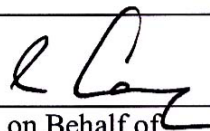


**Proposed Extension of Public Golf Course
at Kau Sai Chau Island, Sai Kung**

**Monthly Environmental Monitoring & Audit (EM&A) Report
for November 2006**

(Report No. 382210/011)

Report Authorized For
Issue By:



For and on Behalf of
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December 2006

Table of Content

Executive Summary

1.Introduction

- 1.1 Background of the Project*
- 1.2 Purpose of the Report*
- 1.3 Structure of the Report*

2.Project Information

- 2.1 Background*
- 2.2 Site Description*
- 2.3 Project Organization*
- 2.4 Construction Programme*
- 2.5 Status of Environmental Submission*
- 2.6 Summary of EM&A Requirements*

3.Environmental Monitoring Requirements

- 3.1 Air Quality*
- 3.2 Water Quality*
- 3.3 Ecology*
- 3.4 Landscape and Visual*
- 3.5 Archaeology (Watching Brief)*
- 3.6 Land Contamination*

4.Implementation Status on Environmental Protection Requirements

5.Monitoring Results

- 5.1 Air Quality*
- 5.2 Water Quality*
- 5.3 Ecology*
- 5.4 Archaeology (Watching Brief)*
- 5.5 Land Contamination*

6.Environmental Site Auditing

7.Environmental Non-Conformance

- 7.1 Summary of Environmental Non-Compliance*
- 7.2 Summary of Environmental Complaint*
- 7.3 Summary of Environmental Summons*

8.Future Key Issues

- 8.1 Key Issues for coming month*
- 8.2 Monitoring Schedule for the coming month*
- 8.3 Construction programme for the next three month*

9.Recommendations and Conclusions

List of Figure

- 1.1 Master Layout Plan of the Proposed Third Golf Course
- 1.2 Project Organisation and Lines of Communication
- 3.1 Proposed Air Quality Monitoring Locations
- 3.2 Proposed Water Quality Monitoring Locations (Construction phase)
- 3.3 Proposed Ecology Monitoring Locations
- 3.4a Locations of Coral and Seagrass Monitoring (Sites D2, D3 and C)
- 3.4b Indicative locations of the tagged corals at Site B2 under the revised monitoring regime
- 3.5 Coral Transplantation Location
- 3.6 Watching Brief Monitoring Area
- 3.7 Sampling Locations for Land Contamination

List of Table

- Table 1.1 Structure of the Report
- Table 2.1 Summary of Compliance with EP Conditions
- Table 2.2 Summary of Impact EM&A Requirements
- Table 3.1 Action and Limit Levels for 1-hour TSP
- Table 3.2 Action and Limit Levels for 24-hour TSP
- Table 3.3 TSP Monitoring Parameter and Frequency
- Table 3.4 Air Quality Monitoring Equipment
- Table 3.5 Derived Summaries of Action and Limit Levels for Marine Water Quality
- Table 3.6 Derived Summaries of Action and Limit Levels for Freshwater Water Quality
- Table 3.7 Water Quality Monitoring Parameter, Frequency and Locations
- Table 3.8 Water Quality Monitoring Locations during Construction Phase
- Table 3.9 Analytical Methods to be applied to Water Quality Samples
- Table 5.2-1 Marine Water Exceedance Summary October – November 2006
- Table 5.2-2 Freshwater Exceedance Summary October to December 2006
- Table 6.1 Summary of Environmental Licensing and Permit Status

List of Annex

- Annex A Tentative Construction Programme
- Annex B Monitoring Programme for the reporting month
- Annex C Event Action Plan
- Annex D Implementation status on Environmental Protection Requirements
- Annex E Monitoring results
- Annex F Calibration Certificates
- Annex G Monitoring Programme for the next three months
- Annex H Construction Programme for the next three months

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Your ref : 40040032/CERT/13_06.doc
Our ref :

**Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung
(Independent Environmental Checker)**

CHECK CERTIFICATE

1. We certify that professional skill and care have been used in the checking of the Environmental Team's (ET) No.11 Monthly EM&A Report for November 2006 for the construction of Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung.
2. We certify that the ET's EM&A programme for the reporting period has been satisfactorily executed and the No.11 Monthly EM&A report for November 2006 has been verified.
3. We would comment that our evaluation of the ET's EM&A is based on a random audit process which cannot be guaranteed to have all non-conformities identified.

Signed



Independent Environmental Checker

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Date 4 December 2006

Executive Summary

This is the eleventh Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Black & Veatch, the designated Environmental Team (ET), for the Project “Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung”. The construction works of golf course was commenced on 16th January 2006. This report presents the results of the EM&A works conducted in the month of October 2006 (25th October 2006 to 24th November 2006).

Summary of construction works undertaken during this report period

Work programme for the construction of the permanent intake and outfall pipelines has not yet been finalized and next allowable time frame under the EP condition for dredging work will be from January 2007 to April 2007. Therefore, temporary pipeline arrangement for the desalination plant is essential in providing irrigation water to the East Course project in this coming dry season if necessary. According to the tentative programme, the desalination plant will be completed in December 2006 for testing and trial. Corals at Site D2 will be transplanted according to the approved coral transplantation methodology. A coral transplantation methodology was approved by EPD on 16th November 2006. The tentative coral transplantation programme will be carried out in the next reporting month.

All haul roads formation and vegetation clearance was mostly completed during the reporting month except Hole 13. For northern and central portions of the third golf course, most of the bulk earthworks were completed at Holes 1-9 and 17-18 during the reporting month. Next phase construction sequence which are mainly the drainage system installation, irrigation system installation, sub-soil drainage installation, grassing and turf establishment. For southern portions of the third golf course, major construction works were bulk earthworks and construction of permanent bridges/pipe culvert. The tentative turf establishment period will commence in January 2006 but it will depend on the availability and water quality of the water source from desalination plant, existing reservoir and water storage from rain water on site. There is no conclusive planting date yet. However, Holes 3, 5 & 8 will be the three targets golf holes for earliest turfing.

Closed low flow drainage system includes lake formation, gravity drains, rising main, underground water tanks and pumping stations. The permanent drainage system installation at Holes 5, 7, 8 was completed. Lake formation at 1D, Hole 4 and Hole 10 was in progress. The construction of gravity drain from Lake 1D to existing reservoir was in progress.

The floating pontoon was located and operated at the designated location according to Environmental Permit (EP). Concrete batching plant has been in operation. For the desalination plant, no dredging work for the desalination plant intake and outfall pipelines was carried out but only land formation work.

The full scale remediation work for the contaminated soil (originally located at Hole 18 – hotspot L3) at Hole 17 (one of the major fill area) was carried out on 4th October 2006. A Final Site Remediation Report (FSRR) will be prepared by the Contractor in the next reporting month.

Archaeology watching brief was started since early September 2006 and in progress at Holes 11, 12, 14, 15 and 16. No archaeological material or deposits was identified in the reporting month.

Environmental Monitoring and Audit Progress

A summary of monitoring activities in this reporting period is shown as follows:

24-hour Total Suspended Particulates (TSP) monitoring at GCA B1	8 times
Water quality monitoring (marine + freshwater)	4 times
Terrestrial Ecology	1 time
Marine Ecology	0 time*
Landscaping & Visual	2 times

* For marine ecology, it will be carried out on quarterly basis and the next coral monitoring will be on December 2006.

Air Quality

8 sets of 24-hour TSP monitoring were carried out on 26th October, 1st, 7th, 10th, 13th, 18th, 21st and 24th November 2006 at Bungalow A (GCA B1) at Kau Sai Chau during this reporting month. Two exceedances of 24-hour TSP were recorded on 1st and 10th November 2006 at GCA B1.

Exceedance was recorded on 1st November 2006, an additional air quality sample was taken on 10th November 2006. Exceedance was also recorded on first additional sample on 10th November 2006, an second additional sample was taken on 21st November 2006. No exceedance was recorded. However, the non-exceedance was not due to the provision of sufficient mitigation measure on site. Wet weather was starting from mid-November 2006 in particular on 21st November 2006 (an amber rainstorm signal was hoisted for 4 hours), dust was significantly suppressed at the construction site and the measured TSP concentration was also below the action level.

Water Quality

4 sets of water quality monitoring were carried out on 4th, 10th, 16th and 22nd November 2006 at 9 marine and 7 freshwater monitoring locations. Amber rainstorm signal was hoisted on 21st November 2006 in the late afternoon, water sample was taken on 22nd November 2006. Silty runoff was recorded on 22nd November 2006 at all streams in particular Stream C (Suspended solids of impact monitoring stations of Stream A, B and C were 130 mg/L, 49 mg/L & 836 mg/L respectively) and fresh water inland marsh (Suspended solids was 393 mg/L). Action levels and Limit levels of suspended solids are 3.9 mg/L and 8 mg/L respectively.

Terrestrial Ecology

A regular environmental site audit was carried out on 7th November 2006, a backhoe was observed and working (vegetation clearance) within the buffer zone of Stream B2. Environmental Team (ET) notified the Engineer and Main Contractor once the incidence happened, the work was stopped by the Main Contractor immediately. According to the site investigation on 10th November 2006, the area of the vegetation clearance area was about 45m² (3m x 15m) within the buffer zone of Stream B2. A meeting was arranged with the representatives of Jockey Club, ET, Main Contractor (CHEC), Engineer and Independent Environmental Checker (IEC) on 14th November 2006. The incident report, mitigation measures and proposed remediation work were prepared by the CHEC and submitted to EPD in this reporting month.

Amber rainstorm signal was hoisted on 21st Nov 2006, silt deposit was settled at the streambed of Streams A, B & C in particular Stream C due to the insufficient temporary drainage system provided on site. Stream A was reinstated by the CHEC two days before the rainstorm but rocks from Hole 17 was washed into the downstream A again after the rainstorm. Downstream A is required to reinstate once again (removal of boulders/rocks by hand within the buffer zone area). Terrestrial ecology monitoring was

conducted on 24th and 29th November 2006. The demarcation of the stream buffer zone had been established for Streams A, B & C at the time of the monitoring survey. The main stream course of Stream A was very turbid and attributed to the earthworks. For Stream B, minor turbidity was observed. In addition, an area of vegetation at Stream B2 buffer zone has been cleared and this will affect the function of buffer zone for the stream protection. Remedial plan at the Stream B2 buffer zone should be implemented. For Stream C, majority of the main stream course of Stream C was covered by a thin layer of fine sediment. The sediments covered the bottoms of rock pools and reduce the habitat sizes available for the aquatic fauna. This might limit the aquatic communities in Stream C. Measures should be taken to prevent any further sedimentation incident in the future.

Marine Ecology

Marine ecology monitoring was not required in October 2006. The next marine monitoring will be conducted in December 2006.

Landscaping & Visual

Landscape and visual monitoring and site audits were carried out on 1st and 15th November 2006. During the site audit, site formation, vegetation clearance works and building construction were being carried out. The Contractor shall take measures to improve the condition of damaged trees. Damaged trees next to administration building were still unprotected after being damaged by the adjacent construction activities.

The performance of the Contractor was considered unsatisfactory on this aspect since July 2006, they are (i) no rectification work has been carried out for all mal-pruning transplanted trees, (ii) no provision of any tree protection zones for all retain trees near administration building - construction materials were stockpiled and surrounded at the tree base area, (iii) the cause of the tree death T925 was outstanding, (iv) tree T848 transplanted in this month and was in poor condition and (v) soil around the transplanted trees was dry and more frequent watering is required in particular in dry season.

Environmental Site Auditing

Fiveweekly joint environmental site audits were carried out on 1st, 7th, 14th, 21st, 28th November 2006, with the Engineer and Contractor's representatives. A monthly joint environmental site audit was carried out on 21st November 2006 by the Contractor's Representative, ET's representative and Independent Environmental Checker (IEC).

Environmental Non-conformance

Air Quality

Two action level exceedances of 24-hour TSP was recorded at GCA B1.

Marine Water Quality

One exceedances of turbidity and four exceedances of suspended solids (SS) on 16th and 22nd November 2006 were recorded at M_RO1, M_Marsh and KS. Exceedances at M_RO1 and KS were considered not project-related and the increase of the turbidity and SS values were mainly due to the natural variation of marine water (magnitude of the increase of turbidity and SS were similar to the control monitoring stations at M_A and M_B).

Freshwater Quality

Twenty three exceedances of turbidity and nineteen exceedances of suspended were recorded at F_DA, F_DB, F_DC and F_Inland Marsh. The exceedances recorded at freshwater inland marsh were mainly attributed to runoff from silty water discharged from the wheel washing facility near to the Contractor's site office and generated during rain. All exceedances recorded at all streams (A, B & C) and fresh water inland marsh were considered project-related.

As the upstream monitoring locations at Streams B & C (F_UB and F_UC) are located within the construction work area since September 2006, they represent and become impact monitoring stations instead of control station.

All notifications of exceedances and the subsequent exceedance incident reports have been forwarded to the relevant parties.

For those considered project-related exceedances at freshwater and marine water, the Contractor was required to critically review the temporary drainage management plan and implement necessary improvement to prevent runoff from the construction site to the marine water and stream courses. The Contractor was also requested to rectify the situation as soon as possible. The water quality monitoring results revealed that the temporary drainage installed on site was insufficient and should be improved especially at those concern areas.

No environmental complaint and environmental summons were received in this reporting month.

Implementation Status of Environmental Mitigation Measures

The Contractor was reminded the following issues and to take actions if necessary:

Air Quality

- Increase frequency of watering at main haul roads and rock breaking areas;
- Pave major haul roads with gravels/concrete to minimize the dust emission due to the heavy traffic;
- Cover the all soil/sand/aggregates stockpiles with tarpaulin or other measures to reduce the dust emission; and
- Install hoarding at the main exit/entrance of the construction site;

Waste Management

- Properly dispose of the vegetation stockpiles, general refuse and construction waste off-site;
- Provide chemical storage areas and construction waste sorting area; and
- Provide sufficient mobile toilets at remote site areas;

Ecology

- Remove of rubbles at downstream of Stream A manually again in November 2006;
- Rectify and remediate the vegetation clearance at Stream B2 buffer zone occurred in November 2006;
- Rectify and remediate the silt deposit at Stream C after the rainstorm occurred in November 2006;

Water Quality

- Enhance the wheel washing facility at the main exit/entrance of the construction site;
- Minimize the water quality impact when undertaking cut-and-fill works. It is important to provide sufficient temporary drainage at critical areas to confine, collect and provide proper treatment before

discharging to marine water and stream courses to ensure that the water quality is complied with WPCO requirements;

- Provide sufficient treatment facilities especially at water sensitive areas before water discharges from construction site;
- Maintain the integrity of silt curtains and remove of settled silt within the silt curtain which have been installed outside the fresh water inland marsh, near Hole 2, near Hole 4, inactive culture zone and Stream A;
- Strengthen the preventive/interim measures for avoiding silty runoff from the exposed areas to the low lying areas. More frequent maintenance of the silt fence is necessary; and
- Provide sufficient temporary drainage system at all temporary bridges;

Landscape & Visual

- Protect the retain trees with sufficient watering mainly located at the administration building;
- Provide sufficient water to the retain and transplanted trees in particular during dry season;
- Provide tree protection zone for all retain tree at the administration building; and
- Provide incident report for the death of the tree T925;

Future Key Issues

General issues to be considered in the coming month include:

- Potential dust generation from activities on-site : bulk earthworks at Holes 10 to 16, concrete batching plant operation and soil/sand/aggregates stockpiles;
- Archaeology watching brief at Holes 11, 12, 14, 15 & 16;
- Provide sufficient temporary drainage and mitigation measures for construction temporary/permanent crossings at Streams A, B1, B2 and C;
- Implement sufficient and improve the temporary drainage system on site to prevent silty runoff discharging to marine and stream courses;
- Implement sufficient temporary drainage system before carrying out any newly exposed area;
- Carry out land formation works for the desalination plant and temporary arrangement of intake and outfall pipelines near to the existing KSC pier ;
- Dispose of construction wastes, vegetation and general refuse off-site; and
- Hydroseed the bare ground/rock slopes according to the golf course design.

Key issues at particular areas:

- Submit the Temporary Drainage Master Plan (TDMP) for the turf establishment period prepared by the Contractor at least one month before implementation for ER and Jockey Club's approval;
- Coral transplantation at Site D2 in the coming reporting month; and
- Implement filter systems (nutrients and pesticides removal) at Holes 5 and 6;

1. Introduction

1.1 Background of the Project

1.1.1 Black & Veatch (hereinafter called the "ET") was appointed by Hong Kong Jockey Club (hereinafter called the "Project Proponent") to undertake Environmental Monitoring and Audit (EM&A) for "Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung" (hereinafter called the "Project"). Under the requirements of Section 4 of Environmental Permit EP-224/2005, EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the EM&A Manual, environmental monitoring of air quality, water quality, terrestrial and marine ecology, landscape and visual, archaeology (watching brief) and land contamination are required for the Project.

1.1.2 This report summarises the environmental monitoring and audit works for the Project in November 2006 (from 25th October to 24th November 2006).

1.2 Purpose of the Report

1.2.1 This is the eleventh EM&A report which summarizes the impact monitoring results and audit findings for the EM&A programme during the reporting period from **25th October to 24th November 2006**.

1.3 Structure of the Report

1.3.1 The structure of the report is shown in Table 1.1.

Table 1.1 Structure of the Report

Section		Description
1	Introduction	Details the scope and structure of the report
2	Project Information	Summarizes background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of environmental permits/licenses during the reporting period.
3	Environmental Monitoring Requirement	Summarizes the monitoring parameters, programmes, methodology, frequency, location, action and limit levels, event action plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.
4	Implementation Status on Environmental Mitigation Measures	Summarizes the implementation of environmental protection measures during the reporting period.
5	Monitoring Results	Summarizes the monitoring results obtained in the reporting period.
6	Environmental Site Auditing	Summarizes the audit findings of the weekly site inspections undertaken within the reporting period.
7	Environmental Non-conformance	Summarizes any monitoring exceedance, environmental complaints and environmental summons within the reporting period.
8	Future Key Issues	Summarizes the impact forecast and monitoring schedule for the next three month (25 Nov 2006 – 24 Feb 2007).
9	Recommendations and Conclusions	Lists out any recommendations and provides an overall conclusion of the results and findings of the EM&A programme for the reporting period.

2. Project Information

2.1 Background

2.1.1 The Project comprises the following major components:

- Construction of the third 18-hole public golf course on the east side of the island, south of the existing golfing area;
- A new irrigation lake to collect surface runoff from the new 18-hole golf course. Water stored at the new irrigation lake can also be diverted to existing reservoir for tertiary treatment and recycling;
- A new desalination plant adjacent to the existing pier to serve as an additional irrigation water supply for the new golf course during dry season; and
- Expansion of existing administration and maintenance buildings.

2.1.2 The potential environmental impacts of the Project have been studied in the Environmental Impact Assessment (EIA) report (EIAO Register No. AEIAR- 091/2005). The EIA was approved on 14 November 2005 under the EIAO. An Environmental Permit (EP-224/2005) was granted on 28 November 2005.

2.2 Site Description

2.2.1 A layout plan of the Project is provided in **Figure 1.1**.

2.3 Project Organization

2.3.1 Project organization and lines of communication are shown in **Figure 1.2**.

2.4 Construction Programme

2.4.1 The tentative construction programme for the Project is presented in **Annex A**. The construction works were commenced on 16 January 2006 and are scheduled to be completed by end of July 2007.

2.5 Status of Environmental Submission

2.5.1 A summary of the reporting requirement for compliance with EP conditions of the Project is listed in Table 2.1.

Table 2.1 Summary of Compliance with EP Conditions

EP-224/2005	Environmental Permit Submission	Status	Remarks
2.3	Management organization of the main construction companies and/or any form of joint ventures associated with the construction of the Project.	Submitted	At least one week before the commencement of construction of the Project.
2.4	Contamination Assessment Plan (CAP) submission. If land contamination is confirmed by the site investigation, submission of a Remediation Assessment	Submitted	Full scale remediation work was carried out in the reporting month. The Final Site Remediation Report (FSRR) will be prepared by the Contractor and submitted to EPD for record.

EP-224/2005	Environmental Permit Submission	Status	Remarks
	Plan (RAP) including a Contamination Assessment Report (CAR) is required.		
3.6	Detailed methodology for Coral Transplantation submission to the Director for approval.	Approved	Approved on 16 th November 2006. At least one month before commencement of the Coral Transplantation. The tentative programme of the coral transplantation at Site D2 will be in the next reporting month.
4.1	EM&A Manual (revised)	Submitted	At least two weeks before commencement of construction of the Project.
4.3	Baseline Monitoring Report	Submitted	At least two weeks before commencement of construction of the Project
4.5	Monthly EM&A Report	Submitted	within 10 working days after the end of the reporting month
5.1	Set up a dedicated web site and notify the Director in writing the Internet address.	Completed	Within 6 weeks after the commencement of construction of the Project (http://www.kscgolf.com/ema/index.asp)
3.4	Variation of Environmental Permit for the construction of the temporary crossings at Stream B during wet season.	Completed	Variation of Environmental Permit was approved on 18 th August 2006. The revised registered EP was EP-224/2005/A.

2.6 Summary of EM&A Requirements

2.6.1 The EM&A programme requires environmental monitoring for air quality, water quality, terrestrial and marine ecology, landscape and visual, archaeology (watching brief) and land contamination. 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 and Action Plans; and
- Environmental mitigation measures, as recommended in the project EIA final report.

2.6.2 A summary of impact EM&A requirements is presented in Table 2.2.

Table 2.2 Summary of Impact EM&A Requirements

Impacts	Parameters/descriptions	Locations	Frequencies	Duration
Air Quality	24-Hour TSP	1 Location	Once every 6 days	During Construction
	1-Hour TSP	1 Location	Three times in every 6 days	During Construction (As required when complaint received)
Water Quality	Dissolved Oxygen, Temperature, Turbidity, pH, Salinity and SS	9 marine and 7 freshwater locations	First 3 months 3 times a week, mid-ebb and mid-flood tides. If there is no exceedance occurs for the first 3 months, reduce to once per week.	During Construction
	Dissolved Oxygen, Temperature, Turbidity, pH, Salinity, SS, NO3-N, NO2-N, NH3-N, TP and selected pesticides.	9 marine and 7 freshwater locations	Once per week. If there is no exceedance occurs, monitoring frequency is subjected to change and shall be agreed with EPD.	During Construction: turf establishment period (permanent low flow drainage is not completed)
	Dissolved Oxygen, Temperature, Turbidity, pH, Salinity, SS, NO3-N, NO2-N, NH3-N, TP, Chl-a and selected pesticides.	9 marine and 6 freshwater locations	A 2-year of monitoring period for the operation phase is proposed. Monitoring should be carried out on bi-weekly basis for the first 12 months, after when the frequency will be reviewed by EPD.	During Operation
	Dissolved Oxygen, Temperature, Turbidity, pH, Salinity, SS, NO3-N, NO2-N, NH3-N, TP, Chl-a and selected pesticides	8 marine locations	Additional water quality monitoring shall be carried out after heavy rain storm or when there is an overflow event from the reservoir, irrigation buffer lake or detention ponds/tanks.	During Construction and Operation
Terrestrial Ecology	Monitoring aquatic fauna	Streams B, C & D	Once a month	During Construction
	Environmental Site Inspection mainly on intact of buffer zones	Streams A, B and C	Once a week	During Construction

Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung
Monthly EM&A Report

Impacts	Parameters/descriptions	Locations	Frequencies	Duration
Marine Ecology	Transplanted corals	Site D2	Quarterly for one year after transplantation	During construction
	Natural corals	Site C, Site B2, Site D2, and the Control Site.	<p>For Site D2 and the Control Site: Weekly at the first two weeks of dredging works for the desalination plant pipelines. If no exceedance was recorded, the monitoring schedule would be changed to biweekly till the pipeline construction works are finished.</p> <p>For Site C, B2 and the Control Site: Monthly for the first three months of the construction phase. If no exceedance was recorded, the monitoring schedule would be changed to quarterly during the rest of the construction phase.</p>	During Construction
		Site C, Site D2 and the Control Site.	First three months would be monthly conducted during the first two years of the operation phase. If no exceedance was recorded, the monitoring schedule would be changed to semi-annually, i.e. once in dry season and once in wet season.	During Operation
	Seagrass bed	Site D3, and at Site D2 if seagrasses were found during the baseline monitoring.	Weekly during the first two weeks of dredging works, and then biweekly till the pipeline construction works are finished.	During Construction
		Site D3, and at Site D2 if seagrasses were found during the baseline monitoring.	<p>During the first two years of the operation phase.</p> <p>The monitoring schedule during the first three months would be monthly. After that, the monitoring schedule would be changed to semi-annually, i.e. once in dry season and once in wet season.</p>	During Operation
Landscape and Visual	Audits to ensure effective implementation of mitigation measures	Project area and at visual sensitive receivers	Auditing inspections and reporting shall be undertaken once every two weeks of the construction phase and once every two months of the operation phase.	During Construction and Operation
Archaeology (Watching Brief)	Monitor archaeological potential sites at major cut areas	Hole 2, Hole 11, Hole 12, Hole 14, Hole 15 and Hole 16.	The archaeologist should keep the AMO informed of the progress of watching brief. The archaeologist should submit progress reports every 3 months during the programme of the watching brief.	During Construction
Land Contamination	Total Sulphur and Total Lead	Locations 2, 3, 6, 7 & 8	One month before commencement of work at the identified 5 hotspots	During Construction
General Site Conditions	Environmental Site Inspection	Works areas and areas affected by works	Periodically (weekly basis)	During Construction

3. Environmental Monitoring Requirements

3.1 Air Quality

Monitoring Requirement

- 3.1.1 24-hour TSP monitoring was carried out at GCA B1 to monitor the construction dust impact level in this reporting period.
- 3.1.2 The established Action/Limit Levels (AL levels) for the 1-hour and 24-hour TSP monitoring works are summarized in Table 3.1 and Table 3.2.

Table 3.1 Action and Limit Levels for 1-hour TSP

Location	Description	Action Level	Limit Level
GCA B1	Bungalow A adjacent to Kau Sai Chau Public Golf Course Administration Building	277.2 $\mu\text{g m}^{-3}$	500 $\mu\text{g m}^{-3}$

Note: The action levels for GCA B1 are developed based on baseline monitoring result.

Table 3.2 Action and Limit Levels for 24-hour TSP

Location	Description	Action Level	Limit Level
GCA B1	Bungalow A adjacent to Kau Sai Chau Public Golf Course Administration Building	187.4 $\mu\text{g m}^{-3}$	260 $\mu\text{g m}^{-3}$

Note: The action levels for GCA B1 are developed based on baseline monitoring result.

Monitoring Parameters, Frequency and Programme

- 3.1.3 The monitoring parameters and frequency are summarized in Table 3.3. The monitoring programme for the reporting period is shown in **Annex B**.

Table 3.3 TSP Monitoring Parameter and Frequency

Parameter	Frequency
24-hour TSP	Once every 6 days
1-hour TSP	3 times every 6 days (as required in case of complaints)

Monitoring Locations

- 3.1.4 In accordance with the EM&A Manual, one monitoring station (GCA B1) was selected and shown in **Figure 3.1**.

Monitoring Equipment

- 3.1.5 24-hour and 1-hour TSP (in case of complaints received) were performed using High Volume Samplers (HVS) and measured in-situ respectively. 24-hour TSP level of samples were collected using filters and High Volume Sampler and the collected samples were determined by a local HOKLAS accredited laboratory upon receipt of the samples and 1-hour TSP level will be performed in-situ.

- 3.1.6 High volume samplers (HVS - Model GS-2310 Accu-vol) complete with the appropriate sampling inlets were installed for 24-hour TSP sampling. The HVS is 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). A portable dust meter was used for the 1-hour TSP monitoring. Table 3.4 summarises the equipment used.

Table 3.4 Air Quality Monitoring Equipment

Equipment	Model
HVS Sampler	GS 2310 Accu-vol system
Calibrator	GMW 25
1-hour TSP Dust Meter	Laser Dust Monitor – Model LD-1 (L)

Monitoring Methodology and Calibration Details

24-hour TSP Monitoring

(i) Field Monitoring, Operation & Analytical Procedures

- 3.1.7 Operating/analytical procedures for the operation of HVS are as follows. The sampler was placed on a horizontal platform with appropriate supporting structure such that:
- the filter was at least 1.3 meters above ground;
 - no two samplers were placed less than 2 metres apart;
 - the distance between the sampler and an obstacle, such as buildings, were at least twice the height that the obstacle protrudes above the sampler;
 - a minimum of 2 metres separation from walls, parapets and penthouses were required for the rooftop samplers;
 - a minimum of 2 metres separation from any supporting structure, measured horizontally was provided;
 - airflow around the sampler was unrestricted;
 - no furnaces or incineration flues were operating near the sampler;
 - the sampler was more than 20 metres from the dripline; and
 - any wire fence and gate to protect the sampler, did not cause any obstruction during monitoring.
- 3.1.8 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 3.1.9 For TSP sampling, fibreglass filters (G810) were used [Note: these filters have a collection efficiency of > 99% for particles of 0.3 mm diameter].
- 3.1.10 The power supply was checked to ensure the sampler worked properly.
- 3.1.11 On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 3.1.12 The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.

- 3.1.13 The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 3.1.14 The shelter lid was closed and secured with the aluminum strip.
- 3.1.15 The timer was then programmed. Information was recorded on the record sheeting, which included the starting time, the weather condition, and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 3.1.16 After sampling, the filter was transferred from the filter holder of the HVS to a sealable plastic bag and sent to the laboratory for weighing. The elapsed time was also recorded.
- 3.1.17 Before weighing, all filters were conditioned for 24 hours before weighing under temperature of $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and the relative humidity (RH) $< 50\% \pm 5\%$, preferably 40%. The HOKLAS laboratory (ALS Technichem (HK) Pty Ltd) has comprehensive quality assurance and quality control programmes.

(ii) Maintenance

- 3.1.18 Proper maintenance would be provided for the HVS as described below:
- 3.1.19 The HVS motors and their accessories have been properly maintained. Appropriate maintenance such as routine motor brushes replacement (time interval for replacement is about 500 hours) and electrical wiring checking have been conducted to ensure that the equipment and necessary power supply were in good working condition.
- 3.1.20 Initial calibration of HVS was conducted upon installation of equipment. The subsequent calibration would be provided at 2-month intervals using GMW-25 Calibration Kit.

1-hour TSP Monitoring

(i) Measuring Procedures

- 3.1.21 The measuring procedures of the 1-hour dust meter have been in accordance with the Manufacturer's Instruction Manual as follows:
- Set POWER to "ON", push BATTERY button, make sure that the meter's indicator is in the range with a red line and allow the instrument to stand for about 3 minutes (Then, the air sampling inlet has been capped).
 - Push the knob at MEASURE position.
 - Push "O-ADJ" button. (Then meter's indication is 0).
 - Push the knob at SENSI ADJ position and set the meter's indication to S value described on the Test Report using the trimmer for SENSI ADJ.
 - Pull out the knob and return it to MEASURE position.
 - Push "START" button.
 - All measurement procedures in section 2.3 of the approved EM&A Manual are followed during the reporting period.

(ii) Maintenance

- 3.1.22 The 1-hour TSP meter would be checked at 3 month intervals and calibrated at 1-year intervals throughout all stages of the air quality baseline monitoring.

Event and Action Plans

3.1.23 The Event and Action Plan (EAP) for air quality monitoring is presented in **Annex C**.

3.2 Water Quality

Monitoring Requirement

3.2.1 Water quality monitoring was conducted in accordance with the EM&A Manual. Tables 3.5 & 3.6 show the established Action/Limit Levels for the water environmental monitoring parameters.

Table 3.5 Derived Summaries of Action and Limit Levels for Marine Water Quality

Parameters	Location	Action	Location	Limit
DO (Surface & Middle)	FCZ	6.0 mg/L	FCZ	5.3 mg/L
	All except FCZ	4.9 mg/L	All except FCZ	4.6 mg/L
DO (Bottom)	All	3.7 mg/L	All	3.4 mg/L
pH (depth-averaged)		N/A	All	6.5 - 8.5
SS (Depth-averaged)☆	FCZ	4.5 mg/L	FCZ	5.6 mg/L
	All except FCZ	6.1 mg/L	All except FCZ	10.6 mg/L
SS (Depth-averaged) Dredging for submarine pipelines⊕	M_RO1	6.1 mg/L	M_RO1	10.6 mg/L
Turbidity (Tby) (depth-averaged) ☆	FCZ	2.9 NTU☼	FCZ	3.9 NTU☼
	All except FCZ	3.3 NTU☼	All except FCZ	6.2 NTU☼
Ammonia Nitrogen (depth-averaged)	FCZ	0.02 mg/L	FCZ	0.03 mg/L
	All except FCZ	0.05 mg/L Δ	All except FCZ	0.05 mg/L Δ
Nitrate Nitrogen (depth-averaged)	FCZ	0.08 mg/L	FCZ	0.09 mg/L
	All except FCZ	0.09mg/L Δ	All except FCZ	0.09 mg/L Δ
Nitrite Nitrogen (depth-averaged)	FCZ	0.02 mg/L θ	FCZ	0.02 mg/L θ
	All except FCZ	0.02 mg/L	All except FCZ	0.04 mg/L
TIN (depth-averaged)	FCZ	0.12 mg/L	FCZ	0.14 mg/L
	All except FCZ	0.16 mg/L	All except FCZ	0.18 mg/L
Total Phosphorus (depth-averaged)	All	0.09 mg/L Δ	All	0.09 mg/L Δ

Remarks:

☆ : Action and limit levels are subjected to review especially for wet season throughout the construction phase of the project.

⊕ : Action and limit levels are subjected to review before the dredging works.

☼ : All are based on EM&A baseline monitoring data due to marked difference between EPD turbidity data and those from the baseline survey.

Δ : For nutrient monitoring (except NO₂-N) at non-FCZ stations, the trigger level has made reference to the existing golf course guideline values. The guideline value of NO₂-N is below the current detection limit of 0.01mg/L and thus not used.

θ : The same action and limit level of 0.02 mg/L is determined from the EM&A baseline data as 78% of the NO₂-N data are ≤ 0.01 mg/L and all remaining 22% equal to 0.02 mg/L.

FCZ including fish culture zones of Kai Lung Wan, Tai Tau Chau and Kau Sai

All except FCZ including remaining impact monitoring station of M_RO1, M_Marsh, M_BP and M_Coral.

Control monitoring locations: M_A & M_B

Table 3.6 Derived Summaries of Action and Limit Levels for Freshwater Water Quality

Parameters	Location	Action	Location	Limit
DO (mid-depth)		6.3 mg/L	All	4 mg/L ξ
pH (mid-depth)		N/A	All	6.0 - 9.0
SS (mid-depth) ☆	All	3.8 mg/L or 120% of upstream control station's SS at the same tide of the same day	All	8 mg/L or 130% of upstream control station's SS at the same tide of the same day
Turbidity (Tby) (mid-depth) ☆	All	3.1 NTU or 120% of upstream control station's Tby at the same tide of the same day	All	4 NTU or 130% of upstream control station's Tby at the same tide of the same day
Ammonia Nitrogen (mid-depth)		N/A	All	0.01 mg/L
Nitrate Nitrogen (mid-depth)	All	0.10 mg/L	All	0.11 mg/L
Nitrite Nitrogen (mid-depth)		N/A	All	0.01 mg/L
TIN (mid-depth)	All	0.12 mg/L	All	0.13 mg/L
Total Phosphorus (mid-depth)		N/A	All	0.02 mg/L

Remarks:

☆ : Action and limit levels are subjected to review especially for wet season.

Freshwater monitoring locations: F_UA, F_DA, F_UB, F_DB, F_UC, F_DC and F_Inland Marsh

As most of the freshwater samples were reported of NH₃-N, NO₂-N levels below the detection limit of 0.01 mg/L, limit level is set at 0.01 mg/L. Similarly for TP, a limit level of 0.02 mg/L (the detection limit of TP) is imposed.

ξ : Water Quality Objectives of the Port Shelter

Monitoring Parameters, Frequency and Programme

- 3.2.2 For marine water quality, measurements shall be taken at both mid-flood and mid-ebb tides and at three water depths (1 m below water surface, mid-depth and 1 m above sea bed, except where the water depth is less than 6 m, in which case the mid-depth station may be omitted). Should the water depth be less than 3 m, only the mid-depth station will be monitored.
- 3.2.3 For the stream course, measurements shall be taken at mid-water depth.
- 3.2.4 The water quality parameters which need to be monitored are as follows:

- Marine water quality - dissolved oxygen (DO), temperature, turbidity, suspended solids (SS), pH and salinity
 - Freshwater water quality - dissolved oxygen (DO), temperature, turbidity, suspended solids (SS), pH and salinity
- 3.2.5 Additional marine and freshwater water quality monitoring parameters for the impact monitoring during construction include nitrate nitrogen (NO₃-N), nitrite nitrogen (NO₂-N), ammonia nitrogen (NH₃-N), total phosphate (TP) and selected pesticides.
- 3.2.6 The ET Leader shall propose the additional monitoring parameters for approval by IC(E), Engineer, EPD and AFCD, and shall submit such information for approval at least 2 weeks before the turf establishment period.
- 3.2.7 Additional water quality monitoring at Tai Tau Chau FCZ (TTC), Kai Lung Wan FCZ (KLW), Kau Sai FCZ (KS), downstream of the existing marsh (M_Marsh), marine water of Port Shelter (M_Coral), existing reservoir (F_Inland M) and Control stations (M_A and M_B) shall be carried out after heavy rain storm or when there is an overflow event from the reservoir, irrigation buffer lake or detention ponds/tanks. The heavy rain storm shall be defined when there is an amber/red/black rainstorm warning signal issued by the Hong Kong Observatory. The water sample shall be taken within 24 hours after the black/red/amber rainstorm warning signal is cancelled. Please refer to revised EM&A manual for the sampling condition requirement after a heavy rain storm event occurs. The monitoring parameters shall include dissolved oxygen, temperature, turbidity, suspended solids, pH and salinity. Additional parameters shall be the same as stated in paragraphs 3.2.5-3.2.6.

Monitoring Frequency

- 3.2.8 The monitoring parameters and frequency are summarized in Table 3.7. The monitoring programme for the reporting period is shown in **Annex B**.

Table 3.7 Water Quality Monitoring Parameter, Frequency and Locations

Parameters	Frequency	Location
Dissolved Oxygen (mg/L)	3 days per week	<u>Marine Water</u> Fish culture zone stations: TTC, KLW, KS
Temperature (°C)		Control stations: M_A, M_B
Turbidity (NTU)		Impact stations: M_BP, M_RO1, M_Marsh, M_Coral
pH		
Salinity (ppt)		<u>Freshwater Water</u> Stream A (F_UA, F_DA) Stream B (F_UB, F_DB) Stream C (F_UC, F_DC) Inland Marsh (F_Inland_M)
Suspended Solids (mg/L)		

Monitoring Locations

3.2.9 The water quality monitoring locations for marine and freshwater (**Figure 3.2**) are summarized in Table 3.8.

Table 3.8 Water Quality Monitoring Locations during Construction Phase

Identification Number	Location	Co-ordinates		Approx. Water Depth	No. of Depth
<i>Marine Water (9 stations)</i>		latitude	longitude		
TTC	Tai Tau Chau Fish Culture Zone	22° 22' 03.7"	114° 19' 19.6"	9.5 m	3
KLW	Kai Lung Wan Fish Culture Zone	22° 22' 10.6"	114° 18' 01.4"	13 m	3
KS	Kau Sai Fish Culture Zone	22° 20' 26.5"	114° 18' 59.9"	11 m	3
M_BP	Temporary barging point	22° 21' 50.6"	114° 19' 16.7"	9.6 m	3
M_RO1	Desalination plant south of the existing pier	22° 21' 51.8"	114° 18' 17.7"	5 m	2
M_Marsh	Discharge point at the existing marsh	22° 22' 19.8"	114° 19' 05.4"	7.7 m	3
M_Coral	Marine water of Port Shelter	22° 21' 21.3"	114° 19' 42.7"	10.2m	3
M_A	Water Control Station of Port Shelter	22° 22' 51.3"	114° 18' 34.5"	7.5 m	3
M_B	Water Control Station of Port Shelter	22° 20' 26.4"	114° 20' 11.8"	16.5 m	3
<i>Fresh Water (7 stations)</i>					
F_UA	Upstream and downstream of stream A	22° 21' 32.3"	114° 19' 06.5"	-	1
F_DA		22° 21' 33.5"	114° 19' 06.8"		1
F_UB	Upstream and downstream of stream B	22° 21' 23.9"	114° 19' 16.1"	-	1
F_DB		22° 21' 27.2"	114° 19' 16.0"		1
F_UC	Upstream and downstream of stream C	22° 21' 14.8"	114° 19' 26.4"	-	1
F_DC		22° 21' 03.5"	114° 19' 32.0"		1
F_Inland M	Downstream of the existing marsh (Inland)	22° 22' 17.9"	114° 18' 59.1"	-	1

Monitoring Equipment

3.2.10 The equipment listed below shall be supplied by the ET and approved by the IC(E) and the Engineer for water quality monitoring.

Dissolved Oxygen and Temperature Measuring Equipment

3.2.11 The instrument shall be a portable and weatherproof DO measuring instrument complete with cable and sensor, and use a DC power source. The equipment shall be capable of measuring:

- dissolved oxygen levels in the range of 0 - 20 mg L⁻¹ and 0 - 200% saturation; and
- a temperature of 0 - 45 degrees Celsius.

3.2.12 It shall have a membrane electrode with automatic temperature compensation complete with a cable. Sufficient stocks of spare electrodes and cables shall be available for replacement where

necessary. (For example, YSI model 59 meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).

- 3.2.13 Should salinity compensation not be built-in in the DO equipment, in-situ salinity shall be measured to calibrate the DO equipment prior to each DO measurement.

Turbidity Measurement Instrument

- 3.2.14 Turbidity shall be measured in situ by the nephelometric method. The instrument shall be portable and weatherproof turbidity measuring instrument using a DC power source complete with cable, sensor and comprehensive operation manuals. It shall have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU (for example, Hach model 2100P or an approved similar instrument). The cable shall not be less than 25m in length. The meter shall be calibrated in order to establish the relationship between NTU units and the levels of suspended solids.

