



PROJECT NO.: TCS/00512/09

**DSD CONTRACT NO. DC/2009/13
CONSTRUCTION OF SEWAGE TREATMENT WORKS AT
YUNG SHUE WAN AND SOK KWU WAN**

**SOK KWU WAN PORTION AREA
MONTHLY ENVIRONMENTAL MONITORING AND AUDIT
(EM&A) REPORT (No.15) – OCTOBER 2011**

PREPARED FOR
LEADER CIVIL ENGINEERING CORPORATION LIMITED

Quality Index

Date	Reference No.	Prepared By	Approved By
11 November 2011	TCS00512/09/600/R0366v2		
		Nicola Hon Environmental Consultant	T.W. Tam Environmental Team Leader

Version	Date	Description
1	7 November 2011	First Submission
2	11 November 2011	Amended against IEC's comments on 9 November 2011

Scott Wilson CDM Joint Venture

Chief Engineer/Harbour Area Treatment Scheme
Drainage Services Department
5/F Western Magistracy
2A Pok Fu Lam Road
Hong Kong

Your reference:

Our reference: 05117/6/16/383060

Date: 11 November 2011

Attention: Mr. C K Au

BY FAX & EMAIL

Dear Sirs,

Contract No. DC/2009/13

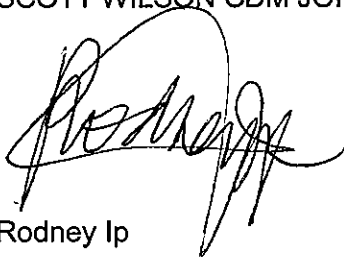
**Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan
Sok Kwu Wan Portion Area**

Monthly Environmental Monitoring and Audit (EM&A) Report No. 15 (October 2011)

We refer to the Monthly EM&A Monitoring Report No. 15 for October 2011 received under cover of the email from the Environmental Team, Action-United Environmental Services and Consulting (AUES), dated 11 November 2011. We have no comment and have verified the captioned report.

Yours faithfully

SCOTT WILSON CDM JOINT VENTURE



Rodney Ip

ICWR/SYSL/ecwc

cc	Leader Civil Engineering	(Attn: Mr Vincent Chan)
	AUES	(Attn: Mr T.W. Tam)
	ER/LAMMA	(Attn: Mr Neil Wong)
	CDM	(Attn: Mr Mark Sin)

EXECUTIVE SUMMARY

ES.01. This is the 15th monthly Environmental Monitoring and Audit (EM&A) Report for Sok Kwu Wan (hereinafter ‘this Report’) for the designated works under the Environmental Permit [EP-281/2007/A], covering a period from 1 to 31 October 2011 (hereinafter ‘the Reporting Period’).

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.02. Environmental monitoring activities under the EM&A programme in this Reporting Period are summarized in the following table.

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Air Quality	1-hour TSP	45
	24-hour TSP	15
Construction Noise	Leq (30min) Daytime	16
Water Quality	Marine Water Sampling	12
Inspection / Audit	ET Regular Environmental Site Inspection	4

ES.03. As informed by the Contractor, the marine work of outfall construction has been commenced on 19 July 2011, therefore, water quality was undertaken in this Reporting Period.

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.04. No exceedance of air quality, construction noise and marine water quality monitoring were recorded in this Reporting Period. No Notification of Exceedance (NOE) was, therefore, issued. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

Environmental Issues	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Air Quality	1-hour TSP	0	0	0	--	--
	24-hour TSP	0	0	0	--	--
Construction Noise	Leq _{30min} Daytime	0	0	0	--	--
Water Quality	DO	0	0	0	--	--
	Turbidity	0	0	0	--	--
	SS	0	0	0	--	--

Note: NOE – Notification of Exceedance

ENVIRONMENTAL COMPLAINT

ES.05. No written or verbal complaint was recorded in this Reporting Period. The statistics of environmental complaint are summarized in the following table.

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 30 September 2011	0	0	NA
1 – 31 October 2011	0	0	NA

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.06. No environmental summons or successful prosecutions were recorded in this Reporting Period. The statistics of environmental complaint are summarized in the following tables.

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 30 September 2011	0	0	NA
1 – 31 October 2011	0	0	NA

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 30 September 2011	0	0	NA
1 – 31 October 2011	0	0	NA

REPORTING CHANGE

ES.07. There is no reporting change in this Reporting Period.

SITE INSPECTION BY EXTERNAL PARTIES

ES.08. No site inspection was undertaken by external parties i.e. Environmental Protection Department (EPD) or Agriculture, Fisheries and Conservation Department (AFCD) within the Reporting Period.

FUTURE KEY ISSUES

- ES.09. 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 fully implement.
- ES.10. Muddy water and other water quality pollutants via site surface water runoff into the sea body within Fish Culture Zone (FCZ) at Picnic Bay and the secondary recreation contact subzone at Mo Tat Wan is the key issue of the Project. Mitigation measures for water quality should be properly maintained to prevent any muddy or sandy runoff from the loose soil surface overflow on the site boundary.

TABLE OF CONTENTS

1	INTRODUCTION	1
2	PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS	3
3	SUMMARY OF BASELINE MONITORING REQUIREMENTS	4
4	IMPACT MONITORING RESULTS - AIR QUALITY	9
5	IMPACT MONITORING RESULTS – CONSTRUCTION NOISE	10
6	IMPACT MONITORING RESULTS – WATER QUALITY	11
7	ECOLOGY	13
8	WASTE MANAGEMENT	14
9	SITE INSPECTION	15
10	ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE	16
11	IMPLEMENTATION STATUS OF MITIGATION MEASURES	17
12	IMPACT FORECAST	23
13	CONCLUSIONS AND RECOMMENDATIONS	24

LIST OF TABLES

Table 2-1	Status of Environmental Licenses and Permits
Table 3-1	Summary of EM&A Requirements
Table 3-2	Location of Air Quality Monitoring Station
Table 3-3	Location of Construction Noise Monitoring Station
Table 3-4	Location of Marine Water Quality Monitoring Station
Table 3-5	Action and Limit Levels for Air Quality
Table 3-6	Action and Limit Levels for Construction Noise
Table 3-7	Action and Limit Levels for Marine Water Quality
Table 4-1	Summary of 24-hour and 1-hour TSP Monitoring Results – AM1
Table 4-2	Summary of 24-hour and 1-hour TSP Monitoring Results – AM2
Table 4-3	Summary of 24-hour and 1-hour TSP Monitoring Results – AM3
Table 5-1	Summarized of Construction Noise Monitoring Results at NM1
Table 5-2	Summarized of Construction Noise Monitoring Results at NM2
Table 5-3	Summarized of Construction Noise Monitoring Results at RNM3
Table 5-4	Summarized of Construction Noise Monitoring Results at NM4
Table 6-1	Summary of Water Quality Results – Mid-ebb Tides (Dissolved Oxygen)
Table 6-2	Summary of Water Quality Results – Mid-ebb Tides (Turbidity & Suspended Solids)
Table 6-3	Summary of Water Quality Results – Mid-flood Tides (Dissolved Oxygen)
Table 6-4	Summary of Water Quality Results – Mid-flood Tides (Turbidity & Suspended Solids)
Table 6-5	Summarized Exceedances of Marine Water Quality
Table 8-1	Summary of Quantities of Inert C&D Materials
Table 8-2	Summary of Quantities of C&D Wastes
Table 8-1	Site Observations
Table 10-1	Statistical Summary of Environmental Complaints
Table 10-2	Statistical Summary of Environmental Summons
Table 10-3	Statistical Summary of Environmental Prosecution
Table 11-1	Environmental Mitigation Measures

LIST OF APPENDICES

Appendix A	Site Layout Plan – Sok Kwu Wan Portion Area
Appendix B	Organization Structure and Contact Details of Relevant Parties
Appendix C	A Master and Three Months Rolling Construction Programme
Appendix D	Location of Monitoring Stations (Air Quality / Construction Noise / Water Quality)
Appendix E	Monitoring Equipments Calibration Certificate
Appendix F	Event and Action Plan
Appendix G	Monitoring Data Sheet
Appendix H	Graphical Plots of Monitoring Results
Appendix I	Meteorological Information
Appendix J	Monthly Summary Waste Flow Table
Appendix K	Weekly Site Inspection Checklist
Appendix L	Implementation Schedule of Mitigation Measures
Appendix M	Tree Inspection Report

1 INTRODUCTION

PROJECT BACKGROUND

- 1.01 The Leader Civil Engineering Corporation Limited (Leader) has been awarded the *Contract DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan* (the Project) by the Drainage Services Department (DSD) on 4 May 2010. The Project is part of an overall plan approved under a statutory EIA for Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection and Treatment (Register No. AEIAR-075/2003) and Disposal Facilities and Outlying Islands Sewerage Stage 1 Phase 1 Package C – Yung Shue Wan Sewage Treatment Works and Outfall (Register No. EIA-124/BC). The Environmental Permit (EP) No. EP-281/2007 and EP-282/2007 for the Project have been obtained by the DSD on 29 June 2007 for the relevant works. After July 2009, EP-281/2007/A instead EP-281/2007 is EP for Sok Kwu Wan relevant works.
- 1.02 The Project involves construction of sewage treatment works at Sok Kwu Wan and Yung She Wan with a capacity of 1,430m³/day and 2,850m³/day respectively to provide secondary treatment, construction of 2 pumping stations at Sok Kwu Wan and 1 pumping station at Yung Shue Wan, construction of submarine outfall from the coastline and laying of underground sewerage pipeline. The site layout plan for the captioned work under the Project is showing in **Appendix A**.
- 1.03 According to the Particular Specification (PS) and **Appendix 25** of the Project, Leader should establish an Environmental Team (ET) to implement the environmental monitoring and auditing works to fulfill the requirements as stipulated in the Environmental Monitoring and Audit (EM&A) Manual. This EM&A Manual is referred to the Appendix B of the Review Report on EIA Study – Sok Kwu Wan (Final) in January 2007 (Agreement No. CE 20/2005(DS)).
- 1.04 Action-United Environmental Services and Consulting (AUES) has been commissioned by Leader as the ET to implement the relevant EM&A programme. Organization chart of the Environmental Team for the Project is shown in **Appendix B**. For ease of reporting, the proposed EM&A programme for baseline and impact monitoring is split to following two stand-alone parts:
- (a) Proposed EM&A Programme for Baseline and Impact Monitoring – Sok Kwu Wan (under EP No. 281/2007/A varied on 23 September 2009)
 - (b) Proposed EM&A Programme for Baseline and Impact Monitoring – Yung Shue Wan (under EP No. 282/2007)
- 1.05 According to the EM&A Manual of Sok Kwu Wan and Yung Shue Wan, baseline water quality monitoring should be carried out for consecutive six months before the marine work commencement. Therefore, the baseline reports of Sok Kwu Wan and Yung Shue Wan are divided to two volumes i.e. the Volume 1 for air quality and noise monitoring; and the Volume II for water quality monitoring for separate submission.
- 1.06 There is a concurrent DSD contract “*DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works*” undertaking at Sok Kwu Wan since April 2008.
- 1.07 Consider that the construction works of DC/2007/18 and DC/2009/13 at Sok Kwu Wan is under the same Environmental Permit and EM&A Manual, the performance criteria of air quality and construction noise at Sok Kwu Wan under the Project is recommended to adopt the Action/Limit Levels established by contract DC/2007/18. The Baseline Monitoring Report Volume 1 under the Project for air quality and noise at Sok Kwu Wan was submitted on 9 July 2010 and verified by IEC and for EPD endorsement before the relevant land works commencement on 27 July 2010.
- 1.08 This is the **15th** monthly EM&A Report – Sok Kwu Wan Portion Area presenting the monitoring results and inspection findings for the Reporting Period from **1 to 31 October 2011**.

