



CONTRACT NO: KL/2009/01
SITE FORMATION FOR
KAI TAK CRUISE TERMINAL DEVELOPMENT
ENVIRONMENTAL MONITORING & AUDIT
MONTHLY REPORT

- SEPTEMBER 2010 -

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9 October 2010

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Subject	<u>Agreement No. CE 19/2009 (EP)</u> <u>Dredging Works for Proposed Cruise Terminal at Kai Tak –</u> <u>Monthly Environmental Monitoring & Audit Report for September 2010</u>		

We refer to the revised Monthly EM&A Report for September 2010 that we received through email on 12 October 2010 and are pleased to confirm we have no further comment on the report.

Should you require further information, please feel free to contact us.

Best regards,

Joseph Poon
Independent Environmental Checker

JP/CY/by

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EXECUTIVE SUMMARY

- i. This is the Environmental Monitoring and Audit (EM&A) Monthly Report – September 2010 for Contract No. KL/2009/01 – Site Formation for Kai Tak Cruise Terminal Development. The dredging works has been commenced on 28 June 2010. This report presents the environmental monitoring findings and information recorded in September 2010.

Construction Activities for the Reporting Period

- ii. During this reporting period, the principal work activities included:
- Dredging at Toe of Existing Seawall;
 - Dredging at Submarine Outfall;
 - Maintenance of Silt Curtain and Silt Screens; and
 - Installation of Inert C&D materials Sorting Facility

Water Quality Monitoring

- iii. Water quality monitoring at 6 designated monitoring stations namely WSD9, WSD10, WSD15, WSD17, WSD19 and WSD21 were conducted during the reporting period. As per the EM&A Manual, water quality impact monitoring was conducted during the dredging works, which commenced on 28 June 2010. Suspended solid (SS) exceedances of water quality at various monitoring stations are summarized in **Table I**. However, investigations indicated these exceedances were not related to the Project works.

Table I Summary for the Exceedances Recorded in Reporting Month

Date	Tide	Parameter	Exceedance	Station	Possible Cause of Exceedance
2-Sep-10	Mid-ebb	SS (mg/L)	LL	WSD21	Upstream of the Project
6-Sep-10	Mid-flood	SS (mg/L)	AL	WSD10	Upstream of the Project
10-Sep-10	Mid-ebb	SS (mg/L)	LL	WSD9	Upstream of the Project
18-Sep-10	Mid-ebb	SS (mg/L)	AL	WSD9	Upstream of the Project

Noise Monitoring

- iv. Due to the non-existence of planned NSRs during the reporting period, no noise monitoring was required to be conducted at the planned noise monitoring locations NM1 and NM2.

Waste Management

- v. There were marine sediment (Type 1 – Open Sea Disposal) to South Cheung Chau Spoil Disposal Area denoted “KTCT-1” and “KTCT -2”. No inert C&D material and non-inert C&D material related to dredging works were disposed off site in the reporting month.

Complaints, Notifications of Summons and Successful Prosecutions

- vi. No complaint, notification of prosecutions or summons was received in the reporting period.

Site Inspections and Audit

- vii. The Environmental Team (ET) conducted four site inspections on 7, 14, 24 and 28 September 2010. Observation related to the dredging work during the audit sessions were rectified by the Contractor.

Compliance with Specific EP Conditions

- viii. Implementation of contractor's mitigation for dredging work and the associated dredging records were checked. It was concluded that the dredging is conducted orderly in compliance with the EP requirements on site mitigation measures.

Construction Activities for the Coming Reporting Period

- ix. In the coming reporting period, the principal work activities included:
- Dredging at Toe of Existing Seawall;
 - Dredging at Submarine Outfall;
 - Maintenance of Silt Curtain and Silt Screens;
 - Dredging at Existing Seawall;
 - Installation of Inert C&D materials Sorting Facility; and
 - Sorting of inert C&D materials from existing seawall

1 INTRODUCTION

1.1 SCOPE OF THE REPORT

1.1.1. Lam Environmental Services Limited (LES) has been appointed to work as the Environmental Team (ET) for dredging works to implement the Environmental Monitoring and Audit (EM&A) programme for Contract No. KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development. The dredging work was commenced on 28 June 2010.

1.1.2. This report presents the environmental monitoring and auditing work carried out in accordance to the Section 10.4 under Environmental Monitoring and Audit (EM&A) Manual.

1.1.3. This report documents the finding of EM&A works in September 2010. The cut-off date of reporting is at the end of each reporting month.

1.2 STRUCTURE OF THE REPORT

Section 1 *Introduction* – details of the scope and structure of the report.

Section 2 *Project Background* – summarizes background and scope of the project, site description, project organization and contact details of key personnel during the reporting period.

Section 3 *Implementation Status* – summarizes the status of valid Environmental Permits / Licenses during the reporting period.

Section 4 *Monitoring Requirements* – summarizes all monitoring parameters, monitoring methodology and equipment, monitoring locations, monitoring frequency, criteria and respective event and action plan and monitoring programmes.

Section 5 *Monitoring Results* – summarizes the monitoring results obtained in the reporting period.

Section 6 *Compliance Audit* – summarizes the auditing of monitoring results and all exceedances environmental parameters.

Section 7 *Site Inspection* – summarizes the findings of weekly site inspections undertaken within the reporting period, with a review of any relevant follow-up actions within the reporting period.

Section 8 *Complaints, Notification of Summons and Prosecution* – summarizes the complaints, notification of summons and



successful prosecution for breaches of environmental legislation and the actions taken within the reporting period.

Section 9 *Conclusion*

2 PROJECT BACKGROUND

2.1 BACKGROUND

- 2.1.1. The former Kai Tak Airport located in the south-eastern part of Kowloon Peninsula was the international airport of Hong Kong. The Kai Tak Airport had come into operations since 1920s. The operation of the Kai Tak Airport was ceased and replaced by the new airport at Chek Lap Kok in July 1998. After closure, the disused airport site has been occupied by various temporary uses, including a golf driving range on the runway area.
- 2.1.2. In 2002, the Chief Executive in Council approved the Kai Tak Outline Zoning Plans (No. S/K19/3 and S/K21/3) to provide the statutory framework to proceed with the South East Kowloon Development at the former Kai Tak Airport. However, following the judgment of the Court of Final Appeal in January 2004 regarding the Harbour reclamation, the originally proposed development which involves reclamation has to be reviewed. The Kai Tak Planning Review (KTPR) has resulted with a Preliminary Outline Development Plan (PODP) for Kai Tak in October 2006. Subsequently, the Administration announced in October 2006 a plan to implement a cruise terminal at Kai Tak, as part of the development.
- 2.1.3. Development of the cruise terminal at Kai Tak would require dredging at the existing seawall at the southern tip of the former Kai Tak Airport runway for construction of a quay deck structure for two berths, and dredging the seabed fronting the new quay to provide necessary manoeuvring basin. The general layout of the proposed cruise terminal construction is shown in ***Figure 2.1***.
- 2.1.4. The current Project involves a dredging operation exceeding 500,000m³ for construction and operation of the proposed cruise terminal at Kai Tak and is therefore classified as a Designated Project under Item C.12, Part I, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO). An Environmental Impact Assessment (EIA) Study for the Project has been undertaken in accordance with the EIA Study Brief (No. ESB-159/2006) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM).

2.2 SCOPE OF THE PROJECT AND SITE DESCRIPTION

- 2.2.1. The scope of the Project comprises:
- Dredging of marine sediment of about 700,000 m³ from the existing seabed (Stage 1 dredging) in the Harbour area off the southern tip of the former Kai Tak Airport runway to provide the necessary water depth within the manoeuvring area for cruise vessels; and
 - Removal of existing seawall of about 322,300m³ by dredging at the southern tip of the former Kai Tak Airport runway for cruise berth construction.

2.3 PROJECT ORGANIZATION AND CONTACT PERSONNEL

2.3.1. Kowloon Development Office of Civil Engineering and Development Department is the overall project controller. For the construction phase of KL/2009/01, Project Engineer, Contractor, Environmental Team and Independent Environmental Checker are appointed to manage and control environmental issues.

2.3.2. The proposed project organization and lines of communication with respect to environmental protection works are shown in **Figure 2.2**. Key personnel and contact particulars are summarized in **Table 2.2**:

Table 2.2 Contact Details of Key Personnel

Party	Role	Name	Post	Contact No.	Contact Fax
Civil Engineering and Development Department (Kowloon Development Office)	Project Proponent	Ir. KY Shin	Senior Engineer	2301 1461	2301 1277
URS / Scott Wilson Limited	Engineer's Representative	Mr. Stephen Cheng	Chief Resident Engineer	2148 7638	2148 7277
Penta-Ocean Construction Company Limited	Contractor	Mr. PL Yue	Project Director	2148 7238	2148 7138
		Mr. Warren Tse	Site Agent		
		Mr. Perry Yam	Environmental Officer		
Fugro (HK) Limited	Independent Environmental Checker (IEC)	Mr. Joseph Poon	Independent Environmental Checker (IEC)	2450 8238	2450 6138
Lam Environmental Services Limited	Environmental Team Leader	Mr. Raymond Dai	Environmental Team Leader (ETL)	2882 3939	2882 3331

2.4 CONSTRUCTION PROGRAMME AND WORKS

2.4.1. During this reporting period, the principal work activities included:

- Dredging at Toe of Existing Seawall;
- Dredging at Submarine Outfall;
- Maintenance of Silt Curtain and Silt Screens; and
- Installation of Inert C&D materials Sorting Facility



3 IMPLEMENTATION REQUIREMENTS

3.1 STATUS OF REGULATORY COMPLIANCE

3.1.1. A summary of the current status on licences and/or permits on environmental protection pertinent to the Project is shown in **Table 3.1**.

Table 3.1 Cumulative Summary of Valid Licences and Permits

Permits and/or Licences	Reference No.	Issued Date	Valid Period	Status in Reporting Month
Environmental Permit	EP-328/2009/A	15 Jun 2009	N/A	Valid
Notification of Works Under APCO	KTCT/907/S/3.14/7.00/L/0060 (POC's REF. number) dated 9 December 2009	--	N/A	Valid
Construction Noise Permit (CNP)	GW-RE0166-10	23 Apr 2010	23 April 2010 (19:00) to 22 September, 2010 (24:00)	Valid till 22 Sep 2010
	GW-RE0442-10	10 Sep 2010	23 Sep 2010 (00:00) to 22 Mar 2011 (24:00)	Valid
Discharge Licence	WT00005933-2010	18 Mar 2010	Until 31 March 2015	Valid
Registration of Waste Producer	5213-247-P2984-01	14 Jan 2010	N/A	Valid
Dumping Permit (Type 1 – Open Sea Disposal)	EP/MD/10-051	2 Mar 2010	3 May to 2 Nov 2010	Valid
Dumping Permit (Type 1 – Open Sea Disposal (Dedicated Sites) & Type 2 – Confined Marine Disposal)	EP/MD/11-042	2 Aug 2010	3 Aug to 2 Sep 2010	Valid till 2 Sep 2010
	EP/MD/11-060	2 Sep 2010	3 Sep to 2 Oct 2010	Valid

3.1.2. Implementation status of the recommended mitigation measures during this reporting period is presented in **Appendix 3.1**.

4 MONITORING REQUIREMENTS

4.1 NOISE MONITORING

- 4.1.1. In accordance with the EIA Report and the approved EM&A Manual, it is anticipated that construction activities, if unmitigated, would not cause any adverse noise impact to the nearest NSRs in the vicinity of the work site. The predicted noise levels at the NSRs would comply with construction noise criteria. These nearest NSRs are designated for construction noise monitoring as listed in **Table 4.1**.

Table 4.1 Planned Noise Monitoring Stations

Station	Description
NM1	Planned Residential Development (R3 site)
NM2	Planned Residential Development (R3 site)

- 4.1.2. As per S.3.1.1 of the approved EM&A Manual states that "Noise levels shall be monitored to evaluate the construction noise impact if there is any planned noise sensitive receivers (NSRs) occupied within 300m from the works area of this Project during the proposed dredging works". Therefore, the impact monitoring for construction noise shall only be carried out when the planned residential development at the two identified monitoring stations are occupied at a later stage.

4.2 WATER QUALITY MONITORING

- 4.2.1. The EIA Report has identified that suspended solids (SS) would be the most critical water quality parameter during the dredging operations. Water quality monitoring for SS and turbidity is therefore recommended to be carried out at selected WSD flushing water intakes. The impact monitoring should be carried out during the proposed dredging works for cruise terminal construction to ensure the compliance with the water quality standards.
- 4.2.2. It is proposed to monitor the water quality at six WSD flushing water intakes along the seafront of the Victoria Harbour. The proposed water quality monitoring stations are shown in **Table 4.2** and **Figure 4.1**.

Table 4.2 Water Quality Stations for Baseline and Impact Monitoring

Station Ref.	WSD Flushing Water Intake	Easting	Northing
WSD9	Tai Wan	837921.0	818330.0
WSD10	Cha Kwo Ling	841900.9	817700.1
WSD15	Sai Wan Ho	841110.4	816450.1
WSD17	Quarry Bay	839790.3	817032.2
WSD21	Wan Chai	836220.8	815940.1
WSD19	Sheung Wan	833415.0	816771.0

4.3 WATER QUALITY PARAMETERS

- 4.3.1. During the period of dredging, monitoring should be undertaken three days per week, at mid-flood and mid-ebb tides, with sampling / measurement at the designated monitoring stations as shown in **Table 4.2**. The interval between two sets of monitoring should not be less than 36 hours except where there are exceedances of Action and/or Limit Levels, in which case the monitoring frequency will be increased. **Table 4.3** shows the proposed monitoring frequency and water quality parameters. Duplicate in-situ measurements and water sampling should be carried out in each sampling event. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should not be less than 0.5m.
- 4.3.2. Silt screens shall be deployed at these intakes during the dredging period. It is recommended to conduct the monitoring inside the silt screens at the seawater intake culvert at each seawater pumping station to collect information on the mitigated water quality condition.

Table 4.3 Water Quality Monitoring Frequency and Parameters

Activities	Monitoring Frequency ¹	Parameters ²
During the 4-week baseline monitoring period	Three days per week, at mid-flood and mid-ebb tides	Turbidity (in NTU), Suspended Solids (SS in mg/L)
During dredging works for proposed cruise terminal at Kai Tak	Three days per week, at mid-flood and mid-ebb tides	Turbidity (in NTU), Suspended Solids (SS in mg/L)

Notes:

1. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5m.
2. Turbidity should be measured in situ whereas SS should be determined by laboratory.

4.3.3. The established Action and Limit levels according to the approved baseline monitoring report for monitoring works can be referred to **Appendix 4.1**.

4.3.4. Current calibration certificates of equipments are presented in **Appendix 4.2**.

4.4 SAMPLING PROCEDURES AND MONITORING EQUIPMENT

4.4.1. In-situ measurements and water sampling shall be conducted at mid-depth. Duplicate *in-situ* measurements and water sampling have been conducted in each sampling event. Water samples for all monitoring parameters shall be collected, stored, preserved and analysed according to the Standard Methods, APHA 17 and/or agreed by IEC and EPD.

Dissolved Oxygen and Temperature Measuring Equipment

4.4.2. The instrument should be a portable, weatherproof dissolved oxygen measuring instrument complete with cable, sensor, comprehensive operation manuals, and use a DC power source. It should be capable of measuring:

- a dissolved oxygen level in the range of 0-20 mg/l and 0-200% saturation
- a temperature of 0-45 degree Celsius

4.4.3. It should have a membrane electrode with automatic temperature compensation complete with a cable. Sufficient stocks of spare electrodes and cables should be available for replacement where necessary. (e.g. YSI model 59 meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).

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

Turbidity Measurement Instrument

- 4.4.5. The instrument should be a portable, weatherproof turbidity-measuring instrument complete with comprehensive operation manual. The equipment should use a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0-1000 NTU and be complete with a cable (e.g. Hach model 2100P or an approved similar instrument).

Suspended Solids

- 4.4.6. A water sampler comprises a transparent PVC cylinder, with a capacity of not less than 2 litres, and can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth (e.g. Kahlsico Water Sampler or an approved similar instrument).
- 4.4.7. Water samples for suspended solids measurement should be collected in high-density polythene bottles, packed in ice (cooled to 4°C without being frozen), and delivered to ALS Technichem (HK) Pty Ltd. as soon as possible after collection for analysis.

Water Depth Detector

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

Salinity

- 4.4.9. A portable salinometer capable of measuring salinity in the range of 0-40 ppt shall be provided for measuring salinity of the water at each of monitoring location.

Locating the Monitoring Site

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

Calibration and Accuracy of Instrument

- 4.4.11. All in-situ monitoring instruments shall be checked, calibrated and certified by a laboratory accredited under HOKLAS or equivalent before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with

certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

- 4.4.12. For the on site calibration of field equipment by the ET, the BS 127:1993, "Guide to Field and on-site test methods for the analysis of waters" should be observed.
- 4.4.13. Sufficient stocks of spare parts should be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.
- 4.4.14. The equipments used in the water quality monitoring in the reporting month are summarized in **Table 4.4**. Current calibration certificates of the used equipments are presented in **Appendix 4.2**

Table 4.4 ***Equipments Used in Water Quality Monitoring in the Reporting Month***

Equipment	Model	Qty.
Multi-meter	YSI Sonde 600XL	1
	Hach SensION 156	1
Turbidimeter	Hach 2100P	1

5 MONITORING RESULTS**5.1 WATER MONITORING RESULTS**

- 5.1.1. Due to the Strong Wind Signal no. 3 in force on 20 September 2010, water quality was concerned substantially affected by urban runoff, which cannot represent the normal impact condition of water quality. Thus, the impact water monitoring for mid-flood tide of that day was cancelled. EPD was immediately notified via facsimile. The water monitoring schedule for the reporting month and coming three months are presented in **Appendix 5.1**.
- 5.1.2. Water monitoring results measured in reporting month are reviewed and presented in **Appendix 5.2**. SS exceedances were recorded on 2, 6, 10 and 18 September 2010. EPD was immediately notified the limit level exceedances via facsimile. Since the natural flow during the tides recorded exceedances indicates that the source of impact was located at the upstream of the Project. It was concluded that exceedances were not related to the Project.
- 5.1.3. Since the exceedances recorded in the reporting month are concluded not related to the Project, no further steps under Event and Action Plan is needed. The details of Event and Action Plans and Notification of Exceedance summarizing the finding of investigation, possible causes and review of Contractor's mitigation measures can be referred to **Appendix 5.3** and **Appendix 5.4**.

5.2 WASTE MONITORING RESULTS

- 5.2.1. No inert C&D material and non-inert C&D material related to dredging works were disposed off site in the reporting month.

6 COMPLIANCE AUDIT

6.1 NOISE MONITORING

6.1.1. Noise monitoring was not necessary in the reporting period.

6.2 WATER QUALITY MONITORING

6.2.1. SS exceedances were recorded on 2, 6, 10 and 18 September 2010 in the reporting month. **Table 6.2** summarize the details of SS exceedances recorded. Investigation indicated the exceedances were not related to Project works.

Table 6.2 Summary of Exceedances recorded in the Reporting Month

Date	Tide	Parameter	Exceedance	Station	Possible Cause of Exceedance
2-Sep-10	Mid-ebb	SS (mg/L)	LL	WSD21	Upstream of the Project
6-Sep-10	Mid-flood	SS (mg/L)	AL	WSD10	Upstream of the Project
10-Sep-10	Mid-ebb	SS (mg/L)	LL	WSD9	Upstream of the Project
18-Sep-10	Mid-ebb	SS (mg/L)	AL	WSD9	Upstream of the Project

6.3 DREDGING AND DISPOSAL

6.3.1. Implementation of mitigation measures for dredging work and the associated dredging records were checked and the findings are summarized in **Table 6.3.1**.

Table 6.3.1 Compliance with EP Conditions in the Reporting Month

EP Condition	Compliance Status and/or Recommendation
2.6 Silt Curtain Deployment	In accordance with the EP requirement and Implementation Schedule for Water Quality Measure
2.7 Daily Dredging Rate $\leq 4,000\text{m}^3/\text{d}$ Hourly Dredging Rate $\leq 334\text{m}^3/\text{hr}$	Complied with the EP requirement in reporting month: Daily Dredging Rate maintained at 30-200 m^3/day and Hourly Dredging Rate maintained at 8-29 m^3/hr .
2.8 Silt Screen Deployment	In accordance with the Silt Screen Deployment Plan for all 6 intakes

6.3.2. The daily and hourly dredging rates were checked and reviewed that were below the EP requirements. It was concluded that the dredging was conducted in compliance with the specific EP requirements.

6.3.3. There was marine sediment (Type 1 – Open Sea Disposal) disposed to South Cheung Chau Spoil Disposal Area denoted “KTCT-1” and “KTCT -2”. No inert C&D material and non-inert C&D material related to dredging works were disposed off site in the reporting month. The details can be referred to the **Table 6.3.2**.

Table 6.3.2 Waste Quantities Related To Dredging Works

Waste Type	Quantity this month, m³ (Bulk volume)	Cumulative-to-Date. m³ (Bulk volume)	Disposal / Dumping Ground
Marine Sediment (Type 1 – Open Sea Disposal)	4,209	5,904	South Cheung Chau Spoil Disposal Area denoted “KTCT-1” and “KTCT -2”
Marine Sediment (Type 1 – Open Sea Disposal (Dedicated Sites) and Type 2 – Confined Marine Disposal)	NIL	7,849	East Sha Chau Contaminated Mud Disposal Site – Pit IVc



7 ENVIRONMENTAL SITE AUDIT

- 7.0.1. Site audits were carried out by ET on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project site.
- 7.0.2. The joint site audits were conducted on 7, 14, 24 and 28 September 2010 by the representatives of IEC, ER, the Contractor and the ET. The observation related to the dredging work was summarized in the **Table 7.0.1**.

