# Maeda Corporation

Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan West Contract No. HY/99/18

Quarterly Environmental Monitoring and Audit Summary Report August 2004 to October 2004

# **Second Issue**

# Maeda Corporation

# West Contract No. HY/99/18 Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

**Environmental Monitoring and Audit** 

Quarterly Environmental Monitoring and Audit Summary Report

August 2004 to October 2004

November 2004

#### Ove Arup & Partners Hong Kong Ltd

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Job number 23437



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Your Ref:

Our

910-06/E04-91729

Ref:

For attention of: Mr. Sam Tsoil

Dear Mr. Tsoil

Contract HY/99/18 West Contract

Castle Peak Road Improvement between Sham Iseng and Ka Loon Tsuen, Tsuen Wan Quarterly EM&A Summary Report (August to October 2004)

We refer to the electronic version of the captioned report submitted by your Mr. Angus Choi via e-mail on 9 November 2004 and subsequent revised pages on 11 November 2004. We do not have comment and endorsed the report.

Please do not hesitate to contact the undersigned on 2911-2719 if you wish to discuss any further issues

Yours sincerely

Coleman Ng

Independent Checker (Environmental)

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#### **ABBREVIATIONS AND ACTONYMS**

A/L Action or Limit Levels AQO Air Quality Objectives

Arup Ove Arup & Partners Hong Kong Limited

ASR Area Sensitive Rating

B&K Brüel & Kiær

CFM Cubic Feet per Minute
CNP Construction Noise Permit

CT Contractor

DO Dissolved Oxygen

DGPS Differential Global Positioning System

EA Environmental Auditor

EIA Environmental Impact Assessment
EM&A Environmental Monitoring and Audit

EP Environmental Permit

EPD Environmental Protection Department ER Engineer / Engineer's Representative

ET Environmental Team

HKPSG Hong Kong Planning Standards and Guidelines HKSAR Hong Kong Special Administrative Region

HOKLAS The Hong Kong Laboratory accreditation Scheme

HVS High Volume Sampler

IEC International Electrotechnical Commission Publications

K Degrees KelvinMC Maeda Corporation

MHJV Mouchel Halcrow Joint Venture

NAMAS National Measurement accreditation Service

NTU Nephelometric Turbidity Unit NSR Noise Sensitive Receiver

SCFM Standard Cubic Feet per Minute

SS Suspended Solids

TSP Total Suspended Particulates

Tby Turbidity

#### **EXECUTIVE SUMMARY**

This is the eleventh quarterly environmental monitoring and audit (EM&A) summary report summarising the site inspection findings, air quality, noise impact and landscape and visual monitoring and audit works for the period from August 2004 to October 2004.

Monitoring works included air quality monitoring at 9 locations and noise monitoring at 13 locations. Air quality was recorded in terms of 1-hour Total Suspended Particulates (TSP) and 24-hour TSP. Noise was measured in terms of L<sub>eq(30min)</sub> with L<sub>10</sub> and L<sub>90</sub> measurements as references.

# **Air Quality**

The highest 1-hour TSP level was 360.1µg/m³ recorded at G/F of Tsing Lung Tau Temple (WA6) on 30 September 2004 while the lowest 1-hour TSP level was 100.8µg/m<sup>3</sup> recorded at Podium of Sea Crest Villa Phase 4 Block 12 (WA7) on 18 August 2004. There was no exceedance of Action and Limit Levels in the reporting period.

The highest 24-hour TSP level was 194.6µg/m<sup>3</sup> recorded at G/F, Carpark, Lido Garden (WA11) on 23 October 2004 while the lowest 24-hour TSP level was 30.4µg/m<sup>3</sup> recorded at Car Park of Sea Crest Villa Phase 2 Block 6 (WA9) on 18 September 2004. There was no exceedance of Action and Limit Levels in the reporting period.

# Noise

The highest noise level was 74dB(A) recorded at Villa Alfavista (WN11) on 18 August 2004 while the lowest noise level was 63dB(A) recorded at Podium of Sea Crest Villa Phase 3 Block 8 (WN13) on 30 September 2004. There was no exceedance of the A/L Levels during the monitoring period.

# **Marine Water Quality**

As reported by the Contractor, major marine works at level below +2.5mPD had been completed in July 2003. The proposal on suspension of marine monitoring was submitted to IC(E), HyD, EPD and AFCD for comments on 25 September 2003. It was confirmed with IC(E) and AFCD that suspension of marine monitoring was acceptable if there is no "active" marine work being carried out. In future, if there is any marine work on or below +2.5mPD, the Contractor shall notify the relevant parties one month in advance and resume the marine monitoring. Subsequently, as instructed by the Contractor/ HyD, the marine monitoring was suspended during period from 10 October 2003 to 31 July 2004.

However, as informed by the Contractor, the planned sand placement activities were conducted at Seawall B. Marine impact monitoring near Seawall B were therefore resumed on 2 August 2004. Marine water quality monitoring was undertaken at monitoring locations, 4 for impact (i.e. WW1, WW2, WW3 and WW4) and 3 for control (i.e. WR-E-1234, WR-F-1234 and FCZ1) during the mid-ebb and mid-flood tidal cycles.

## • Summary of Mid-Ebb Tide

The lowest Dissolved Oxygen DO levels of impact stations at surface & middle and bottom positions were 2.7mg/L at WW4 on 6 August 2004, and 2.70mg/L at WW3 on 13 August 2004 respectively.

The highest depth-averaged Tby result of impact stations was 7.5 Nephelometric Turbidity Unit (NTU) at WW3 on 13 August 2004.

The highest depth-averaged Suspended Solids SS result of impact stations was 56.3mg/L at WW3 on 13 August 2004.

## Summary of Mid-Flood Tide

The lowest DO levels of impact stations at surface & middle and bottom positions were 2.60mg/L at WW2 on 20 August 2004, and 2.4mg/L at WW2 on 20 August 2004.

The highest depth-averaged Tby result of impact stations was 8.4NTU at WW4 on 4 August 2004.

The highest depth-averaged SS result of impact stations was 17.3mg/L at WW2 on 25 August 2004

There were exceedances on A/L Levels of DO and SS of marine water quality monitoring in August 2004. A thorough investigation had been triggered to reveal the causes of exceedances, including the review of Contractor's recent works, identification of other potential pollution sources, complaints, etc.

There was no exceedance of the Action and Limit Levels for Tby of marine water quality monitoring in the reporting period.

Since water quality monitoring had only been conducted in August 2004, there was no quarterly mean of SS level recorded from August 2004 to October 2004.

# **Landscape and Visual**

A total of 7 times of the landscape and visual monitoring and audits had been carried out in the reporting period by a Registered Landscape Architect. Frequently watering and tidying up of the construction site had been suggested after the landscape and visual monitoring and audits. The CT was informed of the recommendations for action.

#### **Waste Disposal**

A total of 56 loads of Construction & Demolition (C&D) waste had been disposed of at WENT Landfill in the reporting period. A total of 3,707 loads of C&D fill materials (Public Fill) had been disposed of at Public Filling Area in Tuen Mun by dump trucks in the reporting period. There was no chemical waste disposed of in the reporting period.

## **Complaint Records**

A total of 3 environmental complaint, regarding sandy wake of a marine vessel carrying sand to the beach reinstatement areas of Seawall B, littering problem on the slope close to Sea Crest Villa Phase 2, and excessive garbage trapped along the adjacent shore of Seawall B west end, were received in the reporting period. The complaints had been resolved after investigation.

# Non-compliance

There was no non-compliance for air quality and noise monitoring during the reporting period.

There were occasional exceedances on A/L Levels of DO and SS of marine water quality at different impact monitoring stations on different monitoring days in August 2004. The no of exceedances of DO and SS in the periods from 2 August 2004 to 27 August 2004 are summarized in Table 8-2. No exceedance of Turbidity was recorded in August 2004.

Monitoring Stations	Exceedance	DO (ı	DO (mg/L)		Turbidity (NTU)		SS (mg/L)		Total	
	Level	Mid- Ebb	Mid- Flood	Mid- Ebb	Mid- Flood	Mid- Ebb	Mid- Flood	Mid- Ebb	Mid- Flood	
WW1	Action	0	3	0	0	0	0	0	3	
	Limit	22	15	0	0	0	0	22	15	
WW2	Action	0	4	0	0	0	0	0	4	
	Limit	24	17	0	0	0	0	24	17	
WW3	Action	0	0	0	0	1	0	1	0	
	Limit	32	26	0	0	1	0	33	26	
WW4	Action	0	1	0	0	0	1	0	2	
	Limit	20	15	0	0	1	0	20	16	
FCZ1	Action	0	1	0	0	0	0	0	1	
	Limit	14	16	0	0	0	0	14	16	
Total	Action	0	9	0	0	1	1	1	1	
	Limit	112	89	0	0	2	0	20	03	

210 exceedances of DO (9 times of Actions Levels and 201 time of Limit Levels) were recorded in the monitoring programme from 2 August 2004 to 27 August 2004 (i.e. 12 monitoring days). It was believed that the majority of exceedances of DO were possibly not justified to the sand placing works, taking into account the very short period and intermittent nature of works (3 consecutive days on 57 August 2004 and 13 August 2004). In addition, there was no identifiable source of discharge from the sites, either point or non-point source, which may affect the DO levels within the monitoring areas. In fact, such exceedances would likely be caused by elevated water temperature (recorded as about 27-32°C), which reduced the solubility of DO in water throughout the monitoring period in summer.

5 exceedances of SS (3 times of Action Levels and 1 time of Limit Levels) were recorded in the same monitoring programme. It was concluded that the exceedances of SS on 13 August 2004 was justified to the sand placing works, based on the information from complaint no 149. However, the implementation of proper mitigation measures promptly rectified the problem as illustrated by the resumption to compliance SS levels for the subsequent monitoring. As no sand placing work or other marine works have been carried out, other exceedances of SS on 20 and 25 August 2004 were not considered as caused by construction work.