REPORT STRUCTURE

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

SECTION 1	INTRODUCTION
SECTION 2	PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS
SECTION 3	SUMMARY OF MONITORING REQUIREMENTS
SECTION 4	AIR QUALITY MONITORING RESULTS
SECTION 5	CONSTRUCTION NOISE MONITORING RESULTS
SECTION 6	WATER QUALITY MONITORING RESULTS
SECTION 7	WASTE MANAGEMENT
SECTION 8	SITE INSPECTIONS
SECTION 9	ENVIRONMENTAL COMPLAINTS AND NON-COMPLIANCE
SECTION 10	IMPLEMENTATION STATUES OF MITIGATION MEASURES
SECTION 11	IMPACT FORECAST
SECTION 12	CONCLUSIONS AND RECOMMENDATION

2 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

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

CONSTRUCTION PROGRESS

- 2.02 The master and three month rolling construction programme are enclosed in [Appendix C](#) and the major construction activities undertaken in this Reporting Period are listed below:-
- Construction of Pumping Station No. 1 & 2
 - Construction of Rising Main
 - Rock Slope Cutting Works
 - Construction of HDD Platform

SUMMARY OF ENVIRONMENTAL SUBMISSIONS

- 2.03 Summary of the relevant permits, licences, and/or notifications on environmental protection for this Project in this Reporting Period is presented in [Table 2-1](#).

Table 2-1 Status of Environmental Licenses and Permits

Item	Description	License/Permit Status
1	Air Pollution Control (Construction Dust) Regulation	Notified EPD on 19 May 2010 Ref.: 317486
2	Chemical Waste Producer Registration	Issued on 8/6/2010 WPN 5213-912-L2720-01
3	Water Pollution Control Ordinance	Approved on 29/9/2010 Valid to: 30/09/2015 Licence no.: WT00007567-2010
4	Billing Account for Disposal of Construction Waste	Issued on 26 May 2010 A/C No: 7010815
5	Construction Noise Permit	Permit no. GW-RS0771-11 Valid from: 2 Sep 2011 Until: 1 Mar 2012

- 2.04 The “Baseline/Impact Monitoring Methodology (TCS00512/09/600/R0010Ver.4)” was set out in accordance with the Sok Kwu Wan EM&A Manual’ requirements. It was approved by the Engineer Representative (ER) and agreed with the Independent Environmental Checker (IEC) and then submitted to the EPD on 8 July 2010.
- 2.05 Baseline Monitoring Report - Volume 1 for Sok Kwu Wan (TCS00512/09/600/R0020Ver.3) was verified by the IEC on 12 July 2010 and submitted to EPD on 12 July 2010.
- 2.06 Baseline Water Quality Monitoring Report - Volume 2 for Sok Kwu Wan (TCS00512/09/600/R0182v7) was revised against EPD comments and re-submitted on 11 October 2011.

3 SUMMARY OF BASELINE MONITORING REQUIREMENTS

ENVIRONMENTAL ASPECT

- 3.01 The EM&A baseline monitoring programme cover the following environmental issues:
- Air quality;
 - Construction noise; and
 - Marine water quality
- 3.02 The ET implements the EM&A programme in accordance with the aforementioned requirements. Detailed air quality, construction noise and water quality of the EM&A programme are presented in the following sub-sections.
- 3.03 A summary monitoring parameters for the air quality, noise and marine water monitoring is presented in *Table 3-1*:

Table 3-1 Summary of EM&A Requirements

Environmental Issue	Parameters
Air Quality	<ul style="list-style-type: none"> • 1-hour TSP Monitoring by Real-Time Portable Dust Meter; and • 24-hour TSP Monitoring by High Volume Air Sampler.
Noise	<ul style="list-style-type: none"> • Leq (30min) during normal working hours; and • Leq (15min) during Restricted Hours.
Marine Water Quality	<p><i>In-situ Measurements</i></p> <ul style="list-style-type: none"> • Dissolved Oxygen Concentration (DO) (mg/L); • Dissolved Oxygen Saturation (%); • Turbidity (NTU); • pH unit; • Salinity (ppt); • Water depth (m); and • Temperature (°C). <p><i>Laboratory Analysis</i></p> <ul style="list-style-type: none"> • Suspended Solids (SS) (mg/L)

MONITORING LOCATIONS

Air Quality

- 3.04 Three air monitoring stations: AM1, AM2 and AM3 were designated in the *EM&A Manual Section 2.5*. The detailed air monitoring stations is described in *Table 3-2* and graphical is shown in *Appendix D*.

Table 3-2 Location of Air Quality Monitoring Station

Sensitive Receiver	Location
AM1	Squatter house in Chung Mei Village
AM2	Squatter house in Chung Mei Village
AM3	Football court

Construction Noise

- 3.05 According to *EM&A Manual Section 3.4*, there were four noise sensitive receivers (NM1-NM4) designated for the construction noise monitoring. NM1, NM2 and NM4 of the three designated monitoring stations were identified and are monitored by the current DSD contract DC/2007/18. However, the premises monitoring station NM3 was rejected by the owner of 1B Sok Kwu Wan and an alternative noise monitoring station RNM3 replacement was proposed by the contract DC/2007/18 ET and accepted by the IEC and EPD before the baseline monitoring commencement in April 2008. The location RNM3 is located at Sok Kwu Wan Sitting-out area which just 3m width footpath away from the original location house 1B. The detailed construction noise monitoring stations to also under the Project is described in *Table 3-3* and graphical is shown in *Appendix D*.

Table 3-3 Location of Construction Noise Monitoring Station

Sensitive Receiver	Location
NM1	1, Chung Mei Village
NM2	20, Sok Kwu Wan
RNM3	Sok Kwu Wan Sitting-out Area
NM4	2-storey village house at Ta Shui Wan

Water Quality

- 3.06 Three control stations (C1-C3) and three impact stations (W1-W3) were recommended in the *EM&A Manual Section 4.5*. Impact stations W1-W3 identified at the sensitive receivers (FCZ and secondary contact recreation subzone) to monitor the impacts from the construction of the submarine outfall as well as the effluent discharge from the proposed STW on water quality. Three control stations: C1, C2 & C3 were specified at locations representative of the project site in its undisturbed condition and located at upstream and downstream of the works area. Detailed and co-ordination of marine water quality monitoring stations is described in *Table 3-4* and the graphical is shown in *Appendix D* and would be performed for EM&A programme.

Table 3-4 Location of Marine Water Quality Monitoring Station

Station	Description	Co-ordnance	
		Easting	Northing
W1	Secondary recreation contact subzone at Mo Tat Wan	832 968	807 732
W2	Fish culture zone at Picnic Bay	832 670	807 985
W3	Fish culture zone at Picnic Bay	832 045	807 893
C1 (flood)	Control Station	833 703	808 172
C2	Control Station	831 467	807 747
C3 (ebb)	Control Station	832 220	808 862

MONITORING FREQUENCY AND PERIOD

- 3.07 The impact monitoring carried out in the EM&A programme is basically in accordance with the requirements in *EM&A Manual Sections 2.7, 3.6, 4.7 and 4.8*. The monitoring requirements are listed as follows.

Air Quality Monitoring

Parameters: 1-hour TSP and 24-hour TSP.

Frequency: Once in every six days for 24-hour TSP and three times in every six days for 1-hour TSP.

Duration: Throughout the construction period.

Noise Monitoring

Parameters: $L_{eq(30min)}$ & $L_{eq(5min)}$, L_{10} and L_{90} .
 $L_{eq(15min)}$ & $L_{eq(5min)}$, L_{10} and L_{90} during the construction undertaken during Restricted hours (19:00 to 07:00 hours next of normal working day and full day of public holiday and Sunday)

Frequency: Once per week during 0700-1900 hours on normal weekdays. Restricted hour monitoring should depend on conditions stipulated in Construction Noise Permit.

Duration: Throughout the construction period.

Marine Water Quality Monitoring

Parameters: Duplicate in-situ measurements: water depth, temperature, dissolved oxygen, pH, turbidity and salinity;
HOKLAS-accredited laboratory analysis: suspended solids

- 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 Depth
- (i.) Three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m.
 - (ii.) If the water depth is between 3m and 6m, two depths: 1m below water surface and 1m above sea bottom.
 - (iii.) If the water depth is less than 3m, 1 sample at mid-depth is taken
- Duration: During the course of marine works

Post-Construction Monitoring – Marine Water

- 3.08 Upon the marine works (dredging and HDD pipe installation) completion, 4 weeks of post-construction monitoring would be undertaken in accordance with the *Section 4.8 of EM&A Manual*. The requirements of post-construction monitoring such as the parameter, frequency, location and sampling depth is same as the impact monitoring.

MONITORING EQUIPMENT

Air Quality Monitoring

- 3.09 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

- 3.10 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 $m s^{-1}$.

Water Quality Monitoring

- 3.11 ***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⁻¹ and 0 – 200% saturation; and a temperature of 0 – 45 degree Celsius.
- 3.12 ***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 a range of 0 to 14.
- 3.13 ***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.
- 3.14 ***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.
- 3.15 ***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.
- 3.16 ***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.