Table 7.0.1 Observation Identified during the Site Audit

Date	Observations	Action taken by Contractor	Outcome
14 Sep 2010	Silt curtain for dredging activities at submarine outfall should be repaired.	Repairing and maintenance the silt curtain	Completion as observed during the site audit on 24 Sep 2010

8 COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

8.0.1. In this reporting period, no complaint, inspection notice, notification of summons or prosecution was received. Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Tables 8.1, 8.2** and **8.3** respectively.

Table 8.1 Environmental Complaints Log

Complaint Log No.	Date of Receipt	Received From and Received By	Nature of Complaint	Date Investigated	Outcome	Date of Reply
NIL	-	-	-	-	-	-

Table 8.2 Cumulative Statistics on Complaints

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative No. Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

Table 8.3 Cumulative Statistics on Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Successful Prosecutions this month (Offence Date)	Cumulative No. Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

9 CONCLUSION

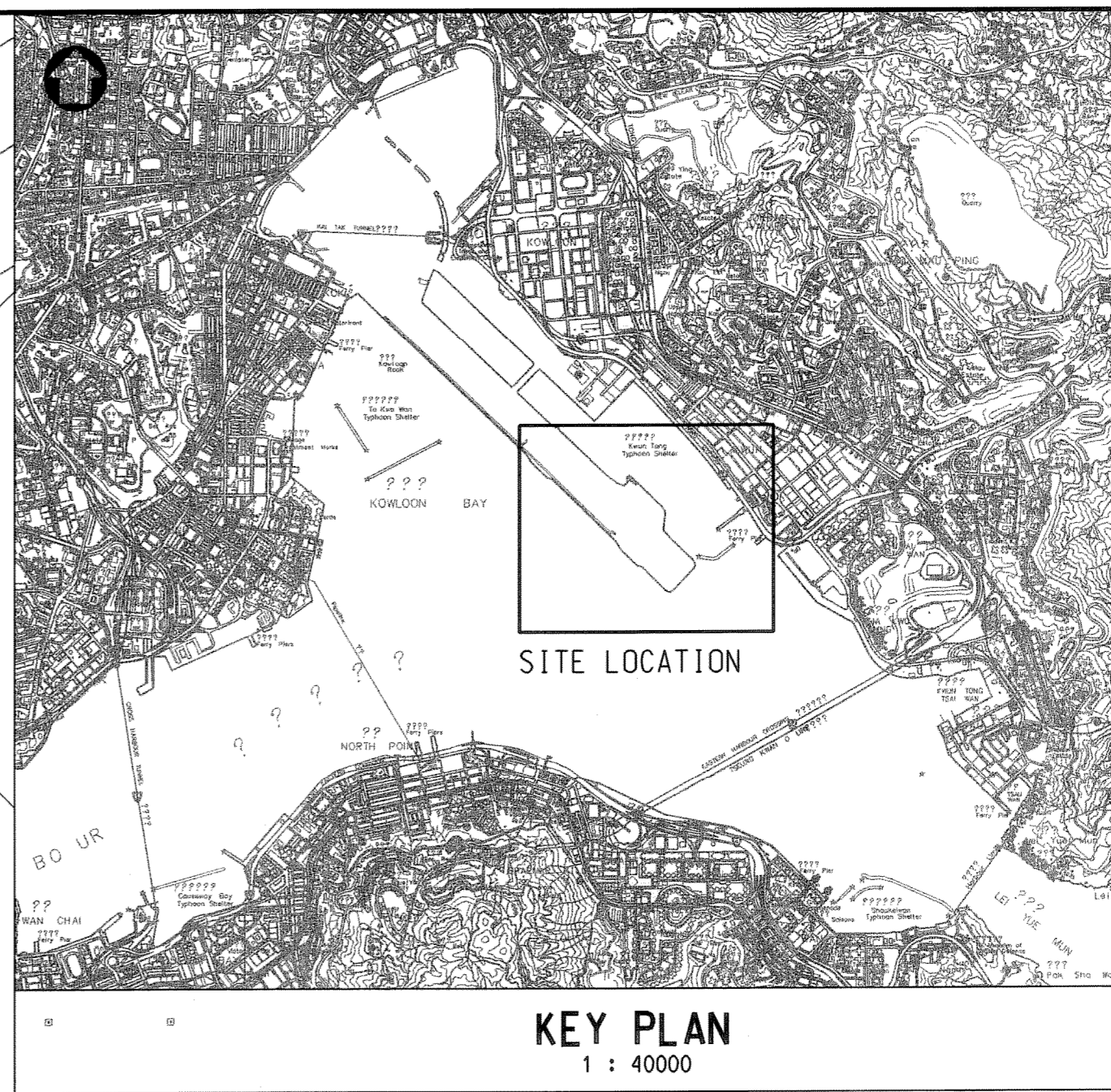
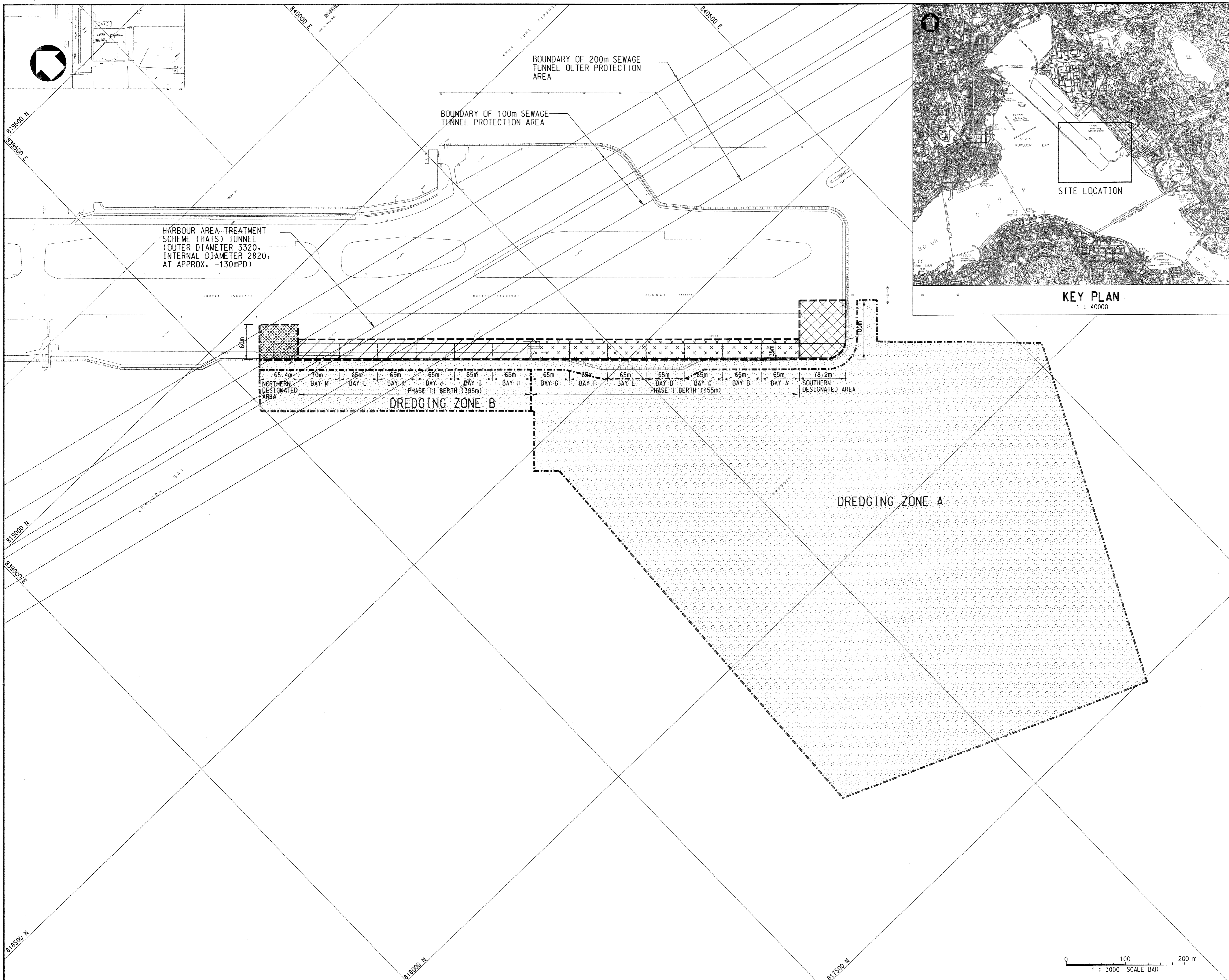
- 9.0.1. The dredging works was commenced on 28 June 2010. The EM&A programme was carried out in accordance with the EM&A Manual requirements. As per the EM&A Manual, water quality impact monitoring was conducted during the dredging work, which was commenced on 28 June 2010.
- 9.0.2. SS exceedances were recorded on 2, 6, 10 and 18 September 2010. Investigation indicated the exceedances were not related to the Project.
- 9.0.3. The scheduled construction activities and the recommended mitigation measures for the coming month are listed in **Table 9.0**. The construction programme of the Project is provided in **Appendix 9.0**.

Table 9.0 Construction Activities and Recommended Mitigation Measures in Coming Report Month

Location	Construction Works	Recommended Mitigation Measures
Marine work	<ul style="list-style-type: none"> • Dredging at Toe of Existing Seawall; • Dredging at Submarine Outfall; • Maintenance of Silt Curtain and Silt Screens; • Dredging at Existing Seawall • Installation of Inert C&D materials Sorting Facility; and • Sorting of inert C&D materials from existing seawall 	<ul style="list-style-type: none"> • Collection and removal of floating refuse at regular intervals on a daily basis such that water within the site boundary and the neighbouring water; • Regular inspection and maintenance of the silt screens and silt curtain; • Silt curtain shall be deployed around the closed grab dredgers used for dredging; • Covering the stockpile and watering the dust surface to suppress dust emission; • 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.



Figure 2.1
General Layout



- NOTES:**
1. ALL COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
 2. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
 3. SETTING OUT REFER TO DRAWING NO.08290/1021.
- LEGEND:**
- SOUTHERN DESIGNATED AREA
 - NORTHERN DESIGNATED AREA
 - DREDGING ZONE / SEAWALL REMOVAL
 - PHASE I BERTH AREA
 - PHASE II BERTH AREA

Rev.	Date	Description	LC	CS
06/09		TENDER		
Rev.	Date	Description	Drawn	Checked
		內容修訂	繪圖	校核

土木工程拓展署
CEPD Civil Engineering and
 Development Department

Contract No.KL200901
 Site Formation for Kai Tak Cruise
 Terminal Development

GENERAL LAYOUT PLAN

Drawing No. 圖則編號	08290/1011			
Designed 設計	Drawn 繪圖	Checked 校核	Scale 比例	
BK	WHM	WCS	1:3000	
Approved 核准	Date 日期	Status 現況		
<i>(Signature)</i>	06/09	TENDER		

Scott Wilson Ltd
 偉信顧問集團有限公司

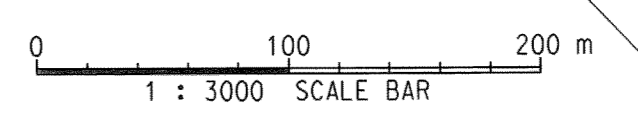




Figure 2.2
Project Organization Chart



Project Organization Chart

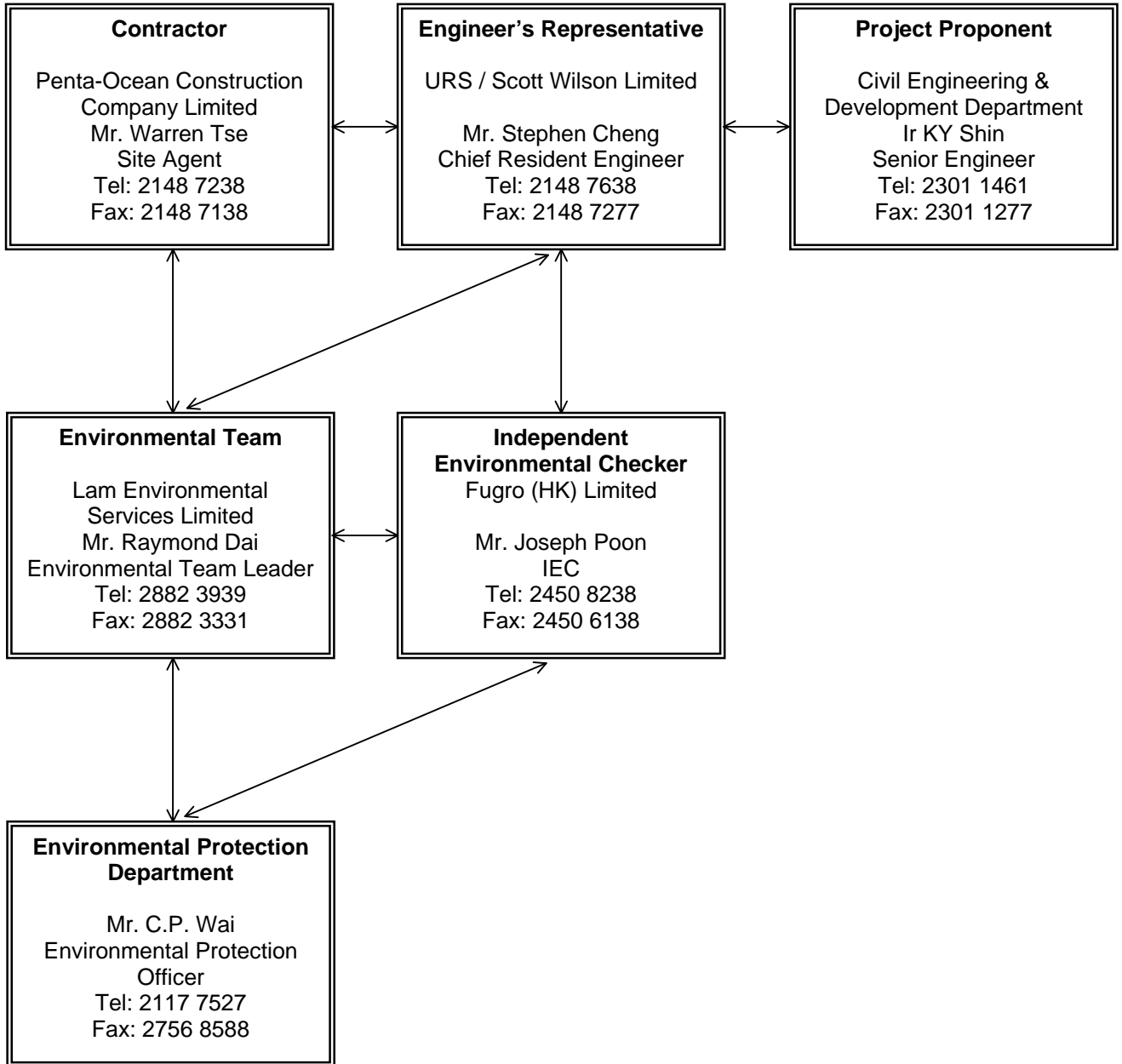
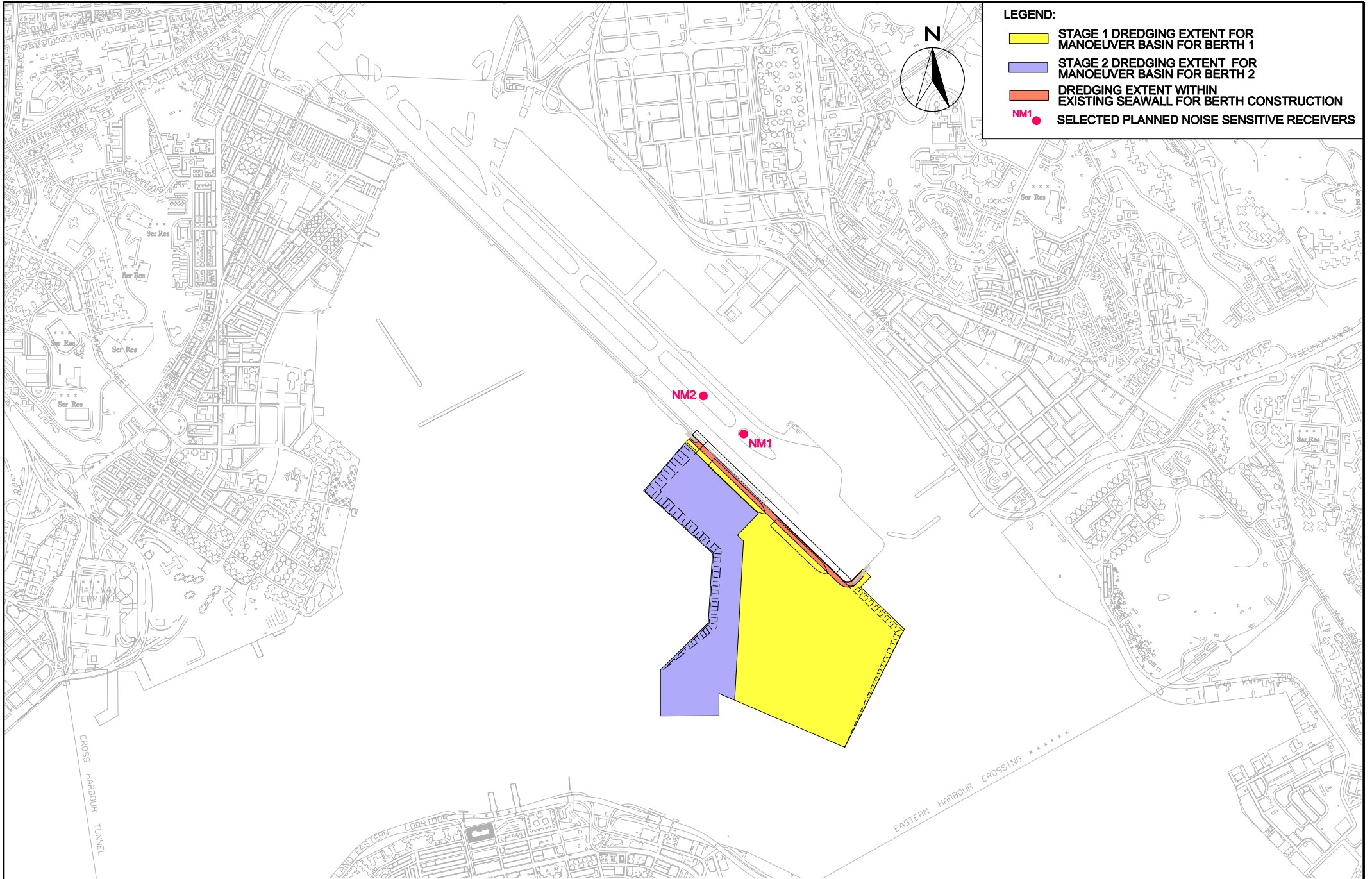
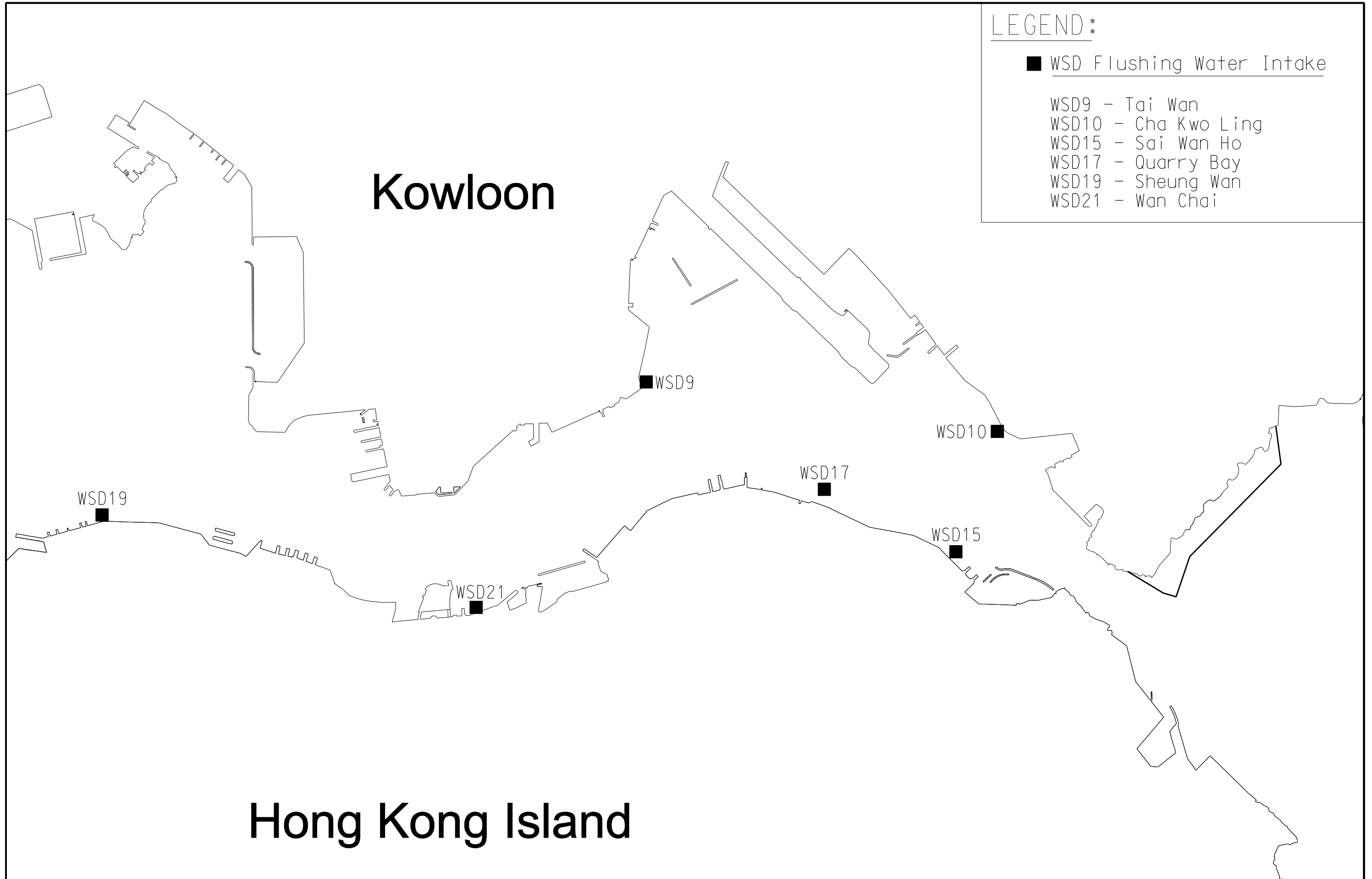