# **Comments**

The environmental performance of the Contractor during the reporting period was acceptable. Upon advised by the ET, remedial measures had been taken to mitigate the environmental impacts caused by the construction activities. EM&A programme had been conducted as planned in the reporting period.

#### 1. INTRODUCTION

Ove Arup & Partners Hong Kong Limited (Arup) was appointed by the Contractor - Maeda Corporation (MC) as the Environmental Team (ET) for Contract No. HY/99/18 Castle Peak Road Improvements between Sham Tseng and Ka Loon Tsuen, Tsuen Wan (hereafter called the "Project"). Environmental parameters including air quality, construction noise, water quality and landscape & visual issues were selected for impact monitoring for the Project. The contract period of the Project are anticipated as 43 months from December 2001 to June 2005.

# 1.1 Project Background

The Castle Peak Road improvements works consists of upgrading the existing Castle Peak Road to provide a dual two-lane carriageway of "Rural Road A" classification between Area 2, Tsuen Wan and Ka Loon Tsuen, and all associated utility, junction and pedestrian facilities. The Castle Peak Improvement project is divided into three contracts. This Environmental Monitoring and Audit (EM&A) exercise only concerns the West Contract No. HY/99/18 between Sham Tseng and Ka Loon Tsuen, Tsuen Wan. Figure 1-1 shows the site location plan.

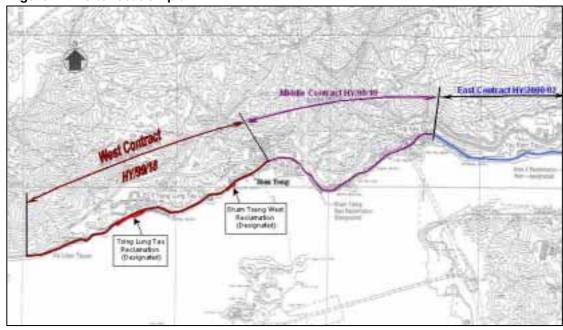


Figure 1-1 Site location plan

The scope of the construction work includes:

- Improvement to Castle Peak Road between Area 2 and Ka Loon Tsuen, Tsuen Wan to a dual two-lane carriageway;
- Provision of pedestrian facilities in the form of footpaths, subways, footbridges and Crossings;
- Road junction and signal design and the re-provision of access roads and connections to existing road networks;
- Construction of associated drainage and landscaping works;
- Environmental mitigation measures;
- Design and construction of watermains;
- Construction of entrusted sewerage works; and
- Dredging and reclamation (designated project see also Section 1.2)

# 1.2 Designated Project

The marine reclamation and the construction of the associated seawall at Tsing Lung Tau and Sham Tseng West within Contract No. HY/99/18 are classified as designated projects under the Environmental Permits No. EP-093/2001 and EP-094/2001 respectively.

# 1.3 Impact EM&A Requirements

The impact environmental monitoring and audit included air quality monitoring (both 1-hour and 24-hour TSP), noise, water quality, landscape and visual monitoring, and environmental audit.

#### 1.4 Purpose of the Report

The purpose of the quarterly EM&A summary report is to summarise and provide the information on monitoring methodology, monitoring results, environmental permit status, site audit findings, recommendations and conclusions for the period from August 2004 to October 2004.

## 2. ENVIRONMENTAL STATUS

# 2.1 Construction Programme

The construction work was commenced in February 2002. The updated construction programme is given in Appendix A.

## 2.2 Construction Activities of the Quarter

The major construction activities carried out by the Contractor (CT) in the reporting period included excavation, rock breaking, rock drilling and chemical blasting; bored piling, construction of outfalls; sand placing in seawall B bench reinstatement work and installation of retaining walls.

#### 3. SUMMARY OF EM&A REQUIREMENTS

Air quality, construction noise, marine water quality and landscape issues are significant environmental impacts identified for the construction period of the project. In accordance with the Project specific EM&A Manual<sup>[1]</sup>, air quality, noise, water quality, landscape impact monitoring, and audit shall be performed by an ET at all specified monitoring locations during the construction and operational stages.

# 3.1 Air Quality Monitoring

#### 3.1.1 Monitoring Parameters

Air monitoring was measured in terms of the TSP levels for both 24-hour and 1-hour periods.

## 3.1.2 Monitoring Frequency

24-hour TSP and 1-hour TSP levels were monitored during the course of construction according to the EM&A Manual. The monitoring parameters and frequencies are specified in Table 3-1.

Table 3-1 TSP monitoring parameters and frequency

Parameters	Monitoring Frequency	Time Period	No. of measurement for each monitoring
24-hour TSP	Once every six days	0000 – 2400	1
1-hour TSP	Three times per every six days	0700 – 1900	1

#### 3.1.3 Monitoring Locations

A total of eleven locations were specified for the air quality monitoring and they are given in Table 3-2 and presented in Figures 3-1a to 3-1d.

Table 3-2 Air quality monitoring locations

Air Monitoring Station No.	Location	Location description	
WA1	Bayside Villas	G/F, Bayside Villas (Temporary Suspended)	
WA2	Grand Bay Villas	G/F, Grand Bay Villas-(Temporary Suspended)	
WA3	Hong Kong Garden	G/F, Hong Kong Garden (Regent Heights)	
WA4	Hong Kong Garden	G/F, Hong Kong Garden (Between Blk 1 & 2)	
WA5	Hong Kong Garden	G/F, Hong Kong Garden (Block 4)	
WA6	Tsing Lung Tau Tin Hau Temple	G/F, Tsing Lung Tau Tin Hau Temple	
WA7	Sea Crest Villa	Podium, Sea Crest Villa (Phase 4 Block 12)	
WA8	Sea Crest Villa	Podium, Sea Crest Villa (Phase 3 Block 8)	
WA9	Sea Crest Villa	Car Park (L3), Sea Crest Villa (Phase 2 Block 6)	

Air Monitoring Station No.	Location	Location description
WA10	Sea Crest Villa	Podium, Sea Crest Villa (Phase 1 Block 1)
WA11	Lido Garden	G/F, Carpark, Lido Garden Tower 1

Note: Bayside Villas (WA1) and Grand Bay Villas (WA2) are no longer the air sensitive receivers as all residents of Bayside Villas and Grand Bay Villas had been evacuated since September 2002. Therefore, the air quality monitoring at Bayside Villas and Grand Bay Villas were temporary suspended since October 2002 after approval from IC(E) and EPD.

### 3.2 Construction Noise Monitoring

#### 3.2.1 Monitoring Parameters

Construction noise monitoring was measured in terms of the A-weighted equivalent continuous sound pressure level ( $L_{eq}$ ).  $L_{10}$  and  $L_{90}$  will also be recorded as supplementary reference information for data auditing.

#### 3.2.2 Monitoring Frequency

Construction noise measurements were required to be taken on a weekly basis according to the EM&A Manual. The monitoring time periods, monitoring parameters and frequency are specified in Table 3-3.

Table 3-3 Construction noise monitoring parameters and frequency

Time Period (when construction activity is found)	Parameters	Monitoring Frequency	No. of Measurements for Each Monitoring	
Between 0700-1900 hours on normal weekdays	n normal weekdays L <sub>eq(30 min)</sub>		1	
Between 1900-2300 hours on normal weekdays	L <sub>eq(5 min)</sub> *	Once per	3 (consecutive)	
Between 2300-0700 hours of next day		week		
Between 0700-1900 hours on holidays				

Remarks: \* The L<sub>eq(5 min)</sub> will only be measured if construction activities are conducted in holidays and between the period of 1900 and 0700 hours during normal weekdays.

#### 3.2.3 Monitoring Locations

A total of sixteen noise monitoring locations were specified. They are given in Table 3-4 and presented in Figures 3-1a to 3-1d. The measurements shall be taken at a position 1m from the exterior of building façade and at a position of 1.2m above ground.

Table 3-4 Construction noise monitoring locations

Noise Monitoring Station No.	Location	Monitoring Point	
WN1	Ka Loon Tsuen House No.3, Ka Loon Tsuen		
WN2 Ka Loon Tsuen House No.15, Ka Loon Tsuen		House No.15, Ka Loon Tsuen	
WN3 Bayside Villas		Upper G/F, Bayside Villas (Temporary Suspended)	
WN4 Bayside Villas		Lower G/F, Bayside Villas (Temporary Suspended)	
WN5 Grand Bay Villas G/F, Grand Bay Villas (Temporary Suspended)		G/F, Grand Bay Villas (Temporary Suspended)	

Noise Monitoring Station No.	Location	Monitoring Point
WN6	Hong Kong Garden	G/F, Hong Kong Garden (Regent Heights)
WN7	Hong Kong Garden	G/F, Hong Kong Garden (Between Blk 1 & 2)
WN8	Hong Kong Garden	G/F, Hong Kong Garden (Block 4)
WN9	Tsing Lung Tau Village	House 1,Tsing Lung Tau Village
WN10	Tsing Lung Tau Village	House 60-64,Tsing Lung Tau Village
WN11	Villa Alfavista	G/F, Villa Alfavista
WN12	Sea Crest Villa	Podium, Sea Crest Villa (Phase 4 Block 12)
WN13 Sea Crest Villa Podium, Sea Crest Villa (Pha		Podium, Sea Crest Villa (Phase 3 Block 8)
WN14 Sea Crest Villa Car Park (L3), Sea Crest Villa (Ph		Car Park (L3), Sea Crest Villa (Phase 2 Block 6)
WN15	WN15 Sea Crest Villa Podium, Sea Crest Villa (Phase 1 Block 1)	
WN16	Lido Garden	G/F, Carpark, Lido Garden Tower 1

**Note:** Bayside Villas (WN3 and WN4) and Grand Bay Villas (WN5) are no longer the noise sensitive receivers as all residents of Bayside Villas and Grand Bay Villas had been evacuated since September 2002. Therefore, the noise monitoring at Bayside Villas and Grand Bay Villas were temporary suspended since October 2002 after approval from IC(E) and EPD.

