

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

**Quarterly Environmental Monitoring & Audit (EM&A) Report  
for October to December 2007**

**(Report No. 382210/Q\_008)**

Report Authorized For  
Issue By:



For and on Behalf of  
Black & Veatch Hong Kong Limited

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**January 2008**

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Your ref : 40040032/CERT/02\_08.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 checking of the Environmental Team's (ET) **Quarterly Environmental Monitoring & Audit (EM&A) Report for October to December 2007** 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 **Quarterly Environmental Monitoring & Audit (EM&A) Report for October to December 2007** 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



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Independent Environmental Checker

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Date 17 January 2008

## Executive Summary

This is the eighth quarterly 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 16<sup>th</sup> January 2006. This report presents the results of the EM&A works conducted in the fourth quarter of 2007 from December 2008.

In the reporting quarter, the following activities took place for the Project:

Major works carried out at the construction site were as follows:

1. Site formation - **Completed**: Holes 1-18
2. Drainage system installation – **Completed**: Holes 1-18
3. Irrigation installation – **Completed**: 1-18
4. Sub-soil drainage installation – **Completed**: 1-18
5. Sand capping – **Completed**: 1-18
6. Turf establishment: **Completed (green)**: 1-18
7. Sand Bunkers: **Completed**: Holes 1-18
8. Reinstatement work for gravity drain: **Completed**
9. Construction of Lake 1D, other pumping stations, underground water tanks and lakes: **Completed**
10. Slope restoration works: **Completed**
11. Removal of Silt Fence and Fencing: **Completed**: Stream C near Holes 15 and 16, Stream B near Hole 11 **In-progress**: Stream B near Hole 10, Hole 12
12. Removal of Silt Curtain: **Not yet commenced**
13. Removal of Temporary Barging Point and connecting haul road: **Not yet commenced**

### Construction of permanent bridges:

- (i) Construction of permanent bridge at Stream A – decking /finishing work (**Completed**). Temporary bridge was demolished on 27 March 07.
- (ii) Pipe culvert construction at Stream B2 – **Completed**
- (iii) In-situ culvert bridge at Stream B1 – decking /finishing work (**Completed**). Temporary bridge was demolished on 30 March 07.
- (iv) Construction of permanent bridge at Stream C – decking /finishing work (bridge wall finishing – **Completed**). Temporary bridge was demolished on 16 March 07.
- (v) Construction of permanent bridge at the fresh water inland marsh – decking /finishing work (**Completed**). Temporary bridge was demolished on 6 March 07.

Other construction activities:

- Operation of sewage treatment work (site office) [**Removed at early December 07**]
- Operation of temporary barging point at EP location [**Tentative removal at mid Jan 08**]

No dredging of the permanent intake and outfall pipelines for the desalination plant has been carried out. Hong Kong Jockey Club (HKJC) submitted supplementary information to EPD in Dec 2007 regarding the discharge licence. As there is no discharge licence for the desalination plant, the plant will not be operated until successful application from EPD.

The 89 transplanted corals survey was completed in September 2007 after one year quarterly monitoring. No coral monitoring is required according to the EM&A manual.

Marine ecology monitoring was conducted in December 2007 at Site B2, Site C, Control Site. A seawall had constructed at Site B2 as the landing point of the temporary barging point. In the present survey, recovery on some corals, on which mortality had been reported previously, were found. New or further mortality on B-55 were found in the present survey. The Control Site still remained similar conditions as

during the Baseline Survey (no mortality, sedimentation or bleaching was found), except the missing of X-05 colony.

The floating pontoon was located and operated at the designated location according to Environmental Permit (EP). No further improper berthing at the temporary barging point was observed.

According to the site observation, turfing was completed in December 2007. Some hydroseeding areas were not fully covered with hydroseed and re-hydroseeding was required. It will be carried out during the Spring time in 2008. Applications of fertilizers and pesticides at all holes with turfing were recorded. Chemical applications (Chlorpyrifos, Chlorothalonil, Fipronil, Glyphosate and Iprodione) were recorded.

All of the closed low flow drainage system was completed to collect surface runoff and covered with turf during reporting month. No significant runoff was observed. For the Temporary Drainage Management Plan (TMDP), no revised plan was submitted to RE for approval during the two years construction phase. ET and the Engineer repeatedly reminded the Contractor to prevent silty/nutrient/pesticides runoff to the streams and marine water since the start of this year wet season.

Hydroseedlings were re-planted in the rock-filled slope area within the buffer zone during the quarterly monitoring. Aquatic life including Atyid shrimps and freshwater snails were recorded in extreme low density at Stream B. Sedimentation was still observed in the Stream C, and the abundance of aquatic fauna, in particular caridian shrimps, was also found in low density. The Stream D was in natural conditions similar to the condition during the Baseline Survey, and the aquatic fauna abundance was found resuming.

Water was actively pumping from Stream C to Hole 15 in December 2007. ET requested CHEC to stop immediately to prevent further dehydrating the sensitive stream. ET considered that this activity is a violation of the Environmental Permit. The situation was rectified within one week time.

The temporary Sewage Treatment Plant (STP), sewage effluent was stored temporarily in a temporary storage tank since early May 2007 and discharge off-site by licenced Contractor. Both CHEC's site office and STP were removed in early December 2007 during daytime through temporary barging point. No information was submitted by CHEC regarding the STP performance during the quarterly monitoring. Nutrient exceedances at the Fresh Water Inland Marsh, in particular ammonia nitrogen, were recorded but in much lower frequency than in February to July 2007. The water quality was resumed to the baseline condition.

Improper temporary stockpiles of construction wastes were observed and located at the edge of the temporary barging point in October 2007 which could cause potential pollution problem or coral damage. The situation was rectified in November 2007.

The latest programme for the removal of the rock filled pier at the temporary barging point will be in mid-January 2008. CHEC prepared the method statement for HKJC, RE and ET for comments. ET provided comments in order to minimize the silty runoff and potential damage from unstable rocks during some critical removal stages to the nearby coral communities. In addition, ET recommended that CHEC should submit immediate actions, remedial actions and mitigation measures proposal when there is any coral damage occurred during the temporary barging point removal for AFCD and EPD approval before removal of the temporary barging point.

Due to the coral damage occurred in March 2006 during the construction of the temporary barging point, additional coral monitoring are recommended during the period of removal. The proposed temporary barging point removal programme is around one month. ET proposed to carry out the coral monitoring during the first, third and fifth weeks of the temporary barging point removal in order to cover the whole removal period. AFCD agreed the coral monitoring frequency in principal. If there is an extension of the

removal programme due to any coral damage, further review on the coral monitoring frequency is required and will be submitted for AFCD and EPD approval.

### **Environmental Monitoring Works**

A summary of the monitoring activities in this quarter is listed below:

24-hour Total Suspended Particulates (TSP) monitoring at GCA B1	15 times
Water quality monitoring (marine + freshwater)	14 times
Terrestrial Ecology	3 times
Marine Ecology	1 time
Landscaping & Visual	6 times

### ***Air Quality***

No exceedance of 24-hour TSP was recorded at GCA B1 in the reporting quarter.

### ***Water Quality***

For marine water quality, all exceedances (SS, turbidity, NH<sub>3</sub>-N, NO<sub>3</sub>-N, Chl a and TIN) measured at KLW, M\_Marsh, TTC, M\_BP, M\_Coral and KS were considered not project-related. For freshwater monitoring stations, exceedances recorded on 29<sup>th</sup> October and 5<sup>th</sup> November 2007 at Stream B were considered project-related. All other exceedances recorded at Stream A, Stream B, Stream C and Fresh Water Inland Marsh were considered not project-related.

### ***Ecology***

#### Terrestrial

Heavy sedimentation to the Stream C leading to extreme low population aquatic fauna, in particular caridean shrimps, was found.

#### Marine

No non-compliance was recorded during the reporting quarter.

### ***Environmental Audit***

Site audit was carried out on a weekly basis to monitor environmental issues on the construction sites. The Contractor generally implemented the mitigation measures recommended in the EIA report to minimize the environmental impacts due to the construction works. Weekly site inspection and *ad hoc* site inspection were carried out to identify the potential source of dust, silty runoff and waste management. The monitoring results revealed that the hydroseeding, shrubs and trees planting were in progress during reporting quarter. Waste management was unsatisfactory. In addition, dust generation from the golf course was observed and affected the golfers playing in existing golf course.

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

#### Air Quality

- Provide sufficient watering at the remaining haul road before temporary baring point and Hole 2 during removal; and
- Cover all soil and waste stockpiles with tarpaulin or other measures to reduce the dust emission before remove offsite;

### Waste Management

- Properly dispose the construction waste off-site;
- Properly stockpile and regularly dispose the construction waste;

### Ecology

- Enhancement of the newly hydroseeding areas located within the buffer zone area at downstream of the Stream A;
- Maintain the reinstated conditions (planting shrub) at Stream B2 buffer zone since March 2007 and Stream C buffer zone since May 2007; and
- Provide effective mitigation measures to prevent damage to the nearby corals during the removal of the temporary barging point.

### Water Quality

- Desilting 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 before removal;
- Desilting of silt fence before removal; and
- Provide effective mitigation measures at the temporary barging point during removal of the temporary barging point.

### Landscape & Visual

- Protect the retain trees with sufficient watering mainly located at the administration building;
- Provide sufficient water to the retain trees, transplanted trees, hydroseeding areas; and
- Provide incident report for the death of the retain trees.

## **Environmental Complaints and Prosecution**

One environmental complaint was received from the golfers regarding dust blowing from the works area to the existing golf course by the end of September 2007 during the reporting quarter. Complaints related to i.) Dust blowing from Hole South 10 works onto the existing South Course and ii.) Sand / Dust blowing from the sand stockpile behind Hole East 1 green to Hole South 6. It was concluded that the Contractor had not provided sufficient mitigation measures to avoid dust nuisance from the works area. Three times (3<sup>rd</sup>, 9<sup>th</sup> and 12<sup>th</sup> October 2007) on-site investigation was carried out by ET against the incident. Additional mitigation measures (eg. watering sand stockpile and operation of irrigation system) were observed. The Contractor was reminded to provide sufficient watering or other equivalent measures to minimize dust nuisance from haul roads, stockpiles and other activities that may generate dust. Furthermore, the Contractor was reminded to comply with Air Pollution Control Ordinance and its subsidiary regulations.

No prosecution was received during the reporting quarter. The prosecution regarding the dust generation under the APCO (Construction Dust) Regulation (Schedule no. 14) in January and May 2007 were in progress.

## **Environmental Licensing and Permitting**

License/Permits granted to the Project include the Environmental Permit (EP), construction noise permit (CNP), exemption account for the construction waste charging scheme and chemical waste producer. The construction noise permit was expired in November 2007. The waste exemption account was expired in August 2007 and renewed in October 2007. Further renewal was recorded in December 2007.



### **Future Key Issues**

The whole golf course was planted with turf in December 2007 and construction of golf course was completed. No major environmental impact is expected. The tentative programme for the removal of temporary barging point will commence in mid-January 2008. Additional coral monitoring will be carried out during the removal. Operation phase will commence in February 2008. The future key issues will be the potential water quality impact due to the use of nutrients and pesticides for the established turf and marine ecology impacts to corals and seagrass during the operation phase of the East Course.

## **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/A, 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 is the eighth quarterly EM&A report which summarises the environmental monitoring and audit works for the Project in the fourth quarter of 2007 from October to September 2007.

## **2. Project Information**

### **2.1 Background**

2.1.1 The Project comprises the following major components:

- Construction of a 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 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<sup>th</sup> November 2005 under the EIAO. An Environmental Permit (EP-224/2005) was granted on 28<sup>th</sup> November 2005. A Variation of Environmental Permit (EP-224/2005/A) was issued on 17 August 2006.

### **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<sup>th</sup> January 2006 and was scheduled to be completed by end of June 2007. According to the Contractor's latest programme, construction works is schedule to be completed by December 2007.

### **2.5 Summary of EM&A Requirements**

2.5.1 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.

### ***Monitoring Parameters and Locations***

- 2.5.2 24-hour TSP was the monitoring parameter for dust monitoring. One location for monitoring air quality was identified.
- 2.5.3 The water quality parameters which need to be monitored are as follows:
- Marine water quality (9 monitoring locations) - dissolved oxygen (DO), temperature, turbidity, suspended solids (SS), pH and salinity
  - Freshwater water quality (7 monitoring locations) - dissolved oxygen (DO), temperature, turbidity, suspended solids (SS), pH and salinity
- 2.5.4 Additional marine and freshwater water quality monitoring parameters for the impact monitoring during construction include nitrate nitrogen (NO<sub>3</sub>-N), nitrite nitrogen (NO<sub>2</sub>-N), ammonia nitrogen (NH<sub>3</sub>-N), total phosphate (TP) and selected pesticides.
- 2.5.5 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.
- 2.5.6 Aquatic fauna and integrity of stream buffer zone at Streams A, B and C were identified to monitor the potential land formation impact on terrestrial ecology especially stream courses. For coral monitoring, there were one control and three impact monitoring locations were identified to monitor the marine construction activities.
- 2.5.7 Watching Brief (archaeology) monitoring locations are identified at the cut areas of Holes 2, 11, 12, 14, 15 & 16.
- 2.5.8 The monitoring locations for air, water, ecology and watching brief (archaeology) are depicted in **Annex B**.

### ***Monitoring Methodology and Calibration Details***

- 2.5.9 All monitoring works were conducted and monitoring equipment was regularly calibrated in accordance with the EM&A Manual. Calibration records were shown in the monthly EM&A reports for October to December 2007.

### ***Environmental Quality Performance Limits (Action and Limit Levels)***

- 2.5.10 The environmental quality performance limits, i.e. Action and Limit Levels (AL Levels) were derived from the baseline monitoring results and make reference to EIA report and latest EPD monitoring data. If the measured environmental quality parameters exceed the AL Levels, the respective action plan would be implemented. The AL Levels for each environmental parameter are given in **Annex C**.

### **3. Monitoring Result & Site Audit**

#### **3.1 Air Quality**

3.1.1 Graphical presentation of the trend of the monitoring results of 24-hour TSP is provided in **Annex D**.

#### **3.2 Water Quality**

3.2.1 Graphical presentations of the trends of the monitoring results of marine water and freshwater quality are provided in **Annex D**.

#### **3.3 Ecology**

3.3.1 Monitoring results of the terrestrial and marine ecology are provided in **Annex D**.

#### **3.4 Landscape and Visual**

3.4.1 No provision of surgery to all damaged trees due to the construction activities.

3.4.2 No tree compensation proposal was submitted by the CHEC for those death trees located next to the administration building due to the construction activities.

3.4.3 Mal-pruning of transplanted trees had not been rectified since July 2006.

3.4.4 A statement on the cause of death of tree T925 recorded was still outstanding.

3.4.5 Soil around the transplanted trees was dry and more frequent watering is required.

3.4.6 Compensatory tree planting within the golf course is in progress.

3.4.7 Health condition of hydroseeding, shrub planting and tree planting are considered poor and more frequent watering is required.

#### **4. Environmental Audit**

##### **4.1 Implementation Status of Environmental Mitigation Measures**

- 4.1.1 Major construction work of the third golf course were (i) sand capping at Holes 2 and 9, (ii) turfing at Holes 2, 9 & 17 (iii) permanent drainage / irrigation system / sub-soil drainage installation at central part (Holes 2 and 17) of East Course, (iv) hydroseeding at the permanent slope/bare grounds and (v) furnishing work at permanent bridges.
- 4.1.2 Routine site inspection was carried out on 11<sup>th</sup> December 2007. A water pump was observed located at the streambed of Stream C underneath bridge no. 15 in operation and pumping water to a nearby catchhole located at Hole 15. This activity will cause potential dehydration of Stream C resulting in violation of the Environmental Permit requirements.
- 4.1.3 The Contractor was reminded to provide sufficient dust suppression measures for loading/unloading activities and haul road (truck traffic).
- 4.1.4 No revised submission was received from the Contractor regarding the temporary drainage during the 2 years construction phase, in particular wet seasons.
- 4.1.5 The Contractor was reminded to dispose the construction waste regularly and properly off-site. The Contractor was reminded to provide proper container to prevent the waste accidentally dropping into the marine water. The Contractor was reminded to dispose more off-site regularly and to submit the chit tickets for our record.
- 4.1.6 Hydroseeding at scar areas within the East Course was completed before March 2007. However, some areas were required re-hydroseeding (due to soil erosion after rain and died out) and will be planted with native shrub. The Contractor proposed to carry out re-planting work in early spring 2008 before the next wet season come.
- 4.1.7 The removal of Contractor's site office and temporary sewage treatment plant (STP) was carried out in early December 2007 through the temporary barging point during daytime. Regarding the STP, no water quality report was submitted by CHEC regarding the performance of the sewage treatment plant since failure. Therefore, no discharge of sewage effluent from the sewage treatment plant to fresh water inland marsh is allowed.
- 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 E**.

##### **4.2 Status of Environmental Licensing and Permitting**

- 4.2.1 Valid environmental licenses and permits for the project during the reporting quarter are summarised in **Annex F**.

##### **4.3 Advice on Solid and Liquid Waste Management Status**

- 4.3.1 According to the site observation, vegetation stockpiles, construction wastes stockpiles and general refuse were removed regularly offsite with disposal records prepared by the Contractor. For the mobile chemical toilets, all of them were removed but no disposal record was submitted by the Contractor during the whole construction phase. Silt fences and orange fencing except silt curtain were removed during the reporting quarter. Disposal records for the construction wastes were received during the reporting quarter.

## 5. Non-compliance (Exceedances) of the Environmental Quality Performance Limits (Action and Limit Levels)

### 5.1 Air Quality

5.1.1 No exceedance of 24-hour TSP was recorded at GCA B1 in the reporting quarter.

### 5.2 Water Quality

5.2.1 No rainstorm events were occurred during the reporting quarter. The marine water exceedances were summarized in **Table 5.2-1**.

**Table 5.2-1 Marine Water Exceedance Summary October to December 2007**

Monitoring Station	Exceedance Level	Date	Parameters	Project-related
KLW	Action Level	8 <sup>th</sup> Oct 07	SS	No
	Action Level	22 <sup>nd</sup> Oct 07	SS	No
	Action Level	29 <sup>th</sup> Oct 07	SS	No
M_Marsh	Action Level	19 <sup>th</sup> Nov 07	Turbidity	No
	Action Level	27 <sup>th</sup> Sep 07	Chl a	No
	Limit Level	27 <sup>th</sup> Sept 07	NH <sub>3</sub> -N	No
	Action Level	15 <sup>th</sup> Oct 07	Turbidity	No
	Limit Level	15 <sup>th</sup> Oct 07	NH <sub>3</sub> -N	No
	Limit Level	12 <sup>th</sup> Nov 07	NH <sub>3</sub> -N	No
	Action Level	26 <sup>th</sup> Nov 07	Chl a	No
	Action Level	10 <sup>th</sup> Dec 07	TIN	No
	Limit Level	10 <sup>th</sup> Dec 07	NH <sub>3</sub> -N	No
	TTC	Action Level	27 <sup>th</sup> Sep 07	Turbidity
Limit Level		27 <sup>th</sup> Sep 07	NH <sub>3</sub> -N, Chl a	No
Action Level		5 <sup>th</sup> Oct 07	SS	No
Action Level		15 <sup>th</sup> Oct 07	SS	No
Limit Level		15 <sup>th</sup> Oct 07	NH <sub>3</sub> -N, Chl a	No
Action Level		22 <sup>nd</sup> Oct 07	Chl a	No
Limit Level		22 <sup>nd</sup> Oct 07	SS	No
Action Level		29 <sup>th</sup> Oct 07	NH <sub>3</sub> -N, Chl a	No
Limit Level		5 <sup>th</sup> Nov 07	Chl a	No
Limit Level		12 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, TIN	No
Limit Level		26 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, Chl a	No
Action Level		3 <sup>rd</sup> Dec 07	NO <sub>3</sub> -N	No
Limit Level		3 <sup>rd</sup> Dec 07	Chl a	No
Action Level		10 <sup>th</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
Limit Level		10 <sup>th</sup> Dec 07	NH <sub>3</sub> -N	No
M_BP	Action Level	17 <sup>th</sup> Dec 07	Chl a	No
	Limit Level	24 <sup>th</sup> Dec 07	NH <sub>3</sub> -N	No
	Action Level	27 <sup>th</sup> Sep 07	Chl a	No
	Limit Level	12 <sup>th</sup> Nov 07	NH <sub>3</sub> -N	No
M_Coral	Action Level	26 <sup>th</sup> Nov 07	Chl a	No
	Limit Level	24 <sup>th</sup> Dec 07	NH <sub>3</sub> -N	No
	Action Level	15 <sup>th</sup> Oct 07	SS	No
	Limit Level	12 <sup>th</sup> Nov 07	NH <sub>3</sub> -N	No
KS	Action Level	26 <sup>th</sup> Nov 07	Chl a	No
	Limit Level	24 <sup>th</sup> Dec 07	NH <sub>3</sub> -N	No
	Action Level	27 <sup>th</sup> Sep 07	NH <sub>3</sub> -N	No
	Limit Level	27 <sup>th</sup> Sep 07	Chl a	No
	Limit Level	5 <sup>th</sup> Oct 07	SS	No

Monitoring Station	Exceedance Level	Date	Parameters	Project-related
	Action Level	8 <sup>th</sup> Oct 07	SS	No
	Action Level	15 <sup>th</sup> Oct 07	NH <sub>3</sub> -N	No
	Limit Level	15 <sup>th</sup> Oct 07	Chl a	No
	Action Level	22 <sup>nd</sup> Oct 07	SS	No
	Limit Level	22 <sup>nd</sup> Oct 07	Chl a	No
	Action Level	29 <sup>th</sup> Oct 07	SS	No
	Limit Level	29 <sup>th</sup> Oct 07	Chl a	No
	Limit Level	5 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, Chl a	No
	Action Level	12 <sup>th</sup> Nov 07	TIN	No
	Action Level	26 <sup>th</sup> Nov 07	SS	No
	Limit Level	26 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, Chl a	No
	Limit Level	3 <sup>rd</sup> Dec 07	Chl a	No
	Action Level	10 <sup>th</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	10 <sup>th</sup> Dec 07	NH <sub>3</sub> -N	No
	Action Level	17 <sup>th</sup> Dec 07	Chl a	No
	Action Level	24 <sup>th</sup> Dec 07	SS	No
	Limit Level	24 <sup>th</sup> Dec 07	NH <sub>3</sub> -N	No

### Freshwater

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

**Table 5.2-2 Freshwater Exceedance Summary October to December 2007**

Monitoring Station	Exceedance Level	Date	Parameters	Project-related	
F_DA	Action Level	27 <sup>th</sup> Sep 07	Turbidity, NO <sub>3</sub> -N, TIN	No	
	Action Level	5 <sup>th</sup> Oct 07	Turbidity, SS	No	
	Limit Level	5 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	No	
	Action Level	8 <sup>th</sup> Oct 07	SS	No	
	Limit Level	8 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	No	
	Limit Level	15 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN, Chl a	No	
	Action Level	22 <sup>nd</sup> Oct 07	SS	No	
	Limit Level	22 <sup>nd</sup> Oct 07	NO <sub>3</sub> -N, TIN, Chl a	No	
	Action Level	29 <sup>th</sup> Oct 07	SS	No	
	Limit Level	29 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN, Chl a	No	
	Action Level	5 <sup>th</sup> Nov 07	SS	No	
	Limit Level	5 <sup>th</sup> Nov 07	NO <sub>3</sub> -N, TIN	No	
	Limit Level	12 <sup>th</sup> Nov 07	Chl a	No	
	Action Level	26 <sup>th</sup> Nov 07	TIN	No	
	Limit Level	26 <sup>th</sup> Nov 07	NH <sub>3</sub> -N	No	
	Action Level	10 <sup>th</sup> Dec 07	Chl a	No	
	Limit Level	17 <sup>th</sup> Dec 07	NO <sub>3</sub> -N, TIN	No	
	Action Level	24 <sup>th</sup> Dec 07	SS	No	
	F_UB	Limit Level	27 <sup>th</sup> Sep 07	Turbidity, NH <sub>3</sub> -N, NO <sub>3</sub> -N, TIN	No
		Action Level	5 <sup>th</sup> Oct 07	SS	No
Limit Level		5 <sup>th</sup> Oct 07	Turbidity, NO <sub>3</sub> -N, TIN	No	
Action Level		8 <sup>th</sup> Oct 07	SS	No	
Limit Level		8 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	No	
Action Level		15 <sup>th</sup> Oct 07	Turbidity	No	
Limit Level		15 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN, Chl a	No	
Action Level		22 <sup>nd</sup> Oct 07	Turbidity, SS	No	
Limit Level		22 <sup>nd</sup> Oct 07	NO <sub>3</sub> -N, TIN	No	
Action Level		29 <sup>th</sup> Oct 07	SS	No	
Limit Level		29 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	Yes	
Limit Level		5 <sup>th</sup> Nov 07	NO <sub>3</sub> -N, TIN	Yes	
Limit Level		12 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, NO <sub>3</sub> -N, TIN	No	



Monitoring Station	Exceedance Level	Date	Parameters	Project-related
	Limit Level	19 <sup>th</sup> Nov 07	NO <sub>3</sub> -N, TIN	No
	Action Level	26 <sup>th</sup> Nov 07	SS	No
	Limit Level	26 <sup>th</sup> Nov 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	3 <sup>rd</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Action Level	10 <sup>th</sup> Dec 07	SS	No
	Limit Level	10 <sup>th</sup> Dec 07	NH <sub>3</sub> -N, NO <sub>3</sub> -N, TIN	No
	Action Level	17 <sup>th</sup> Dec 07	Turbidity, Chl a	No
	Limit Level	17 <sup>th</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Action Level	24 <sup>th</sup> Dec 07	SS	No
F_DB	Action Level	27 <sup>th</sup> Sep 07	SS	No
	Limit Level	27 <sup>th</sup> Sep 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	5 <sup>th</sup> Oct 07	SS, NO <sub>3</sub> -N, TIN	No
	Action Level	8 <sup>th</sup> Oct 07	SS	No
	Limit Level	8 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	15 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN, Chl a	No
	Limit Level	22 <sup>nd</sup> Oct 07	NO <sub>3</sub> -N, TIN	No
	Action Level	29 <sup>th</sup> Oct 07	SS	No
	Limit Level	29 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	Yes
	Limit Level	5 <sup>th</sup> Nov 07	NO <sub>3</sub> -N, TIN	Yes
	Limit Level	12 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, TP	No
	Limit Level	19 <sup>th</sup> Nov 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	26 <sup>th</sup> Nov 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	3 <sup>rd</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Action Level	10 <sup>th</sup> Dec 07	SS	No
	Limit Level	10 <sup>th</sup> Dec 07	NH <sub>3</sub> -N, NO <sub>3</sub> -N, TIN	No
	Limit Level	17 <sup>th</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Action Level	24 <sup>th</sup> Dec 07	SS	No
	Limit Level	24 <sup>th</sup> Dec 07	NH <sub>3</sub> -N, TIN	No
F_UC	Limit Level	27 <sup>th</sup> Sep 07	Turbidity	No
	Action Level	5 <sup>th</sup> Oct 07	SS	No
	Limit Level	5 <sup>th</sup> Oct 07	Turbidity, NO <sub>3</sub> -N, TIN, Chl a	No
	Action Level	8 <sup>th</sup> Oct 07	SS	No
	Limit Level	8 <sup>th</sup> Oct 07	Turbidity, NO <sub>3</sub> -N, TIN, Chl a	No
	Limit Level	15 <sup>th</sup> Oct 07	Turbidity, NO <sub>3</sub> -N, TIN, Chl a	No
	Action Level	22 <sup>nd</sup> Oct 07	SS	No
	Limit Level	22 <sup>nd</sup> Oct 07	Turbidity, Chl a	No
	Limit Level	29 <sup>th</sup> Oct 07	Chl a	No
	Limit Level	5 <sup>th</sup> Nov 07	Chl a	No
	Limit Level	12 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, TIN, TP	No
	Action Level	3 <sup>rd</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	17 <sup>th</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Action Level	24 <sup>th</sup> Dec 07	SS	No
F_DC	Limit Level	27 <sup>th</sup> Sep 07	NO <sub>3</sub> -N, TIN	No
	Action Level	5 <sup>th</sup> Oct 07	SS	No
	Limit Level	5 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	No
	Action Level	8 <sup>th</sup> Oct 07	SS	No
	Limit Level	8 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	15 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN, Chl a	No
	Limit Level	22 <sup>nd</sup> Oct 07	SS, Chl a	No
	Action Level	29 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	5 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, NO <sub>3</sub> -N, TIN	No
	Limit Level	12 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, TIN	No
	Action Level	19 <sup>th</sup> Nov 07	Chl a	No
	Limit Level	26 <sup>th</sup> Nov 07	Chl a	No
	Limit Level	3 <sup>rd</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	10 <sup>th</sup> Dec 07	NH <sub>3</sub> -N, Chl a	No

Monitoring Station	Exceedance Level	Date	Parameters	Project-related
	Limit Level	17 <sup>th</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Action Level	24 <sup>th</sup> Dec 07	SS	No
F_Inland M	Limit Level	27 <sup>th</sup> Sep 07	NH <sub>3</sub> -N, NO <sub>3</sub> -N, TIN	No
	Action Level	5 <sup>th</sup> Oct 07	SS	No
	Limit Level	5 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	No
	Action Level	8 <sup>th</sup> Oct 07	SS	No
	Limit Level	8 <sup>th</sup> Oct 07	NO <sub>3</sub> -N, TIN	No
	Action Level	15 <sup>th</sup> Oct 07	TIN	No
	Limit Level	15 <sup>th</sup> Oct 07	NH <sub>3</sub> -N	No
	Action Level	22 <sup>nd</sup> Oct 07	SS	No
	Limit Level	29 <sup>th</sup> Oct 07	NH <sub>3</sub> -N, NO <sub>3</sub> -N, TIN	No
	Limit Level	5 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, NO <sub>3</sub> -N, TIN	No
	Limit Level	12 <sup>th</sup> Nov 07	NH <sub>3</sub> -N, NO <sub>3</sub> -N, TIN	No
	Action Level	3 <sup>rd</sup> Dec 07	SS	No
	Limit Level	10 <sup>th</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	17 <sup>th</sup> Dec 07	NO <sub>3</sub> -N, TIN	No
	Limit Level	24 <sup>th</sup> Dec 07	NH <sub>3</sub> -N, NO <sub>3</sub> -N, TIN	No

5.2.3 Exceedances of ammonia nitrogen, nitrate nitrogen and total inorganic nitrogen were recorded at downstream of fresh water inland marsh but in very low frequency when it compared to the directly discharge of sewage from the Contractor's STP. All exceedances were considered not project-related.

5.2.1 Chemical applications (Chlorpyrifos, Chlorothalonil, Fipronil, Glyphosate and Iprodione) were recorded in the reporting quarter. In the reporting quarter, 10 days (7 days in October 2007, 2 days in November 2007 and 1 day in December 2007) of water sampling due to the chemical application were carried out. All water samples were required to send to overseas laboratory for analysis and testing. All chemicals were found below the detection limit during the reporting quarter.

5.2.2 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

6.1.1 The hydroseeding areas at the downstream of Stream A within the buffer zone area were found not in good condition. The Contractor was required to reinstate the buffer zone back to baseline condition.

6.1.2 Water was actively pumping from Stream C to Hole 15 was recorded during the reporting quarter. ET requested CHEC to stop immediately to prevent further dehydrating the sensitive stream. ET considered that this activity is a violation of the Environmental Permit.

6.1.3 No illegal berthing was observed during the site audit. Floating pontoon was berthed at EP location at the temporary barging point. The barges were mainly delivering turf and construction wastes during the reporting quarter.

- 6.1.4 Regarding to the vegetation clearance of Streams B & C buffer zone due to the permanent drainage construction work, the area was planting with shrubs. The Contractor was reminded to keep the reinstated area in good and healthy condition for the newly plants.
- 6.1.5 The proposed removal programme of the temporary barging point will commence in mid-January 2008 and require one month. ET commented on the submitted method statement prepared by the Contractor to ensure the nearby coral communities are well-protected and avoid damage (in particular, silt and physical) during the removal period. The Contractor is required to submit the immediate and remedial action plans and mitigation measures proposal to AFCD for approval before commencement.

#### Marine Ecology

- 5.3.1 The fourth quarterly coral monitoring at Site B2, Site C and Control Site was carried out in December 2007. At Site C and the Control Site, the 20 colonies of natural corals selected during the Baseline Survey were recovered.
- 5.3.2 Mortality had been found on some tagged corals in Site B during the previous reporting quarter. In the present monitoring, the majority of the coral colonies were in conditions similar as recorded in previous monitoring, but recoveries on some of the coral colonies were found, including B-11 (recovered from 50 to zero %), B-54 (recovered from 50% to zero%). There were also some minor increases on mortality in some other colonies (e.g. B-55, increased from 60% to 70%), but these mortality records were still below the Action Level for the coral monitoring, i.e. “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”. The remaining tagged corals were still similar with the baseline conditions during the Baseline Survey in December 2005 or in April 2006.
- 5.3.3 All 20 tagged corals in Site C were recovered except C-04 (which had been destroyed by adverse weather and reported during the reporting quarter), no mortality or sedimentation was found on other tagged corals. Coral X-05 was lost in June 2006, the remaining 19 tagged corals were recovered at the Control Site. No mortality, sedimentation or bleaching was found on any of the tagged corals.

#### Transplanted Coral

- 5.3.4 One year transplanted corals monitoring were completed in the previous reporting month.

### **5.4 Summary of Environmental Complaint**

- 5.4.1 One environmental complaint from the construction site was received during the reporting quarter.

### **5.5 Summary of Environmental Summons**

- 5.5.1 No summon was received from the construction site during the reporting quarter.

## **6. Recommendations and Conclusions**

- 6.1.1 This Quarterly Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from October to December 2007 in accordance with EM&A Manual and the requirement under EP-224/2005/A.
- 6.1.2 No exceedance was recorded for 24-hour TSP in the reporting quarter.
- 6.1.3 The Contractor was reminded to provide sufficient dust suppression mitigation measures especially during haul road and temporary barging point removal and large soils stockpiles.
- 6.1.4 The Contractor was reminded to dispose stockpiles of the construction waste off-site properly.
- 6.1.5 The Contractor was reminded to provide sufficient mitigation measures and proposed remedial action plan to AFCD approval before commencement in order to avoid coral damage during the temporary barging point removal.
- 6.1.6 The abundance of aquatic fauna, in particular caridian shrimps, was still found extreme low in Streams B & C during the reporting quarter.
- 6.1.7 Intrusion at Stream C within the buffer zone area due to operation of water pump was recorded during the reporting quarter.
- 6.1.8 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;
  - Re-fix the label of retained tree for easy identification;
  - Maintain the tree protection zone required and remove all construction material / debris from the tree protection zone;
  - More frequent watering for transplanted trees, planted vegetation and hydroseeded grass; and
  - Rectify the mal-pruning practice of the transplanted trees.
- 6.1.9 One environmental complaint was received during the reporting quarter. No summon was received during the reporting quarter.
- 6.1.10 The ET will keep track of the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

# **Annex A**

## **Tentative Construction Programme**

識別碼	任務名稱	工期	開始時間	完成時間	2008年02月					
					13/01	20/01	27/01	03/02	10/02	17/02
1	Dismantling of Rock-filled Pier	25 工作日	2008/01/16	2008/02/16						
2	Mobilization of Backhoe, Dump Truck and Flat Barge	1 工作日	2008/01/16	2008/01/16						
3	Trench Excavation along Seawall Blocks	2 工作日	2008/01/17	2008/01/18						
4	Loading and Unloading of Flat Barge at TKO Depot (1st Trip)	4 工作日	2008/01/19	2008/01/23						
5	Installation of Silt Curtain	2 工作日	2008/01/24	2008/01/25						
6	Removal of Seawall Blocks	2 工作日	2008/01/26	2008/01/28						
7	Loading and Unloading of Flat Barge at TKO Depot (2nd Trip)	6 工作日	2008/01/29	2008/02/04						
8	Loading and Unloading of Flat Barge at TKO Depot (3rd Trip)	6 工作日	2008/02/05	2008/02/14						
9	Removal of Silt Curtain	1 工作日	2008/02/15	2008/02/15						
10	Demobilization of Construction Plant	1 工作日	2008/02/16	2008/02/16						

22

專案: Dismantling of Pier  
日期: 2007/12/12

任務分割

進度里程碑

摘要

專案摘要報告

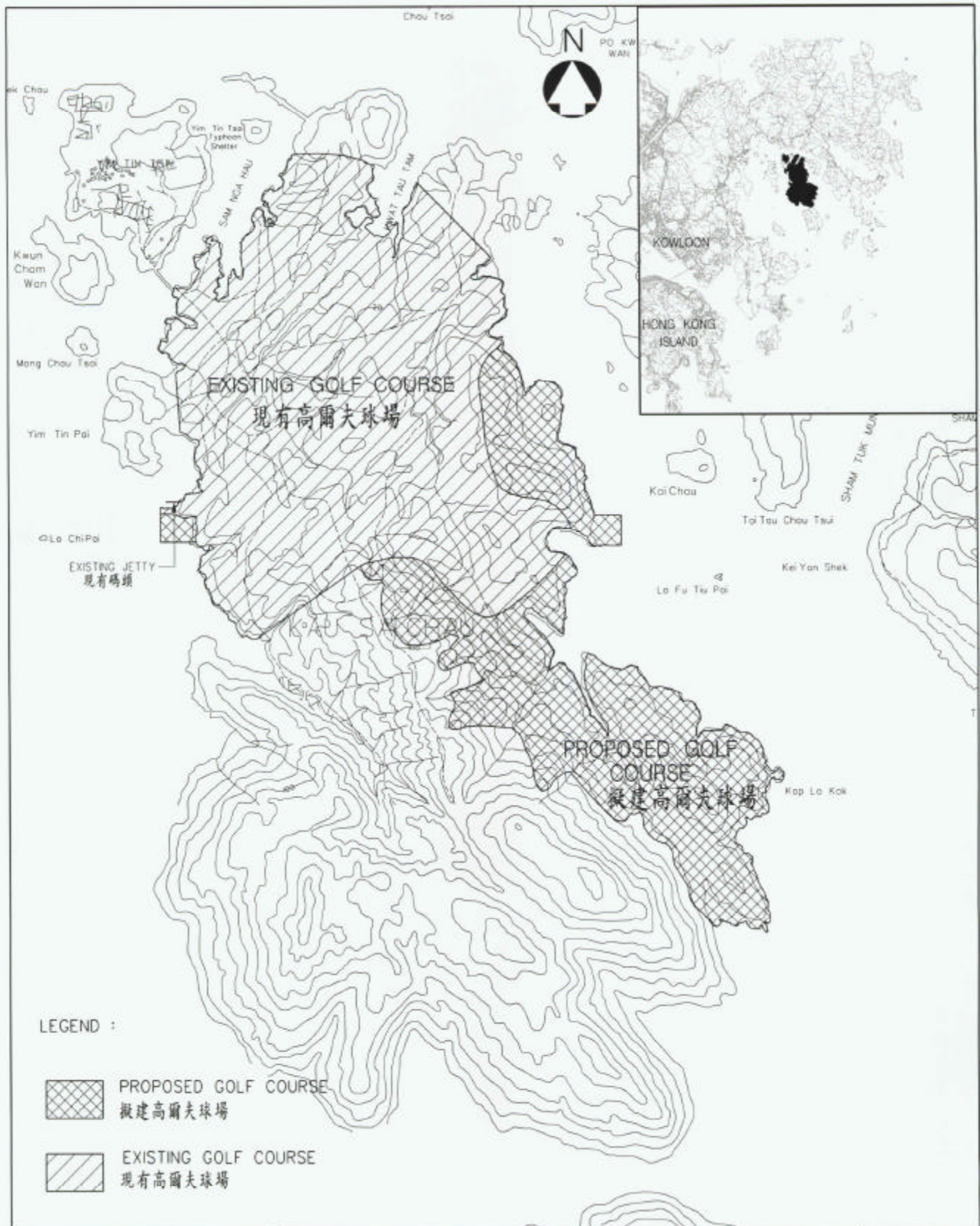
外部任務

外部里程碑

期限

# **Annex B**

## **Monitoring Locations**



LEGEND :

-  PROPOSED GOLF COURSE  
擬建高爾夫球場
-  EXISTING GOLF COURSE  
現有高爾夫球場

 The Hong Kong Jockey Club

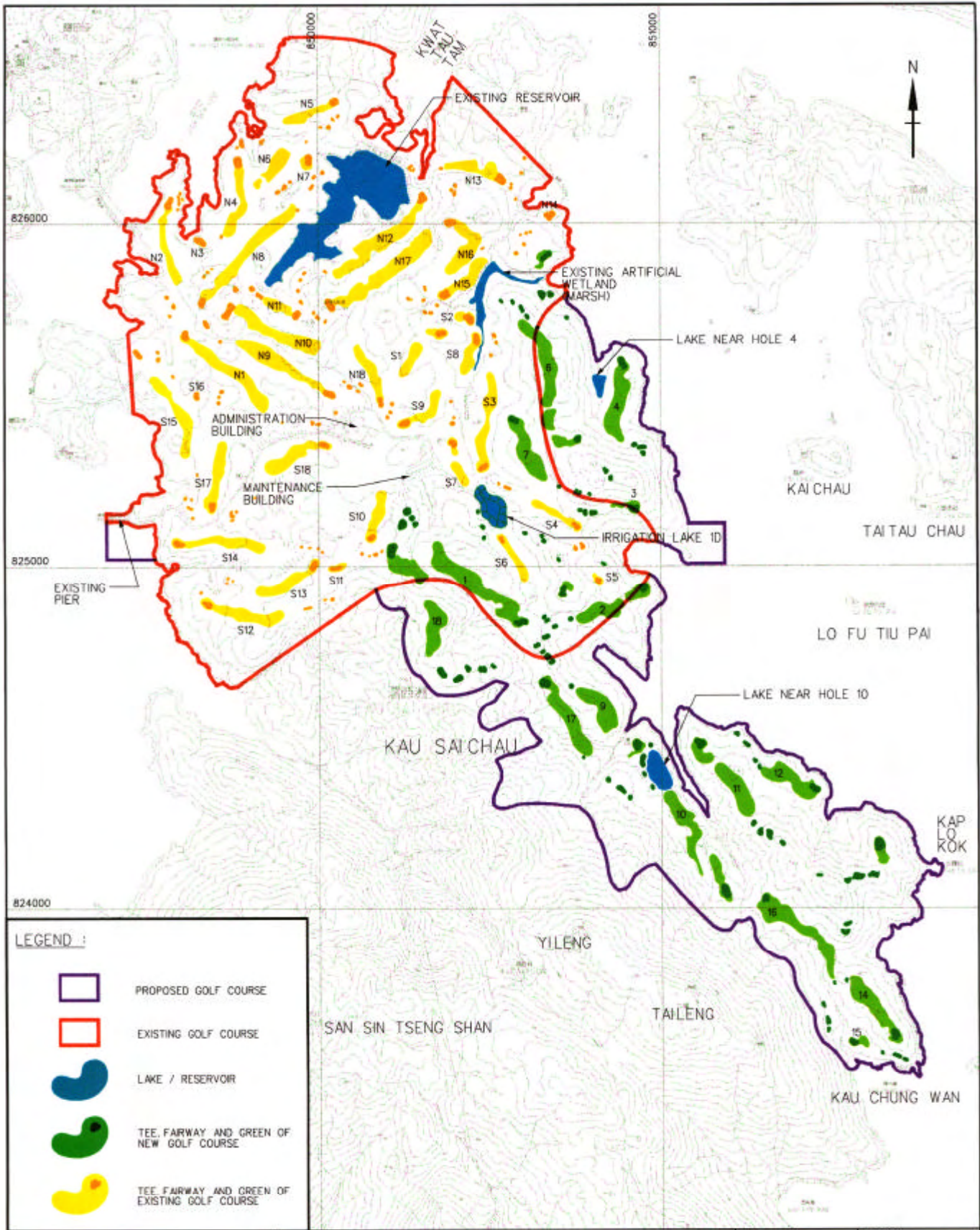
  
BLACK & VEATCH HONG KONG LIMITED  
博威工程顧問有限公司

PROPOSED EXTENSION OF PUBLIC GOLF COURSE AT KAU SAI CHAU, SAI KUNG  
西貢滯西洲公眾高爾夫球場擬建擴建工程






PROJECT LOCATION AND KEY FEATURES  
工程位置圖

Figure No. 1.1	Revision -
Reference -	File Name 3822100201-1.1.DGN
Prepared ET	Checked JW
Date MAY 2005	Scale N.T.S.





**LEGEND :**

-  PROPOSED GOLF COURSE
-  EXISTING GOLF COURSE
-  LAKE / RESERVOIR
-  TEE, FAIRWAY AND GREEN OF NEW GOLF COURSE
-  TEE, FAIRWAY AND GREEN OF EXISTING GOLF COURSE

 The Hong Kong Jockey Club

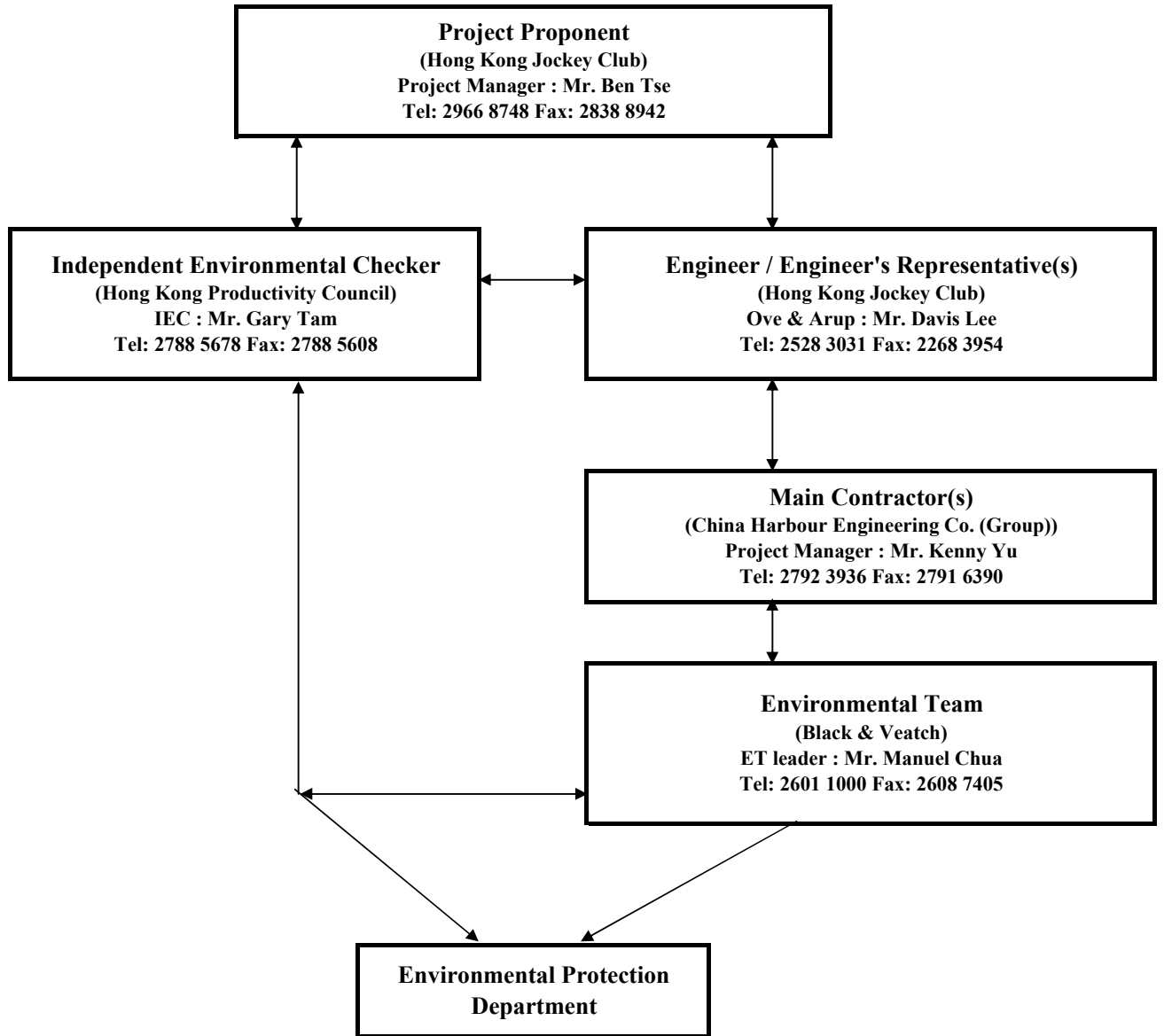
  
**BLACK & VEATCH HONG KONG LIMITED**  
 博威工程顧問有限公司

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

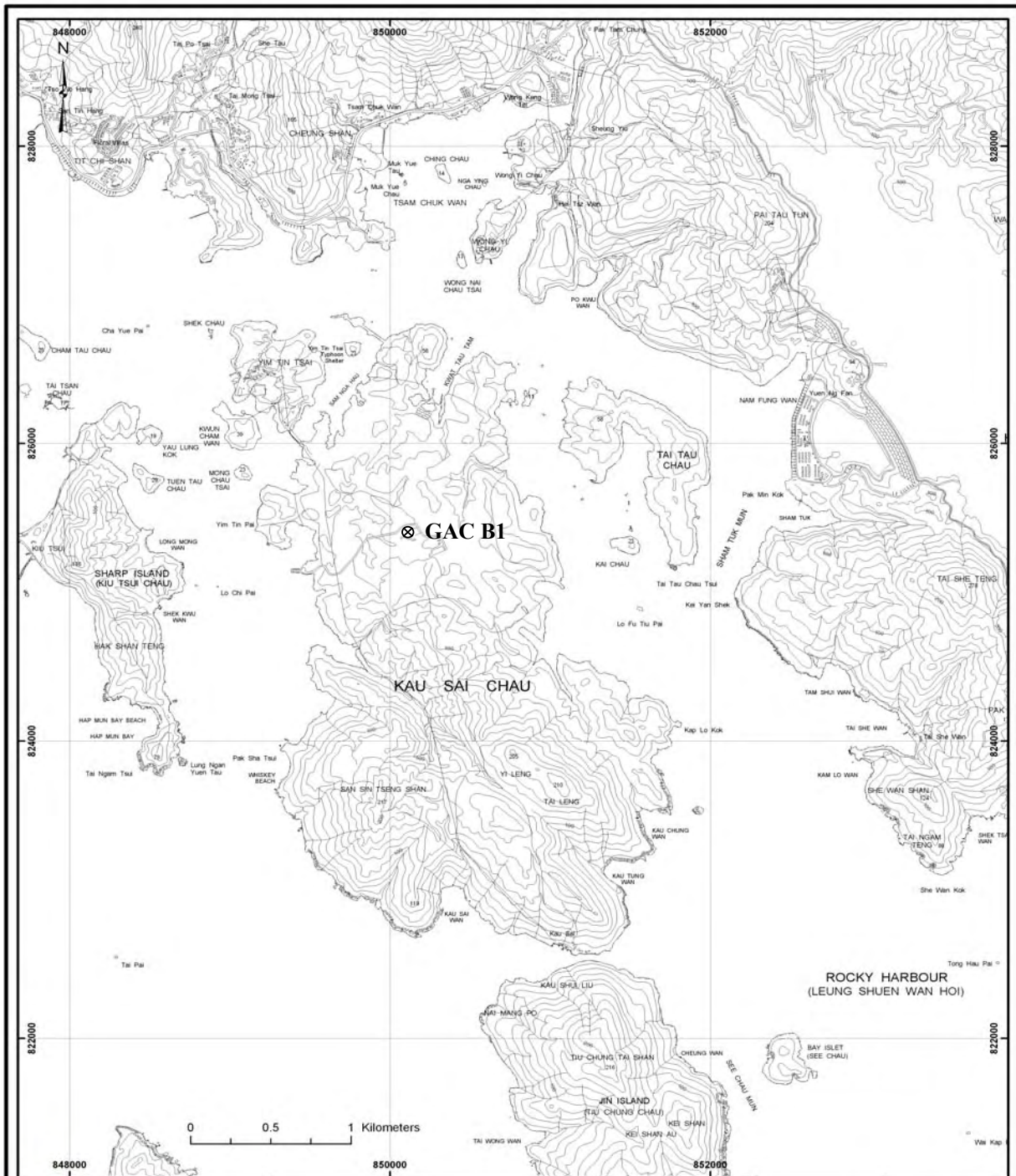
PROPOSED 18-HOLE THIRD GOLF COURSE  
 (MASTER LAYOUT PLAN)

