.1	60
13-Oct-08	11:00	13-Oct-08	12:00	2.7255	2.7412	1.0	1.0	14193.69	14194.69	1	263	Cloudy	0.0157	1.0	60
15-Oct-08	9:00	15-Oct-08	10:00	2.7441	2.7584	1.1	1.1	14194.69	14195.69	1	225	Cloudy	0.0143	1.1	64
17-Oct-08	10:58	17-Oct-08	11:58	2.7517	2.7585	1.1	1.1	14219.69	14220.69	1	107	Fine	0.0068	1.1	64
20-Oct-08	9:00	20-Oct-08	10:00	2.7483	2.7623	1.0	1.0	14220.69	14221.69	1	234	Cloudy	0.0140	1.0	60
21-Oct-08	9:00	21-Oct-08	10:00	2.7712	2.7798	1.0	1.0	14221.69	14222.69	1	144	Cloudy	0.0086	1.0	60
22-Oct-08	10:55	22-Oct-08	11:55	2.7364	2.7432	1.1	1.1	14246.69	14247.69	1	101	Fine	0.0068	1.1	67
24-Oct-08	9:00	24-Oct-08	10:00	2.7227	2.7380	1.0	1.0	14247.69	14248.70	1	253	Fine	0.0153	1.0	60

Remarks: Bold value indicated an Action Level exceedance

Bold & Italic value indicated an Limit Level exceedance

X denotes no measurement due to power supply failure

- denotes no measurement due to Typhoon

APPENDIX C – AIR QUALITY MONITORING RESULTS (CONT'D)

24-hr TSP Monitoring Results at Station AM1

Monitoring Period			Filter Weight		Flow Rate		Elanca Ti	ma (haur)	Sampling Time	Concentration (μg/m³)		Particular	Average	Total volume	
From	From To			(g)		(m³/min)		Elapse Time (hour)			Weather Condition	weight	flow		
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final	(hours)	(1-3)		(g)	(m³/min)	(m³)
27-Sep-08	14:40	28-Sep-08	14:40	2.7875	2.8609	0.9	0.9	11887.81	11911.81	24	58	Cloudy	0.0734	0.9	1270
03-Oct-08	14:25	04-Oct-08	14:40	2.7631	2.8410	1.0	1.0	11914.81	11920.45	6	240	Cloudy	0.0779	1.0	324
09-Oct-08	12:38	10-Oct-08	12:38	2.7767	2.8418	0.9	0.9	11922.49	11946.49	24	48	Cloudy	0.0651	0.9	1342
15-Oct-08	10:05	16-Oct-08	10:06	2.7837	2.8849	1.1	1.1	11949.47	11973.48	24	66	Cloudy	0.1012	1.1	1529
21-Oct-08	10:35	22-Oct-08	10:35	2.7329	2.8078	1.0	1.0	11976.48	12000.48	24	52	Cloudy	0.0749	1.0	1454

24-hr TSP Monitoring Results at Station AM2

Monitoring Period			Filter Weight		Flow Rate (m³/min)		Elanca Ti	Elapse Time (hour)		Concentration (μg/m³)		Particular	Average	Total volume	
From To			(g)				Liapse Time (nour)		Sampling Time		Weather Condition	weight	flow		
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final	(hours)	(1-5-)		(g)	(m³/min)	(m³)
27-Sep-08	14:38	28-Sep-08	14:38	2.7708	2.8475	1.1	1.1	11651.03	11675.03	24	48	Cloudy	0.0767	1.1	1606
03-Oct-08	14:30	04-Oct-08	14:36	2.7559	2.8121	1.1	1.1	11678.03	11702.04	24	37	Cloudy	0.0562	1.1	1519
09-Oct-08	12:22	10-Oct-08	12:22	2.7419	2.7899	1.1	1.1	11705.04	11729.04	24	32	Cloudy	0.0480	1.1	1519
15-Oct-08	9:55	16-Oct-08	9:55	2.7949	2.9054	1.1	1.1	11732.04	11756.03	24	69	Cloudy	0.1105	1.1	1605
21-Oct-08	10:25	22-Oct-08	10:25	2.7370	2.8231	1.1	1.1	11759.03	11783.03	24	55	Cloudy	0.0861	1.1	1562

Remarks: Bold value indicated an Action Level exceedance

Bold & Italic value indicated an Limit Level exceedance

X denotes no measurement due to power supply failure

APPENDIX C - AIR QUALITY MONITORING RESULTS (CONT'D)

24-hr TSP Monitoring Results at Station AM3A

Monitoring Period				Filter Weight		Flow Rate		Elapse Time (hour)		Sampling			Particular	Average	Total
From		То		(g)		(m³/min)		Liapse Time (nour)		Time	Concentration (μg/m³)	Weather Condition	weight	flow	volume
Date	Time	Date	Time	Initial	Final	Initial	Final	Initial	Final	(hours)	(1.5)		(g)	(m³/min)	(m³)
27-Sep-08	14:46	28-Sep-08	14:47	2.7206	2.8405	1.2	1.2	14113.20	14137.21	24	72	Cloudy	0.1199	1.2	1658
03-Oct-08	14:39	04-Oct-08	14:47	2.7641	2.8264	1.2	1.2	14140.21	14164.21	24	37	Cloudy	0.0623	1.2	1702
09-Oct-08	12:50	10-Oct-08	12:50	2.7620	2.8509	1.2	1.2	14167.21	14191.21	24	52	Cloudy	0.0889	1.2	1702
15-Oct-08	10:10	16-Oct-08	10:10	2.8000	2.9523	1.1	1.1	14195.69	14219.69	24	100	Cloudy	0.1523	1.1	1524
21-Oct-08	10:50	22-Oct-08	10:50	2.7434	2.8510	1.1	1.1	14222.69	14246.69	24	71	Cloudy	0.1076	1.1	1524

Remarks: Bold value indicated an Action Level exceedance

Bold & Italic value indicated an Limit Level exceedance

X denotes no measurement due to power supply failure

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

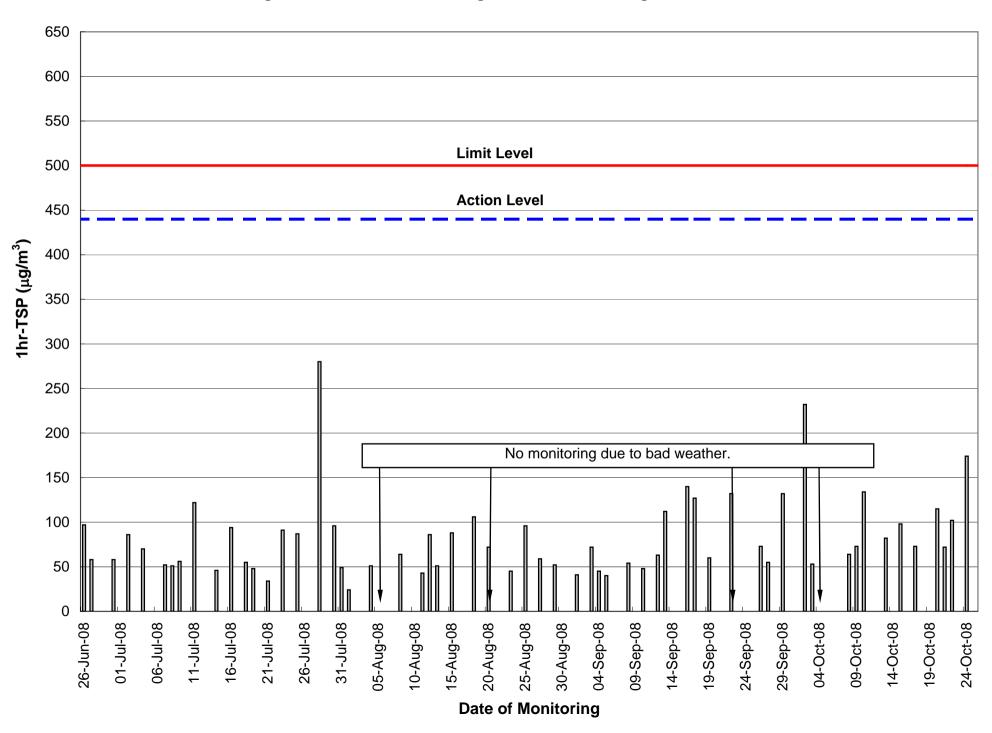


Figure C.2 1-hr TSP monitoring results of Monitoring Station AM2

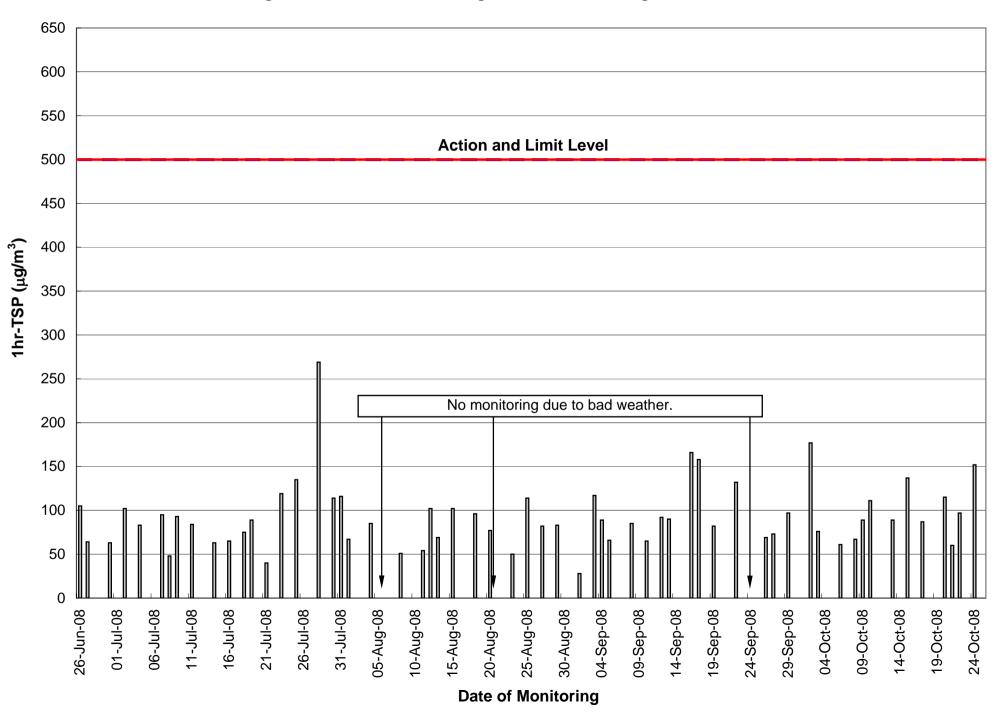


Figure C.3 1-hr TSP monitoring results of Monitoring Station AM3A

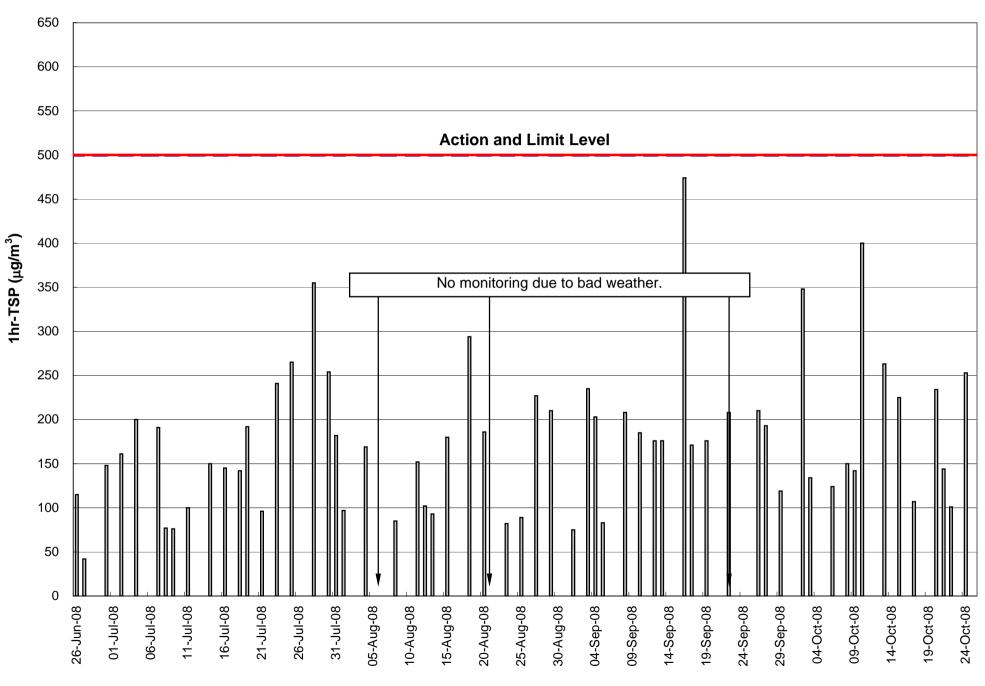
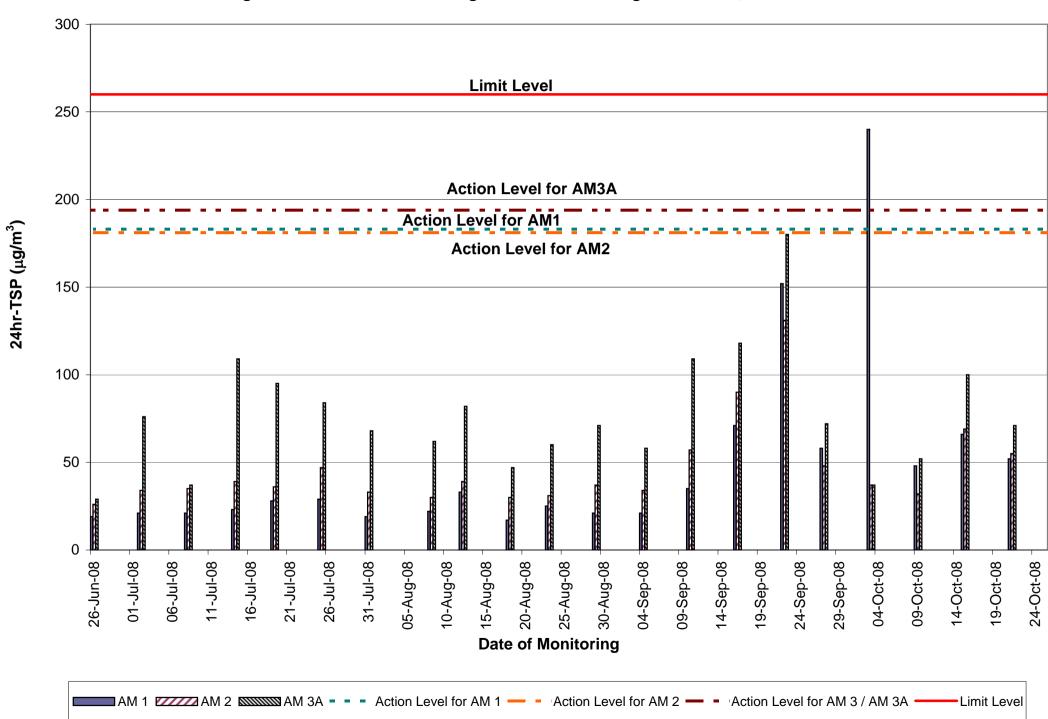


Figure C.4 24-hr TSP monitoring results of Monitoring Station AM1, AM2 & AM3A



APPENDIX D - NOISE MONITORING RESULTS

Daytime Noise Monitoring Results at Station CN1

Date	Weather	Measure	d Noise Leve	l for 30 mins.	., dB(A)	Baseline Noise	Limit Level,	Exceedance (Y/N)	
Date	Condition	Time	Leq	L10	L90	Level, dB(A)	dB(A)		
29-Sep-08	Sunny	9:00	65.6	69.3	63.4	63.2	70	N	
06-Oct-08	Cloudy	9:15	66.2	70.8	65.4	63.2	70	N	
13-Oct-08	Cloudy	9:30	67.8	70.2	65.8	63.2	70	N	
20-Oct-08	Sunny	13:30	66.4	69.2	64.2	63.2	70	N	

Daytime Noise Monitoring Results at Station CN2

Date	Weather	Measured Noise Level for 30 mins., dB(A)				Baseline Noise	Limit Level,	Exceedance	
Date	Condition	Time	Leq	L10	L90	Level, dB(A)	dB(A)	(Y/N)	
29-Sep-08	Sunny	10:25	57.1	61.3	55.7	64.0	75	N	
06-Oct-08	Cloudy	9:56	60.6	62.3	57.3	64.0	75	N	
13-Oct-08	Cloudy	10:55	61.4	63.9	59.2	64.0	75	N	
20-Oct-08	Sunny	15:00	59.7	62.5	57.3	64.0	75	N	

Daytime Noise Monitoring Results at Station CN3

Date	Weather	Measured Noise Level for 30 mins., dB(A)				Baseline Noise	Limit Level,	Exceedance
Date	Condition	Time	Leq	L10	L90	Level, dB(A)	dB(A)	(Y/N)
29-Sep-08	Sunny	11:08	56.6	60.2	54.9	59.3	75	N
06-Oct-08	Cloudy	10:40	55.9	59.8	53.7	59.3	75	N
13-Oct-08	Cloudy	11:30	62.2	64.3	59.5	59.3	75	N
20-Oct-08	Sunny	15:40	61.1	63.6	58.3	59.3	75	N

Remarks: Bold & Italic value indicated an Limit Level exceedance

APPENDIX D – NOISE MONITORING RESULTS (CONT'D)

Daytime Noise Monitoring Results at Station CN4

Date	Weather	Measured Noise Level for 30 mins., dB(A)				Baseline Noise	Limit Level,	Exceedance	
Date	Condition	Time	Leq	L10	L90	Level, dB(A)	dB(A)	(Y/N)	
29-Sep-08	Sunny	9:42	66.7	70.2	64.1	59.9	75	N	
06-Oct-08	Cloudy	11:28	67.1	69.8	63.6	59.3	75	N	
13-Oct-08	Cloudy	10:15	71.0	73.4	67.9	59.3	75	N	
20-Oct-08	Sunny	14:15	70.1	73.0	67.8	59.3	75	N	

Remarks: Bold & Italic value indicated an Limit Level exceedance

APPENDIX D - NOISE MONITORING RESULTS (CONT'D)

Evening Noise Monitoring Results at Station CN1

Date	Weather	Measured Noise Level for 15 mins., dB(A)				Baseline Noise	Limit Level,	Exceedance	
Date	Condition	Time	Leq	L10	L90	Level, dB(A)	dB(A)	(Y/N)	
02-Oct-08	х	Х	Х	Х	х	57.0	60	N	
08-Oct-08	Cloudy	19:24	51.6	56.2	49.8	57.0	60	N	
15-Oct-08	Cloudy	19:25	51.8	55.9	49.3	57.0	60	N	
22-Oct-08	Sunny	19:23	51.9	56.2	49.2	57.0	60	N	

Evening Noise Monitoring Results at Station CN2

Date	Weather	Measured Noise Level for 15 mins., dB(A)				Baseline Noise	Limit Level,	Exceedance	
Date	Condition	Time	Leq	L10	L90	Level, dB(A)	dB(A)	(Y/N)	
02-Oct-08	х	Х	Х	Х	Х	58.5	60	N	
08-Oct-08	Cloudy	20:00	52.1	57.4	49.3	58.5	60	N	
15-Oct-08	Cloudy	20:05	51.7	56.8	48.8	58.5	60	N	
22-Oct-08	Sunny	20:06	52.2	57.2	49.1	58.5	60	N	

Evening Noise Monitoring Results at Station CN3

Date	Weather	Measured Noise Level for 15 mins., dB(A)				Baseline Noise	Limit Level,	Exceedance	
Date	Condition	Time	Leq	L10	L90	Level, dB(A)	dB(A)	(Y/N)	
02-Oct-08	х	Х	Х	Х	Х	56.1	60	N	
08-Oct-08	Cloudy	20:21	51.6	56.9	48.7	56.1	60	N	
15-Oct-08	Cloudy	20:25	51.2	55.9	49.3	56.1	60	N	
22-Oct-08	Sunny	20:28	51.6	57.1	49.3	56.1	60	N	

Remarks: Bold & Italic value indicated an Limit Level exceedance

X denotes no measurement due to typhoon and heavy rain.