# 3.3 Water Quality (Designated Project)

#### 3.3.1 Monitoring Parameters

Water quality monitoring includes Turbidity (Tby) in the unit of NTU, Dissolved Oxygen (DO) in the unit of mg/L and Suspended Solids (SS) in the unit of mg/L. In addition to the water quality parameters, other relevant data, such as monitoring location/position, time, water depth, water temperature, salinity, DO saturation, weather conditions, sea conditions, tidal stage will be recorded including any special phenomena, work underway at the construction site, etc.

#### 3.3.2 Monitoring Frequency

Water quality monitoring during the impact stage will be conducted thrice per week, during mid-flood and mid-ebb tides and at sixteen designated sampling locations. The interval between two sets of monitoring will not be less than 36 hours except where exceedances above the Action Level or Limit Level were detected (see also section 3.4). In these cases, the monitoring frequency will be increased.

# 3.3.3 Monitoring Locations

A total of sixteen locations, 9 for impact and 7 for control had been selected for marine water quality monitoring and the locations are given in Table 3-5 and presented in Figure 3-1b to 3-1e.

Table 3-5 Water quality monitoring locations

Water Menitoring S	tation No.	Location			
Water Monitoring Station No.		Eastings	Northings		
Tsing Lung Tau	WW1 (Impact Station)	822306	824405		
	WW2 (Impact Station)	822377	824462		
	WW3 (Impact Station)	822529	824500		
	WW4 (Impact Station)	822775	824560		
	WR-E-1234 (Control Station for Mid-Ebb Tide)	822204	824312		
	WR-F-1234 (Control Station for Mid-Flood Tide)	822850	824519		
Angler's Beach:	WW5 (Impact Station)	823700	824905		
Sham Tseung West	WW6/7 (Impact Station)	823797	824964		
	WW8 (Impact Station)	823900	825023		
	WR-E-5678 (Control Station for Mid-Ebb Tide)		824830		
	WR-F-5678 (Control Station for Mid-Flood Tide)	823994	825034		
Ma Wan Fish Culture Zone	FCZ1 (Impact Station)	823500	823870		



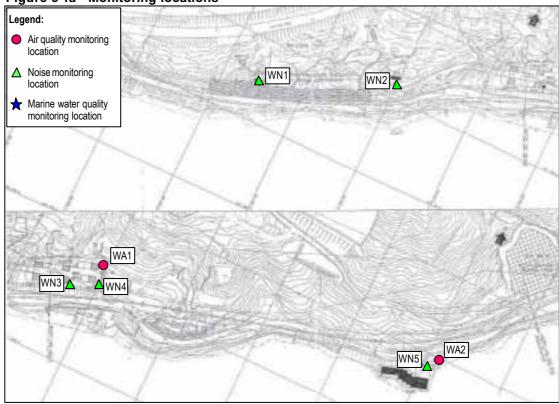
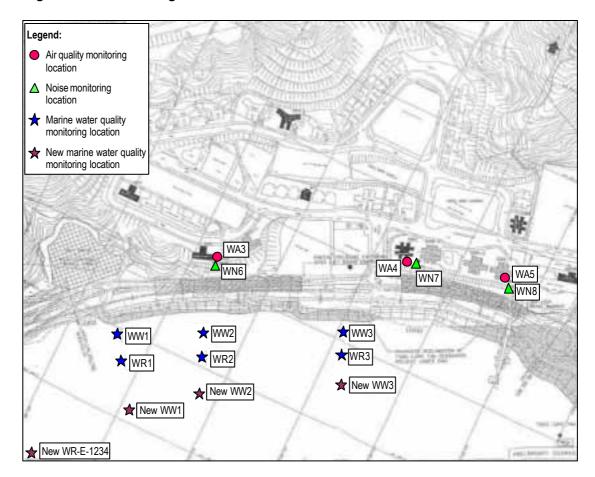


Figure 3-1b Monitoring locations





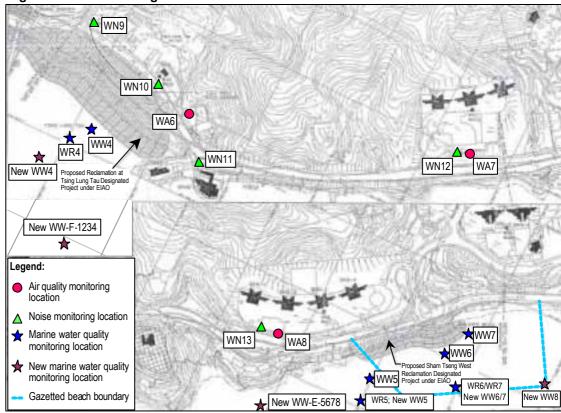
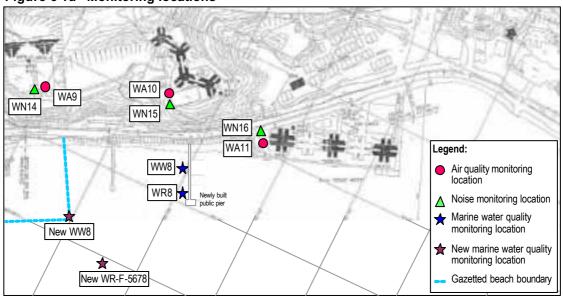
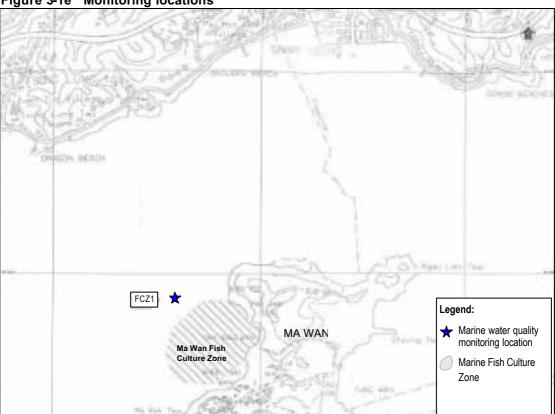


Figure 3-1d Monitoring locations





**Monitoring locations** Figure 3-1e

#### 3.4 **Landscape and Visual Monitoring and Audit**

#### 3.4.1 **Audit Parameters**

All landscape and visual mitigation measures undertaken by both the CT and the Landscape Contractor during the construction phase and during the first year of the operational phase were audited by a Registered Landscape Architect, to ensure compliance with the intended aims of the mitigation measures.

#### 3.4.2 **Audit Frequency**

The landscape and visual monitoring and audit was undertaken at least once every two weeks throughout the construction period and once every two months during the operational phase.

#### 3.4.3 **Audit Location**

The landscape and visual monitoring and audit was conducted throughout the entire site area.

#### 3.5 **Performance Limits and Event-Action Plans**

The monitoring results were checked against appropriate standards and requirements. A two-tier system performance limits had been established in the Project specific EM&A Manual. The "Action Level" and the "Limit Level" (A/L) are established according to the EPD requirements. ET, ER, IC(E), and CT will take corresponding actions in accordance with the Event-Action Plans if the monitoring results exceed the performance limits.

#### 3.5.1 Air Quality

The action and limit levels for air quality have been established during the baseline monitoring and are provided in Table 3-6.

Table 3-6 Action and Limit Level for air quality

Air Monitoring	1-hour TSP I	_evel in g/m³	24-hour TSP	Level in g/m³
Station No.	Action Level	Limit Level	Action Level	Limit Level
WA1	350		187	
WA2	362		192	
WA3	353		190	
WA4	362		187	
WA5	346		185	
WA6	362	500	204	260
WA7	351		187	
WA8	347		188	
WA9	345		182	
WA10	352		183	
WA11	357		195	

Table 3-7 details the actions required to be carried out by different parties in case of an exceedance of performance limits being detected.