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**








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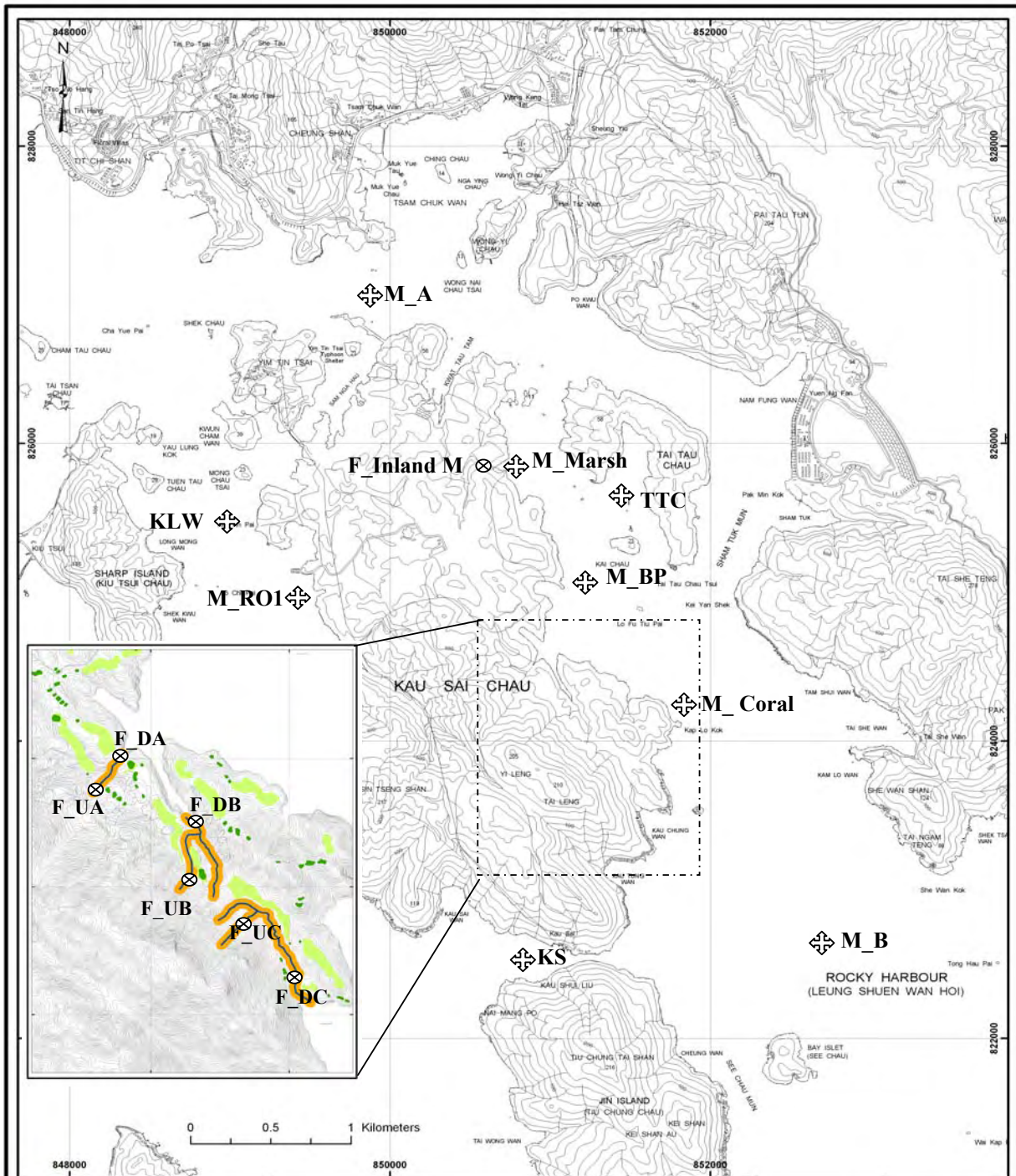

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Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung

Proposed Air Quality Monitoring Location

<b>Fig 3.1</b>	
<b>ET</b>	<b>JW</b>
<b>Feb 2006</b>	

MXD file: C:\P550\0\Project\022176\_0202\evation.mxd  
 Plot file: C:\P550\0\Project\022176\_0202\evation.pdf



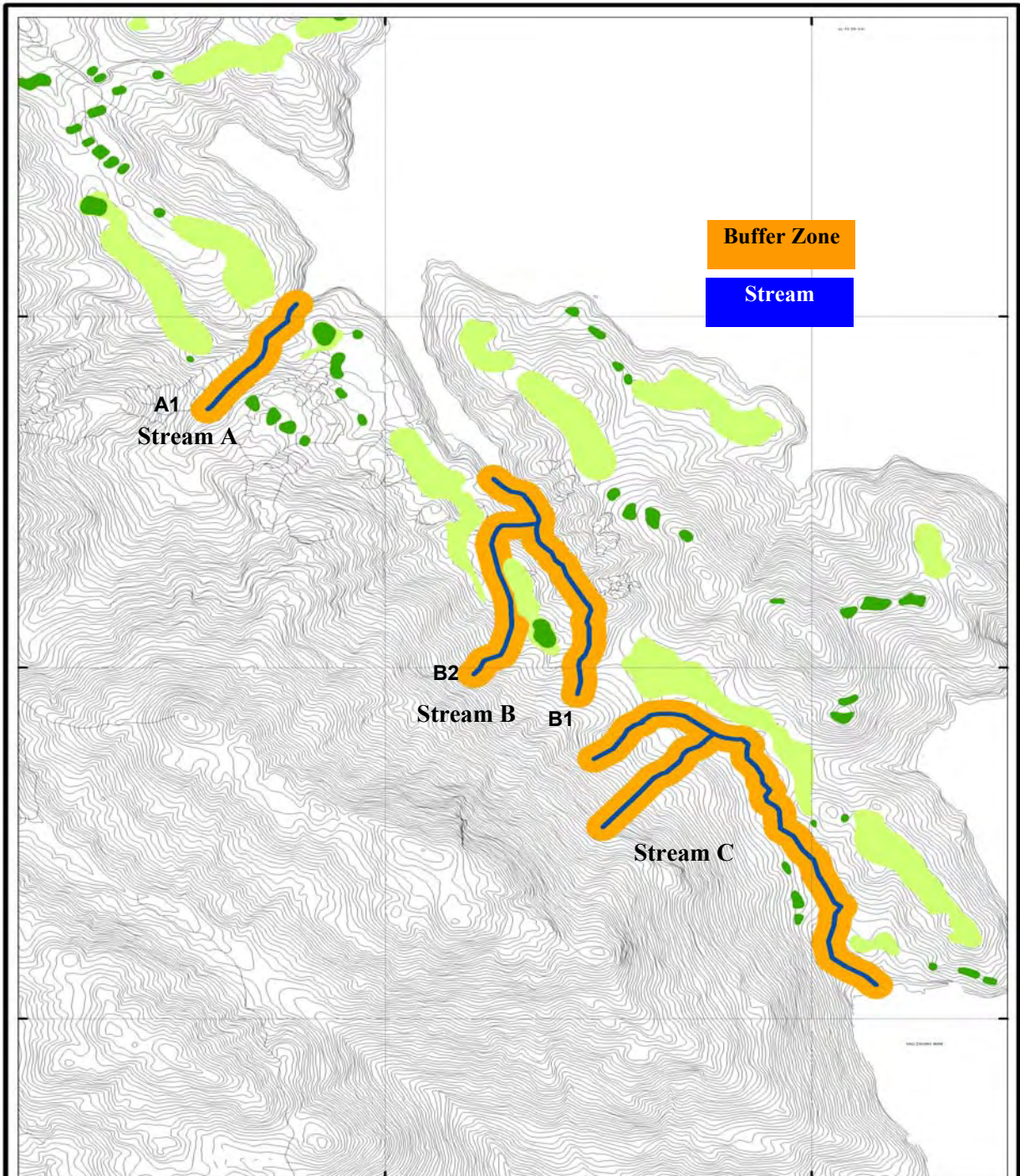

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 博威工程顧問有限公司

Proposed Extension of Public Golf Course at Kau Sai  
 Chau Island, Sai Kung  
 Proposed Water Quality Monitoring Locations  
 (Construction Phase)

<b>Fig 3.2</b>	
<b>ET</b>	<b>JW</b>
<b>Feb 2006</b>	

M:\D\CP550 D\Project\02219\_02\2\evation.mxd  
 Plot No. CP550 D\Project\02219\_02\2\evation.pdf






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Proposed Extension of Public Golf Course at Kau Sai  
 Chau Island, Sai Kung  
 Proposed Ecological Monitoring Location  
 (Streams Buffer Zone)

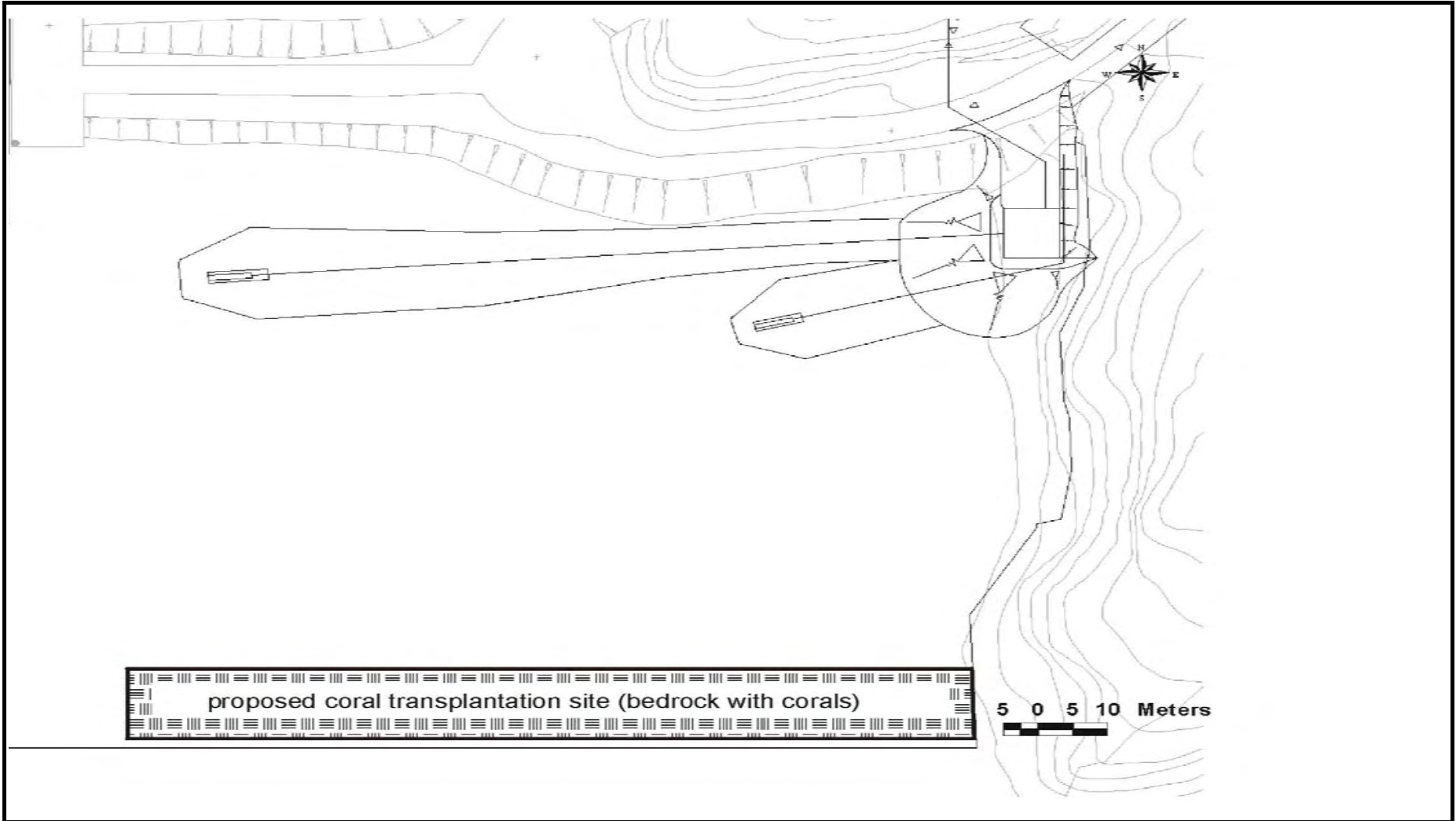
Fig 3.3

ET

JW

Feb 2006

MKD No. CP550 D:\Project\02219\_02\Location.mxd  
 Plot No. CP550 D:\Project\02219\_02\Location.pdf



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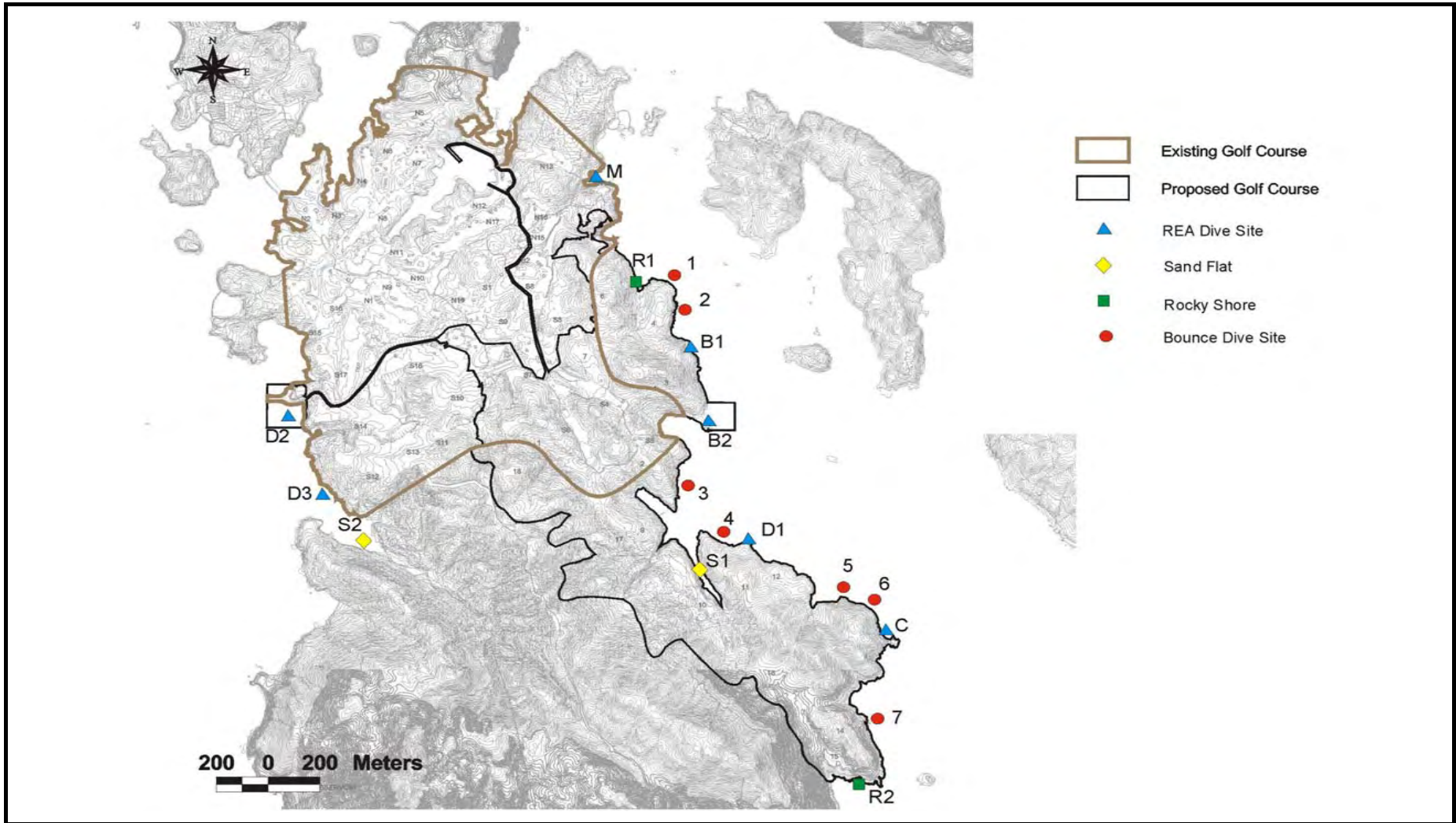
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung

Location of proposed coral transplantation site (Bedrock with corals)

Fig 3.4

Prepared	Checked
ET	JW
Date	Feb-06






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

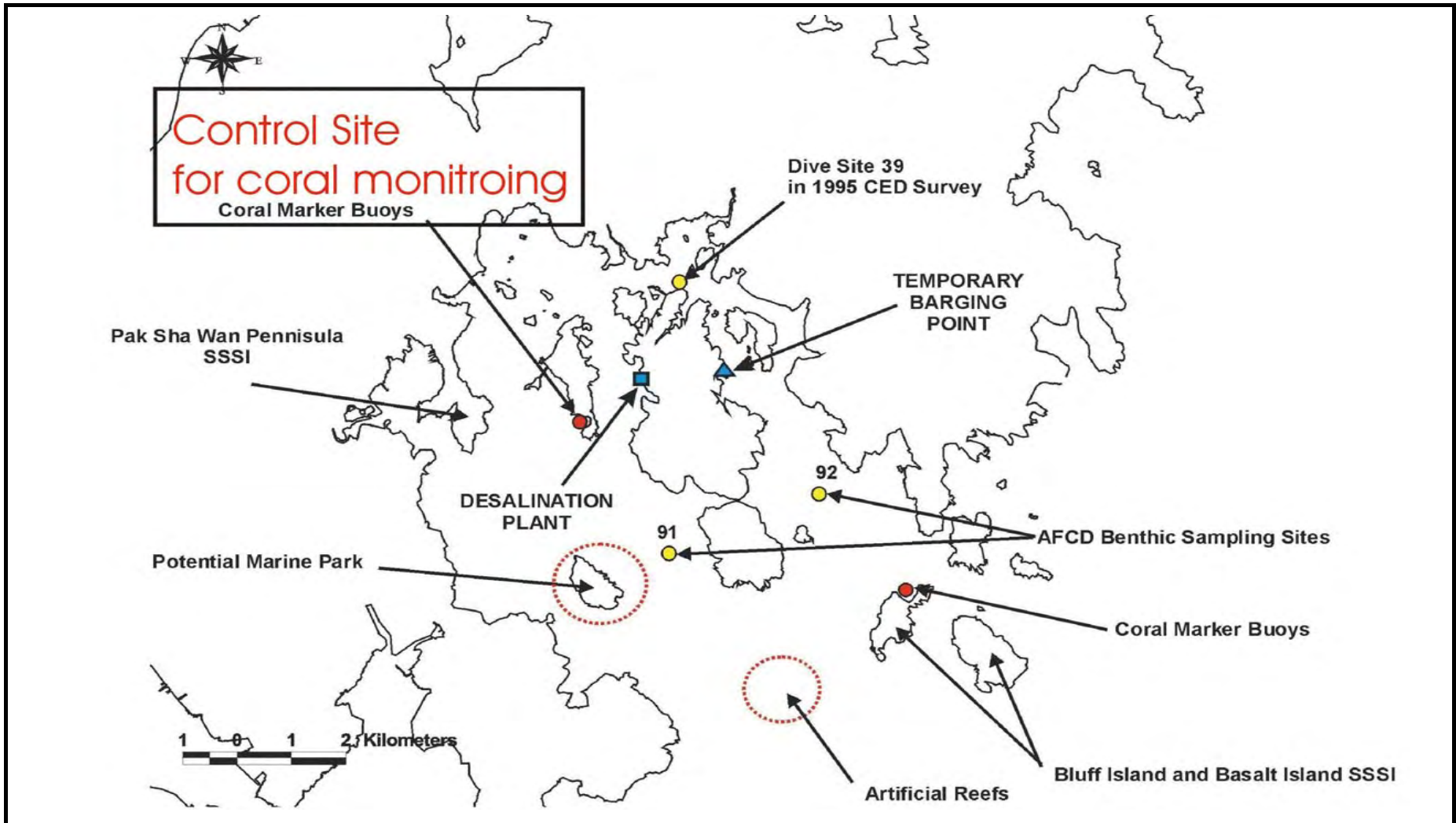
Fig 3.5


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Location of coral and seagrass monitoring (Sites D2, D3 and C)

Prepared	Checked
ET	JW

Date	Feb-06
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Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung

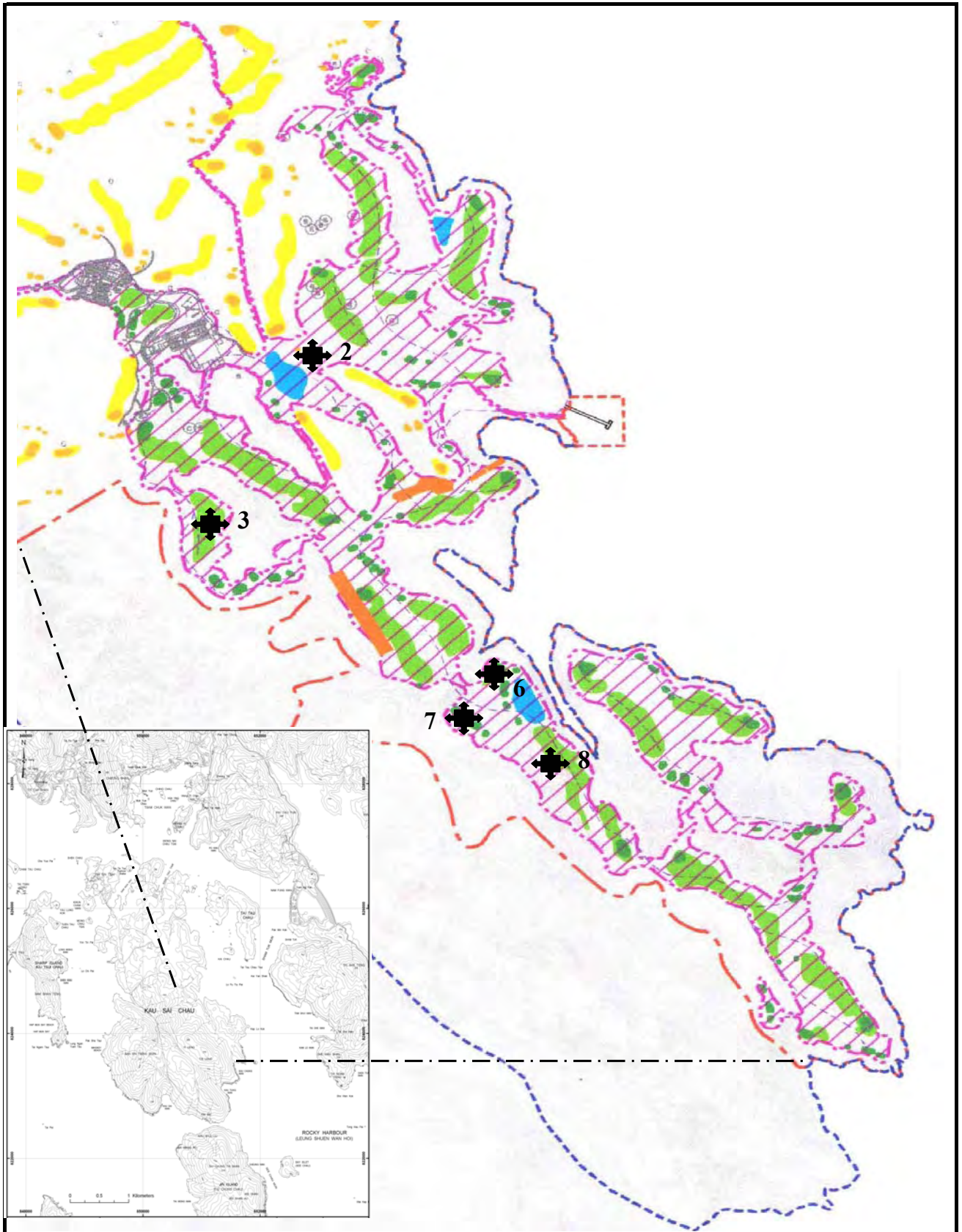
Control Site for Natural Coral Monitoring



Fig 3.6

Prepared	Checked
ET	JW
Date	Feb-06







 <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>Fig 3.8</p>	
 <p>BLACK &amp; VEATCH HONG KONG LIMITED 博威工程顧問有限公司</p>		<p>Sampling location for land contamination</p>	<p>Prepared ET</p>
			<p>Date</p>



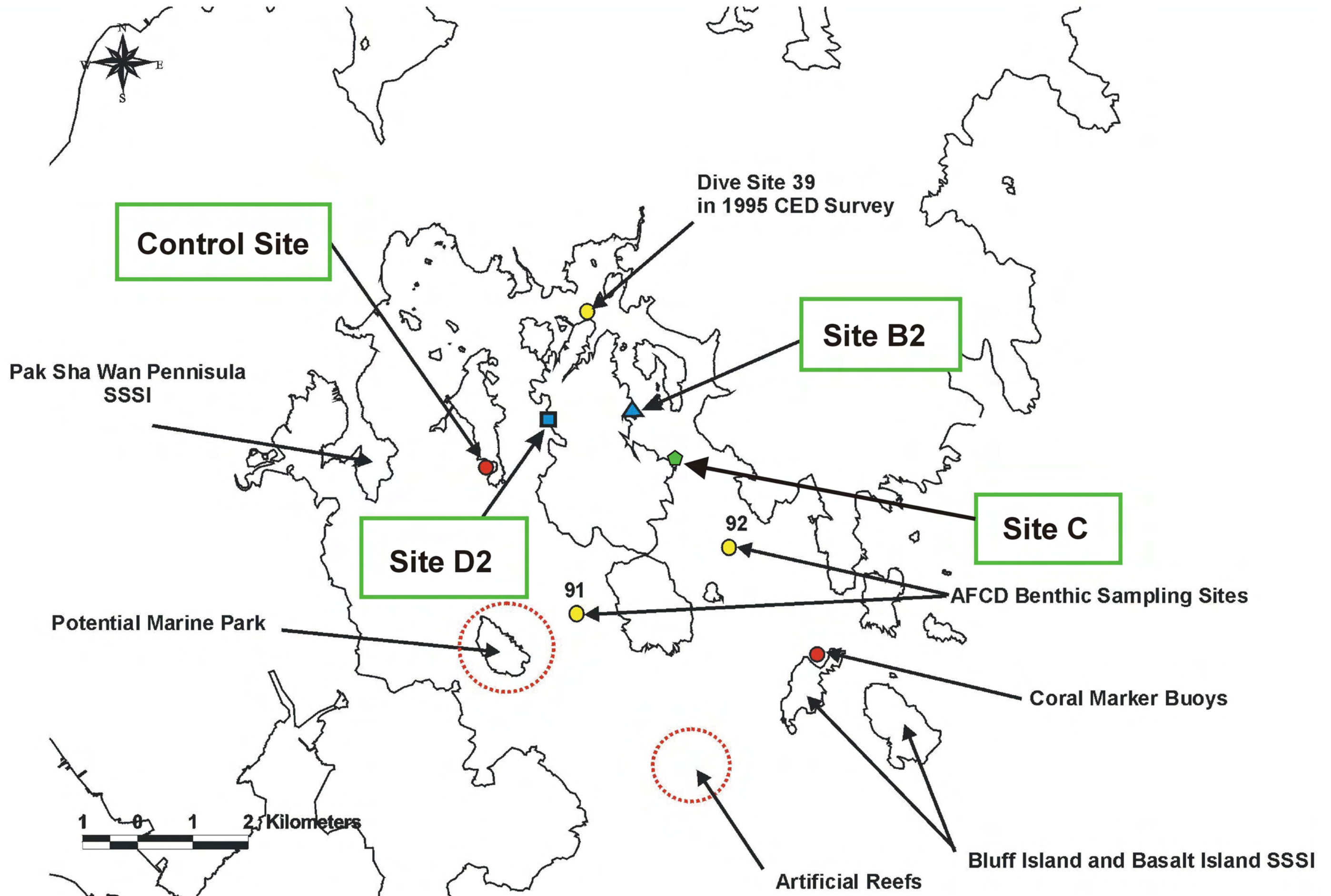
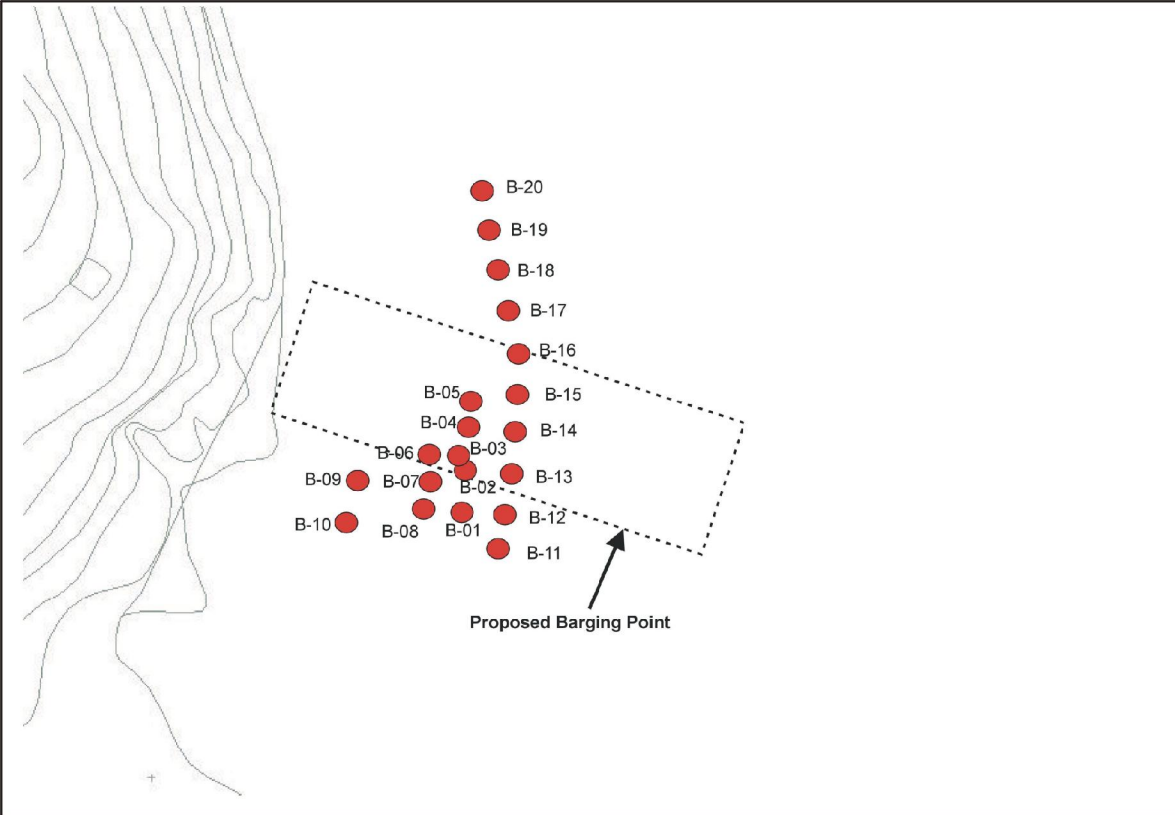
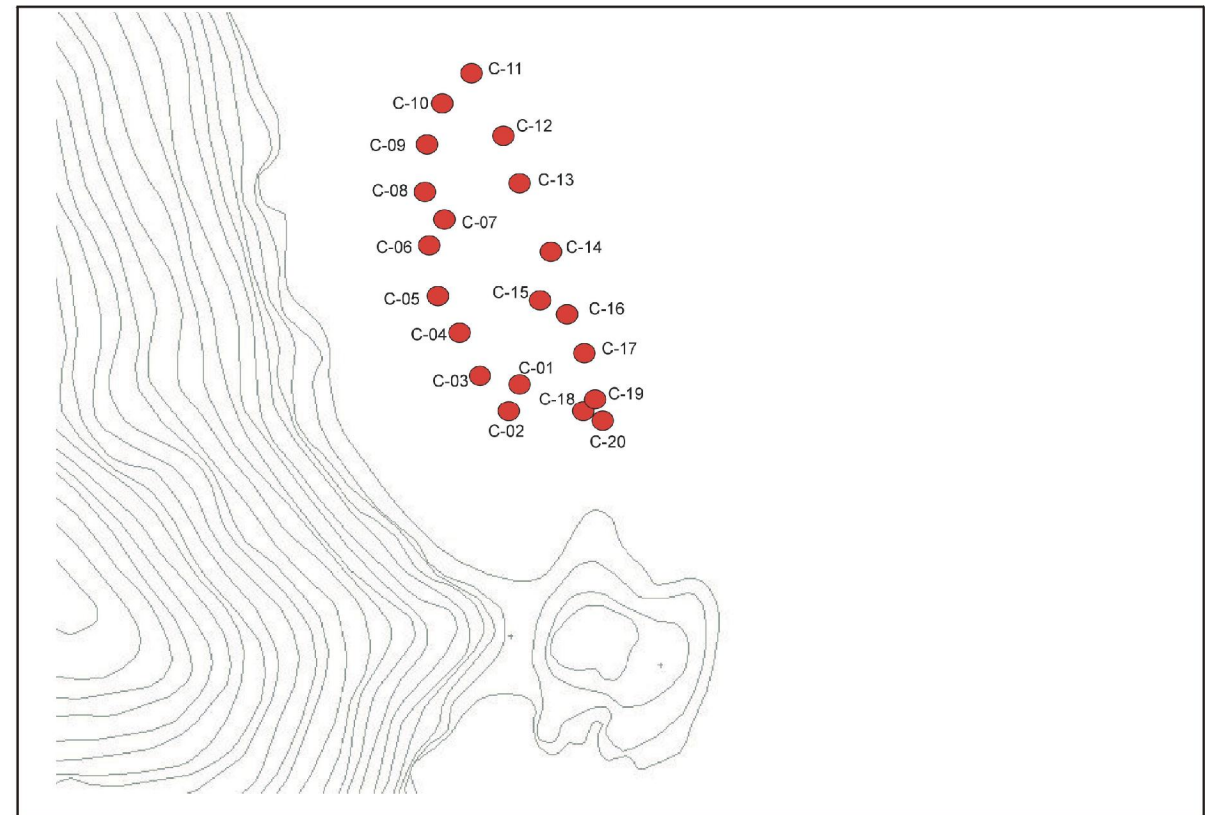


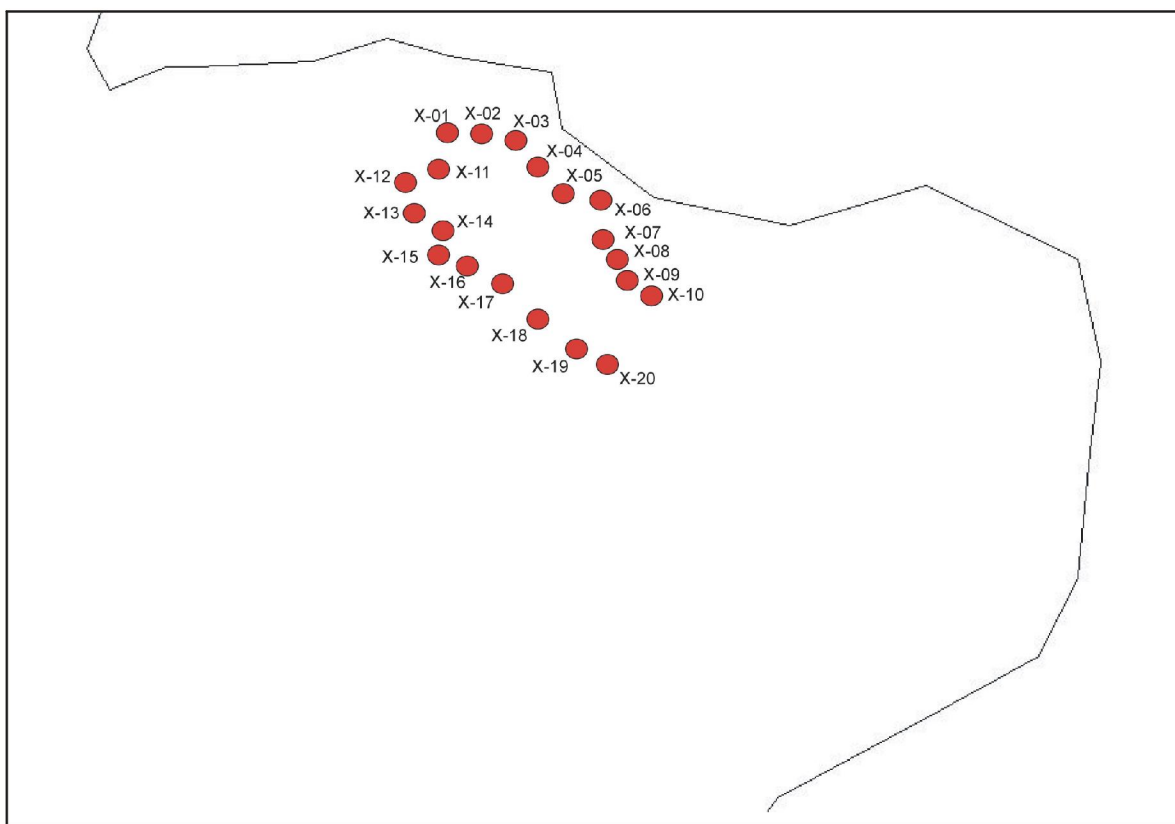
Figure 4.1 The locations of the four coral monitoring sites (  )



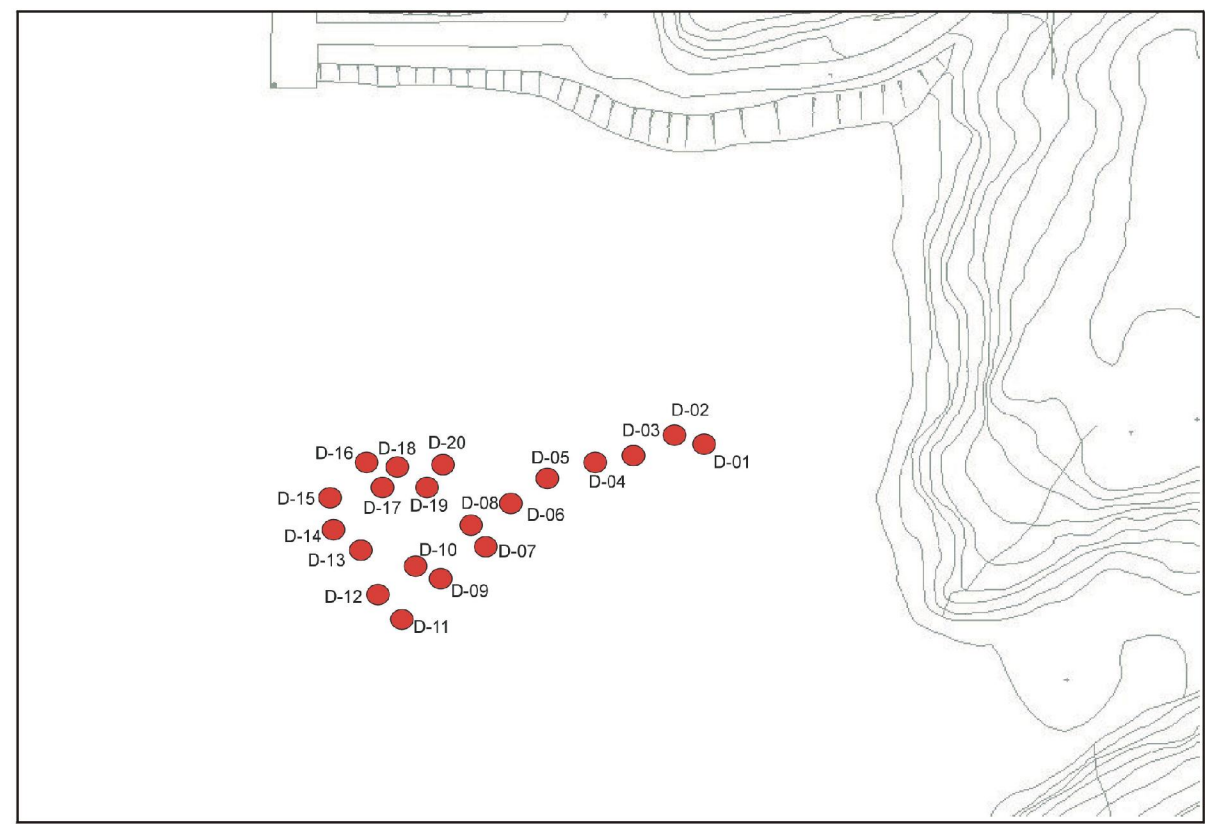
**Site B2**



**Site C**



**Control Site**



**Site D2**

Figure 4.2 Indicative locations of the tagged corals at four monitoring sites

# **Annex C**

## **Event Action Plan**

**Event / Action Plan for Air Quality**

EVENT	ACTION			
	ET	IC(E)	Engineer	CONTRACTOR
<b>ACTION LEVEL</b>				
1. Exceedance for one sample	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.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	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.	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.	1. Confirm in writing receipt of notification of exceedance; 2. Notify Contractor; 3. Supervise proper implementation of remedial measures.	1. Submit proposals for remedial measures to Engineer within three working days of notification; 2. Implement agreed proposals; 3. Amend proposal if appropriate.
<b>LIMIT LEVEL</b>				
1. Exceedance for one sample	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	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.	1. Confirm in writing receipt of notification of exceedance; 2. Notify Contractor; 3. Supervise proper implementation of remedial measures.	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
	and keep IC(E), EPD and Engineer informed of results.			
2 Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IC(E), Engineer, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase to daily monitoring;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation measures to be implemented;</li> <li>6. Arrange meeting with IC(E) and Engineer to discuss remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and Engineer informed of results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<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"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IC(E) within three working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as instructed by Engineer until the exceedance is abated.</li> </ol>

### Event and Action Plan for Water Quality

Event	ET Leader	IC(E)	Engineer	Contractor
<b>ACTION LEVEL</b>				
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.
<b>LIMIT LEVEL</b>				
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	Discuss mitigation measures with ET and Contractor; Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; Assess effectiveness of implemented	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;	Inform Engineer and confirm in writing notification of the non-compliance; Rectify unacceptable practice; Check all plant and equipment; Consider changes in working methods;



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

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

<b>Parameters</b>	<b>Action Level</b>	<b>Limit Level</b>
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

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

# **Annex D**

## **Monitoring Results**

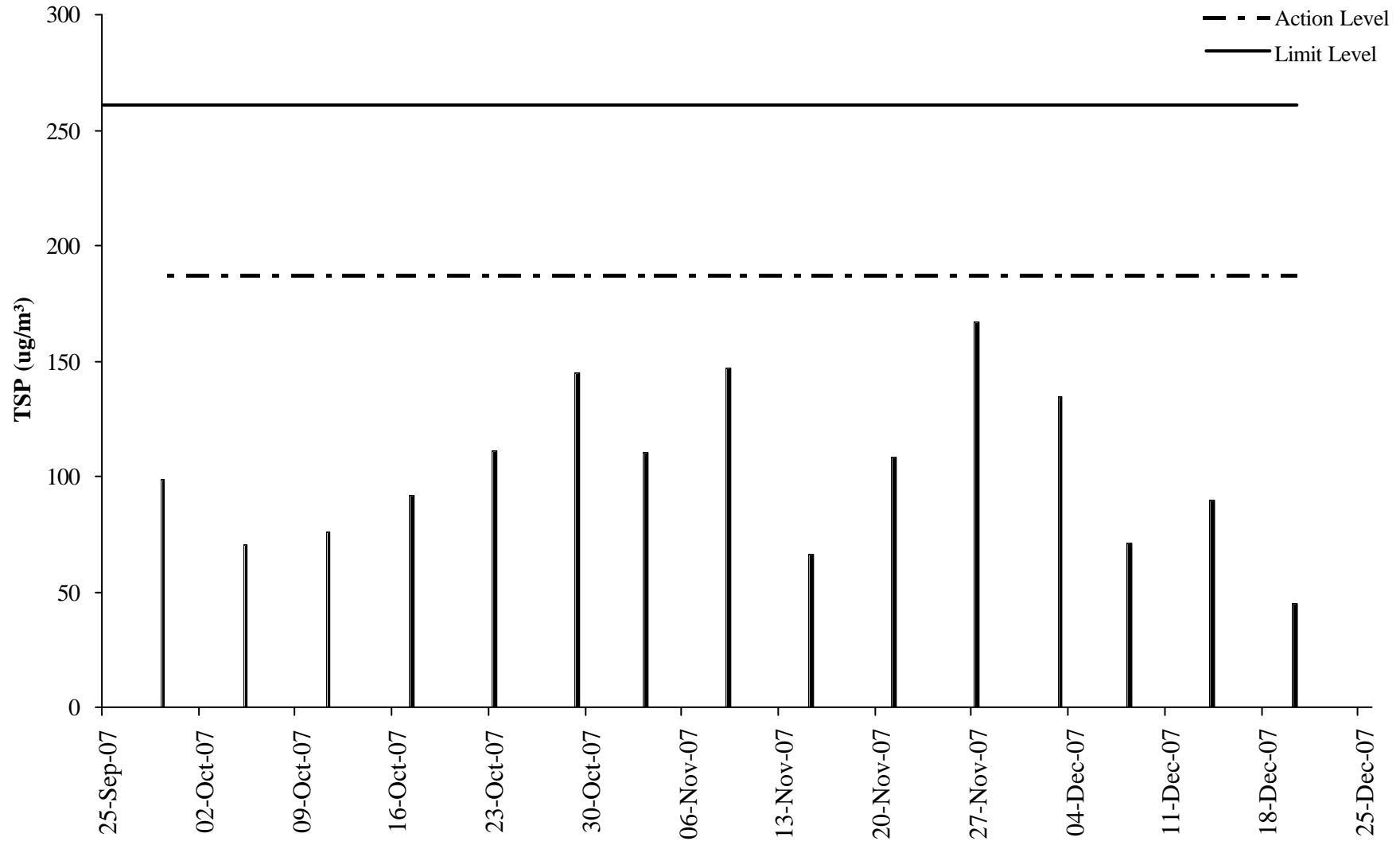
# **Air Quality**

**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 <sup>3</sup> /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Weather Condition	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )
	Initial	Final	Initial	Final	Initial	Final						
29-Sep-07	3.5779	3.7630	1.31	1.31	12128.5	12152.5	24.0	98.5	Sunny	0.19	1.31	1879.2
05-Oct-07	3.3400	3.4744	1.32	1.32	12152.5	12176.5	24.0	70.7	Sunny	0.13	1.32	1902.2
11-Oct-07	3.3668	3.5099	1.31	1.31	12176.5	12200.5	24.0	76.1	Sunny	0.14	1.31	1879.2
17-Oct-07	3.3420	3.5165	1.32	1.32	12200.5	12224.5	24.0	92.0	Sunny	0.17	1.32	1896.5
23-Oct-07	3.5551	3.7660	1.32	1.32	12224.5	12248.5	24.0	111.2	Sunny	0.21	1.32	1896.5
29-Oct-07	3.5433	3.8238	1.35	1.35	12248.5	12272.5	24.0	144.6	Sunny	0.28	1.35	1939.7
03-Nov-07	3.3472	3.5666	1.38	1.38	12272.5	12296.5	24.0	110.6	Sunny	0.22	1.38	1982.9
09-Nov-07	3.3423	3.6279	1.35	1.35	12296.5	12320.5	24.0	147.2	Sunny	0.29	1.35	1939.7
15-Nov-07	3.3315	3.4575	1.32	1.32	12320.5	12344.5	24.0	66.4	Sunny	0.13	1.32	1896.5
21-Nov-07	3.3378	3.5482	1.35	1.35	12344.5	12368.5	24.0	108.5	Sunny	0.21	1.35	1939.7
27-Nov-07	3.6016	3.9258	1.35	1.35	12368.5	12392.5	24.0	167.1	Sunny	0.32	1.35	1939.7
03-Dec-07	3.6284	3.8894	1.35	1.35	12392.5	12416.5	24.0	134.6	Sunny	0.26	1.35	1939.7
08-Dec-07	3.5371	3.6753	1.35	1.35	12416.5	12440.5	24.0	71.2	Sunny	0.29	1.35	1939.7
14-Dec-07	3.3142	3.4845	1.32	1.32	12440.5	12464.5	24.0	89.8	Sunny	0.29	1.35	1939.7
20-Dec-07	3.5394	3.6258	1.35	1.35	12464.5	12488.5	24.0	44.5	Fine	0.29	1.35	1939.7
								Min	44.5			
								Max	167.1			
								Average	102.2			

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 (October - December 2007)



# Water Quality

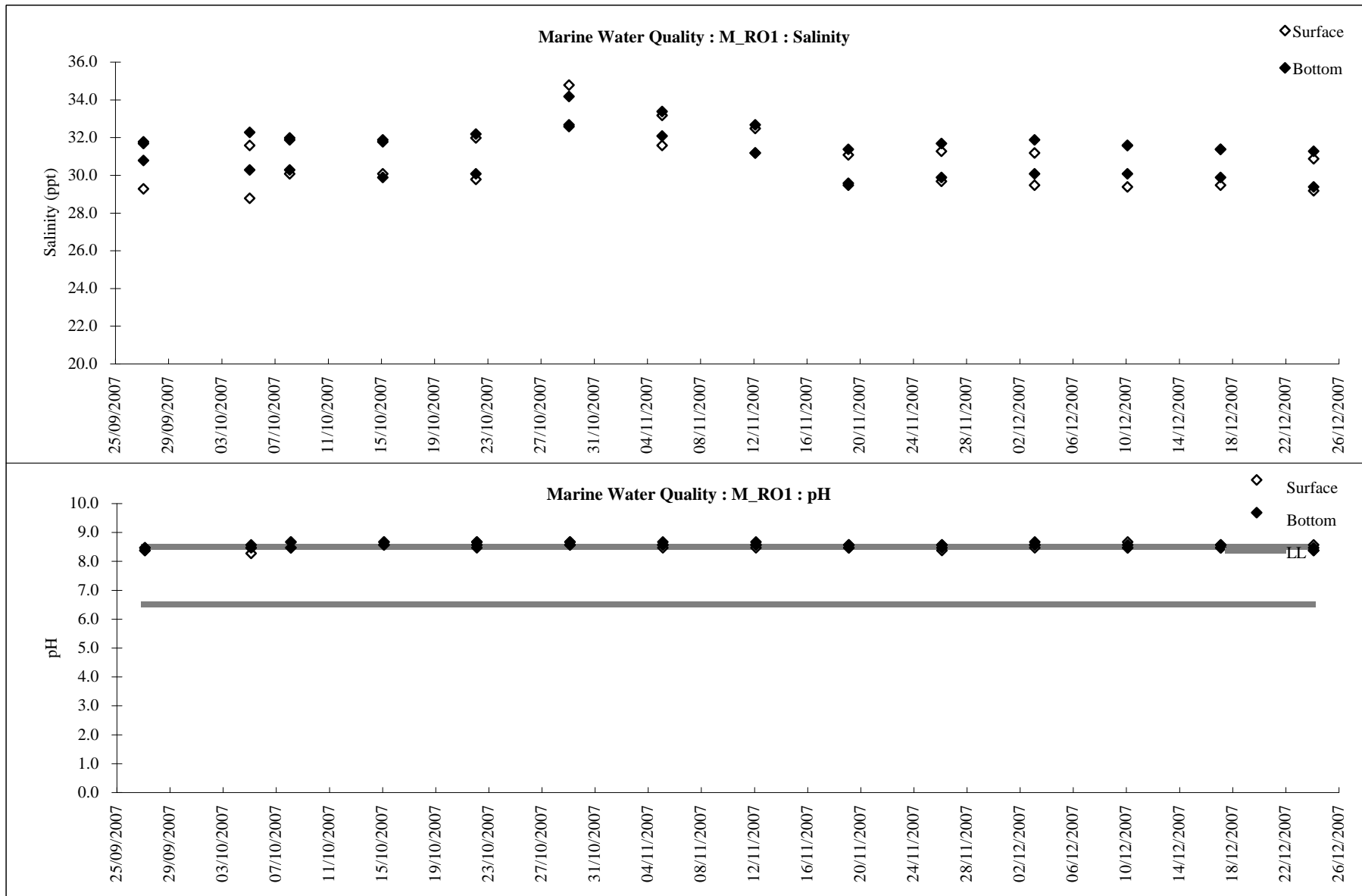


Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
Weather Records

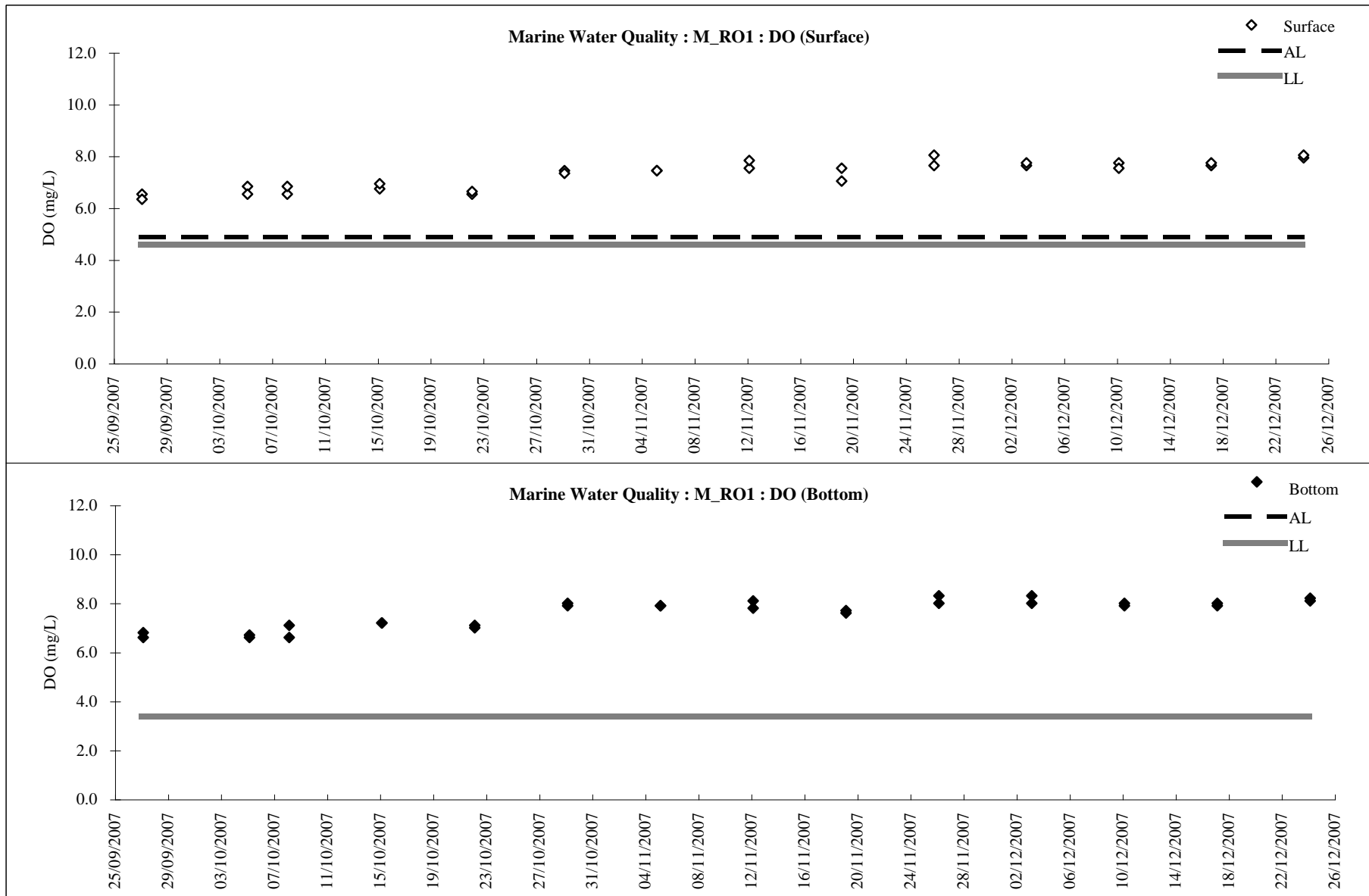
**KSC Rainfall (source: Hong Kong Observatory)**