Figure 4.1

Layout of Environmental Monitoring Stations





MAUNSELL | AECOM
 Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)
 KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND
 CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION
WATER QUALITY MONITORING STATIONS

SCALE	A3 1:35000	DATE	AUG 07
CHECK	AKYC	DRAWN	WCM
JOB No.	60022503	DRAWING No.	4.1
		REV	-



Appendix 3.1

Implementation Schedule of Environmental Mitigation Measures



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S3.6	Requirements of the Air Pollution Control (Construction Dust) Regulation shall be adhered to during the construction period.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	Air Pollution Control (Construction Dust) Regulation
S3.6	In order to minimize the potential odour emissions, if any, the dredged sediment placed on barge should be properly covered as far as practicable to minimise the exposed area and hence the potential odour emissions during the transportation of the dredged sediment.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM
S4.8	Good Site Practices: <ul style="list-style-type: none">• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.• Mobile plant, if any, should be sited as far away from NSRs as possible.• Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.• Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	NCO EIAO-TM



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S4.9	If there is any planned NSRs within 300m from the work area occupied during the dredging period, an EM&A programme is recommended to be established according to the predicted occurrence of noisy activities. All the recommended mitigation measures for daytime normal working activities should be incorporated into the EM&A programme for implementation during dredging.	Representative NSRs at the former Kai Tak Airport runway / Upon formal occupation	N/A	Not applicable	NCO EIAO-TM
S5.9	<ul style="list-style-type: none">Dredging will be carried out by closed grab dredger to minimize release of sediment and other contaminants during both capital and maintenance dredging.The maximum production rate for dredging from the seabed to provide necessary manoeuvring area would not be more than 4,000m³ per day (and no more than 2 closed grab dredgers) during capital dredging and 2,000m³ per day (and no more than 1 closed grab dredger) during maintenance dredging.The maximum production rate for dredging at or near the seawall area would not be more than 4,000m³ per day for berth construction. No more than two closed grab dredger would be operated at the same time at or near the seawall for berth construction.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM WPCO
S5.9	Silt curtains should be deployed around the closed grab dredgers used for dredging at and near the existing seawall of the former Kai Tak Airport runway for construction of the cruise berth structures.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S5.9	Silt screens should be installed at the WSD flushing water intakes at Cha Kwo Ling, Sai Wan Ho, Quarry Bay, Sheung Wan, Wan Chai and Tai Wan for dredging in the manoeuvring basin of the first berth during the capital dredging.	Seawater intakes in Victoria Harbour/ During the construction of cruise terminal	Contractor for capital dredging	Implemented	EIAO-TM, WPCO
S5.9	Silt screens should be installed at the WSD flushing water intakes at Cha Kwo Ling, Quarry Bay and Tai Wan for dredging in the manoeuvring basin of the second berth during the capital dredging.	Seawater intakes in Victoria Harbour / During the construction of cruise terminal	Contractor for capital dredging	Implemented	EIAO-TM, WPCO
S5.9	If the opening has been introduced at the northern runway, silt screens should also be installed at the WSD flushing water intake at Sai Wan Ho, Sheung Wan and Wan Chai for dredging in the manoeuvring basin of the second berth during the capital dredging.	Seawater intake at Sai Wan Ho, Sheung Wan and Wan Chai / During the construction of cruise terminal	Contractor for capital dredging	Implemented	EIAO-TM, WPCO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S5.9	<p>Other good site practices that should be undertaken during dredging include:</p> <ul style="list-style-type: none">• all vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;• all barges / dredgers should be fitted with tight fitting seals to their bottom openings to prevent leakage of material;• construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site or dumping grounds;• barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation.	Work site and adjacent waters / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO, EIAO-TM, WPCO, WDO
S5.9	Appropriate numbers of portable chemical toilets shall be provided by a licensed contractor to serve the construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices.	Work site and adjacent waters / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO, WDO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref #	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S5.9	Collection and removal of floating refuse should be performed at regular intervals on a daily basis. The contractor should be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish during the dredging works.	Work site and adjacent waters / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO, WDO
S5.9	An environmental monitoring and audit programme should be implemented to verify whether or not impact predictions are representative, and to ensure that all the recommended mitigation measures are implemented properly. If the water quality monitoring data indicate that the proposed dredging works result in unacceptable water quality impacts in the receiving water, appropriate actions should be taken to review the dredging operation and additional measures such as use of frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works should be implemented as necessary.	6 selected WSD flushing water intakes in Victoria Harbour/ During dredging in construction stage	Environmental Team and verified by Independent Environmental Checker	Implemented	EIAO-TM, WPCO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S5.9	Silt screens are recommended to be deployed at 6 selected WSD flushing water intakes during the capital dredging. The contractor for capital dredging shall demonstrate and ensure that the design of the silt screen will not affect the normal operation of flushing water intake. The contractor shall obtain consensus from all relevant parties, including WSD and Marine Department on the design of the silt screen at each of the six selected flushing water intake points before installation of the silt screen and commencement of the proposed dredging works. As a mitigation measure to avoid the pollutant and refuse entrapment problems and to ensure that the impact monitoring results are representative, regular maintenance of the silt screens and refuse collection should be performed at the monitoring stations at regular intervals on a daily basis. The Contractor should be responsible for keeping the water behind the silt screen free from floating rubbish and debris during the impact monitoring period.	6 selected WSD flushing water intakes in Victoria Harbour/ During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	<p>Good Site Practices</p> <p>It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during the dredging activities include:</p> <ul style="list-style-type: none">• Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.• Training of site personnel in proper waste management and chemical waste handling procedures.• Provision of sufficient waste disposal points and regular collection for disposal.• Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.• A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).• 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.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7 (cont.)	<ul style="list-style-type: none">Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the workforce.Any unused chemicals or those with remaining functional capacity shall be recycled.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM
S6.7	<p>Marine Sediments</p> <p>The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 – Open Sea Disposal. Contaminated sediment would require either Type 1 – Open Sea Disposal (Dedicated Sites) or Type 2 - Confined Marine Disposal and must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the East Sha Chau Contaminated Mud Pits that are designated for the disposal of contaminated mud in Hong Kong.</p>	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	ETWB TCW No. 34/2002



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	It will be the responsibility of the Contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The contractor for the dredging works shall apply for the allocation of marine sediment disposal sites from all relevant authorities.	Work site / During dredging in construction stage	Contractor for capital dredging	Dumping Permits were issued by EPD	ETWB TCW No. 34/2002
S6.7	During transportation and disposal of the dredged marine sediments requiring Type 1 and Type 2 disposal, the following measures shall be taken to minimise potential impacts on water quality: <ul style="list-style-type: none">• Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.• Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP.• Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	WDO; WPCO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	Chemical Wastes After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S6.7	General Refuse General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	WDO, WPCO



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	<p>Construction and Demolition Material</p> <p>It is recommended that the extent of dredging of the existing seawall should be kept to a minimum in the detailed design of the new cruise terminal to minimize generation of C&D material. Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:</p> <ul style="list-style-type: none">• Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.• Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.• Skip hoist for material transport should be totally enclosed by impervious sheeting.• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	Work site / During the construction period	Contractor for capital dredging	Implemented	ETWB TCW No. 33/2002, 31/2004, 19/2005



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7 (cont.)	<ul style="list-style-type: none">• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.• The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.	Work site / During the construction period	Contractor for capital dredging	Implemented	ETWB TCW No. 33/2002, 31/2004, 19/2005
S6.7	When delivering inert C&D material to public fill reception facilities, the material shall consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by the Contractor under the Waste Management Plan certified by the Environmental Team and verified by the Independent Environmental Checker who should be responsible for auditing the results of the system.	Work site / During the construction period	Contractor for capital dredging, Engineer, Environmental Team and Independent Environmental Checker	Not applicable	ETWB TCW No. 31/2004



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S7.8	The dredging activities of the proposed cruise terminal should ensure that disturbance to the existing seawall masonry outside the Project boundary should be avoided as far as practicable.	Work site/ During construction of cruise terminal	Contractor for capital dredging as per CEDD's advice	Implemented	Antiquities and Monuments Ordinance EIAO, EIAO-TM Guidance Notes on Assessment of Impact on Sites of Cultural Heritage in Environmental Impact Assessment Studies (GN-CH) Hong Kong Planning Standards and Guidelines (HKPSG)
S7.10, App. 7.1	It is recommended that the dredged spoil should be monitored for the presence of archaeological material. Guidelines for the monitoring brief have been prepared in consultation with the AMO. A qualified marine archaeologist needs to be on standby to provide specialist advice, if required, but the monitoring can be carried out by a member of staff on the dredging barge.	Work site / during dredging in construction stage	Contractor for capital dredging, Environmental Team	Implemented	Antiquities and Monuments Ordinance EIAO, EIAO-TM GN-CH HKPSG Marine Archaeological Investigation Guidelines



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
8.7	<p>Translocate those existing coral colonies attached on boulders that are manually movable by a diver underwater (possibly longest dimension of less than 50cm) located within the hard substrata sea area within the dredging site as far as practicable prior to the commencement of the capital dredging activities. The entire translocation exercise include the preparation of a detailed translocation plan, the pre-translocation coral survey, the coral translocation, and the quarterly post-translocation monitoring for one year. Pre-translocation survey would be focused on identifying and mapping of coral colonies that would be directly impacted by the proposed dredging and investigating the translocation feasibility of these coral colonies. A detailed translocation plan (including pre-translocation coral survey, translocation methodology and monitoring of transplanted corals) should be prepared during the detailed design stage of the Project which, together with the ecologist involved in coral translocation, should be approved by AFCD prior to commencement of the translocation exercises. The proposed relocation of the coral colonies should not affect any private/public marine rights at the recipient site.</p>	<p>Along the section of the former Kai Tak Airport runway that will be directed affected by the cruise terminal construction / During detailed design stage</p>	<p>Other ET specifically employed for coral translocation works</p>	<p>Final Detailed Coral Translocation Plan was approved by EPD in letter ref. (18) in EP2/K19/C/19 Pt.5 dated 5 June 2009.</p> <p>Form 5 was submitted under CEDD's memo ref. (6) in KD 2/31/4 Pt.3 dated 10 June 2009 regarding minor alteration of the position of the coral recipient site.</p> <p>Coral Translocation Report was submitted in Scott Wilson letter ref. 08290/325723 dated 2 July 2009.</p> <p>Post-translocation report shall be referred to the submissions by another ET specifically employed for coral translocation works.</p>	<p>EIAO-TM</p>



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S8.7	New seawalls at the berth structure of the cruise terminal shall be constructed in order to provide large area of hard substrata for settlement and recruitment of intertidal and subtidal assemblages similar to those previously recorded from existing habitats.	The section of the former Kai Tak Airport runway that will be directed affected by the cruise terminal construction / During detailed design stage	To be confirmed at later stage	To be confirmed at later stage	EIAO-TM
9.6	No fisheries-specific mitigation measures would be required.	-	Not applicable	Not applicable	-



Appendix 4.1

Action and Limit Levels



Action and Limit Levels

Action and Limit Levels for Noise Monitoring

Time Period	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A)

Remarks: No noise monitoring was conducted due to no planned noise sensitive receivers (NSRs) occupied within 300m from the works area of this Project during the dredging works.

Action and Limit Levels for Water Monitoring

Parameters	Action Level		Limit Level			
Turbidity in NTU	<u>All Season</u>		<u>All Season</u>			
	WSD9	5.67	WSD9	12.27		
	WSD10	6.26	WSD10	10.47		
	WSD15	8.15	WSD15	14.41		
	WSD17	11.60	WSD17	16.91		
	WSD21	9.11	WSD21	15.38		
	WSD19	13.09	WSD19	15.34		
Suspended Solids (SS) in mg/L	<u>Dry Season</u> <u>Wet Season</u>		<u>Dry Season</u> <u>Wet Season</u>			
	WSD9	6.9	9.7	WSD9	7.8	10.9
	WSD10	7.7	9.1	WSD10	10.3	12.2
	WSD15	7.8	13.5	WSD15	8.4	14.5
	WSD17	9.5	11.2	WSD17	13.7	16.2
	WSD21	13.3	17.1	WSD21	13.9	17.8
	WSD19	16.3	15.1	WSD19	17.0	15.7

Remarks:
Wet season is from April to September.
Dry season is from October to April.



Appendix 4.2

Copies of Calibration Certificates



CERTIFICATE OF ANALYSIS

CONTACT: MS CHERRY MAK
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG.

PROJECT:

Batch: HK1013018
AMENDMENT NO: 1
LABORATORY: HONG KONG
DATE RECEIVED: 15/06/2010
DATE OF ISSUE: 12/10/2010
SAMPLE TYPE: EQUIPMENT
No. of SAMPLES: 1

COMMENTS

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

NOTES

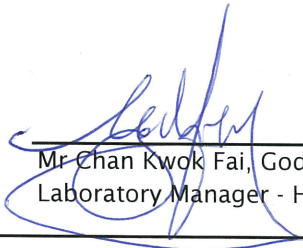
This is the Final Report and supersedes any preliminary report with this batch number. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

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Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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Kuala Lumpur
Bogor

AMERICAS

Vancouver
Santiago
Atofagasta
Lima

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Abbreviations: % SPK REC denotes percentage spike recovery

CHK denotes duplicate check sample

LOR denotes limit of reporting

LCS % REC denotes Laboratory Control Sample percentage recovery

CERTIFICATE OF ANALYSIS



Batch: HK1013018
Amendment No: 1
Date of Issue: 12/10/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference:

Calibration of Multimeter

Item : pH , Temperature , Salinity , DO
ALS Lab ID: HK1013018-001
Date of Calibration: 17 June, 2010

Model No.: YSI Sonde 600XL
Serial No.: 05C1607

Testing Results :

pH

Expected Reading	Recording Reading
4.00	3.90
7.00	7.15
10.00	10.05
Allowing Deviation	± 0.2 unit

Testing Method:

APHA (20th edition), 4500-H⁺B

Conductivity

Expected Reading	Recording Reading
146.9 uS/cm	150 uS/cm
6667 uS/cm	6259 uS/cm
12890 uS/cm	12234 uS/cm
58670 uS/cm	55608 uS/cm
Allowing Deviation	± 10%

Testing Method:

APHA (20th edition), 2510B

Temperature

Expected Reading	Recording Reading
17.0 °C	16.9 °C
24.5 °C	24.6 °C
41.0 °C	40.6 °C
Allowing Deviation	±2.0°C

Testing Method:

In-House Method

Salinity

Expected Reading	Recording Reading
0 g/L	0.01 g/L
10.0 g/L	10.2 g/L
20.0 g/L	20.3 g/L
30.0 g/L	30.8 g/L
Allowing Deviation	± 10%

Testing Method:

APHA (20th edition), 2520 A and B

DO

Expected Reading	Recording Reading
7.67 mg/L	7.70 mg/L
5.97 mg/L	6.02 mg/L
4.70 mg/L	4.86 mg/L
Allowing Deviation	± 0.2 mg/L

Testing Method:

APHA (20th edition), 4500-OC & G



CERTIFICATE OF ANALYSIS

CONTACT: MS CHERRY MAK
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG.
PROJECT:

Batch: HK1019486
AMENDMENT NO: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/08/2010
DATE OF ISSUE: 12/10/2010
SAMPLE TYPE: EQUIPMENT
No. of SAMPLES: 1

COMMENTS

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

NOTES

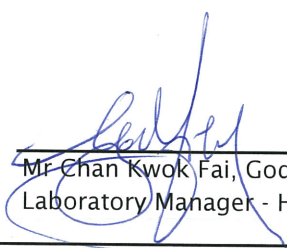
This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

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Abbreviations: % SPK REC denotes percentage spike recovery

CHK denotes duplicate check sample

LOR denotes limit of reporting

LCS % REC denotes Laboratory Control Sample percentage recovery

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A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS



Batch: HK1019486
Amendment No: 1
Date of Issue: 12/10/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference:

Calibration of Multimeter

Item : Multimeter Model No.: HACH SEASION 156
ALS Lab ID: HK1019486 -001 Equipment No.: EN07
Date of Calibration: 25 August, 2010 Serial No.: 1010228

Testing Results :

pH

Expected Reading	Recording Reading
4.00	4.12
7.00	7.13
10.0	9.97
Allowing Deviation	± 0.2 unit

Testing Method:

APHA (20th edition), 4500-H⁺B

Conductivity

Expected Reading	Recording Reading
146.9 uS/cm	142.4 uS/cm
6667 uS/cm	6640 uS/cm
12890 uS/cm	13100 uS/cm
58670 uS/cm	60400 uS/cm
Allowing Deviation	± 10%

Testing Method:

APHA (20th edition), 2510B

Temperature

Expected Reading	Recording Reading
15.5 °C	16.1 °C
26.5 °C	25.8 °C
37.0 °C	36.3 °C
Allowing Deviation	±2.0°C

Testing Method:

In-House Method

Salinity

Expected Reading	Recording Reading
0 g/L	0 g/L
10.0 g/L	10.6 g/L
20.0 g/L	20.8 g/L
30.0 g/L	31.8 g/L
Allowing Deviation	± 10%

Testing Method:

APHA (20th edition), 2520 A and B

DO

Expected Reading	Recording Reading
4.71 mg/L	4.74 mg/L
5.82 mg/L	5.81 mg/L
6.81 mg/L	6.93 mg/L
Allowing Deviation	± 0.2 mg/L

Testing Method:

APHA (20th edition), 4500-OC & G



CERTIFICATE OF ANALYSIS

CONTACT: MS CHERRY MAK
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
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WAN CHAI, HONG KONG.

PROJECT NO.:

Batch: HK1019685
AMENDMENT NO: 1
LABORATORY: HONG KONG
DATE RECEIVED: 26/08/2010
DATE OF ISSUE: 12/10/2010
SAMPLE TYPE: EQUIPMENT
No. of SAMPLES: 1

COMMENTS

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

NOTES

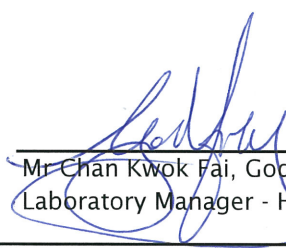
This is the Final Report and supersedes any preliminary report with this batch number. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

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Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AMERICAS

Vancouver
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Atofagasta
Lima

Abbreviations: % SPK REC denotes percentage spike recovery
CHK denotes duplicate check sample
LOR denotes limit of reporting
LCS % REC denotes Laboratory Control Sample percentage recovery

CERTIFICATE OF ANALYSIS



Batch: HK1019685
Amendment No: 1
Date of Issue: 12/10/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference:

Calibration of Turbidimeter

Item : TURBIDIMETER Model No.: 2100P
ALS Lab ID: HK1019685-001 Equipment No.: 1010688-1
Date of Calibration: 27 August, 2010 Serial No.: 930300002705

Testing Results :

Turbidity

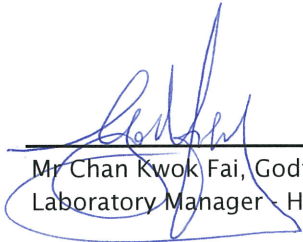
Expected Reading	Recording Reading
0.00 NTU	0.21 NTU
4.00 NTU	3.84 NTU
40.0 NTU	39.4 NTU
80.0 NTU	76.5 NTU
400 NTU	386 NTU
Allowing Deviation	± 10%

Testing Method:

APHA (19th edition), 2130B

ALS Technichem (HK) Pty Ltd

ALS Environmental


Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong



Appendix 5.1

Monitoring Schedule for the Reporting Month and Coming Three Months

Contract No. KL/2009/01
Site Formation for Kai Tak Cruise Terminal Development

Water Quality Monitoring Schedule

September 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Sep	2-Sep	3-Sep	4-Sep
				Impact WQM Mid-ebb: 6:00 Mid-flood: 18:43		Impact WQM Mid-ebb: 8:45 Mid-flood: 21:18
5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep
	Impact WQM Mid-ebb: 10:30 Mid-flood: 17:35		Impact WQM Mid-ebb: 12:06 Mid-flood: 18:33		Impact WQM Mid-flood: 7:18 Mid-ebb: 13:34	
12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep
	Impact WQM Mid-ebb: 3:17 Mid-flood: 10:04			Impact WQM Mid-ebb: 7:03 Mid-flood: 19:40		Impact WQM Mid-ebb: 9:08 Mid-flood: 16:56
19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep
	Impact WQM Mid-ebb: 10:38 Mid-flood: 17:38		Impact WQM Mid-ebb: 11:46 Mid-flood: 18:17		Impact WQM Mid-ebb: 12:47 Mid-flood: 18:53	
26-Sep	27-Sep	28-Sep	29-Sep	30-Sep		
	Impact WQM Mid-flood: 8:41 Mid-ebb: 14:19		Impact WQM Mid-flood: 10:25	Impact WQM Mid-ebb: 3:42		

Notes:

1. Water Quality Monitoring for 6 water quality monitoring stations: WSD9, WSD10, WSD15, WSD17, WSD21, WSD19
2. Actual monitoring will be subjected to change due to any safety concern or adverse weather condition.
3. Cut-off day is the end of day of each month.
4. Due to the Strong Wind Signal no.3 in force on 20 September 2010, water monitoring for mid-flood tide of that day was cancelled.