Suspended Solids

- 3.2.15 A water sample at least 2.5L in capacity with messenger and using a 10m line should be collected. Samples should be submitted to HOKLAS accredited laboratory as soon as possible for gravimetric analysis for suspended.

Sampler

- 3.2.16 A water sampler is required. It shall comprise a transparent PVC cylinder, with a capacity of not less than 2 litres, which can be effectively sealed with latex cups at both ends. The sampler shall have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth (for example, Kahlsico Water Sampler or an approved similar instrument).

Water Depth Detector

- 3.2.17 A portable, battery-operated echo sounder shall be used for the determination of water depth at each designated monitoring station. This unit can either be hand held or affixed to the bottom of the work boat, if the same vessel is to be used throughout the monitoring programme.

Salinity

- 3.2.18 A portable salinometer capable of measuring salinity in the range of 0 - 40 parts per thousand (ppt) shall be provided for measuring salinity of the water at each monitoring location.

pH

- 3.2.19 The instrument shall consist of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It shall be readable to 0.1pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 shall be used for calibration of the instrument before and after use. Details of the method shall comply with APHA, 19th ed. 4500-HTB.

Flow Rate Meter

- 3.2.20 A portable, battery-operated flow meter should be used for the determination of water depth at each designated monitoring location and record in m³/s. A hand held or meter fixed to the underside of the survey boat may be used.

Sample Containers and Storage

- 3.2.21 Water samples for laboratory analysis shall be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen) and delivered to the laboratory and analysed as soon as possible after collection. Sufficient volume of samples shall be collected to achieve the required detection limit.

Monitoring Position Equipment

- 3.2.22 A hand-held or boat-fixed type digital Differential Global Positioning System (DGPS) with way point bearing indication or other equipment instrument of similar accuracy, shall be provided and used during marine water monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

Monitoring Methodology and Calibration Details

- 3.2.23 Dissolved oxygen (DO), temperature, turbidity, pH and salinity were measured in situ at the designated water quality monitoring stations. General observation, weather conditions, with the sampling time, date and location were marked on the field record sheet.
- 3.2.24 Water samples were taken from each monitoring station for laboratory analysis. The sample identification number, sampling location, date, time, project name and analyses were required.
- 3.2.25 The samples were placed in a cooler with ice (to 4°C without being frozen) and kept away from sunlight. Samples were submitted to a Hong Kong Laboratory Accreditation Scheme (HOKLAS) or other international accredited laboratory for analysis within 24 hours of sampling.

Calibration of In-Situ Instruments

- 3.2.26 All in situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use and subsequently re-calibrated at three monthly intervals throughout all stages of the water quality monitoring programme. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter were carried out before measurement at each monitoring location.

Laboratory Analysis

- 3.2.27 All laboratory work were carried out by ALS Technichem Pty Ltd (HOKLAS accredited laboratory). Water samples were collected at the monitoring and control stations for carrying out the laboratory determinations. The determination work will start within 24 hours after collection of the water samples. The analysis shall follow the standard methods according to APHA Standard Methods for the Examination of Water and Wastewater, 19th Edition, or an equivalent method approved by EPD.

Table 3.9 Analytical Methods to be applied to Water Quality Samples

Determinant	Standard Method	Reporting Limit
Suspended Solids	APHA 2540 D	2 mg/L
Nitrate Nitrogen	APHA 4500-NO ₃ ⁻	0.01 mg/L
Nitrite Nitrogen	APHA 4500-NO ₂ ⁻	0.01 mg/L
Ammonia Nitrogen	APHA 4500-NH ₃ (D)	0.01 mg/L
Total phosphorus	ASTM D515-88B	0.02 mg/L*
Chlorophyll a	APHA 10200 H2 &3	0.5 µg/L

Remarks: *After review baseline data, the detection limit report will be revised to 0.02 mg/L.

QA/QC Procedure

- 3.2.28 ALS Technichem Pty Ltd. has comprehensive quality assurance and quality control programmes. For QA/QC procedures of parameters, one duplicate sample was analysed for every batch of 20 samples as required by HOKLAS.

Event and Action Plans

- 3.2.29 The Event and Action Plan (EAP) for water quality monitoring is presented in **Annex C**.

3.3 Ecology

Introduction

- 3.3.1 The marine and terrestrial ecological monitoring surveys for the ecological EM&A were conducted in accordance with the EM&A manual.
- 3.3.2 As stipulated in the EM&A Manual, the ecological monitoring surveys for terrestrial ecology would be conducted monthly during the construction phase. Monitoring survey would consist of aquatic fauna survey. While the majority of the Project Area would be subject to site formation, natural streams would be partially or fully preserved and protected by buffer zones, and therefore would constitute the primary target of the terrestrial ecological monitoring. Special attention should thus be paid to ecologically sensitive streams to ensure minimum damage to existing vegetation and streams. The purpose of the monitoring survey was to check the conditions of the stream habitat and the associated aquatic fauna communities.
- 3.3.3 While the ecological monitoring surveys for marine ecology included coral monitoring at both the eastern and western coasts of Kau Sai Chau Island. The coral monitoring at the western coast would be conducted concurrently with the dredging works which has yet to conduct, and therefore had not been commenced. The coral monitoring at the eastern Kau Sai Chau would be monthly for the first three months of the construction phase, and if no exceedance was recorded, the monitoring schedule would be changed to quarterly during the rest of the construction phase. As a coral damage incident was recorded in March 2006, the monthly monitoring was extended for another three months from April 2006 to June 2006. No exceedance was recorded during these three months, the monitoring schedule would be changed to quarterly after that till the end of the construction phase. Monitoring survey would consist of checking tagged corals at both impact sites and control site. The purpose of the monitoring survey was to check the conditions of the tagged corals and the impact sites.

Ecological Mitigation Measures and Implementations

- 3.3.4 Ecological mitigation measures to be implemented during the construction phase include the following:
- Establishment of buffer zones for the natural stream courses during both construction phase.
 - Provision of temporary bypass channels or pipes during construction phase for stream courses subject to pipe culverting.
 - Protection of water quality of the natural stream courses and temporary bypass channels or pipes.
 - Transplantation of coral colonies within the dredging area for the desalination plant prior to the dredging works.
 - Avoidance of corals when the anchoring points are deployed, and to shift the floating temporary barging point to the location with least corals within the mapping area.
 - Regular site audit of ecological mitigation measures and good site practice.

Monitoring Frequency and Schedule

Terrestrial Ecology

- 3.3.5 As reported in the EIA Report, there were four perennial natural streams (Streams A-D) within the Assessment Area for the EIA Study. Streams A, B & C were located within the Project Area, while Stream D was outside the Project Areas and acted as the main stream draining the western part of the Assessment Area. Buffer Zone would be established for the three streams within the Project Area along their partial length (Stream A) or full length (Streams B & C) (**Figure 3.3**). Moreover, Streams B, C & D would be monitored for aquatic fauna monthly during the construction phase. Monitoring on the implementation of the mitigation measures for stream protection, the effectiveness of stream buffer zones, and the aquatic fauna in streams would be conducted during the entire construction phase.
- 3.3.6 The objectives of the monitoring survey are to check the status of *Caridina trifasciata* and *Nanhaipotamon hongkongensis*. The surveys covered natural stream courses within the assessment area (Streams A to D), and aquatic fauna were studied by various sampling methods depending upon site conditions. Methods included direct observation, active searching, and sample collection using hand-nets. Hand nets were used to collect swimming organisms such as shrimps and fish. Where necessary boulders on the stream beds were overturned to locate aquatic organisms such as crabs. Aquatic species encountered was recorded, with special attention to rare or protected species.

Marine Ecology

- 3.3.7 As required in the EM&A Manual, prior to the commencement of all construction works, a baseline survey of natural corals were conducted in December 2005. At each of the Site C, Site B2, Site D2 and a Control Site near the AFCD's Coral Buoy at Sharp Island (**Figure 3.4**), 20 natural coral colonies in good conditions (i.e. generally intact and no sign of bleaching) and significant sizes (preferably over 20 cm in diameter) were selected and tagged. Each of the tagged coral colonies was identified to species level and their conditions, in terms of percentages of survival, sedimentation and bleaching, were recorded. Each coral was attached with a plastic label with assigned number and then photographed. The species and the size of each tagged corals were also recorded. The species of corals to have been tagged included the following 15 species: *Cyphastrea serailia*, *Favia speciosa*, *Favites abdita*, *Favites pentagona*, *Goniastrea aspera*, *Goniopora columna*, *Hydnophora exesa*, *Leptastrea pruinosa*, *Lithophyllon undulatum*, *Pavona decussate*, *Platygyra acuta*, *Platygyra carnosus*, *Plesiastrea versipora*, *Psammocora superficialis*, and *Turbinaria peltata*. All tagged corals were in good conditions during the baseline survey, without significant sign of bleaching or being covered by sediments, and therefore were all recommended as the monitored coral colonies (all 80 tagged corals, 20 from each site). The seagrass beds in Site D3 were also surveyed for their extent, coverage percentage and health conditions during the baseline survey. The results of the baseline survey has presented in the Baseline Monitoring Report. The original 20 tagged corals at Site B2 were re-organised in April 2006, with B-11 to B-20 retained, but 40 new tagged corals (B-21 to B-60) were established. The number of tagged corals at Site B2 was therefore increased from 20 nos. to 50 nos. The baseline conditions of these newly tagged corals (40 nos.) were presented in the monthly monitoring report of April 2006.
- 3.3.8 As the dredging works for the desalination plant had not been commenced, the impact sites to be monitored in this monitoring survey were Site B2 and Site C (impact sites on the eastern Kau Sai Chau Island for the new golf course) only, while Site D2 and Site D3 (impact sites on the western Kau Sai Chau Island for desalination plant) were not required in this survey. The coral transplantation, which should be conducted prior to the commencement of dredging works, had

not been performed. The monitoring on transplanted corals on the bedrock at Site D2 (see **Figure 3.5**) therefore was not needed in this survey.

- 3.3.9 The schedule for the impact sites on the eastern Kau Sai Chau Island during construction would be monthly in the first three months of the construction programme, and if no exceedance was recorded then quarterly till the end of the construction. As coral damage incident was reported in Month Three of the construction programme, AFCD requested the monthly monitoring should be extended to cover another three months (April, May and June 2006). As no exceedance was recorded during these three months, the monitoring schedule were changed to quarterly after that till the end of the construction phase.
- 3.3.10 During the weekly site inspection, ET also monitored and audited the implementation of the recommended mitigation measures for terrestrial and marine ecology. Monitoring locations for ecology are shown in **Figures 3.3 – 3.5**. The monitoring programme for the reporting period is shown in **Annex B**.

Event and Action Plans

- 3.3.11 The Event and Action Plan (EAP) for ecology monitoring is presented in **Annex C**.

3.4 Landscape and Visual

- 3.4.1 The EIA concluded that the landscape and visual impacts associated with the construction of the third golf course are anticipated to be acceptable with mitigation. In order to ensure that the effective management and implementation of landscape mitigation measures developed and defined in the EIA, the ET conducted regular site inspections of the construction work sites.
- 3.4.2 Auditing inspections and reporting are undertaken once every two weeks of the construction phase. The effectiveness of the mitigation works has been audited in order to ensure impact reduction levels are achieved as described in the EIA report for this monitoring month. The monitoring programme for the reporting period is shown in **Annex B**.

3.5 Archaeology (Watching Brief)

Introduction

- 3.5.1 The archeological impact assessment conducted in the EIA concluded that some potential for archaeological material remains at the Wan Chai Archaeological Site and a watching brief is recommended during the construction phase.
- 3.5.2 A watching brief is a process whereby a qualified and licensed archaeologist monitors the excavation works during the construction phase in areas identified (and agreed with the Antiquities and Monuments Office (AMO)) to be of archaeological potential.
- 3.5.3 The archaeologist conducting the watching brief should obtain a licence prior to commencement of works as stipulated in Section 12 of the Antiquities and Monuments Ordinance (Cap. 53). The licence was granted on 22nd December 2005.

Monitoring Location

- 3.5.4 The monitoring locations include Hole 2, Hole 11, Hole 12, Hole 14, Hole 15 & Hole 16. The monitoring locations are present in **Figure 3.6**.

Monitoring Frequency

- 3.5.5 A total of 18 days of monitoring is considered as minimum, and additional arrangement for watching brief should be made in consultation with AMO in case significant archaeological findings are unearthed in the course of excavation work.

Progress Report

- 3.5.6 Archaeologist should submit progress reports every 3 months during the programme of the watching brief.
- 3.5.7 A summary table for categories of archaeological find and recommended action is presented in **Annex C**.

3.6 Land Contamination

Potential Areas Recommended for Further Investigation

- 3.6.1 Contamination Assessment Plan (CAP) shall be submitted to EPD for approval before site investigation. If land contamination is confirmed by the site investigation, submission of a Remediation Assessment Plan (RAP) including a Contamination Assessment Report (CAR) is required. Potential 5 land contamination hotspots are presented in **Figure 3.7**.

4. Implementation Status on Environmental Protection Requirements

- 4.1.1 Major construction work of the third golf course were (i) site formation at Holes 11-16, (ii) permanent drainage system installation including gravity drain from Lake 1D to existing reservoir, (iii) irrigation system installation and (iv) hydroseeding at the permanent slope/bare grounds.
- 4.1.2 The Contractor concentrates more on the dust suppression mitigation measures than the silty runoff impact to water sensitive receivers in the dry season. However, Temporary Drainage Management Plan (TDMP) submission prepared by the Contractor for ER's approval is still required for the dry season and coming next wet season. In particular, TDMP for the turf establishment area is very critical because the expected earliest turf establishment will be in January 2006 but no formal submission of TDMP yet. The Contractor agreed to confirm and provide information on the discrepancy between the actual permanent drainage implemented on site and the temporary drainage implemented at those areas where the permanent drainage is not yet implemented.
- 4.1.3 Silt fence was implemented along the site boundary (major component of the temporary drainage system) for most of the newly exposed areas once after vegetation clearance was completed. However, maintenance frequency of the silt fence was unsatisfactory. Most of the formerly installed silt fence were collapsed and not installed properly and recorded during the site audit. This is one of the possible reason that silty runoff was recorded at all sensitive streams after the heavy rainstorm on 21st November 2006. The Contractor was reminded to rectify the situation to prevent silty runoff to the water sensitive areas, critical review the temporary drainage provided on site and prevent the incident happened in future. Potential heavy rain(s) could still occur during the dry season.
- 4.1.4 The wheel washing facility provided on site was still not effective to mitigate the silty water discharge since the last three reporting months, silty runoff was observed from this area to the freshwater inland marsh for all site audits. The sewage treatment plant was started to operate at the end of May 2006. Water discharge licence for this project was obtained in September 2006.
- 4.1.5 No dust suppression measure was provided for all rock breaking areas (Holes 6, 9, 10 and 14). Dust suppression measures for loading/unloading activities, rough shaping and haul road (truck traffic) were insufficient. According to the site observation, it demonstrated that the provided mitigation measures on site were insufficient for dust suppression. Two to three water trucks were mainly watering at those haul roads near to the existing golf course. The water source was mainly pumped from the downstream of the fresh water inland marsh and downstream of Stream A which could dry up during the dry season. Alternative water source for dust suppression should be considered during the dry season. Water source from WSD has already successfully applied by the Contractor few months ago. The Contractor can also consider alternative water source such as underground water source or other dust mitigation measures.
- 4.1.6 Hydroseeding was observed at part of soil stockpile near Hole 17, soil stockpile at Hole 18 was covered by tarpaulin but no mitigation measure provided for all other soil/sand/aggregates stockpiles. Insufficient watering to the hydroseeded areas was observed which led to poor growth to minimize the dust generation and silty runoff properly.
- 4.1.7 Vegetation stockpile, general refuse and construction waste stockpiles were temporary stored on site since the start of the project. Part of the vegetation stockpiles located at Hole 1 was disposed during the reporting month. The construction waste stockpile mixing with general refuse located at Hole 2 was not properly disposed for more than four months. The Contractor agreed to dispose all waste off-site gradually starting from last reporting month. No chemical

storage area and sorting area were available on site since the start of this project. Insufficient mobile toilets were available on site at remote areas, only two units were located at the southern portion of construction site.

- 4.1.8 No dredging work has been carried out near to the existing pier for the desalination plant pipelines. Summary of implementation status is provided in **Annex D**.

5. Monitoring Results

5.1 Air Quality

5.1.1 Dust monitoring was conducted as scheduled in the reporting month. Monitoring of air quality was conducted on 8 occasions in October to September 2006. All monitoring data are provided in **Annex E**. Monitoring of 24-hour TSP was conducted at GCA B1 on 26th October, 1st, 7th, 10th, 13th, 18th, 21st and 24th November 2006. The QA/QC results for laboratory testing in the reporting month were acceptable. The QA/QC results are summarised in **Annex F**.

5.1.2 Two action level exceedances of 24-hour TSP were recorded at GCA B1 on 1st and 10th November 2006 in the reporting month, they were 212.4 and 210.2 µg/m³. Exceedances were considered project-related and mainly due to insufficient dust suppression measures provided on site.

5.2 Water Quality

5.2.1 Marine and freshwater water quality monitoring were conducted at the 9 and 7 designated monitoring stations respectively. All monitoring data are provided in **Annex E**.

5.2.2 Monitoring of marine and freshwater locations was conducted on 4 occasions in October and November 2006 (4th, 10th, 16th and 22nd November 2006). The QA/QC results for laboratory testing in the reporting month were acceptable. The QA/QC results are summarised in **Annex F**.

5.2.3 Amber rainstorm signals were hoisted on 21st November 2006 during the reporting month.

Marine water

- M_RO1: one action level exceedance of suspended solids;
- M_Marsh: one action and one limit level exceedances of suspended solids; one limit level exceedance of turbidity; and
- KS: one limit level exceedance of suspended solids.

Table 5.2-1 Marine Water Exceedance Summary October – November 2006

Monitoring Station	Exceedance Level	Date	Parameters	Project-related
M_RO1	Action Level	16 th Nov 06	SS	No
M_Marsh	Action Level	16 th Nov 06	SS	Yes
M_Marsh	Limit Level	22 nd Nov 06	Turbidity, SS	Yes
KS	Limit Level	16 th Nov 06	SS	No

Remarks: Exceedances at M_RO1 and KS were mainly due to natural variation of marine water quality.

5.2.4 The marine water exceedances were summarised in **Table 5.2-1**. Exceedances at M_RO1 and KS were considered not project-related. The exceedances were mainly due to the natural variation of marine water. The magnitude of the increase of SS was similar to the control monitoring stations at M_A and M_B. For the exceedances at M_Marsh, they were mainly due to insufficient temporary drainage system implemented on site, therefore, they were considered project-related.

Freshwater

- Stream A: one action and two limit level exceedances of turbidity; four limit exceedances of suspended solids.
- Stream B: two action and six limit level exceedances of turbidity; one action and six limit level exceedances of suspended solids.
- Stream C: one action and seven limit level exceedances of turbidity; three action and three limit level exceedances of suspended solids.
- F_Inland Marsh: four limit level exceedances of turbidity; two limit level exceedances of suspended solids.

5.2.5 The freshwater water exceedances were summarised in **Table 5.2-2**.

Table 5.2-2 Freshwater Exceedance Summary October to December 2006

Monitoring Station	Exceedance Level	Date	Parameters	Project-related
F DA	Limit Level	4 th Nov 06	SS	Yes
	Action Level	11 th Nov 06	Turbidity	Yes
	Action Level	11 th Nov 06	Turbidity	Yes
	Limit Level	16 th Nov 06	Turbidity, SS	Yes
	Limit Level	22 nd Nov 06	Turbidity, SS	Yes
F UB	Limit Level	4 th Nov 06	Turbidity	Yes
	Action Level	4 th Nov 06	SS	Yes
	Action Level	11 th Nov 06	Turbidity	Yes
	Limit Level	16 th Nov 06	Turbidity, SS	Yes
	Limit Level	22 nd Nov 06	Turbidity, SS	Yes
F DB	Limit Level	4 th Nov 06	Turbidity, SS	Yes
	Action Level	11 th Nov 06	Turbidity	Yes
	Limit Level	11 th Nov 06	SS	Yes
	Limit Level	16 th Nov 06	Turbidity, SS	Yes
	Limit Level	22 nd Nov 06	Turbidity, SS	Yes
F UC	Limit Level	4 th Nov 06	Turbidity	Yes
	Limit Level	11 th Nov 06	Turbidity	Yes
	Limit Level	16 th Nov 06	Turbidity	Yes
	Action Level	16 th Nov 06	SS	Yes
	Limit Level	22 nd Nov 06	Turbidity, SS	Yes
F DC	Action Level	4 th Nov 06	Turbidity, SS	Yes
	Limit Level	11 th Nov 06	Turbidity	Yes
	Action Level	11 th Nov 06	SS	Yes
	Limit Level	16 th Nov 06	Turbidity, SS	Yes
	Limit Level	22 nd Nov 06	Turbidity, SS	Yes
F Inland M	Limit Level	4 th Nov 06	Turbidity	Yes
	Limit Level	11 th Nov 06	Turbidity	Yes
	Limit Level	16 th Nov 06	Turbidity, SS	Yes
	Limit Level	22 nd Nov 06	Turbidity, SS	Yes

Remarks: All exceedances were mainly due to rains occurred in November 2006 in particular on the amber rainstorm signal was hoisted on 21st November 2006. For Inland Marsh, the exceedances were also attributed due to the continue discharge of silty water from the wheel wash facility.

5.2.6 Exceedances of suspended solids and turbidity for all streams and freshwater inland marsh were consider project-related and mainly due to the runoff from construction site. The exceedances recorded at freshwater inland marsh were manly attributed to the silty runoff from Holes 1, 6, 7, 8 & 18 and wheel washing facility provided near the maintenance building to the existing freshwater inland marsh and considered project-related.

- 5.2.7 For the upstream monitoring location (F_UB), it is located downstream to the construction area near Hole 10 and the monitoring location cannot be relocated further upstream (temporary bridges located at Streams B1 and B2) as no water was observed and available for sampling. For Stream C, exceedances were recorded at both upstream and downstream monitoring locations. For the upstream monitoring location (F_UC), it is located downstream to the construction area near Hole 16 and the monitoring location cannot be relocated further upstream as no water was observed and available for sampling. Therefore, the F_UC is considered the most upstream location of Stream C. Same as Stream B, it is considered that F_UC is also the impact monitoring location and F_UA was used as the representative control monitoring station.

5.3 Ecology

- 5.3.1 Terrestrial and marine ecology monitoring photos are provided in **Annex E**.

Terrestrial Ecology

- 5.3.2 The Monitoring Survey for the reporting month was conducted on 24th and 29th November 2006. Works fronts had advanced beyond Stream C, and earth works had been being conducted at the majority of the new golf course site, including areas inside the existing golf course. The demarcation of the stream buffer zone had been fully established at Stream A main stream, Stream B and Stream C at the time of the monitoring survey.
- 5.3.3 Although the surveyed streams have not been previously affected by developments or pollution sources, they are relatively small. Water depth was less than 0.3m in most of the stream reaches even during wet season. Currently (still within dry season) these streams had very small surface flow or even had no surface flow for most of the length.
- 5.3.4 Stream A is located within the Project Area. Its main stream section (downstream to the confluence of two tributaries) would be protected by stream buffer zone (**Figure 3.3**). Stream A was heavily silted with sediments from eroded hillsides all year round, particularly at the main stream section. The stream had low flow.
- 5.3.5 In the present monitoring survey, the main stream course of Stream A (the section downstream to the confluence of tributaries A1 and A2) was found still to be filled up by rubbles which was first report in June 2006 (see **Photo Plate 5.3-1**). The rubbles were reported to be washed down from the upper Tributary A2 which was under pipe culvert construction. Although the riparian vegetation was not affected by the rubbles, this section of stream channel was temporarily lost. Tributary A2 had been converted to underground pipeline as proposed in the EIA report. As there had been rainfalls since mid-November 2006, it was found in the present survey that the flow in the main stream course of Stream A was very turbid. It might be attributed to the earthworks on the stream banks of Tributary A1 (just upstream to the main stream). Stream A was of the lowest ecological value among the four natural streams as it was heavily silted with sediments from eroded hillsides all year round. No stream fish and only very limited aquatic fauna were recorded in Stream A before. The impact from this temporary loss of stream channel would not be severe. But remedial works should be implemented to clear the rubbles, restore the channel, and improve the water quality, as the condition of this stream is expected to improve after the construction of the golf course extension (in which the eroded hill slopes would be replaced by turf).
- 5.3.6 Stream B is located within the Project Area. It had clear flow (with little sediment in the stream beds) of moderate volume during the wet season. This stream also has two main tributaries, B1

and B2. The full length of Stream B (two tributaries and the main stream) would all be protected by buffer zone (**Figure 3.3**). Stream B also contains a long estuarine section of muddy sandy substrate.

- 5.3.7 In the present survey, it was found that the flow in Stream B also show minor turbidity after the heavy rainfall in November 06. The stream bed and banks had no sign of severe sedimentation, probably due to the protection of the vegetation inside the buffer zone. Aquatic fauna including *Caridina trifasciata* were still sighted in the stream. An area of the buffer zone of Tributary B2 was however accidentally cleared (see **Figure 5.3.1**). This might affect the function of the buffer zone for the stream protection, and remedial plan should be implemented.
- 5.3.8 Stream C is located within the Project Area. This stream also has two main tributaries. It has had low but clear flow. In contrast to Stream B, Stream C drains to a sandy beach at Kau Chung Wan, and therefore lacks a clear estuarine zone. The full length of Stream C (two tributaries and the main stream) would all be protected by buffer zone (**Figure 3.3**).
- 5.3.9 Sedimentation in Stream C was reported earlier this month (November 2006) by ET. Some silt fences along the Stream C buffer zone were found collapsed after the heavy rainfalls in mid-November and there were sediments inside Stream C due to surface runoff from the construction site. In the present survey, it was found that the majority of the main stream course of Stream C was covered by a layer of fine sediment. Although the flow was only slightly turbid during the survey and aquatic fauna including *Caridina trifasciata* could still be found hiding among the aquatic plants, the sediments covered the bottoms of rock pools and reduced the habitat sizes available for the aquatic fauna. This might limit the aquatic communities in Stream C. The long-term impact on the aquatic fauna will be reflected in the following reporting months. Measures should be taken by the Main Contractor to prevent any further sedimentation incident happened in the future.
- 5.3.10 Stream D is located outside the Project Area but within the Assessment Area and is the main stream draining the west side of the Assessment Area. It had clear water and moderate flow levels. Stream D is the only stream with deeper water depth among the four streams (water depth over 0.3 m in some of the stream reaches). As Stream D is outside the construction area, buffer zone would not be needed for this stream.
- 5.3.11 Minor sedimentation was also found on the banks of Stream D. The flow was found slightly turbid, and Atyid shrimp *Caridina trifasciata* was still recorded in Stream D in the present survey. It demonstrated that part of the sedimentation and turbidity of stream flow were caused by the adverse weather in November 2006.
- 5.3.12 Photos of Streams A to D were shown in **Photo Plate 5.3-1 (Annex E)**.
- 5.3.13 The habitats and vegetation generally remained intact within a large portion of the project site (beyond the works fronts), within the major of stream buffer zone (except an area for Tributary B2) and outside the project area. No earthwork, human disturbance or fire disturbance was observed beyond the works fronts other than the historical erosion of hillsides and the access paths to the project site.

Marine Ecology

- 5.3.14 The schedule for the impact sites on the eastern Kau Sai Chau Island during construction would be monthly in the first three months of the construction programme, and if no exceedance was recorded then quarterly till the end of the construction.

- 5.3.15 According to the additional three months coral monitoring at Site B2, Site C and Control Site (Apr to June 06) due to the coral damage incident happened on 26th March 06, no exceedance was recorded on corals. AFCD have no objection to reduce the monitoring frequency from monthly to quarterly until the end of the construction phase. The first quarterly survey was conducted in September 2006. No survey was required in the reporting month (November 2006).
- 5.3.16 To avoid similar incident from occurring again and as an additional measure to protect the corals along the shore, diving inspection by coral specialist is suggested during the period of demolition of the temporary barging point.
- 5.3.17 The reporting month (November 2006) was the Month Eleventh of the construction programme. As the dredging works for the desalination plant had not been commenced, Site D2 and Site D3 (impact sites on the western Kau Sai Chau Island for desalination plant) were not required yet. The coral transplantation, which should be conducted prior to the commencement of dredging works, had not finished. The monitoring on transplanted corals on the bedrock at Site D2 (see **Figure 3.5**) therefore was also not needed yet.

5.4 Archaeology (Watching Brief)

- 5.4.1 Excavation was carried out at Holes 11, 12, 14 & 16 during this monitoring month and watching brief monitoring was resumed since September 2006. According to the latest construction programme, part of the Hole 2 will not be completed very late construction stage in 2007. Approximate 40% of the Hole 2 area was being excavated and the watching brief at Hole 2 will have to further extend. The first (January to March 2006) and second (April to September 2006) quarterly progress reports had been sent to AMO for comments on 31st March 2006 and 15th October 2006 respectively. The next quarterly progress report will be submitted to AMO in January 2007.
- 5.4.2 The Archaeological Watching Brief (AWB) will consist of 18 days of on-site monitoring of the construction work. An initial site visit was made on 20th January 2006 to inspect preliminary vegetation clearance at Hole 2. The second site visit was undertaken on 3rd February 2006. The first day of the monitoring was agreed on 14th February 2006 after the confirmation with the Contractor that the bulk excavation was being carried out at Hole 2. The site visit at Holes 11, 12, 14, 15 & 16 were started from September 2006 once vegetation clearance commence and in progress.
- 5.4.3 Monitoring results were shown as follows:

Hole 2

- 5.4.4 Clearance of surface soil was monitored in Areas 1 and 2 (mainly the concrete batching plant and underground water tank location) which is around 60% of the actual bulk earthwork. All monitoring areas were investigated after vegetation clearance and no archaeological material was identified in the first quarterly report. A thirty minute video of the works was recorded. No works have been undertaken outside the Areas 1 and 2 up the reporting period (January to March 2006).

Holes 11, 12, 14, 15 & 16

- 5.4.5 For the excavation at watching brief concern areas (Holes 11, 12, 14, 15 & 16), the excavation programme was commenced in early September 2006 after the completion of temporary bridges construction at Streams B1 and B2. Vegetation clearance was started in early September 2006 and completed in the reporting month at Holes 11, 12, 14, 15 & 16. Bulk earthwork at

concerned watching brief area was concentrated Holes 11, 12, 14 and 16. No archaeological material was identified in the second quarterly report (April to September 2006). Archaeological watching brief monitoring was in progress during this reporting month.

5.5 Land Contamination

- 5.5.1 The Contamination Assessment Plan (CAP) was approved by EPD 17th February 2006. Site investigation was carried out on 14th and 15th February 2006. Site audit was carried out with IEC on 14th February 2006 with the Contractor's representatives. The CAP was approved on 17th February 2006. The Contamination Assessment Report (CAR) and Remediation Action Plan (RAP) were approved on 18th August 2006.
- 5.5.2 Remedial work for the contaminated soil located at the Hotspot L3 (Hole 18) is required to be implemented properly according to the RAP. A confirmation pilot trial on the ratio of cement and contaminated soil was carried out during the reporting month. According to the Contractor's submitted methodology, the contaminated soil will be transferred from Hole 18 to Hole 17 for remediation. It is because that Hole 17 is the major fill area and the remediation soil to cement mixture can be used as general fill material. The full scale remediation work was carried in the reporting month on 4th October 2006. A Final Site Remediation Report (FSRR) is prepared by the Main Contractor and submitted in the next reporting report.

6. Environmental Site Auditing

- 6.1.1 The weekly site inspections were conducted by the ET with Contractor's representative and/or Jockey Club's representative on 1st, 7th, 14th, 21st and 28th November 2006 and the monthly joined site inspection with IEC and the Contractor's representative undertaken on 21st November 2006. The following observations and recommendations were made.

Dust Mitigation Measures

- 6.1.2 Major excavation work was carried at Holes 10, 11, 12 and 14 during the reporting month. Haul road was constructed linking up all 18 golf course except Hole 13. No dust suppression measure was provided during rock breaking activities carrying at Holes 6, 10, 11, 14 & 16. Dust generation from the haul road, during earth moving operation and excavation were observed at sunny and windy weather, insufficient dust mitigation measures was provided on site. According to the site observation, two to three water trucks were provided on site for haul road watering to minimize the dust generation from the haul road only.
- 6.1.3 Huge temporary soil stockpiles were mainly located at Holes 1, 4, 9, 16 and 18. Only two of them were partially covered with tarpaulin / hydroseed. The Contractor was repeatedly urged to provide sufficient mitigation measures and watering the hydroseed areas. There were many new sand/aggregates located at Hole 1, these stockpiles are more vulnerable to silty runoff and dust generation due to their particular size are more fine in nature and not suitable for compaction and watering. The Contractor was suggested to cover the stockpiles properly under the APCO requirement.
- 6.1.4 The Contractor was reminded to minimize the dust generated by the site vehicles moving along the haul road by paving the heavy traffic haul road and haul road near to the existing golf course. The Contractor was repeatedly reminded to provide sufficient dust suppression measure at all other excavation / earth moving areas.
- 6.1.5 Concrete batching plant was operating during this reporting month. The estimated quantity of concrete produced was around 100m³/day. No major dust generation was observed from the concrete batching plant during operation.
- 6.1.6 Dust emission was observed during the unloading of aggregates from the barge to the trucks located at temporary barging point. The Contractor was reminded to keep the aggregates moist in any time during the material transfer.

Water Quality

Temporary Drainage Master Plan

- 6.1.7 The Contractor agreed and required to submit the TDMP for the (i) turf grass establishment period and (ii) next wet season. The pesticide is a prohibited substance which is not allowed to be discharged to any water bodies under the WPCO. The Contractor was reminded to confine, collect and reuse runoff generated from the irrigation area properly.
- 6.1.8 The TDMP indicates that there are many discharge points along the construction boundary to the marine water and streams. Same as the earlier submission, the basic temporary drainage principle submitted by CHEC is that the construction site contaminated runoff will pass through the silt fence / rock channel and then discharge/overflow to marine or stream courses. The construction site contaminated runoff will not be confined, collected and properly treated before

water discharge. The Contractor was reminded to provide adequate temporary drainage system implemented on site for all season.

- 6.1.9 According to the site observation which is similar to the last few reporting months, cut-off drain was only implemented at Hole 17. The temporary drainage system implemented on site was mainly surrounded with silt fence along the site boundary with few sedimentation basins before discharge. Most of the runoff was discharged by overland flow through silt fence to stream and marine water. The silt fence installed on site was not well-maintenance especially at formerly installed areas which may lead to silty runoff. The Contractor was repeatedly reminded to improve the effectiveness of the mitigation measures and provide sufficient temporary drainage system on site.
- 6.1.10 Permanent hydroseeding was provided at the bare slopes of the desalination plant land formation area. The Contractor was reminded to provide sufficient temporary drainage system to prevent any silty runoff from the desalination plant. Temporary arrangement pipelines were provided at the existing pier. All works were above water and laying on the armour rock of the existing KSC pier only. No dredging of the intake and outfall pipelines was carried out during the reporting month.
- 6.1.11 The Contractor was reminded to provide adequate mitigation facilities on site and sufficient temporary drainage at temporary bridges no. 5, 9, 10 (two crossings) and 15 to ensure no polluted runoff discharge from the construction works to Stream A, Stream B and freshwater inland marsh. The construction of permanent bridges / pipe culvert at Streams A, B and C were commenced last reporting month and in progress. The permanent bridges should be constructed by precast unit and any discharge of polluted runoff to the stream is prohibited during construction. The first precast bridge located at fresh water marsh was commenced in October 2006 and expected to be finished by the end of December 2006.
- 6.1.12 The Contractor was reminded to maintain the silt curtain and desilt the settled solids within the silt curtain in a routine basis and ensure the effectiveness of its intended use.
- 6.1.13 The Contractor agreed that the silty water from the wheel washing facility was diverted to the sedimentation basin near the Contractor's site office and treated with the wastewater treatment plant before discharge to fresh water inland marsh. No improvement on the wheel washing facility was observed since the last two reporting months. Silty water was still directly discharged to the freshwater inland marsh.
- 6.1.14 No turf has been established during this reporting month. According to the construction programme, turf establishment will start in January 2006. The Contractor was reminded to provide temporary drainage system to collect and divert the runoff to the existing reservoir when the permanent closed low flow drainage system is not completed yet. The Contractor was recommended that turf establishment should not be concentrated in a short period of time to reduce the potential nutrients and pesticides runoff to freshwater and marine water sensitive receivers.

Ecology

- 6.1.15 Buffer zone at Streams A, B1, B2 and C had been established. The whole buffer zone aims to protect the streams and avoid any works/equipment intrusion into the buffer zone.
- 6.1.16 The main stream course of Stream A was found to be filled up by rubbles to the level of the weir at its downstream end since mid-June 2006, and its conditions remained similar in the present monitoring survey. Remedial works were implemented to clear the rubbles and restore the channel manually in early November 2006. However, the rocks were filled up the downstream

A again after the rainstorm on 21st November 2006. The Contractor was not yet implemented to clear the rubbles and resume the channel manually in the reporting month.

- 6.1.17 Floating pontoon was berthed at EP location at the temporary barging point. No illegal berthing was observed during the site audit. Increase of loading of the sand/aggregates/drainage pipes/irrigation pipes delivery was observed during the reporting month.
- 6.1.18 No dredging work was carried out at the desalination plant location. No monitoring and transplantation was carried at this area.

Stream B2 Buffer Zone

- 6.1.19 For the Stream B2 buffer zone incident (vegetation clearance at part of the buffer zone area), the Contractor was proposed the following remedial and mitigation measures for EPD's comment:

Immediate Mitigation Measures

- The vegetation clearance work within the Stream B2 buffer zone had been stopped immediately;
- All the incorrect orange fencing were removed / dismantled and the buffer zone was re-erected with orange fence again to avoid any misleading incident happened; and
- A meeting had been held with the engineers, foreman, subcontractors and workers to emphasize that any construction work within the buffer zone was restricted.

Further Mitigation Measures

- Provide sufficient warning signs (in words and symbols) along all sensitive streams buffer zones in particular Streams B and C to enhance the awareness to the workers and avoid similar incident happened in future;
- To hydroseed the buffer zone which was cleared by the backhoe and provide regular watering to promote the growth of the native grass/hydroseed to reinstate the buffer zone as soon as possible;
- Native shrubs species or equivalent will be planted at the clearance area; and
- More frequent communication between the on-site supervisory staff and the frontline staff before any work to be carried out within the buffer zone area.

Silt Deposit at Stream C

- 6.1.20 Significant silty runoff and silt were deposited at the stream bed of Stream C were recorded after the rainstorm on 22nd November 2006. The incident report, proposed remediation work and mitigation measures prepared by the Contractor were outstanding in this reporting month.

Waste / Chemical Management

- 6.1.21 Cleared vegetation was stockpile on site for a long time and no disposal was recorded. In addition, stockpile of construction waste was also observed located at Hole 2 at least five months. The Contractor was repeatedly reminded to dispose the vegetation stockpiles and construction waste off-site properly according to the waste management plan. Part of the vegetation stockpiles was disposed off-site in November 2006. The accumulated huge stockpile of construction waste located at Hole 2 was not properly disposed in the reporting month.
- 6.1.22 No chemical storage area was available on site during the reporting month. Some oil tanks were required as the standby fuel. Drip trays were provided underneath the oil tanks to prevent leakage on the bare ground. The Contractor confirmed that the chemical waste generated was in

small amount and would be disposed by their sub-contractor or store on site. The Contractor was reminded to provide chemical storage areas for chemical storage on site.

- 6.1.23 There were few general refuse disposal records only in the last reporting month. The Contractor was requested to provide the waste generation and disposal record regularly for ER and ET to review and to ensure that all waste generated from the site is disposed properly and not through Jockey Club existing dumping system. According to the site observation, the general refuse was still accumulated within the construction area (at Hole 2) without proper disposal for more than one month.

Landscape and Visual

- 6.1.24 Damaged trees next to the administration building were still unprotected after being damaged by the adjacent construction activities.
- 6.1.25 Mal-pruning of transplanted trees had not been rectified since July 2006. Construction material was still stockpiled within tree protection zones since July 2006.
- 6.1.26 A statement on the cause of death of tree T925 recorded in the last report was still outstanding.
- 6.1.27 Tree T848 transplanted in this month and was in poor condition
- 6.1.28 Soil around the transplanted trees was dry and more frequent watering is required in particular in dry season.

Status of Environmental Licensing and Permitting

6.1.29 Permits / licences submission and approval status are summarised in Table 6.1.

Table 6.1 Summary of Environmental Licensing and Permit Status

Permit/licence/notification form title	Submission date	Status	Registration No./ Remarks
Application for a construction noise permit for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work.	21 st Jan 2006	Approved on 16 th February 2006	GW-RE0012-06 (valid until 3 rd July 2006), supersede by GW-RE0067-06.
Application for a construction noise permit for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work.	6 th Apr 2006	Approved on 9 th Jun 06 (supersede the GW-RE0067-06)	GW-RE0157-06 (valid until 28 th Nov 2006)
Notification of the air pollution control (construction dust) regulation	21 st Jan 2006	Acknowledge receipt from EPD on 27 th February 2006	Ref. no.: 001006902
Registration as a chemical waste producer	10 th Jan 2006	Register on 7 th February 2006	WPN-5213-813-C1186-04
Application for a permit to dump material at sea under the Dumping at Sea Ordinance	10 th Jan 2006	Deferred by CHEC on 17 th March 2006 (CHEC/KSC3.9.1/0459)	No dredging work will be carried out between May to December 2006.
Application of exemption account for the construction waste charging scheme	12 th Jan 2006	Approved on 16 th January 2006	A/C no. 5005322 (valid until 2 nd August 2007)
Application for a licence for production pursuant to Section 14 of Air pollution Control Ordinance	2 nd Mar 2006	The total silo capacity for the cement works was 45 tonnes which is lower than 50 tonnes. It is not a specified process, application is not required.	EPD letter refer. no.: EP640/EA/SK/015
Application for a licence under Water Pollution Ordinance – Construction Site	18 th Mar 2006	Approved on 12 th Sept 2006 (CHEC/KSC3/9.1/0414)	EPD letter refer. No: EP640/W4/J1003

7. Environmental Non-Conformance

7.1 Summary of Environmental Non-Compliance

Air Quality

- 7.1.1 Two non-compliance of 24-TSP were recorded at GCA B1 in the reporting month.