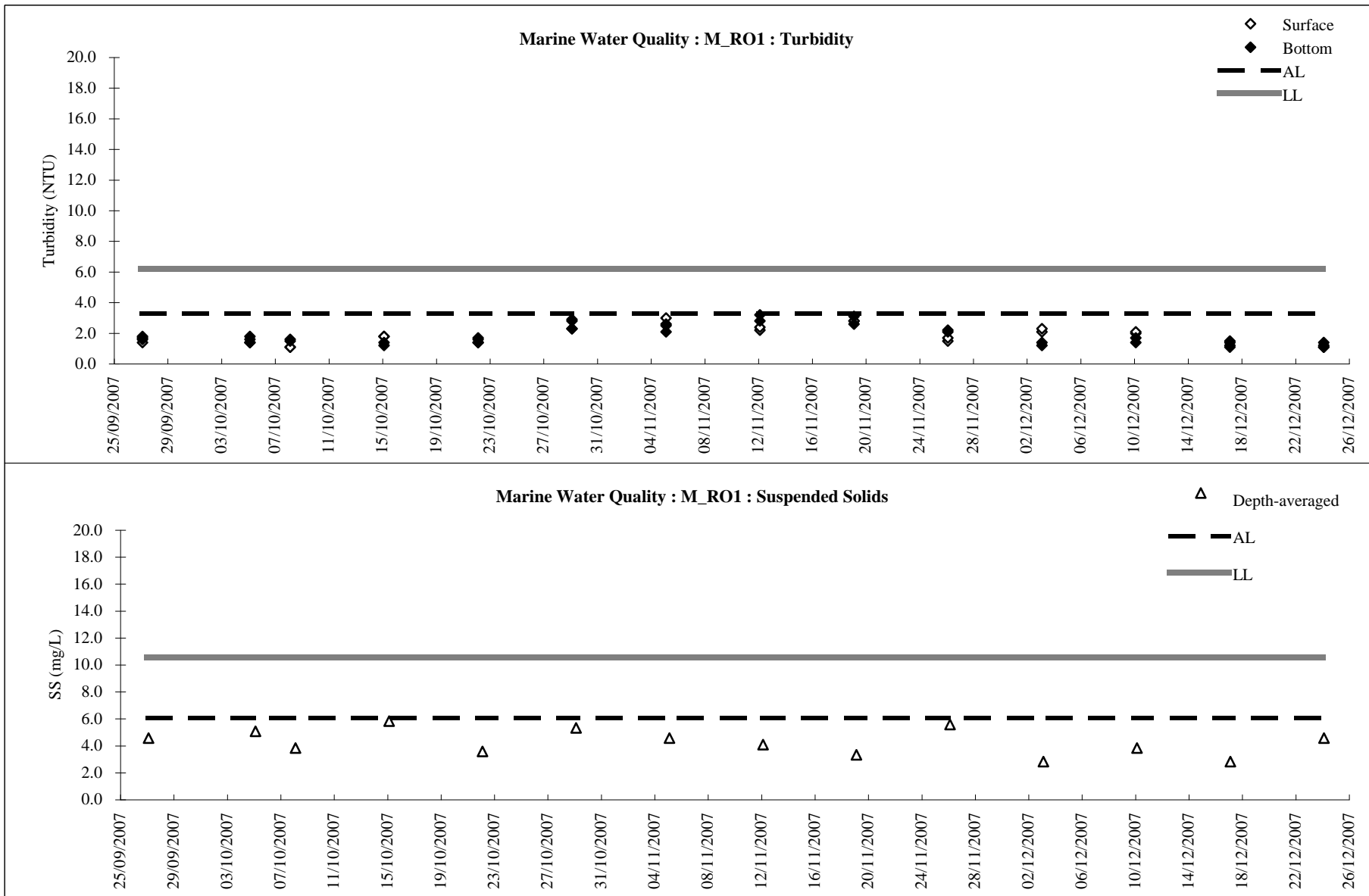
**Weather Records during Sampling at Kau Sai Chau**

Date	Rainfall mm	Date	Rainfall mm	Date	Rainfall mm	Date	Weather	
							am	pm
25-Sep-07	0-2	25-Oct-07	<0.5	25-Nov-07	<0.5	27/09/2007	Sunny	sunny
26-Sep-07	<0.5	26-Oct-07	<0.5	26-Nov-07	<0.5	05/10/2007	Sunny	sunny
27-Sep-07	<0.5	27-Oct-07	<0.5	27-Nov-07	<0.5	08/10/2007	Sunny	sunny
28-Sep-07	<0.5	28-Oct-07	<0.5	28-Nov-07	<0.5	15/10/2007	Sunny	sunny
29-Sep-07	<0.5	29-Oct-07	<0.5	29-Nov-07	<0.5	22/10/2007	Sunny	sunny
30-Sep-07	<0.5	30-Oct-07	5-10	30-Nov-07	<0.5	29/10/2007	Cloudy	Cloudy
01-Oct-07	<0.5	31-Oct-07	0.5-5	01-Dec-07	<0.5	05/11/2007	Cloudy	Cloudy
02-Oct-07	2-5	01-Nov-07	5-20	02-Dec-07	<0.5	12/11/2007	Cloudy	Cloudy
03-Oct-07	10-20	02-Nov-07	0.5-2	03-Dec-07	<0.5	19/11/2007	Cloudy	Cloudy
04-Oct-07	<0.5	03-Nov-07	<0.5	04-Dec-07	<0.5	26/11/2007	Cloudy	Cloudy
05-Oct-07	<0.5	04-Nov-07	<0.5	05-Dec-07	<0.5	03/12/2007	Cloudy	Cloudy
06-Oct-07	<0.5	05-Nov-07	<0.5	06-Dec-07	<0.5	10/12/2007	Cloudy	Cloudy
07-Oct-07	<0.5	06-Nov-07	<0.5	07-Dec-07	<0.5	17/12/2007	Cloudy	Cloudy
08-Oct-07	<0.5	07-Nov-07	<0.5	08-Dec-07	<0.5	24/12/2007	Cloudy	Cloudy
09-Oct-07	<0.5	08-Nov-07	<0.5	09-Dec-07	<0.5			
10-Oct-07	0-2	09-Nov-07	<0.5	10-Dec-07	<0.5			
11-Oct-07	<0.5	10-Nov-07	<0.5	11-Dec-07	<0.5			
12-Oct-07	0-2	11-Nov-07	<0.5	12-Dec-07	<0.5			
13-Oct-07	0-2	12-Nov-07	<0.5	13-Dec-07	<0.5			
14-Oct-07	0-2	13-Nov-07	<0.5	14-Dec-07	<0.5			
15-Oct-07	<0.5	14-Nov-07	<0.5	15-Dec-07	<0.5			
16-Oct-07	<0.5	15-Nov-07	<0.5	16-Dec-07	<0.5			
17-Oct-07	0-2	16-Nov-07	<0.5	17-Dec-07	<0.5			
18-Oct-07	<0.5	17-Nov-07	<0.5	18-Dec-07	<0.5			
19-Oct-07	<0.5	18-Nov-07	<0.5	19-Dec-07	<0.5			
20-Oct-07	<0.5	19-Nov-07	<0.5	20-Dec-07	<0.5			
21-Oct-07	<0.5	20-Nov-07	<0.5	21-Dec-07	<0.5			
22-Oct-07	<0.5	21-Nov-07	<0.5	22-Dec-07	<0.5			
23-Oct-07	<0.5	22-Nov-07	<0.5	23-Dec-07	0.5-2			
24-Oct-07	<0.5	23-Nov-07	<0.5	24-Dec-07	10-30			
		24-Nov-07	<0.5					



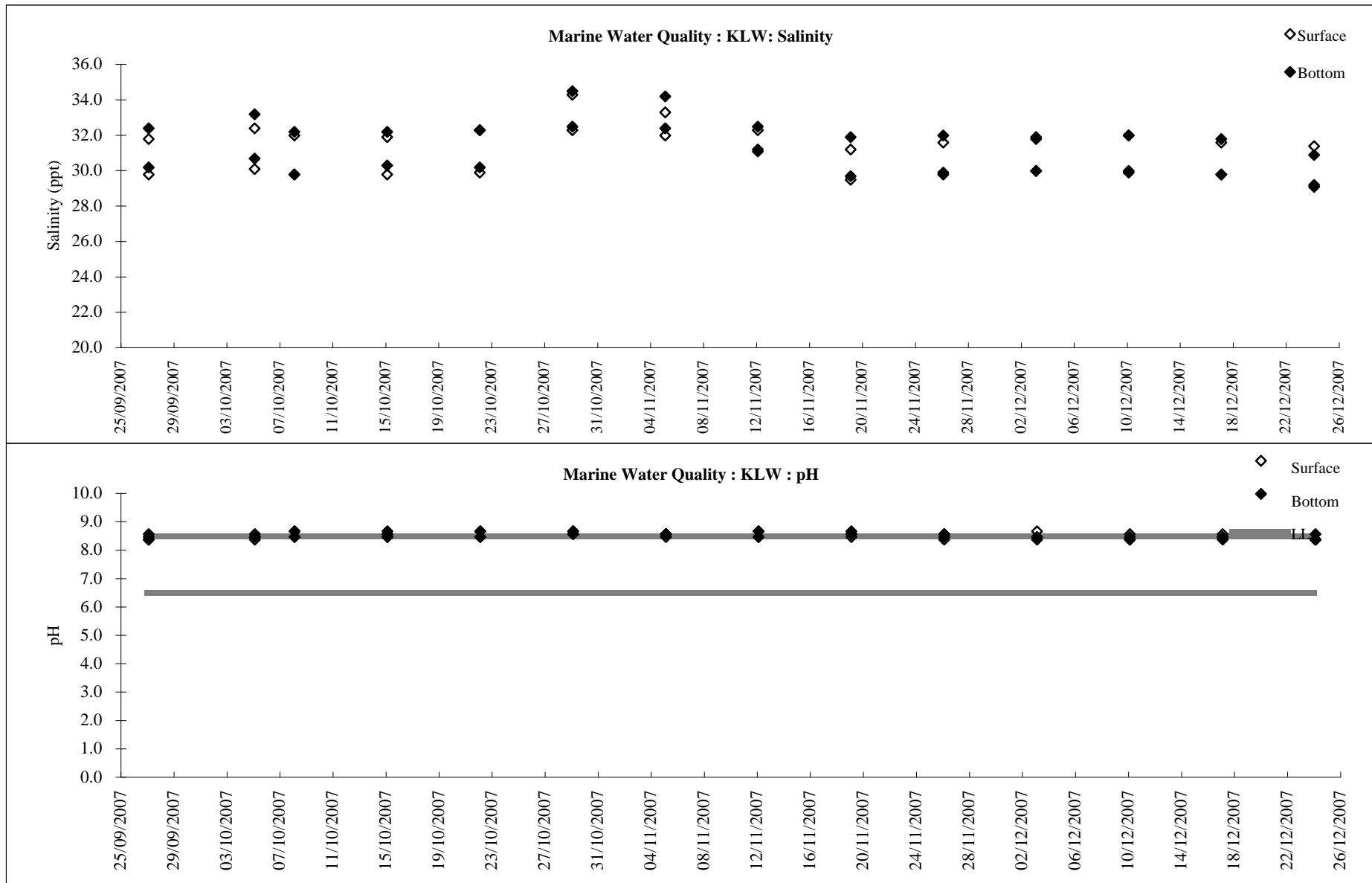
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results





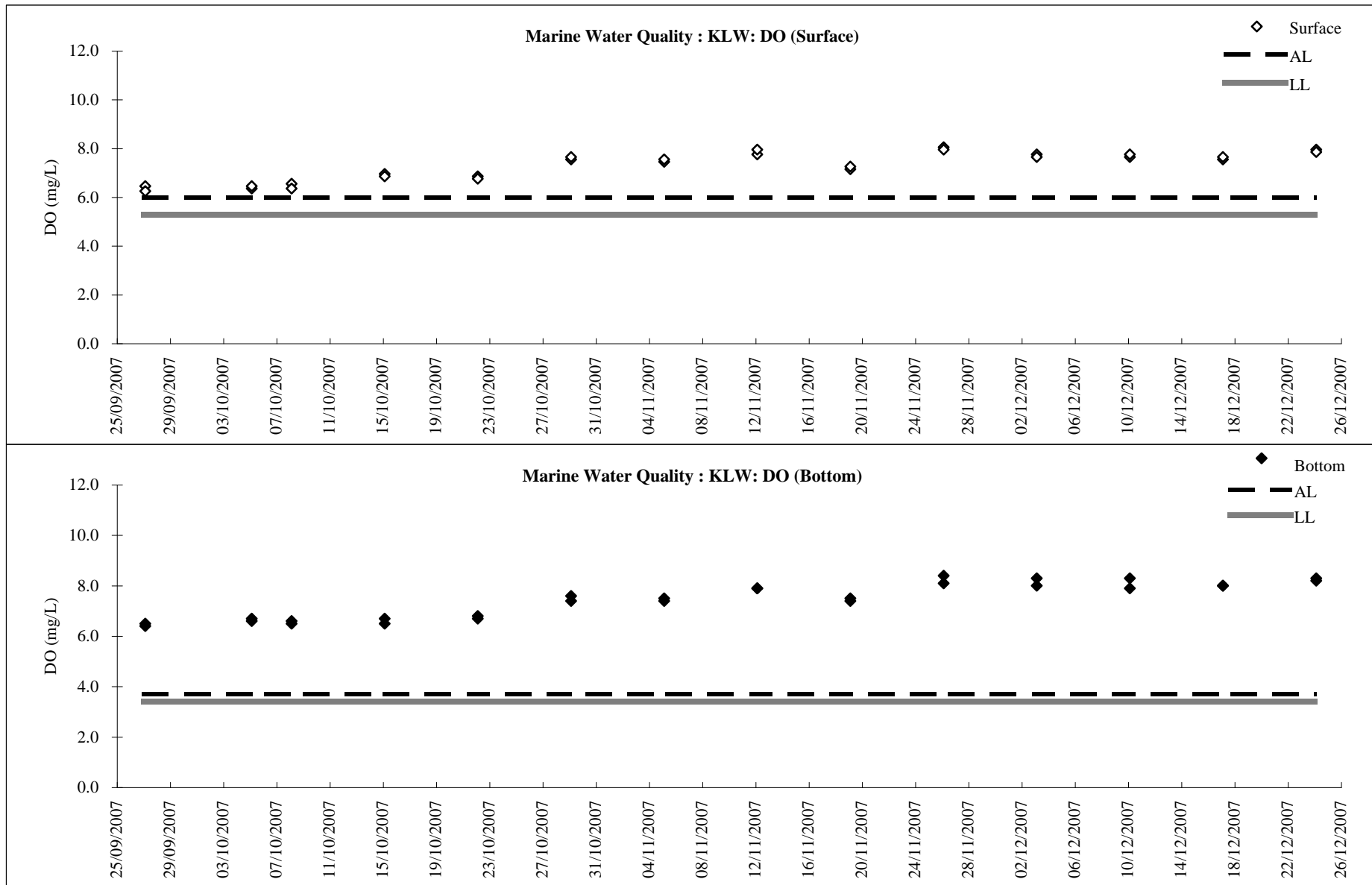
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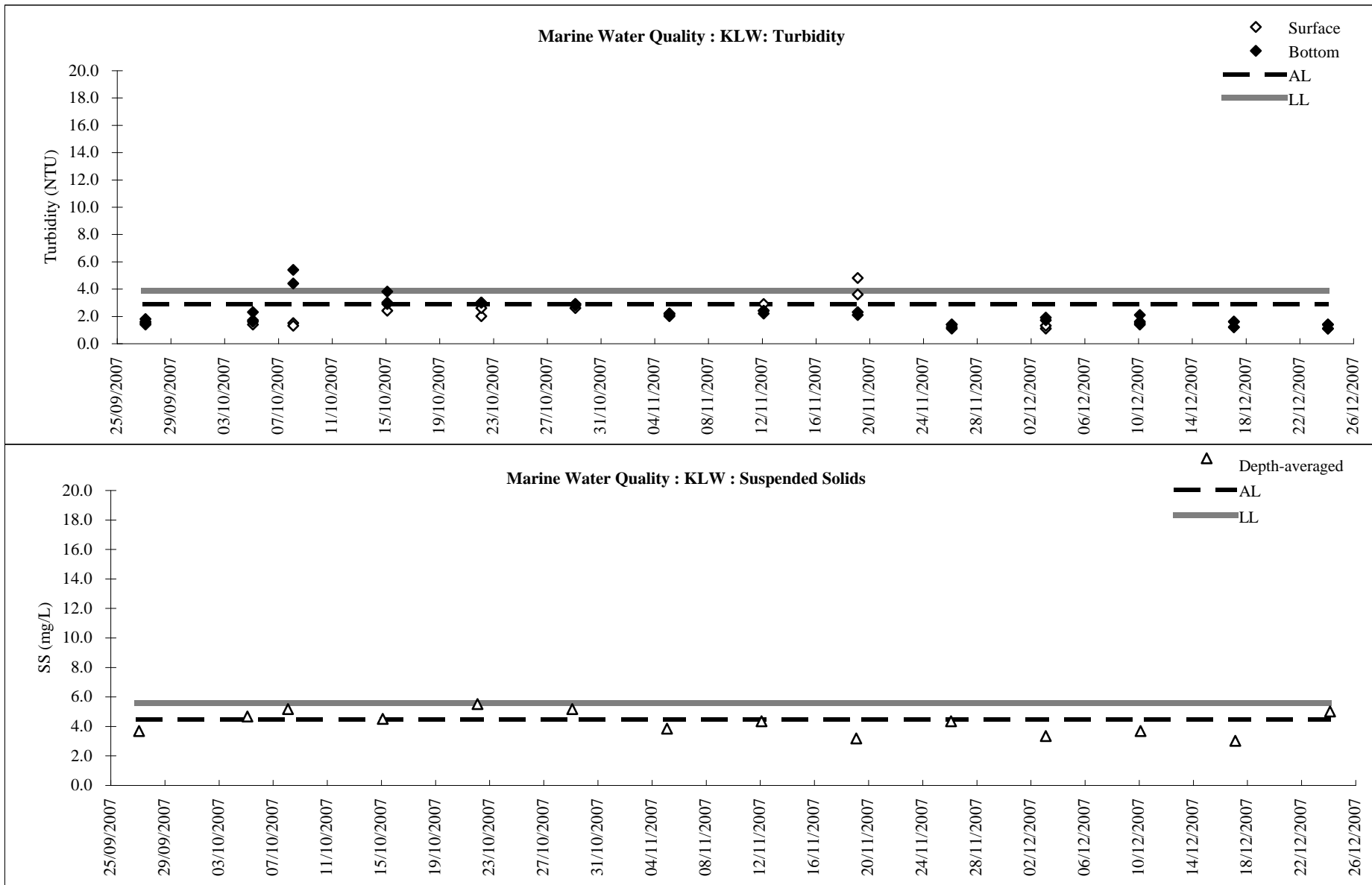
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Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

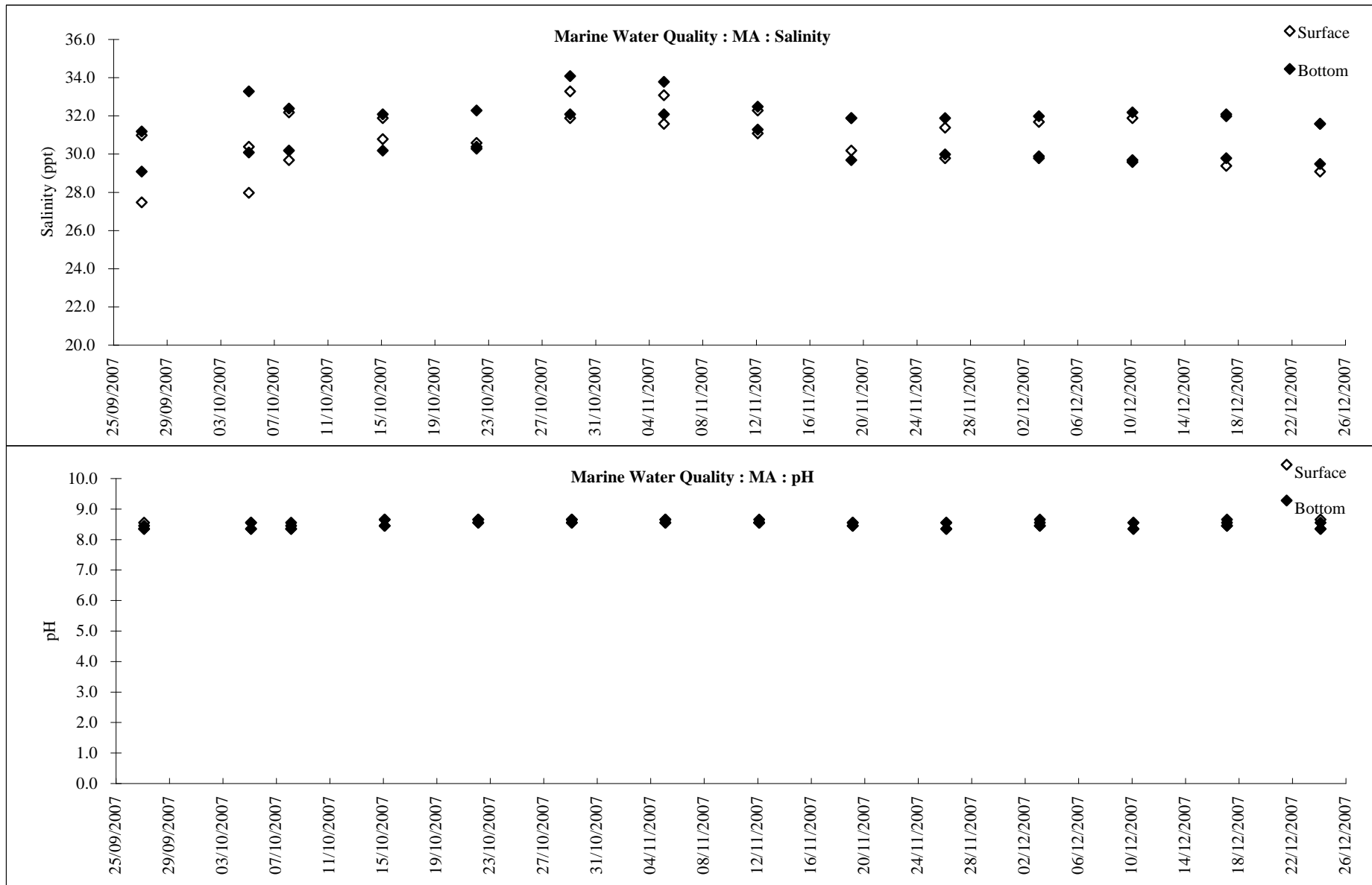
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Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

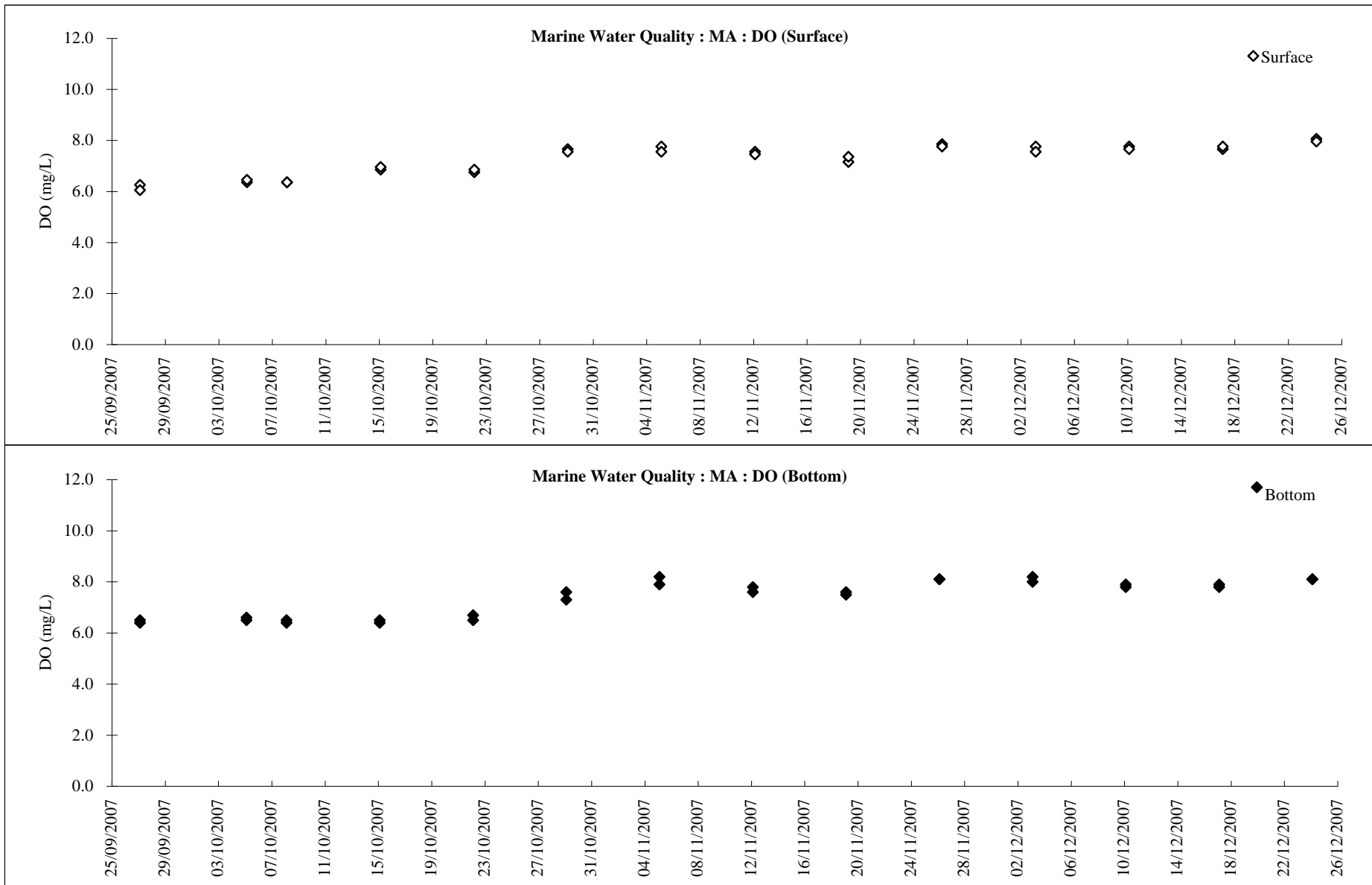
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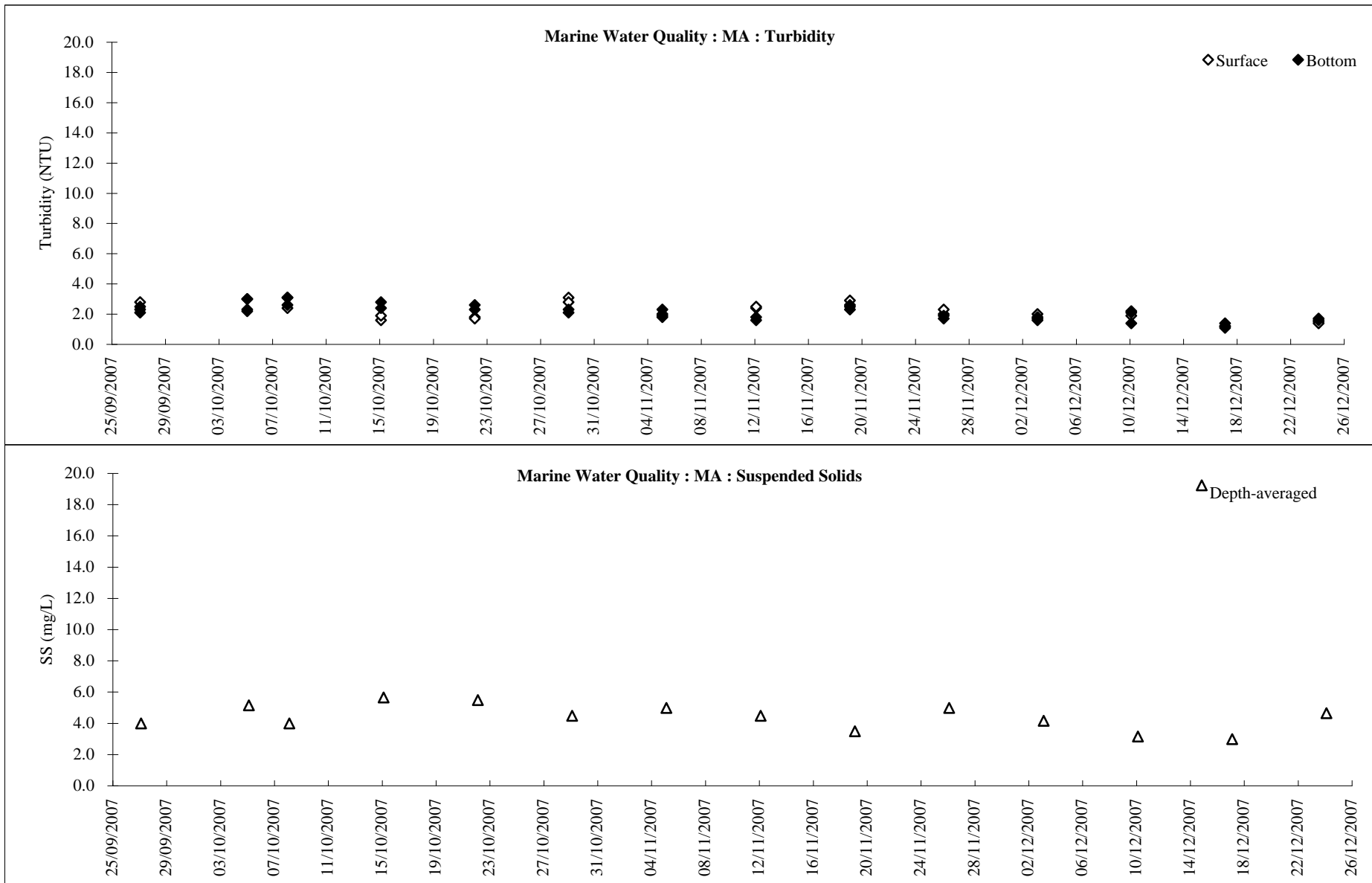




Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

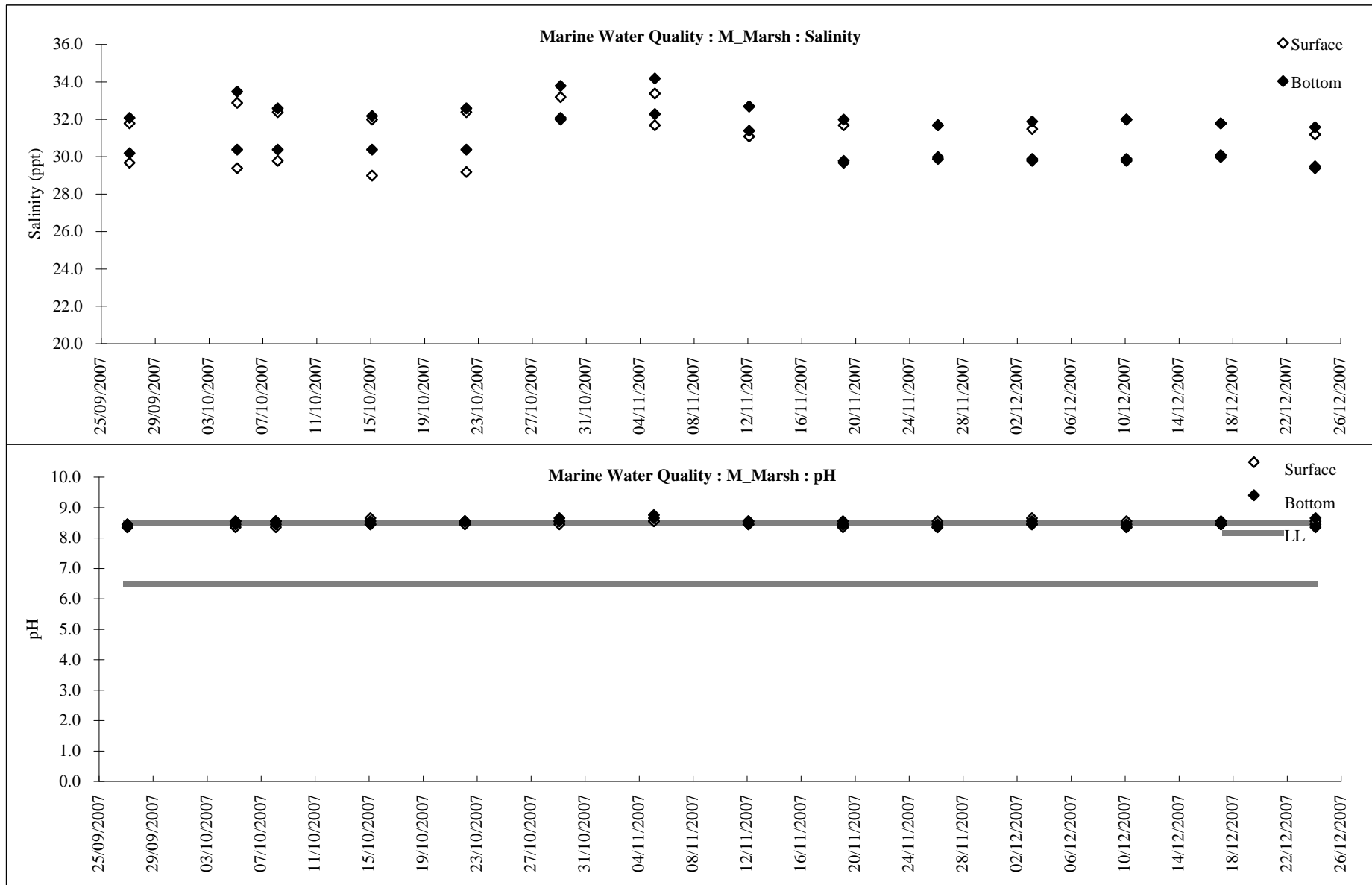
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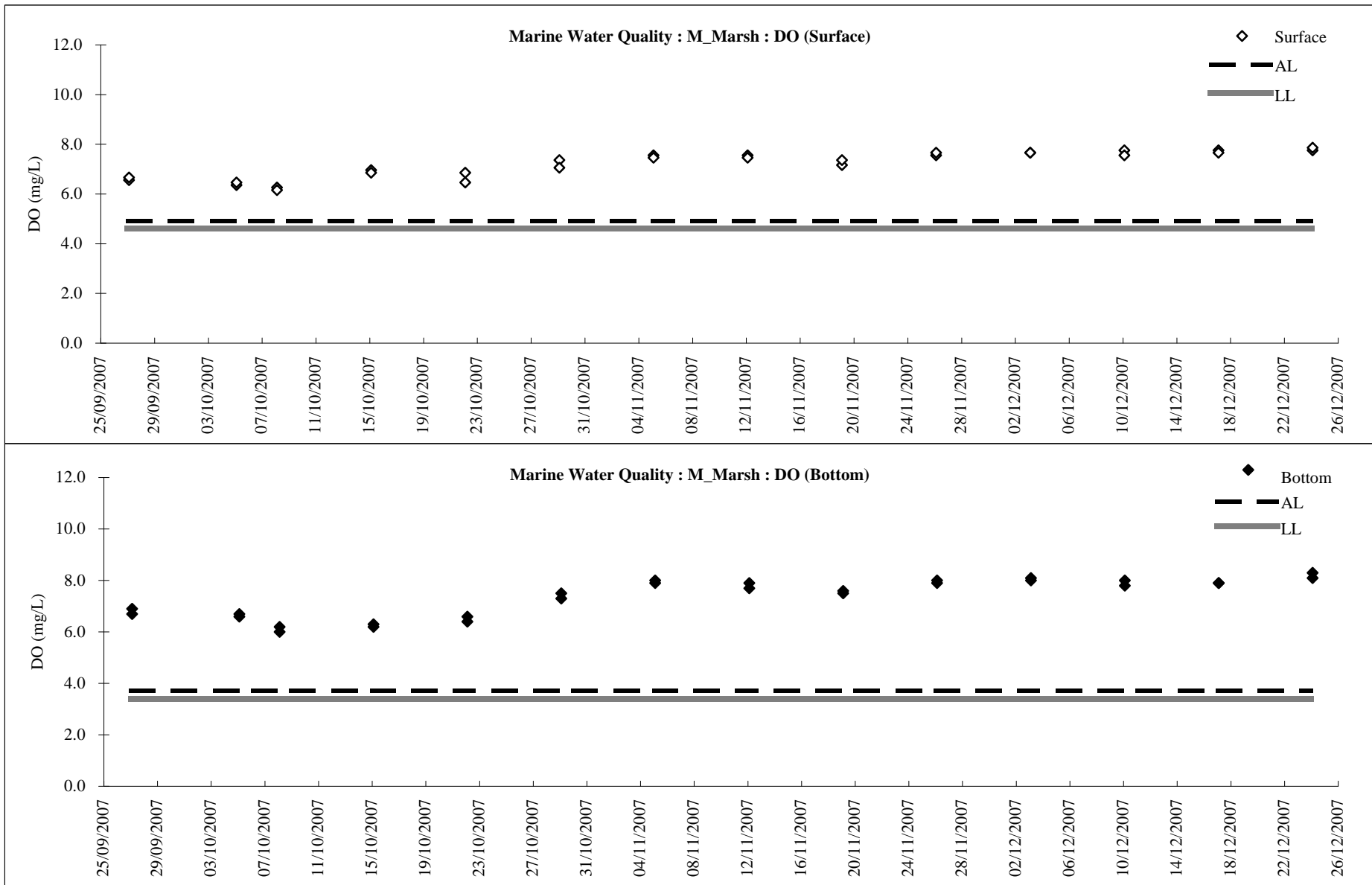
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

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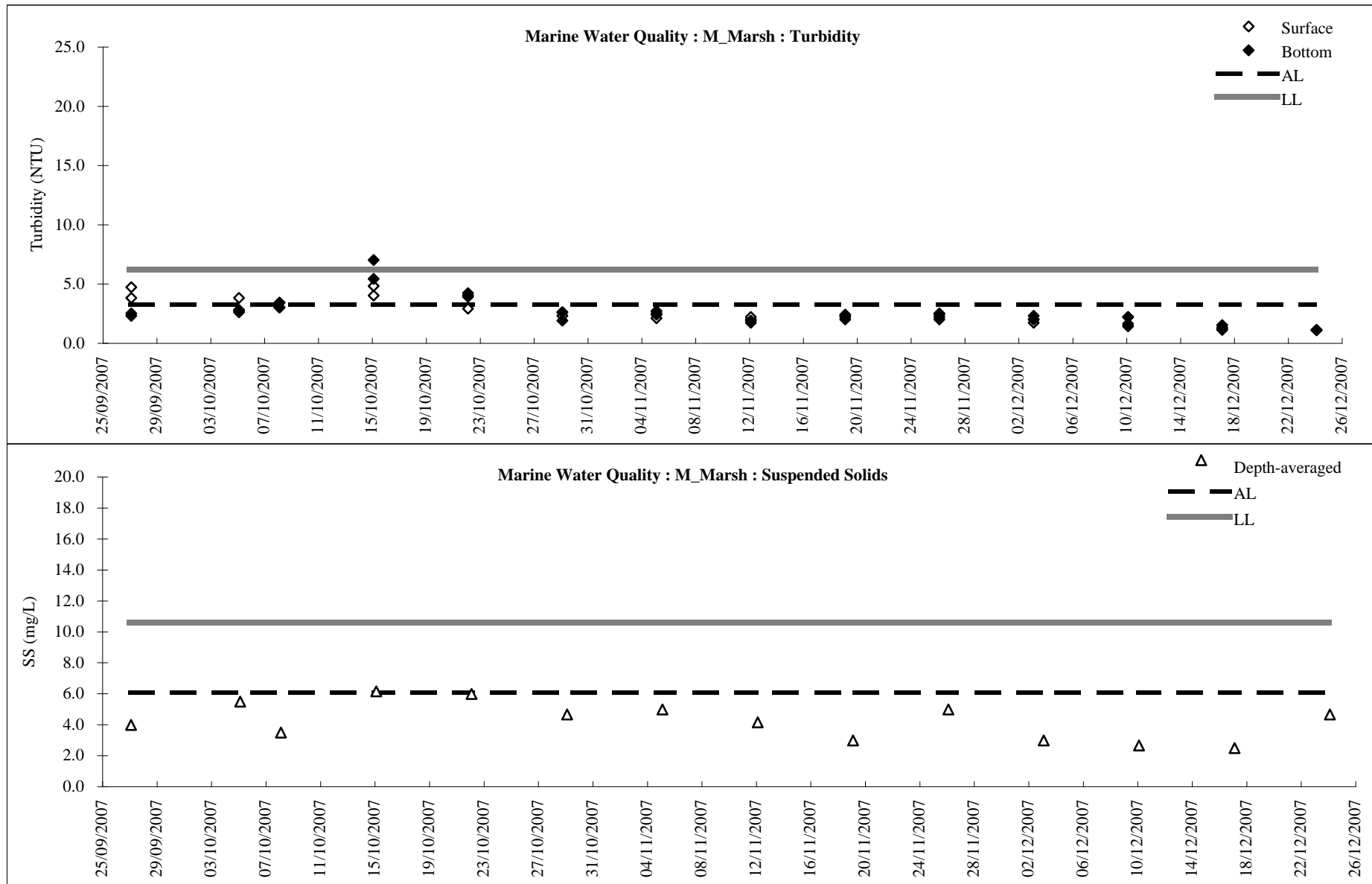
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

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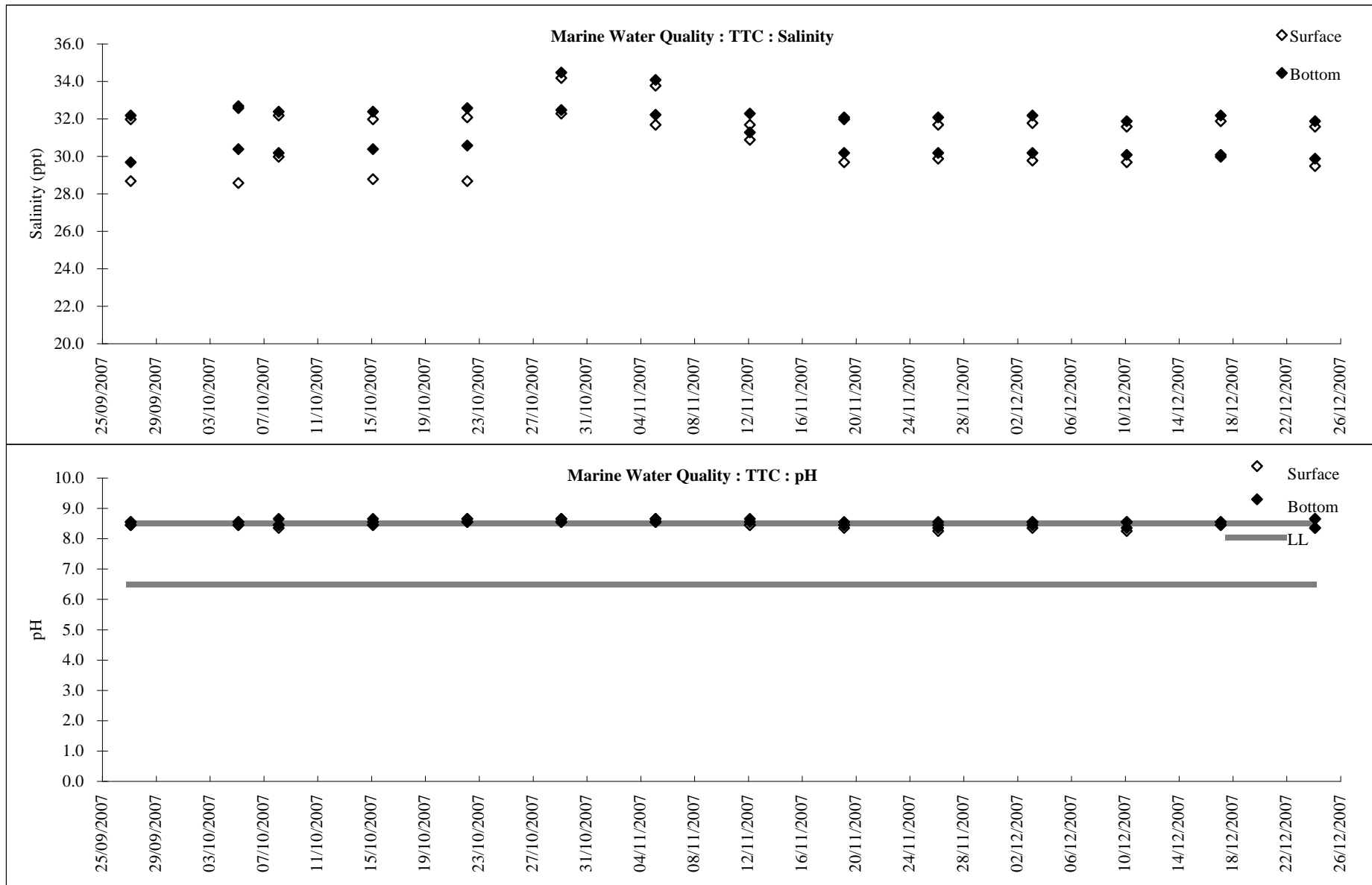
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

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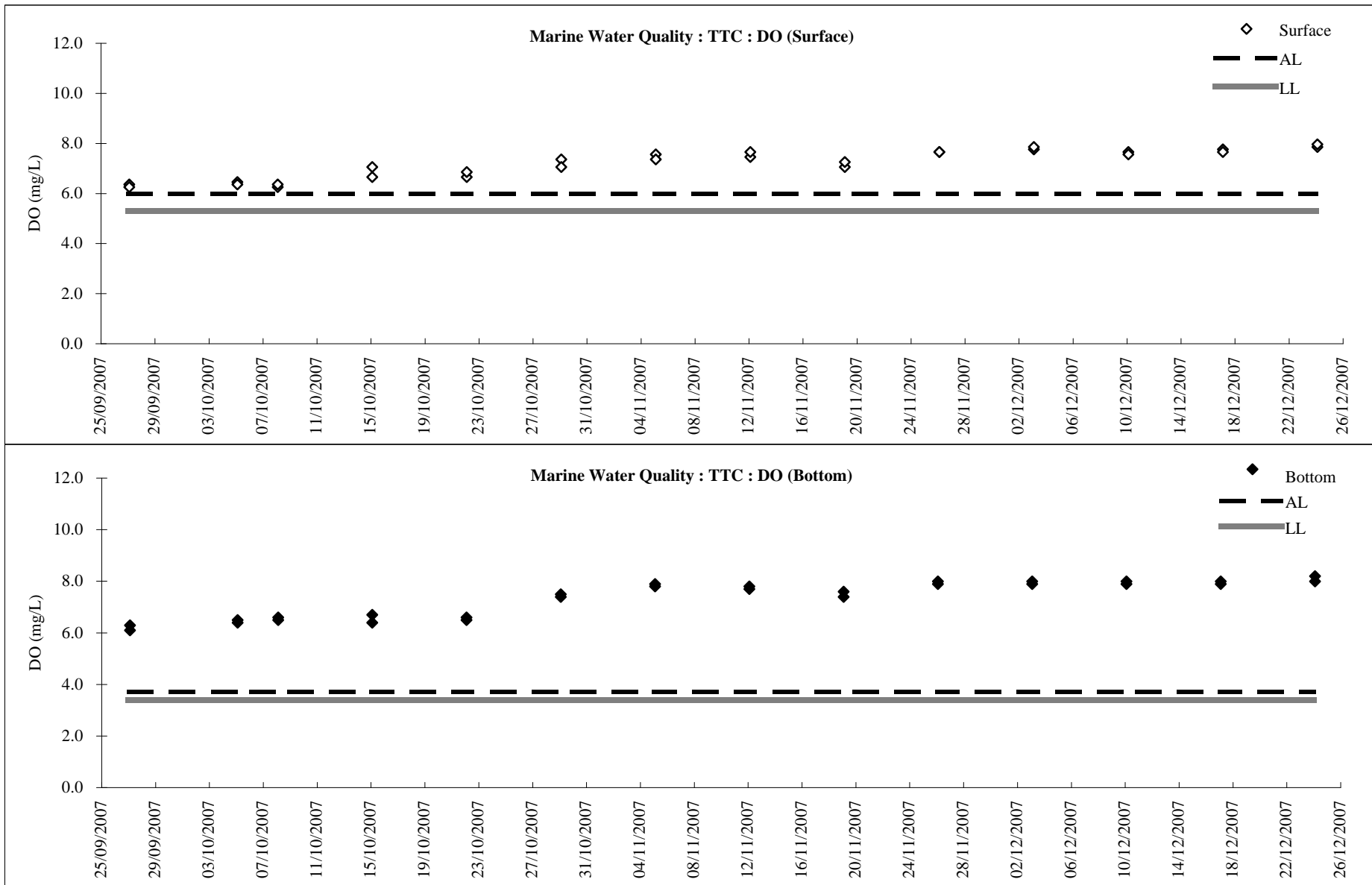
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

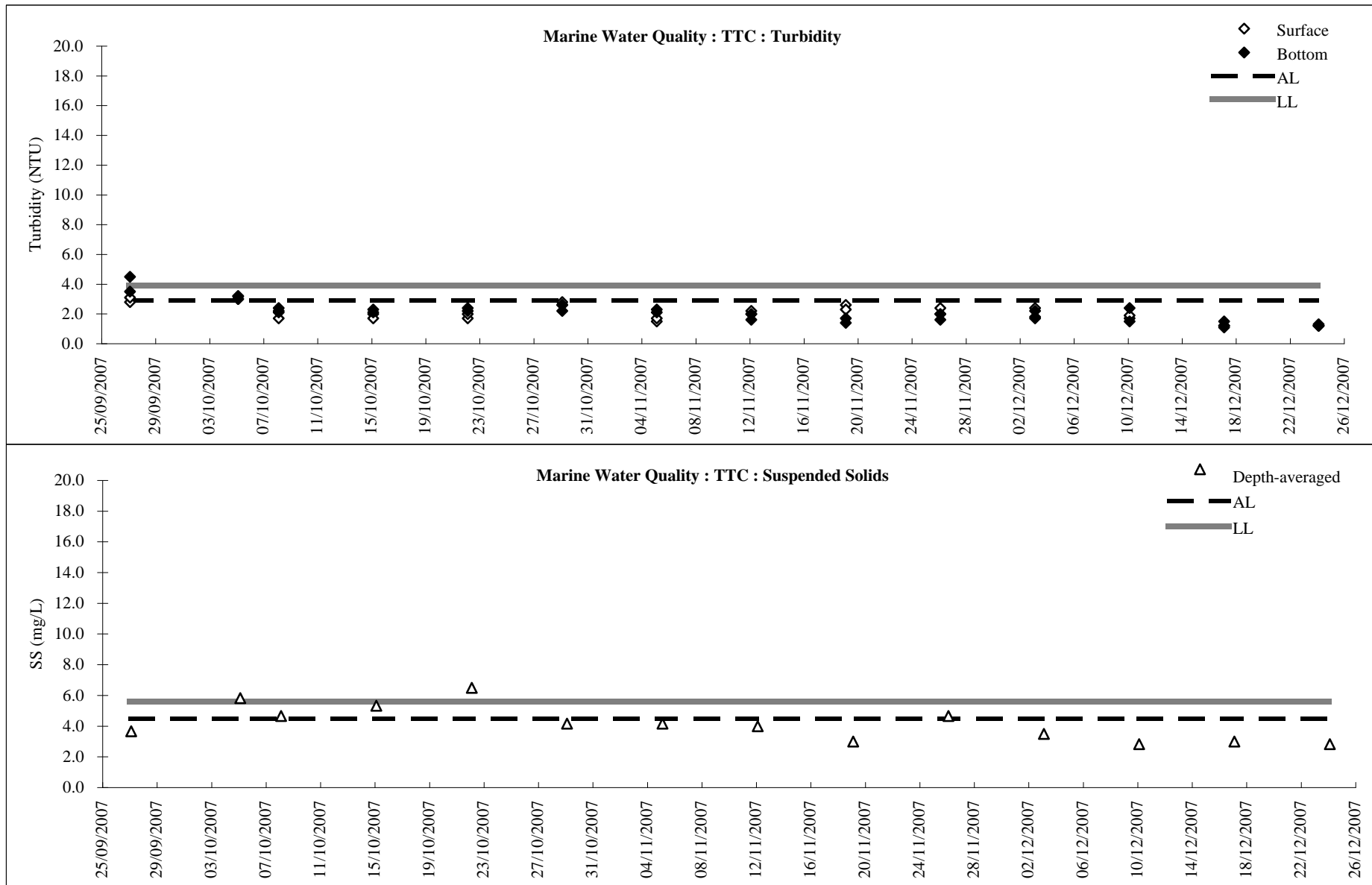
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Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