- 3.17 **Sample Containers and Storage** – Water samples for suspended solids should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen).
- 3.18 **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.
- 3.19 **Suspended Solids Analysis** – Analysis of suspended solids shall be carried out in a HOKLAS or other international accredited laboratory.

EQUIPMENT CALIBRATION

- 3.20 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.
- 3.21 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.
- 3.22 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.
- 3.23 The Water Quality Monitoring equipments such as DO meter, pH meter, turbidity measuring instrument and salinometer, are calibrated by HOKLAS accredited laboratory of three month intervals.
- 3.24 All updated calibration certificates of the monitoring equipment used for the impact monitoring programme in the Reporting Period would be attached in [Appendix E](#).

METEOROLOGICAL INFORMATION

- 3.25 The meteorological information during the construction phase is obtained from the Wong Chuk Hang Station of the Hong Kong Observatory (HKO) due to it nearly the Project site.

DATA MANAGEMENT AND DATA QA/QC CONTROL

- 3.26 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 programme.
- 3.27 The monitoring data recorded in the equipment e.g. 1-hour TSP meter, sound level meter and Multi-parameter Water Quality Monitoring System, are downloaded directly from the equipments 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.

DETERMINATION OF ACTION/LIMIT (A/L) LEVELS

- 3.28 According to the Sok Kwu Wan Environmental Monitoring and Audit Manual, the air quality, construction noise and marine water quality were set up, namely Action and Limit levels are listed in [Tables 3-5, 3-6 and 3-7](#) as below.

Table 3-5 Action and Limit Levels for Air Quality

Monitoring Station	Action Level ($\mu\text{g}/\text{m}^3$)		Limit Level ($\mu\text{g}/\text{m}^3$)	
	1-hour	24-hour	1-hour	24-hour
AM1	343	173	500	260
AM2	331	175	500	260
AM3	353	191	500	260

Table 3-6 Action and Limit Levels for Construction Noise

Monitoring Location	Action Level	Limit Level
	0700-1900 hours on normal weekdays	
NM1 NM2 RNM3 NM4	When one or more documented complaints are received	75 dB(A) of $L_{\text{eq}(30\text{min})}$ during normal hours from 0700 to 1900 hours on normal weekdays, reduced to 70 dB(A) of $L_{\text{eq}(30\text{min})}$ for schools and 65 dB(A) during school examination periods

Table 3-7 Action and Limit Levels for Marine Water Quality

Parameter	Performance Criteria	Impact Station		
		W1	W2	W3
DO Concentration (Surface and Middle) (mg/L)	Action Level	5.39	4.64	4.71
	Limit Level	5.29	4.56	4.54
DO Concentration (Bottom) (mg/L)	Action Level	N/A	3.60	3.37
	Limit Level	N/A	3.06	3.18
Turbidity (Depth-Average) (NTU)	Action Level	4.39	4.84	6.48
	Limit Level	6.06	5.99	6.71
Suspended Solids (Depth-Average) (mg/L)	Action Level	12.41	9.24	10.79
	Limit Level	12.68	11.28	12.25

- 3.29 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan enclosed in [Appendix F](#).

4 IMPACT MONITORING RESULTS - AIR QUALITY

4.01 As informed by Leader, the construction of relevant land works at Sok Kwu Wan was commenced on 27 July 2010, therefore, the impact EM&A programme was started as compliance with the contract Particular Specification, Sok Kwu Wan EM&A Manual and the EP.

Results of Air Quality Monitoring

4.02 In this Reporting Period, **45** and **15** monitoring events were performed for 1-hour TSP and 24-hour TSP monitoring respectively at the designated locations AM1, AM2 and AM3. The results for 24-hour and 1-hour TSP at AM1, AM2 and AM3 are summarized in **Tables 4-1, 4-2** and **4-3** respectively. The 24-hour TSP data are shown in **Appendix G**. The graphical plots of 24-hour and 1-hour TSP are shown in **Appendix H**.

Table 4-1 Summary of 24-hour and 1-hour TSP Monitoring Results – AM1

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
4-Oct-11	101	4-Oct-11	14:19	87	91	83
10-Oct-11	64	10-Oct-11	9:17	72	82	56
15-Oct-11	66	14-Oct-11	9:56	67	72	66
21-Oct-11	124	20-Oct-11	9:42	67	80	64
27-Oct-11	68	26-Oct-11	13:41	72	83	70
Average (Range)	85 (64 – 124)	Average (Range)		74 (56 – 91)		

Table 4-2 Summary of 24-hour and 1-hour TSP Monitoring Results – AM2

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
4-Oct-11	101	4-Oct-11	12:38	79	87	67
10-Oct-11	40	10-Oct-11	10:38	69	61	87
15-Oct-11	64	14-Oct-11	14:25	73	60	68
21-Oct-11	116	20-Oct-11	11:49	76	83	70
27-Oct-11	99	26-Oct-11	10:02	76	73	79
Average (Range)	84 (40 – 116)	Average (Range)		74 (60 – 87)		

Table 4-3 Summary of 24-hour and 1-hour TSP Monitoring Results – AM3

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
4-Oct-11	58	4-Oct-11	10:16	63	78	72
10-Oct-11	41	10-Oct-11	13:06	83	92	77
15-Oct-11	144	14-Oct-11	14:28	64	77	73
21-Oct-11	47	20-Oct-11	13:58	60	71	76
27-Oct-11	125	26-Oct-11	9:34	87	76	91
Average (Range)	83 (41 – 144)	Average (Range)		76 (60 – 92)		

4.03 As shown in **Tables 4-1, 4-2** and **4-3**, 24-hour and 1-hour TSP results fluctuated well below the Action Level during the Reporting Period. No Notification of Exceedance (NOE) of 24-hour and 1-hour TSP air quality criteria or corrective action was therefore required.

4.04 The meteorological information during the impact monitoring days are summarized in **Appendix I**.

5 IMPACT MONITORING RESULTS – CONSTRUCTION NOISE

5.01 The noise monitoring results are presented in the following sub-sections.

Results of Construction Noise Monitoring

5.02 In this Reporting Period, 4 construction noise monitoring events were undertaken at designated location NM1, NM2, RNM3 and NM4. The results for $L_{eq30min}$ at NM1, NM2, RNM3 and NM3 are summarized in *Tables 5-1, 5-2, 5-3 and 5-4* and graphical plots are shown in *Appendix H*.

Table 5-1 Summarized of Construction Noise Monitoring Results at NM1

Date	Start Time	End time	1 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30
4-Oct-11	14:38	15:08	66.2	65.5	65.9	70.0	68.4	67.2	67.5
10-Oct-11	13:08	13:38	52.0	48.3	51.7	53.2	53.6	50.0	51.8
20-Oct-11	11:29	11:59	57.7	54.4	55.4	53.9	48.7	55.9	55.1
26-Oct-11	9:56	10:26	60.7	50.2	54.0	53.7	47.3	51.0	55.1
Limit Level in dB(A)									75

Table 5-2 Summarized of Construction Noise Monitoring Results at NM2

Date	Start Time	End time	1 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30
4-Oct-11	13:51	14:21	69.2	68.8	68.2	68.2	67.8	67.9	68.4
10-Oct-11	15:18	15:48	61.9	59.6	65.9	58.7	57.4	60.9	61.7
20-Oct-11	10:38	11:08	59.5	59.1	54.9	60.1	62.3	62.8	60.4
26-Oct-11	10:38	11:08	56.3	59.2	54.3	51.6	52.3	53.7	55.4
Limit Level in dB(A)									75

Table 5-3 Summarized of Construction Noise Monitoring Results at RNM3

Date	Start Time	End time	1 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30	Corrected* Leq30
4-Oct-11	13:06	13:36	56.8	62.4	57.9	61.9	58.6	58.2	59.8	62.8
10-Oct-11	14:28	14:58	54.1	55.4	50.5	66.1	52.8	50.1	59.3	62.3
20-Oct-11	10:00	10:30	61.1	63.6	62.1	63.8	60.8	60.7	62.2	65.2
26-Oct-11	13:32	14:02	54.3	58.8	54.1	50.9	56.8	55.0	55.6	58.6
Limit Level in dB(A)									75	

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

Table 5-4 Summarized of Construction Noise Monitoring Results at NM4

Date	Start Time	End time	1 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30
4-Oct-11	11:32	12:02	62.8	57.9	67.2	59.4	62.8	61.4	63.0
10-Oct-11	13:46	14:16	53.5	54.2	53.3	54.8	60.6	59.4	57.0
20-Oct-11	12:01	12:31	47.6	47.4	47.5	42.5	44.5	46.5	46.4
26-Oct-11	12:01	12:31	63.1	58.3	56.0	56.5	61.2	60.1	59.9
Limit Level in dB(A)									75

5.03 It was noted that no noise complaint (which is an Action Level exceedance) was received. In view of the results shown in *Tables 5-1, 5-2, 5-3 and 5-4* which were all below 75dB(A), no Action or Limit Level exceedance was triggered during this month.

6 IMPACT MONITORING RESULTS – WATER QUALITY

- 6.01 The construction of marine outfall works was commenced on 19 July 2011 and therefore marine water quality monitoring is required in this Reporting Period. In this Reporting Period, 12 events of water quality monitoring were carried out at the designated locations. The monitoring results including in-situ measurements and laboratory testing results are presented in [Appendix G](#). The graphical plots are shown in [Appendix H](#).
- 6.02 During the Reporting Period, field measurements of both control and impact stations showed that marine water of the depth average of the salinity concentration was within **30.43 to 32.54** ppt, and pH value was within **7.83 to 8.41**.
- 6.03 Monitoring results of 3 key parameters: dissolved oxygen (DO), turbidity and suspended solids (SS) in this Reporting Period, are summarized in [Tables 6-1, 6-2, 6-3 and 6-4](#). A summary of exceedances for the 3 parameters are shown in [Table 6-5](#).