Marine Water Quality

- 7.1.2 Two exceedances of turbidity and one exceedances of suspended solids recorded at M_Marsh were considered project-related in the reporting month.

Freshwater Quality

- 7.1.3 Twenty three exceedances of turbidity and nineteen exceedances of suspended recorded at F_DA, F_DB, F_DC and F_Inland Marsh were considered project-related in the reporting month.

Terrestrial Ecology

- 7.1.4 Two non-compliances were recorded during the site audit, (i) rocks filled at downstream A after the rainstorm on 21st November 2006 and (ii) vegetation clearance at Stream B2 buffer zone on 7th November 2006.

Marine Ecology

- 7.1.5 Coral monitoring survey at Site B2, Site C and Control site was not required in this reporting month. Coral transplantation will be carried out in the next reporting month at Site D2 before the operation of the desalination plant. No dredging work was carried out at Site D2 because of the implementation of temporary intake and outfall pipeline arrangement.

7.2 Summary of Environmental Complaint

- 7.2.1 No environmental complaint was received in this reporting month.

7.3 Summary of Environmental Summons

- 7.3.1 There was no notification of summons with respect to environmental issues registered in this month.

8. Future Key Issues

8.1 Key Issues for coming month

8.1.1 Major works to be taken for the coming monitoring period are summarized as follows.

- Operation of temporary barging point
- Operation of sewage treatment plant
- Operation of concrete batching plant
- Operation of wastewater treatment plant
- Land formation for desalination plant
- Drainage and irrigation systems installation at Golf Holes
- Haul road formation and bulk excavation at Hole 13
- Gravity drain construction from Lake 1D to existing reservoir
- Implementation of temporary drainage master plan
- Implementation of dust suppression mitigation measures
- Vegetation, general and construction wastes disposal off-site
- Coral transplantation in the next reporting month at Site D2
- Operation of desalination plant if required

8.2 Monitoring Schedule for the coming month

8.2.1 The tentative schedule of air, water, ecology and landscape & visual monitoring for the next three months is presented in **Annex F**. The environmental monitoring will be conducted at the same monitoring locations in this reporting month. The monitoring programme has been reviewed and was considered as adequate to cater the nature of works to be undertaken.

8.3 Construction programme for the next three month

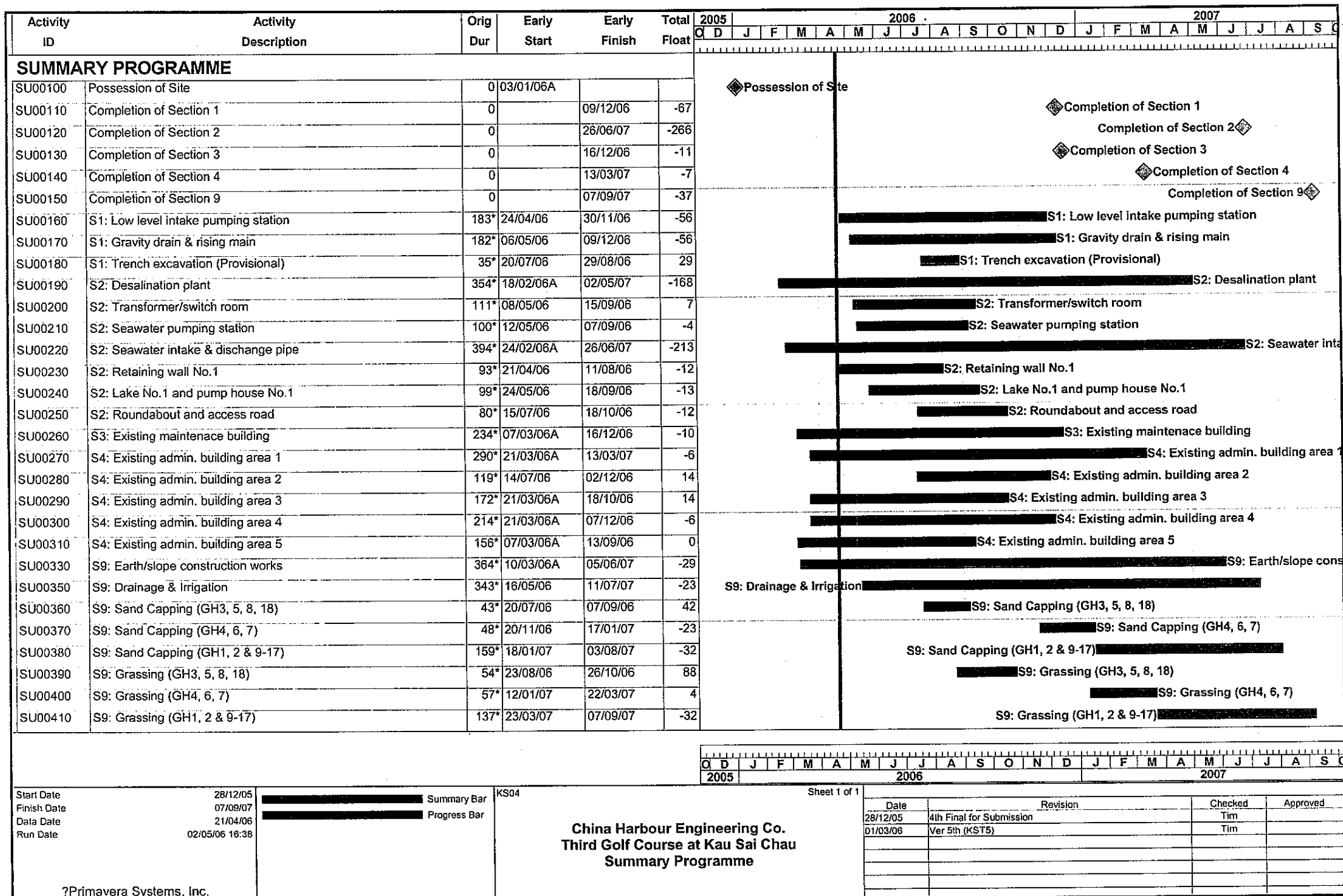
8.3.1 The construction programme for the next three months is presented in **Annex G**.

9. Recommendations and Conclusions

- 9.1.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 25th October 2006 to 24th November 2006 in accordance with EM&A Manual and the requirement under EP-224-2005/A.
- 9.1.2 The Contractor was repeatedly reminded to improve and provide sufficient temporary drainage system on site to prevent silty runoff to marine and stream courses. In addition, the Contractor was reminded to provide sufficient dust suppression mitigation measures especially during rock breaking activity, earth movement (loading and unloading), at haul road (vehicle movement) and large soils stockpiles.
- 9.1.3 In the June 2006 monitoring survey of terrestrial ecology, the main stream course of Stream A was found to be filled up with rubbles to the level of the weir at its downstream end, and its conditions remained similar in the present monitoring survey. Silt deposit at the stream bed of stream C was recorded after the rainstorm on 21st November 2006. The Contractor was reminded to control the construction work quality and prevent same incident happened in future. Remedial works were not implemented to clear the rubbles and restore the channel at Stream A by hand.
- 9.1.4 Same as the last reporting month, no rectification work was done by the Contractor. Regarding the retained trees, the Contractor shall take the following measures:
- Carry out surgery to damaged trees;
 - Report the cause of death of tree T925;
 - Maintain the tree protection zone required and remove all construction material / debris from the tree protection zone;
 - Maintain the transplanted tree in good condition by sufficient watering;
 - Rectify the mal-pruning practice of the transplanted trees; and
 - Carry out hydroseed works at temporary and permanent stockpiles/bare slopes when practical.
- 9.1.5 No environmental complaint and environmental summons/prosecutions was received during the reporting period.
- 9.1.6 The ET will keep track of the EM&A programme with respect to compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Annex A

Tentative Construction Programme



Annex B

Monitoring Programme for the reporting month

Oct 2006						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
22	23	24	25	26 AQ	27	28
29	30	31				

Nov 2006						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 AQ LV	2	3	4 WQ
5	6	7 AQ	8	9	10 AQ WQ	11
12	13 AQ	14	15 LV	16 WQ	17	18 AQ
19	20	21 AQ	22 WQ	23	24 AQ TE	25
26	27	28	29 TE	30		

Remarks: AQ = TSP, WQ = Freshwater and Marine water quality, TE = Terrestrial Ecology, ME = Marine Ecology;
LV = Landscape & Visual

Annex C

Event Action Plan

Event / Action Plan for Air Quality

EVENT	ACTION			
	ET	IC(E)	Engineer	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of complaint and propose remedial measures; 2. Inform IC(E) and Engineer; 3. Repeat measurement to confirm finding; 4. Increase to daily monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IC(E) and Engineer; 3. Advise Engineer on effectiveness of proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase to daily monitoring; 6. Discuss with IC(E) and Contractor remedial actions required; 7. If exceedance continues, arrange meeting with IC(E) and Engineer; 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor possible remedial measures; 4. Advise ET on the effectiveness of proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm in writing receipt of notification of exceedance; 2. Notify Contractor; 3. Supervise proper implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial measures to Engineer within three working days of notification; 2. Implement agreed proposals; 3. Amend proposal if appropriate.
LIMIT LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source, investigate causes of exceedance and propose remedial measures; 2. Inform IC(E), Engineer, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase to daily monitoring; 5. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and Engineer 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor possible remedial measures; 4. Advise Engineer on effectiveness of proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm in writing receipt of notification of exceedance; 2. Notify Contractor; 3. Supervise proper implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E) within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposals if appropriate.

EVENT	ACTION			
	ET	IC(E)	Engineer	CONTRACTOR
	informed of results.			
2 Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Notify IC(E), Engineer, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase to daily monitoring; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation measures to be implemented; 6. Arrange meeting with IC(E) and Engineer to discuss remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and Engineer informed of results; 8. If exceedance stops, cease additional monitoring. 	<p>Discuss amongst Engineer, ET, and Contractor the potential remedial actions;</p> <p>Review Contractor's remedial actions whenever necessary to assure their effectiveness, and advise Engineer accordingly;</p> <p>Supervise implementation of remedial measures.</p>	<p>Confirm receipt of notification of exceedance in writing;</p> <p>Notify Contractor;</p> <p>In consultation with the IC(E), agree with the Contractor the remedial measures to be implemented;</p> <p>Supervise proper implementation of remedial measures;</p> <p>If exceedance continues, consider what portion of the works is responsible and instruct the Contractor to stop that portion of work until exceedance has abated.</p>	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E) within three working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as instructed by Engineer until the exceedance is abated.

Event and Action Plan for Water Quality

Event	ET Leader	IC(E)	Engineer	Contractor
ACTION LEVEL				
Action level being exceeded by one sampling day	Repeat <i>in situ</i> measurement to confirm findings; Identify reasons for non-compliance and source(s) of impact; Inform IC(E) and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IC(E) and Contractor; Repeat measurement on next day of exceedance.	Discuss mitigation measures with ET and Contractor ; Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; Assess effectiveness of implemented mitigation measures.	Discuss proposed mitigation measures with IC(E); Make agreement on mitigation measures to be implemented. Assess effectiveness of the implemented mitigation measures.	Inform the Engineer and confirm in writing notification of the non-compliance; Rectify unacceptable practice; Check all plant and equipment; Consider changes in working methods; Discuss with ET and IC(E) and propose mitigation measures to IC(E) and Engineer; Implement agreed mitigation measures.
Action level being exceeded by more than two consecutive sampling days	Repeat <i>in situ</i> measurement to confirm findings; Identify reasons for non-compliance and source(s) of impact; Inform IC(E) and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IC(E) and Contractor; Ensure mitigation measures are implemented; Prepare to increase to daily monitoring; Repeat measurement on next day of exceedance.	Discuss mitigation measures with ET and Contractor ; Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; Assess effectiveness of implemented mitigation measures.	Discuss the proposed mitigation measures with IC(E); Make agreement on mitigation measures to be implemented; Assess effectiveness of implemented mitigation measures.	Inform Engineer and confirm in writing notification of the non-compliance; Rectify unacceptable practice; Check all plant and equipment; Consider changes in working methods; Discuss with ET and IC(E) and propose mitigation measures to IC(E) and Engineer within three working days; Implement agreed mitigation measures.
LIMIT LEVEL				
Limit level being exceeded by one sampling day	Repeat <i>in situ</i> measurement to confirm findings; Identify reasons for non-compliance and source(s) of impact; Inform IC(E) Contractor and EPD; Check monitoring data, all plant, equipment and Contractor's	Discuss mitigation measures with ET and Contractor; Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; Assess effectiveness of implemented mitigation measures.	Discuss proposed mitigation measures with IC(E), ET and Contractor; Request Contractor to critically review the working methods; Make agreement on mitigation measures to be implemented; Assess effectiveness of implemented	Inform Engineer and confirm in writing notification of the non-compliance; Rectify unacceptable practice; Check all plant and equipment; Consider changes in working methods; Discuss with ET, IC(E)

Event	ET Leader	IC(E)	Engineer	Contractor
	<p>working methods;</p> <p>Discuss mitigation measures with IC(E), Engineer and Contractor;</p> <p>Ensure mitigation measures are implemented;</p> <p>Increase to daily monitoring until no exceedance of Limit level.</p>		mitigation measures.	<p>and Engineer and propose mitigation measures to IC(E) and Engineer within three working days;</p> <p>Implement agreed mitigation measures.</p>
Limit level being exceeded by more than two consecutive sampling days	<p>Repeat <i>in situ</i> measurement to confirm findings;</p> <p>Identify reasons for non-compliance and source(s) of impact;</p> <p>Inform IC(E), Contractor and EPD;</p> <p>Check monitoring data, all plant, equipment and Contractor's working methods;</p> <p>Discuss mitigation measures with IC(E), Engineer and Contractor;</p> <p>Ensure mitigation measures are implemented;</p> <p>Increase to daily monitoring until no exceedance of Limit level for two consecutive days.</p>	<p>Discuss mitigation measures with ET and Contractor;</p> <p>Review proposals on mitigation measures submitted by Contractor and advise Engineer accordingly;</p> <p>Assess effectiveness of implemented mitigation measures.</p>	<p>Discuss proposed mitigation measures with IC(E), ET and Contractor;</p> <p>Request Contractor to critically review working methods;</p> <p>Make agreement on mitigation measures to be implemented;</p> <p>Assess effectiveness of implemented mitigation measures;</p> <p>Consider and if necessary instruct Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.</p>	<p>Inform Engineer and confirm in writing notification of the non-compliance;</p> <p>Rectify unacceptable practice;</p> <p>Check all plant and equipment;</p> <p>Consider changes of working methods;</p> <p>Discuss with ET, IC(E) and Engineer and propose mitigation measures to IC(E) and Engineer within three working days;</p> <p>Implement agreed mitigation measures;</p> <p>As directed by the Engineer, slow down or stop all or part of the construction activities until no exceedance of Limit level.</p>

Action and Limit level and Event Action Plan for natural corals monitoring

Parameters	Action Level	Limit Level
Sedimentation	a 15% increase in the percentage of sedimentation on the hard corals occurs at more than 20% of the tagged coral colonies at one or more monitoring sites	a 25% increase in the percentage of sedimentation on the hard corals occurs at more than 20% of the tagged coral colonies at one or more monitoring sites
Bleaching	a 15% increase in the percentage of bleaching of hard corals occurs at more than 20% of the tagged coral colonies at one or more monitoring sites	a 25% increase in the percentage of bleaching of hard corals occurs at more than 20% of the tagged coral colonies at one or more monitoring sites
Mortality	a 15% increase in the percentage of partial mortality of corals occurs at more than 20% of the tagged coral colonies at one or more monitoring sites	a 25% increase in the percentage of partial mortality of corals occurs at more than 20% of the tagged coral colonies at one or more monitoring sites

Action	Action Level	Limit Level
Construction phase	If the Action Level is exceeded the ET Leader should inform all parties (Contractor, Project Proponent, EPD, AFCD and IEC). The data from the water quality monitoring should also be reviewed. If the water quality monitoring shows no attributable effects of the installation works, then the Action Level is not triggered. If the water quality data indicate exceedances (for SS and/or turbidity) the ET Leader should discuss with the Contractor the most appropriate method of reducing suspended solids during dredging (e.g. reduce the rate of dredging), and/or control sedimentation during earth works (e.g. check the intactness and effectiveness of the temporary drainage system and stream buffer zone). This mitigated method should then be enacted on the next working day.	If the Limit Level is exceeded the ET Leader should inform all parties (Contractor, Project Proponent, EPD, AFCD and IEC) immediately. Should the Limit Level be exceeded, the contractor should stop dredging and/or earth works immediately and work out the solution according to the requirements of EPD and AFCD. The ET Leader should inform the Contractor to suspend dredging and/or earth works until an effective solution is identified. Once the solution has been identified and agreed with all parties dredging and/or earth works may commence
Operation phase	If the Action Level is exceeded the ET Leader should inform Golf Course Operator, EPD, and AFCD. The data from the water quality monitoring should also be reviewed. If the water quality monitoring shows no attributable effects of the installation works, then the Action Level is not triggered. If the water quality data indicate exceedances (salinity and/or pesticides) the ET Leader should discuss with the Golf Course Operator the most appropriate method of reducing salinity (e.g. reduce the daily operation time of the desalination plant), and/or control chemicals from runoff (e.g. reduce the frequency and quantity of chemical applied, check the intactness and effectiveness of the closed drainage system and stream buffer zone). This mitigated method should then be enacted on the next working day.	If the Limit Level is exceeded the ET Leader should inform all parties Golf Course Operator, EPD, and AFCD immediately. Should the Limit Level be exceeded, the Golf Course Operator should stop the operation of the desalination plant and/or the application of chemicals immediately and work out the solution according to the requirements of EPD and AFCD. The operation of the desalination plant and/or the application of chemicals would be suspended until an effective solution is identified.

Categories of Archaeological Finds and Recommended Action

Categories of Archaeological Material	Retrieval Procedure
<p>Human burial</p> <ul style="list-style-type: none"> Skeleton remains Items associated with human burial, i.e. grave goods 	<p>Full recording and recovering of human remains and associated features</p> <ul style="list-style-type: none"> Complete recoding by photography, drawing, written description Full measurement of burial and surrounding matrix Retrieval of human remains and associated materials Retrieval of surrounding soil for further analysis
<p>Intact features</p> <ul style="list-style-type: none"> Structural/architectural remains Undisturbed context, such as hearth, midden, habitation area, assemblages of artefacts and/or environmental material 	<p>Limited recording and recovery of archaeological features</p> <ul style="list-style-type: none"> Recording and measurement of salient features by photography, drawing and written description Retrieval of all archaeological material Retrieval of samples from the surrounding matrix
<p>Intact artefacts</p> <ul style="list-style-type: none"> Complete objects such as pottery, metal objects, stone and bone tools. The objects are complete but isolated and are no part of assemblages or feature. 	<p>Recovery of artefacts</p> <ul style="list-style-type: none"> Recovery of objects Sampling of the surrounding matrix Proper treatment with cleaning, marking and packing under international acceptable standards
<p>Isolated material</p> <ul style="list-style-type: none"> Sherds, non-human bone, artefact fragments (metal, pottery, glass). There are no complete objects, the material is isolated and fragmentary in nature. 	<p>Recovery of artefact fragments/archaeological material</p> <ul style="list-style-type: none"> Recovery of material, such as artefact fragments, environmental material and sampling of surrounding matrix
<p>Deposits with archaeological potential</p> <ul style="list-style-type: none"> Soil deposits which exhibit characteristics associated with archaeological remains in Hong Kong 	<p>Sampling of the deposit</p> <ul style="list-style-type: none"> Collection of soil samples from deposits displaying archaeological potential

Annex D

Implementation status on Environmental Protection Requirements

IMPLEMENTATION SCHEDULE OF THE PROPOSED MITIGATION MEASURES

Table 1 Implementation Schedule of Air Quality Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines	Implementation Status
					D	C	O		
Air Quality - Construction Phase									
4.7.1		<p>In order that nuisance to air sensitive receivers is minimized, it is important to minimize dust emissions from construction activities including cut and fill operations and trucks movements on haul road.</p> <p>Dust control techniques should be considered to control dust to a level not exceeding the AQOs as well as the 1-hour TSP guideline level. These measures include:</p> <ul style="list-style-type: none">• Adoption of good site practices;• Avoid practices likely to raise dust level;• Frequent cleaning and damping down of stockpiles, dusty areas of the Site and the haul roads;• Reduce the speed of the vehicles (say 10 kph) on the haul road;• Reducing drop height during material handling;• Provision of wheel-washing facilities for Site vehicles leaving the Site;• Regular plant maintenance to minimize exhaust emission;• If concrete batching plant or rock crushing plant is planned to used, a license from EPD may be required depending on the total silo capacity since they are specified processes under the APCO. Modern plant should be designed to limit emissions	Work site / during construction	All contractors		√		EIAO-TM, APCO, Air Pollution Control (Construction Dust) Regulation	<div>Insufficient</div> <div>Insufficient</div> <div>Insufficient</div> <div>√</div> <div>√</div> <div>Insufficient</div> <div>Insufficient</div> <div>As confirmed by Contractor, the concrete batching plant is not a specific process.</div>
4.7.2		Providing watering four times a day for dust suppression.							Insufficient

* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.
** D=Design, C=Construction, O=Operation; N/A = Not applicable

Table 2 Implementation Schedule of Water Quality Control Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines	Implementation Status
					D	C	O		
Water Quality – Construction phase									
6.11.4		<u>Proposed 18 holes Golf Course Layout Design</u> 20m buffer zones on both sides of the streams will be demarcated as a preventative mitigation measure to reduce the disturbance during construction phase of the golf course except for the portions of Streams A which is of low ecological value and an old tributary of Stream B. On one side of part of the Stream B, the buffer zone would be reduced to 5m.	Work site / During the construction period	All contractors		√		ProPECC PN 1/94; WPCO; TM-Effluent Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Water	Streams A, B1, B2 and C buffer zones fencing were provided.
6.11.5		For the construction activity which is unavoidable near natural streams (within the buffer zone), mainly the construction of crossings, preventative mitigation measures during the construction stage should be follow by the Contractor, they are shown as follows: <ul style="list-style-type: none">The proposed works site inside or in the proximity of natural streams should be temporarily isolated, through by placement of sandbags or silt curtains and properly supported by props, to prevent adverse impacts on the stream water qualities;The natural bottom and existing flow in the stream should be preserved to avoid disturbance to the stream habitats;No direct and indirect discharge into the natural stream is allowed from any construction work activities;Stockpiling of construction material, if any, should be properly covered and located away from any natural stream;Monitor rain forecast closely and cover any exposed spoil when rainstorms are forecated. Debris should be properly disposed of before rainstorm to avoid any inadvertent wash away into the stream; andemoval of existing vegetation alongside the stream should be avoided. When disturbance to vegetation is unavoidable, all disturbed areas should be hydroseeded or planted with suitable vegetation to blend in with the natural environmental upon completion of works.						Temporary bridges at no.9, 10 and 15 were constructed at Streams A, B1, B2 and C within the buffer zone areas. The Contractor was reminded to ensure no discharge/runoff to the Streams A, B & C from the construction activity especially within the buffer zone areas.	
								Construction of permanent bridge (precast in concrete) no. 5 was in progress at downstream of freshwater inland marsh. The Contractor was reminded to provide sufficient mitigation measures during construction to prevent runoff from the bridge. Permanent bridges construction at Streams A, B2 and C was commenced in the reporting month (Dry season).	
6.11.13		<u>Runoff and Drainage Management</u> <ul style="list-style-type: none">Diversion of upstream flows around the works areas for stream crossings and underground pipes: To minimize the impact of upstream runoff on the Works area by preventing storm flows reaching the work areas. This will be done through provision of upstream cut-off drains to intercept the flows and divert them around the Works area. It would convey flows to downstream stream courses, or other elements of temporary drainage systems (such as storage facilities).Temporary covering the works areas during severe storm events: Significant rainstorm events can be reasonably well forecast and when heavy rain is predicted, mitigation measures should be provided for the vulnerable areas by using tarpaulins, plastic sheets or other temporary covering to protect works area and minimize damage and erosion. It is recommended not to cover the newly establishment grass areas, and if unavoidable, this should only to be done on a short term basis (less than 24 hours).Silt traps and sedimentation tanks for main discharge routes form works area: Sufficient and suitably sized silt traps and/or sedimentation tanks should be provided at the downstream ends of the systems to remove suspended solids prior to discharge. The discharge water quality shall be compliant with the <i>TM on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters</i> under the WPCO. The required volume of the sedimentation tanks will depend on the catchment area served. Multiple tanks in series may also be required where runoff might be expected to be silty.The design details of the temporary drainage system at turf establishment area follow the same principles of the permanent drainage system. However the component pipes, tanks, lakes and/or pumps may differ in size, shape, location, etc. from that of the permanent system, dependent upon the temporary runoff areas as compared with those of the permanent system. Additionally or alternatively, the temporary drainage system may consist of other methods to control soil erosion and/or to facilitate the collection of surface water runoff. <p>The temporary drainage system will function during the period of time in which the permanent system is not yet completed. This circumstance will arise from the fact that the golf holes, inclusive of the permanent drainage system, will be constructed individually. As a result, the permanent drainage</p>	Work site / During the construction period	All contractors		√		ProPECC PN 1/94; WPCO; TM-Effluent Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Water	The latest temporary drainage plan has included the whole construction site. The temporary drainage plan will be updated by the Contractor throughout the construction phase to cope with the change of site conditions. The Engineer was reminded the Contractor to prepare the next wet season drainage plan for their approval. The latest submitted drainage plan is the mitigation measures for the silty runoff mainly which has not included the recycling the runoff during the turf establishment.
								The installation and maintenance of the temporary drainage on site was very low since last reporting month. The site was mainly surrounded with silt fence with low frequency of maintenance. Permanent temporary drainage (including closed low flow drainage system) was constructed in progress. No turf was established on site yet. The expected earliest turf establishment period will be commenced in January 07 at but subject to further confirmation with the Contractor.	

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines	Implementation Status
					D	C	O		
		<p>system may not be completed in its entirety until connection is made from each respective golf hole area to the lake/reservoir. As the permanent drainage system is completed for each hole, the corresponding temporary system will be decommissioned and reused elsewhere.</p> <p>The temporary drainage system will be in use until the permanent system is functional in a given area. Once the permanent system is functional in a given area, the temporary system will be decommissioned and, wherever possible, the components re-used in another temporary drainage system installed elsewhere. It is anticipated that the maximum duration of use for the temporary drainage system in any given area will be one-year.</p> <p>The storage tanks and/or lakes will be designed to segregate suspended solids (or pollutants as may be the case in plant/equipment storage and refueling areas) as may be necessary by contract requirements and reuse.</p> <ul style="list-style-type: none"> No irrigation, fertilizer and pesticide applications to the turf would be permitted during rainstorm events or when heavy rainstorm is predicted 24 hours before the application. Runoff from materials storage areas, particularly fuel and chemicals storage area should be separated from the main drainage systems (bundled, if necessary) and provided with dedicated facilities throughout the construction period, such as petrol interceptors. 							
6.11.14		<p>The Contractor shall follow good site practices and be responsible for the design, construction, operation, and maintenance of all the mitigation measures as specified in <i>ProPECC PN1/94</i> on construction site drainage through the construction period. These practices include:</p> <ul style="list-style-type: none"> Temporary ditches should be provided to facilitate run-off discharge into appropriate watercourses, via a silt retention pond. All drainage facilities and erosion and sediment control structures should be inspected monthly and maintained to ensure proper and efficient operation at all times. Excavation of soil that cannot be avoided during the wet season, and exposed surface or open stockpiles should be covered with tarpaulin or other means. Other measures that need to be implemented before, during and after rainstorms are summarized in <i>ProPECC PN1/94</i>. Exposed soil areas should be minimized to reduce potential for increase siltation and contamination of runoff. Earthwork final surfaces should be well compacted and subsequent permanent work (turf establishment) should be immediately performed. The Contractor shall contain within the site all surface runoff generated from the construction works, concreting works, dust control and vehicle washing, etc. The Contractor shall arrange other measures, such as provision of sand bags or temporary diversion systems to prevent washing away of soil, silt or debris into any nearby natural streams. Any runoff shall be diverted into appropriate sediment traps before discharging to the nearby drainage system. The discharge water quality shall be compliant with the <i>TM on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters</i> under the WPCO. The Contractor shall observe and comply with the Water Pollution Control Ordinance (WPCO) and its subsidiary regulations by implementing environmental protection measures (such as the use of silt traps) and preventing any point or non-point source of pollution. 	Work site / During the construction period	All Contractor		√		ProPECC PN 1/94; WPCO; TM-Effluent Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Water	<p>The latest temporary drainage plan has included the whole construction site. The temporary drainage plan will be updated by the Contractor throughout the construction phase to cope with the change of site conditions. The Engineer was reminded the Contractor to prepare the next wet season drainage plan for their approval. The latest submitted drainage plan is the mitigation measures for the silty runoff mainly which has not included the recycling the runoff during the turf establishment.</p> <p>The installation and maintenance of the temporary drainage on site was very low since last reporting month. The site was mainly surrounded with silt fence with low frequency of maintenance. Permanent temporary drainage (including closed low flow drainage system) was constructed in progress. No turf was established on site yet. The expected earliest turf establishment period will be commenced in January 07 at but subject to further confirmation with the Contractor.</p>

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines	Implementation Status
					D	C	O		
6.11.15		<p><u>Concrete bridge construction</u></p> <p>No work is allowed to come into contact with the underlying stream bed during the concrete bridge construction. During the construction of precast concrete bridge, if necessary, precaution measures should be taken to ensure no potentially polluting liquid or solid wastes fall into the stream. This is essential to avoid water quality impacts within ecologically sensitive streams.</p> <p>The Contractor shall good site follow practices, including, but no limited to::</p>	Work site / During the construction period	All contractors		√		ProPECC PN 1/94; WPCO; TM-Effluent Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Water	One concrete bridge/pipe culvert was under construction at the freshwater inland marsh (no. 5) during the reporting month. Permanent bridges and pipe culvert was commenced during the reporting month (Dry season).
6.11.16		<ul style="list-style-type: none"> Construction work area for the precast concrete should be outside the designated stream buffer zone area; The designated work area for precast concrete work should be covered to minimize the potential water runoff during rain from the construction area; All water used within the concrete work area should be collected, stored and recycled to reduce resource consumption. Stormwater runoff from the works areas fro precast concreting works should drain under gravity towards a sedimentation basin. The overlying water from the sedimentation basin should be recycled for reuse within the plant. The deposited sediment should be dewatered and the dry matter should require disposal off-site. No water should be discharged outside the boundary of the precast concrete works area; The use of tarpaulin sheet or other means (water impermeable texture) should be placed beneath precast concrete beam level (must be above the stream bed level) to capture any falling object during installation of precast concrete bridge on the footings or abutments; Prohibition of any direct and indirect discharge into the streams; The concrete bridge and footings of abutments must be completely above the high water mark; All equipment and machinery must be free of leaks or excess oil and grease; Equipment refueling or servicing or storage of fuel must be undertaken at a minimum of 30 meters from the stream; Prevent soil and trash from getting into stream during construction by use of silt fence, fiber rolls, gravel bags and other effective means; All bare soil (abutment slope or temporary stockpile) must be covered with tarpaulin or other means before forecast rain; and Wash out concrete trucks or pumps only into designated washout pits. 							
6.11.19		<p><u>Dredging during Construction of Desalination Plant's intake and outfall</u></p> <p>The intake and outfall pipelines will be constructed by dredging the seabed to form a trench and backfilled with a layer of bedding material (quarry run stone) before putting the pipelines in place. Once in place, the pipelines are covered with layers of rock armour on top of the pipelines to protect the pipelines against damage by wave action. The alternative backfilling material is from rock excavated during site formation if suitable.</p>	Work site / During the construction period	All contractors		√		ProPECC PN 1/94; WPCO; TM-Effluent Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Water	No dredging work for the desalination plant pipelines was carried out. The only work for the desalination plant was the land formation and construction of temporary pipelines arrangement at the existing KSC pier during the reporting month.
6.11.20		<p>The materials used for the backfilling at the intake and outfall pipelines are stone and rock armour only. Transfer of backfilling materials onto the seabed from barge should be conducted by careful grabbing and unloading to seabed (to minimize sediment migration), thereby minimize impacts on water quality to nearby water sensitive receivers. As a preventative measures, silt curtain will also be required during the backfilling activities. The expected backfilling duration is approximate 2 months.</p>							
6.11.21		<p>The Contractor shall use backhoe for dredging works at a water depth of less than 2m and use close grab dredger for works with water depth of more than 2m. The estimated dredging works is about 50m long (where backhoe should be used for water less than 2m deep) and 70m long (where close grab dredger should be used for water more than 2m deep). Only one dredging method should be used at any one time.</p>							
6.11.22		<p>In order to avoid pollution during dredging, transporting and dumping of marine mud. Pollution avoidance measures shall include but not be limited to the following:</p> <ul style="list-style-type: none"> The maximum daily dredging rate for closed grab dredger should be 45m³/day; The maximum daily dredging rate for backhoe should be 20m³/day; Silt curtain should be installed for any dredging methods to protect the WSRs; Closed grabs or sealed grabs should only be used for locations with water depths ≥ 2m; Backhoe should only be used for locations with water depths ≤ 2m; All equipment should be designed and maintained to minimise the risk of silt and other contaminants 							

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines	Implementation Status
					D	C	O		
6.11.23		<p>being released into the water column or deposited in locations other than designated location;</p> <ul style="list-style-type: none"> • Mechanical grabs should be designed and maintained to avoid spillage and should seal tightly while being lifted; • No trailing suction hopper dredgers would be deployed for the dredging of marine mud; • All vessels should be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; • All pipe leakages should be repaired promptly and plant shall not be operated with leaking pipes; • Before moving the vessels which are used for transporting dredged materials excess material should be cleaned from the decks and exposed fittings of vessels and the excess materials should never be dumped into the sea except at the approved locations; • Adequate freeboard should be maintained on barges to ensure that decks are not washed by wave action; • The Contractor should monitor all vessels transporting material to ensure that no dumping outside the approved location takes place. The contractor should keep and produce logs and other records to demonstrate compliance and that journey times are consistent with designated locations and copies of such records should be submitted to the engineer; • All bottom dumping vessels should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; • Loading of barges and hoppers should be controlled to prevent splashing of dredged material to the surrounding water, and vessels should not be filled to a level which will cause overflowing of material or polluted water during loading or transportation; and • The engineer may monitor any or all vessels transporting material to check that no dumping outside the approved location nor loss of material during transportation takes place. The contractor should provide all reasonable assistance to the engineer for this purpose. <p>In addition, baseline water quality monitoring before commencement of the marine works shall be carried out in the nearby waters to obtain baseline information for subsequence monitoring. Regular and frequent water quality monitoring shall be carried out throughout the whole construction period to ensure the water quality during construction is well within the established environmental guidelines and standards.</p>							
6.11.24		<p>Silt Curtain</p> <p>In order to minimize impacts during the whole construction period of desalination plant's intake and discharge outfall, silt curtains should be utilized to minimize sediment migration. The Contractor shall be responsible for the design, installation and maintenance of the silt curtains to minimize the impacts on the water quality and the protection of water sensitive receivers. The design and specification of the silt curtains shall be submitted by the Contractor to the Engineer for approval. Area of the silt curtain to enclose the works area should be minimized in order to reduce the disturbance of ecological sensitive areas nearby.</p>							
6.11.25		<p>A typical suspended solids reduction of 75% can be achieved with the incorporation of silt curtain. Two-layer silt curtains have generally been used for dredging projects of larger scale to further ensure this reduction. However, as the scale of proposed project is considered small, it is recommended to use single layer silt curtain which can achieve a minimum 75% suspended solids reduction.</p>							
6.11.26		<p>Silt curtains shall be formed from tough, abrasion resistant, permeable membranes, suitable for the purpose, supported on floating booms in such a way as to ensure that the sediment plume shall be restricted to within the limit of the works area.</p>							
6.11.27		<p>The silt curtain shall be formed and installed in such a way that tidal rise and fall are accommodated, with the silt curtains always extending from the surface to the bottom of the water column. The removal and reinstallation of such curtains during typhoon conditions shall be as agreed with the Director of Marine Department.</p>							
6.11.28		<p>The Contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic. Any damage to the silt curtain shall be repaired by the Contractor promptly and the works shall be stopped until the repair is effected to the satisfaction of the Engineer.</p>							

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines	Implementation Status
					D	C	O		
6.11.29		<u>General Construction Activities</u> Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering adjacent watercourse. Stockpiles of construction materials should be kept covered when not being used.	Work site / During the construction period	All contractors		√		ProPECC PN 1/94; WPCO; TM-Effluent Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Water	The Contractor was submitted the disposal records for the general refuse and construction waste since the last reporting month. The major disposal waste was vegetation.
6.11.30		Oils and fuels should only be stored/handled in designated areas with pollution prevention facilities. Oil interceptors need to be regularly inspected and cleaned to avoid wash-out of oil during storm conditions.							Not observed
6.11.32		All fuel tanks should be provided with locks and be sited on sealed areas within bunds of capacity equal to 110% of the storage capacity of the largest tank.							Not observed
6.11.33		Good housekeeping practices and staff training are required to minimize careless spillage and keep the work space in a tidy and clean conditions at all times. Accidental spillage of chemicals in the works area would directly affect the aquatic environment. It is recommended that the Contractor should develop management procedures for chemical and implement an emergency plan to deal with chemical spillage in case of an accident.	Work site / During the construction period	All contractors		√		ProPECC PN 1/94; WPCO; TM-Effluent Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Water	No observed
6.11.34		Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The chemical waste should be transported to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility at Tsing Yi. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes details the requirements to deal with chemical wastes.							No waste disposal recorded was submitted by the Contractor.
6.11.35		<u>On-Site Sewage Effluents</u> In order to prevent sewage effluents affecting water courses, the following mitigation measures should be provided by the Contractor:- <ul style="list-style-type: none">Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site to handle sewage from the workforce;The toilet facilities should be more than 30 m from any watercourse;Temporary storage tank should be provided to collect wastewater from kitchens or canteen, if any;A licensed waste collector should be deployed to clean the chemical toilets on a regular basis which will be and disposed of at government sewage treatment facilitiesRegular environmental audit on the construction site can provide an effective control of any malpractices and can achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures; andNotices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the project.							
									√. A sewage treatment plant was provided at the site office. Few mobile toilets were available on site at southern portion of the construction site.
									No canteen was available..
									√
									√
									No observed
6.11.36		<u>Concrete batching plant</u> All water used within the concrete batching plant will be collected, stored and recycled to reduce resource consumption. This includes water used in the concrete batching process, truck cleaning, yard washing and dust suppression spraying. All spent dust suppression effluent will be collected and recycled. To minimize the potential water quality impacts that may generate from the concrete batching plant, a drainage system should be provided in this site. The batching plant area should be channelled to collect concrete washings for further treatment before reuse on-site and prevent concrete washings from directly entering the any stream or seawater. Site runoff should also be collected through the drainage system. To minimize the generation of contaminated site runoff from concrete production area, the concrete batching plant should be sheltered.	Work site / During the construction period	All contractors		√		ProPECC PN 1/94; WPCO; TM-Effluent Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Water	The concrete batching plant is operating during the reporting month. Temporary drains to cut-off the water from haul road was not observed. Concrete bund was provided at the downstream periphery end of the site to confine the wastewater. There was a sedimentation pit within the concrete batching plant area to collect the wastewater and used as a wheel waste facilities. The collected water will pump to sedimentation columns for recycle use. No discharge was expected from the plant. The site condition of the concrete batching plant was satisfactory.
6.11.37		Concrete washings and site runoff should be pumped to a wastewater treatment system with a sedimentation unit for removal of suspended solids such as waste concrete particles, silt and grit in order to achieve the discharge standards. pH adjustment should also be applied if the pH value of the collected concrete washings and site runoff is higher than the pH range specified in the discharge licence. This can be achieved by adding neutralizing regents, i.e. acidic additive. A discharge licence should be applied from EPD for discharge of effluent from the site. Analysis of effluent quality may be required as one of the licensing conditions of the discharge licence. The Contractor should collect effluent samples at the final discharge point in accordance with the required sampling frequency to test the specified water quality parameters. The quality of the discharged effluent should comply with the discharge licence requirements.							

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines	Implementation Status
					D	C	O		
6.11.38		It is recommended to reuse the treated effluent for dust suppression and general cleaning on site, wherever possible.							
6.11.39		The drainage system should be maintained on a regular basis to remove the deposits on the channels. The sedimentation and pH adjustment systems should also be checked and maintained by competent persons to ensure that the systems are functioning properly at all times.							
6.11.40		The deposited sediment will be dewatered and the dry matter will require disposal off-site. The estimated maximum concentrate batching operation period during construction is 20 months.							
6.11.41		Sand, gravel and other bulk materials will be delivered from the production area by conveyor boats or derrick barges to the temporary barging point, and the material will then be loaded onto dump trucks by loaders and delivered to the on-site storage areas.							
		Regular environmental inspections should be conducted to check the environmental performance of daily operation. These inspections will ensure proper installation and maintenance of pollution control measures, such as checking of sedimentation basin, wastewater recycling facility and enclosure of stockpiles, and the implementation of other mitigation measures.							

* All recommendations and requirements resulted during the course of EIA/EA Process, including ACE and/or accepted public comment to the proposed project.

