



PROJECT No.: TCS/00477/09

VERSION: 2

**CEDD CONTRACT NO. ST/2008/02  
ROADS, DRAINAGE AND SEWAGE WORKS AT  
WHITEHEAD AND LOK WO SHA, PHASE 1**

**29<sup>TH</sup> MONTHLY ENVIRONMENTAL MONITORING AND  
AUDIT (EM&A) REPORT – FEBRUARY 2012**

PREPARED FOR  
**CHINA ROAD & BRIDGE CORPORATION**

Quality Index Date	Reference No.	Prepared By	Certified By
26 March 2012	TCS00477/09/600/R0347v2	 Ben Tam Environmental Consultant	 T.W. Tam Environmental Team Leader

Version	Date	Description
1	20 March 2012	First Submission
2	26 March 2012	Amended against IEC's comments on 26 March 2012



3D Visualisation  
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Our reference: HKCEDD01/50/101081

Date: 27 March 2012

Attn.: Mr Kevin C W Lam and Mr Tom W K Lee

**BY FAX ONLY**  
**(Fax no.: 2739 0076)**

Dear Sirs

Agreement No. NTE 01/2009  
Ma On Shan Development Roads, Drainage and Sewerage Works  
at Whitehead and Lok Wo Sha Phase I  
Monthly EM&A Report No. 29

Reference is made to the Environmental Team's submission of the Monthly EM&A Report No. 29 for the captioned project by emails on 22 and 27 March 2012 for our review and comment.

Please be informed that we have no adverse comment on the captioned submission. We write to verify the captioned Monthly EM&A Report in accordance with Condition 5.3 of the Environmental Permit no. EP-332/2009.

Should you have any queries, please do not hesitate to contact the undersigned on 2869 6018.

Yours faithfully  
EDMS CONSULTING LIMITED

  
James Choi  
Independent Environmental Checker

CPSJ/LYMA/csym

cc RE – Mr Angus Law (Fax: 2631 7226)

## EXECUTIVE SUMMARY

- ES.01 The China Road & Bridge Corporation (CRBC) have been awarded the *Contract ST/2008/02 Ma On Shan Development – Roads, Drainage and Sewerage Works at Whitehead and Lok Wo Sha Phase 1* (the Project) by the Civil Engineering & Development Department (CEDD) on 18 June 2009. The Project is part of an overall plan approved under a statutory EIA (Register No. AEIAR-068/2002) for a *Feasibility Study for Housing Development at Whitehead & Lee on in Man On Shan* commissioned by the Territory Development Department.
- ES.02 An Environmental Permit (No. EP-332/2009) for Road D1(N), Road D1(W) and Box Culvert of Whitehead & Lok Wo Sha Phase One Project (EP) has been obtained by the CEDD on 24 March 2009 under the Project. According to the Environmental Permit No. EP-332/2009 and Section 25 of the Particular Specification (PS), the overall scope of environmental monitoring including the aspect of air quality, construction noise, water quality, landscaping and visual and site environmental audit should be undertaken in accordance with the Final Report Environmental Monitoring and Audit Manual [2095/13.3] by an independent Environmental Team (ET).
- ES.03 Action-United Environmental Services and Consulting (AUES) have been commissioned by CRBC as the ET to implement the relevant EM&A program except the monitoring and audit works of landscaping and visual, which is undertaken by other.

### ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

- ES.04 This is the 29<sup>th</sup> Monthly EM&A Report which presents the monitoring results and inspection findings for the period from **26 January 2012** to **25 February 2012** (the Reporting Period).
- ES.05 Environmental monitoring activities under the EM&A program in this Reporting Month are summarized in the following table.

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Air Quality	1-hour TSP	18
	24-hour TSP	6
Construction Noise	Leq (30min) Daytime	6
Water Quality	Marine Water Sampling	14
Inspection / Audit	ER and Contractor regular Environmental Site Inspection	4

### BREACH OF ACTION AND LIMIT (A/L) LEVELS

- ES.06 No construction noise complaint (an Action Level exceedance) was received and no exceedance was recorded in construction noise monitoring in this Reporting Period.
- ES.07 No 1-hour and 24-hour TSP monitoring results that triggered the Action or Limit Level in this Reporting Period. Therefore, no associated corrective actions were required.
- ES.08 No marine water monitoring results that triggered the Action or Limit Level in this Reporting Period. Therefore, no associated corrective actions were then required.
- ES.09 Exceedances registered during the Reporting Period were summarized below:

Exceedance	Construction Noise	Air Quality		Marine Water Quality			Total
		24-hour TSP	1-hour TSP	DO	Turbidity	Suspended Solids	
Action Level	0	0	0	0	0	0	0
Limit Level	0	0	0	0	0	0	0

**ENVIRONMENTAL COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS**

ES.10 No environmental complaint, summons and successful prosecutions was recorded or received.

**SITE INSPECTION BY EXTERNAL PARTIES**

ES.11 In this Reporting Period, no site visit by EPD/ AFCD was recorded.

**REPORTING CHANGE**

ES.12 There are no reporting changes in this reporting period.

**FUTURE KEY ISSUES**

ES.13 During dry season, special attention should be paid to the dust mitigation measures to avoid fugitive dust emissions from loose soil surface or haul road. Nevertheless, mitigation measures implemented for control the surface runoff including wheel wash facilities, covering of the loose soil surface or stockpile with tarpaulin sheet, etc., should be properly maintained to prevent any muddy or sandy runoff from the loose soil surface overflow on the site boundary; and also with construction noise and other environmental issues stipulated in the Final Report Environmental Monitoring and Audit Manual [2095/13.3].

ES.14 For the dust control and construction noise aspects, mitigation measures described in Mitigation Measure Implementation Schedule, should also be properly followed to avoid generating any potential adverse impacts from the construction activities.



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## **1 INTRODUCTION**

### **1.1 PROJECT BACKGROUND**

The China Road & Bridge Corporation (CRBC) has been awarded the *Contract ST/2008/02 Ma On Shan Development – Roads, Drainage and Sewerage Works at Whitehead and Lok Wo Sha Phase 1* (the Project) by the Civil Engineering & Development Department (CEDD) on 18 June 2009. Total project time is expected to be 23 months.

The Project includes civil engineering infrastructure works for the construction of District Distributors: Road D1(N) & Road D1(W) and Local Road L3 with the associated footpath, cycle tracks, planting areas, drains, sewers, water-mains and landscaping works. There are also one box culvert, one sewage pumping station with pressurized sewers and two site formation works for G/IC and LWS-B areas at Lok Wo Sha to be constructed under the Project. The site layout plan is shown in [Annex A](#).

The Project is part of an overall plan approved under a statutory EIA (Register No. AEIAR-068/2002) for a Feasibility Study for Housing Development at Whitehead & Lee On in Man On Shan commissioned by the then Territory Development Department. An Environmental Permit (EP-332/2009) for Road D1(N), Road D1(W) and Box Culvert of Whitehead & Lok Wo Sha Phase One Project (EP) has been obtained by the CEDD on 24 March 2009 for the relevant works.

According to the Particular Specification (PS) Section 25 and the Environmental Permit No. EP-332/2009, overall scope of environmental monitoring including air quality, construction noise, water quality, and site environmental audit should be undertaken in accordance with the Final Report Environmental Monitoring and Audit Manual [2095/13.3] by an independent Environmental Team (ET). Also, monitoring and audit works for landscaping and visual will be undertaken as part of the EM&A programme.

Action-United Environmental Services and Consulting (AUES) has been commissioned by CRBC as the ET to implement the relevant EM&A program. As part of the EM&A program, baseline monitoring is required to determine the ambient environmental conditions.

This is the 29<sup>th</sup> monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **26 January 2012** to **25 February 2012**.

### **1.2 REPORT STRUCTURE**

The Monthly Environmental Monitoring and Audit (EM&A) Report is structured into the following sections:-

<b>SECTION 1</b>	<b>INTRODUCTION</b>
<b>SECTION 2</b>	<b>PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS</b>
<b>SECTION 3</b>	<b>SUMMARY OF MONITORING REQUIREMENTS</b>
<b>SECTION 4</b>	<b>IMPACT MONITORING RESULTS</b>
<b>SECTION 5</b>	<b>WASTE MANAGEMENT</b>
<b>SECTION 6</b>	<b>SITE INSPECTIONS</b>
<b>SECTION 7</b>	<b>ENVIRONMENTAL COMPLAINTS AND NON-COMPLIANCE</b>
<b>SECTION 8</b>	<b>IMPLEMENTATION STATUES OF MITIGATION MEASURES</b>
<b>SECTION 9</b>	<b>IMPACT FORECAST</b>
<b>SECTION 10</b>	<b>CONCLUSIONS AND RECOMMENDATION</b>

## 2 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

### 2.1 PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in [Annex B](#).

### 2.2 CONSTRUCTION PROGRESS

The master and three month rolling construction programs are enclosed in [Annex C](#) and the major construction activities undertaken in this Reporting Period are listed in [Table 2-1](#) as below.

**Table 2-1 Construction Activities undertake in the Reporting Period**

Location	Activities	Nuisances	Mitigation Measures
Portion 1	Erection of fencing	Noise generated from erection work	Carry out work within 07:00-19:00, except public holiday/Sunday
	Road construction	Noise generated from road construction work	Carry out work within 07:00-19:00, except public holiday/Sunday
	Metal work	Noise generated from metal work	Carry out work within 07:00-19:00, except public holiday/Sunday

### 2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

Summary of the relevant permits, licences, and/or notifications on environmental protection for this Project in this Reporting Period is presented in [Table 2-2](#).

**Table 2-2 Status of Environmental Licenses and Permits**

Item	Description	License/Permit Status
1	Environmental Permit EP-332/2009 - Road D1(N), Road D1(W) and Box Culvert of Whitehead & Lok Wo Sha Phase One Project	Permit Issued on 24 March 2009
2	Air pollution Control (Construction Dust)	Notified EPD on 12 June 09
3	Chemical waste Producer Registration (WPN: 5123-757-C3124-31)	Application date: 16/07/2009 Date approved: 20/8/2009
4	Water Pollution Control Ordinance (Discharge License) (License no.: WT00005406-2009)	Application date: 06/07/2010 Date approved: 22/07/2010
5	Billing Account for Disposal of Construction Waste (Account Number: 700892117)	Application no. :RN/00606 Valid to: 28/2/2015
6	Landscape Master Plan for Roads D1(N) and D1(W)	Application date: 02/10/2009 Status : Approved on 28/5/2010

The “Baseline/Impact Monitoring Methodology (R0009 Version 6)” was set out in accordance with the Final Report Environmental Monitoring and Audit Manual [2095/13.3]. It was approved by the ER and agreed with the Independent Environmental Checker (IEC) and submitted to the EPD for endorsement.

Baseline Monitoring Report (TCS00477/09/600/R0023Ver.3) for the Project was issued by the ETL and verified by the IEC on 5 October 2009. The report was also submitted to the EPD for endorsement.

### 3 SUMMARY OF MONITORING REQUIREMENTS

The Environmental Monitoring and Audit requirements are set out in the project EM&A manual. Air quality, construction noise and water quality have been identified to be the key issues during the construction phase of the Project. Also, monitoring and audit works for landscaping and visual will be undertaken as part of the EM&A programme by others during construction period.

A summary of the Impact EM&A requirements for air, noise and marine water monitoring are presented in the sub-sections below.

#### 3.1 MONITORING PARAMETERS

The EM&A Impact monitoring program covers the following environmental issues:

- Air quality;
- Construction noise;
- Water quality; and
- Landscape and visual resources (to be provided by others separately)

A summary of the monitoring parameters is presented in *Table 3-1* as below.

**Table 3-1 Summary of EM&A Requirements**

Environmental Issue	Parameters
Air Quality	<ul style="list-style-type: none"> <li>• 1-hour TSP Monitoring by Real-Time Portable Dust Meter; and</li> <li>• 24-hour TSP Monitoring by High Volume Air Sampler.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Leq<sub>(30min)</sub> during normal working hours.; and</li> <li>• Leq<sub>(15min)</sub> during the construction works is undertaken in Restricted Hours.</li> </ul>
Marine Water Quality*	<b>In-situ Measurements</b> <ul style="list-style-type: none"> <li>• Dissolved Oxygen Concentration (mg/L);</li> <li>• Dissolved Oxygen Saturation ( % );</li> <li>• Turbidity (NTU);</li> <li>• pH unit;</li> <li>• Salinity (ppt);</li> <li>• Water depth (m); and</li> <li>• Temperature (°C).</li> </ul>
	<b>Laboratory Analysis</b> <ul style="list-style-type: none"> <li>• Suspended Solids (mg/L)</li> </ul>
Landscape and Visual Resources	<ul style="list-style-type: none"> <li>• Vegetation survey undertaken on an “area” basis to identify representative types and species composition;</li> <li>• Assessment of landscape character; and</li> <li>• Tree survey report.</li> </ul>

\* *Notes: Since there will be no workshop, vehicle repair area, canteens, workers’ facilities or chemical storage facilities with water discharge points within the site boundaries, no measurements for oil and grease, BOD<sub>5</sub> or COD will be necessary based on Section 4.2.2 of the EM&A Manual.*

#### 3.2 MONITORING LOCATIONS

Some monitoring locations have been recommended in the *EM&A Manual* and shown in [Annex D](#). However, as the *EM&A Manual* was originally approved for a much greater area, some of the monitoring locations have been refined in order to monitor the specific impacts of this Project only. Before the commencement of this EM&A programme, the proposed monitoring locations had been verified by the IEC and endorsed by the EPD.

##### Air Quality

Two designated monitoring stations: A1 and A2 were recommended in the *EM&A Manual*. Location A1 is situated at a village house in To Tau near a new pumping station to be constructed under the Project, and Location A2 is at the existing Li Po Chung United World College.

However, owing to the much reduced scale of the Project compare to the original scope envisaged in the 2002 EIA Study, it is considered, from experience, that it would be sufficient for both the baseline and impact monitoring programmes to be carried out at A1 only. The recommendation and proposal was issued by ET and verified by the IEC and endorsed by the EPD. The final Air Sensitive Receiver where monitoring shall be performed is listed in **Table 3-2** and shown in **Annex E**.

**Table 3-2 Location of Air Quality Monitoring Station**

Sensitive Receiver	Location
A1	Village house in To Tau near the proposed pumping station

**Construction Noise**

Two designated monitoring stations: CN1 and CN2 were recommended by the *EM&A Manual*. They are identical to Locations A1 and A2 respectively for air monitoring.

Similarly, it is necessary to carry out baseline and impact monitoring at CN1 only. The noise sensitive receiver was performed in baseline monitoring period under the Project is renamed as N1 for brevity and shown in **Table 3-3** and **Annex E**.

**Table 3-3 Location of Noise Monitoring Station**

Sensitive Receiver	Location
N1	Village house in To Tau near the proposed pumping station

**Marine Water Quality**

Totally ten designated water monitoring stations are identified in the *EM&A Manual* including two control stations (C1-C2) and eight impact stations (W1-W8). Impact stations W1-W4 were identified near the discharge outfalls of the stormwater drainage systems at the north and west shore of Whitehead development; W5 & W6 were identified at the box culver outfall and natural stream outfall of Starfish Bay respectively; and W7 & W8 were located offshore near the Tolo Channel. Two control stations: C1 & C2 were recommended at the sea body of the Whitehead development and within Starfish Bay respectively.

***Review of Monitoring Locations***

According to *Section 4.5.1* of the *EM&A Manual*, the monitoring locations designated in the manual are subject to change to cater for possible updates in the scale of development, design of works packages and surrounding sensitive receivers. A review in relation to the latest monitoring locations is given below.

- A Due to the relocation of the box culvert which is now diverted to discharge into the north of Whitehead development instead of Starfish Bay, one location, the old W6 location in the *EM&A Manual*, which was located at the immediate exit of the culvert may be deleted in the future.
- B As the new discharge point at the north of Whitehead development is very close to one old station (W3 of the *EM&A Manual*), there is no need to provide an additional station for the new culvert exit.

For ease of administration, the new impact station’s ID are renumbered as M1-M8 (meaning Marine Stations 1-8) to replace the old impact stations ID: W1-W8. The location of sampling points ID are listed in **Table 3-4** and a map showing these monitoring stations is presented in **Annex E**.



**Table 3-4 Location of Marine Water Quality Monitoring Stations**

Sensitive Receiver	Monitoring Station	Status	Co-ordnance		Location/Remarks
			East	North	
The Sea Zone of the Project West and North (Tolo Harbour)	C1	Control Station	833014	0842187	Upstream of sea body located at north-west of Whitehead development
	M1 (old W1)	Impact Station	832561	842518	Near the shore of Cheung Kang Village
	M2 (old W2)	Impact Station	832795	842535	The shore of To Tau near the proposed sewage pumping station
	M3 (old W3)	Impact Station	833094	842649	Close to the new box culvert outfall of the Project.
	M4 (old W4)	Impact Station	833110	843038	The shore of Wo Kwai Sha Tsoi
The Sea Zone of Starfish Bay	C2	Control Station	832995	843819	Upstream of sea body located at Starfish Bay
	M5 (old W7)	Impact Station	832784	843484	Located offshore near the Tolo Channel in Starfish Bay
	M6 (old W5)	Impact Station	832713	843393	Located at the natural stream outfall in Starfish Bay
	M7 (old W8)	Impact Station	832649	843643	Located offshore near the Tolo Channel in Starfish Bay
	M8 (old W6)	Impact Station	832584	843470	Located at the natural stream outfall in Starfish Bay

### 3.3 MONITORING FREQUENCY AND PERIOD

The requirements of impact monitoring are stipulated in *Sections 2.7, 3.6, and 4.7* of the EM&A Manual and listed as follows.

#### 1-hour TSP Monitoring

Parameters : 1-hour TSP monitoring  
Frequency : 3 times every six days for 1-hour TSP  
Duration : Throughout out the construction period

#### 24-hour TSP Monitoring

Parameters : 24-hour TSP monitoring  
Frequency : once every 6 days for 24-hour TSP  
Duration : Throughout out the construction period

#### Noise Monitoring

Parameters : One set of Leq(30min) as 6 consecutive Leq(5min) between 0700-1900 hours on normal weekdays  
Frequency : Once every week  
Duration : Throughout out the construction period

#### Marine Water Quality Monitoring

Parameters : In-situ measurements including water depth, temperature, DO, pH, turbidity and salinity; and Suspended Solids is analyzed by HOKLAS-accredited laboratory.

Frequency : Three days a week, at mid ebb and mid flood tides. The interval between 2 sets of monitoring will be more than 36 hours.

Sampling : (a) Three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m.

#### Depth

(b) If the water depth is between 3m and 6m, two depths: 1m below water surface and 1m above sea bottom.

(c) If the water depth is less than 3m, 1 sample at mid-depth is taken

- Duration:
- (a) Stations C1, M1, M2, M3 and M4 will be carried out during the construction works is still on-going after stormwater drainage systems are built and operated or marine works undertaken (in accordance with the Section 4.5.4 EM&A Manual).
  - (b) Station C2, M5, M6, M7 and M8 will be carried out throughout construction period (in accordance with the Section 4.5.3 EM&A Manual).

### 3.4 MONITORING EQUIPMENT

#### Air Quality Monitoring

The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B*. If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to the IEC to approve. The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.

#### Noise Monitoring

Sound level meter in compliance with the *International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1)* specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m s<sup>-1</sup>.

#### Water Quality Monitoring

- i. **Dissolved Oxygen and Temperature Measuring Equipment** – The instrument should be a portable and weatherproof dissolved oxygen (DO) measuring instrument complete with cable and sensor, and use a DC power source. The equipment should be capable of measuring as included a DO level in the range of 0 – 20mg L<sup>-1</sup> and 0 – 200% saturation; and a temperature of 0 – 45 degree Celsius.
- ii. **pH Meter** – The instrument shall consist of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It shall be readable to 0.1 pH in arrange of 0 to 14.
- iii. **Turbidity (NTU) Measuring Equipment** – The instrument should be a portable and weatherproof turbidity measuring instrument using a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU.
- iv. **Water Sampling Equipment** – A water sampler should comprise a transparent PVC cylinder, with a capacity of not less than 2 litres, which can be effectively sealed with latex cups at both ends. The sampler 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.
- v. **Water Depth Detector** – A portable, battery-operated echo sounder should be used for the determination of water depth at each designated monitoring station. This unit can either be hand held or affixed to the bottom of the work boat.
- vi. **Salinity Measuring Equipment** – A portable salinometer capable of measuring salinity in the range of 0 - 40 parts per thousand (ppt) should be provided for measuring salinity of the water at each monitoring location.
- vii. **Sample Containers and Storage** – Water samples for SS should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen).
- viii. **Monitoring Position Equipment** - A hand-held or boat-fixed type digital Differential Global Positioning System (DGPS) with way point bearing indication and Radio Technical Commission for maritime (RTCM) Type 16 error message ‘screen pop-up’ facilities (for real-time auto-display of error messages and DGPS corrections from the Hong Kong Hydrographic Office), or other equipment instrument of similar accuracy, should be provided and used during marine water monitoring to ensure the monitoring vessel is at the



correct location before taking measurements.

- ix. **Suspended Solids Analysis** – Analysis of suspended solids shall be carried out in a HOKLAS or other international accredited laboratory.

The monitoring equipments using for the EM&A program were proposed by the ET and verified by the IEC prior to the commencement of the monitoring. Details of the equipments used for impact monitoring are listed in *Table 3-5* below.

**Table 3-5 Monitoring Equipments Used in EM&A Program**

Equipment	Model
<b>Air Quality Monitoring</b>	
High Volume Sampler – 24 hour TSP	TE-5170 TSP MFC Sampler System
Calibration Kit – 24-hour TSP	TISCH Model TE-5025A
Portable dust meter – 1-hour TSP	TSI DustTrak Model 8520
<b>Construction Noise</b>	
Integrating Sound Level Meter	B&K Type 2238
Calibrator	B&K Type 4231
Portable Wind Speed Indicator	Testo Anemometer
<b>Water quality</b>	
A Digital Global Positioning System	GPS12 Garmin
Water Depth Detector	Eagle Sonar
Water Sampler	A 2-litre transparent PVC cylinder with latex cups at both ends
Thermometer & DO meter	YSI Professional Plus Multimeter and Hach 2100Q Turbidimeter
pH meter	
Turbidimeter	
Salinometer	
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	‘Willow’ 33-litter plastic cool box with Ice pad
Suspended Solids	HOKLAS-accredited laboratory (ALS Technichem (HK) Pty Ltd)

### 3.5 MONITORING METHODOLOGY

#### 1-hour TSP Monitoring

The 1-hour TSP monitor was either a TSI Dust Track Aerosol Monitor Model 8520 which is a portable, battery-operated laser photometer. The 1-hour TSP meter provides a real time 1-hour TSP measurement based on 90° light scattering. The 1-hour TSP monitor consists of the following:

- (a.) A pump to draw sample aerosol through the optic chamber where TSP is measured;
- (b.) A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability; and
- (c.) A built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

The 1-hour TSP meter is used within the valid period as follow manufacturer’s Operation and Service Manual.

#### 24-hour TSP Monitoring

The equipment used for 24-hour TSP measurement is T TE-5170 TSP MFC Sampler System, which complied with *EPA Code of Federal Regulation, Appendix B to Part 50*. The High Volume Air Sampler (HVS) consists of the following

- (a.) An anodized aluminum shelter;
- (b.) A 8”x10” stainless steel filter holder;
- (c.) A blower motor assembly;
- (d.) A continuous flow/pressure recorder;
- (e.) A motor speed-voltage control/elapsed time indicator;

- (f.) A 7-day mechanical timer, and
- (g.) A power supply of 220v/50 Hz

The HVS is operated and calibrated on a regular basis in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A). One point checking would carry out in two month interval while full point checking in every 6 month.

24-hour TSP is collected by the ET on filters of HVS and quantified by a local HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd (ALS), upon receipt of the samples. The ET keep all the sampled 24-hour TSP filters in normal air conditioned room conditions, i.e. 70% RH (Relative Humidity) and 25°C, for six months prior to disposal.

### **Noise Monitoring**

Noise measurements were taken in terms of the A-weighted equivalent sound pressure level ( $L_{eq}$ ) measured in decibels (dB). Supplementary statistical results ( $L_{10}$  and  $L_{90}$ ) were also obtained for reference.

Sound level meters listed in **Table 3-5** are complied with the *International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1)* specifications, as recommended in Technical Memorandum (TM) issued under the *Noise Control Ordinance (NCO)*.

During the monitoring, all noise measurements were performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level ( $L_{eq}$ ).  $Leq_{(30min)}$  in six consecutive  $Leq_{(5min)}$  measurements were used as the monitoring parameter for the time period between 0700-1900 hours on weekdays; and also  $Leq_{(15min)}$  in three consecutive  $Leq_{(5min)}$  measurements is used as monitoring parameter for other time periods (e.g. during restricted hours), if necessary.

During the measurement, the sound level meter is mounted on a tripod with a height of 1.2m above ground and placed at the assessment point and oriented such that the microphone is pointed to the site with the microphone facing perpendicular to the line of sight. The windshield is fitted for all measurements. The assessment point is normally set as free-field situation for the measurement.

Prior of noise measurement, the accuracy of the sound level meter is checked using an acoustic calibrator generating a known sound pressure level at a known frequency. The checking was performed before and after the noise measurement.

### **Water Quality**

Water quality monitoring is conducted at the designated locations. The sampling produce with the in-situ monitoring are presented as below:

#### ***Sampling Procedure***

A Digital Global Positioning System (GPS) is used to identify the designated monitoring stations prior to water sampling. A portable, battery-operated echo sounder is used for the determination of water depth at each station. At each station, marine water samples is collected at three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m. Samples at 1m below water surface and 1m above sea bottom are collected when the water depth is between 3m and 6m. Only 1 sample at mid-depth is taken when the water depth is below 3m.

The marine water sampler is lowered into the water body at the predetermined depth. The trigger system of the sampler should been activated with a messenger. The opening ends of the sampler then is closed accordingly and water sample is collected.

The sample container is rinsed with a portion of the water sample. The water sample then is transferred to the high-density polythene bottles as provided by the laboratory, labeled with a unique sample number and sealed with a screw cap.

Before commencement of the sampling, general information such as the date and time of sampling, weather condition and tidal condition as well as the personnel responsible for the monitoring are to be recorded on the monitoring field data sheet.

A 'Willow' 33-litter plastic cool box packed with ice is used to preserve the collected water samples prior to arrival at the laboratory for chemical determination. The water temperature of the cool box is maintained at a temperature as close to 4<sup>0</sup>C as possible without being frozen. Samples collected are delivered to the laboratory upon collection

### ***In-situ Measurement***

#### ***Positioning of Monitoring Locations***

A digital Global Positioning System (GPS) is used during marine water monitoring to ensure the monitoring vessel is at the correct location when taking measurement and samples.

#### ***Depth, Dissolved Oxygen (DO), Temperature, Turbidity, Salinity and pH value***

The *YSI Model 6820 Multi-parameter Water Quality Monitoring System* is used for marine water in-situ measures, which automates the measurements and data logging of depth, temperature, dissolved oxygen, dissolved oxygen saturation, turbidity, pH and salinity simultaneously. Before each round of monitoring, the dissolved oxygen probe is calibrated by the wet bulb method and the turbidity and salinity probes checked with distilled water.

#### ***Laboratory Analysis***

All water samples are analyzed with Suspended Solids (SS) as specified in the *EM&A Manual* by a local HOKLAS-accredited testing laboratory (ALS Technichem (HK) Pty Ltd HOKLAS registration no. 66). SS analysis is determined by the laboratory upon receipt of the water samples using HOKLAS accredited analytical methods namely ALS Method EA-025. The HOKLAS accredited certificate of laboratory is provided in [Annex F](#).

### **3.6 EQUIPMENT CALIBRATION**

Calibration of the HVS is performed upon installation in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A). The calibration data are properly documented and the records are maintained by ET for future reference.

The 1-hour TSP meter was calibrated by the supplier prior to purchase. Zero response of the equipment was checked before and after each monitoring event. In-house calibration with the High Volume Sampler (HVS) in same condition was undertaken in yearly basis.

The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis.

The Multi-parameter Water Quality Monitoring System is calibrated by HOKLAS accredited laboratory of three month intervals.

All updated calibration certificates of the monitoring equipment used for the impact monitoring program in this Reporting Period are attached in [Annex F](#).

### **3.7 METEOROLOGICAL INFORMATION**

The meteorological information during the construction phase is obtained from Tai Po and Shatin Stations of the Hong Kong Observatory (HKO).

### 3.8 DATA MANAGEMENT AND DATA QA/QC CONTROL

The impact monitoring data are handled by the ET's systematic data recording and management, which complies with in-house Quality Management System. Standard Field Data Sheets (FDS) are used in the impact monitoring program.

The monitoring data recorded in the equipment e.g. 1-hour TSP meter, noise meter and Multi-parameter Water Quality Monitoring System are downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data are input into a computerized database properly maintained by the ET. The laboratory results are input directly into the computerized database and QA/QC checked by personnel other than those who input the data. For monitoring activities require laboratory analysis, the local laboratory follows the QA/QC requirements as set out under the HOKLAS scheme for all laboratory testing.

### 3.9 DETERMINATION OF ACTION/LIMIT (A/L) LEVELS

According to the Final Report Environmental Monitoring and Audit Manual [2095/13.3], the air quality, construction noise and water quality criteria with Landscape and Visual Impact were set up, namely Action and Limit levels are listed in *Tables 3-6, 3-7, 3-8 and 3-9* as below.

**Table 3-6 Action and Limit Levels for Air Quality Monitoring**

Monitoring Stations	Action Level ( $\mu\text{g}/\text{m}^3$ )		Limit Level ( $\mu\text{g}/\text{m}^3$ )	
	1-hour	24-hour	1-hour	24-hour
A1	302	172	500	260

**Table 3-7 Action and Limit Levels for Construction Noise**

Time Period	Action Level in dB(A)	Limit Level in dB(A)
0700-1900 hours on normal weekdays	When one documented complaint is received	> 75* dB(A)

Note: \* Reduces to 70 dB(A) for schools and 65 dB(A) during the school examination periods.

**Table 3-8 Action and Limit Levels for Water Quality**

Monitoring Location	DO (mg/L) (Surface & Mid)		DO (mg/L) (Bottom)		Turbidity (NTU) (Depth Averaged)		SS (mg/L) (Depth Averaged)	
	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
M1	2.73	1.61	NA	NA	5.73	6.44	8.00	8.77
M2	2.85	1.98	NA	NA	6.26	6.45	10.40	14.08
M3	2.51	1.62	NA	NA	5.10	5.64	4.00	4.00
M4	2.60	1.74	2.57	1.65	5.32	5.83	5.50	6.27
M5	1.94	1.45	NA	NA	8.01	8.7	31.55	48.09
M6	2.36	1.38	NA	NA	8.47	9.36	12.00	18.93
M7	1.98	1.57	NA	NA	7.11	7.24	7.85	10.31
M8	2.67	1.08	NA	NA	6.27	7.19	7.00	11.62

Notes:

- "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths;
- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

**Table 3-9 Action Level for Landscape and Visual Impact in Construction Phase**

Parameter	Action Level	Limit Level
Any trespass by the contractor outside the limit of the works, including any damage to existing trees, woodland and vegetation	<ul style="list-style-type: none"> <li>• Non-conformity on one occasion</li> <li>• Repeated non-conformity</li> </ul>	NA

Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan enclosed in *Annex G*.

## 4 IMPACT MONITORING RESULTS

Further to the instruction by CRBC, the EM&A program was commenced on 20 October 2009 and the monitoring schedule of this reporting period and the forthcoming month are presented in [Annex H](#). The monitoring results are presented in the following sub-sections.

### 4.1 RESULTS OF AIR QUALITY MONITORING

In this reporting period, a total of **6** events of 24-hour TSP monitoring and **18** events of 1-hour TSP monitoring were undertaken. The results for air quality monitoring are summarized in [Tables 4-1](#). The 24-hour TSP data are shown in [Annex I](#) and the graphical plots of 24-hour and 1-hour TSP are shown in [Annex J](#).

**Table 4-1 Summary of 24-hour and 1-hour TSP Monitoring Results**

Date	24-hour TSP ( $\mu\text{g}/\text{m}^3$ )	1-hour TSP ( $\mu\text{g}/\text{m}^3$ )				
		Date	Start Time	1 <sup>st</sup> hour measured	2 <sup>nd</sup> hour measured	3 <sup>rd</sup> hour measured
26-Jan-12	40	26-Jan-12	10:27	87	72	90
1-Feb-12	83	1-Feb-12	9:33	102	111	108
7-Feb-12	78	6-Feb-12	11:18	98	81	93
13-Feb-12	84	10-Feb-12	9:51	87	94	83
18-Feb-12	95	16-Feb-12	9:17	104	119	113
24-Feb-12	35	22-Feb-12	9:28	91	97	93
Average (Range)	<b>69</b> <b>(35-95)</b>	Average (Range)		<b>96</b> <b>(72-119)</b>		

As shown in [Tables 4-1](#), all the monitoring results for 1-hour and 24-hour TSP were well below the Action/ Limit Level. No associated corrective actions were therefore required.

The meteorological data during the impact monitoring days are summarized in [Annex K](#).

### 4.2 RESULTS OF CONSTRUCTION NOISE MONITORING

**6** events of construction noise monitoring were undertaken in this Reporting Period. The noise monitoring results at the designated location (N1) are summarized in [Table 4-2](#). The sound level were measured as a free field situation, therefore, a façade correction of +3 dB(A) has been added accordance to acoustical principles of the EPD guidelines.

**Table 4-2 Summary of Construction Noise Monitoring Results**

Date	Start Time	1 <sup>st</sup> Leq <sub>5min</sub>	2 <sup>nd</sup> Leq <sub>5min</sub>	3 <sup>rd</sup> Leq <sub>5min</sub>	4 <sup>th</sup> Leq <sub>5min</sub>	5 <sup>th</sup> Leq <sub>5min</sub>	6 <sup>th</sup> Leq <sub>5min</sub>	Leq <sub>30min</sub>	Corrected* Leq <sub>30min</sub>
26-Jan-12	10:29	48.2	51.3	50.6	49.6	52.2	51.7	50.8	53.8
1-Feb-12	9:28	53.6	52.1	54.6	51.6	50.8	55.1	53.2	56.2
6-Feb-12	11:15	50.3	51.1	50.8	49.6	52.3	51.4	51.0	54.0
10-Feb-12	9:58	56.1	54.8	54.2	53.7	55.6	57.4	55.5	58.5
16-Feb-12	9:22	64.7	63.2	63.8	65.9	66.1	62.4	64.6	67.6
22-Feb-12	9:31	57.4	59.1	56.3	53.8	58.4	57.9	57.5	60.5

(\* ) A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines.

It was noted that no noise complaint (which is an Action Level exceedance) and exceedances were received in this reporting month. The monitoring result is shown in [Tables 4-2](#) and the graphical plot is shown in [Annex J](#).

### 4.3 RESULTS OF MARINE WATER QUALITY OF MONITORING

According to the information provided by the Contractor, the box culvert has built and operated since 8 June 2011. The concern monitoring at C1 and other four designed monitoring stations was commenced accordingly. After the stormwater drainage system was built, Starfish Bay and the sea zone of the project west and north (Tolo Harbour) are the potential impact area during construction phase as it would receive all the site runoff of the project. Therefore the control



stations C1 & C2 and eight designated monitoring stations M1-M8 were ongoing adopted to carry out impact monitoring in this Reporting Period in accordance with Section 4.5 of the Final EM&A Manual.

The monitoring results including in-situ measurements and laboratory testing results are provided in *Annex I*. The graphical plots are shown in *Annex J*.

During the Reporting Period, field measurements showed that marine water of the depth average of temperature was within **15.29 to 17.46°C**, the salinity concentration was within **31.34 to 33.03 ppt**, and pH value was within **8.19 to 8.51**.

Monitoring results of 3 key parameters: dissolved oxygen (DO), turbidity and suspended solids in this Reporting Period, are summarized in *Tables 4-3 to 4-6*.