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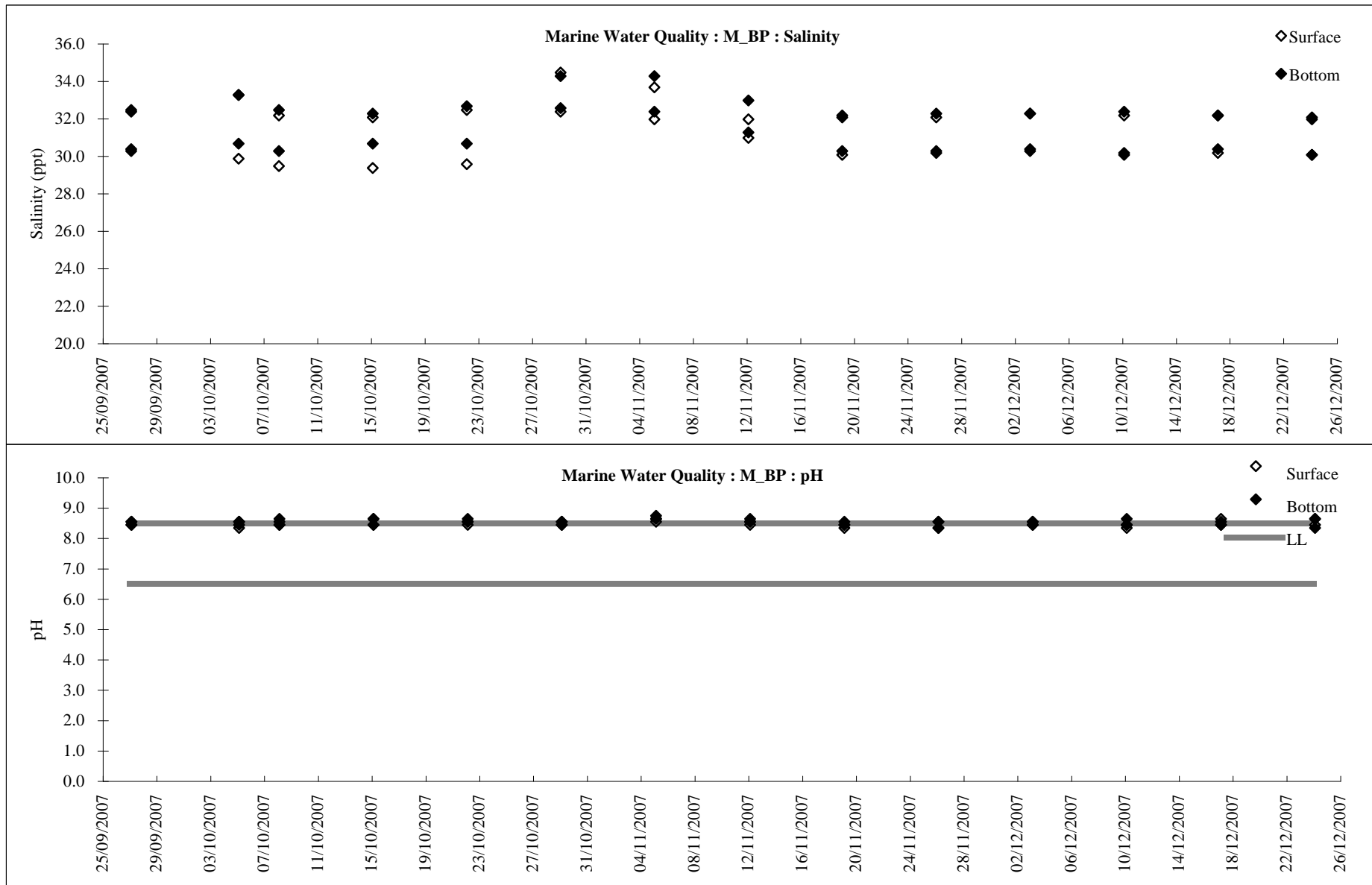






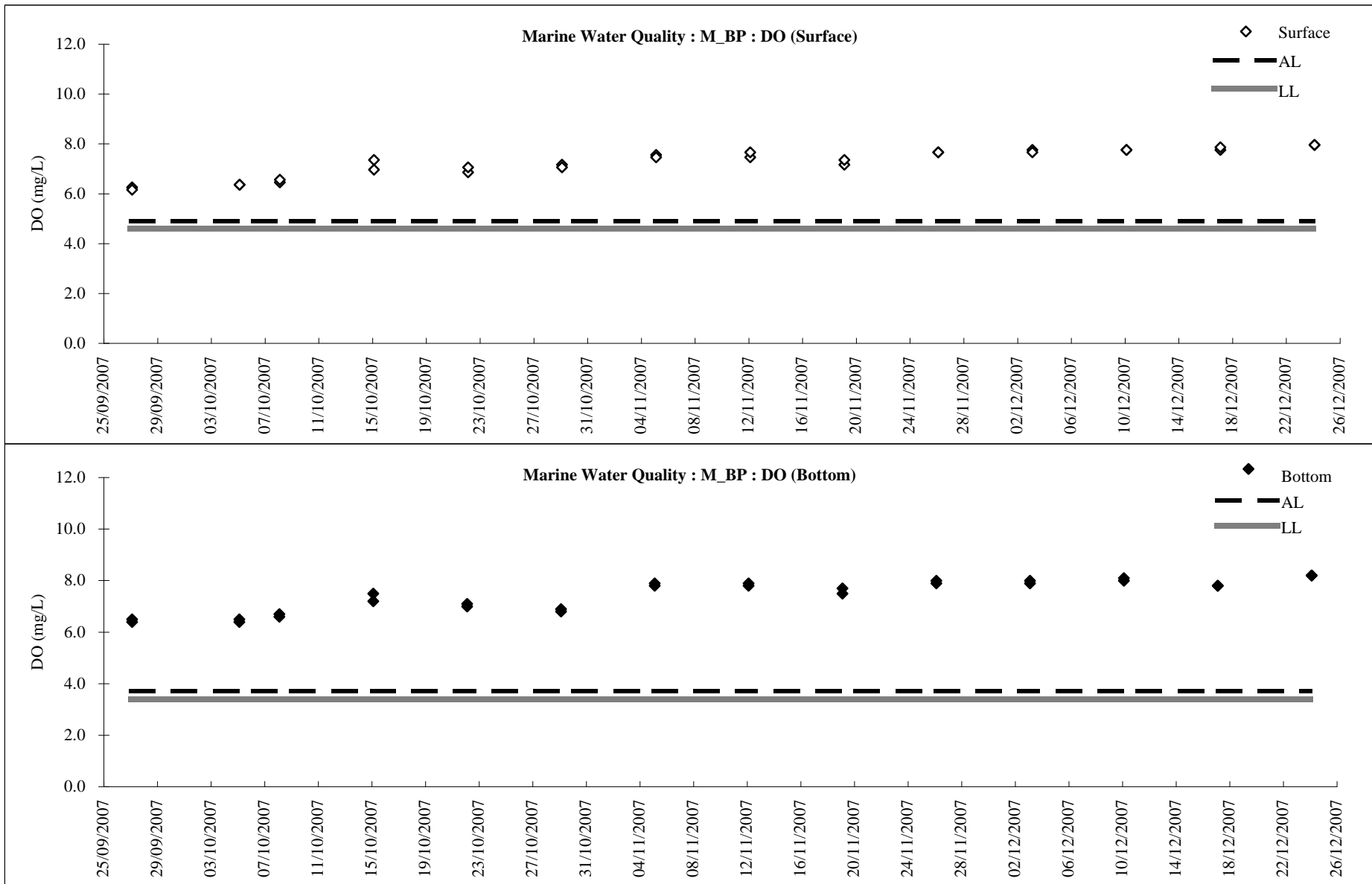
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 Water Quality Monitoring Results

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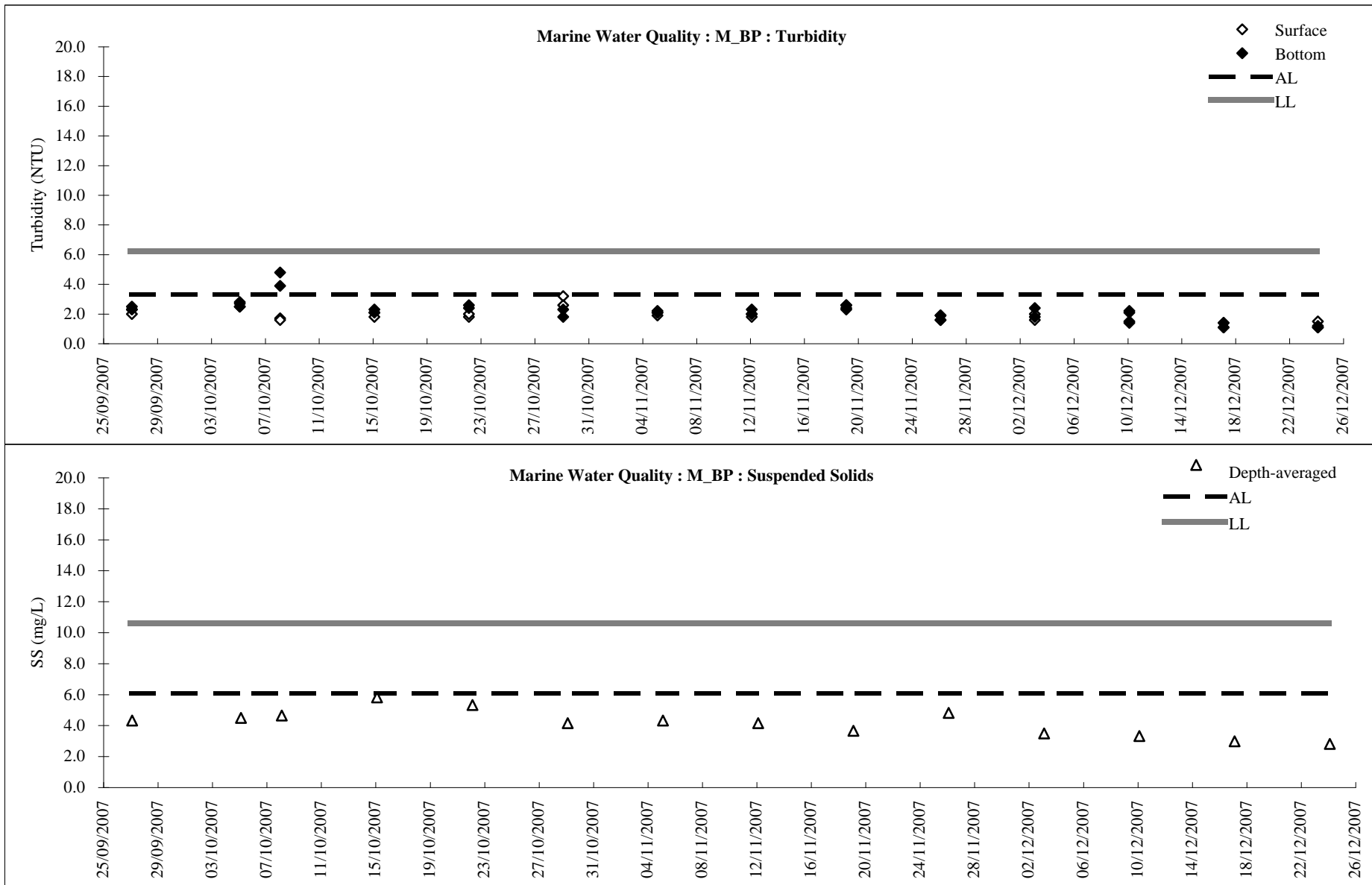
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

*In-Situ*



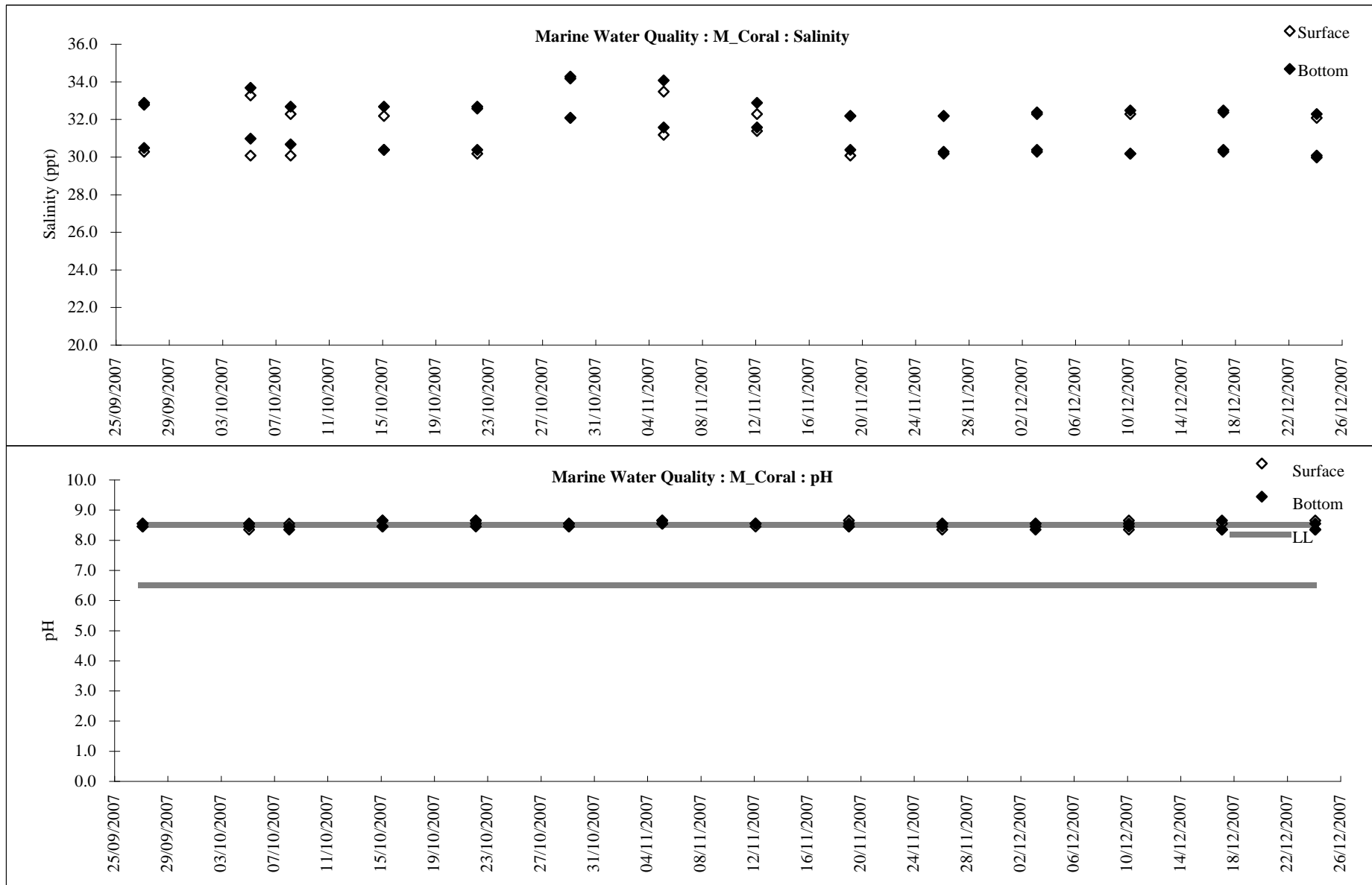
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 Water Quality Monitoring Results

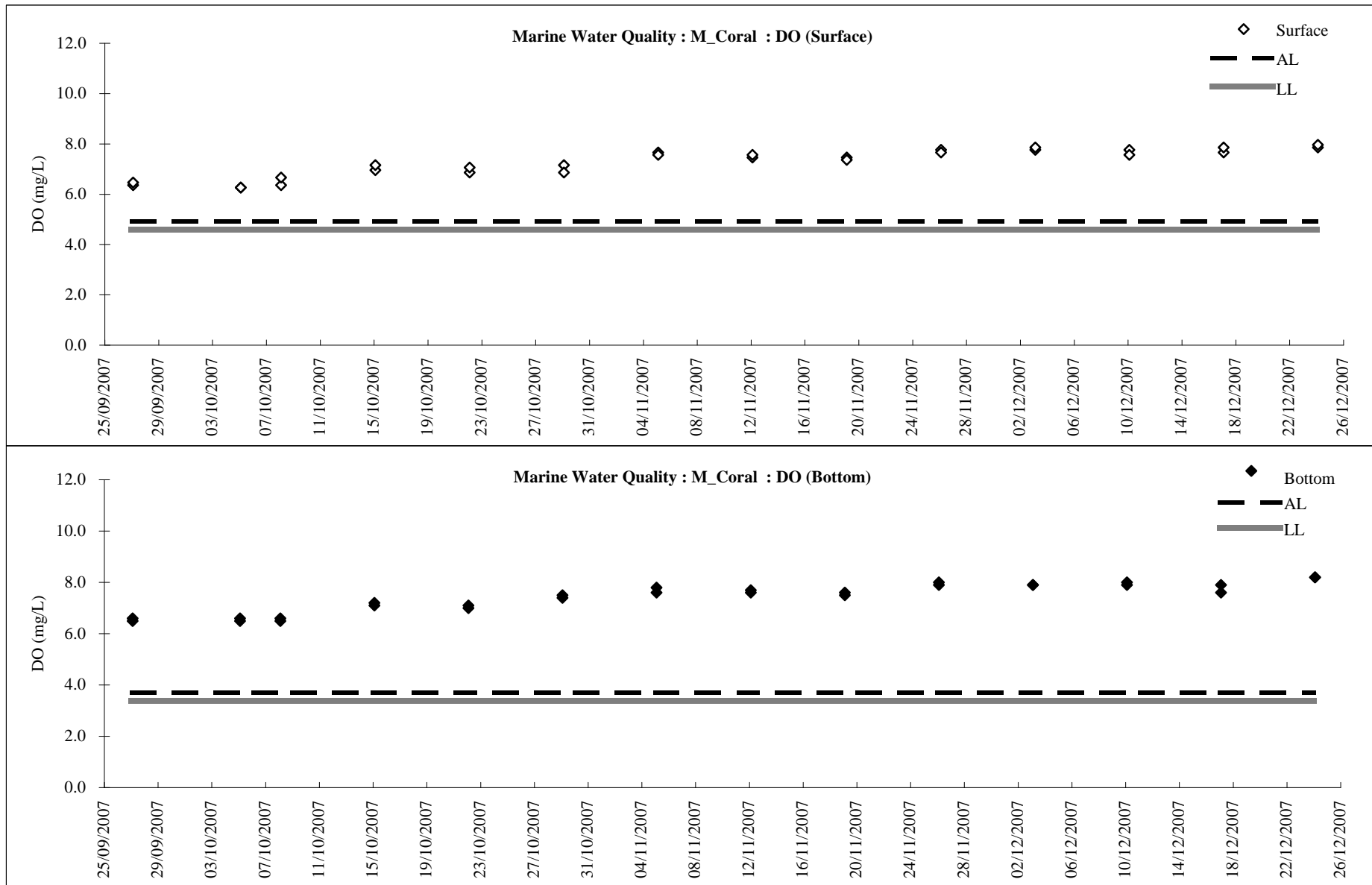
*In-Situ*

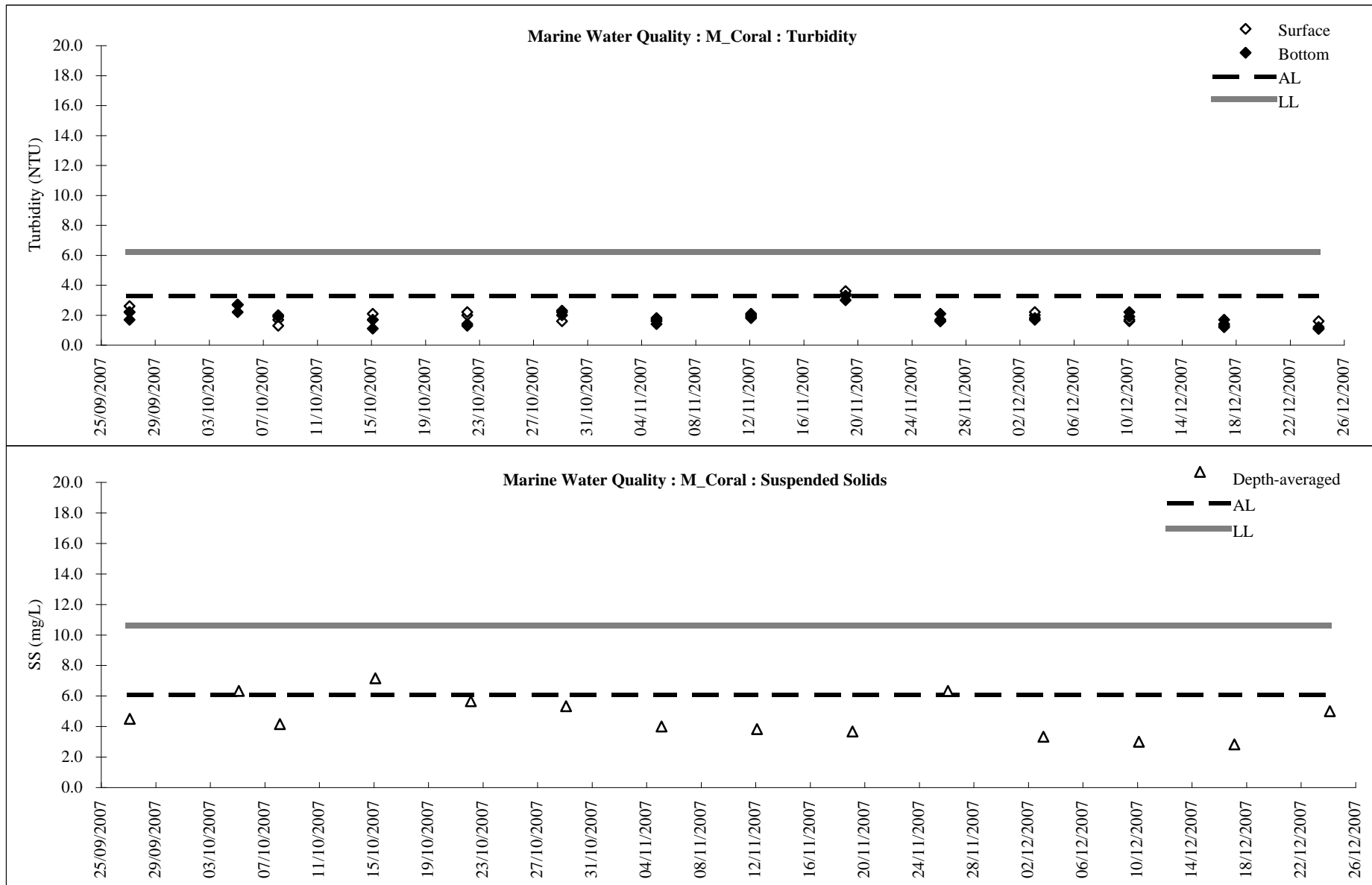


Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

*In-Situ*

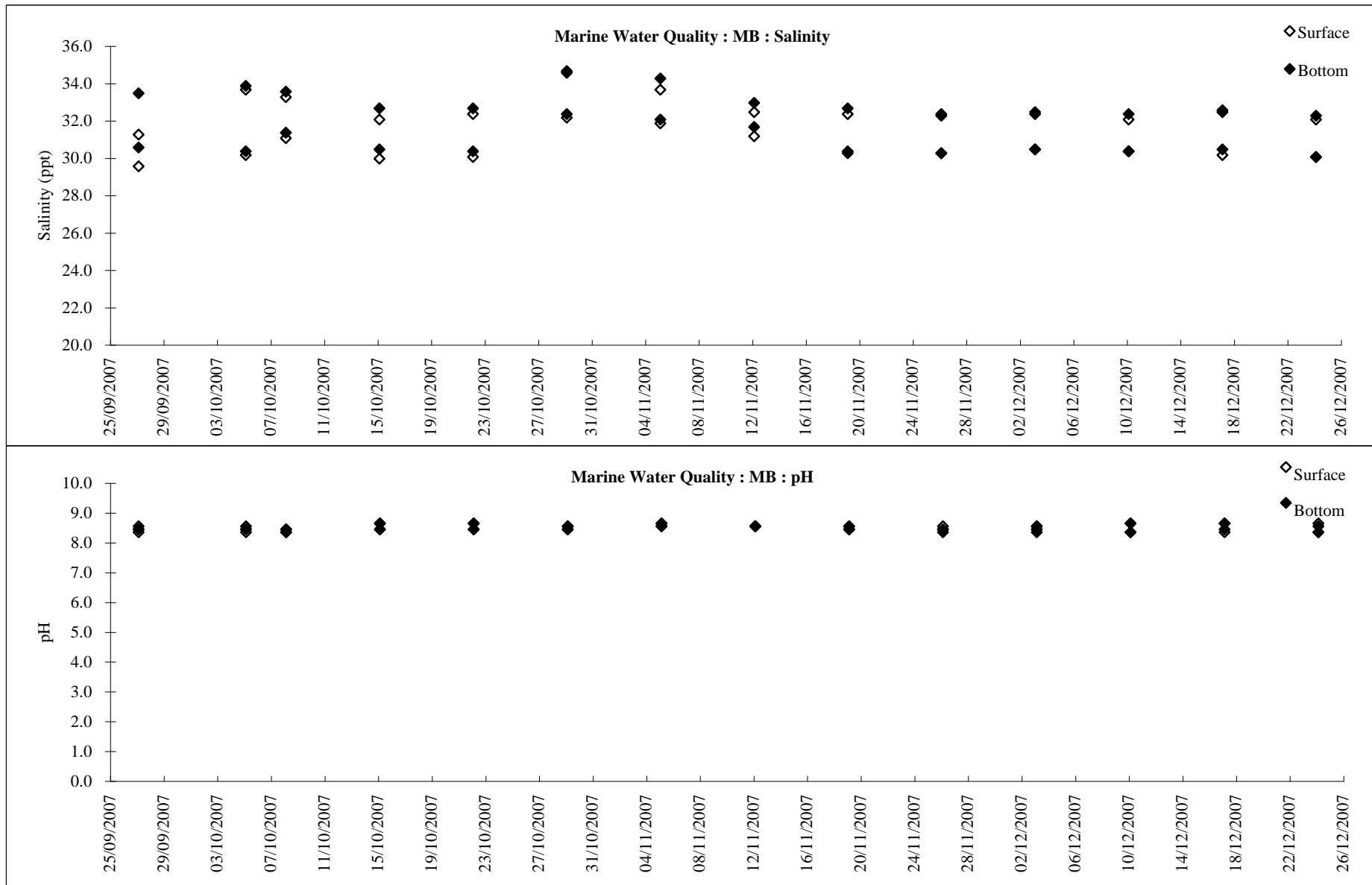


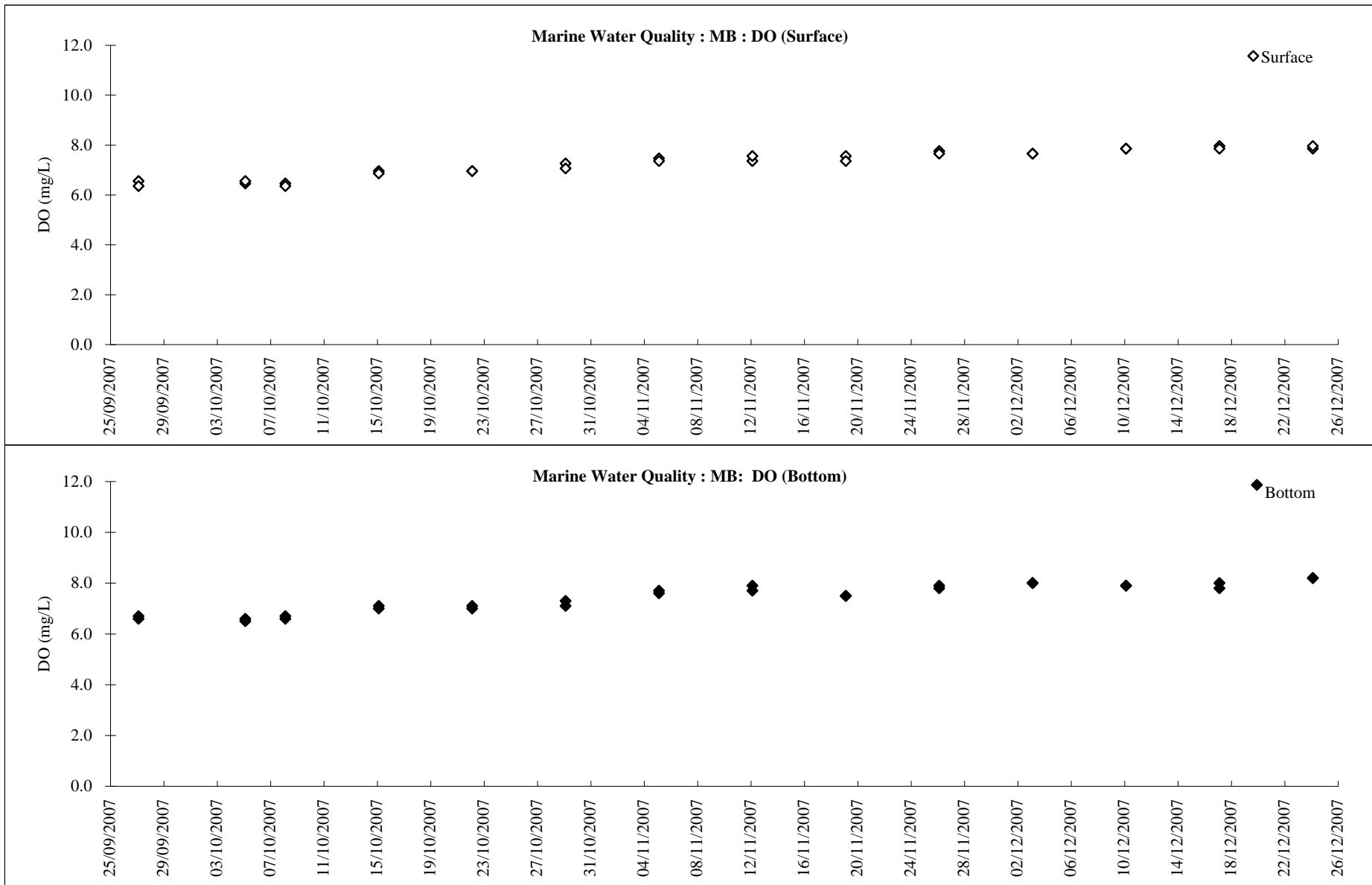




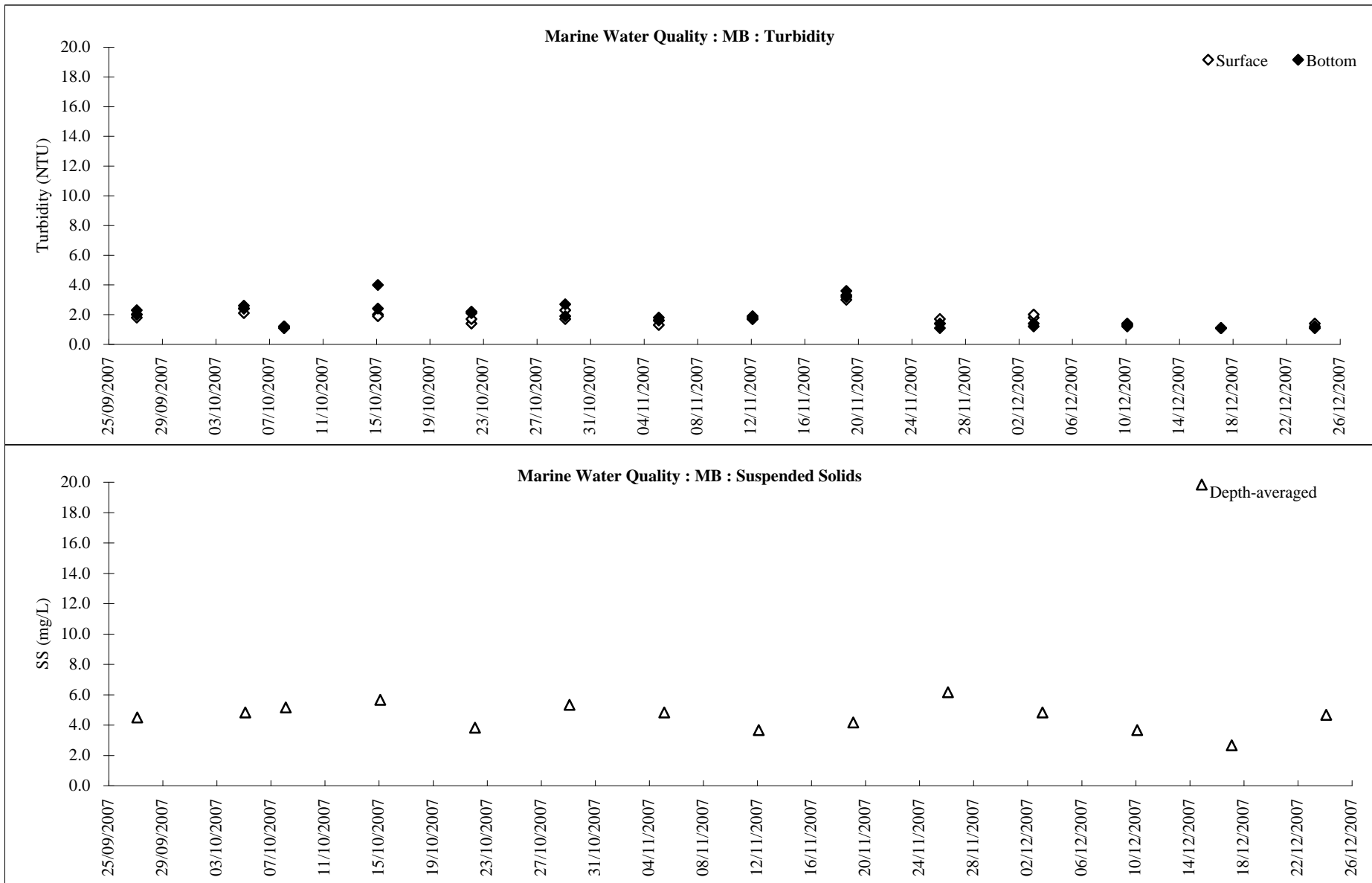
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

*In-Situ*



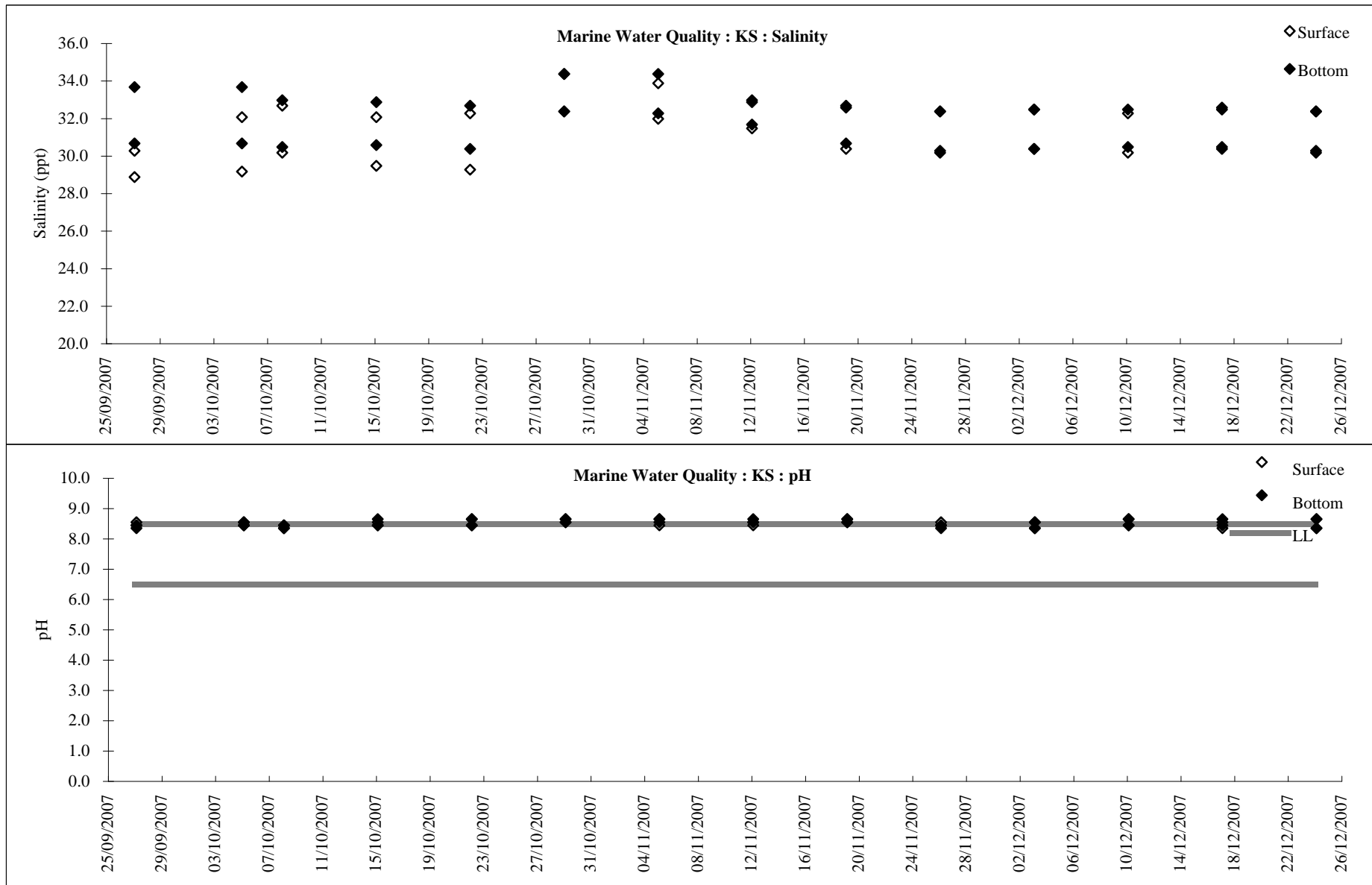






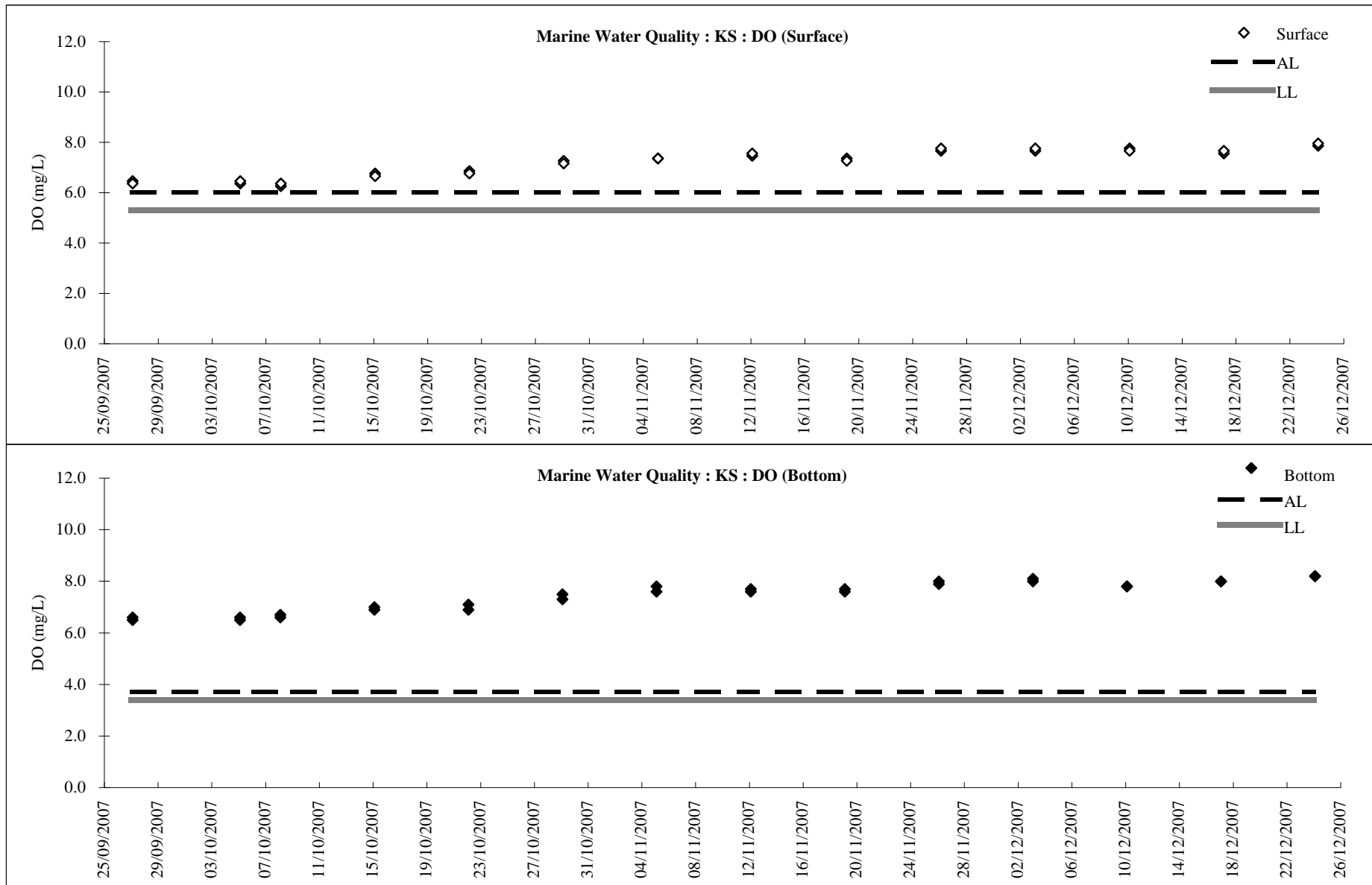
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

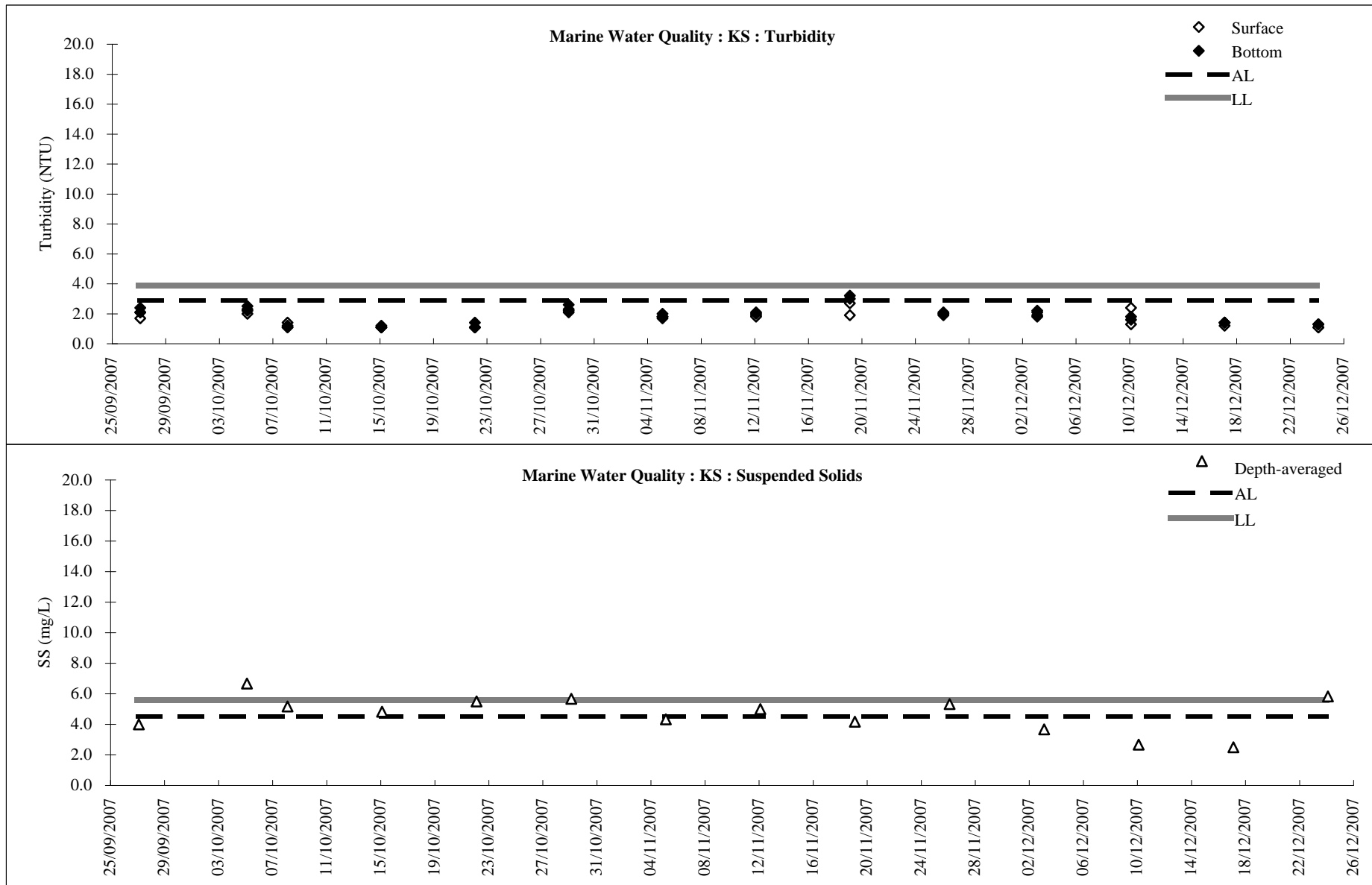
*In-Situ*



Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

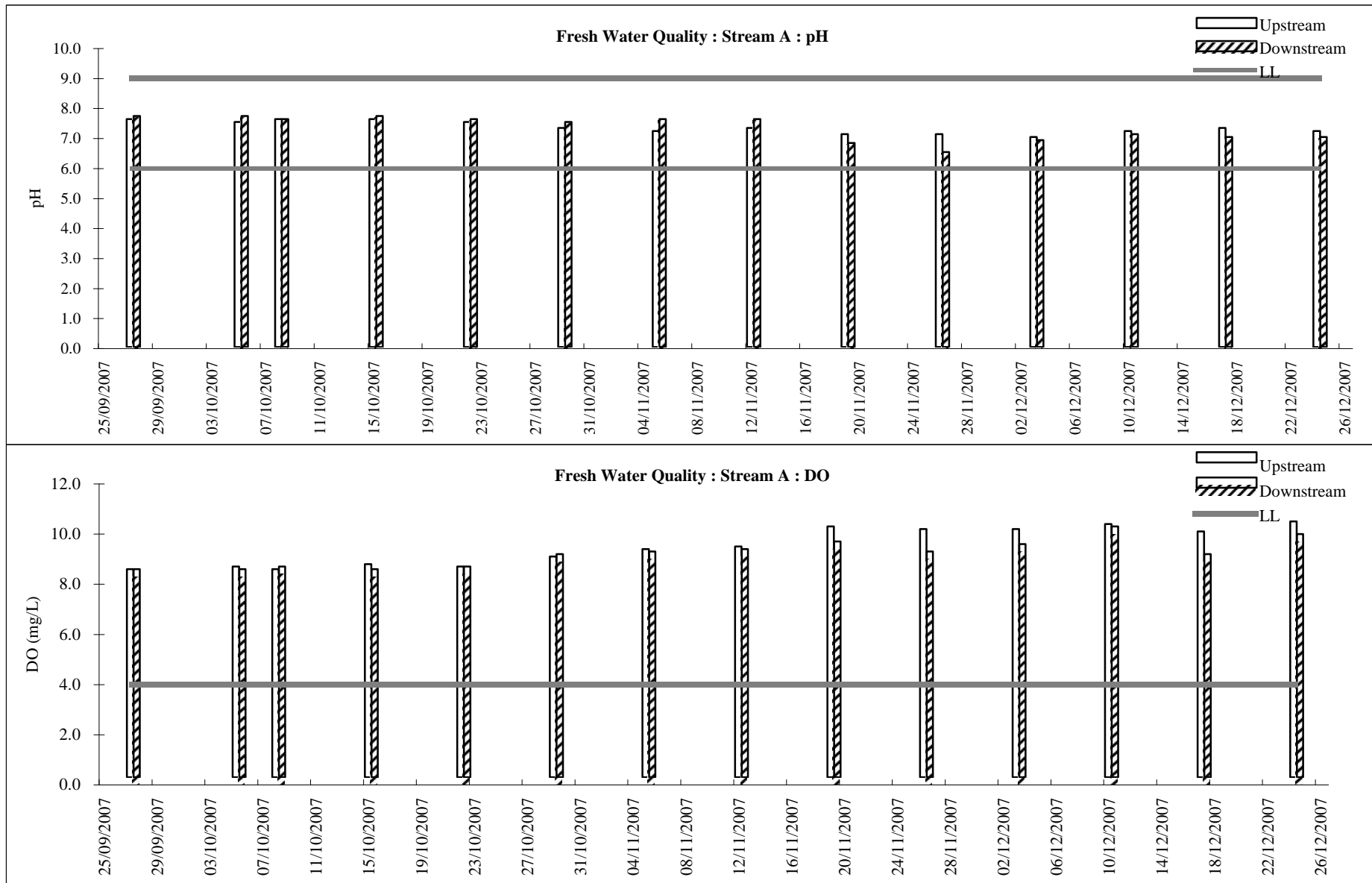
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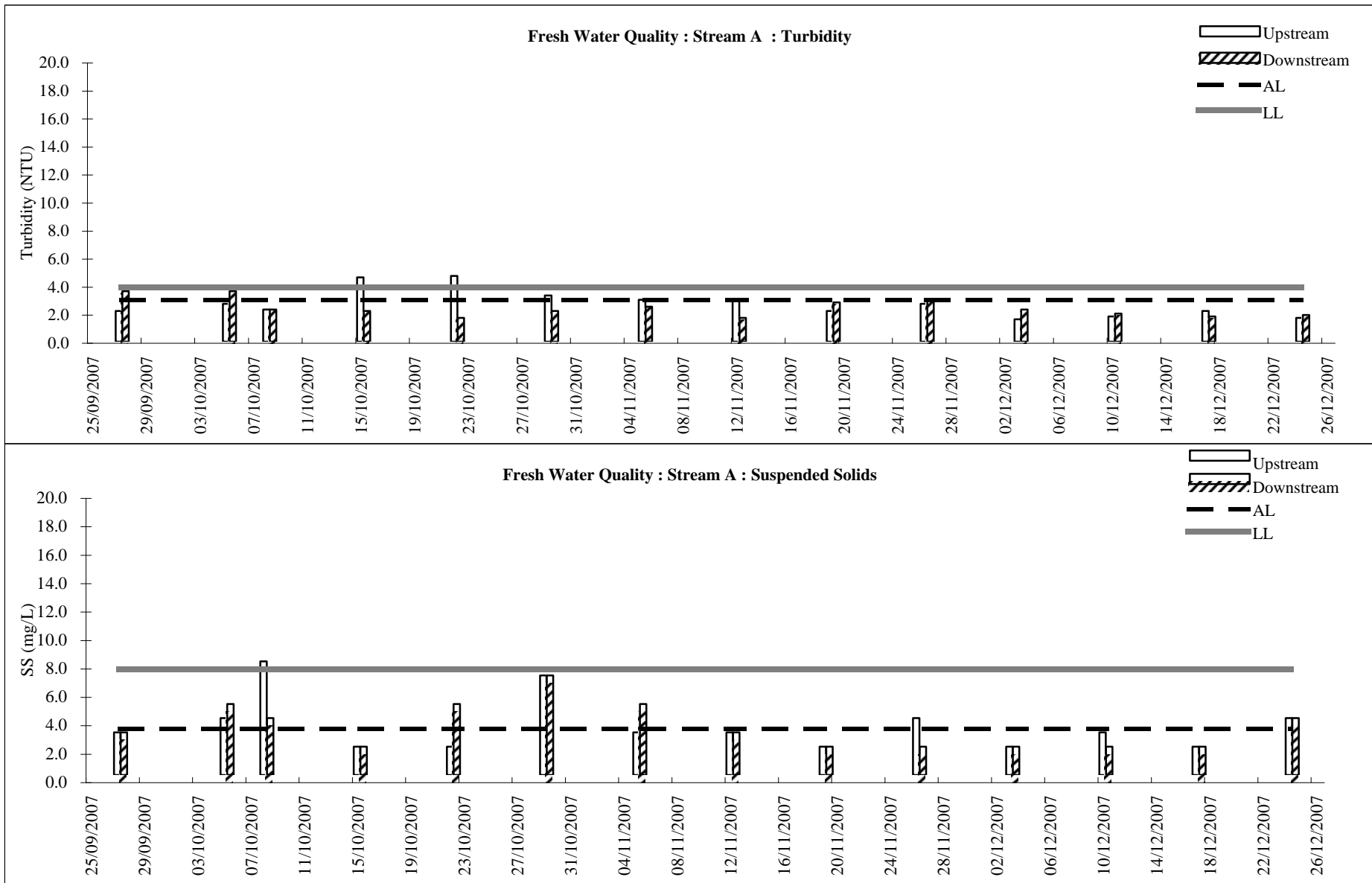
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