** Des - Design, C = Construction, O = Operation

N/A Not applicable

Table 3 Implementation Schedule of Waste Management Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
Waste Management - Construction Phase									
7.7.2		Good site practice to minimize solid waste generation, including: <ul style="list-style-type: none">nomination of approved personnel, such as a site manager, to be responsible for good site practices, and making arrangements for collection of all wastes generated at the site and effective disposal to an appropriate facility;training of site personnel in proper waste management and chemical waste handling procedures;provision of sufficient waste disposal points and regular collection for disposal;appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;a Waste Management Plan should be prepared and should be submitted to the Engineer for approval. One may make reference to ETWB TCW No. 15/2003 for details; anda recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed.	Work site / During the construction period	All Contractors		√		WDO; Public Health and Municipal Services Ordinance; The Land (Miscellaneous Provisions) Ordinance; ETWB TCW NO. 15/2003.	√ The Contractor was requested to submit the waste generation quantity and disposal from the construction site for ET and ER review. Disposal records was submitted by the Contractor since last reporting month.
7.7.4		Good management and control can prevent the generation of significant amounts of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: <ul style="list-style-type: none">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;separate labelled bins shall be provided to segregate aluminium cans from other general refuse generated by the work force, and to encourage collection of by individual collectors;any unused chemicals or those with remaining functional capacity shall be recycled;maximising the use of reusable steel formwork to reduce the amount of C&D material;prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill;proper storage and site practices to minimise the potential for damage or contamination of construction materials;plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste;minimize over ordering of concrete, mortars and cement grout by doing careful check before ordering.	Work site / During the construction period	All Contractors		√		WDO; Public Health and Municipal Services Ordinance; The Land (Miscellaneous Provisions) Ordinance; ETWB TCW NO. 15/2003.	
									Not observed
									Not observed
									Not observed
									√
									Not observed
									Not observed
									√
7.7.6		<u>Site Clearance Waste</u> Scrub and other vegetation will be stripped for the tees, fairways, greens and access roads. The normal route for disposal for such material is landfill but in this case it is proposed that vegetation is passed through a "chipper" to break down the material into a medium that can be used as mulch / compost and provide a seed-bank for natural hydroseeding of exposed areas.	Work site / During the construction period	All Contractors		√		WDO; Public Health and Municipal Services Ordinance ; The Land (Miscellaneous Provisions) Ordinance; ETWB TCW NO. 15/2003.	√ The Contractor was reminded to dispose/reuse the vegetation stockpiles and construction waste stockpiles properly.
		7.7.7 Non-inert materials should be kept separate and reused on-site as fill in preference to disposal at public filling areas which are operated by CEDD or disposal at landfill.							√
7.7.8		<u>Excavated Materials</u> Material generated during open cut works, and access route formation will comprise rock and soil and all this material will be reused in the site shaping	Work site / During the construction period	All Contractors		√		WDO; Public Health and Municipal Services Ordinance; The Land (Miscellaneous	√

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		process. It is anticipated that there will be no material requiring disposal off-site in public filling areas.						Provisions) Ordinance; ETWB TCW NO. 15/2003.	
7.7.9		<u>Construction and Demolition (C&D) Material</u> The C&D material generated from the site formation and demolition works should be sorted on-site into inert C&D material and C&D waste. In order to minimise the impact resulting from collection and transportation of C&D material for off-site disposal, the excavated material comprising fill material should be reused on-site as backfilling material. C&D waste, such as wood, plastic, steel and other metals should be reused or recycled and, as a last resort, disposed of to landfill. A suitable area(s) should be designated within the site for temporary stockpiling of C&D material and to facilitate the sorting process. The stockpiling/sorting area should be located far away from the identified sensitive receivers.	Work site / During the construction period	All Contractors		√		WDO; Public Health and Municipal Services Ordinance; The Land (Miscellaneous Provisions) Ordinance; ETWB TCW NO. 15/2003.	√
7.7.10		<u>Site fencing</u> Some site fencing may be required. Attention should be paid to WBTC No. 19/2001 which introduce a new policy requiring the use of metallic site hoardings and signboards in order to reduce the amount of timber used on construction sites.	Work site / During the construction period	All Contractors		√		WBTC No. 19/2001	√ Plastic fencing / metallic hoarding was used on site.
7.7.12		<u>Chemical Waste</u> Where the construction processes produce chemical waste, the Contractor must register with EPD as a Chemical Waste Producer. Wastes classified as chemical wastes are listed in the <i>Waste Disposal (Chemical Waste) (General) Regulation</i> . These wastes are subject to stringent disposal routes. EPD requires information on the particulars of the waste generation processes including the types of waste produced, their location, quantities and generation rates. A nominated contact person must be provided.	Work site / During the construction period	All Contractors		√		Waste Disposal (Chemical Waste) (General) Regulation	Chemical waste storage area was not available on site. Improper storage of chemicals was observed near to the wastewater treatment plant.
7.7.14		Hard standing surfaces draining via oil interceptors shall be provided in works area compounds. Interceptors will be regularly emptied to prevent release of oils and grease into the surface water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain. Oil and fuel bunkers should be bunded to prevent discharge due to accidental spillages or breaches of tanks. Waste collected from any grease traps should be collected and disposed of by a licensed contractor.							
7.7.15		Any construction plant which is likely to leak oil, should have absorbent inert material e.g. sand, placed beneath it. This material should be replaced on a regular basis and the contaminated material should be stored in a designated, secure place. Any sand used for soaking oil waste is classified as chemical waste and should be disposed of in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulations</i> .							
7.7.16		Lubricants and waste oils are likely to be generated during the maintenance of vehicles and mechanical equipment. Used lubricants will be collected and stored in individual containers which are fully labelled. The containers should be stored in a designated secure place. If possible such waste should be sent to oil recycling companies; there are also companies which collect empty oil drums for reuse or refill.							
7.7.17		Oil and lubricant wastes are classified as chemical wastes, and if not recycled, should be collected by licensed collector and should be treated at the Chemical Waste Treatment Centre, Tsing Yi, or other sites licensed for disposal of waste oil. A trip ticket system operates to control the movement of such chemical waste and tickets have to be produced upon the request of EPD.							
7.7.18		Some paints and solvents are classified as chemical waste and, if used on site, will be subject to the stringent requirements of the <i>Waste Disposal</i>							

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
7.7.19		(<i>Chemical Waste</i>) (<i>General</i>) <i>Regulation</i> . Empty paint cans should be recycled or collected as waste. Any dry paint waste should be swept up and collected in containers for disposal. No lubricants, oils, solvents or paint products should be allowed to discharge into water courses, either by direct discharge, or as contaminants carried in surface water runoff from the construction site.							
7.7.20		<u>Sewage</u> An adequate number of portable toilets should be provided for the on-site construction workforce. The portable toilets shall be maintained in a state that will not deter the workers from using them.	Work site / During the construction period	All Contractors		√		WDO; Public Health and Municipal Services Ordinance; The Land (Miscellaneous Provisions) Ordinance; ETWB TCW NO. 15/2003.	Few portable toilets were not available at remote area to the site office. Site office with provision of flushing toilets for workers and staffs.
7.7.21		<u>General Refuse</u> 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. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.	Work site / During the construction period	All Contractors		√		WDO; Public Health and Municipal Services Ordinance; The Land (Miscellaneous Provisions) Ordinance; ETWB TCW NO. 15/2003.	Temporary stored on site without properly covered and not dispose properly during the reporting month.
7.7.22		Solid and liquid wastes will be generated by the construction workers during the clearance/construction period. The refuse (mainly non-recyclable materials) will be collected regularly in black refuse bags and delivered to the existing solid waste disposal system and transferred to landfill for disposal.							
7.7.23		<u>Marine Sediments</u> The basic requirements and procedures for dredged mud disposal are specified under the ETWB TCW No. 34/2002. The management of the dredging, use and disposal of marine mud is monitored by the Marine Fill Committee (MFC), while the licensing of marine dumping is the responsibility of the Director of Environmental Protection (DEP). The dredged marine sediments will be loaded onto barges and transported to the designated disposal site.	Marine Dredging area / During the construction period	All Contractors		√		ETWB TCW NO. 34/2002.	No dredging works was carried out during the reporting month. No dumping licence was applied by the Contractor.
7.7.25		During transportation and disposal of the dredged marine sediments, the following measures should be taken to minimise potential impacts on water quality: <ul style="list-style-type: none"> Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved. Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP. 							

* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

** D=Design, C=Construction, O=Operation; N/A = Not applicable

Table 4 Implementation Schedule of Ecological Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
Construction Phase									
8.7.1		<u>Terrestrial Ecology</u> Haul roads would be located on future fairway and cart paths alignments to minimise temporary disturbance of habitats.	Work site / During the construction period	All Contractor		√		-	√
8.6.39		Avoid disturbance of stream bed during the construction of the permanent bridges by using precast unit of the bridge segments transported from other locations and installed to the proposed locations.	Stream crossing/ During the construction period	All Contractor		√		-	Vegetation clearance at Stream B2 buffer zone during the reporting month.
8.7.4		Good site practice. Construction materials must be stored at locations away the stream courses. Site runoff would be desilted in settling ponds to reduce the potential for suspended sediments, organics and other contaminants to enter stream and marine environment.	Work site / During the construction period	All Contractor		√		-	Silt runoff and silt deposit at the stream bed in particular Stream C was recorded.
8.9	Table 4.1	Streams B, C, and D will be monitored monthly during the construction phase to determine the status of <i>Caridina trifasciata</i> (shrimp) and <i>Nanhaipotamon hongkongensis</i> (freshwater crab). Stream condition will be recorded with reference to the protective buffer zone. Encroachment onto the buffer zone will be reported to the ER/ET. Sheet piling will be installed at the buffer zone perimeter as needed to prevent further encroachment. Stream sedimentation will be reported to the ER/ET, the agent causing sedimentation will be discovered, and sedimentation will be stopped.	Stream B, C & D/ During the construction phase	All Contractor		√			Monitoring has been carried out during this reporting month. The Contractor was not yet removed the newly deposited rock from rock fill of Hole 17 (by hand) at downstream A during this reporting month. No rectify work has been carried out within the stream B2 buffer zone was observed.
9.7.22		<u>Marine Ecology</u> The temporary drainage system, which would receive flows from all areas subject to earth works, would collect all site runoff. The collected runoff would be retained for turf grass irrigation.	Work site / During the construction period	All Contractor		√			On-going with enhancement on the effectiveness of temporary drainage system for silty runoff. Turf establishment was not started yet.
9.8.5		Dredging for the two pipelines for the desalination plant would be require 50 days and would be scheduled to the extent possible from January to April 2006. This would avoid the flowering season for the seagrass <i>Halophila ovalis</i> , i.e. November and December (Fong et al. 2005) and the spawning season for corals, i.e. July to October (Lam 2000; Storlazzi, C. D. 2004).	Dredging area/ during dredging period	All Contractor		√			N/A
9.8.2	4.2.12	Coral colonies within the silt curtain, in particular the 79 colonies identified during the coral mapping survey, (see Appendix A9.2) would be transplanted. Prior to commencement of any marine construction works for the proposed project, the affected coral colonies would be tagged using plastic labels and a number would be assigned to each. The tagged corals in the dredging area at D2 site will be transplanted to the bedrock area about 80 m south of the ferry pier. All these transplantation works should be conducted by experienced marine ecologist(s) and should be completed before the commencement of marine construction works.	Dredging area/Prior to dredging	All Contractor		√			Coral transplantation at Site D2 will be commenced in the next reporting month.
9.8.5		Silt curtains will be deployed during dredging for the desalination plant. With the deployment of silt curtains around the dredging area for the desalination plant, adverse water quality impacts associated with the dredging and backfilling would be controlled to acceptable levels.	Dredging area/Prior to dredging	All Contractor		√			N/A
		All anchoring points/structures of the floating pier would be located on the shore and/or at least 40m seaward to avoid the coral colonies at Site B2 which are concentrated within the first 15m seaward from the coastline and none recorded over 35m seaward.	Temporary barging point/ during construction of the barging point	All Contractor		√			Floating pontoon was located at designated location according to EP during the reporting month.
		The location of the floating pier would also be shifted from the original location for barging point at Zone 2 and Zone 3 of the mapping area in Site B2 (see Figure 2 in Appendix A9.2), to Zone 5 to further protect corals. Impacts to corals are not expected.	Temporary barging point/ during the entire construction phase	All Contractor		√			√

* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

** D=Design, C=Construction, O=Operation

N/A Not applicable

Table 5 Implementation Schedule of Fisheries Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
10.8.2		<u>Construction phase</u> In addition to the temporary drainage system which would collect site runoff for re-use for irrigation, site runoff would also be controlled by general site practices during the construction period.	Work site / During the construction period	All Contractor		√		N/A	Not observed
10.8.3		Silt curtains will be deployed during dredging for the desalination plant. With the deployment of silt curtains around the construction area, adverse water quality impacts associated with the dredging and back-filling would be controlled.	Work site / During the construction period	All Contractor		√		N/A	No dredging work for the desalination plant was carried out during the reporting month.
10.7.12		The majority of the heavy construction works, in particular, the cut and fill earth works, would be conducted within the 2005-2006 dry season.	Work site / During the construction period	All Contractor		√		N/A	Master Programme indicated that excavation will carried out throughout the year 2006 to mid 2007.

* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

** D=Design, C=Construction, O=Operation

N/A Not applicable

Table 6 Implementation Schedule of Landscape and Visual Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
Landscape and Visual Impact - Construction Phase									
Table 12.13	MC1	Site offices and construction yards: <ul style="list-style-type: none">Site offices and the construction yard shall be decommissioned after construction.Haul roads shall be decommissioned and restored with hydroseeding works after construction.	All site offices	All contractors		√		EIAO Guidance Note No. 8/2002	To commence
Table 12.13	MC2	Height of site offices: <ul style="list-style-type: none">The height of site offices shall be controlled in order to avoid visual impacts.	All site offices	All contractors		√		EIAO Guidance Note No. 8/2002	Complied. A two-storey high site office painted in green color has been constructed.
Table 12.13	MC3	Hoarding and screening: <ul style="list-style-type: none">Where practical the site offices areas, construction yards and storage areas shall be screened using olive green coated hoarding or vegetation around the peripheries of the works area until the completion of relevant construction phases.	All site office and construction yard areas.	All contractors		√		EIAO Guidance Note No. 8/2002	Complied. Green hoarding erected.
Table 12.13	MC4	Construction plant and building material: <ul style="list-style-type: none">Shall be orderly and carefully stored in order to appear neat and avoid visibility from outside where practical;Excess materials shall be removed from site as soon as practical;All construction plant shall be removed from site upon completion of construction works.	In all construction yards.	All contractors		√		EIAO Guidance Note No. 8/2002	Complied.
Table 12.13	MC5	Construction light: <ul style="list-style-type: none">To be oriented away from the viewing location of VSRs; andAll lighting shall have frosted diffusers and reflective covers.While construction at night might be required from time to time, this should be controlled and minimised.	All construction lights.	All contractors		√		EIAO Guidance Note No. 8/2002	No construction lights at present.
Table 12.13	MC6	Vegetation: <ul style="list-style-type: none">Temporary construction sites shall be restored to standards as good as, or better than, the original condition. In this respect, areas that are not covered by golf course grassing works shall be hydro seeded;The potential for soil erosion shall be reduced at the construction stage by minimizing the extent of vegetation disturbance on site and providing a protective cover over exposed ground; andNo plant or building materials shall be stored under the dripline of retained trees and no vehicle movement or other construction activities like washing, concrete mixing etc shall be carried out under the dripline of trees.	All temporary construction sites.	All contractors		√		EIAO Guidance Note No. 8/2002	Complied. Hydroseeding has been carried out for erosion control. Hydroseeding at site office are dead and shall be re-placed. NOT complied. Building material has been stored under dripline of trees.
Table 12.13	MT1	Compensation for losses: <ul style="list-style-type: none">The tree compensation to tree loss ratio shall be between 1:2 and 1:3;At least 700 new trees shall have be of light standard or larger size.	As shown on mitigation measures plans.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.
Table 12.13	MT2	The majority of compensation species shall comprise species that already occurs within the LIA boundaries;	General.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.
Table 12.13	MT3	Where practical, trees that require removal shall be transplanted on Site;	General.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: Partial completed of transplantation works on site.
Table 12.13	MT4	New trees shall be planted in groups in order to screen visual impacts and to provide additional shade at the administration building, rain shelters and halfway houses.	As shown on mitigation measure plans.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
Table 12.13	MT5	Tree Planting on Slopes: <ul style="list-style-type: none"> New slopes with a gradient larger than 30° shall have whip tree planting. Such whip trees shall comprise tree species with shrub-like characteristics, such as <i>Gordonia axillaries</i> (大頭茶) and <i>Raphiolepis indica</i> (車輪梅). 	General.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.
Table 12.13	MT6	Tree planting works at the hill where the desalination plant will be located shall be carefully positioned in order to represent its original profile.	At the desalination plant.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: complied Construction Stage : Commence
Table 12.13	MT7	Tree Preservation: <ul style="list-style-type: none"> No tree shall be transplanted or felled without prior approval by relevant Government departments in accordance with WBTC 24/94, WBTC 14/2002 and ETWB 2/2004; All trees that are marked for retention shall be fenced off with a 1.2m high fence around the dripline of trees or larger area; Transplant preparation works shall be carried as soon as possible after commencement of construction. Rootball and crown pruning shall be carried out over at least 1 month. 	All areas with existing trees	All contractors	√	√		WBTC 24/94, WBTC 14/2002, ETWB 2/2004	Design Stage: Tree felling approved. Construction Stage : Some trees were found damaged or dead. Tree transplantation commenced.
Table 12.13	MT8	Buffer Areas <ul style="list-style-type: none"> For streams the width of the buffer zones will be 20m from the stream bank. The only exception would be the buffer zone in the reach of upper tributary of stream B lying between the two parts of Hole 10, where the buffer will zone will be 5m, the dry tributary of stream B that will be converted to an underground culvert and the secondary tributary of stream A that will also be converted to an underground culvert. No construction activities will be allowed in the buffer zones, except for site formation works, which are required for the construction of bridge footings. 	At streams	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: complied Construction Stage: Commenced and buffer zone intrusion at Stream B2 was recorded.
Table 12.13	MS1	Bulk hydroseeding: <ul style="list-style-type: none"> Bulk site formation works shall be followed with bulk hydroseeding as soon as practical. 	General.	All contractors		√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: Temporary hydroseeding commence.
Table 12.13	MS2	Grassing: <ul style="list-style-type: none"> In the case of golf course areas, grassing shall be carried out as soon as practical after sanding and shaping; and Sanding, shaping and grassing works shall be phased in sections. 	At proposed grassing areas.	All contractors		√		EIAO Guidance Note No. 8/2002	To commence.
	MS3	Restoration: <ul style="list-style-type: none"> In the case of residual areas that were disturbed during construction, which will not be part of the golf course areas, detailed site formation works and shaping shall be followed by hydroseeding and shrub planting as soon as practical; and The hydroseeding mix shall be composed of the following grass species: <i>Eragrostis curvula</i> <i>Lolium Perenne</i> <i>Neyraudia reynaudiana</i> <i>Pennisetum purpureum</i>; and the following shrub / small tree species: <i>Gordonia axillaries</i>, <i>Raphiolepis indica</i> and <i>Rhodomyrtus tomentosa</i>. 	At all residual areas.	All contractors		√		EIAO Guidance Note No. 8/2002	To commence.
Table 12.13	ME1	Screening: <ul style="list-style-type: none"> Bridges and pumping stations shall be screened by tree and shrub planting; and Retaining wall shall be covered with climber plants. 	All bridges and pumping stations.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.
Table 12.13	ME2	Abutments of bridges shall be surfaced with stone of volcanic origin with a colour and texture similar to that of rock in the surrounding landscape;	All bridges.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
Table 12.13	ME3	Above-ground walls and foundations of pumping stations shall be surfaced with stone of volcanic origin with a colour and texture similar to that of rock in the surrounding landscape.	All pumping stations.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.
Table 12.13	ME4	Above-ground covers of pumping stations shall have an olive green coating.	All pumping stations.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.
Table 12.13	ME5	The desalination plant shall be located within the hill behind the pier. Slope cutting of this hill shall have a natural appearance with hydroseeding cover.	As shown on the mitigation measure plans.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: Site formation is being carried out.
Table 12.13	ME6	Water tanks shall be located below surface level. Above-ground components shall be coated in olive green.	All water tanks.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.
Table 12.13	MB1	Extensions of the clubhouse shall have a surface cover that is in visual harmony with the clubhouse itself.	All new extensions of the clubhouse.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.
Table 12.13	MB2	Shrub planting shall be implemented in front of the new golf cart parking area in order to screen low-level views.	The new golf cart parking area.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.
Table 12.13	MB3	Tree and shrub planting shall be implemented on the peripheries of the maintenance building and its extensions.	At the maintenance building.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.
Table 12.13	MB4	Halfway houses and rain shelters shall be surfaced with either stone or beige and olive green paint.	At all halfway houses and rain shelters.	All contractors		√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: To commence.

* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

** D=Design, C=Construction, O=Operation

N/A Not applicable

Table 7 Implementation Schedule of Cultural Heritage Mitigation Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
Construction Phase									
Table 13.4		Wan Chai Archaeological Site - Archaeological Watching Brief	Site formation and construction works	All Contractors		√		EIAO	√ (Part of Hole 2 mainly, Holes 11, 12, 14, 15 & 16 will be carried out starting from next reporting month).
Table 13.4		Grave #1 – Preservation in-situ - Fenced off three metre buffer zone around the grave	Site formation and construction works	All Contractors		√		EIAO	Buffer zone fencing was provided around at Grave 1.
Table 13.4		Grave #5 - Preservation by record; and recovery of structural elements (if required by AMO)	Construction phase (prior to commencement of works)	All Contractors		√		EIAO	The revised golf course design will not disturb the Grave 5 and will keep in-situ. No preservation record for this grave is required.
Table 13.4		Grave #20 - Preservation by record; and recovery of structural elements (if required by AMO)	Construction phase (prior to commencement of works)	All Contractors		√		EIAO	The preservation by record was completed in 23 rd October 2006 and submitted to AMO for record.
Table 13.4		Any, as of yet unidentified graves at Kap Lo Kok. If a grave is found works will stop in the immediate vicinity of the grave until it can be inspected by AMO staff.	Site formation and construction works	All Contractors		√		EIAO	√

* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.
** D=Design, C=Construction, O=Operation
N/A Not applicable

Table 8 Implementation Schedule of Land Contamination Mitigation Measures

EIA Ref	EM& A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines	Implementation status
					D	C	O		
Land Contamination - Construction Phase									
11.9.2		<p>Since the exact cut areas on site during construction by the Contractor have not been determined at this stage, the Contractor should implement the suitable precautions and preventive measures for the discovery of buried or abandoned ordnance during the construction. Moreover, it is recommended that standard good practice should be implemented during the construction phase in order to minimize any potential exposure to contaminated soils or groundwater. These measures include:</p> <ul style="list-style-type: none">• The Contractor should sweep the area of intended excavation with a metal detector to check any ordnance underneath the ground prior to any excavation.• For any detection of metals under the ground, the Contractor should cease work immediately before confirming the identity of the cause. For any suspect of artillery ordnance, Hong Kong Police Force should be informed.• The use of bulk earth-moving excavator equipment would minimise construction workers’ potential contact with the contaminated materials;• Exposure to any contaminated materials can be minimised by the wearing of appropriate clothing and personal protective equipment such as gloves (when interacting directly with suspected contaminated material), providing adequate hygiene and washing facilities and preventing smoking and eating during such activities;• Stockpiling of contaminated soil should be avoided. If this cannot be avoided, the stockpile of contaminated materials should be segregated from the uncontaminated ones. Moreover, the contaminated materials should be properly covered with waterproof material (e.g. tarpaulin sheet) to avoid leaching of contaminants, especially during rainy season.• Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates should be sealed to prevent any leakage during transport or during wet conditions;• Only licensed waste haulers should be used to collect and transport any contaminated material to an appropriate disposal site and procedures should be developed to ensure that illegal disposal of waste does not occur;• Necessary waste disposal permits should be obtained, as required, from the appropriate authorities, in accordance with the <i>Waste Disposal Ordinance (Cap 354)</i>, <i>Waste Disposal (Chemical Waste) (General) Regulation (Cap 35)</i>, as required;• Records of the quantities of wastes generated and disposed of should be maintained;• Adequate washing facilities should be provided on site; and• In accordance with good construction practice, silt traps should be used to reduce the impact to drainage caused by suspended solids arising from disturbed ground, or any construction materials such as cement and gravel. Groundwater should be disposed of in accordance with the <i>Water Pollution Control Ordinance (Cap 358)</i>.	Work site / During the construction period	All Contractors		√		Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 35); Water Pollution Control Ordinance (Cap 358).	CAR and RAP was approved on 18 th August 2006. The pilot trial of the remedial work was started during the reporting month. The full scale remediation work was carried out during this reporting month. A final site remediation report (FSRR) will be prepared by the Contractor after the completion of the remediation work on site.
11.11.1		Based on preliminary site investigation, the site is considered as a potentially land contaminated site as hotspots of contamination of lead and sulphur were identified. Further investigation for land contamination at this site is therefore required and is detailed in the Contamination Assessment Plan (CAP) of this section to be undertaken prior to commencement of excavation works. A Contamination Assessment Report (CAR) should be prepared and if the results of the site investigation reveal contamination at the subject site, a Remediation Action Plan (RAP) should also be prepared and submitted together with the CAR to EPD for approval.	Work site / During the construction period	All Contractors		√		Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 35); Water Pollution Control Ordinance (Cap 358).	Same as above.

* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

** D=Design, C=Construction, O=Operation; N/A Not applicable

Annex E

Monitoring results

Air Quality

Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung
Monthly EM&A Report

Date		Weather description	Temp (°C)	Relative Humidity (%)	Mean amount of cloud (%)	Total Rainfall (mm)	Wind direction
10 月 25 日	Wed	Sunny periods.	26.3	77	84	Trace	E to NE
10 月 26 日	Thu	Sunny periods with haze.	26	73	72	-	NE
10 月 27 日	Fri	Sunny periods with haze.	25.4	70	65	Trace	NE
10 月 28 日	Sat	Sunny periods with haze.	26.1	68	54	Trace	NE
10 月 29 日	Sun	Sunny periods with haze.	26.2	72	40	Trace	NE
10 月 30 日	Mon	Sunny periods with haze.	25.9	71	44	0.5	NE
10 月 31 日	Tue	Sunny periods with haze.	25.7	63	74	Trace	NE
11 月 1 日	Wed	Sunny periods with dry.	25	47	81	-	NE
11 月 2 日	Thu	Mainly cloudy and dry.	23.6	56	79	-	NE
11 月 3 日	Fri	Mainly cloudy and dry.	23	66	73	Trace	NE
11 月 4 日	Sat	Sunny intervals and dry.	23.9	67	10	-	NE
11 月 5 日	Sun	Sunny periods.	24.2	69	10	-	NE
11 月 6 日	Mon	Fine and dry.	24.9	58	12	-	N to NE
11 月 7 日	Tue	Mainly fine.	23.8	61	18	-	E to NE
11 月 8 日	Wed	Mainly fine.	23.6	68	26	-	E
11 月 9 日	Thu	Fine but hazy.	24.2	75	15	-	E to NE
11 月 10 日	Fri	Fine but hazy.	25	75	16	-	E to NE
11 月 11 日	Sat	Fine but hazy.	26	60	18	-	NE
11 月 12 日	Sun	Mainly fine.	23.3	57	27	-	NE
11 月 13 日	Mon	Mainly cloudy.	23	74	80	Trace	E to NE
11 月 14 日	Tue	Mainly cloudy.	24.5	77	88	0.3	E to NE
11 月 15 日	Wed	Cloudy with a few rain patches.	22	84	95	9.2	E to NE
11 月 16 日	Thu	Mainly cloudy.	22.5	85	89	Trace	E

Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung
Monthly EM&A Report

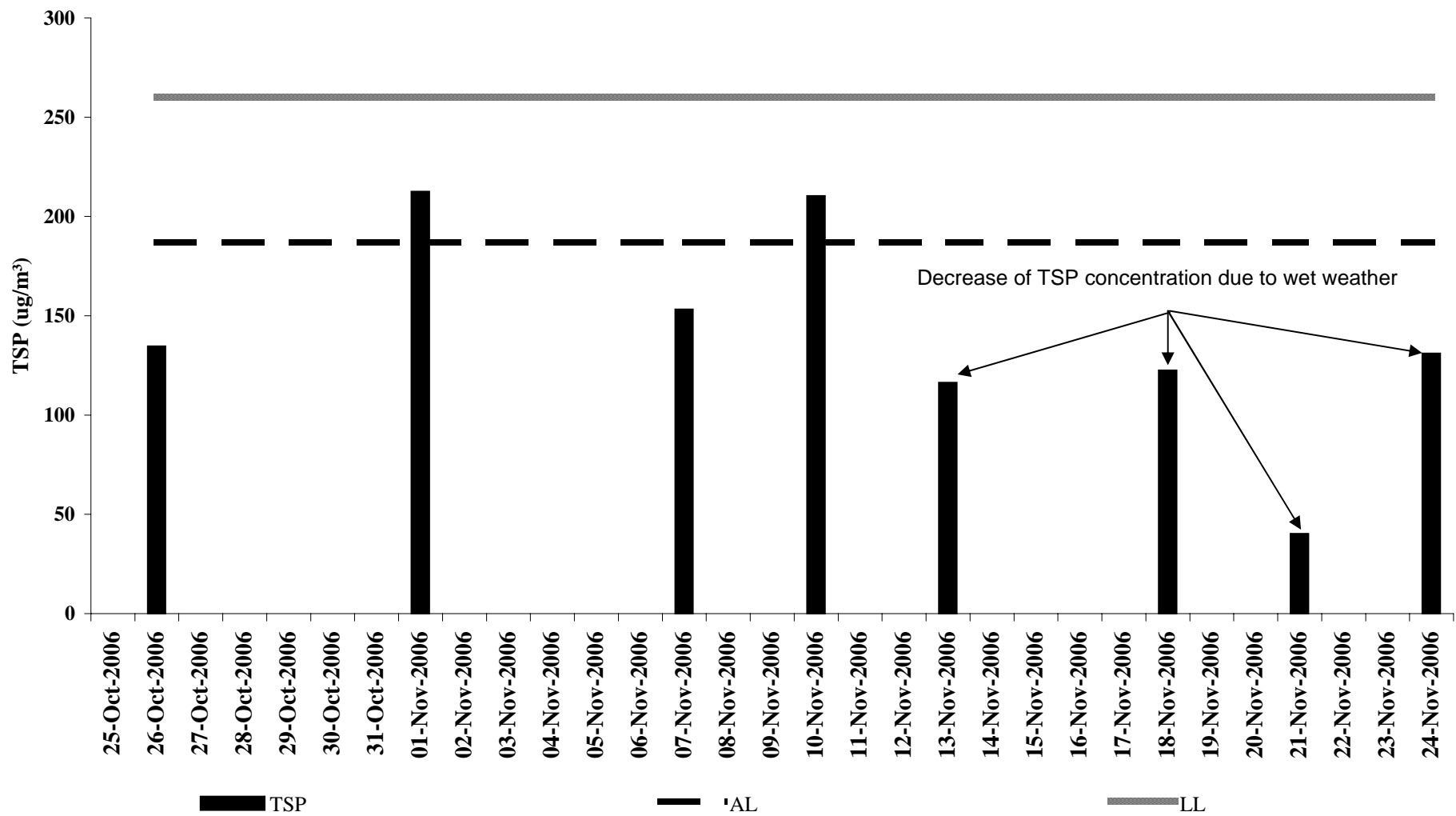
Date		Weather description	Temp (°C)	Relative Humidity (%)	Mean amount of cloud (%)	Total Rainfall (mm)	Wind direction
11 月 17 日	Fri	Mainly cloudy with a few light rain patches.	23.6	84	80	-	E
11 月 18 日	Sat	Cloudy with a few rain patches.	23.9	90	79	1.6	E
11 月 19 日	Sun	Cloudy with a few rain patches.	24.1	86	86	Trace	E
11 月 20 日	Mon	Sunny intervals and haze.	23.6	82	85	Trace	NE
11 月 21 日	Tue	Rainstorms	22	90	95	66.5	NE
11 月 22 日	Wed	Mainly cloudy with few rain patches	20.7	94	95	9.7	E
11 月 23 日	Thu	Mainly cloudy with rain patches	22.1	83	80	3	N
11 月 24 日	Fri	Mainly cloudy with one or two rain patches	22.5	83	88	-	E to NE

Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung
24-hour TSP Monitoring Results at Station GCA B1

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)
	Initial	Final	Initial	Final	Initial	Final						
26-Oct-06	3.5343	3.8011	1.38	1.38	10606.6	10630.6	24.0	134.6	Sunny	0.27	1.38	1982.9
1-Nov-06	3.4942	3.9598	1.52	1.52	10630.6	10654.6	24.0	212.4	Sunny	0.47	1.52	2191.7
7-Nov-06	3.5191	3.8101	1.32	1.32	10654.6	10678.6	24.0	153.1	Sunny	0.29	1.32	1900.8
10-Nov-06	3.5385	3.9993	1.52	1.52	10678.6	10702.6	24.0	210.2	Sunny	0.46	1.52	2191.7
13-Nov-06	3.4844	3.7451	1.56	1.56	10702.6	10726.6	24.0	116.2	Sunny	0.26	1.56	2243.5
18-Nov-06	3.4889	3.7634	1.56	1.56	10726.6	10750.6	24.0	122.4	Fine	0.27	1.56	2243.5
21-Nov-06	3.5067	3.5988	1.60	1.60	10750.6	10774.6	24.0	40.1	Rainy	0.09	1.60	2296.8
24-Nov-06	3.5238	3.7727	1.32	1.32	10774.6	10798.6	24.0	130.9	Fine	0.3	1.3	1900.80
								Min	40.1			
								Max	212.4			
								Average	140.0			

Remark: Bold value indicated an Action level exceedance
 Bold & Italic value indicated an Limit level exceedance

24-hour TSP Monitoring Results at Station GCA B1



Water Quality

M_RO1		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	8:31	5.5	1.0	25.2	30.1	6.9	8.4	1.7
Mid-Ebb	10/11/2006	12:46	5.6	1.0	25.0	29.8	6.8	8.3	1.3
Mid-Ebb	16/11/2006	8:01	5.4	1.0	24.3	29.7	7.1	8.2	2.1
Mid-Ebb	22/11/2006	11:01	5.3	1.0	22.5	26.3	7.2	8.2	2.2

M_RO1		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	14:01	5.7	1.0	25.3	31.1	6.8	8.3	1.5
Mid-Flood	10/11/2006	8:31	5.8	1.0	25.5	31.2	6.6	8.3	1.3
Mid-Flood	16/11/2006	12:51	5.8	1.0	24.6	31.3	6.8	8.2	1.5
Mid-Flood	22/11/2006	8:31	5.7	1.0	22.6	27.5	7.0	8.3	1.9

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

M_RO1		Middle							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006								
Mid-Ebb	10/11/2006								
Mid-Ebb	16/11/2006								
Mid-Ebb	22/11/2006								

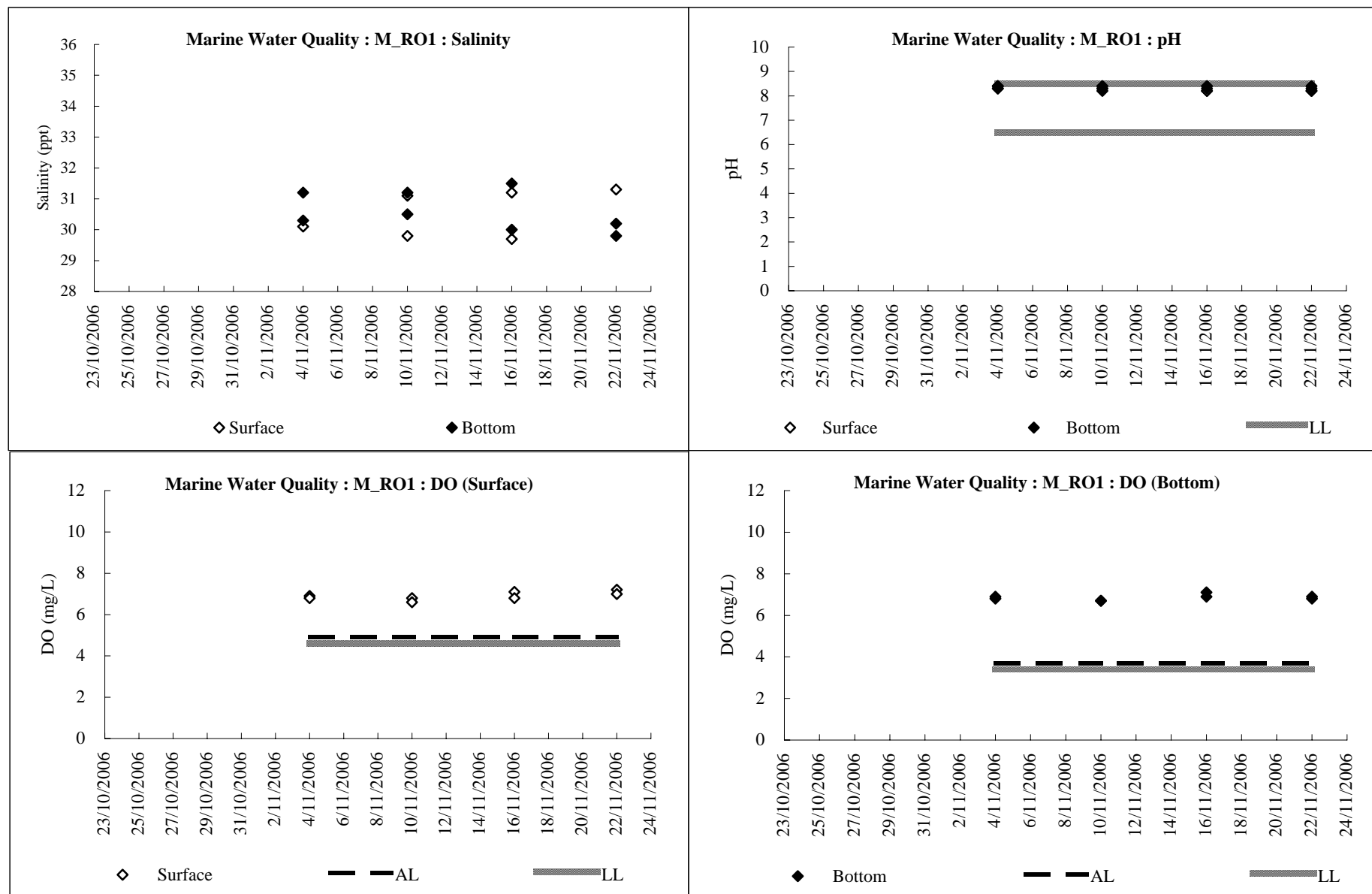
NOT USED

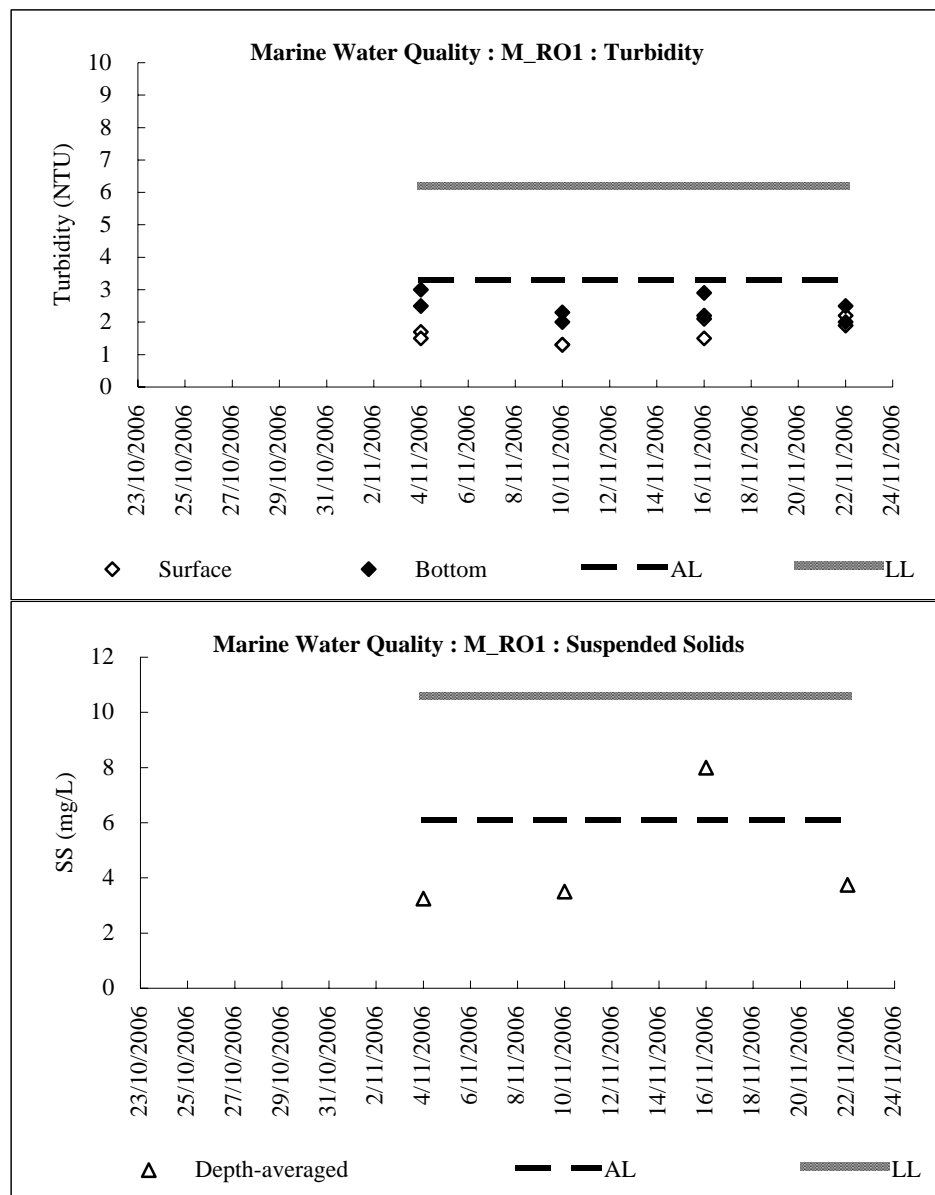
M_RO1		Middle							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
	4/11/2006								
	10/11/2006								
	16/11/2006								
	22/11/2006								