Contract No. KL/2009/01
 Site Formation for Kai Tak Cruise Terminal Development

Tentative Water Quality Monitoring Schedule

October 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Oct Impact WQM Mid-flood: 18:04	2-Oct Impact WQM Mid-ebb: 6:43
3-Oct	4-Oct Impact WQM Mid-ebb: 9:12 Mid-flood: 16:17	5-Oct	6-Oct Impact WQM Mid-ebb: 10:58 Mid-flood: 17:19	7-Oct	8-Oct Impact WQM Mid-ebb: 12:30 Mid-flood: 18:24	9-Oct
10-Oct	11-Oct Impact WQM Mid-flood: 9:03 Mid-ebb: 14:43	12-Oct	13-Oct Impact WQM Mid-ebb: 3:48 Mid-flood: 11:16	14-Oct	15-Oct	16-Oct Impact WQM Mid-ebb: 7:07 Mid-flood: 15:35
17-Oct	18-Oct Impact WQM Mid-ebb: 9:07 Mid-flood: 16:21	19-Oct	20-Oct Impact WQM Mid-ebb: 10:38 Mid-flood: 17:05	21-Oct	22-Oct Impact WQM Mid-ebb: 11:45 Mid-flood: 17:39	23-Oct
24-Oct	25-Oct Impact WQM Mid-ebb: 13:20 Mid-flood: 18:19	26-Oct	27-Oct Impact WQM Mid-flood: 19:02	28-Oct Impact WQM Mid-ebb: 2:27	29-Oct Impact WQM Mid-flood: 20:20	30-Oct Impact WQM Mid-ebb: 4:24
31-Oct						

Contract No. KL/2009/01
 Site Formation for Kai Tak Cruise Terminal Development

Tentative Water Quality Monitoring Schedule

November 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Nov Impact WQM Mid-ebb: 7:39 Mid-flood: 14:47	2-Nov	3-Nov Impact WQM Mid-ebb: 9:43 Mid-flood: 16:02	4-Nov	5-Nov Impact WQM Mid-ebb: 11:26 Mid-flood: 17:11	6-Nov
7-Nov Impact WQM Mid-flood: 7:19 Mid-ebb: 13:00	8-Nov	9-Nov Impact WQM Mid-flood: 9:04	10-Nov Impact WQM Mid-ebb: 2:32	11-Nov	12-Nov Impact WQM Mid-ebb: 4:06 Mid-flood: 16:25	13-Nov
14-Nov	15-Nov Impact WQM Mid-ebb: 6:52 Mid-flood: 14:42	16-Nov	17-Nov Impact WQM Mid-ebb: 8:55 Mid-flood: 15:38	18-Nov	19-Nov Impact WQM Mid-flood: 16:19 Mid-ebb: 23:10	20-Nov
21-Nov Impact WQM Mid-flood: 17:06	22-Nov Impact WQM Mid-ebb: 0:04	23-Nov Impact WQM Mid-flood: 17:43	24-Nov Impact WQM Mid-ebb: 0:58	25-Nov	26-Nov Impact WQM Mid-flood: 10:19	27-Nov Impact WQM Mid-ebb: 3:09
28-Nov	29-Nov Impact WQM Mid-ebb: 5:39 Mid-flood: 13:04	30-Nov				

Contract No. KL/2009/01
Site Formation for Kai Tak Cruise Terminal Development

Tentative Water Quality Monitoring Schedule

December 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Dec Impact WQM Mid-ebb: 8:16 Mid-flood: 14:37	2-Dec	3-Dec Impact WQM Mid-flood: 15:57 Mid-ebb: 22:46	4-Dec
5-Dec Impact WQM Mid-flood: 17:12	6-Dec Impact WQM Mid-ebb: 0:10	7-Dec	8-Dec Impact WQM Mid-flood: 8:58	9-Dec Impact WQM Mid-ebb: 2:13	10-Dec	11-Dec Impact WQM Mid-ebb: 3:19 Mid-flood: 11:06
12-Dec	13-Dec Impact WQM Mid-ebb: 4:20 Mid-flood: 12:35	14-Dec	15-Dec	16-Dec Impact WQM Mid-flood: 14:17 Mid-ebb: 21:47	17-Dec	18-Dec Impact WQM Mid-flood: 15:15 Mid-ebb: 22:42
19-Dec	20-Dec Impact WQM Mid-flood: 16:27 Mid-ebb: 23:49	21-Dec	22-Dec Impact WQM Mid-flood: 17:54	23-Dec Impact WQM Mid-ebb: 1:13	24-Dec	25-Dec Impact WQM Mid-ebb: 2:45 Mid-flood: 9:52
26-Dec	27-Dec	28-Dec Impact WQM Mid-flood: 12:09 Mid-ebb: 18:19	29-Dec	30-Dec Impact WQM Mid-flood: 13:43 Mid-ebb: 20:58	31-Dec	

Notes:

1. Water Quality Monitoring for 6 water quality monitoring stations: WSD9, WSD10, WSD15, WSD17, WSD21, WSD19
2. Actual monitoring will be subjected to change due to any safety concern or adverse weather condition.
3. Cut-off day is the end of day of each month.



Appendix 5.2

Water Quality Monitoring Results and Graphical Presentation



**Water Monitoring Result at WSD9 - Tai Wan
Mid-Flood Tide**

Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH			Salinity		DO Saturation		DO		Turbidity		Suspended Solids						
					°C		-		ppt		%		mg/L		NTU		mg/L							
			m	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average					
2/9/2010	17:30	Rainy	Middle	2	28.76	28.74	28.80	7.64	7.63	7.59	31.27	31.25	31.28	85.6	85.6	85.0	5.57	5.57	5.52	1.14	1.13	1.16	5	4.5
	17:31		Middle	2	28.84	28.85		7.54	7.53		31.31	31.30		84.5	84.4		5.49	5.44		1.11	1.24		4	
4/9/2010	20:32	Cloudy	Middle	2	27.63	27.62	27.54	7.37	7.37	7.36	30.78	30.77	30.86	73.0	76.2	76.1	5.25	5.28	5.33	1.33	1.35	1.35	5	5.5
	20:33		Middle	2	27.46	27.45		7.35	7.35		30.94	30.93		77.7	77.5		5.40	5.39		1.38	1.35		6	
6/9/2010	17:52	Fine	Middle	2	27.99	27.99	28.00	7.06	7.06	7.05	31.19	31.19	31.22	57.2	56.3	58.5	3.70	3.70	3.87	2.62	2.13	2.49	5	5.5
	18:01		Middle	2	28.01	28.01		7.04	7.04		31.25	31.25		60.3	60.3		4.02	4.04		2.79	2.42		6	
8/9/2010	18:02	Fine	Middle	2	28.36	28.36	28.61	7.42	7.42	7.42	29.81	29.81	29.94	55.8	58.2	57.7	3.62	3.71	3.72	5.26	5.13	5.00	5	6.0
	18:07		Middle	2	28.85	28.85		7.42	7.42		30.07	30.07		57.3	59.3		3.72	3.83		4.88	4.74		7	
10/9/2010	7:20	Cloudy	Middle	3	27.60	27.60	27.70	7.84	7.84	7.84	31.22	31.22	31.23	56.1	55.6	54.8	3.73	3.69	3.64	3.32	3.41	3.18	11	9.5
	7:23		Middle	3	27.80	27.80		7.83	7.83		31.24	31.24		54.2	53.4		3.60	3.55		3.05	2.94		8	
13/9/2010	9:01	Sunny	Middle	2	27.10	27.10	27.15	7.87	7.87	7.87	29.50	29.50	29.51	54.9	54.7	55.0	3.71	3.69	3.71	4.91	4.60	4.63	4	5.0
	9:04		Middle	2	27.20	27.20		7.87	7.87		29.51	29.51		55.4	55.0		3.74	3.71		4.52	4.48		6	
16/9/2010	18:15	Cloudy	Middle	2	29.40	29.40	29.40	7.40	7.40	7.41	29.53	29.53	29.53	78.0	76.8	77.0	5.06	4.98	4.99	3.52	3.35	3.47	4	4.0
	18:21		Middle	2	29.39	29.39		7.42	7.42		29.53	29.53		76.0	77.2		4.90	5.03		3.53	3.48		4	
18/9/2010	16:55	Fine	Middle	2	29.81	29.81	29.81	7.20	7.20	7.21	29.43	29.43	29.43	76.3	76.4	75.6	4.85	4.85	4.80	2.95	2.77	2.87	8	8.0
	17:01		Middle	2	29.81	29.81		7.21	7.21		29.43	29.43		75.2	74.4		4.78	4.72		2.76	2.99		8	
20/9/2010	-	Rain	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
22/9/2010	17:23	Cloudy	Middle	2	27.27	27.27	27.27	6.87	6.88	6.88	29.81	29.81	29.82	66.3	66.8	67.2	4.46	4.48	4.51	3.46	3.83	3.69	7	6.5
	17:30		Middle	2	27.27	27.26		6.88	6.88		29.82	29.82		66.9	68.8		4.49	4.62		3.62	3.86		6	
24/9/2010	18:05	Fine	Middle	2	27.96	27.96	27.96	6.72	6.72	6.72	30.93	30.93	30.93	63.6	65.6	63.2	4.19	4.32	4.16	3.46	3.76	3.47	6	5.5
	18:11		Middle	2	27.96	27.95		6.72	6.72		30.93	30.93		62.4	61.1		4.11	4.03		3.28	3.39		5	
27/9/2010	7:35	Sunny	Middle	2	26.50	26.50	26.65	7.97	7.97	7.96	30.60	30.60	30.62	76.5	75.2	75.7	4.99	4.88	4.93	3.34	2.83	2.99	5	5.0
	7:38		Middle	2	26.80	26.80		7.95	7.95		30.63	30.63		77.9	73.1		5.09	4.77		2.88	2.90		5	
29/9/2010	9:40	Sunny	Middle	3	27.30	27.30	27.55	7.89	7.89	7.92	30.39	30.39	30.33	78.2	76.7	77.2	5.20	5.10	5.13	3.77	2.90	3.11	4	4.0
	9:43		Middle	3	27.80	27.80		7.94	7.94		30.27	30.27		77.5	76.4		5.15	5.07		2.98	2.78		4	



**Water Monitoring Result at WSD10 - Cha Kwo Ling
Mid-Flood Tide**

Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH			Salinity		DO Saturation		DO		Turbidity		Suspended Solids						
					°C		-		ppt		%		mg/L		NTU		mg/L							
			m	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average					
2/9/2010	17:10	Rainy	Middle	2	28.61	28.59	28.70	7.49	7.49	7.49	31.10	31.11	31.14	88.6	88.7	88.4	5.71	5.73	5.72	2.54	2.66	2.88	7	7.5
	17:11		Middle	2	28.80	28.79		7.49	7.48		31.17	31.18		88.4	88.0		5.72	5.70		3.27	3.05		8	
4/9/2010	19:50	Cloudy	Middle	2	28.58	28.62	28.47	7.33	7.32	7.35	32.13	32.16	32.12	68.5	65.1	66.9	4.54	4.41	4.50	1.94	1.82	1.98	8	8.5
	19:51		Middle	2	28.33	28.35		7.36	7.37		32.10	32.09		67.4	66.7		4.54	4.49		2.29	1.87		9	
6/9/2010	16:36	Fine	Middle	2	28.05	28.05	28.19	6.98	6.98	6.99	31.36	31.36	31.49	63.4	64.2	66.1	4.23	4.22	4.38	3.96	4.12	3.84	11	11.0
	16:42		Middle	2	28.33	28.33		6.99	6.99		31.61	31.61		68.4	68.4		4.53	4.54		3.64	3.64		11	
8/9/2010	17:06	Fine	Middle	2	28.74	28.73	28.70	7.18	7.18	7.18	30.45	30.45	30.34	60.1	57.2	58.8	3.72	3.61	3.71	5.90	5.58	5.95	9	9.0
	17:11		Middle	2	28.66	28.66		7.17	7.17		30.23	30.23		60.5	57.5		3.64	3.85		6.32	6.00		9	
10/9/2010	6:55	Cloudy	Middle	3	27.70	27.70	27.80	7.90	7.90	7.90	31.34	31.34	31.34	56.3	52.0	53.9	3.74	3.45	3.58	2.97	3.22	3.19	9	9.0
	6:58		Middle	3	27.90	27.90		7.90	7.91		31.34	31.34		53.9	53.2		3.58	3.53		3.51	3.06		9	
13/9/2010	8:18	Sunny	Middle	2	26.50	26.50	26.55	7.87	7.87	7.88	29.24	29.24	29.13	51.4	50.3	51.4	3.50	3.43	3.51	5.99	6.07	5.92	6	6.0
	8:21		Middle	2	26.60	26.60		7.88	7.88		29.02	29.02		52.9	51.0		3.61	3.48		5.89	5.71		6	
16/9/2010	18:35	Cloudy	Middle	2	29.20	29.20	29.20	7.33	7.33	7.33	29.77	29.77	29.77	89.3	89.2	89.3	5.81	5.80	5.81	3.64	3.35	3.50	5	6.0
	18:42		Middle	2	29.19	29.19		7.33	7.33		29.77	29.77		89.7	89.1		5.83	5.80		3.60	3.39		7	
18/9/2010	16:00	Fine	Middle	2	30.29	30.69	30.62	7.41	7.41	7.42	29.08	29.08	29.12	83.2	84.0	84.0	5.21	5.23	5.26	2.69	3.05	2.96	7	6.0
	16:06		Middle	2	30.74	30.74		7.42	7.42		29.15	29.15		84.9	84.0		5.32	5.26		3.07	3.03		5	
20/9/2010	-	Rain	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
22/9/2010	16:47	Cloudy	Middle	2	27.45	27.45	27.44	6.92	6.92	6.92	29.61	29.61	29.62	72.7	70.5	69.7	4.87	4.75	4.70	4.50	4.26	4.19	8	7.5
	16:54		Middle	2	27.43	27.43		6.92	6.92		29.63	29.63		67.3	68.1		4.62	4.56		3.95	4.04		7	
24/9/2010	17:21	Fine	Middle	2	27.87	27.87	27.88	6.69	6.69	6.70	31.10	31.10	31.10	64.0	64.9	64.1	4.22	4.28	4.23	2.48	2.38	2.66	5	4.5
	17:27		Middle	2	27.88	27.88		6.70	6.70		31.10	31.10		63.9	63.6		4.21	4.20		2.94	2.82		4	
27/9/2010	8:05	Sunny	Middle	2	26.40	26.40	26.55	7.97	7.97	7.98	31.18	31.18	31.15	77.8	77.2	77.4	5.07	5.05	5.04	3.34	3.71	3.49	8	7.0
	8:08		Middle	2	26.70	26.70		7.99	8.00		31.12	31.12		78.0	76.7		5.08	4.94		3.29	3.62		6	
29/9/2010	10:20	Sunny	Middle	3	27.70	27.70	27.85	8.07	8.07	8.08	31.09	31.09	31.01	84.2	82.9	83.6	5.53	5.46	5.51	5.07	4.38	4.70	8	8.5
	10:24		Middle	3	28.00	28.00		8.09	8.09		30.93	30.93		84.8	82.6		5.59	5.44		4.71	4.63		9	



**Water Monitoring Result at WSD15 - Sai Wan Ho
Mid-Flood Tide**

Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH				Salinity		DO Saturation		DO		Turbidity		Suspended Solids					
					°C		-		ppt		%		mg/L		NTU		mg/L							
			m	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average					
2/9/2010	20:10	Rainy	Middle	3	29.90	29.92	29.45	7.63	7.64	7.66	31.39	31.38	31.36	88.5	88.4	88.2	5.73	5.72	5.70	0.88	0.92	1.00	3	3.5
	20:11		Middle	3	28.96	29.02		7.68	7.68		31.32	31.33		88.0	88.0		5.67	5.67		1.15	1.05		4	
4/9/2010	22:37	Cloudy	Middle	3	27.69	27.67	27.70	7.33	7.32	7.34	30.51	30.53	30.55	72.8	72.7	74.0	5.05	5.04	5.15	2.25	2.17	2.19	5	4.0
	22:38		Middle	3	27.70	27.72		7.36	7.35		30.56	30.60		74.2	76.2		5.17	5.32		2.21	2.13		3	
6/9/2010	19:16	Fine	Middle	3	28.43	28.43	28.36	7.13	7.13	7.13	30.91	30.91	31.09	61.7	61.5	63.5	4.13	4.02	4.21	1.65	1.53	1.66	4	5.0
	16:21		Middle	3	28.29	28.29		7.13	7.13		31.26	31.26		64.4	66.2		4.35	4.33		1.76	1.70		6	
8/9/2010	20:03	Fine	Middle	3	28.22	28.21	28.58	7.51	7.51	7.51	31.73	31.75	31.84	55.5	56.8	57.3	3.57	3.64	3.63	2.10	2.13	2.37	3	3.0
	20:09		Middle	3	28.95	28.95		7.51	7.51		31.93	31.93		56.3	60.7		3.67	3.63		2.72	2.52		3	
10/9/2010	7:43	Cloudy	Middle	3	27.60	27.60	27.75	7.65	7.65	7.65	30.98	30.98	31.00	55.1	50.6	53.5	3.66	3.33	3.54	4.07	4.12	4.07	9	8.0
	7:46		Middle	3	27.90	27.90		7.64	7.64		31.01	31.01		54.4	53.9		3.60	3.55		3.86	4.24		7	
13/9/2010	11:30	Sunny	Middle	2	26.40	26.40	26.55	7.92	7.92	7.92	30.03	30.03	29.98	52.4	50.5	51.7	3.55	3.41	3.50	4.00	3.86	3.97	3	3.0
	11:33		Middle	2	26.70	26.70		7.92	7.92		29.93	29.93		52.2	51.8		3.53	3.51		4.34	3.69		3	
16/9/2010	20:02	Cloudy	Middle	3	29.18	29.17	29.17	7.48	7.48	7.48	30.18	30.18	30.19	71.6	72.2	70.2	4.65	4.64	4.54	2.97	3.24	3.05	6	7.0
	20:10		Middle	3	29.16	29.16		7.48	7.48		30.20	30.20		68.2	68.6		4.43	4.45		3.02	2.96		8	
18/9/2010	18:18	Fine	Middle	3	30.44	30.44	30.44	7.20	7.20	7.20	30.27	30.27	30.27	75.9	75.2	75.9	4.79	4.78	4.81	1.79	2.06	1.79	4	3.5
	18:25		Middle	3	30.44	30.44		7.20	7.20		30.27	30.27		76.2	76.4		4.82	4.85		1.66	1.63		3	
20/9/2010	-	Rain	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
22/9/2010	19:25	Cloudy	Middle	3	27.15	27.15	27.15	6.89	6.89	6.89	31.03	31.03	31.04	56.2	58.2	56.4	3.75	3.89	3.77	3.66	3.49	3.43	6	6.0
	19:32		Middle	3	27.15	27.15		6.89	6.89		31.04	31.04		56.7	54.4		3.79	3.64		3.36	3.20		6	
24/9/2010	19:20	Fine	Middle	3	27.53	27.53	27.53	6.64	6.63	6.64	31.62	31.62	31.63	52.3	53.6	54.1	3.46	3.55	3.58	1.90	1.78	1.91	2	2.5
	19:29		Middle	3	27.53	27.54		6.64	6.64		31.63	31.63		53.9	56.4		3.57	3.73		1.94	2.01		3	
27/9/2010	8:29	Sunny	Middle	2	27.10	27.10	27.30	7.99	7.99	8.01	31.15	31.15	31.09	60.8	60.4	61.4	4.06	4.03	4.09	2.89	2.70	2.69	4	4.0
	8:32		Middle	2	27.50	27.50		8.02	8.02		31.03	31.03		63.3	61.0		4.20	4.05		2.67	2.51		4	
29/9/2010	11:01	Sunny	Middle	3	27.60	27.60	27.80	8.11	8.11	8.12	31.11	31.11	31.05	90.8	89.5	90.8	5.98	5.89	5.98	4.00	3.72	3.81	7	6.0
	11:05		Middle	3	28.00	28.00		8.12	8.12		30.99	30.99		91.9	91.1		6.05	5.99		3.84	3.69		5	