APPENDIX D - NOISE MONITORING RESULTS (CONT'D)

Evening Noise Monitoring Results at Station CN4

Date	Weather	Measured Noise Level for 15 mins., dB(A)				Baseline Noise	Limit Level,	Exceedance	
Date	Condition	Time	Leq	L10	L90	Level, dB(A)	dB(A)	(Y/N)	
02-Oct-08	х	Х	Х	Х	Х	55.8	60	N	
08-Oct-08	Cloudy	19:00	50.8	55.8	49.7	55.8	60	N	
15-Oct-08	Cloudy	19:00	51.2	56.1	50.2	55.8	60	N	
22-Oct-08	Sunny	19:00	52.1	57.2	50.8	55.8	60	N	

Remarks: Bold & Italic value indicated an Limit Level exceedance

X denotes no measurement due to typhoon and heavy rain.

Fig D.2 - Evening Noise Monitoring Results of Monitoring Stations NM1, NM2, NM3 & NM4

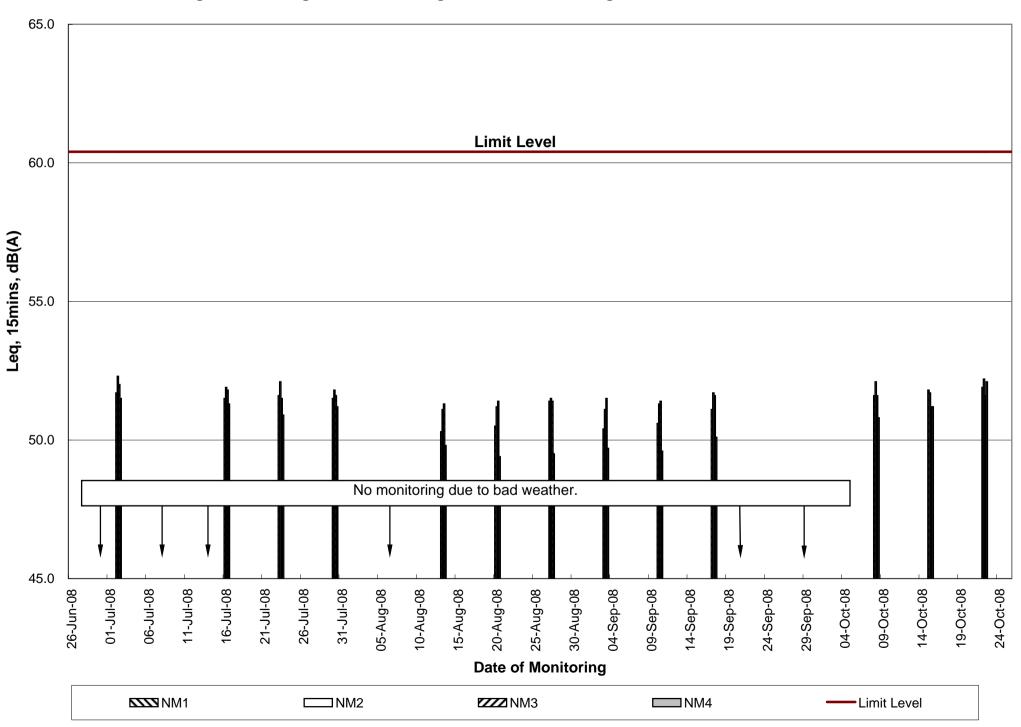
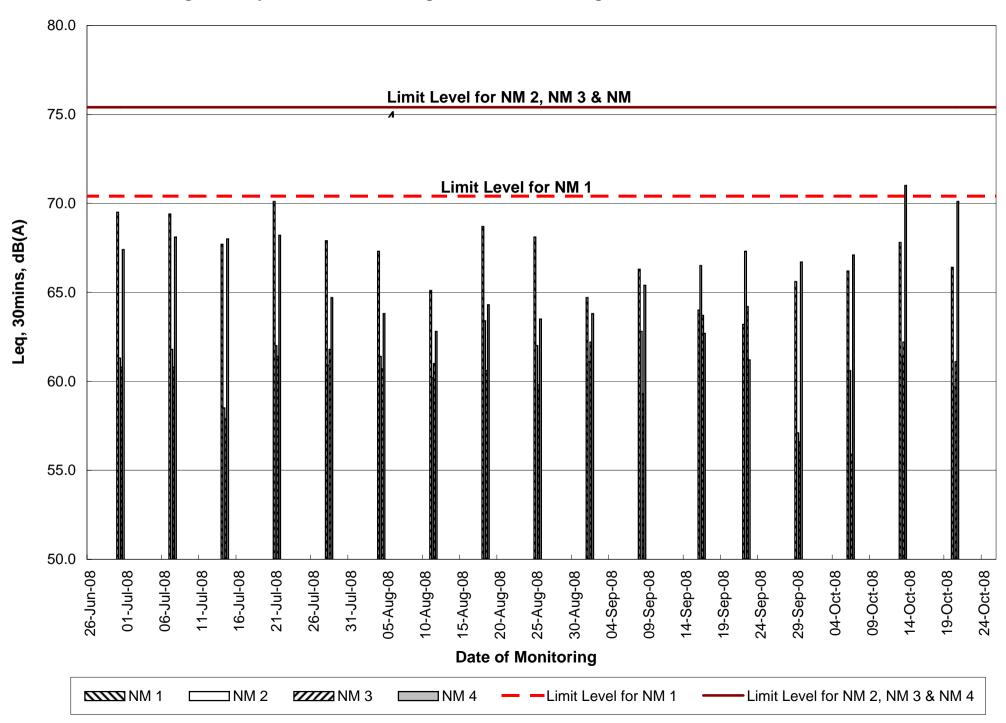


Fig D.1 - Daytime Noise Monitoring Results of Monitoring Stations NM1, NM2, NM3 & NM4



APPENDIX E - TERRESTRIAL ECOLOGY MONITORING RESULTS



APPENDIX F - SUBTIDAL MONITORING RESULTS



APPENDIX G – CALIBRATION DETAILS

Air Quality Monitoring Equipments

Monitoring Location	AM1	AM2	AM3/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 September 2008	03 September 2008	03 September 2008
Calibration Due Date	02 November 2008	02 November 2008	02 November 2008
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.	00773032		
Date of Calibration	26 November 2007		
Calibration Due Date	25 November 2009		
Result	Good		



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TEST REPORT

Calibration Report

High Volume Air Sampler

Manufacturer

Graseby GMW

Date of Calibration

03 September 2008

Serial No.

1174 (ET / EA / 003 / 08)

Calibration Due Date

02 November 2008

Method

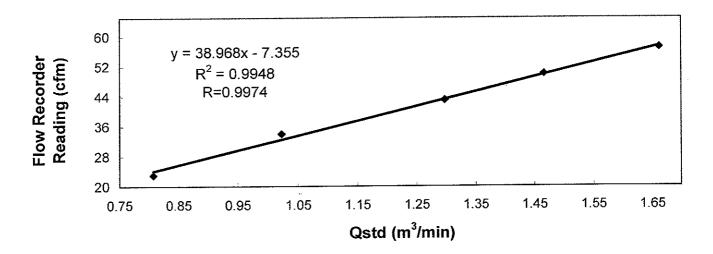
Based on Operations Manual for in series calibration method by TISCH

ENVIROMENTAL Model Te-5025A calibration kit

Results

Flow recorder rea	ding (cfm)	57	50	43	34	23
Qstd (Actual flow	rate, m³/min)	1.66	1.47	1.30	1.02	0.81
Pressure :	759.06 mm Hg		Temp, :	303	K	

Sampler 1174 Calibration Curve Site: Ocean Park (AM-1) Date of Calibration: 03 September 2008



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

LI, Wan Lung (Technician)

Approved by

(Asst. Environmental Officer)



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Fax : 2695 3944 Web site

TEST REPORT

Calibration Report

01

High Volume Air Sampler

Manufacturer

Graseby GMW

Date of Calibration

03 September 2008

Serial No.

1177 (ET/EA/003/07)

Calibration Due Date

02 November 2008

Method

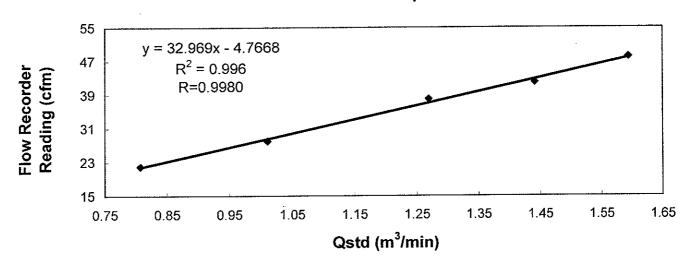
Based on Operations Manual for the 5-point calibration using standard calibration kit

manufactured by Tisch TE-5025 A

Results

Flow recorder rea	ding (cfm)	48	42	38	28	22
Qstd (Actual flow	rate, m³/min)	1.59	1.44	1.27	1.01	0.81
Pressure :	759.06 mm Hg		Temp.:	303	Κ	

Sampler 1177 Calibration Curve Site: Ocean Park (AM-2) Date of Calibration: 03 September 2008



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

LI, Wan Lung (Technician) Approved by

CHOW, Hoi Tat

(Asst. Environmental Officer)



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Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report

of

High Volume Air Sampler

Manufacturer

Graseby GMW

Date of Calibration

03 September 2008

Serial No.

9998 (ET/EA/003/12)

Calibration Due Date

02 November 2008

Method

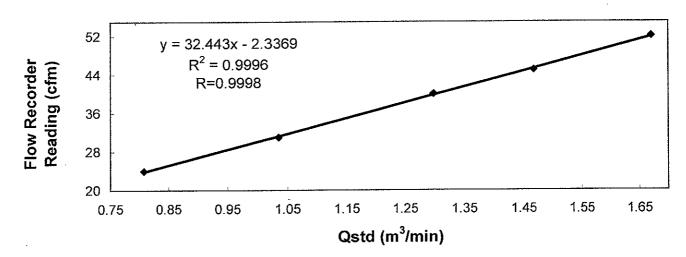
Based on Operations Manual for the 5-point calibration using standard calibration kit

manufactured by Tisch TE-5025 A

Results

Flow recorder rea	ding (cfm)	52	45	40	31	24
Qstd (Actual flow	rate, m³/min)	1.67	1.47	1.30	1.03	0.81
Pressure :	759.81 mm Hg		Temp.:	303	K .	

Sampler 9998 Calibration Curve Site: Ocean Park (AM-3) Date of Calibration: 03 September 2008



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

LI, Wan Lung (Technician)

Approved by

HOW, Hoi Tat

(Asst. Environmental Officer)



3-20-41 Higashimotomachi Kokubunji Tokyo 185-8533 Phone:042(359)7888, Facsimile:042(359)7442

Certificate of Calibration

Name : Precision sound level meter

Model : NL-31 S/No. : 00773032

Microphone: UC-53A S/No.: 313111

Preamplifier: NH-21 S/No.: 25043

Date of Calibration: November, 27, 2007

We hereby certify that the above product was tested and calibrated according to the prescribed Rion procedures, and that it fulfills specification requirements.

The measuring equipment and reference devices used for testing and calibrating this unit are managed under the Rion traceability system and are traceable according to official Japanese standards and official standards of countries belonging to the International Committee of Weights and Measures.

Manager, Quality Control Department

					Delivery Method			Other / Remarks
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Air Qua	lity							
AQ01	Dust emission from construction site in general	Cap 311, sub leg R Schedule III S.13	Hoardings of not less than 2.4m high from ground level should be erected along the entire length of the site boundary except for site entrance or exit.	✓			✓	
AQ02	Dust emission from construction site in general	Cap 311, sub leg R Schedule III S.13 & PS 26.10(6)(i)(e)	To minimize dust emissions, the amount of soil exposed and the dust generation potential should be kept as low as possible. This can be accomplished by water sprays, surface compaction; temporary fabric covers, minimizing the extent of exposed soil, and prompt re-vegetation of completed earthworks.	✓		✓	✓	
AQ03	Dust emission from construction site in general	Cap 311, sub leg R Schedule III S.13 & PS 26.10(6)(i)(j)	Wheel washing facilities should be provided at all vehicle site entrances/exits to prevent dusty material from being carried off-site on vehicles and deposited on public roads. The facilities shall be provided in advance of any major construction activities.	√			√	
AQ04	Dust emission from site clearance	Cap 311, sub leg R Schedule IV S.26 (1), (2) & PS 26.10(6)(i)(l)	The working area for uprooting of trees, shrubs or vegetation or for the removal of boulders, poles, pillars or temporary or permanent structures shall be sprayed with water or a dust suppression agent immediately before, during and immediately after the operation so as to maintain the entire surface wet.		✓	√	√	
AQ05	Dust emission from excavation or earth moving	Cap 311, sub leg R Schedule III S.24	The heights from which excavated materials are dropped should be minimized to limit fugitive dust generation from loading/unloading.	✓		✓	✓	
AQ06	Dust emission from excavation or earth moving	Cap 311, sub leg R Schedule III S.24	Working areas of any excavation or earth moving operation will be sprayed with water.		✓	✓	✓	
AQ07	Access Road	PS 26.10(6)(i)(g)	Effective water sprays should be used on the site to dampen potential dust emission sources such as unpaved areas used by site traffic and active construction areas.		√	√	✓	

					Delivery Method			Other / Remarks
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Air Qua	lity							
AQ08	Access Road	Cap 311, sub leg R Schedule III S.14 (1) & PS 26.10 (6)(i)(a)	Areas of site with regular movement of vehicles shall have an approved hard surface and be kept clean of loose material.	✓			✓	
AQ09	Access Road	PS 26.10 (6)(i)(d)	All on-site motorized vehicles speeds shall be restricted to a max. speed of 10km/h and delivery vehicles to designated roadways inside the Site to reduce dust re-suspension and dispersion.			✓	✓	
AQ10	Access Road	Cap 311, sub leg R Schedule III S.14 (1) & PS 26.10(6)(i)(a)	The roadway between the wheel wash and the public road will be paved.	✓			✓	
AQ11	Dust emission from material transporting and handling	PS 26.10(6)(i)(h) & (i)	Vehicles transporting materials with the potential to generate dust should have properly fitting side and tailboards.	✓		✓	✓	
AQ12	Dust emission from material transporting and handling	PS 1.110 (a)	The cover of the bed of dump truck shall be power operated with manual backup, so that the operator would not need to climb on the dump bed to operate the cover (both under power mode and manual mode). Operation from driver cab or with the operator standing on ground is acceptable. After the cover to the dump bed is closed, any gap left on the system of enclosure should be less than 25mm wide measured in a direction across the gap. Any remaining gap is to be sealed up tightly with a layer of nylon bristle of sufficient length to bridge across the gap.	√		✓	√	
AQ12a	Dust emission from material transporting and handling	Cap 311, sub leg R Schedule IV S.26 (1)	Materials transported by vehicles should be covered, with the cover properly secured and extended over the edges of the side and tail boards.	✓		✓	✓	