**In-Situ**



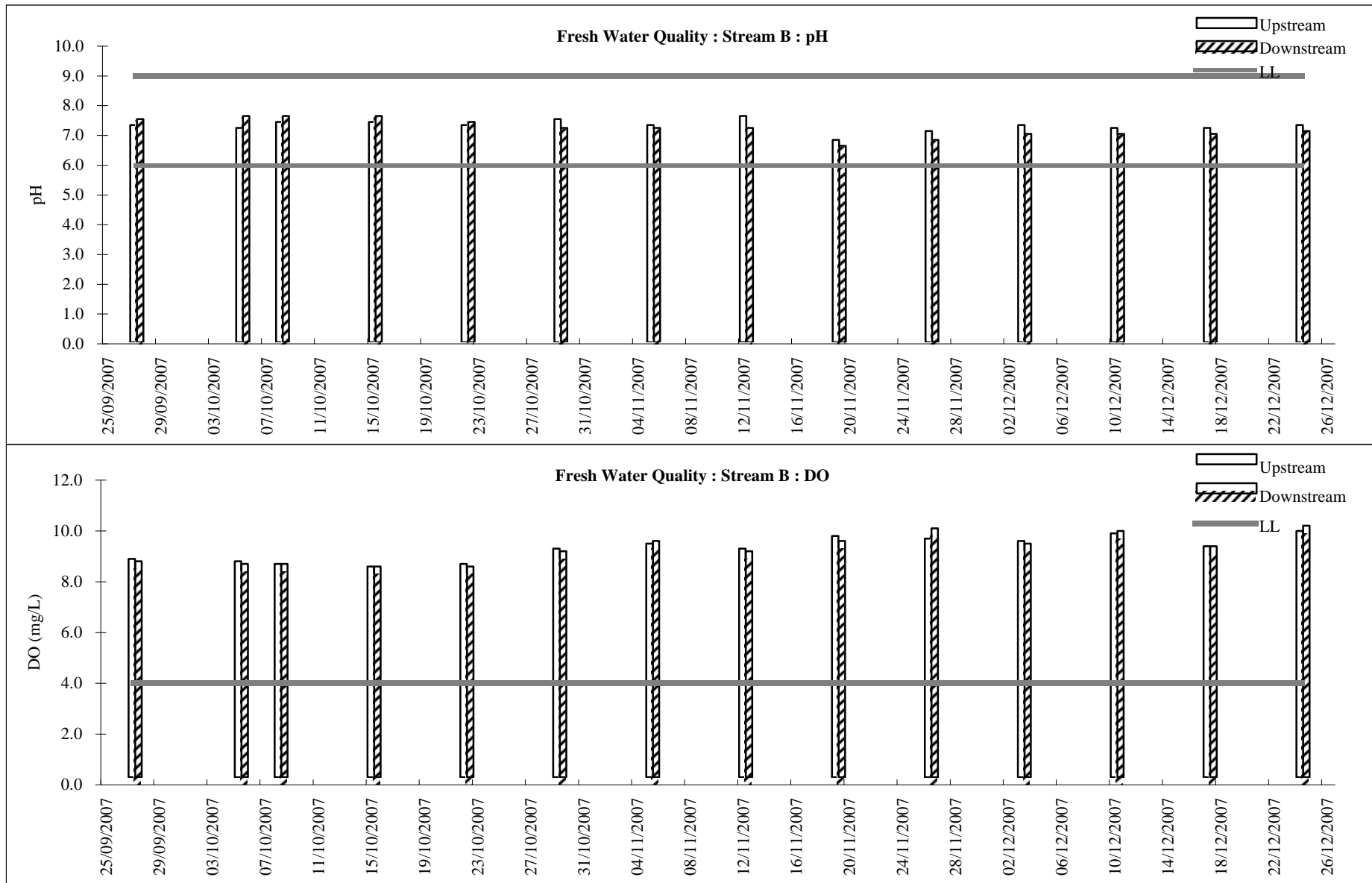
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

*In-Situ*



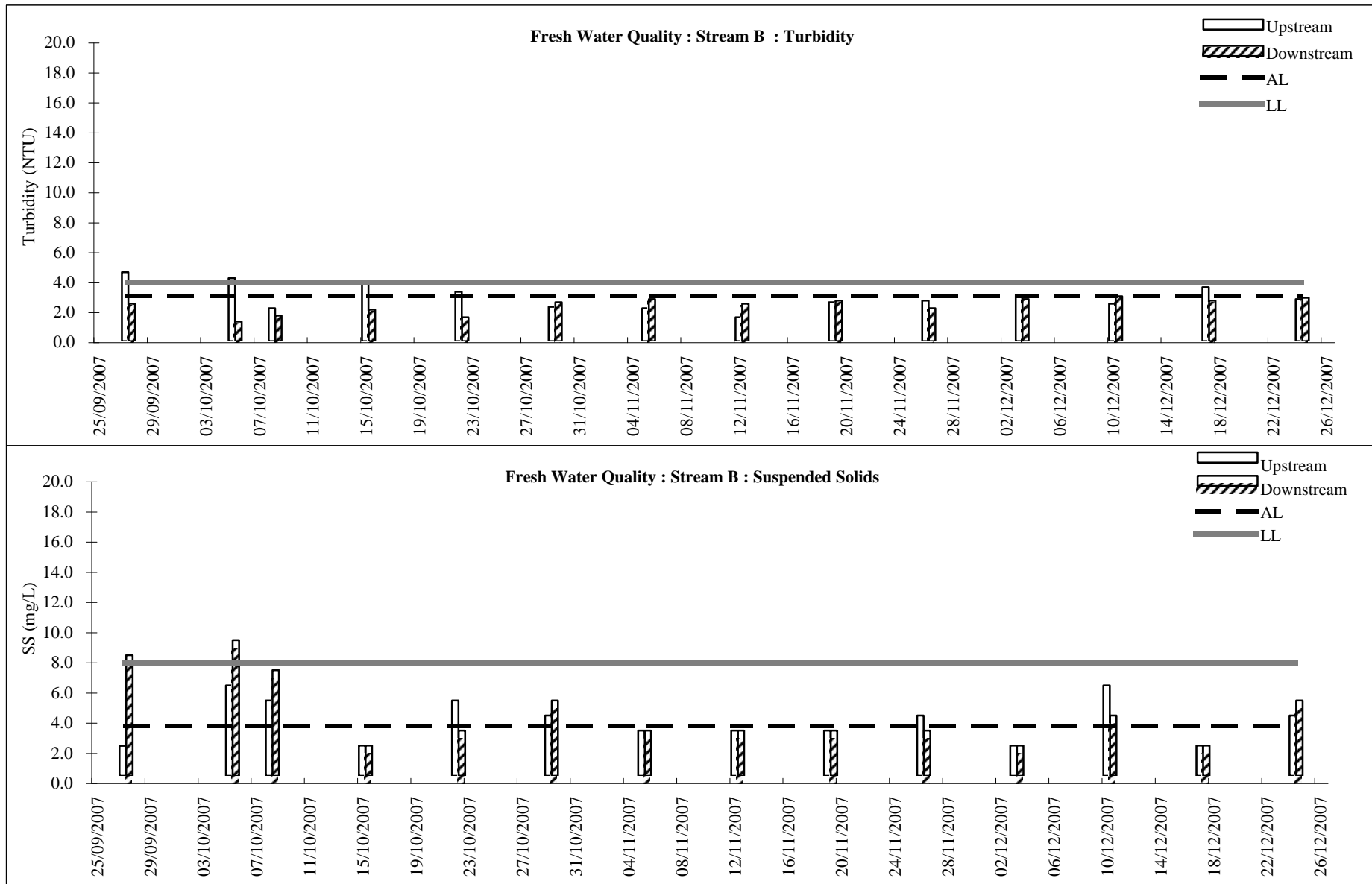
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

**In-Situ**



Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

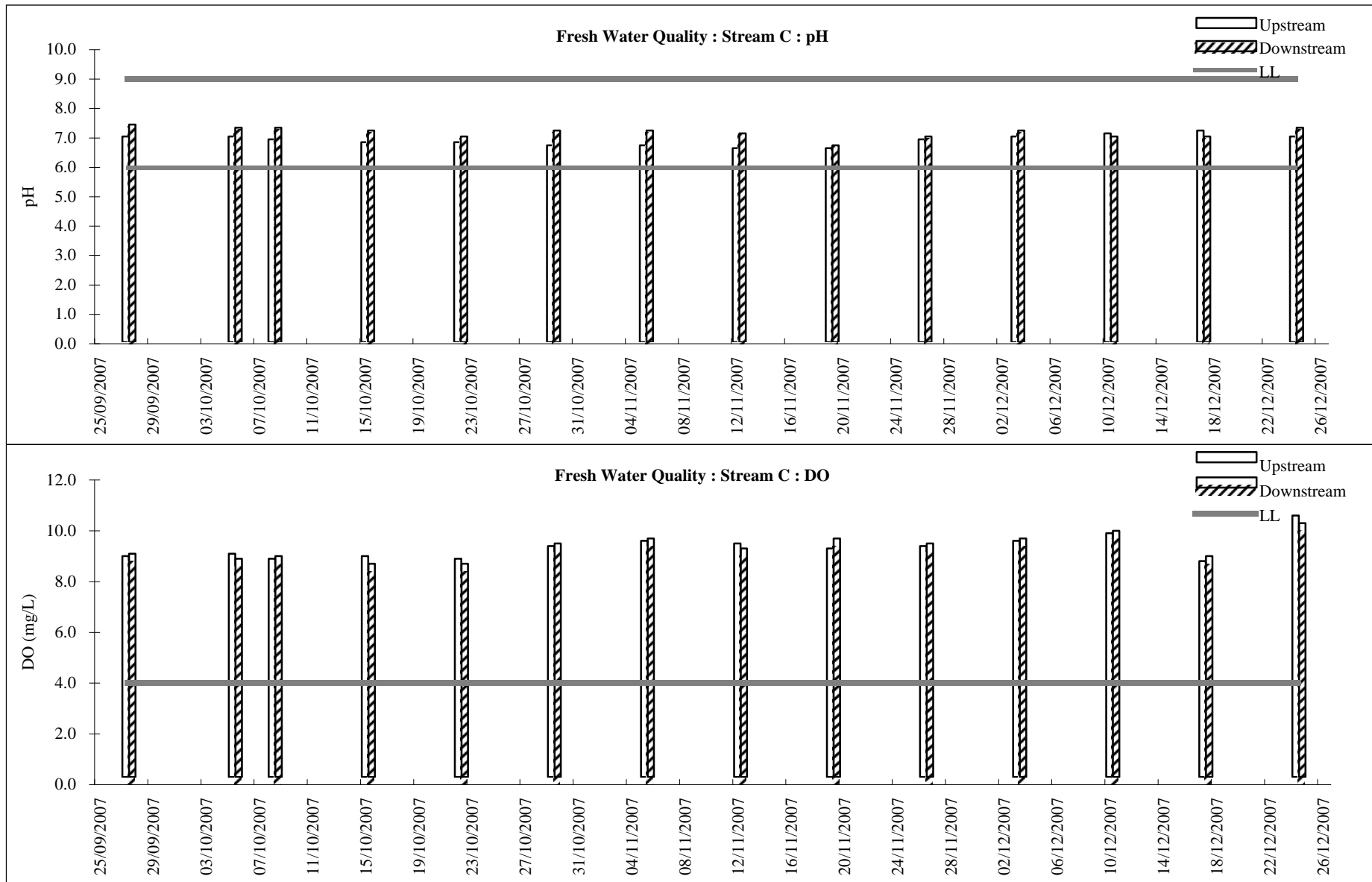
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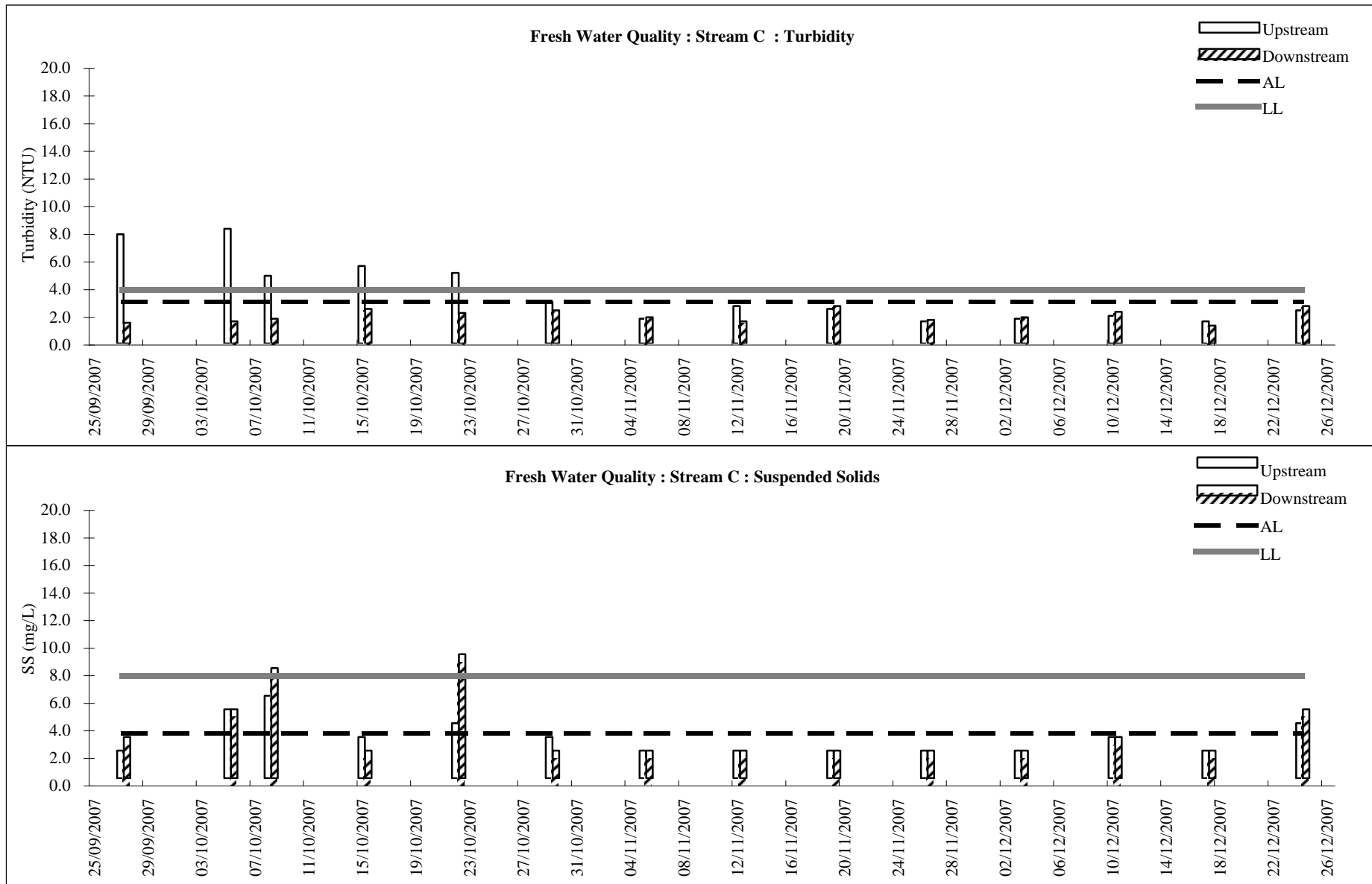
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

**In-Situ**



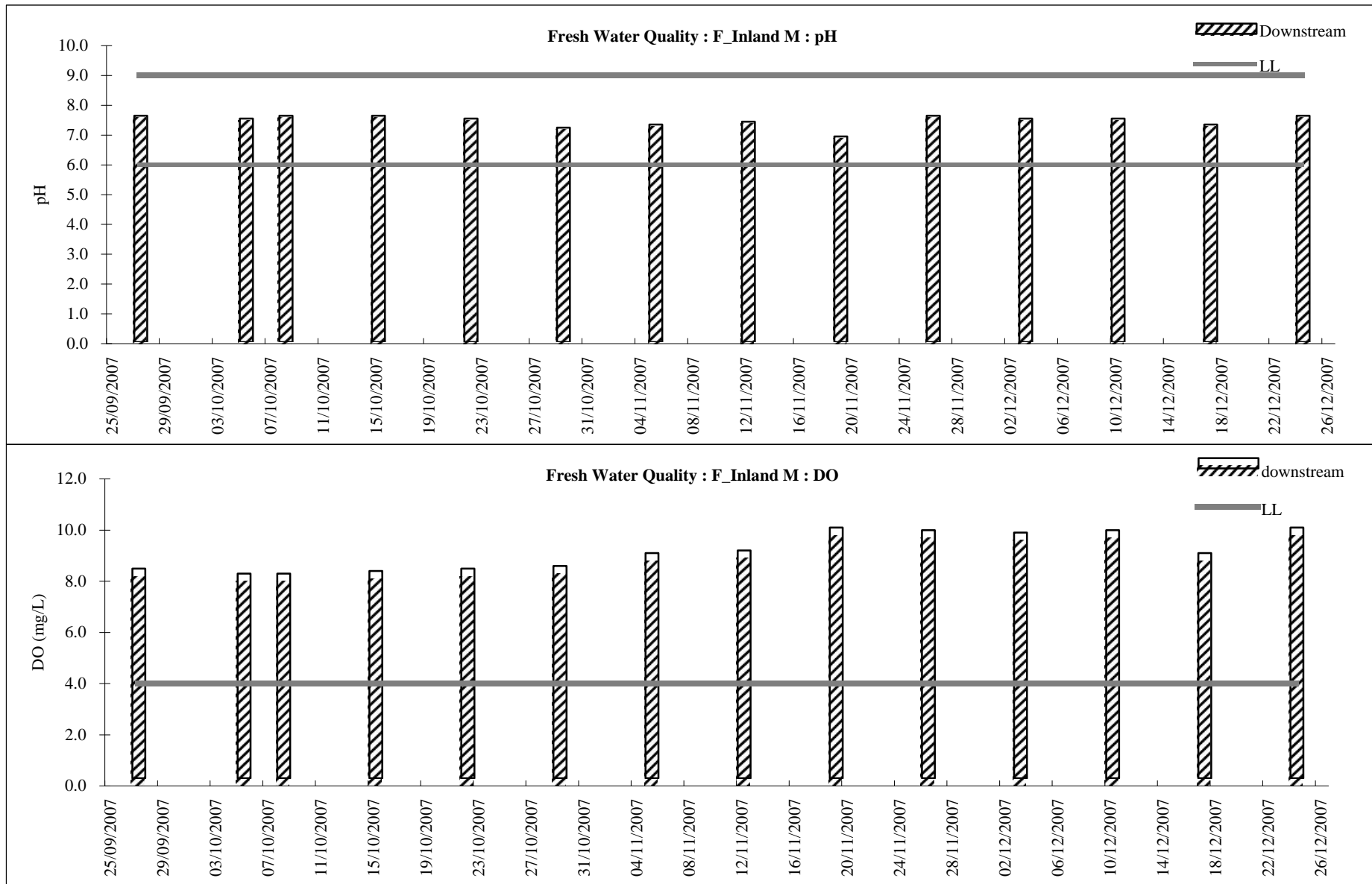
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

**In-Situ**



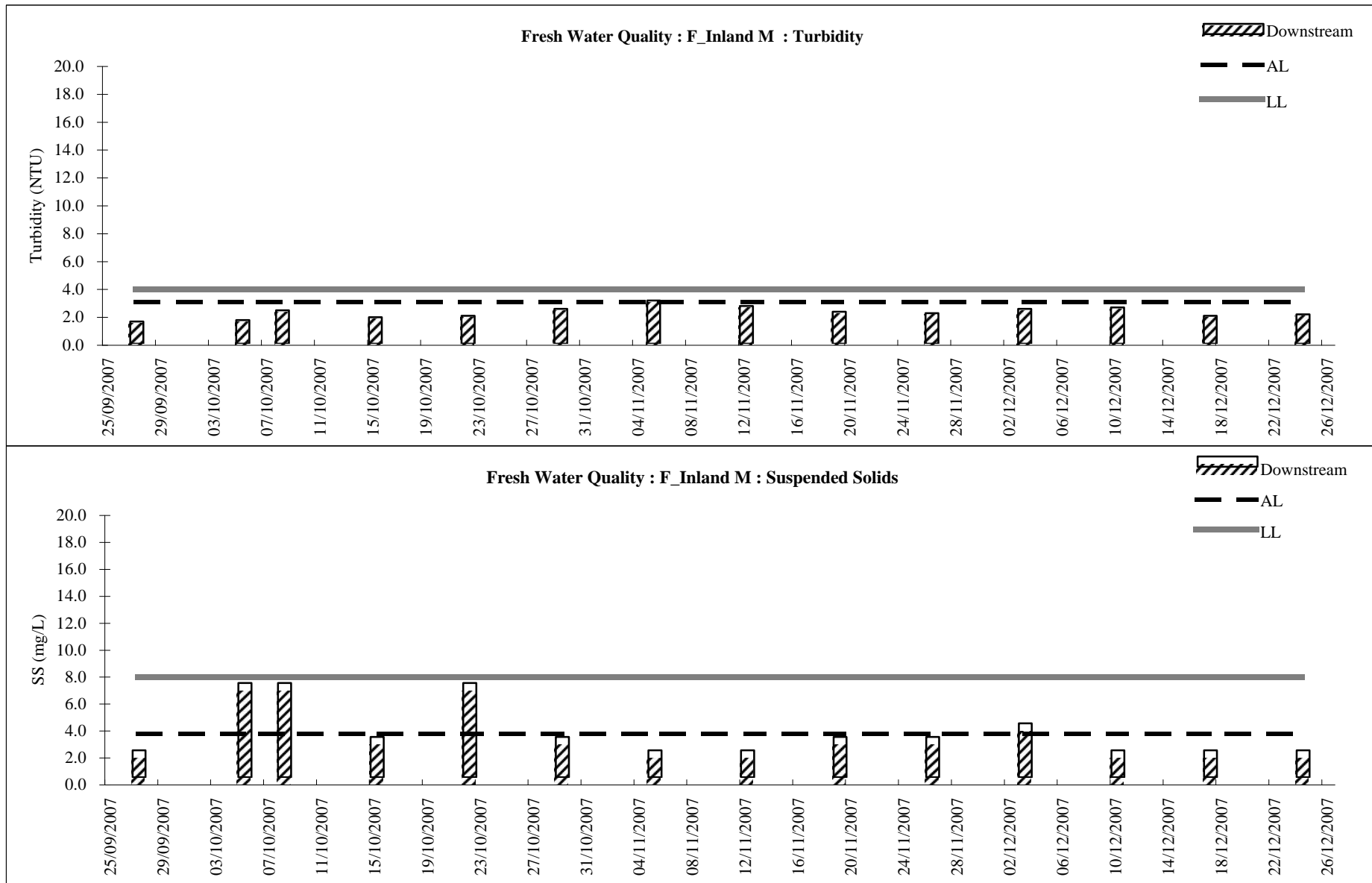
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

**In-Situ**



Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

*In-Situ*



**Marine Water Monitoring Stations (Fish Culture Zones - FCZ)**  
(Depth-averaged value for marine water quality samples)

TTC	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	26.7	30.6	6.1	8.3	3.0	3.2
5-Oct-07	27.0	31.1	6.2	8.3	2.8	<b>5.3</b>
8-Oct-07	27.3	31.1	6.3	8.3	2.3	4.2
15-Oct-07	27.3	30.9	6.6	8.3	1.9	<b>4.8</b>
22-Oct-07	27.1	31.0	6.6	8.3	2.0	<b>6.0</b>
29-Oct-07	22.4	33.3	7.2	8.3	2.4	3.7
5-Nov-07	21.8	32.9	7.5	8.4	1.7	3.7
12-Nov-07	21.6	31.5	7.4	8.3	1.8	3.5
19-Nov-07	18.5	30.9	7.2	8.2	1.9	2.5
26-Nov-07	19.0	30.9	7.6	8.2	1.8	4.2
3-Dec-07	18.8	30.9	7.7	8.2	1.8	3.0
10-Dec-07	18.1	30.8	7.6	8.2	1.8	2.3
17-Dec-07	18.3	31.0	7.7	8.3	1.2	2.5
24-Dec-07	17.4	30.7	7.8	8.3	1.2	2.3

Remarks: Exceedance

> Action level	<b><i>Bold &amp; Italic</i></b>
> Limit level	<b>Bold</b>
< Detection Limit	Grey

Å = Rainstorm event

KLW	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	26.7	30.9	6.2	8.2	1.4	3.2
5-Oct-07	26.7	31.4	6.4	8.2	1.7	4.2
8-Oct-07	27.2	30.9	6.4	8.3	2.5	<b>4.7</b>
15-Oct-07	27.2	31.0	6.6	8.3	2.4	4.0
22-Oct-07	27.0	31.1	6.5	8.3	2.2	<b>5.0</b>
29-Oct-07	23.0	33.3	7.4	8.4	2.6	<b>4.7</b>
5-Nov-07	22.4	33.0	7.3	8.3	2.2	3.3
12-Nov-07	21.8	31.7	7.7	8.3	2.4	3.8
19-Nov-07	19.8	30.6	7.2	8.3	<b>3.1</b>	2.7
26-Nov-07	18.9	30.8	8.0	8.2	1.3	3.8
3-Dec-07	18.7	30.8	7.7	8.3	1.4	2.8
10-Dec-07	18.2	30.9	7.7	8.2	1.7	3.2
17-Dec-07	18.2	30.6	7.6	8.2	1.3	2.5
24-Dec-07	17.3	30.0	7.9	8.2	1.1	4.5

KS	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	27.0	30.9	6.3	8.2	2.0	3.5
5-Oct-07	27.4	31.5	6.3	8.2	2.3	<b>6.2</b>
8-Oct-07	27.3	31.6	6.3	8.2	1.2	<b>4.7</b>
15-Oct-07	27.0	31.2	6.7	8.3	1.0	4.3
22-Oct-07	26.9	31.2	6.7	8.3	1.0	<b>5.0</b>
29-Oct-07	23.1	33.3	7.1	8.4	2.2	<b>5.2</b>
5-Nov-07	22.4	33.1	7.4	8.3	1.7	3.8
12-Nov-07	21.9	32.1	7.4	8.3	1.9	4.5
19-Nov-07	18.7	31.5	7.3	8.4	2.7	3.7
26-Nov-07	19.4	31.2	7.7	8.2	1.8	<b>4.8</b>
3-Dec-07	18.9	31.3	7.7	8.2	1.8	3.2
10-Dec-07	18.2	31.3	7.6	8.3	1.6	2.2
17-Dec-07	18.3	31.4	7.6	8.3	1.2	2.0
24-Dec-07	17.5	31.2	7.9	8.3	1.1	<b>5.3</b>

**Marine Water Monitoring Stations (Other than FCZ)**  
(Depth-averaged value for marine water quality samples)

M_ROI	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	26.7	30.8	6.4	8.2	1.5	4.0
5-Oct-07	26.7	30.7	6.5	8.2	1.5	4.5
8-Oct-07	27.4	31.0	6.6	8.3	1.2	3.3
15-Oct-07	27.4	30.8	6.9	8.4	1.5	5.3
22-Oct-07	26.9	30.9	6.7	8.3	1.4	3.0
29-Oct-07	22.7	33.5	7.5	8.4	2.5	4.8
5-Nov-07	22.4	32.5	7.5	8.3	2.5	4.0
12-Nov-07	21.9	31.8	7.7	8.3	2.6	3.5
19-Nov-07	20.0	30.3	7.3	8.3	2.7	2.8
26-Nov-07	19.1	30.6	7.8	8.2	1.8	5.0
3-Dec-07	18.7	30.6	7.8	8.3	1.7	2.3
10-Dec-07	18.1	30.6	7.6	8.3	1.7	3.3
17-Dec-07	18.3	30.5	7.7	8.3	1.2	2.3
24-Dec-07	17.3	30.1	7.9	8.2	1.1	4.0

Remarks: Exceedance

> Action level	<b><i>Bold &amp; Italic</i></b>
> Limit level	<b>Bold</b>
< Detection Limit	Grey

Å = Rainstorm event

M_Marsh	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	26.5	30.8	6.5	8.2	3.2	3.5
5-Oct-07	27.0	31.5	6.4	8.2	3.0	5.0
8-Oct-07	27.3	31.2	6.1	8.2	2.6	3.0
15-Oct-07	27.4	30.9	6.5	8.3	<b>4.8</b>	5.7
22-Oct-07	27.1	31.1	6.5	8.3	3.3	5.5
29-Oct-07	22.4	32.8	7.1	8.3	2.2	4.2
5-Nov-07	21.9	32.9	7.6	8.4	2.3	4.5
12-Nov-07	21.6	31.8	7.5	8.3	1.8	3.7
19-Nov-07	18.6	30.6	7.3	8.2	2.1	2.5
26-Nov-07	18.9	30.7	7.6	8.2	2.1	4.5
3-Dec-07	18.8	30.7	7.7	8.3	1.9	2.5
10-Dec-07	18.3	30.8	7.6	8.2	1.8	2.2
17-Dec-07	18.3	30.9	7.6	8.2	1.4	2.0
24-Dec-07	17.4	30.3	7.8	8.3	1.0	4.2

M_BP	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	26.7	31.3	6.2	8.3	2.2	3.8
5-Oct-07	26.9	31.7	6.2	8.2	2.5	4.0
8-Oct-07	27.4	31.1	6.4	8.3	2.6	4.2
15-Oct-07	27.3	31.1	7.1	8.3	1.9	5.3
22-Oct-07	27.2	31.4	6.9	8.3	2.0	4.8
29-Oct-07	22.5	33.4	6.9	8.3	2.4	3.7
5-Nov-07	21.8	33.1	7.5	8.4	1.8	3.8
12-Nov-07	23.3	31.8	7.5	8.3	1.8	3.7
19-Nov-07	18.6	31.1	7.3	8.2	2.4	3.2
26-Nov-07	19.1	31.1	7.6	8.2	1.6	4.3
3-Dec-07	18.8	31.2	7.6	8.3	1.9	3.0
10-Dec-07	18.1	31.1	7.7	8.2	1.7	2.8
17-Dec-07	18.4	31.2	7.6	8.3	1.1	2.5
24-Dec-07	17.4	31.0	7.9	8.3	1.1	2.3

M_Coral	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	26.8	31.6	6.3	8.3	2.0	4.0
5-Oct-07	26.6	31.8	6.3	8.2	2.4	5.8
8-Oct-07	27.3	31.3	6.3	8.2	1.6	3.7
15-Oct-07	27.4	31.3	7.0	8.3	1.4	<b>6.7</b>
22-Oct-07	27.0	31.4	6.9	8.3	1.4	5.2
29-Oct-07	22.9	33.1	7.1	8.3	2.0	4.8
5-Nov-07	22.1	32.6	7.5	8.3	1.6	3.5
12-Nov-07	22.0	31.9	7.4	8.3	1.9	3.3
19-Nov-07	18.8	31.1	7.4	8.3	3.2	3.2
26-Nov-07	19.4	31.1	7.7	8.2	1.8	5.8
3-Dec-07	18.9	31.3	7.7	8.2	1.7	2.8
10-Dec-07	18.2	31.2	7.6	8.3	1.8	2.5
17-Dec-07	18.4	31.3	7.6	8.3	1.3	2.3
24-Dec-07	17.4	31.0	7.9	8.2	1.1	4.5

**Marine Water Monitoring Stations (Control Stations)**  
(Depth-averaged value for marine water quality samples)

M_A	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	26.3	29.9	6.1	8.2	2.5	3.5
5-Oct-07	26.8	30.5	6.3	8.2	2.7	4.7
8-Oct-07	27.3	31.1	6.3	8.2	2.4	3.5
15-Oct-07	27.4	31.0	6.6	8.3	1.9	5.2
22-Oct-07	27.0	30.9	6.6	8.4	1.8	5.0
29-Oct-07	22.9	32.9	7.4	8.3	2.4	4.0
5-Nov-07	22.1	32.6	7.7	8.4	1.9	4.5
12-Nov-07	21.8	31.7	7.4	8.3	2.1	4.0
19-Nov-07	19.3	30.8	7.2	8.3	2.6	3.0
26-Nov-07	19.0	30.7	7.8	8.2	1.7	4.5
3-Dec-07	18.8	30.7	7.7	8.3	1.7	3.7
10-Dec-07	18.3	30.7	7.6	8.2	1.9	2.7
17-Dec-07	18.2	30.7	7.6	8.3	1.1	2.5
24-Dec-07	17.3	30.3	7.9	8.2	1.4	4.2

Remarks: Exceedance

> Action level	<b><i>Bold &amp; Italic</i></b>
> Limit level	<b>Bold</b>
< Detection Limit	Grey

Å = Rainstorm event

M_B	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	27.3	31.2	6.3	8.2	2.0	4.0
5-Oct-07	27.1	31.9	6.4	8.2	2.3	4.3
8-Oct-07	27.2	32.3	6.4	8.2	1.1	4.7
15-Oct-07	27.0	31.3	6.8	8.3	2.0	5.2
22-Oct-07	26.9	31.3	6.8	8.3	1.5	3.3
29-Oct-07	22.9	33.3	7.1	8.3	2.0	4.8
5-Nov-07	22.2	33.1	7.4	8.4	1.7	4.3
12-Nov-07	22.2	32.0	7.5	8.3	1.8	3.2
19-Nov-07	18.4	31.3	7.3	8.3	3.1	3.7
26-Nov-07	19.4	31.3	7.6	8.2	1.3	5.7
3-Dec-07	18.9	31.4	7.7	8.3	1.5	4.3
10-Dec-07	18.0	31.3	7.7	8.3	1.2	3.2
17-Dec-07	18.3	31.4	7.7	8.3	1.0	2.2
24-Dec-07	17.5	31.1	7.9	8.2	1.1	4.2

**Freshwater Monitoring Stations (Streams A & B)**  
(mid depth for freshwater quality samples)

F UA	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	25.3	<0.1	8.3	7.6	2.2	3.0
5-Oct-07	25.0	<0.1	8.4	7.5	2.7	4.0
8-Oct-07	25.0	<0.1	8.3	7.6	2.3	8.0
15-Oct-07	25.2	<0.1	8.5	7.6	4.6	2.0
22-Oct-07	25.1	<0.1	8.4	7.5	4.7	2.0
29-Oct-07	21.1	<0.1	8.8	7.3	3.3	7.0
5-Nov-07	19.8	<0.1	9.1	7.2	3.0	3.0
12-Nov-07	19.3	<0.1	9.2	7.3	2.9	3.0
19-Nov-07	14.4	<0.1	10	7.1	2.2	2.0
26-Nov-07	15.6	<0.1	9.9	7.1	2.7	4.0
3-Dec-07	15.4	<0.1	9.9	7	1.6	2.0
10-Dec-07	14.1	<0.1	10.1	7.2	1.8	3.0
17-Dec-07	16.7	<0.1	9.8	7.3	2.2	2.0
24-Dec-07	15.0	<0.1	10.2	7.2	1.7	4.0

Remarks: Exceedance

> Action level	<b><i>Bold &amp; Italic</i></b>
> Limit level	<b>Bold</b>
< Detection Limit	Grey

Å = Rainstorm event

F DA	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	25.4	<0.1	8.3	7.7	3.6	3.0
5-Oct-07	25.3	<0.1	8.3	7.7	3.6	<b>5.0</b>
8-Oct-07	25.0	<0.1	8.4	7.6	2.3	<b>4.0</b>
15-Oct-07	25.1	<0.1	8.3	7.7	2.2	2.0
22-Oct-07	25.1	<0.1	8.4	7.6	1.7	<b>5.0</b>
29-Oct-07	21.0	<0.1	8.9	7.5	2.2	<b>7.0</b>
5-Nov-07	19.9	<0.1	9	7.6	2.5	<b>5.0</b>
12-Nov-07	19.3	<0.1	9.1	7.6	1.7	3.0
19-Nov-07	15.6	<0.1	9.4	6.8	2.8	2.0
26-Nov-07	16.8	<0.1	9	6.5	2.9	2.0
3-Dec-07	15.8	<0.1	9.3	6.9	2.3	2.0
10-Dec-07	14.4	<0.1	10	7.1	2.0	2.0
17-Dec-07	18.9	<0.1	8.9	7	1.8	2.0
24-Dec-07	15.2	<0.1	9.7	7	1.9	<b>4.0</b>

F UB	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	25.1	<0.1	8.6	7.3	4.6	2.0
5-Oct-07	25.2	<0.1	8.5	7.2	4.2	6.0
8-Oct-07	25.1	<0.1	8.4	7.4	2.2	5.0
15-Oct-07	25.3	<0.1	8.3	7.4	3.9	2.0
22-Oct-07	25.2	<0.1	8.4	7.3	3.3	5.0
29-Oct-07	21	<0.1	9	7.5	2.3	4.0
5-Nov-07	19.8	<0.1	9.2	7.3	2.2	3.0
12-Nov-07	19.4	<0.1	9	7.6	1.6	3.0
19-Nov-07	17.3	<0.1	9.5	6.8	2.6	3.0
26-Nov-07	16.2	<0.1	9.4	7.1	2.7	4.0
3-Dec-07	16.1	<0.1	9.3	7.3	3.1	2.0
10-Dec-07	14.6	<0.1	9.6	7.2	2.5	6.0
17-Dec-07	17.7	<0.1	9.1	7.2	3.6	2.0
24-Dec-07	15.1	<0.1	9.7	7.3	2.8	4.0

F DB	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	25	<0.1	8.5	7.5	2.5	<b>8.0</b>
5-Oct-07	25.2	<0.1	8.4	7.6	1.3	<b>9.0</b>
8-Oct-07	25.2	<0.1	8.4	7.6	1.7	<b>7.0</b>
15-Oct-07	25.3	<0.1	8.3	7.6	2.1	2.0
22-Oct-07	25.2	<0.1	8.3	7.4	1.6	3.0
29-Oct-07	21.5	<0.1	8.9	7.2	2.6	<b>5.0</b>
5-Nov-07	19.3	<0.1	9.3	7.2	2.8	3.0
12-Nov-07	19	<0.1	8.9	7.2	2.5	3.0
19-Nov-07	16.8	<0.1	9.3	6.6	2.7	3.0
26-Nov-07	15.5	<0.1	9.8	6.8	2.2	3.0
3-Dec-07	16.3	<0.1	9.2	7	2.8	2.0
10-Dec-07	14.3	<0.1	9.7	7	3.0	<b>4.0</b>
17-Dec-07	17.6	<0.1	9.1	7	2.7	2.0
24-Dec-07	14.9	<0.1	9.9	7.1	2.9	<b>5.0</b>



**Freshwater Monitoring Stations (Stream C & Freshwater Inland Marsh)**  
(mid depth for freshwater quality samples)

F UC	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	25	<0.1	8.7	7	7.9	2.0
5-Oct-07	25	<0.1	8.8	7	8.3	5.0
8-Oct-07	25.2	<0.1	8.6	6.9	4.9	6.0
15-Oct-07	25	<0.1	8.7	6.8	5.6	3.0
22-Oct-07	25	<0.1	8.6	6.8	5.1	4.0
29-Oct-07	21	<0.1	9.1	6.7	3.0	3.0
5-Nov-07	19.7	<0.1	9.3	6.7	1.8	2.0
12-Nov-07	19	<0.1	9.2	6.6	2.7	2.0
19-Nov-07	15.5	<0.1	9	6.6	2.5	2.0
26-Nov-07	16.6	<0.1	9.1	6.9	1.6	2.0
3-Dec-07	15.8	<0.1	9.3	7	1.8	2.0
10-Dec-07	14.1	<0.1	9.6	7.1	2.0	3.0
17-Dec-07	18.9	<0.1	8.5	7.2	1.6	2.0
24-Dec-07	15.2	<0.1	10.3	7	2.4	4.0

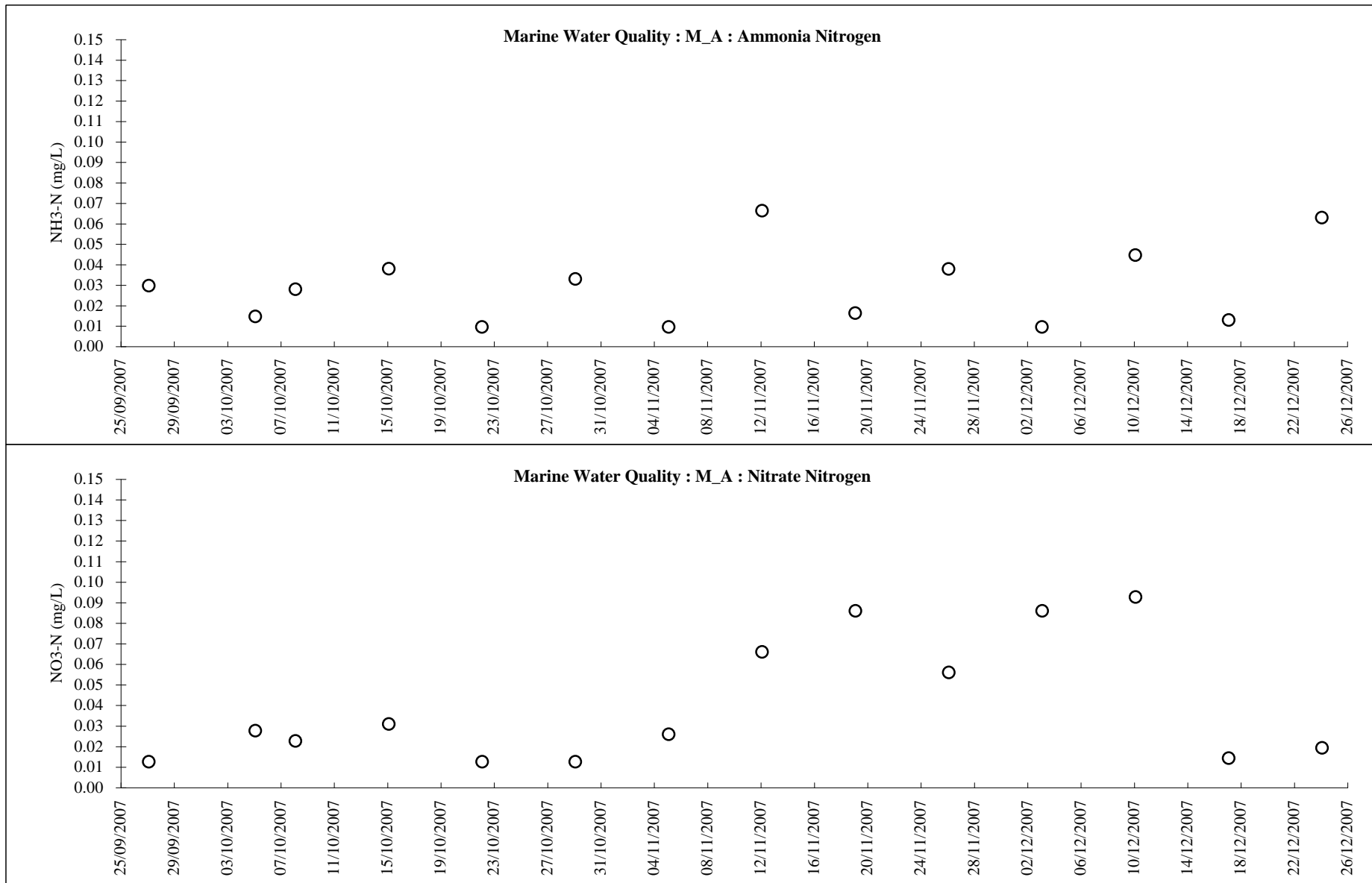
Remarks: Exceedance

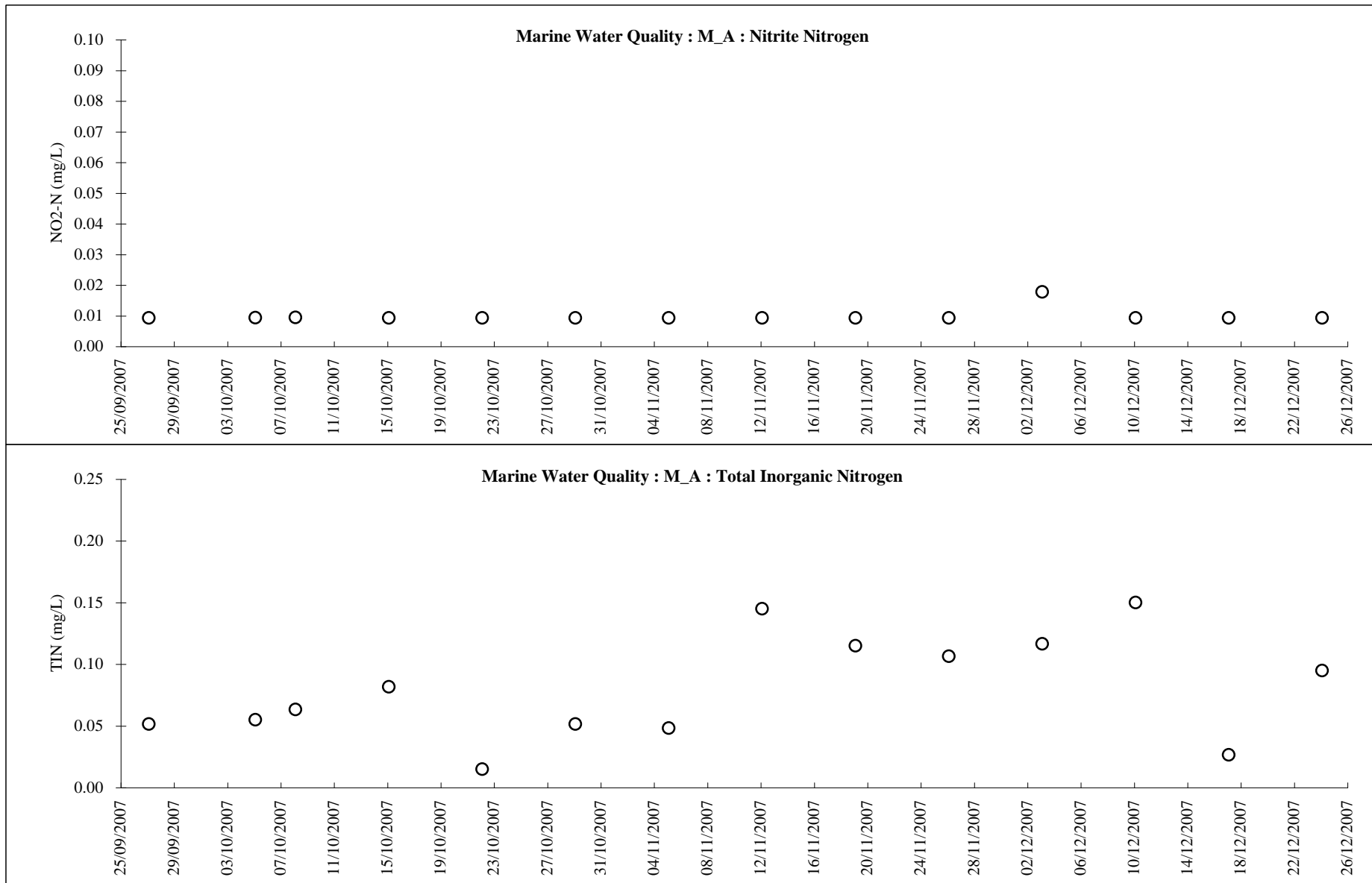
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> Limit level	<b>Bold</b>
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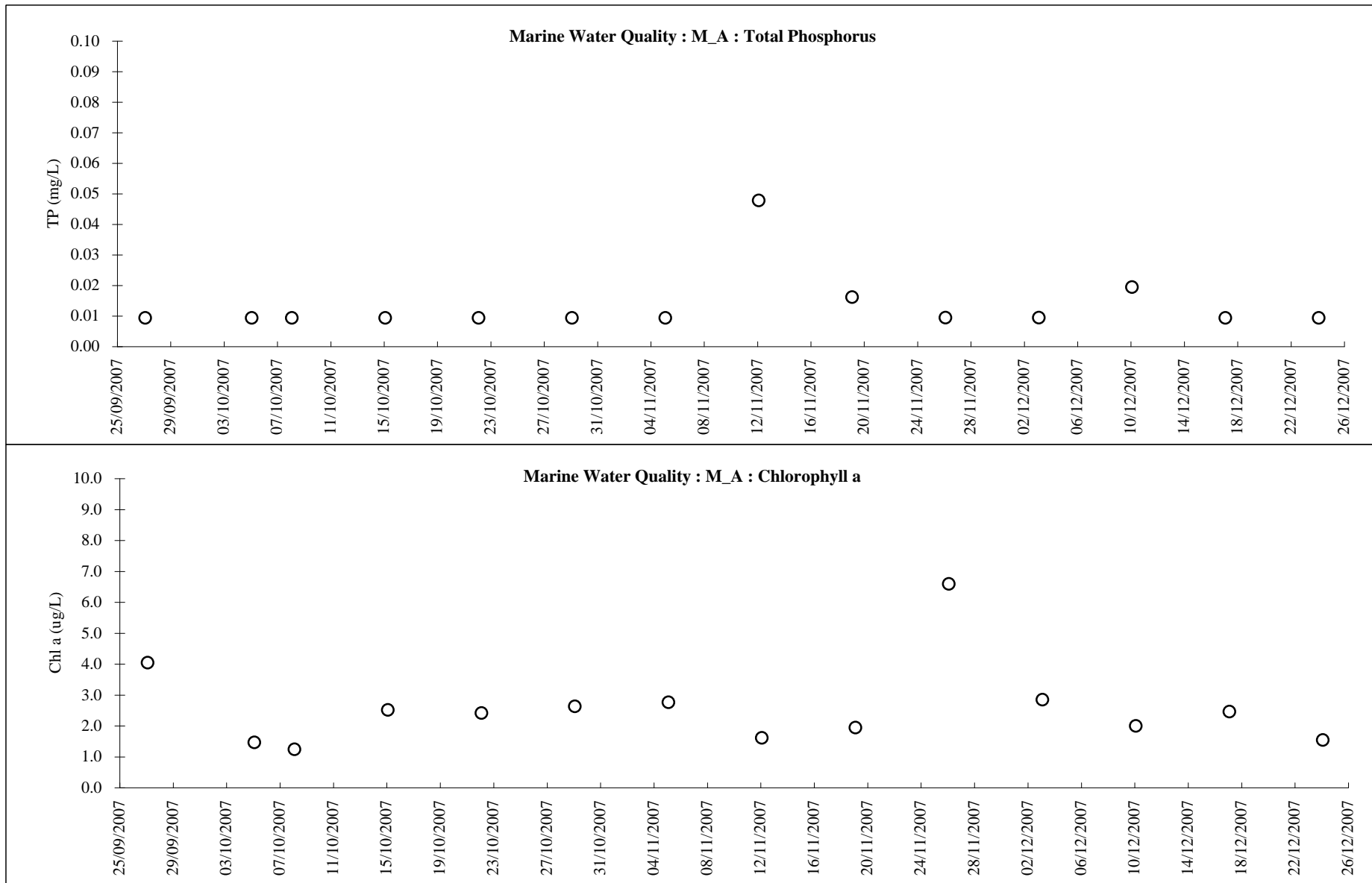
Å = Rainstorm event

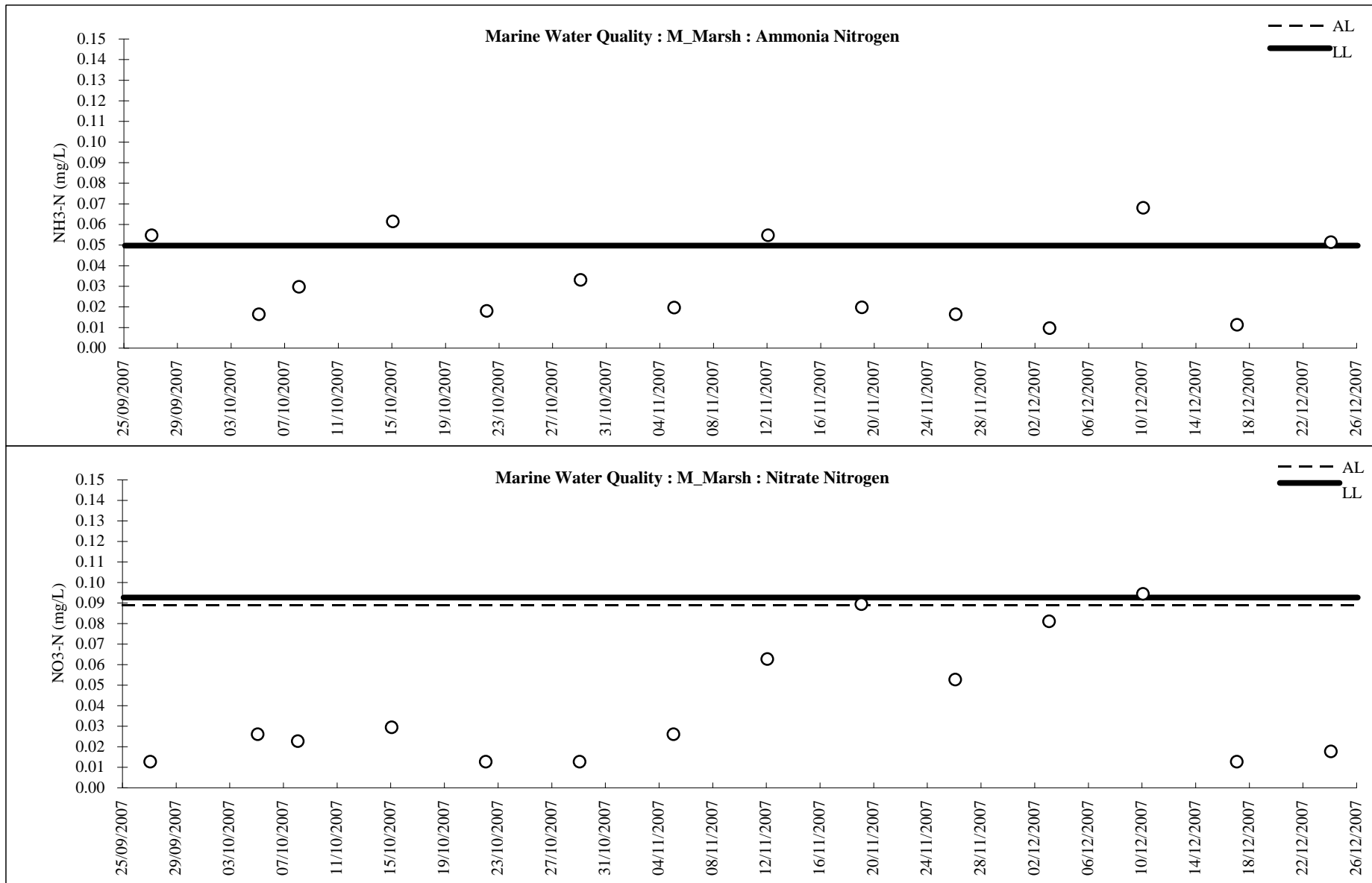
F DC	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	24.9	<0.1	8.8	7.4	1.5	3.0
5-Oct-07	25.0	<0.1	8.6	7.3	1.6	<b>5.0</b>
8-Oct-07	25.2	<0.1	8.7	7.3	1.8	<b>8.0</b>
15-Oct-07	25.1	<0.1	8.4	7.2	2.5	2.0
22-Oct-07	25.1	<0.1	8.4	7.0	2.2	<b>9.0</b>
29-Oct-07	20.8	<0.1	9.2	7.2	2.4	2.0
5-Nov-07	19.5	<0.1	9.4	7.2	1.9	2.0
12-Nov-07	19.2	<0.1	9.0	7.1	1.6	2.0
19-Nov-07	15.3	<0.1	9.4	6.7	2.7	2.0
26-Nov-07	16.9	<0.1	9.2	7.0	1.7	2.0
3-Dec-07	15.9	<0.1	9.4	7.2	1.9	2.0
10-Dec-07	14.2	<0.1	9.7	7.0	2.3	3.0
17-Dec-07	19.0	<0.1	8.7	7.0	1.3	2.0
24-Dec-07	15.6	<0.1	10.0	7.3	2.7	<b>5.0</b>