**Table 4-3 Summary of Water Quality Results – Ebb Tides (The Sea Zone of the Project West and North)**

Sampling date	DO conc. of Depth Ave. of Surf. and Mid Layer (mg/L)				DO Conc. Bottom layer (mg/L)	Turbidity Depth Ave. (NTU)				SS Depth Ave. (mg/L)			
	M1	M2	M3	M4	M4	M1	M2	M3	M4	M1	M2	M3	M4
26-Jan-12	8.28	8.11	8.05	8.02	7.97	2.05	1.90	1.90	1.93	3.00	2.00	3.00	3.50
28-Jan-12	7.66	7.68	7.61	7.79	7.66	1.45	1.60	1.70	1.70	2.00	5.00	4.00	2.00
30-Jan-12	9.01	8.78	7.77	8.27	8.10	1.65	1.45	1.55	1.43	2.00	2.00	2.00	2.50
1-Feb-12	8.32	8.22	7.86	8.05	8.06	1.30	1.15	1.55	1.45	8.00	5.00	3.00	4.50
4-Feb-12	9.17	9.11	8.71	8.77	8.81	1.55	2.25	1.75	2.20	3.00	3.00	2.00	2.00
6-Feb-12	9.71	10.06	9.31	9.86	9.38	1.40	1.35	1.40	1.50	5.00	2.00	4.00	3.50
8-Feb-12	8.02	7.73	7.58	7.52	7.47	1.10	1.55	2.15	1.05	4.00	8.00	4.00	4.00
10-Feb-12	6.72	6.89	6.62	6.71	6.50	1.35	1.40	1.50	1.73	2.00	5.00	2.00	4.50
14-Feb-12	5.17	4.90	4.49	4.75	4.58	1.10	1.10	1.15	1.55	6.00	2.00	4.00	3.00
16-Feb-12	4.63	4.62	4.18	4.45	4.47	1.05	1.15	1.10	1.18	2.00	2.00	2.00	2.50
18-Feb-12	4.23	4.25	4.91	4.67	4.83	2.10	2.35	1.15	1.08	2.00	2.00	3.00	2.50
20-Feb-12	4.28	4.16	4.08	3.89	3.79	2.35	2.25	1.10	1.60	2.00	3.00	2.00	3.00
22-Feb-12	3.13	3.16	3.05	3.13	3.08	1.15	1.15	1.25	1.25	4.00	2.00	3.00	5.00
24-Feb-12	4.90	4.96	4.40	4.79	4.67	1.45	1.50	1.45	1.38	5.00	2.00	3.00	3.00

**Table 4-4 Summary of Water Quality Results – Flood Tides (The Sea Zone of the Project West and North)**

Sampling date	DO conc. of Depth Ave. of Surf. and Mid Layer (mg/L)				DO Conc. Bottom layer (mg/L)	Turbidity Depth Ave. (NTU)				SS Depth Ave. (mg/L)			
	M1	M2	M3	M4	M4	M1	M2	M3	M4	M1	M2	M3	M4
26-Jan-12	9.09	8.97	8.59	8.49	8.29	1.90	2.00	1.95	2.15	2.00	2.00	3.00	4.00
28-Jan-12	8.06	8.08	7.94	7.87	7.84	1.60	1.50	1.95	1.85	2.00	2.00	2.00	3.00
30-Jan-12	8.02	8.03	7.37	7.79	7.78	1.40	1.70	1.55	1.58	3.00	6.00	4.00	3.00
1-Feb-12	8.10	8.08	7.70	8.03	7.73	1.40	1.35	1.25	1.25	5.00	8.00	4.00	3.50
4-Feb-12	8.49	8.57	8.05	8.28	8.23	2.25	1.75	2.05	1.83	2.00	2.00	2.00	2.50
6-Feb-12	8.52	8.55	7.60	8.41	8.28	2.00	1.70	1.45	1.78	8.00	4.00	4.00	4.00
8-Feb-12	9.48	9.11	8.15	8.11	8.06	3.70	1.55	1.50	1.80	5.00	5.00	3.00	5.50
10-Feb-12	7.26	7.61	7.30	7.34	6.88	1.90	1.90	1.45	1.83	2.00	3.00	3.00	4.00
14-Feb-12	6.52	6.26	5.25	5.24	5.05	1.35	1.10	1.30	1.43	2.00	2.00	2.00	3.00
16-Feb-12	4.45	4.44	4.01	4.20	4.08	1.30	1.20	1.35	1.35	2.00	2.00	2.00	2.50

18-Feb-12	4.18	4.08	4.15	4.04	3.93	0.95	1.00	0.95	0.95	6.00	3.00	2.00	2.00
20-Feb-12	3.62	3.59	3.68	3.59	3.47	2.25	1.45	1.15	0.93	4.00	5.00	4.00	3.50
22-Feb-12	4.33	4.25	3.37	3.56	3.43	1.40	1.45	1.10	1.23	5.00	4.00	2.00	2.50
24-Feb-12	5.84	5.77	4.46	5.03	4.76	1.25	1.80	1.30	1.43	3.00	4.00	4.00	3.00

**Table 4-5 Summary of Water Quality Results – Ebb Tides (The Sea Zone of the Starfish Bay)**

Sampling date	DO conc. of Depth Ave. of Surf. and Mid Layer (mg/L)				Turbidity Depth Ave. (NTU)				SS Depth Ave. (mg/L)			
	M5	M6	M7	M8	M5	M6	M7	M8	M5	M6	M7	M8
26-Jan-12	7.90	7.93	7.90	7.96	1.90	2.25	3.00	2.60	2.00	3.00	4.00	2.00
28-Jan-12	7.51	7.58	7.51	7.44	1.25	1.35	1.40	1.60	2.00	2.00	4.00	2.00
30-Jan-12	8.11	8.13	8.09	7.97	1.45	1.60	1.70	1.45	2.00	4.00	2.00	5.00
1-Feb-12	8.13	8.11	8.12	7.81	1.50	1.35	1.40	1.25	3.00	6.00	7.00	3.00
4-Feb-12	8.52	8.48	8.46	8.27	1.80	1.60	1.90	1.85	3.00	6.00	3.00	3.00
6-Feb-12	8.87	8.91	8.77	8.69	1.35	1.55	1.50	2.05	6.00	3.00	5.00	7.00
8-Feb-12	7.24	7.26	7.15	7.27	1.55	1.35	1.25	1.25	7.00	5.00	6.00	4.00
10-Feb-12	6.50	6.51	6.37	6.50	1.35	1.40	1.60	1.45	3.00	6.00	4.00	5.00
14-Feb-12	4.65	4.56	4.64	4.31	1.20	1.35	1.20	1.25	3.00	2.00	3.00	2.00
16-Feb-12	4.47	4.45	4.47	4.28	1.25	1.10	1.20	1.20	2.00	2.00	2.00	2.00
18-Feb-12	4.31	4.42	4.27	4.62	1.20	1.20	1.10	1.35	2.00	2.00	3.00	2.00
20-Feb-12	3.65	3.66	3.60	3.68	0.95	0.90	1.00	1.00	6.00	2.00	7.00	2.00
22-Feb-12	3.12	3.12	3.13	3.01	1.15	1.25	1.25	1.20	4.00	2.00	4.00	4.00
24-Feb-12	4.83	4.72	4.85	4.25	1.40	1.40	1.45	1.55	4.00	2.00	5.00	3.00

**Table 4-6 Summary of Water Quality Results – Flood Tides (The Sea Zone of the Starfish Bay)**

Sampling date	DO conc. of Depth Ave. of Surf. and Mid Layer (mg/L)				Turbidity Depth Ave. (NTU)				SS Depth Ave. (mg/L)			
	M5	M6	M7	M8	M5	M6	M7	M8	M5	M6	M7	M8
26-Jan-12	8.21	8.22	8.15	8.29	2.30	2.30	1.90	2.60	2.00	6.00	4.00	4.00
28-Jan-12	7.81	7.76	7.82	7.61	1.60	1.65	1.45	1.60	4.00	2.00	2.00	2.00
30-Jan-12	7.66	7.64	7.61	7.37	1.85	1.50	1.80	1.50	8.00	3.00	6.00	2.00
1-Feb-12	7.68	8.12	7.67	7.36	2.15	1.45	1.55	1.50	4.00	2.00	6.00	4.00
4-Feb-12	8.27	8.24	8.23	8.02	1.95	1.75	1.75	1.70	4.00	4.00	3.00	4.00
6-Feb-12	7.92	7.67	7.88	7.10	1.65	1.30	1.70	1.40	6.00	7.00	5.00	4.00
8-Feb-12	7.76	7.78	7.73	7.77	1.50	1.45	1.50	1.60	4.00	6.00	3.00	5.00
10-Feb-12	7.05	7.01	7.12	6.87	1.70	1.70	1.40	1.45	7.00	3.00	4.00	4.00
14-Feb-12	4.94	4.92	4.91	4.76	1.30	1.40	1.25	1.15	4.00	2.00	5.00	2.00
16-Feb-12	4.39	4.37	4.40	4.04	1.10	1.10	1.20	1.10	2.00	4.00	2.00	4.00
18-Feb-12	3.87	3.91	3.86	4.06	0.95	0.95	1.35	1.05	3.00	2.00	3.00	2.00
20-Feb-12	3.59	3.59	3.59	3.59	1.00	1.00	0.95	1.05	2.00	4.00	2.00	4.00
22-Feb-12	3.30	3.30	3.31	3.07	1.20	1.35	1.55	1.25	7.00	2.00	4.00	2.00
24-Feb-12	4.96	4.83	4.90	4.53	1.95	1.40	1.50	1.40	2.00	3.00	2.00	3.00

A summary of exceedances for the three parameters: dissolved oxygen (DO), turbidity and suspended solids are shown in **Table 4-7**.

**Table 4-7 Summarized Exceedances of Marine Water Quality**

Station	DO (Ave of Top & mid-depth)		Turbidity (Depth Ave.)		SS (Depth Ave)		Total Exceedance	
	Action	Limit	Action	Limit	Action	Limit	Action	Limit
<b>Mid-Ebb</b>								
M1	0	0	0	0	0	0	0	0
M2	0	0	0	0	0	0	0	0
M3	0	0	0	0	0	0	0	0
M4	0	0	0	0	0	0	0	0
M5	0	0	0	0	0	0	0	0
M6	0	0	0	0	0	0	0	0
M7	0	0	0	0	0	0	0	0
M8	0	0	0	0	0	0	0	0
<b>Mid-Flood</b>								
M1	0	0	0	0	0	0	0	0
M2	0	0	0	0	0	0	0	0
M3	0	0	0	0	0	0	0	0
M4	0	0	0	0	0	0	0	0
M5	0	0	0	0	0	0	0	0
M6	0	0	0	0	0	0	0	0
M7	0	0	0	0	0	0	0	0
M8	0	0	0	0	0	0	0	0
<b>No of Exceedance</b>	0	0	0	0	0	0	0	0

For marine water monitoring, no exceedance of Action/Limit level was recorded in this reporting month. Based on temporary discharge drainage system and air quality mitigation measures, all waste water or runoff as come from the work site should not be discharged into natural streams and flow to the Starfish Bay, due to its was collected and reused for dust mitigation measures at the site. It is therefore no corrective action required.



## 5 WASTE MANAGEMENT

Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

### 5.1 RECORDS OF WASTE QUANTITIES

All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil.

The quantities of waste for disposal in this Reporting Period are summarized in *Table 5-1* and *5-2* and the Monthly Summary Waste Flow Table is shown in *Annex L*. Whenever possible, materials were reused on-site as far as practicable.

**Table 5-1 Summary of Quantities of Inert C&D Materials**

Type of Waste	Quantity	Disposal Location
Reused in this Contract (Inert) (m <sup>3</sup> )	0	Reuse in the contract
Reused in other Projects (Inert) (m <sup>3</sup> )	0	-
Disposal as Public Fill (Inert) (m <sup>3</sup> )	0	-

**Table 5-2 Summary of Quantities of C&D Wastes**

Type of Waste	Quantity	Disposal Location
Recycled Metal (kg)	0	-
Recycled Paper / Cardboard Packing (kg)	0	-
Recycled Plastic (kg)	0	-
Chemical Wastes (kg)	0	-
General Refuses (m <sup>3</sup> )	4	NENT Landfill

There was no site effluent or surface runoff discharged in this monthly period.

## 6 SITE INSPECTION

According to the Final Report Environmental Monitoring and Audit Manual [2095/13.3], the environmental site inspection should be formulated by ET Leader. Regular environmental site inspections had been carried out by the Contractor and ER to confirm the environmental performance.

Due to the completion of the project, no join site inspections were carried out by the RE, IEC, and the Contractor with ET on **February 2012** during the Reporting Period.

## 7 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

### 7.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

No environmental complaint, summons and prosecution was received in this Reporting Period. The statistical summary table of environmental complaint is presented in *Tables 7-1, 7-2* and *7-3*.

**Table 7-1 Statistical Summary of Environmental Complaints**

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
26 November 2009 – 25 January 2012	0	0	NA
26 January 2012 – 25 February 2012	0	0	NA

**Table 7-2 Statistical Summary of Environmental Summons**

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
26 November 2009 – 25 January 2012	0	0	NA
26 January 2012 – 25 February 2012	0	0	NA

**Table 7-3 Statistical Summary of Environmental Prosecution**

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
26 November 2009 – 25 January 2012	0	0	NA
26 January 2012 – 25 February 2012	0	0	NA

## 8 IMPLEMENTATION STATUS OF MITIGATION MEASURES

The environmental mitigation measures that recommended in the Final Report Environmental Monitoring and Audit Manual [2095/13.3] covered the issues of dust, noise and waste and they are summarized as following:

### **Dust Mitigation Measure**

- (a) The contractor shall frequently clean and water the site to minimize fugitive dust emissions.
- (b) Effective water sprays shall be used during the delivery and handling of aggregate, and other similar materials, when dust is likely to be created and to dampen all sited material during dry and windy weather.
- (c) Watering of exposed surfaces shall be exercised as often as possible depending on the circumstance.
- (d) Areas within the site where there is regular movement of vehicles must be regularly watered as often as necessary for effective suppression of dust or as often as directed by the Engineer.
- (e) Where dusty materials are being discharged to vehicle from a conveying system at a fixed transfer point, a three-sided roofed enclosure with a flexible curtain across the entry shall be provided. Exhausted fans shall be provided for this enclosure and vented to a suitable fabric filter system.
- (f) The Contractor shall restrict all motorized vehicles within the site, excluding those on public roads, to a maximum speed of 15km per hour and confine haulage and delivery vehicles to designated roadways inside the site.
- (g) Wheel washing facilities shall be installed and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads, water in wheel cleaning facility shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall submit detailed proposals for the wheel cleaning facilities to the Engineer prior to construction of the facility. Such wheel washing facilities shall be usable prior to any earthworks excavating activity in the site.
- (h) Any material dropped in the roads will need to be cleaned up immediately to prevent dust nuisance.

### **Noise Mitigation Measure**

- (a) Noisy equipment and activities should be sited by the Contractor as far from close-proximity sensitive receivers as practical. Prolonged operation of noisy equipment close to dwellings and schools should be avoided.
- (b) The Contractor should minimise construction noise exposure to the schools (especially during examination periods) as much as possible. The Contractor should liaise with the school and the Examination Authority to ascertain the exact dates and times of all examination periods during the course of the contract and to avoid noisy activities during these periods.
- (c) Noisy plant or processes should be replaced by quieter alternatives where possible. Silenced diesel and gasoline generators and power units, as well as silenced and super-silenced air compressors should be used.
- (d) Noisy activities should be scheduled to minimize exposure of nearby sensitive receivers to high levels of construction noise. For example, noisy activities can be scheduled for midday, or at times coinciding with periods of high background noise (such as during peak traffic hours).
- (e) Idle equipment should be turned off or throttled down. Noisy equipment should be properly maintained and used no more often than is necessary.
- (f) The power units of non-electric stationary plant and earth-moving plant should be quietened by vibration isolation and partial or full acoustic enclosures for individual noise-generating components.
- (g) Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided, thus reducing the cumulative impacts between operations. The numbers of operating items of powered mechanical equipment

- should be minimized.
- (h) Construction plant should be properly maintained (well-greased, damage and worn parts promptly replaced) and operated. Construction equipment often has silencing measures built in or added on, e.g. bulldozer silencers, compressor panels, and mufflers. Silencing measures should be properly maintained and utilized. Where possible, rubber or damping materials should be introduced between metal panels to avoid rattle and reverberation of noise.
  - (i) Equipment known to emit sound strongly in one direction, should where possible, be oriented so that the noise is directed away from nearby NSRs.
  - (j) Material stockpiles and other structures (such as site offices) should be effectively utilized, where practicable, to screen noise from on-site construction activities. Alternatively, noise barriers having a surface density of 10 kg/m<sup>2</sup> should be used to protect nearby NSRs if necessary.
  - (k) The Contractor should devise, arrange methods of working and carry out the works in such manner as to minimize noise impacts on the surrounding environment, and should provide experienced personnel with suitable training to ensure that these measures are implemented properly.

### **Waste Mitigation Measures**

- (a) The Contractor shall observe and comply with the Waste Disposal Ordinance (WDO) and its subsidiary regulations.
- (b) The Contractor shall submit to the Engineer for approval a Waste Management Plan with appropriate mitigation measures including the allocation of an area for waste segregation and shall ensure that the day-to-day site operations comply with the approved waste management plan.
- (c) The Contractor shall minimize the generation of waste from his work. Avoidance and minimization of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.
- (d) The reuse and recycling of waste shall be practiced as far as possible. The recycled materials shall include paper/cardboard, timber and metal etc.
- (e) The Contractor shall ensure that Construction and Demolition (C&D) materials are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt shall be reused in earth filling, reclamation or site formation works. The C&D waste which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled where possible and, as the last resort, disposal of at landfills.
- (f) The Contractor shall record the amount of wastes generated, recycled and disposed of (including the disposal sites). The Contractor shall use a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill.
- (g) In order to avoid dust or odour impacts, any vehicles leaving a works area carrying construction waste or public fill shall have their load covered.
- (h) To avoid the excessive use of wood, reusable steel shutters shall be used as a preferred alternative to formwork and falsework where possible.
- (i) The Contractor shall observe and comply with the Waste Disposal (Chemical Waste) (General) Regulation. The Contractor shall apply for registration as chemical waste producer under the Waste Disposal (Chemical Waste) (General) Regulation when chemical waste is produced. All chemical waste shall be properly stored, labeled, packaged and collected in accordance with the Regulation.

CRBC had been implementing the required environmental mitigation measures according to the Final Report Environmental Monitoring and Audit Manual [2095/13.3] subject to the site condition. Environmental mitigation measures generally implemented by CRBC in this Reporting Period are summarized in *Table 8-1*.

**Table 8-1 Environmental Mitigation Measures**

Issues	Environmental Mitigation Measures
Water Quality	<ul style="list-style-type: none"> <li>• Wastewater were appropriately treated by treatment facilities;</li> <li>• Drainage channels were provided to convey run-off into the treatment facilities; and</li> <li>• Drainage systems were regularly and adequately maintained.</li> <li>• De-silting facility was provided to treat the discharged water; also the treated water is reused for spraying the road surface.</li> </ul>
Air Quality	<ul style="list-style-type: none"> <li>• Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;</li> <li>• Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;</li> <li>• Cover all excavated or stockpile of dusty material by impervious sheeting or sprayed with water to maintain the entire surface wet;</li> <li>• Public roads around the site entrance/exit had been kept clean and free from dust; and</li> <li>• Tarpaulin covering of any dusty materials on a vehicle leaving the site.</li> <li>• Sprinkler of water spray system is provided at haul road to reduce dust emissions during the vehicles passing through the haul road</li> <li>• Wheel washing facility is provided at the site exit.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Good site practices to limit noise emissions at the sources;</li> <li>• Use of quiet plant and working methods;</li> <li>• Use of site hoarding or other mass materials as noise barrier to screen noise at ground level of NSRs;</li> <li>• Use of shrouds/temporary noise barriers to screen noise from relatively static PMEs;</li> <li>• Scheduling of construction works outside school examination period in critical area; and</li> <li>• Alternative use of plant items within one worksite, where practicable.</li> </ul>
Waste and Chemical Management	<ul style="list-style-type: none"> <li>• Excavated material should be reused on site as far as possible to minimize off-site disposal. Scrap metals or abandoned equipment should be recycled if possible;</li> <li>• Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner;</li> <li>• The Contractor should adopt a trip ticket system for the disposal of C&amp;D materials to any designed public filling facility and/or landfill; and</li> <li>• Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.</li> </ul>
General	<ul style="list-style-type: none"> <li>• The site was generally kept tidy and clean.</li> </ul>

## **9 IMPLEMENTATION STATUS OF MITIGATION MEASURES**

### **9.1 MAJOR FORTHCOMING ACTIVITIES**

- Carry out outstanding works
- Environmental monitoring

### **9.2 KEY ISSUES FOR THE COMING MONTH**

Key issues to be considered in the coming month include:

- Implementation of dust suppression measures at all times;
- Potential wastewater quality impact due to surface runoff;
- Potential fugitive dust quality impact due from the dry/loose/exposure soil surface/dusty material;
- Disposal of empty engine oil containers within site area;
- Ensure dust suppression measures are implemented properly;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Discharge of site effluent to the nearby wetland, stockpiling or disposal of materials, and any dredging or construction area at this area are prohibited;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures

## **10 CONCLUSIONS AND RECOMMENTATIONS**

### **10.1 CONCLUSIONS**

This is the 29<sup>th</sup> monthly EM&A report, covering the construction period from 26 January 2012 to 25 February 2012 (the Reporting Period).

No construction noise complaint (an Action Level exceedance) was received and no exceedance was recorded in construction noise monitoring in this Reporting Period.

No 1-hour and 24-hour TSP monitoring results that triggered the Action or Limit Level were recorded in this Reporting Period.

No marine water monitoring results that triggered the Action or Limit Level in this Reporting Period. Therefore, no associated corrective actions were then required.

No documented complaint, notification of summons or successful prosecution was received.

Due to the completion of the project, no join site inspections were carried out by the RE, IEC, and the Contractor with ET on February 2012 during the Reporting Period.

In this Reporting Period, no site visit by EPD/ AFCD was recorded.

The landscape and visual impacts monitoring was undertaken by the landscape sub-contractor. The monitoring results will be submitted separately as a stand-alone document.

### **10.2 RECOMMENDATIONS**

During dry season, special attention should be paid to the dust mitigation measures to avoid fugitive dust emissions from loose soil surface or haul road. Nevertheless, mitigation measures implemented for control the surface runoff including wheel wash facilities, covering of the loose soil surface or stockpile with tarpaulin sheet, etc., should be properly maintained to prevent any muddy or sandy runoff from the loose soil surface overflow on the site boundary.

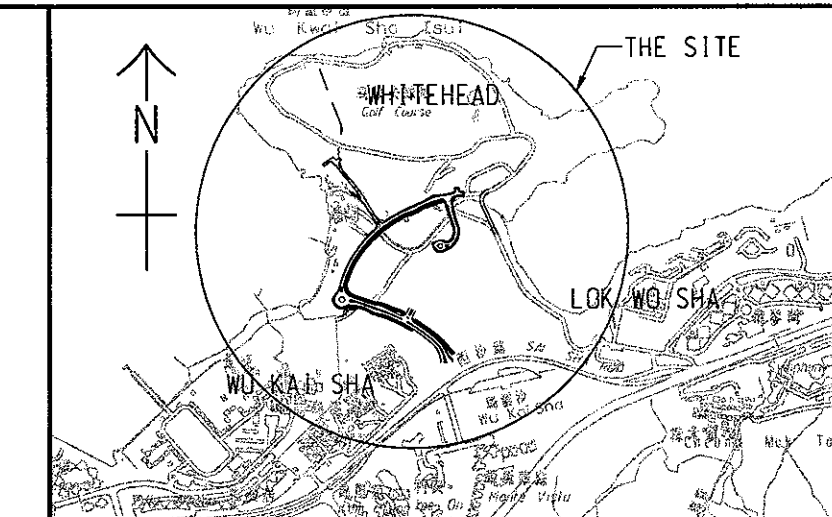
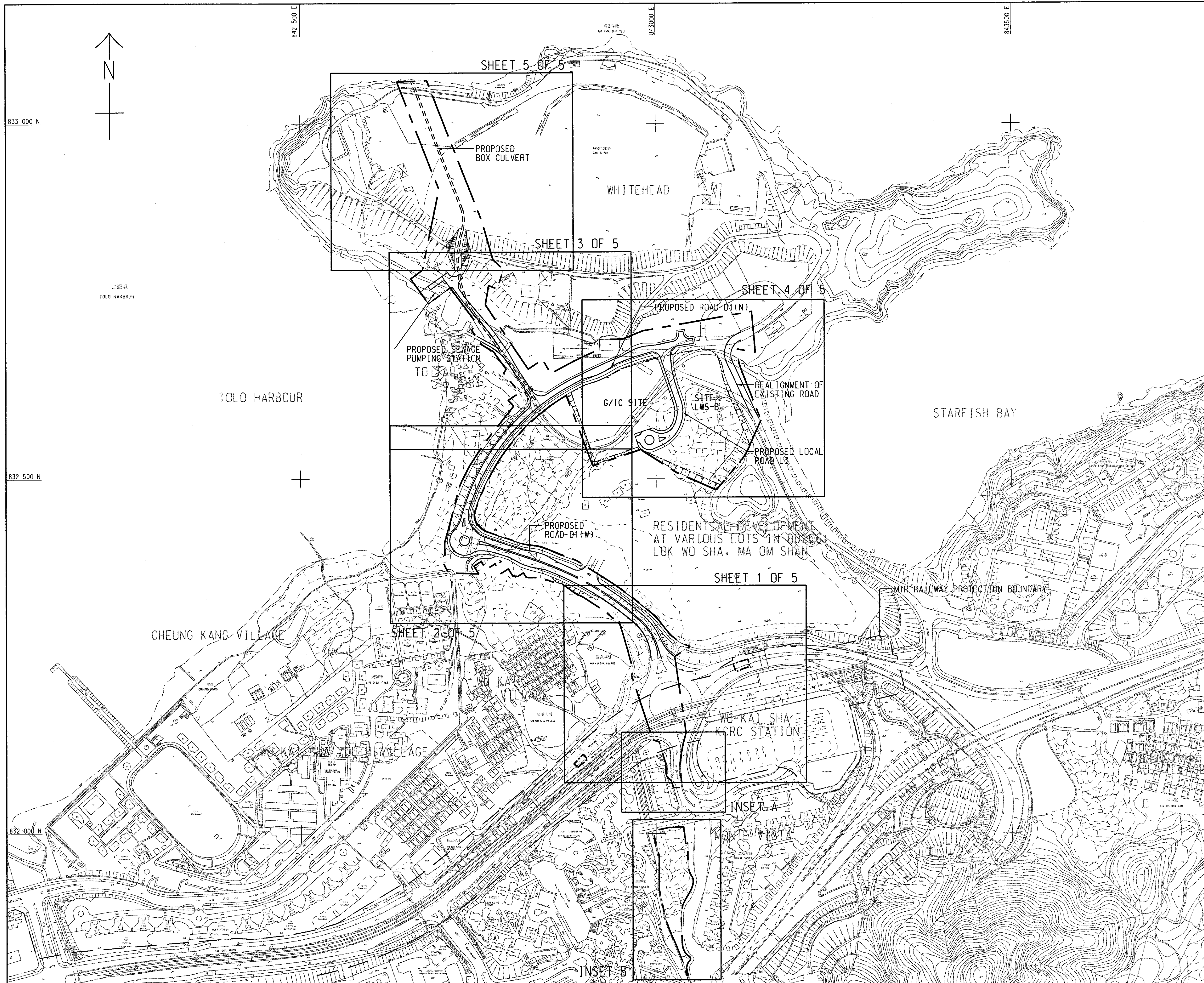
To control the site performance on waste management, CRBC shall ensure that all solid and liquid waste management works are fully in compliance with the relevant license/permit requirements, such as the effluent discharge license and the chemical waste producer registration. CRBC is also reminded to implement the recommended environmental mitigation measures according to the Final Report Environmental Monitoring and Audit Manual [2095/13.3].



**Annex A**

**Project Site Layout Plan**





LOCATION PLAN  
SCALE 1 : 20000

DRG. NO.	60022908/1001
DESIGNED BY	SS
CHECKED BY	WQ
DATE	21/03/02

Civil Engineering and Development Department  
NT EAST DEVELOPMENT OFFICE



MA ON SHAN DEVELOPMENT  
ROADS, DRAINAGE AND SEWERAGE WORKS AT WHITEHEAD AND LOK WO SHA PHASE 1  
KEY AND LOCATION PLAN

MAUNSELL | AECOM  
Maunsell Consultants Asia Ltd.  
茂盛(亞洲)工程顧問有限公司

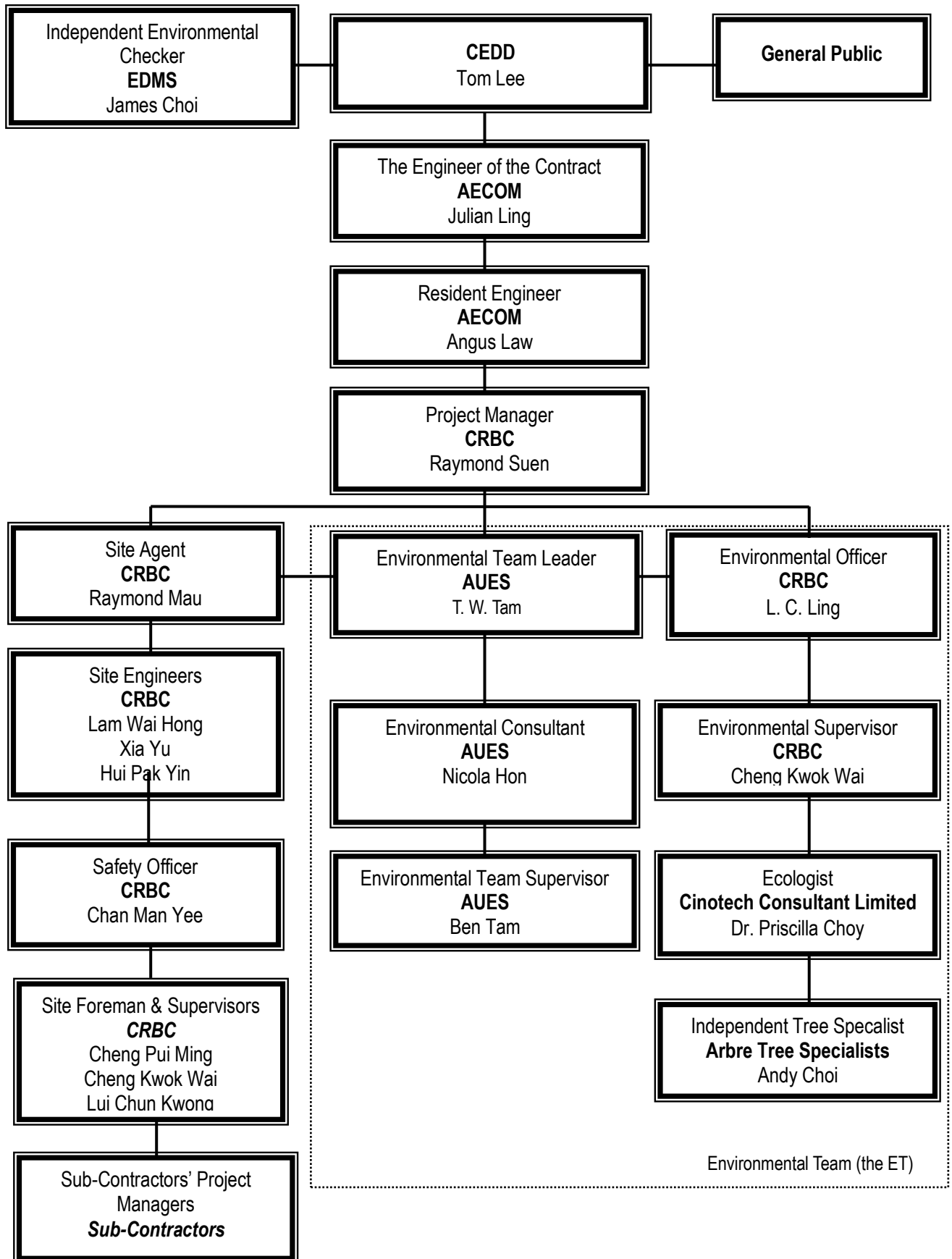
DRG. NO.	60022908/1001
DESIGNED BY	SS
CHECKED BY	WQ
DATE	21/03/02
SCALE	A1 : 2500
DIMENSIONS ARE IN	METER

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**Annex B**

**Organization Structure  
and  
Contact Details of the CRBC & Relevant Parties**



**Contact Details of Key Personnel**

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Employer	Mr. Tom Lee	2301-1317	2739-0076
AECOM	The Engineer of the Contract	Julian Ling	2631-7796	2631-7226
AECOM	Engineer's Representative	Mr. Angus Law	2631-7796	2631-7226
EDMS	Independent Environmental Checker	Mr. James Choi	2869-6018	3007-8556
CRBC	Project Director	Mr. Wang Yanhua	2283-1688	2283-1689
CRBC	Project Manager	Mr. Raymond Suen	9779-8871	2631-8993
CRBC	Site Agent	Mr. Raymond Mau	9048-3669	2631-8993
CRBC	Site Engineer	Mr. Lam Wai Hong	2631-8823	2631-8993
CRBC	Site Engineer	Mr. Xia Yu	2631-8823	2631-8993
CRBC	Site Engineer	Mr. Hui Pak Yin	2631-8823	2631-8993
CRBC	Environmental Officer	Mr. L.C. Ling	9858-1378	2631-8993
CRBC	Environmental Supervisor	Mr. Cheng Kwok Wai	2631-8823	2631-8993
CRBC	Safety Officer	Ms. Chan Man Yee	2631-8823	2631-8993
CRBC	Assistant Safety Officer	Ms. Wong Yih Tin	2631-8823	2631-8993
AUES	Environmental Team Leader	Mr. T. W. Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959-6059	2959-6079
AUES	Team Supervisor	Mr. Ben Tam	2959-6059	2959-6079
ATS	Independent Tree Specialist	Andy Choi	9461-7173	-
CCL	Ecologist	Dr. Priscilla Choy	2151-2083	3107-1388