Table 3-7 Event/Action plan for air quality

4.00				Action				
Evelit		ET Leader		IC(E)		ER		Contractor
Action Level								
1. Exceedance for one sample	<del>-</del> - c	Identify the source.	<del>-</del>	Check monitoring data submitted by the ET Leader.	<del>-</del>	Notify Contractor.	← ~	Rectify any unacceptable practice.
_	i က	Repeat measurement to confirm finding.	2	Check Contractor's working method.			i	iate.
	4	Increase monitoring frequency to daily.						
2. Exceedance for		Identify the source.	<u>.</u>	Check monitoring data submitted by the ET	<del>-</del>	Confirm receipt of notification of failure	<del>.</del>	Submit proposals for remedial actions
two or more	5.	Inform the IC(E) and the ER.	c	Leader.	ď	in writing.		to IC(E) within 3 working days of
consecutive	က်	Repeat measurements to confirm findings.	.7	Check the Contractor's working method.	. v	Notify the Contractor.		Houlicauon.
o de la	4	Increase monitoring frequency to daily.	က	Discuss with the ET Leader and the	က်	Ensure remedial measures properly	N 6	Implement the agreed proposals.
	2.	Discuss with the IC(E) and the Contractor on remedial	4	Advise the FR on the effectiveness of the		inperieu.	oj.	Amena proposar ii appropriate:
	U	If available continues arrange mosting with the		proposed remedial measures.				
	o i	I exceedance withings, analige meening with the IC(E) and the ER.	5	Supervisor implementation of remedial				
	7.	If exceedance stops, cease additional monitoring.		measures.				
Limit Level								
<ol> <li>Exceedance for</li> </ol>	1.	Identify the source.	<del>-</del> -	Check monitoring data submitted by the ET	<del>(</del> -	Confirm receipt of notification of failure	<del>-</del> -	Take immediate action to avoid
one sample	2	Inform the ER and the EPD.		Leader.		in writing.		further exceedance.
	က	Repeat measurement to confirm finding.	7	Check the Contractor's working method.	5	Notify the Contractor.	7	Submit proposals for remedial actions
	4	Increase monitoring frequency to daily.	က	Discuss with the ET Leader and the	က်	Ensure remedial measures properly		to IC(E) within 3 working days of
	2	Assess effectiveness of Contractor's remedial actions		Contractor on possible remedial measures.		implemented.	c	notification.
		and keep the IC(E), the EPD and the ER informed of	4	Advise the ER on the effectiveness of the			ი; ∠	Implement the agreed proposals.
		the results.	и	implementation of			ť	Allend proposal il appropriate.
			റ	Supervisor implementation of remedial measures.				
2. Exceedance for	1.	Notify the IC(E), the ER, the EPD and the Contractor.	<del>-</del>	Discuss amongst the ER, the ET Leader	<del>-</del>	Confirm receipt of notification of failure	<del>.</del>	Take immediate action to avoid
Wo or more	2.	Identify the source		and the Contractor on the potential	(	In Writing.		Turtner exceedance.
comsecutive	က်	Repeat measurements to confirm findings.	c	Terriedial actions.	2.	Notify the Contractor.	7	Submit proposals for remedial actions
Sallibles	4	Increase monitoring frequency to daily.	.7	Keview the Contractor's remedial actions whenever necessary and advise the FR	က်	In consultation with the IC(E), agree		to IC(E) within 3 working days of
	5.	Carry out analysis of the Contractor's working		accordingly.		implemented	~	Implement the agreed proposals
		procedures to determine possible mitigation to be	က	Supervise the implementation of remedial	4	Figure remedial measures are	, 4	Resubmit proposals if problem still
	ď	IIIIpiemented.  Arrange meeting the IC/E) and the ER to discuss the		measures.	-	d.	:	not under control.
	i	remedial actions to be taken.			5.	If exceedance continues, consider	5.	Stop the relevant activity of works as
	7	Assess effectiveness of the Contractor's remedial				what activity of the work is responsible		determined by the ER until the
		actions and keep the IC(E), the EPD and the ER				and instruct the Contractor to stop that activity of work until the exceedance is		exceedance is abated.
	œ	Informed of the results. If exceedance stops cease additional monitoring				abated.		
	i	וו כאכככלמווסכ פוסףס, ככמסכ מתמונטוומן וווסווונטוווט.						

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#### 3.5.2 Construction Noise Impact

The action and limit levels for the construction noise have been established in accordance with the Baseline Monitoring Report<sup>[2]</sup> and are tabulated in Table 3-8.

Table 3-8 Action and Limit Levels for construction noise

Time Period	Action	Limit
0700 – 1900 hours on any day not being a Sunday or public holiday		75dB(A) <sup>(1)</sup>
19:00 – 23:00 hours on all days and 07:00 – 23:00 on general holidays (including Sundays)	When one documented complaint is received	55(2) / 70(3)
23:00 – 07:00 hours on all days		40(2) / 55(3)

Remarks:

- (1) For educational establishments the limit level shall be 70dB(A) and reduced to 65dB(A) during examination periods.
- (2) Refers to the types of Plant regulated under the Technical Memorandum on Noise from Construction Work in Designated Areas (DA-TM).
- (3) Refers to the types of Plant regulated under the Technical Memorandum on Noise Other than Percussive Piling (GW-TM).
- (4) Owing to the high background noise level recorded at WN5, WN9, and WN10, the noise impact monitoring results at these 3 locations will be corrected by its background using the following background correction equation:  $L_{eq(30min)} = 10 \log (10^{m/10} 10^{b/10})$  as m= Measured  $L_{eq(30min)}$ , b=Average Baseline  $L_{eq(30min)}$ .

Only up to the maximum of 3dB(A) is allowed to be deducted after the background correction.

Table 3-9 details the actions required to be carried out by different parties in the case of an exceedance of performance limits being detected.

Table 3-9 Event/Action plan for construction noise

L	!			Action				
Event		ET Leader		IC(E)		ER		Contractor
Action Level	1.	Notify the IC(E) and the Contractor.	1. R	Review with analysed results	1.	Confirm receipt of notification	<del>-</del>	Submit noise mitigation
	2.	Carry out investigation.		~	c		c	proposals to IC(E).
	<del>د</del> .	Report the results of investigation to the IC(E) and the Contractor.	7 Z E <u>2</u>	Review the proposed remedial measures by the Contractor and advise the ER accordingly.	ب بن م		7	Implement noise mitigation proposals.
	4.	Discuss with the Contractor and formulate remedial measures.	က်	Supervise the implement of remedial measures.		propose remedial measures for the analysed noise problem.		
	5.	Increase monitoring frequency to check mitigation measures.			4.	Ensure remedial measures are properly implemented.		
Limit Level	<del>_</del> .	Notify the IC(E), the ER, the EPD and the Contractor.	1. L	Discuss amongst the ER, the ET Leader and the Contractor on the	<del>-</del>	Confirm receipt of notification of failure in writing.	<del>-</del> :	Take immediate action to avoid further exceedance.
	2.		<u>ă</u>	potential remedial actions.	2	or.	2	Submit proposals for
	ა.	Repeat measurement to confirm findings.	2. R. R.	Review the Contractor's remedial actions whenever necessary to	რ.	Require the Contractor to		remedial actions to IC(E) within 3 working days of
	4.	Increase monitoring frequency.	, g	assure their effectiveness and		propose remedial measures for the analysed noise problem.		notification.
	5.	Carry out analysis of Contractor's working procedures to determine possible mitiration to be implemented	ა.	advise the EK accordingly.  Supervise the implementation of	4.	are	က	Implement the agreed proposals.
	9.			50.000	5.	If exceedance continues, consider what activity of the work is responsible and instruct	4.	Resubmit proposals if problem still not under control.
	7.	Assess effectiveness of the contractor's remedial actions and keep the IC(E), the ED) and the ED informed of the society.				the Contractor to stop that activity of work until the exceedance is abated.	ب	Stop the relevant activity of works as determined by the ER until the exceedance is
	ωi							מסמכת.

#### 3.5.3 Water Quality

The action and limit levels for the water quality have been established in accordance with the EM&A Manual and approved by EPD on 15 October 2002. EPD and IC(E) had agreed on 10 April 2003 to apply the "Direct Comparison" method for evaluation of the marine water quality exceedance. The A/L levels had been revised in April 2003 and are presented in Table 3-10.

Table 3-10 Action and Limit Levels of water quality

Parameters		Monitoring Location		
lers	WW1 to	WW8	FC	Z1
	Action Level	Limit Level	Action Level	Limit Level
b				
Surface & Middle	4.9	4.8	4.7	4.6
Bottom	4.8	4.8	4.0	4.0
	17.0	23.4	For EPD: <b>12.9</b>	For EPD: <b>14.0</b>
,			For AFCD: 12.9 and 120% of upstream control station's SS at the same tide of the same day	For AFCD: <b>14.0</b> and <b>130%</b> of upstream control station's SS at the same tide of the same
	12.0	13.6	For EPD: <b>9.1</b>	<u>For EPD</u> : <b>10.3</b>
			For AFCD: <b>9.1 and 120%</b> of upstream control station's Tby at the same tide of the same day	For AFCD: 10.3 and 130% of upstream control station's Tby at the same tide of the same day.
od				
Surface & Middle	4.3	4.2	4.5	4.4
Bottom	4.3	4.1	4.1	4.1
	25.3	28.7	For EPD: 23.3	<u>For EPD</u> : <b>25.9</b>
			For AFCD: 23.3 and 120% of upstream control station's SS at the same tide of the same day	For AFCD: 25.9 and 130% of upstream control station's SS at the same tide of the same
	25.2	31.5	For EPD: <b>18.7</b>	For EPD: 22.3
			For AFCD: 18.7 and 120% of upstream control station's Tby at the same tide of the same day	For AFCD: 22.3 and 130% of upstream control station's Tby at the same tide of the same day.
	& Middle  Bottom  L) averaged)  U) averaged)  od  Surface & Middle	Action Level  Surface & Middle  Bottom 4.8  17.0  L) averaged)  Od  Surface & Middle  Surface & Middle  Bottom 4.3  Bottom 4.3  25.3  L) averaged)	Surface & Middle	Surface & Middle

**Notes:** "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.

For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

In order to better differentiate between exceedance caused by the contract works and elevated readings arising from causes unrelated to contract works, all parties had agreed to introduce a term "Reaching of Trigger Value" to represent the scenario where the A/L levels were exceeded by the "Direct Comparison" evaluation method. Upon the detection of "Reaching of Trigger Value", an initial analysis would be

carried out to determine whether it was caused by contract works. Exceedance and non-compliance should only be recorded in case where the "Reaching of Trigger Value" was caused by the contract works.

Table 3-11 details the actions required to be carried out by different parties in the case of water quality exceedance of performance limits being detected. The revised Event/Action Plan for water quality has been endorsed by IC(E) in May 2003, and will be finalised subject to agreement with EPD.