**Water Monitoring Result at WSD17 - Quarry Bay
Mid-Flood Tide**

Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH			Salinity		DO Saturation		DO		Turbidity		Suspended Solids						
					°C		-		ppt		%		mg/L		NTU		mg/L							
			m	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average					
2/9/2010	19:55	Rainy	Middle	3	29.40	29.41	29.32	7.48	7.49	7.50	30.28	30.36	30.30	81.0	81.0	80.4	5.15	5.15	5.12	2.01	1.95	2.02	4	4.5
	19:56		Middle	3	29.24	29.22		7.51	7.51		30.27	30.28		78.7	80.8		5.07	5.12		2.11	2.01		5	
4/9/2010	22:21	Cloudy	Middle	3	28.14	28.12	28.14	7.48	7.47	7.45	30.68	30.69	30.80	88.1	87.9	86.2	6.00	5.99	5.90	1.17	1.22	1.09	4	5.0
	22:22		Middle	3	28.16	28.15		7.42	7.41		30.91	30.90		86.3	82.3		5.93	5.66		0.97	0.98		6	
6/9/2010	19:00	Fine	Middle	3	27.89	27.89	27.54	7.00	7.00	7.00	31.02	31.02	31.02	55.7	55.1	55.9	3.64	3.65	3.71	2.31	2.18	2.18	4	4.5
	19:05		Middle	3	27.18	27.18		7.00	6.99		31.02	31.02		54.8	58.0		3.66	3.87		2.09	2.14		5	
8/9/2010	19:39	Fine	Middle	3	28.89	28.89	28.86	7.50	7.50	7.50	31.85	31.85	31.85	57.0	57.4	57.4	3.68	3.71	3.70	2.11	1.96	2.22	3	3.0
	19:47		Middle	3	28.83	28.83		7.50	7.50		31.84	31.84		56.8	58.4		3.66	3.76		2.40	2.42		3	
10/9/2010	8:05	Cloudy	Middle	3	27.80	27.80	27.80	7.95	7.95	7.96	31.72	31.72	31.73	55.5	53.9	54.4	3.67	3.55	3.59	6.84	7.07	6.89	10	9.5
	8:08		Middle	3	27.80	27.80		7.96	7.96		31.74	31.74		54.5	53.6		3.60	3.53		6.66	6.97		9	
13/9/2010	11:53	Sunny	Middle	3	26.50	26.50	26.65	7.95	7.95	7.95	31.45	31.45	31.46	54.7	51.5	52.7	3.67	3.46	3.54	4.65	4.86	4.68	4	3.5
	11:56		Middle	3	26.80	26.80		7.94	7.94		31.46	31.46		52.7	52.0		3.54	3.49		4.71	4.50		3	
16/9/2010	19:49	Cloudy	Middle	3	29.35	29.35	29.35	7.35	7.35	7.36	29.80	29.80	29.81	81.5	80.7	81.0	5.28	5.23	5.25	3.24	3.19	3.17	7	7.5
	19:56		Middle	3	29.35	29.35		7.36	7.36		29.81	29.81		80.8	80.8		5.24	5.24		3.06	3.17		8	
18/9/2010	18:00	Fine	Middle	3	29.92	29.91	29.91	7.17	7.17	7.17	29.48	29.48	29.49	61.8	59.7	60.9	3.98	3.84	3.95	3.50	3.46	3.37	5	5.5
	18:07		Middle	3	29.90	29.89		7.17	7.17		29.49	29.50		63.9	58.2		4.11	3.86		3.14	3.36		6	
20/9/2010	-	Rain	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
22/9/2010	19:05	Cloudy	Middle	3	27.34	27.33	27.32	6.90	6.90	6.90	30.45	30.45	30.46	52.7	53.4	55.1	3.52	3.57	3.69	2.11	2.10	1.90	5	5.0
	19:11		Middle	3	27.31	27.31		6.90	6.90		30.47	30.47		57.4	57.0		3.84	3.81		1.61	1.77		5	
24/9/2010	19:05	Fine	Middle	3	27.40	27.41	27.42	6.62	6.63	6.63	31.44	31.45	31.49	52.6	52.7	52.7	3.49	3.50	3.49	2.61	2.93	2.85	4	4.0
	19:11		Middle	3	27.43	27.43		6.64	6.64		31.53	31.53		52.5	52.8		3.48	3.50		2.97	2.87		4	
27/9/2010	9:25	Sunny	Middle	3	27.30	27.30	27.45	8.10	8.10	8.11	31.26	31.26	31.20	85.5	84.0	84.1	5.63	5.52	5.52	5.23	5.06	4.98	8	9.0
	9:28		Middle	3	27.60	27.60		8.12	8.12		31.13	31.13		83.6	83.1		5.48	5.44		4.84	4.78		10	
29/9/2010	11:30	Sunny	Middle	3	27.80	27.80	28.00	8.15	8.15	8.16	31.20	31.20	31.14	87.3	86.8	86.4	5.75	5.70	5.68	4.94	4.82	5.31	6	5.0
	11:33		Middle	3	28.20	28.20		8.16	8.16		31.07	31.07		86.4	85.1		5.67	5.59		4.68	6.80		4	



**Water Monitoring Result at WSD21 - Wan Chai
Mid-Flood Tide**

Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH			Salinity		DO Saturation		DO		Turbidity		Suspended Solids						
					°C		-		ppt		%		mg/L		NTU		mg/L							
			m	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average					
2/9/2010	19:05	Rainy	Middle	2	29.03	29.01	29.09	7.44	7.44	7.49	30.72	30.73	30.76	83.0	82.3	82.3	5.48	5.47	5.47	2.03	2.05	1.96	6	5.0
	19:06		Middle	2	29.17	29.16		7.55	7.53		30.79	30.80		81.9	81.9		5.46	5.46		1.81	1.95		4	
4/9/2010	22:02	Cloudy	Middle	2	28.11	28.10	28.06	7.30	7.31	7.29	30.45	30.46	30.42	65.1	64.5	65.2	4.44	4.40	4.45	1.88	1.87	1.70	4	4.0
	22:03		Middle	2	28.01	28.03		7.27	7.28		30.38	30.39		66.0	65.1		4.51	4.45		1.55	1.49		4	
6/9/2010	19:35	Fine	Middle	2	28.17	28.17	28.24	7.02	7.02	7.02	30.59	30.59	30.55	53.2	55.8	57.5	3.44	3.61	3.69	1.95	2.05	2.07	6	5.5
	19:40		Middle	2	28.32	28.30		7.02	7.02		30.51	30.51		60.1	60.9		3.86	3.86		2.15	2.11		5	
8/9/2010	18:55	Fine	Middle	2	27.94	27.94	28.02	7.16	7.16	7.18	29.70	29.70	29.69	64.7	64.8	65.4	4.30	4.30	4.34	3.91	3.94	3.93	9	9.0
	19:01		Middle	2	28.10	28.10		7.19	7.19		29.67	29.67		65.1	66.9		4.31	4.44		3.96	3.90		9	
10/9/2010	8:12	Cloudy	Middle	3	24.00	24.30	24.23	7.87	7.85	7.86	32.00	32.60	32.30	73.5	72.2	71.8	5.13	5.05	5.02	4.82	4.47	4.69	5	6.5
	8:15		Middle	3	24.50	24.10		7.89	7.84		32.00	32.60		70.9	70.6		4.98	4.93		4.72	4.75		8	
13/9/2010	10:20	Sunny	Middle	2	25.90	25.90	25.95	7.74	7.74	7.75	32.00	32.00	32.05	61.5	61.2	61.6	4.15	4.13	4.16	2.86	2.56	2.71	6	6.5
	10:23		Middle	2	26.00	26.00		7.75	7.75		32.10	32.10		62.0	61.8		4.18	4.17		2.66	2.77		7	
16/9/2010	19:36	Cloudy	Middle	2	29.21	29.21	29.21	7.23	7.22	7.23	29.29	29.29	29.29	61.5	64.4	62.6	4.01	4.20	4.08	4.78	4.40	4.55	9	8.0
	19:42		Middle	2	29.20	29.20		7.23	7.23		29.29	29.29		63.7	60.9		4.15	3.97		4.53	4.49		7	
18/9/2010	18:51	Fine	Middle	2	30.25	30.25	30.25	7.13	7.13	7.13	28.76	28.77	28.77	56.7	52.3	53.6	3.64	3.36	3.44	3.23	2.97	3.12	7	8.0
	18:57		Middle	2	30.25	30.25		7.13	7.13		28.77	28.77		52.0	53.3		3.34	3.43		3.10	3.17		9	
20/9/2010	-	Rain	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
22/9/2010	18:53	Cloudy	Middle	2	27.60	27.59	27.58	6.85	6.85	6.86	29.63	29.64	29.64	58.5	58.6	58.9	3.91	3.92	3.94	2.28	2.23	2.22	4	4.0
	18:59		Middle	2	27.56	27.56		6.86	6.86		29.64	29.64		59.2	59.3		3.96	3.96		2.19	2.16		4	
24/9/2010	19:24	Fine	Middle	2	27.25	27.25	27.25	6.54	6.54	6.54	30.80	30.80	30.70	51.3	55.5	54.0	3.43	3.71	3.61	2.25	2.05	2.25	6	5.0
	19:31		Middle	2	27.25	27.25		6.54	6.54		30.60	30.60		52.8	56.3		3.53	3.76		2.24	2.47		4	
27/9/2010	9:56	Sunny	Middle	2	28.70	28.60	28.63	7.88	7.91	7.90	30.80	30.70	30.78	71.1	67.2	66.6	4.90	4.57	4.56	5.42	5.21	5.27	7	7.0
	9:59		Middle	2	28.50	28.70		7.90	7.92		30.90	30.70		63.8	64.1		4.38	4.40		5.24	5.22		7	
29/9/2010	10:40	Sunny	Middle	2	29.60	29.60	29.55	7.87	7.86	7.85	31.20	31.30	31.23	59.4	56.5	59.0	4.13	3.96	4.11	3.71	3.52	3.46	9	10.0
	10:43		Middle	2	29.50	29.50		7.84	7.84		31.20	31.20		59.9	60.2		4.16	4.20		3.34	3.27		11	



**Water Monitoring Result at WSD19 - Sheung Wan
Mid-Flood Tide**

Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH			Salinity		DO Saturation		DO		Turbidity		Suspended Solids						
					°C		-		ppt		%		mg/L		NTU		mg/L							
			m	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average					
2/9/2010	18:47	Rainy	Middle	2	28.27	28.22	28.39	7.38	7.38	7.39	30.46	30.45	30.47	78.4	78.2	78.1	5.25	5.24	5.22	3.08	2.79	2.58	6	5.5
	18:48		Middle	2	28.54	28.53		7.39	7.39		30.47	30.50		77.8	77.8		5.20	5.20		2.27	2.18		5	
4/9/2010	21:12	Cloudy	Middle	2	28.43	28.42	28.38	7.30	7.29	7.31	30.56	30.57	30.58	65.9	66.2	66.5	4.63	4.64	4.67	2.59	2.75	2.49	5	5.5
	21:13		Middle	2	28.33	28.32		7.32	7.31		30.59	30.60		69.3	64.6		4.87	4.55		2.36	2.24		6	
6/9/2010	19:43	Fine	Middle	2	28.78	28.78	28.67	7.04	7.04	7.03	30.11	30.11	30.09	70.5	73.0	71.7	4.61	4.65	4.65	3.14	3.46	3.33	6	6.5
	19:50		Middle	2	28.55	28.55		7.02	7.02		30.06	30.06		72.6	70.5		4.76	4.56		3.44	3.27		7	
8/9/2010	19:00	Fine	Middle	2	28.76	28.76	28.58	7.34	7.34	7.34	29.15	29.14	29.45	53.3	57.3	55.1	3.45	3.70	3.60	3.68	4.07	4.26	6	6.5
	19:07		Middle	2	28.39	28.39		7.34	7.34		29.75	29.75		56.2	53.4		3.78	3.46		4.53	4.74		7	
10/9/2010	8:27	Cloudy	Middle	3	28.20	28.20	28.35	7.79	7.79	7.80	30.33	30.33	30.34	52.7	50.5	51.3	3.46	3.31	3.36	3.44	4.11	3.78	12	12.0
	8:30		Middle	3	28.50	28.50		7.80	7.80		30.34	30.34		53.1	49.0		3.48	3.20		3.68	3.87		12	
13/9/2010	10:58	Sunny	Middle	2	27.30	27.30	27.30	7.88	7.88	7.88	29.67	29.67	29.66	61.0	60.6	60.0	4.10	4.08	4.03	4.54	5.15	4.80	6	7.0
	11:00		Middle	2	27.30	27.30		7.87	7.88		29.65	29.65		58.1	60.4		3.92	4.03		4.87	4.65		8	
16/9/2010	20:48	Cloudy	Middle	2	29.16	29.16	29.12	7.48	7.48	7.48	28.58	28.59	28.61	62.4	62.3	62.3	4.09	4.09	4.08	3.50	3.60	3.46	9	8.0
	20:55		Middle	2	29.08	29.08		7.48	7.48		28.63	28.63		61.8	62.7		4.01	4.11		3.35	3.37		7	
18/9/2010	18:55	Fine	Middle	2	29.81	29.81	29.80	7.11	7.11	7.12	28.15	28.15	28.15	77.9	78.8	78.3	5.06	5.12	5.09	3.26	3.11	3.13	6	6.5
	19:02		Middle	2	29.79	29.79		7.12	7.12		28.14	28.14		78.2	78.2		5.08	5.09		3.07	3.08		7	
20/9/2010	-	Rain	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-		Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
22/9/2010	18:07	Cloudy	Middle	2	27.42	27.42	27.43	6.83	6.84	6.84	29.64	29.64	29.65	58.4	57.9	58.8	3.91	3.90	3.96	3.42	3.31	3.53	4	4.5
	18:14		Middle	2	27.43	27.43		6.84	6.84		29.65	29.65		59.0	60.0		4.01	4.00		3.68	3.72		5	
24/9/2010	20:03	Fine	Middle	2	27.36	27.35	27.33	6.46	6.46	6.47	28.66	28.66	28.66	61.3	59.9	59.5	4.14	4.05	4.02	2.53	2.35	2.37	3	3.0
	20:10		Middle	2	27.31	27.31		6.48	6.48		28.67	28.66		57.6	59.1		3.89	3.98		2.21	2.37		3	
27/9/2010	10:20	Sunny	Middle	2	27.30	27.30	27.40	7.82	7.82	7.85	30.67	30.67	30.52	63.0	62.6	62.9	4.18	4.15	4.17	4.41	3.89	3.95	7	6.5
	10:23		Middle	2	27.50	27.50		7.87	7.87		30.37	30.37		63.8	62.3		4.23	4.13		3.68	3.81		6	
29/9/2010	12:03	Sunny	Middle	2	27.70	27.70	27.90	8.10	8.10	8.10	30.78	30.78	30.87	94.2	93.0	93.3	6.01	5.95	5.96	2.88	2.77	2.76	7	8.0
	12:06		Middle	2	28.10	28.10		8.09	8.09		30.95	30.95		93.7	92.3		5.98	5.90		2.68	2.70		9	



**Water Monitoring Result at WSD9 - Tai Wan
Mid-Ebb Tide**

Date	Time	Weather Condition	Sampling Depth	m	Water Temperature		Average	pH		Average	Salinity		Average	DO Saturation		Average	DO		Average	Turbidity		Average	Suspended Solids	
					°C			-			ppt			%			mg/L			NTU			mg/L	
					Value	Value		Value	Value		Value	Value		Value	Value		Value	Value		Value	Value		Value	Value
2/9/2010	5:39	Cloudy	Middle	2	29.36	29.36	29.37	7.18	7.18	7.18	30.66	30.66	30.66	88.0	87.2	87.3	5.68	5.63	5.63	1.36	1.11	1.19	4	4.0
	5:42		Middle	2	29.38	29.38		7.17	7.17		30.66	30.66		87.3	86.5		5.63	5.58		1.06	1.24		4	
4/9/2010	7:21	Rainy	Middle	3	27.17	27.17	27.18	7.19	7.19	7.20	30.51	30.51	30.51	80.3	79.7	79.1	5.37	5.34	5.30	1.92	1.97	1.91	5	4.5
	7:24		Middle	3	27.18	27.18		7.20	7.20		30.51	30.52		79.2	77.2		5.30	5.17		1.82	1.94		4	
6/9/2010	9:08	Sunny	Middle	2	27.88	27.88	27.92	7.40	7.40	7.40	30.20	30.20	30.21	86.4	86.9	86.9	5.45	5.48	5.46	2.04	2.11	2.08	3	3.0
	9:11		Middle	2	27.95	27.95		7.40	7.40		30.21	30.21		87.3	87.1		5.49	5.42		2.09	2.06		3	
8/9/2010	14:10	Cloudy	Middle	2	29.10	29.10	29.15	7.90	7.90	7.90	30.35	30.35	30.36	53.8	51.5	52.1	3.50	3.37	3.38	5.21	5.06	5.41	7	6.0
	14:13		Middle	2	29.20	29.20		7.90	7.90		30.37	30.37		52.4	50.6		3.40	3.25		5.72	5.66		5	
10/9/2010	13:00	Cloudy	Middle	2	28.40	28.40	28.60	8.01	8.01	8.00	30.88	30.88	30.88	55.6	54.0	53.7	3.59	3.49	3.47	4.12	4.70	4.19	12	11.5
	13:04		Middle	2	28.80	28.80		7.99	7.99		30.87	30.87		53.0	52.0		3.42	3.36		3.88	4.06		11	
13/9/2010	2:20	Cloudy	Middle	2	26.16	26.16	26.23	7.14	7.14	7.15	30.14	30.14	30.14	74.5	77.0	75.0	5.22	5.26	5.12	1.98	2.00	1.73	4	3.5
	2:26		Middle	2	26.30	26.30		7.16	7.17		30.13	30.13		75.1	73.2		5.12	4.99		1.44	1.49		3	
16/9/2010	5:54	Sunny	Middle	2	27.80	27.80	27.90	7.96	7.96	7.96	29.98	29.98	29.97	64.3	61.7	63.6	4.25	4.08	4.21	2.79	2.82	2.77	4	4.5
	5:57		Middle	2	28.00	28.00		7.95	7.95		29.96	29.95		66.4	62.1		4.39	4.11		2.77	2.71		5	
18/9/2010	8:12	Sunny	Middle	2	29.40	29.40	29.60	8.03	8.03	8.04	29.28	29.28	29.15	72.4	72.0	72.5	4.64	4.61	4.64	2.42	1.97	2.15	9	10.0
	8:15		Middle	2	29.80	29.80		8.04	8.04		29.02	29.02		73.6	71.8		4.71	4.60		2.08	2.13		11	
20/9/2010	10:01	Cloudy	Middle	3	28.50	28.50	28.75	8.04	8.04	8.06	29.87	29.87	29.81	68.3	65.2	67.5	4.42	4.23	4.35	3.68	1.96	2.52	5	5.5
	10:04		Middle	3	29.00	29.00		8.07	8.07		29.75	29.75		68.9	67.4		4.46	4.29		2.11	2.34		6	
22/9/2010	13:24	Cloudy	Middle	2	25.60	25.60	25.70	8.07	8.07	8.04	29.49	29.49	29.46	58.4	57.4	57.9	4.03	3.96	3.99	2.56	2.50	2.50	4	4.0
	13:27		Middle	2	25.80	25.80		8.00	8.00		29.43	29.43		59.1	56.6		4.07	3.90		2.48	2.44		4	
24/9/2010	11:45	Sunny	Middle	3	26.30	26.30	26.45	8.03	8.03	8.01	31.01	31.01	30.91	68.2	66.7	67.6	4.60	4.50	4.56	2.04	1.90	1.95	4	3.0
	11:48		Middle	3	26.60	26.60		8.00	7.99		30.81	30.81		68.6	67.0		4.62	4.51		1.88	1.97		2	
27/9/2010	15:15	Sunny	Middle	2	27.70	27.70	27.95	8.11	8.11	8.13	31.27	31.27	31.17	84.4	82.7	84.7	5.55	5.43	5.57	3.25	2.98	3.03	3	3.5
	15:18		Middle	2	28.20	28.20		8.14	8.14		31.07	31.07		86.4	85.4		5.68	5.61		2.84	3.06		4	
30/9/2010	2:47	Fine	Middle	2	26.60	26.60	26.60	8.21	8.21	8.21	31.00	31.00	31.00	71.1	70.9	71.1	4.89	4.89	4.90	2.62	2.42	2.43	4	5.0
	2:56		Middle	2	26.60	26.60		8.21	8.21		31.00	31.00		71.1	71.4		4.89	4.91		2.16	2.50		6	