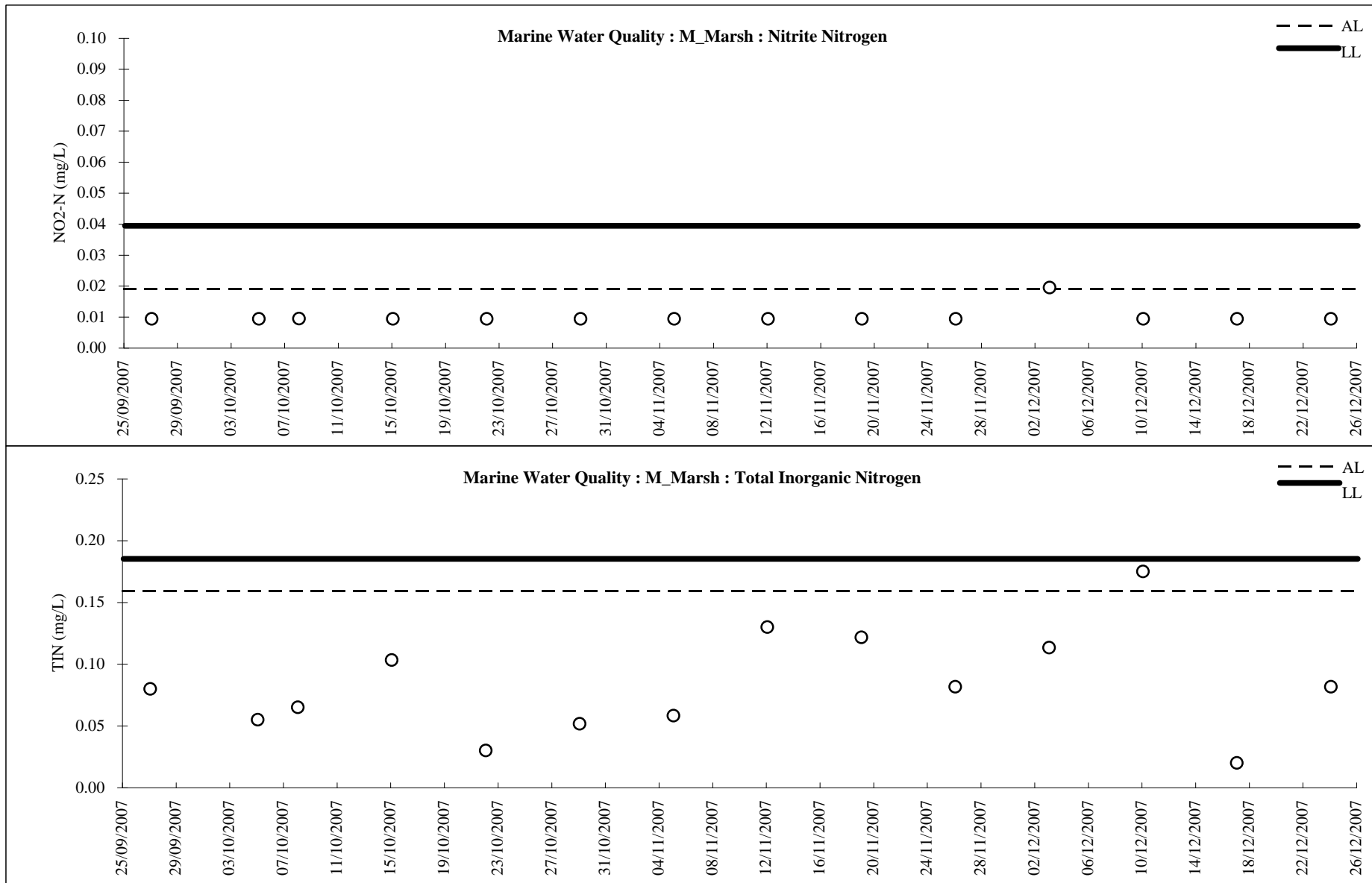
F Inland M	Temp (oC)	Salinity (ppt)	DO (mg/L)	pH	Turbidity (NTU)	SS (mg/L)
27-Sep-07	25.3	<0.1	8.2	7.6	1.6	2.0
5-Oct-07	25.2	<0.1	8.0	7.5	1.7	<b>7.0</b>
8-Oct-07	25.1	0.1	8.0	7.6	2.4	<b>7.0</b>
15-Oct-07	25.3	<0.1	8.1	7.6	1.9	3.0
22-Oct-07	25.2	<0.1	8.2	7.5	2.0	<b>7.0</b>
29-Oct-07	21.9	<0.1	8.3	7.2	2.5	3.0
5-Nov-07	20.1	<0.1	8.8	7.3	3.1	2.0
12-Nov-07	19.8	0.1	8.9	7.4	2.7	2.0
19-Nov-07	16.8	<0.1	9.8	6.9	2.3	3.0
26-Nov-07	15.0	<0.1	9.7	7.6	2.2	3.0
3-Dec-07	15.2	<0.1	9.6	7.5	2.5	<b>4.0</b>
10-Dec-07	15.1	0.1	9.7	7.5	2.6	2.0
17-Dec-07	17.3	<0.1	8.8	7.3	2.0	2.0
24-Dec-07	15.7	<0.1	9.8	7.6	2.1	2.0

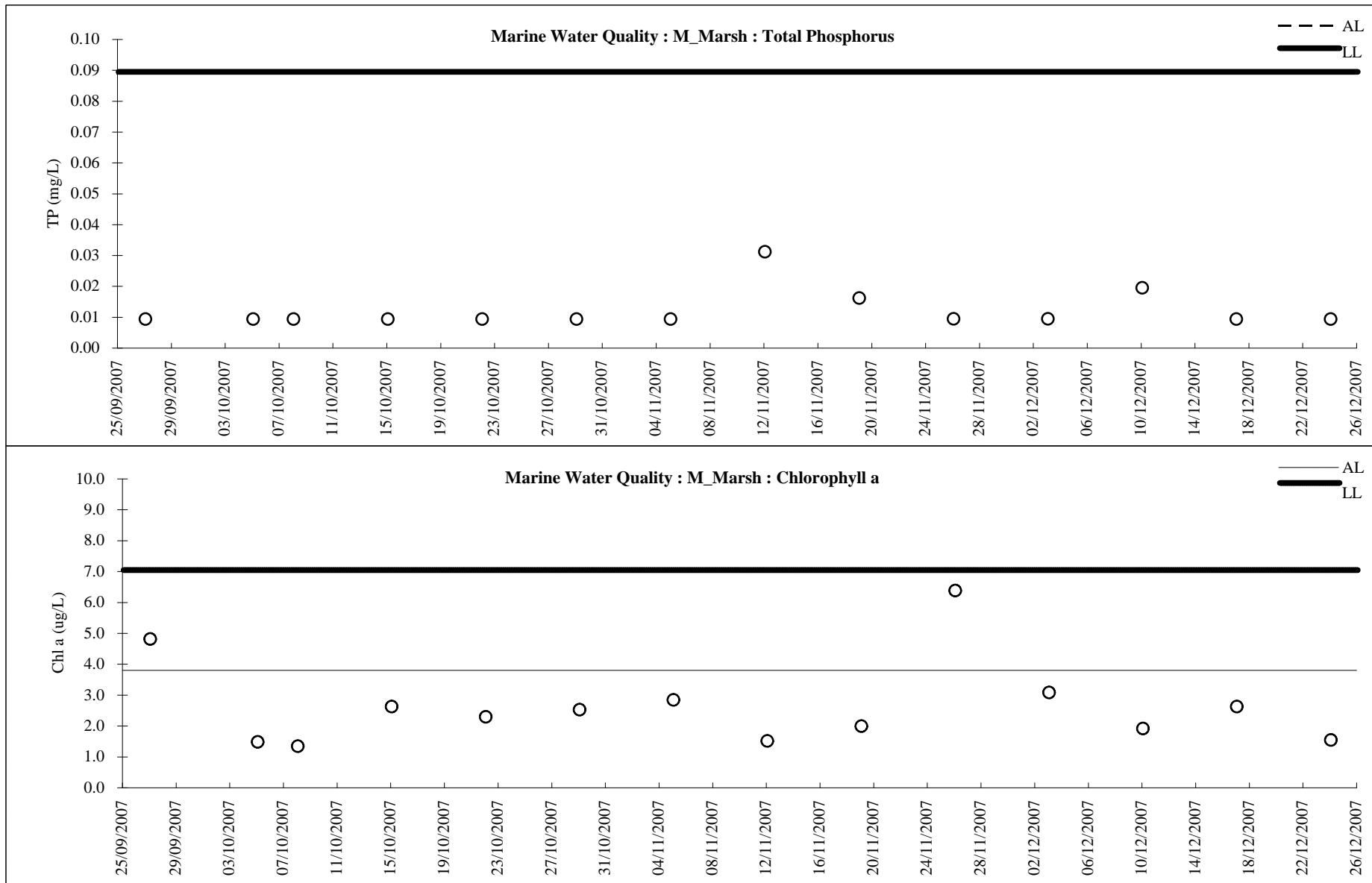


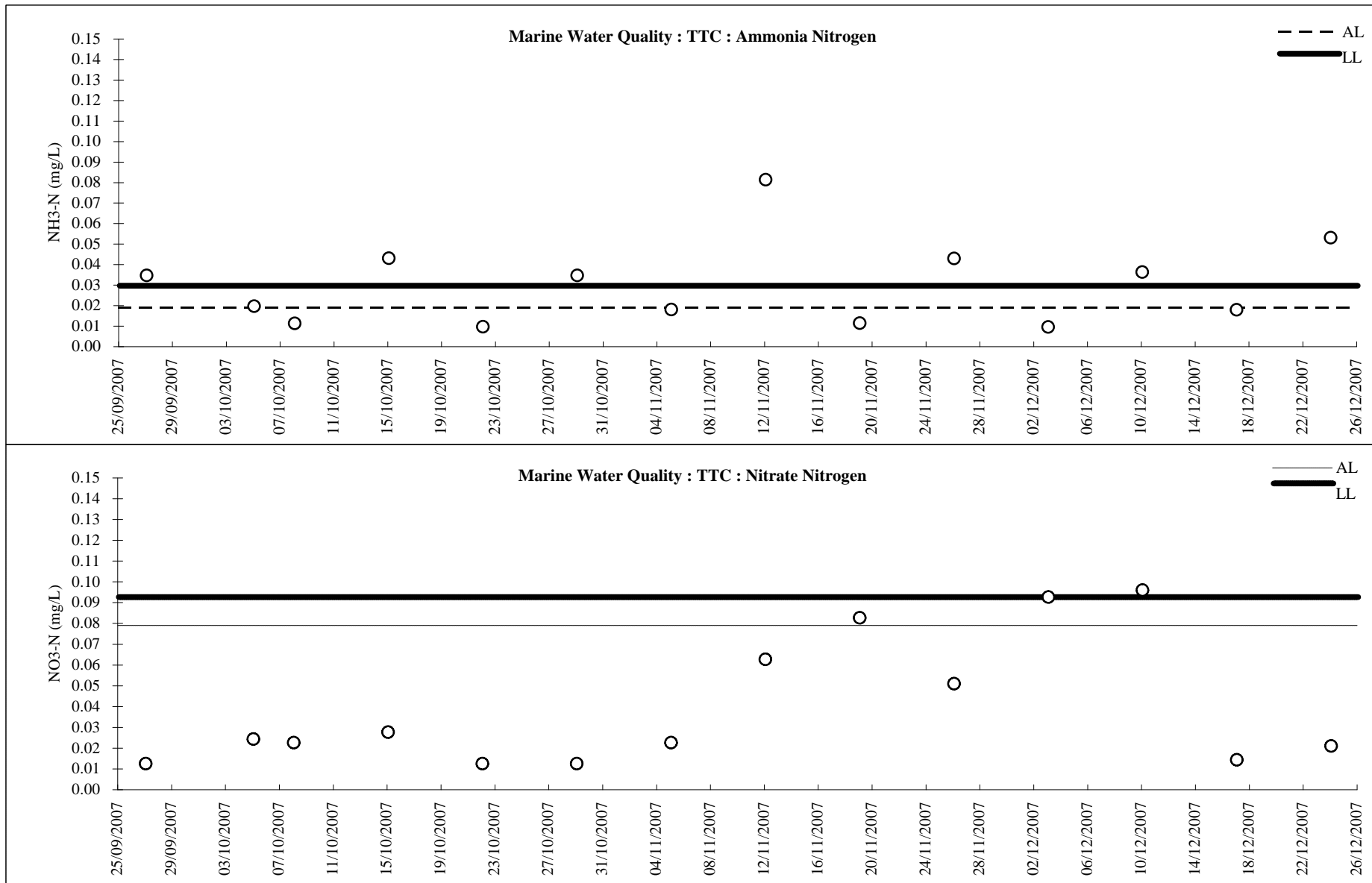




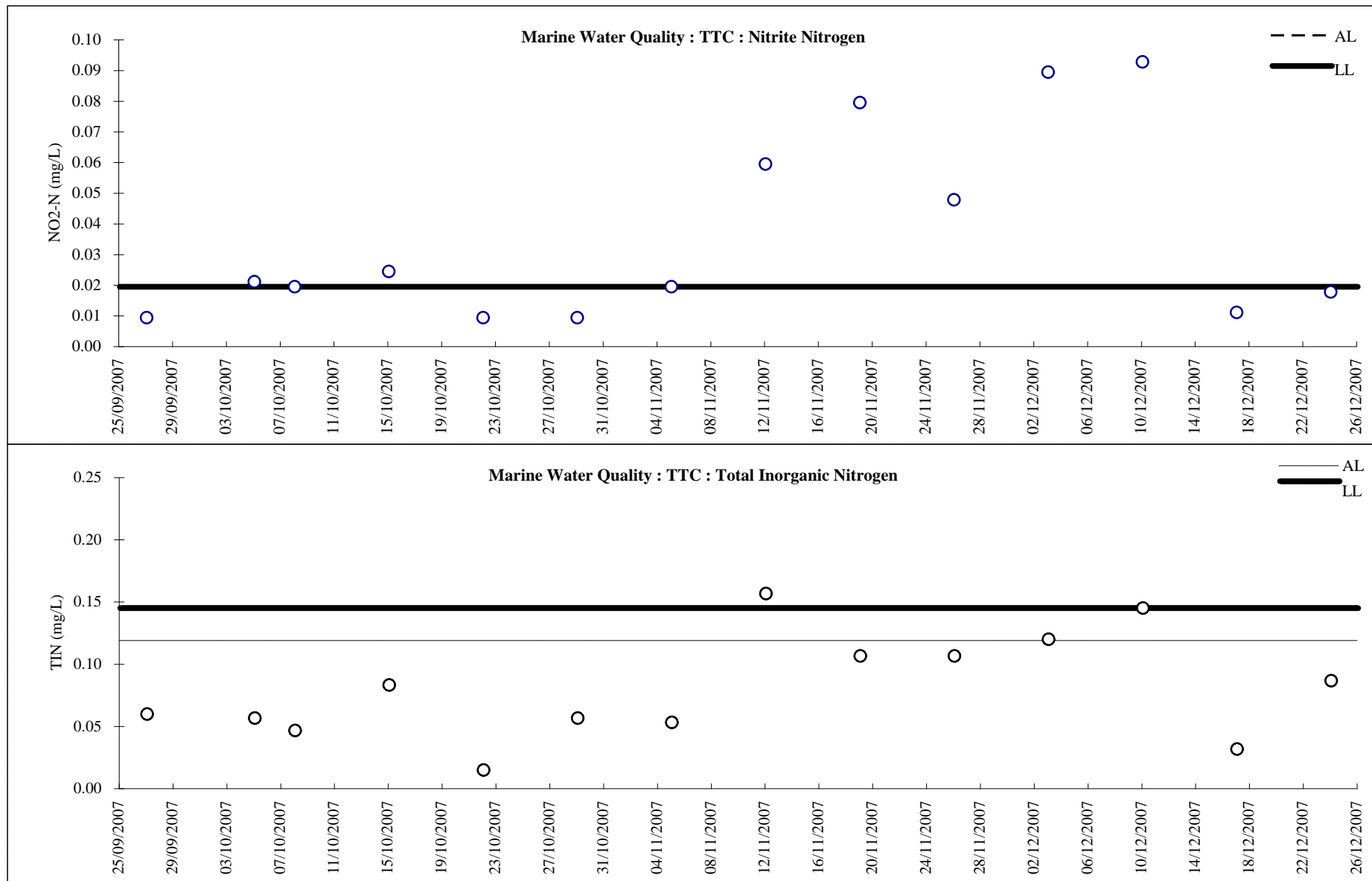


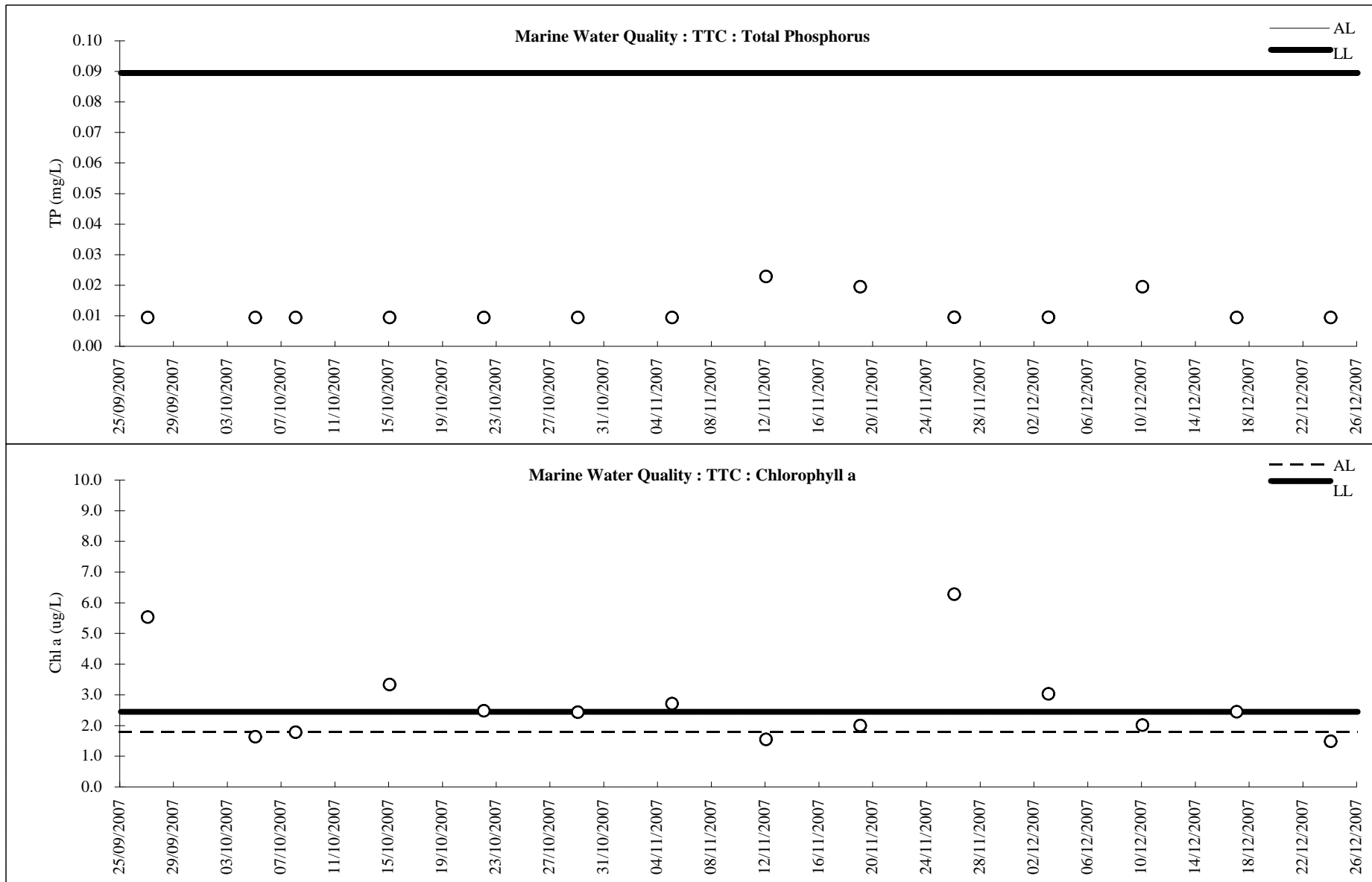






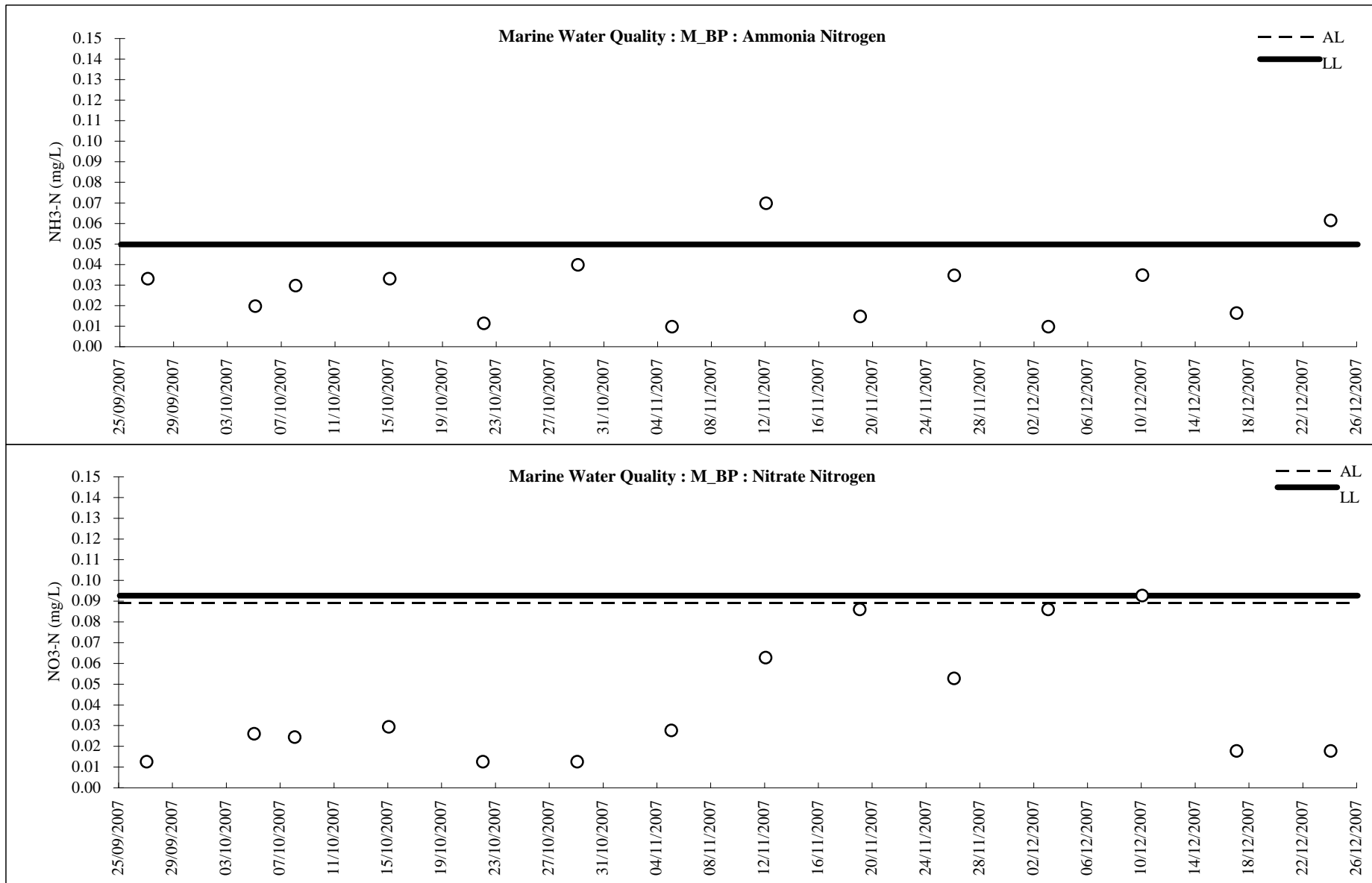


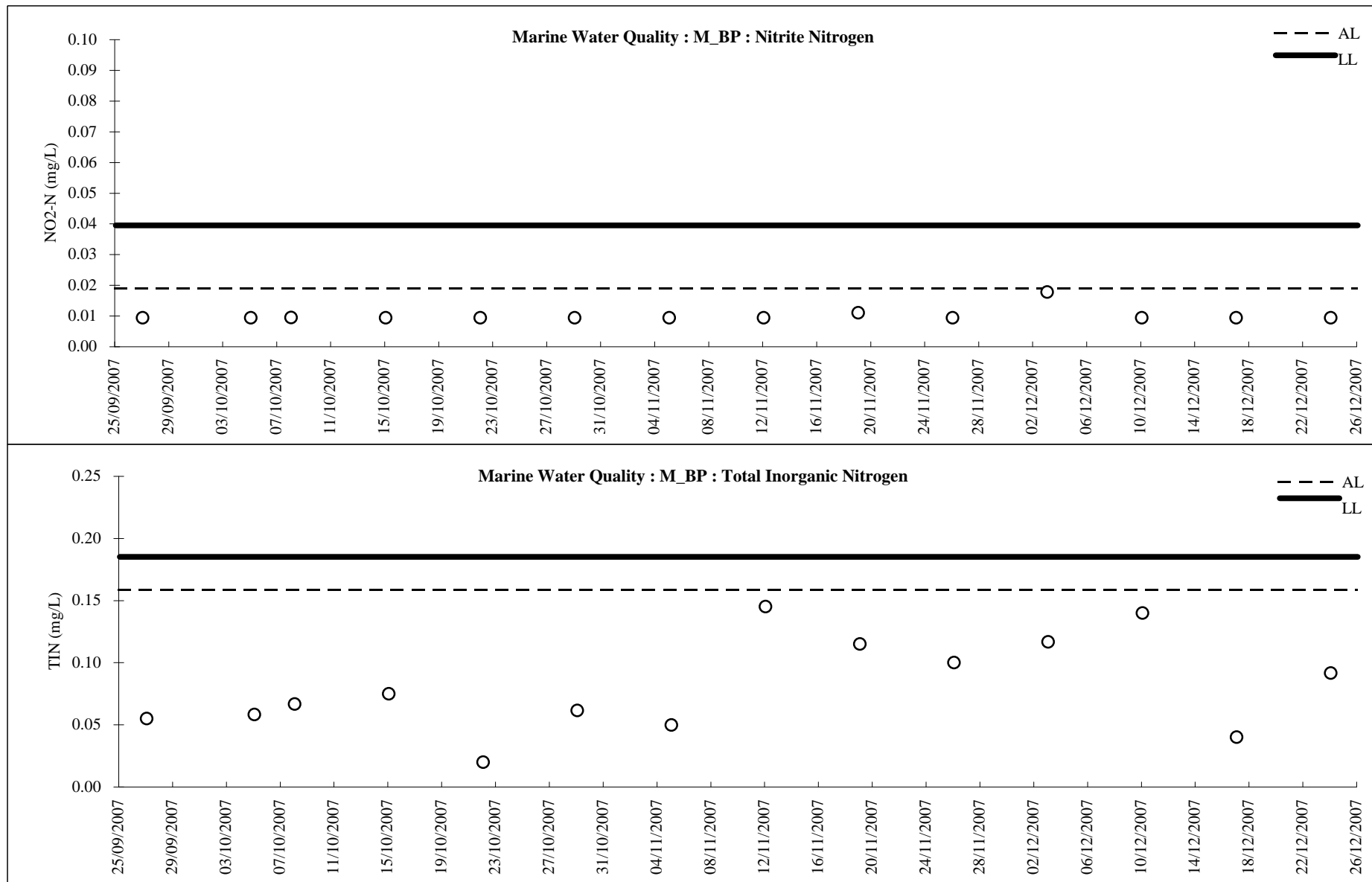




Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
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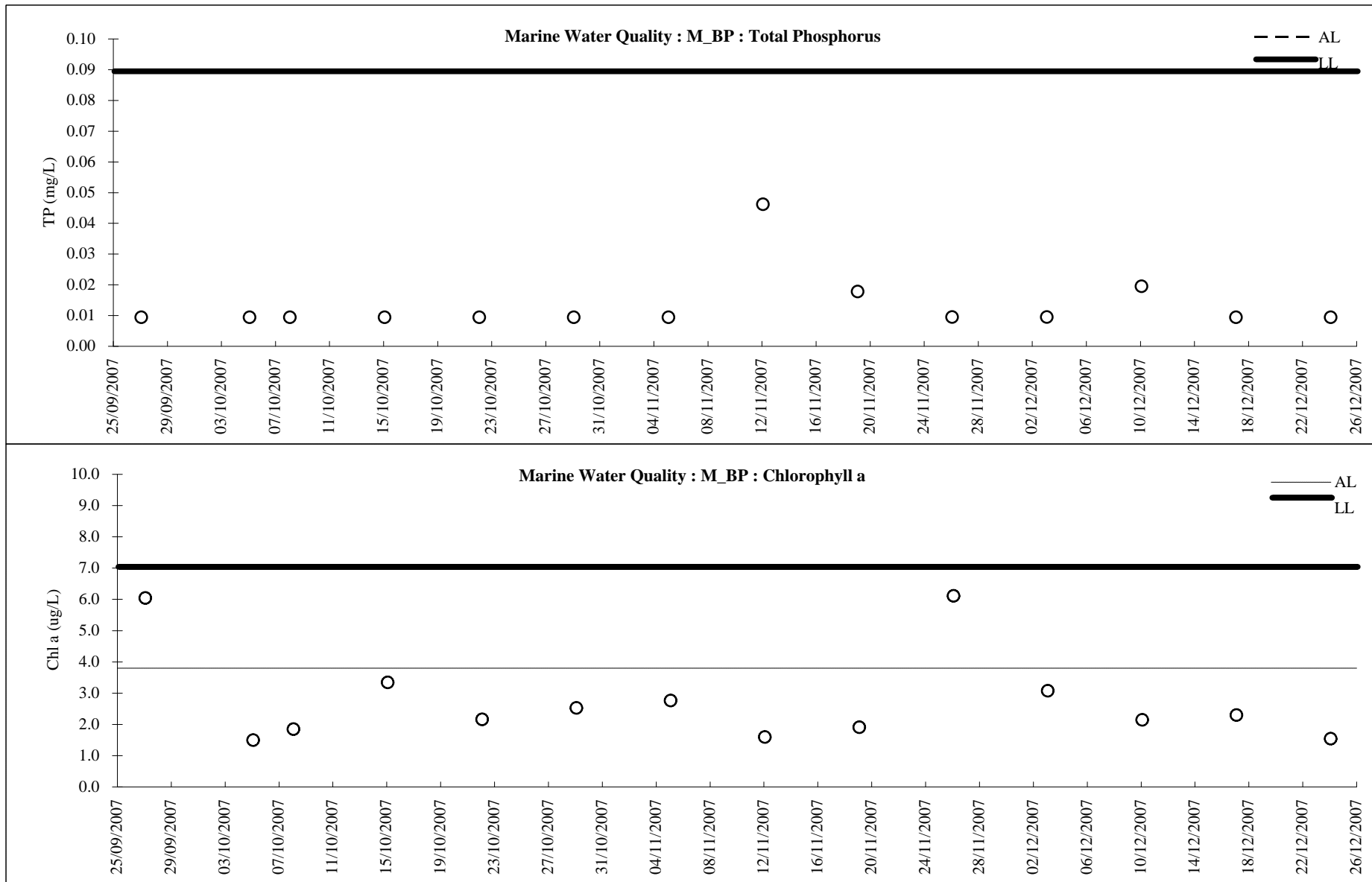
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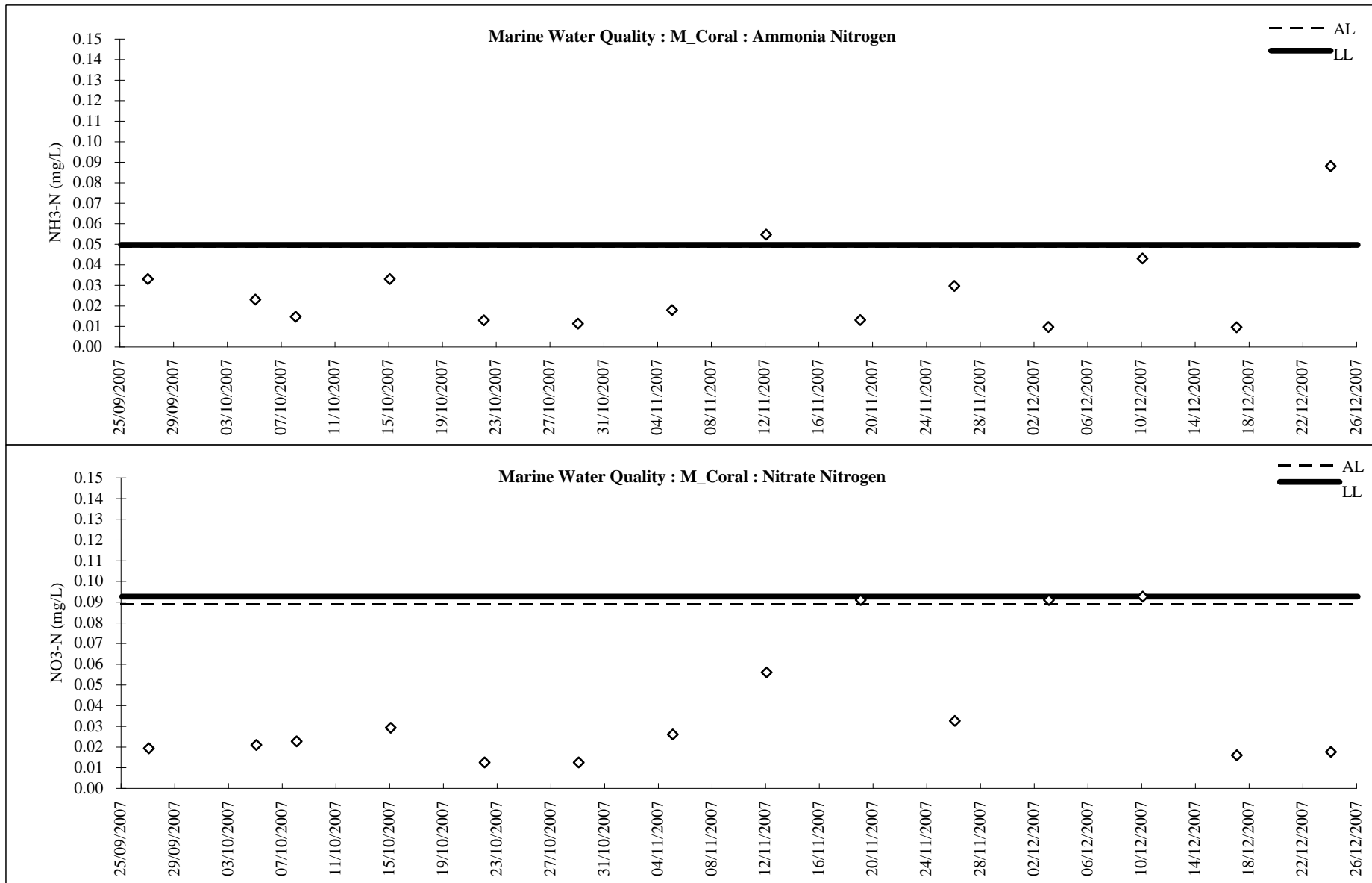


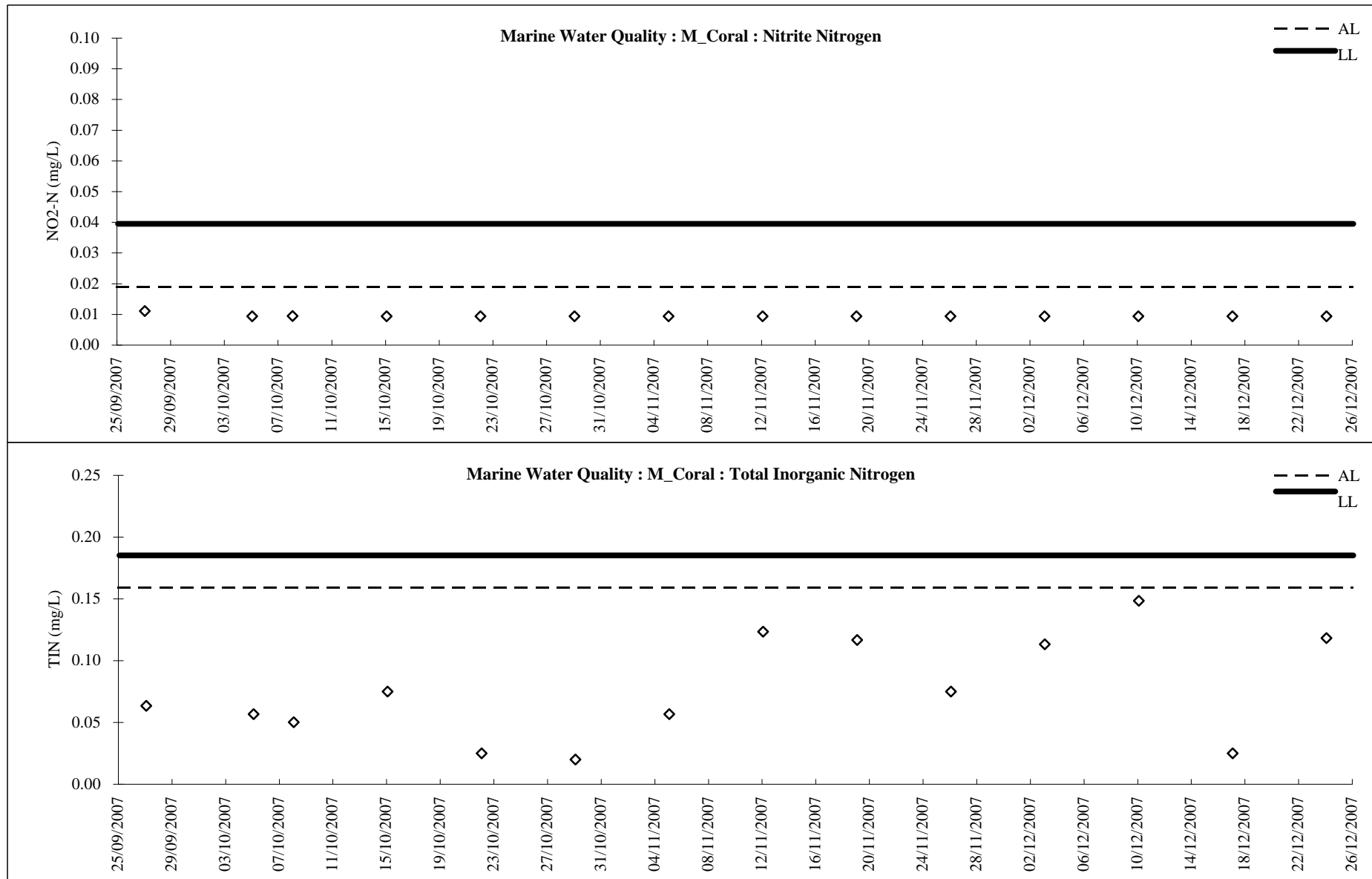


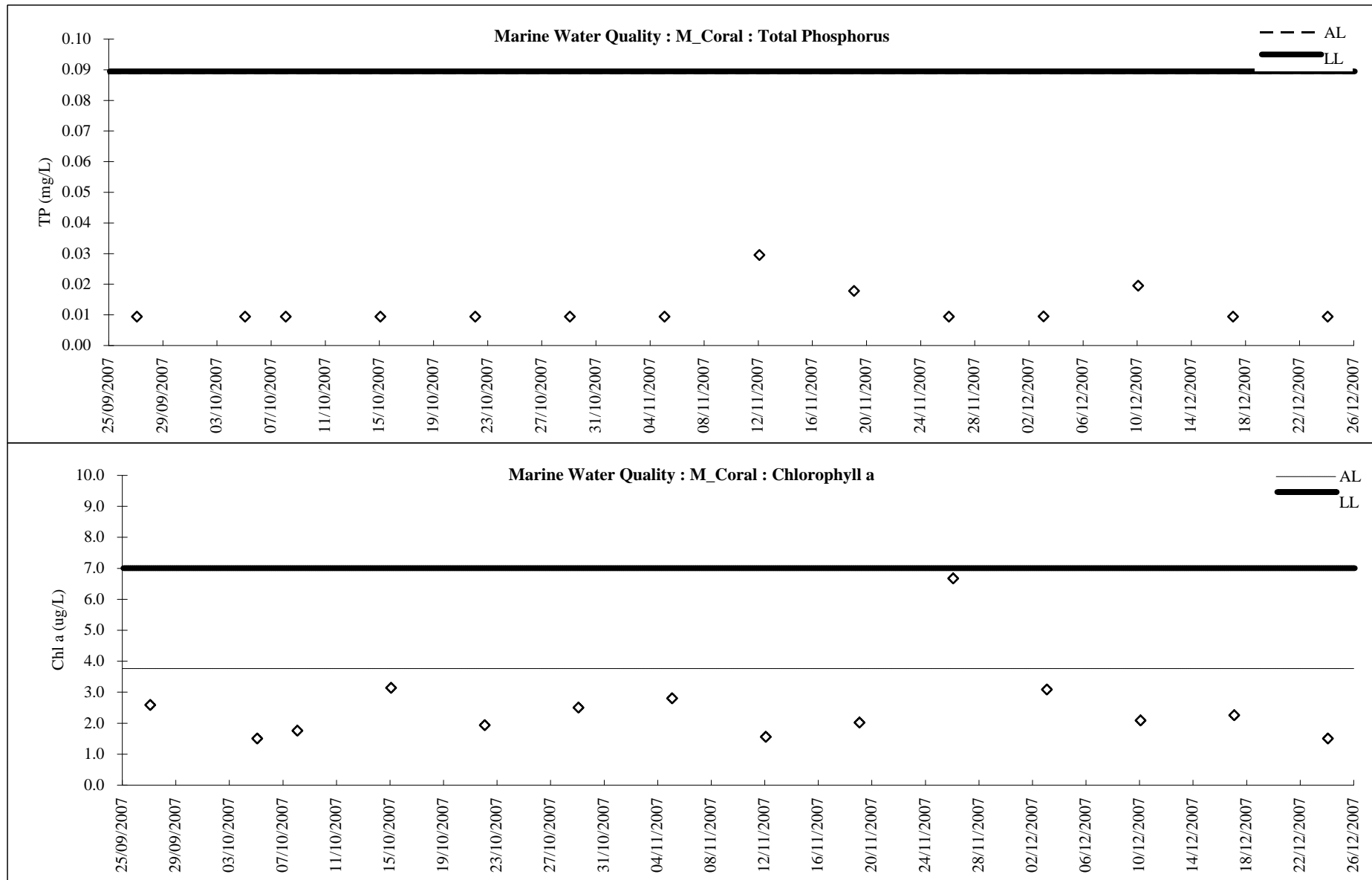
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