					Delivery Method			Other / Remarks
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Air Qua	lity							
AQ13	Dust emission from material transporting and handling	PS 26.10(6)(i)(k)	Spraying all dusty materials with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	✓		✓	✓	
AQ14	Dust emission from material transporting and handling	PS 26.10(6)(i)(a)	Material storage and handling areas shall be located on hard core or paved.	✓		✓	✓	
AQ15	Dust emission from material transporting and handling	Cap 311, sub leg R Schedule IV S.26	All stockpiled aggregate or spoil of more than 50 m ³ should be enclosed or covered and water applied twice per day during dry or windy conditions.	✓		√	✓	
AQ16	Dust emission from materials transporting and handling	Cap 311, sub leg R Schedule III S.15 (1) & PS 26.10(6)(i)(f)	Stockpiles of dusty materials shall be covered and minimized the extent of spoil exposed at any given time.	✓		✓	✓	
AQ17	Dust emission from materials transporting and handling	Cap 311, sub leg R Schedule III S.15 (1)	Every stock of more than 20 bags of cement shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	✓		√	✓	
AQ18	Dust emission from materials transporting and handling	Cap 311, sub leg R Schedule III S.15 (1) & PS 26.10 (6)(i)(b)	Material conveyors for the transfer of dusty materials shall be fitted with windboards and enclosed conveyor transfer points and hopper discharge areas to minimize dust emission.	✓	√		✓	
AQ19	Dust emission from materials transporting and handling	PS 26.10 (6)(i)(c)	Totally enclosing all conveyors carrying materials which have the potential to create dust and fitting them with belt cleaners.	✓	✓		✓	
AQ20	Dust emission from materials transporting and handling	PS26.16 (2)(ii)	Profiled steel cladding should be provided at two sides of loading point at barge.	✓	✓		✓	
AQ21	Dust emission from materials transporting and handling	PS 26.16 (2)(iii)	Dust suppression sprays should be installed and operated in strategic locations at the feeding inlet and outlet.	✓	✓		✓	
AQ22	Dust emission from materials transporting and handling	PS 26.16 (2)(iv)	The barging point should be placed within a totally enclosed structure incorporating an enclosed chute for material transfer to barge.	✓	✓		✓	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Air Qua	ality							
AQ23	Dust emission from materials transporting and handling	PS 26.16 (2)(iv)	Flexible curtain should be hanged on the enclosed chute to prevent dust emission when excavated material/rocks are transported into the barge.	✓	✓		✓	
AQ24	Dust emission from materials transporting and handling	Cap 311, sub leg R Schedule III S.15	Debagging of cement and similar materials to be done in a ventilated enclosure with a filtered extraction system.	✓		✓	✓	
AQ25	Dust Emission from Blasting	Cap 311. sub leg R Schedule IV S.27 (1), (2)	Wet the area within 30m from the blasting area with water prior to blasting.	✓	✓	✓	✓	
AQ26	Dust Emission from Blasting	Cap 311. sub leg R Schedule IV S.27 (1), (2)	Wire mesh, gunnysack and sandbag should be used on top of the blast area on each shot to prevent flying rock and reduce fugitive dust generation.	√			√	
AQ27	Dust Emission from Blasting	Cap 311. sub leg R Schedule IV S.27 (1), (2)	Do not carry out blasting when the strong wind signal or tropical cyclone warning no. 3 is hoisted unless prior permission of the Commissioner of Mines is obtained.		✓	✓	√	
AQ28	Dust Emission from Blasting	Cap 311. sub leg R Schedule IV S.27 (1), (2)	Blasting shall not be carried out when a Hong Kong Observatory Thunderstorm Warning is in force.		✓	✓	✓	
AQ29	Dust Emission from Blasting	Cap 311. sub leg R Schedule IV S.27 (1), (2)	Use of vacuum extraction drilling methods and sequenced the blasting works carefully.		✓		✓	
AQ30	Dust Emission from Blasting	Cap 311. sub leg R Schedule IV S.27 (1), (2); PS 26.13(4)(iv)	Firing of explosive shall be carried out in the morning prior to opening of the Park.	√	√	√	√	
AQ31	Dust Emission from Tunnel		Exhausts from tunnel ventilation should face away from sensitive receivers.	✓	✓	✓	✓	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Air Qua	lity							
AQ32	Dust Emission from Tunnel		Forced ventilation shall be maintained in the tunnel to ensure noxious or asphyxiating gases do not accumulate. At the tunnel access shaft or portal the expelled air shall be vented to the atmosphere ensuring adequate diffusion of gases. Expelled air shall be directed away from nearby buildings.	√	✓	✓	✓	
AQ33	Dust Emission from Tunnel		Tunnel ventilation containing high level of Total Suspended Particulates (TSP) shall be filtered at least to the satisfaction of the Safety and Environmental Officers prior to being vented to the atmosphere. The filters should be changed weekly to prevent blockages, which may affect the performance of the system.	√		✓	✓	
AQ34	Dust Emission from Crushing Plant	PS 26.10(2)	The crushing plant shall be operated in accordance with the specified process licence.	✓		√	√	
AQ35	Gas Emission Smoke/fume from construction plants and equipments	Cap 311, sub leg C S.3	All plants and equipments should be well maintenance to avoid dark smoke.	✓		√	such a manner that emitted for more that period of 4 hours	perates any plant in t any dark smoke is nan 6 minutes in any or for more than 3 sly at any one time,
AQ36	Smoke/fume from construction plants and equipments	Cap 311, sub leg A S.4, 5 & 6	Prior approval should be obtained before the installation of the emergency generator.	✓			N/A	Include in the design
AQ37	Smoke from open burning	Cap 311, sub leg O S.4 (1)	Open burning for the purpose of disposal of construction waste/tyres, the salvage of metal or the clearance of site in preparation for construction work is prohibited.			√	√	
AQ38	Smoke/fume from all site vehicles	Cap 374, sub leg A S.31(1)	Black smoke should be avoided from any vehicle whether or not mechanically propelled which is constructed or adapted for use on roads (exclude a vehicle of the North-west Railway or a tram)	✓		✓	√	

					Delivery Method			Other / Remarks
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Air Qua	llity							
AQ39	Smoke/fume from all site vehicles	Cap 311, sub leg L Schedule I	Ensure the correct diesel used in any vehicle whether or not mechanically propelled which is constructed or adapted for use on roads (exclude a vehicle of the North-west Railway or a tram)		✓	✓	✓	
AQ40	Emission from spraying products	Cap 403, sub. leg C s.3	Ozone depleting paint sprayers shall not be used on sites.		✓	✓	✓	
Noise/Vi	ibration							
NV01	Noise from construction work other than percussive piling	Cap 400, S.6(1), PS 26.11 (2)	Work required for the use of powered mechanical equipment (PME) in restricted hours, i.e. the hours between 7pm and 7am on weekdays or at any time on Sundays or a public holiday, for carrying out construction activity shall be required a valid Construction Noise Permit (CNP).		√	✓	✓	
NV02	Noise Emission from construction plants and equipments	PS 26.11 (9)	Relocation of noise-emitting plant, the use of silencers, mufflers, acoustic sheds or shields or acoustic sheds or screens upon the best reasonable practice.	✓		√	✓	
NV03	Noise Emission from construction plants and equipments	PS 26.11 (10)	Maintain all plant and silencing equipment in good condition so as to minimize the noise emission during the works.			✓	✓	
NV04	Noise Emission from construction plants and equipments	Cap 400, sub. leg. C, s17(1)	Compressors should have Noise Emission Labels (NELS).			✓	✓	
NV05	Noise Emission from construction plants and equipments	Cap 400, sub. leg. D, s17(1)	Hand held breakers should have Noise Emission Labels (NELS).			√	✓	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Noise/V	ibration							
NV06	Noise Emission from construction plants and equipments	PS 26.11 (13)(i)	If the work causing serious noise pollution impacts or reached the Target Limit as stated in the Contractor's EM&A Manual, the Contractor shall provide the following proposed remedial measures:					
			Change of construction equipment location and scheduling of activities;		✓	✓	✓	
			Change of construction equipment location and scheduling of activities;	✓		✓	✓	
			Installation of construction equipment soundproofing;	✓		✓	✓	
			Provision of alternative Contractor's equipment;		✓	✓	✓	
			Erection of sound barriers around the part of the Site or the location of the construction noise source; or	✓		✓	✓	
			Any other measures that may be effective in reducing noise.		✓	✓	✓	
NV07	Noise Emission from Blasting	PS 26.13(4)(iv)	Firing of explosive shall be carried out in the morning prior to opening of the Park.	✓	✓	√	✓	
NV08	Noise Emission from Blasting	GEP Technical Guidance Note No. 25 (TGN 25)	Blast doors on tunnels to be closed during blasting if required by the blasting period.	✓		√	✓	
NV09	Noise Emission for Vehicles	Cap 374, sub leg A S.30(1)	Every vehicle propelled by an internal combustion engine shall be fitted with a silencer, expansion chamber or other contrivance suitable and sufficient for reducing, as far as may be reasonable, the noise caused by the escape of the exhaust gases from the engine.	✓		√	✓	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Water (Quality (Refer to Drainage Manage	ement Plan as stated in	PS 26.17(7))					
WQ01	Flooding and wastewater including surface runoff discharges from the construction site/work to inland coastal waters, communal sewers and drains	PS 26.12 (2)	Before commencing any site formation work, all sewer and drainage connection should be sealed to prevent debris, soil, sand and etc from entering public sewers/drains	√		✓	The existing drainage system is in use and the temporary drainage system is under preparation	
WQ02		PS 26.12 (2)	The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection.	✓			N/A	
WQ03		PS 26.12 (2)	Wheel wash water shall be changed frequently and sediment removed regularly	✓		✓	✓	
WQ04		PS 26.12 (2)	Construction runoff related impacts associated with tunneling and above ground construction activities can be readily controlled through the use of appropriate mitigations measures which include:					
			Use of sediment traps, oil interceptors; and	✓		✓	✓	
			Adequate maintenance of drainage systems to prevent flooding and overflow.		✓	✓	✓	
WQ05		PS 26.12 (2)	Exposed areas should be minimised to reduce the potential for increased siltation, runoff contamination, and erosion.	✓	✓	✓	✓	
WQ06		EIA Ref. S9.44 EM&A Ref. S8.3	Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses via silt retention points.	√	✓	✓	✓	
WQ07		EPD ProPECC Note No. PN1/94; PS 26.17(6)(ii)	The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC Note PN 1/94.	√	✓		✓	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Water (Quality (Refer to Drainage Manage	ement Plan as stated in	PS 26.17(7))					
WQ08	Flooding and wastewater including surface runoff discharges from the construction site/work to inland coastal waters, communal sewers and	EP Clause2.13	To improve the coagulation and sedimentation process for construction phase discharges from excavation works at Headland, sand/silt removal facilities, including sand/silt traps and sediment basins should be provided.	~		✓	✓	Updated Drainage Proposal is being implemented
WQ09	waters, communal sewers and drains	PS 26.12(4)	All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable.		√	✓	o	
WQ10		PS 26.12	If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	✓	√	✓	o	
WQ11		PS 26.12(6)(iv)	Sediment tanks of sufficient capacity are recommended as a general mitigation measure that can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	√		✓	✓	
WQ12		PS 26.12(6)(ii)	All silt removal facilities will be inspected daily and cleaned whenever necessary.			✓	✓	
WQ13		PS 26.12(6)(iv)	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed in to foul sewers.		✓	✓	✓	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Water Q	Quality (Refer to Drainage Manage	ement Plan as stated in	PS 26.17(7))					
WQ14	Flooding and wastewater including surface runoff discharges from the construction site/work to inland coastal waters, communal sewers and drains	EP Clause2.12 & 2.14; PS 26.17(6)(iii)	Design and install a silt curtain system to enclose the existing 1000mm diameter storm water pipe outlet at Tai Shue Wan to minimize the water quality impacts on the marine environment during rainy seasons.	✓	✓		✓	Silt curtain proposal was deposited in the EIAO Register Office for public inspection.
WQ15		EPD ProPECC Note No. PN1/94; PS 26.17(8)(e)	Precautions should be taken at any time of year when rainstorms are likely. Actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms, are summarized in Appendix A2 or ProPECC Note PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.			√	√	Heavy rain procedures
WQ16		PS 26.12(6)(i)	Oil interceptors should be provided in the drainage system and these should be regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	√			✓	
WQ17		PS 26.12(2)	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited on roads.			√	✓	
WQ18		PS 26.12	Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	✓			✓	
WQ19		PS 26.12(6)(iii)	An adequately designed and located wheel washing bay should be provided at every site exit and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.	✓			✓	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Water (Quality (Refer to Drainage Manage	ement Plan as stated in	PS 26.17(7))					
WQ20	Flooding and wastewater including surface runoff discharges from the construction site/work to inland coastal waters, communal sewers and drains	PS 26.12	The section of access road leading to, and exiting from, the wheel wash bay to the public road should be paved with sufficient backfall towards the wheel wash bay to prevent transport of soils and silty water to public roads and drains.	✓			✓	
WQ21		PS 26.12	Open stockpiles of construction materials of more than 50m ³ should be covered with tarpaulin or similar fabric.			✓	✓	
Drainag	ge and Sewage (Refer to Drainage	Management Plan as st	ated in PS 26.17(7) and Drainage Proposals as sta	ted in EP Clause 2	2.13)			
DS01	Polluted water discharge from construction site or works	PS 26.17(4)	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharges should be adequately designed for the controlled release of storm flow (one in five year event).	√			√	Drainage Proposal
DS02	Polluted water entry stormwater system during the site activities	PS 26.17(6)	All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms.	✓		✓	√	
DS03	Polluted water from site reinstatement	PS 26.17(2)	Temporarily diverted drainage systems should be reinstated to their original condition when the construction work has finished, or the temporary diversion is no longer required.				✓	Note
DS04	Polluted water from concrete lorry washing	PS 26.17	Wash water from concrete trucks and pumps is to be collected in skips for treatment.	✓		✓	✓	
DS05	Polluted water from the plant yard	WMP	Plant maintenance areas to be enclosed.	✓			✓	
DS07	Polluted water entry from waste collected area	PS 26.18(2)	Debris and rubbish on site should be collected, handled and disposed of properly to avoid entering the water column to cause water quality impacts.	√		✓	√	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Drainag	ge and Sewage (Refer to Drainage 1	Management Plan as st	ated in PS 26.17(7) and Drainage Proposals as sta	ted in EP Clause 2	.13)			
DS06	Polluted water from excavation	PS 26.17(6)(ii)	Temporary open storage of excavated materials used for backfill on site should be covered with tarpaulin or similar fabric during rainstorms. Any washout of construction or excavated materials should be diverted through appropriate sediment traps before discharge to storm water drainage systems.			√	✓	
DS08	Polluted water and sewage entry the chemical toilets	PS 26.12(3)	Construction sewage may need to be handled by portable chemical toilets if construction workers are likely to be dispersed along the alignment.	✓			✓	
DS09	Polluted water and sewage entry the chemical toilets	PS 26.12(3)	Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the construction workers. This contractor will also be responsible for waste disposal and maintenance practices.	~			✓	
DS10	Polluted water from chemical storage area	PS 26.12(9)	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching WSRs.	~			✓	
DS11	Polluted water from spillage	WMP; PS 26.12(10)	Spill action plan is to be prepared.			✓	✓	Spill procedures
DS12	Polluted water from petrol filling activity	WMP; PS 26.17(8)(l)	Petrol interception for oil filling point.	✓			✓	
DS13	Polluted water from tunnel pump out	PS 26.17(8)	Ground water pumped from tunnels etc., should be discharged into drainage channels that incorporate sediment traps to entrance deposition rates and to remove silt.	<			N/A	
DS14	Polluted water from construction works	PS 26.17(8)(i)	Construction work force sewage discharges on site should be connected to the existing trunk sewer or sewage treatment facilities, if practicable.	✓		√	√	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Drainag	e and Sewage (Refer to Drainage	Management Plan as sta	ated in PS 26.17(7) and Drainage Proposals as sta	ted in EP Clause 2	.13)			
DS15	Polluted water from pantry	PS 26.17(8)(k)	Wastewater collected from pantry including that from basins, sinks and floor drains, should be discharged into foul sewers via grease traps capable of providing at least 20 minutes retention during peak flow.	✓			✓	
Waste N	Ianagement (Refer to Waste Man	agement Plan as stated	in EP Clause 2.21)					
WM01	Disposal of waste (general)	PS 26.18	Minimize the generation of waste from Works. Avoidance and minimization of waste generation shall be achieved through changing or improving design and practices, careful planning and good site management.			✓	✓	Note
WM02	Disposal of waste (general)	PS 26.18	Different types of waste are segregated on-site and stored in different containers, skips or stockpiles to facilitate the reuse/recycling of materials, thus avoiding disposal (generally with only limited processing and reprocessing may be required).	√		*	✓	
WM03	Disposal of waste (general)	WMP	A trip ticket system for the disposal of Construction and Demolition (C&D) materials following the guidelines stipulated in the Environment, Transport and Works Bureau Technical Circular (Works) No. 31/2004 shall be used to prevent any illegal dumping.			✓	✓	
WM04	Disposal of waste (general)	PS 26.18	No construction waste of more than 20% inert material by volume shall be disposed of to landfill. Inert materials like rock, sand, concrete debris should be sorted out from construction waste before disposal. Dry concrete waste or the excavated materials should be recycled for reuse or sorted for disposal at public dumps.			✓	✓	
WM05	Generation and disposal of construction and demolition waste	WMP; PS 26.18	All non-inert construction waste material deemed unsuitable for reclamation or land formation and all other waste material shall be disposed at public dumps.	✓		✓	✓	Note

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Waste M	Ianagement (Refer to Waste Man	agement Plan as stated	in EP Clause 2.21)					
WM06	Generation and disposal of construction and demolition waste	WMP; PS 26.18	The C&D materials shall be sorted into public fill (inert portion) and C&D waste (non-inert portion). The inert portion which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt shall be reused in earth filling, reclamation or site formation works as far as possible. Where excavated rock is of the appropriate grade, it shall be crushed and reused as aggregate or for other surfacing uses, wherever possible. The non-inert portion, which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled.	√	✓	✓	\	
WM07	Disposal of waste (general)	WMP; PS 26.18	Record of the amount of waste generated, recycled and disposed of shall be kept on site for easy reference and checking.			✓	✓	
WM08	Disposal of waste (general)	WMP; PS 26.18	Authorized/Licensed Waste Hauliers/Collectors should be used to collect and transport different category wastes to the appropriate disposal points.			√	√	
WM09	Disposal of waste (general)	WMP; PS 26.18	Handle and store wastes in a manner, which ensures that they are held securely without loss or leakage, thereby minimizing the potential for pollution.			√	√	Note
WM10	Disposal of waste (general)	WMP; PS 26.18	Remove wastes in a timely manner and maintain the waste storage areas clean regularly.			√	✓	
WM11	Disposal of waste (general)	WMP; PS 26.17(8)	Regular cleaning and maintenance the drainage system, sumps, oil interceptors and grease traps. The waste from these facilities shall be collected and disposed of by a licensed Collector.	√		√	✓	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Waste M	Ianagement (Refer to Waste Man	agement Plan as stated	in EP Clause 2.21)					
WM12	Disposal of waste (general)	WMP	Obtain the necessary permits and licenses with regards to the waste management from the appropriate authorities wherever necessary, in accordance with The Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste)(General) Regulation (Cap 354), The Crown Land Ordinance (Cap 28), and Dumping at Sea Ordinance (Cap 466)			√	✓	
WM13	Disposal of waste (general)	WMP	Provide training for workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling.			✓	✓	
WM14	Generation and disposal of construction and demolition waste	WMP & WBTC 5/99 (Appendix A)	The Contractor shall produce a Construction and Demolition Material Disposal Delivery Form (the Form) for each and every vehicular trip transporting Construction and Demolition (C&D) materials off-site. The Contractor shall complete the Form and maintain records as per procedures.			√	✓	
WM15	Production of Chemical Waste (general)	Magnitude	For those processes that generate chemical waste, it may be possible to find alternatives that generate reduced quantities or even no chemical wastes, or less dangerous types of chemical waste	√	√		✓	
WM16	Production of Chemical Waste (general)	Cap 354 sub. leg. C; PS 26.18 (4)	The Contractor shall be required to register with EPD as a chemical waste producer and to follow the guidelines as stated in the Code of Practice on the Packaging, Labeling and Storage of Chemical Wastes.				✓	Register as chemical waste producer has done