**Water Monitoring Result at WSD10 - Cha Kwo Ling
Mid-Ebb Tide**

Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH		Salinity		DO Saturation		DO		Turbidity		Suspended Solids							
					°C		-		ppt		%		mg/L		NTU		mg/L							
			m	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average					
2/9/2010	6:05	Cloudy	Middle	2	28.11	28.11	28.12	7.16	7.16	7.17	30.97	30.97	30.97	86.0	85.7	85.5	5.65	5.63	5.62	1.88	1.55	1.72	4	4.0
	6:08		Middle	2	28.13	28.13		7.17	7.17		30.97	30.97		85.2	85.1		5.60	5.59		1.74	1.72		4	
4/9/2010	7:55	Rainy	Middle	3	26.90	26.90	26.91	7.25	7.25	7.25	30.52	30.52	30.53	66.1	65.6	64.1	4.45	4.41	4.31	2.93	2.98	2.95	4	4.0
	7:58		Middle	3	26.92	26.92		7.24	7.24		30.54	30.54		62.4	62.2		4.20	4.18		3.03	2.85		4	
6/9/2010	10:20	Sunny	Middle	2	29.81	29.81	29.81	7.27	7.27	7.27	31.30	31.30	31.30	88.3	89.1	89.7	5.57	5.62	5.67	2.55	2.33	2.40	4	5.0
	10:23		Middle	2	29.81	29.80		7.27	7.27		31.30	31.30		92.3	89.1		5.88	5.62		2.32	2.40		6	
8/9/2010	14:40	Cloudy	Middle	3	29.00	29.00	29.00	7.89	7.89	7.89	30.11	30.11	30.11	64.0	60.2	60.0	3.79	3.61	3.57	5.80	5.86	5.99	4	4.5
	14:45		Middle	3	29.00	29.00		7.89	7.89		30.11	30.11		58.2	57.7		3.49	3.40		6.20	6.08		5	
10/9/2010	12:30	Cloudy	Middle	2	28.80	28.80	28.85	8.06	8.06	8.06	30.99	30.99	31.02	50.1	49.2	49.3	3.26	3.21	3.20	6.44	5.87	5.84	8	8.0
	12:33		Middle	2	28.90	28.90		8.05	8.05		31.04	31.04		49.1	48.7		3.17	3.15		5.62	5.43		8	
13/9/2010	1:45	Cloudy	Middle	2	26.41	26.41	26.43	7.12	7.12	7.14	32.07	32.07	32.09	70.7	72.4	72.0	4.76	4.87	4.84	2.13	2.30	2.05	7	6.0
	1:56		Middle	2	26.45	26.45		7.15	7.15		32.11	32.11		73.5	71.5		4.92	4.81		1.92	1.83		5	
16/9/2010	6:23	Sunny	Middle	2	27.90	27.90	28.00	7.97	7.97	7.97	29.52	29.52	29.52	67.3	65.2	65.6	4.46	4.32	4.34	3.11	2.58	2.60	4	3.5
	6:25		Middle	2	28.10	28.10		7.96	7.96		29.52	29.52		65.7	64.3		4.36	4.23		2.22	2.49		3	
18/9/2010	8:52	Sunny	Middle	2	28.70	28.70	28.75	8.18	8.18	8.18	28.58	28.58	28.53	78.1	76.9	76.8	5.20	5.07	5.07	2.62	2.41	2.59	7	6.5
	8:55		Middle	2	28.80	28.80		8.18	8.18		28.48	28.48		76.8	75.3		5.06	4.96		2.79	2.54		6	
20/9/2010	10:34	Cloudy	Middle	3	28.10	28.10	28.25	8.14	8.14	8.15	29.26	29.26	29.24	78.5	76.5	76.5	5.20	5.06	5.06	3.95	3.84	3.44	5	5.5
	10:38		Middle	3	28.40	28.40		8.15	8.15		29.21	29.21		76.2	74.7		5.02	4.94		2.97	2.99		6	
22/9/2010	13:04	Cloudy	Middle	3	25.80	25.80	25.85	8.00	8.00	8.00	29.26	29.26	29.27	58.9	57.2	57.7	4.07	3.94	3.98	2.85	3.10	2.84	5	6.0
	13:07		Middle	3	25.90	25.90		7.99	7.99		29.27	29.27		58.5	56.1		4.03	3.87		2.66	2.73		7	
24/9/2010	14:34	Sunny	Middle	2	26.70	26.70	26.85	8.02	8.02	8.01	31.18	31.18	31.13	70.3	69.8	69.5	4.70	4.65	4.64	3.09	2.90	2.87	4	4.5
	14:38		Middle	2	27.00	27.00		7.99	7.99		31.07	31.07		70.6	67.3		4.72	4.50		2.75	2.73		5	
27/9/2010	16:00	Sunny	Middle	2	27.40	27.40	27.65	8.12	8.12	8.13	31.24	31.24	31.15	86.7	84.4	85.0	5.73	5.57	5.61	4.03	3.93	3.91	6	6.0
	16:03		Middle	2	27.90	27.90		8.14	8.14		31.05	31.05		85.0	83.9		5.60	5.53		3.80	3.86		6	
30/9/2010	2:10	Fine	Middle	2	26.00	26.00	26.00	8.18	8.18	8.18	30.78	30.78	30.80	67.6	67.5	67.3	4.88	4.71	4.71	2.50	2.48	2.58	4	5.0
	2:19		Middle	2	26.00	26.00		8.18	8.18		30.81	30.81		67.0	66.9		4.63	4.60		2.68	2.64		6	



**Water Monitoring Result at WSD15 - Sai Wan Ho
Mid-Ebb Tide**

Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH				Salinity		DO Saturation		DO		Turbidity		Suspended Solids					
					°C		-		ppt		%		mg/L		NTU		mg/L							
			m	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average					
2/9/2010	6:45	Cloudy	Middle	2	28.14	28.14	28.15	7.21	7.21	7.21	30.93	30.93	30.93	61.9	60.8	62.1	4.07	4.00	4.08	3.85	2.91	3.18	6	6.0
	6:48		Middle	2	28.15	28.16		7.20	7.20		30.93	30.93		63.6	62.1		4.18	4.08		2.85	3.12		6	
4/9/2010	8:47	Rainy	Middle	2	26.91	26.91	26.92	7.09	7.09	7.09	30.95	30.95	30.96	52.8	51.3	53.5	3.54	3.44	3.58	2.73	2.62	2.64	6	6.5
	8:50		Middle	2	26.93	26.93		7.09	7.09		30.97	30.97		53.4	56.3		3.58	3.77		2.52	2.69		7	
6/9/2010	11:17	Sunny	Middle	3	27.97	27.97	27.97	7.10	7.10	7.10	27.99	27.99	27.95	71.7	71.6	71.4	4.70	4.71	4.69	4.38	4.46	4.19	8	8.0
	11:20		Middle	3	27.97	27.97		7.10	7.10		27.89	27.93		71.7	70.4		4.72	4.63		3.91	4.01		8	
8/9/2010	11:15	Cloudy	Middle	2	28.10	28.10	28.20	7.38	7.39	7.39	31.38	30.38	31.12	45.9	45.4	47.2	3.00	2.97	3.08	5.00	4.21	4.68	3	2.5
	11:18		Middle	2	28.30	28.30		7.40	7.40		31.36	31.36		49.9	47.7		3.24	3.09		4.84	4.66		2	
10/9/2010	11:33	Cloudy	Middle	2	27.80	27.80	28.00	8.05	8.05	8.04	30.17	30.17	30.13	55.3	52.2	54.4	3.66	3.46	3.60	8.16	7.77	7.90	5	6.5
	11:36		Middle	2	28.20	28.20		8.02	8.02		30.08	30.08		56.1	53.8		3.71	3.56		7.94	7.72		8	
13/9/2010	3:39	Cloudy	Middle	3	26.26	26.28	26.38	7.04	7.04	7.07	30.85	30.85	30.85	71.7	72.9	74.7	5.10	4.95	5.07	2.01	2.04	1.69	8	6.5
	3:45		Middle	3	26.49	26.49		7.09	7.09		30.84	30.84		77.7	76.4		5.05	5.17		1.34	1.36		5	
16/9/2010	6:55	Sunny	Middle	2	28.10	28.10	28.25	7.99	7.99	8.00	30.16	30.16	29.75	68.3	66.1	68.7	4.50	4.31	4.51	2.60	2.31	2.56	4	3.5
	6:58		Middle	2	28.40	28.40		8.00	8.00		29.33	29.33		70.8	69.7		4.64	4.59		2.75	2.57		3	
18/9/2010	9:25	Sunny	Middle	2	28.50	28.50	28.75	8.16	8.16	8.15	29.14	29.14	29.09	76.0	75.1	76.3	5.05	4.92	5.03	3.06	3.10	3.11	5	4.5
	9:28		Middle	2	29.00	29.00		8.14	8.14		29.04	29.04		77.8	76.3		5.10	5.06		3.19	3.08		4	
20/9/2010	11:25	Cloudy	Middle	2	28.40	28.40	28.45	8.07	8.07	8.07	29.84	29.84	29.85	68.6	67.3	67.1	4.51	4.43	4.41	2.70	2.60	2.57	6	7.0
	11:28		Middle	2	28.50	28.50		8.06	8.06		29.86	29.86		67.8	64.7		4.46	4.25		2.64	2.32		8	
22/9/2010	14:00	Cloudy	Middle	2	25.40	25.40	25.50	8.05	8.05	8.04	30.02	30.02	30.00	54.3	53.9	54.0	3.75	3.72	3.73	3.48	3.40	3.28	4	4.5
	14:03		Middle	2	25.60	25.60		8.02	8.02		29.98	29.98		54.1	53.7		3.74	3.70		3.22	3.02		5	
24/9/2010	13:40	Sunny	Middle	3	26.60	26.60	26.75	7.99	7.99	7.99	31.59	31.59	31.49	66.6	64.6	66.1	4.45	4.31	4.41	2.76	2.33	2.51	2	2.5
	13:43		Middle	3	26.90	26.90		7.99	7.99		31.38	31.38		67.1	66.1		4.47	4.41		2.29	2.64		3	
27/9/2010	16:30	Sunny	Middle	2	27.10	27.10	27.30	8.13	8.13	8.12	31.14	31.14	31.07	83.0	82.2	83.3	5.52	5.47	5.54	3.41	2.80	3.06	6	5.5
	16:33		Middle	2	27.50	27.50		8.11	8.11		31.00	31.00		84.4	83.5		5.61	5.55		3.06	2.97		5	
30/9/2010	4:59	Fine	Middle	3	26.60	26.60	26.60	8.26	8.26	8.26	30.98	30.98	30.98	70.6	71.6	70.0	5.00	4.96	4.89	1.77	2.04	1.71	2	2.5
	5:10		Middle	3	26.60	26.60		8.26	8.26		30.98	30.97		68.3	69.6		4.73	4.87		1.51	1.52		3	



**Water Monitoring Result at WSD17 - Quarry Bay
Mid-Ebb Tide**

Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH		Salinity		DO Saturation		DO		Turbidity		Suspended Solids							
					°C		-		ppt		%		mg/L		NTU		mg/L							
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average						
2/9/2010	7:12	Cloudy	Middle	2	28.01	28.01	28.03	7.14	7.14	7.14	30.59	30.59	30.59	71.7	70.8	67.6	4.73	4.65	4.47	2.82	2.41	2.48	4	3.5
	7:15		Middle	2	28.04	28.04		7.13	7.13		30.58	30.58		64.3	63.7		4.30	4.20		2.21	2.47		3	
4/9/2010	9:25	Rainy	Middle	2	27.44	27.44	27.46	7.05	7.05	7.05	30.65	30.65	30.66	56.3	55.9	57.0	3.76	3.72	3.80	6.78	6.17	7.14	8	8.5
	9:28		Middle	2	27.48	27.48		7.06	7.05		30.66	30.66		58.5	57.4		3.90	3.82		7.94	7.66		9	
6/9/2010	11:33	Sunny	Middle	2	28.24	28.26	28.32	6.75	6.75	6.75	30.82	30.82	30.82	61.8	64.3	63.3	4.06	4.21	4.16	3.81	3.12	3.58	7	7.0
	11:36		Middle	2	28.38	28.39		6.74	6.74		30.82	30.82		62.8	64.4		4.12	4.24		3.74	3.66		7	
8/9/2010	11:40	Cloudy	Middle	2	28.20	28.20	28.50	7.82	7.82	7.84	31.44	31.44	31.40	51.8	50.7	51.1	3.39	3.22	3.31	3.77	3.73	3.60	3	3.0
	11:43		Middle	2	28.80	28.80		7.86	7.86		31.35	31.35		51.5	50.4		3.35	3.27		3.27	3.64		3	
10/9/2010	11:50	Cloudy	Middle	2	28.00	28.00	28.35	7.97	7.98	7.98	31.25	31.26	31.22	55.0	53.7	54.1	3.61	3.50	3.54	6.07	5.72	5.73	7	7.5
	11:54		Middle	2	28.70	28.70		7.98	7.97		31.19	31.19		55.1	52.5		3.61	3.44		5.43	5.69		8	
13/9/2010	3:23	Cloudy	Middle	3	26.27	26.27	26.33	7.07	7.08	7.09	27.86	27.86	27.97	77.0	73.7	74.3	5.10	5.05	5.02	1.81	1.52	1.54	4	5.0
	3:28		Middle	3	26.39	26.39		7.10	7.10		28.08	28.08		72.4	74.0		4.89	5.03		1.41	1.41		6	
16/9/2010	7:25	Sunny	Middle	2	27.90	27.90	27.98	7.93	7.93	7.94	30.14	30.14	30.10	70.8	69.9	70.2	4.67	4.61	4.63	2.13	2.04	2.19	5	6.0
	7:28		Middle	2	28.10	28.00		7.94	7.94		30.06	30.06		70.5	69.6		4.65	4.59		2.29	2.31		7	
18/9/2010	10:19	Sunny	Middle	2	28.60	28.60	28.85	8.09	8.09	8.08	29.07	29.07	28.97	72.7	71.8	72.0	4.76	4.69	4.71	3.23	2.93	2.96	5	5.5
	10:23		Middle	2	29.10	29.10		8.06	8.06		28.87	28.87		72.3	71.3		4.73	4.66		2.97	2.71		6	
20/9/2010	11:46	Cloudy	Middle	2	26.90	26.90	27.10	8.05	8.05	8.03	31.30	31.30	31.23	53.9	53.1	53.8	3.59	3.53	3.58	3.51	3.05	3.13	5	5.5
	11:49		Middle	2	27.30	27.30		8.01	8.01		31.15	31.15		54.8	53.2		3.65	3.53		2.92	3.03		6	
22/9/2010	12:25	Cloudy	Middle	2	25.50	25.50	25.65	7.97	7.97	7.97	30.49	30.49	30.46	54.9	53.3	54.2	3.76	3.66	3.72	2.74	3.00	2.79	3	3.5
	12:28		Middle	2	25.80	25.80		7.97	7.97		30.43	30.43		55.0	53.7		3.77	3.70		2.49	2.94		4	
24/9/2010	13:12	Sunny	Middle	3	26.10	26.10	26.45	7.99	7.99	7.98	32.04	32.05	32.01	62.3	61.5	62.2	4.15	4.10	4.14	3.67	3.60	3.49	4	3.5
	13:15		Middle	3	26.80	26.80		7.97	7.97		31.97	31.97		63.0	61.9		4.19	4.12		3.13	3.54		3	
27/9/2010	16:52	Sunny	Middle	2	27.20	27.20	27.40	8.08	8.08	8.09	31.13	31.13	31.06	80.7	79.3	80.4	5.36	5.26	5.32	3.65	3.56	3.61	7	6.0
	16:55		Middle	2	27.60	27.60		8.10	8.10		30.99	30.99		81.5	79.9		5.40	5.27		3.50	3.71		5	
30/9/2010	4:42	Fine	Middle	3	26.30	26.30	26.30	8.24	8.24	8.24	30.88	30.88	30.88	70.2	70.0	70.1	4.86	4.80	4.84	2.00	1.77	1.72	3	4.0
	4:31		Middle	3	26.30	26.30		8.24	8.24		30.88	30.88		69.7	70.3		4.83	4.87		1.59	1.53		5	



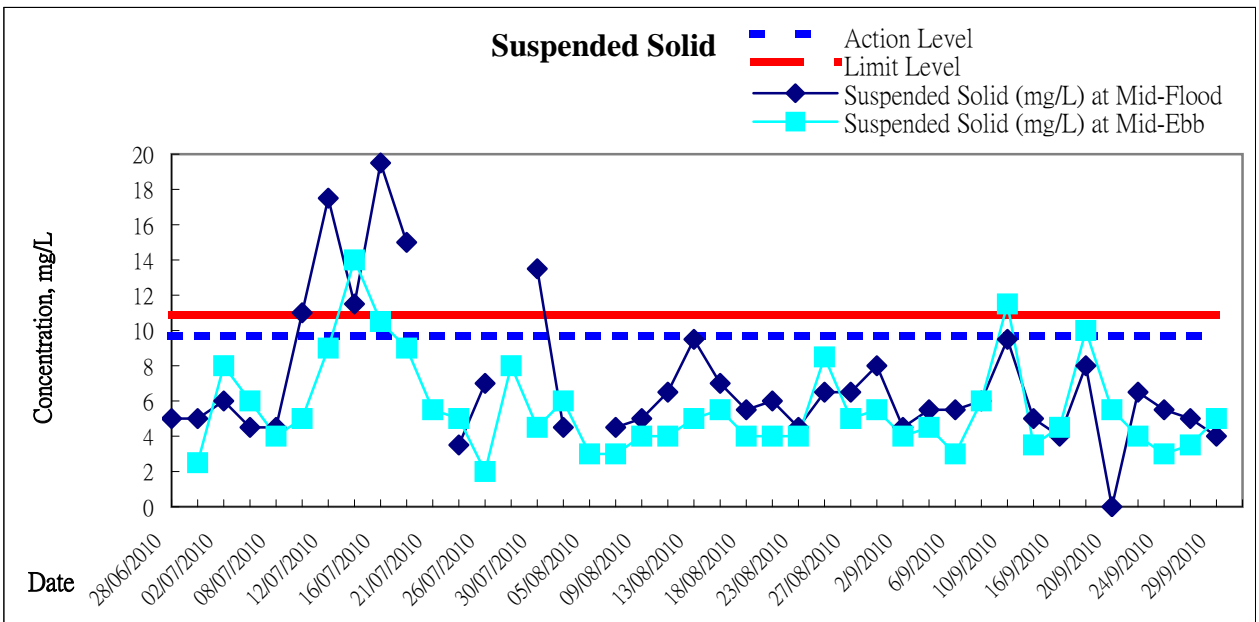
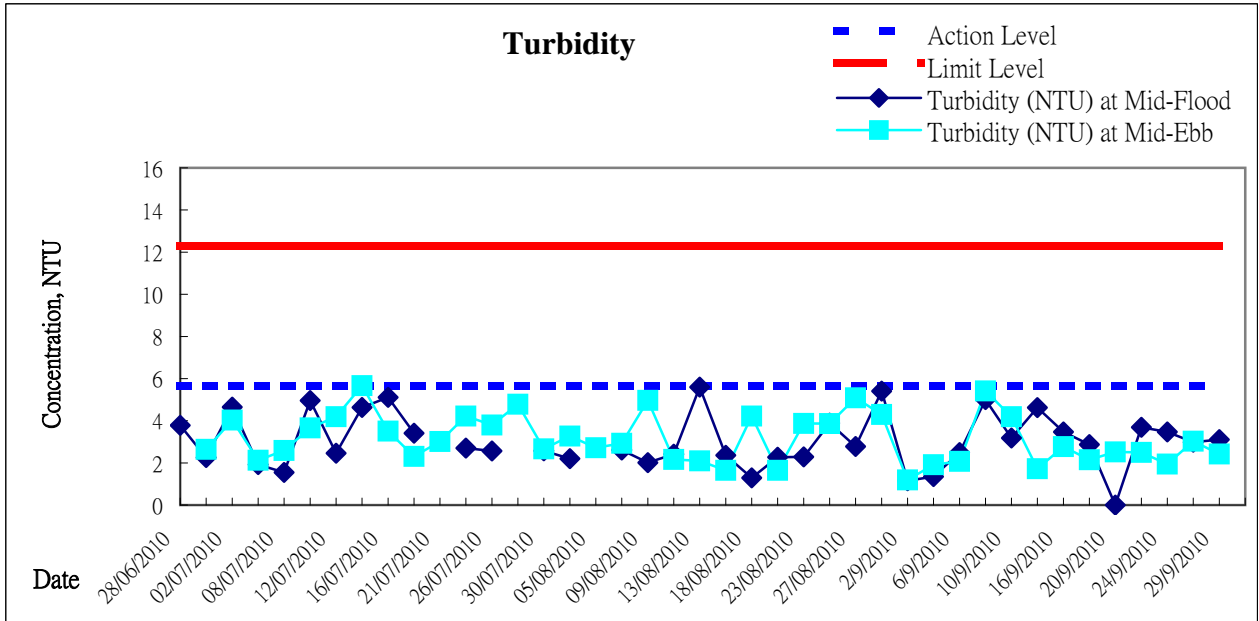
Water Monitoring Result at WSD21 - Wan Chai
Mid-Ebb Tide