Table 3-11 Event/Action plan for water quality

		A	Action	
Event	ET Leader	IC(E)	ER	Contractor
<b>Trigger Value</b>				
Trigger Value     being surpassed     for one sampling     day	<ol> <li>Repeat in-situ measurement to confirm findings.</li> <li>Conduct investigation to identify the source(s) of impact.</li> <li>Check monitoring data, all plant, equipment, mitigation measures and the Contractor's working methods.</li> <li>Inform the IC(E), ER, EPD, HyD, Contractor and AFCD (if required) the investigation results.</li> <li>If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "Action Level" and "Limit Level"</li> </ol>	If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "Action Level" and "Limit Level"	If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "Action Level" and "Limit Level"	If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "Action Level" and "Limit Level"
Action Level				
Action level     being exceeded     by one     sampling day     and is caused     by the     construction     works	Discuss the current mitigation measures with the IC(E) and the Contractor.     Pay attention on the monitoring results collected on the subsequent scheduled monitoring date to see if an exceedance, caused by the same or related construction works, is recurring.	Discuss with the ET Leader and the Contractor on the current mitigation measures.     Assess the effectiveness of the current mitigation measures and advised the ER accordingly.	Discuss with the IC(E) on the current mitigation measures.	Inform the ER and confirm notification of the exceedance in writing.     Rectify unacceptable practice.     Check all plants and equipment.     Consider changes of working methods.     Discuss with the ET Leader and the IC(E) on the current mitigation measures.
2. Action level being exceeded by more than one consecutive days and is cause by the construction works	Discuss mitigation measures with the IC(E) and the Contractor.     Ensure the proposed mitigation measures are implemented.     Further evaluation of the monitoring results on the next scheduled monitoring day and report to all concerned parties, if the affected monitoring stations are still being affected (or are no longer affected) by the construction works.  4. Prepare to increase the monitoring frequency to daily, if the Limit Level is exceeded as below.	Discuss with the ETLeader and the Contractor on the proposed mitigation measures.     Review proposals on mitigation measures submitted by the Contractor and advised the ER accordingly.     Assess the effectiveness of the implemented mitigation measures.	Discuss with IC(E), the ET Leader and the     Contractor on the proposed mitigation measures.     Make agreement on the proposed mitigation     measures to be implemented.     Assess the effectiveness of the implemented     mitigation measures.	Inform the ER and confirm notification of the consecutive exceedance in writing.     Rectify unacceptable practice.     Check all plants and equipment.     Consider changes of working methods.     Discuss with the ET Leader and the IC(E) and propose mitigation measures to the IC(E) and the ER within 3 working day.     Implement the agreed mitigation measures.
Limit Level				
Limit level being exceeded by one sampling day and is cause by the construction works	Discuss mitigation measures with the IC(E), the ER and the Contractor.     Ensure the proposed mitigation measures are implemented.     Prepare to increase the monitoring frequency to daily if further exceedances of the Limit Level are detected on the next sampling day.	Discuss with the ETLeader and the Contractor on the proposed mitigation measures.     Review proposals on mitigation meas ures submitted by the Contractor and advised the ER accordingly.  Assess the effectiveness of the implemented mitigation measures.	Discuss with IC(E), the ET Leader and the Contractor on the proposed mitigation measures.     Request the Contractor to Critically review the working methods.     Make agreement on the proposed mitigation measures to be implemented.	Inform the ER and confirm notification of the exceedance in writing.     Rectify unacceptable practice.     Check all plants and equipment.     Consider changes of working methods.     Discuss with the ET Leader, the IC(E) and the ER, and propose mitigation measures to the IC(E) and the ER within 3 working days.     Implement the agreed mitigation measures.

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400		1	Action	
	ET Leader	IC(E)	ER	Contractor
<ol><li>Limit level being</li></ol>	1. Discuss further mitigation measures with the IC(E),	<ol> <li>Discuss with the ET Leader and the</li> </ol>	1. Discuss with IC(E), the ET Leader and the	<ol> <li>Inform the ER and confirm notification of the</li> </ol>
exceeded by	the ER and the Contractor.	Contractor on the proposed further	Contractor on the proposed further mitigation	consecutive exceedance in writing.
more than one	2. Ensure the proposed further mitigation measures	mitigation measures.	measures.	<ol><li>Rectify unacceptable practice.</li></ol>
consecutive	are implemented.	<ol><li>Review proposals on further mitigation</li></ol>	2. Request the Contractor to Critically review the	3. Check all plants and equipment.
days and is	3. Increase the monitoring frequency to daily until no	measures submitted by the Contractor	working methods.	<ol> <li>Consider changes of working methods.</li> </ol>
canse by the	exceedance of the Limit Level.	and adv ised the ER accordingly.	<ol><li>Make agreement on the further mitigation measures</li></ol>	5. Discuss with the ET Leader, the IC(E) and
construction		<ol><li>Assess the effectiveness of the</li></ol>	to be implemented.	the ER, and propose further mitigation
works		implemented further mitigation	4. Assess the effectiveness of the implemented further	measures to the IC(E) and the ER within 3
		measures.	mitigation measures.	working days.
			<ol><li>Consider and instruct, if necessary, the Contractor</li></ol>	6. Implement the agreed further mitigation
			to slow down or to stop all or part of the marine work	measures.
			until no exceedance of Limit Level.	7. As directed by the ER, slow down or stop all
				or part of the construction activities.

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#### 3.5.4 Landscape and Visual

The Final Tree Survey Report<sup>[3]</sup> approved in April 2001 was adopted as the framework of the baseline landscape condition of this road section. In addition, a supplementary tree survey has been carried out in December 2001. The Supplementary Tree Survey Report (Revision A)<sup>[4]</sup> completed in March 2002 is also adopted to provide supplementary information of the baseline landscape condition of this road section.

If any non-conformity on landscape and visual issue is observed, the actions in accordance with Event/Action Plan shown in Table 3-12 shall be carried out.

Table 3-12 Event/Action plan for landscape and visual impact

Event		Action		
Event	ET Leader	IC(E)	ER	Contractor
Non-conformity on one occasion	Identify Source(s).     Inform the IC(E) and the ER.     Discuss mitigation actions with the IC(E), the ER and the Contractor.     Monitor remedial actions until rectification has been completed.	Check report.     Check the Contractor's working method.     Discuss with the ET Leader and the Contractor on possible remedial measures.     Advise the ER on effectiveness of proposed remedial measures.     Check implementation of remedial measures.	Notify Contractor.     Ensure remedial measures are properly implemented.	Amend working method.     Rectify damage and undertaken any necessary replacement.
Repeated Non-conformity	Identify Source(s).     Inform the IC(E) and the ER.I     Increase monitoring frequency     Discuss mitigation actions with the IC(E), the ER and the Contractor.     Monitor remedial actions until rectification has been completed.     If exceedance stops, cease additional monitoring	Check monitoring report     Check the Contractor's working method     Discuss with the ET Leader and the Contractor on possible remedial measures.     Advise the ER on effectiveness of proposed remedial measures.     Supervise implementation of remedial measures.	Notify the Contractor.     Ensure remedial measures are properly implemented.	Amend     working     method.     Rectify     damage and     undertaken     any necessary     replacement.

#### 4. AIR QUALITY

# 4.1 1-hour TSP Monitoring Results

The highest 1-hour TSP level was  $360.1 \mu g/m^3$  recorded at G/F of Tsing Lung Tau Temple (WA6) on 30 September 2004 while the lowest 1-hour TSP level was  $100.8 \mu g/m^3$  recorded at Podium of Sea Crest Villa Phase 4 Block 12 (WA7) on 18 August 2004.

There was no exceedance of Action and Limit Levels in the reporting period.

The trend of 1-hour TSP levels at each monitoring location are plotted and presented in Figure 4-1.

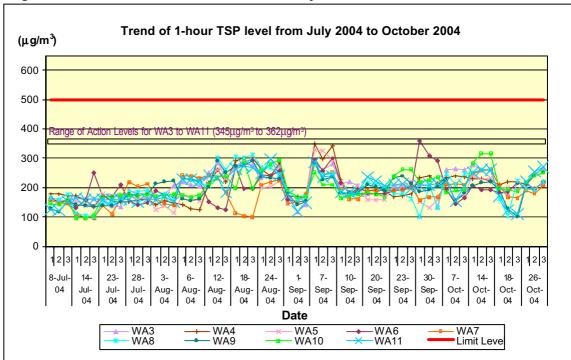


Figure 4-1 Trend of 1-hour TSP levels from July 2004 to October 2004

# 4.2 24-hour TSP Monitoring Results

The highest 24-hour TSP level was  $194.6\mu g/m^3$  recorded at G/F, Carpark, Lido Garden (WA11) on 23 October 2004 while the lowest 24-hour TSP level was  $30.4\mu g/m^3$  recorded at Car Park of Sea Crest Villa Phase 2 Block 6 (WA9) on 18 September 2004.

There was no exceedance of Action and Limit Levels in the reporting period.

The trend of 24-hour TSP levels at each monitoring location are plotted and presented in Figure 4-2.

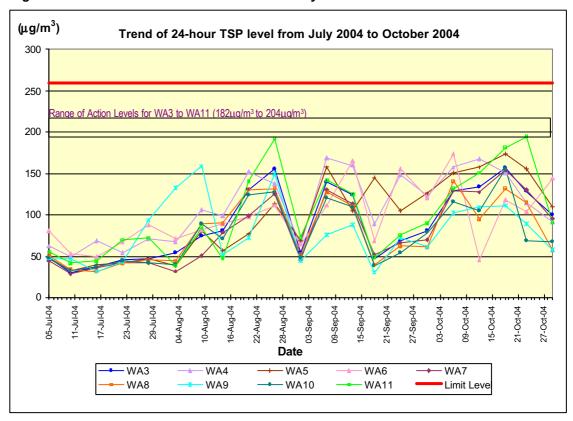


Figure 4-2 Trend of 24-hour TSP level from July 2004 to October 2004

#### 5. NOISE

# 5.1 Noise Monitoring Results

All the noise measurements were taken between 0700-1900 hours on normal weekdays during which the construction site was under normal operation.

The highest noise level was 74dB(A) recorded at Villa Alfavista (WN11) on 18 August 2004 while the lowest noise level was 63dB(A) recorded at Podium of Sea Crest Villa Phase 3 Block 8 (WN13) on 30 September 2004.

The trend of the noise levels at each monitoring location are plotted and presented in Figure 5-1.