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Waste M	Ianagement (Refer to Waste Mana	agement Plan as stated i	in EP Clause 2.21)					
WM17	Storage of Chemical Waste	Cap 354 sub. leg. C s. 13, 14, 15, 16, 18 & 19; PS 26.18(4)	Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste)(General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labeling and Storage of Chemical Wastes as follows:					
			A suitable area (special container(s) would be proposed to use) for temporary storage of chemical waste shall be provided. The best location for the storage area shall be located close to the source of chemical waste generation.	✓			✓	
			The container used for the storage of chemical waste should be used for chemical waste only and kept clean and dry all the times.	✓		√	✓	
			The container shall be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed.	✓		√	✓	
			The container should have a capacity of less than 450 l unless the specifications have been approved by EPD.	✓			✓	
			If the container is not used as the storage, the storage area shall be enclosed on at least three sides by a wall, partition or fence with a height of not less than 2m or the total height in stack, whichever is less.	✓		√	✓	
			Adequate ventilation shall be allowed by leaving some space between the top of the enclosure walls and ceiling, or provision of louvers on the sides of the enclosure walls.	✓		✓	✓	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Waste M	Ianagement (Refer to Waste Mana							
WM17 (contd)	Storage of Chemical Waste	Cap 354 sub. leg. C s. 13, 14, 15, 16, 18 & 19; PS 26.18(4)	The storage area should have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	✓		✓	✓	
			The storage area should be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary)	✓		✓	✓	
			• Every chemical waste storage area should display a hazard-warning panel, notice or marking at or near the entrance or opening of the storage area in English and Chinese characters "CHEMICAL WASTE" and "化學廢物" clearly and boldly in red on a white background with a letter/character size of not less than 60mm high.	✓		√	✓	
WM18	Disposal of Chemical Waste	WMP; PS 26.18	Disposal of chemical waste be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility that also offers a chemical waste collection service and can supply the necessary storage containers, or to a re-user of the waste under approval from EPD.			√	✓	
WM19	Disposal of Chemical Waste	Cap 354, sub. leg. C s21 & 22	Disposal of chemical waste should be via a licensed waste collector.			✓	✓	
WM20	Generation of general refuse	Cap 311, sub leg O S.4 (1)	Law prohibits the burning of refuse on construction sites.			✓	✓	
WM21	Generation of general refuse	Magnitude	Office wastes can be reduced through recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered if one is available.	✓		✓	✓	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Waste N	Management (Refer to Waste Man	agement Plan as stated	in EP Clause 2.21)					
WM22	Generation of general refuse	WMP	General refuse generated on site should be stored in enclosed bins or compaction units separate from construction and chemical wastes. A reputable waste collector should be employed to remove general refuse from the site, separately from construction and chemical wastes, on a daily or every second day basis to minimize odour, pest and litter impacts.	√		✓	✓	
WM23	Generation of general refuse	Magnitude	General refuse will be generated largely by food service activities on site, so reusable rather than disposable dishware should be used if feasible. Individual collectors often recover aluminum cans from the waste stream if they are segregated or easily accessible, so separate labeled bins for their deposit should be provided wherever feasible.	✓		✓	✓	
Ecology		_						
EC01	Ozone Emission entry the ambient environment	PS 26.08 (3) (i)	Ozone depleting fire extinguishers shall not be used for temporary firefighting measures and ozone depleting substances shall not be used in carrying out the Works.				√	Note restriction
EC02	Disturbance the marine ecological sensitive receivers	EP Clause 2.12; PS 26.14(5)	Divert the construction phase discharges from excavation works at Headland to an existing 1000mm diameter storm water pipe outlet at Tai Shue Wan to avoid impacts on coral communities in the marine water around the Nam Long Shan headland.	✓		√	✓	Drainage Proposal
EC03	Disturbance the marine ecological sensitive receivers	EP Clause 2.15	No marine-based construction works shall be allowed for the Project to conserve the marine ecological resources in the vicinity of the project area.	✓	✓	√	√	

					Delivery Method		g, ,	Other / Remarks
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	
Ecology								
EC04	Disturbance the ecological sensitive receivers	EP Clause 2.17 & PS 26.14 (1)	The site clearance works before bulk excavation to the existing mountain to provide a new platform for the Summit shall commence before or outside the breeding season of Black Kites, i.e. from October to May of the next year.	√	√	✓	✓	
EC05	Disturbance the ecological sensitive receivers	PS 26.14 (2)	Design of temporary conveyor belt system and the location of temporary adit portals should be considered to avoid impact to potential nest sites in the tall shrubland habitat at Tai Shue Wan area where possible.	√	√	✓	✓	
EC06	Disturbance the ecological sensitive receivers	EP Clause 2.19	No construction works and discharge from the construction site(s) shall be allowed within the existing freshwater ponds at the Tai Shue Wan area and within the enhanced Pond 35 after enhancement works.	✓		✓	✓	
EC07	Disturbance the ecological sensitive receivers	EM&A section 6.2.5	Minimize the impact due to construction on the existing surrounding vegetation by: Set up of temporary tree nurseries; Designation of "no-intrusion zones" and to record any trespass, including the damage to the existing vegetation; Hill fire prevention;	✓		✓ ✓	✓ ✓ ✓ ✓	
			Well-planned irrigation networks throughout the establishment period.	√	√	<i>✓</i>	✓	

					Delivery Method		_	
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Ecology								
EC08	Disturbance the ecological sensitive receivers	EM&A section 7.17 & EIA section 5.138	Minimize the impact due to construction on the uncommon plant species by:					
			Vegetation survey and subsequent transplantation of locally uncommon or restricted species as far as practicable;		√		including Long Ten leaved Orchid, Rattlesnake-Plan	restricted species tacle Orchid, Sword- Green-flowered ntain, Cycad-fern, and Chinese Lily
			Trees located within the works areas shall be preserved as far as practicable;	✓		✓	✓	
			Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimize disturbance to natural habitats;			✓	✓	
			Construction activities shall be restricted to the works areas that would be clearly demarcated;	✓		✓	✓	
			The work areas shall be reinstated immediately after the completion of works;	✓			✓	
			Landscaping works on newly formed land shall as far as possible make use of native plant species.	✓			✓	
Hazard	to Life							
HL01	Hazard to life due to blasting activities	EM&A section 11.3 & EIA Section 12.15	The blasting activities shall be inspected and audited at practical intervals to ensure that the assumptions and recommendations from the Quantitative Risk Assessment (QRA) study are implemented.	✓	✓	√	✓	
HL02			The recommendations from the systematic hazard identification are consistently implemented in accordance with the intent of the hazard to life assessment.	✓	✓	✓	√	

					Delivery Method			
No.	Environmental Aspect	Requirement (Classification)	Aspect Mitigation	Site Installation	Method Statement	Toolbox Talk	Status	Other / Remarks
Landsca	pe and Visual							
LV01	Visual and Appearance	EM&A Section 6.2.5	Minimize the visual and appearance impact by:					
	considerations		careful choice between 'impermeable' and 'permeable' hoardings.	✓			✓	
			2. control over the appearance of construction workers, construction plants/ machines.			✓	✓	
			3. proper screening and careful alignment of the temporary barging point and conveyor system.	✓			In the design	
			4. careful selection of security floodlights to avoid light pollution.	✓			✓	
Cultural	and Heritage Impact							
CH01	Cultural and Heritage Impact	EP clause 2.22	To preserve the grave G1, no works shall be allowed within one metre from the vicinity of such grave.	√		√	✓	Note requirement

Notes:

EP denotes the Environmental Permit No. 249/2006 and its subsequent permits.

EM&A Manual denotes the Contractor specific EM&A Manual.

WMP denotes the Waste Management Plan.

EIA denotes the Final EIA Report No. AEIAR-101/2006.

PS denotes the Particular Specification of the Project.

- ✓ denotes implemented.
- **o** denotes to be implemented.

APPENDIX I – EVENT AND ACTION PLANS

Event/Action Plan for Air Quality Monitoring

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

APPENDIX I – EVENT AND ACTION PLANS (CONT'D)

Event/Action Plan for Air Quality Monitoring

Event		Action	<u> </u>	
Limit Level	CET	Contractor	PMR	IEC
Exceedance for one sample	 Identify source. Notify EPD, IEC, PMR and Contractor. Conduct additional monitoring to investigate the causes. 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. 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. 	 Take immediate action to avoid further exceedance and rectify any unacceptable practice 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 Implement agreed proposal within a time scale agreed with PMR and IEC. Amend working methods if appropriate. 	 Confirm receipt of notification of failure in writing. Notify Contractor. Require Contractor to submit air mitigation proposal. Ensure remedial measures are properly implemented. 	 Review monitoring data and investigation report submitted by CET. Discuss amongst PMR, CET and Contractor in order to formulate air mitigation proposal. Review Contractor's air mitigation proposal and advise the PMR accordingly. Supervise and confirm in writing the implementation of remedial measures.
Exceedance for two or more consecutive samples	 Identify source. Notify EPD, IEC, PMR and Contractor. Conduct additional monitoring to investigate the causes. 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. 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. If exceedances continue after 2 consecutive monitoring events, request PMR to arrange meeting with IEC and contractor to discuss remedial actions. 	 Take immediate action to avoid further exceedance and rectify any unacceptable practice. 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. Implement agreed proposal within a time scale agreed with PMR and IEC. Amend working methods and proposal if appropriate. Stop relevant portion(s) of works as required by PMR, CET and IEC. 	 Confirm receipt of notification of failure in writing. Notify Contractor. Require Contractor to submit air mitigation proposal. Ensure remedial measures are properly implemented. 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. 	 Review monitoring data and investigation report submitted by CET. Discuss amongst PMR, CET and Contractor in order to formulate air mitigation proposal. Review Contractor's air mitigation proposal and advise the PMR accordingly. Supervise and confirm in writing the implementation of remedial measures.

APPENDIX I – EVENT AND ACTION PLANS (CONT'D)

Event/Action Plan for Regular Construction Noise Monitoring

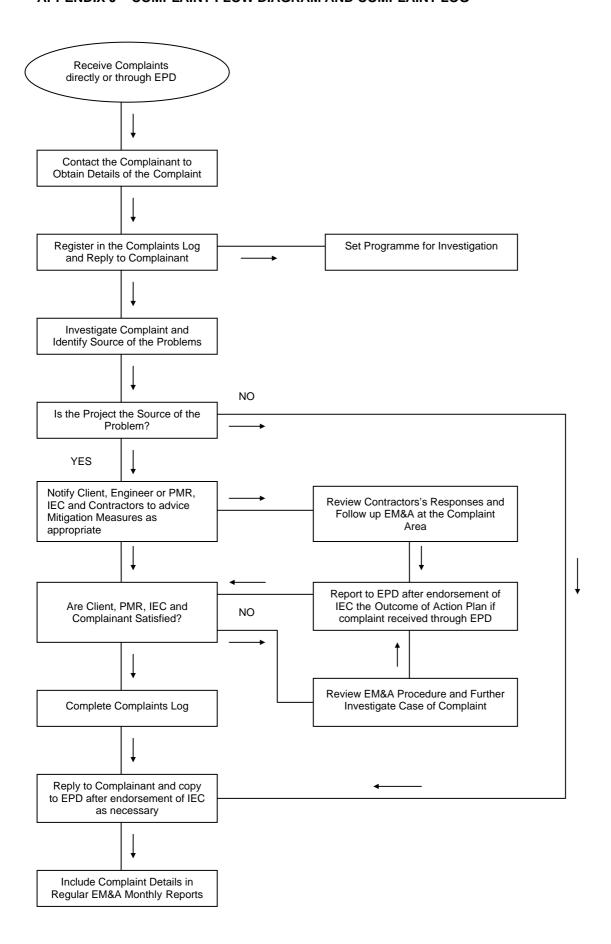
Event	Action Action				
	CET	Contractor	PMR	IEC	
Action Level Exceedance	 Identify source. Notify IEC, PMR and Contractor. Conduct additional noise monitoring to investigate the causes. Report the investigation results to the IEC, PMR and Contractor. Discuss with Contractor for their formulation of remedial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

APPENDIX I – EVENT AND ACTION PLANS (CONT'D)

Event/Action Plan for Subtidal Monitoring

Event	ET				
Action Level Exceedance	tep 1 - Inform the IEC, ER, Contractor, Project Proponent, EPD, and AFCD and discuss the most appropriate method of reduce sediment in the discharge (e.g. check and increase effectiveness of construction site drainage and sediment and other site run off removal facilities)	_			
	Step 2 - Audit the implementation of mitigation measures on site.				
	tep 3 - If non-compliance continues, check and confirm the effectiveness of mitigation measures and repeat monitoring survey measurements.				
Limit Level	Undertake Steps 1-3.				
Exceedance	If further exceedance of Limit Level, suspend construction works until an effective solution is identified.				
	nce the solutions have been identified and agreed with all parties, construction works may commence.				