M_RO1		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	8:30	5.5	4.5	25.3	30.3	6.9	8.4	3.0
Mid-Ebb	10/11/2006	12:45	5.6	4.6	25.2	30.5	6.7	8.4	2.3
Mid-Ebb	16/11/2006	8:00	5.4	4.4	24.4	30.0	7.1	8.4	2.9
Mid-Ebb	22/11/2006	11:00	5.3	4.3	24.2	29.8	6.9	8.4	2.5

M_RO1		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	14:00	5.7	4.7	25.3	31.2	6.8	8.3	2.5
Mid-Flood	10/11/2006	8:30	5.8	4.8	25.4	31.2	6.7	8.2	2.0
Mid-Flood	16/11/2006	12:50	5.8	4.8	24.5	31.5	6.9	8.3	2.2
Mid-Flood	22/11/2006	8:30	5.7	4.7	24.5	30.2	6.8	8.2	2.0

	Mid-Ebb			Mid-Flood			Depth-averaged
M_RO1	Surface	Midlle	Bottom	Surface	Midlle	Bottom	SS (mg/L)
4/11/2006	2.0	-	3.0	3.0	-	5.0	3.3
10/11/2006	2.0	-	5.0	4.0	-	3.0	3.5
16/11/2006	8.0	-	6.0	5.0	-	13.0	8.0
22/11/2006	3.0	-	4.0	4.0	-	4.0	3.8





KLW		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	8:42	13.2	1.0	25.1	30.3	6.7	8.3	2.7
Mid-Ebb	10/11/2006	12:57	13.5	1.0	25.3	30.0	6.6	8.3	2.3
Mid-Ebb	16/11/2006	8:12	13.4	1.0	24.2	29.9	7.3	8.2	2.8
Mid-Ebb	22/11/2006	11:12	13.3	1.0	22.5	26.5	7.2	8.3	2.5

KLW		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	14:12	14.1	1.0	25.3	30.8	6.8	8.2	2.5
Mid-Flood	10/11/2006	8:42	14.2	1.0	25.5	31.0	6.6	8.2	2.0
Mid-Flood	16/11/2006	13:02	14.5	1.0	24.9	31.6	7.0	8.1	2.5
Mid-Flood	22/11/2006	8:11	14.3	1.0	23.1	28.3	7.0	8.2	2.3

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

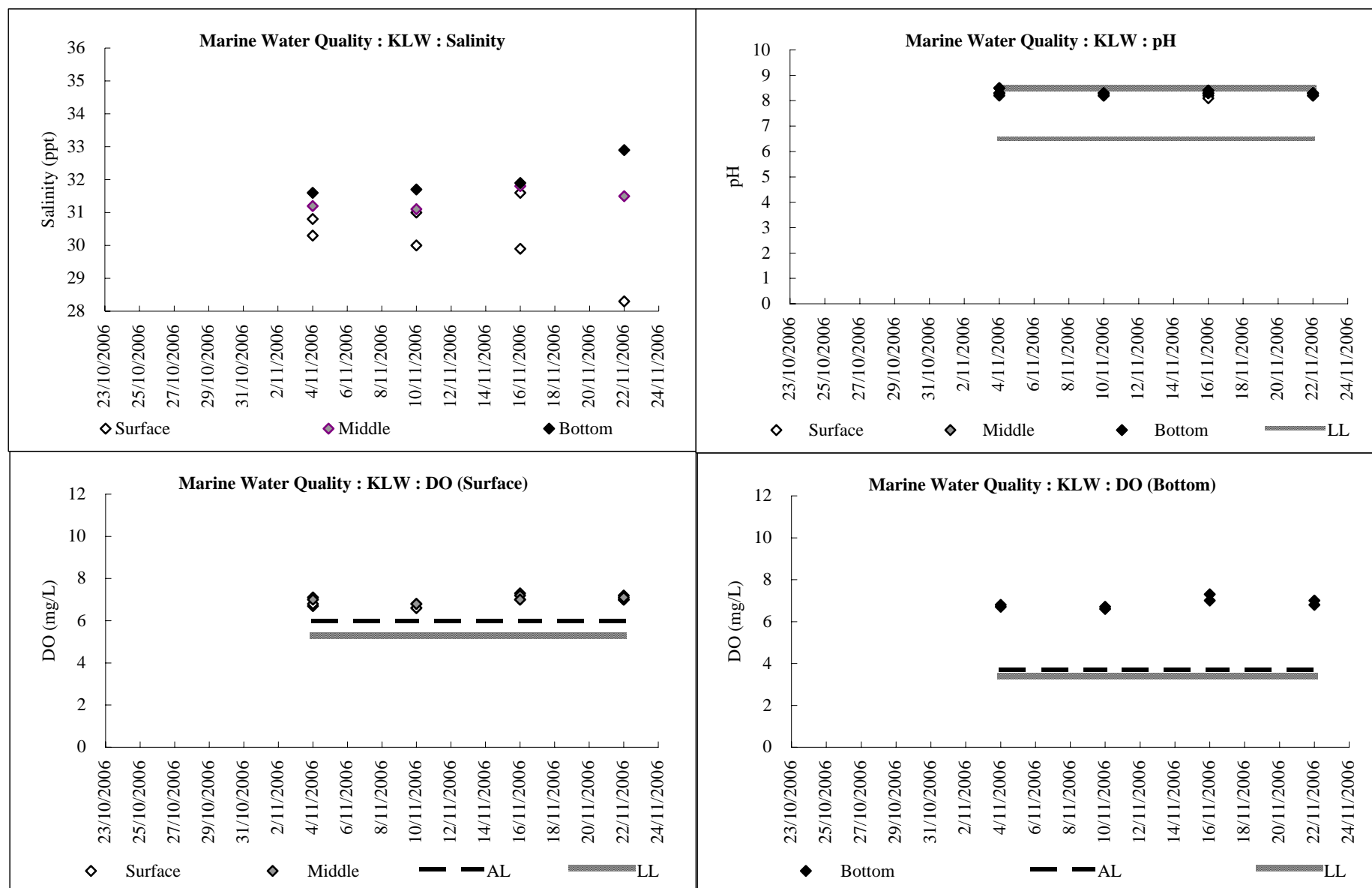
KLW	Middle								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	8:41	13.2	6.6	25.0	30.6	7.1	8.5	2.9
Mid-Ebb	10/11/2006	12:56	13.5	6.8	25.0	30.2	6.8	8.3	2.6
Mid-Ebb	16/11/2006	8:11	13.4	6.7	24.3	30.0	7.2	8.4	1.8
Mid-Ebb	22/11/2006	11:11	13.3	6.7	23.5	30.5	7.0	8.3	2.2

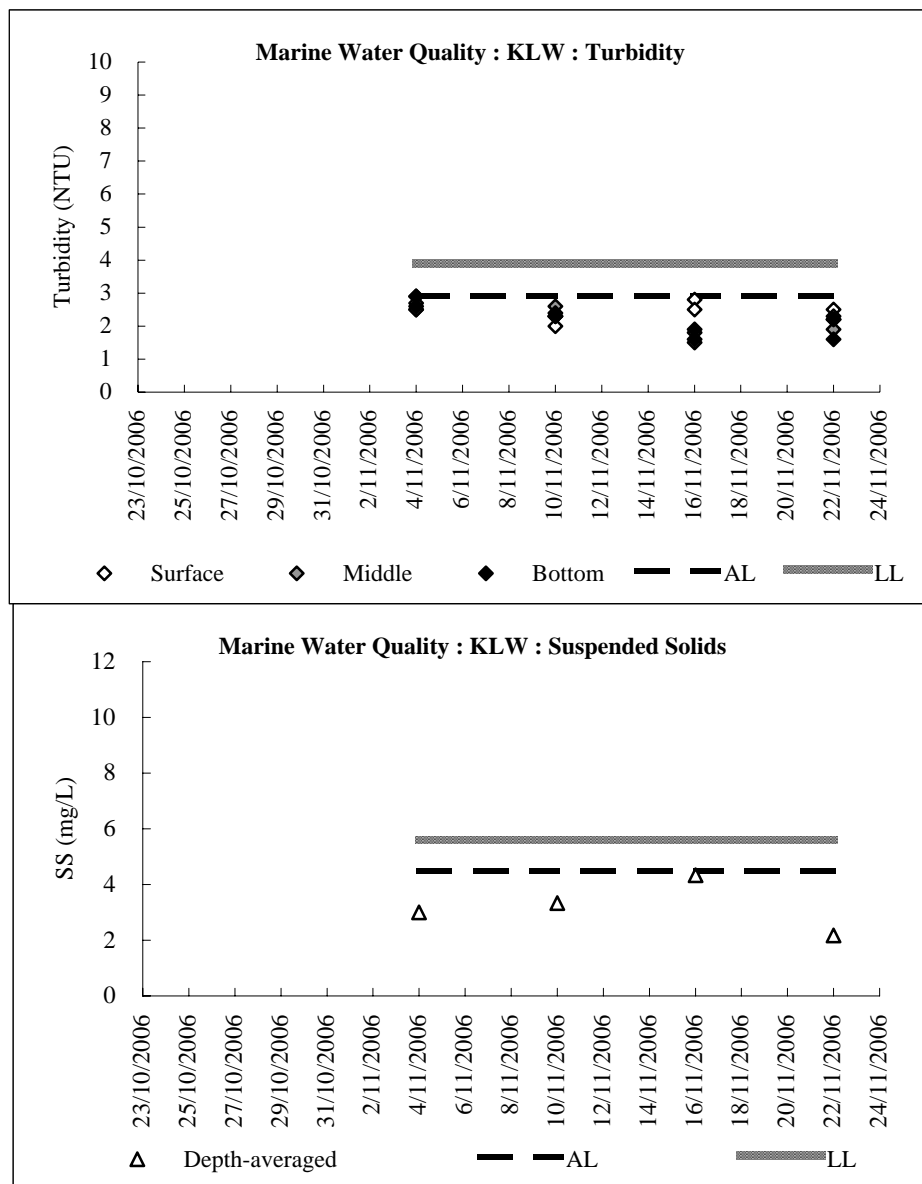
KLW	Middle								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	14:11	14.1	7.1	25.1	31.2	7.0	8.3	2.5
Mid-Flood	10/11/2006	8:41	14.2	7.1	25.2	31.1	6.8	8.3	2.3
Mid-Flood	16/11/2006	13:01	14.5	7.3	24.6	31.8	7.0	8.3	1.5
Mid-Flood	22/11/2006	8:10	14.3	7.2	23.6	31.5	7.1	8.2	1.9

KLW	Bottom								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	8:40	13.2	12.2	25.0	30.6	6.8	8.5	2.9
Mid-Ebb	10/11/2006	12:55	13.5	12.5	25.0	30.3	6.7	8.3	2.4
Mid-Ebb	16/11/2006	8:10	13.4	12.4	24.3	30.1	7.3	8.4	1.6
Mid-Ebb	22/11/2006	11:10	13.3	12.3	24.1	31.5	7.0	8.3	2.2

KLW	Bottom								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	14:10	14.1	13.1	25.0	31.6	6.7	8.3	2.6
Mid-Flood	10/11/2006	8:40	14.2	13.2	25.1	31.7	6.6	8.2	2.3
Mid-Flood	16/11/2006	13:00	14.5	13.5	24.4	31.9	7.0	8.3	1.9
Mid-Flood	22/11/2006	8:40	14.3	13.3	24.0	32.9	6.8	8.3	1.6

	Mid-Ebb			Mid-Flood			Depth-averaged
KLW	Surface	Middle	Bottom	Surface	Middle	Bottom	SS (mg/L)
4/11/2006	2.0	5.0	4.0	2.0	3.0	2.0	3.0
10/11/2006	3.0	2.0	4.0	4.0	4.0	3.0	3.3
16/11/2006	3.0	4.0	3.0	5.0	6.0	5.0	4.3
22/11/2006	2.0	2.0	2.0	2.0	3.0	2.0	2.2





M_A	Surface								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	9:02	7.8	1.0	24.7	30.0	6.9	8.5	3.3
Mid-Ebb	10/11/2006	13:17	7.7	1.0	24.9	30.1	6.8	8.3	2.8
Mid-Ebb	16/11/2006	8:32	7.6	1.0	23.8	29.8	7.2	8.3	1.8
Mid-Ebb	22/11/2006	11:32	7.5	1.0	22.7	24.2	7.1	8.4	9.2

M_A	Surface								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	8:22	8.0	1.0	24.8	30.8	6.8	8.3	2.7
Mid-Flood	10/11/2006	9:02	8.1	1.0	25.1	31.2	6.8	8.2	2.5
Mid-Flood	16/11/2006	13:22	8.2	1.0	24.2	31.6	6.8	8.2	2.0
Mid-Flood	22/11/2006	9:02	8.0	1.0	23.5	26.8	6.9	8.3	20.4

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

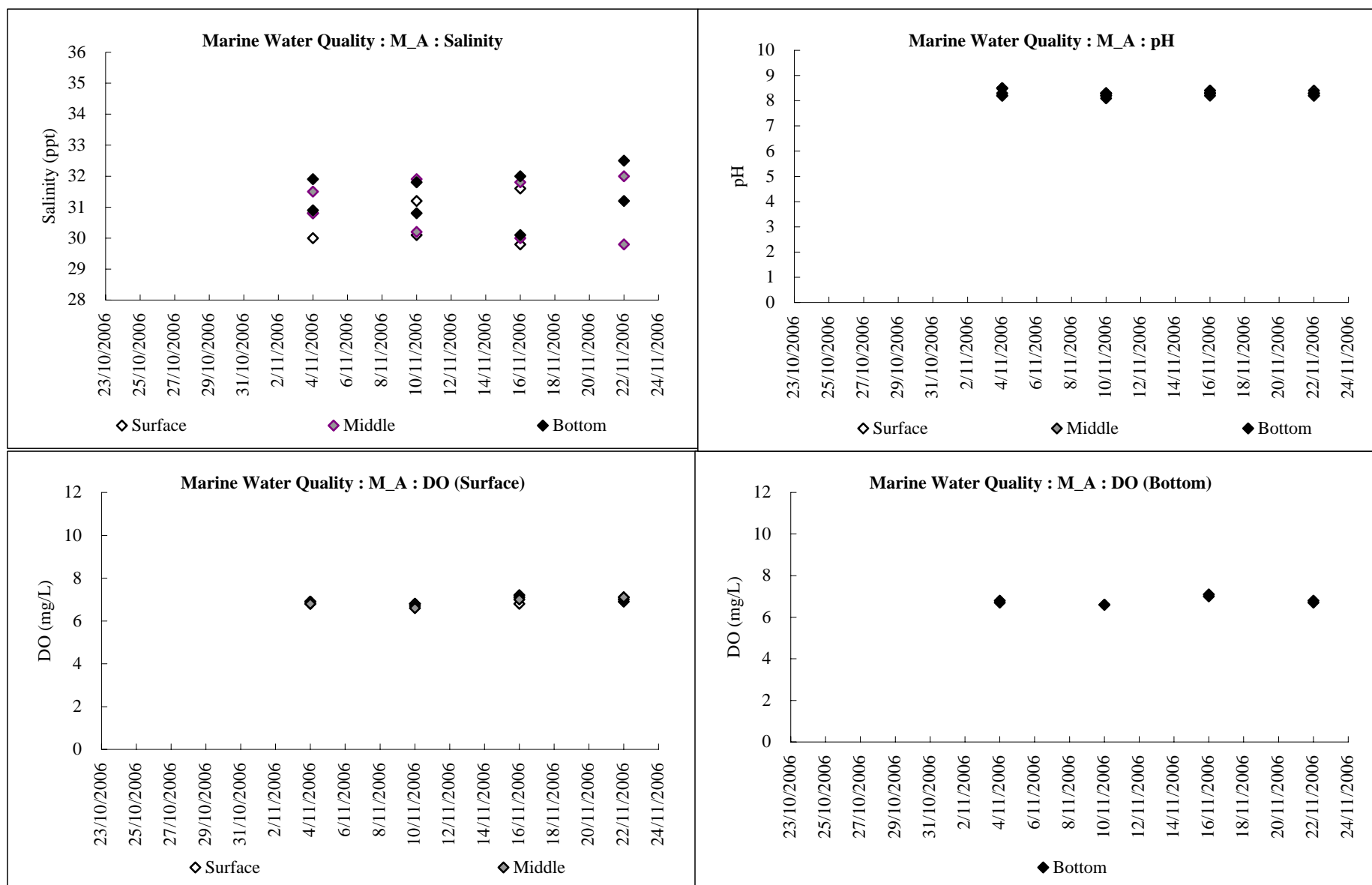
M_A	Middle								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	9:01	7.8	3.9	24.8	30.8	6.9	8.5	2.0
Mid-Ebb	10/11/2006	13:16	7.7	3.9	24.8	30.2	6.7	8.3	1.3
Mid-Ebb	16/11/2006	8:31	7.6	3.8	24.0	30.0	7.1	8.4	1.8
Mid-Ebb	22/11/2006	11:31	7.5	3.8	24.1	29.8	7.0	8.3	1.9

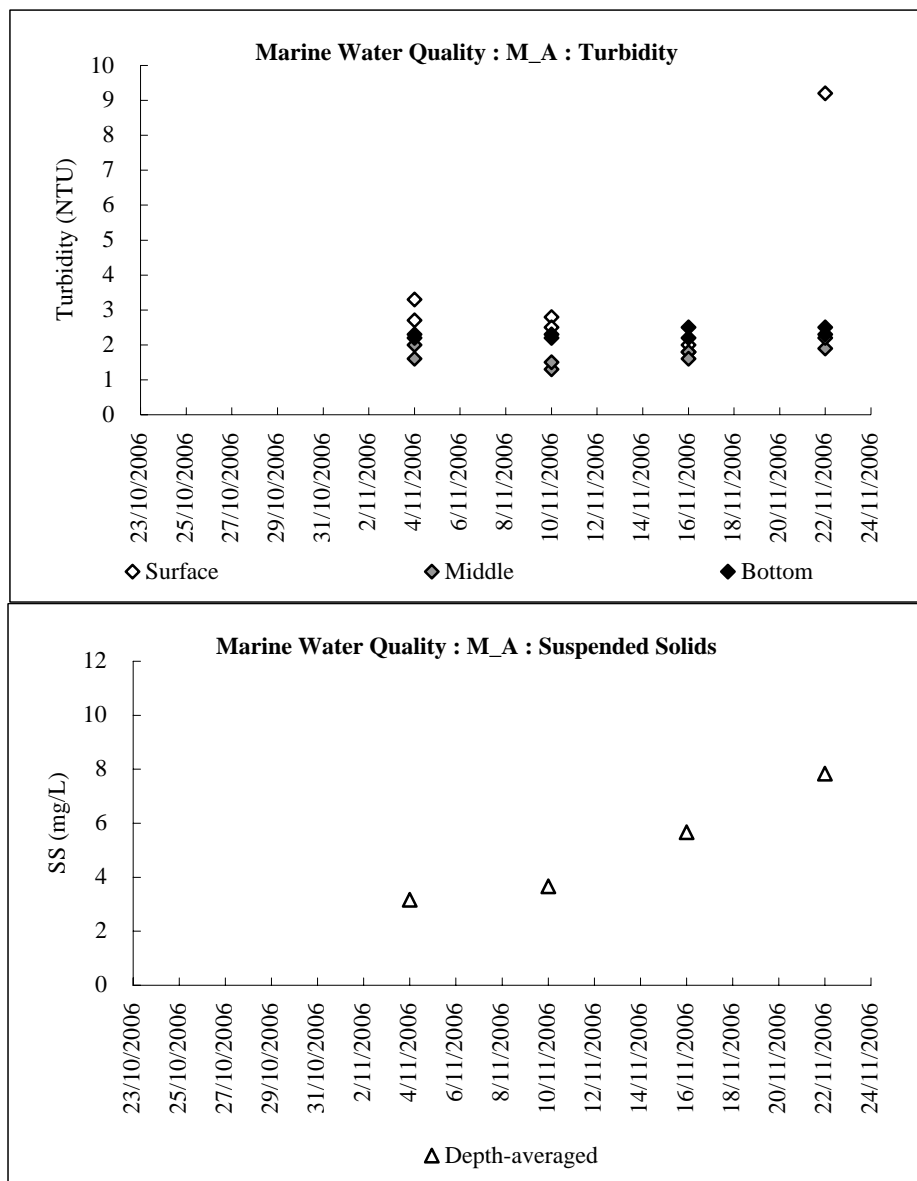
M_A	Middle								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	8:21	8.0	4.0	24.9	31.5	6.8	8.2	1.6
Mid-Flood	10/11/2006	9:01	8.1	4.1	24.9	31.9	6.6	8.2	1.5
Mid-Flood	16/11/2006	13:21	8.2	4.1	24.1	31.8	7.0	8.3	1.6
Mid-Flood	22/11/2006	9:01	8.0	4.0	24.3	32.0	7.1	8.2	2.2

M_A	Bottom								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	9:00	7.8	6.8	24.8	30.9	6.7	8.5	2.3
Mid-Ebb	10/11/2006	13:15	7.7	6.7	24.8	30.8	6.6	8.3	2.2
Mid-Ebb	16/11/2006	8:30	7.6	6.6	23.6	30.1	7.1	8.4	2.5
Mid-Ebb	22/11/2006	11:30	7.5	6.5	24.1	31.2	6.7	8.3	2.3

M_A	Bottom								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	8:20	8.0	7.0	24.9	31.9	6.8	8.2	2.2
Mid-Flood	10/11/2006	9:00	8.1	7.1	24.8	31.8	6.6	8.1	2.3
Mid-Flood	16/11/2006	13:20	8.2	7.2	23.6	32.0	7.0	8.3	2.2
Mid-Flood	22/11/2006	9:00	8.0	7.0	24.3	32.5	6.8	8.2	2.5

M_A	Mid-Ebb			Mid-Flood			Depth-averaged
	Surface	Midlle	Bottom	Surface	Midlle	Bottom	SS (mg/L)
4/11/2006	3.0	3.0	5.0	3.0	2.0	3.0	3.2
10/11/2006	3.0	3.0	8.0	3.0	2.0	3.0	3.7
16/11/2006	7.0	4.0	7.0	4.0	5.0	7.0	5.7
22/11/2006	14.0	4.0	3.0	16.0	4.0	6.0	7.8





M_Marsh		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	9:17	8.0	1.0	24.7	31.2	6.8	8.4	3.0
Mid-Ebb	10/11/2006	13:32	7.9	1.0	24.8	30.8	6.6	8.3	2.7
Mid-Ebb	16/11/2006	8:47	7.7	1.0	23.6	29.8	6.9	8.3	2.1
Mid-Ebb	22/11/2006	11:47	7.6	1.0	22.1	24.2	6.8	8.2	38.3

M_Marsh		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	8:32	8.2	1.0	24.9	32.0	6.7	8.3	2.2
Mid-Flood	10/11/2006	9:17	8.2	1.0	24.8	31.9	6.7	8.2	2.0
Mid-Flood	16/11/2006	13:37	8.1	1.0	24.2	31.8	6.8	8.2	1.7
Mid-Flood	22/11/2006	9:17	7.9	1.0	22.8	27.1	6.7	8.2	52.8

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

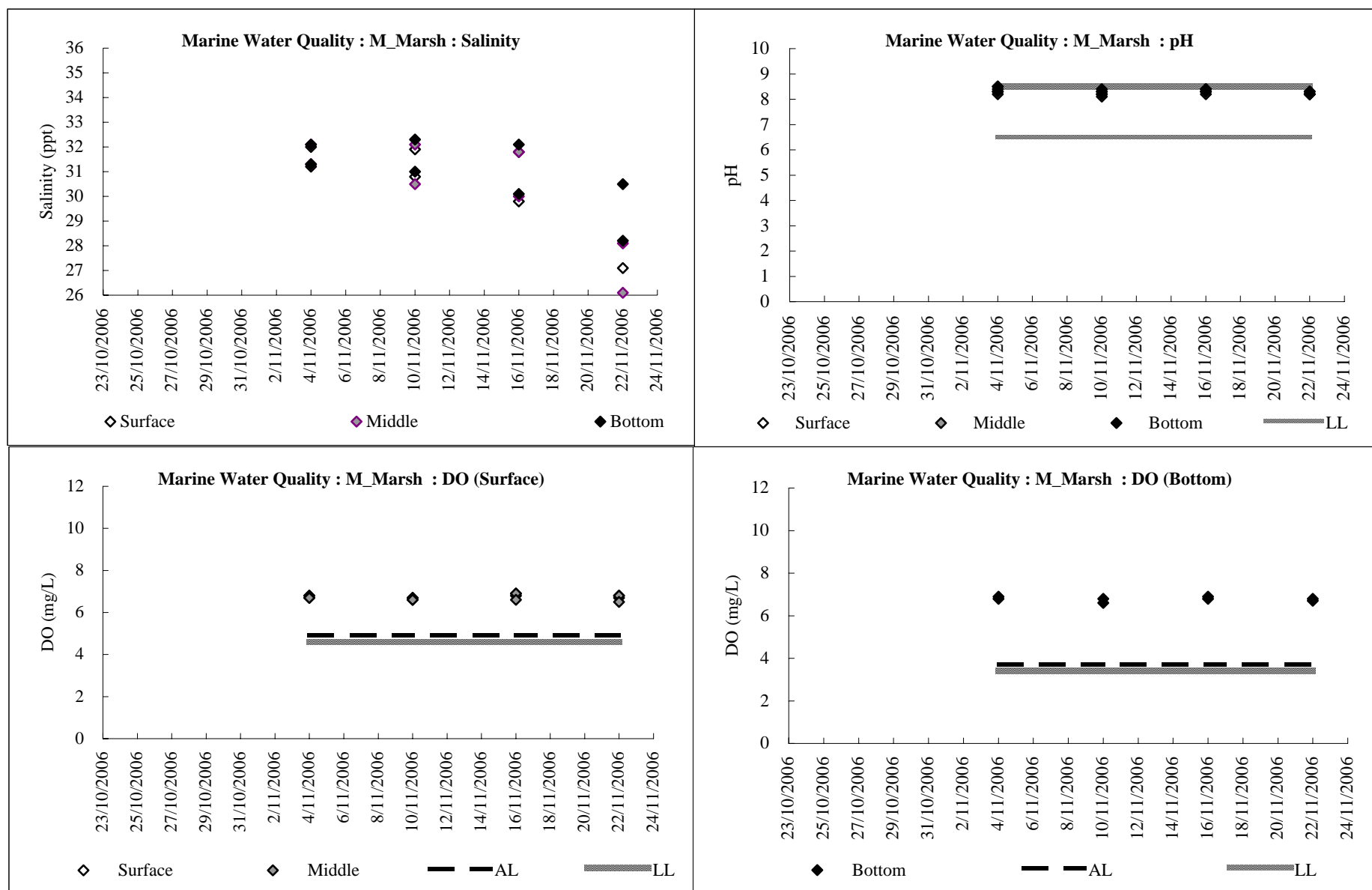
M_Marsh		Middle							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	9:16	8.0	4.0	24.7	31.3	6.8	8.5	1.6
Mid-Ebb	10/11/2006	13:31	7.9	4.0	24.8	30.5	6.7	8.3	1.6
Mid-Ebb	16/11/2006	8:46	7.7	3.9	23.6	30.0	6.9	8.4	1.9
Mid-Ebb	22/11/2006	11:46	7.6	3.8	23.1	26.1	6.8	8.3	15.6

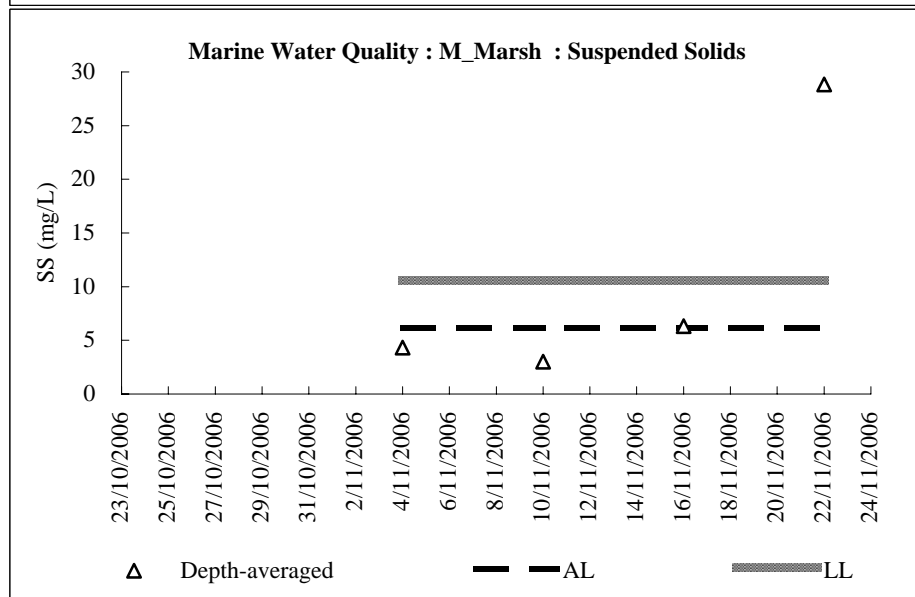
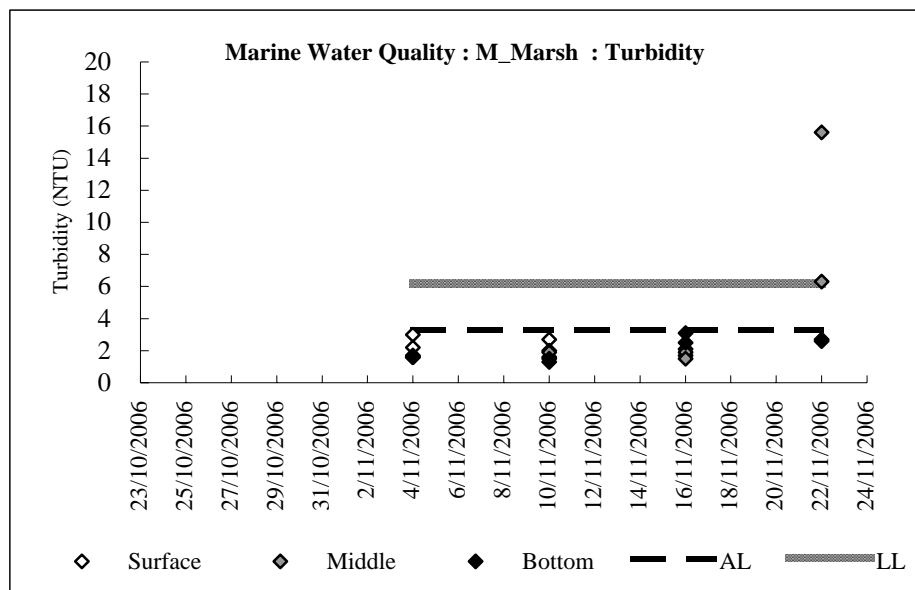
M_Marsh		Middle							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	8:31	8.2	4.1	24.8	32.1	6.7	8.2	1.6
Mid-Flood	10/11/2006	9:16	8.2	4.1	24.7	32.1	6.6	8.1	1.9
Mid-Flood	16/11/2006	13:36	8.1	4.1	23.8	31.8	6.6	8.3	1.5
Mid-Flood	22/11/2006	9:16	7.9	4.0	23.2	28.1	6.5	8.2	6.3

M_Marsh		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	9:15	8.0	7.0	24.7	31.3	6.9	8.5	1.7
Mid-Ebb	10/11/2006	13:30	7.9	6.9	24.8	31.0	6.8	8.4	1.5
Mid-Ebb	16/11/2006	8:45	7.7	6.7	23.7	30.1	6.9	8.4	3.1
Mid-Ebb	22/11/2006	11:45	7.6	6.6	23.8	28.2	6.8	8.3	2.7

M_Marsh		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	8:30	8.2	7.2	24.7	32.1	6.8	8.3	1.6
Mid-Flood	10/11/2006	9:15	8.2	7.2	24.8	32.3	6.6	8.2	1.3
Mid-Flood	16/11/2006	13:35	8.1	7.1	23.8	32.1	6.8	8.3	2.5
Mid-Flood	22/11/2006	9:15	7.9	6.9	24.1	30.5	6.7	8.2	2.6

	Mid-Ebb			Mid-Flood			Depth-averaged
M_Marsh	Surface	Midlle	Bottom	Surface	Midlle	Bottom	SS (mg/L)
4/11/2006	3.0	4.0	4.0	3.0	6.0	6.0	4.3
10/11/2006	4.0	3.0	2.0	4.0	3.0	2.0	3.0
16/11/2006	5.0	6.0	7.0	6.0	7.0	7.0	6.3
22/11/2006	55.0	22.0	3.0	82.0	9.0	2.0	28.8





TTC		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	13:57	9.7	1.0	24.9	31.8	6.8	8.4	2.0
Mid-Ebb	10/11/2006	13:52	9.7	1.0	24.8	31.5	6.7	8.3	1.6
Mid-Ebb	16/11/2006	9:07	9.6	1.0	23.7	30.0	7.1	8.3	2.5
Mid-Ebb	22/11/2006	11:57	9.5	1.0	22.3	26.8	6.9	8.4	2.2

TTC		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	8:52	9.9	1.0	25.2	32.3	6.7	8.3	2.0
Mid-Flood	10/11/2006	9:37	9.8	1.0	24.7	32.3	6.8	8.2	2.1
Mid-Flood	16/11/2006	13:47	9.9	1.0	24.2	32.2	6.8	8.1	1.9
Mid-Flood	22/11/2006	9:27	9.7	1.0	22.9	28.3	6.9	8.3	2.5

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

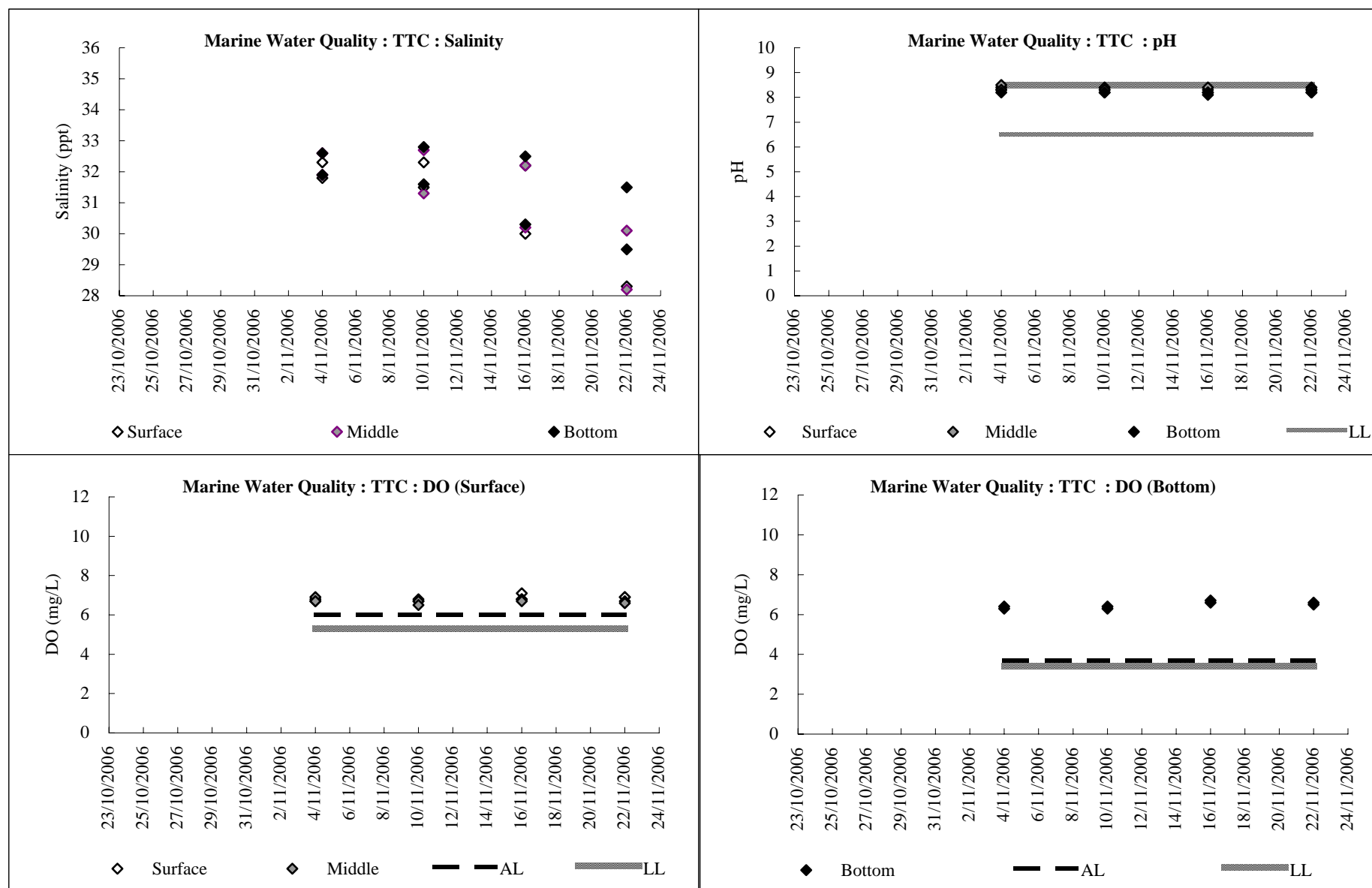
TTC		Middle							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	13:56	9.7	4.9	25.0	31.9	6.9	8.5	2.2
Mid-Ebb	10/11/2006	13:51	9.7	4.9	25.1	31.3	6.7	8.4	2.0
Mid-Ebb	16/11/2006	9:06	9.6	4.8	23.8	30.2	6.8	8.4	2.1
Mid-Ebb	22/11/2006	11:56	9.5	4.8	23.7	28.2	6.7	8.3	2.0

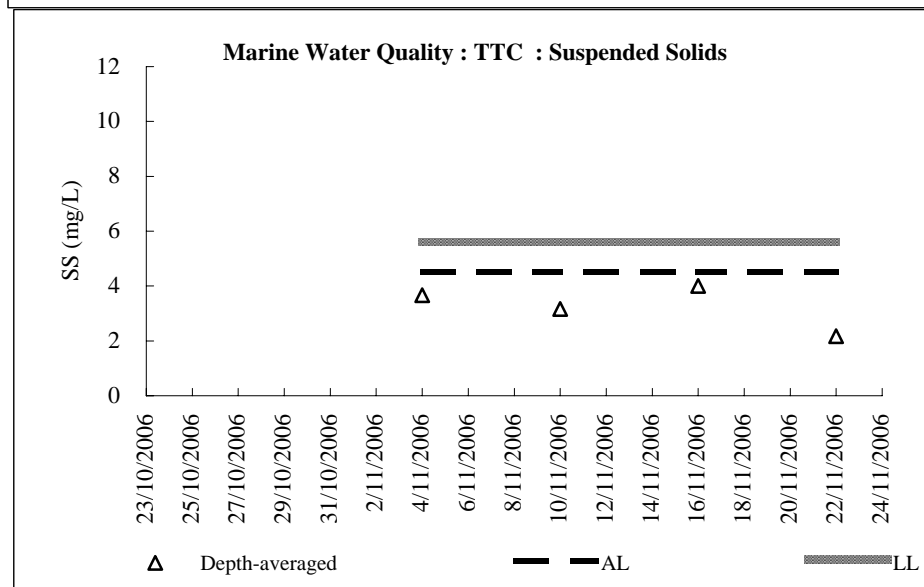
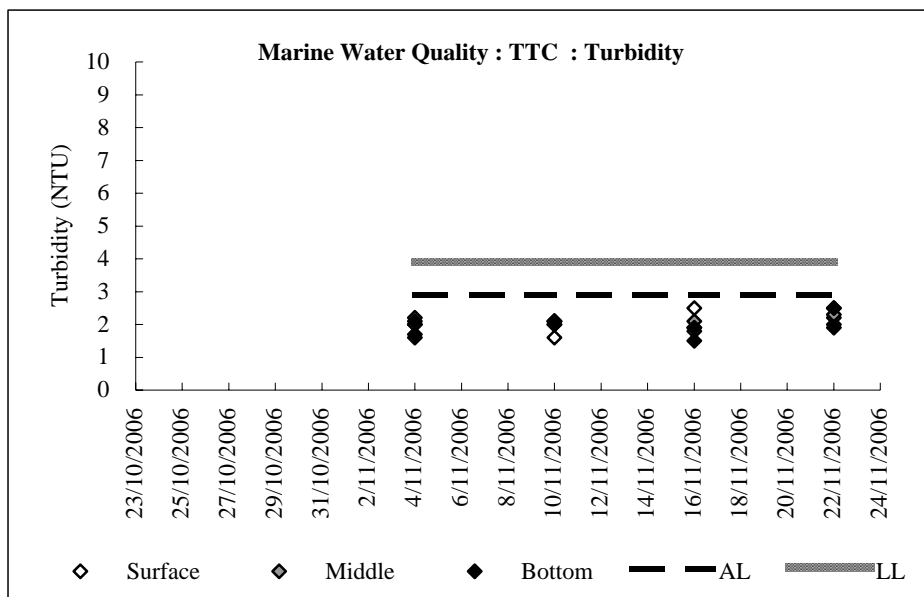
TTC		Middle							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	8:51	9.9	5.0	25.1	32.6	6.7	8.3	1.6
Mid-Flood	10/11/2006	9:36	9.8	4.9	25.0	32.7	6.5	8.3	2.1
Mid-Flood	16/11/2006	13:46	9.9	5.0	24.0	32.2	6.7	8.2	1.8
Mid-Flood	22/11/2006	9:26	9.7	4.9	24.0	30.1	6.6	8.2	2.3

TTC		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	13:55	9.7	8.7	24.9	31.9	6.4	8.4	2.1
Mid-Ebb	10/11/2006	13:50	9.7	8.7	24.8	31.6	6.3	8.3	2.0
Mid-Ebb	16/11/2006	9:05	9.6	8.6	23.8	30.3	6.7	8.4	1.9
Mid-Ebb	22/11/2006	11:55	9.5	8.5	24.1	29.5	6.6	8.3	2.5