Table 6-1 Summary of Water Quality Results – Mid-ebb Tides (Dissolved Oxygen)

Sampling date	Dissolved Oxygen conc. of Depth Ave. of Surf. and Mid Layer (mg/L)						Dissolved Oxygen conc. of Depth Ave. of Bottom Layer (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
4-Oct-11	5.63	5.60	5.53	5.59	5.47	5.77	NA	5.25	5.18	5.29	5.33	5.69
6-Oct-11	5.62	5.80	5.79	5.78	5.78	5.69	NA	5.60	5.45	5.26	5.74	5.51
8-Oct-11	6.12	5.69	5.73	5.83	5.63	5.84	NA	5.71	5.55	5.78	5.40	5.88
10-Oct-11	6.01	6.03	5.80	5.97	5.34	5.71	NA	6.09	5.87	5.75	5.20	5.75
12-Oct-11	6.03	5.92	5.92	5.99	5.88	5.88	NA	5.89	5.93	5.99	5.84	5.84
14-Oct-11	5.88	5.85	5.81	5.79	5.77	5.77	NA	5.92	5.72	5.66	5.64	5.64
18-Oct-11	6.11	6.15	6.13	6.25	6.11	6.11	NA	6.15	6.17	6.01	6.22	6.22
20-Oct-11	6.66	6.54	6.08	6.78	6.37	6.37	NA	6.46	5.90	6.55	5.66	5.66
22-Oct-11	6.76	6.69	6.65	6.55	6.95	6.95	NA	6.38	6.42	6.67	6.47	6.47
24-Oct-11	6.60	6.78	6.63	6.95	6.64	6.64	NA	6.47	6.70	6.67	6.57	6.57
26-Oct-11	6.38	6.81	6.90	6.36	6.77	6.77	NA	6.71	6.39	6.20	6.07	6.07
28-Oct-11	6.88	6.90	7.05	6.79	7.17	7.17	NA	6.44	6.51	6.50	7.05	7.05

Table 6-2 Summary of Water Quality Results – Mid-ebb Tides (Turbidity & Suspended Solids)

Sampling date	Turbidity Depth Ave. (NTU)						Suspended Solids Depth Ave. (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
4-Oct-11	4.33	4.38	4.34	4.80	4.49	4.67	9.40	8.13	8.50	12.40	9.53	9.70
6-Oct-11	3.91	4.20	4.25	4.31	4.66	4.42	4.30	6.33	6.20	6.27	6.13	5.63
8-Oct-11	3.93	4.02	3.80	3.70	3.72	4.54	4.10	5.03	4.03	3.07	7.43	5.40
10-Oct-11	3.99	3.85	3.67	3.51	4.19	4.01	7.80	8.17	6.83	7.00	5.07	4.33
12-Oct-11	3.98	4.31	4.53	3.97	4.19	4.71	8.70	7.40	6.83	6.53	5.23	8.93
14-Oct-11	4.35	3.84	4.05	3.98	3.68	4.17	7.80	4.80	4.20	5.80	6.27	5.83
18-Oct-11	3.50	4.55	4.30	3.97	4.32	4.72	3.20	5.07	4.83	4.17	4.70	4.13
20-Oct-11	3.08	3.81	3.58	3.83	3.77	3.17	7.10	5.47	5.53	5.70	4.03	4.50
22-Oct-11	4.00	4.19	3.96	3.91	3.78	4.17	4.70	5.90	10.37	5.97	6.67	6.97
24-Oct-11	3.97	4.14	3.92	3.78	3.63	4.12	3.60	5.27	3.40	3.30	3.50	4.03
26-Oct-11	3.98	3.42	3.85	4.26	3.60	4.49	3.40	6.00	4.37	3.60	4.03	4.57
28-Oct-11	2.75	2.94	2.99	2.93	3.25	3.09	2.60	2.97	2.70	2.70	2.67	5.37

Table 6-3 Summary of Water Quality Results – Mid-flood Tides (Dissolved Oxygen)

Sampling date	Dissolved Oxygen conc. of Depth Ave. of Surf. and Mid Layer (mg/L)						Dissolved Oxygen conc. of Depth Ave. of Bottom Layer (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
2-Sep-11	5.57	5.92	5.40	5.24	5.28	5.38	NA	5.78	5.42	5.30	5.31	5.17
6-Sep-11	5.80	6.10	5.62	6.09	5.40	5.91	NA	5.86	5.37	5.86	5.75	5.89
8-Sep-11	5.84	6.04	5.54	6.02	5.83	5.92	NA	5.86	5.76	5.92	5.82	5.91
10-Sep-11	5.68	5.69	5.62	5.85	5.71	5.90	NA	5.53	5.68	5.95	5.68	5.88
12-Sep-11	5.68	5.89	6.08	6.13	5.95	6.14	NA	5.86	5.61	5.95	5.75	6.03
14-Sep-11	5.77	5.83	5.76	5.84	5.66	5.84	NA	5.73	5.66	5.66	5.39	5.73
16-Sep-11	6.26	6.25	6.30	6.34	6.29	6.24	NA	6.26	6.33	6.29	5.65	6.15
20-Sep-11	6.67	6.81	6.84	6.77	6.62	6.48	NA	6.75	6.76	6.62	6.53	6.47
24-Sep-11	6.40	6.58	6.83	6.69	6.09	6.25	NA	6.12	6.50	6.09	6.06	6.31
26-Sep-11	6.67	6.92	6.65	6.55	6.21	6.40	NA	6.81	6.55	6.21	6.80	6.33
28-Sep-11	6.88	6.71	6.80	6.85	6.67	7.13	NA	6.51	6.29	6.67	6.78	6.96
30-Sep-11	7.07	7.00	6.97	6.90	6.57	7.02	NA	6.61	6.55	6.57	6.79	6.67

Table 6-4 Summary of Water Quality Results – Mid-flood Tides (Turbidity & Suspended Solids)

Sampling date	Turbidity Depth Ave. (NTU)						Suspended Solids Depth Ave. (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
4-Oct-11	4.03	4.58	4.27	4.71	4.42	4.38	9.80	9.07	6.63	8.43	9.77	7.80
6-Oct-11	4.33	4.44	4.42	4.27	4.68	4.75	11.00	5.03	4.43	5.27	5.13	4.47
8-Oct-11	2.82	3.94	4.04	4.26	4.36	3.36	3.40	4.57	3.47	4.50	5.27	5.97
10-Oct-11	3.96	3.56	3.58	3.54	3.77	4.36	3.70	4.73	5.33	5.63	9.27	5.83
12-Oct-11	3.96	4.58	3.63	4.39	3.81	4.79	8.40	8.70	6.50	10.03	8.33	7.80
14-Oct-11	4.00	4.02	4.39	3.43	4.04	3.94	5.30	4.57	5.00	5.07	3.57	4.23
18-Oct-11	4.00	5.48	4.47	5.22	3.28	4.18	5.70	4.53	4.83	4.57	2.70	3.10
20-Oct-11	2.87	3.27	3.44	3.69	3.81	3.74	5.10	6.47	6.27	4.47	4.90	5.43
22-Oct-11	3.37	4.15	3.57	3.73	3.68	3.92	5.70	7.07	5.77	6.03	5.50	4.17
24-Oct-11	3.72	3.41	3.91	4.25	3.87	3.63	4.50	4.10	6.17	6.13	6.47	5.00
26-Oct-11	4.15	3.93	3.73	4.11	3.84	3.61	4.30	4.90	6.60	7.97	5.47	5.13
28-Oct-11	3.51	4.24	3.36	4.23	3.62	4.14	4.30	3.63	4.33	3.00	3.43	3.67

Table 6-5 Summarized Exceedances of Marine Water Quality

Station	DO (Ave of Surf. & mid-depth)		DO (Ave. of Bottom Layer)		Turbidity (Depth Ave.)		SS (Depth Ave)		Total Exceedance	
	Action	Limit	Action	Limit	Action	Limit	Action	Limit	Action	Limit
Mid-Ebb										
WY1	0	0	0	0	0	0	0	0	0	0
WY2	0	0	0	0	0	0	0	0	0	0
WY3	0	0	0	0	0	0	0	0	0	0
Mid-Flood										
WY1	0	0	0	0	0	0	0	0	0	0
WY2	0	0	0	0	0	0	0	0	0	0
WY3	0	0	0	0	0	0	0	0	0	0
No of Exceedance	0	0	0	0	0	0	0	0	0	0

6.04 For marine water monitoring, no exceedance of Action/Limit levels was recorded in this Reporting Period. Therefore, no associated corrective actions were then required.

7 ECOLOGY

- 7.01 According to Clause 3.7 and Figure 4 in the Environmental Permit No. EP-281/2007/A, a total of 12 numbers *Celtis Timorensis* (uncommon species) in Chung Mei at Sok Kwu Wan, are identified to require labeling, fencing and protection. Out of these, four numbers located in the Pumping Station No.1 area are required to be transplanted in advance of pumping station construction and the transplantation proposal has been submitted to EPD previously.
- 7.02 Regular inspection of the transplanted tree was carried out by the landscaping sub-Contractor (Melofield Nursery and Landscape Contractor Limited) on **10 and 24 October 2011**. As a contingency measure in case that CT7 to CT10 can no longer be recovered, additional 7 no. of *Celtis Timorensis* were planted adjacent to the under-monitoring *Celtis Timorensis* CT7 to CT10 on 30 April 2011. The tree inspection report is presented in **Appendix M**.

8 WASTE MANAGEMENT

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

Records of Waste Quantities

8.02 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

8.03 The quantities of waste for disposal in this Reporting Period are summarized in *Table 8-1* and *8-2* and the Monthly Summary Waste Flow Table is shown in *Appendix J*. Whenever possible, materials were reused on-site as far as practicable.

Table 8-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) ('000m ³)	0.007	Sok Kwu Wan Transfer Facility
Reused in the Contract (Inert) ('000m ³)	0	-
Reused in other Projects (Inert) ('000m ³)	1.674	-
Disposal as Public Fill (Inert) ('000m ³)	0	Sok Kwu Wan Transfer Facility

Table 8-2 Summary of Quantities of C&D Wastes

Type of Waste	Quantity	Disposal Location
Metal (kg)	0	-
Paper / Cardboard Packing (kg)	0	-
Plastic (kg)	0	-
Chemical Wastes (kg)	0	-
General Refuses (tonne)	6.85	Sok Kwu Wan Transfer Facility

8.04 There was no site effluent discharged but the estimated volume of surface runoff was less than 50m³ in this monthly period.

9 SITE INSPECTION

- 9.01 According to the Environmental Monitoring and Audit Manual, the environmental site inspection should be formulated by ET Leader. Regular environmental site inspections had been carried out by the ET to confirm the environmental performance. In this Reporting Period, weekly site inspection by ET was carried out on **4, 11, 18 and 25 October 2011** and a joint-site visit by IEC Representative, RE, Leader and ET was carried out on **11 October 2011**.
- 9.02 The findings/ deficiencies that observed during the weekly site inspection are listed in **Table 9-1** and the relevant checklists are attached in **Appendix K**.