**Legend:**

*CEDD (Employer) – Civil Engineering and Development Department*

*AECOM (Engineer) – AECOM*

*CRBC (Main Contractor) – China Road and Bridge Corporation*

*EDMS (IEC) – EDMS Consulting Limited*

*AUES (ET) – Action-United Environmental Services & Consulting*

## **Annex C**

### **Master and Three-Month Rolling Construction Programs**

ID	Task Name	Duration	Start	Finish	Predecessors	2009												2010												2011												2012											
						5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12				
1	<b>Project key date</b>	<b>1292 days</b>	<b>Thu 09/6/18</b>	<b>Sun 12/12/30</b>																																																	
2	Section I	927 days	Thu 09/6/18	Sat 11/12/31																																																	
3	Section IA	927 days	Thu 09/6/18	Sat 11/12/31																																																	
4	Section IB	1292 days	Thu 09/6/18	Sun 12/12/30																																																	
5	Section II ( Subject to Excision No:01 )	803 days	Thu 09/6/18	Mon 11/8/29																																																	
6	Section III ( Subject to Excision No: 02 )	805 days	Thu 09/6/18	Wed 11/8/31																																																	
7	Section IV ( Subject to Excision No: 03 )	807 days	Thu 09/6/18	Fri 11/9/2																																																	
8	Section IVA ( Subject to Excision No: 04 )	1172 days	Thu 09/6/18	Sat 12/9/1																																																	
9	Section V	927 days	Thu 09/6/18	Sat 11/12/31																																																	
10																																																					
11	<b>Preliminary Works</b>	<b>351 days</b>	<b>Thu 09/6/18</b>	<b>Thu 10/6/3</b>																																																	
12	Commencement Date	0 days	Thu 09/6/18	Thu 09/6/18																																																	
13	Mobilization works	7 days	Thu 09/6/18	Wed 09/6/24	12																																																
14	General site clearance	14 days	Thu 09/6/25	Wed 09/7/8	13																																																
15	Hoarding erection at Office Area	30 days	Thu 09/7/9	Fri 09/8/7	14																																																
16	Submission and approval of RE's office	14 days	Thu 09/6/25	Wed 09/7/8	13																																																
17	Delivery of material for RE's office	7 days	Thu 09/7/9	Wed 09/7/15	16																																																
18	Establishment of RE office	30 days	Thu 09/7/16	Fri 09/8/14	17																																																
19	Establishment of contractor office	30 days	Thu 09/7/16	Fri 09/8/14	18SS																																																
20	Establishment of TMLG	20 days	Sat 09/8/15	Thu 09/9/3	19,18																																																
21	Submission of TTA and approval	15 days	Fri 09/9/4	Fri 09/9/18	20																																																
22	Establishment of SLG	30 days	Sat 09/8/15	Sun 09/9/13	19																																																
23	Material submission, approval and delivery	90 days	Sat 09/8/15	Thu 09/11/12	19																																																
24	<b>Survey of the site</b>	<b>59 days</b>	<b>Thu 09/7/9</b>	<b>Sat 09/9/5</b>																																																	
25	Carrying out initial surveys and setting out Site boundaries	45 days	Thu 09/7/9	Sat 09/8/22	14																																																
26	Structural survey record	7 days	Sun 09/8/23	Sat 09/8/29	25																																																
27	Recording existing condition in the vicinity of the Site	7 days	Sun 09/8/30	Sat 09/9/5	26																																																
28	<b>Archaeological survey at D1(W)</b>	<b>302 days</b>	<b>Thu 09/6/18</b>	<b>Thu 10/4/15</b>																																																	
29	Submit specialist for archaeological survey and approval	30 days	Thu 09/6/18	Fri 09/7/17	12																																																
30	Apply License to Excavate and Search for Antiquities	70 days	Sat 09/7/18	Fri 09/9/25	29																																																
31	Carry out archaeological survey	45 days	Sat 09/9/26	Mon 09/11/9	30																																																
32	Backfill the confirmatory trial pit	7 days	Tue 09/11/10	Mon 09/11/16	31																																																
33	Submission of Draft Archaeological survey report for AMO's comment	90 days	Tue 09/11/17	Sun 10/2/14	32																																																
34	Submission of Final Archaeological survey report	14 days	Fri 10/4/2	Thu 10/4/15	33																																																
35	<b>Environmental works</b>	<b>308 days</b>	<b>Thu 09/6/18</b>	<b>Wed 10/4/21</b>																																																	
36	Submit EMP and WMP for approval	40 days	Thu 09/6/18	Mon 09/7/27	12																																																
37	Propose website layout for reporting of EM&A information for approval	20 days	Tue 09/7/28	Sun 09/8/16	36																																																
38	Propose specialist for baseline monitoring and approval	10 days	Thu 09/6/18	Sat 09/6/27	12																																																
39	Propose Methodology of baseline and approval	60 days	Sun 09/6/28	Wed 09/8/26	38																																																
40	Carry out baseline monitoring	30 days	Thu 09/8/27	Fri 09/9/25	39																																																
41	Submission of Baseline report for ICE's endorsement	12 days	Sat 09/9/26	Wed 09/10/7	40																																																
42	Obtain consent from EPD for designated Non Woodland Area	12 days	Thu 09/10/8	Mon 09/10/19	41																																																
43	Erect hoarding around the fung shui woodland at D1	14 days	Tue 09/10/20	Mon 09/11/2	42																																																
44	Erection of protective measures around existing grave at D1(W)	10 days	Tue 09/11/17	Thu 09/11/26	43																																																
45	Erection of protective hoarding around Wu Kai Sha Village Well at D1(W)	14 days	Thu 10/4/8	Wed 10/4/21	44																																																
46	<b>Landscape works</b>	<b>351 days</b>	<b>Thu 09/6/18</b>	<b>Thu 10/6/3</b>																																																	
47	Propose specialist for tree survey and approval	14 days	Thu 09/6/18	Wed 09/7/1	12																																																
48	Carry out tree survey	60 days	Thu 09/7/2	Sun 09/8/30	47																																																
49	Propose methodology for tree transplanting works for approval	30 days	Thu 09/7/2	Fri 09/7/31	47																																																
50	Submission of tree survey report and LMP for IEC's endorsement	30 days	Mon 09/8/31	Tue 09/9/29	48																																																
51	<b>Obtain consent from EPD for designated Woodland Project Area</b>	<b>282 days</b>	<b>Tue 09/8/25</b>	<b>Thu 10/6/3</b>	<b>50</b>																																																
52	XP application at Sha On Street	45 days	Sat 09/9/19	Mon 09/11/2	21																																																
53	Preparation of planting area for transplanted trees	30 days	Tue 09/11/3	Wed 09/12/2	52																																																
54	<b>Ground Investigation Works</b>	<b>176 days</b>	<b>Thu 09/6/18</b>	<b>Thu 09/12/10</b>																																																	
55	Propose specialist and methodology for SI works	90 days	Thu 09/6/18	Tue 09/9/15	12																																																
56	Mobilization of plants and set up	7 days	Wed 09/9/16	Tue 09/9/22	55																																																
57	<b>Carry out SI works</b>	<b>49 days</b>	<b>Wed 09/9/23</b>	<b>Tue 09/11/10</b>																																																	
58	ADH4	7 days	Wed 09/9/23	Tue 09/9/29	56																																																
59	ADH5	7 days	Wed 09/9/30	Tue 09/10/6	58																																																
60	ADH6	7 days	Wed 09/10/7	Tue 09/10/13	59																																																
61	ADH7	7 days	Wed 09/10/14	Tue 09/10/20	60																																																
62	ADH2	7 days	Wed 09/10/21	Tue 09/10/27	61																																																
63	ADH3	7 days	Wed 09/10/28	Tue 09/11/3	62																																																
64	ADH1	7 days	Wed 09/11/4	Tue 09/11/10	63																																																
65	Submission of draft and final report	30 days	Wed 09/11/11	Thu 09/12/10	64																																																
66	<b>Section I Works (Works at Portion 1)</b>	<b>853 days</b>	<b>Mon 09/8/31</b>	<b>Sat 11/12/31</b>																																																	
67	<b>V.O. 007 - Works at Retaining Wall no. 6</b>	<b>609 days</b>	<b>Mon 09/8/31</b>	<b>Wed 10/10/13</b>																																																	
68	<b>Tree Transplant</b>	<b>101 days</b>	<b>Mon 09/8/31</b>	<b>Wed 09/12/9</b>																																																	
69	Mobilization of plants	14 days	Mon 09/8/31	Sun 09/9/13	49,48																																																
70	Tree - Crown pruning	5 days	Mon 09/9/14	Fri 09/9/18	69																																																
71	Tree - Root pruning 1st stage - Pruning	9 days	Mon 09/9/14	Tue 09/9/22	69																																																
72	Tree - Root pruning 1st stage - Wait	28 days	Wed 09/9/23	Tue 09/10/20	71																																																
73	Tree - Root pruning 2nd stage - Pruning	5 days	Wed 09/10/21	Sun 09/10/25	72																																																
74	Tree - Root pruning 2nd stage - Wait	28 days	Mon 09/10/26	Sun 09/11/22	73																																																
75	Tree - Transplant	7 days	Thu 09/12/3	Wed 09/12/9	74,53																																																





























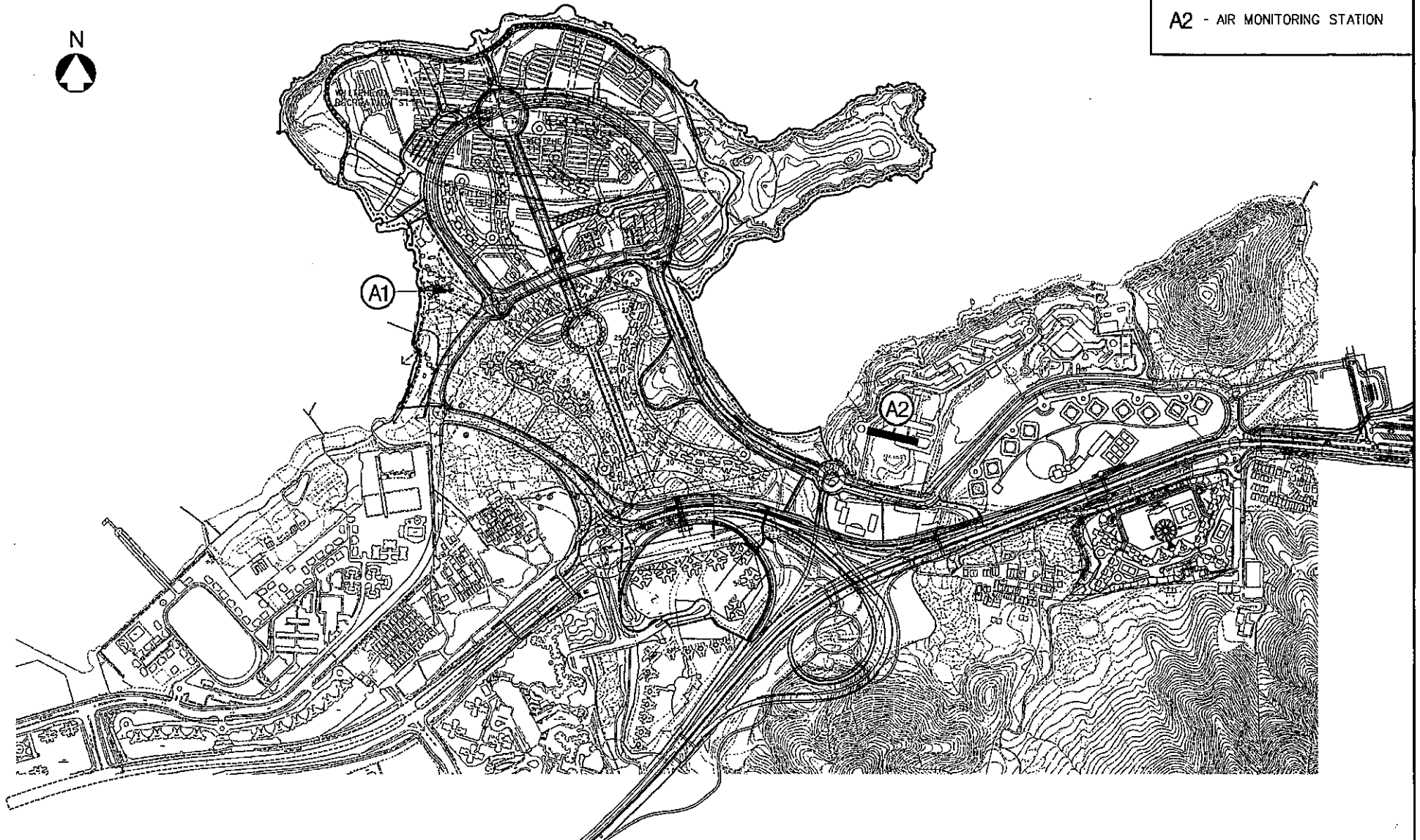
## **Annex D**

### **Monitoring Locations Designated in the EM&A Manual**





A2 - AIR MONITORING STATION



AGREEMENT NO. CE 16/99  
FEASIBILITY STUDY FOR HOUSING  
DEVELOPMENT AT WHITEHEAD AND  
LEE ON IN MA ON SHAN, SHATIN

Title :

LOCATIONS OF AIR MONITORING STATION

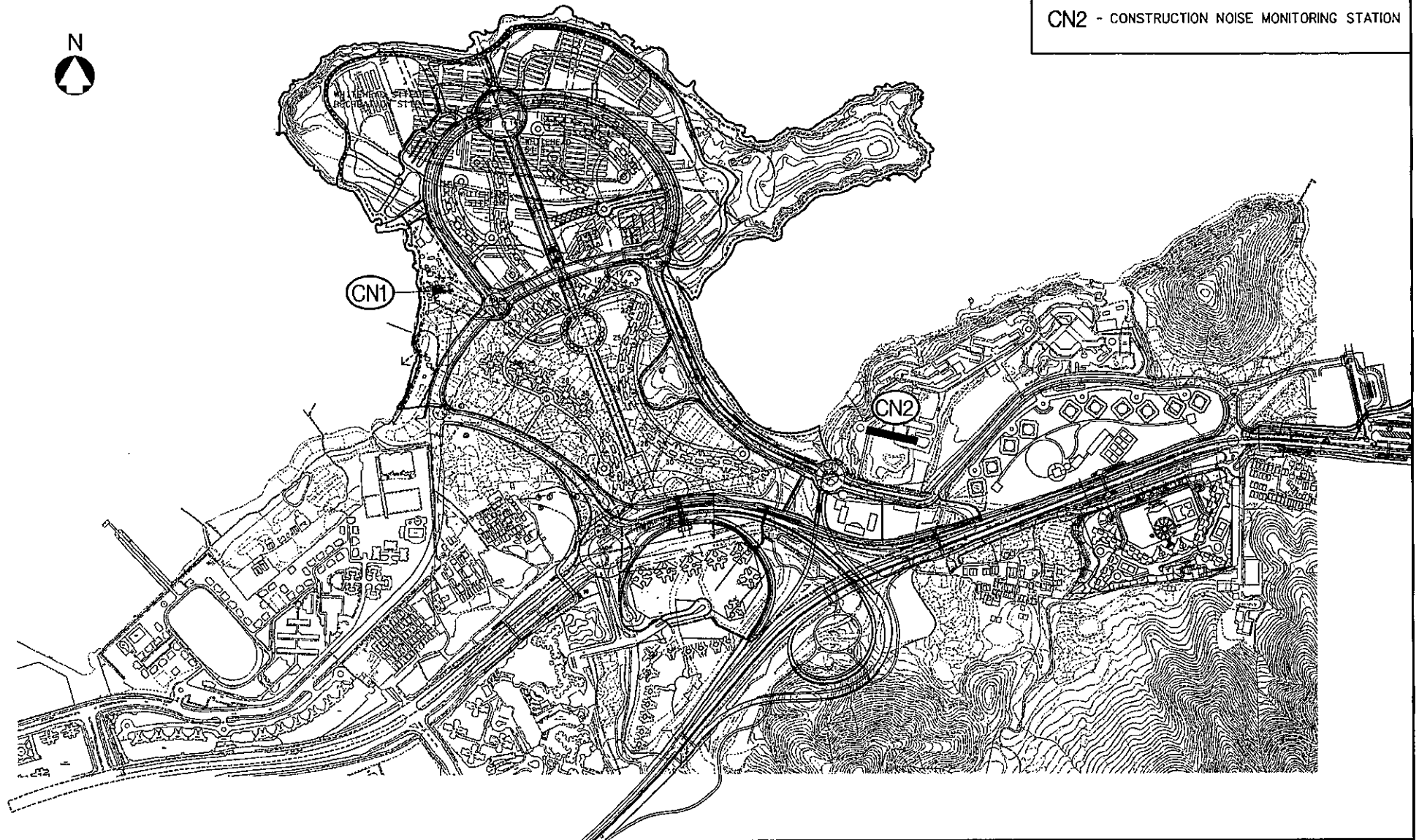
Figure No. 2.2	Revision 0
Reference -	File Name 3820950206-76.DGN
Prepared MC	Checked YWL
Date MAY. 2002	Scale N.T.S.

**&Binnie**

Binnie Black & Veatch Hong Kong Limited  
博威工程顧問有限公司  
Engineers and Architects



CN2 - CONSTRUCTION NOISE MONITORING STATION



AGREEMENT NO. CE 18/99  
FEASIBILITY STUDY FOR HOUSING  
DEVELOPMENT AT WHITEHEAD AND  
LEE ON IN MA ON SHAN, SHATIN

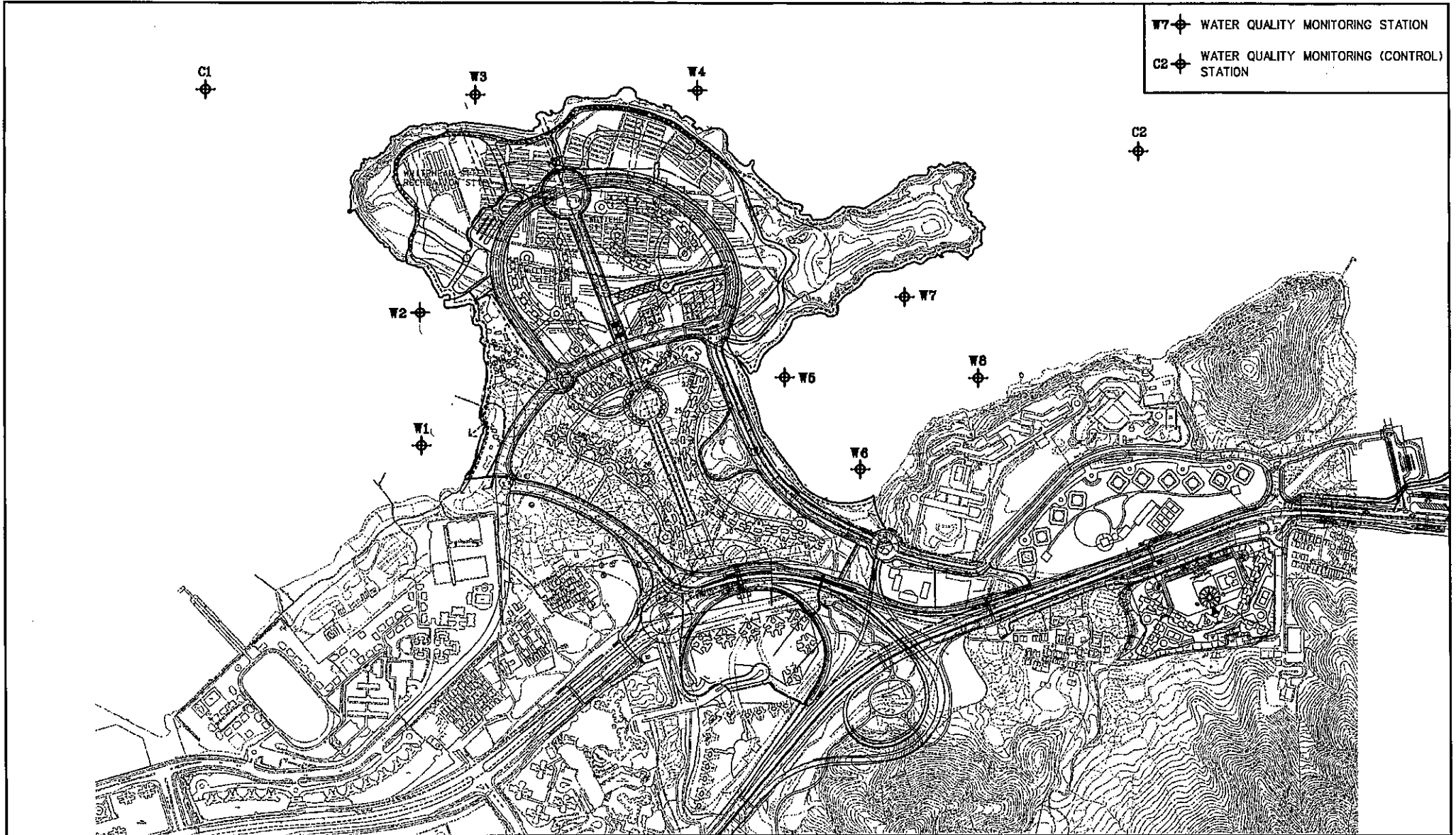
Title :

LOCATIONS OF CONSTRUCTION NOISE MONITORING STATION



Binnie Black & Veatch Hong Kong Limited  
博威工程顧問有限公司  
Engineers and Architects

Figure No. 3.2	Revision 0
Reference -	File Name 3820950206-77.DGN
Prepared MC	Checked YWL
Date MAY. 2002	Scale N.T.S.



AGREEMENT NO. CE 16/99  
 FEASIBILITY STUDY FOR HOUSING  
 DEVELOPMENT AT WHITEHEAD AND  
 LEE ON IN MA ON SHAN, SHATIN

Title :

LOCATIONS OF WATER QUALITY MONITORING STATIONS

Figure No. 4.2	Revision 0
Reference -	File Name 3820950206-94.DGN
Prepared MC	Checked YWL
Date May. 2002	Scale N.T.S.

**&Binnie**

Binnie Black & Veatch Hong Kong Limited  
 博威工程顧問有限公司  
 Engineers and Scientists

## **Annex E**

### **Current Impact Monitoring Stations**



# LOCATION OF AIR MONITORING STATION

# AUES



# LOCATION OF NOISE MONITORING STATION

# AUES





LEGENDS	
C1	MARINE WATER MONITORING CONTROL STATION
M1	MARINE WATER MONITORING IMPACT STATION

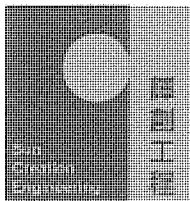
# LOCATION OF WATER QUALITY MONITORING STATION

# AUES



**Annex F**

**Monitoring Equipment Calibrated Certificates  
and Laboratory Certificate**



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C112473

## Certificate of Calibration

*This is to certify that the equipment*

*Description : Acoustical Calibrator (EQ081)*

*Manufacturer : Bruel & Kjaer*

*Model No. : 4231*

*Serial No. : 2326408*

*has been calibrated for the specific items and ranges.  
The results are shown in the Calibration Report No. C112473.*

*The equipment is supplied by*

*Co. Name : Action-United Environmental Services and Consulting*

*Address : Unit A, 20/F., Gold King Industrial Building,  
35-41 Tai Lin Pai Road, Kwai Chung, N.T.*

*Date of Issue : 5 May 2011*

*Certified by :*   
H C Chan

The test equipment used for calibration are traceable to the National Standards as specified in this report.  
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

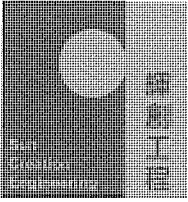
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C112473

## Calibration Report

### ITEM TESTED

DESCRIPTION : Acoustical Calibrator (EQ081)  
MANUFACTURER : Bruel & Kjaer  
MODEL NO. : 4231  
SERIAL NO. : 2326408

### TEST CONDITIONS

AMBIENT TEMPERATURE :  $(23 \pm 2)^{\circ}\text{C}$  RELATIVE HUMIDITY :  $(55 \pm 20)\%$   
LINE VOLTAGE : ---

### TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 4 May 2011

JOB NO. : IC11-0947

### TEST RESULTS

The results apply to the particular unit-under-test only.  
All results are within manufacturer's specification.  
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by :

  
K C Lee

Date : 5 May 2011

The test equipment used for calibration are traceable to the National Standards as specified in this report.  
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

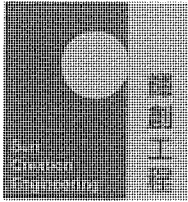
Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com

Page 1 of 2



## Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours before the commencement of the test.
2. The results presented are the mean of 3 measurements at each calibration point.
3. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C103289
CL281	Multifunction Acoustic Calibrator	C1006860
TST150A	Measuring Amplifier	C101008

4. Test procedure : MA100N.

5. Results :

### 5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

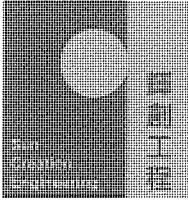
### 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

Remark : - The uncertainties are for a confidence probability of not less than 95 %.

#### Note :

The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C112474

## *Certificate of Calibration*

*This is to certify that the equipment*

*Description : Integrating Sound Level Meter (EQ008)*

*Manufacturer : Bruel & Kjaer*

*Model No. : 2238*

*Serial No. : 2285690*

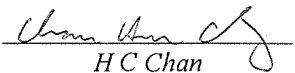
*has been calibrated for the specific items and ranges.  
The results are shown in the Calibration Report No. C112474.*

*The equipment is supplied by*

*Co. Name : Action-United Environmental Services and Consulting*

*Address : Unit A, 20/F., Gold King Industrial Building,  
35-41 Tai Lin Pai Road, Kwai Chung, N.T.*

*Date of Issue : 5 May 2011*

*Certified by :*   
H C Chan

The test equipment used for calibration are traceable to the National Standards as specified in this report.  
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

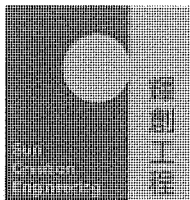
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C112474

## Calibration Report

### ITEM TESTED

DESCRIPTION : Integrating Sound Level Meter (EQ008)  
MANUFACTURER : Bruel & Kjaer  
MODEL NO. : 2238  
SERIAL NO. : 2285690

### TEST CONDITIONS

AMBIENT TEMPERATURE :  $(23 \pm 2)^{\circ}\text{C}$  RELATIVE HUMIDITY :  $(55 \pm 20)\%$   
LINE VOLTAGE : ---

### TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 4 May 2011

JOB NO. : IC11-0947

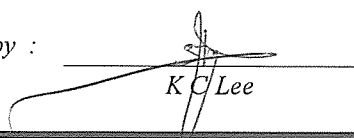
### TEST RESULTS

The results apply to the particular unit-under-test only.  
All results are within manufacturer's specification.  
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by :

  
K C Lee

Date : 5 May 2011

The test equipment used for calibration are traceable to the National Standards as specified in this report.  
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

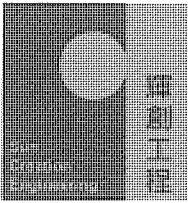
Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com

Page 1 of 4



# Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration using the B & K Acoustic Calibrator 4231, S/N : 2326408 was performed before the test.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C110018
CL281	Multifunction Acoustic Calibrator	C1006860

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L <sub>AFF</sub>	A	F	94.00	1	94.3	± 0.7

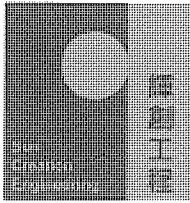
- 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L <sub>AFF</sub>	A	F	94.00	1	94.3 (Ref.)
				104.00		104.3
				114.00		114.3

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

The test equipment used for calibration are traceable to the National Standards as specified in this report. This report shall not be reproduced except in full and with prior written approval from this laboratory.





# Calibration Report

## 6.2 Time Weighting

### 6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L <sub>AFP</sub>	A	F	94.00	1	94.3	Ref.
	L <sub>ASP</sub>		S			94.3	± 0.1
	L <sub>AIP</sub>		I			94.3	± 0.1

### 6.2.2 Tone Burst Signal (2 kHz)

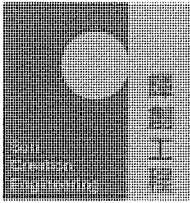
UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L <sub>AFP</sub>	A	F	106.0	Continuous	106.0	Ref.
	L <sub>AFMax</sub>				200 ms	105.0	-1.0 ± 1.0
	L <sub>ASP</sub>		S		Continuous	106.0	Ref.
	L <sub>ASMax</sub>				500 ms	102.0	-4.1 ± 1.0

## 6.3 Frequency Weighting

### 6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L <sub>AFP</sub>	A	F	94.00	31.5 Hz	55.0	-39.4 ± 1.5
					63 Hz	68.1	-26.2 ± 1.5
					125 Hz	78.1	-16.1 ± 1.0
					250 Hz	85.6	-8.6 ± 1.0
					500 Hz	91.1	-3.2 ± 1.0
					1 kHz	94.3	Ref.
					2 kHz	95.5	+1.2 ± 1.0
					4 kHz	95.3	+1.0 ± 1.0
					8 kHz	93.2	-1.1 (+1.5 ; -3.0)
12.5 kHz	90.1	-4.3 (+3.0 ; -6.0)					

The test equipment used for calibration are traceable to the National Standards as specified in this report. This report shall not be reproduced except in full and with prior written approval from this laboratory.



# Calibration Report

## 6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L <sub>CFP</sub>	C	F	94.00	31.5 Hz	91.4	-3.0 ± 1.5
					63 Hz	93.5	-0.8 ± 1.5
					125 Hz	94.1	-0.2 ± 1.0
					250 Hz	94.3	0.0 ± 1.0
					500 Hz	94.3	0.0 ± 1.0
					1 kHz	94.3	Ref.
					2 kHz	94.1	-0.2 ± 1.0
					4 kHz	93.5	-0.8 ± 1.0
					8 kHz	91.3	-3.0 (+1.5 ; -3.0)
					12.5 kHz	88.2	-6.2 (+3.0 ; -6.0)

## 6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L <sub>Aeq</sub>	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
								90	90.1	± 0.5
								80	79.8	± 1.0
								70	69.7	± 1.0
			60 sec.			1/10 <sup>2</sup>				
			5 min.			1/10 <sup>3</sup>				
						1/10 <sup>4</sup>				

Remarks : - Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :
  - 94 dB : 31.5 Hz - 125 Hz : ± 0.40 dB
  - 250 Hz - 500 Hz : ± 0.30 dB
  - 1 kHz : ± 0.20 dB
  - 2 kHz : ± 0.40 dB
  - 4 kHz : ± 0.50 dB
  - 8 kHz : ± 0.70 dB
  - 12.5 kHz : ± 1.20 dB
  - 104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  - 114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  - Burst equivalent level : ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

### Note :

The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the National Standards as specified in this report. This report shall not be reproduced except in full and with prior written approval from this laboratory.

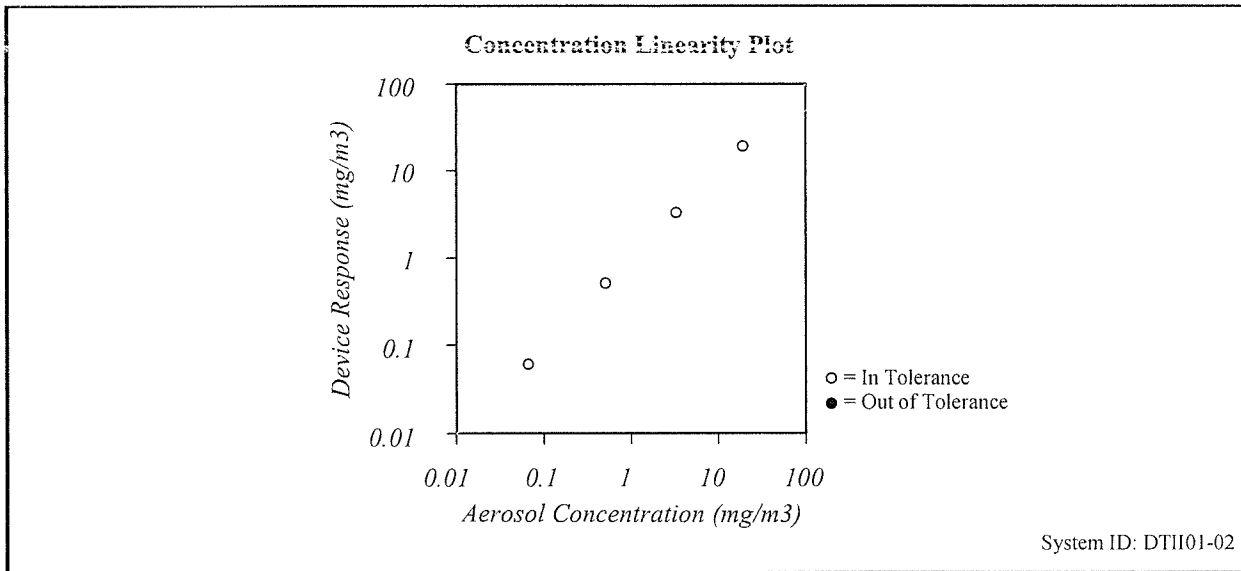


# CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA  
 Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Condition			Model	<b>8520</b>
Temperature	68.7 (20.4)	°F (°C)		
Relative Humidity	41	%RH	Serial Number	<b>23079</b>
Barometric Pressure	28.98 (981.4)	inHg (hPa)		

<input checked="" type="checkbox"/> As Left	<input checked="" type="checkbox"/> In Tolerance
<input type="checkbox"/> As Found	<input type="checkbox"/> Out of Tolerance



Zero Stability Results			
Average:	Minimum:	Maximum:	Time:
0.000 :mg/m <sup>3</sup>	0.000 :mg/m <sup>3</sup>	0.001 :mg/m <sup>3</sup>	4:00 :hrs.

*TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona dust) Our calibration ratio is greater than 1.2:1*

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Barometric Pressure	E003733	01-15-11	02-15-12	Temperature	E002873	11-24-10	11-24-11
Humidity	E002873	11-24-10	11-24-11	DC Voltage	E003314	01-05-11	01-05-12
DC Voltage	E003315	01-05-11	01-05-12	Photometer	E003319	07-25-11	01-25-12
Microbalance	E001324	01-04-11	01-04-12	Pressure	E003511	11-12-10	11-12-11
Flowmeter	E003769	06-13-11	06-13-12				

T. Thao  Final Function Check September 13, 2011  
 Calibrated  Date

## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Village house in To Tau near the proposed pumping station  
 Location ID : A1

Date of Calibration: 30-Dec-11  
 Next Calibration Date: 29-Feb-12  
 Technician: Mr. Ben Tam

### CONDITIONS

Sea Level Pressure (hPa)	1023	Corrected Pressure (mm Hg)	767.25
Temperature (°C)	17.7	Temperature (K)	291

### CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11693
Model->	5025A	Qstd Intercept ->	-0.02568
Calibration Date->	2-Jun-11	Expiry Date->	2-Jun-12

### CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	4.5	4.5	9.0	1.454	50	51.50	Slope = 31.9910 Intercept = 5.4051 Corr. coeff. = 0.9984
13	3.1	3.1	6.2	1.209	43	44.29	
10	2	2	4.0	0.973	36	37.08	
7	1.4	1.4	2.8	0.816	31	31.93	
5	1.0	1.0	2.0	0.692	26	26.78	

**Calculations :**

$$Q_{std} = 1/m[\text{Sqrt}(H2O(Pa/P_{std})(T_{std}/T_a))-b]$$

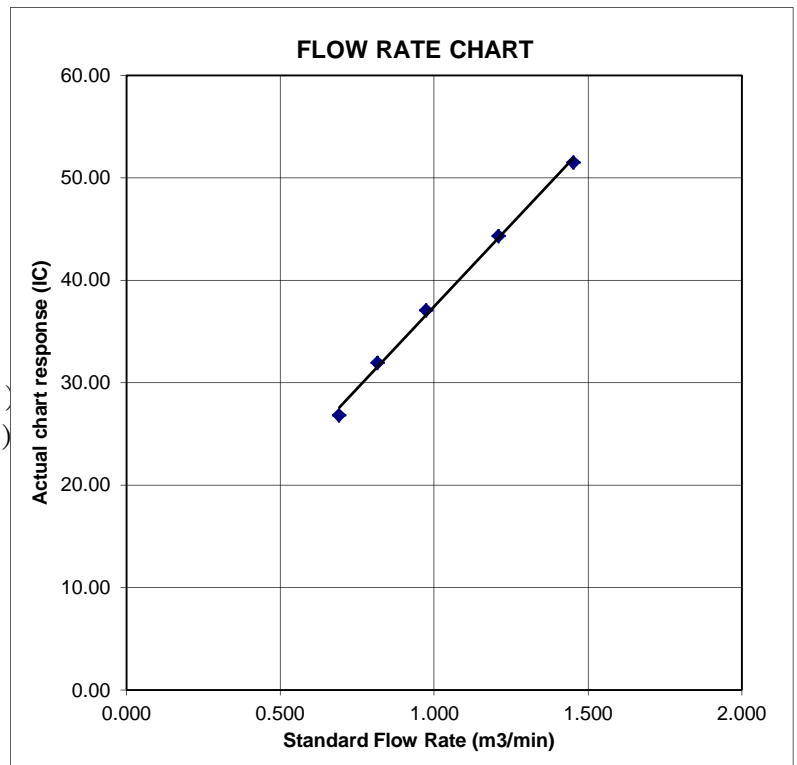
$$IC = I[\text{Sqrt}(Pa/P_{std})(T_{std}/T_a)]$$

Qstd = standard flow rate  
 IC = corrected chart responses  
 I = actual chart response  
 m = calibrator Qstd slope  
 b = calibrator Qstd intercept  
 Ta = actual temperature during calibration ( deg K )  
 Pstd = actual pressure during calibration ( mm Hg )

**For subsequent calculation of sampler flow:**

$$1/m(( I )[\text{Sqrt}(298/T_{av})(P_{av}/760)]-b)$$

m = sampler slope  
 b = sampler intercept  
 I = chart response  
 Tav = daily average temperature  
 Pav = daily average pressure



# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1129081  
 Date of Issue: 16/12/2011  
 Client: ACTION UNITED ENVIRO SERVICES



Description: YSI Sonde  
 Brand Name: YSI  
 Model No.: YSI 6820 / 650MDS  
 Serial No.: 02J0912/02K0788 AA  
 Equipment No.: --  
 Date of Calibration: 16 December, 2011      Date of next Calibration: 16 March, 2012

**Parameters:**

**Dissolved Oxygen**      Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
5.70	5.83	0.13
6.91	7.05	0.14
8.00	8.08	0.08
Tolerance Limit (±mg/L)		0.20

**pH Value**      Method Ref: APHA (21st edition), 4500H:B

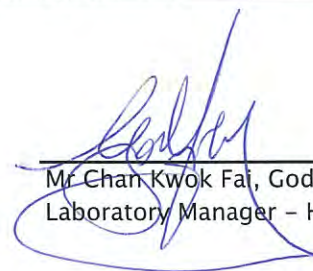
Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	3.95	-0.05
7.0	6.95	-0.05
10.0	9.92	-0.08
Tolerance Limit (±unit)		0.20

**Salinity**      Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	10.05	0.5
20	20.10	0.5
30	30.89	3.0
Tolerance Limit (±%)		10.0

**Temperature**      Method Ref: Section 6 of International Accreditation New Zealand Technical  
 Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)
11.0	10.80	-0.2
22.0	21.40	-0.6
32.0	31.83	-0.2
Tolerance Limit (°C)		2.0

  
 Mr Chan Kwok Fai, Godfrey  
 Laboratory Manager - Hong Kong



# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1129081  
Date of Issue: 16/12/2011  
Client: ACTION UNITED ENVIRO SERVICES



Description: YSI Sonde  
Brand Name: YSI  
Model No.: YSI 6820 / 650MDS  
Serial No.: 02J0912/02K0788 AA  
Equipment No.: --  
Date of Calibration: 16 December, 2011

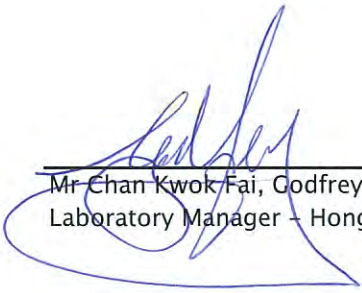
Date of next Calibration: 16 March, 2012

## Parameters:

### Turbidity

Method Ref: APHA 21st Ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.6	--
4	4.3	7.5
10	10.0	0.0
20	21.5	7.5
50	50.9	1.8
100	99.4	-0.6
	Tolerance Limit (±%)	10.0

  
Mr Chan Kwok Fai, Godfrey  
Laboratory Manager - Hong Kong



## **Annex G**

### **Event and Action Plan**

### Event and Action Plan for Air Quality

EVENT	ACTION			
	ET leader	IEC	ER	Contractor
<b>ACTION LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>Identify source</li> <li>Inform IEC, ER and Contractor</li> <li>Repeat measurement to confirm findings</li> <li>Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET leader</li> <li>Check Contractor's working method</li> </ol>	<ol style="list-style-type: none"> <li>Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>Rectify any unacceptable practice</li> <li>Amend working methods if appropriate</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>Identify source</li> <li>Inform IEC, ER and Contractor</li> <li>Repeat measurement to confirm findings</li> <li>Increase monitoring frequency to daily</li> <li>Discuss with IEC, Contractor and ER on remedial actions required</li> <li>If exceedance continue, arrange meeting with IEC, ER and Contractor</li> <li>If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET leader</li> <li>Check Contractor's working method</li> <li>Discuss with ET leader and Contractor on possible remedial measures</li> <li>Advise the ER on the effectiveness of the proposed remedial measures</li> <li>Supervise implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of failure in writing</li> <li>Notify Contractor</li> <li>Ensure remedial measures properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>Submit proposals for remedial actions to IEC and ER within 3 working days of notification</li> <li>Implement the agreed proposals</li> <li>Amend proposal if appropriate</li> </ol>
<b>LIMIT LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>Identify source</li> <li>Inform IEC, ER, EPD and Contractor</li> <li>Repeat measurement to confirm findings</li> <li>Increase monitoring frequency to daily</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET leader</li> <li>Check Contractor's working method</li> <li>Discuss with ET leader and Contractor on possible remedial measures</li> <li>Advise the ER on the effectiveness of the proposed remedial measures</li> <li>Audit implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of failure in writing</li> <li>Notify Contractor</li> <li>Ensure remedial measures properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>Take immediate action to avoid for the exceedance</li> <li>Submit proposals for remedial actions to IEC and ER within 3 working days of notification</li> <li>Amend proposal if appropriate</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>Notify IEC, ER, Contractor and EPD</li> <li>Identify source</li> <li>Repeat measurement to confirm findings</li> <li>Increase monitoring frequency to daily</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</li> <li>Arrange meeting with IEC, Contractor and ER to discuss the remedial actions to be taken</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results</li> <li>If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>Discuss amongst ER, ET leader and Contractor on the potential remedial actions</li> <li>Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</li> <li>Audit the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of failure in writing</li> <li>Notify Contractor</li> <li>In consultation with IEC, agree with the Contractor on the remedial measures to be implemented</li> <li>Ensure remedial measures properly implemented</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>Take immediate action to avoid for the exceedance</li> <li>Submit proposals for remedial actions to IEC and ER within 3 working days of notification</li> <li>Implement the agreed proposals</li> <li>Resubmit proposals if problem still not under control</li> <li>Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

### Event and Action Plan for Construction Noise Quality

EVENT	ACTION			
	ET Leader	IEC	ER	Contractor
<b>Action Level</b>	<ol style="list-style-type: none"> <li>Notify IEC, Contractor and ER</li> <li>Carry out investigation</li> <li>Report the results of investigation to the IEC, Contractor and ER</li> <li>Discuss with the Contractor and formulate remedial measures</li> <li>Double monitoring frequency</li> <li>Check compliance to Action/Limit Levels after application of mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>Review the analysed results submitted by the ET leader</li> <li>Review the proposed remedial measures by the Contractor and advise the ER accordingly</li> <li>Review the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of complaint in writing</li> <li>Notify Contractor</li> <li>Require Contractor to propose remedial measures for the analysed noise problem</li> <li>Ensure remedial measures are properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>Submit noise mitigation proposals to ER and IEC</li> <li>Implement noise mitigation proposals</li> </ol>
<b>Limit Level</b>	<ol style="list-style-type: none"> <li>Notify IEC, ER, EPD and Contractor</li> <li>Identify Source</li> <li>Repeat measurement to confirm findings</li> <li>Increase monitoring frequency</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</li> <li>Inform IEC, ER and EPD the causes &amp; actions taken for the exceedances</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results</li> <li>If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>Discuss amongst ER, ET leader and Contractor on the potential remedial actions</li> <li>Review remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</li> <li>Audit the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of failure in writing</li> <li>Notify Contractor</li> <li>Require Contractor to propose remedial measures for the analysed noise problem</li> <li>Ensure remedial measures are properly implemented</li> <li>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</li> </ol>	<ol style="list-style-type: none"> <li>Take immediate action to avoid further exceedance</li> <li>Submit proposals for remedial actions to within 3 working days of notification</li> <li>Implement the agreed proposals</li> <li>Resubmit proposals if problem still not under control</li> <li>Stop the relevant portion of works as determined by the ER until the exceedance is abated</li> </ol>

### Event and Action Plan for Water Quality

Event	ET leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	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 Repeat measurement on next day of exceedance	Discuss with ET leader 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	Discuss with IEC on the proposed mitigation measures Make agreement on the mitigation measures to be implemented	Inform the ER and confirm notification of the non-compliance in writing Rectify unacceptable practice Check all plant and equipment Consider changes of working method Discuss with ET leader and IEC and propose mitigation measures to IEC and ER Implement the agreed mitigation measures
Action level being exceeded by more than one consecutive sampling days	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 Ensure mitigation measures are implemented Prepare to increase the monitoring frequency to daily Repeat measurement on next day of exceedance	Discuss with ET leader 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	Discuss with IEC on the proposed mitigation measures Make agreement on the mitigation measures to be implemented Assess the effectiveness of the implemented mitigation measures	Inform the ER and confirm notification of the non-compliance in writing Rectify unacceptable practice Check all plant and equipment Consider changes of working method Discuss with ET leader and IEC and propose mitigation measures to IEC and ER Implement the agreed mitigation measures
Limit level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings Identify source(s) of impact Inform IEC, Contractor and EPD Check monitoring data, all plant, equipment and Contractor's working methods Discuss mitigation measures with IEC and Contractor Ensure mitigation measures are implemented Increase the monitoring frequency to daily until no exceedance of Limit level	Discuss with ET leader 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	Discuss with IEC on the proposed mitigation measures Request Contractor to critically review the working methods Make agreement on the mitigation measures to be implemented Assess the effectiveness of the implemented mitigation measures	Inform the ER and confirm notification of the non-compliance in writing Rectify unacceptable practice Check all plant and equipment Consider changes of working method Discuss with ET leader and IEC and propose mitigation measures to IEC and ER within 3 working days Implement the agreed mitigation measures
Limit level being exceeded by more than one consecutive sampling days	Repeat in-situ measurement to confirm findings Identify source(s) of impact Inform IEC, Contractor and EPD Check monitoring data, all plant, equipment and Contractor's working methods Discuss mitigation measures with IEC and Contractor Ensure mitigation measures are implemented Increase the monitoring frequency to daily until no exceedance of Limit level	Discuss with ET leader 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	Discuss with IEC on the proposed mitigation measures Request Contractor to critically review the working methods Make agreement on the mitigation measures to be implemented Assess the effectiveness of the implemented mitigation measures 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	Inform the ER and confirm notification of the non-compliance in writing Rectify unacceptable practice Check all plant and equipment Consider changes of working method Discuss with ET leader and IEC and propose mitigation measures to IEC and ER within 3 working days Implement the agreed mitigation measures As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities

## **Annex H**

### **Monitoring Schedule This Reporting Month And Next Reporting Month**

### Monitoring Schedule in the Reporting Month

Date		Air Quality		Noise	Water Quality
		1-hour TSP	24-hour TSP	Leq (30min)	
Thu	26-January-12	✓	✓	✓	✓ (C1, C2, M1 – M8)
Fri	27-January-12				
Sat	28-January-12				✓ (C1, C2, M1 – M8)
Sun	29-January-12				
Mon	30-January-12				✓ (C1, C2, M1 – M8)
Tue	31-January-12				
Wed	1-February-12	✓	✓	✓	✓ (C1, C2, M1 – M8)
Thu	2-February-12				
Fri	3-February-12				
Sat	4-February-12				✓ (C1, C2, M1 – M8)
Sun	5-February-12				
Mon	6-February-12	✓		✓	✓ (C1, C2, M1 – M8)
Tue	7-February-12		✓		
Wed	8-February-12				✓ (C1, C2, M1 – M8)
Thu	9-February-12				
Fri	10-February-12	✓		✓	✓ (C1, C2, M1 – M8)
Sat	11-February-12				
Sun	12-February-12				
Mon	13-February-12		✓		
Tue	14-February-12				✓ (C1, C2, M1 – M8)
Wed	15-February-12				
Thu	16-February-12	✓		✓	✓ (C1, C2, M1 – M8)
Fri	17-February-12				
Sat	18-February-12		✓		✓ (C1, C2, M1 – M8)
Sun	19-February-12				
Mon	20-February-12				✓ (C1, C2, M1 – M8)
Tue	21-February-12				
Wed	22-February-12	✓		✓	✓ (C1, C2, M1 – M8)
Thu	23-February-12				
Fri	24-February-12		✓		✓ (C1, C2, M1 – M8)
Sat	25-February-12				

### Time Schedule for Impact Water Quality Monitoring for February 2012

Week	Scheduled Monitoring Day		Scheduled Time for Measurements	
			Mid-Flood	Mid-Ebb
1	26-January-12	Thursday	9:03	14:56
	28-January-12	Saturday	10:20	16:19
2	30-January-12	Monday	11:28	8:00*
	1-February-12	Wednesday	12:32	8:00*
	4-February-12	Saturday	14:55	10:32
3	6-February-12	Monday	17:18	11:44
	8-February-12	Wednesday	8:00*	13:08
	10-February-12	Friday	8:40	14:40
4	14-February-12	Tuesday	11:26	17:52
	16-February-12	Thursday	13:18	8:00*
	18-February-12	Saturday	15:30	10:15
5	20-February-12	Monday	17:41	11:54
	22-February-12	Wednesday	8:00*	13:20
	24-February-12	Friday	8:30	14:32

\* Due to safety precaution, the subsequent monitoring time the most early will be 8:00 and the latest will be 17:00.

**Predicted Monitoring Schedule in the coming Month**

Date		Air Quality		Noise	Water Quality
		1-hour TSP	24-hour TSP	Leq (30min)	
Sun	26-February-12				
Mon	27-February-12				
Tue	28-February-12	✓		✓	✓ (C1, C2, M1 – M8)
Wed	29-February-12				
Thu	1-March-12		✓		✓ (C1, C2, M1 – M8)
Fri	2-March-12				
Sat	3-March-12	✓		✓	✓ (C1, C2, M1 – M8)
Sun	4-March-12				
Mon	5-March-12				
Tue	6-March-12				✓ (C1, C2, M1 – M8)
Wed	7-March-12		✓		
Thu	8-March-12	✓		✓	✓ (C1, C2, M1 – M8)
Fri	9-March-12				
Sat	10-March-12				✓ (C1, C2, M1 – M8)
Sun	11-March-12				
Mon	12-March-12				✓ (C1, C2, M1 – M8)
Tue	13-March-12		✓		
Wed	14-March-12	✓		✓	✓ (C1, C2, M1 – M8)
Thu	15-March-12				
Fri	16-March-12				✓ (C1, C2, M1 – M8)
Sat	17-March-12				
Sun	18-March-12				
Mon	19-March-12		✓		
Tue	20-March-12	✓		✓	✓ (C1, C2, M1 – M8)
Wed	21-March-12				
Thu	22-March-12				✓ (C1, C2, M1 – M8)
Fri	23-March-12				
Sat	24-March-12		✓		✓ (C1, C2, M1 – M8)
Sun	25-March-12				

**Time Schedule for Impact Water Quality Monitoring for March 2012**

Week	Scheduled Monitoring Day		Scheduled Time for Measurements	
			Mid-Flood	Mid-Ebb
1	28-February-12	Tuesday	10:15	17:00
	1-March-12	Thursday	10:32	18:00*
	3-March-12	Saturday	11:58	18:00*
2	6-March-12	Tuesday	17:08	11:25
	8-March-12	Thursday	18:00*	12:54
	10-March-12	Saturday	8:14	14:20
3	12-March-12	Monday	9:30	15:48
	14-March-12	Wednesday	10:52	17:34
	16-March-12	Friday	12:49	8:00*
4	20-March-12	Tuesday	17:32	11:37
	22-March-12	Thursday	18:00*	12:55
	24-March-12	Saturday	8:00*	14:08

\* Due to safety precaution, the subsequent monitoring time the most early will be 8:00 and the latest will be 17:00.



# **Annex I**

## **Database of Monitoring Results**

**Impact 24-hour TSP Monitoring Results - A1 (Village house in To Tau near the proposed pumping station)**

Date of Calibration: 30-Dec-11      Slope = 31.9910  
 Next Calibration Date: 29-Feb-12      Intercept = 5.4051

DATE	SAMPLE NUMBER	ELAPSED TIME INITIAL	ELAPSED TIME FINAL	ELAPSED TIME (min)	MIN CHART READING	MAX CHART READING	AVG CHART READING	AVG TEMP (oC)	STANDARD			BLANK SAMPLE NUMBER	BLANK INTIAL WEIGHT (g)	BLANK FINAL WEIGHT (g)	BLANK DIFF WEIGHT (g)	INITIAL FILTER WEIGHT (g)	FINAL FILTER WEIGHT (g)	WEIGHT DUST COLLECTED (g)	DUST 24-hour TSP IN AIR (ug/m <sup>3</sup> )
									AVG PRESS (hPa)	FLOW RATE (m3/min)	AIR VOLUME (std m3)								
26-Jan-12	24501	6407.53	6431.62	1445.40	33	35	34.0	11.2	1019.7	0.92	1334	NA	3.5657	3.5658	0.0001	2.8196	2.8736	0.0540	40
1-Feb-12	24502	6431.62	6455.51	1433.40	33	35	34.0	15.6	1020	0.91	1311	NA	2.8690	2.8691	0.0001	2.8532	2.9627	0.1095	83
7-Feb-12	24503	6455.51	6479.48	1438.20	32	34	33.0	16.7	1015	0.88	1263	NA	2.8690	2.8691	0.0001	2.8389	2.9374	0.0985	78
13-Feb-12	24544	6479.48	6503.38	1434.00	33	35	34.0	19.1	1017.6	0.91	1300	NA	2.8680	2.8683	0.0003	2.7536	2.8635	0.1099	84
18-Feb-12	24545	6503.38	6527.55	1450.20	32	34	33.0	13.7	1022.6	0.89	1287	NA	2.5670	2.5672	0.0002	2.7656	2.8883	0.1227	95
24-Feb-12	24546	6527.55	6551.61	1443.60	32	35	33.5	17.8	1010	0.89	1284	NA	3.5669	3.5673	0.0004	2.7531	2.7979	0.0448	35

Contract ST/2008/02

Ma On Shan Development - Roads, Drainage and Sewerage Works

at whitehead and Lok Wo Sha, Phase 1

Baseline Marine Water Quality Monitoring



Impact Data 26-Jan-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/1/26 14:50:45	M1	ME	842518	832561	2.3	1.155	15.37	8.35	102.1	2.3	32.90	8.49	3
2012/1/26 14:50:53						1.164	15.39	8.21	100.4	1.8	32.93	8.50	
2012/1/26 14:54:22	M2	ME	842535	832795	1.8	0.952	15.35	8.11	99.1	1.9	32.90	8.49	2
2012/1/26 14:54:29						0.964	15.34	8.11	99.1	1.9	32.90	8.49	
2012/1/26 14:58:00	C1	ME	842187	833014	7.6	0.988	15.37	8.09	98.9	1.9	32.91	8.49	3
2012/1/26 14:58:08						0.972	15.36	8.09	98.9	1.6	32.91	8.49	
2012/1/26 14:58:28						3.820	15.44	7.87	96.3	2.3	32.93	8.49	
2012/1/26 14:58:34						3.887	15.41	7.98	97.6	2.3	32.91	8.49	3
2012/1/26 14:58:49						6.676	15.57	8.11	99.6	1.7	32.97	8.48	
2012/1/26 14:58:56						6.652	15.57	7.86	96.5	2.1	32.98	8.49	
2012/1/26 15:09:05	M3	ME	842649	833094	2.3	1.301	15.40	8.05	98.5	1.9	32.94	8.49	3
2012/1/26 15:09:11						1.269	15.39	8.05	98.5	1.9	32.94	8.49	
2012/1/26 15:13:38	M4	ME	843038	833110	4.8	0.941	15.38	8.03	98.2	1.8	32.95	8.48	3
2012/1/26 15:13:44						0.969	15.40	8.01	98.0	1.8	32.94	8.49	
2012/1/26 15:13:59						3.841	15.41	8.09	99.0	2.1	32.95	8.48	4
2012/1/26 15:14:06						3.865	15.40	7.85	96.1	2.0	32.95	8.50	
2012/1/26 15:19:43	C2	ME	832995	843811	9	1.038	15.40	8.03	98.3	1.7	32.96	8.49	3
2012/1/26 15:19:50						1.043	15.40	8.00	97.9	1.7	32.95	8.48	
2012/1/26 15:20:35						4.573	15.39	7.86	96.2	2.1	32.96	8.48	
2012/1/26 15:20:42						4.499	15.43	7.86	96.2	2.0	32.96	8.49	2
2012/1/26 15:20:58						8.078	15.61	7.98	98.1	1.7	33.04	8.49	
2012/1/26 15:21:04						8.095	15.61	7.73	95.0	1.6	33.05	8.48	
2012/1/26 15:31:39	M8	ME	832650	843634	2.1	1.100	15.39	7.96	97.4	3.3	32.97	8.49	2
2012/1/26 15:31:47						1.103	15.38	7.95	97.2	1.9	32.97	8.48	
2012/1/26 15:35:19	M6	ME	832580	843477	1.9	0.883	15.38	7.93	97.0	2.5	32.98	8.49	3
2012/1/26 15:35:26						0.898	15.38	7.92	96.9	2.0	32.99	8.48	
2012/1/26 15:38:46	M5	ME	832717	843396	2.2	1.280	15.40	7.91	96.8	1.9	32.99	8.48	2
2012/1/26 15:38:52						1.216	15.40	7.89	96.6	1.9	32.99	8.47	
2012/1/26 15:42:13	M7	ME	832779	843492	2.2	1.279	15.41	7.90	96.7	3.0	33.00	8.47	4
2012/1/26 15:42:19						1.284	15.43	7.89	96.6	3.0	32.99	8.48	
2012/1/26 09:02:31	M1	MF	842518	832561	2.3	1.316	15.31	9.09	110.8	1.7	32.62	8.44	2
2012/1/26 09:02:38						1.331	15.30	9.09	110.8	2.1	32.63	8.45	
2012/1/26 09:05:59	M2	MF	842535	832795	2	1.082	15.30	8.98	109.5	1.9	32.66	8.46	2
2012/1/26 09:06:06						1.101	15.29	8.96	109.2	2.1	32.67	8.46	
2012/1/26 09:11:08	C1	MF	842187	833014	8.2	1.033	15.30	8.85	107.9	2.5	32.70	8.48	3
2012/1/26 09:11:12						1.057	15.30	8.83	107.7	2.5	32.72	8.48	
2012/1/26 09:11:39						4.123	15.40	8.78	107.3	2.0	32.73	8.48	
2012/1/26 09:11:50						4.120	15.40	8.80	107.5	2.1	32.76	8.49	2
2012/1/26 09:12:24						7.255	15.59	8.63	105.9	2.2	32.83	8.49	
2012/1/26 09:12:31						7.292	15.58	8.66	106.2	2.0	32.82	8.48	
2012/1/26 09:23:45	M3	MF	842649	833094	2.3	1.311	15.34	8.61	105.1	1.8	32.77	8.50	3
2012/1/26 09:23:53						1.280	15.33	8.57	104.5	2.1	32.77	8.50	
2012/1/26 09:29:13	M4	MF	843038	833110	5.2	0.996	15.33	8.50	103.7	2.1	32.78	8.49	5
2012/1/26 09:29:20						0.997	15.32	8.48	103.5	2.7	32.79	8.50	
2012/1/26 09:29:39						4.155	15.33	8.29	101.2	2.0	32.79	8.48	3
2012/1/26 09:29:46						4.201	15.33	8.29	101.2	1.8	32.79	8.50	
2012/1/26 09:35:41	C2	MF	832999	843826	10	1.036	15.34	8.45	103.1	2.0	32.81	8.48	3
2012/1/26 09:35:48						0.963	15.33	8.43	102.9	1.8	32.82	8.50	
2012/1/26 09:36:21						5.051	15.51	8.23	100.8	1.8	32.85	8.47	
2012/1/26 09:36:30						5.124	15.45	8.27	101.3	2.7	32.86	8.50	9
2012/1/26 09:36:52						9.040	15.79	8.12	100.2	2.6	33.02	8.49	
2012/1/26 09:37:02						9.043	15.79	8.18	100.9	2.9	33.02	8.48	
2012/1/26 09:48:13	M8	MF	832640	843644	2.2	1.218	15.33	8.29	101.2	3.5	32.85	8.49	4
2012/1/26 09:48:19						1.279	15.33	8.28	101.1	1.7	32.86	8.49	
2012/1/26 09:51:48	M6	MF	832577	843479	2	1.070	15.34	8.23	100.5	1.8	32.86	8.51	6
2012/1/26 09:51:55						1.057	15.34	8.21	100.3	2.8	32.87	8.50	
2012/1/26 09:55:21	M5	MF	832710	843394	2.2	1.237	15.33	8.22	100.4	1.7	32.88	8.48	2
2012/1/26 09:55:28						1.202	15.34	8.19	100.0	2.9	32.88	8.47	
2012/1/26 09:59:51	M7	MF	832784	843493	2.6	1.334	15.38	8.15	99.6	2.1	32.89	8.49	4
2012/1/26 09:59:57						1.357	15.37	8.14	99.5	1.7	32.89	8.48	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

**Contract ST/2008/02**  
**Ma On Shan Development - Roads, Drainage and Sewerage Works**  
**at whitehead and Lok Wo Sha, Phase 1**  
**Baseline Marine Water Quality Monitoring**



Impact Data 28-Jan-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/1/28 16:16:15	M1	ME	842518	832561	2.2	1.258	15.77	7.65	94.3	1.5	32.95	8.35	<2
2012/1/28 16:16:26						1.212	15.77	7.66	94.4	1.4	32.93	8.35	
2012/1/28 16:20:59	M2	ME	842535	832795	2	1.083	15.84	7.69	94.9	1.6	32.92	8.35	5
2012/1/28 16:21:06						1.062	15.86	7.67	94.7	1.6	32.95	8.34	
2012/1/28 16:24:37	C1	ME	842187	833014	7.8	0.985	15.86	7.68	94.9	1.4	32.94	8.35	<2
2012/1/28 16:24:45						0.997	15.88	7.67	94.7	1.5	32.95	8.36	
2012/1/28 16:25:02						3.911	15.44	7.53	92.3	1.4	32.98	8.38	
2012/1/28 16:25:09						3.929	15.43	7.68	94.0	1.4	32.98	8.37	
2012/1/28 16:25:34						6.827	15.52	7.59	93.1	1.3	33.08	8.37	
2012/1/28 16:25:40						6.847	15.52	7.56	92.8	1.4	33.07	8.35	
2012/1/28 16:33:58	M3	ME	842649	833094	2.2	1.196	15.76	7.61	93.8	1.4	32.94	8.38	4
2012/1/28 16:34:06						1.178	15.77	7.61	93.8	2.0	32.95	8.35	
2012/1/28 17:16:02	M4	ME	843038	833110	5	1.044	16.01	7.78	96.3	1.3	32.97	8.42	<2
2012/1/28 17:16:09						1.000	15.99	7.79	96.4	1.7	32.94	8.42	
2012/1/28 17:16:29						4.044	15.46	7.64	93.6	2.3	32.97	8.43	
2012/1/28 17:16:36						4.044	15.46	7.67	94.0	1.5	32.97	8.43	
2012/1/28 16:37:54	C2	ME	832995	843811	9.4	1.019	15.78	7.62	93.9	1.4	32.93	8.37	<2
2012/1/28 16:38:03						1.068	15.80	7.59	93.6	1.6	32.92	8.35	
2012/1/28 16:38:35						4.712	15.45	7.52	92.1	1.5	33.02	8.35	
2012/1/28 16:38:45						4.754	15.45	7.49	91.8	1.5	33.03	8.37	
2012/1/28 16:39:04						8.469	15.55	7.33	90.0	4.2	33.16	8.34	
2012/1/28 16:39:10						8.437	15.55	7.22	88.6	3.3	33.14	8.35	
2012/1/28 16:51:25	M8	ME	832650	843634	2.2	1.204	15.87	7.41	91.5	1.6	32.94	8.36	2
2012/1/28 16:51:32						1.203	15.86	7.46	92.1	1.6	32.94	8.38	
2012/1/28 16:55:04	M6	ME	832580	843477	2	0.978	15.89	7.57	93.5	1.5	32.95	8.38	2
2012/1/28 16:55:11						1.001	15.88	7.58	93.6	1.2	32.94	8.38	
2012/1/28 16:59:45	M5	ME	832717	843396	2.1	1.182	15.88	7.51	92.8	1.2	32.95	8.38	<2
2012/1/28 16:59:50						1.102	15.88	7.50	92.0	1.3	32.95	8.38	
2012/1/28 17:03:12	M7	ME	832779	843492	2.2	1.210	15.87	7.48	92.3	1.4	32.94	8.38	4
2012/1/28 17:03:24						1.233	15.87	7.53	93.0	1.4	32.99	8.38	
2012/1/28 10:12:47	M1	MF	842518	832561	2.2	1.200	15.54	8.06	98.8	1.5	32.83	8.31	<2
2012/1/28 10:12:54						1.223	15.52	8.06	98.8	1.7	32.83	8.31	
2012/1/28 10:16:31	M2	MF	842535	832795	1.9	0.937	15.61	8.10	99.4	1.5	32.83	8.31	<2
2012/1/28 10:16:38						0.947	15.65	8.05	98.9	1.5	32.84	8.30	
2012/1/28 10:21:22	C1	MF	842187	833014	7.6	0.973	15.65	8.01	98.4	1.6	32.82	8.30	<2
2012/1/28 10:21:30						1.017	15.66	8.01	98.4	1.8	32.83	8.29	
2012/1/28 10:21:55						3.745	15.51	8.02	98.3	1.6	32.87	8.31	
2012/1/28 10:22:02						3.846	15.51	8.04	98.5	1.6	32.87	8.30	
2012/1/28 10:22:24						6.596	15.51	7.74	94.9	1.9	32.96	8.31	
2012/1/28 10:22:31						6.626	15.51	7.82	95.9	1.9	32.96	8.30	
2012/1/28 10:31:28	M3	MF	842649	833094	2.2	1.223	15.62	7.95	97.6	1.7	32.86	8.31	<2
2012/1/28 10:31:38						1.198	15.62	7.92	97.3	2.2	32.87	8.30	
2012/1/28 10:36:07	M4	MF	843038	833110	4.6	1.030	15.72	7.88	96.9	1.8	32.86	8.30	<2
2012/1/28 10:36:15						1.004	15.72	7.86	96.7	2.7	32.87	8.30	
2012/1/28 10:36:35						3.636	15.51	7.81	95.7	1.5	32.90	8.31	
2012/1/28 10:36:42						3.692	15.51	7.87	96.4	1.4	32.90	8.31	
2012/1/28 10:44:44	C2	MF	832999	843826	8.9	1.031	15.60	7.76	95.3	2.4	32.92	8.31	<2
2012/1/28 10:44:52						1.030	15.62	7.78	95.5	1.7	32.91	8.31	
2012/1/28 10:46:15						4.509	15.50	7.80	95.7	1.5	33.00	8.30	
2012/1/28 10:46:24						4.522	15.50	7.80	95.7	1.7	33.00	8.32	
2012/1/28 10:47:00						7.980	15.60	7.47	91.9	3.7	33.16	8.29	
2012/1/28 10:47:08						7.967	15.60	7.45	91.6	3.1	33.16	8.30	
2012/1/28 10:58:42	M8	MF	832640	843644	2.2	1.196	15.56	7.60	93.2	1.5	32.93	8.33	<2
2012/1/28 10:58:49						1.192	15.57	7.62	93.6	1.7	32.93	8.33	
2012/1/28 11:03:02	M6	MF	832577	843479	2.1	1.059	15.58	7.75	95.2	1.8	32.93	8.34	<2
2012/1/28 11:03:09						1.091	15.58	7.77	95.4	1.5	32.93	8.35	
2012/1/28 11:10:49	M5	MF	832710	843394	2.2	1.263	15.60	7.82	96.1	1.9	32.93	8.33	4
2012/1/28 11:10:58						1.245	15.60	7.79	95.7	1.3	32.93	8.36	
2012/1/28 11:14:48	M7	MF	832784	843493	2.2	1.223	15.73	7.81	96.2	1.4	32.93	8.35	<2
2012/1/28 11:14:55						1.244	15.71	7.82	96.3	1.5	32.91	8.35	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

Contract ST/2008/02

Ma On Shan Development - Roads, Drainage and Sewerage Works

at whitehead and Lok Wo Sha, Phase 1

Baseline Marine Water Quality Monitoring



Impact Data 30-Jan-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/1/30 08:20:54	M1	ME	842518	832561	2.2	1.182	15.71	8.98	110.0	1.7	32.27	8.33	2
2012/1/30 08:21:01						1.232	15.71	9.03	110.7	1.6	32.36	8.36	
2012/1/30 08:24:31	M2	ME	842535	832795	2	1.061	15.77	8.82	108.4	1.5	32.49	8.38	2
2012/1/30 08:24:37						1.065	15.75	8.74	107.5	1.4	32.51	8.41	
2012/1/30 08:30:50	C1	ME	842187	833014	8	1.005	15.69	8.19	100.6	1.6	32.68	8.46	3
2012/1/30 08:30:57						1.003	15.70	8.23	101.1	1.5	32.66	8.46	
2012/1/30 08:31:42						4.001	15.76	8.11	99.9	1.6	32.90	8.43	
2012/1/30 08:31:55						4.082	15.76	8.05	99.1	2.1	32.88	8.44	2
2012/1/30 08:32:15						7.073	15.63	7.75	95.3	5.4	33.00	8.42	
2012/1/30 08:32:24						7.093	15.62	7.67	94.3	5.2	33.00	8.40	<2
2012/1/30 08:41:10	M3	ME	842649	833094	2.3	1.339	15.68	7.70	94.6	1.3	32.69	8.46	<2
2012/1/30 08:41:18						1.322	15.68	7.84	96.3	1.8	32.69	8.46	
2012/1/30 08:46:16	M4	ME	843038	833110	4.8	0.987	15.70	8.27	101.6	1.4	32.69	8.46	2
2012/1/30 08:46:23						1.045	15.70	8.26	101.5	1.4	32.69	8.46	
2012/1/30 08:46:50						3.753	15.75	8.12	100.0	1.5	32.87	8.43	3
2012/1/30 08:46:57						3.809	15.74	8.08	99.4	1.4	32.85	8.45	
2012/1/30 08:52:45	C2	ME	832995	843811	9.5	1.080	15.71	8.09	99.4	1.4	32.71	8.46	4
2012/1/30 08:52:51						1.046	15.71	8.13	99.9	2.0	32.72	8.47	
2012/1/30 08:53:12						4.741	15.75	7.96	98.1	2.0	32.92	8.45	<2
2012/1/30 08:53:19						4.764	15.74	7.94	97.8	2.1	32.93	8.44	
2012/1/30 08:53:49						8.472	15.62	7.48	92.0	2.7	33.07	8.40	2
2012/1/30 08:53:56						8.532	15.61	7.34	90.2	3.1	33.07	8.41	
2012/1/30 09:05:24	M8	ME	832650	843634	2	1.039	15.70	7.93	97.5	1.6	32.73	8.45	5
2012/1/30 09:05:30						1.068	15.70	8.00	98.3	1.3	32.73	8.46	
2012/1/30 09:09:03	M6	ME	832580	843477	1.8	0.917	15.73	8.13	99.9	1.6	32.73	8.47	4
2012/1/30 09:09:09						0.894	15.72	8.12	99.9	1.6	32.73	8.46	
2012/1/30 09:13:40	M5	ME	832717	843396	2.1	1.211	15.71	8.11	99.8	1.4	32.74	8.47	<2
2012/1/30 09:13:48						1.159	15.71	8.10	99.6	1.5	32.74	8.46	
2012/1/30 09:17:05	M7	ME	832779	843492	2.2	1.240	15.70	8.09	99.5	1.8	32.75	8.47	<2
2012/1/30 09:17:12						1.283	15.71	8.09	99.5	1.6	32.75	8.46	
2012/1/30 11:21:40	M1	MF	842518	832561	2.2	1.264	15.76	8.01	98.6	1.4	32.74	8.47	3
2012/1/30 11:21:47						1.255	15.70	8.03	98.7	1.4	32.75	8.47	
2012/1/30 11:25:45	M2	MF	842535	832795	2	1.079	15.71	8.02	98.6	1.8	32.76	8.47	6
2012/1/30 11:25:54						1.055	15.71	8.04	98.8	1.6	32.77	8.47	
2012/1/30 11:33:11	C1	MF	842187	833014	7.5	1.014	15.73	7.93	97.6	1.7	32.77	8.47	<2
2012/1/30 11:33:21						1.035	15.73	7.94	97.7	1.7	32.76	8.45	
2012/1/30 11:33:44						3.829	15.69	7.71	94.9	2.6	32.91	8.45	
2012/1/30 11:33:51						3.848	15.69	7.76	95.5	2.4	32.92	8.44	7
2012/1/30 11:34:13						6.629	15.65	7.42	91.4	3.8	33.07	8.42	
2012/1/30 11:34:27						6.581	15.64	7.35	90.4	5.1	33.07	8.41	<2
2012/1/30 11:44:42	M3	MF	842649	833094	2.2	1.221	15.73	7.28	89.5	1.6	32.79	8.48	4
2012/1/30 11:44:49						1.265	15.73	7.45	91.7	1.5	32.79	8.47	
2012/1/30 11:49:15	M4	MF	843038	833110	5.2	1.007	15.74	7.78	95.7	1.3	32.78	8.47	4
2012/1/30 11:49:20						0.989	15.74	7.79	95.8	1.4	32.78	8.45	
2012/1/30 11:49:35						4.282	15.74	7.87	97.0	2.0	32.97	8.45	<2
2012/1/30 11:49:43						4.273	15.76	7.68	94.7	1.6	32.97	8.44	
2012/1/30 11:57:06	C2	MF	832999	843826	9.6	1.022	15.74	7.78	95.7	1.4	32.80	8.47	6
2012/1/30 11:57:13						1.020	15.74	7.76	95.6	1.5	32.79	8.47	
2012/1/30 11:57:56						4.828	15.69	7.51	92.5	2.4	32.98	8.44	<2
2012/1/30 11:58:05						4.840	15.70	7.46	91.9	2.8	32.98	8.44	
2012/1/30 11:58:31						8.589	15.61	7.03	86.4	2.4	33.15	8.41	3
2012/1/30 11:58:38						8.641	15.61	6.94	85.4	3.2	33.15	8.40	
2012/1/30 12:10:41	M8	MF	832640	843644	2	1.046	15.75	7.33	90.2	1.4	32.81	8.47	<2
2012/1/30 12:10:48						1.048	15.74	7.41	91.1	1.6	32.80	8.46	
2012/1/30 12:14:11	M6	MF	832577	843479	1.9	0.873	15.75	7.62	93.8	1.5	32.81	8.47	3
2012/1/30 12:14:17						0.916	15.76	7.66	94.3	1.5	32.80	8.47	
2012/1/30 12:19:42	M5	MF	832710	843394	2.2	1.195	15.73	7.65	94.1	1.7	32.81	8.46	8
2012/1/30 12:19:49						1.219	15.73	7.67	94.4	2.0	32.82	8.48	
2012/1/30 12:24:14	M7	MF	832784	843493	2.2	1.234	15.72	7.59	93.4	1.8	32.81	8.46	6
2012/1/30 12:24:21						1.261	15.73	7.63	93.8	1.8	32.82	8.47	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