APPENDIX J - COMPLAINT FLOW DIAGRAM AND COMPLAINT LOG



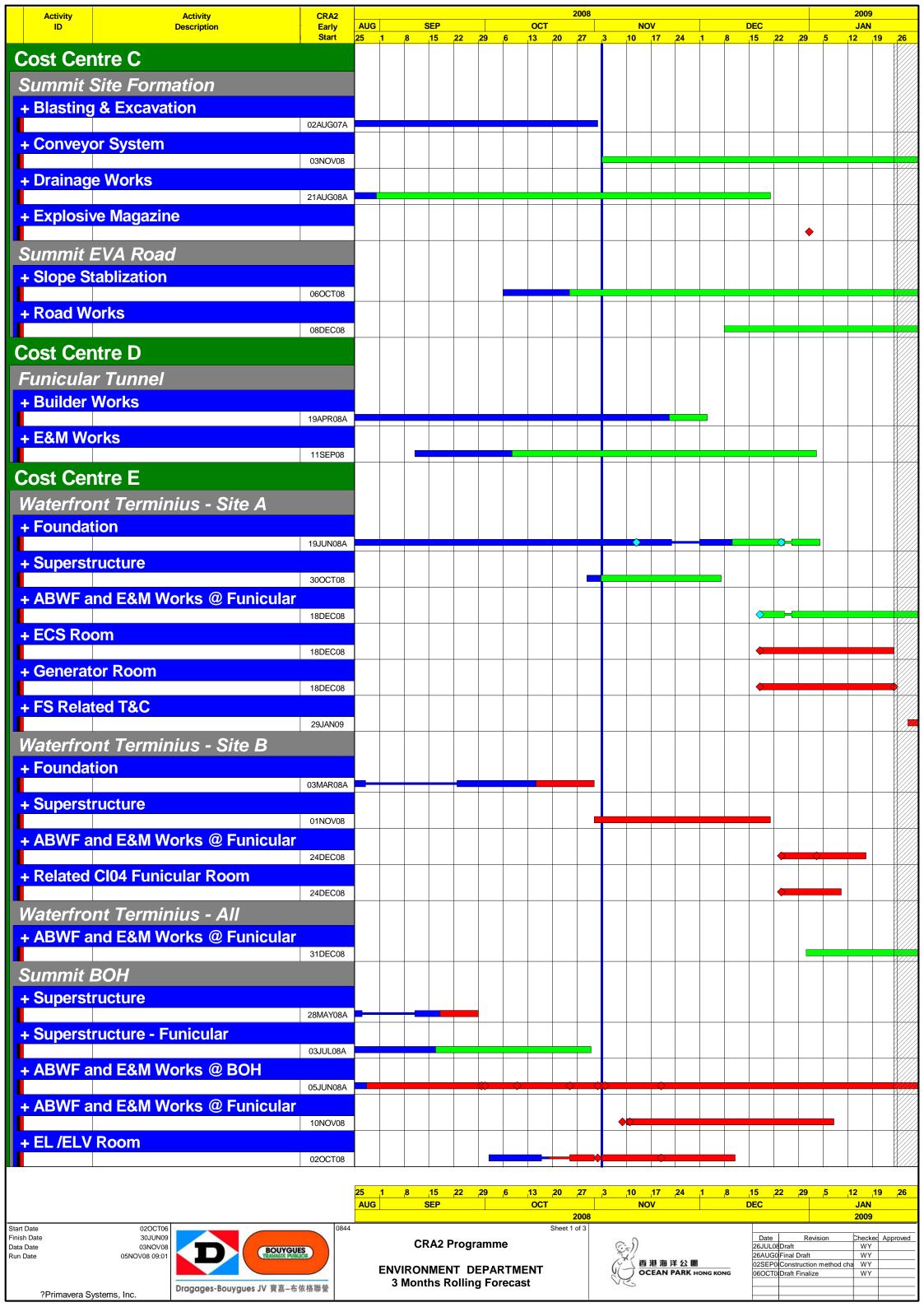
COMPLAINT RECORD REGISTER

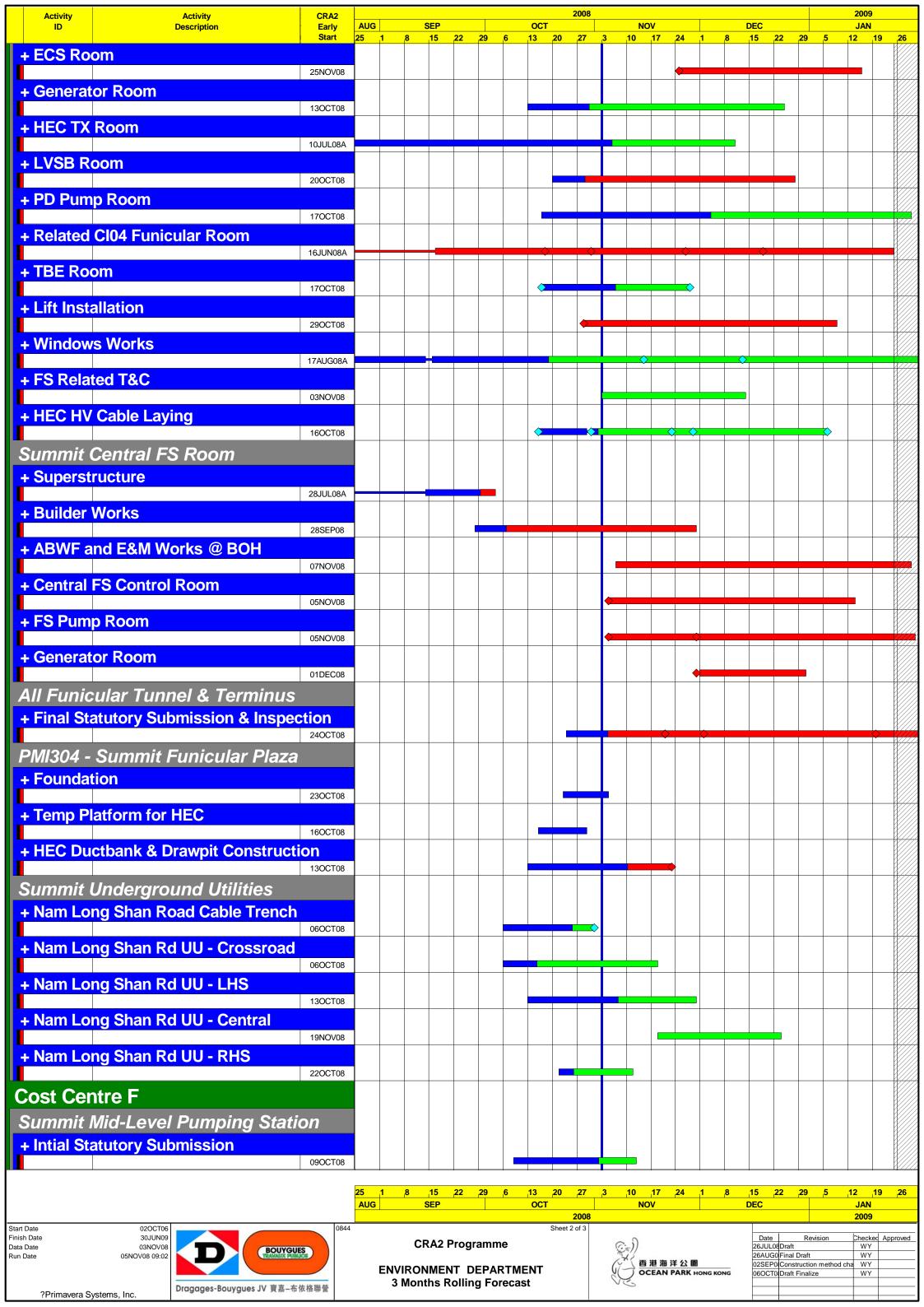
Record ID	Date Received	Type (PMR / EPD / Public / Others, please specify)	Description	Responsible Project	Justified complaint?	Status (Open / Closed)
OPE/DBJV/PROJ/QSE/ECR/001	05-Nov-07	Public thro' EPD	The complainant claimed that dust nuisance was observed at Tai Shue Wan on 03-Nov-07.	CI05	N/A	The inspector of EPD came to the scene on 05-Nov-07 and no significant observation was made, hence the complaint was closed.
OPE/DBJV/PROJ/QSE/ECR/002						Under investigation, the noise nuisance was concluded from the soft ground tunnel support work adjacent to GPH. Rock breaking had to be carried out within the tunnel works areas due to safety and emergency in order to prevent the collapse of the ground support structure.
	09-Jan-08	Public thro' OPC	The complainant claimed that noise nuisance was heard from the Ocean Park construction sites during the restricted hours	CI05	Justified	With regards to the complaints, immediate action was taken and summarized as follows:
OPE/DBJV/PROJ/QSE/ECR/003						The enclosure and the acoustic doors have been built and completed on 21-Jan-08; and
						Surveillance was stepped up in order to ensure that timely actions could be taken to rectify any complaints.
						With regards to the complaints, immediate action was taken and summarized as follows:
OPE/DBJV/PROJ/QSE/ECR/004	13-Feb-08	Public thro' EPD	The complainant claimed that noise nuisance was heard from the Ocean Park construction sites during the restricted hours at Tai Shue Wan	CI05	Justified	Additional noise control measures, including noise enclosure at the junction of the conveyors at Tai Shue Wan; and
			at tal sites it all			Well manage the working sequence in order to minimize the impacts to the vicinity.
						With regards to the complaint, investigation has conducted and the findings and action to be taken were summarized as follows:
OPE/DBJV/PROJ/QSE/ECR/005	12-Mar-08	Public thro' EPD	The resident from Broadview Court claimed that noise nuisance from the night works at Nam Long Shan Road	CI05	Justified	 Movable noise panels and the noise shield have been used during the breaking works. The potential cause of the noise nuisance might be the panels were not placed properly and the noise emitted from the gap. The in-charge foreman has been reminded to place the panels properly in order to minimize the noise nuisance to the vicinity.
OPE/DBJV/PROJ/QSE/ECR/006	13-Mar-08	Public thro' EPD	The complainant claimed that noise nuisance from the night works at Nam Long Shan Road	CI05	Justified	Please refer to the findings of Record ID No. OPE/DBJV/PROJ/QSE/ECR/005.
OPE/DBJV/PROJ/QSE/ECR/007	20-Mar-08	Public thro' EPD	The complainant claimed that noise nuisance from the night works at Nam Long Shan Road	Cl05	Justified	With regards to the complaint, investigation has conducted and the findings could not made any conclusions. In this context, the incharge engineer/foreman of each CNP has notified and reminded that all requirements under the CNP should be complied with all the times.
						With regards to the complaint, action was taken as follows:
OPE/DBJV/PROJ/QSE/ECR/008	15-Mar-08	Public thro' EPD	The complainant claimed that dust nuisance from the crusher,	CI05	Cl05 Justified	Enhance the water spraying, especially the frequency, in order to minimize the dust nuisance to the vicinity.
			Nam Long Shan Road			Besides, the length of dust screen was extended to increase the coverage area of stockpile to minimize the dust nuisance due to strong wind.
			The complete state of the training the training training the training train			With regards to the complaint, immediate action was taken and summarized as follows:
OPE/DBJV/PROJ/QSE/ECR/009	19-Mar-08	ar-08 Public thro' EPD	The complainant claimed that noise from the temporary steel plates over trenches at Nam Long Shan Road	Cl05	05 Justified	Inform the in-charge foreman to provide sufficient sandbags or rubber pad before placing the temporary steel plates back to cover the trench.
ODE IDD IVIDDO HOSE IFOR 1212	05 M 00	25-Mar-08 Public thro' EPD	Police Training School claimed that dust nuisance from Cl12C to the school	Cl05	Justified	With regards to the complaint, immediate action was taken and summarized as follows:
OPE/DBJV/PROJ/QSE/ECR/010	25-Mar-08					Inform the in-charge foreman to increase the frequency of water spraying of the exposed areas.

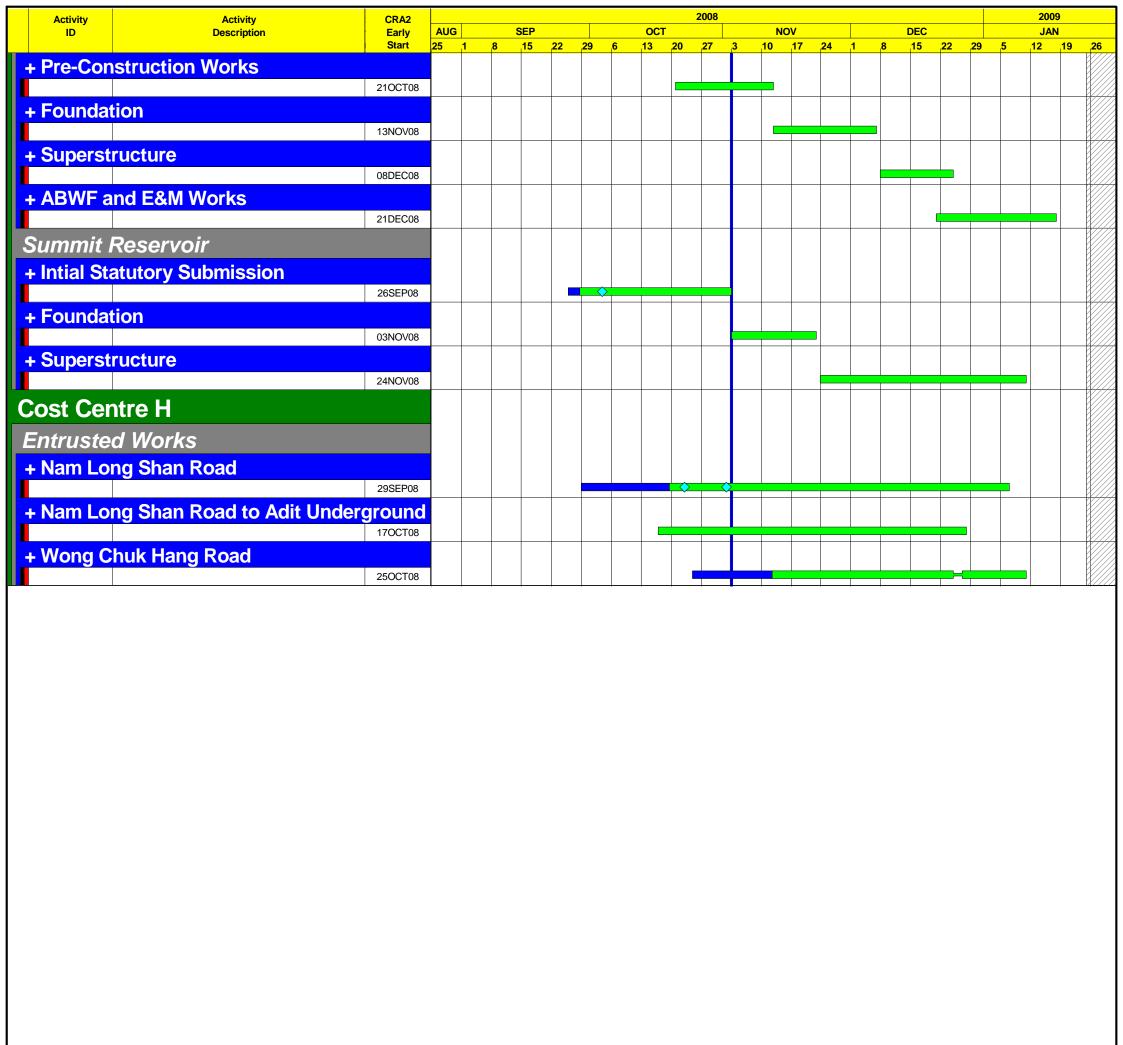
COMPLAINT RECORD REGISTER

Record ID	Date Received	Type (PMR / EPD / Public / Others, please specify)	Description	Responsible Project	Justified complaint?	Status (Open / Closed)
OPE/DBJV/PROJ/QSE/ECR/011	23-May-08	Public thro' EPD	The complainant claimed that noise from the temporary steel plates over trenches at Nam Long Shan Road.	Cl05	Justified	With regards to the complaint, immediate action was taken and summarized as follows: Inform the in-charge foreman to ensure that the temporary steel plates should be placed tight without loose and gap before leaving. Inform the heavy vehicle drivers try to not step on the metal plate when driving thro' the metal plates and reduce the speed.
OPE/DBJV/PROJ/QSE/ECR/012	18-Jul-08	Public thro' EPD	The complainant concerning the export of excavated materials originated from Ocean Park to the Mainland China.	CI05	Justified	With regards to the complaint, relevant documents have been provided to EPD to justify the procedures of import and export of excavated materials are fully followed.
OPE/DBJV/PROJ/QSE/ECR/013	05-Aug-08	Public thro' DSD and EPD	The complainant mentioned that there was muddy water at the Wong Chuk Hang Nullah (opposite to Aberdeen Sport Ground).	N/A	Not justified	With regards to the complaint, a joint site inspection has been conducted with DSD, EPD, SDC, PMR, DBJV and WH. Conclusion has been made that DBJV was responsible to clean the portion of nullah near the construction sites and the cleaning works has completed in the following week after the inspection.
OPE/DBJV/PROJ/QSE/ECR/014	02-Sep-08	Public thro' EPD	The complainant claimed that dust nuisance from the barging point at Tai Shue Wan.	CI05	Not justified	With regards to the complaint, a joint site inspection has been conducted with EPD, PMR and DBJV. Conclusion has been made that it was suspected that the complainant saw the misty vapour and claimed as dust since the water spray in misty form has been in use during the operation all the times.
OPE/DBJV/PROJ/QSE/ECR/015	30-Sep-08	Public thro' EPD	The complainant claimed that noise from the temporary steel plates over trenches and the smell of bitumen during the road paving at Nam Long Shan Road.	Cl05	Justified	With regards to the complaint, EPD visited our site on 30-Sep-08 and made some advice as follows: Strengthen the cushion media underneath the steel plate. Further remind all DBJV vehicles to reduce the speed during passing on the steel plate. Give advance notice to the tenants when there is a bitumen paving.

APPENDIX K – CONSTRUCTION PROGRAMME







25 1 8 15 22 29 6 13 20 27 3 10 17 24 1 8 15 22 29 5 12 19 26

AUG SEP OCT NOV DEC JAN

2009

0844 Sheet 3 of 3

 Start Date
 02OCT06

 Finish Date
 30JUN09

 Data Date
 03NOV08

 Run Date
 05NOV08 09:02

 ?Primavera Systems, Inc.



CRA2 Programme

ENVIRONMENT DEPARTMENT

3 Months Rolling Forecast



Date Revision Checked Approved
26JUL08Draft WY
26AUG0 Final Draft WY
02SEPO Construction method cha WY
06OCTO Draft Finalize WY

APPENDIX L – CONTACTS OF KEY ENVIRONMENTAL PERSONNEL

Company	Contact Person	Position	Telephone No.
Ocean Park Corporation	Walter KERR	Project Manager	2910 3121
Maunsell Consultants Asia Ltd	Edmund PANG	Project Manager Representative (PMR) & Project ETL	2871 5888
	KC CHAN	RSS (Safety & Environment)	2910 3155
Dragages-Bouygues J.V.	YT SO	YT SO Project QSE Manager	
Dragages-bouygues 3. v.	Schroeder TAM	Project QSE Officer (Env.)	2555 4113
Mott MacDonald Hong Kong Ltd	Dr. Anne KERR	Independent Environmental Checker	2828 5757
ETS-Testconsult Limited	CL LAU	Environmental. Monitoring Team Supervisor	2695 8318



Contract No. CW02

Ocean Park Redevelopment Project - Astounding Asia

Monthly EM&A Report (Version 1.0)

October 2008

Certified By

(Environmental Team Leader)

REMARKS:

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

CINOTECH accepts no responsibility for changes made to this report by third parties.

CINOTECH CONSULTANTS LTD

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Email: info@cinotech.com.hk

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EXECUTIVE SUMMARY

Introduction

This is the 15th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited (Cinotech) for the Contract No. CW02 "Ocean Park Redevelopment Project – Astounding Asia" (hereinafter called "the Project"). The Project was commenced on 1st August 2007. This document reports the findings of the environmental auditing works conducted in October 2008.

The major site activities undertaken in the reporting month included:

- Builder's & finishing works, E&M works and fitting out work at Astounding Asia Restaurant;
- R.C. work for MVAC culvert, underground drainage works, superstructure works (RC works), builder's & finishing works, E&M works, fitting out works and structure works for artificial rockworks at the New Panda Habitat;
- Tree transplanting works and excavation work at Bird Theatre; and
- External drainage, services pipelines and ducting works and road formation & structural paving.

Environmental Monitoring and Audit Works

Environmental monitoring and audit works for the Project was performed as stipulated in the updated EM&A Manual. Site audits were conducted once per week. Environmental site audits were conducted on 8th, 14th, 24th and 28th October 2008. No non-compliance was observed during the site audits.

The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

No notification of exceedance was received from the Project Environmental Team Leader (ETL) in the reporting month. Summary of the events and action taken in the reporting month is tabulated in **Table I**.

Table I Summary Table for Events Recorded in the Reporting Month

Danamatan	No. of Events		No. of Events	Action Taken	
Parameter	Action Level	Limit Level	Due to the Project	Action Taken	
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

Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Redevelopment Project, Registration of Waste Producer, Water Discharge License and one Construction Noise Permit (CNP). No new CNP was issued to the Project by EPD in the reporting month.

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

Complaints and Prosecutions

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

Future Key Issues

Key issues to be considered in the coming month include:

- Finishing works, E&M and fitting out works at Astounding Asia Restaurant;
- Underground drainage works, superstructure works(Steel works), ETFE Roofing installing, builder 's and finishing works, E&M works, fitting out work and structural & work for artificial rockwork at the New Panda Habitat;
- Excavation works and RC work for footing and underground drainage work at New Bird Theatre; and
- External drainage, services pipelines and ducting works and road formation & structural paving.

1. INTRODUCTION

Background

- 1.1 The "Repositioning and Long Term Operation Plan of Ocean Park" has been implementing by the Ocean Park Corporation at its 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.
- 1.2 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 (Project's 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.
- 1.3 W. Hing Construction Co., Ltd. (the Contractor) was commissioned by the Employer to undertake the design and construction of the Contract No. CW02 "Ocean Park Redevelopment Project Astounding Asia" (hereinafter call "the Project").
- 1.4 The Project includes design and construction of:
 - (a) ETFE roof membrane system including the membrane, mullion, supporting frame, fixing to main structure, openings and all associated elements
 - (b) Aviary netting including mesh and supporting wire and fixing to main structures
 - (c) Artificial Rockwork including concrete foundations, internal structural supporting systems and fixing details
 - (d) All GRC works
 - (e) Skylight at back of house of Panda Habitat
 - (f) Nest box of Red Panda
 - (g) E&M supporting structures
 - (h) Balustrade
 - (i) Mural
 - (j) Exhibit glazing at the alligator, panda mountain viewing shelter, otter viewing, and goldfish exhibit
 - (k) Bamboo Rail including foundation
 - (1) Bamboo and Reed Barriers including foundation
 - (m) Planter Wall
 - (n) Fog system within Panda Habitat
 - (o) Glass Guard Rails
 - (p) Snow Production System
 - (q) Chilled rock system
 - (r) Fire Services
 - (s) "Rock Delta" Stone Wool Intensive Medium for the rice paddy wall
 - (t) Woven willow cladding for fence wall/gate
 - (u) Foundation for shelter support pole for panda mountain viewing shelter

- (v) Kid's climbing tree & giant panda climbing structure
- 1.5 Cinotech Consultants Ltd. (Cinotech) was commissioned by the Contractor to undertake the Environmental Team (ET) services for the Project. This is the 15th monthly EM&A Report summarizing the EM&A works for the Project in October 2008.