Table 9-1 Site Observations

Date	Findings / Deficiencies	Follow-Up Status
4 October 2011	<ul style="list-style-type: none">• Drip tray should be provided for all chemical containers.• Silt curtain should be reinstated after storm as appropriate.	Drip tray was found to be provided on 11 October 2011. Silt curtain was found to be reinstated on 11 October 2011.
11 October 2011	<ul style="list-style-type: none">• No environmental issue was observed during site inspection.	N.A.
18 October 2011	<ul style="list-style-type: none">• Sedimentation tank under concrete plant at Portion L2 has to be cleaned up to restore its de-silting function.	To be followed.
25 October 2011	<ul style="list-style-type: none">• Sedimentation tank under concrete plant at Portion L2 has to be cleaned up to restore its de-silting function.	To be followed.

10 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

10.01 No environmental complaint, summons and prosecution was received in this Reporting Period. The statistical summary table of environmental complaint is presented in *Tables 10-1, 10-2* and *10-3*.

Table 10-1 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 30 September 2011	0	0	NA
1 – 31 October 2011	0	0	NA

Table 10-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 30 September 2011	0	0	NA
1 – 31 October 2011	0	0	NA

Table 10-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 30 September 2011	0	0	NA
1 – 31 October 2011	0	0	NA

11 IMPLEMENTATION STATUS OF MITIGATION MEASURES

11.01 The environmental mitigation measures that recommended in the Sok Kwu Wan Environmental Monitoring and Audit covered the issues of dust, noise, water and waste and they are summarized as following:

Dust Mitigation Measure

11.02 Installation of 2m high solid fences around the construction site of Pumping Station P2 is recommended. Implementation of the requirements stipulated in the Air Pollution Control (Construction Dust) Regulation and the following good site practices are recommended to control dust emission from the site:

- (a) Stockpiles of imported material kept on site should be contained within hoardings, dampened and / or covered during dry and windy weather;
- (b) Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses;
- (c) Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like.
- (d) Any vehicle used for moving sands, aggregates and construction waste shall have properly fitting side and tail boards. Materials should not be loaded to a level higher than the side and tail boards, and should be covered by a clean tarpaulin.

Noise Mitigation Measure

11.03 As detailed in the EIA report, concreting work of the Pumping Station P1a and sewer alignment construction activities would likely cause adverse noise impacts on some of the noise sensitive receivers. Appropriate mitigation measures have therefore been recommended. The mitigation measures recommended in the EIA report are summarised below:

- (a) Use of quiet equipment for the construction activities of the Pumping Stations and sewer alignment;
- (b) Use of temporary noise barrier around the site boundary of Pumping Station P1a;
- (c) Use of kick ripper (saw and lift) method to replace the breaker for pavement removal during sewer alignment construction;
- (d) Restriction on the number of plant during sewer alignment construction;
- (e) Use of noise screening structures in the form of acoustic shed or movable barrier wherever practicable and feasible in areas with sufficient clearance and headroom during the construction of sewer alignment;
- (f) Adoption of manual working method wherever practicable and feasible in areas where the worksites of the proposed sewer alignment are located less than 20m from the residential noise sensitive receivers and less than 30m from the temple and the public library; and
- (g) Implementation of the following good site practices:
 - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme.
 - Mobile plant, if any, should be sited as far away from NSRs as possible.
 - Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.
 - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.
 - Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.

Water Quality Mitigation Measure

11.04 No-dig method using Horizontal Directional Drilling (HDD) would be used for the installation of outfall pipe of about 480 m from shore to minimize the potential water quality impacts arising from the dredging works required for the submarine outfall construction. For the remaining outfall pipe of about 240m and the diffuser section, open trench dredging would still be required.

- 11.05 During the dredging works, the Contractor should be responsible for the design and implementation of the following mitigation measures.
- Dredging should be undertaken using closed grab dredgers with a total production rate of 55m³/hr;
 - Deployment of 2-layer silt curtains with first layer enclosing the grab and the second layer at around 50, from the dredging area while dredging works are in progress;
 - all vessels should be sized such that adequate clearance (i.e. minimum clearance of 0.6m) is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;
 - all pipe leakages should be repaired promptly and plant shall not be operated with leaking pipes;
 - excess material should be cleaned from the decks and exposed fittings of barges before the vessel is moved;
 - adequate freeboard (i.e. minimum of 200m) should be maintained on barges to ensure that decks are not washed by wave action;
 - all barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; and
 - loading of barges and hoppers should be controlled to prevent splashing of dredged material to the surrounding water, and barges and hoppers should not be filled to a level which would cause the overflow of materials or sediment laden water during loading or transportation; and
 - the decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard.

Construction Run-off and Drainage

- 11.06 The Contractor should observe and comply with the Water Pollution Control Ordinance and the subsidiary regulations. The Contractor should follow the practices, and be responsible for the design, construction, operation and maintenance of all the mitigation measures as specified in ProPECC PN 1/94 “Construction Site Drainage”. The design of the mitigation measures should be submitted by the Contractor to the Engineer for approval. These mitigation measures should include the following practices to minimise site surface runoff and the chance of erosion, and also to retain and reduce any suspended solids prior to discharge:
- Provision of perimeter channels to intercept storm-runoff from outside the site. These should be constructed in advance of site formation works and earthworks.
 - Works programmes should be designed to minimize works areas at any one time, thus minimising exposed soil areas and reducing the potential for increased siltation and runoff.
 - Sand/silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove the sand/silt particles from run-off. These facilities should be properly and regularly maintained. These facilities shall be carefully planned to ensure that they would be installed at appropriate locations to capture all surface water generated on site.
 - Careful programming of the works to minimise soil excavation works during rainy seasons.
 - Exposed soil surface should be protected by paving or hydroseeding as soon as possible to reduce the potential of soil erosion.
 - Trench excavation should be avoided in the wet season, and if necessary, these should be excavated and backfilled in short sections.
 - Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric.

General Construction Activities

- 11.07 Debris and rubbish generated on-site should be collected, handled and disposed of properly to avoid entering the nearby coastal waters and stormwater drains. All fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. Open drainage channels and culverts near the works areas should be covered to block the entrance of large debris and refuse.

Wastewater Arising from Workforce

- 11.08 Portable toilets shall be provided by the Contractors, where necessary, to handle sewage from the workforce. The Contractor shall also be responsible for waste disposal and maintenance practices

Sediment Contamination Mitigation Measure

- 11.09 The basic requirements and procedures for dredged mud disposal are specified under the WBTC No. 34/2002. The management of the dredging, use and disposal of marine mud is monitored by the MFC, while the licensing of marine dumping is the responsibility of the Director of Environmental Protection (DEP).
- 11.10 The uncontaminated dredged sediment will be loaded onto barges and transported to the designated marine disposal site. Appropriate dredging methods have been incorporated into the recommended water quality mitigation measures including the use of closed-grab dredgers and silt curtains. Category L sediment would be suitable for disposal at a gazetted open sea disposal ground.
- 11.11 During transportation and disposal of the dredged marine sediments, the following measures should be taken to minimize potential impacts on water quality:
- Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.
 - Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic self-monitoring devices as specified by the DEP.

Construction Waste Mitigation Measure

Good Site Practices and Waste Reduction Measures

- 11.12 It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are strictly followed. Recommendations for good site practices for the construction waste arising include:
- Nomination of an approved person, such as a site manager, to be responsible for the implementation of good site practices, arranging for collection and effective disposal to an appropriate facility, of all wastes generated at the site.
 - Training of site personnel in proper waste management and chemical handling procedures.
 - Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.
 - Provision of sufficient waste disposal points and regular collection for disposal.
 - Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility.
 - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.
 - Maintain records of the quantities of wastes generated, recycled and disposed.
- 11.13 In order to monitor the disposal of C&D waste at landfills and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.
- 11.14 Good management and control can prevent the generation of significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:
- segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;

- to encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the work force;
- any unused chemicals or those with remaining functional capacity should be recycled;
- use of reusable non-timber formwork to reduce the amount of C&D material;
- prior to disposal of C&D waste, it is recommended that wood, steel and other metals should be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill;
- proper storage and site practices to minimise the potential for damage or contamination of construction materials; and
- plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.

General Site Wastes

- 11.15 A collection area should be provided where waste can be stored prior to removal from site. An enclosed and covered area is preferred for the collection of the waste to reduce 'wind blow' of light material.

Chemical Wastes

- 11.16 After use, chemical waste (eg. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Any unused chemicals or those with remaining functional capacity should be recycled. Spent chemicals should be properly stored on site within suitably designed containers, and should be collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licenced facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordinance.
- 11.17 Any service shop and minor maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakages and spillage should only be undertaken with the areas appropriately equipped to control these discharges.

Construction and Demolition Material

- 11.18 The C&D material should be separated on-site into three categories: (i) public fill, the inert portion of the C&D material (e.g. concrete and rubble), which should be re-used on-site or disposed of at a public filling area; (ii) C&D waste for re-use and/or recycling, the non-inert portion of the C&D material, (e.g. steel and other metals, wood, glass and plastic); (iii) C&D waste which cannot be re-used and/or recycled. The waste producers are responsible for its disposal at strategic landfills.
- 11.19 In order to minimise the impact resulting from collection and transportation of material for off-site disposal, it was recommended that inert material should be re-used on-site where possible. Prior to disposal of C&D material, it was also recommended that steel and other metals should be separated for re-use and/or recycling where practicable to minimise the quantity of waste to be disposed of to landfill.

Ecology Mitigation Measure

Terrestrial Ecology

- 11.20 The uncommon tree species should be labelled and probably fenced to avoid direct or indirect disturbance during construction. Works areas should avoid woodland habitats, in particular where these trees are located.
- 11.21 Construction and maintenance of site runoff control measures would be required at all work sites during construction. These should include barriers to direct runoff to sand/silt removal facilities (sand/silt/traps and/or sediment basins); minimisation of earthworks during rainy season (May to September); and coverage of sand/fill piles and exposed earth during storms.

- 11.22 Special attention should be paid during the breeding season of Romer’s Tree Frog (March to September) to ensure their habitat landward to Pumping Station P2 site is well protected from site runoff. Barriers should be deployed completely along the landward side of the pumping station site boundary to prevent any site runoff from entering the tree frog habitat. Intactness of the barriers should be frequently inspected.