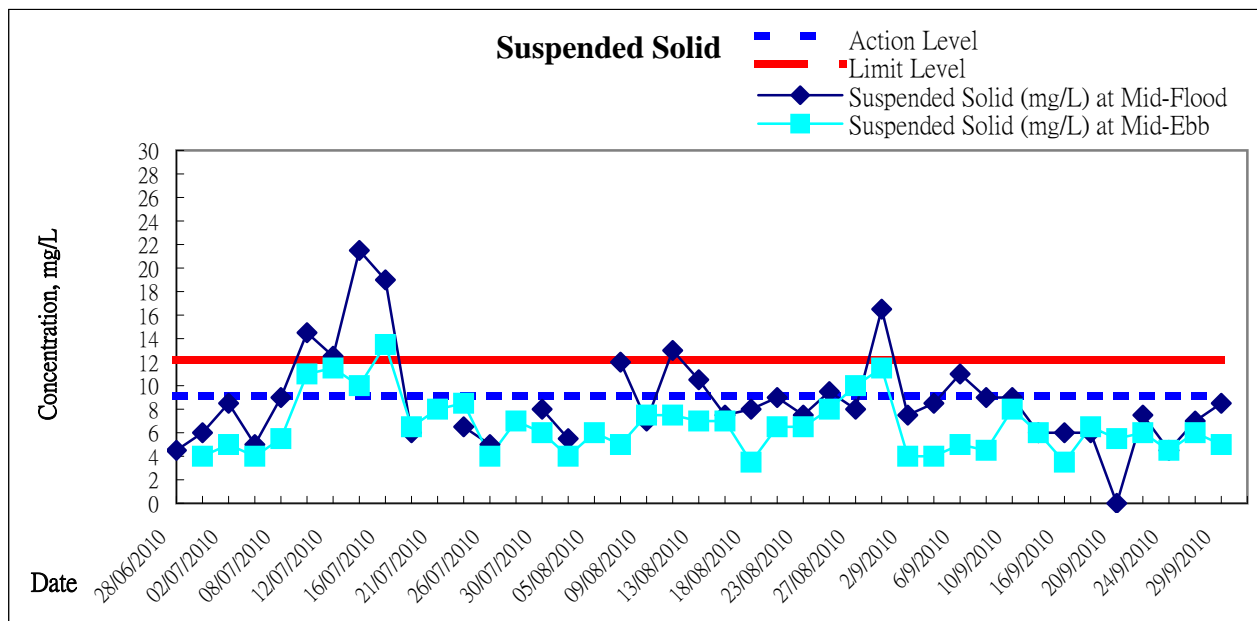
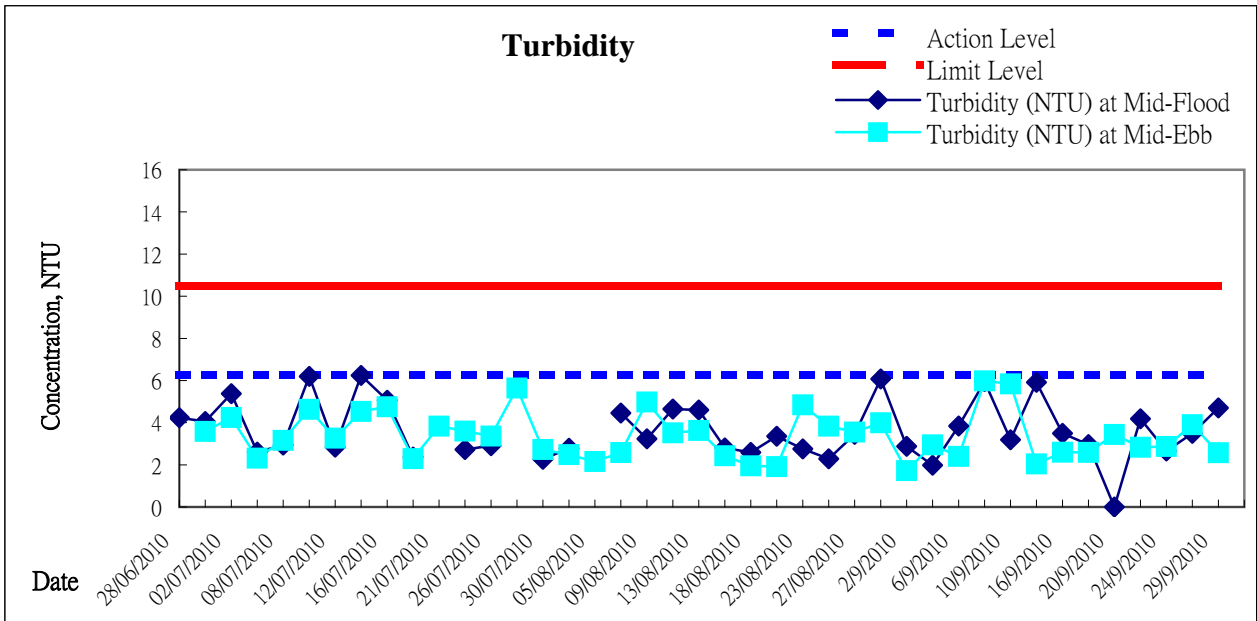
Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH		Salinity		DO Saturation		DO		Turbidity		Suspended Solids							
					°C		-		ppt		%		mg/L		NTU		mg/L							
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average						
2/9/2010	6:48	Cloudy	Middle	2	27.41	27.41	27.41	7.65	7.58	7.61	30.99	30.99	30.98	53.4	52.1	51.7	3.53	3.44	3.42	3.00	3.09	2.99	25	<u>21.5</u>
	6:51		Middle	2	27.42	27.41		7.65	7.56		30.97	30.97		51.0	50.2		3.37	3.32		2.89	2.97		18	
4/9/2010	9:50	Rainy	Middle	2	27.20	27.20	27.23	7.47	7.52	7.52	28.31	28.32	28.35	56.8	54.2	54.9	3.91	3.72	3.75	2.88	2.69	2.77	6	6.0
	9:53		Middle	2	27.20	27.30		7.53	7.55		28.35	28.43		54.9	53.7		3.73	3.65		2.68	2.83		6	
6/9/2010	10:45	Sunny	Middle	2	26.53	26.53	26.54	7.51	7.51	7.52	30.37	30.31	30.44	83.6	84.6	83.5	5.53	5.60	5.43	2.70	2.73	2.54	6	6.5
	10:48		Middle	2	26.55	26.55		7.53	7.53		30.53	30.53		82.6	83.1		5.22	5.36		2.53	2.18		7	
8/9/2010	12:45	Cloudy	Middle	2	26.60	26.60	26.65	7.85	7.85	7.84	31.31	31.31	31.31	59.8	57.8	58.6	4.00	3.86	3.92	3.89	4.39	4.32	6	6.5
	12:48		Middle	2	26.70	26.70		7.83	7.83		31.31	31.31		58.5	58.4		3.90	3.91		4.57	4.41		7	
10/9/2010	13:18	Cloudy	Middle	2	25.70	25.70	25.75	8.00	8.00	8.01	32.10	32.10	32.18	53.5	57.0	56.0	3.68	3.99	3.91	3.87	3.98	4.07	6	6.0
	13:21		Middle	2	25.80	25.80		8.01	8.01		32.30	32.20		55.5	57.8		3.91	4.06		4.11	4.32		6	
13/9/2010	3:22	Cloudy	Middle	2	26.16	26.16	26.24	6.90	6.91	6.92	28.64	28.64	28.60	65.1	66.2	68.5	4.48	4.55	4.71	1.44	1.45	1.28	4	4.0
	3:27		Middle	2	26.31	26.32		6.93	6.93		28.55	28.55		71.4	71.4		4.90	4.90		1.18	1.03		4	
16/9/2010	7:57	Sunny	Middle	2	28.10	28.10	28.05	8.04	8.04	8.04	28.61	28.61	28.62	76.4	75.6	75.5	5.11	5.03	5.03	4.06	4.19	4.06	5	6.0
	7:59		Middle	2	28.00	28.00		8.04	8.04		28.63	28.63		76.1	74.0		5.05	4.91		3.92	4.07		7	
18/9/2010	11:20	Sunny	Middle	2	29.20	29.20	29.20	8.20	8.21	8.21	28.32	28.32	28.32	78.7	78.0	77.4	5.21	5.16	5.13	8.97	9.07	8.98	18	16.5
	11:23		Middle	2	29.20	29.20		8.20	8.21		28.32	28.32		77.2	75.8		5.11	5.02		8.83	9.04		15	
20/9/2010	10:25	Cloudy	Middle	2	28.40	28.30	28.35	6.69	6.68	6.69	31.73	31.73	31.73	63.6	65.9	63.6	4.28	4.39	4.25	2.30	2.21	2.22	9	8.0
	10:28		Middle	2	28.40	28.30		6.69	6.68		31.73	31.73		62.8	61.9		4.19	4.13		2.13	2.25		7	
22/9/2010	12:37	Cloudy	Middle	2	28.30	28.30	28.30	8.13	8.13	8.13	31.75	31.74	31.74	78.1	78.9	77.8	5.45	5.48	5.41	2.33	2.09	2.20	5	4.5
	12:38		Middle	2	28.30	28.30		8.13	8.13		31.74	31.74		77.6	76.5		5.39	5.33		2.17	2.20		4	
24/9/2010	12:50	Sunny	Middle	2	27.90	27.90	27.90	8.05	8.05	8.05	31.07	31.07	31.08	70.3	70.1	70.4	4.85	4.83	4.86	1.86	1.79	1.92	6	6.5
	12:52		Middle	2	27.90	27.90		8.05	8.05		31.08	31.08		70.0	71.1		4.82	4.93		2.05	1.97		7	
27/9/2010	14:40	Sunny	Middle	2	31.20	31.10	31.05	7.94	7.93	7.94	31.20	31.50	31.23	78.7	76.5	78.0	5.38	5.20	5.32	3.51	3.40	3.59	11	10.0
	14:43		Middle	2	30.90	31.00		7.94	7.96		31.00	31.20		77.3	79.5		5.24	5.47		3.65	3.78		9	
30/9/2010	3:40	Fine	Middle	2	25.50	25.50	25.50	8.10	8.10	8.10	30.38	30.37	30.38	63.3	62.9	62.4	4.63	4.51	4.49	3.18	2.55	2.85	5	4.5
	3:48		Middle	2	25.50	25.50		8.10	8.10		30.37	30.38		59.9	63.5		4.25	4.55		3.17	2.51		4	

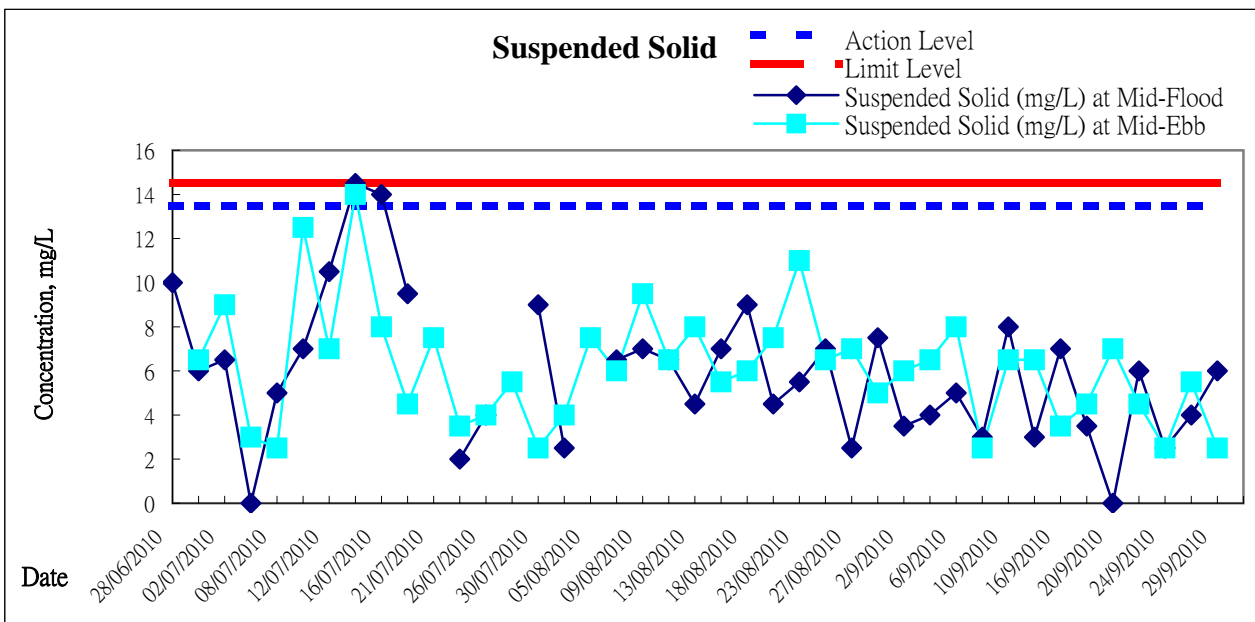
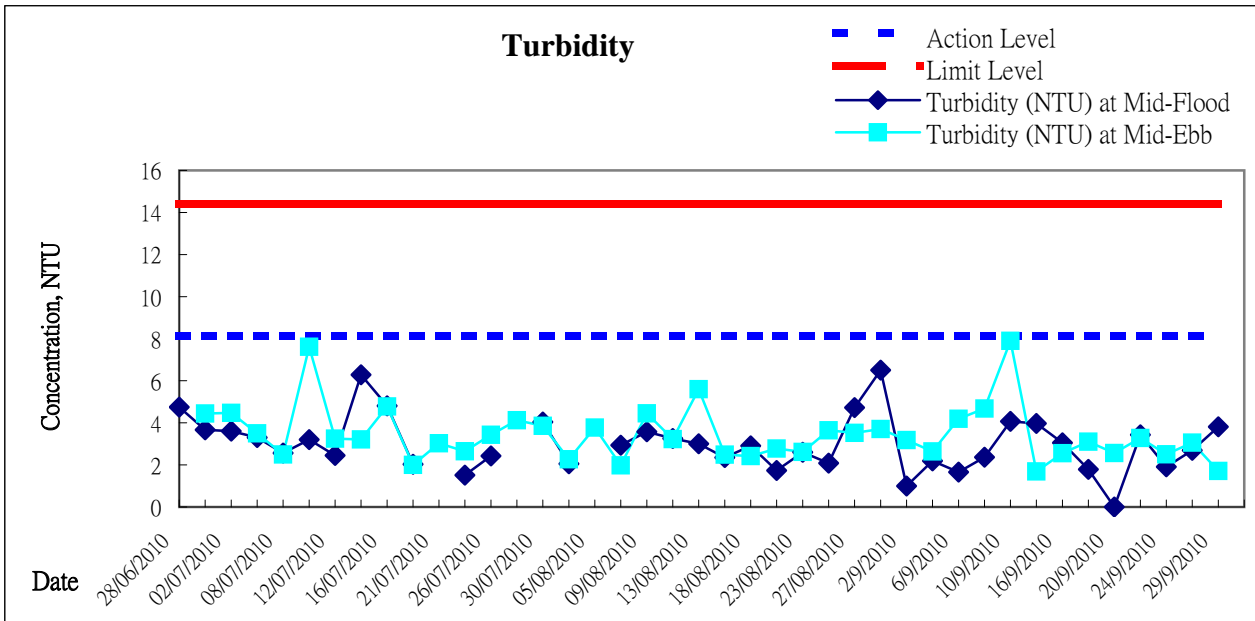


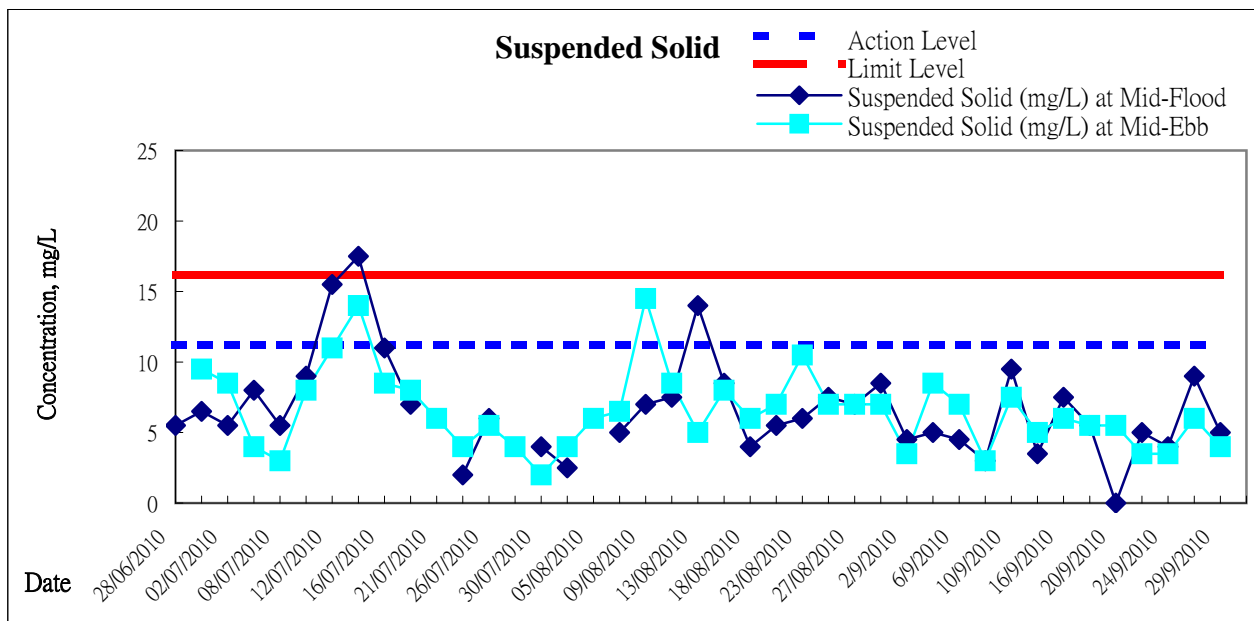
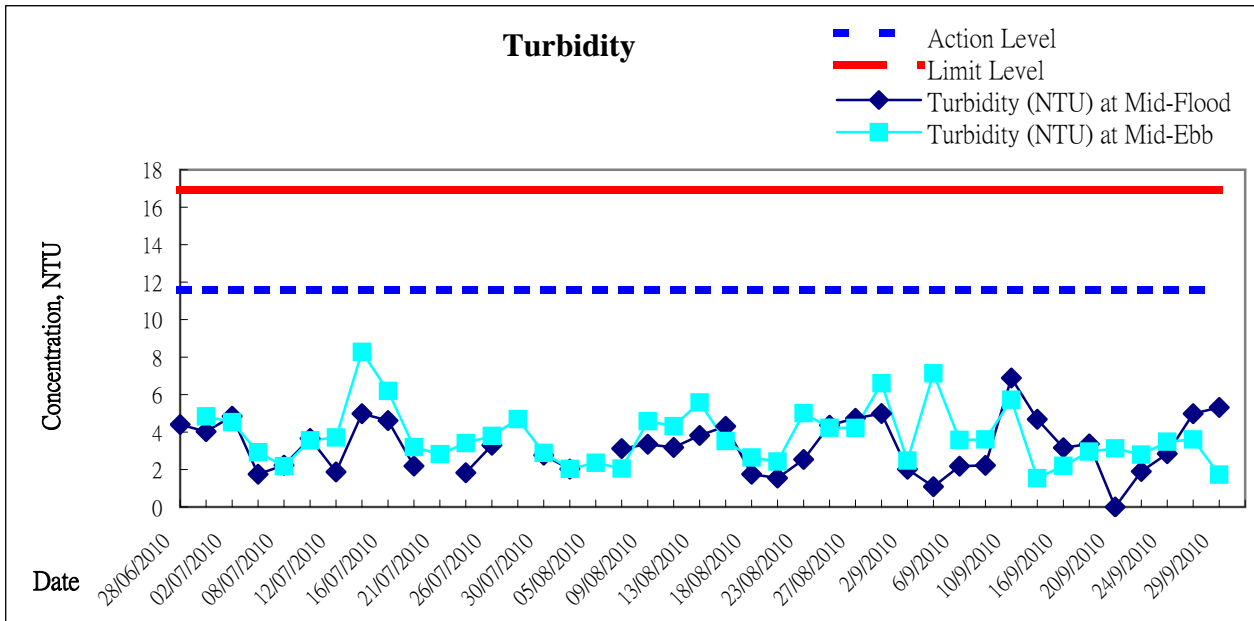
**Water Monitoring Result at WSD19 - Sheung Wan
Mid-Ebb Tide**