Project Organizations

- 1.6 Different parties with different levels of involvement in the project organization include:
 - The Engineer and Project Environmental Team Leader (ETL) Maunsell Consultants Asia Ltd.
 - Contractor W. Hing Construction Co. Ltd.
 - Contractor Environmental Team (CET) Cinotech Consultants Ltd.
 - Independent Environmental Checker (IEC) Mott MacDonald HK Ltd.
- 1.7 The responsibilities of respective parties are provided in Section the Contractor's EM&A Manual of the Project.
- 1.8 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. Benny Chan	Safety Manager	2910 3155	2552 1256
Floject E1	Mr. Andy Leung	Assistant Inspector of Works	2910 3156	2332 1230
	Mr. Billy Lee	Project Manager	6193 4096	
Contractor	Mr. Eddie Chiu	Environmental & Safety Manager	6105 4075	8343 9188
	Dr. Priscilla Choy	Contractor's Environmental Team Leader (CETL)	2151 2089	
Contractor's ET	Mr. Ian Ip	ET Coordinator & Audit Team Leader	2151 2095	3107 1388
	Mr. Henry Leung	Monitoring Team Leader 9779 7340		
IEC	Miss Florence Yuen	Independent Environmental Checker (IEC) Representative	2828 5757	28271823

Construction Programme

- 1.9 The site activities undertaken in the reporting month were:
 - Builder's & finishing works, E&M works and fitting out work at Astounding Asia Restaurant:
 - R.C. work for MVAC culvert, underground drainage works, superstructure works (RC works), builder's & finishing works, E&M works, fitting out works and structure works for artificial rockworks at the New Panda Habitat;
 - Tree transplanting works and excavation work at Bird Theatre; and
 - External drainage, services pipelines and ducting works and road formation & structural paving.

Summary of EM&A Requirements

- 1.10 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 Contractor's 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 and adverse environmental impacts arising;
 - requipment 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 Sections 7.11 to 7.14 of the Contractor's EM&A Manual.
- 1.11 This report presents the environmental monitoring and audit works for the Project in October 2008.

2. ENVIRONMENTAL AUDIT

Environmental Site Audits

- 2.1 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.
- 2.2 Site audits for the Project in the reporting month were conducted on 8th, 14th, 24th and 28th October 2008. No non-compliance was observed during the site audits. The summaries of site audits are attached in **Appendix A**.
- 2.3 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations are summarized in **Table 2.1**.

Table 2.1 Observations and Recommendations of Site Audits

Parameters	Date	Observations / Recommendations	Remediation/ Follow up
Water Quality	08/10/08	Leaves were accumulated at the U-channel of the Flight Exercise Aviary. Contractor was reminded to clear them to prevent any blockage of the drainage.	This item was rectified at 14/10/08
Air Quality	24/10/08	The main access was dry. Contractor was reminded to provide water spray to suppress dust.	This item was rectified at 28/10/08
	08/10/08	Construction wastes were accumulated at the New Panda Habitat. Contractor was reminded to dispose them more regularly	This item was rectified at 24/10/08
	Oil drums were accumulated at New Panda Habitat Contractor was reminded to provide them with drip tray to avoid any land contamination		This item is still outstanding so follow up is needed at the next audit session
	14/10/08	Construction wastes were still accumulated at New Panda Habitat. Contractor was reminded to clear them as soon as possible.	This item was rectified at 24/10/08
Waste/ Chemical	14/10/08	Oil drums were found not provide with drip tray at Bird Theatre and New Panda Habitat storage area. Contractor was reminded to take measure to avoid any land contamination.	This item is still outstanding so follow up is needed at the next audit session
Management	24/10/08 mixed with general refuse at New Panda Habitat Contractor was reminded to give segregation to separate general refuse with C&D waste. Construction materials were accumulated around	This item is still outstanding so follow up is needed at the next audit session	
		Construction materials were accumulated around the tree at Bird Theatre. Contractor was reminded to clear them.	This item is still outstanding so follow up is needed at the next audit session
	28/10/08	Construction wastes were still mixed with general refuse at New Panda Habitat. Contractor was reminded to separate general refuse with C&D waste.	This item is still outstanding so follow up is needed at the next audit session

Parameters	Date	Observations / Recommendations	Remediation/ Follow up
	28/10/08	Oil drums were still accumulated at New Panda Habitat storage area. Contractor was reminded to take measure to avoid land contamination.	This item is still outstanding so follow up is needed at the next audit session

Status of Environmental Licensing and Permitting

2.4 All valid permits/licenses obtained for the Project are summarized in **Table 2.2**. Total of One new CNP was issued to the Project in the reporting month.

Table 2.2 Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
Permit No.	From	То	Details	
Environmental Perm	it			
EP-249/2006/A	23/10/2006	N/A	Expansion of the existing Ocean Park and reconstruction / modification of its existing facilities.	Valid
Registration of Chem	ical Waste Pr	oducer		
WPN2513-199- W2894-18	20/08/2007	N/A	Waste Disposal (Chemical Waste) (General) Regulation Registration of Waste Producer	Valid
Construction Noise P	ermit			
GW-RS0619-08	02/09/2008	01/03/2009	Construction Noise Permit for Ocean Park, Wong Chuk Hang, Hong Kong	
Water Discharge Lice	ense			
EP820/W9/XW240	12/10/2007	31/10/2012	Discharge of industrial trade effluent arising from the Sedimentation tank at the construction site (CW02 Astounding Asia, Ocean Park Redevelopment Project) to communal storm water drain.	Valid
Others				
001022180	N/A	N/A	Notification Pursuant to Section 3(1) of the Air Pollution Control (Construction Dust) Regulation	
7005864	N/A	N/A	Construction Waste Disposal Billing Account with EPD	Valid

Status of Waste Management

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

Implementation Status of Environmental Mitigation Measures

2.6 According to the Environmental Permit and the Contractor's 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 C**.

Summary of Exceedances

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

Implementation Status of Event Action Plans

2.8 The Event Action Plans for air quality and construction noise are presented in **Appendix D**.

Summary of Complaints and Prosecutions

2.9 No environmental complaint and prosecution related to the Project works was received during the reporting month.

3. FUTURE KEY ISSUES

Key Issues for the Coming Month

- 3.1 Key issues to be considered in the coming month include:
 - Dust generation from excavation, slopes, stockpiles and underground drainage works;
 - Noise generated from operation equipment and machinery on-site;
 - Storage of chemicals/fuel and chemical waste/waste oil on site;
 - Sorting of C&D materials at source;
 - Ensure proper collection and disposal of rubbish generated on site; and
 - Larviciding against mosquito breeding in stagnant water should be carried out at least on a weekly basis;
 - Ensure the operation of sedimentation tank in collecting the rainstorm.

Construction Program for the Next Month

3.2 The tentative construction program for the Project is provided in **Appendix E**.

4. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 4.1 Four environmental site audits were performed in October 2008. No non-compliance was observed during the site audits.
- 4.2 No execeedance of environmental monitoring was reported in the reporting month.
- 4.3 No environmental complaint and prosecution related to the project was received in the

reporting month.

Recommendations

4.4 According to the environmental audits performed in the reporting month, the following recommendations are recommended:

Dust Impact

- To ensure water spray is applied for the dust emissive works, such as breaking, loading and unloading of soil materials
- To implement dust suppression measures on haul road, stockpiles and dry surfaces.

Noise Impact

- To space out noisy equipment and position as far away as possible from sensitive receivers.
- To review the works sequence of site activities so as to reduce the number of noisy equipment in concurrent operation.
- To provide temporary noise barriers for noisy activities, such as breaking works and drilling works.
- To employ quiet powered mechanical equipment if possible.
- To ensure compliance of CNP conditions during restricted-hour works.

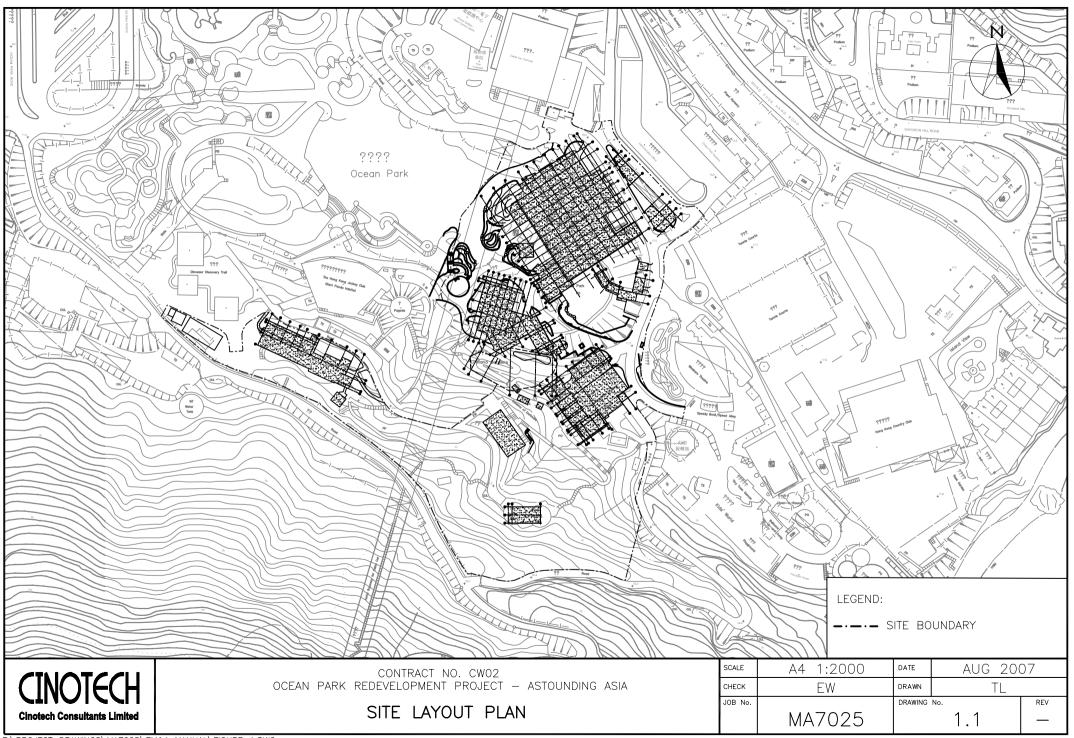
Water Quality Impact

- To identify any wastewater discharges from site.
- To regularly maintain the condition of u-channel, catch pits and wheel washing facilities on site.
- To regularly maintain the sediment control measures after rainstorms.
- To avoid water from accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed.
- To avoid any blockage of the outlet and the operation of sedimentation tank.

Waste/Chemical Management

- To check for any accumulation of waste materials or refuse on site.
- To avoid any discharge of oil directly from the site.
- To avoid improper handling or storage of oil drums on site.
- To dispose the waste regularly and properly.

FIGURE



APPENDIX A SITE AUDIT SUMMARY

Ocean Park Master Redevelopment Project Contract No. CW02 – Astounding Asia

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	81008
Date	8 October 2008 (Wednesday)
Time	14:30-15:30

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

Ref. No.	Remarks/Observations	Related Item No.
81008 – 03	A. Water Quality Leaves were accumulated at the U-channel of the Flight Exercise Aviary. Contractor was reminded to clear them to prevent any blockage of the drainage.	2.17
	B. Air Quality No environmental deficiency was identified during the site inspection.	
	C. Noise No environmental deficiency was identified during the site inspection.	
	D. Waste / Chemical Management	
81008 01	Construction wastes were accumulated at the New Panda Habitat. Contractor was reminded to dispose them more regularly	5.1.3
81008 02	Oil drums were accumulated at New Panda Habitat. Contractor was reminded to provide them with drip tray to avoid any land contamination	5.3.4
	E. Permit / Licenses	
	No environmental deficiency was identified during the site inspection.	
	F. Others	
	• Follow-up on previous audit (Ref. No.:80930). All the environmental	7
	deficiencies were not rectified in this site inspection. Follow-up action is needed for the outstanding items.	

	Name	Signature	Date
Recorded by	Ian Ip	A	8 October 2008
Checked by	Dr. Priscilla Choy	With	8 October 2008

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	81014
Date	14 October 2008 (Tuesday)
Time	10:00-10:45

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

Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	No environmental deficiency was identified during the site inspection.	
	B. Air Quality	
	No environmental deficiency was identified during the site inspection.	
	The characteristic deficiency was identified during the site inspection.	
	C. Noise	
	No environmental deficiency was identified during the site inspection.	
	D. Waste / Chemical Management	
81014 - 01	Construction wastes were still accumulated at New Panda Habitat.	5.1.3
	Contractor was reminded to clear them as soon as possible.	
81014 03		
81014 – 02	Oil drums were found not provide with drip tray at Bird Theatre and New Banda Habitat stars as area. Contractor was received at the was a way to	5.3.4
	Panda Habitat storage area. Contractor was reminded to take measure to avoid any land contamination.	
	avoid any land containmenton.	
	E. Permit / Licenses	
	No environmental deficiency was identified during the site inspection.	
	F. Others	
	• Follow-up on previous audit (Ref. No.:81008). Items 81008-01 and	Ì
	81008-02 were not rectified in this site inspection. Follow-up action is	
	needed for the outstanding items.	

	Name	Signature	Date
Recorded by	Ian Ip	A	14 October 2008
Checked by	Dr. Priscilla Choy	127-	14 October 2008

CINOTECH MA7025 81014

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	81024
Date	24 October 2008 (Friday)
Time	14:30-15:30

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

Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
81024 - 02	The main access was dry. Contractor was reminded to provide water	3.2
	spray to suppress dust.	
	P. Alic Occultur	
	B. Air Quality	
	No environmental deficiency was identified during the site inspection.	
	C. Noise	:
	No environmental deficiency was identified during the site inspection.	
	D. Wasta / Chamical Management	
	D. Waste / Chemical Management	
81024 - 01	Construction wastes were still accumulated and mixed with general	5.4.2
	refuse at New Panda Habitat. Contractor was reminded to give	
	segregation to separate general refuse with C&D waste.	Ī
81024 - 03	Construction materials were accumulated around the tree at Bird Theatre.	5.4.3
	Contractor was reminded to clear them.	
	E. Permit / Licenses	
	No environmental deficiency was identified during the site inspection.	
	F. Others	
	• Follow-up on previous audit (Ref. No.:81014). Item 81014-01 was not	
	rectified in this site inspection. Follow-up action is needed for the	
	outstanding items.	

	Name	Signature	Date
Recorded by	Ian Ip	A	24 October 2008
Checked by	Dr. Priscilla Choy	VŽ.	24 October 2008

CINOTECH MA7025 81024

Ocean Park Master Redevelopment Project

Contract No. CW02 – Astounding Asia

Weekly Site Inspection Record Summary 1

Inspection Information

Checklist Reference Number	81028
	28 October 2008 (Tuesday)
Time	10:30-11:30

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

Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality No environmental deficiency was identified during the site inspection.	
	 B. Air Quality No environmental deficiency was identified during the site inspection. 	
	C. Noise No environmental deficiency was identified during the site inspection.	
	D. Waste / Chemical Management	
81028 – 01	Construction wastes were still mixed with general refuse at New Panda Habitat. Contractor was reminded to separate general refuse with C&D waste.	5.4.2
81028 – 02	Oil drums were still accumulated at New Panda Habitat storage area. Contractor was reminded to take measure to avoid land contamination. E. Permit / Licenses	5.3.4
	No environmental deficiency was identified during the site inspection.	
	 F. Others Follow-up on previous audit (Ref. No.:81024). Item 81024-01 was not rectified in this site inspection. Follow-up action is needed for the outstanding items. 	