TTC		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	8:50	9.9	8.9	25.1	32.6	6.3	8.2	1.7
Mid-Flood	10/11/2006	9:35	9.8	8.8	24.8	32.8	6.4	8.2	2.1
Mid-Flood	16/11/2006	13:45	9.9	8.9	23.9	32.5	6.6	8.2	1.5
Mid-Flood	22/11/2006	9:25	9.7	8.7	24.5	31.5	6.5	8.2	1.9

	Mid-Ebb			Mid-Flood			Depth-averaged
TTC	Surface	Midlle	Bottom	Surface	Midlle	Bottom	SS (mg/L)
4/11/2006	3.0	4.0	3.0	3.0	4.0	5.0	3.7
10/11/2006	4.0	2.0	6.0	3.0	2.0	2.0	3.2
16/11/2006	4.0	3.0	3.0	4.0	8.0	2.0	4.0
22/11/2006	2.0	2.0	2.0	3.0	2.0	2.0	2.2





M_BP		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:07	8.1	1.0	24.9	31.9	6.9	8.4	2.7
Mid-Ebb	10/11/2006	14:02	8.0	1.0	25.1	31.8	6.6	8.3	2.7
Mid-Ebb	16/11/2006	9:17	8.0	1.0	23.8	30.1	7.1	8.3	1.8
Mid-Ebb	22/11/2006	12:07	8.2	1.0	22.5	24.8	7.0	8.3	2.6

M_BP		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:02	8.3	1.0	25.2	32.9	6.7	8.3	2.6
Mid-Flood	10/11/2006	9:47	8.3	1.0	24.8	32.8	6.6	8.3	2.0
Mid-Flood	16/11/2006	13:57	8.3	1.0	24.3	32.5	6.8	8.2	2.2
Mid-Flood	22/11/2006	9:37	8.5	1.0	23.4	26.9	6.8	8.2	2.4

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

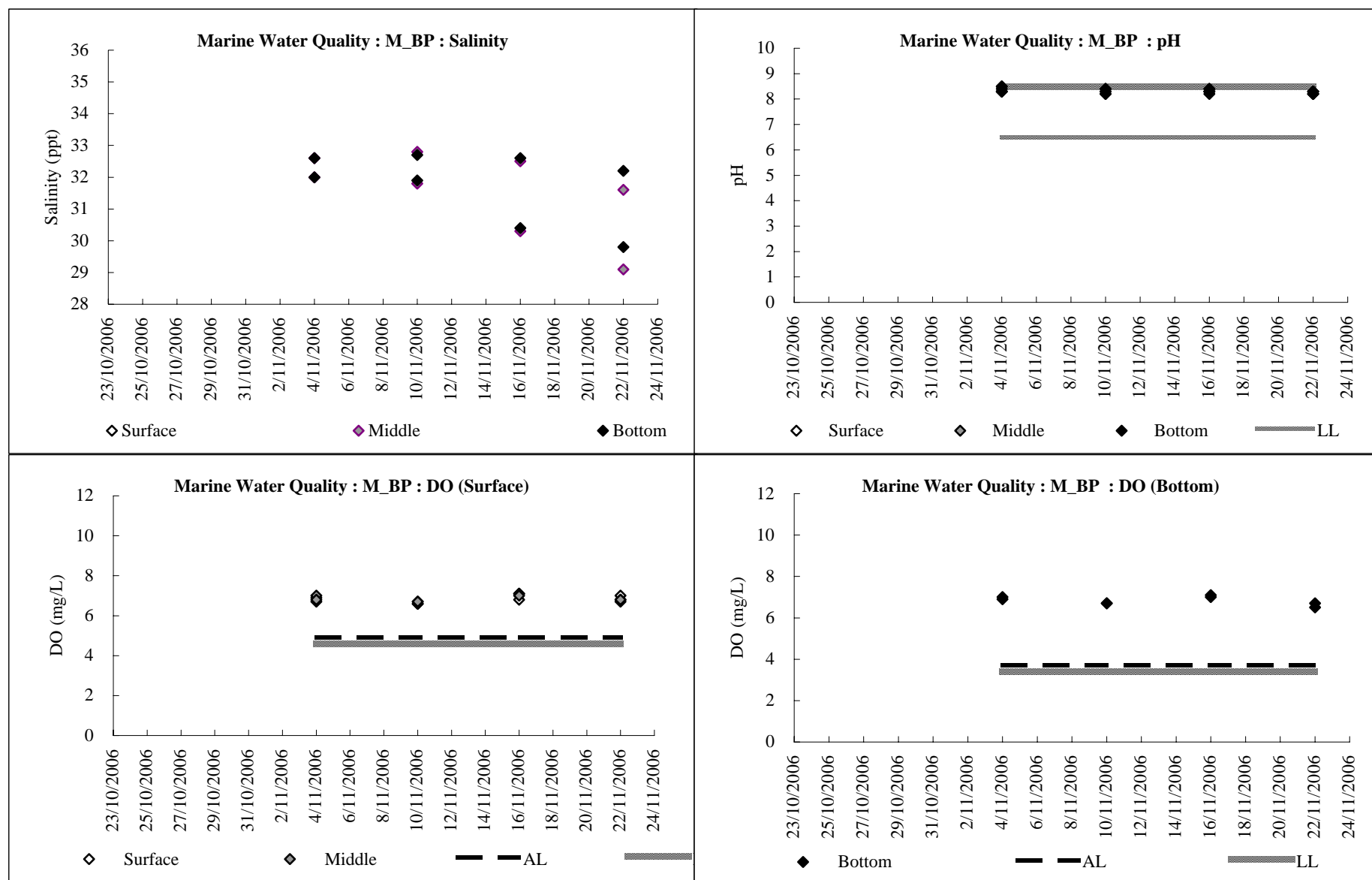
M_BP		Middle							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:06	8.1	4.1	24.9	32.0	7.0	8.5	2.0
Mid-Ebb	10/11/2006	14:01	8.0	4.0	24.8	31.8	6.7	8.4	2.2
Mid-Ebb	16/11/2006	9:16	8.0	4.0	23.9	30.3	7.1	8.4	1.7
Mid-Ebb	22/11/2006	12:06	8.2	4.1	24.3	29.1	6.7	8.3	2.4

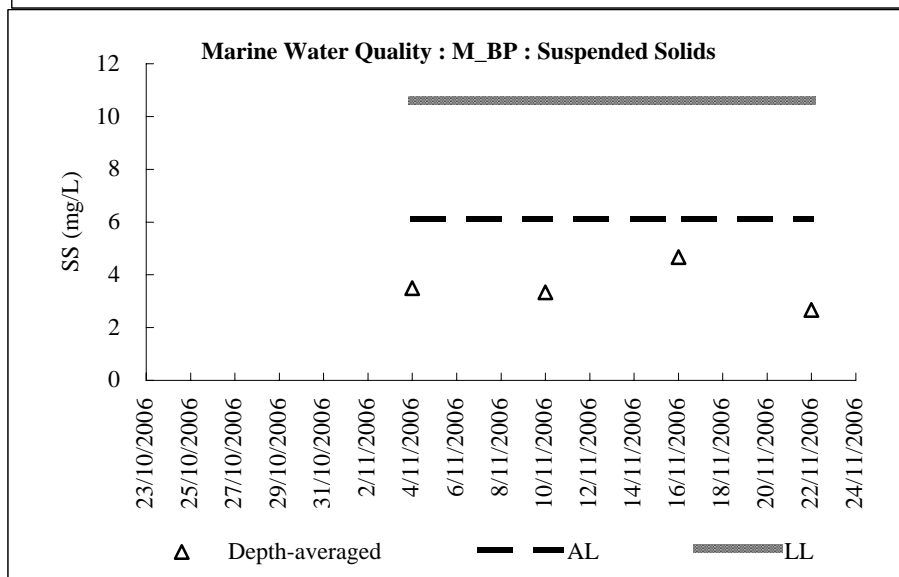
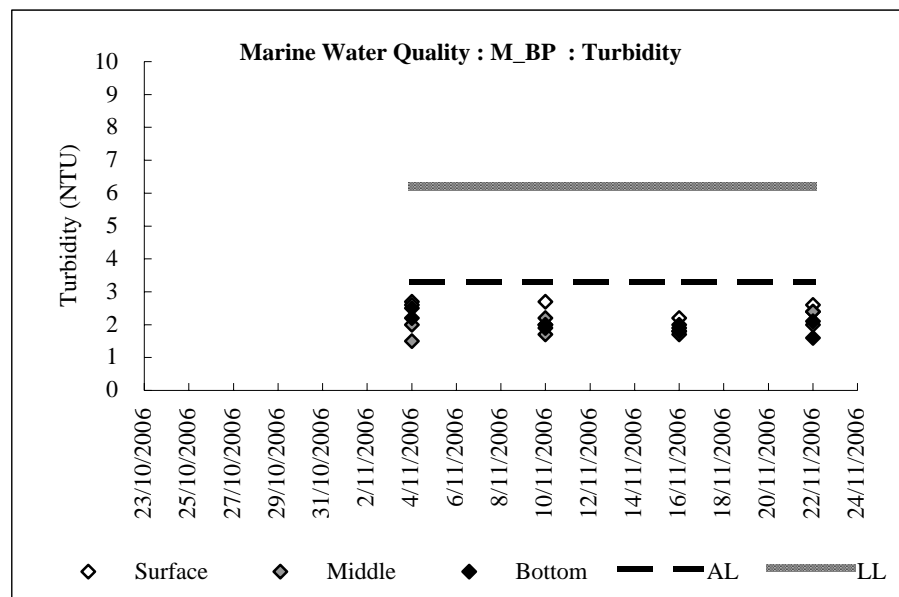
M_BP		Middle							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:01	8.3	4.2	24.9	32.6	6.8	8.3	1.5
Mid-Flood	10/11/2006	9:46	8.3	4.2	24.7	32.8	6.7	8.2	1.7
Mid-Flood	16/11/2006	13:56	8.3	4.2	24.2	32.5	7.0	8.3	1.9
Mid-Flood	22/11/2006	9:36	8.5	4.3	24.6	31.6	6.8	8.2	2.0

M_BP		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:05	8.1	7.1	24.9	32.0	7.0	8.5	2.2
Mid-Ebb	10/11/2006	14:00	8.0	7.0	24.9	31.9	6.7	8.4	1.9
Mid-Ebb	16/11/2006	9:15	8.0	7.0	23.9	30.4	7.1	8.4	2.0
Mid-Ebb	22/11/2006	12:05	8.2	7.2	23.7	29.8	6.7	8.3	1.6

M_BP		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:00	8.3	7.3	24.9	32.6	6.9	8.3	2.5
Mid-Flood	10/11/2006	9:45	8.3	7.3	24.8	32.7	6.7	8.2	2.0
Mid-Flood	16/11/2006	13:55	8.3	7.3	24.0	32.6	7.0	8.3	1.8
Mid-Flood	22/11/2006	9:35	8.5	7.5	24.0	32.2	6.5	8.2	2.1

	Mid-Ebb			Mid-Flood			Depth-averaged
M_BP	Surface	Midlle	Bottom	Surface	Midlle	Bottom	SS (mg/L)
4/11/2006	5.0	4.0	4.0	2.0	2.0	4.0	3.5
10/11/2006	4.0	4.0	4.0	3.0	2.0	3.0	3.3
16/11/2006	4.0	6.0	2.0	5.0	5.0	6.0	4.7
22/11/2006	2.0	2.0	5.0	3.0	2.0	2.0	2.7





M_Coral		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:17	10.1	1.0	24.6	31.6	6.8	8.3	2.3
Mid-Ebb	10/11/2006	15:12	9.8	1.0	24.8	31.8	6.6	8.2	2.0
Mid-Ebb	16/11/2006	10:27	10.0	1.0	23.7	30.6	6.7	8.4	1.7
Mid-Ebb	22/11/2006	12:12	9.9	1.0	22.4	26.7	6.7	8.3	2.3

M_Coral		Surface							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:12	10.5	1.0	24.9	32.5	6.7	8.3	2.0
Mid-Flood	10/11/2006	11:07	10.3	1.0	24.6	32.6	6.8	8.2	1.7
Mid-Flood	16/11/2006	14:07	10.2	1.0	24.2	32.6	6.7	8.3	1.8
Mid-Flood	22/11/2006	9:47	10.6	1.0	23.1	29.1	6.5	8.2	2.1

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

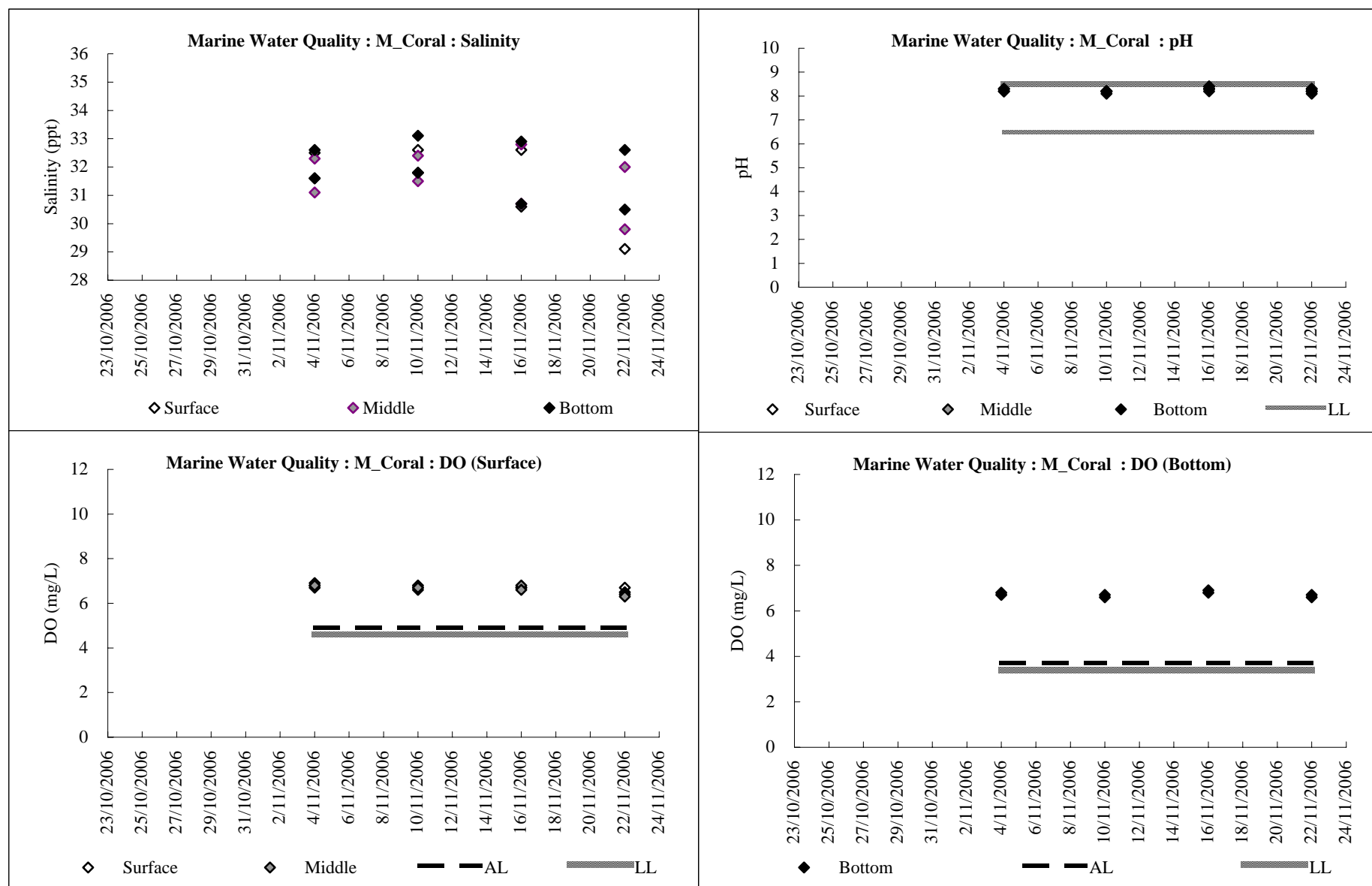
M_Coral		Middle							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:16	10.1	5.1	24.8	31.1	6.9	8.2	2.0
Mid-Ebb	10/11/2006	15:11	9.8	4.9	24.7	31.5	6.7	8.2	1.6
Mid-Ebb	16/11/2006	10:26	10.0	5.0	23.8	30.7	6.8	8.3	1.9
Mid-Ebb	22/11/2006	12:11	9.9	5.0	23.5	29.8	6.4	8.2	1.7

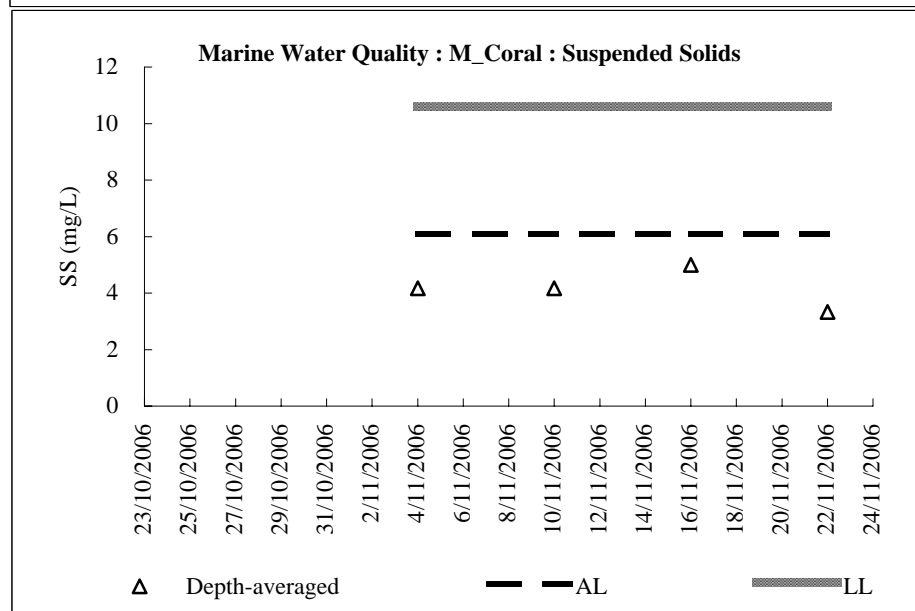
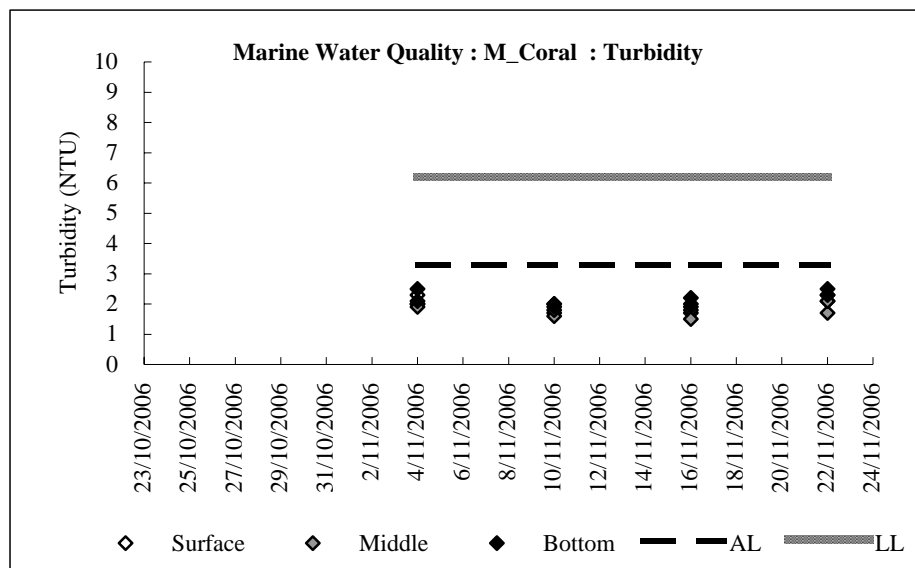
M_Coral		Middle							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:11	10.5	5.3	24.8	32.3	6.8	8.2	1.9
Mid-Flood	10/11/2006	11:06	10.3	5.2	24.6	32.4	6.7	8.1	1.8
Mid-Flood	16/11/2006	14:06	10.2	5.1	23.9	32.8	6.6	8.2	1.5
Mid-Flood	22/11/2006	9:46	10.6	5.3	23.6	32.0	6.3	8.1	2.1

M_Coral		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:15	10.1	9.1	24.7	31.6	6.8	8.3	2.1
Mid-Ebb	10/11/2006	15:10	9.8	8.8	24.8	31.8	6.6	8.2	1.9
Mid-Ebb	16/11/2006	10:25	10.0	9.0	23.8	30.7	6.9	8.4	2.0
Mid-Ebb	22/11/2006	12:10	9.9	8.9	24.0	30.5	6.6	8.3	2.5

M_Coral		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:10	10.5	9.5	24.7	32.6	6.7	8.2	2.5
Mid-Flood	10/11/2006	11:05	10.3	9.3	24.6	33.1	6.7	8.2	2.0
Mid-Flood	16/11/2006	14:05	10.2	9.2	23.8	32.9	6.8	8.3	2.2
Mid-Flood	22/11/2006	9:45	10.6	9.6	24.1	32.6	6.7	8.2	2.3

	Mid-Ebb			Mid-Flood			Depth-averaged
M_Coral	Surface	Midlle	Bottom	Surface	Midlle	Bottom	SS (mg/L)
4/11/2006	4.0	4.0	3.0	8.0	2.0	4.0	4.2
10/11/2006	5.0	3.0	4.0	2.0	8.0	3.0	4.2
16/11/2006	4.0	6.0	4.0	6.0	6.0	4.0	5.0
22/11/2006	4.0	5.0	3.0	2.0	4.0	2.0	3.3





M_B	Surface								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:27	16.8	1.0	24.6	31.2	6.9	8.3	2.0
Mid-Ebb	10/11/2006	15:57	16.7	1.0	24.8	31.3	6.8	8.2	1.9
Mid-Ebb	16/11/2006	11:12	16.6	1.0	23.5	30.6	6.8	8.4	1.5
Mid-Ebb	22/11/2006	12:27	16.8	1.0	22.3	26.8	6.7	8.3	2.1

M_B	Surface								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:22	17.3	1.0	24.7	32.2	6.8	8.2	2.2
Mid-Flood	10/11/2006	11:52	17.2	1.0	24.6	32.6	6.7	8.1	2.3
Mid-Flood	16/11/2006	14:17	17.3	1.0	23.9	32.5	6.7	8.3	1.9
Mid-Flood	22/11/2006	9:57	17.4	1.0	22.8	29.0	6.8	8.2	2.2

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

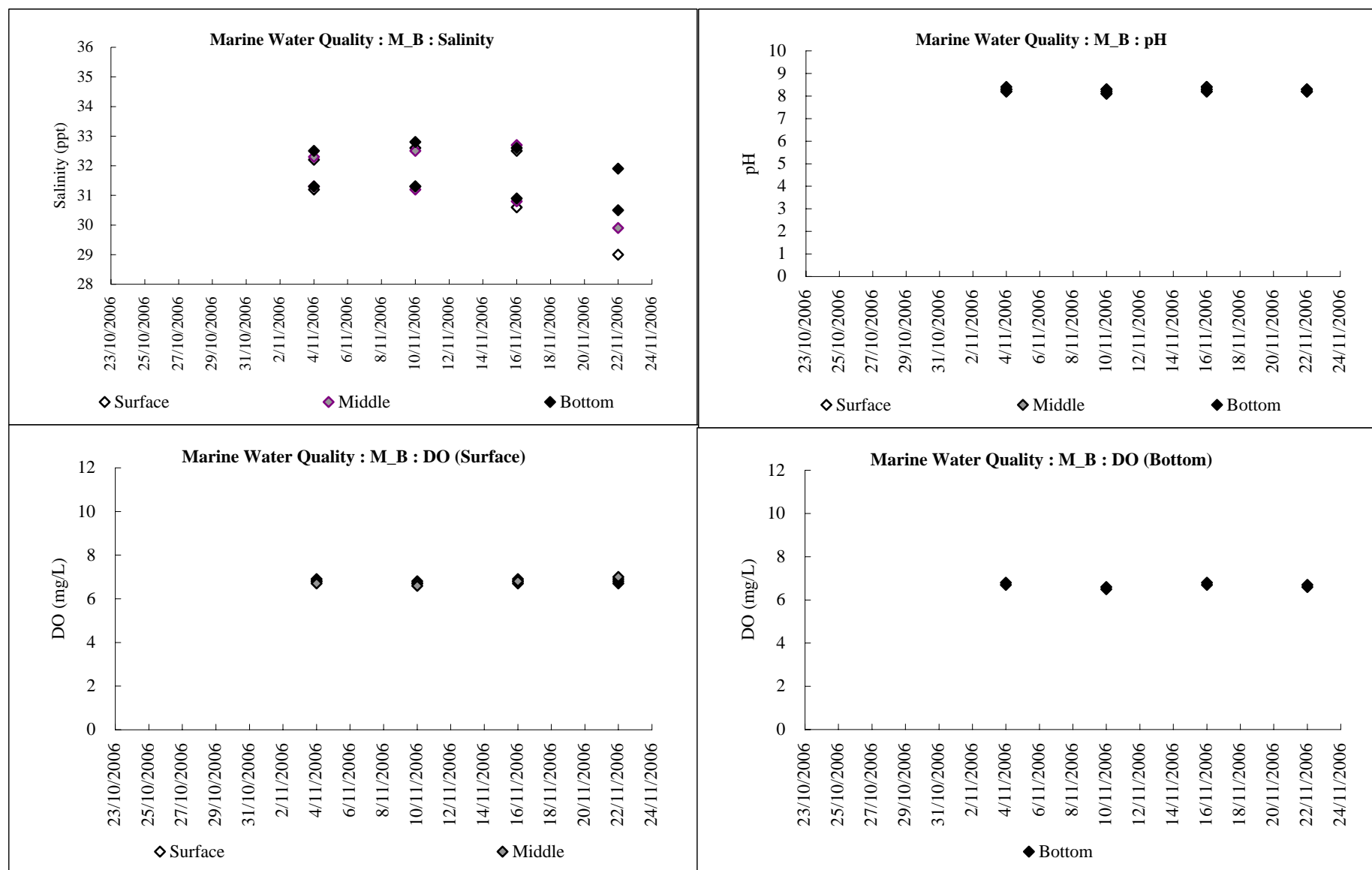
M_B	Middle								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:26	16.8	8.4	24.7	31.3	6.8	8.3	1.9
Mid-Ebb	10/11/2006	15:56	16.7	8.4	24.7	31.2	6.7	8.3	2.0
Mid-Ebb	16/11/2006	11:11	16.6	8.3	23.6	30.8	6.9	8.4	1.9
Mid-Ebb	22/11/2006	12:26	16.8	8.4	23.2	27.3	6.9	8.3	2.1

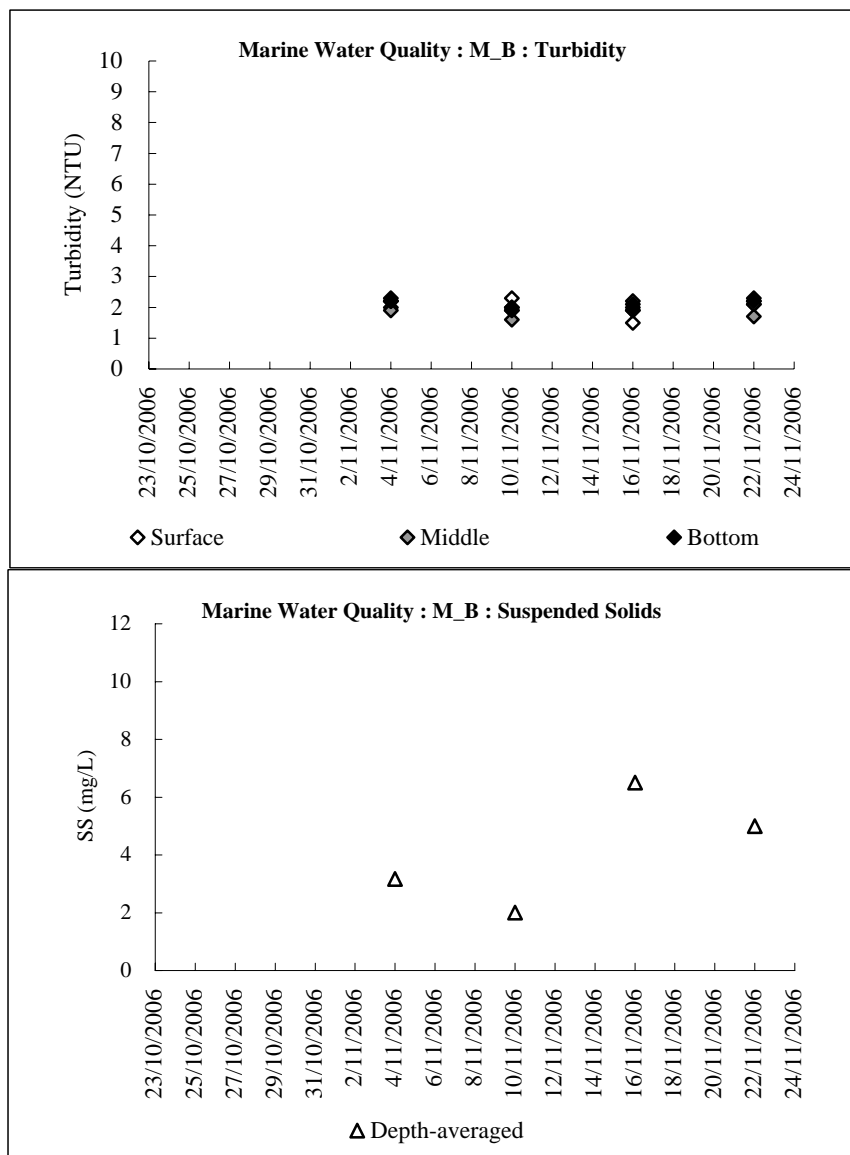
M_B	Middle								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:21	17.3	8.7	24.8	32.3	6.7	8.2	2.2
Mid-Flood	10/11/2006	11:51	17.2	8.6	24.6	32.5	6.6	8.1	1.6
Mid-Flood	16/11/2006	14:16	17.3	8.7	23.8	32.7	6.8	8.2	2.2
Mid-Flood	22/11/2006	9:56	17.4	8.7	23.5	29.9	7.0	8.2	1.7

M_B	Bottom								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:25	16.8	15.8	24.6	31.3	6.7	8.4	2.3
Mid-Ebb	10/11/2006	15:55	16.7	15.7	24.7	31.3	6.5	8.3	2.0
Mid-Ebb	16/11/2006	11:10	16.6	15.6	23.8	30.9	6.8	8.3	2.1
Mid-Ebb	22/11/2006	12:25	16.8	15.8	23.9	30.5	6.7	8.2	2.2

M_B	Bottom								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:20	17.3	16.3	24.6	32.5	6.8	8.3	2.2
Mid-Flood	10/11/2006	11:50	17.2	16.2	24.6	32.8	6.6	8.2	1.9
Mid-Flood	16/11/2006	14:15	17.3	16.3	23.8	32.6	6.7	8.2	2.0
Mid-Flood	22/11/2006	9:55	17.4	16.4	24.0	31.9	6.6	8.2	2.3

M_B	Mid-Ebb			Mid-Flood			Depth-averaged
	Surface	Midlle	Bottom	Surface	Midlle	Bottom	SS (mg/L)
4/11/2006	3.0	4.0	4.0	4.0	2.0	2.0	3.2
10/11/2006	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16/11/2006	6.0	8.0	7.0	5.0	7.0	6.0	6.5
22/11/2006	4.0	4.0	6.0	8.0	3.0	5.0	5.0





KS	Surface								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:47	13.5	1.0	24.6	31.2	6.9	8.4	2.2
Mid-Ebb	10/11/2006	16:17	13.4	1.0	24.7	31.3	6.5	8.3	1.6
Mid-Ebb	16/11/2006	11:32	13.5	1.0	23.7	30.8	6.8	8.4	1.8
Mid-Ebb	22/11/2006	12:47	13.3	1.0	22.8	25.3	6.7	8.3	1.9

KS	Surface								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:52	14.0	1.0	24.8	32.2	6.7	8.3	2.1
Mid-Flood	10/11/2006	12:22	14.2	1.0	24.6	32.6	6.7	8.2	1.7
Mid-Flood	16/11/2006	14:47	14.3	1.0	24.1	32.8	6.6	8.3	2.1
Mid-Flood	22/11/2006	10:27	14.1	1.0	23.1	27.9	6.6	8.2	2.2

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

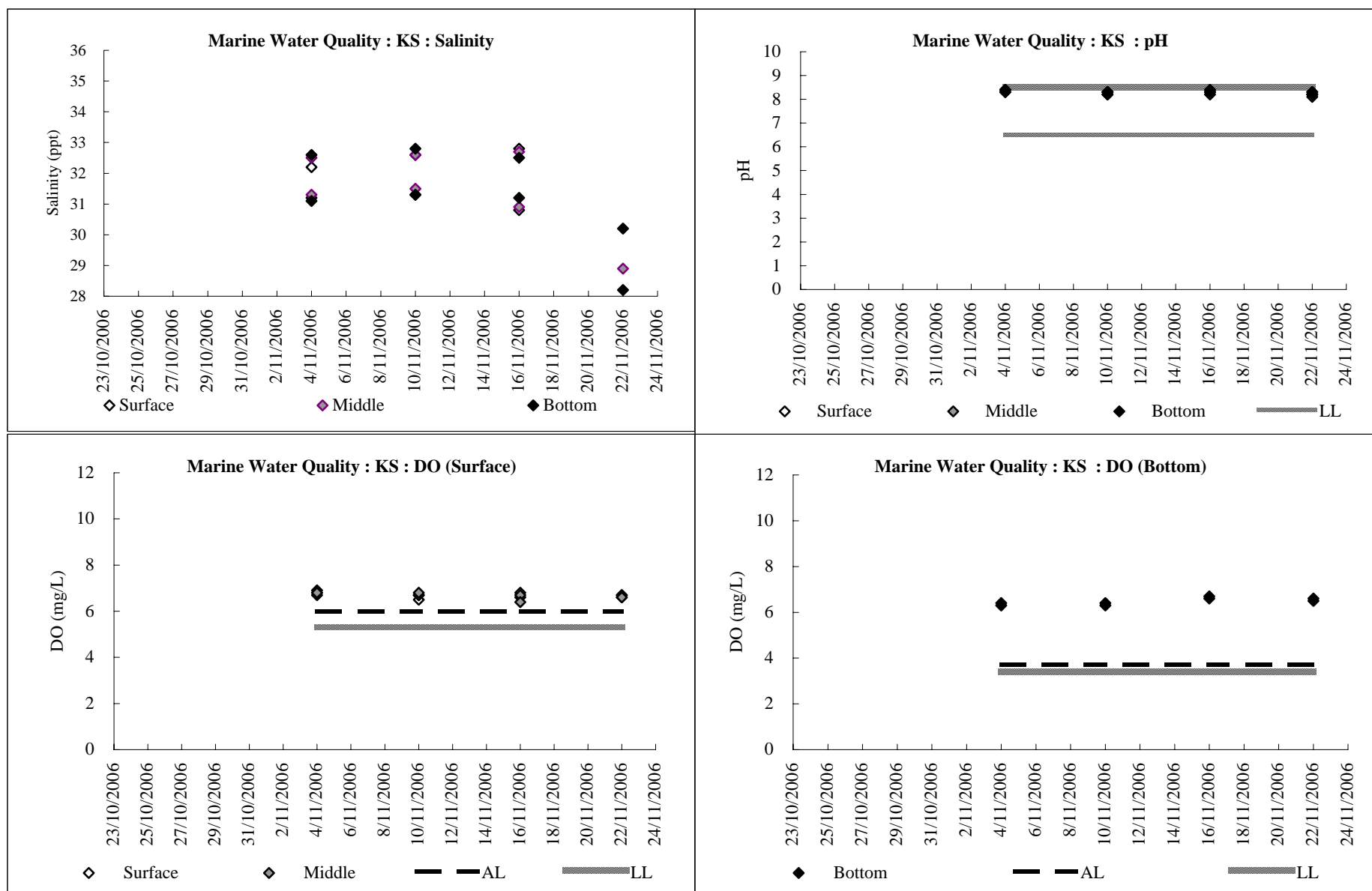
KS	Middle								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:46	13.5	6.8	24.7	31.3	6.8	8.4	2.3
Mid-Ebb	10/11/2006	16:16	13.4	6.7	24.6	31.5	6.7	8.3	2.1
Mid-Ebb	16/11/2006	11:31	13.5	6.8	23.9	30.9	6.7	8.3	2.0
Mid-Ebb	22/11/2006	12:46	13.3	6.7	23.5	26.1	6.7	8.2	2.0

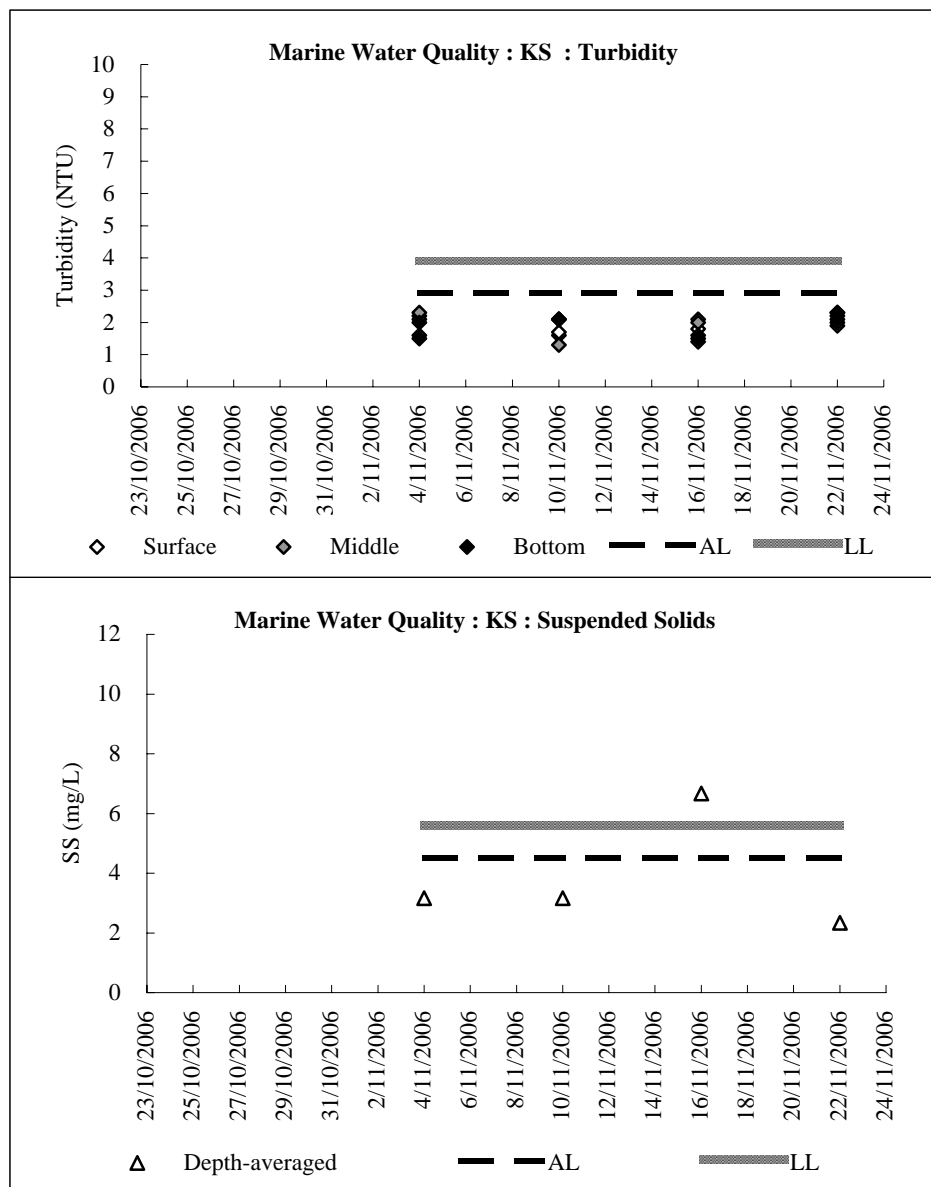
KS	Middle								
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:51	14.0	7.0	24.7	32.5	6.8	8.4	1.6
Mid-Flood	10/11/2006	12:21	14.2	7.1	24.5	32.6	6.8	8.3	1.3
Mid-Flood	16/11/2006	14:46	14.3	7.2	24.2	32.7	6.4	8.2	1.4
Mid-Flood	22/11/2006	10:26	14.1	7.1	23.8	28.9	6.6	8.1	2.3

KS		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Ebb	4/11/2006	14:45	13.5	12.5	24.6	31.1	6.7	8.4	2.0
Mid-Ebb	10/11/2006	16:15	13.4	12.4	24.6	31.3	6.5	8.3	2.1
Mid-Ebb	16/11/2006	11:30	13.5	12.5	23.7	31.2	6.8	8.4	1.5
Mid-Ebb	22/11/2006	12:45	13.3	12.3	23.6	28.2	6.4	8.3	2.1

KS		Bottom							
tide condition	Date	time	Water depth (m)	Sampling depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)
Mid-Flood	4/11/2006	9:50	14.0	13.0	24.7	32.6	6.7	8.3	1.5
Mid-Flood	10/11/2006	12:20	14.2	13.2	24.5	32.8	6.7	8.2	2.1
Mid-Flood	16/11/2006	14:45	14.3	13.3	23.8	32.5	6.7	8.3	1.6
Mid-Flood	22/11/2006	10:25	14.1	13.1	23.8	30.2	6.5	8.2	2.3

	Mid-Ebb			Mid-Flood			Depth-averaged
KS	Surface	Midlle	Bottom	Surface	Midlle	Bottom	SS (mg/L)
4/11/2006	4.0	3.0	3.0	3.0	3.0	3.0	3.2
10/11/2006	3.0	5.0	3.0	3.0	3.0	2.0	3.2
16/11/2006	6.0	7.0	5.0	8.0	8.0	6.0	6.7
22/11/2006	2.0	2.0	2.0	2.0	3.0	3.0	2.3