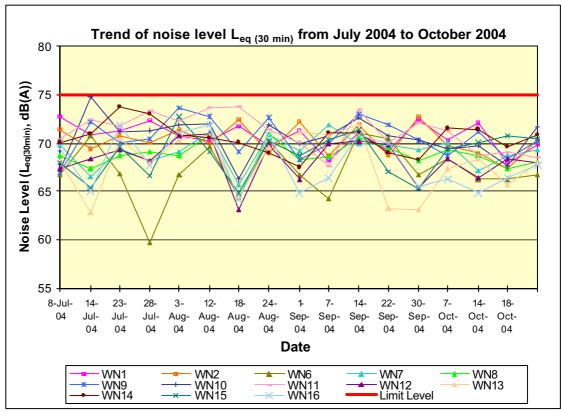


Figure 5-1 Trend of noise level from July 2004 to October 2004

### 6. WATER QUALITY (DESIGNATED PROJECT)

#### 6.1 Suspension and resumption of Marine Monitoring

As reported by the Contractor, major marine works at level below +2.5mPD had been completed in July 2003. The proposal on suspension of marine monitoring was submitted to IC(E), HyD, EPD and AFCD for comments on 25 September 2003. It was confirmed with IC(E) and AFCD that suspension of marine monitoring was acceptable if there is no "active" marine work being carried out. In future, if there is any marine work on or below +2.5mPD, the Contractor shall notify the relevant parties one month in advance and resume the marine monitoring. Subsequently, as instructed by the Contractor/ HyD, the marine monitoring was suspended during period from 10 October 2003 to 31 July 2004.

However, as informed by the Contractor, the planned sand placement activities were conducted at Seawall B. Marine impact monitoring near Seawall B were therefore resumed on 2 August 2004. Marine water quality monitoring was undertaken at monitoring locations, 4 for impact (i.e. WW1, WW2, WW3 and WW4) and 3 for control (i.e. WR-E-1234, WR-F-1234 and FCZ1) during the mid-ebb and mid-flood tidal cycles.

The monitoring results from August 2004 to October 2004 are plotted and presented in Figure 6-1 to Figure 6-8.

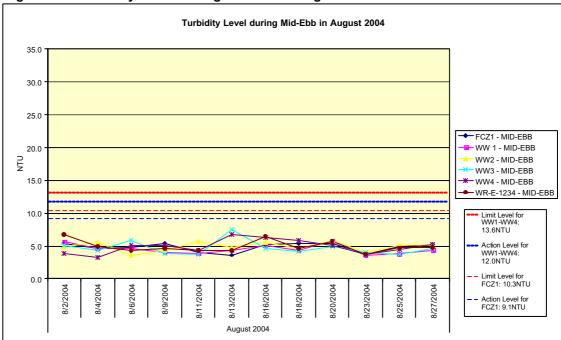


Figure 6-1 Turbidity levels during mid-ebb in August 2004

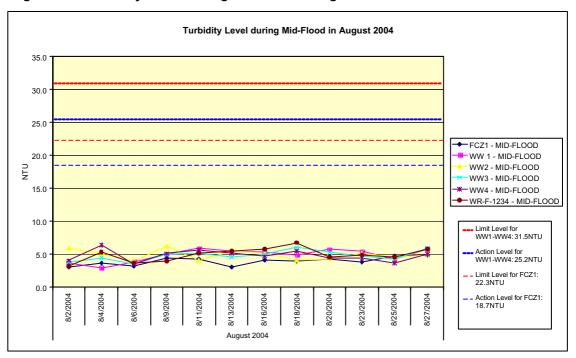
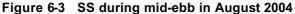
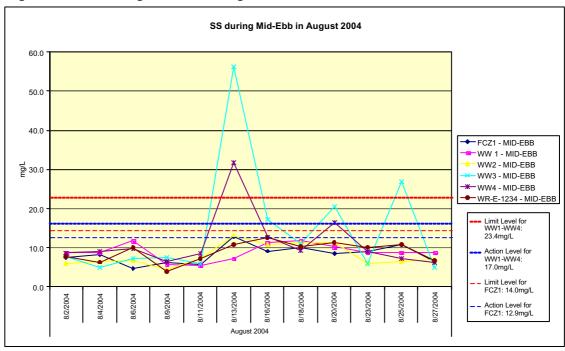


Figure 6-2 Turbidity levels during mid-flood in August 2004





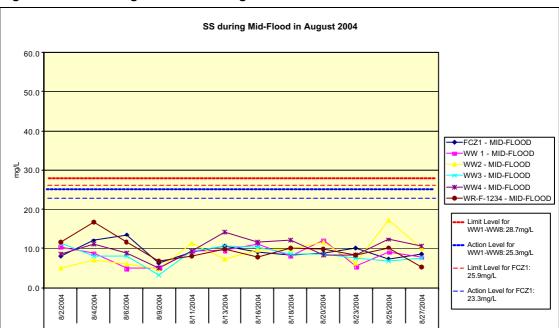
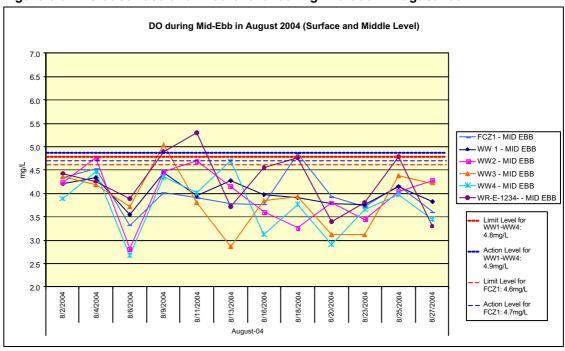


Figure 6-4 SS during mid-flood in August 2004





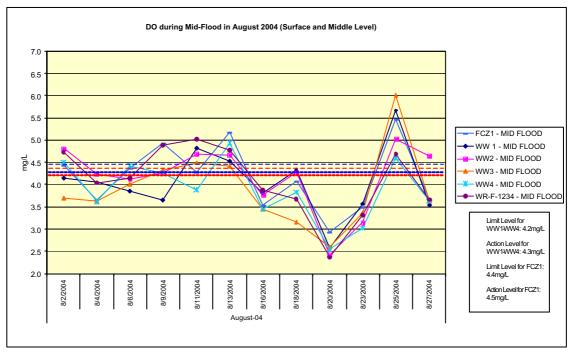
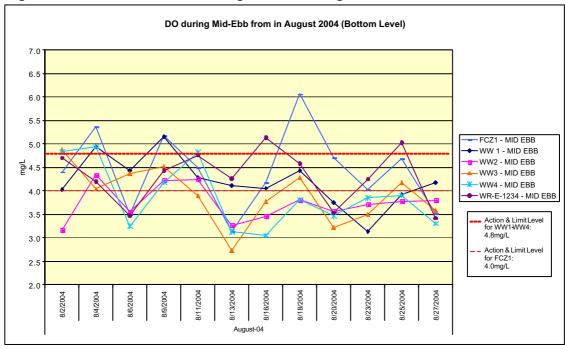


Figure 6-6 DO at surface and middle level during mid-flood in August 2004





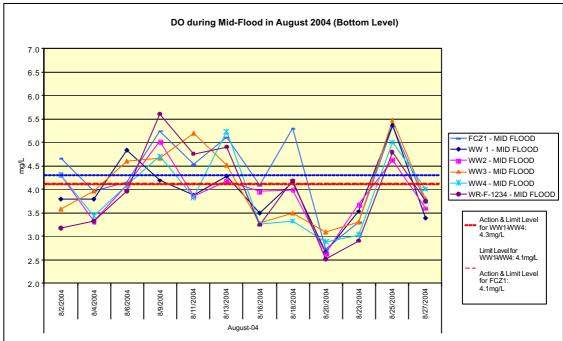


Figure 6-8 DO at bottom level during mid-flood in August 2004

There were exceedances on A/L Levels of DO and SS of marine water quality monitoring in August 2004. A thorough investigation had been triggered to reveal the causes of exceedances, including the review of Contractor's recent works, identification of other potential pollution sources, complaints, etc.

There was no exceedance of the Action and Limit Levels for Tby of marine water quality monitoring in the reporting period.

## 7. LANDSCAPE AND VISUAL MONITORING AND AUDIT

A total of 7 times of the landscape and visual monitoring and audits had been carried out in the reporting period by a Registered Landscape Architect. Frequently watering and tidy up the construction site have been suggested after the landscape and visual monitoring and audits. The CT was informed of the recommendations for action.

# 8. QUARTERLY SUMMARY, ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE RECORDS

#### 8.1 Summary of Waste Disposal

Table 8-1 summarises the waste disposal quantity in the reporting period.

Table 8-1 Waste disposal quantity in the period from August 2004 to October 2004

Type of waste or	Disposal at		No. of loads	or quantities	
material		Aug-04	Sep-04	Oct-04	Total
C&D waste	WENT Landfill	23 loads	15 loads	18 loads	56 loads
C&D material	Public Filling Area in Tuen Mun	1,909 loads	692 loads	1,106 loads	3,707 loads
Grease trap waste	Interim Grease Trap Waste Treatment Facility at WENT Landfill	0	0	0	0
Chemical waste	Collected by licenced collector	0	0	0	0

## 8.2 Complaint Record

A total of 3 environmental complaints, regarding sandy wake of a marine vessel carrying sand to the beach reinstatement areas of Seawall B, littering problem on the slope close to Sea Crest Villa Phase 2, and excessive garbage trapped along the adjacent shore of Seawall B west end, were received in the reporting period. The complaints had been resolved after investigation. A log record on the environmental complaints is given in Appendix B.

#### 8.3 Non-compliance

There was no non-compliance for air quality monitoring during the reporting period.

#### 8.4 Notification of Summons and Successful Prosecution

There was no notification of summons or prosecution received during the reporting period.

There were occasional exceedances on A/L Levels of DO and SS of marine water quality at different impact monitoring stations on different monitoring days in August 2004. The no of exceedances of DO and SS in the periods from 2 August 2004 to 27 August 2004 are summarized in Table 8-2. The daily exceedance records are detailed in Appendix N. No exceedance of Turbidity was recorded in August 2004.