	Name	Signature	Date	
Recorded by	Ian Ip	A	28 October 2008	
Checked by	Dr. Priscilla Choy	ルボ	30 October 2008	

CINOTECH MA7025 81028

APPENDIX B SUMMARY OF AMOUNT OF WASTE GENERATED

Appendix B

Name of Department: W. Hing Construction Co., Ltd

Contract No.: CW-02

Monthly Summary Waste Flow Table For October 2008

Month	Actual Quantities of Inert Disposed to Public filling area at Tseung Kwan O	C&D Materials Generated Disposed to Public Barging area at Quarry Bay	Non-inert C&D Waste disposed to Tseung Kwan O Sorting Facility	Non-inert C&D Waste disposed to SENT Landfill	Chemical Waste disposed to Chemical Waste Treatment Facility at Tsing Yi	Recycle Metals	Packaging (e.g. Plastic, paper wrapping etc.) and other general refuse
	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in litres)	(in tonnes)	(in tonnes)
Sep-07	100.49	28.75	8.61	1.94	N/A	N/A	N/A
Oct-07	16.42	19.61	8.47	16.06	N/A	N/A	N/A
Nov-07	N/A	95.29	N/A	4.95	N/A	N/A	N/A
Dec-07	N/A	15.63	10.68	3.83	N/A	N/A	N/A
Jan-08	N/A	158.91	13.18	16.37	N/A	N/A	N/A
Feb-08	N/A	708.19	4.58	15.01	N/A	N/A	N/A
Sub-total	116.91	1026.38	45.52	58.16	0.00	0.00	0.00
Mar-08	N/A	857.78	25.17	36.22	N/A	N/A	N/A
Apr-08	N/A	1,309.35	N/A	52.10	N/A	N/A	N/A
May-08	N/A	334.03	11.44	40.86	N/A	N/A	N/A
Jun-08	N/A	528.74	18.19	9.15	N/A	N/A	N/A
Jul-08	9.87	832.48	24.00	26.89	N/A	N/A	N/A
Aug-08	37.88	1682.03	60.62	76.08	N/A	N/A	N/A
Sep-08	N/A	101.29	40.47	58.92	N/A	N/A	N/A
Oct-08	N/A	2120.15	18.22	94.93	N/A	N/A	N/A
Nov-08							
Dec-08							
Total	164.66	8792.23	243.63	453.31	0.00	0.00	0.00

APPENDIX C ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

Appendix C - Summary of Environmental Mitigation Implementation Schedule

Types of Impacts	Mitigation Measures	Status
Impacts	 Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. 	٨
	Use of frequent watering for particularly dusty construction areas, temporary stockpiles and areas close to ASRs.	٨
	• 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.	N/A
	 Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. 	٨
	 Restricting heights from which materials are dropped, as far as practicable to minimise the fugitive dust arising from unloading/ loading. 	۸
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	۸
	Use of vehicle wheel and body washing facilities at the exit points of the site.	۸
Construction Dust	 Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. 	N/A
Bust	 Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit. 	٨
	Dusty activities should be re-scheduled if high-wind conditions are encountered.	N/A
	 Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs. 	N/A
	• Suitable buffer zone should be provided and the works areas should be fenced off with hoarding. The height of hoarding should not be less than 2.4m from ground level.	N/A
	Crushing Plant	
	Water sprays on the crusher.	N/A
	Fabric filters installed for the crushing plant.	N/A
	 When transferring materials from crusher to the conveyors, chutes or dust curtains would be used for controlling dust. 	N/A

Types of Impacts	Mitigation Measures	Status
•	Barging Point & Conveyor Belt System	
	 The conveyors would be placed within a totally enclosed structure Profiled steel cladding would be provided at two sides of loading point. 	N/A N/A
	 Dust suppression sprays would be installed and operated in strategic locations at the feeding inlet and outlet. The barging point would be placed within a totally enclosed structure incorporating an enclosed chute for material 	N/A
	transfer to the barge. Flexible curtain would be hanged on the enclosed chute prevent dust emission when excavated materials/rocks transported into the barge.	N/A
	• Some areas of the Park would remain open for visitors during the construction period. Therefore, suitable buffer zones from major construction activities should be provided where practical and the works areas should be fenced off with hoarding during the construction phase. It is recommended to erect hoarding of a height not less than 2.4m from ground level.	^
	Construction Phase	
	• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme	^
	• Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction programme	N/A
	• Mobile plant, if any, should be sited as far from NSRs as possible.	N/A
Construction	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	٨
Noise	• 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	۸
	Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities	N/A
	Adoption of Quieter Plant	
	• In order to reduce the excessive noise impacts at the affected NSRs at the Waterfront during normal daytime working hours, quieter plants are recommended. The Contractors do not have to use specific items of quiet plant adopted in this assessment. The Contractors may use other type of quiet plant, which have the same total SWL, to meet their needs	۸

Types of Impacts	Mitigation Measures	Status
.	Use of Movable Noise Barrier	
	• The use of movable barrier for certain PME could further alleviate the construction noise impacts. In general, 5dB (A) reduction for movable PME and 10dB (A) for stationary PME can be achieved depending on the actual design of movable noise barrier.	N/A
	• The Contractor should be responsible for designing of the movable noise barrier with due consideration given to the size of the PME and the requirement of intercepting the line of sight between the NSRs and PME. Barrier material of surface mass in excess of 7kg/m2 is recommended to achieve the predicted screening effect.	N/A
	• Exceedance of up to 5dB (A) would be predicted at the Police Training School (NSR PTS) during the examination periods. Early liaison with the principal of this impacted school is recommended to plan for the construction programme. Noisy construction activities should be avoided during the examination period as far as practicable so as to reduce the potential noise impact at the school to comply with the noise criterion of 65dB(A).	N/A
	Construction Phase	
	• All excavation works carried out close to water bodies shall be carefully controlled to avoid runoff entering watercourses, especially during periods of heavy rain.	^
	• Site runoff shall be directed towards regularly cleaned and maintained silt traps and where appropriate, oil/grease separators to minimize risk of sedimentation and pollution.	N/A
	 Suitable size / capacity silt traps and oil/grease interceptors shall be used. 	N/A
	• Noise mitigation measures including the use of quiet construction plant and movable noise barriers shall be implemented to minimize disturbance to habitats adjacent to the work areas.	N/A
	 Trees located within the works areas shall be preserved as far as practicable. 	٨
Ecology	• Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats	٨
	 Construction activities shall be restricted to the work areas that would be clearly demarcated 	٨
	The work areas shall be reinstated immediately after completion of the works	^
	 Waste skips shall be provided to collect general refuse and construction wastes. The wastes would be disposed of timely and properly off-site. Drainage arrangements shall include sediment traps to collect and control construction run-off 	N/A
	Open burning on works sites is illegal, and shall be strictly enforced	^
		^
	 Landscaping works on newly formed land shall as far as possible make use of native plant species 	^

Types of Impacts	Mitigation Measures	Status
Types of Impacts Water Quality	 Construction Runoff and Drainage 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. 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. Boundaries of earthworks should be marked and surrounded by dykes or embankments for flood protection, as necessary. 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. 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. Exposed soil surfaces should be covered. Water pumped out from foundation excavations should be discharged into silt removal facilities. If excavation cannot be avoided during rainy seasons, temporarily exposed	* A
		^
	 Exposed soil areas should be minimized to reduce potential for increased siltation and contamination of runoff. 	^
	• 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.	^

Types of Impacts	Mitigation Measures	Status
Impacts	Open stockpiles of construction materials or construction wastes on-site of more than 50m³ should be covered with tarpaulin or similar fabric during rainstorms	N/A
	 General Construction Activities Debris and refuse generated on-site should be collected Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to nearby water bodies and public drains 	*
	Sewage from Construction Workforce • Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor would be responsible for appropriate disposal of waste matter and maintenance of these facilities	۸
	 Good Site Practice nomination of an approved personnel, 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 regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors 	^ N/A
	 training of site personnel in proper waste management and chemical handling procedures provision of sufficient waste disposal points and regular collection for disposal 	^
Waste / Chemical	 appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers 	*
Chemicai	 Waste Reduction Measures sort C&D waste from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals 	^
	 segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. 	^
	proper storage and site practices to minimise the potential for damage or contamination of construction materials	^
	 to encourage collection of aluminium cans by individual collectors, separate labelled bins shall be provided to segregate this waste from other general refuse generated by the work force. plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary 	^
	generation of waste.	٨

Types of Impacts	Mitigation Measures	Status						
	 General Refuse 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. 							
	 Construction and Demolition Material A Waste Management Plan should be prepared. In order to monitor the disposal of C&D and solid wastes at public filling facilities and landfills and to control fly-tipping, a trip-ticket system should be included. One may make reference to ETWB TCW No.31/2004 for details. 							
	• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed.	^						
	• If chemical wastes are produced at the construction site, the 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. 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 chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation							
Remarks:	^ Compliance of mitigation measure; X Non-compliance of mitigation measure; N/A Not Applicable; • Non-compliance but rectified by the contractor; * Recommendation was made during site audit but improved/rectified by the contractor.							

APPENDIX D EVENT ACTION PLANS

Appendix D: Event and Action Plan for Construction Noise

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

Appendix D: Event and Action Plan for Air Quality

Event				Action								
		Contractor's ET	\mathbf{L}	Contractor		PM						
Action	1.	Identify source	1.	Take immediate action to avoid further	1.	Confirm receipt of notification of failure in						
Level	2.	Notify Contractor and PM		exceedance and rectify any		writing						
	3.	Conduct additional monitoring to		unacceptable practice.	2.	Notify Contractor						
		investigate the causes, if necessary	2.	Submit air mitigation proposal and PM	3.	Require Contractor to submit air mitigation						
	4.	Report the investigation results and if		for agreement if Contractor's ET		proposal						
		exceedance to Contractor and PM		indicated that exceedance is related to	4.	Ensure remedial measures are properly						
				the construction works		implemented						
			3.	Implement agreed proposal within a								
				time scale agreed with PM								
Limit Level	1.	Identify source	1.	Take immediate action to avoid further	1.	Confirm receipt of notification of failure in						
	2.	Notify Contractor and PM		exceedance and rectify any		writing						
	3.	Conduct additional monitoring and		unacceptable practice	2.	Notify Contractor						
		investigate the causes, if necessary	2.	In consultation with the PM, submit air	3.	Require Contractor to submit air mitigation						
				mitigation proposal to PM for		proposal						
				agreement within 3 working days of	4.	Ensure remedial measures are properly						
				notification if Contractor's ET indicated		implemented						
				that exceedances are related to								
				construction works								
			3.	Implement agreed proposal within a								
				time scale agreed with PM								
			4.	Amend working methods if appropriate.								

APPENDIX E TENTATIVE WORKS PROGRAMME

CONTRACT CW02 - ASTOUNDING ASIA OUTLINE PROGRAMME

OUTLINE PROGRAMME																				
	.07	07	70	-07	07	80	80	80	80	80-	80	80	80	80	80	80	08	60	60	60
	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09
	٧.	9,					-		1				٧.	•,			1		-	
NEW PARK MOVICE				-		-									-					
NEW BIRD HOUSE							L													
Substructure / Structure																				
Builders Works																				
Building Services																				
FLIGHT EXERCISE AVIARY																				
Substructure / Structure					İ		ř													
Builders Works																				
Building Services																				
BIRDS CENTRAL KITCHEN																				
Substructure / Structure																				
Builders Works			—		Ļ.,															
Building Services																				
AA RESTAURANT & TOILET BLOCK																				
Substructure / Structure																				
Builders Works																				
Building Services			1																	
Building Services				-		-									-					
NEW DAND A WARRENT O DOW			1																	
NEW PANDA HABITAT & BOH																				
Substructure / Basement								<u> </u>												
Switch Room & Generator										,										
Structural Frame & Roof																				
BOH, Classroom, Preshow																				
Animal Exhibits																				
Building Services																				
FARMHOUSE RETAIL																				
Substructure / Structure																				
Builders Works										1										
Building Services																				
NEW BIRD THEATRE & BOH																				
Substructure / Structure																				
Builders Works																				
Building Services																				
EXTERNAL WORKS																				
Formation																				
Mains & Drains																<u> </u>				
Electrical & Fire																				
Landscaping																				
Irrigation Etc		 	1																	
Ingation Die																				
		I.	<u> </u>	1	l	1	L	l	<u> </u>	<u> </u>	<u> </u>	L	L		1	L	L		L	





OCEAN PARK REDEVELOPMENT PROJECT

CONTRACT NO. CI07

ENTRY PLAZA, AQUA CITY AND GRAND AQUARIUM

Monthly EM&A Report - October 2008

Prepared by:

Reviewed by:

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Project Environmental

Coordinator

Jerry Wong

Construction Manager

Darren Beasley Project Director



Ocean Park Redevelopment Project Contract No. Cl07 – Entry Plaza, Aqua City and Grand Aquarium Monthly EM&A Report – October 2008

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- D Environmental Mitigation Implementation Schedule (EMIS)
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EXECUTIVE SUMMARY

Introduction

This is the third Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Leighton Contractors (Asia) Limited for the Ocean Park Redevelopment Project Contract No. Cl07 – Entry Plaza, Aqua City and Grand Aquarium (hereinafter called the Project). The Project was commenced on 15 August 2008. This document reports the findings of the environmental auditing works conducted in October 2008.

The major site activities undertaken in the reporting month included:

- Trim and make good formation level at Grand Aquarium area;
- Forming haul road and surface water diversion at Grand Aquarium;
- Site clearance (break up & removal of surface hard features) and shallow excavation work at Entry Plaza;
- Rockfill and plate load test at Entry Plaza;
- Tree transplanting;
- Site office set up;
- Underground drainage at Existing Coach Bus Parking Area, and
- Trial pit excavation.

Environmental Audit and Monitoring Works

Environmental monitoring and audit works for the Project was performed as stipulated in the EM&A Manual. Site audits were conducted once per week. Environmental site audits were conducted on, 10, 17, 24 and 31 October 2008. No non-compliance was observed during the site audit.

The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

No notification of exceedance was received from the Project Environmental Team Leader (ETL) in the reporting month. Summary of the events and action taken in the reporting month is tabulated in Table 1.

Table 1 Summary Table for Events Recorded in the Reporting Month

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



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Environmental Licenses and Permits

Construction Waste Disposal Billing Account was opened and 500 Chits were obtained for construction waste disposal. Application for issuance of 800 Chits was submitted.

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.

Application of Construction Noise Permit for work during restricted hours was submitted.

Complaints and Prosecutions

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

Future Key Issues

Key issues to be considered in November or coming months include:

- Trim and make good formation level at Grand Aquarium area;
- Site clearance (break up & removal of surface hard features), rock filling and excavation work at Entry Plaza;
- Sheet piling at Entry Plaza;
- Tree transplanting;
- Excavation and construction retaining wall;
- Demolition of plant room;
- Underground drainage/utilities at Existing Coach Bus Parking Area, and
- Site office set up.



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 Appendix A.

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. Cl07 – Entry Plaza, Aqua City and Grand Aquarium (hereinafter call the Project).

The works to be executed under Contract Cl07 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;



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- 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



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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.

• Entry Plaza Phase 2:

- demolition of the temporary entrance, transformer building, existing staff canteen and associated structures and road works within Portion EP3;
- modification of the existing car park, access road and roundabout to the temporary entrance to form a new coach parking and car park within Portions EP3;

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 Cl07, 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 Aguarium 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 Leader (ETL) Maunsell Consultants Asia 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 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. Edmund Pang		Project ET Leader (ETL)	2871 5888	2552 1256
Contractor	Darren Beasley	Project Director	2823 1417	2529 8784
	Jerry Wong	Construction Manager	2823 1111	2529 8784
Contractor's ET	Thomas Lee	Project Environmental	2823 1128	2529 8784
		Coordinator		
	W C Lam	Environmental Engineer	2823 1111	2529 8784
IEC	Miss Florence	Independent	2828 5757	28271823
	Yuen	Environmental Checker		
		(IEC) Representative		

1.3 Construction Programme

The site activities undertaken in the reporting month were:

- Trim and make good formation level at Grand Aguarium area;
- Forming haul road and surface water diversion at Grand Aguarium:
- Site clearance (break up & removal of surface hard features) and shallow excavation work at Entry Plaza;
- Rockfill and plate load test at Entry Plaza
- Tree transplanting
- Site office set up
- Underground drainage at Existing Coach Bus Parking Area, and
- Trial pit excavation.



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 October 2008.



2 ENVIRONMENTAL AUDIT

2.1 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 10, 17, 24 and 31 October 2008. No non-compliance was observed during the site audits. The summaries of site audits are attached in Appendix B.

During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations are summarized in Table 2.1.

Table 2.1 Observations and Recommendations of Site Audits

Parameter	Date	Observations / Recommendations	Remediation / Follow up
Air	10/10/08	Tarpaulin cover for the stockpile	Cover stockpile properly
		blow-off	(completed)
	10/10/08	Asphalt road surface was dry during	Provide sufficient watering
		breaking	(completed)
	17/10/08	Open stockpile	Compact the opened
			stockpile (completed)
	17/10/08	No water spraying during concrete	Provide water spraying (on-
		breaking work	going)
	24/10/08	Provide water spray at unpaved	Watering the dry unpaved
		areas during dry weather	area regularly (on-going)
Waste	31/10/08	Remove the empty chemical	Removed
		containers	
	31/10/08	Random check truck overloading	Check randomly (on-going)

2.2 Status of Environmental Licensing and Permitting

All valid permits/licenses obtained for the Project are summarized in Table 2.2.

Table 2.2 Summary of Environmental Licensing and Permit Status

Permit No,	Valid I	Period	Details	Status				
Permit NO,	From	To		Status				
Environmental Permit								
EP-249/2006/A	23/10/2006	N.A.	Expansion of the existing Ocean Park and reconstruction / modification of its existing	Valid				



			facilities.						
Site Effluent Discharge Licence									
EP820/W2/XW246	from construction site (Contract CI07) at sedimentation tank into communal storm water drain			Valid					
Chemical Waste Pro	ducer Registration	on							
5213-199-L2174-28	22/09/2008	N.A.	Waste Disposal (Chemical Waste) (General) Regulation – Registration of Waste Producer	Valid					
Application of Constr 22 October 2008.	Application of Construction Noise Permit for work during restricted hours was submitted to EPD on								
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					

2.3 Status of Waste Management

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

The following materials are recycled/reused on site:

- Existing steel parapets at carpark area are modified and reused as safety fencing for excavation work;
- Broken concrete and bitumen are reused for hard paving for temporary access road;
- Reinforcement in the broken concrete are cut and recycled, and
- Treated waste waster is reused for watering dry area to minimize discharge.

2.4 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 D.

2.5 Summary of Exceedances

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



2.6 Implementation Status of Event Action Plans

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

2.7 Summary of Complaints and Prosecutions

No environmental complaint and prosecution related to the Project works was received during the reporting month.

3 FUTURE KEY ISSUES

3.1 Key Issues for the Coming Month

Key issues to be considered in the coming month include:

- Dust generating from breaking existing concrete/bitumen paving and excavation work;
- Dust generating from temporary stockpile, unpaved areas, loading dusty materials and haul road;
- Noise generating from operation of construction plants;
- Water generating from wheel washing, underground water and surface run-off;
- Storage of diesel drums on site, and
- Sorting C&D materials on site.

3.2 Construction Program for the Next Month

The tentative construction program for the Project is provided in Appendix F.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Four environmental site audits were performed in October 2008. No non-compliance was observed during the site audits.

No execeedance of environmental monitoring was reported in the reporting month.

No environmental complaint and prosecution related to the project was received in the reporting month.