*Nutrients*

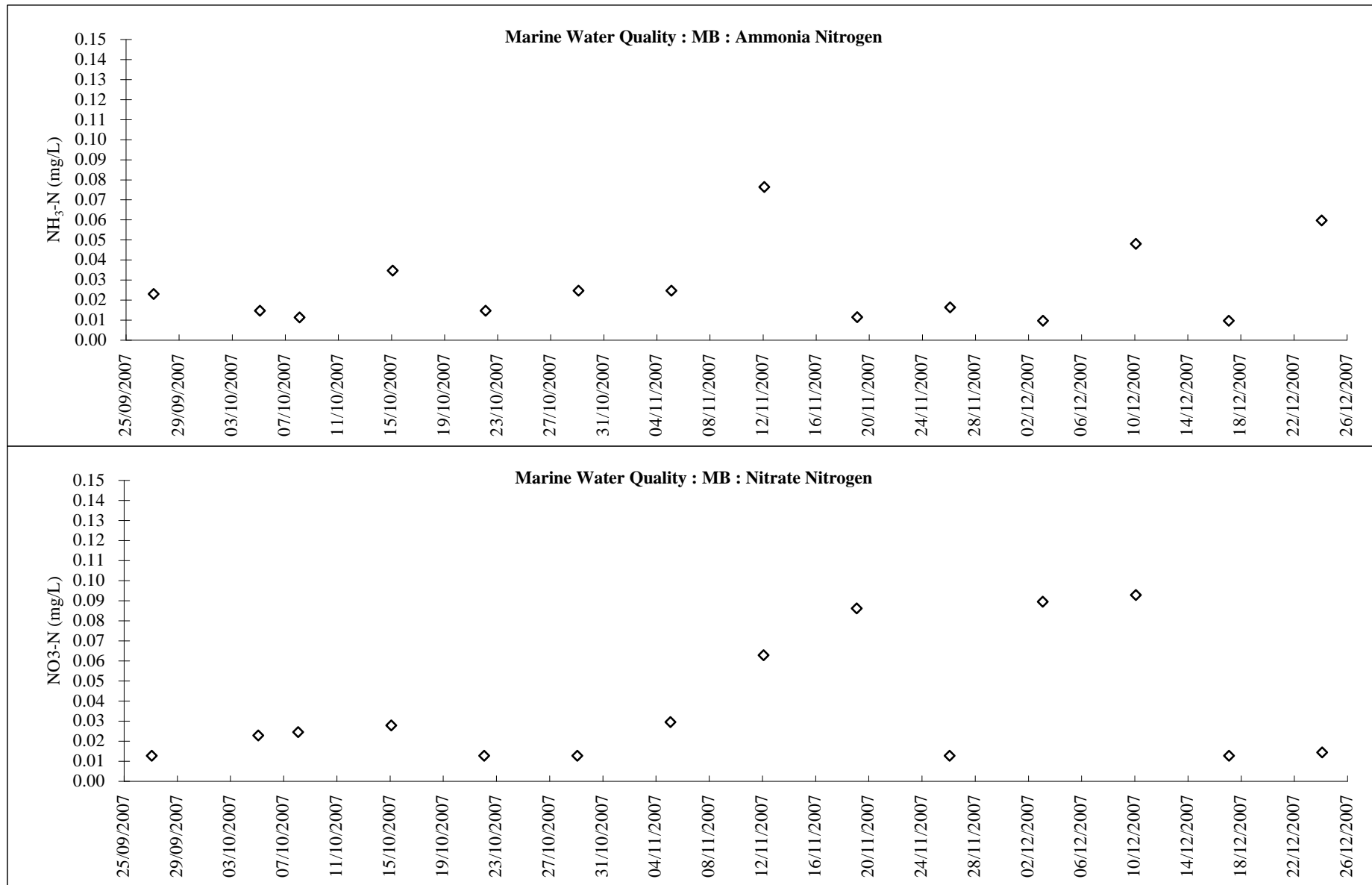


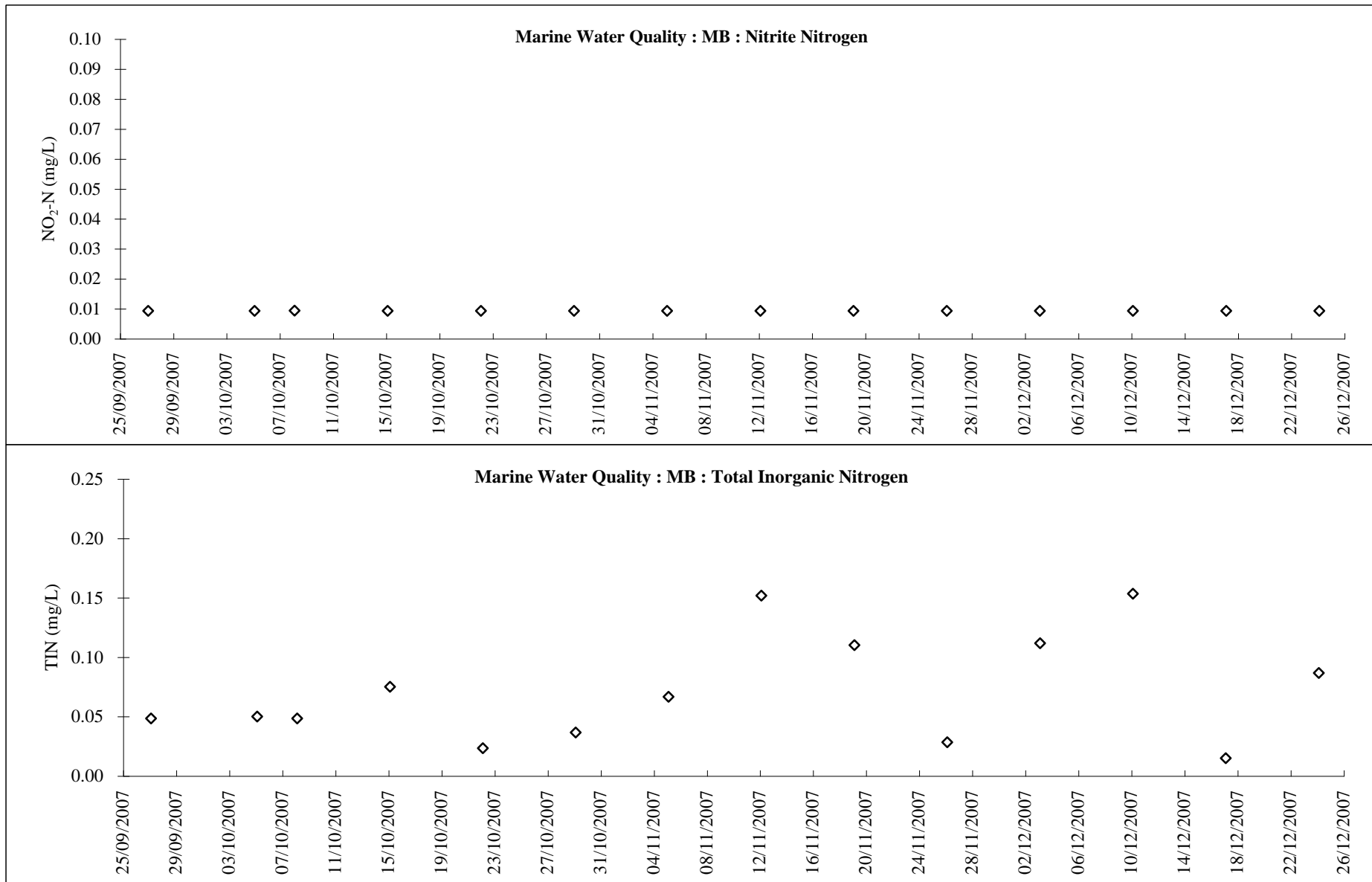


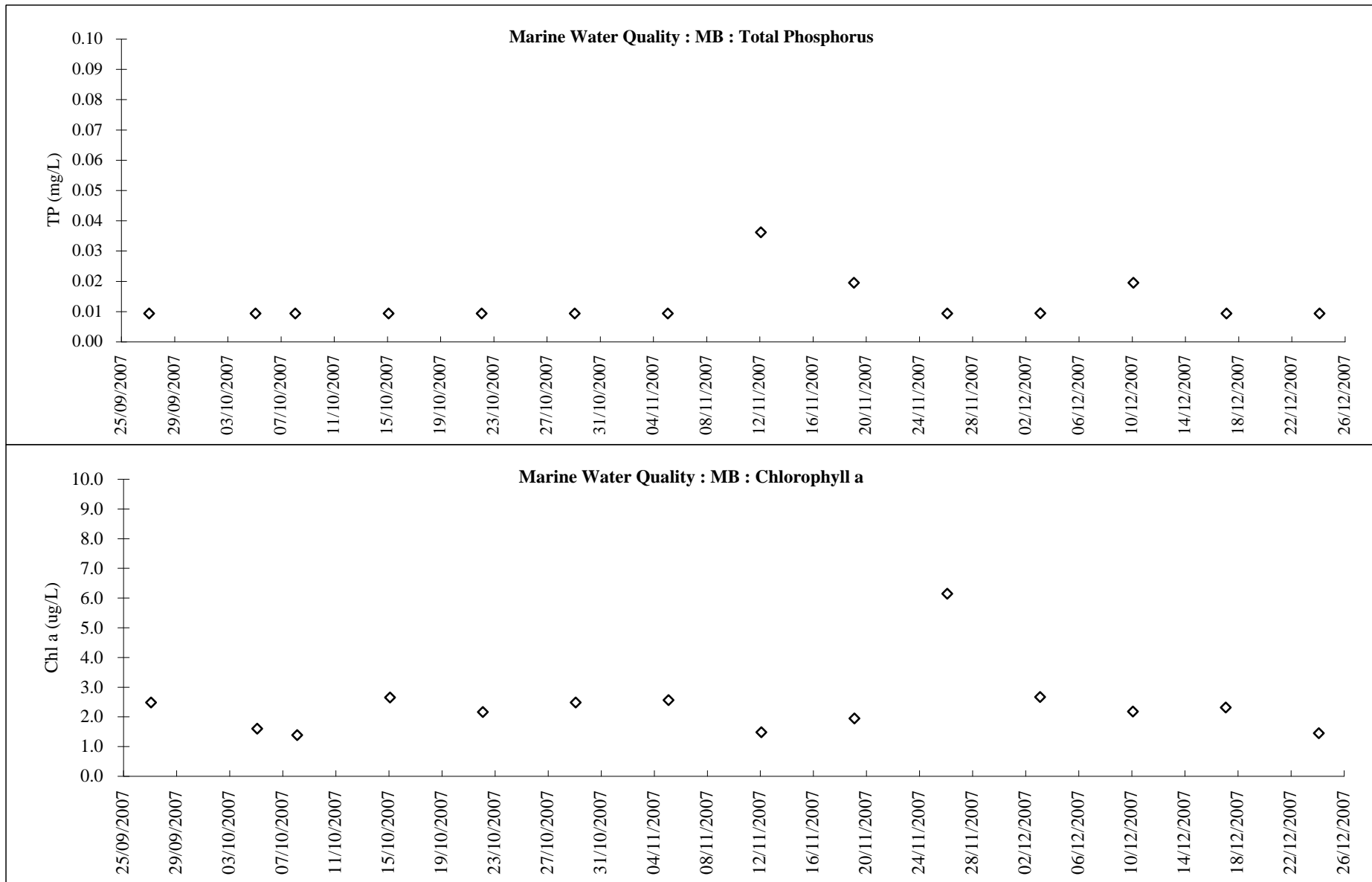


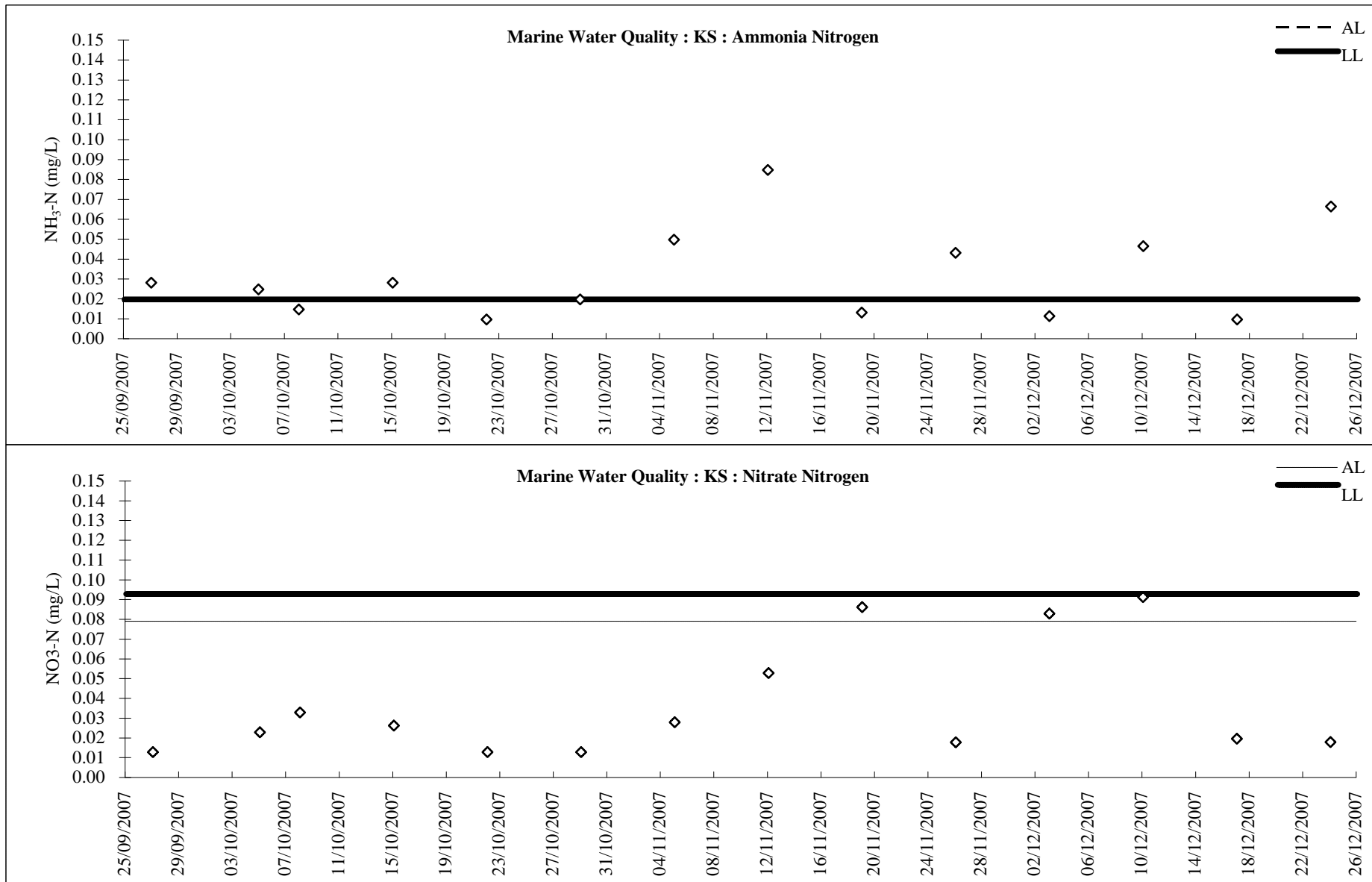


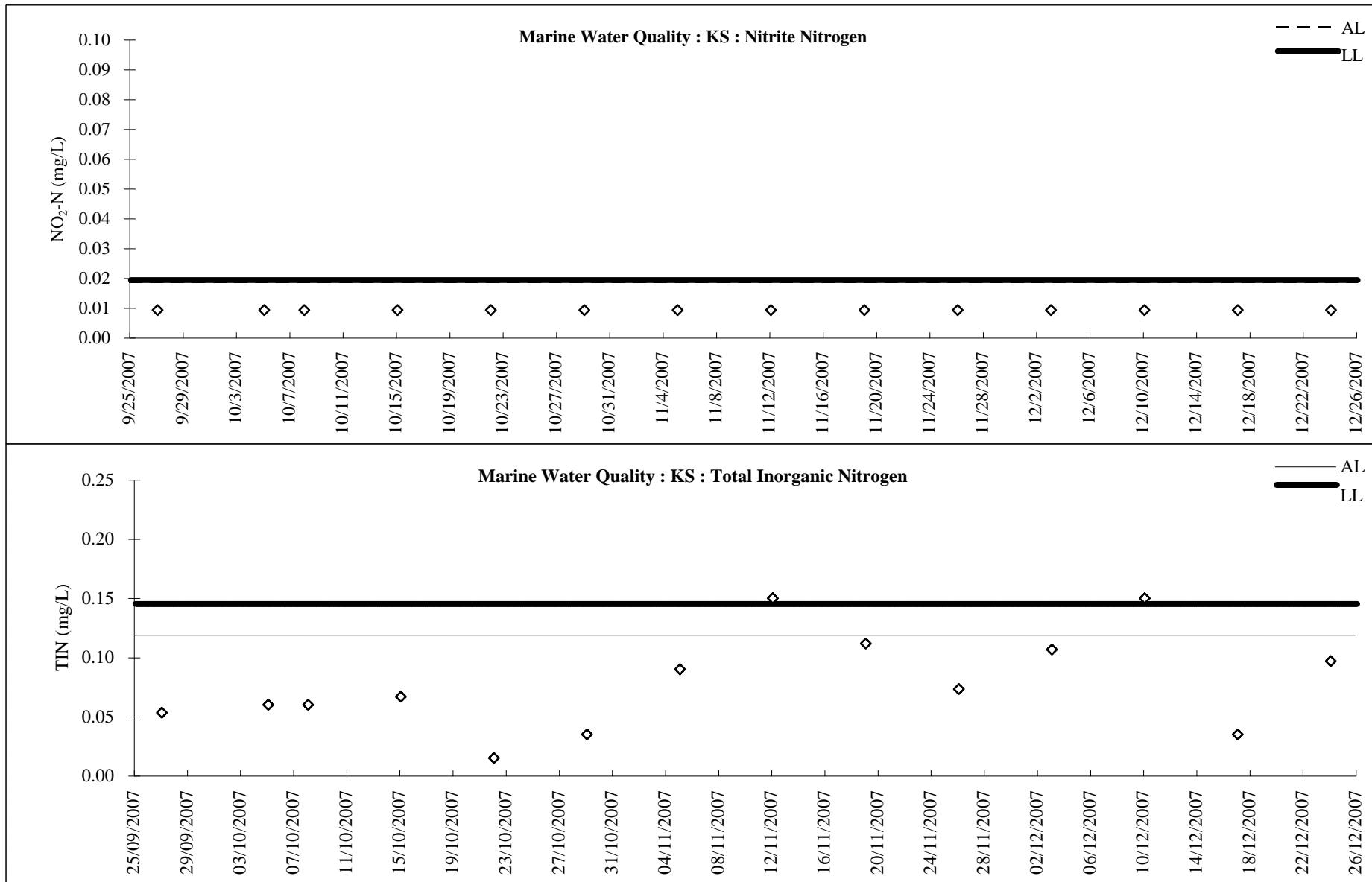


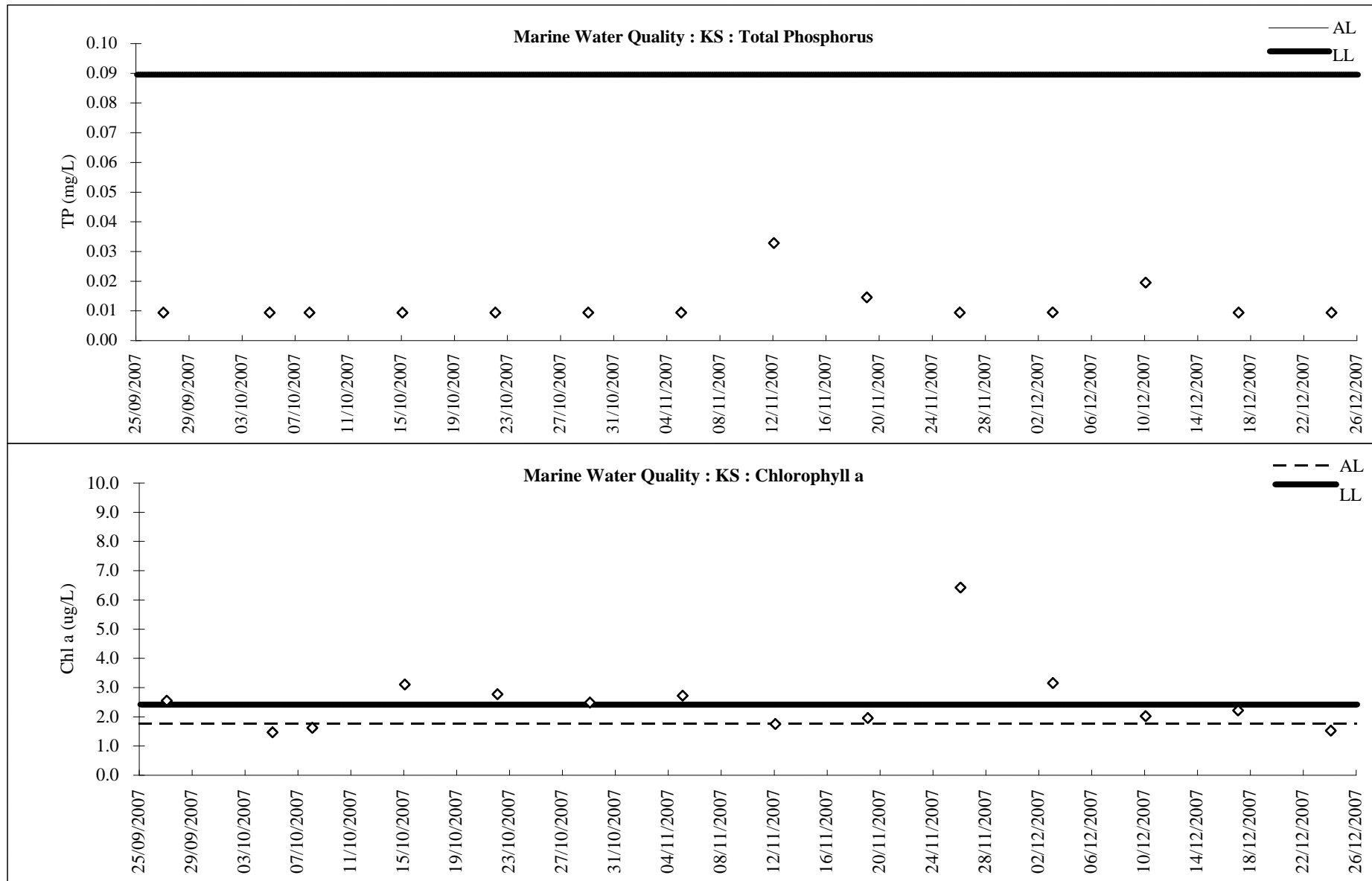


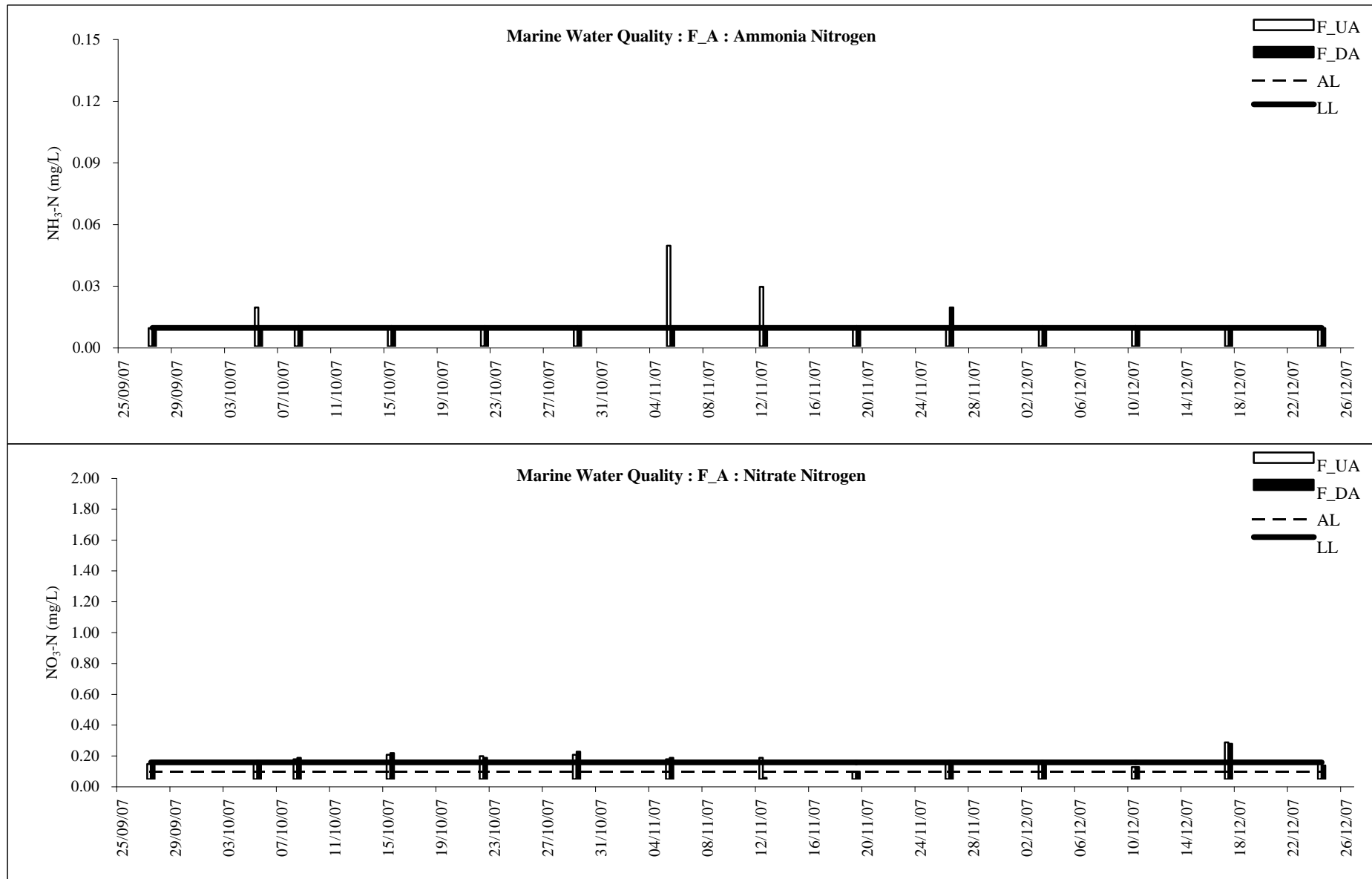






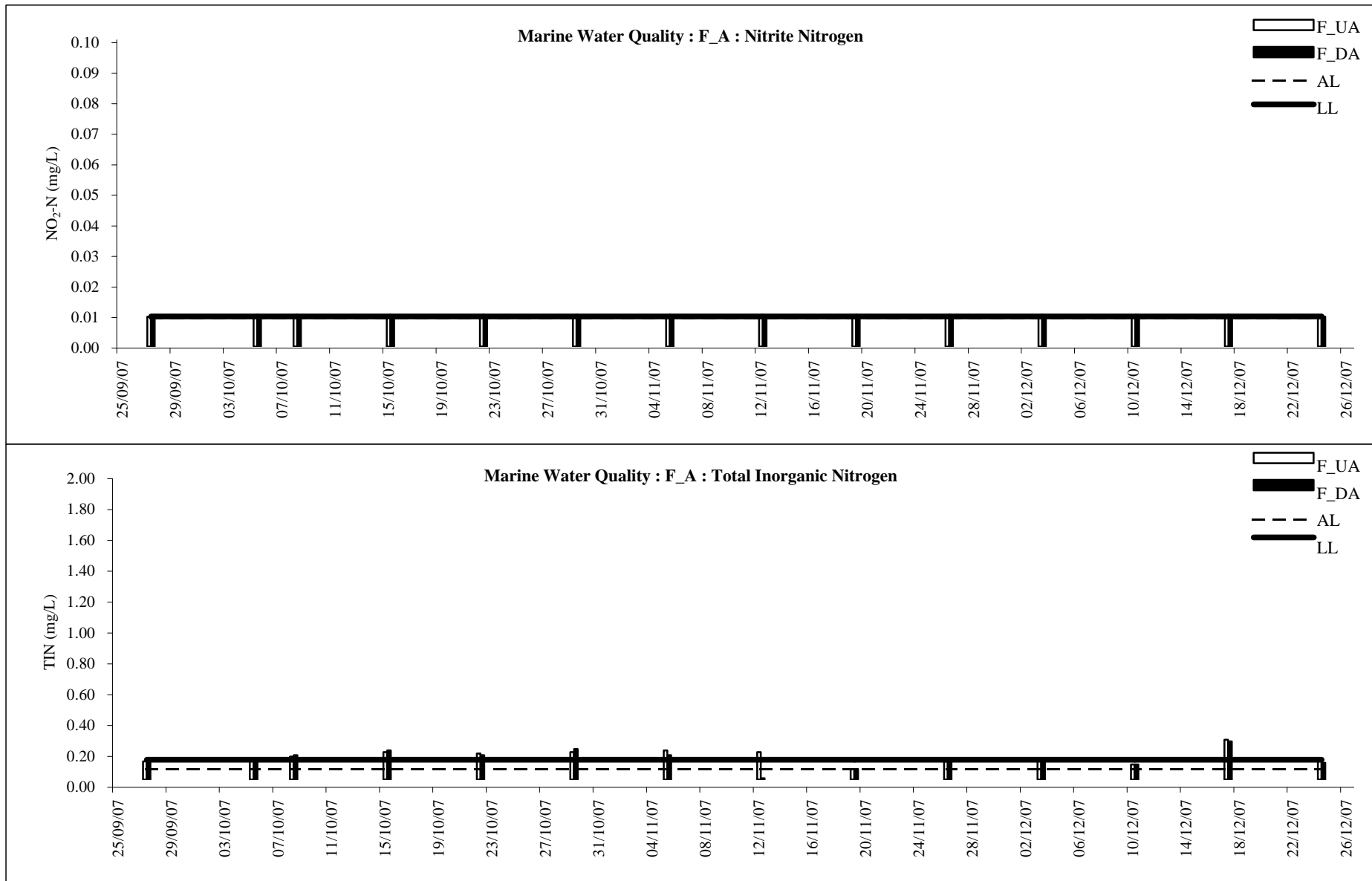




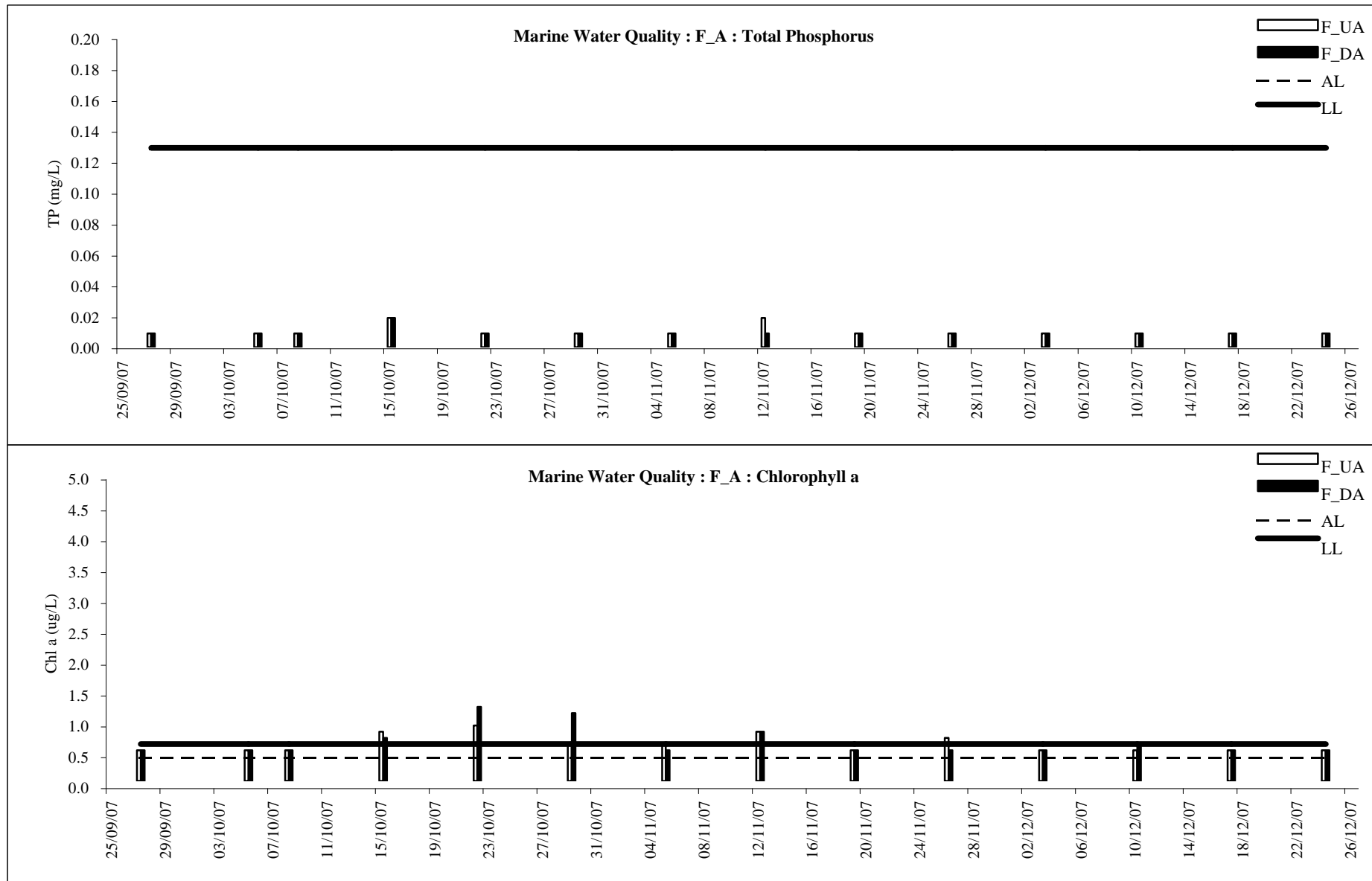


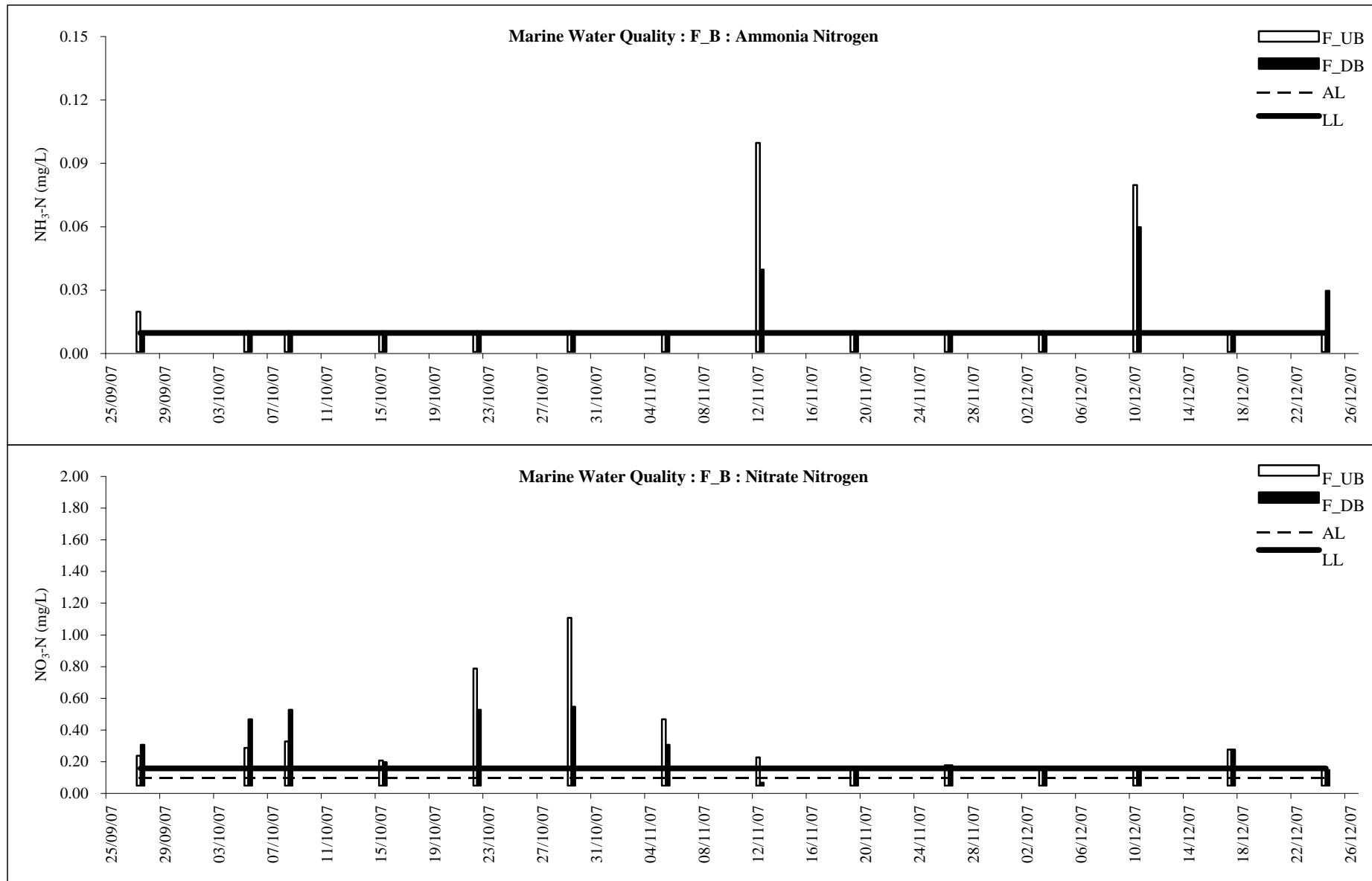
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

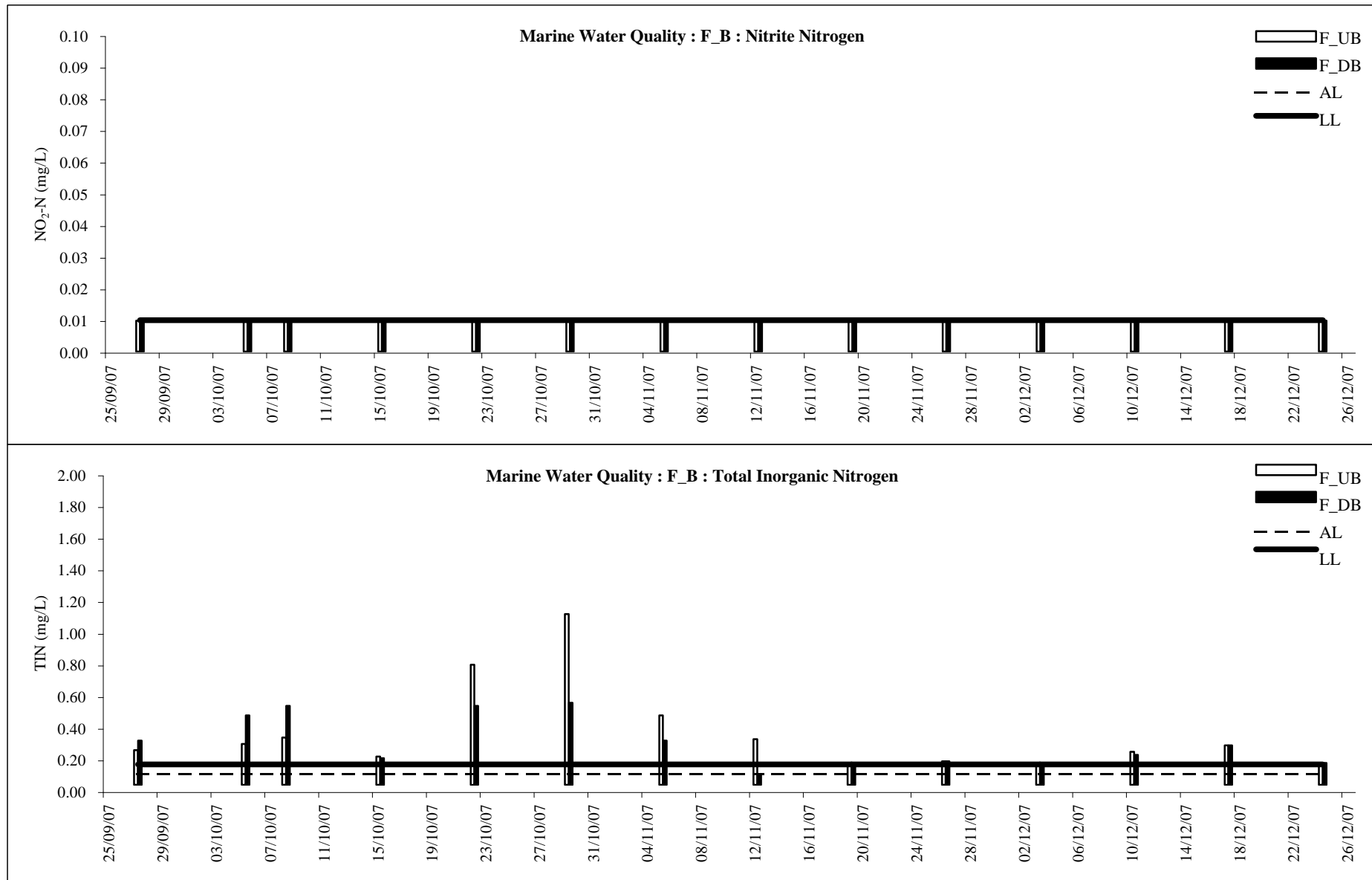
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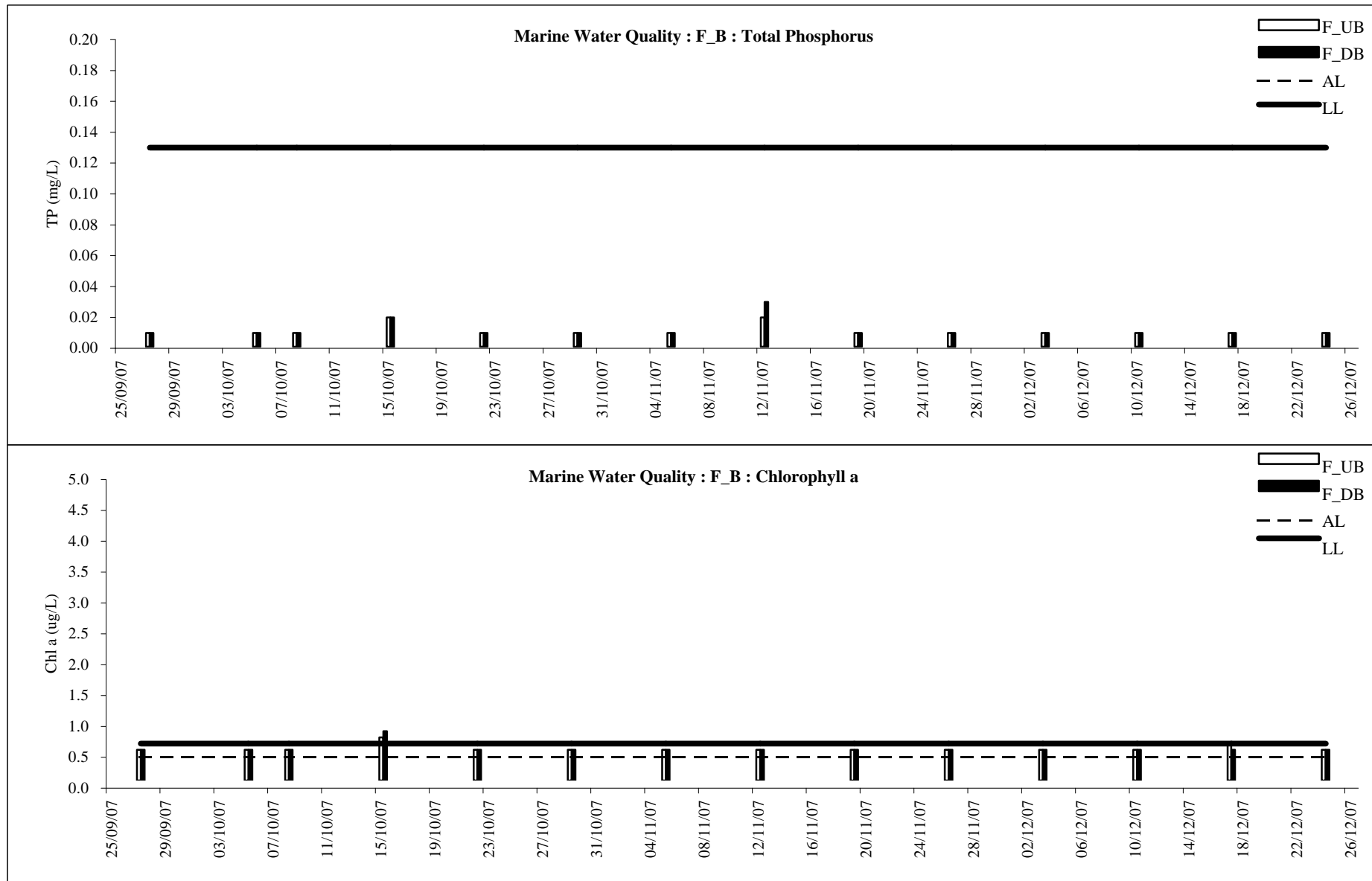






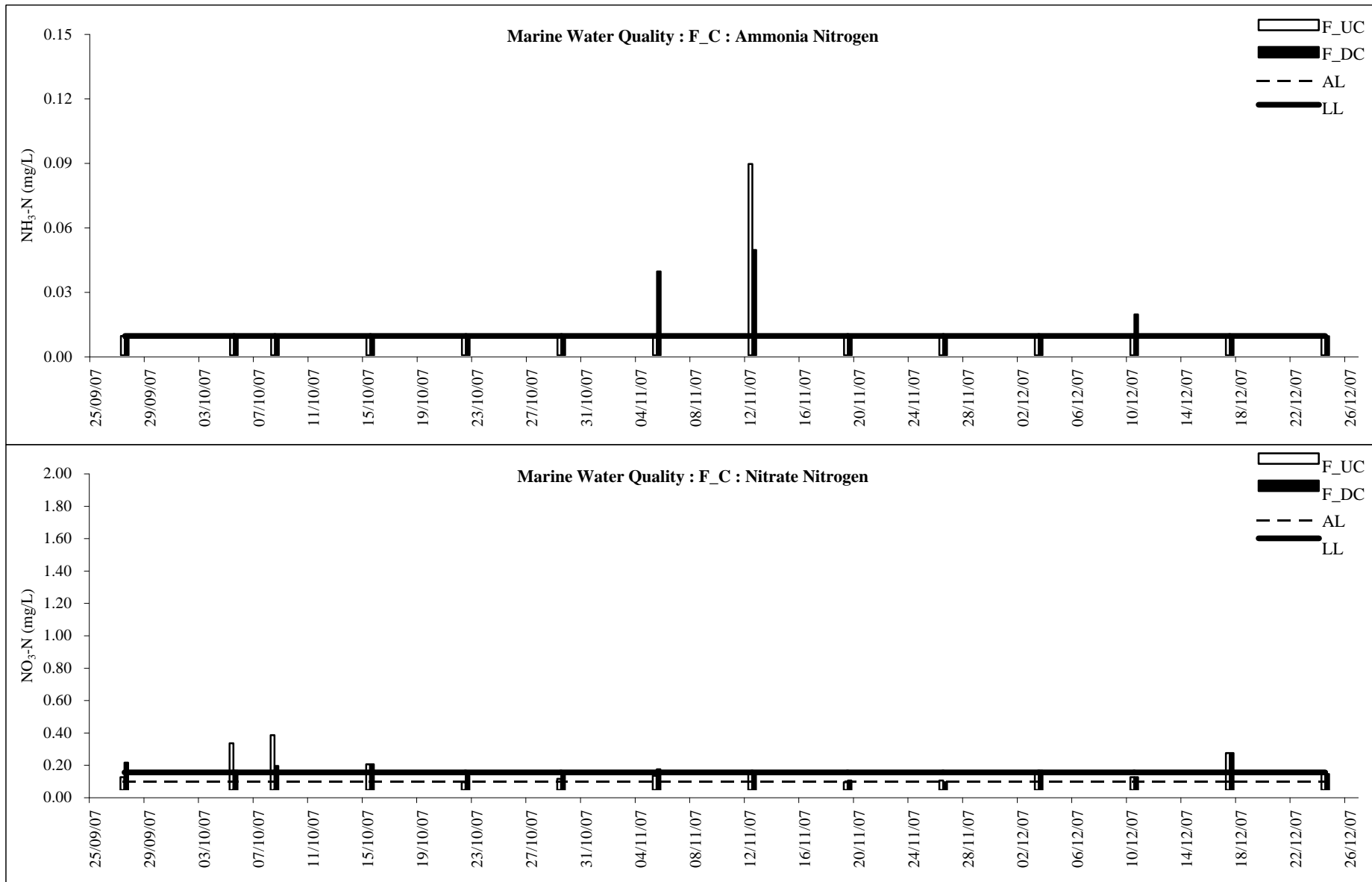






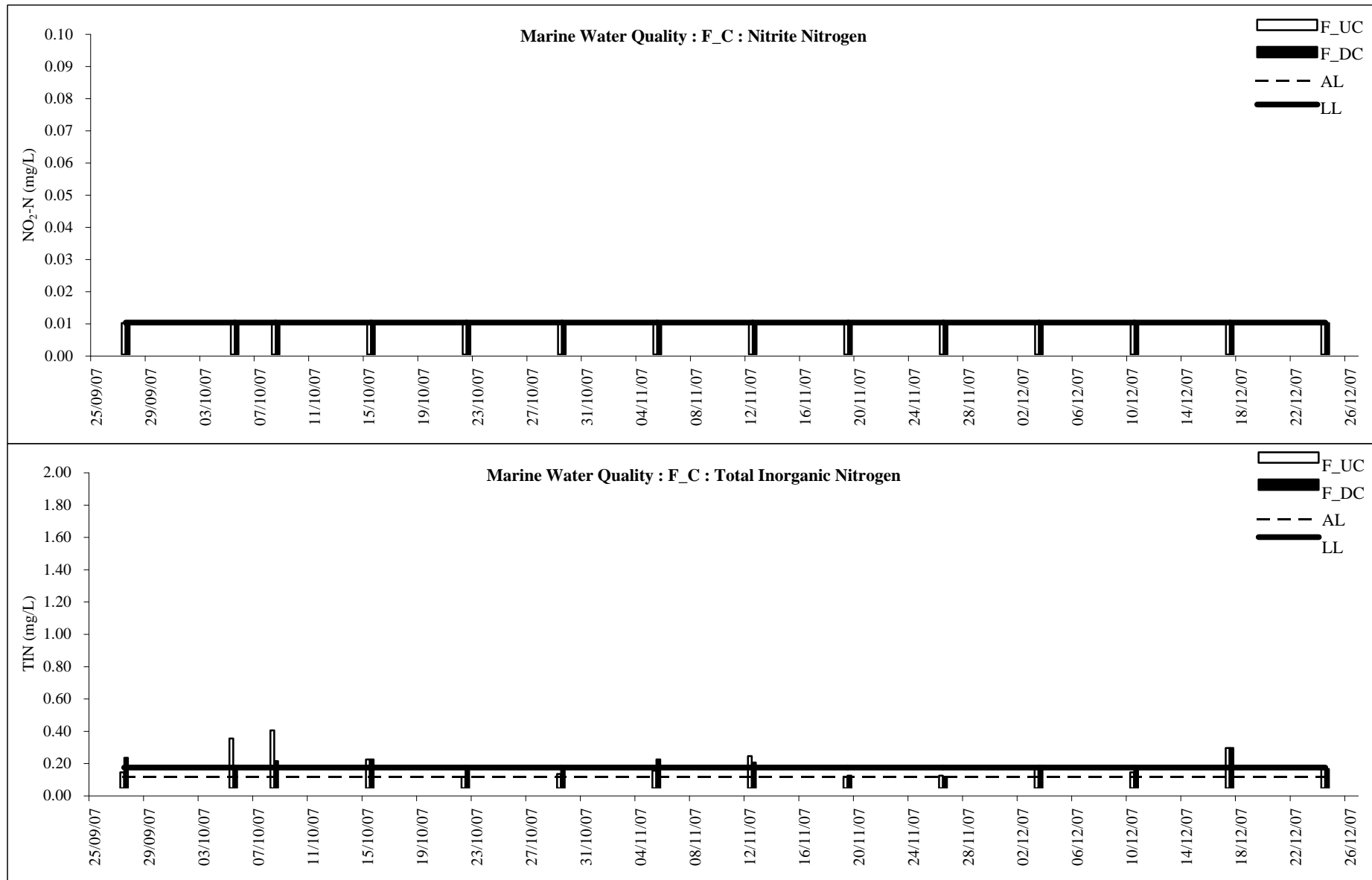
Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

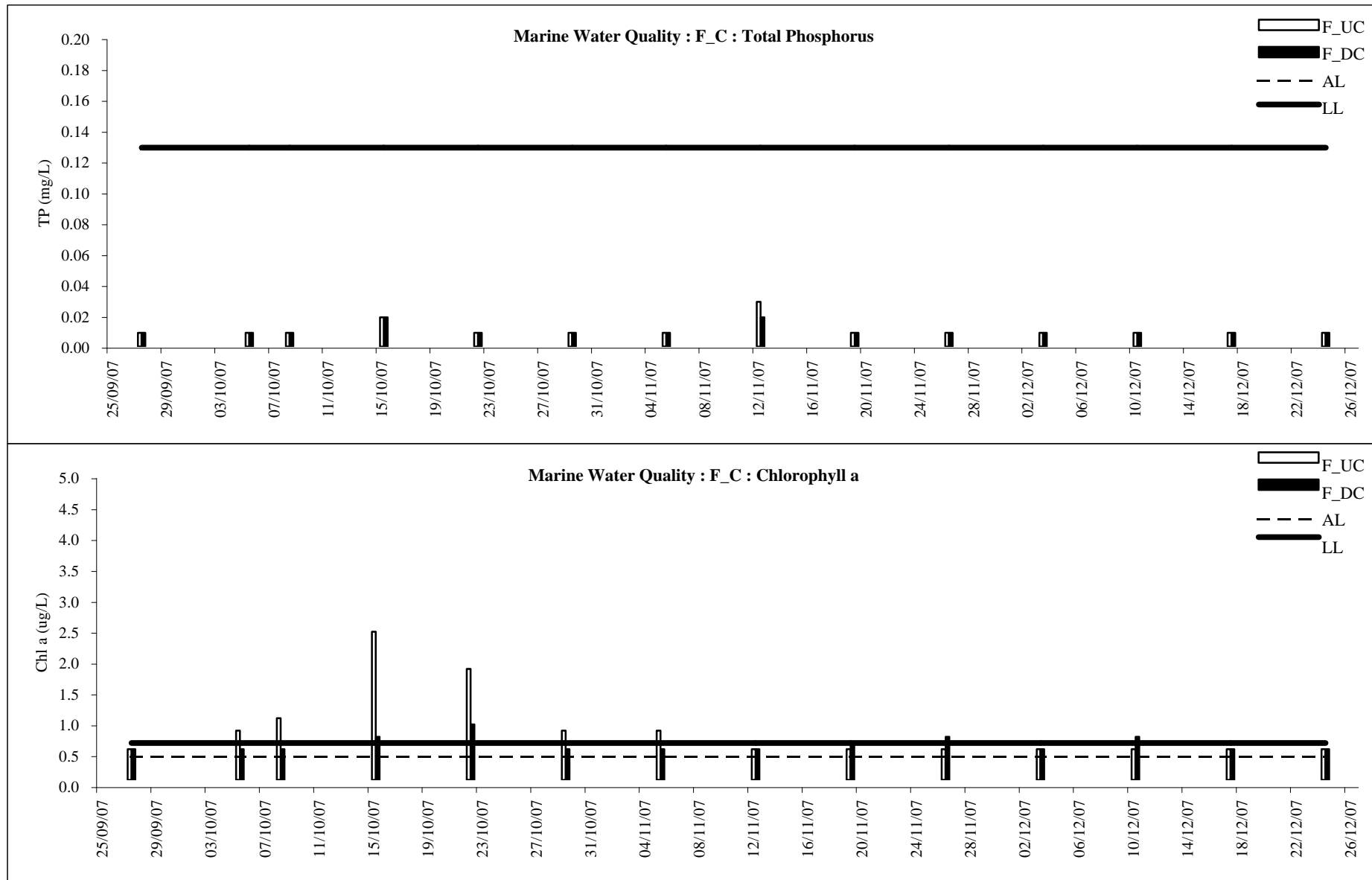
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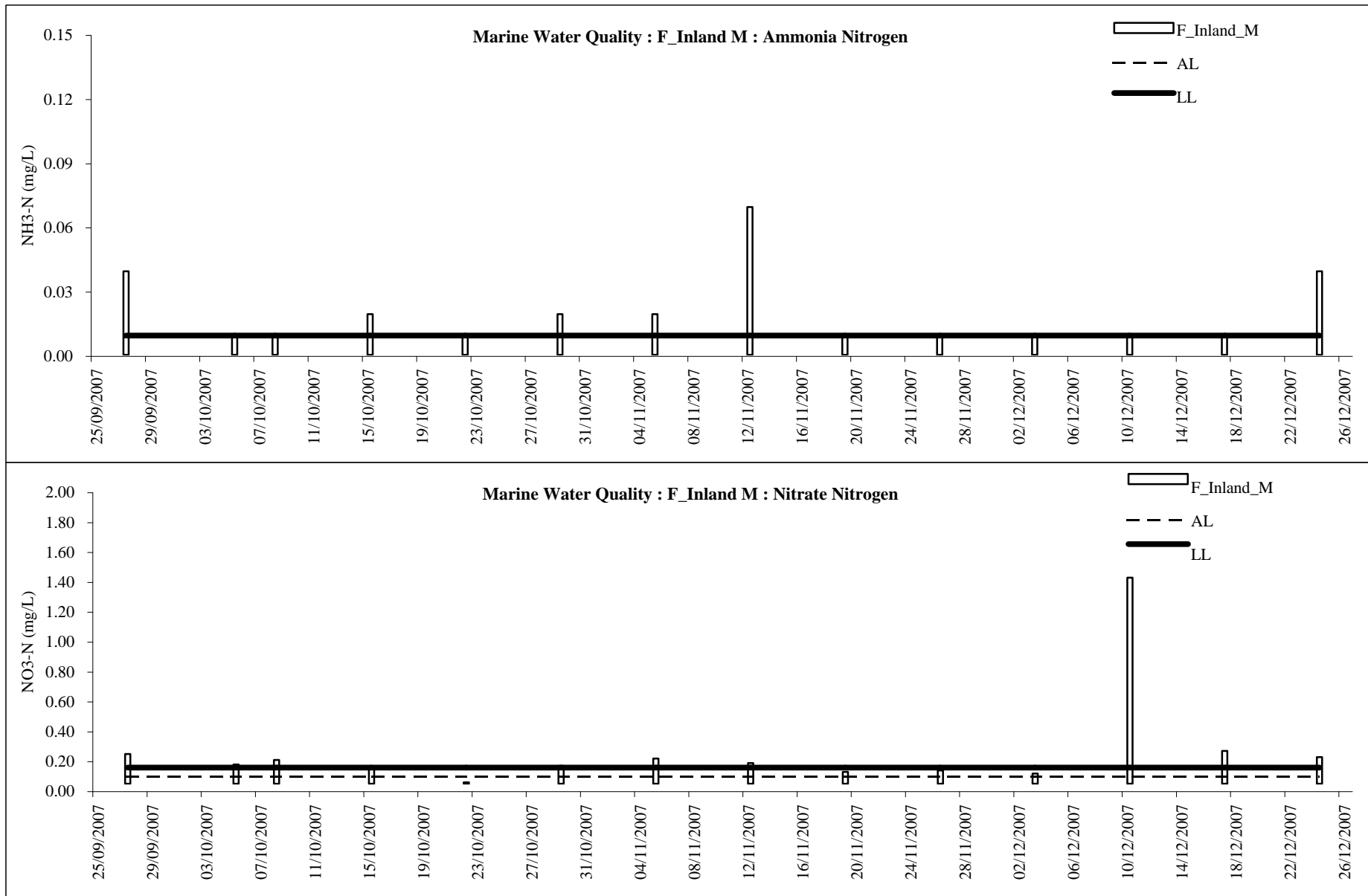


Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Water Quality Monitoring Results

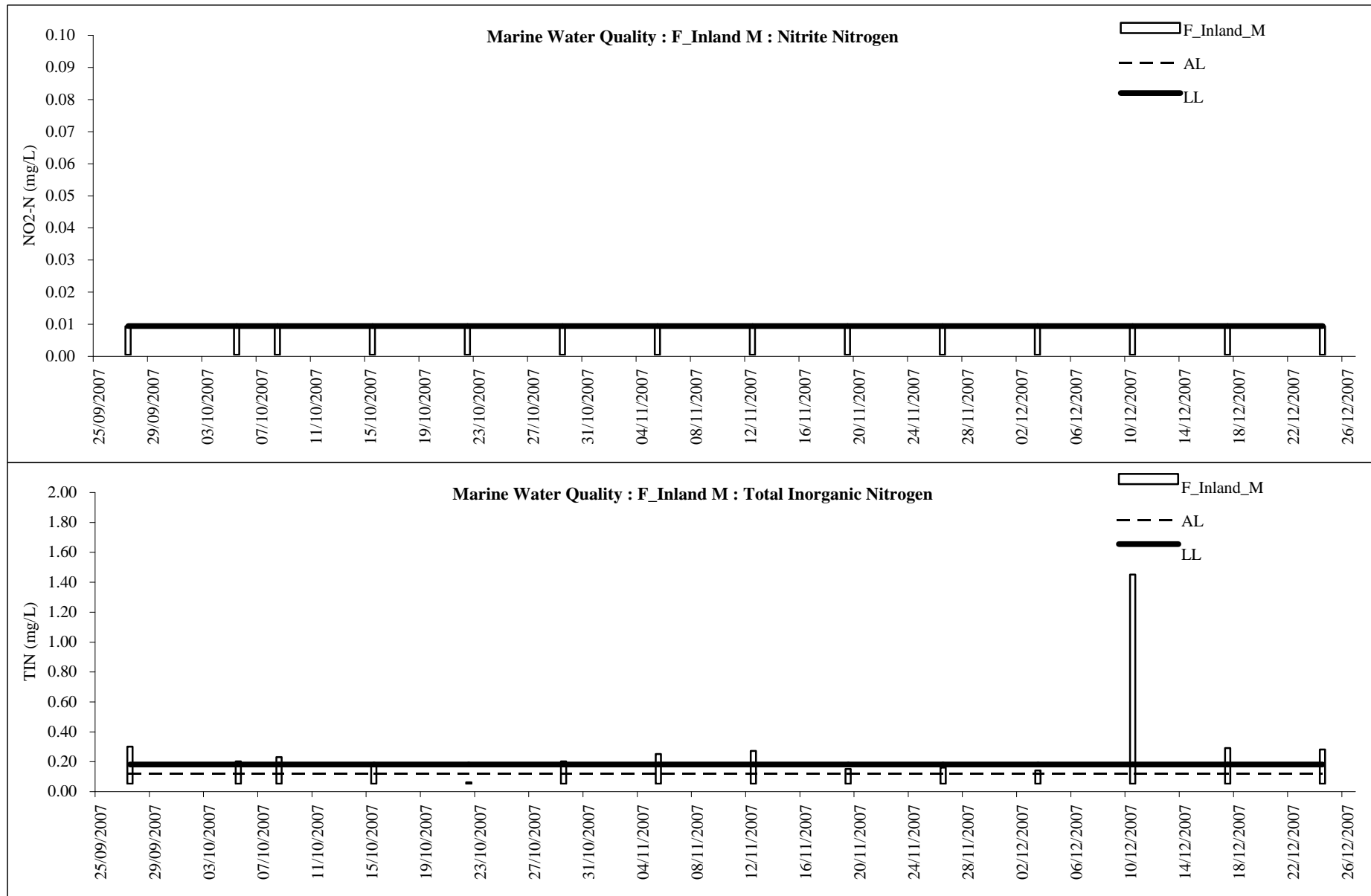
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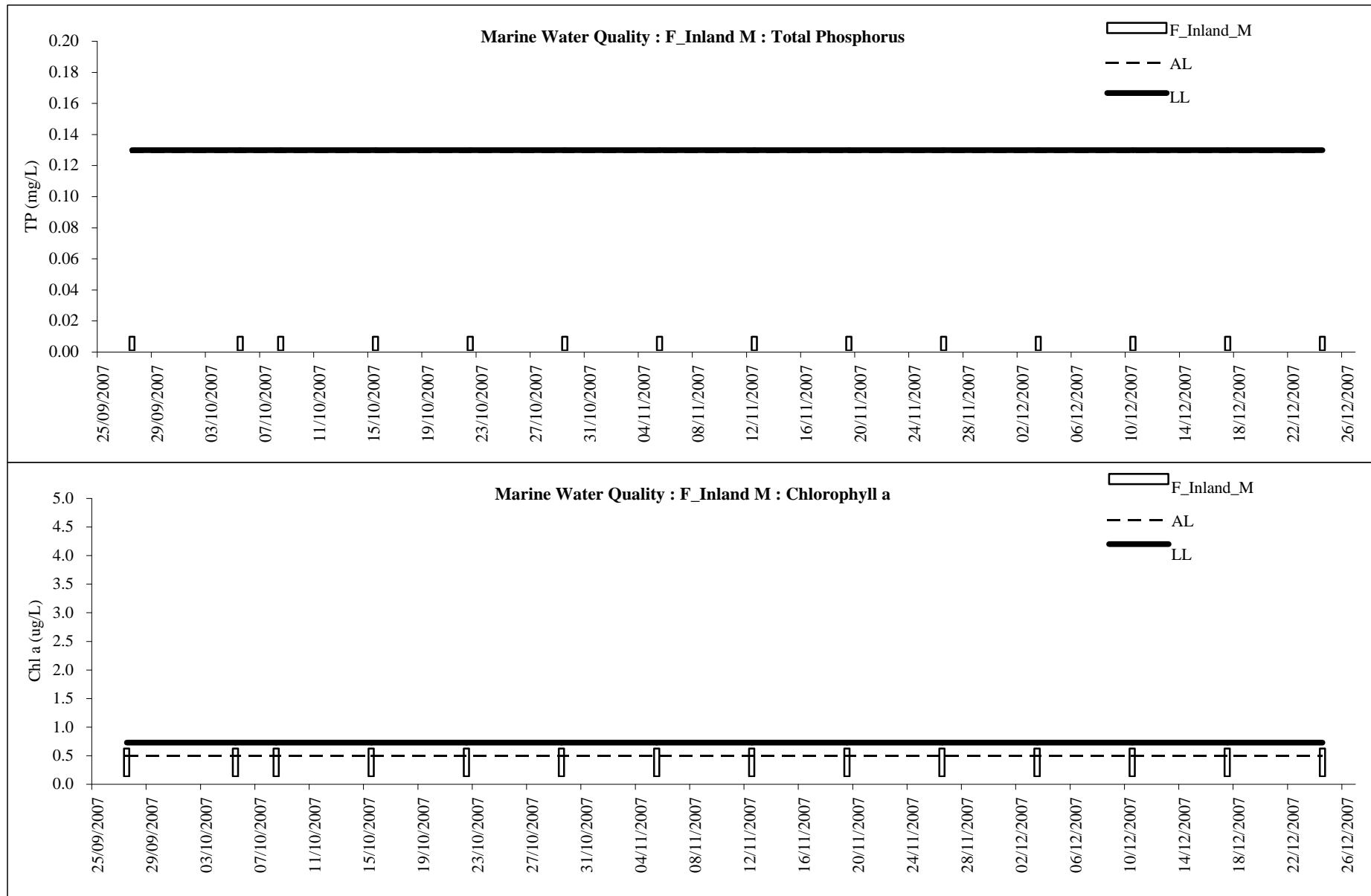