Table 8-2 Summary of exceedance of marine water quality monitoring from 2 August 2004 to 27 August 2004

Monitoring	Exceedance	T T	mg/L)	Turbidi	ty (NTU)	SS (ı	mg/L)	То	tal
Stations	Level	Mid- Ebb	Mid- Flood	Mid- Ebb	Mid- Flood	Mid- Ebb	Mid- Flood	Mid- Ebb	Mid- Flood
WW1	Action	0	3	0	0	0	0	0	3
	Limit	22	15	0	0	0	0	22	15
WW2	Action	0	4	0	0	0	0	0	4
	Limit	24	17	0	0	0	0	24	17
WW3	Action	0	0	0	0	1	0	1	0
	Limit	32	26	0	0	1	0	33	26
WW4	Action	0	1	0	0	0	1	0	2
	Limit	20	15	0	0	1	0	20	16
FCZ1	Action	0	1	0	0	0	0	0	1
	Limit	14	16	0	0	0	0	14	16
Total	Action	0	9	0	0	1	1	1	1
	Limit	112	89	0	0	2	0	20	03

210 exceedances of DO (9 times of Actions Levels and 201 time of Limit Levels) were recorded in the monitoring programme from 2 August 2004 to 27 August 2004 (i.e. 12 monitoring days). It was believed that the majority of exceedances of DO were possibly not justified to the sand placing works, taking into account the very short period and intermittent nature of works (3 consecutive days on 5-7 August 2004 and 13 August 2004). In addition, there was no identifiable source of discharge from the sites, either point or non-point source, which may affect the DO levels within the monitoring areas. In fact, such exceedances would likely be caused by elevated water temperature (recorded as about 27-32°C), which reduced the solubility of DO in water throughout the monitoring period in summer.

5 exceedances of SS (3 times of Action Levels and 1 time of Limit Levels) were recorded in the same monitoring programme. It was concluded that the exceedances of SS on 13 August 2004 was justified to the sand placing works, based on the information from complaint no 149. However, the implementation of proper mitigation measures promptly rectified the problem as illustrated by the resumption to compliance SS levels for the subsequent monitoring. As no sand placing work or other marine works have been carried out, As no sand placing work or other marine works have been carried out, other exceedances of SS on 20 and 25 August 2004 were not considered as caused by construction work. Investigation report of exceedances of water quality monitoring data are attached in Appendix R.

#### 8.5 Environmental Licenses

There was no new environmental license granted during the reporting period.

#### 9. COMMENTS, RECOMMENDATION AND CONCLUSION

#### 9.1 Comments and Recommendations

Regarding the water quality issue, there had been occasionally accumulation of silt, construction debris or sands inside the existing and temporary drainage systems and desilting facilities. In addition, stagnant water had always been found within the construction site, but was cleared up immediately by the Contractor. Pest control had been conducted during site audits Provision of facilities and implementation of wheel washing were in progress. Some entrances had been closed but mud trails were often found outside site entrance.

Regarding the air quality issue, dust had been occasionally spotted from the activities such as rock breaking, excavation and vehicle movement on dry and dusty haul roads and mud trails on public roads. The Contractor had therefore implemented mitigation measures for dust suppression upon requested by the ET. These included spraying water onto rock breaking and excavation activities, watering of dry and dusty haul road; provision of wheel washing facilities, and cleaning the public road when necessary. Exposed slopes and stockpiles was occasionally spotted but were covered after requested.

Construction noise impact was insignificant in the reporting period. It was occasionally spotted that noise label had not been provided for some PMEs but was provided after verbal warning.

Accumulation of general refuse, C&D waste and chemical or oil containers had been occasionally spotted by the ET. Upon advised, the Contractor had disposed of the waste, removed the containers, cleaned up the area and provided drip tray for the chemical or oil containers accordingly. Oil stain was often spotted and the Contractor was advised to remove the contaminated soil. General housekeeping was gradually improving.

No significant landscape and visual impacts had been recorded in the reporting period.

The EM&A programme including landscape and visual monitoring and audit for the period from August 2004 to October 2004 had been conducted as planned to avoid significant environmental and visual impacts to the sensitive receivers.

#### 9.2 Conclusion

The environmental performance of the Contractor during the reporting period was acceptable. Upon advised by the ET, remedial measures had been taken to mitigate the environmental impacts caused by the construction activities. As a whole, EM&A programme had been well conducted in the reporting period.

#### 10. REFERENCES

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# APPENDIX A

Construction programme

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APPENDIX B
Log record on environmental complaints

No.	Date of Complaint Received	Description	Propopsed Actions	Completion Date	Remarks
029	12-Aug-02	Complaint from Mr. Au regarding muddy water washing out from Kowloon Bound Lane from the construction site	Enlarge concrete paving at site entrance; further improvement to the existing temporary drainage system to minimise wash-off of waste water to the adjacent road; and make sure temporary water supply points are properly turned off during lunch break or other times when they are not in use.	16-Aug-02	
036	31-Aug-02	Complaint from Mrs. Chung regarding the generation of fugitive dust from the construction site in front of Tsing Lung Tau Village	Frequent watering of the related works area with the aid of water browser	31-Aug-02	
054	07-Dec-02	Complaint from Mr. Lo regarding the stagnant water ponding in front of the construction site at Sham Tseng	Explained to the complainant that the water ponding was a wheel washing bay	07-Dec-02	
067	03-Mar-03	Complaint from Hong Kong Garden Management Office regarding the noise from vehicular movement over the temporary road cover at Castle Peak Road provided by the Contractor	The Contractor has added extra welding to improve the rigidity of the temporary steel deck. The work was completed dring the off-peak hours in the period between 12-Mar-03 to 17-Mar-03.	17-Mar-03	The Contractor has taken noise readings and found that the noise level was within the baseline levels.
068	11-Mar-03	Complaint from Mr. Leung at Hong Kong Garden regarding the noise from evening road traffic, travelling over the steel decking plate on the adjacnt temporary road diversion.	The Contractor has added extra welding to improve the rigidity of the temporary steel deck. The work was completed dring the off-peak hours in the period between 12-Mar-03 to 17-Mar-03.	17-Mar-03	The Contractor has taken noise readings and found that the noise level was within the baseline levels.
070	06-Mar-03	Complaint from EPD regarding the reclamation works at Seawall B opposite to Hong Kong Garden on Sunday	The Contractor has previously informed the subcontractor of the statutory requirements as noise, dust emission, water discharge, and waste management. The Contractor agreed to keep vigilant in monitoring and survellance of the site and continue to remind the subcontractors of the statutory requirements.	10-Mar-03	The Contractor has formally closed all site area for the Chinese New Year. Entrances of all site area were barricaded before the Contractor's staff vacnated the sites on 30 January 2003.
070	06-Mar-03	Complaint from EPD regarding dust emission from the reclamation works at Seawall B opposite to Hong Kong Garden.	The Contractor has previously informed the subcontractor of the statutory requirements as noise, dust emission, water discharge, and waste management. The Contractor agreed to keep vigilant in monitoring and surveillance of the site and continue to remind the subcontractors of the statutory requirements.	10-Mar-03	The Contractor has investigated and confirmed that the marine works towards the eastern end of Seawall B was wet and the concreting works at the west end of the Seawall B were not dusty and no dust was emitted. Ground surface was also covered with crushed rock. The Contractor was also further reminded to spray water before and during unloading and moving of rock boulders and onto the haul road.
070	24-Mar-03	Complaint from EPD regarding daytime construction noise at Seawall B opposite to Hong Kong Garden.	The Contractor agreed to continuously monitor and review the operation in the vicinity opposite to Lung tang Court, in order to minimize the noise impact caused to the public. In addition the Contractor will respond to the complaints received on the 24- hours Contract Complaint Hotline 2496 2555 in the first instant.	31-Mar-03	No exceedance was recorded at the noise monitoring station WN6, WN7 and WN8 from January 2003 to March 2003. It was suspected that the noise was due to traffic noise together with operational noise of plant equipment at Seawall B. The Contractor was also reminded if reorganzation of working arrangement is necessary, mitigation proposal should be submitted to IC(E) for review. Additional noise monitoring shall also be conducted at the noise monitoring station WN8 once the mitigation proposal is implemented.

No.	Date of Complaint Received	Description	Propopsed Actions	Completion Date	Remarks
076	15-Apr-03	Complaint from Mr. Wong of TL 60 Management Limited regarding the noise nuisance generated from the vehicle movement over the temporary steel decking in front of Hong Kong Garden at Castle Peak Road provided by the Contractor.	The Contractor has replaced the isolated decking plate by 17 April 2003 and agreed to frequently inspect the condition of the steel decking. Further improvement works were completed on 25 April 2003.	25-Apr-03	
078	15-Apr-03	Complaint from Mr. Chau of Hong Kong Garden regarding the noise nuisance generated from vehicle movement over the temporary steel plate in front of the premises.	The Contractor has explained to Mr. Chau that the improvement works were completed on 25 April 2003 and agreed to carry out daily inspection to check the condition of the steel plate.	29-Apr-03	The complainant agreed that the noise nuisance has abated.
080	05-May-03	Complaint from Mr. Tsao / Mr. Chan of Mui Yuen, opposite to Bayside Villas regarding water leakage from the rocky slope behind his house and the damage of water pipes by cleaning works.	boundary.	09-May-03	
082	07-May-03	regarding water ponding	The Contractor has formed holes at existing upstand wall to drain off water trapped in the adjacent footpath and to patch up local depression at the affected footway with plain concrete.	19-May-03	
084	21-May-03	Complaint from Ms. Lam of Sea Crest Villa Phase I regarding construction noise from the slope works outside Sea Crest Villa Phase I.	The Contractor has observed low-noise emission construction equipment were being used at the time of inspection and proposed to speed up the works to limit the duration of daytime construction noise impact.  The Contractor has provided additional information in their letter ref. HY/99/18/M45/300/40/10229 dated 25 June 2003. Additional noise monitoring had been taken by the Contractor on 22 May 2003 at WN15 obtaining the result of 66.6dB(A), which was below the limit level of 75dB(A). After reviewing the findings and investigation details, the Contractor confirmed that no further remedial actions was required.	25-Jun-03	The Contractor was requested to submit mitigation proposal to IC(E) for review and to implement the mitigation proposal. Additional noise monitoring is required to be conducted at the noise monitoring station WN15 once the mitigation proposal is implemented.  The IC(E) had no comment on the Contractor's findings. Since no mitigation measures were implemented, additional noise monitoring was not conducted.
086	23-May-03	Complaint from Mr. So regarding stagnant water in the drainage and wheel washing bay near the entrance of Sea Crest Villa Phase IV and the damage of road surface near L1 main gate and CLP electricity supply room.	Explained to the complainant that the stagnant water inside the wheel washing bay was for cleaning of vehicle. The leakage found the temporary water pipe was repaired. The water and silt trapped in the U-channel near the main entrance of the estate was removed and the kerb on west side of the run-in to Gate L1 was reinstated.	29-May-03	The Contractor will properly maintain the wheel washing facility, regularly inspect and clean the drainage channel and the gully pots near the main entrance of the estate. The damaged paving slab and cable pit near the power supply room will be restored to original condition after completion of the adjacent substructure works around mid August 2003.
088	03-Jun-03	Complaint from EPD regarding construction dust from Seawall B.	The Contractor proposed to place the concerned area under higher priority and endeavor to water the concerned haul road more frequently during dry days.	06-Jun-03	No rock breaking activity has been observed in site audits since 5 June 2003. The haul road at Seawall B was observed wetted in the site audits. The Contractor was reminded to provide water spraying if there is rock breaking activity in this vicinity.