Contract ST/2008/02

**Ma On Shan Development - Roads, Drainage and Sewerage Works  
at whitehead and Lok Wo Sha, Phase 1  
Baseline Marine Water Quality Monitoring**



Impact Data 1-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/1 08:05:50	M1	ME	842518	832561	2.3	1.289	16.25	8.36	103.8	1.3	32.66	8.48	8
2012/2/1 08:05:58						1.341	16.22	8.27	102.7	1.3	32.66	8.49	
2012/2/1 08:09:44	M2	ME	842535	832795	2	1.075	16.29	8.21	102.1	1.1	32.64	8.49	5
2012/2/1 08:09:51						1.075	16.28	8.23	102.3	1.2	32.65	8.49	
2012/2/1 08:14:17	C1	ME	842187	833014	7.6	1.095	16.29	8.21	102.0	1.5	32.63	8.50	3
2012/2/1 08:14:24						1.056	16.26	8.22	102.1	1.5	32.66	8.49	
2012/2/1 08:14:47						3.861	16.12	8.20	101.7	1.5	32.73	8.47	5
2012/2/1 08:14:57						3.853	16.14	8.11	100.6	1.1	32.73	8.46	
2012/2/1 08:15:22						6.644	15.97	7.91	97.8	1.8	32.82	8.43	6
2012/2/1 08:15:28						6.644	15.97	7.64	94.4	2.3	32.83	8.43	
2012/2/1 08:24:38	M3	ME	842649	833094	2.2	1.229	16.28	7.79	96.8	1.3	32.66	8.48	3
2012/2/1 08:24:51						1.278	16.25	7.92	98.4	1.8	32.69	8.49	
2012/2/1 08:29:26	M4	ME	843038	833110	4.8	1.044	16.22	8.05	100.0	1.3	32.71	8.48	4
2012/2/1 08:29:33						0.970	16.23	8.05	100.0	1.3	32.70	8.48	
2012/2/1 08:29:56						3.844	16.09	8.07	100.0	1.2	32.74	8.48	5
2012/2/1 08:30:06						3.807	16.09	8.04	99.6	2.0	32.76	8.49	
2012/2/1 08:35:44	C2	ME	832995	843811	9	1.058	16.21	8.12	100.8	1.2	32.72	8.49	7
2012/2/1 08:35:50						1.019	16.21	8.09	100.4	1.5	32.72	8.49	
2012/2/1 08:36:18						4.597	16.09	8.03	99.5	1.5	32.75	8.48	5
2012/2/1 08:36:24						4.611	16.08	8.03	99.4	1.5	32.76	8.48	
2012/2/1 08:36:47						8.059	15.95	7.88	97.4	1.1	32.85	8.44	5
2012/2/1 08:36:53						8.093	15.92	7.79	96.2	1.3	32.85	8.44	
2012/2/1 08:48:01	M8	ME	832650	843634	2.2	1.142	16.28	7.69	95.6	1.2	32.67	8.49	3
2012/2/1 08:48:08						1.201	16.26	7.92	98.3	1.3	32.66	8.49	
2012/2/1 08:51:30	M6	ME	832580	843477	1.8	0.950	16.29	8.09	100.5	1.5	32.66	8.51	6
2012/2/1 08:51:37						0.848	16.29	8.12	100.9	1.2	32.66	8.50	
2012/2/1 08:55:00	M5	ME	832717	843396	2.1	1.310	16.30	8.13	101.0	1.5	32.65	8.50	3
2012/2/1 08:55:08						1.192	16.30	8.13	101.1	1.5	32.65	8.50	
2012/2/1 08:59:05	M7	ME	832779	843492	2.2	1.139	16.29	8.12	100.9	1.3	32.65	8.51	7
2012/2/1 08:59:12						1.258	16.31	8.12	101.0	1.5	32.65	8.51	
2012/2/1 12:30:58	M1	MF	842518	832561	2.1	1.178	16.32	8.10	100.7	1.4	32.64	8.50	5
2012/2/1 12:31:06						1.191	16.33	8.09	100.6	1.4	32.63	8.50	
2012/2/1 12:35:03	M2	MF	842535	832795	1.9	0.967	16.32	8.09	100.7	1.2	32.65	8.50	8
2012/2/1 12:35:11						0.986	16.29	8.07	100.3	1.5	32.64	8.50	
2012/2/1 12:40:56	C1	MF	842187	833014	7.6	0.999	16.32	8.10	100.7	1.3	32.64	8.49	2
2012/2/1 12:41:03						0.988	16.29	8.10	100.7	1.3	32.65	8.50	
2012/2/1 12:41:27						3.770	16.10	8.03	99.5	1.2	32.79	8.48	4
2012/2/1 12:41:34						3.821	16.11	7.94	98.4	1.4	32.77	8.48	
2012/2/1 12:41:57						6.637	16.00	7.80	96.5	1.3	32.86	8.46	3
2012/2/1 12:42:14						6.616	15.99	7.57	93.6	1.5	32.85	8.45	
2012/2/1 12:51:03	M3	MF	842649	833094	2.2	1.241	16.31	7.67	95.4	1.2	32.65	8.51	4
2012/2/1 12:51:10						1.283	16.31	7.72	96.0	1.3	32.65	8.51	
2012/2/1 12:55:55	M4	MF	843038	833110	5	1.026	16.26	8.03	99.7	1.2	32.67	8.51	5
2012/2/1 12:56:03						1.068	16.29	8.02	99.7	1.3	32.66	8.51	
2012/2/1 12:56:47						4.029	16.15	7.74	96.0	1.2	32.81	8.47	2
2012/2/1 12:56:54						4.067	16.11	7.71	95.6	1.3	32.78	8.47	
2012/2/1 13:06:58	C2	MF	832999	843826	9.5	1.072	16.33	7.95	98.9	1.5	32.66	8.51	8
2012/2/1 13:07:05						0.979	16.32	7.94	98.8	1.5	32.66	8.50	
2012/2/1 13:07:27						4.784	15.98	7.93	98.0	1.4	32.81	8.46	10
2012/2/1 13:07:35						4.783	15.97	7.76	96.0	1.5	32.84	8.46	
2012/2/1 13:08:04						8.573	15.84	7.15	88.2	1.5	32.87	8.42	10
2012/2/1 13:08:11						8.529	15.85	6.99	86.3	1.9	32.87	8.42	
2012/2/1 13:19:10	M8	MF	832640	843644	2.2	1.234	16.33	7.31	90.9	1.5	32.67	8.49	4
2012/2/1 13:19:16						1.206	16.32	7.40	92.0	1.5	32.68	8.49	
2012/2/1 13:23:31	M6	MF	832577	843479	1.9	0.903	16.28	8.36	103.9	1.4	32.69	8.48	<2
2012/2/1 13:23:39						0.985	16.26	7.88	97.9	1.5	32.69	8.48	
2012/2/1 13:27:12	M5	MF	832710	843394	2.2	1.308	16.25	7.68	95.5	1.4	32.69	8.49	4
2012/2/1 13:27:17						1.289	16.26	7.68	95.4	2.9	32.69	8.48	
2012/2/1 13:31:04	M7	MF	832784	843493	2.3	1.279	16.26	7.66	95.1	1.5	32.68	8.49	6
2012/2/1 13:31:10						1.309	16.24	7.67	95.2	1.6	32.68	8.49	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide



Contract ST/2008/02

**Ma On Shan Development - Roads, Drainage and Sewerage Works  
at whitehead and Lok Wo Sha, Phase 1  
Baseline Marine Water Quality Monitoring**



Impact Data 4-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/4 10:30:59	M1	ME	842518	832561	2.2	1.162	16.00	9.16	113.1	1.6	32.58	8.45	3
2012/2/4 10:31:06						1.211	16.00	9.17	113.3	1.5	32.60	8.43	
2012/2/4 10:34:49						0.960	16.02	9.12	112.7	1.8	32.64	8.47	
2012/2/4 10:35:00	M2	ME	842535	832795	1.9	0.954	16.02	9.10	112.5	2.7	32.65	8.47	3
2012/2/4 10:39:52						1.025	16.02	9.07	112.2	1.5	32.67	8.49	
2012/2/4 10:39:59	C1	ME	842187	833014	7	1.008	16.02	9.07	112.1	1.7	32.67	8.48	3
2012/2/4 10:40:33						3.549	16.00	9.03	111.6	1.4	32.75	8.46	
2012/2/4 10:40:46						3.504	16.00	9.01	111.4	2.4	32.74	8.48	
2012/2/4 10:41:15						6.037	16.04	8.70	107.8	2.4	32.85	8.43	2
2012/2/4 10:41:22						6.084	16.04	8.66	107.2	2.4	32.85	8.43	
2012/2/4 10:50:21						1.206	16.03	8.68	107.4	1.6	32.76	8.48	
2012/2/4 10:50:28	M3	ME	842649	833094	2.1	1.188	16.04	8.73	108.0	1.9	32.75	8.45	2
2012/2/4 10:55:00						1.035	16.03	8.78	108.6	1.8	32.71	8.46	
2012/2/4 10:55:06	M4	ME	843038	833110	4.4	1.032	16.03	8.76	108.4	2.7	32.75	8.47	<2
2012/2/4 10:55:28						3.424	16.01	8.78	108.6	1.7	32.78	8.49	
2012/2/4 10:55:34						3.463	16.01	8.84	109.4	2.6	32.78	8.48	
2012/2/4 11:00:24	C2	ME	832995	843811	8.8	1.009	16.04	8.83	109.3	1.8	32.76	8.48	2
2012/2/4 11:00:30						1.024	16.04	8.81	109.1	1.8	32.76	8.49	
2012/2/4 11:00:58						4.486	16.01	8.83	109.2	1.7	32.79	8.49	
2012/2/4 11:01:05						4.436	16.00	8.81	108.9	1.6	32.80	8.48	2
2012/2/4 11:01:27						7.829	16.05	8.63	107.0	2.6	32.98	8.42	
2012/2/4 11:01:34						7.848	16.05	8.50	105.3	3.4	32.98	8.41	
2012/2/4 11:12:16	M8	ME	832650	843634	2	1.043	16.03	8.21	101.6	2.0	32.75	8.48	3
2012/2/4 11:12:21						1.049	16.04	8.32	103.0	1.7	32.79	8.47	
2012/2/4 11:15:07	M6	ME	832580	843477	1.8	0.878	16.04	8.45	104.6	1.6	32.77	8.48	6
2012/2/4 11:15:13						0.862	16.04	8.51	105.3	1.6	32.76	8.49	
2012/2/4 11:18:39	M5	ME	832717	843396	2.1	1.143	16.04	8.52	105.4	1.6	32.77	8.48	3
2012/2/4 11:18:47						1.130	16.03	8.52	105.4	2.0	32.76	8.48	
2012/2/4 11:22:16	M7	ME	832779	843492	2.2	1.183	16.03	8.47	104.8	2.2	32.76	8.47	3
2012/2/4 11:22:23						1.219	16.03	8.44	104.4	1.6	32.77	8.46	
2012/2/4 14:51:18	M1	MF	842518	832561	2.2	1.195	16.02	8.46	104.7	2.8	32.79	8.49	2
2012/2/4 14:51:25						1.201	16.02	8.52	105.4	1.7	32.80	8.48	
2012/2/4 14:54:54	M2	MF	842535	832795	1.9	0.950	16.02	8.58	106.2	2.0	32.80	8.49	<2
2012/2/4 14:55:02						0.981	16.02	8.55	105.9	1.5	32.81	8.49	
2012/2/4 14:59:34	C1	MF	842187	833014	8	1.025	16.01	8.54	105.6	2.1	32.77	8.47	3
2012/2/4 14:59:40						0.991	16.01	8.52	105.4	1.7	32.76	8.48	
2012/2/4 15:00:07						4.039	15.99	8.40	103.9	2.0	32.84	8.46	
2012/2/4 15:00:14						4.064	15.98	8.40	103.9	1.4	32.85	8.48	4
2012/2/4 15:00:33						7.081	16.06	8.20	101.6	2.6	32.98	8.43	
2012/2/4 15:00:40						7.075	16.06	8.12	100.7	2.1	32.99	8.42	
2012/2/4 15:09:20	M3	MF	842649	833094	2.3	1.325	16.01	8.00	99.0	1.6	32.77	8.49	2
2012/2/4 15:09:27						1.304	16.01	8.09	100.0	2.5	32.77	8.49	
2012/2/4 15:14:54	M4	MF	843038	833110	5	1.033	16.01	8.24	101.9	1.6	32.77	8.49	2
2012/2/4 15:14:59						1.003	16.00	8.32	102.9	1.8	32.77	8.49	
2012/2/4 15:15:17						4.034	16.01	8.19	101.3	1.7	32.86	8.46	3
2012/2/4 15:15:24						4.065	16.03	8.27	102.4	2.2	32.87	8.47	
2012/2/4 15:21:08	C2	MF	832999	843826	9.1	1.008	16.00	8.24	101.9	1.5	32.78	8.49	4
2012/2/4 15:21:12						1.028	16.01	8.25	102.1	1.7	32.78	8.50	
2012/2/4 15:21:41						4.564	16.03	8.15	101.0	2.0	32.88	8.46	
2012/2/4 15:21:49						4.484	16.02	8.05	99.6	1.6	32.87	8.47	3
2012/2/4 15:22:11						8.016	16.04	7.86	97.4	6.1	33.04	8.42	
2012/2/4 15:22:20						8.108	16.04	7.78	96.4	2.6	33.05	8.43	
2012/2/4 15:33:18	M8	MF	832640	843644	2	1.096	16.01	7.98	98.8	1.5	32.80	8.49	4
2012/2/4 15:33:24						1.090	16.01	8.06	99.7	1.9	32.79	8.48	
2012/2/4 15:36:50	M6	MF	832577	843479	2	0.980	16.00	8.21	101.6	1.7	32.78	8.50	4
2012/2/4 15:36:55						1.005	16.01	8.27	102.2	1.8	32.77	8.49	
2012/2/4 15:40:23	M5	MF	832710	843394	2.2	1.229	16.02	8.28	102.5	1.7	32.83	8.49	4
2012/2/4 15:40:29						1.239	16.02	8.26	102.2	2.2	32.79	8.50	
2012/2/4 15:43:53	M7	MF	832784	843493	2.2	1.303	16.01	8.23	101.8	1.5	32.79	8.48	3
2012/2/4 15:44:00						1.233	16.02	8.22	101.7	2.0	32.81	8.48	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

Contract ST/2008/02

Ma On Shan Development - Roads, Drainage and Sewerage Works  
at whitehead and Lok Wo Sha, Phase 1  
Baseline Marine Water Quality Monitoring



Impact Data 6-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/6 11:40:38	M1	ME	842518	832561	2.1	1.197	16.67	9.69	120.9	1.5	32.10	8.47	5
2012/2/6 11:40:45						1.183	16.65	9.73	121.4	1.3	32.13	8.47	
2012/2/6 11:44:23	M2	ME	842535	832795	1.9	0.946	16.67	10.06	125.6	1.4	32.10	8.46	2
2012/2/6 11:44:32						0.916	16.68	10.06	125.6	1.3	32.11	8.47	
2012/2/6 11:48:08	C1	ME	842187	833014	7.5	1.017	16.68	9.93	123.9	1.3	32.12	8.47	7
2012/2/6 11:48:15						1.044	16.68	9.91	123.7	1.4	32.12	8.46	
2012/2/6 11:48:52						3.704	16.29	9.61	119.4	1.6	32.50	8.41	
2012/2/6 11:49:00						3.761	16.28	9.54	118.4	1.6	32.50	8.40	5
2012/2/6 11:50:10						6.450	16.26	8.80	109.2	1.9	32.54	8.40	
2012/2/6 11:50:16						6.517	16.26	8.78	109.0	1.6	32.55	8.40	
2012/2/6 11:59:27	M3	ME	842649	833094	2.1	1.150	16.66	9.27	115.7	1.4	32.18	8.47	4
2012/2/6 11:59:37						1.172	16.61	9.34	116.5	1.4	32.24	8.46	
2012/2/6 12:05:16	M4	ME	843038	833110	4.6	1.009	16.60	9.98	124.5	1.5	32.28	8.50	4
2012/2/6 12:05:24						1.032	16.60	9.73	121.4	1.3	32.28	8.50	
2012/2/6 12:05:46						3.585	16.28	9.39	116.5	1.5	32.53	8.47	3
2012/2/6 12:05:54						3.618	16.26	9.37	116.4	1.7	32.54	8.45	
2012/2/6 12:11:56	C2	ME	832995	843811	9	1.044	16.57	8.83	110.1	1.4	32.31	8.48	6
2012/2/6 12:12:02						1.077	16.57	8.90	111.0	1.4	32.31	8.47	
2012/2/6 12:12:17						4.499	16.22	8.91	110.5	1.5	32.59	8.45	7
2012/2/6 12:12:26						4.565	16.22	8.99	111.5	2.2	32.59	8.43	
2012/2/6 12:13:11						8.016	16.12	8.09	100.3	2.3	32.71	8.37	4
2012/2/6 12:13:19						8.021	16.12	8.05	99.8	2.4	32.72	8.37	
2012/2/6 12:26:32	M8	ME	832650	843634	2	1.086	16.55	8.66	108.0	2.6	32.37	8.48	7
2012/2/6 12:26:40						1.055	16.57	8.72	108.8	1.5	32.35	8.49	
2012/2/6 12:30:08	M6	ME	832580	843477	1.9	0.897	16.59	8.89	110.9	1.6	32.34	8.50	3
2012/2/6 12:30:18						0.907	16.58	8.92	111.3	1.5	32.35	8.48	
2012/2/6 12:33:45	M5	ME	832717	843396	2.1	1.143	16.50	8.89	110.8	1.4	32.42	8.47	6
2012/2/6 12:33:51						1.118	16.53	8.85	110.4	1.3	32.40	8.48	
2012/2/6 12:37:12	M7	ME	832779	843492	2.2	1.258	16.51	8.78	109.5	1.6	32.41	8.49	5
2012/2/6 12:37:19						1.245	16.54	8.76	109.2	1.4	32.39	8.48	
2012/2/6 17:11:47	M1	MF	842518	832561	2.2	1.264	16.46	8.50	105.9	1.3	32.43	8.49	8
2012/2/6 17:11:54						1.231	16.46	8.53	106.2	2.7	32.43	8.49	
2012/2/6 17:15:46	M2	MF	842535	832795	2	0.977	16.57	8.52	106.2	1.7	32.30	8.48	4
2012/2/6 17:15:54						1.060	16.61	8.58	107.0	1.7	32.27	8.48	
2012/2/6 17:20:25	C1	MF	842187	833014	8	1.012	16.58	8.59	107.1	1.4	32.29	8.49	7
2012/2/6 17:20:32						1.064	16.57	8.59	107.2	1.5	32.30	8.50	
2012/2/6 17:20:56						4.006	16.22	8.41	104.4	1.5	32.65	8.43	
2012/2/6 17:21:02						3.994	16.22	8.36	103.8	1.8	32.67	8.44	3
2012/2/6 17:21:28						7.001	16.10	7.84	97.1	2.6	32.81	8.37	
2012/2/6 17:21:34						7.048	16.11	7.63	94.5	1.6	32.79	8.38	
2012/2/6 17:30:40	M3	MF	842649	833094	2.3	1.314	16.49	7.52	93.7	1.4	32.44	8.50	4
2012/2/6 17:30:46						1.332	16.50	7.67	95.6	1.5	32.42	8.49	
2012/2/6 17:35:56	M4	MF	843038	833110	5.1	1.051	16.54	8.41	104.9	1.4	32.40	8.50	3
2012/2/6 17:36:03						1.042	16.53	8.41	104.8	1.6	32.39	8.50	
2012/2/6 17:36:18						4.086	16.23	8.34	103.5	2.1	32.67	8.43	5
2012/2/6 17:36:31						4.157	16.25	8.21	101.9	2.0	32.65	8.44	
2012/2/6 17:42:26	C2	MF	832999	843826	9.4	1.056	16.57	7.98	99.6	1.3	32.38	8.49	2
2012/2/6 17:42:33						1.009	16.58	8.08	100.8	1.9	32.37	8.51	
2012/2/6 17:43:07						4.736	16.24	7.89	98.0	1.9	32.68	8.43	5
2012/2/6 17:43:16						4.673	16.24	7.73	96.0	1.6	32.67	8.44	
2012/2/6 17:43:41						8.408	16.09	7.42	92.0	1.4	32.85	8.35	8
2012/2/6 17:43:48						8.412	16.09	7.19	89.2	1.5	32.85	8.36	
2012/2/6 17:55:31	M8	MF	832640	843644	2.2	1.207	16.40	6.97	86.7	1.4	32.54	8.47	4
2012/2/6 17:55:38						1.212	16.40	7.23	90.0	1.4	32.54	8.48	
2012/2/6 17:59:01	M6	MF	832577	843479	1.9	0.942	16.58	7.60	94.9	1.3	32.35	8.50	7
2012/2/6 17:59:09						0.967	16.58	7.74	96.6	1.3	32.37	8.50	
2012/2/6 18:03:16	M5	MF	832710	843394	2.2	1.269	16.43	7.92	98.7	1.8	32.53	8.50	6
2012/2/6 18:03:24						1.276	16.43	7.91	98.4	1.5	32.53	8.50	
2012/2/6 18:07:18	M7	MF	832784	843493	2.2	1.252	16.44	7.88	98.1	1.9	32.52	8.50	5
2012/2/6 18:07:25						1.250	16.45	7.88	98.1	1.5	32.51	8.49	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

**Contract ST/2008/02**  
**Ma On Shan Development - Roads, Drainage and Sewerage Works**  
**at whitehead and Lok Wo Sha, Phase 1**  
**Baseline Marine Water Quality Monitoring**



Impact Data 8-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/8 13:14:01	M1	ME	842518	832561	2.2	1.142	16.06	8.13	100.8	1.2	32.84	8.46	4
2012/2/8 13:14:12						1.227	16.06	7.90	97.8	1.0	32.85	8.47	
2012/2/8 13:18:31	M2	ME	842535	832795	2	1.103	16.06	7.71	95.5	1.7	32.86	8.47	8
2012/2/8 13:18:44						1.072	16.06	7.74	95.9	1.4	32.86	8.45	
2012/2/8 13:21:15	C1	ME	842187	833014	8	1.001	16.06	7.71	95.6	1.0	32.86	8.47	8
2012/2/8 13:21:21						0.998	16.07	7.69	95.3	0.9	32.86	8.47	
2012/2/8 13:22:14						4.068	16.07	7.67	95.0	2.1	32.87	8.46	
2012/2/8 13:22:21						4.066	16.07	7.68	95.1	2.4	32.86	8.46	6
2012/2/8 13:22:57						7.090	16.07	7.65	94.7	1.1	32.87	8.46	
2012/2/8 13:23:04						7.091	16.06	7.63	94.5	1.2	32.86	8.45	
2012/2/8 13:30:47	M3	ME	842649	833094	2.2	1.265	16.09	7.57	93.8	1.2	32.87	8.46	4
2012/2/8 13:30:57						1.290	16.09	7.59	94.1	3.1	32.87	8.46	
2012/2/8 13:36:11	M4	ME	843038	833110	5.1	0.993	16.09	7.51	93.1	1.4	32.88	8.46	4
2012/2/8 13:36:18						1.083	16.09	7.53	93.3	0.7	32.88	8.46	
2012/2/8 13:36:38						4.094	16.06	7.39	91.5	0.9	32.87	8.45	4
2012/2/8 13:36:45						4.133	16.04	7.55	93.5	1.2	32.88	8.46	
2012/2/8 13:42:26	C2	ME	832995	843811	9.5	0.991	16.04	7.47	92.6	3.2	32.89	8.46	9
2012/2/8 13:42:36						1.043	16.06	7.43	92.0	1.0	32.88	8.45	
2012/2/8 13:43:06						4.830	16.09	7.48	92.7	0.9	32.89	8.44	
2012/2/8 13:43:14						4.796	16.08	7.47	92.5	0.6	32.89	8.44	4
2012/2/8 13:44:07						8.670	16.05	7.41	91.8	0.8	32.89	8.44	
2012/2/8 13:44:15						8.575	16.05	7.39	91.6	1.5	32.89	8.44	
2012/2/8 13:55:37	M8	ME	832650	843634	2	1.046	16.04	7.26	89.9	1.6	32.90	8.45	4
2012/2/8 13:55:44						1.063	16.04	7.27	90.0	0.9	32.90	8.45	
2012/2/8 13:58:42	M6	ME	832580	843477	1.9	1.000	16.04	7.24	89.7	1.2	32.89	8.45	5
2012/2/8 13:58:50						0.989	16.03	7.28	90.1	1.5	32.90	8.45	
2012/2/8 14:03:06	M5	ME	832717	843396	2.1	1.276	16.04	7.24	89.7	1.4	32.90	8.45	7
2012/2/8 14:03:13						1.174	16.04	7.23	89.6	1.7	32.90	8.44	
2012/2/8 14:06:42	M7	ME	832779	843492	2.2	1.301	16.03	7.07	87.5	1.1	32.90	8.45	6
2012/2/8 14:07:11						1.222	16.03	7.23	89.5	1.4	32.90	8.43	
2012/2/8 08:18:04	M1	MF	842518	832561	2.2	1.226	16.01	9.56	117.9	3.8	32.24	8.33	5
2012/2/8 08:18:11						1.209	16.01	9.40	116.0	3.6	32.31	8.36	
2012/2/8 08:21:38	M2	MF	842535	832795	2	0.964	16.00	9.20	113.6	1.6	32.46	8.39	5
2012/2/8 08:21:45						1.027	16.00	9.02	111.4	1.5	32.48	8.39	
2012/2/8 08:29:42	C1	MF	842187	833014	7.6	1.040	16.02	8.33	103.0	2.2	32.72	8.45	6
2012/2/8 08:29:50						1.044	16.02	8.34	103.2	2.0	32.73	8.46	
2012/2/8 08:30:19						3.854	16.02	8.52	105.4	1.5	32.75	8.46	
2012/2/8 08:30:26						3.851	16.02	8.52	105.4	1.6	32.75	8.45	5
2012/2/8 08:30:47						6.690	16.02	8.25	102.0	2.5	32.75	8.46	
2012/2/8 08:30:55						6.665	16.02	8.36	103.4	3.9	32.76	8.46	
2012/2/8 08:34:47	M3	MF	842649	833094	2.2	1.234	16.03	8.15	100.9	1.6	32.76	8.46	3
2012/2/8 08:34:55						1.215	16.03	8.14	100.7	1.4	32.75	8.46	
2012/2/8 08:39:58	M4	MF	843038	833110	4.9	1.064	16.03	8.12	100.5	1.4	32.76	8.45	5
2012/2/8 08:40:05						1.052	16.03	8.10	100.2	2.6	32.76	8.46	
2012/2/8 08:40:26						3.982	16.02	8.02	99.2	1.5	32.76	8.45	6
2012/2/8 08:40:35						3.945	16.03	8.09	100.1	1.7	32.76	8.45	
2012/2/8 08:45:22	C2	MF	832999	843826	9	1.075	16.03	7.91	97.9	2.1	32.77	8.47	6
2012/2/8 08:45:29						0.988	16.03	7.98	98.8	1.5	32.77	8.46	
2012/2/8 08:45:50						4.566	16.03	7.94	98.2	1.6	32.78	8.47	
2012/2/8 08:45:57						4.593	16.03	8.00	99.0	1.3	32.79	8.46	8
2012/2/8 08:46:15						8.015	16.03	7.82	96.8	1.4	32.78	8.46	
2012/2/8 08:46:22						8.064	16.03	7.98	98.8	1.3	32.78	8.47	
2012/2/8 08:58:03	M8	MF	832640	843644	2.1	1.066	16.03	7.79	96.4	1.6	32.79	8.45	5
2012/2/8 08:58:09						1.131	16.03	7.74	95.8	1.6	32.80	8.47	
2012/2/8 09:01:39	M6	MF	832577	843479	1.9	0.961	16.03	7.77	96.1	1.6	32.81	8.46	6
2012/2/8 09:01:45						0.965	16.04	7.79	96.4	1.3	32.81	8.46	
2012/2/8 09:05:11	M5	MF	832710	843394	2.2	1.227	16.04	7.75	95.9	1.3	32.82	8.45	4
2012/2/8 09:05:18						1.269	16.04	7.76	96.0	1.7	32.82	8.45	
2012/2/8 09:08:59	M7	MF	832784	843493	2.2	1.256	16.04	7.74	95.8	1.2	32.82	8.46	3
2012/2/8 09:09:06						1.285	16.04	7.71	95.5	1.8	32.82	8.45	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

Contract ST/2008/02

**Ma On Shan Development - Roads, Drainage and Sewerage Works  
at whitehead and Lok Wo Sha, Phase 1  
Baseline Marine Water Quality Monitoring**



Impact Data 10-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/10 14:33:57	M1	ME	842518	832561	2.1	1.108	15.82	6.65	81.6	1.4	32.13	8.43	<2
2012/2/10 14:34:04						1.133	15.82	6.78	83.3	1.3	32.15	8.43	
2012/2/10 14:37:03	M2	ME	842535	832795	1.9	0.991	15.84	6.89	84.5	1.4	32.06	8.43	5
2012/2/10 14:37:10						0.999	15.84	6.89	84.5	1.4	32.04	8.43	
2012/2/10 14:41:05	C1	ME	842187	833014	7.6	0.955	15.84	6.86	84.3	1.4	32.08	8.42	6
2012/2/10 14:41:11						0.965	15.84	6.86	84.2	1.3	32.04	8.43	
2012/2/10 14:41:31						3.824	15.93	6.53	80.6	2.0	32.59	8.42	6
2012/2/10 14:41:37						3.871	15.93	6.73	83.1	2.1	32.60	8.43	
2012/2/10 14:41:59						6.661	15.86	6.60	81.4	2.4	32.69	8.39	3
2012/2/10 14:42:05						6.667	15.86	6.59	81.3	2.3	32.69	8.38	
2012/2/10 14:48:58	M3	ME	842649	833094	2.1	1.166	15.85	6.60	81.0	1.5	32.01	8.43	<2
2012/2/10 14:49:05						1.166	15.85	6.64	81.5	1.5	32.01	8.44	
2012/2/10 14:54:41	M4	ME	843038	833110	4.7	0.992	15.85	6.70	82.2	1.4	31.97	8.43	6
2012/2/10 14:54:48						1.012	15.86	6.72	82.4	1.6	31.97	8.41	
2012/2/10 14:55:05						3.758	15.93	6.35	78.3	2.0	32.52	8.43	3
2012/2/10 14:55:11						3.712	15.91	6.64	81.9	1.9	32.49	8.43	
2012/2/10 15:00:58	C2	ME	832995	843811	9	1.051	15.86	6.45	79.2	1.7	31.98	8.43	9
2012/2/10 15:01:05						0.994	15.86	6.63	81.4	1.4	31.99	8.44	
2012/2/10 15:01:37						4.530	15.92	6.56	80.9	1.8	32.62	8.43	4
2012/2/10 15:01:44						4.563	15.93	6.54	80.7	2.2	32.62	8.42	
2012/2/10 15:02:07						7.994	15.85	6.36	78.4	3.4	32.71	8.40	5
2012/2/10 15:02:15						8.079	15.85	6.34	78.2	2.2	32.72	8.40	
2012/2/10 15:13:42	M8	ME	832650	843634	2	0.999	15.84	6.49	79.7	1.5	32.03	8.42	5
2012/2/10 15:13:49						1.057	15.83	6.50	79.8	1.4	32.04	8.43	
2012/2/10 15:16:35	M6	ME	832580	843477	1.9	0.864	15.84	6.51	79.9	1.4	32.01	8.42	6
2012/2/10 15:16:42						0.901	15.84	6.51	79.9	1.4	32.02	8.43	
2012/2/10 15:20:14	M5	ME	832717	843396	2.1	1.154	15.83	6.50	79.8	1.3	32.06	8.43	3
2012/2/10 15:20:19						1.173	15.83	6.49	79.7	1.4	32.08	8.43	
2012/2/10 15:28:04	M7	ME	832779	843492	2.3	1.237	15.84	6.37	78.2	1.6	32.19	8.44	4
2012/2/10 15:28:20						1.310	15.85	6.36	78.2	1.6	32.21	8.43	
2012/2/10 08:33:23	M1	MF	842518	832561	2.3	1.284	15.83	7.31	89.7	1.8	31.95	8.35	<2
2012/2/10 08:33:30						1.315	15.83	7.21	88.4	2.0	31.96	8.36	
2012/2/10 08:37:17	M2	MF	842535	832795	2	0.993	15.83	7.58	92.9	1.9	31.96	8.38	3
2012/2/10 08:37:24						1.034	15.83	7.63	93.6	1.9	31.96	8.37	
2012/2/10 08:40:12	C1	MF	842187	833014	8.2	1.058	15.81	7.41	90.8	1.5	32.04	8.42	2
2012/2/10 08:40:18						1.078	15.81	7.30	89.5	1.4	32.04	8.42	
2012/2/10 08:40:37						4.162	15.99	7.00	86.5	2.2	32.53	8.39	5
2012/2/10 08:40:45						4.177	15.99	7.11	87.8	1.8	32.53	8.39	
2012/2/10 08:41:08						7.237	15.85	6.89	84.8	3.1	32.57	8.39	4
2012/2/10 08:41:15						7.254	15.84	7.08	87.2	2.9	32.59	8.38	
2012/2/10 08:48:26	M3	MF	842649	833094	2.2	1.212	15.82	7.28	89.3	1.5	31.93	8.40	3
2012/2/10 08:48:33						1.252	15.82	7.31	89.6	1.4	31.94	8.41	
2012/2/10 08:53:07	M4	MF	843038	833110	5.2	1.021	15.82	7.33	89.9	1.5	31.95	8.42	5
2012/2/10 08:53:14						1.024	15.82	7.35	90.1	1.3	31.94	8.41	
2012/2/10 08:53:28						4.291	16.01	6.75	83.4	2.3	32.58	8.40	3
2012/2/10 08:53:35						4.273	16.01	7.01	86.7	2.2	32.58	8.40	
2012/2/10 08:59:20	C2	MF	832999	843826	9.6	1.061	15.83	7.18	88.0	1.4	31.98	8.42	4
2012/2/10 08:59:27						1.040	15.83	7.18	88.1	1.4	31.98	8.41	
2012/2/10 08:59:50						4.806	15.98	7.04	87.0	2.5	32.60	8.39	<2
2012/2/10 08:59:59						4.795	15.97	7.00	86.5	2.6	32.60	8.39	
2012/2/10 09:00:21						8.650	15.82	6.45	79.4	2.2	32.67	8.37	4
2012/2/10 09:00:29						8.682	15.83	6.52	80.3	2.0	32.66	8.37	
2012/2/10 09:10:30	M8	MF	832640	843644	2.1	1.209	15.82	6.86	84.1	1.5	31.99	8.42	4
2012/2/10 09:10:35						1.198	15.82	6.88	84.4	1.4	32.01	8.42	
2012/2/10 09:14:01	M6	MF	832577	843479	1.9	0.940	15.83	6.99	85.8	1.7	31.99	8.43	3
2012/2/10 09:14:07						0.965	15.83	7.02	86.1	1.7	31.99	8.43	
2012/2/10 09:17:13	M5	MF	832710	843394	2.2	1.299	15.83	7.09	87.0	1.5	32.03	8.41	7
2012/2/10 09:17:20						1.292	15.82	7.01	86.0	1.9	32.04	8.42	
2012/2/10 09:22:31	M7	MF	832784	843493	2.2	1.250	15.83	7.15	87.7	1.5	32.02	8.44	4
2012/2/10 09:22:39						1.256	15.83	7.08	86.9	1.3	32.01	8.43	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