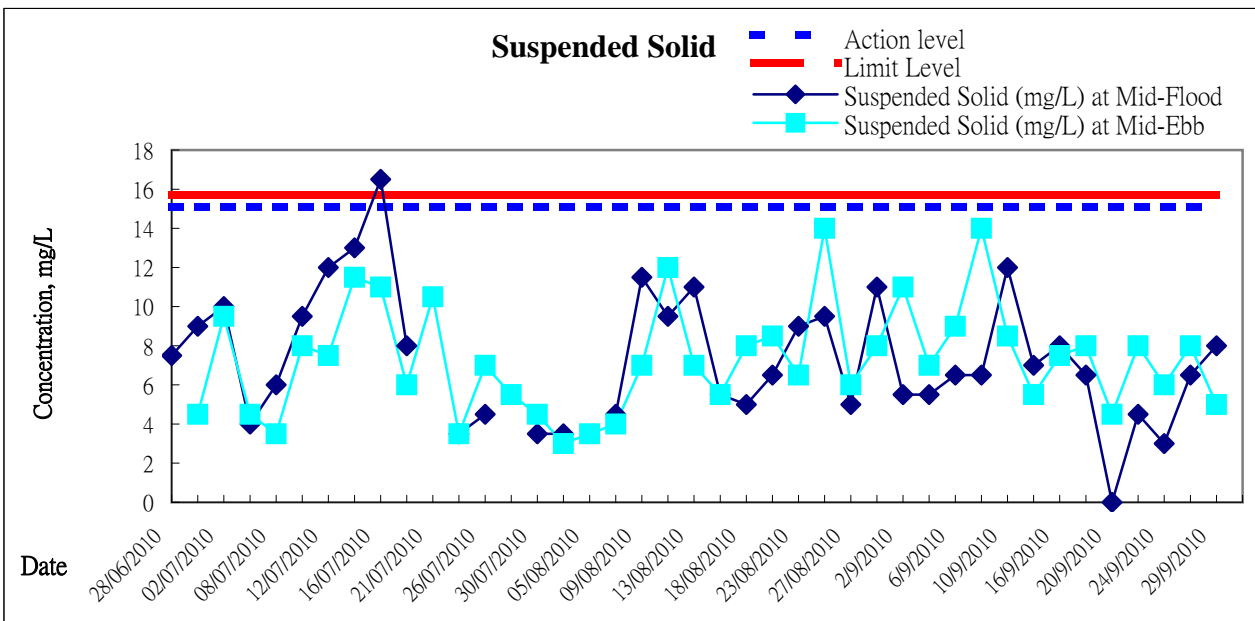
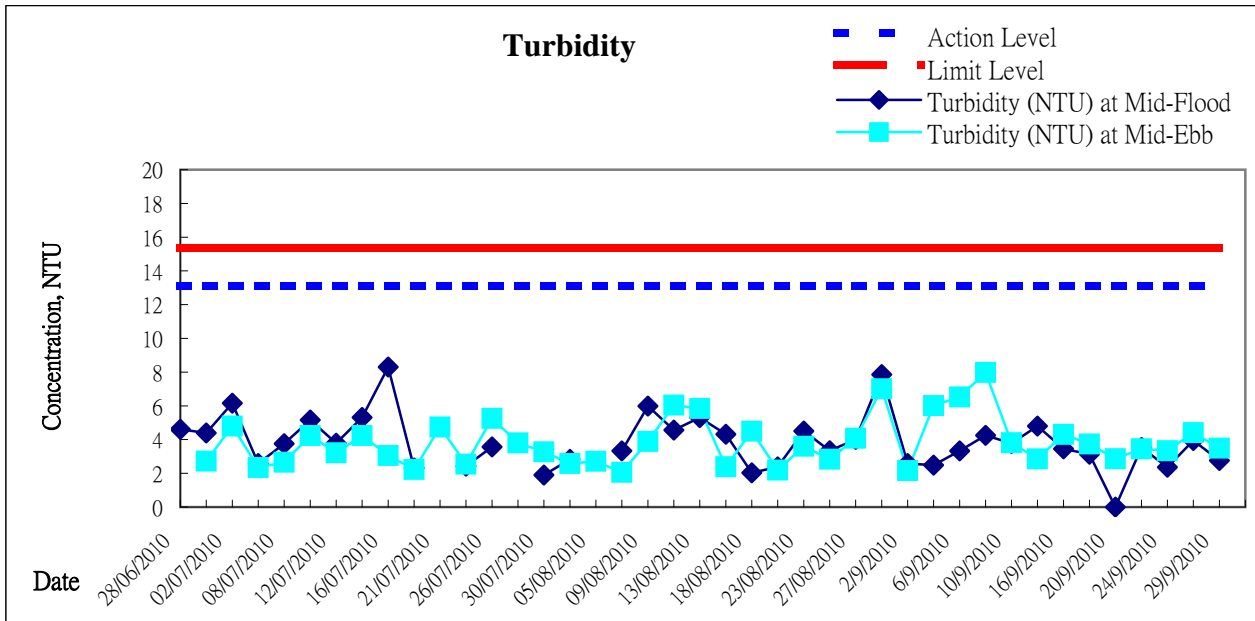
Date	Time	Weather Condition	Sampling Depth		Water Temperature		pH				Salinity				DO Saturation				DO				Turbidity				Suspended Solids	
					°C		-		ppt		%		mg/L		NTU		mg/L											
			m	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average			
2/9/2010	7:45	Cloudy	Middle	2	27.87	27.87	27.89	7.04	7.04	7.04	30.63	30.63	30.64	69.4	65.7	67.5	4.59	4.34	4.46	2.34	2.11	2.16	12	11.0				
	7:48		Middle	2	27.91	27.92		7.03	7.03		30.64	30.66		67.4	67.6		4.45	4.46		2.05	2.14		10					
4/9/2010	10:20	Rainy	Middle	2	27.40	27.40	27.42	7.09	7.09	7.09	30.73	30.73	30.74	65.1	64.4	65.0	4.38	4.33	4.37	6.25	5.80	6.01	7	7.0				
	10:23		Middle	2	27.44	27.44		7.08	7.08		30.74	30.75		65.5	65.1		4.40	4.38		6.06	5.94		7					
6/9/2010	11:45	Sunny	Middle	3	28.18	28.18	28.19	6.91	6.91	6.91	29.52	29.52	29.52	64.9	68.6	66.4	4.36	4.53	4.40	6.77	6.30	6.53	9	9.0				
	11:47		Middle	3	28.19	28.19		6.90	6.90		29.52	29.52		66.7	65.5		4.40	4.32		6.70	6.34		9					
8/9/2010	12:15	Cloudy	Middle	3	29.30	29.30	29.30	7.78	7.78	7.78	28.92	28.92	28.92	45.0	45.4	45.2	2.94	2.94	2.95	8.42	8.01	7.98	14	14.0				
	12:17		Middle	3	29.30	29.30		7.78	7.78		28.92	28.92		45.2	45.0		2.94	2.97		7.84	7.66		14					
10/9/2010	13:50	Cloudy	Middle	2	29.40	29.40	29.45	8.01	8.01	8.01	29.87	29.88	29.91	54.0	53.3	53.2	3.47	3.44	3.43	4.13	3.84	3.81	8	8.5				
	13:53		Middle	2	29.50	29.50		8.00	8.00		29.94	29.94		53.0	52.6		3.42	3.39		3.66	3.62		9					
13/9/2010	4:24	Cloudy	Middle	2	26.55	26.53	26.45	6.98	6.96	6.97	28.52	28.51	28.43	82.9	83.8	83.9	5.68	5.49	5.50	3.16	3.23	2.86	4	5.5				
	4:30		Middle	2	26.26	26.46		6.97	6.96		28.35	28.34		83.7	85.0		5.78	5.05		2.70	2.35		7					
16/9/2010	8:00	Sunny	Middle	2	27.80	27.80	27.90	8.04	8.04	8.05	28.60	28.60	28.61	76.9	76.1	75.4	5.21	5.10	5.07	4.55	4.38	4.31	7	7.5				
	8:03		Middle	2	28.00	28.00		8.05	8.05		28.61	28.61		74.6	73.9		5.01	4.97		4.14	4.16		8					
18/9/2010	11:30	Sunny	Middle	2	29.80	29.80	29.95	8.16	8.16	8.16	28.42	28.42	28.39	83.0	82.8	81.2	5.37	5.34	5.24	3.81	3.73	3.74	8	8.0				
	11:33		Middle	2	30.10	30.10		8.16	8.16		28.36	28.36		80.2	78.9		5.17	5.08		3.75	3.68		8					
20/9/2010	12:10	Cloudy	Middle	2	28.20	28.20	28.25	8.14	8.14	8.15	28.37	28.37	28.37	70.9	68.8	70.3	4.71	4.57	4.68	2.87	2.63	2.87	4	4.5				
	12:13		Middle	2	28.30	28.30		8.15	8.15		28.37	28.37		71.3	70.3		4.74	4.68		3.04	2.92		5					
22/9/2010	11:48	Cloudy	Middle	2	26.20	26.20	26.25	7.91	7.91	7.91	28.51	28.51	28.47	58.0	57.2	57.7	3.99	3.93	3.96	3.72	3.20	3.46	9	8.0				
	11:51		Middle	2	26.30	26.30		7.91	7.91		28.42	28.42		58.3	57.1		4.01	3.92		3.36	3.54		7					
24/9/2010	10:56	Sunny	Middle	2	26.60	26.60	26.70	7.91	7.91	7.91	29.91	29.91	29.86	57.7	55.5	56.9	3.89	3.74	3.83	3.38	3.31	3.34	7	6.0				
	11:00		Middle	2	26.80	26.80		7.91	7.91		29.81	29.81		57.9	56.5		3.90	3.80		3.26	3.41		5					
27/9/2010	13:40	Sunny	Middle	2	28.10	28.10	28.20	7.94	7.94	7.93	30.09	30.09	30.08	73.7	72.3	73.2	4.86	4.75	4.81	4.46	4.39	4.41	9	8.0				
	13:43		Middle	2	28.30	28.30		7.92	7.92		30.06	30.06		74.2	72.4		4.88	4.76		4.37	4.41		7					
30/9/2010	3:48	Fine	Middle	2	26.70	26.70	26.70	7.98	7.98	7.98	30.40	30.40	30.40	63.1	65.1	64.4	4.45	4.50	4.47	3.35	3.98	3.49	5	5.0				
	3:54		Middle	2	26.70	26.70		7.98	7.98		30.40	30.40		65.1	64.3		4.49	4.45		3.22	3.41		5					

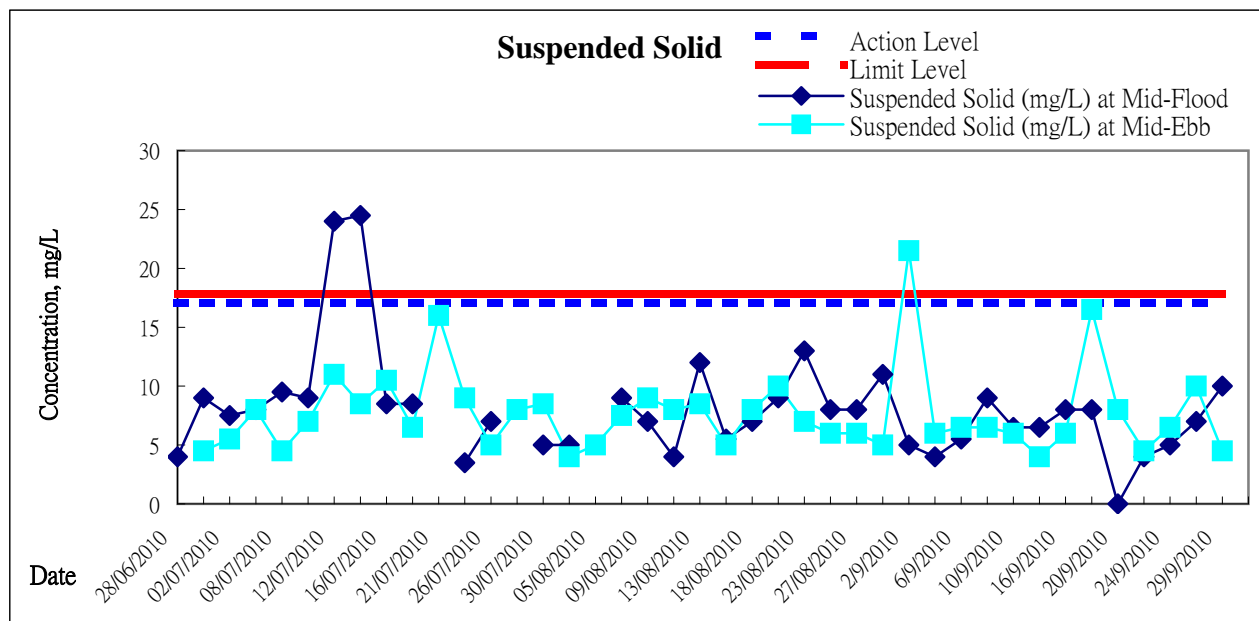
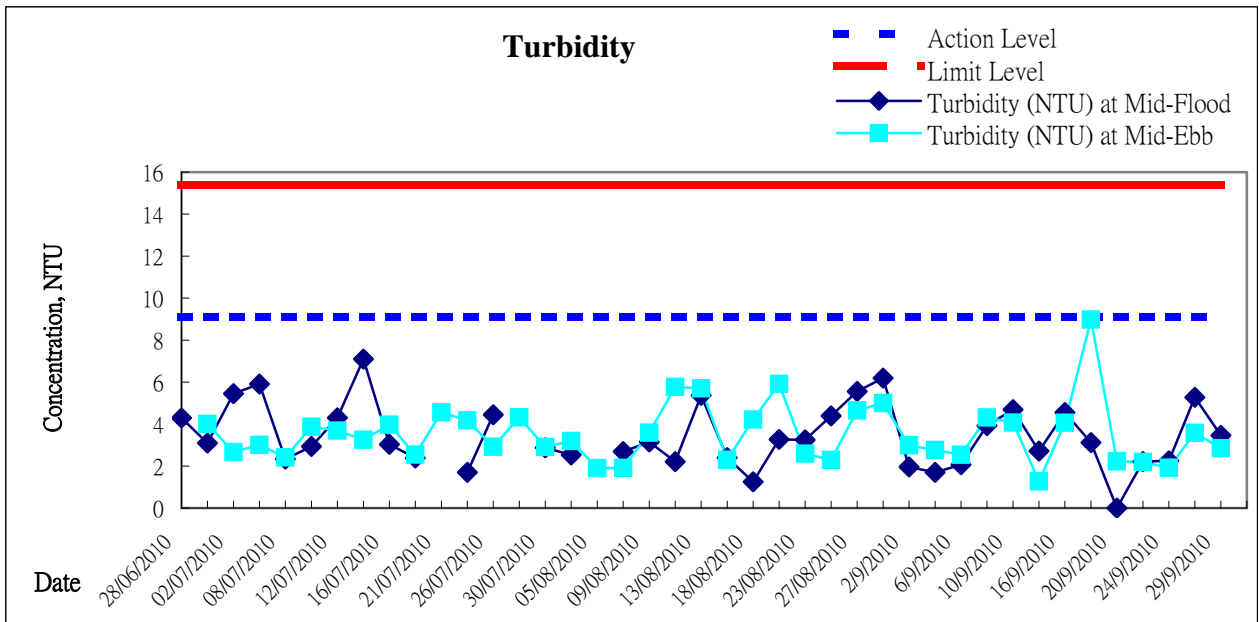














Appendix 5.3

Event and Action Plan



Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.



Event and Action Plan for Marine Water Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; (The above actions should be taken within 1 working day after the exceedance is identified) Repeat measurement on next day of exceedance. 	<ol style="list-style-type: none"> Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified) 	<ol style="list-style-type: none"> Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. (The above actions should be taken within 1 working day after the exceedance is identified) 	<ol style="list-style-type: none"> Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Review the working methods and consider additional measures such as use of frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; Discuss with ET and IEC and propose mitigation measures to IEC and ER; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)
Action level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; 	<ol style="list-style-type: none"> Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER 	<ol style="list-style-type: none"> Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness 	<ol style="list-style-type: none"> Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	<ul style="list-style-type: none">5. Ensure mitigation measures are implemented;6. Prepare to increase the monitoring frequency to daily;7. (The above actions should be taken within 1 working day after the exceedance is identified)8. Repeat measurement on next working day of exceedance.	<ul style="list-style-type: none">3. Assess the effectiveness of the implemented mitigation measures.4. (The above actions should be taken within 1 working day after the exceedance is identified)	<ul style="list-style-type: none">of the implemented mitigation measures.4. (The above actions should be taken within 1 working day after the exceedance is identified)	<ul style="list-style-type: none">equipment;4. Review the working methods and consider additional measures such as use of frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works;5. Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days;6. Implement the agreed mitigation measures.7. (The above actions should be taken within 1 working day after the exceedance is identified)



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit Level. 8. (The above actions should be taken within 1 working day after the exceedance is identified) 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified) 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures. 5. (The above actions should be taken within 1 working day after the exceedance is identified) 	<ol style="list-style-type: none"> 1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Review the working methods and consider additional measures such as use of frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; 5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures. 7. (The above actions should be taken within 1 working day after the exceedance is identified)



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> 1. Identify source(s) of impact; 2. Inform IEC, Contractor and EPD; 3. Check monitoring data, all plant, equipment and Contractor's working methods; 4. Discuss mitigation measures with IEC, ER and Contractor; 5. Ensure mitigation measures are implemented; 6. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days. 7. (The above actions should be taken within 1 working day after the exceedance is identified) 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified) 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures; 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level. 6. (The above actions should be taken within 1 working day after the exceedance is identified) 	<ol style="list-style-type: none"> 1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Review the working methods and consider additional measures such as use of frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; 5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures; 7. As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities. 8. (The above actions should be taken within 1 working day after the exceedance is identified)



Appendix 5.4

Summary of Notification of Exceedances



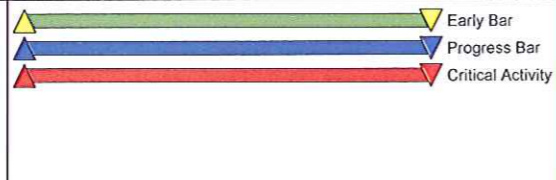
Ref no.	Date	Tidal	Location	Parameters (Unit)	Average	Action Level	Limit Level	Level of Exceedance	Follow-up action
X035	2-Sep-10	Mid-ebb	WSD21	SS (mg/L)	21.5	17.1	17.8	Limit Level	<p>Action taken / to be taken: Silt screen was inspected and confirmed in a proper condition during the water monitoring; No sign of traceable source was identified; Check monitoring data and contractor's dredging works</p> <p>Possible reason: Since the natural flow during the ebb tide indicated that the source of impact was located at the upstream of the project site, it is concluded that the source of impact was due to natural variation or change around WSD21 and not related to the project work.</p> <p>Remarks / Other Obs: Conclude as non-dredging related impact and hence no further mitigation nor repeated measurement under the EAP is required.</p>
X036	6-Sep-10	Mid-flood	WSD10	SS (mg/L)	11.0	9.1	12.2	Action Level	<p>Action taken / to be taken: Silt screen was inspected and confirmed in a proper condition during the water monitoring; Potential source of impact was recorded; no sign of traceable source was identified; Check monitoring data and contractor's dredging works</p> <p>Possible reason: The sampling tide is mid-flood and thus WSD10 is located at upstream to the project site; Natural variation or change around the Station WSD10 as no traceable source identified</p> <p>Remarks / Other Obs: Conclude as non-dredging related impact and hence no further mitigation nor repeated measurement under the EAP is required.</p>
X037	10-Sep-10	Mid-ebb	WSD9	SS (mg/L)	11.5	9.7	10.9	Limit Level	<p>Action taken / to be taken: Silt screen was inspected and confirmed in a proper condition during the water monitoring; Potential source of impact was recorded; no sign of traceable source was identified; Check monitoring data and contractor's dredging works</p> <p>Possible reason: Since the natural flow during the ebb tide indicated that the source of impact was located at the upstream of the project site, it is concluded that the source of impact was due to natural variation or change around WSD9 and not related to the project work.</p> <p>Remarks / Other Obs: Conclude as non-dredging related impact and hence no further mitigation nor repeated measurement under the EAP is required.</p>
X038	18-Sep-10	Mid-ebb	WSD9	SS (mg/L)	10.0	9.7	10.9	Action Level	<p>Action taken / to be taken: Silt screen was inspected and confirmed in a proper condition during the water monitoring; Potential source of impact was recorded; no sign of traceable source was identified; Check monitoring data and contractor's dredging works</p> <p>Possible reason: Since the natural flow during the ebb tide indicated that the source of impact was located at the upstream of the project site, it is concluded that the source of impact was due to natural variation or change around WSD9 and not related to the project work.</p> <p>Remarks / Other Obs: Conclude as non-dredging related impact and hence no further mitigation nor repeated measurement under the EAP is required.</p>



Appendix 9.0

Construction Programme

Activity ID	Activity Description	Orig Dur	Early Start	Late Start	Early Finish	Late Finish	Total Float	Free Float	2009												2010												2011												2012												2013												2014																																																																																			
									N D J F M A M J J A S O N D												N D J F M A M J J A S O N D												N D J F M A M J J A S O N D												N D J F M A M J J A S O N D												N D J F M A M J J A S O N D																																																																																															
SW.3.3010	Removal of Existing Seawall Rockfill (7650m3)	28	28/11/11	28/11/11	25/12/11	25/12/11	0	0																																					▲																																																																																																											
SW.3.3020	Excavation Within MQ3 (63300m3)	91	26/12/11	26/12/11	25/03/12	25/03/12	0	0																																					▲																																																																																																											
SW.3.3030	Removal of Existing Abandoned Outfall	7	28/11/11	19/12/11	04/12/11	25/12/11	21	21																																					▲																																																																																																											
Section 4 - Portions MQ4, LS3, NDA & DZB																																																																																																																																																								
Portion MQ4 (Bays J - M) & LS3																																																																																																																																																								
Dredging Work & Removal of Existing Seawall																																																																																																																																																								
SW.4.3000	Removal of Existing Seawall Armour (17250m3)	49	27/02/12	27/02/12	15/04/12	15/04/12	0	0																																					▲																																																																																																											
SW.4.3010	Removal of Existing Seawall Rockfill (15600m3)	49	26/03/12	26/03/12	13/05/12	13/05/12	0	0																																					▲																																																																																																											
SW.4.3020	Excavation Within MQ4 (129100m3)	140	09/04/12	09/04/12	26/08/12	26/08/12	0	0																																					▲																																																																																																											
SW.4.3030	Removal of Existing Abandoned Outfall	7	16/04/12	07/05/12	22/04/12	13/05/12	21	21																																					▲																																																																																																											
Portion NDA (Bay NDA)																																																																																																																																																								
Dredging Work & Removal of Existing Seawall																																																																																																																																																								
SW.41.3000	Removal of Existing Seawall Armour (4250m3)	14	27/08/12	29/08/12	09/09/12	11/09/12	2	0																																					▲																																																																																																											
SW.41.3010	Removal of Existing Seawall Rockfill (3850m3)	14	10/09/12	20/02/13	23/09/12	05/03/13	163	7																																					▲																																																																																																											
SW.41.3020	Excavation Within MQ4 (31850m3)	28	01/10/12	06/03/13	28/10/12	02/04/13	156	156																																					▲																																																																																																											
Portion DZB																																																																																																																																																								
Dredging Work																																																																																																																																																								
SW.42.1000	Preparation & Installation of Silt Curtain	28	15/04/10	13/11/10	12/05/10	10/12/10	212	0													▲																																																																																																																																			
SW.42.1010	Installation of Light Buoy at DZB	21	13/05/10	11/12/10	02/06/10	31/12/10	212	200													▲																																																																																																																																			
SW.42.1020	Dredging at Toe of Existing Seawall (10500m3)	77	20/12/10	01/01/11	06/03/11	18/03/11	12	0																									▲																																																																																																																							
SW.42.1030	Dredging Remaning Area (30000m3)	77	26/09/12	09/10/13	11/12/12	24/12/13	378	378																																					▲																																																																																																											



KTWP
Penta-Ocean Construction Co., Ltd.
CEDD Contract No. KL/2009/01
Site Formation for Kai Tak Cruise Terminal Development
Programme for Marine Works (General Dredging)

Sheet 2 of 2
Start Date 30/11/09
Finish Date 24/12/13
Data Date 30/11/09
Run Date 07/10/10 09:37

Date	Revision	Checked	Approved
31/08/10	F	TM	DK