4.2 Recommendations

According to the environmental audits performed in the reporting month, the following recommendations are made:

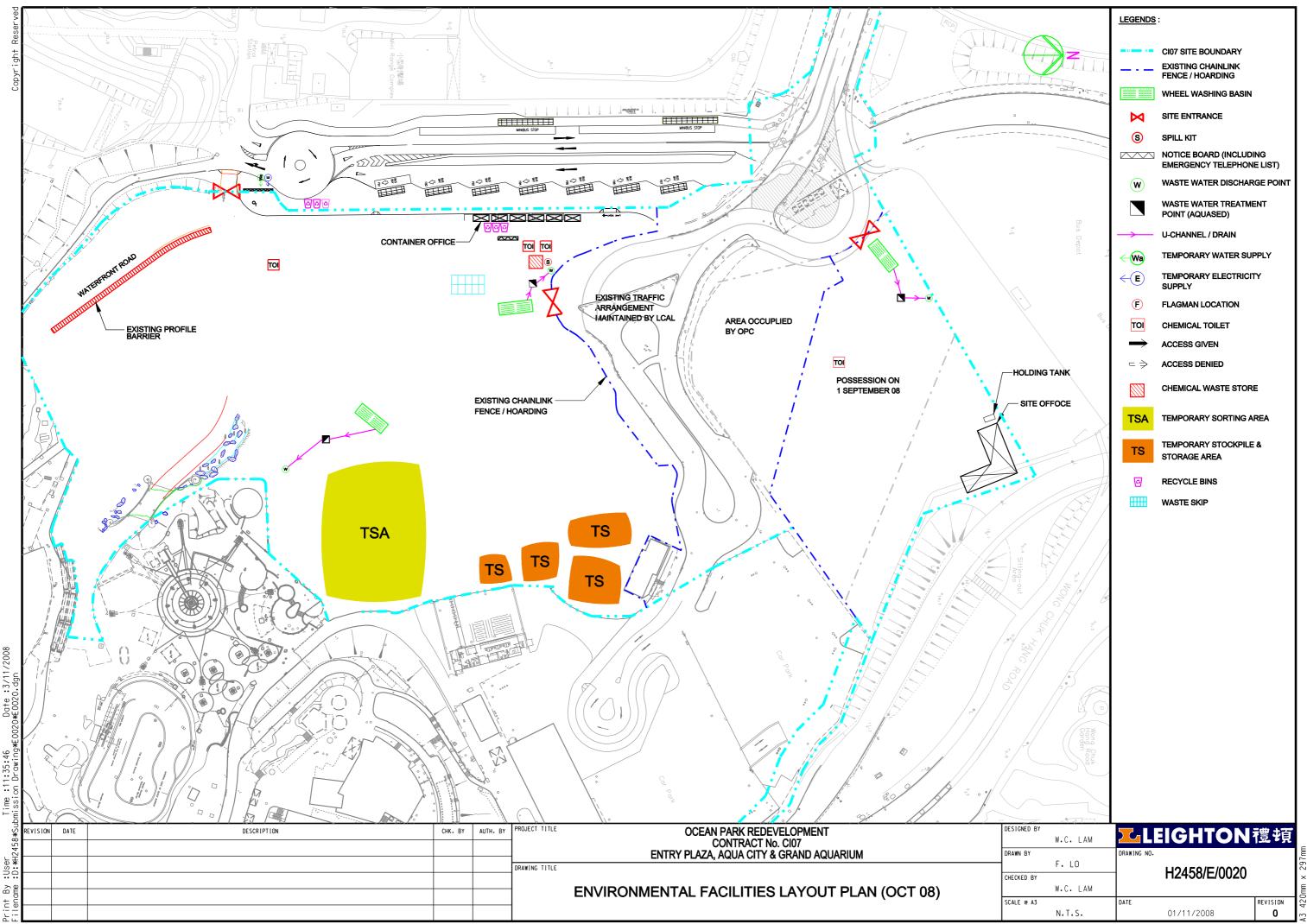
- Cover the stockpile properly;
- Provide sufficient watering during concrete/ asphalt breaking work;
- Watering the dry unpaved areas regularly during dry weather;
- Remove empty chemical containers from site, and
- Random check truck overloading.

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Appendix A – Site Layout Plan





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Appendix B – Site Audit Summary

Remarks

- 1.) The cover of tarpaulin for the stockpile(near swimming pool) was observed blow-off by wind .The contractor was reminded to proper cover the stockpile as soon as possible.
- 2.) The breaking of asphalt road at the carpark was observed dry. The contractor proposed to sufficient watering in the road.

Remark: Following up last weekly inspection(30 Sep 08), the wheel washing bay has been established at Entry Plaza.

Inspected by :			
ET Inspector	RSS's Representative	Contractor's Representative	IEC Representative
Signatures:	Signatures:	Signatures:	Signatures:
Name:	Name: AND ECAG	W.C. Lam W. (All Name:Lam Wai Chung	Name:
Date:	Date: 10/10/06.	Date:10 Oct 2008	Date:

Remarks

- 1.) The open stockpile of sub-base material was observed in the site area(Entry Plaza). The contractor was reminded to take proper measure to prevent dust emission.
- 2.) No water spraying during concrete breaking work. The contractor proposed to water for this activity.

Inspected by :			
ET Inspector	RSS's Representative	Contractor's Representative	IEC Representative
Signatures:	Signatures:	Signatures:	Signatures:
Name:	Namo	h' ('/by	Nama
name.	Name: Kcchon	Name:Lam Wai Chung	Name:
Date:	Date: 17/10/18	Date:17 Oct 2008	Date:



Inspection / Follow up Report No 008.

Time of Inspection: Date of Inspection: 17 Oct 08

09:30



1.) The opened stockpile was observed at the site area.



The opened stockpile was compressed to prevent dust emission.



2.) No water spraying during concrete breaking work.



Water spraying was carried out during concrete breaking work.

Approved By:

Inspected By: W. C.

Signature:

Observation for this month

(Unpared areas and hauls roads were day. The Contractor shall provide water spray to suppress dust during dry weather

IEC Representative

Glorence Yuen

1 Florence Yuen

Environmental Manager

Contractor's
Representative

(LAM WAT CHUNGS)



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Appendix C – Summary of Amount of Waste Generated



Monthly Waste Flow Table

Contract: Entry Plaza, Aqua City and Grand Aquarium Contract No: Cl07 (H2458) Year: 2008

Concess	cycled formula (to N.A.	Project (tonnes)	Re-used in Other Projects ³ (tonnes)	Metals Recycled	Paper Pocycled	Cardboard							l i
(tonn Jan N./. Feb N./. Mar N./. Q1 total 0	nnes) (t	·	(tonnos)		raper Necycleu		Plastic⁴ Recycled	Timber	Others ⁵	Chemical Waste ⁶ to Licensed Facilities		Inert Construction Waste ⁷ to Public	Construction Waste to Landfill
Jan N.A Feb N.A Mar N.A Q1 total 0	N.A.	·	(tonnoc)			-				Liquid	Solid	Fill	
Feb N./ Mar N./ Q1 total 0			(tornles)	(tonnnes)	(kg)	(kg)	(kg)	(Kg)	(kg)	(litres)	(kg)	(tonnes)	(tonnes)
Mar N.A	1.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Q1 total 0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr N.A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
May N.A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Jun N.A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Q2 total 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul N.A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Aug 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Q3 total 0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct 0	0	10	5187	16	0	0	0	0	0	0	0	3157	26
Nov													
Dec													
Q4 total 0	0	10	5187	16	0	0	0	0	0	0	0	3157	26
Grand total 0		10	5187	16	0	0	0	0	0	0	0	3157	26

Note / Definition:

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^{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.



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Appendix D – Environmental Mitigation Implementation Schedule

Ocean Park Redevelopment Project Cl07 - Entry Plaza, Aqua City and Grand Aquarium



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)		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	N.A.
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	N.A.
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



Environmental Mitigation Implementation Schedule - Air Emission

ID No	(not required for actions specifically recommended in Environmental Impact	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
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
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		-	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			Implementation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work idusty conditions arise.	-		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



Environmental Mitigation Implementation Schedule - Noise

	I	I	I				
ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	Specifically Recommeded in Environmental Impact Assessment?		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	· · · · · · · · · · · · · · · · · · ·	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		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.



Environmental Mitigation Implementation Schedule - Noise

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)		Status
9		yes	Superstructure Construction where calculated noise levels exceed limits	Supervisor/Foremen	Weekly Environmental Inspection Checklist	08/08-11/10	N.A.



Environmental Mitigation Implementation Schedule - Water

		Specifically Recommeded in			Additional Control/monitoring and measurement		
	Environmental Aspect	Environmental			procedures/		
ID N	(not required for actions specifically recommended in Environmental Impact		These actions can be amended if necessary to suit particular needs unless they are in	A (' 1 /)	methods	Scheduled	01.1
ID No	Assessment)	Assessment?	response to a specified legal requirements	Action party(s)	(if necessary)	months	Status
1		Yes	Before commencing any site formation work, all sewer and drainage connections		Weekly	08/08 to 09/08	OK
			should be sealed to prevent debris, soil, sand etc. from entering public	Supervisor/Foremen	Environmental		
			sewers/drains.		Inspection		
_				Subcontractor	Checklist		211
2		Yes	Temporary ditches should be provided to facilitate run-off discharge into	Superintendent/	Weekly	08/08 to 11/10	OK
			appropriate watercourses, via appropriately sized/ designed silt retention pond or	Supervisor/Foremen	Environmental		
			similar structure. No site run-off should enter artificial ponds. Cut-off ditches		Inspection		
			should be provided for all major site clearance/ excavation works where soils	Subcontractor	Checklist		
			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 o				
			relevant site formation works.				
3		Yes	Boundaries of earthworks should be marked and surrounded by dykes or	Superintendent/		08/08 to 11/10	N.A.
			embankments for flood protection, as necessary.	Supervisor/Foremen			
				land surveyor			
4		Yes	Sand/silt removal facilities such as sand/silt traps and sediment basins should be		Weekly	08/08 to 11/10	OK
			provided to remove sand/silt particles from runoff to meet the requirements of the	Supervisor/Foremen	Environmental		
			Technical Memorandum standard under the Water Pollution Control Ordinance.		Inspection		
			The design of silt removal facilities should be based on the guidelines provided in		Checklist		
			ProPECC PN 1/94. All drainage facilities and erosion and sediment control	co-ordinator			
			structures should be inspected monthly and maintained to ensure proper and				
			efficient operation at all times and particularly during rainstorms				
5		Yes	Silt removal facilities, channels and manholes should be maintained and the	Superintendent/	Weekly	08/08 to 11/10	OK
			deposited silt and grit should be regularly removed, at the onset of and after each	Supervisor/Foremen	Environmental		
			rainstorm to ensure that these facilities are functioning properly at all times.		Inspection		
				Subcontractor	Checklist	00/00/	211
6		Yes	Exposed soil surfaces should be covered,	Superintendent/	Weekly	08/08 to 11/10	OK
				Supervisor/Foremen	Environmental		
				<u></u>	Inspection		
				Subcontractor	Checklist		



Environmental Mitigation Implementation Schedule - Water

		Specifically Recommeded in			Additional Control/monitoring and measurement		
	Environmental Aspect	Environmental	Actions Required		procedures/		
	(not required for actions specifically recommended in Environmental Impact	Impact	These actions can be amended if necessary to suit particular needs unless they are in		methods	Scheduled	
ID No	Assessment)	Assessment?	response to a specified legal requirements	Action party(s)	(if necessary)	months	Status
7		Yes	Water pumped out from foundation excavations should be discharged into silt removal facilities.	Superintendent/ Supervisor/Foremen	Weekly Environmental Inspection	08/08 to 11/10	N.A.
				Subcontractor	Checklist		
8		Yes	If excavation cannot be avoided during rainy seasons, temporarily exposed	Superintendent/	Weekly	08/08 to 11/10	N.A.
				Supervisor/Foremen	Environmental		
			practicable, and temporary access roads should be protected by crushed stone of		Inspection		
				co-ordiantor	Checklist		
			along the crest/ edge of the excavation) to prevent storm runoff from washing	Subcontractor			
			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.				
9		Yes	Exposed soil areas should be minimized to reduce potential for increased siltation		Weekly	08/08 to 11/10	N.A.
			and contamination of runoff.	Supervisor/Foremen	Environmental		
					Inspection		
				Subcontractor	Checklist		
10		Yes		Superintendent/	Weekly	08/08 to 11/10	N.A.
				Supervisor/Foremen	Environmental		
			intercepting channels should be provided where necessary. Rainwater pumped		Inspection		
			out from trenches or excavations should be directed to silt removal facilities before discharge.	Subcontractor	Checklist		
11		Yes	Open stockpiles of construction materials or construction wastes on-site of more			08/08 to 11/10	OK
			than 50m ³ should be covered with tarpaulin or similar fabric during	Supervisor/Foremen			
			rainstorms				
				Subcontractor		00/00/	0
12		Yes		Superintendent/	Weekly	08/08 to 11/10	OK
				Supervisor/Foremen	Environmental		
			system. Stockpiles of cement and other construction materials should be kept		Inspection		
			covered when not being used.	Subcontractor	Checklist		



Environmental Mitigation Implementation Schedule - Water

		Specifically Recommeded in			Additional Control/monitoring and measurement		
	Environmental Aspect	Environmental	Actions Required		procedures/		
	(not required for actions specifically recommended in Environmental Impact	Impact	These actions can be amended if necessary to suit particular needs unless they are in		methods	Scheduled	
ID No	Assessment)	Assessment?	response to a specified legal requirements	Action party(s)	(if necessary)	months	Status
13		Yes	Temporary sanitary facilities, such as portable chemical toilets, should be	Superintendent/	Weekly	08/08 to 11/10	OK
			employed on-site where necessary to handle sewage from the workforce. A	Supervisor/Foremen	Environmental		
			licensed contractor would be responsible for appropriate disposal of waste matter	project environmental	Inspection		
			and maintenance of these facilities.	co-ordinator	Checklist		
				Subcontractor			



Environmental Mitigation Implementation Schedule - Ecological Resources

ID No	Environmental Aspect (not required for actions specifically recommended in Environmental Impact Assessment)	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 controlle to avoid runoff entering watercourses, especially during periods of heavy rain.	dSuperintendent/ Supervisor/Foremen Subcontractor	Weekly Environmental Inspection Checklist	08/08-11/10	N.A.
2			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		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, Greenflowered Rattlesnake-Plantain, Cycad-fern Balloon Flower and Chinese Lily) sha 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	N.A.



Environmental Mitigation Implementation Schedule - Ecological Resources

ID No	(not required for actions specifically recommended 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			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	Project Environmental Coordinator/ Engineer		08/08-11/10	N.A.
10			Equipment or stockpile shall only be in designated works areas wherever practicable.	Superintendent/ Supervisor/Foremen		08/08-11/10	N.A.
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	N.A.
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



Environmental Mitigation Implementation Schedule - Ecological Resources

ID No	(not required for actions specifically recommended in Environmental Impact	Specifically Recommeded in Environmental Impact Assessment?	Actions Required These actions can be amended if necessary to suit particular needs unless they are in	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)		Status
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	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)		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.



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	N.A.
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	N.A.
7			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/	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	N.A.



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?		Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)	Scheduled months	Status
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	N.A.
11		Yes	· · · · · · · · · · · · · · · · · · ·	Superintendent/ Supervisor/Foremen project environmental coordinator Subcontractor		08/08-11/10	OK
12		Yes			Weekly Environmental Inspection Checklist	08/08-11/10	N.A.
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			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	N.A.



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	Action party(s)	Additional Control/monitoring and measurement procedures/ methods (if necessary)		Status
15	Assessment	Yes	Chemical waste:The Contractor shall use a licensed collector to transport and	Superintendent/ Supervisor/Foremen	(ii riecessary)	08/08-11/10	N.A.



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Appendix E – Event and Action Plans



Ocean Park Redevelopment Project Contract No. Cl07 – Entry Plaza, Aqua City and Grand Aquarium Monthly EM&A Report – October 2008

Appendix E – Event and Action Plan for Construction Noise

Event	Action												
Event		Contractor's ET		Contractor	Project Manager (PM)								
Action Level	1. 2.	Identify source Notify Contractor and PM	1.	Take immediate action to avoid further exceedance	1.	Confirm receipt of notification of failure in writing							
	3.		2.	Submit noise mitigation proposals to Contractor's ET and PM	2.	Notify Contractor Require Contractor to propose							
	4.	Report the investigation results to Contractor and PM	3.	Implement noise mitigation		remedial measures for the analysed noise problem							
	5.	Discuss with Contractor for their formulation of remedial measures if the exceedance is related to construction works		proposals		Ensure remedial measures are properly implemented							
	6.	Conduct additional monitoring to check mitigation effectiveness, if necessary											
Limit Level	1. 2.	Identify source Notify Contractor and PM	1.	Take immediate action to avoid further exceedance	1.	Confirm receipt of notification of failure in writing							
	3.		2.	Submit proposals for remedial actions to Contractor's ET, and Pm within 3 working days of notification	2. 3.	Notify Contractor Require Contractor to propose remedial measures for the analysed noise problem							
	4.	on the causes and proposed action to be taken for the exceedances if exceedance is related to construction works		Implement the agreed proposals Resubmit proposals if problem still not under control Stop the relevant portion of	4.5.	Ensure remedial measures are properly implemented If exceedance continues, consider what portion of the							
	5.			works as determined by the PM until the exceedance is abated		work is responsible and instruct the Contractor to stop that portion of work until the							
	6.	If exceedance stops, cease additional monitoring, if any				exceedance is abated							



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Appendix E – Event and Action Plan for Air Quality

Event	Action													
LVeiit	Contractor's ET	Contractor	Project Manager (PM)											
Action Level	 Identify source Notify Contractor and PM Conduct additional monitoring to investigate the causes, if necessary Report the investigation results and if exceedance to Contractor and PM 	 Take immediate action to avoid further exceedance and rectify any unacceptable practice. Submit air mitigation proposal and PM for agreement if Contractor's ET indicated that exceedance is related to the construction works Implement agreed proposal within a time scale agreed with PM 	 Confirm receipt of notification of failure in writing Notify Contractor Require Contractor to submit air mitigation proposal Ensure remedial measures are properly implemented 											
Limit Level	 Identify source Notify Contractor and PM Conduct additional monitoring and investigate the causes, if necessary 	 Take immediate action to avoid further exceedance and rectify any unacceptable practice In consultation with the PM, submit air mitigation proposal to PM for agreement within 3 working days of notification if Contractor's ET indicated that exceedances are related to construction works Implement agreed proposal within a time scale agreed with PM Amend working methods if appropriate. 	 Confirm receipt of notification of failure in writing Notify Contractor Require Contractor to submit air mitigation proposal Ensure remedial measures are properly implemented 											



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Appendix F – Tentative Work Programme

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

	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10
ENTRY PLAZA																												
Substructure / Structure																												
Builders Works										1							_											
Building Services																												
AQUA CITY																												
Substructure / Structure										_																		
Builders Works																				•								
Building Services																												
GRAND AQUARIUM																												
Substructure / Structure																			•									
Builders Works																				-								
Building Services															_		_											
AREA DEVELOPMENT																												
Entry Plaza (Carpark / Road)																	 											ı
Aqua City (Funicular Plaza)																												
Aqua City (Carousel Plaza)																												
Aqua City (Lagoon)																												
Grand Aquarium (Transformer Room)																												
Grand Aquarium (Irrigation Building)																 												
Grand Aquarium (DG Store)																	 											
CABLE CAR TRANSFORMER BUILDING &																												
AREA CONTROL BUILDING																												
Substructure / Structure																												
Builders Works																												
Building Services						-																						