**Contract ST/2008/02**  
**Ma On Shan Development - Roads, Drainage and Sewerage Works**  
**at whitehead and Lok Wo Sha, Phase 1**  
**Baseline Marine Water Quality Monitoring**



Impact Data 14-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/14 17:48:53	M1	ME	842518	832561	2.1	1.222	16.71	5.30	66.3	1.1	32.39	8.39	6
2012/2/14 17:49:01						1.192	16.73	5.04	63.1	1.1	32.38	8.39	
2012/2/14 17:52:53	M2	ME	842535	832795	1.8	0.926	16.73	4.90	61.4	1.2	32.39	8.39	<2
2012/2/14 17:53:00						0.889	16.72	4.90	61.3	1.0	32.39	8.39	
2012/2/14 17:56:54	C1	ME	842187	833014	7.2	0.989	16.73	4.90	61.3	1.0	32.39	8.39	<2
2012/2/14 17:57:02						1.047	16.72	4.87	61.0	1.9	32.39	8.39	
2012/2/14 17:57:20						3.632	15.98	4.49	55.5	1.4	32.82	8.34	
2012/2/14 17:57:27						3.639	16.00	4.67	57.8	1.6	32.82	8.32	
2012/2/14 17:58:00						6.226	15.82	4.43	54.6	1.4	32.95	8.33	
2012/2/14 17:58:04						6.269	15.81	4.41	54.4	1.5	32.95	8.33	
2012/2/14 18:06:44	M3	ME	842649	833094	2.2	1.285	16.71	4.47	56.0	1.1	32.42	8.38	4
2012/2/14 18:06:50						1.260	16.72	4.51	56.4	1.2	32.42	8.38	
2012/2/14 18:10:58	M4	ME	843038	833110	4.5	0.999	16.74	4.74	59.3	1.2	32.42	8.38	2
2012/2/14 18:11:03						1.029	16.73	4.75	59.4	1.2	32.42	8.39	
2012/2/14 18:11:13						3.568	15.99	4.61	57.1	2.2	32.84	8.33	
2012/2/14 18:11:26						3.546	15.98	4.54	56.2	1.6	32.84	8.34	
2012/2/14 18:16:58	C2	ME	832995	843811	8.9	1.025	16.69	4.39	54.9	2.4	32.44	8.38	7
2012/2/14 18:17:04						1.088	16.73	4.42	55.3	1.2	32.43	8.38	
2012/2/14 18:17:27						4.539	15.98	4.46	55.2	1.6	32.87	8.33	
2012/2/14 18:17:34						4.609	15.99	4.39	54.3	1.6	32.86	8.33	
2012/2/14 18:17:51						8.041	15.64	4.06	50.0	2.0	33.07	8.30	
2012/2/14 18:17:59						7.959	15.62	4.11	50.6	2.2	33.09	8.30	
2012/2/14 18:28:34	M8	ME	832650	843634	2	1.003	16.71	4.25	53.2	1.3	32.44	8.38	<2
2012/2/14 18:28:41						1.011	16.70	4.36	54.5	1.2	32.45	8.37	
2012/2/14 18:32:00	M6	ME	832580	843477	1.9	0.961	16.70	4.54	56.9	1.4	32.46	8.37	<2
2012/2/14 18:32:08						0.979	16.72	4.58	57.3	1.3	32.44	8.37	
2012/2/14 18:36:07	M5	ME	832717	843396	2.1	1.160	16.69	4.65	58.2	1.2	32.46	8.38	3
2012/2/14 18:36:14						1.121	16.70	4.64	58.1	1.2	32.46	8.39	
2012/2/14 18:40:06	M7	ME	832779	843492	2.1	1.116	16.70	4.64	58.0	1.2	32.47	8.39	3
2012/2/14 18:40:13						1.142	16.73	4.63	58.0	1.2	32.45	8.39	
2012/2/14 11:16:32	M1	MF	842518	832561	2.2	1.280	16.74	6.54	81.7	1.5	32.12	8.24	<2
2012/2/14 11:16:39						1.264	16.75	6.50	81.3	1.2	32.14	8.25	
2012/2/14 11:20:09	M2	MF	842535	832795	2	1.036	16.76	6.26	78.3	1.1	32.19	8.29	<2
2012/2/14 11:20:16						1.066	16.74	6.25	78.2	1.1	32.22	8.31	
2012/2/14 11:25:02	C1	MF	842187	833014	7.9	1.005	16.65	5.90	73.7	1.3	32.33	8.34	4
2012/2/14 11:25:10						0.997	16.68	5.87	73.3	1.3	32.32	8.34	
2012/2/14 11:25:41						4.083	16.02	5.61	69.4	1.5	32.69	8.31	
2012/2/14 11:25:49						4.030	16.02	5.48	67.7	1.7	32.68	8.31	
2012/2/14 11:26:32						6.945	15.82	5.34	65.8	1.4	32.84	8.30	
2012/2/14 11:26:41						6.986	15.83	5.33	65.7	1.3	32.84	8.30	
2012/2/14 11:32:53	M3	MF	842649	833094	2.2	1.276	16.67	5.23	65.3	1.3	32.34	8.36	<2
2012/2/14 11:33:03						1.262	16.67	5.26	65.8	1.3	32.34	8.35	
2012/2/14 11:38:37	M4	MF	843038	833110	5.1	1.086	16.69	5.26	65.8	1.3	32.33	8.36	4
2012/2/14 11:38:44						1.025	16.67	5.21	65.2	1.2	32.35	8.36	
2012/2/14 11:39:09						4.241	15.98	5.10	63.0	1.5	32.73	8.32	
2012/2/14 11:39:16						4.162	15.99	5.00	61.8	1.7	32.74	8.32	
2012/2/14 11:45:06	C2	MF	832999	843826	10	0.999	16.70	4.97	62.1	1.3	32.35	8.34	<2
2012/2/14 11:45:14						1.025	16.72	5.00	62.5	1.2	32.34	8.34	
2012/2/14 11:45:41						5.038	15.98	4.86	60.1	1.5	32.76	8.32	
2012/2/14 11:45:48						5.013	15.98	4.87	60.2	1.5	32.76	8.32	
2012/2/14 11:46:10						9.096	15.51	4.58	56.3	2.4	33.08	8.27	
2012/2/14 11:46:19						9.022	15.51	4.54	55.7	2.3	33.07	8.27	
2012/2/14 11:57:10	M8	MF	832640	843644	2.2	1.238	16.65	4.74	59.2	1.2	32.41	8.36	2
2012/2/14 11:57:15						1.259	16.62	4.77	59.6	1.1	32.43	8.34	
2012/2/14 11:59:44	M6	MF	832577	843479	2.1	1.133	16.62	4.94	61.7	1.3	32.44	8.36	<2
2012/2/14 11:59:50						1.160	16.68	4.90	61.2	1.5	32.39	8.37	
2012/2/14 12:03:16	M5	MF	832710	843394	2.2	1.230	16.67	4.94	61.7	1.2	32.40	8.37	4
2012/2/14 12:03:22						1.290	16.66	4.93	61.7	1.4	32.41	8.37	
2012/2/14 12:06:51	M7	MF	832784	843493	2.2	1.259	16.72	4.90	61.3	1.2	32.37	8.37	5
2012/2/14 12:06:57						1.296	16.69	4.91	61.3	1.3	32.38	8.37	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide



**Contract ST/2008/02**  
**Ma On Shan Development - Roads, Drainage and Sewerage Works**  
**at whitehead and Lok Wo Sha, Phase 1**  
**Baseline Marine Water Quality Monitoring**



Impact Data 16-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/16 08:03:59	M1	ME	842518	832561	2.1	1.186	16.72	4.63	57.9	1.1	32.46	8.39	<2
2012/2/16 08:04:06						1.194	16.72	4.63	58.0	1.0	32.46	8.39	
2012/2/16 08:07:31	M2	ME	842535	832795	1.8	0.850	16.77	4.62	57.8	1.1	32.44	8.39	2
2012/2/16 08:07:41						0.884	16.75	4.61	57.8	1.2	32.45	8.38	
2012/2/16 08:11:06	C1	ME	842187	833014	7.5	1.000	16.74	4.59	57.4	1.1	32.45	8.40	<2
2012/2/16 08:11:13						1.015	16.72	4.59	57.4	1.1	32.46	8.40	
2012/2/16 08:11:29						3.775	15.94	4.40	54.4	1.4	32.94	8.33	
2012/2/16 08:11:40						3.758	15.96	4.37	54.1	1.5	32.92	8.33	5
2012/2/16 08:12:00						6.465	15.65	4.10	50.5	1.8	33.10	8.31	
2012/2/16 08:12:06						6.522	15.64	4.10	50.4	1.9	33.11	8.31	
2012/2/16 08:19:35	M3	ME	842649	833094	2.2	1.173	16.72	4.16	52.0	1.1	32.46	8.38	<2
2012/2/16 08:19:42						1.279	16.67	4.20	52.5	1.1	32.50	8.39	
2012/2/16 08:25:04	M4	ME	843038	833110	4.8	1.057	16.73	4.43	55.5	1.0	32.46	8.39	3
2012/2/16 08:25:11						1.094	16.74	4.47	56.0	1.2	32.46	8.39	
2012/2/16 08:25:22						3.887	15.99	4.71	58.2	1.3	32.90	8.34	<2
2012/2/16 08:25:28						3.869	15.95	4.23	52.3	1.2	32.93	8.34	
2012/2/16 08:31:05	C2	ME	832995	843811	9	0.992	16.73	4.25	53.2	1.1	32.47	8.39	<2
2012/2/16 08:31:11						0.976	16.73	4.27	53.5	1.1	32.46	8.39	
2012/2/16 08:31:34						4.574	15.95	4.28	53.0	1.6	32.94	8.34	
2012/2/16 08:31:43						4.543	15.94	4.20	51.9	1.6	32.94	8.33	3
2012/2/16 08:32:02						8.040	15.54	3.86	47.5	2.4	33.18	8.30	
2012/2/16 08:32:08						8.055	15.53	4.00	49.2	2.1	33.19	8.29	
2012/2/16 08:43:03	M8	ME	832650	843634	2.1	1.115	16.71	4.24	53.1	1.2	32.49	8.39	2
2012/2/16 08:43:12						1.173	16.71	4.32	54.1	1.2	32.50	8.40	
2012/2/16 08:46:39	M6	ME	832580	843477	1.9	0.969	16.73	4.43	55.5	1.1	32.49	8.39	<2
2012/2/16 08:46:48						0.924	16.74	4.46	55.9	1.1	32.48	8.39	
2012/2/16 08:50:10	M5	ME	832717	843396	2.1	1.110	16.74	4.47	56.0	1.2	32.49	8.40	<2
2012/2/16 08:50:17						1.160	16.70	4.47	55.9	1.3	32.51	8.39	
2012/2/16 08:54:58	M7	ME	832779	843492	2.2	1.226	16.72	4.48	56.0	1.2	32.51	8.40	<2
2012/2/16 08:55:05						1.224	16.68	4.45	55.7	1.2	32.54	8.39	
2012/2/16 13:12:51	M1	MF	842518	832561	2.1	1.253	16.67	4.46	55.8	1.5	32.54	8.40	2
2012/2/16 13:12:58						1.171	16.64	4.44	55.5	1.1	32.56	8.40	
2012/2/16 13:16:59	M2	MF	842535	832795	2	1.074	16.74	4.44	55.6	1.2	32.48	8.40	<2
2012/2/16 13:17:09						1.072	16.74	4.43	55.5	1.2	32.49	8.39	
2012/2/16 13:21:32	C1	MF	842187	833014	8	0.992	16.74	4.43	55.5	1.0	32.49	8.40	<2
2012/2/16 13:21:38						0.991	16.72	4.42	55.4	1.2	32.50	8.39	
2012/2/16 13:21:59						3.992	15.95	4.28	53.0	1.3	32.94	8.34	
2012/2/16 13:22:05						4.060	15.95	4.21	52.1	1.8	32.95	8.35	<2
2012/2/16 13:22:18						7.013	15.77	3.96	48.9	1.6	33.05	8.34	
2012/2/16 13:22:25						7.064	15.74	3.93	48.5	1.5	33.08	8.33	
2012/2/16 13:31:12	M3	MF	842649	833094	2.2	1.242	16.42	4.00	49.9	1.4	32.70	8.38	<2
2012/2/16 13:31:19						1.275	16.36	4.01	50.0	1.3	32.74	8.38	
2012/2/16 13:36:44	M4	MF	843038	833110	5.1	0.973	16.72	4.18	52.3	1.3	32.51	8.40	2
2012/2/16 13:36:51						0.968	16.71	4.22	52.8	1.1	32.51	8.40	
2012/2/16 13:37:09						4.189	15.95	4.04	50.0	1.4	32.95	8.35	3
2012/2/16 13:37:16						4.116	15.95	4.11	50.9	1.6	32.94	8.33	
2012/2/16 13:42:19	C2	MF	832999	843826	9.5	1.050	16.62	4.14	51.8	1.0	32.59	8.40	2
2012/2/16 13:42:25						1.027	16.68	4.20	52.6	1.3	32.55	8.40	
2012/2/16 13:42:45						4.806	15.91	4.11	50.9	1.6	32.99	8.34	
2012/2/16 13:42:53						4.798	15.94	4.19	51.9	1.6	32.97	8.33	<2
2012/2/16 13:43:10						8.615	15.54	3.84	47.1	2.1	33.20	8.30	
2012/2/16 13:43:18						8.585	15.54	3.83	47.1	2.1	33.20	8.30	
2012/2/16 13:53:55	M8	MF	832640	843644	2.1	1.175	16.71	4.02	50.4	1.1	32.51	8.40	4
2012/2/16 13:54:02						1.133	16.72	4.06	50.8	1.1	32.51	8.40	
2012/2/16 13:57:37	M6	MF	832577	843479	1.9	0.905	16.75	4.35	54.5	1.1	32.50	8.41	4
2012/2/16 13:57:44						0.935	16.75	4.38	54.8	1.1	32.50	8.41	
2012/2/16 14:01:08	M5	MF	832710	843394	2.1	1.185	16.65	4.39	54.9	1.0	32.57	8.40	<2
2012/2/16 14:01:16						1.150	16.71	4.39	54.9	1.2	32.53	8.41	
2012/2/16 14:05:08	M7	MF	832784	843493	2.1	1.205	16.71	4.39	55.0	1.2	32.54	8.41	<2
2012/2/16 14:05:17						1.199	16.64	4.41	55.1	1.2	32.58	8.40	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

**Contract ST/2008/02**  
**Ma On Shan Development - Roads, Drainage and Sewerage Works**  
**at whitehead and Lok Wo Sha, Phase 1**  
**Baseline Marine Water Quality Monitoring**



Impact Data 18-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/18 10:00:31	M1	ME	842518	832561	2.2	1.190	16.12	4.23	52.3	2.3	32.45	8.27	2
2012/2/18 10:00:37						1.217	16.12	4.22	52.2	1.9	32.47	8.27	
2012/2/18 10:03:58						0.916	16.12	4.25	52.6	2.1	32.50	8.27	
2012/2/18 10:04:06	M2	ME	842535	832795	1.8	0.899	16.12	4.24	52.5	2.6	32.50	8.30	<2
2012/2/18 10:09:35	C1	ME	842187	833014	7.2	1.023	15.91	4.41	54.3	1.1	32.54	8.42	3
2012/2/18 10:09:43						1.045	15.92	4.32	53.3	0.9	32.54	8.42	
2012/2/18 10:10:12						3.630	15.96	4.68	57.8	1.0	32.60	8.40	
2012/2/18 10:10:20						3.612	15.95	4.86	60.0	1.2	32.60	8.39	<2
2012/2/18 10:10:48						6.217	15.93	4.71	58.2	1.6	32.64	8.39	<2
2012/2/18 10:10:55						6.231	15.93	4.75	58.7	1.7	32.64	8.39	<2
2012/2/18 10:17:52						M3	ME	842649	833094	2.2	1.225	15.93	4.97
2012/2/18 10:18:00	1.263	15.93	4.85	59.8	0.9						32.58	8.42	
2012/2/18 10:23:26	M4	ME	843038	833110	4.8	1.037	15.93	4.64	57.3	1.2	32.60	8.42	2
2012/2/18 10:23:33						0.997	15.93	4.69	57.9	0.9	32.59	8.41	
2012/2/18 10:23:46						3.884	15.94	4.70	58.0	1.0	32.62	8.42	3
2012/2/18 10:23:57						3.835	15.93	4.95	61.0	1.2	32.63	8.42	
2012/2/18 10:29:35	C2	ME	832995	843811	9	1.018	15.93	4.92	60.8	1.0	32.62	8.43	<2
2012/2/18 10:29:41						1.033	15.93	4.77	58.9	0.8	32.62	8.42	
2012/2/18 10:29:57						4.512	15.93	4.82	59.5	1.0	32.64	8.42	2
2012/2/18 10:30:03						4.536	15.92	4.84	59.7	1.0	32.64	8.43	
2012/2/18 10:30:27						8.047	15.92	4.63	57.2	1.9	32.70	8.39	<2
2012/2/18 10:30:34						8.050	15.92	4.54	56.0	1.6	32.70	8.38	<2
2012/2/18 10:39:16						M8	ME	832650	843634	2	0.987	15.93	4.69
2012/2/18 10:39:23	1.001	15.93	4.54	56.1	1.6						32.63	8.43	
2012/2/18 10:42:48	M6	ME	832580	843477	1.8	0.891	15.93	4.41	54.5	1.4	32.65	8.43	<2
2012/2/18 10:42:58						0.899	15.93	4.42	54.5	1.0	32.65	8.42	
2012/2/18 10:46:33	M5	ME	832717	843396	2.2	1.185	15.93	4.32	53.3	1.2	32.66	8.43	2
2012/2/18 10:46:37						1.208	15.93	4.29	53.0	1.2	32.66	8.43	
2012/2/18 10:50:02	M7	ME	832779	843492	2.2	1.216	15.93	4.27	52.7	1.0	32.66	8.42	3
2012/2/18 10:50:09						1.265	15.93	4.27	52.7	1.2	32.66	8.43	
2012/2/18 15:23:10	M1	MF	842518	832561	2.3	1.315	15.94	4.20	51.9	1.0	32.71	8.42	6
2012/2/18 15:23:18						1.311	15.94	4.16	51.4	0.9	32.71	8.42	
2012/2/18 15:27:45	M2	MF	842535	832795	2.1	1.069	15.95	4.08	50.3	1.0	32.71	8.42	3
2012/2/18 15:27:51						1.113	15.94	4.08	50.4	1.0	32.72	8.41	
2012/2/18 15:32:33	C1	MF	842187	833014	8.1	1.015	15.95	4.02	49.6	1.0	32.72	8.42	4
2012/2/18 15:32:40						1.061	15.94	4.03	49.7	1.0	32.72	8.41	
2012/2/18 15:32:52						4.217	15.91	3.92	48.4	1.5	32.75	8.42	
2012/2/18 15:32:58						4.175	15.91	3.91	48.3	1.8	32.75	8.42	<2
2012/2/18 15:33:18						7.254	15.90	3.99	49.3	2.9	32.76	8.43	<2
2012/2/18 15:33:24						7.199	15.90	4.18	51.6	2.8	32.76	8.42	<2
2012/2/18 15:40:12						M3	MF	842649	833094	2.3	1.303	15.94	4.16
2012/2/18 15:40:19	1.362	15.94	4.13	51.0	0.9						32.73	8.41	
2012/2/18 15:45:00	M4	MF	843038	833110	5.2	1.014	15.95	4.06	50.1	1.2	32.74	8.42	2
2012/2/18 15:45:07						0.986	15.94	4.02	49.7	0.9	32.74	8.40	
2012/2/18 15:45:26						4.279	15.91	3.97	49.0	0.8	32.76	8.42	<2
2012/2/18 15:45:33						4.248	15.91	3.89	48.0	0.9	32.76	8.43	
2012/2/18 15:51:04	C2	MF	832999	843826	9.9	1.006	15.94	4.18	51.7	1.0	32.74	8.42	<2
2012/2/18 15:51:10						1.024	15.94	4.12	50.9	0.9	32.74	8.41	
2012/2/18 15:51:42						5.088	15.91	4.08	50.4	0.8	32.76	8.42	5
2012/2/18 15:51:49						4.989	15.91	4.07	50.2	0.8	32.77	8.42	
2012/2/18 15:52:09						8.961	15.90	3.96	48.8	1.2	32.78	8.42	<2
2012/2/18 15:52:18						8.955	15.90	4.00	49.4	0.9	32.77	8.42	<2
2012/2/18 16:00:30						M8	MF	832640	843644	2.2	1.225	15.94	4.09
2012/2/18 16:00:38	1.257	15.94	4.03	49.7	1.0						32.75	8.42	
2012/2/18 16:05:07	M6	MF	832577	843479	2	1.170	15.94	3.91	48.3	1.0	32.75	8.42	<2
2012/2/18 16:05:15						1.096	15.94	3.90	48.2	0.9	32.76	8.42	
2012/2/18 16:08:52	M5	MF	832710	843394	2.2	1.239	15.94	3.87	47.8	1.0	32.75	8.41	3
2012/2/18 16:08:58						1.271	15.94	3.87	47.8	0.9	32.75	8.41	
2012/2/18 16:12:22	M7	MF	832784	843493	2.2	1.270	15.93	3.85	47.5	1.0	32.76	8.40	3
2012/2/18 16:12:28						1.280	15.94	3.86	47.6	1.7	32.76	8.41	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

Contract ST/2008/02

Ma On Shan Development - Roads, Drainage and Sewerage Works

at whitehead and Lok Wo Sha, Phase 1

Baseline Marine Water Quality Monitoring



Impact Data 20-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/20 11:36:01	M1	ME	842518	832561	2.1	1.147	15.95	4.35	53.6	2.5	32.24	8.17	<2
2012/2/20 11:36:08						1.147	15.95	4.21	51.9	2.2	32.27	8.21	
2012/2/20 11:40:11	M2	ME	842535	832795	1.9	0.913	15.97	4.17	51.4	2.2	32.37	8.29	3
2012/2/20 11:40:18						0.983	15.98	4.15	51.2	2.3	32.38	8.29	
2012/2/20 11:45:47	C1	ME	842187	833014	7	1.006	15.89	4.42	54.5	0.7	32.65	8.39	6
2012/2/20 11:45:53						1.020	15.90	4.39	54.1	0.8	32.66	8.38	
2012/2/20 11:46:09						3.543	15.77	4.06	49.9	1.0	32.76	8.39	
2012/2/20 11:46:15						3.499	15.77	4.11	50.6	0.9	32.75	8.38	
2012/2/20 11:46:44						6.025	15.71	4.14	50.9	0.9	32.81	8.38	
2012/2/20 11:46:53						6.068	15.71	4.13	50.8	1.0	32.82	8.38	
2012/2/20 11:54:54	M3	ME	842649	833094	2.2	1.269	15.89	4.11	50.7	1.2	32.69	8.40	2
2012/2/20 11:55:00						1.245	15.85	4.05	49.9	1.0	32.72	8.39	
2012/2/20 12:00:52	M4	ME	843038	833110	4.5	0.992	15.88	3.91	48.2	1.2	32.70	8.40	3
2012/2/20 12:01:01						0.971	15.88	3.87	47.7	2.8	32.70	8.40	
2012/2/20 12:01:19						3.497	15.78	3.81	47.0	1.5	32.78	8.40	
2012/2/20 12:01:25						3.566	15.77	3.76	46.4	0.9	32.78	8.39	
2012/2/20 12:07:20	C2	ME	832995	843811	9	0.998	15.87	3.99	49.2	1.0	32.72	8.40	6
2012/2/20 12:07:27						1.021	15.88	3.91	48.2	1.0	32.72	8.40	
2012/2/20 12:07:53						4.538	15.72	3.78	46.5	0.9	32.83	8.40	
2012/2/20 12:08:00						4.567	15.72	3.80	46.8	0.9	32.82	8.39	
2012/2/20 12:08:34						8.016	15.70	3.62	44.5	1.0	32.89	8.37	
2012/2/20 12:08:42						8.042	15.70	3.64	44.7	1.0	32.89	8.37	
2012/2/20 12:20:20	M8	ME	832650	843634	2.1	1.009	15.84	3.68	45.3	0.9	32.79	8.39	2
2012/2/20 12:20:27						1.108	15.89	3.68	45.3	1.1	32.73	8.39	
2012/2/20 12:23:50	M6	ME	832580	843477	1.8	0.887	15.90	3.65	45.0	1.0	32.73	8.41	2
2012/2/20 12:23:57						0.856	15.91	3.66	45.2	0.8	32.73	8.41	
2012/2/20 12:27:30	M5	ME	832717	843396	2.1	1.274	15.83	3.67	45.2	0.9	32.80	8.40	6
2012/2/20 12:27:38						1.186	15.84	3.63	44.8	1.0	32.79	8.39	
2012/2/20 12:31:04	M7	ME	832779	843492	2.2	1.175	15.87	3.60	44.5	1.0	32.76	8.39	7
2012/2/20 12:31:11						1.133	15.86	3.59	44.3	1.0	32.76	8.41	
2012/2/20 17:43:06	M1	MF	842518	832561	2.3	1.222	15.85	3.62	44.7	2.4	32.80	8.40	4
2012/2/20 17:43:14						1.329	15.87	3.61	44.5	2.1	32.77	8.40	
2012/2/20 17:46:48	M2	MF	842535	832795	2.1	1.102	15.91	3.60	44.4	1.5	32.75	8.42	5
2012/2/20 17:46:54						1.172	15.91	3.58	44.2	1.4	32.75	8.42	
2012/2/20 17:50:31	C1	MF	842187	833014	8.1	0.990	15.88	3.69	45.6	0.8	32.77	8.41	6
2012/2/20 17:50:38						0.979	15.89	3.69	45.5	1.0	32.76	8.41	
2012/2/20 17:51:00						4.106	15.77	3.50	43.1	1.0	32.87	8.40	
2012/2/20 17:51:07						4.133	15.77	3.57	44.0	1.0	32.88	8.40	
2012/2/20 17:51:25						7.189	15.71	3.41	42.0	0.8	32.92	8.40	
2012/2/20 17:51:34						7.199	15.71	3.54	43.5	0.9	32.91	8.40	
2012/2/20 17:58:40	M3	MF	842649	833094	2.1	1.308	15.86	3.70	45.7	1.3	32.79	8.41	4
2012/2/20 17:58:47						1.323	15.85	3.65	45.0	1.0	32.80	8.41	
2012/2/20 18:03:30	M4	MF	843038	833110	5.3	0.963	15.91	3.59	44.4	0.8	32.77	8.42	2
2012/2/20 18:03:36						0.990	15.91	3.59	44.4	1.0	32.76	8.42	
2012/2/20 18:04:01						4.346	15.74	3.44	42.4	0.9	32.90	8.40	
2012/2/20 18:04:08						4.376	15.74	3.50	43.0	1.0	32.91	8.41	
2012/2/20 18:09:51	C2	MF	832999	843826	10	0.971	15.91	3.65	45.1	1.1	32.76	8.42	<2
2012/2/20 18:09:58						0.941	15.90	3.66	45.2	0.9	32.77	8.42	
2012/2/20 18:10:20						5.016	15.73	3.67	45.2	0.9	32.93	8.39	
2012/2/20 18:10:27						4.997	15.75	3.62	44.6	1.0	32.91	8.40	
2012/2/20 18:10:54						9.014	15.70	3.52	43.3	1.0	32.97	8.39	
2012/2/20 18:11:01						9.014	15.70	3.50	43.1	0.8	32.97	8.39	
2012/2/20 18:20:56	M8	MF	832640	843644	2.2	1.241	15.91	3.59	44.4	1.0	32.79	8.42	4
2012/2/20 18:21:03						1.280	15.89	3.58	44.1	1.1	32.80	8.42	
2012/2/20 18:24:45	M6	MF	832577	843479	2.1	1.072	15.90	3.59	44.3	1.0	32.80	8.42	4
2012/2/20 18:24:54						1.110	15.91	3.58	44.2	1.0	32.78	8.42	
2012/2/20 18:29:00	M5	MF	832710	843394	2.3	1.298	15.88	3.60	44.4	1.0	32.80	8.42	<2
2012/2/20 18:29:07						1.317	15.84	3.57	44.1	1.0	32.79	8.42	
2012/2/20 18:33:38	M7	MF	832784	843493	2.2	1.264	15.86	3.61	44.6	1.0	32.80	8.42	<2
2012/2/20 18:33:46						1.260	15.85	3.57	44.1	0.9	32.80	8.42	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

Contract ST/2008/02

**Ma On Shan Development - Roads, Drainage and Sewerage Works  
at whitehead and Lok Wo Sha, Phase 1  
Baseline Marine Water Quality Monitoring**



Impact Data 22-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/22 13:17:49	M1	ME	842518	832561	2.1	1.250	16.44	3.13	39.0	1.1	32.50	8.41	4
2012/2/22 13:18:06						1.198	16.43	3.12	38.8	1.2	32.49	8.41	
2012/2/22 13:21:38						0.907	16.42	3.15	39.2	1.1	32.49	8.41	
2012/2/22 13:21:50	M2	ME	842535	832795	1.9	0.921	16.43	3.16	39.3	1.2	32.49	8.41	<2
2012/2/22 13:25:50						1.036	16.45	3.16	39.3	1.6	32.48	8.42	
2012/2/22 13:25:57	C1	ME	842187	833014	7.2	1.004	16.43	3.13	39.0	1.0	32.49	8.41	4
2012/2/22 13:26:12						3.717	16.08	2.99	37.0	1.3	32.84	8.35	
2012/2/22 13:26:19						3.754	16.02	3.04	37.6	1.2	32.90	8.34	
2012/2/22 13:26:36						6.299	15.94	2.83	35.0	1.2	32.97	8.32	4
2012/2/22 13:26:43						6.252	15.95	2.94	36.3	1.1	32.97	8.33	
2012/2/22 13:32:25						1.058	16.46	3.02	37.6	1.4	32.48	8.42	
2012/2/22 13:32:34	M3	ME	842649	833094	2.1	1.113	16.46	3.07	38.2	1.1	32.48	8.41	3
2012/2/22 13:38:51						0.971	16.45	3.13	39.0	1.2	32.49	8.42	
2012/2/22 13:39:00	M4	ME	843038	833110	4.5	1.014	16.45	3.13	38.9	1.2	32.48	8.41	4
2012/2/22 13:39:12						3.599	16.04	3.10	38.4	1.3	32.89	8.36	
2012/2/22 13:39:20						3.532	16.02	3.05	37.8	1.3	32.90	8.35	
2012/2/22 13:45:10	C2	ME	832995	843811	8.6	0.996	16.46	3.05	38.0	1.2	32.49	8.42	<2
2012/2/22 13:45:18						1.024	16.45	3.10	38.6	1.3	32.49	8.43	
2012/2/22 13:45:35						4.282	15.97	2.98	36.9	1.2	32.96	8.35	
2012/2/22 13:45:42						4.387	15.96	3.02	37.4	1.1	32.98	8.34	<2
2012/2/22 13:46:05						7.579	15.76	2.84	35.0	1.7	33.13	8.29	
2012/2/22 13:46:13						7.617	15.77	2.79	34.4	1.7	33.12	8.29	
2012/2/22 13:57:10	M8	ME	832650	843634	2.1	1.102	16.48	2.97	37.0	1.2	32.49	8.43	4
2012/2/22 13:57:16						1.107	16.47	3.04	37.8	1.2	32.49	8.43	
2012/2/22 14:00:51	M6	ME	832580	843477	1.8	0.813	16.47	3.12	38.8	1.2	32.50	8.43	<2
2012/2/22 14:00:58						0.843	16.48	3.12	38.8	1.3	32.49	8.43	
2012/2/22 14:05:04	M5	ME	832717	843396	2.1	1.149	16.46	3.12	38.9	1.1	32.50	8.42	4
2012/2/22 14:05:11						1.135	16.46	3.12	38.9	1.2	32.49	8.43	
2012/2/22 14:09:33	M7	ME	832779	843492	2.1	1.187	16.47	3.13	39.0	1.4	32.49	8.43	4
2012/2/22 14:09:40						1.135	16.48	3.13	39.0	1.1	32.49	8.44	
2012/2/22 08:11:06	M1	MF	842518	832561	2.2	1.273	16.54	4.35	54.0	1.3	31.86	8.22	5
2012/2/22 08:11:13						1.242	16.53	4.31	53.6	1.5	31.87	8.24	
2012/2/22 08:14:52	M2	MF	842535	832795	2.1	1.124	16.54	4.24	52.7	1.5	31.87	8.25	4
2012/2/22 08:14:58						1.131	16.54	4.26	53.0	1.4	31.88	8.25	
2012/2/22 08:23:34	C1	MF	842187	833014	8.1	0.962	16.42	3.70	46.0	1.1	32.38	8.33	7
2012/2/22 08:23:40						0.947	16.41	3.72	46.2	1.3	32.40	8.33	
2012/2/22 08:24:02						4.154	16.00	3.62	44.8	1.1	32.83	8.26	
2012/2/22 08:24:09						4.117	16.00	3.64	45.1	1.2	32.83	8.26	5
2012/2/22 08:24:26						7.176	15.78	3.19	39.3	1.4	33.00	8.23	
2012/2/22 08:24:43						7.124	15.77	3.34	41.1	1.6	33.01	8.21	
2012/2/22 08:31:25	M3	MF	842649	833094	2.1	1.214	16.40	3.37	41.9	1.1	32.41	8.33	<2
2012/2/22 08:31:31						1.172	16.40	3.36	41.8	1.1	32.43	8.34	
2012/2/22 08:35:23	M4	MF	843038	833110	5.1	1.012	16.42	3.57	44.4	1.1	32.42	8.35	3
2012/2/22 08:35:29						0.998	16.40	3.54	44.0	1.3	32.43	8.35	
2012/2/22 08:36:37						4.106	16.01	3.43	42.5	1.3	32.84	8.28	2
2012/2/22 08:36:42						4.129	15.99	3.43	42.5	1.2	32.87	8.30	
2012/2/22 08:42:07	C2	MF	832999	843826	8.9	1.028	16.43	3.29	40.9	1.0	32.44	8.37	<2
2012/2/22 08:42:12						1.047	16.42	3.30	41.1	1.1	32.45	8.37	
2012/2/22 08:42:44						4.557	15.98	3.22	39.8	1.2	32.89	8.30	
2012/2/22 08:42:52						4.528	15.98	3.17	39.2	1.1	32.90	8.30	4
2012/2/22 08:43:09						8.036	15.74	2.88	35.5	2.2	33.09	8.25	
2012/2/22 08:43:19						7.992	15.73	2.93	36.1	1.8	33.10	8.25	
2012/2/22 08:54:07	M8	MF	832640	843644	2.2	1.299	16.44	3.05	38.0	1.2	32.45	8.37	<2
2012/2/22 08:54:12						1.234	16.44	3.09	38.5	1.3	32.46	8.38	
2012/2/22 08:57:56	M6	MF	832577	843479	2	1.078	16.46	3.30	41.1	1.2	32.46	8.39	<2
2012/2/22 08:58:03						1.097	16.47	3.30	41.1	1.5	32.45	8.39	
2012/2/22 09:01:33	M5	MF	832710	843394	2.2	1.257	16.45	3.30	41.1	1.2	32.47	8.40	7
2012/2/22 09:01:43						1.271	16.46	3.29	41.0	1.2	32.47	8.40	
2012/2/22 09:05:14	M7	MF	832784	843493	2.2	1.249	16.46	3.31	41.2	1.2	32.46	8.40	4
2012/2/22 09:05:22						1.250	16.47	3.30	41.1	1.9	32.46	8.40	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