Intertidal and Subtidal Ecology

- 11.23 Construction and maintenance of site runoff control measures would be required at all work sites during construction. These should include barriers to direct runoff to sand/silt removal facilities (sand/silt/traps and/or sediment basins); use of silt curtains along coastline; minimisation of earthworks during rainy season (May to September); and coverage of sand/fill piles and exposed earth during storms.
- 11.24 To reduce impacts of sediment resuspension upon nearby habitats and organisms during dredging, all dredging should be done using a closed-grab dredger, and silt curtains should be deployed around the dredger during all dredging activity

Fisheries Mitigation Measure

- 11.25 Closed grab dredger, deployment of silt curtains around the immediate dredging area and low dredging rate have been recommended in Water Quality of the EIA report in order to minimise sediment release into the water column.

Landscape & Visual Mitigation Measure

- 11.26 Mitigation measures recommended in the EIA Report for landscape and visual impacts during the construction stage are summarised below.
- Screening of site construction works by use of hoarding that is appropriate to its site context;
 - Retaining existing trees and minimising damage to vegetation where possible by close co-ordination and on site alignment adjusted of rising main and gravity sewer pipelines. Tree protective measures should be implemented to ensure trees identified as to be retained are satisfactorily protected during the construction phase;
 - Careful and efficient transplanting of affected trees (1 no.) to temporary or final transplant location (the proposed tree to be transported is a semi-mature *Macaranga tanarius* and is located at the proposed Pumping Station P2 location);
 - Short excavation and immediate backfilling of sections upon completion of works to reduce active site area;
 - Conservation of top-soil for reuse.
 - Night-time light source from marine fleets should be directed away from the residential units
- 11.27 The implementation schedule of mitigation measures is presented in [Appendix L](#).
- 11.28 Leader had been implementing the required environmental mitigation measures according to the Sok Kwu Wan Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by Leader in this Reporting Period are summarized in [Table 11-1](#).

Table 11-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Water Quality	<ul style="list-style-type: none"> • Drainage channels were provided to convey run-off into the treatment facilities; and • Drainage systems were regularly and adequately maintained.
Air Quality	<ul style="list-style-type: none"> • Cover all excavated or stockpile of dusty material by impervious sheeting or sprayed with water to maintain the entire surface wet; • Public roads around the site entrance/exit had been kept clean and free from dust; and • Tarpaulin covering of any dusty materials on a vehicle leaving the site.

Issues	Environmental Mitigation Measures
Noise	<ul style="list-style-type: none">• Good site practices to limit noise emissions at the sources;• Use of quiet plant and working methods;• Use of site hoarding or other mass materials as noise barrier to screen noise at ground level of NSRs; and• To minimize plant number use at the worksite.
Waste and Chemical Management	<ul style="list-style-type: none">• 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;• Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner;• The Contractor should adopt a trip ticket system for the disposal of C&D materials to any designed public filling facility and/or landfill; and• Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.
General	<ul style="list-style-type: none">• The site was generally kept tidy and clean.

12 IMPACT FORECAST

12.01 Key issues to be considered in the coming month include:

Water Quality

- Erect of sand bag in proper area to avoid any muddy surface runoff from the loose soil surface or haul road during the rainy days; and
- The accumulated stagnant water should be drained away.

Air Quality

- Vehicles shall be cleaned of mud and debris before leaving the site;
- Stockpile and loose soil surface shall be covered with tarpaulin sheet or other means to eliminate the fugitive dust;
- Water spaying on the dry haul road and exit/entrance of the site in regular basis is reminded; and
- Public roads around the site entrance/exit had been kept clean and free from dust.

Noise

- Works and equipment should be located to minimize noise nuisance from the nearest sensitive receiver; and
- Idle equipments should be either turned off or throttled down;

Waste and Chemical Management

- Housekeeping on site shall be improved;
- The Contractor is advised to fence off the construction waste at a designated area in order to maintain the tidiness of the site;
- Drip tray and proper label should be provided for all chemical containers.
- C&D waste should be disposed in regular basis.

13 CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

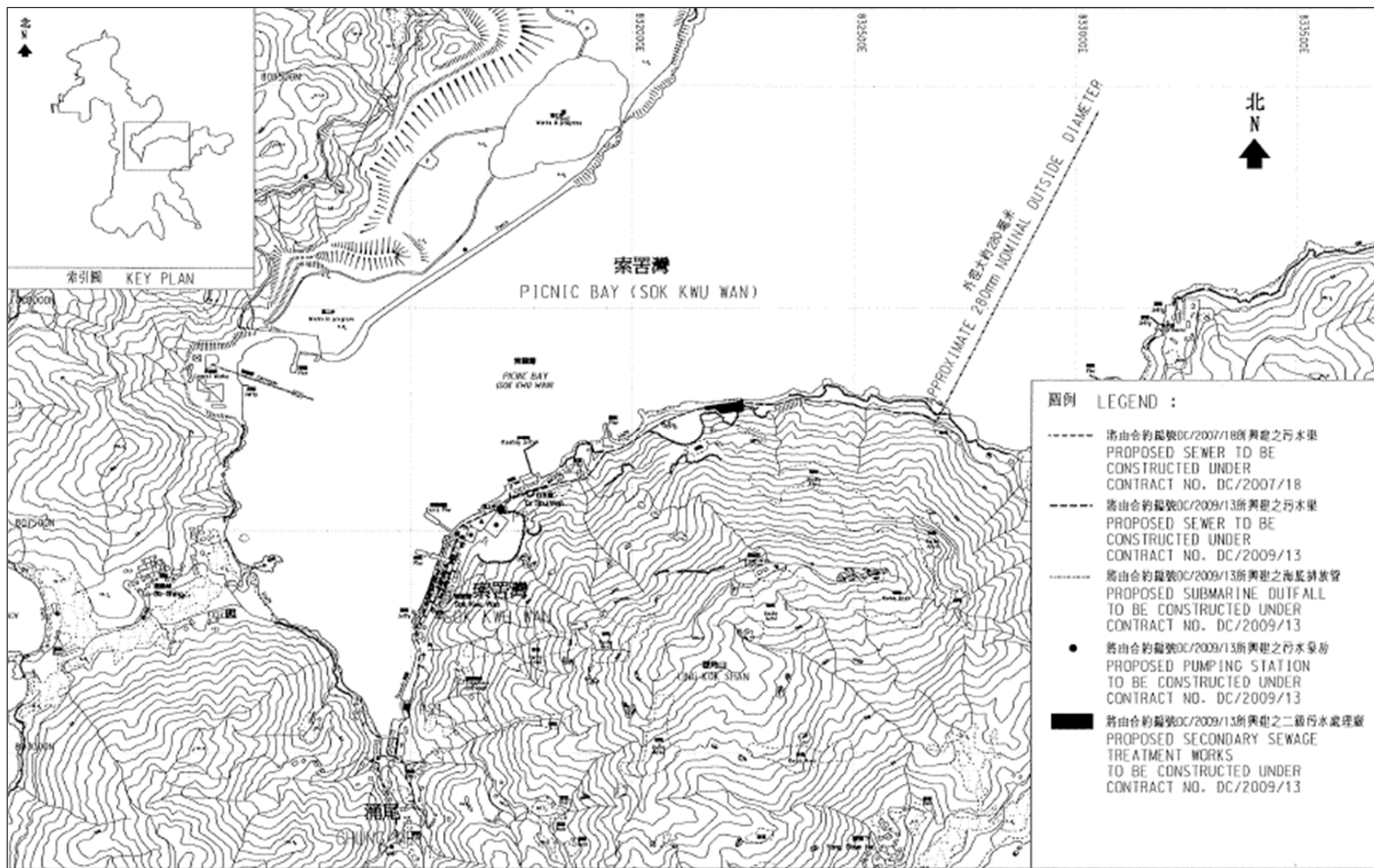
- 13.01 This is the **15th** monthly EM&A Report covering the construction period from **1 to 31 October 2011**.
- 13.02 No 1-hour TSP or 24-hr TSP monitoring results was found to be triggered the Action or Limit Level in this Reporting Period.
- 13.03 No noise complaint (an Action Level exceedance) was received and no construction noise measurement results that exceeded the Limit Level were recorded in this Reporting Period.
- 13.04 As informed by the Contractor, the marine work of outfall construction has been commenced on 19 July 2011, therefore, water quality was undertaken in this Reporting Period. The monitoring result demonstrated no exceedance of Action or Limit Level in this Reporting Period.
- 13.05 No documented complaint, notification of summons or successful prosecution was received.
- 13.06 In this Reporting Period, weekly site inspection by ET was carried out on **4, 11, 18 and 25 October 2011** and a joint-site visit by IEC Representative, RE, Leader and ET was carried out on **11 October 2011**. All the observation has been rectified during the next week site inspection. The environmental performance of the Project was therefore considered as satisfactory.

RECOMMENDATIONS

- 13.07 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 fully implement.
- 13.08 Muddy water and other water quality pollutants via site surface water runoff into the sea body within Fish culture zone at Picnic Bay and the Secondary recreation contact subzone at Mo Tat Wan is the key issue of the Project. Mitigation measures for water quality should be properly maintained to prevent any muddy or sandy runoff from the loose soil surface overflow on the site boundary.