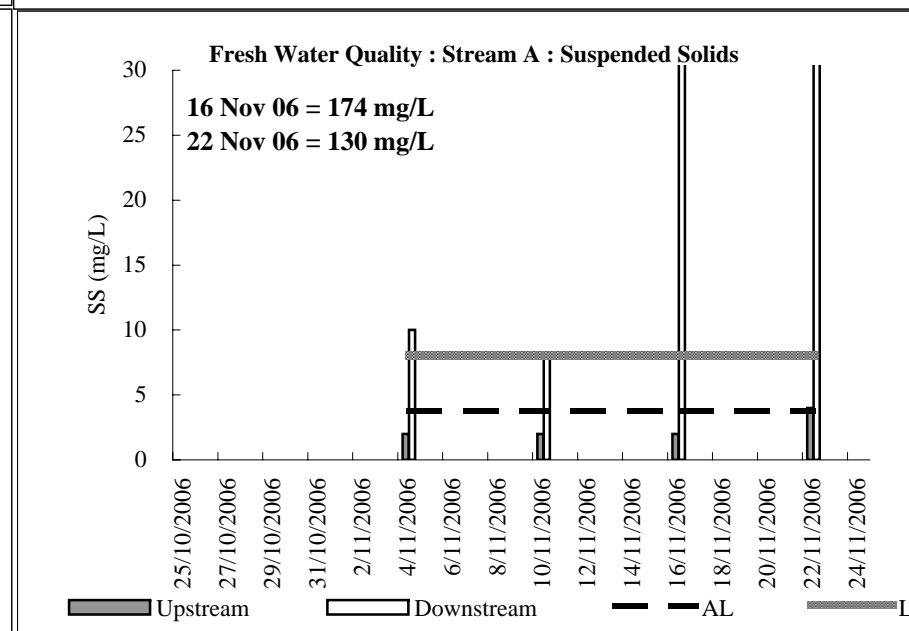
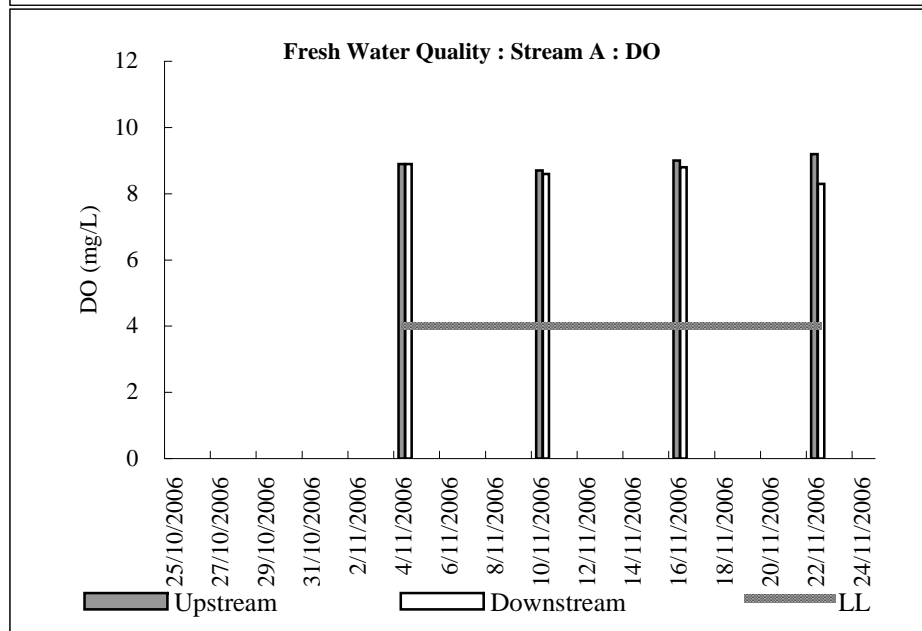
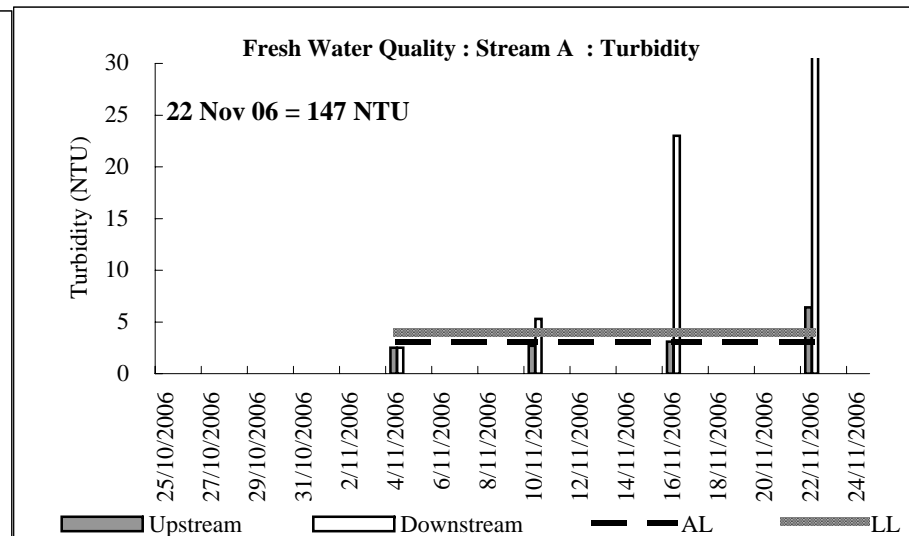
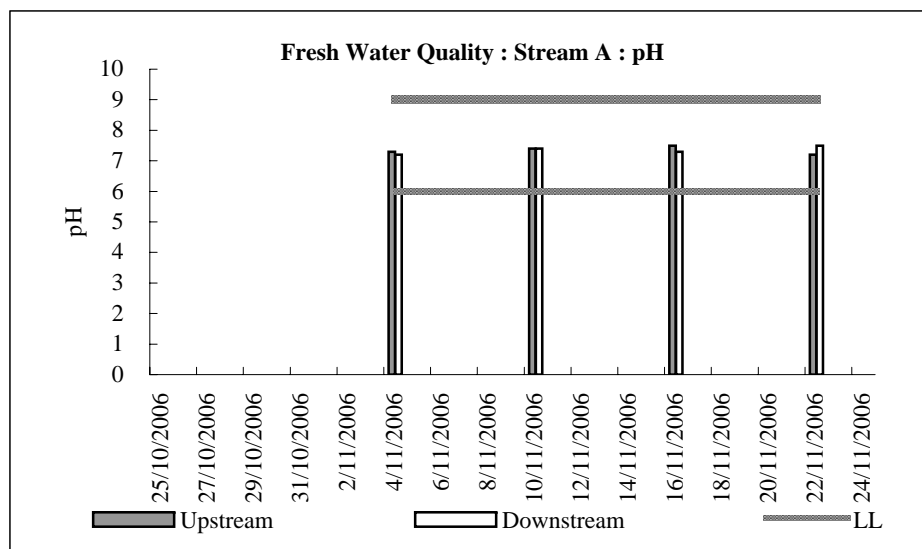


F_UA	Mid depth						
Date	time	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
4/11/2006	14:55	23.5	<0.1	8.9	7.3	2.5	2.0
10/11/2006	14:50	23.3	<0.1	8.7	7.4	2.7	2.0
16/11/2006	10:05	22.5	<0.1	9.0	7.5	3.1	2.0
22/11/2006	14:30	22.0	<0.1	9.2	7.2	6.4	4.0

F_DA	Mid depth						
Date	time	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
4/11/2006	15:00	23.5	<0.1	8.9	7.2	2.5	10.0
10/11/2006	14:55	23.2	<0.1	8.6	7.4	5.3	8.0
16/11/2006	10:10	22.4	<0.1	8.8	7.3	23.0	174.0
22/11/2006	14:35	22.2	<0.1	8.3	7.5	147.0	130.0

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

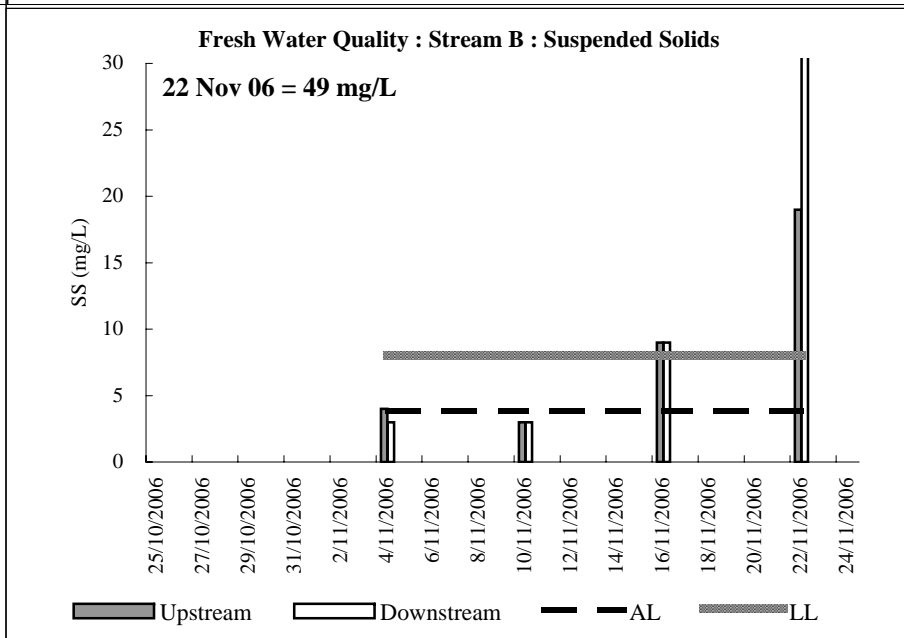
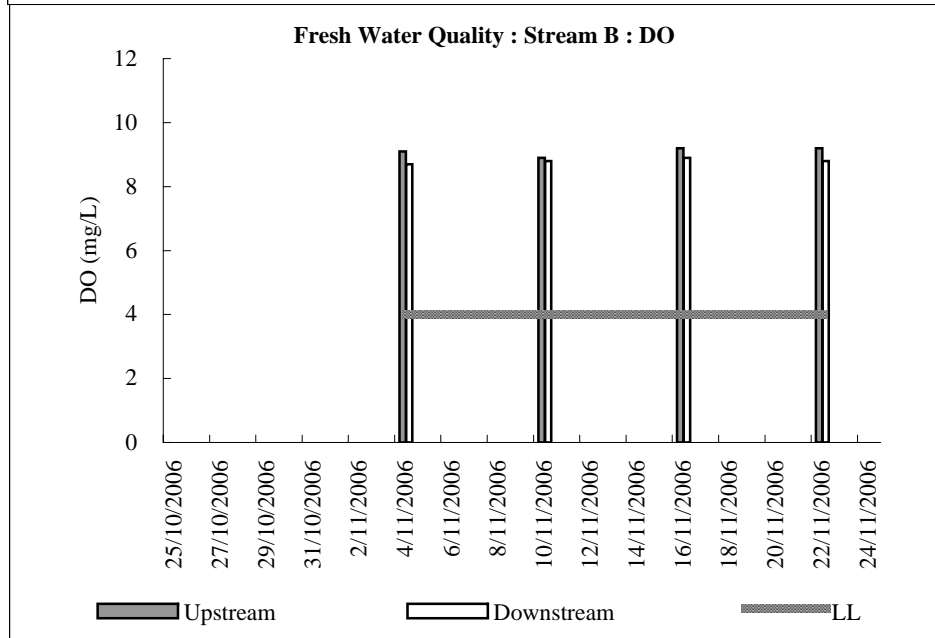
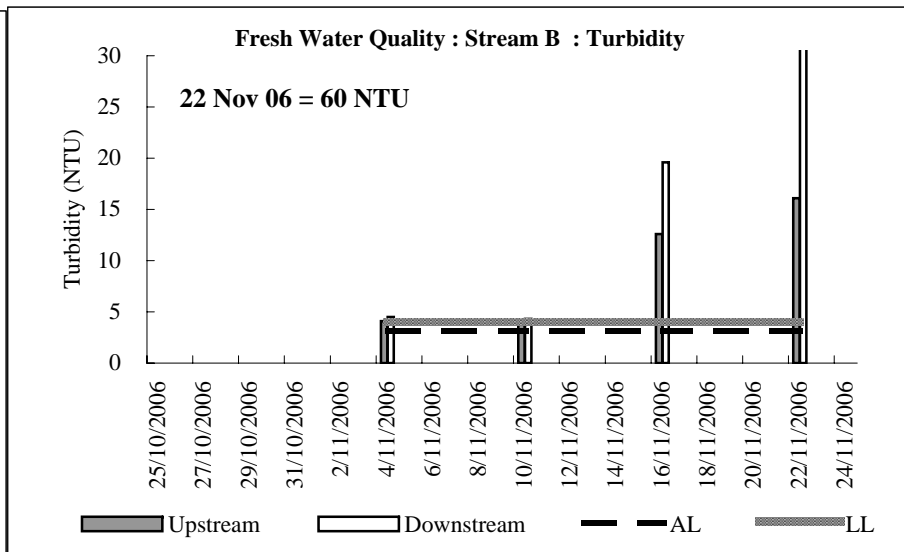
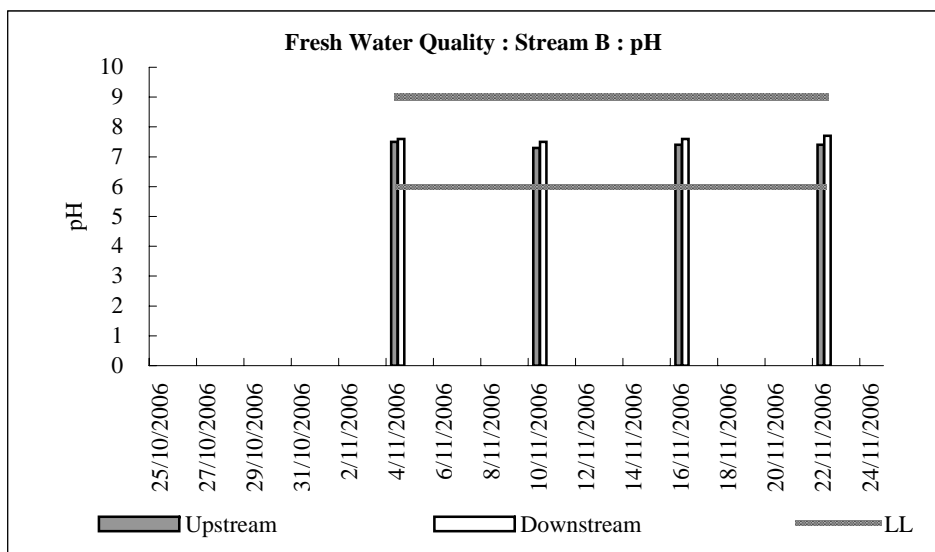


F_UB	Mid depth						
Date	time	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
4/11/2006	14:30	23.3	<0.1	9.1	7.5	4.1	4.0
10/11/2006	14:25	23.2	<0.1	8.9	7.3	4.0	3.0
16/11/2006	9:40	22.4	<0.1	9.2	7.4	12.6	9.0
22/11/2006	14:00	22.1	<0.1	9.2	7.4	16.1	19.0

F_DB	Mid depth						
Date	time	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
4/11/2006	14:40	23.4	<0.1	8.7	7.6	4.5	3.0
10/11/2006	14:35	23.2	<0.1	8.8	7.5	4.3	3.0
16/11/2006	9:50	22.3	<0.1	8.9	7.6	19.6	9.0
22/11/2006	14:10	22.2	<0.1	8.8	7.7	60.8	49.0

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey

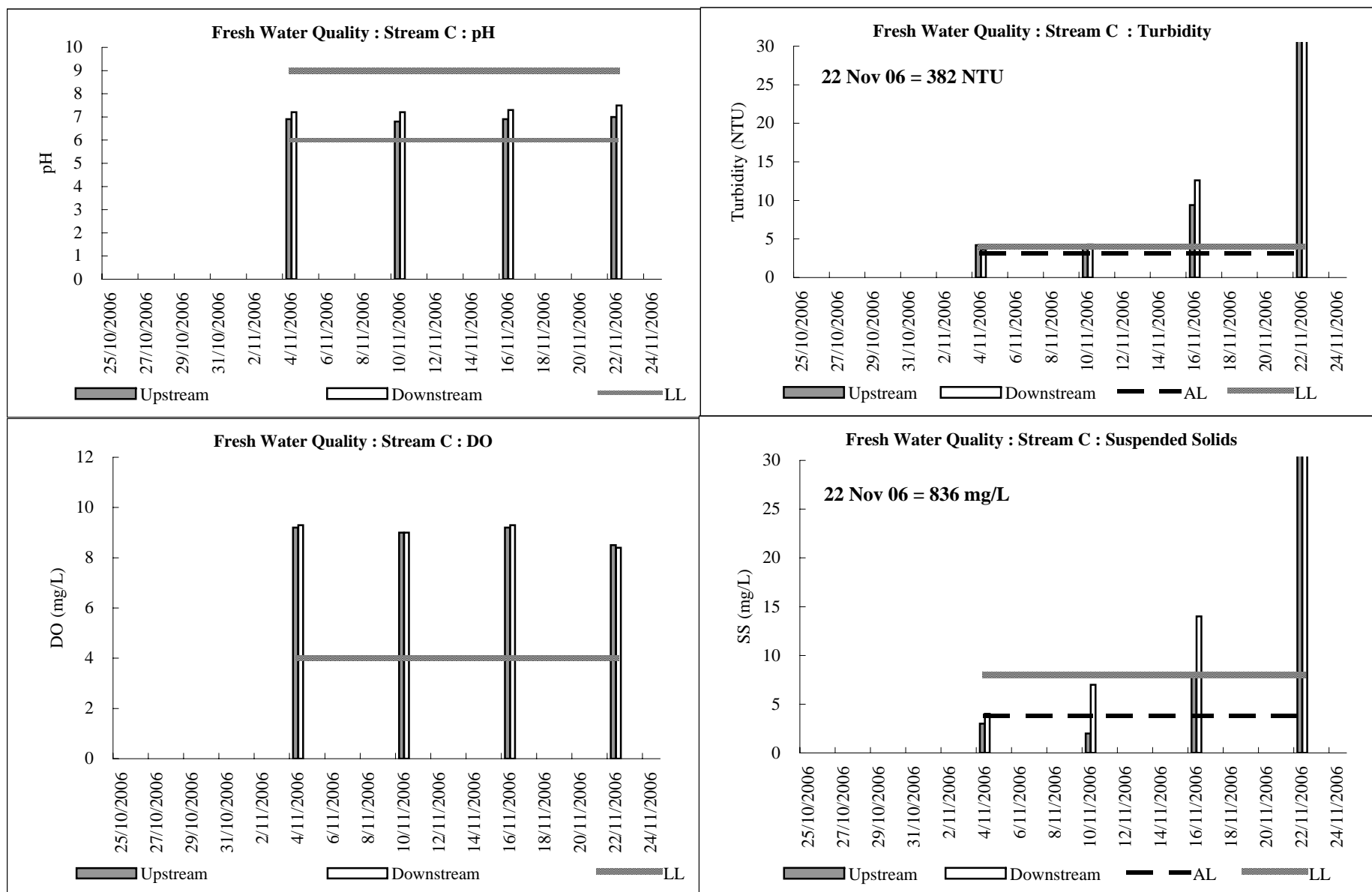


F_UC	Mid depth						
Date	time	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
4/11/2006	14:35	23.3	<0.1	9.2	6.9	4.2	3.0
10/11/2006	15:30	23.2	<0.1	9.0	6.8	4.1	2.0
16/11/2006	10:45	22.2	<0.1	9.2	6.9	9.4	8.0
22/11/2006	13:30	22.1	<0.1	8.5	7.0	82.1	159.0

F_DC	Mid depth						
Date	time	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
4/11/2006	14:45	23.2	<0.1	9.3	7.2	3.6	4.0
10/11/2006	15:40	23.2	<0.1	9.0	7.2	4.3	7.0
16/11/2006	10:55	22.1	<0.1	9.3	7.3	12.6	14.0
22/11/2006	13:40	22.0	<0.1	8.4	7.5	382.0	836.0

Remarks:

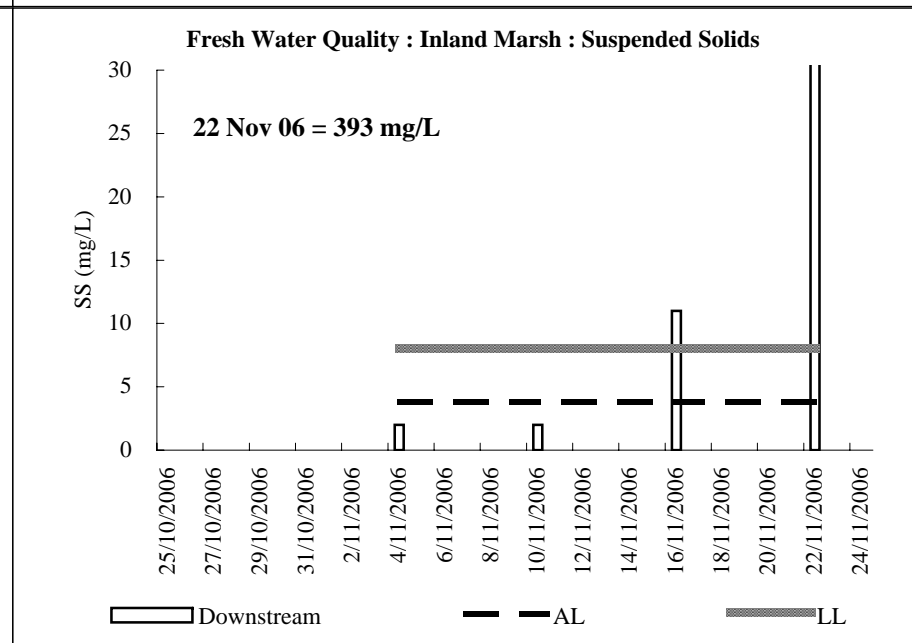
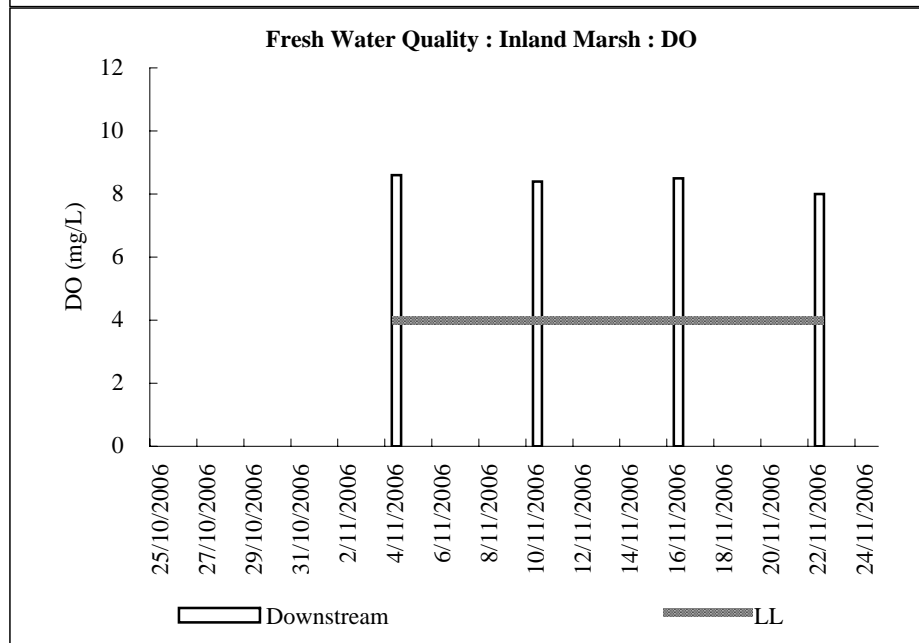
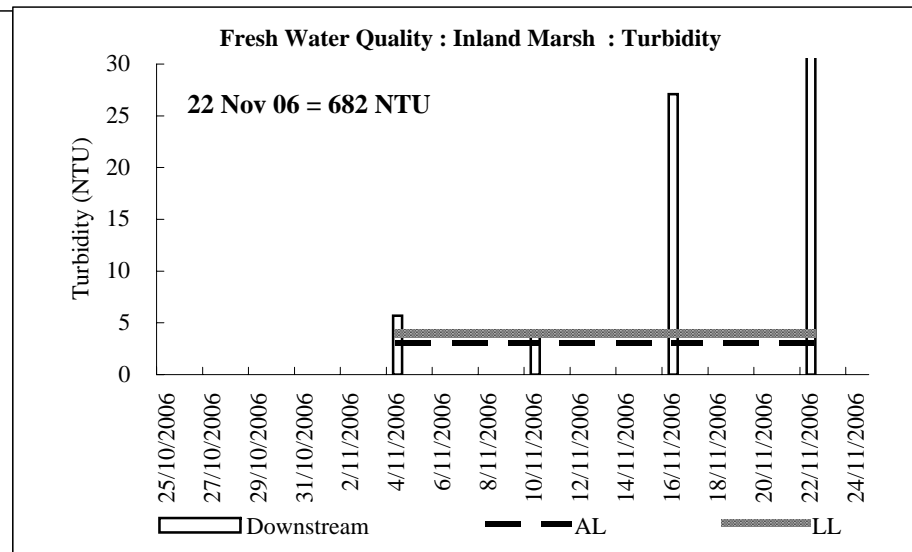
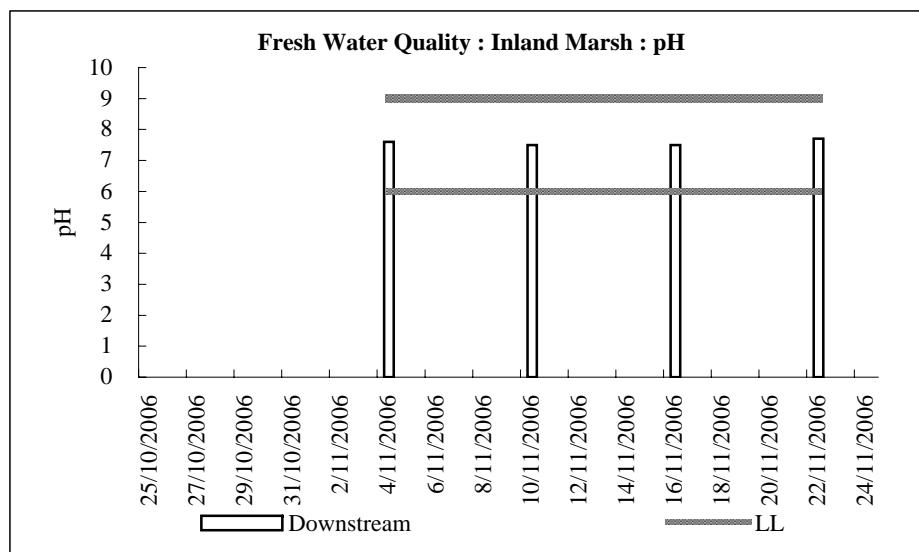
Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	Grey



F_Inland M	Mid depth						
Date	time	Temp (°C)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
4/11/2006	9:25	24.2	<0.1	8.6	7.6	5.7	2.0
10/11/2006	13:40	24.1	<0.1	8.4	7.5	4.2	2.0
16/11/2006	8:55	23.1	0.1	8.5	7.5	27.1	11.0
22/11/2006	12:30	22.8	<0.1	8.0	7.7	682.0	393.0

Remarks:

Action level	<i>Bold & Italic</i>
Limit level	Bold
< detection limit	<i>Grey</i>



Ecology

Plate 5.3-1 Photos of Stream Habitat



Stream A
and
Buffer Zone



Stream Flow
in upper
Stream A



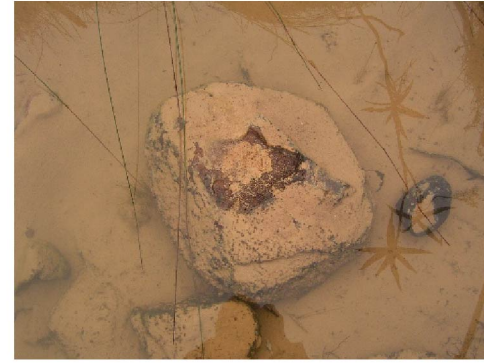
Stream B2
and the
buffer zone



Stream B
close-up



Stream C



Stream C
close-up



Shrimp in
Stream C



Riparian
plants in
Stream C



Stream D
Banks



Close-up of
Stream D

Annex F

Calibration Certificates

Maunsell Environmental Management Consultants Ltd.
TSP High Volume Sampler
Field Calibration Report

Station: KSC Public Golf Course Bungalow A (GCA B1) Operator: Porky
 Cal. Date: 02-Nov-06 Next Due Date: 02-Jan-07
 Equipment No.: A-001-47T Serial No.: B/M200HX

Ambient Condition			
Temperature, Ta (K)	296.6	Pressure, Pa (mmHg)	762.4

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	2.00878	Intercept, bc	0.00015
Last Calibration Date:	15-Nov-05	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	15-Nov-06	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X - axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	13.0	3.62	1.80	55.0	55.22
13	10.7	3.28	1.63	48.0	48.19
10	7.4	2.73	1.36	40.0	40.16
7	5.5	2.35	1.17	34.0	34.13
5	3.5	1.88	0.93	25.0	25.10

By Linear Regression of Y on X

Slope, mw = 33.7419 Intercept, bw = -6.0250

Correlation Coefficient* = 0.9969

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]^{1/2} = 37.69

Remarks: _____

QC Reviewer: Eddie Yang Signature: Eddie Yang Date: 3.11.2006

Environmental Division

**CERTIFICATE OF ANALYSIS**

CONTACT: MR WONG SIU HO
CLIENT: ENOVATIVE ENV TECHNOLOGY CO
ADDRESS: RM 3704 SIK MAN HOUSE
HOMANTIN ESTATE
KOWLOON
ORDER No.:
PROJECT:

Batch: HK53248
Sub Batch: 0
LABORATORY: HONG KONG
DATE RECEIVED: 25/10/2006
DATE OF ISSUE: 21/11/2006
SAMPLE TYPE: EQUIPMENT
No. of SAMPLES: 1

COMMENTS

The calibration procedure used for the analysis has been applied for the calibration of the above instrument.

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG**Address**

ALS Technichem (HK) Pty Ltd
11/F
Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

Phone: 852-2610 1044
Fax: 852-2610 2021
Email: hongkong@alsenviro.com


Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

AUSTRALIA
Brisbane
Melbourne
Sydney
Newcastle
Hong Kong
Singapore
Kuala Lumpur
Bogor

AMERICAS
Vancouver
Santiago
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Lima

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.

Phone: 852-2610 1044 Fax: 852-2610 2021 www.alsenviro.com

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CERTIFICATE OF ANALYSIS



Batch: HK53248
Sub Batch : 0
Date of Issue: 21/11/2006
Client: ENOVATIVE ENV TECHNOLOGY CO
Client Reference:

Calibration of Turbidimeter

Item : YSI SONDE Environmental Monitoring System
Model No. : 6920
Serial No. : 000109DF
Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 2130B
Date of Calibration : 25 October, 2006

Testing Results :

Expected Reading	Recording Reading
0.00 NTU	0.2 NTU
4.00 NTU	3.90 NTU
16.0 NTU	16.1 NTU
80.0 NTU	80.0 NTU
160 NTU	159 NTU
Allowing Deviation	±10%


Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS



Batch: HK53248
Sub Batch : 0
Date of Issue: 21/11/2006
Client: ENOVATIVE ENV TECHNOLOGY CO
Client Reference:

Calibration of Conductivity System

Item : YSI SONDE Environmental Monitoring System
Model No. : 6920
Serial No. : 000109DF
Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 2510B
Date of Calibration : 25 October, 2006

Testing Results :

Expected Reading	Recording Reading
1412 uS/cm 6667 uS/cm 58670 uS/cm	1405 uS/cm 6732 uS/cm 57920 uS/cm
Allowing Deviation	±10%


Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong



Batch: HK53248
Sub Batch : 0
Date of Issue: 21/11/2006
Client: ENOVATIVE ENV TECHNOLOGY CO
Client Reference:

Calibration of Salinity System

Item : YSI SONDE Environmental Monitoring System

Model No. : 6920

Serial No. : 000109DF

Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 2520 A and B

Date of Calibration : 25 October, 2006

Testing Results :

Expected Reading	Recording Reading
10.0 g/L	10.0 g/L
20.0 g/L	20.5 g/L
30.0 g/L	30.9 g/L
Allowing Deviation	±10%

Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS



Batch: HK53248
Sub Batch : 0
Date of Issue: 21/11/2006
Client: ENOVATIVE ENV TECHNOLOGY CO
Client Reference:

Calibration of Thermometer

Item : YSI SONDE Environmental Monitoring System
Model No. : 6920
Serial No. : 000109DF
Calibration Method : In-house Method
Date of Calibration : 25 October, 2006

Testing Results :

Reference Temperature (°C)	Recorded Temperature (°C)
3.5 °C 20.1 °C	3.5 °C 20.0 °C
Allowing Deviation	±2.0°C


Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS



Batch:
Sub Batch:
Date of Issue:
Client:
Client Reference:

Batch: HK53248
Sub Batch : 0
Date of Issue: 21/11/2006
Client: ENOVATIVE ENV TECHNOLOGY CO
Client Reference:

Calibration

Calibration of DO System

Item :
Model No :
Serial No :
Calibration Method :
Date of Calibration :
Testing Results :

Item : YSI SONDE Environmental Monitoring System
Model No. : 6920
Serial No. : 000109DF
Calibration Method : This meter was calibrated in accordance with standard method APHA (18th Ed.) 4500-OC & G
Date of Calibration : 25 October, 2006
Testing Results :

Expected Reading	Recording Reading
0.00 mg/L	0.10 mg/L
3.50 mg/L	3.60 mg/L
5.10 mg/L	5.00 mg/L
7.90 mg/L	7.90 mg/L
Allowing Deviation	±0.2 mg/L

Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

AL

CERTIFICATE OF ANALYSIS



Batch: HK53248
Sub Batch : 0
Date of Issue: 21/11/2006
Client: ENOVATIVE ENV TECHNOLOGY CO
Client Reference:

Calibration of pH System

Item : YSI SONDE Environmental Monitoring System
Model No. : 6920
Serial No. : 000109DF
Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 4500 H:B
Date of Calibration : 25 October, 2006
Testing Results :

Expected Reading	Recording Reading
4.00	4.01
7.00	7.01
10.0	9.93
Allowing Deviation	±0.2 unit


Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

**Instrument:**

Daily checking and calibration record
YSI 6920 (ENO 003)

[illegible]

Annex G

Monitoring Programme for the next three months

Dec 2006						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4 WQ	5	6 AQ	7	8 ME	9 ME
10	11 WQ	12 AQ	13 LV	14	15 TE	16
17	18 AQ WQ	19	20	21	22	23 AQ
24	25	26	27 WQ LV	28	29 AQ	30
31						

Jan 2007						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4 AQ	5	6
7	8 WQ	9	10 AQ LV	11	12	13
14	15	16 AQ	17 WQ	18	19 TE	20
21	22 AQ WQ	23	24 LV	25	26	27 AQ
28	29 WQ	30	31			

February 2007						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2 AQ	3
4	5 WQ	6	7 LV	8 AQ	9	10
11	12 WQ	13	14 AQ	15	16	17
18	19	20	21 LV AQ	22 WQ	23	24
25	26 WQ	27 TE AQ	28 TE			

Remarks: AQ = TSP, WQ = Freshwater and Marine water quality, TE = Terrestrial Ecology, ME = Marine Ecology, LV = Landscape & Visual.

No exceedance was found during the three months of coral monitoring (Apr – Jun 2006) at the temporary barging point after the coral incident (23rd Mar 2006), the monitoring frequency will be changed on quarterly basis (start from Sept 2006) till the end of the construction phase (Dec 06, Mar 07, Jun 07).

No dredging was carried out for the desalination plant pipeline construction. However, corals at Site D2 will be transplanted in the Dec 2006. Transplanted coral monitoring on quarterly basis for one year will be commenced once the completion of coral transplanted.

Annex H

Construction Programme for the next three months

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish	Total Float	2006												2007																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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								23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish	Total Float	2006												2007							
								OCT 23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19		
Construction of Seawater Pumping Station																											
Sewer Pumping Station: Civil Works																											
S200140	Lay seawater rising main fm SWPH to DP	30	6	60	03-10-06A	27-11-06	-50																				
S200290	Excavation of SWP Station	21	21	0	21-11-06*	14-12-06	-150																				
S200300	Reinf. & cast base slab of SWP station	10	10	0	15-12-06	28-12-06	-150																				
Seawater Intake & Discharge Pipe																											
Seawater Intake Pipe																											
S200342	Gazette for Dredging	60	1	90	24-02-06A	20-11-06	-322																				
S200346	Submission & Approval for Coral Transplantation	24	0	100	17-10-06A	16-11-06A																					
S200348	Coral Transplantation	12	12	0	20-11-06	02-12-06	-221																				
Construction Retaining Wall No.1																											
Construction Retaining Wall No.1																											
S200590	Slope work for retaining wall RW1	6	6	0	04-12-06*	09-12-06	-56																				
Lake No.1 and Pump House No.1																											
Diversion of Drainage																											
S200609	Diversion of Existing Irrigation system	7	0	100	18-10-06A	20-10-06A																					
Construction Lake No.1																											
S200610	Fill works to irrigation lake no.1	18	3	80	24-08-06A	22-11-06	202																				
S200612	Cut works to irrigation lake no.1	18	3	80	16-10-06A	22-11-06	-66																				
S200620	Trim to shape of irrigation lake no.1 1st	14	13	80	08-11-06A	04-12-06	-76																				
S200630	Trim to shape of irrigation lake no.1 2nd	5	5	0	05-12-06	09-12-06	-76																				
S200650	Lay granular & lining material 1st	6	6	0	05-12-06*	11-12-06	-72																				
S200660	Lay granular & lining material 2nd	6	6	0	11-12-06	16-12-06	-73																				
S200670	Place miracell and hydroseeding	10	10	0	13-12-06	23-12-06	-73																				
Pump House No.1: Civil Works																											
S200700	Construct 1st wall of PH1	7	0	100	19-10-06A	07-11-06A																					
S200702	Backfill wall of PH1	6	0	100	09-11-06A	18-11-06A																					
S200710	Construct base slab of Pump House PH1	6	6	0	11-12-06	16-12-06	-76																				
Pump House No.1: E&M Works																											
S200720	E&M installation and testing for PH1	6	6	0	18-12-06	23-12-06	-76																				
Rising Main No.1: Lay Pipe																											
S200780	Construction of HW1-1.6	12	0	100	09-11-06A	22-11-06A																					

23

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8

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OCT

NOV

DEC

JAN

FEB

2006

2007

Start Date

28-12-05

Early Bar

Progress Bar

Critical Activity

Finish Date

27-10-07

Data Date

20-11-06

Run Date

04-12-06 16:23

KS11

Sheet 4 of 13

China Harbour Engineering Company (Group)

The Jockey Club Kau Sai Chau Public Golf Course

3 Months Rolling programme

Date

28-12-05

27-05-06

Revision

1st rolling

KST7

Checked

Tim

Tim

Approved

Primavera Systems, Inc.

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish	Total Float	2006												2007											
								OCT 23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19						
Area 2																															
Existing Admin. Building																															
Admin. Building: Structure Works																															
S4020200	Site Formation Works	4	0	100	26-10-06A	31-10-06A																									
S4020300	Foundation to G/F Slab	12	15	30	01-11-06A	06-12-06	-39																								
S4020400	G/F Slab to Roof	40	40	0	07-12-06	25-01-07	-39																								
Area 1																															
Existing Admin. Building																															
Admin. Building: Structure Works																															
S4010300	Diversion of Existing Cart Entrance	1	1	0	30-11-06	30-11-06	-34																								
S4010400	Site Formation Works	18	19	20	10-11-06A	11-12-06	-49																								
S4010500	Foundation to G/F Slab (Phase 1)	28	28	0	12-12-06	16-01-07	-49																								
S4010600	Foundation to G/F Slab (Phase 2)	24	24	0	19-12-06	18-01-07	-49																								
Admin. Building: Fitting Out Works																															
S4011200	Finishing Works (1/F - Phase 1 Area)	24	10	60	04-09-06A	30-11-06	-34																								
Admin. Building: E&M Works																															
S4011000	E&M Works (1/F - Phase 1 Area)	24	10	60	04-09-06A	30-11-06	-34																								
Existing Building																															
Existing Admin. Building																															
Admin. Building: Structure Works																															
S4060100	Utility Diversion	30	30	0	30-11-06*	06-01-07	-39																								
Transformer Room																															
Existing Admin. Building																															
Admin. Building: E&M Works																															
S4100800	Install metal works to transformer/switch room	12	10	80	14-10-06A	30-11-06	28																								
S4100900	Install building services works	12	10	80	14-10-06A	30-11-06	28																								
S4101200	CLP final inspection (awaited CLP)	0	0	0	01-12-06*		28																								
S4101300	Allow CLP Cable laying (by CLP)	60	60	0	01-12-06	29-01-07	36																								
S4101400	Installation of transformer (by CLP)	60	60	0	01-12-06	29-01-07	36																								
General Works																															
Survey and Site Clearance																															
KSC00040	Preliminary Sum 4	345*	135*	53	07-03-06A	09-05-07	-49																								

23

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25

1

8

15

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29

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12

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OCT

NOV

DEC

JAN

FEB

2006

2007

Start Date

28-12-05

Early Bar

Progress Bar

Critical Activity

Finish Date

27-10-07

Data Date

20-11-06

Run Date

04-12-06 16:23

KS11

Sheet 7 of 13

China Harbour Engineering Company (Group)

The Jockey Club Kau Sai Chau Public Golf Course

3 Months Rolling programme

Date

28-12-05

27-05-06

Revision

1st rolling

KST7

Checked

Tim

Tim

Approved

?Primavera Systems, Inc.