Contract ST/2008/02

Ma On Shan Development - Roads, Drainage and Sewerage Works

at whitehead and Lok Wo Sha, Phase 1

Baseline Marine Water Quality Monitoring



Impact Data 24-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			North	East									
2012/2/24 14:20:34	M1	ME	842518	832561	2.1	1.183	17.35	4.91	62.1	1.5	31.96	8.47	5
2012/2/24 14:20:42						1.143	17.24	4.89	61.6	1.4	31.90	8.46	
2012/2/24 14:24:43	M2	ME	842535	832795	1.8	0.878	17.45	4.96	62.6	1.4	31.54	8.48	<2
2012/2/24 14:24:53						0.874	17.45	4.95	62.4	1.6	31.39	8.48	
2012/2/24 14:28:26	C1	ME	842187	833014	7.2	1.034	17.39	4.95	62.5	1.4	31.70	8.48	4
2012/2/24 14:28:31						1.055	17.37	4.95	62.5	1.4	31.74	8.48	
2012/2/24 14:28:54						3.586	16.38	4.58	57.2	2.4	32.92	8.38	
2012/2/24 14:29:01						3.626	16.38	4.54	56.6	1.4	32.92	8.38	3
2012/2/24 14:29:18						6.202	15.90	4.46	55.2	1.9	33.27	8.31	
2012/2/24 14:29:25						6.202	15.88	4.08	50.4	1.8	33.28	8.30	
2012/2/24 14:36:10	M3	ME	842649	833094	2.2	1.156	17.40	4.35	54.8	1.4	31.58	8.47	3
2012/2/24 14:36:15						1.240	17.44	4.44	56.1	1.5	31.55	8.48	
2012/2/24 14:41:41	M4	ME	843038	833110	4.7	1.056	17.44	4.75	60.0	1.4	31.51	8.49	2
2012/2/24 14:41:47						1.045	17.43	4.83	60.9	1.4	31.59	8.48	
2012/2/24 14:42:03						3.808	16.37	4.79	59.8	1.4	32.95	8.38	4
2012/2/24 14:42:09						3.764	16.31	4.54	56.5	1.3	33.00	8.37	
2012/2/24 14:47:53	C2	ME	832995	843811	9	1.019	17.42	4.54	57.3	1.3	31.60	8.48	4
2012/2/24 14:47:59						1.042	17.44	4.60	58.1	1.4	31.57	8.48	
2012/2/24 14:48:21						4.452	16.05	4.34	53.9	1.6	33.19	8.32	5
2012/2/24 14:48:29						4.416	16.06	4.12	51.1	1.4	33.18	8.33	
2012/2/24 14:48:50						8.032	15.73	3.80	46.9	2.2	33.41	8.29	3
2012/2/24 14:48:56						8.005	15.73	3.73	46.1	2.1	33.41	8.29	
2012/2/24 14:59:29	M8	ME	832650	843634	1.9	0.963	17.43	4.17	52.6	1.8	31.61	8.47	3
2012/2/24 14:59:36						0.976	17.43	4.33	54.7	1.3	31.65	8.48	
2012/2/24 15:02:55	M6	ME	832580	843477	1.8	0.855	17.41	4.69	59.2	1.4	31.66	8.49	2
2012/2/24 15:03:02						0.880	17.44	4.75	60.0	1.4	31.60	8.49	
2012/2/24 15:06:32	M5	ME	832717	843396	2.1	1.120	17.41	4.82	60.9	1.4	31.69	8.49	4
2012/2/24 15:06:37						1.120	17.41	4.84	61.2	1.4	31.78	8.49	
2012/2/24 15:09:57	M7	ME	832779	843492	2.1	1.168	17.40	4.85	61.2	1.3	31.78	8.49	5
2012/2/24 15:10:04						1.168	17.38	4.84	61.2	1.6	31.79	8.49	
2012/2/24 08:39:05	M1	MF	842518	832561	2.2	1.252	17.05	5.86	73.6	1.3	32.03	8.42	3
2012/2/24 08:39:12						1.235	17.30	5.82	73.3	1.2	31.55	8.42	
2012/2/24 08:43:49	M2	MF	842535	832795	2	1.060	17.43	5.76	72.5	2.1	31.32	8.45	4
2012/2/24 08:43:56						1.030	17.42	5.78	72.8	1.5	31.35	8.45	
2012/2/24 08:47:27	C1	MF	842187	833014	8.3	0.989	17.45	5.66	71.3	1.4	31.29	8.45	5
2012/2/24 08:47:33						0.993	17.46	5.64	71.1	1.5	31.24	8.46	
2012/2/24 08:48:00						4.090	16.23	5.17	64.2	2.3	32.91	8.34	
2012/2/24 08:48:07						4.201	16.24	5.08	63.2	1.4	32.90	8.33	3
2012/2/24 08:48:28						7.343	15.93	4.38	54.2	1.9	33.14	8.27	
2012/2/24 08:48:35						7.336	15.92	4.55	56.3	1.9	33.13	8.27	
2012/2/24 08:55:18	M3	MF	842649	833094	2.2	1.258	17.14	4.35	54.8	1.3	32.06	8.40	4
2012/2/24 08:55:23						1.286	17.11	4.57	57.5	1.3	32.02	8.42	
2012/2/24 08:59:54	M4	MF	843038	833110	5.3	1.017	17.39	5.03	63.4	1.3	31.55	8.45	<2
2012/2/24 09:00:00						1.043	17.39	5.03	63.4	1.3	31.39	8.46	
2012/2/24 09:00:18						4.374	16.30	4.78	59.5	1.6	32.87	8.35	4
2012/2/24 09:00:24						4.382	16.30	4.74	59.0	1.5	32.87	8.34	
2012/2/24 09:06:03	C2	MF	832999	843826	10	1.069	17.37	4.67	58.9	1.4	31.60	8.45	<2
2012/2/24 09:06:11						1.052	17.38	4.77	60.1	1.3	31.65	8.46	
2012/2/24 09:06:42						5.094	16.09	4.37	54.3	1.4	33.02	8.32	4
2012/2/24 09:06:48						5.078	16.08	4.32	53.6	1.4	33.03	8.32	
2012/2/24 09:07:09						9.016	15.72	3.99	49.2	4.0	33.30	8.26	<2
2012/2/24 09:07:16						9.037	15.72	3.97	49.0	3.9	33.31	8.25	
2012/2/24 09:18:08	M8	MF	832640	843644	2.2	1.217	17.35	4.48	56.5	1.4	31.82	8.46	3
2012/2/24 09:18:14						1.207	17.36	4.58	57.8	1.4	31.80	8.46	
2012/2/24 09:21:39	M6	MF	832577	843479	2	1.011	17.23	4.78	60.2	1.4	31.86	8.46	3
2012/2/24 09:21:45						1.035	17.37	4.87	61.5	1.4	31.73	8.47	
2012/2/24 09:25:11	M5	MF	832710	843394	2.3	1.334	17.03	5.01	63.1	1.4	32.44	8.45	<2
2012/2/24 09:25:17						1.322	16.95	4.90	61.6	2.5	32.49	8.44	
2012/2/24 09:29:38	M7	MF	832784	843493	2.3	1.269	17.04	4.93	61.9	1.6	32.19	8.45	<2
2012/2/24 09:29:45						1.302	17.22	4.87	61.4	1.4	32.01	8.46	

Remarks: MF - Middle Flood tide  
ME - Middle Ebb tide

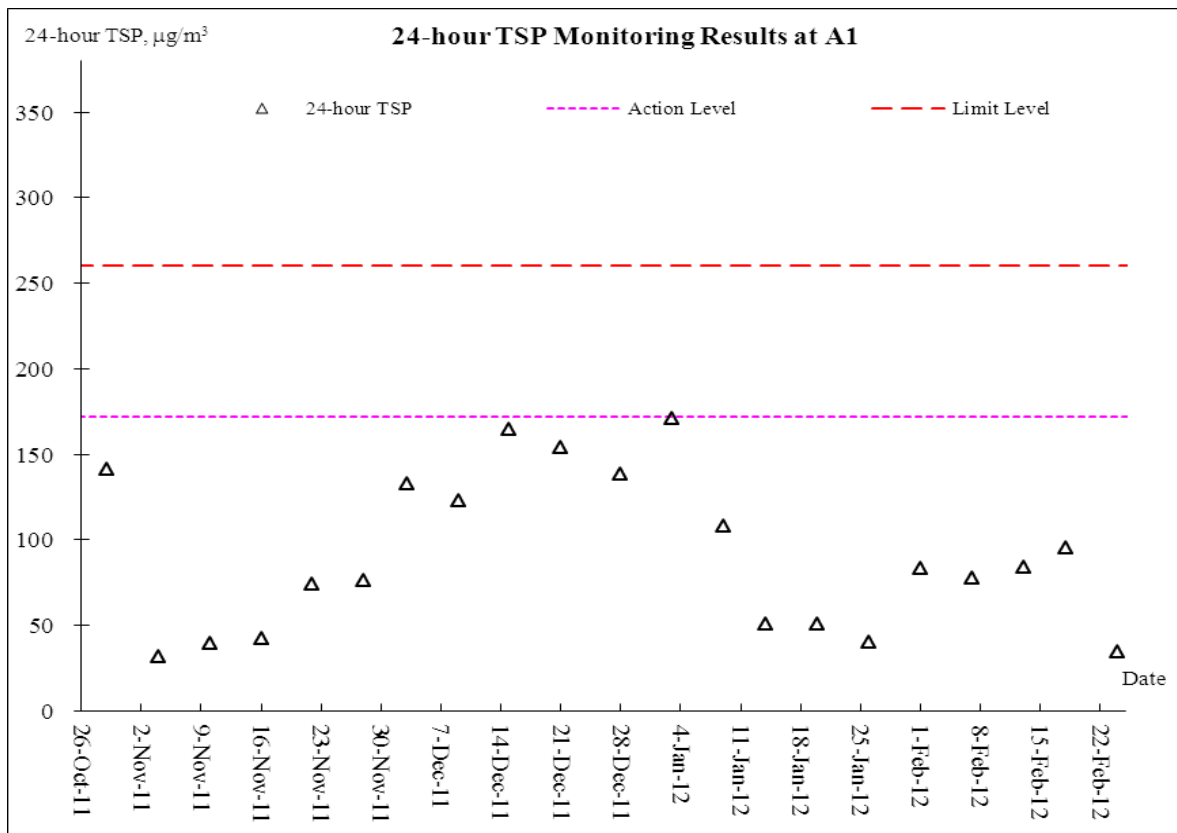
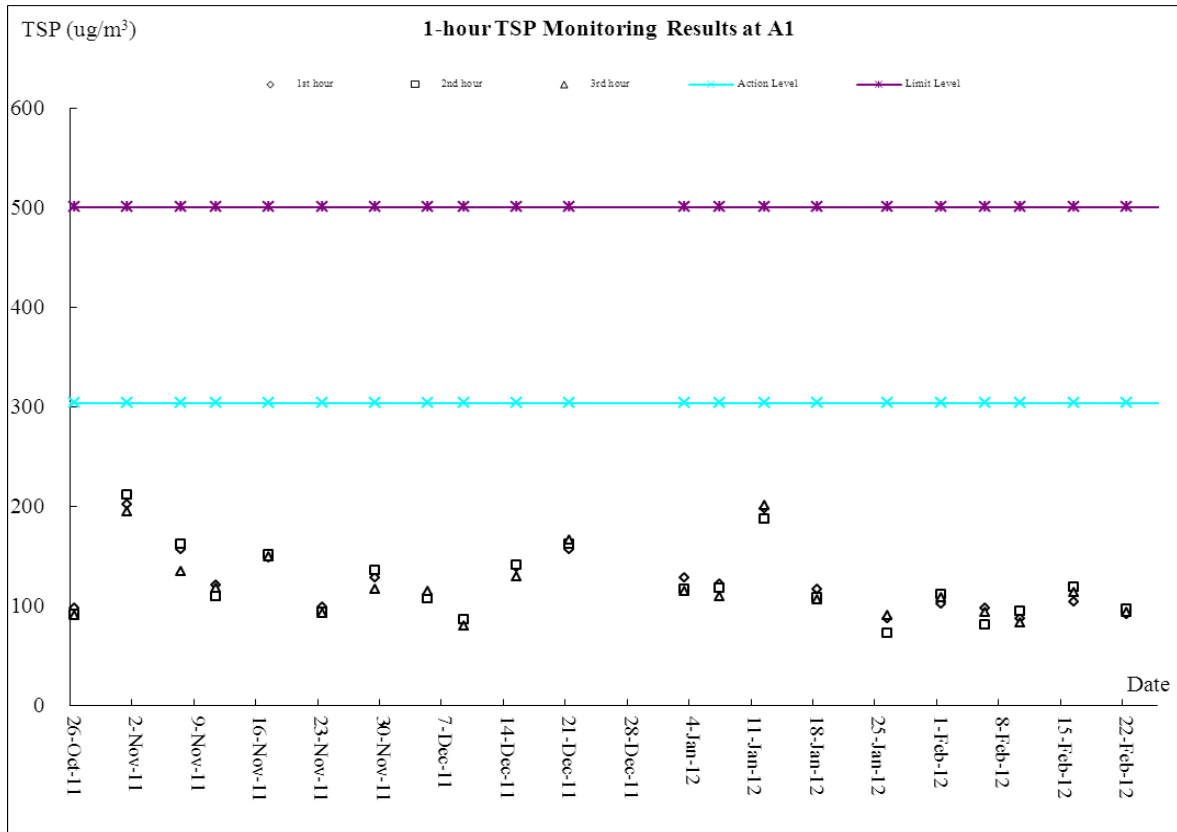


## **Annex J**

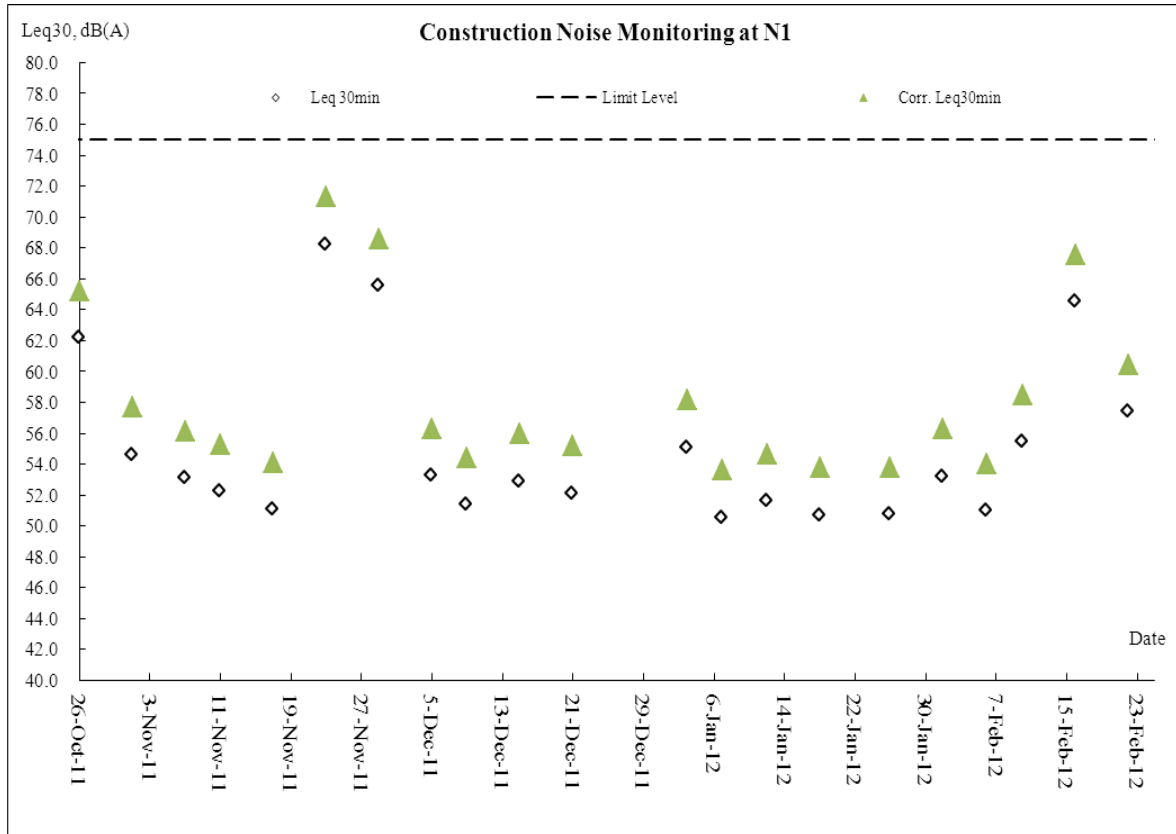
### **Graphical Plots of Impact Monitoring**

- 1. Air**
- 2. Noise**
- 3. Marine Water**

## Air Quality



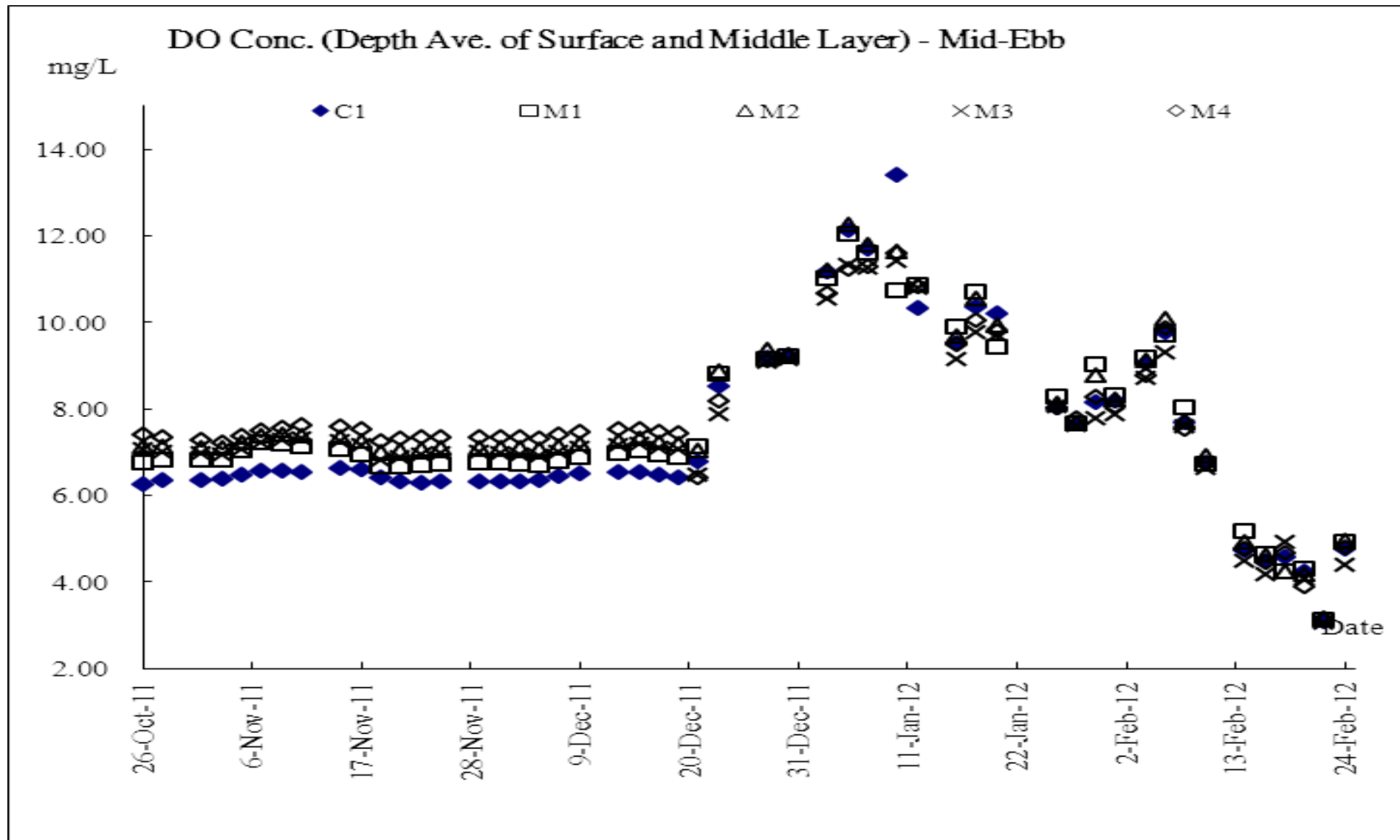
## Construction Noise

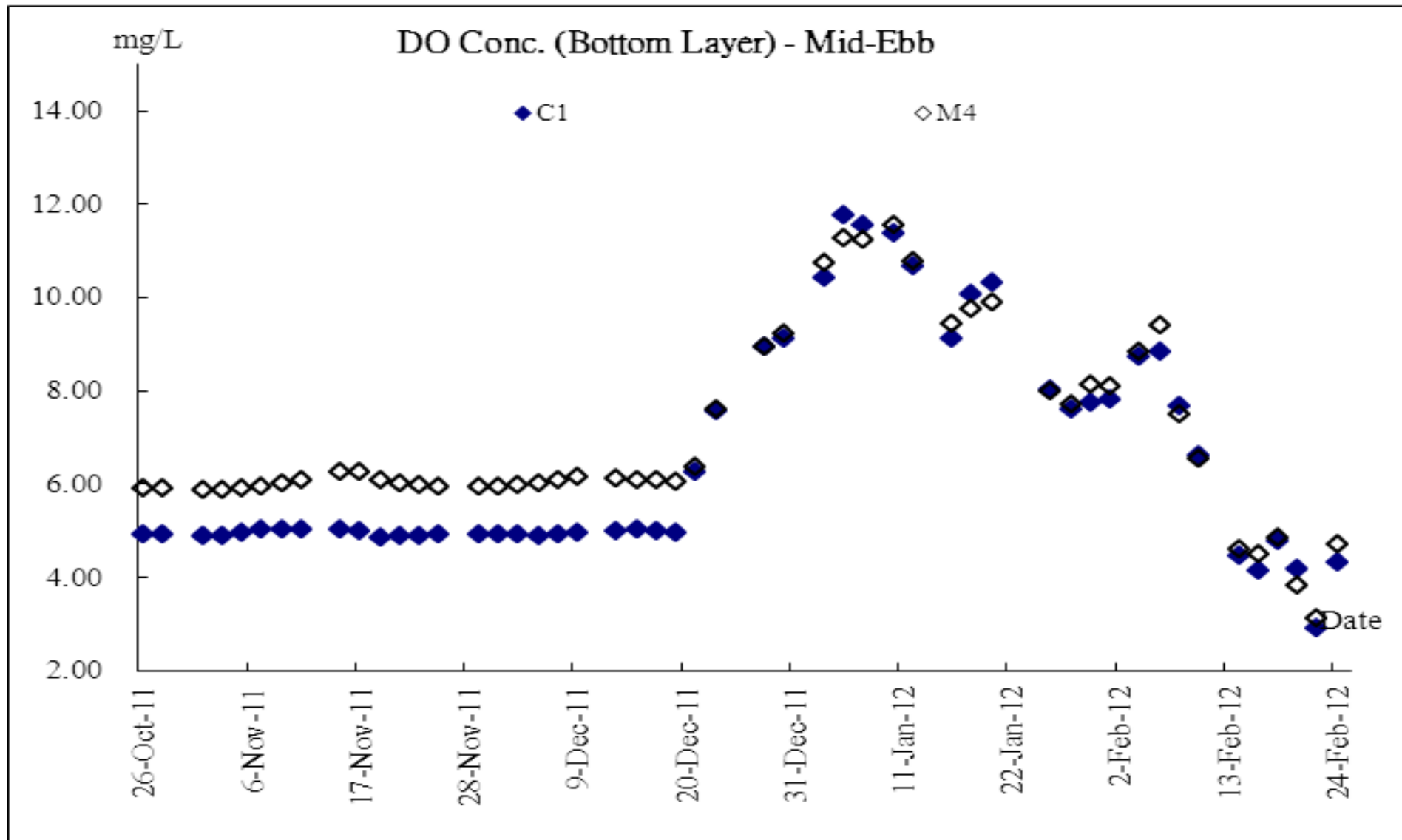


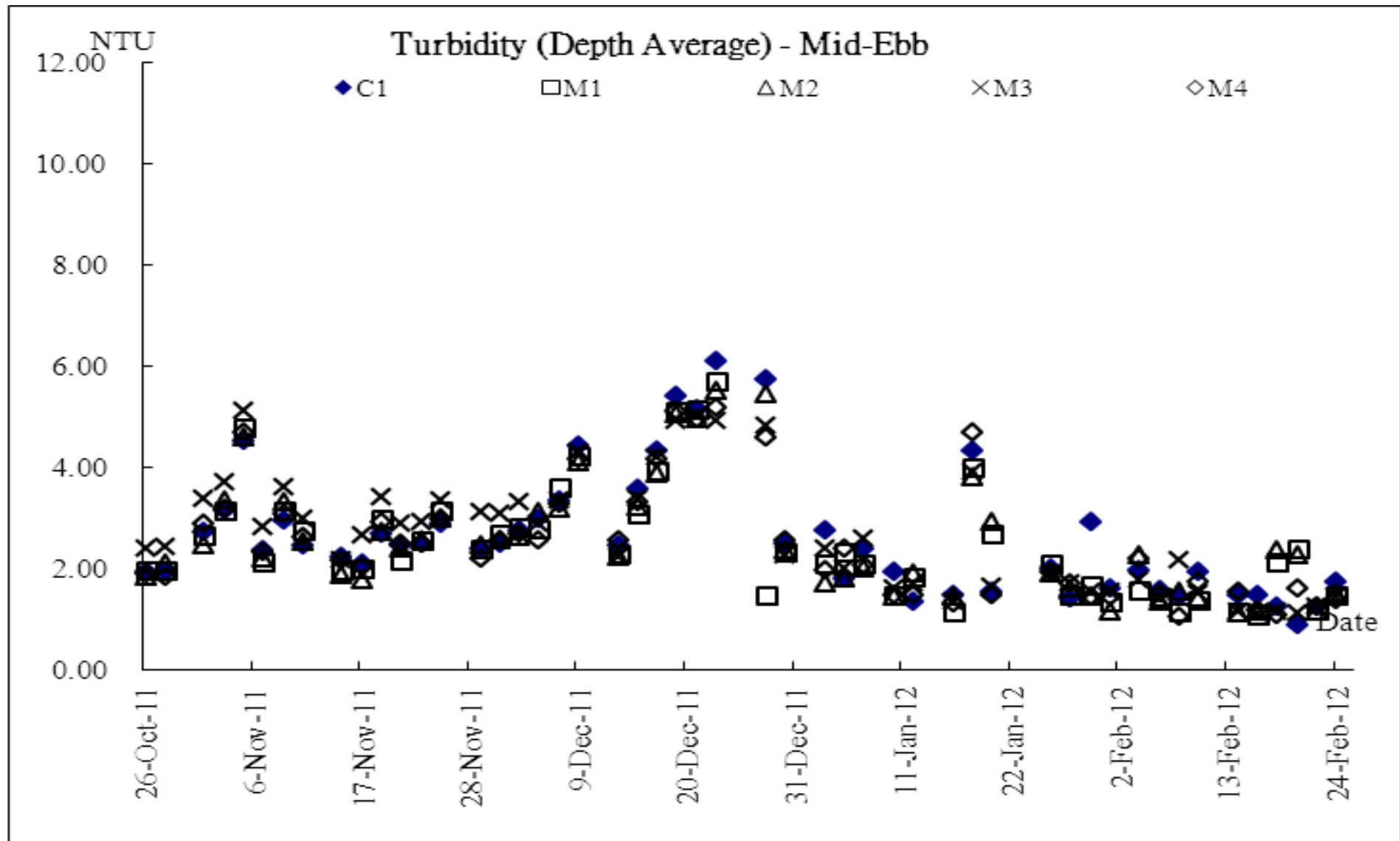


## Marine Water

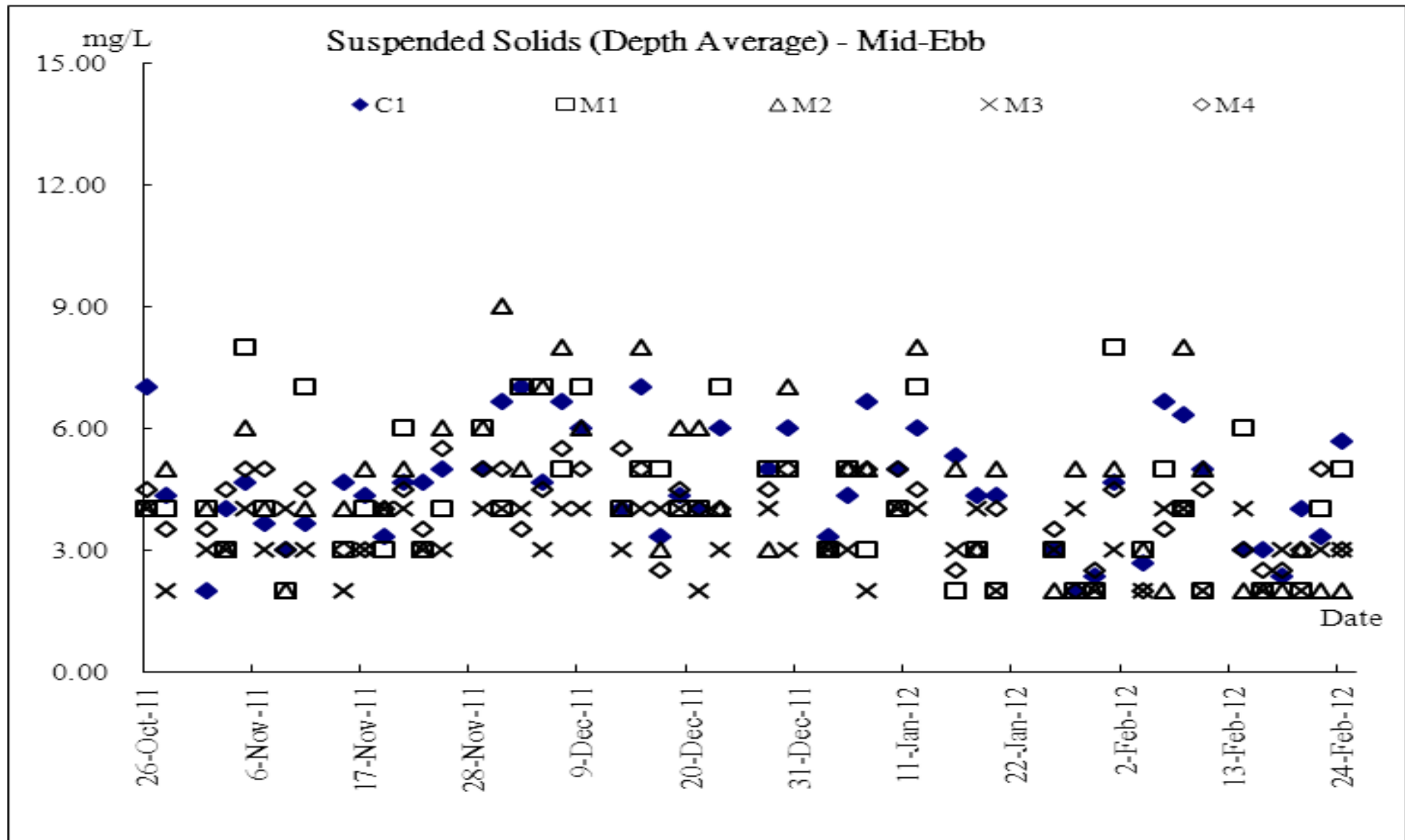
## **The Sea Zone of the Project West and North (Tolo Harbour)**