Appendix A

Site Layout Plan – Sok Kwu Wan Portion Area



Appendix B

Organization Structure and Contact Details of Relevant Parties

Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
DSD	Employer	Mr. AU Chi Kwong	-	-
SCJV	Engineer's Representative	Mr. Neil Wong	2982 0240	2982 4129
SCJV	Resident Engineer	Mr. Alfred Cheung	2982 0240	2982 4129
Scott Wilson	Independent Environmental Checker	Mr. Rodney Ip	2410 3750	2428 9922
Leader	Project Manager	Mr. Vincent Chan	2982 1750	2982 1163
Leader	Site Agent	Mr. Stephen Leung	2982 1750	2982 1163
Leader	Environmental Officer	Mr. K.Y. So	2982 8652	2982 8650
Leader	Section Engineer	Mr. Burgess Yip	2982 1750	2982 1163
Leader	Safety Officer	Mr. Edwin Leung	2982 1750	2982 1163
AUES	Environmental Team Leader	Mr. T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959 6059	2959 6079
AUES	Assistance Environmental Consultant	Mr. Ray Cheung	2959 6059	2959 6079
AUES	Team Supervisor	Mr. Ben Tam	2959 6059	2959 6079

Legend:

DSD (Employer) – Drainage Services Department

CDM (Engineer) – Scott Wilson CDM Joint Venture

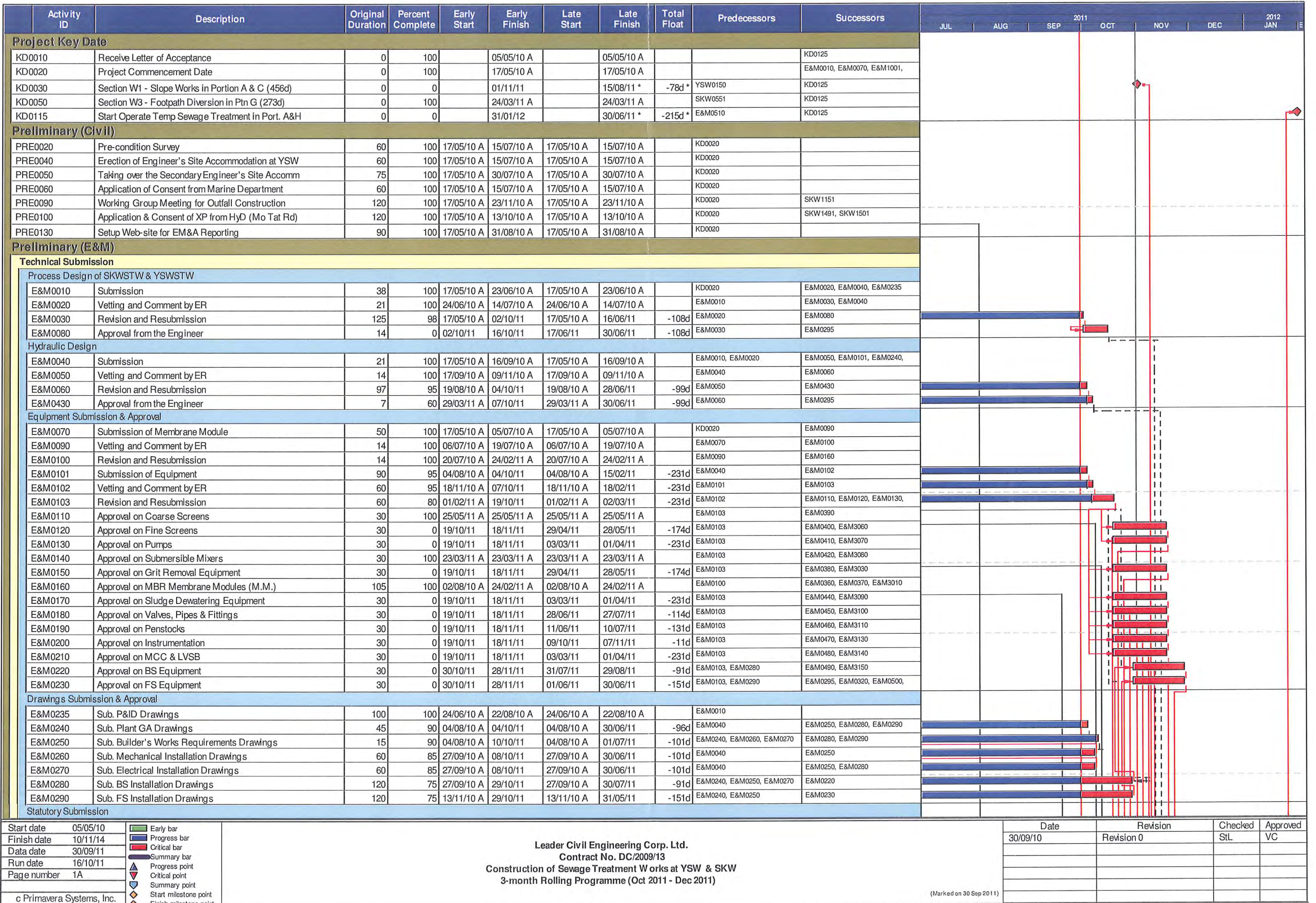
Leader (Main Contractor) – Leader Civil Engineering Corporation Limited

Scott Wilson (IEC) – Scott Wilson Limited

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

Appendix C

A Master and Three Months Rolling Construction Programme



Start date	05/05/10
Finish date	10/11/14
Data date	30/09/11
Run date	16/10/11
Page number	1A
c Primavera Systems, Inc.	

- Early bar
- Progress bar
- Critical bar
- Summary bar
- Progress point
- Critical point
- Summary point
- Start milestone point
- Finish milestone point

Leader Civil Engineering Corp. Ltd.
 Contract No. DC/2009/13
Construction of Sewage Treatment Works at YSW & SKW
 3-month Rolling Programme (Oct 2011 - Dec 2011)

Date	Revision	Checked	Approved
30/09/10	Revision 0	StL	VC

(Marked on 30 Sep 2011)