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish	Total Float	2006												2007																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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2006

2007

Start Date

28-12-05

Early Bar

Progress Bar

Critical Activity

Finish Date

27-10-07

Data Date

20-11-06

Run Date

04-12-06 16:23

KS11

Sheet 8 of 13

China Harbour Engineering Company (Group)

The Jockey Club Kau Sai Chau Public Golf Course

3 Months Rolling programme

Date

28-12-05

27-05-06

Revision

1st rolling

KST7

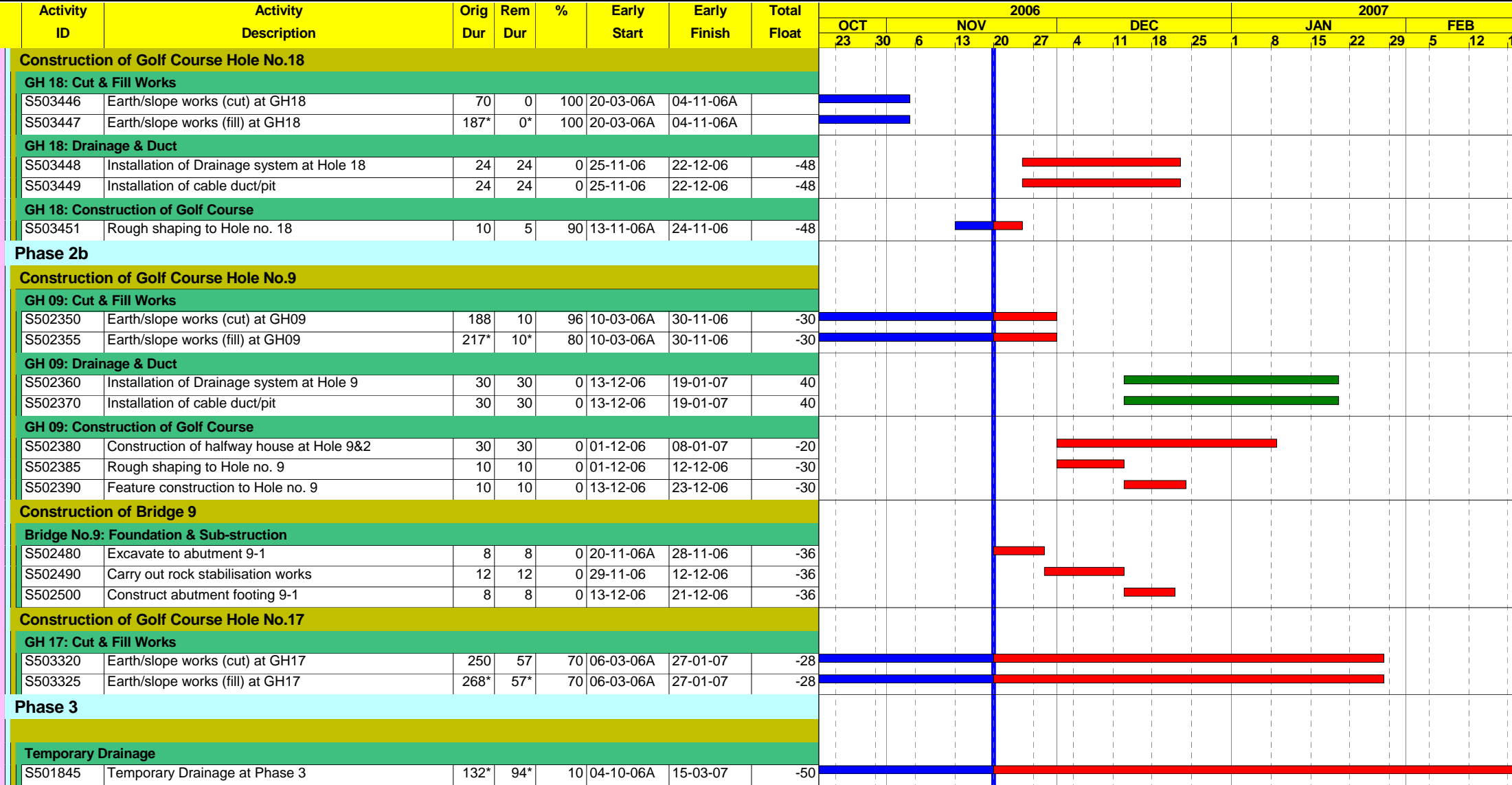
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Approved

Primavera Systems, Inc.



Start Date28-12-05

Finish Date27-10-07

Data Date20-11-06

Run Date04-12-06 16:23

Early Bar

Progress Bar

Critical Activity

KS11

Sheet 11 of 13

China Harbour Engineering Company (Group)

The Jockey Club Kau Sai Chau Public Golf Course

3 Months Rolling programme

23306132027411182518JAN22295121

OCTNOVDECJANFEB

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Date	Revision	Checked	Approved
28-12-05	1st rolling	Tim	
27-05-06	KST7	Tim	

?Primavera Systems, Inc.

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish	Total Float	2006												2007									
								OCT			NOV			DEC			JAN			FEB									
								23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	1				
Construction of Golf Course Hole No.15																													
Survey and Site Clearance																													
S500975	Site Clearance & UXO at GH15	6	0	100	31-10-06A	04-11-06A																							
Tank No.15 and Pump House No.15																													
T & PH 15: Structure Works																													
S501110	Excavate to lowflow PH 15 & Tank 15	6	8	50	13-11-06A	28-11-06	65																						
S501120	Cast base slab to lowflow PH 15 & Tank 15	6	6	0	29-11-06	05-12-06	65																						
S501130	Cast 1st pour wall/slab of PH 15 & Tank 15	11	11	0	06-12-06	18-12-06	65																						
S501140	Cast 2nd pour wall/slab of PH 15 & Tank 15	12	12	0	19-12-06	04-01-07	65																						
S501350	Rising Main from Tank 15 to BP Chamber 4	6	6	0	29-11-06	05-12-06	177																						
Construction of Bridge 15																													
Bridge No.15: Foundation & Sub-struction																													
S501010	Excavate to abutment 15-1	8	0	100	17-11-06A	20-11-06A																							
S501020	Carry out rock stabilisation works	12	12	0	20-11-06	02-12-06	9																						
S501030	Construct abutment footing 15-1	8	8	0	04-12-06	12-12-06	9																						
S501040	Construct abutment wall 15-1	15	15	0	13-12-06	02-01-07	9																						
General Works																													
Survey and Site Clearance																													
KSC00050	Preliminary Sum 9	539*	278*	44	03-01-06A	27-10-07	-261																						
Slope Restoration/Bioengineering Works																													
Slope Restoration/Bioengineering Works																													
S503471	Slope restoration works (no works in wet season)	100	100	0	21-11-06*	23-03-07	14																						

Start Date

28-12-05

Early Bar

Finish Date

27-10-07

Progress Bar

Data Date

20-11-06

Critical Activity

Run Date

04-12-06 16:23

KS11

Sheet 13 of 13

China Harbour Engineering Company (Group)

The Jockey Club Kau Sai Chau Public Golf Course

3 Months Rolling programme

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Date

28-12-05

27-05-06

Revision

1st rolling

KST7

Checked

Tim

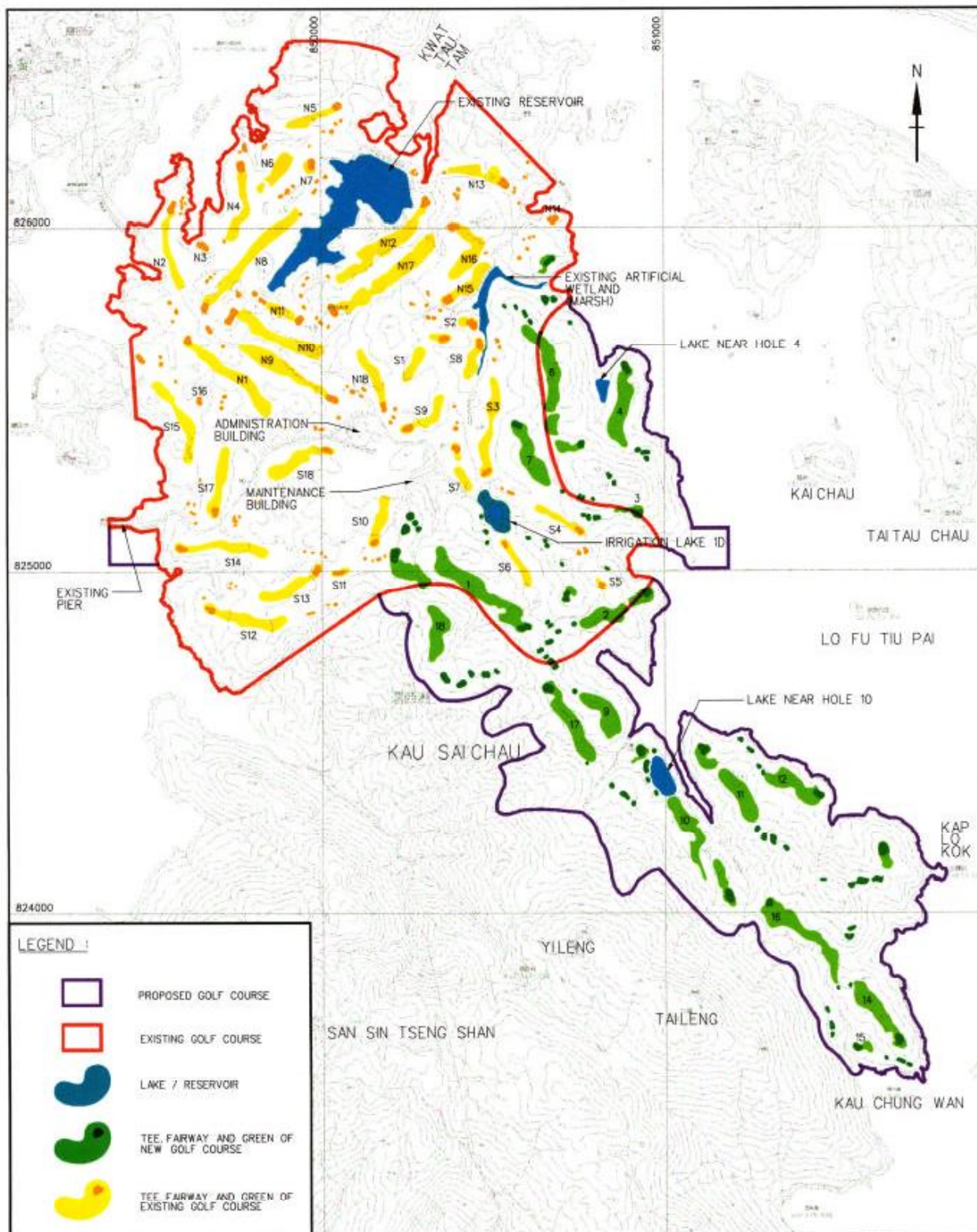
Tim

Approved

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Primavera Systems, Inc.

FIGURES



The Hong Kong Jockey Club



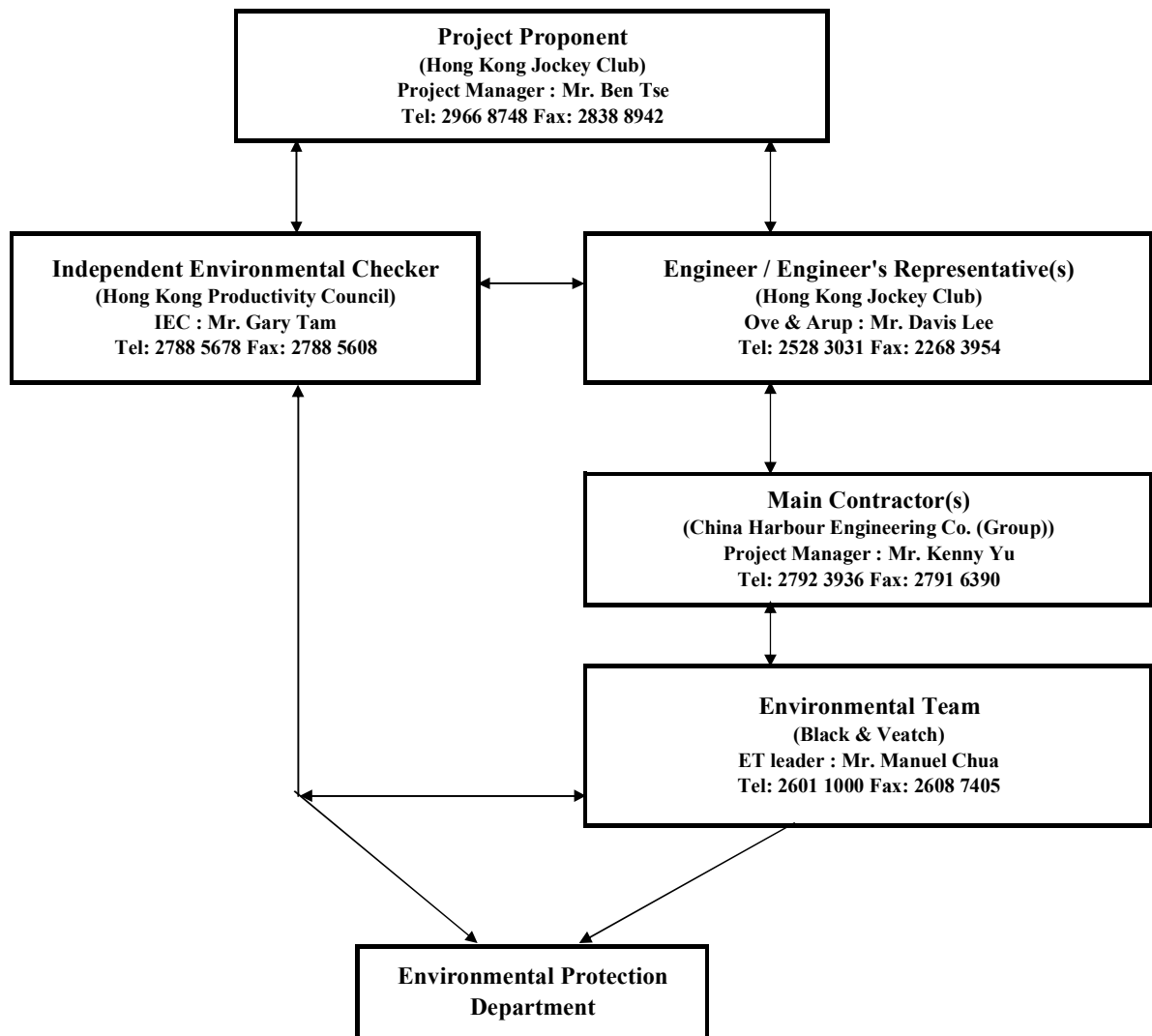
BLACK & VEATCH HONG KONG LIMITED
 博威工程顧問有限公司

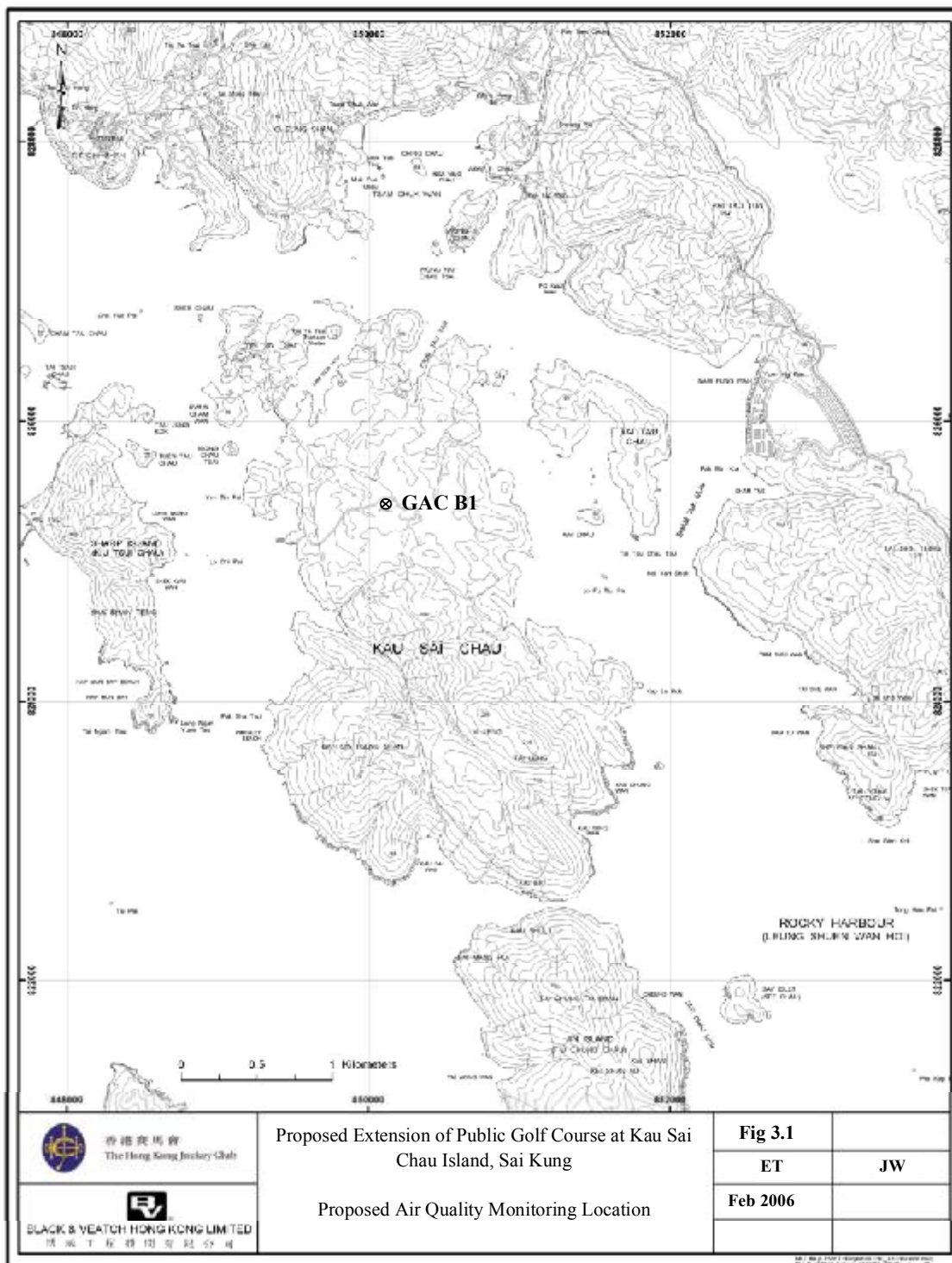
PROPOSED EXTENSION OF PUBLIC GOLF COURSE AT KAU SAI CHAU, SAI KUNG

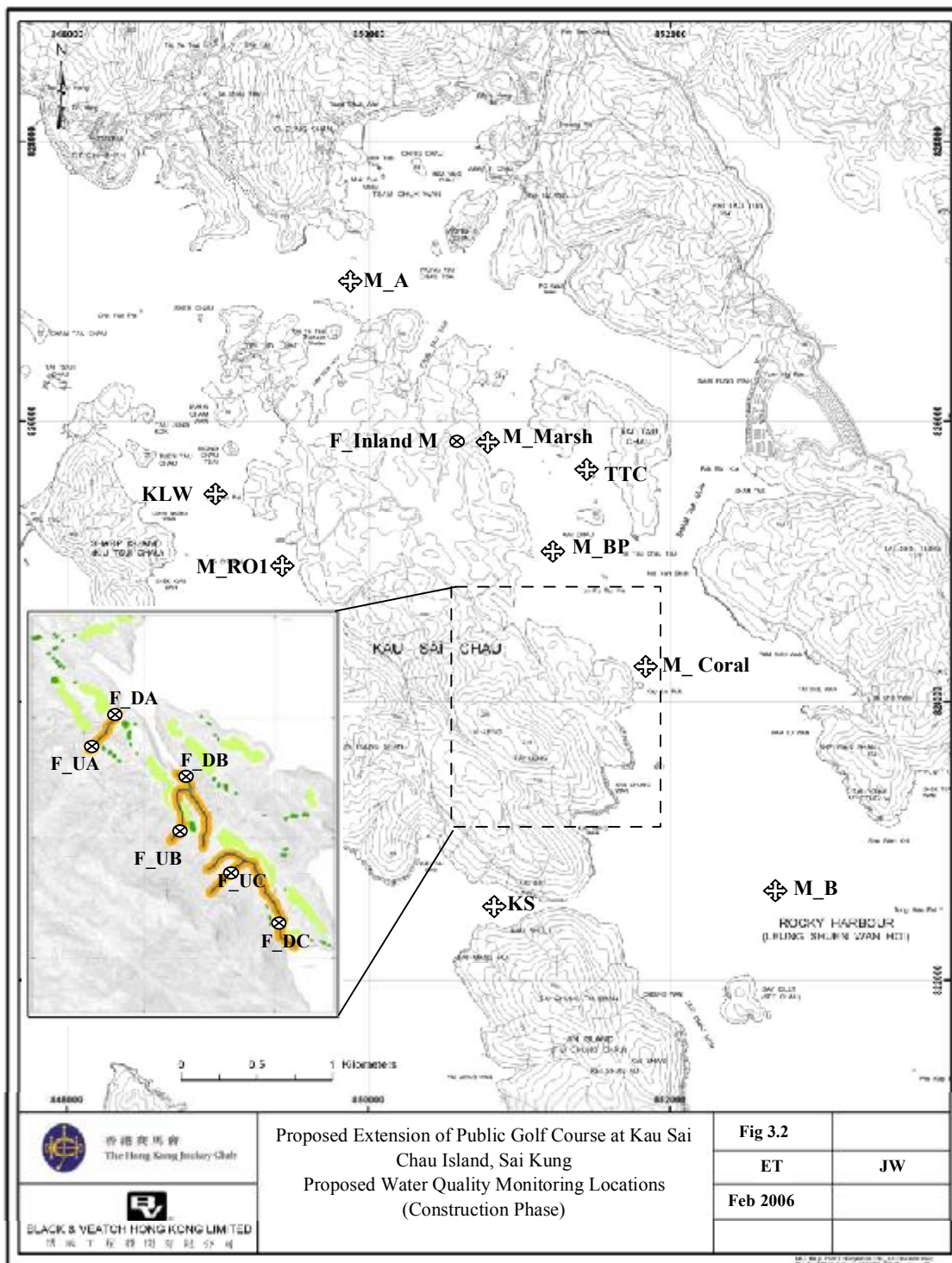
PROPOSED 18-HOLE THIRD GOLF COURSE (MASTER LAYOUT PLAN)

Figure No.	Revision
2.1	-
Reference	File Name
-	3822100201-2.1.DGN
Prepared	Checked
ET	JW
Date	Scale
MAY 2005	1:15000 (A4)

Figure 1.2
Project Organisation and Lines of Communication







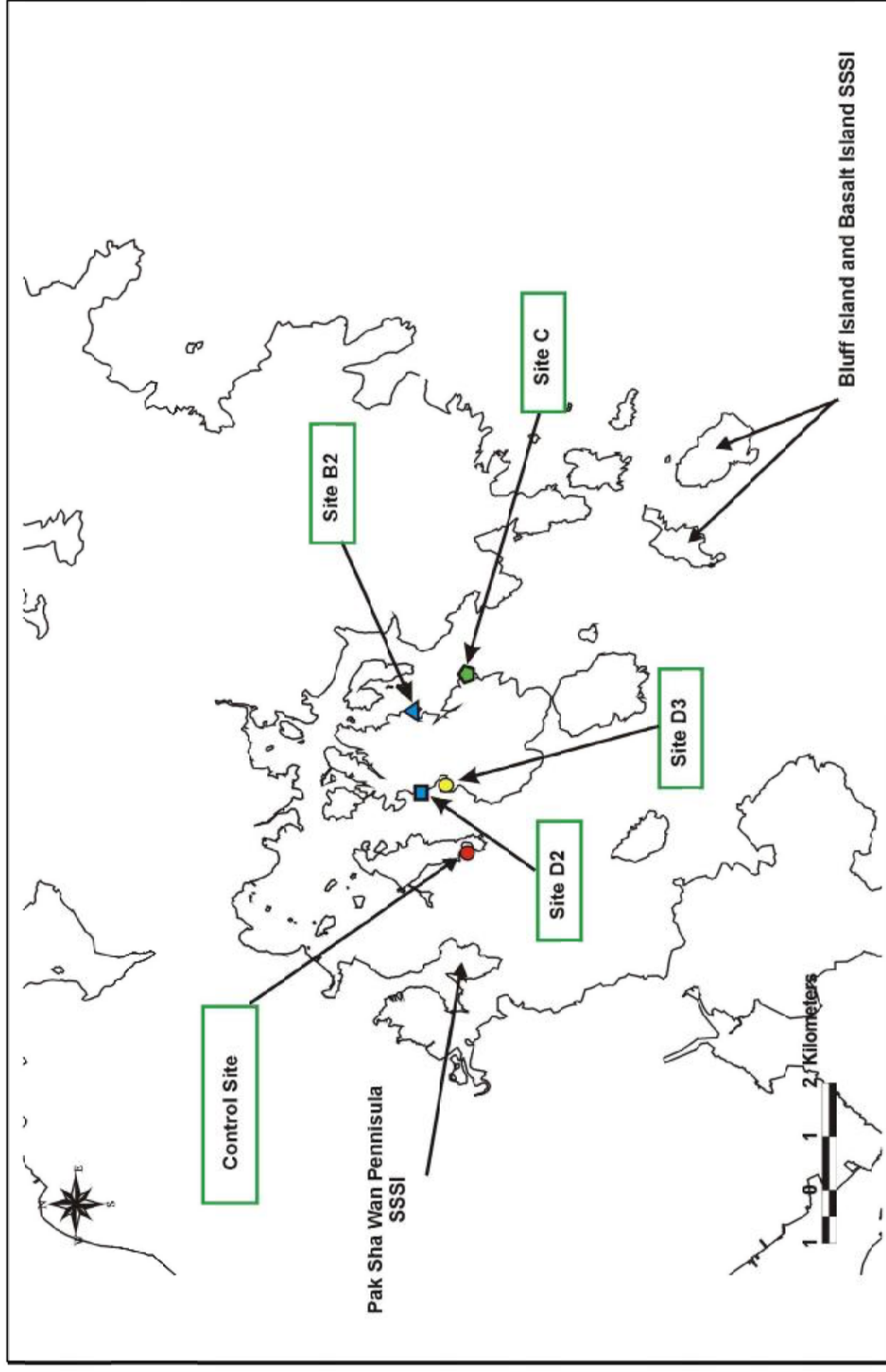


Figure 3.4 Site C, Site B2, Site D2 and a Control Site near the AFCD's Coral Buoy at Sharp Island

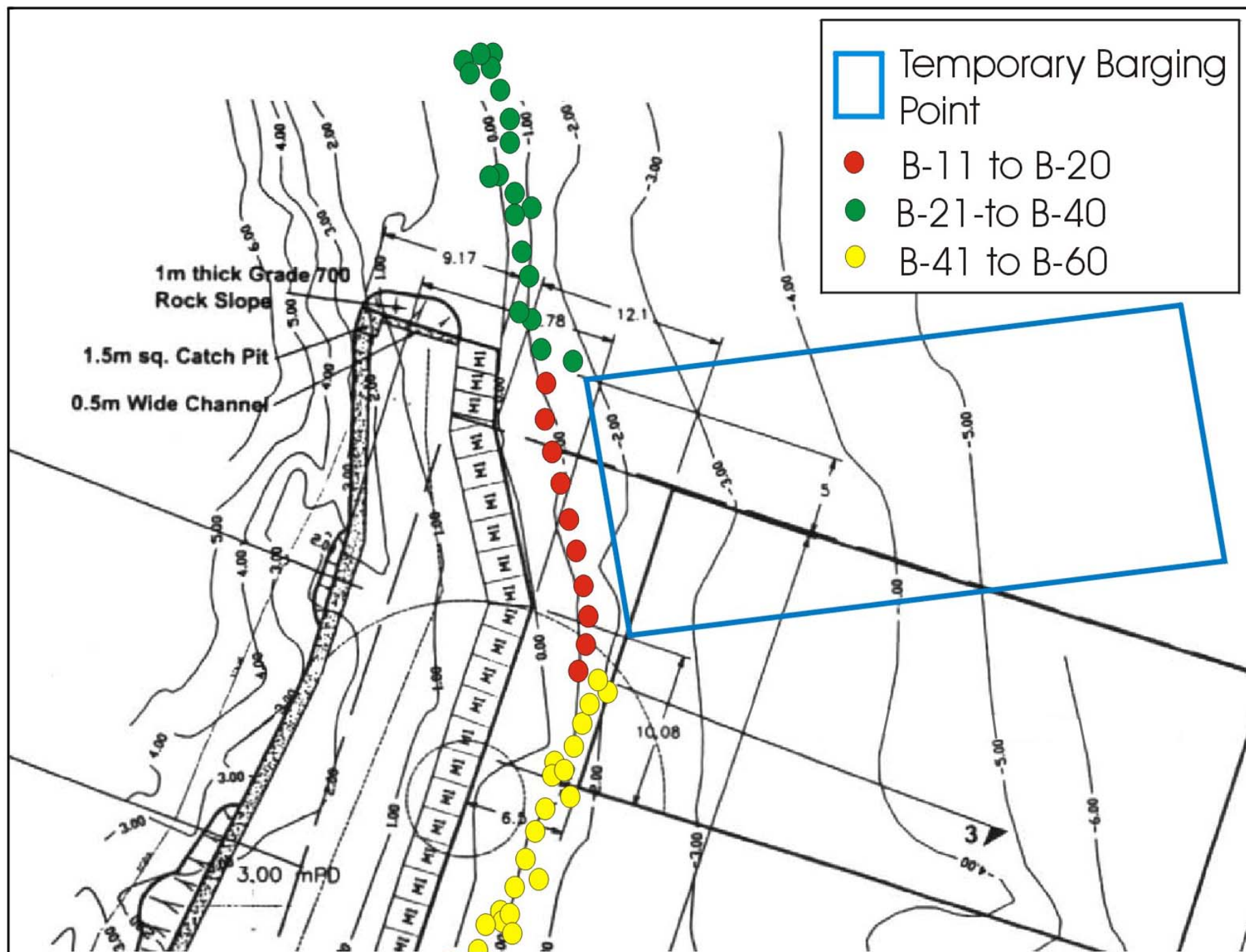


Figure 3.4b
Indicative map of additional tagged corals at Site B2

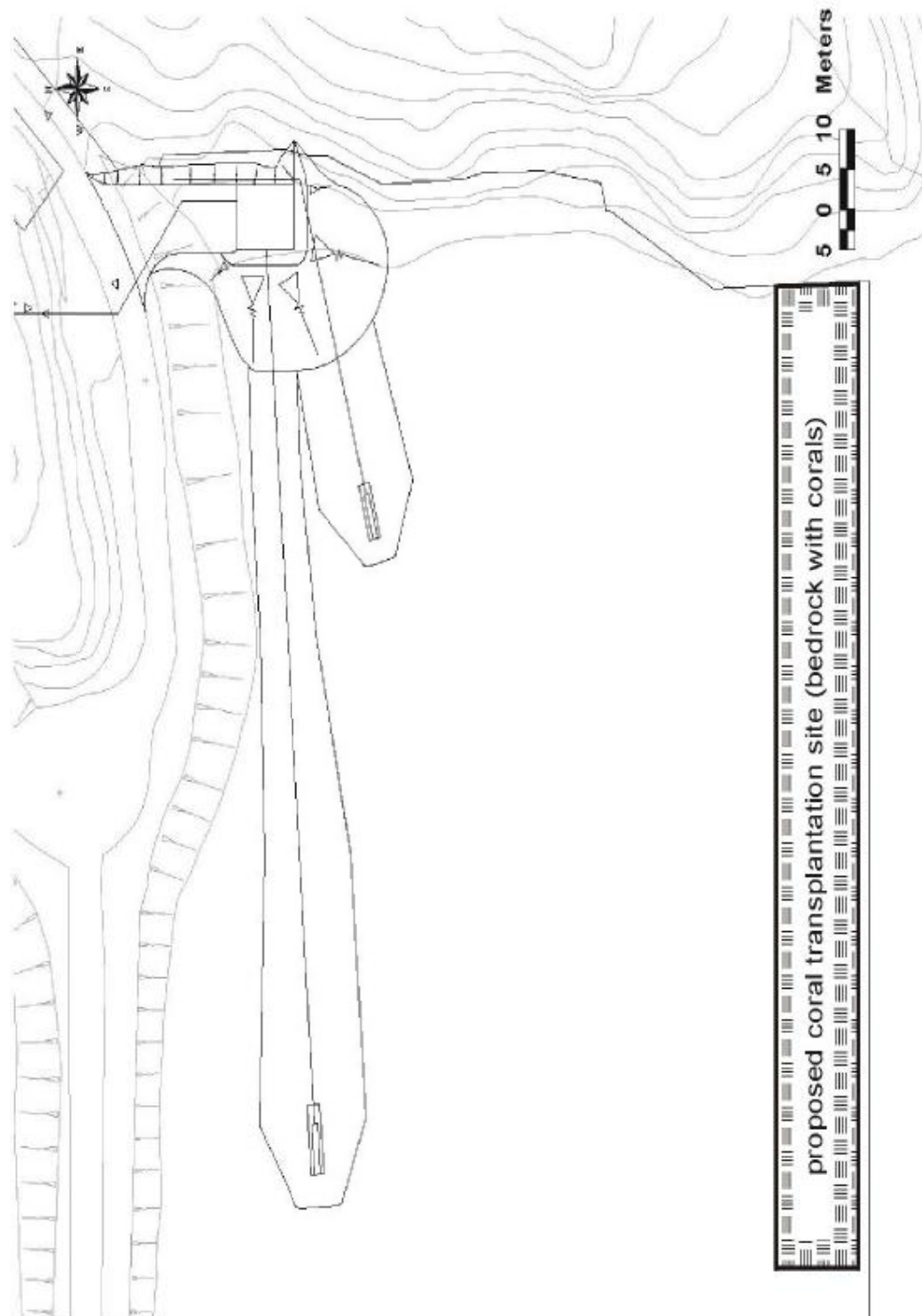


Fig 3.5

Proposed Extension of Public Golf Course at Kan Sai Chau Island, Sai Kung

Location of proposed coral transplantation site (bedrock with corals)

Prepared
FT

Checked
JW

Date
Jun-05

香港賽馬會
The Hong Kong Jockey Club



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博威工程顧問有限公司



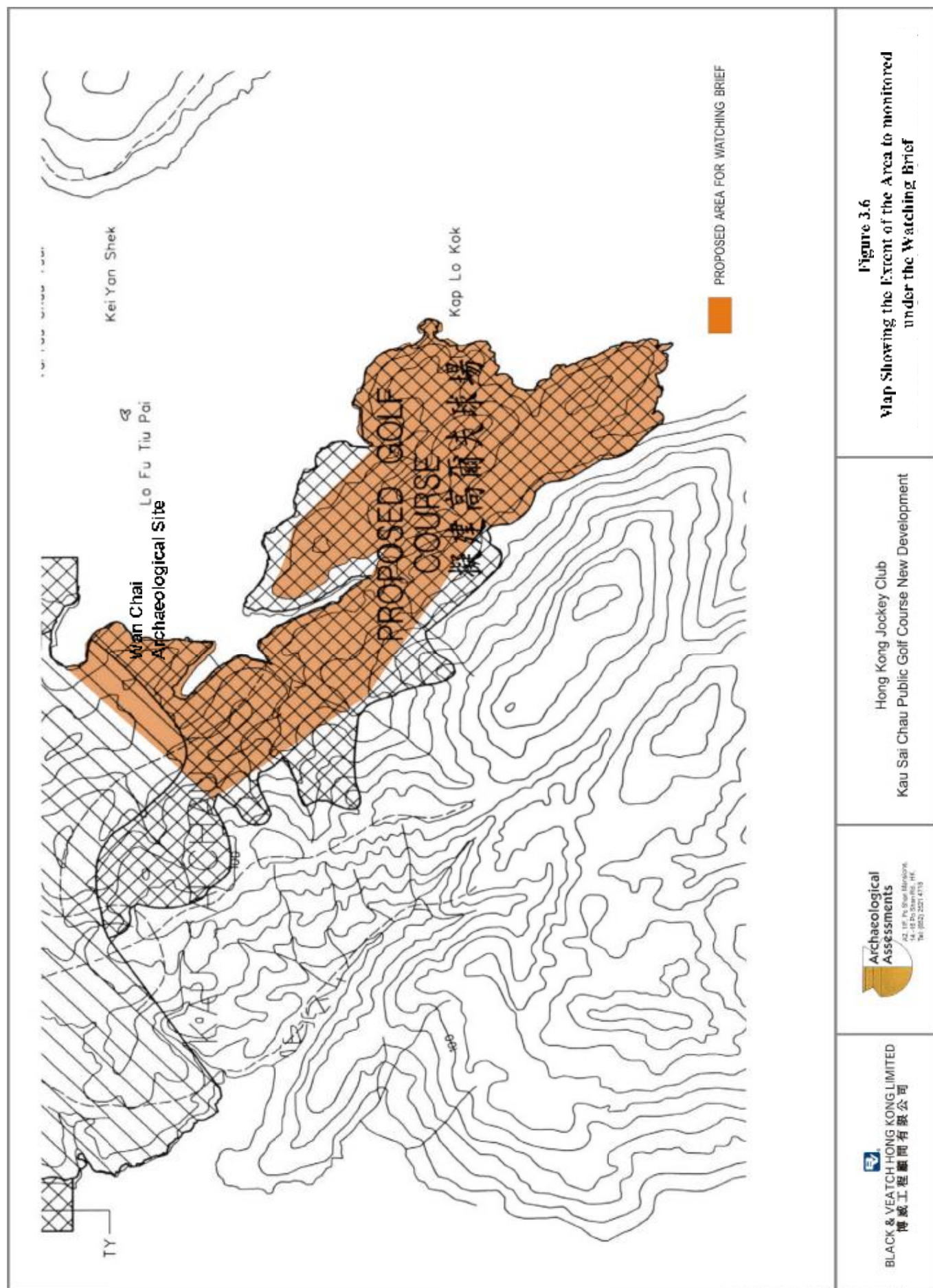
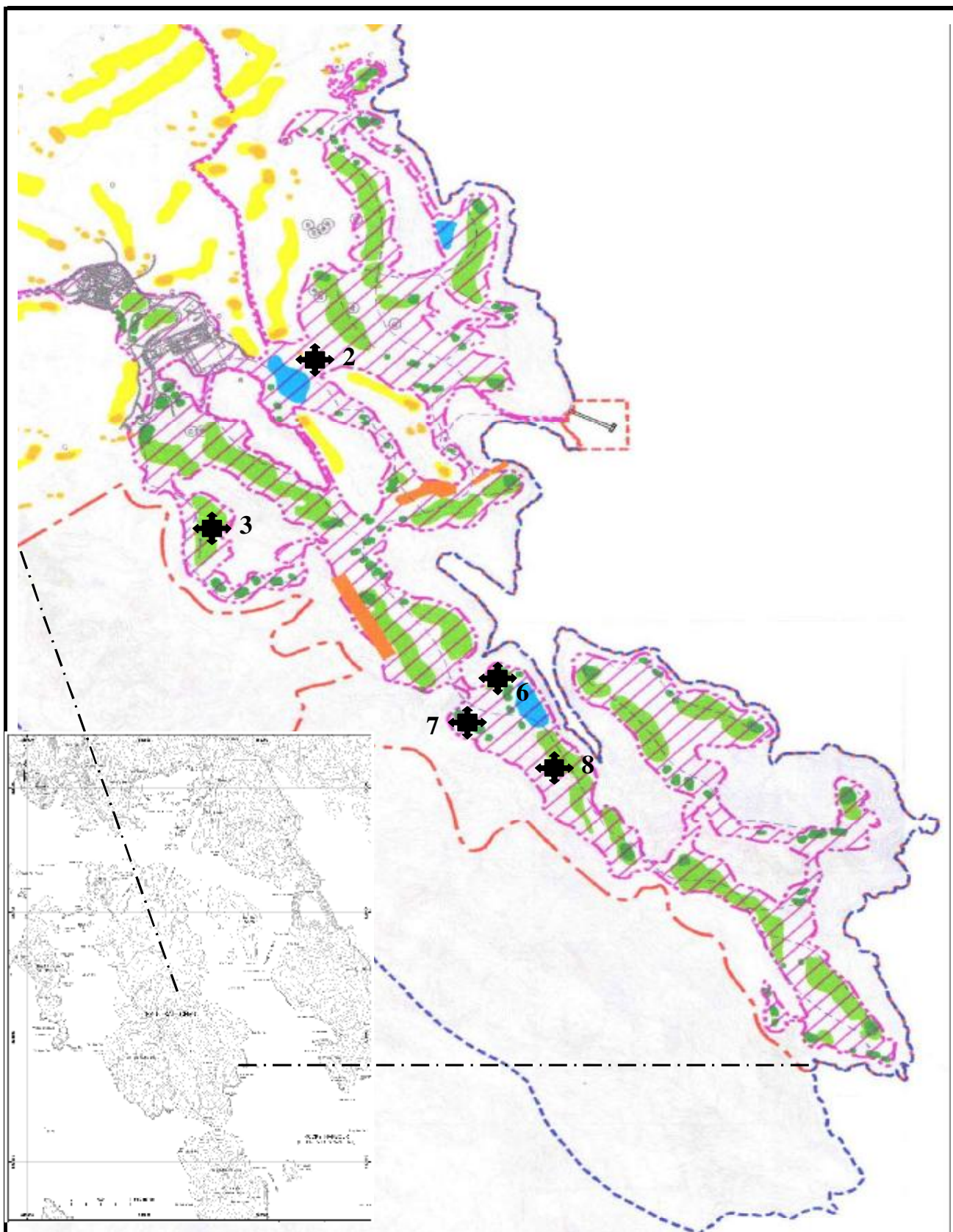




Figure 3.6
Map Showing the Extent of the Area to be monitored
under the Watching Brief

Hong Kong Jockey Club
 Kau Sai Chau Public Golf Course New Development



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 博威工程顧問有限公司



 <p>香港賽馬會 The Hong Kong Jockey Club</p>	<p>Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung</p> <p>Sampling location for land contamination</p>	<p>Fig 3.7</p>	
 <p>BLACK & VEATCH HONG KONG LIMITED 博威工程顧問有限公司</p>		<p>Prepared ET</p>	<p>Checked JW</p>
		<p>Date Jun-05</p>	