**Marine Water Monitoring Stations (Fish Culture Zones - FCZ)**  
(Depth-averaged value for marine water quality samples)

TTC	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	<b>0.04</b>	0.01	0.01	0.05	0.01	<b>5.3</b>
5-Oct-07	0.02	0.02	0.01	0.05	0.01	1.4
8-Oct-07	0.01	0.02	0.01	0.04	0.01	1.5
15-Oct-07	<b>0.04</b>	0.03	0.01	0.08	0.01	<b>3.1</b>
22-Oct-07	0.01	0.01	0.01	0.01	0.01	<b>2.2</b>
29-Oct-07	<b>0.03</b>	0.01	0.01	0.05	0.01	<b>2.2</b>
5-Nov-07	0.02	0.02	0.01	0.05	0.01	<b>2.5</b>
12-Nov-07	<b>0.08</b>	0.06	0.01	<b>0.15</b>	0.02	1.3
19-Nov-07	0.01	0.08	0.01	0.10	0.02	1.8
26-Nov-07	<b>0.04</b>	0.05	0.01	0.10	0.01	<b>6.0</b>
3-Dec-07	0.01	<b>0.09</b>	0.01	0.11	0.01	<b>2.8</b>
10-Dec-07	<b>0.04</b>	<b>0.09</b>	0.01	<b>0.14</b>	0.02	1.8
17-Dec-07	0.02	0.01	0.01	0.03	0.01	<b>2.2</b>
24-Dec-07	<b>0.05</b>	0.02	0.01	0.08	0.01	1.2

Remarks: Exceedance

> Action level	<b><i>Bold &amp; Italic</i></b>
> Limit level	<b>Bold</b>
< Detection Limit	Grey

Å = Rainstorm event

KS	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	<b>0.03</b>	0.01	0.01	0.05	0.01	<b>2.3</b>
5-Oct-07	<b>0.02</b>	0.02	0.01	0.05	0.01	1.3
8-Oct-07	0.01	0.03	0.01	0.05	0.01	1.4
15-Oct-07	<b>0.03</b>	0.02	0.01	0.06	0.01	<b>2.9</b>
22-Oct-07	0.01	0.01	0.01	0.01	0.01	<b>2.6</b>
29-Oct-07	0.02	0.01	0.01	0.03	0.01	<b>2.3</b>
5-Nov-07	<b>0.05</b>	0.03	0.01	0.08	0.01	<b>2.5</b>
12-Nov-07	<b>0.09</b>	0.05	0.01	<b>0.14</b>	0.03	1.5
19-Nov-07	0.01	<b>0.08</b>	0.01	0.11	0.02	1.7
26-Nov-07	<b>0.04</b>	0.01	0.01	0.07	0.01	<b>6.2</b>
3-Dec-07	0.01	0.08	0.01	0.10	0.01	<b>2.9</b>
10-Dec-07	<b>0.05</b>	<b>0.09</b>	0.01	<b>0.14</b>	0.02	1.8
17-Dec-07	0.01	0.02	0.01	0.03	0.01	<b>2.0</b>
24-Dec-07	<b>0.07</b>	0.02	0.01	0.09	0.01	1.3

**Marine Water Monitoring Stations (Other than FCZ)**  
(Depth-averaged value for marine water quality samples)

M_Marsh	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	<b>0.06</b>	0.01	0.01	0.07	0.01	<b>4.6</b>
5-Oct-07	0.02	0.02	0.01	0.05	0.01	1.2
8-Oct-07	0.03	0.02	<b>0.01</b>	0.06	0.01	1.1
15-Oct-07	<b>0.06</b>	0.03	0.01	0.10	0.01	2.4
22-Oct-07	0.02	0.01	0.01	0.02	0.01	2.1
29-Oct-07	0.03	0.01	0.01	0.05	0.01	2.3
5-Nov-07	0.02	0.02	0.01	0.05	0.01	2.6
12-Nov-07	<b>0.06</b>	0.06	0.01	0.12	0.03	1.3
19-Nov-07	0.02	0.09	0.01	0.12	0.02	1.8
26-Nov-07	0.02	0.05	0.01	0.08	0.01	<b>6.1</b>
3-Dec-07	0.01	0.08	<b>0.02</b>	0.11	0.01	2.8
10-Dec-07	<b>0.07</b>	<b>0.09</b>	0.01	<b>0.17</b>	0.02	1.7
17-Dec-07	0.01	0.01	0.01	0.01	0.01	2.4
24-Dec-07	<b>0.05</b>	0.02	0.01	0.08	0.01	1.3

Remarks: Exceedance

> Action level	<b><i>Bold &amp; Italic</i></b>
> Limit level	<b>Bold</b>
< Detection Limit	Grey

M_BP	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	0.03	0.01	0.01	0.05	0.01	<b>5.8</b>
5-Oct-07	0.02	0.02	0.01	0.05	0.01	1.3
8-Oct-07	0.03	0.02	0.01	0.06	0.01	1.6
15-Oct-07	0.03	0.03	0.01	0.07	0.01	3.1
22-Oct-07	0.01	0.01	0.01	0.01	0.01	1.9
29-Oct-07	0.04	0.01	0.01	0.06	0.01	2.3
5-Nov-07	0.01	0.03	0.01	0.04	0.01	2.5
12-Nov-07	<b>0.07</b>	0.06	0.01	0.14	0.05	1.4
19-Nov-07	0.02	0.08	<b>0.01</b>	0.11	0.02	1.7
26-Nov-07	0.03	0.05	0.01	0.09	0.01	<b>5.9</b>
3-Dec-07	0.01	0.08	<b>0.02</b>	0.11	0.01	2.8
10-Dec-07	0.04	0.09	0.01	0.13	0.02	1.9
17-Dec-07	0.02	0.02	0.01	0.03	0.01	2.1
24-Dec-07	<b>0.06</b>	0.02	0.01	0.09	0.01	1.3

M_Coral	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	0.03	0.02	<b>0.01</b>	0.06	0.01	2.4
5-Oct-07	0.02	0.02	0.01	0.05	0.01	1.3
8-Oct-07	0.01	0.02	<b>0.01</b>	0.04	0.01	1.6
15-Oct-07	0.03	0.03	0.01	0.07	0.01	2.9
22-Oct-07	0.01	0.01	0.01	0.02	0.01	1.7
29-Oct-07	0.01	0.01	0.01	0.01	0.01	2.3
5-Nov-07	0.02	0.02	0.01	0.05	0.01	2.6
12-Nov-07	<b>0.06</b>	0.05	0.01	0.12	0.03	1.4
19-Nov-07	0.01	0.09	0.01	0.11	0.02	1.8
26-Nov-07	0.03	0.03	0.01	0.07	0.01	<b>6.5</b>
3-Dec-07	0.01	0.09	0.01	0.11	0.01	2.9
10-Dec-07	0.04	0.09	0.01	0.14	0.02	1.9
17-Dec-07	0.01	0.01	0.01	0.02	0.01	2.1
24-Dec-07	<b>0.09</b>	0.01	0.01	0.11	0.01	1.3

**Marine Water Monitoring Stations (Control Stations)**  
(Depth-averaged value for marine water quality samples)

M_A	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	0.03	0.01	0.01	0.05	0.01	3.8
5-Oct-07	0.01	0.03	0.01	0.05	0.01	1.2
8-Oct-07	0.03	0.02	0.01	0.06	0.01	1.0
15-Oct-07	0.04	0.03	0.01	0.08	0.01	2.3
22-Oct-07	0.01	0.01	0.01	0.01	0.01	2.2
29-Oct-07	0.03	0.01	0.01	0.05	0.01	2.4
5-Nov-07	0.01	0.02	0.01	0.04	0.01	2.5
12-Nov-07	0.07	0.06	0.01	0.14	0.05	1.4
19-Nov-07	0.02	0.08	0.01	0.11	0.02	1.7
26-Nov-07	0.04	0.05	0.01	0.10	0.01	6.4
3-Dec-07	0.01	0.08	0.02	0.11	0.01	2.6
10-Dec-07	0.05	0.09	0.01	0.14	0.02	1.8
17-Dec-07	0.01	0.01	0.01	0.02	0.01	2.2
24-Dec-07	0.06	0.02	0.01	0.09	0.01	1.3

Remarks: Exceedance

> Action level	<b><i>Bold &amp; Italic</i></b>
> Limit level	<b>Bold</b>
< Detection Limit	Grey

Å = Rainstorm event

M_B	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	0.02	0.01	0.01	0.04	0.01	2.3
5-Oct-07	0.01	0.02	0.01	0.04	0.01	1.4
8-Oct-07	0.01	0.02	0.01	0.04	0.01	1.2
15-Oct-07	0.04	0.03	0.01	0.07	0.01	2.4
22-Oct-07	0.01	0.01	0.01	0.02	0.01	2.0
29-Oct-07	0.02	0.01	0.01	0.03	0.01	2.3
5-Nov-07	0.02	0.03	0.01	0.06	0.01	2.4
12-Nov-07	0.08	0.06	0.01	0.15	0.04	1.3
19-Nov-07	0.01	0.08	0.01	0.10	0.02	1.7
26-Nov-07	0.02	0.01	0.01	0.02	0.01	5.9
3-Dec-07	0.01	0.09	0.01	0.11	0.01	2.5
10-Dec-07	0.05	0.09	0.01	0.15	0.02	2.0
17-Dec-07	0.01	0.01	0.01	0.01	0.01	2.1
24-Dec-07	0.06	0.01	0.01	0.08	0.01	1.2

**Freshwater Monitoring Stations (Streams A & B)**  
(mid depth for freshwater quality samples)

F UA	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	0.01	0.10	0.01	0.12	0.01	0.5
5-Oct-07	0.02	0.11	0.01	0.14	0.01	0.5
8-Oct-07	0.01	0.13	0.01	0.15	0.01	0.5
15-Oct-07	0.01	0.16	0.01	0.18	0.02	0.8
22-Oct-07	0.01	0.15	0.01	0.17	0.01	0.9
29-Oct-07	0.01	0.16	0.01	0.18	0.01	0.6
5-Nov-07	0.05	0.13	0.01	0.19	0.01	0.6
12-Nov-07	0.03	0.14	0.01	0.18	0.02	0.8
19-Nov-07	0.01	0.05	0.01	0.07	0.01	0.5
26-Nov-07	0.01	0.10	0.01	0.12	0.01	0.7
3-Dec-07	0.01	0.11	0.01	0.13	0.01	0.5
10-Dec-07	0.01	0.08	0.01	0.10	0.01	0.5
17-Dec-07	0.01	0.24	0.01	0.26	0.01	0.5
24-Dec-07	0.01	0.12	0.01	0.14	0.01	0.5

Remarks: Exceedance

> Action level	<b><i>Bold &amp; Italic</i></b>
> Limit level	<b>Bold</b>
< Detection Limit	Grey

Å = Rainstorm event

F DA	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	0.01	0.11	0.01	0.13	0.01	0.5
5-Oct-07	0.01	0.12	0.01	0.14	0.01	0.5
8-Oct-07	0.01	0.14	0.01	0.16	0.01	0.5
15-Oct-07	0.01	0.17	0.01	0.19	0.02	0.7
22-Oct-07	0.01	0.14	0.01	0.16	0.01	1.2
29-Oct-07	0.01	0.18	0.01	0.20	0.01	1.1
5-Nov-07	0.01	0.14	0.01	0.16	0.01	0.5
12-Nov-07	0.01	0.01	0.01	0.01	0.01	0.8
19-Nov-07	0.01	0.05	0.01	0.07	0.01	0.5
26-Nov-07	0.02	0.10	0.01	0.13	0.01	0.5
3-Dec-07	0.01	0.10	0.01	0.12	0.01	0.5
10-Dec-07	0.01	0.08	0.01	0.10	0.01	0.6
17-Dec-07	0.01	0.23	0.01	0.25	0.01	0.5
24-Dec-07	0.01	0.09	0.01	0.11	0.01	0.5

F UB	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	0.02	0.19	0.01	0.22	0.01	0.5
5-Oct-07	0.01	0.24	0.01	0.26	0.01	0.5
8-Oct-07	0.01	0.28	0.01	0.30	0.01	0.5
15-Oct-07	0.01	0.16	0.01	0.18	0.02	0.7
22-Oct-07	0.01	0.74	0.01	0.76	0.01	0.5
29-Oct-07	0.01	1.06	0.01	1.08	0.01	0.5
5-Nov-07	0.01	0.42	0.01	0.44	0.01	0.5
12-Nov-07	0.10	0.18	0.01	0.29	0.02	0.5
19-Nov-07	0.01	0.12	0.01	0.14	0.01	0.5
26-Nov-07	0.01	0.13	0.01	0.15	0.01	0.5
3-Dec-07	0.01	0.12	0.01	0.14	0.01	0.5
10-Dec-07	0.08	0.12	0.01	0.21	0.01	0.5
17-Dec-07	0.01	0.23	0.01	0.25	0.01	0.6
24-Dec-07	0.01	0.10	0.01	0.12	0.01	0.5

F DB	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	0.01	0.26	0.01	0.28	0.01	0.5
5-Oct-07	0.01	0.42	0.01	0.44	0.01	0.5
8-Oct-07	0.01	0.48	0.01	0.50	0.01	0.5
15-Oct-07	0.01	0.15	0.01	0.17	0.02	0.8
22-Oct-07	0.01	0.48	0.01	0.50	0.01	0.5
29-Oct-07	0.01	0.50	0.01	0.52	0.01	0.5
5-Nov-07	0.01	0.26	0.01	0.28	0.01	0.5
12-Nov-07	0.04	0.02	0.01	0.07	0.03	0.5
19-Nov-07	0.01	0.12	0.01	0.14	0.01	0.5
26-Nov-07	0.01	0.13	0.01	0.15	0.01	0.5
3-Dec-07	0.01	0.12	0.01	0.14	0.01	0.5
10-Dec-07	0.06	0.12	0.01	0.19	0.01	0.5
17-Dec-07	0.01	0.23	0.01	0.25	0.01	0.5
24-Dec-07	0.03	0.10	0.01	0.14	0.01	0.5

**Freshwater Monitoring Stations (Stream C & Freshwater Inland Marsh)**  
(mid depth for freshwater quality samples)

F_UC	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	0.01	0.08	0.01	0.10	0.01	0.5
5-Oct-07	0.01	<b>0.29</b>	0.01	<b>0.31</b>	0.01	<b>0.8</b>
8-Oct-07	0.01	<b>0.34</b>	0.01	<b>0.36</b>	0.01	<b>1.0</b>
15-Oct-07	0.01	<b>0.16</b>	0.01	<b>0.18</b>	0.02	<b>2.4</b>
22-Oct-07	0.01	0.05	0.01	0.07	0.01	<b>1.8</b>
29-Oct-07	0.01	0.07	0.01	0.09	0.01	<b>0.8</b>
5-Nov-07	0.01	0.09	0.01	0.11	0.01	<b>0.8</b>
12-Nov-07	<b>0.09</b>	<b>0.10</b>	0.01	<b>0.20</b>	<b>0.03</b>	0.5
19-Nov-07	0.01	0.05	0.01	0.07	0.01	<b>0.5</b>
26-Nov-07	0.01	0.06	0.01	0.08	0.01	0.5
3-Dec-07	0.01	<b>0.11</b>	0.01	<b>0.13</b>	0.01	<b>0.5</b>
10-Dec-07	0.01	0.08	0.01	0.10	0.01	<b>0.5</b>
17-Dec-07	0.01	<b>0.23</b>	0.01	<b>0.25</b>	0.01	0.5
24-Dec-07	0.01	<b>0.10</b>	0.01	0.12	0.01	0.5

Remarks: Exceedance

> Action level	<b><i>Bold &amp; Italic</i></b>
> Limit level	<b>Bold</b>
< Detection Limit	Grey

Å = Rainstorm event

F_DC	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	0.01	<b>0.17</b>	0.01	<b>0.19</b>	0.01	0.5
5-Oct-07	0.01	<b>0.12</b>	0.01	<b>0.14</b>	0.01	0.5
8-Oct-07	0.01	<b>0.15</b>	0.01	<b>0.17</b>	0.01	0.5
15-Oct-07	0.01	<b>0.16</b>	0.01	<b>0.18</b>	0.02	<b>0.7</b>
22-Oct-07	0.01	0.09	0.01	0.11	0.01	<b>0.9</b>
29-Oct-07	0.01	<b>0.11</b>	0.01	<b>0.13</b>	0.01	0.5
5-Nov-07	<b>0.04</b>	<b>0.13</b>	0.01	<b>0.18</b>	0.01	0.5
12-Nov-07	<b>0.05</b>	<b>0.10</b>	0.01	<b>0.16</b>	0.02	0.5
19-Nov-07	0.01	0.06	0.01	0.08	0.01	<b>0.6</b>
26-Nov-07	0.01	0.05	0.01	0.07	0.01	<b>0.7</b>
3-Dec-07	0.01	<b>0.12</b>	0.01	<b>0.14</b>	0.01	<b>0.5</b>
10-Dec-07	<b>0.02</b>	0.08	0.01	0.11	0.01	<b>0.7</b>
17-Dec-07	0.01	<b>0.23</b>	0.01	<b>0.25</b>	0.01	0.5
24-Dec-07	0.01	<b>0.10</b>	0.01	0.12	0.01	0.5

F_Inland_M	NH3-N (mg/L)	NO3-N (mg/L)	NO2-N (mg/L)	TIN (mg/L)	TP (mg/L)	Chlorophyll a (ug/L)
27-Sep-07	<b>0.04</b>	<b>0.20</b>	0.01	<b>0.25</b>	0.01	0.5
5-Oct-07	0.01	<b>0.13</b>	0.01	<b>0.15</b>	0.01	0.5
8-Oct-07	0.01	<b>0.16</b>	0.01	<b>0.18</b>	0.01	0.5
15-Oct-07	<b>0.02</b>	<b>0.10</b>	0.01	<b>0.13</b>	0.01	0.5
22-Oct-07	0.01	0.01	0.01	0.01	0.01	0.5
29-Oct-07	<b>0.02</b>	<b>0.12</b>	0.01	<b>0.15</b>	0.01	0.5
5-Nov-07	<b>0.02</b>	<b>0.17</b>	0.01	<b>0.20</b>	0.01	0.5
12-Nov-07	<b>0.07</b>	<b>0.14</b>	0.01	<b>0.22</b>	0.01	0.5
19-Nov-07	0.01	0.08	0.01	0.10	0.01	0.5
26-Nov-07	0.01	0.09	0.01	0.11	0.01	0.5
3-Dec-07	0.01	0.07	0.01	0.09	0.01	0.5
10-Dec-07	0.01	<b>1.38</b>	0.01	<b>1.40</b>	0.01	0.5
17-Dec-07	0.01	<b>0.22</b>	0.01	<b>0.24</b>	0.01	0.5
24-Dec-07	<b>0.04</b>	<b>0.18</b>	0.01	<b>0.23</b>	0.01	0.5

# Ecology



**Table 3-1 Conditions of tagged corals at Site B2**

Code of tagged corals	Species*	Baseline Survey (Dec 2005 or Apr 2006)			Month 24 (December 2007)		
		Mortality (%)	Sedimentation (%)	Bleaching (%)	Mortality (%)	Sedimentation (%)	Bleaching (%)
<b>Within the Temporary Barging Point Area</b>							
B-11	<i>Turbinaria peltata</i>	0	0	0	0	0	0
B-12	<i>Plesiastrea versipora</i>	0	0	0	50	0	0
B-13	<i>Plesiastrea versipora</i>	0	0	0	30	0	0
B-14	<i>Goniastrea aspera</i>	0	0	0	0	0	0
B-15	<i>Lithophyllon undulatum</i>	0	0	0	0	0	0
B-16	<i>Favia speciosa</i>	0	0	0	0	0	0
B-17	<i>Favia speciosa</i>	0	0	0	Missing	Missing	Missing
B-18	<i>Turbinaria peltata</i>	0	0	0	20	0	0
B-19	<i>Favia speciosa</i>	0	0	0	Missing	Missing	Missing
B-20	<i>Favia speciosa</i>	0	0	0	0	0	0
<b>To the North of the Temporary Barging Point Area</b>							
B-21	<i>Favia speciosa</i>	0	0	0	0	0	0
B-22	<i>Cyphastrea serailia</i>	0	0	0	0	0	0
B-23	<i>Favia speciosa</i>	0	0	0	0	0	0
B-24	<i>Favia speciosa</i>	0	0	0	0	0	0
B-25	<i>Favites abdita</i>	0	0	0	0	0	0
B-26	<i>Cyphastrea serailia</i>	0	0	0	0	0	0
B-27	<i>Favia speciosa</i>	0	0	0	0	0	0
B-28	<i>Goniopora columna</i>	0	0	0	0	0	0
B-29	<i>Cyphastrea serailia</i>	0	0	0	0	0	0
B-30	<i>Favia speciosa</i>	0	0	0	0	0	0
B-31	<i>Platygyra acuta</i>	5	0	0	0	0	0
B-32	<i>Favia speciosa</i>	3	0	0	0	0	0
B-33	<i>Turbinaria peltata</i>	0	0	0	0	0	0
B-34	<i>Cyphastrea serailia</i>	0	0	0	0	0	0
B-35	<i>Cyphastrea serailia</i>	0	0	0	0	0	0
B-36	<i>Platygyra acuta</i>	0	0	0	0	0	0
B-37	<i>Favia speciosa</i>	0	0	0	0	0	0
B-38	<i>Cyphastrea serailia</i>	0	0	0	0	0	0

Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung  
 Quarterly EM&A Report (October – December 2007)

Code of tagged corals	Species*	Baseline Survey (Dec 2005 or Apr 2006)			Month 24 (December 2007)		
		Mortality (%)	Sedimentation (%)	Bleaching (%)	Mortality (%)	Sedimentation (%)	Bleaching (%)
B-39	<i>Cyphastrea serailia</i>	0	0	0	0	0	0
B-40	<i>Favia speciosa</i>	0	0	0	0	0	0
<b>To the south of the Temporary Barging Point Area</b>							
B-41	<i>Leptastrea pruinosa</i>	0	0	0	0	0	0
B-42	<i>Goniastrea aspera</i>	0	0	0	<b>10</b>	0	0
B-43	<i>Favia speciosa</i>	0	0	0	0	0	0
B-44	<i>Cyphastrea serailia</i>	0	0	0	0	0	0
B-45	<i>Platygyra acuta</i>	0	0	0	0	0	0
B-46	<i>Favia speciosa</i>	0	0	0	0	0	0
B-47	<i>Favites abdita</i>	0	0	0	0	0	0
B-48	<i>Cyphastrea serailia</i>	0	0	0	0	0	0
B-49	<i>Goniopora columna</i>	0	0	0	0	0	0
B-50	<i>Favia speciosa</i>	0	0	0	Missing	Missing	Missing
B-51	<i>Psammocora superficialis</i>	0	0	0	Missing	Missing	Missing
B-52	<i>Favia speciosa</i>	0	0	0	0	0	0
B-53	<i>Favia speciosa</i>	0	0	0	0	0	0
B-54	<i>Favia speciosa</i>	0	0	0	<b>0</b>	0	0
B-55	<i>Goniastrea aspera</i>	0	0	0	<b>70</b>	0	0
B-56	<i>Platygyra carnosus</i>	0	0	0	0	0	0
B-57	<i>Goniastrea aspera</i>	0	0	0	0	0	0
B-58	<i>Favia speciosa</i>	<b>5</b>	0	0	<b>30</b>	0	0
B-59	<i>Favia speciosa</i>	0	0	0	Missing	Missing	Missing
B-60	<i>Favia speciosa</i>	<b>5</b>	0	0	Missing	Missing	Missing

\* Damaged corals were bold.

**Table 3-2 Conditions of tagged corals at Site C**

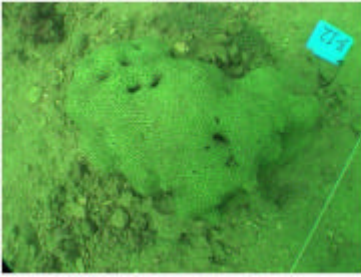

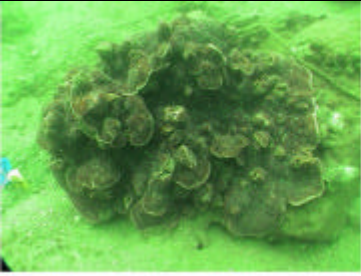


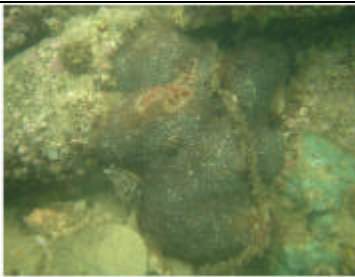
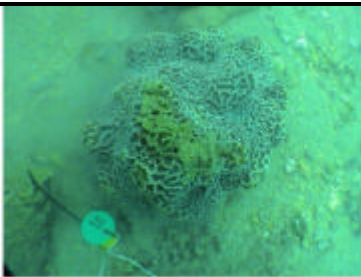





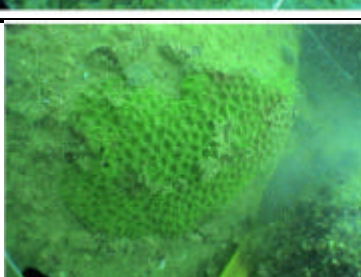
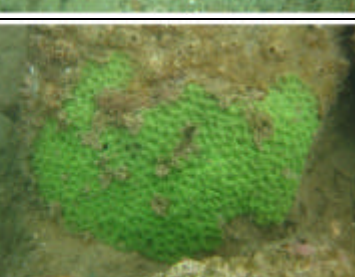
Code of tagged corals	Species	Baseline Survey (December 2005)			Month 24 (December 2007)		
		Mortality (%)	Sedimentation (%)	Bleaching (%)	Mortality (%)	Sedimentation (%)	Bleaching (%)
C-01	<i>Platygyra carnosus</i>	0	0	0	0	0	0
C-02	<i>Platygyra carnosus</i>	0	0	0	0	0	0
C-03	<i>Favia speciosa</i>	0	0	0	0	0	0
C-04	<i>Favites abdita</i>	0	0	0	<b>100</b>	0	0
C-05	<i>Turbinaria peltata</i>	0	0	0	0	0	0
C-06	<i>Favia speciosa</i>	0	0	0	0	0	0
C-07	<i>Platygyra acuta</i>	0	0	0	0	0	0
C-08	<i>Platygyra acuta</i>	0	0	0	0	0	0
C-09	<i>Favia speciosa</i>	0	0	0	0	0	0
<b>C-10*</b>	<i>Platygyra acuta</i>	0	0	0	0	0	0
C-11	<i>Favia speciosa</i>	0	0	0	0	0	0
C-12	<i>Platygyra acuta</i>	0	0	0	0	0	0
C-13	<i>Platygyra carnosus</i>	0	0	0	0	0	0
C-14	<i>Favia speciosa</i>	0	0	0	0	0	0
C-15	<i>Goniopora columna</i>	0	0	0	0	0	0
C-16	<i>Platygyra carnosus</i>	0	0	0	0	0	0
C-17	<i>Goniopora columna</i>	0	0	0	0	0	0
C-18	<i>Platygyra carnosus</i>	0	0	0	0	0	0
C-19	<i>Favites pentagona</i>	0	0	0	0	0	0
C-20	<i>Favia speciosa</i>	0	0	0	0	0	0

\*C-10 had sign of anchor damages.

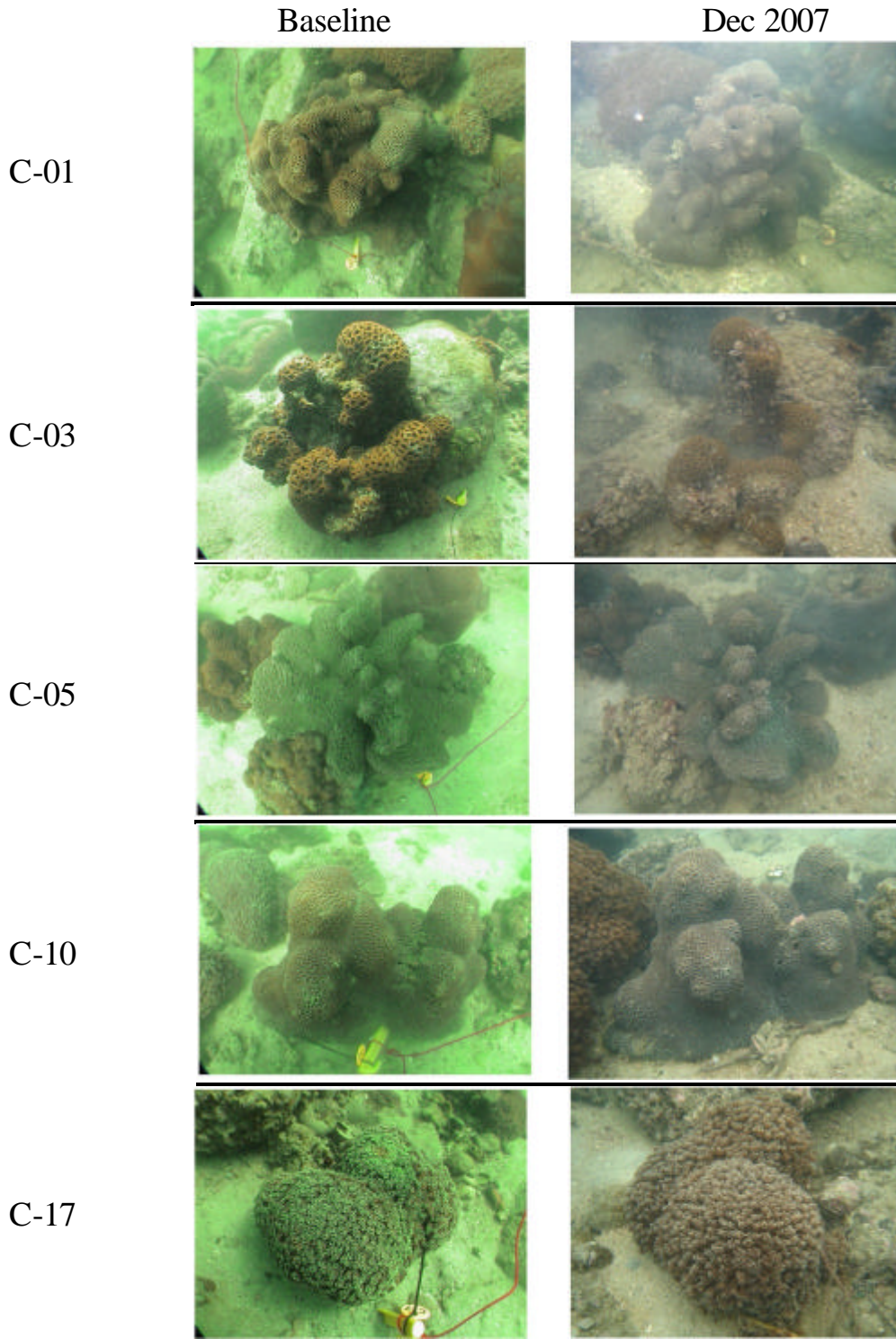
**Table 3-3 Conditions of tagged corals at Control Site**

Code of tagged corals	Species	Baseline Survey (December 2005)			Month 24 (December 2007)		
		Mortality (%)	Sedimentation (%)	Bleaching (%)	Mortality (%)	Sedimentation (%)	Bleaching (%)
X-01	<i>Platygyra carnosus</i>	0	0	0	0	0	0
X-02	<i>Platygyra carnosus</i>	0	0	0	0	0	0
X-03	<i>Platygyra carnosus</i>	0	0	0	0	0	0
X-04	<i>Pavona decussata</i>	0	0	0	0	0	0
X-05	<i>Hydnophora exesa</i>	0	0	0	Missing	Missing	Missing
X-06	<i>Platygyra carnosus</i>	0	0	0	0	0	0
X-07	<i>Platygyra carnosus</i>	0	0	0	0	0	0
X-08	<i>Favites abdita</i>	0	0	0	0	0	0
X-09	<i>Cyphastrea serailia</i>	0	0	0	0	0	0
X-10	<i>Cyphastrea serailia</i>	0	0	0	0	0	0
X-11	<i>Platygyra carnosus</i>	0	0	0	0	0	0
X-12	<i>Platygyra acuta</i>	0	0	0	0	0	0
X-13	<i>Platygyra acuta</i>	0	0	0	0	0	0
X-14	<i>Platygyra acuta</i>	0	0	0	0	0	0
X-15	<i>Platygyra acuta</i>	0	0	0	0	0	0
X-16	<i>Platygyra acuta</i>	0	0	0	0	0	0
X-17	<i>Favia speciosa</i>	0	0	0	0	0	0
X-18	<i>Platygyra acuta</i>	0	0	0	0	0	0
X-19	<i>Goniastrea aspera</i>	0	0	0	0	0	0
X-20	<i>Cyphastrea serailia</i>	0	0	0	0	0	0

# Site B2 – (Representative Corals Photos)

	Baseline	Dec 2007
B-12		
B-15		
B-22		
B-31		
B-41		
B-45		
B-57		

## Site C – (Representative Corals Photos)



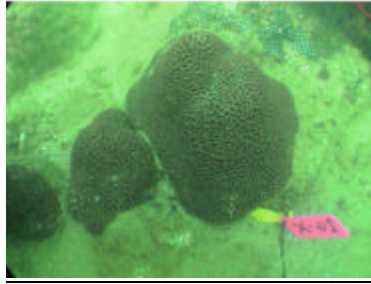


# Control Site – (Representative Corals Photos)

Baseline

Dec 2007

X-01



X-06



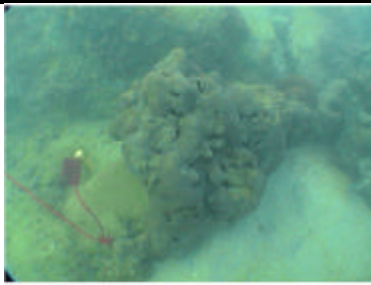
X-09



X-13



X-20



# **Annex E**

## **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		
<b>Air Quality - Construction Phase</b>									
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"> <li>• Adoption of good site practices;</li> <li>• Avoid practices likely to raise dust level;</li> <li>• Frequent cleaning and damping down of stockpiles, dusty areas of the Site and the haul roads;</li> <li>• Reduce the speed of the vehicles (say 10 kph) on the haul road;</li> <li>• Reducing drop height during material handling;</li> <li>• Provision of wheel-washing facilities for Site vehicles leaving the Site;</li> <li>• Regular plant maintenance to minimize exhaust emission;</li> <li>• If concrete batching plant or rock crushing plant is planned to be 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</li> </ul>	Work site / during construction	All contractors		√		EIAO-TM, APCO, Air Pollution Control (Construction Dust) Regulation	N/A
									N/A
									Insufficient
									√
									√
									N/A
									√
									N/A
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		
<b>Water Quality – Construction phase</b>									
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	√
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"> <li>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;</li> <li>The natural bottom and existing flow in the stream should be preserved to avoid disturbance to the stream habitats;</li> <li>No direct and indirect discharge into the natural stream is allowed from any construction work activities;</li> <li>Stockpiling of construction material, if any, should be properly covered and located away from any natural stream;</li> <li>Monitor rain forecast closely and cover any exposed spoil when rainstorms are forecasted. Debris should be properly disposed of before rainstorm to avoid any inadvertent wash away into the stream; and</li> <li>removal 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.</li> </ul>							Turfing was completed. Temporary drainage system at Holes 2, 9 & 17 provided on site was still considered insufficient and ineffective.
6.11.13		<u>Runoff and Drainage Management</u> <ul style="list-style-type: none"> <li><b>Diversion of upstream flows around the works areas for stream crossings and underground pipes:</b> 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).</li> <li><b>Temporary covering the works areas during severe storm events:</b> 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).</li> <li><b>Silt traps and sedimentation tanks for main discharge routes form works area:</b> 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.</li> <li>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.</li> </ul> <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 system may not be completed in its entirety until connection is made from each respective golf hole</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 revised TDMP was submitted the Contractor for RE and ET approval and comment during this reporting month. The latest submitted drainage plan is the mitigation measures for the silty runoff which has not included the recycling the runoff during the turf establishment. The wastewater treatment facility was not provided.  Turfing area was completed. Chemical applications were required and applied during the reporting month.

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines	Implementation Status
					D	C	O		
		<p>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"> <li>• 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.</li> <li>• 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.</li> </ul>							
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"> <li>• Temporary ditches should be provided to facilitate run-off discharge into appropriate watercourses, via a silt retention pond.</li> <li>• All drainage facilities and erosion and sediment control structures should be inspected monthly and maintained to ensure proper and efficient operation at all times.</li> <li>• 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>.</li> <li>• Exposed soil areas should be minimized to reduce potential for increase siltation and contamination of runoff.</li> <li>• Earthwork final surfaces should be well compacted and subsequent permanent work (turf establishment) should be immediately performed.</li> <li>• The Contractor shall contain within the site all surface runoff generated from the construction works, concreting works, dust control and vehicle washing, etc.</li> <li>• 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.</li> <li>• 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.</li> </ul>	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	Same as above

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	Construction of all permanent bridges was completed before March 2007. Decking/finishing work of all bridges was completed during the reporting month.
6.11.16		<ul style="list-style-type: none"> <li>• Construction work area for the precast concrete should be outside the designated stream buffer zone area;</li> <li>• The designated work area for precast concrete work should be covered to minimize the potential water runoff during rain from the construction area;</li> <li>• 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;</li> <li>• 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;</li> <li>• Prohibition of any direct and indirect discharge into the streams;</li> <li>• The concrete bridge and footings of abutments must be completely above the high water mark;</li> <li>• All equipment and machinery must be free of leaks or excess oil and grease;</li> <li>• Equipment refueling or servicing or storage of fuel must be undertaken at a minimum of 30 meters from the stream;</li> <li>• Prevent soil and trash from getting into stream during construction by use of silt fence, fiber rolls, gravel bags and other effective means;</li> <li>• All bare soil (abutment slope or temporary stockpile) must be covered with tarpaulin or other means before forecast rain; and</li> <li>• Wash out concrete trucks or pumps only into designated washout pits.</li> </ul>							
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. Application of the discharge licence of the desalination plant was on-going.
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"> <li>• The maximum daily dredging rate for closed grab dredger should be 45m<sup>3</sup>/day;</li> <li>• The maximum daily dredging rate for backhoe should be 20m<sup>3</sup>/day;</li> <li>• Silt curtain should be installed for any dredging methods to protect the WSRs;</li> <li>• Closed grabs or sealed grabs should only be used for locations with water depths ≥ 2m;</li> <li>• Backhoe should only be used for locations with water depths ≤ 2m;</li> <li>• All equipment should be designed and maintained to minimise the risk of silt and other contaminants being released into the water column or deposited in locations other than designated location;</li> </ul>							

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		<ul style="list-style-type: none"> <li>Mechanical grabs should be designed and maintained to avoid spillage and should seal tightly while being lifted;</li> <li>No trailing suction hopper dredgers would be deployed for the dredging of marine mud;</li> <li>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;</li> <li>All pipe leakages should be repaired promptly and plant shall not be operated with leaking pipes;</li> <li>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;</li> <li>Adequate freeboard should be maintained on barges to ensure that decks are not washed by wave action;</li> <li>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;</li> <li>All bottom dumping vessels should be fitted with tight fitting seals to their bottom openings to prevent leakage of material;</li> <li>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</li> <li>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.</li> </ul> <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><b>Silt Curtain</b></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	Construction waste disposed off-site was reported. 50 chit tickets were approved by EPD in December 2007. 28 chit tickets were used in December 2007.	
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.				√			✓	
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	Not 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 disposal record was received during the reporting month. The chemical waste storage area was located at temporary barging point.			
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"><li>• Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site to handle sewage from the workforce;</li><li>• The toilet facilities should be more than 30 m from any watercourse;</li><li>• Temporary storage tank should be provided to collect wastewater from kitchens or canteen, if any;</li><li>• 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 facilities</li></ul> <ul style="list-style-type: none"><li>• Regular 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; and</li><li>• Notices 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.</li></ul>					√. A sewage treatment plant (STP) was provided at the site office. Approximate five mobile toilets were available on site at southern portion of the construction site. The STP and most of the mobile toilets were removed off-site. No sewage disposal record was submitted by the Contractor during the reporting month. No canteen was available. Not observe. √ Not 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 was dismantled.	
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								

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		parameters. The quality of the discharged effluent should comply with the discharge licence requirements. 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		
<b>Waste Management - Construction Phase</b>									
7.7.2		<p>Good site practice to minimize solid waste generation, including:</p> <ul style="list-style-type: none"> <li>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;</li> <li>training of site personnel in proper waste management and chemical waste handling procedures;</li> <li>provision of sufficient waste disposal points and regular collection for disposal;</li> <li>appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;</li> <li>regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;</li> <li>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; and</li> <li>a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed.</li> </ul>	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.	Construction Waste: Disposal recorded was received during the reporting month. Domestic Waste: No disposal recorded was received during the reporting month.
7.7.4		<p>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:</p> <ul style="list-style-type: none"> <li>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;</li> <li>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;</li> <li>any unused chemicals or those with remaining functional capacity shall be recycled;</li> <li>maximising the use of reusable steel formwork to reduce the amount of C&amp;D material;</li> <li>prior to disposal of C&amp;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;</li> <li>proper storage and site practices to minimise the potential for damage or contamination of construction materials;</li> <li>plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste;</li> <li>minimize over ordering of concrete, mortars and cement grout by doing careful check before ordering.</li> </ul>	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.	N/A N/A N/A N/A N/A N/A N/A
7.7.6		<p><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.</p>	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.	All vegetated area within the construction area was removed and disposed off-site in March 2007.
7.7.7		<p>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.</p>							N/A
7.7.8		<p><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 process. It is anticipated that there will be no material requiring disposal off-</p>	Work site / During the construction period	All Contractors		√		WDO; Public Health and Municipal Services Ordinance; The Land (Miscellaneous Provisions) Ordinance;	N/A



EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		site in public filling areas.						ETWB TCW NO. 15/2003.	
7.7.9		<u>Construction and Demolition (C&amp;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.	No sorting of construction waste was observed and improper stockpiles were observed at the temporary barging point.
7.7.10		<u>Site fencing</u> Some site fencing may be required. Attention should be paid to WBTC No. 19/2001 which introduces 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	N/A
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	As most of the heavy equipments and trucks were leaving the construction site. The temporary chemical storage area is relocated at the temporary barging point.
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 banded 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 (Chemical Waste) (General) Regulation</i> . Empty paint cans should be							

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		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.	N/A
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.	N/A
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.
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"> <li>◆ 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.</li> <li>◆ 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.</li> </ul>							

\* 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		
<b>Construction Phase</b>									
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		√		-	N/A
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		√		-	N/A
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		√		-	No silty runoff was observed during the reporting month.
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. Reinstated planting / hydroseeding at the buffer zone area of Stream A was considered not in good condition. Very low abundance of <i>Caridina trifasciata</i> (shrimp) was observed at Streams B and C during the ecology survey.
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		√			N/A
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		√			N/A
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 tentative programme for the removal temporary barging point will be in January 2008.
		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	N/A

\* 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		
<b>Landscape and Visual Impact - Construction Phase</b>									
Table 12.13	MC1	Site offices and construction yards: <ul style="list-style-type: none"> <li>Site offices and the construction yard shall be decommissioned after construction.</li> <li>Haul roads shall be decommissioned and restored with hydroseeding works after construction.</li> </ul>	All site offices	All contractors		√		EIAO Guidance Note No. 8/2002	Complied
Table 12.13	MC2	Height of site offices: <ul style="list-style-type: none"> <li>The height of site offices shall be controlled in order to avoid visual impacts.</li> </ul>	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"> <li>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.</li> </ul>	All site office and construction yard areas.	All contractors		√		EIAO Guidance Note No. 8/2002	Hoarding along the site boundary was dismantled.
Table 12.13	MC4	Construction plant and building material: <ul style="list-style-type: none"> <li>Shall be orderly and carefully stored in order to appear neat and avoid visibility from outside where practical;</li> <li>Excess materials shall be removed from site as soon as practical;</li> <li>All construction plant shall be removed from site upon completion of construction works.</li> </ul>	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"> <li>To be oriented away from the viewing location of VSRs; and</li> <li>All lighting shall have frosted diffusers and reflective covers.</li> <li>While construction at night might be required from time to time, this should be controlled and minimised.</li> </ul>	All construction lights.	All contractors		√		EIAO Guidance Note No. 8/2002	N/A
Table 12.13	MC6	Vegetation: <ul style="list-style-type: none"> <li>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;</li> <li>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; and</li> <li>No 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.</li> </ul>	All temporary construction sites.	All contractors		√		EIAO Guidance Note No. 8/2002	Hydroseeding has been carried out for erosion control but erosion occurred especially to the Restoration Slope.  Complied.
Table 12.13	MT1	Compensation for losses: <ul style="list-style-type: none"> <li>The tree compensation to tree loss ratio shall be between 1:2 and 1:3;</li> <li>At least 700 new trees shall have be of light standard or larger size.</li> </ul>	As shown on mitigation measures plans.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: In progress
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: In progress
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 transplanted 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: Tree planting are being carried out but the quality of most of the planted tree are in poor condition.

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"> <li>New slopes with a gradient larger than 30° shall have whip tree planting.</li> <li>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).</li> </ul>	General.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: In progress.
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: Completed
Table 12.13	MT7	Tree Preservation: <ul style="list-style-type: none"> <li>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;</li> <li>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;</li> <li>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.</li> </ul>	All areas with existing trees	All contractors	√	√		WBTC 24/94, WBTC 14/2002, ETWB 2/2004	Design Stage: Tree felling approved.
Table 12.13	MT8	Buffer Areas <ul style="list-style-type: none"> <li>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.</li> <li>No construction activities will be allowed in the buffer zones, except for site formation works, which are required for the construction of bridge footings.</li> </ul>	At streams	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: No works in buffer areas at present.
Table 12.13	MS1	Bulk hydroseeding: <ul style="list-style-type: none"> <li>Bulk site formation works shall be followed with bulk hydroseeding as soon as practical.</li> </ul>	General.	All contractors		√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: Hydroseeding completed.
Table 12.13	MS2	Grassing: <ul style="list-style-type: none"> <li>In the case of golf course areas, grassing shall be carried out as soon as practical after sanding and shaping; and</li> <li>Sanding, shaping and grassing works shall be phased in sections.</li> </ul>	At proposed grassing areas.	All contractors		√		EIAO Guidance Note No. 8/2002	Construction Stage: Completed.
	MS3	Restoration: <ul style="list-style-type: none"> <li>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</li> <li>The hydroseeding mix shall be composed of the following grass species: <i>Erograstic 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>.</li> </ul>	At all residual areas.	All contractors		√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: Completed but some of the planted shrubs were withered due to inadequate watering.
Table 12.13	ME1	Screening: <ul style="list-style-type: none"> <li>Bridges and pumping stations shall be screened by tree and shrub planting; and</li> <li>Retaining wall shall be covered with climber plants.</li> </ul>	All bridges and pumping stations.	All contractors	√	√		EIAO Guidance Note No. 8/2002	Design Stage: Complied Construction Stage: In progress.
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: Completed.

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: Completed.
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: In Progress.
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: Desalination plant has been constructed. Landscape work to be commenced.
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: In Progress.
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: Completed.
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: Completed
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: Completed.
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: Completed.

\* 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		
<b>Construction Phase</b>									
Table 13.4		Wan Chai Archaeological Site - Archaeological Watching Brief	Site formation and construction works	All Contractors		√		EIAO	Watching brief at Hole 2 was completed in February 2007.
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 <sup>rd</sup> 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		
<b>Land Contamination - Construction Phase</b>									
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"> <li>• The Contractor should sweep the area of intended excavation with a metal detector to check any ordnance underneath the ground prior to any excavation.</li> <li>• 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.</li> <li>• The use of bulk earth-moving excavator equipment would minimise construction workers' potential contact with the contaminated materials;</li> <li>• 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;</li> <li>• 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.</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• Records of the quantities of wastes generated and disposed of should be maintained;</li> <li>• Adequate washing facilities should be provided on site; and</li> <li>• 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>.</li> </ul>	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).	Completed.
11.11.1		<p>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.</p>	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 F**

## **Status of Licensing & Permitting**

### 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 <sup>st</sup> Jan 2006	Approved on 16 <sup>th</sup> February 2006	GW-RE0012-06 (valid until 3 <sup>rd</sup> July 2006)
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 <sup>th</sup> Apr 2006	Approved on 9 <sup>th</sup> Jun 06 (supersede the GW-RE0012-06)	GW-RE0157-06 (valid until 28 <sup>th</sup> Nov 2006)
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.	Nov 2006	Approved on 22 <sup>nd</sup> Nov 06 (supersede the GW-RE0157-06)	GW-RE0384-06 (valid until 26 <sup>th</sup> May 2007).
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.	4 <sup>th</sup> May 2007	Approved on 18 <sup>th</sup> May 07 (supersede the GW-RE0384-06)	GW-RE0141-07 (valid until 25 <sup>th</sup> Nov 2007).
Notification of the air pollution control (construction dust) regulation	21 <sup>st</sup> Jan 2006	Acknowledge receipt from EPD on 27 <sup>th</sup> February 2006	Ref. no.: 001006902
Registration as a chemical waste producer	10 <sup>th</sup> Jan 2006	Register on 7 <sup>th</sup> February 2006	WPN-5213-813-C1186-04
Application for a permit to dump material at sea under the Dumping at Sea Ordinance	10 <sup>th</sup> Jan 2006	Deferred by CHEC on 17 <sup>th</sup> March 2006 (CHEC/KSC3.9.1/0459)	No dredging work will be carried out between May to December 2006.
<i>Application of exemption account for the construction waste charging scheme***</i>	<i>12<sup>th</sup> Jan 2006</i>	<i>Approved on 16<sup>th</sup> January 2006</i>	<i>A/C no. 5005322 (valid until 2<sup>nd</sup> August 2007)</i>
Application for a licence for production pursuant to Section 14 of Air pollution Control Ordinance	2 <sup>nd</sup> 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 <sup>th</sup> Mar 2006	Approved on 12 <sup>th</sup> Sept 2006 (CHEC/KSC3/9.1/0414)	EPD letter refer. No: EP640/W4/J1003

\*\*\* The Contractor reported that 50 chit tickets were approved by EPD in December 2007. However, the Contractor claimed that additional 100 chit tickets are required in order to dispose all of the construction wastes. Up the latest record submitted by the Contractor, 40 chit tickets were used.