No.	Date of Complaint Received	Description	Propopsed Actions	Completion Date	Remarks
088	03-Jun-03	Complaint from EPD regarding construction noise from Seawall B.	The Contractor reported that there may be occasional crashing noise for the piling works when rock level is reached. The Contractor has been providing mitigation measures, such as barrier and restriction of the rate of concerned works. The Contractor will also endeavor to expedite the works to reduce the duration of perceived daytime impact. The Contractor proposed to perform additional ad hoc inspections on Mondays, Wednesday and Fridays at the concerned area to confirm continual implementation of measures and to conduct additional noise monitoring where appropriate.	06-Jun-03	No rock breaking activity has been observed in site audits since 5 June 2003. Contractor has been reminded to submit mitigation proposal to IC(E) for review and to implement the mitigation proposal if provision of additional mitigation measures is required. The Contractor was also advised to provide portable noise barrier if there is rock breaking activity. Additional noise monitoring is also required to be conducted at the noise monitoring station WN8 once the mitigation proposal is implemented. The IC(E) had no comment on the Contractor's findings. Since no mitigation measures were implemented, additional noise monitoring was not conducted.
091	16-Jun-03	of Sea Crest Villa Phase 1 regarding noise from drilling works carried out at BPRW70 outside Sea Crest Villa Phase 1 before 07:00.	Upon investigation, the Contractor confirmed that there has been no construction work being conducted before 07:00. Nevertheless, the Contractor has scheduled the concerned work to be commenced at 08:00 as on 17 July 2003.	17-Jun-03	
092	16-Jun-03	Complaint from Mrs. Chung of Lido Garden regarding noise from drilling works carried out at BPRW70 opposite to Lido Garden before 07:00.	Upon investigation, the Contractor confirmed that there has been no construction work being conducted before 07:00. Nevertheless, the Contractor has scheduled the concerned work to be commenced at 08:00 as on 17 July 2003.	17-Jun-03	
097	27-Jun-03	Complaint from Mr Fok of Kai Shing Management Services regarding noise nuisance and the ponding of stagnant water arising from the construction activities outside Sea Crest Villa Phase III.	Upon investigation, the condition of water pumps installed separately at east end of the slope close to SCV Phase III and Pai Min Kok Stream Course has been checked. Noise generated from the ongoing construction works in these areas has been monitored. The rock breaking with jackhammer at PMK had been completed on 26 June 2003.	04-Jul-03	After further enquiry into the nature of the complaint, its appears that the complaint refers to the extended duration of construction works in the concerned area (i.e. inconvenienve caused due to lengthy works program). The Contrator's Mr Peter Ip has explained the nature of the works to the Management Office. There have been no further complaints from SCV Phase III since the briefing.
103	31-Jul-03	Complaint from Hong Kong Management Office regarding the noise generated by vehicles running over the steel decking plate on the Castle Peak Road close to Hong Kong Garden.	The existing steel decking plate had been repaired during off peak hours and regular inspection on the condition of steel plate and adjacent road surface was agreed to be conducted.	05-Aug-03	There had been no further complaints after the repair.
105	13-Aug-03	Complaint from Mr Chow of Sham Tseng regarding fell of all old trees along section of Castle Peak Road near Ma Wan Pier.	After investigation on the matter, it had been confirmed that the felling and the transplanting of group of trees along the Castle Peak Road near Ma Wan Pier had been carried out in compliance with approved plans and schedules. No follow up is required.	16-Aug-03	
108	11-Sep-03	was very dusty at her	After investigation on the matter, water browser was arranged for spraying through the haul road. Rock breaking location would be sprayed directly connected from water supply point. To follow up the case, water browser would be arranged every 2 to 3 hours depends on drying up condition. A worker would be arranged for spraying water through out the rock breaking process.	11-Sep-03	

No.	Date of Complaint Received	Description	Propopsed Actions	Completion Date	Remarks
112	10-Oct-03	Complaint from Mr Cheung of FEHD that egarding the general refuse being accumulating on the pedestrian walkway between Sea Crest Villa Phase III and Phase II and the drainage channel at Pai Min Kok Village.	Investigation was conducted immediately on 11 October 2003. It was observed that the pedestrian walkway and Outfall I had been tidied up except at the corner of Sea Crest Villa Phase III where a broken umbrella and some broken traffic light was lying on the ground. Immediate action was taken to remove the broken umbrella and signal lights. The site area would be maintained regularly. It was noted that wooden formwork and construction materials might possibly been mistaken to be rubbish.	13-Oct-03	
114	25-Nov-03	Complaint log no. 114 was received on 25 November 2003 regarding the muddy water found on the beach opposite to Sea Crest Villa Phase III.	An inspection for the concerned site area at the interface between the beach and the construction site revealed that there was no evidence of active construction works adjacent to the beach or the presence of muddy water. There was also no evidence of muddy water discharge from Outfall I. The work programme for the following days leading up to the complaint was inspection and found that the bored piling activity had been completed and removed since 15 November 2003. The contractor would regularly monitor the area for muddy water. If potential discharge sources were identified, the Contractor would take action to rectify the situation.	26-Nov-03	
115	30-Nov-03	Complaint from Miss Chan of Sham Tseng Latrine was received on 30 November 2003 regarding the pond of foul water at the footway in front of Sham Tseng Latrine.	An inspection for the concerned site area was carried out. The water ponding was confirmed to be overflow from the terminal manhole, which was a part of public latrine system. The maintenance of the public latrine and the associated systems were the responsibility of FEHD. The Contractor had contacted FEHD to follow up the issue.	01-Dec-03	
116	06-Dec-03	Complaint from Mr Paul Wong of Hong Kong Garden Management Office was received on 6 December 2003 regarding construction noise during early hours of 8:00am.	Inspection of concern area and no abnormal construction activities was found. The Contractor had explained to the Complainer that no statutory permit was required for construction work other than percussive piling at 8:00am and the nature of works conducted at the area was well within permitted limits. ET was reminded the Contractor to implement noise mitigation proposal in accordance with EM&A Manual.	08-Dec-03	Noise generated from the ongoing construction works in these areas was monitored and no exceedance was found. As the Contractor had responded to the complainant and no further complaint was recorded, the Contractor proposed that no further remedial/preventative measures were necessary.
123	20-Feb-04	Complaint from Mr Ho of TL60 Management Ltd was received on 20 February 2004 regardingnoise arising from the temporary steel plates on road pavement near Blocks 1 & 2 of Hong Kong Garden	Condition of the decking plat was checked on 23 February 2004 and was repaired on 24 February 2004 during off peak hours.	24-Feb-04	Regular inspection will be conducted and adjacent works was be expedited to allow early road diversion for permanent removal of the steel plates.
139	09-Jul-04	Complaint from EPD was received on 9 July 2004 regarding noise arising from prescribed construction works or works using power mechanical equipment at night near Seawall-B area opposite to Hong Kong Garden	After investigation on the matter, there was no evidence of carrying out the prescribed construction works or using power mechanical equipment between 1900 and 2300 on 3 July 2004.	23-Jul-04	
140	10-Jul-04	Complaint from Highway Department was received on 10 July 2004 regarding noise arising from rock breaking near Sea Crest Villa Phase 3	After investigation on the matter, there was no evidence of rock breaking activities undertaken in the vicinity of Sea Crest Villa Phase 3.	23-Jul-04	

No.	Date of Complaint Received	Description	Propopsed Actions	Completion Date	Remarks
149	11-Aug-04	of a marine vessel carrying sand to the	After investigation on the matter, the following action was proposed. The vessel and water depth should be thoroughly checked prior to sand placing. If shadow water need to be approached, another shallower vessel should be used. The land co-ordinator should cease the sand placing operation if muddy plumes were noticeable.		
154	25-Aug-04	Complaint from Ms Tang regarding littering on the slope close to the Sea Crest Villa Phase 2.	After investigation on the matter, there was no evidence that the problem was caused by any construction activities.	27-Aug-04	
156	18-Sep-04	Complaint from Mr Chu regarding excessive garbage trapped along the adjacent shore of Seawall B west end.	It was out of control over the accumulation of floating rubbish drifting toward the shore. However, the contractor would remove them as soon as possible.	20-Sep-04	