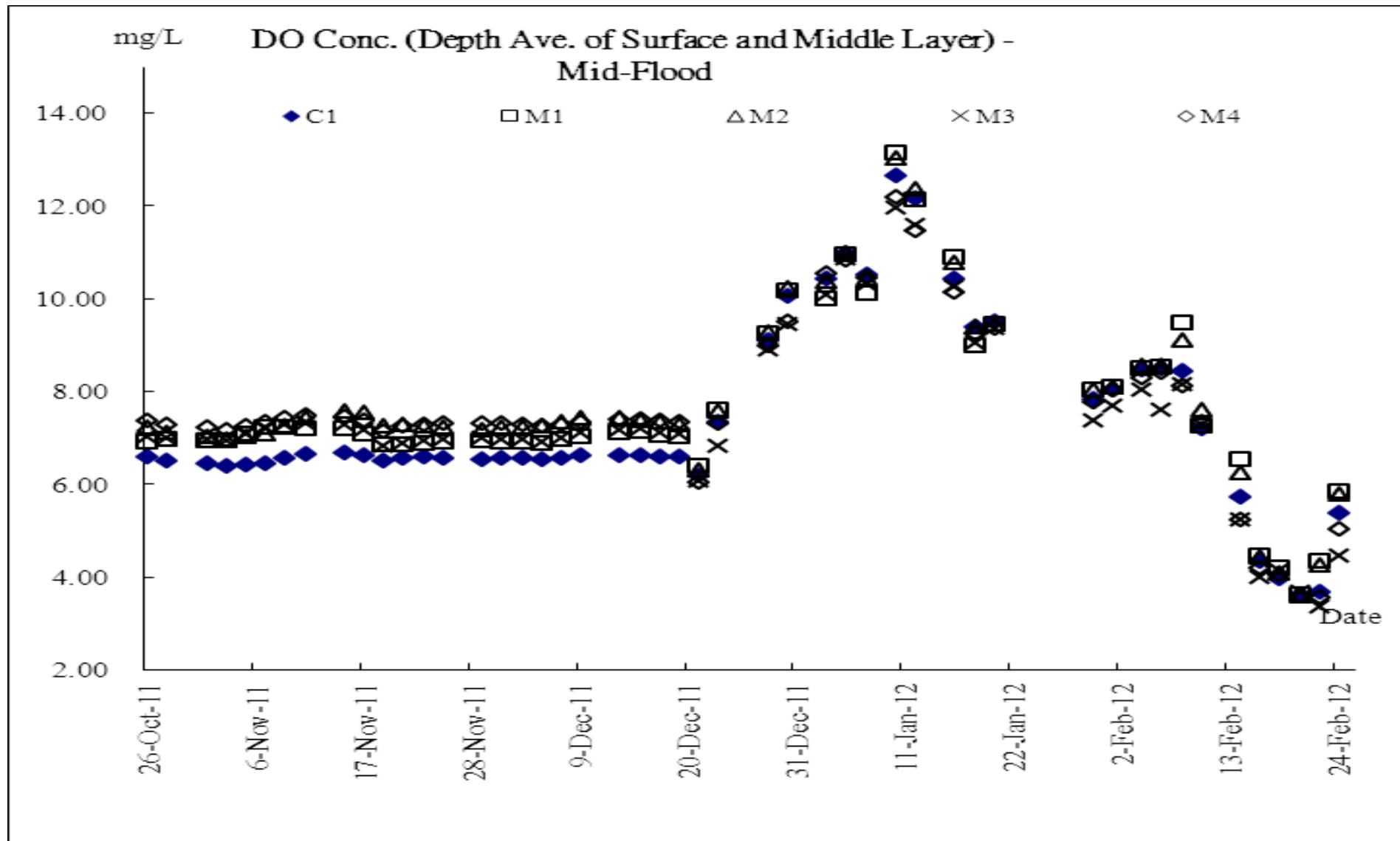


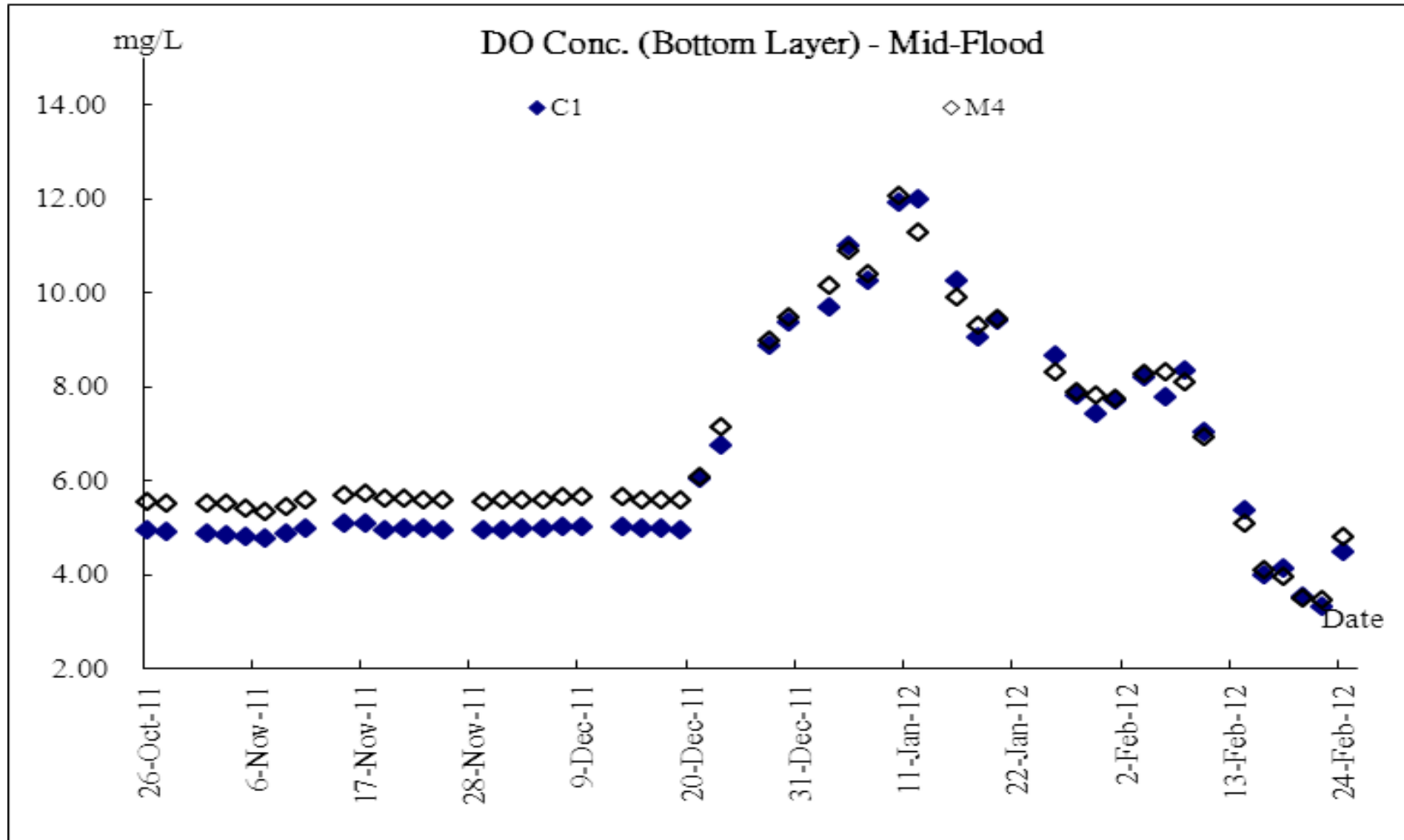


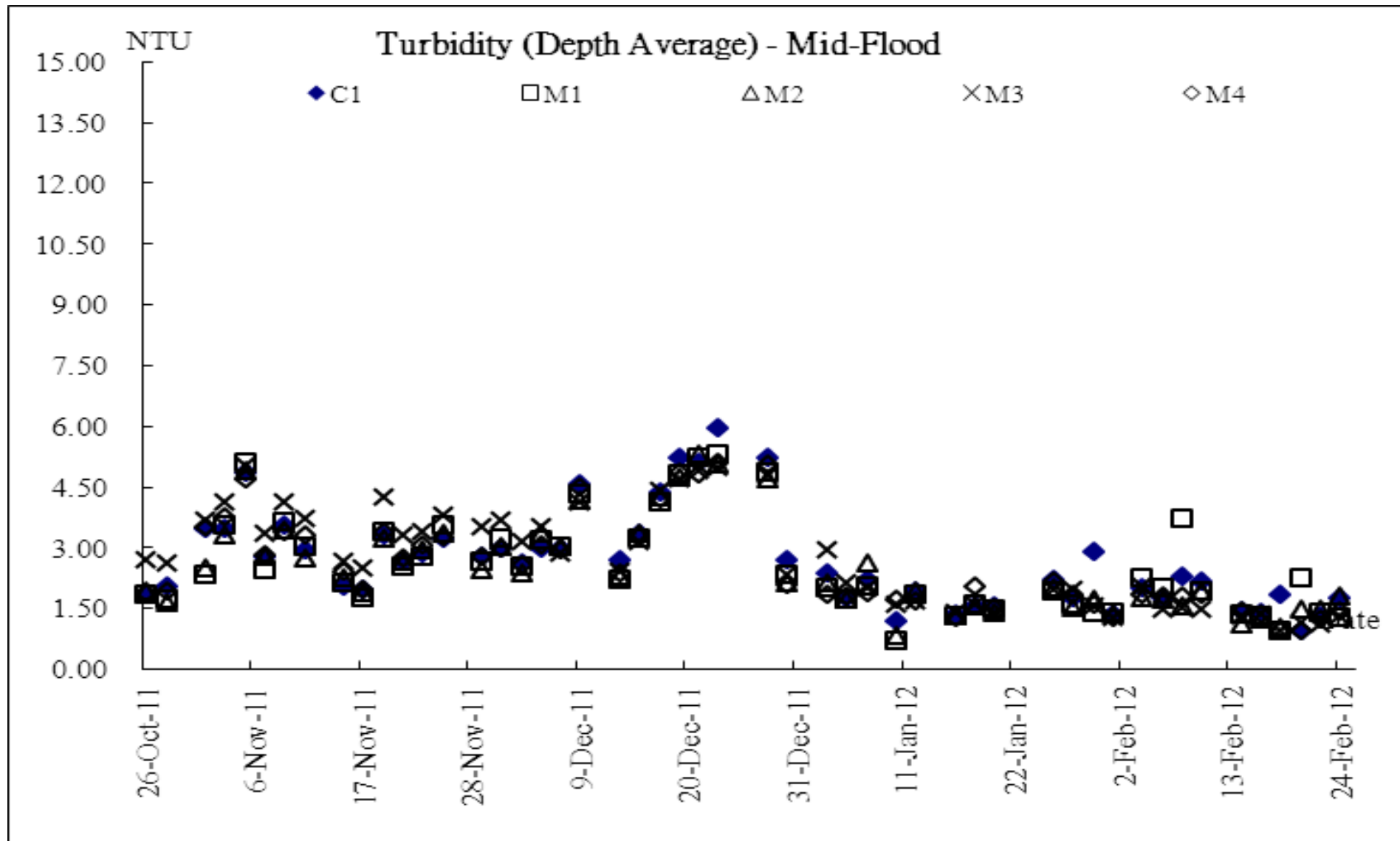


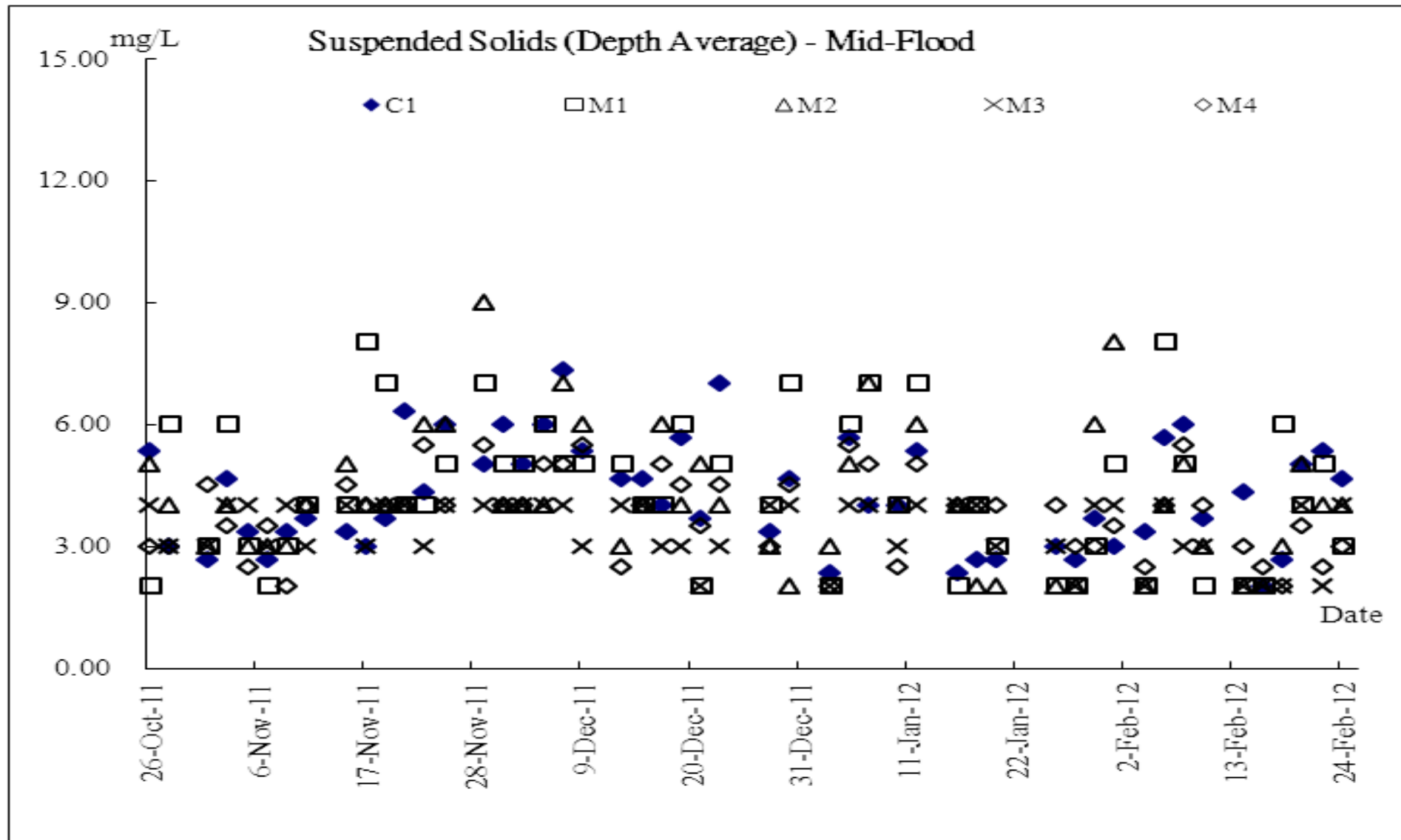






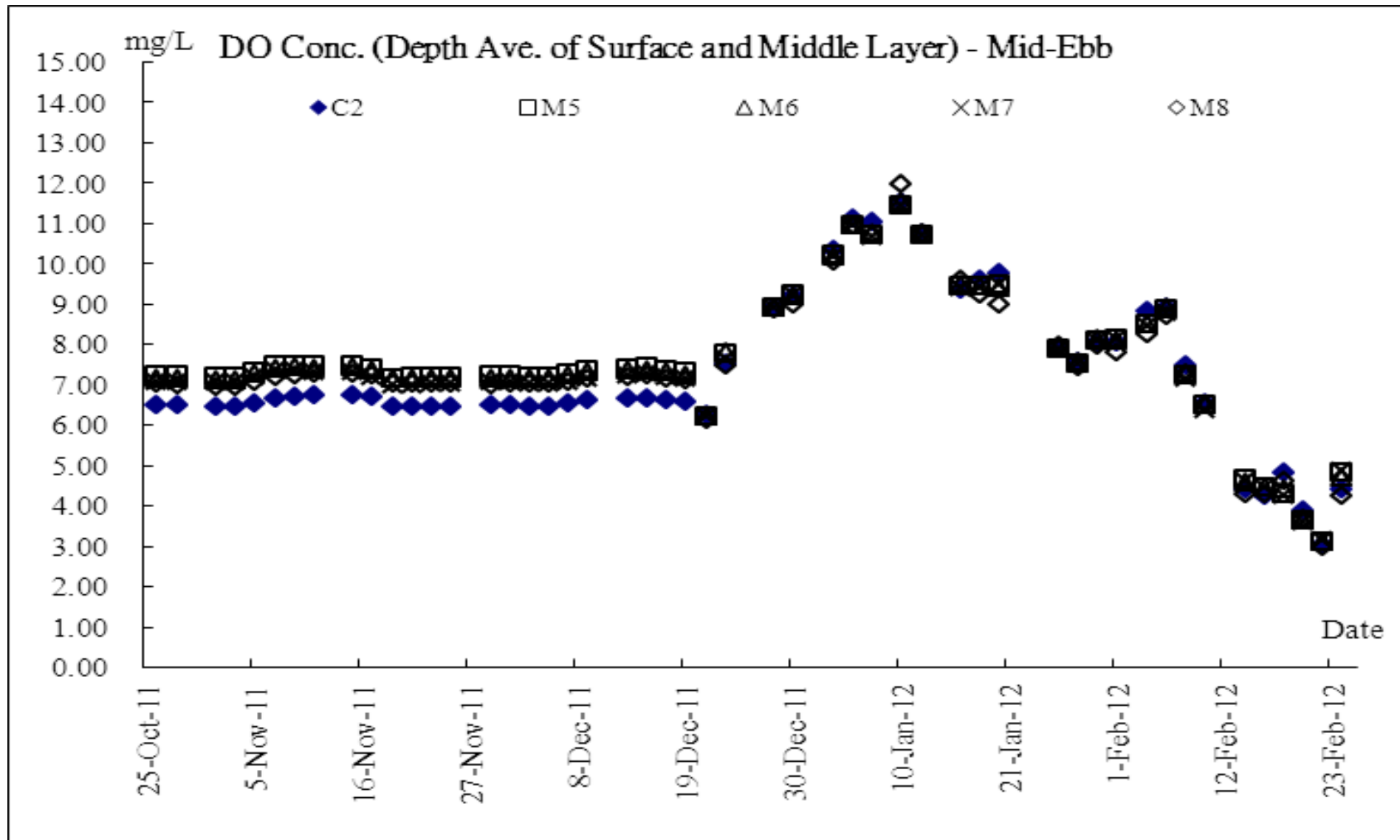


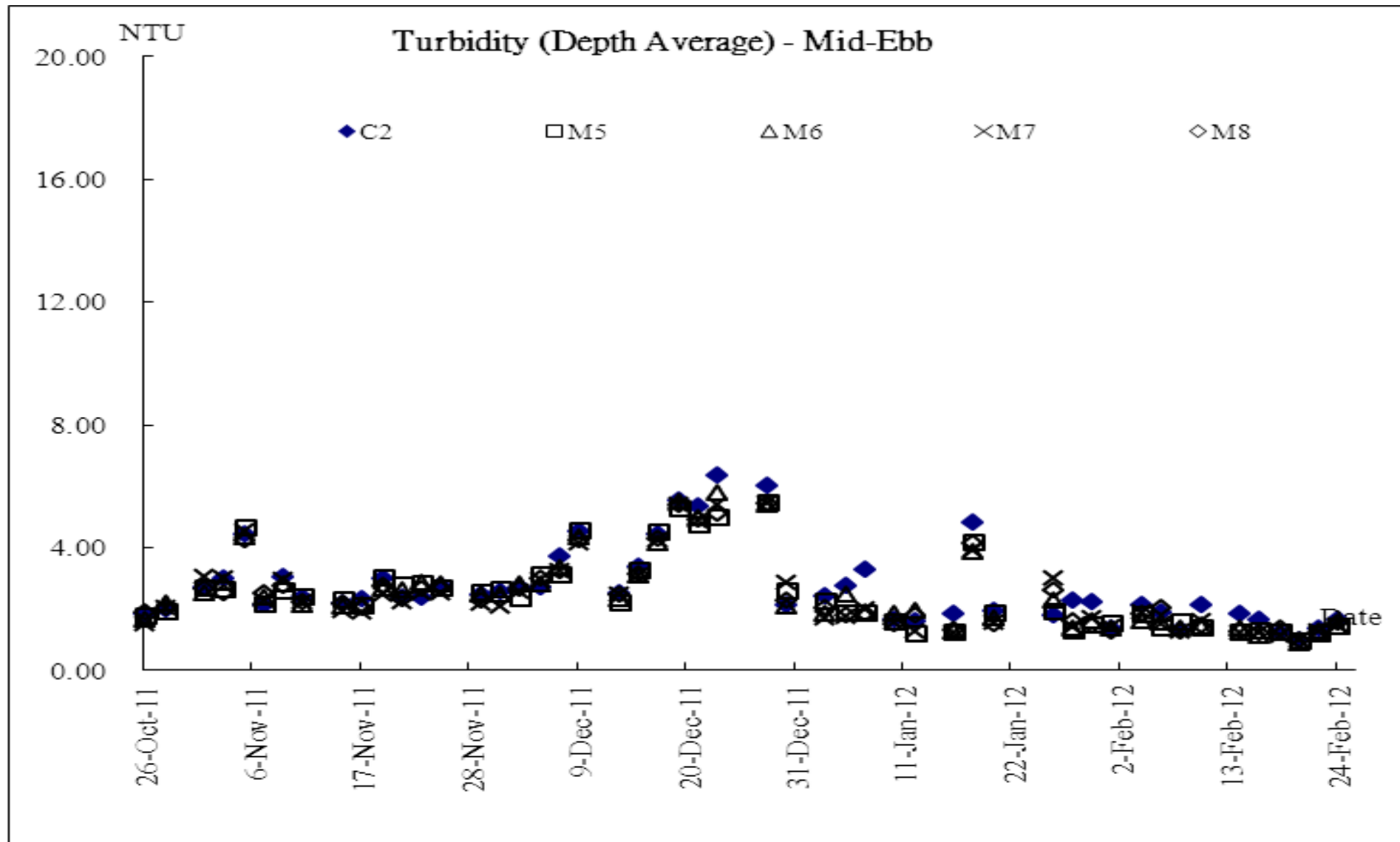


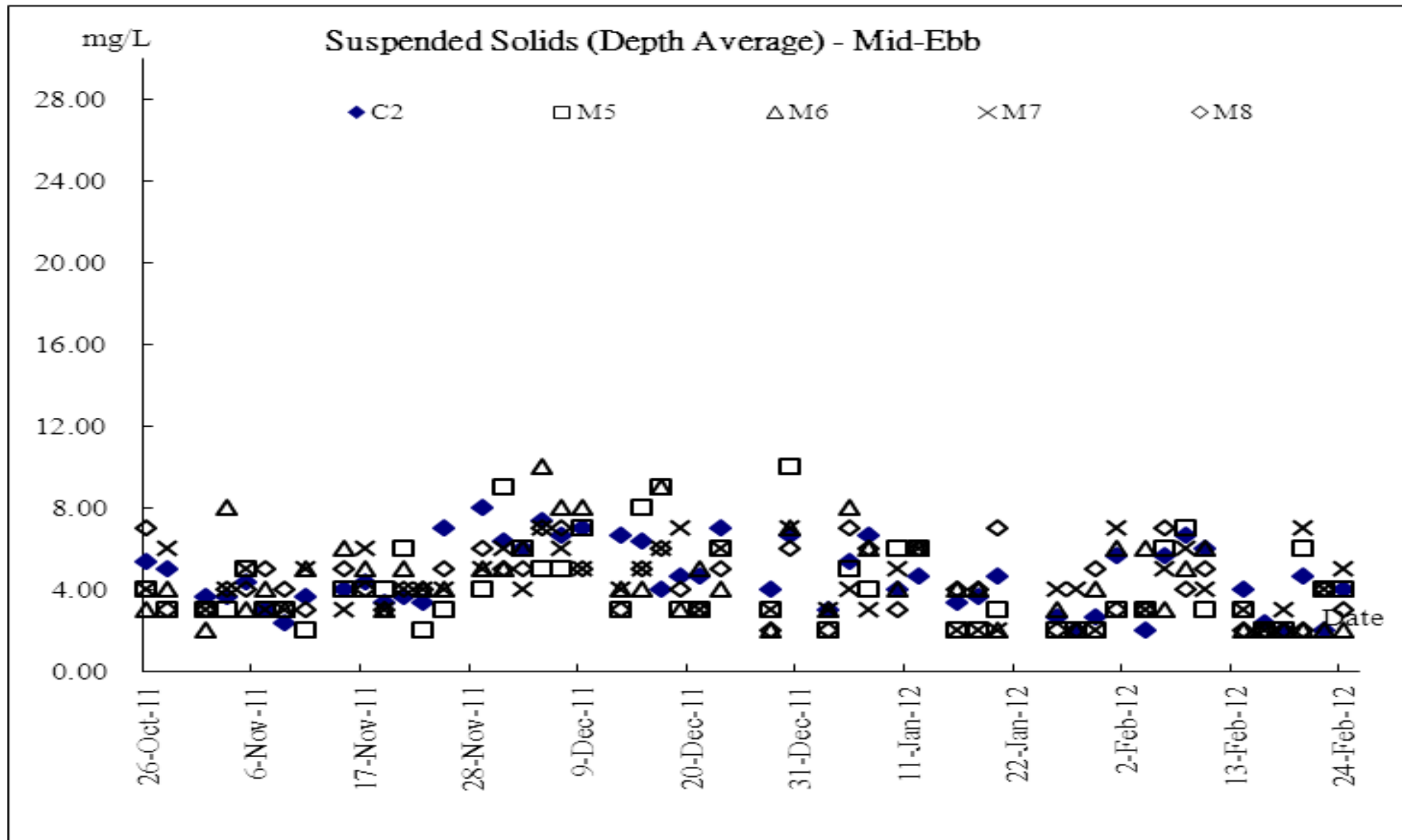


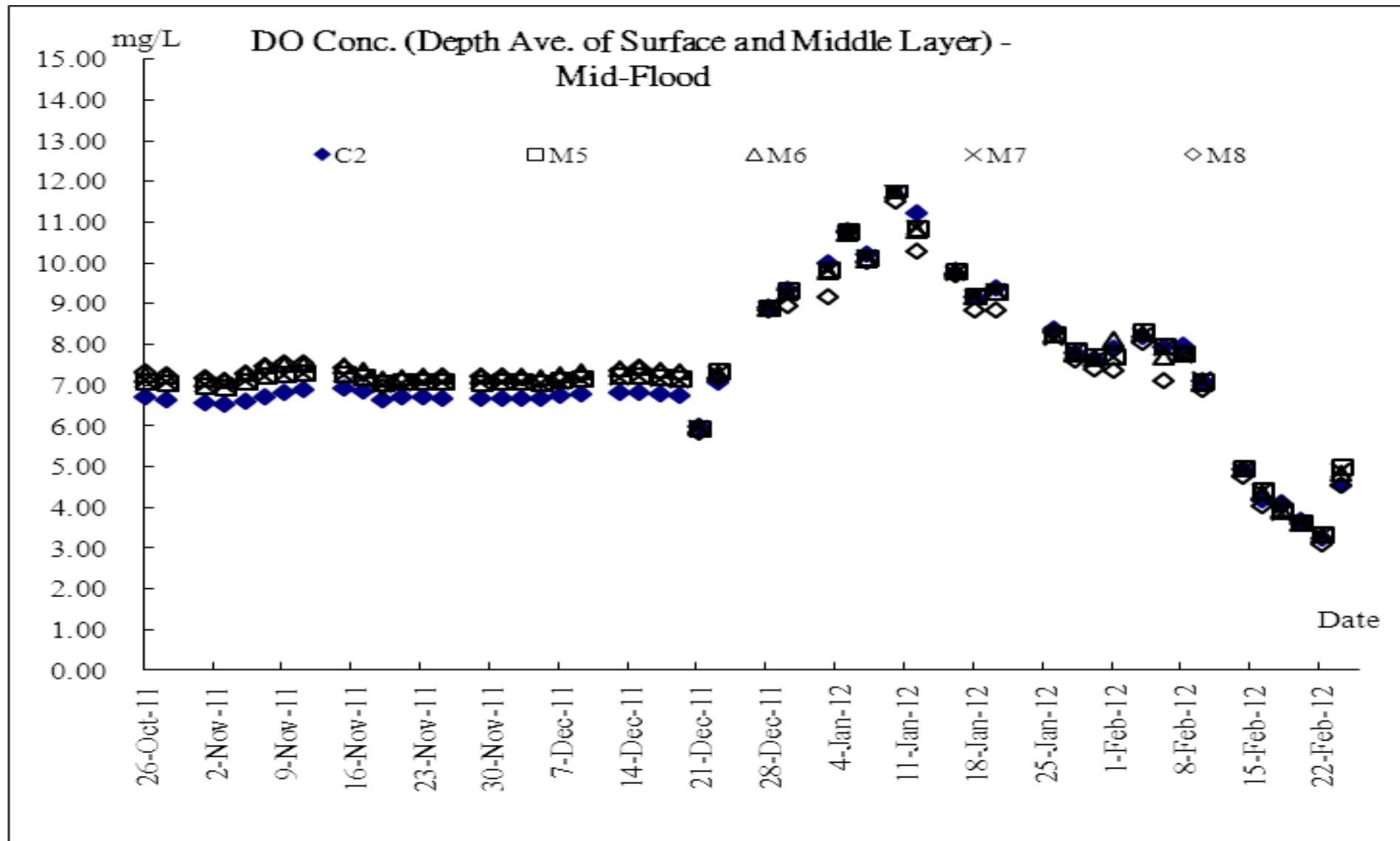
## **The Sea Zone of Starfish Bay**

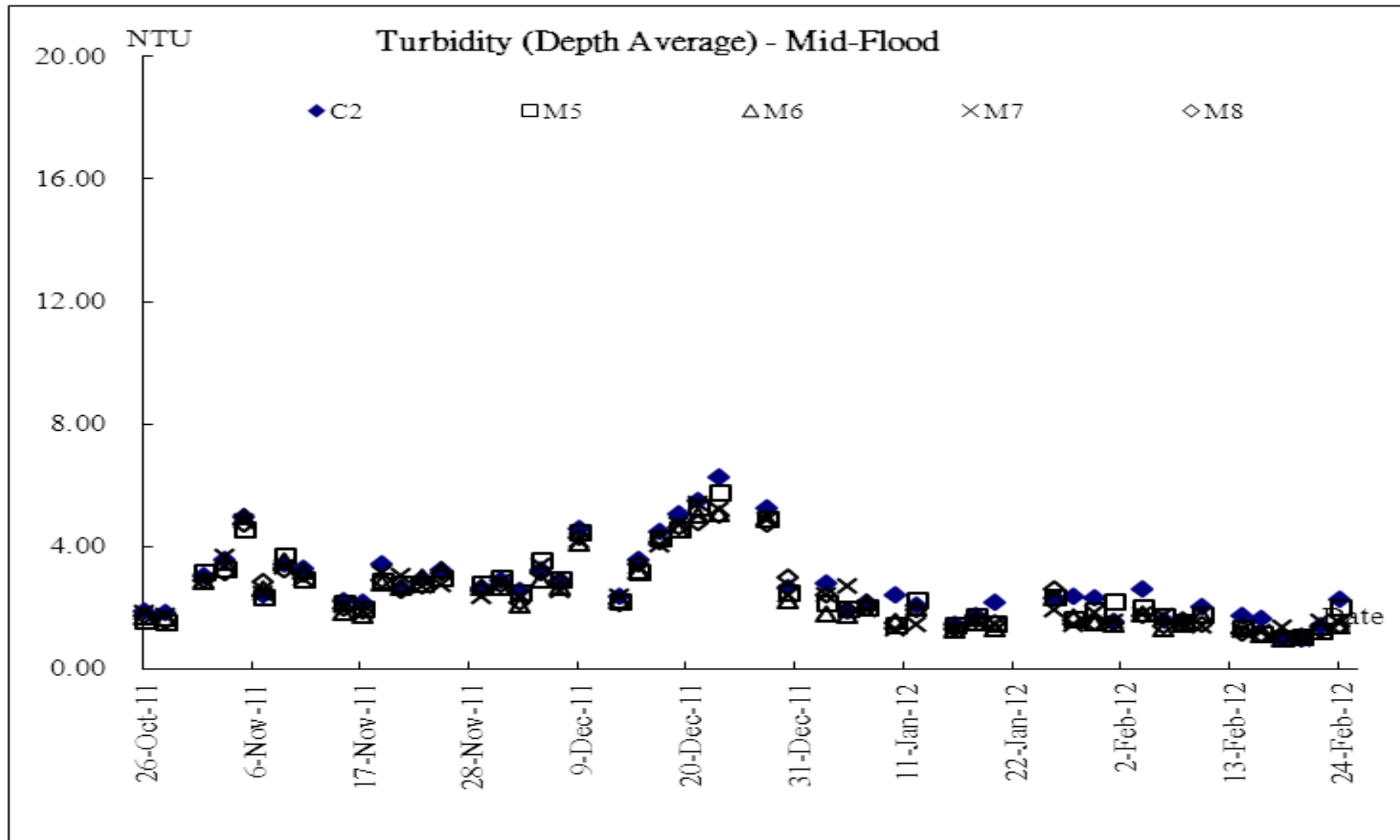


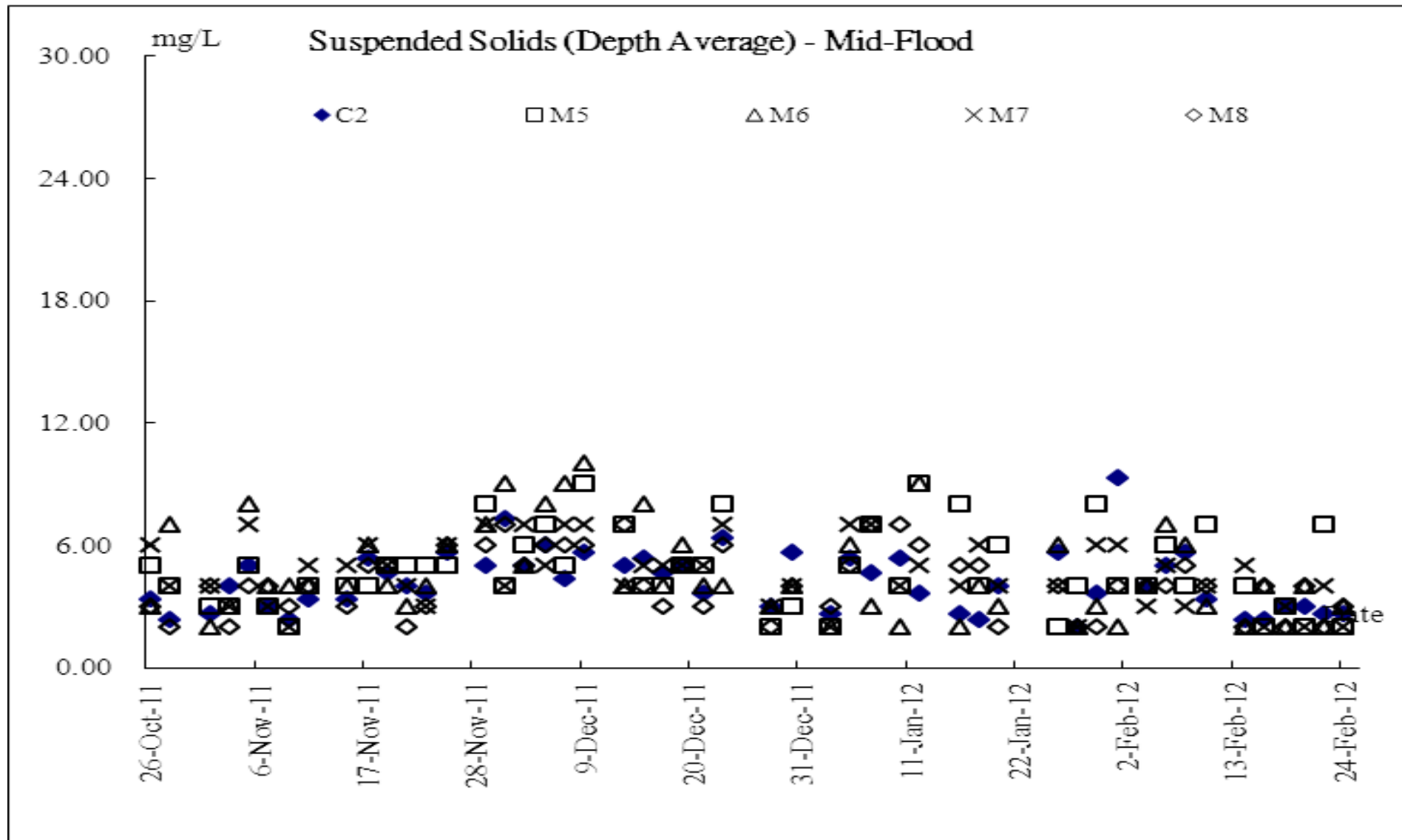














## **Annex K**

### **Meteorological Data of Reporting Month**

**Meteorological Data in This Reporting Period**

Date		Weather	Total Rainfall (mm)	Tai Po Station (Wind Speed & Direction use Shatin Station)			
				Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
26-Jan-12	Thu	Cloudy and misty.	0.8	10.2	7.5	91.2	N
27-Jan-12	Fri	Cloudy and misty.	0	14.6	6.5	89.2	N/NW
28-Jan-12	Sat	Moderate easterly winds.	0	18.2	7.2	87.2	NE
29-Jan-12	Sun	Moderate north to northeasterly winds.	0	14.6	6	82.5	NE
30-Jan-12	Mon	Cloudy.	0	15.7	6.9	69.5	NE
31-Jan-12	Tue	Mainly fine and dry.	0	15.3	9	56.5	N/NE
1-Feb-12	Wed	Sunny intervals.	0	14.7	7.5	77.2	E/SE
2-Feb-12	Thu	Cloudy with a few mist patches	0	15.8	7.1	77.2	E/SE
3-Feb-12	Fri	Moderate easterly winds	Trace	13.2	8.2	79.7	N/NE
4-Feb-12	Sat	Mainly cloudy.	Trace	15.3	9	88.5	E/NE
5-Feb-12	Sun	Moderate easterly winds	0.1	17.3	11	79.7	E/NE
6-Feb-12	Mon	Moderate easterly winds, fresh at times offshore	0.4	18.7	12	86.7	E/NE
7-Feb-12	Tue	Mainly cloudy.	3.1	15.6	10	75.5	NE
8-Feb-12	Wed	Moderate easterly winds	0.7	11.3	11.5	80.5	N/NE
9-Feb-12	Thu	Mainly cloudy.	Trace	11.7	10.9	89.2	E
10-Feb-12	Fri	Cloudy with a few mist patches	Trace	13.9	8	89.2	N/NE
11-Feb-12	Sat	Cloudy with one or two rain patches.	0	12.3	7.9	85	N/NE
12-Feb-12	Sun	Cloudy with a few mist patches	Trace	15.1	6.8	79	N
13-Feb-12	Mon	Cloudy with one or two rain patches and coastal fog.	Trace	19.3	8.2	80	N/NE
14-Feb-12	Tue	Cloudy with one or two rain patches.	0.3	19.5	6	83.3	NE
15-Feb-12	Wed	Moderate easterly winds.	Trace	18.7	10	93	NE
16-Feb-12	Thu	Moderate easterly winds	Trace	15.9	9	82.7	N
17-Feb-12	Fri	Sunny intervals.	Trace	14.3	10.2	68.7	NE
18-Feb-12	Sat	Cloudy with a few mist patches	0	12.8	7.4	71	N/NE
19-Feb-12	Sun	Sunny intervals.	0	14.7	11.3	64	E/SE
20-Feb-12	Mon	Moderate easterly winds.	0	14.4	8	70.5	N
21-Feb-12	Tue	Mainly cloudy with one or two rain patches.	1.7	17.4	7.7	80	E
22-Feb-12	Wed	Humid with fog.	1.3	19	7.9	91	N/NE
23-Feb-12	Thu	Cloudy with a few rain patches	2.9	19.5	5.5	98	E/NE
24-Feb-12	Fri	Sunny intervals.	0.5	18.1	10.8	92.5	E
25-Feb-12	Sat	Moderate to fresh northerly winds	Trace	15.4	11	91	NE

## **Annex L**

### **Monthly Summary Waste Flow Table**

Monthly Summary Waste Flow Table for February 2012											
Month /Year	Actual Quantities of Inert C & D Materials Generated Monthly						Actual Quantities of C & D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see note 3)	Chemical Waste	Others, e.g. General refuse
	(in '000M <sup>3</sup> )	(in '000M <sup>3</sup> )	(in '000M <sup>3</sup> )	(in '000M <sup>3</sup> )	(in '000M <sup>3</sup> )	(in '000M <sup>3</sup> )	(in '000KG)	(in '000KG)	(in '000KG)	(in '000KG)	(in '000M <sup>3</sup> )
Accumulate	0.000	18.334	18.334	0.000	0.000	16.909	0.000	0.000	0.000	0.000	0.512
Jan-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.014
Feb-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
Mar-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Apr-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sub-Total	0.000	18.334	18.334	0.000	0.000	16.909	0.000	0.000	0.000	0.000	0.530
Jul-12	0.000	0.000	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oct-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.000	18.334	28.334	0.000	0.000	16.909	0.000	0.000	0.000	0.000	0.530

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken	Reused in the Contract	Reused in other projects	Disposed as Public Fill	Imported Fill	Metals	Paper / cardboard	Plastics (See Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
0.00	20.00	7.00	13.00	0.00	23.00	2.00	2.00	1.00	1.00	5.00

Notes:

(1) The performance targets are given in PS Clause 1.100(14).

(2) The waste flow table shall also include C&amp;D materials that are specified in the Contract to be imported for use at the site.

(3) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.

\* (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the works is equal to or exceeding 50,000m<sup>3</sup>.