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2011											
											JUL	AUG	SEP	OCT	NOV	DEC	2012	JAN	FEB	MAR	APR	MAY
E&M0295	Preparation of Submission to HEC	39	0	29/11/11	06/01/12	01/07/11	08/08/11	-151d	E&M0080, E&M0230, E&M0430	E&M0300	[Gantt bar: Oct 29, 2011 - Nov 6, 2011]											
E&M0300	Application & Approval from HEC	150	0	07/01/12	04/06/12	09/08/11	05/01/12	-151d	E&M0295	E&M0305	[Gantt bar: Nov 7, 2011 - Jan 4, 2012]											
E&M0320	Form 314 Submission to FSD	14	0	29/11/11	12/12/11	15/04/12	28/04/12	138d	E&M0230	E&M0325, E&M0670	[Gantt bar: Oct 29, 2011 - Nov 28, 2011]											
E&M0325	Submission to WSD	14	0	13/12/11	26/12/11	29/04/12	12/05/12	138d	E&M0320	E&M0670, E&M0680	[Gantt bar: Nov 13, 2011 - Dec 26, 2011]											
E&M0350	Form 501 Submission to FSD (PS1 & PS2)	28	0	27/01/12	24/02/12	01/10/14	10/11/14	952d	E&M2016		[Gantt bar: Jan 27, 2012 - Feb 24, 2012]											
Yung Shue Wan																						
Preliminary																						
YSW0020	Approval of Environmental Team	16	100	17/05/10 A	01/06/10 A	17/05/10 A	01/06/10 A		KD0020	YSW0030, YSW0040	[Gantt bar: May 17, 2010 - Jun 1, 2010]											
YSW0030	Baseline monitoring (Air & Noise)	14	100	31/07/10 A	22/08/10 A	31/07/10 A	22/08/10 A		YSW0020	YSW0035	[Gantt bar: Jul 31, 2010 - Aug 22, 2010]											
YSW0035	Baseline Monitoring Report Submission (A & N)	14	100	23/08/10 A	07/09/10 A	23/08/10 A	07/09/10 A		YSW0030	YSW0120, YSW0152, YSW0500	[Gantt bar: Aug 23, 2010 - Sep 7, 2010]											
YSW0040	Baseline monitoring (Water)	213	100	30/07/10 A	31/12/10 A	30/07/10 A	31/12/10 A		YSW0020	YSW0350	[Gantt bar: Jul 30, 2010 - Dec 31, 2010]											
YSW0050	Erect Hoarding and Fencing	60	100	17/05/10 A	15/07/10 A	17/05/10 A	15/07/10 A				[Gantt bar: May 17, 2010 - Jul 15, 2010]											
Section W 1 - Slope Works in Portion A & C																						
YSW0075	Mobilization	30	100	17/05/10 A	15/06/10 A	17/05/10 A	15/06/10 A		KD0020	YSW0100	[Gantt bar: May 17, 2010 - Jun 15, 2010]											
YSW0080	Site Clearance	30	100	17/05/10 A	15/06/10 A	17/05/10 A	15/06/10 A			YSW0085, YSW0120	[Gantt bar: May 17, 2010 - Jun 15, 2010]											
YSW0085	Initial Survey	14	100	02/06/10 A	15/06/10 A	02/06/10 A	15/06/10 A		YSW0080	YSW0120	[Gantt bar: Jun 2, 2010 - Jun 15, 2010]											
YSW0090	Verify the Rock Boulder required Stabilization Wk	30	100	19/07/10 A	21/03/11 A	19/07/10 A	21/03/11 A			YSW0100, YSW0110	[Gantt bar: Jul 19, 2010 - Mar 21, 2011]											
YSW0100	Removal of Rock Boulder	280	100	20/09/10 A	03/06/11 A	20/09/10 A	03/06/11 A		YSW0075, YSW0090	YSW0150	[Gantt bar: Sep 20, 2010 - Jun 3, 2011]											
YSW0110	Stablizing work for rockboulder	280	100	16/07/11 A	19/08/11 A	16/07/11 A	19/08/11 A		YSW0090	YSW0150	[Gantt bar: Jul 16, 2011 - Aug 19, 2011]											
YSW0120	Cut the slope to design profile	100	100	13/09/10 A	14/09/10 A	13/09/10 A	14/09/10 A		YSW0035, YSW0080, YSW0085	YSW0131, YSW0165	[Gantt bar: Sep 13, 2010 - Sep 14, 2010]											
YSW0131	Mobilization of Plant and Material of Soil Nails	20	100	01/09/10 A	14/09/10 A	01/09/10 A	14/09/10 A		YSW0120	YSW0132	[Gantt bar: Sep 1, 2010 - Sep 14, 2010]											
YSW0132	Erect Scaffold and Working Platform	20	100	15/09/10 A	16/09/10 A	15/09/10 A	16/09/10 A		YSW0131	YSW0133	[Gantt bar: Sep 15, 2010 - Sep 16, 2010]											
YSW0133	Setting out and Verify Locations of Soil Nails	10	100	14/09/10 A	31/10/10 A	14/09/10 A	31/10/10 A		YSW0132	YSW0134	[Gantt bar: Sep 14, 2010 - Oct 31, 2010]											
YSW0134	Drilling and Soil Nails Installation	20	100	08/10/10 A	19/11/10 A	08/10/10 A	19/11/10 A		YSW0133	YSW0135	[Gantt bar: Oct 8, 2010 - Nov 19, 2010]											
YSW0135	Construction of Nail Heads	10	100	24/11/10 A	01/12/10 A	24/11/10 A	01/12/10 A		YSW0134	YSW0136	[Gantt bar: Nov 24, 2010 - Dec 1, 2010]											
YSW0136	Mesh Installation on Cut Slope	10	100	04/12/10 A	04/12/10 A	04/12/10 A	04/12/10 A		YSW0135	YSW0137	[Gantt bar: Dec 4, 2010 - Dec 4, 2010]											
YSW0137	Hydroseeding	30	0	30/09/11	29/10/11	14/07/11	12/08/11	-78d	YSW0136	YSW0140	[Gantt bar: Sep 30, 2011 - Oct 29, 2011]											
YSW0140	Construct U-channels & Step Channel on Cut Slope	116	100	02/04/11 A	30/09/11 A	02/04/11 A	30/09/11 A		YSW0137	YSW0150	[Gantt bar: Apr 2, 2011 - Sep 30, 2011]											
YSW0150	Construction of access, u-channels and catch pit	76	96	10/01/11 A	01/11/11	10/01/11 A	15/08/11	-78d	YSW0100, YSW0110, YSW0140	KD0030	[Gantt bar: Jan 10, 2011 - Nov 1, 2011]											
YSW0165	Construction of Barrier Wall (below Ground Lev)	226	92	10/09/10 A	18/10/11	10/09/10 A	12/08/11	-66d	YSW0120	YSW0150, YSW0154, YSW0155	[Gantt bar: Sep 10, 2010 - Oct 18, 2011]											
Section W 2 - YSW STW & Submarine Outfall																						
Civil & Structural Work																						
YSW0412	Mobilization	30	100	17/05/10 A	15/06/10 A	17/05/10 A	15/06/10 A		KD0020	YSW0422	[Gantt bar: May 17, 2010 - Jun 15, 2010]											
YSW0422	Site Clearance	30	100	17/05/10 A	15/06/10 A	17/05/10 A	15/06/10 A		KD0020, YSW0412	YSW0432, YSW0500, YSW0610	[Gantt bar: May 17, 2010 - Jun 15, 2010]											
YSW0432	Initial Survey	14	100	02/06/10 A	15/06/10 A	02/06/10 A	15/06/10 A		YSW0422	YSW0510	[Gantt bar: Jun 2, 2010 - Jun 15, 2010]											
YSW STP - GL H - T																						
YSW0500	ELS & Excavation for Inlet Pumping Station	62	100	17/09/10 A	16/12/10 A	17/09/10 A	16/12/10 A		YSW0035, YSW0422	YSW0510	[Gantt bar: Sep 17, 2010 - Dec 16, 2010]											
YSW0510	Sub-structure construction (Inlet Pumping Stn)	30	100	17/12/10 A	04/04/11 A	17/12/10 A	04/04/11 A		YSW0432, YSW0500	YSW0520	[Gantt bar: Dec 17, 2010 - Apr 4, 2011]											
YSW0520	Backfill & Remove ELS (Inlet Pumping Stn)	30	100	03/01/11 A	05/05/11 A	03/01/11 A	05/05/11 A		YSW0510	YSW0530, YSW0610	[Gantt bar: Jan 3, 2011 - May 5, 2011]											
YSW0530	ELS & Excavation for Equalization Tank	40	100	11/01/11 A	08/06/11 A	11/01/11 A	08/06/11 A		YSW0520	YSW0540	[Gantt bar: Jan 11, 2011 - Jun 8, 2011]											
YSW0540	Sub-structure construction (Equalization Tank)	40	100	13/06/11 A	28/09/11 A	13/06/11 A	28/09/11 A		YSW0530	YSW0550	[Gantt bar: Jun 13, 2011 - Sep 28, 2011]											
YSW0550	Backfilling & Remove ELS (Equalization Tank)	40	85	15/08/11 A	05/10/11	15/08/11 A	20/04/11	-168d	YSW0540	YSW0570	[Gantt bar: Aug 15, 2011 - Oct 5, 2011]											
YSW0570	Excavate to formation by open cut	30	95	02/07/11 A	07/10/11	02/07/11 A	22/04/11	-168d	YSW0550	YSW0580	[Gantt bar: Jul 2, 2011 - Oct 22, 2011]											
YSW0580	Base slab construction	30	75	06/07/11 A	14/10/11	06/07/11 A	29/04/11	-168d	YSW0570	YSW0590	[Gantt bar: Jul 6, 2011 - Oct 29, 2011]											
YSW0590	G/F to 1/F construction	50	5	29/09/11 A	01/12/11	29/09/11 A	16/06/11	-168d	YSW0580	YSW0600	[Gantt bar: Sep 29, 2011 - Dec 16, 2011]											
YSW0600	1/F to Roof construction	50	0	02/12/11	20/01/12	17/06/11	05/08/11	-168d	YSW0590	YSW0720, YSW0800	[Gantt bar: Dec 2, 2011 - Jan 20, 2012]											
YSW0720	Water Test	36	0	21/01/12	25/02/12	06/08/11	10/09/11	-168d	YSW0600	E&M0530, E&M0540, E&M0550	[Gantt bar: Jan 21, 2012 - Feb 25, 2012]											
YSW0800	ABWF installation	36	0	21/01/12	25/02/12	06/08/11	10/09/11	-168d	YSW0600	E&M0530, E&M0540, E&M0550	[Gantt bar: Jan 21, 2012 - Feb 25, 2012]											
YSW STP - GL T - X																						
YSW0610	Excavate to formation	50	100	08/09/10 A	17/09/10 A	08/09/10 A	17/09/10 A		YSW0035, YSW0422, YSW0520	YSW0620	[Gantt bar: Sep 8, 2010 - Sep 17, 2010]											
YSW0620	Base slab construction	60	100	18/09/10 A	23/05/11 A	18/09/10 A	23/05/11 A		YSW0610	YSW0630	[Gantt bar: Sep 18, 2010 - May 23, 2011]											
YSW0630	G/F to 1/F construction	95	100	27/12/10 A	19/07/11 A	27/12/10 A	19/07/11 A		YSW0620	YSW0640	[Gantt bar: Dec 27, 2010 - Jul 19, 2011]											
YSW0640	1/F to Roof Construction	91	95	20/07/11 A	04/10/11	20/07/11 A	21/08/11	-44d	YSW0630	YSW0810, YSW0840	[Gantt bar: Jul 20, 2011 - Oct 4, 2011]											
YSW0810	ABWF installation	86	0	30/09/11	24/12/11	02/07/11	25/09/11	-90d	YSW0640	E&M0610, E&M0620, E&M0630	[Gantt bar: Sep 30, 2011 - Dec 24, 2011]											
YSW STP - GL F - H & DN Tanks																						

Start date	05/05/10		Early bar
Finish date	10/11/14		Progress bar
Data date	30/09/11		Critical bar
Run date	16/10/11		Summary bar
Page number	2A		Progress point
			Critical point
			Summary point
			Start milestone point
			Finish milestone point

Leader Civil Engineering Corp. Ltd.
 Contract No. DC/2009/13
Construction of Sewage Treatment Works at YSW & SKW
3-month Rolling Programme (Oct 2011 - Dec 2011)

(Marked on 30 Sep 2011)

Date	Revision	Checked	Approved
30/09/10	Revision 0	StL	VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2011													
											JUL	AUG	SEP	OCT	NOV	DEC	2012							
												JAN	FEB											
YSW0650	ELS & Excavation for DN Tanks	70	100	21/08/10 A	14/10/10 A	21/08/10 A	14/10/10 A		YSW0035, YSW0422	YSW0660														
YSW0660	Sub-structure construction (DN Tanks)	40	100	15/10/10 A	31/12/10 A	15/10/10 A	31/12/10 A		YSW0650	YSW0670														
YSW0670	Backfill & Remove ELS (DN Tanks)	32	100	08/01/11 A	15/03/11 A	08/01/11 A	15/03/11 A		YSW0660	YSW0680														
YSW0680	Base slab construction	30	100	16/03/11 A	28/03/11 A	16/03/11 A	28/03/11 A		YSW0670	YSW0690														
YSW0690	Superstructure construction upto +10.5mPD	60	100	30/03/11 A	18/06/11 A	30/03/11 A	18/06/11 A		YSW0680	YSW0700, YSW0820														
YSW0700	Apply protective paint	20	0	30/09/11	19/10/11	27/02/11	18/03/11	-215d	YSW0690	YSW0710														
YSW0710	Water test	14	0	20/10/11	02/11/11	19/03/11	01/04/11	-215d	YSW0700	E&M0510, E&M0630, E&M0640														
YSW0820	ABWF installation	34	0	30/09/11	02/11/11	27/02/11	01/04/11	-215d	YSW0690	E&M0510, E&M0630, E&M0640														
YSW STP - GL A - F																								
YSW0730	Completion of HDD	0	0	08/12/11		01/07/11		-160d	YSW0360	YSW0740														
YSW0740	ELS & excavate for Outfall Shaft	22	0	08/12/11	30/12/11	01/07/11	22/07/11	-160d	YSW0730	YSW0750														
YSW0750	Sub-structure construction (outfall shaft)	22	0	30/12/11	21/01/12	23/07/11	13/08/11	-160d	YSW0740	YSW0760														
YSW0760	Backfill & remove ELS (outfall shaft)	24	0	21/01/12	14/02/12	14/08/11	06/09/11	-160d	YSW0750	YSW0770, YSW1470														
Fire Hose Reel / Sprinkler Pump Rm																								
YSW0840	ELS & excavate to formation (+0 mPD approx)	30	0	04/10/11	03/11/11	01/09/11	30/09/11	-34d	YSW0035, YSW0422, YSW0640	YSW0860														
YSW0860	Sub-structure construction	30	0	03/11/11	03/12/11	01/10/11	30/10/11	-34d	YSW0840	YSW0880														
YSW0880	Backfill & remove ELS	30	0	03/12/11	02/01/12	31/10/11	29/11/11	-34d	YSW0860	YSW0890														
YSW0890	Construction Ground Slab at +5.2mPD	30	0	02/01/12	01/02/12	30/11/11	29/12/11	-34d	YSW0880	YSW0900, YSW0930														
YSW0900	Superstructure construction upto +8.2mPD	35	0	01/02/12	07/03/12	30/12/11	02/02/12	-34d	YSW0890	YSW0910, YSW0925														
YSW0930	Construction of Gurad House	60	0	01/02/12	01/04/12	06/05/12	04/07/12	95d	YSW0890	E&M0690, KD0040														
Road, Drain, Cable Draw Pits & Ducting																								
YSW0152	Temporary Diversion of Drainage	92	100	02/12/10 A	09/05/11 A	02/12/10 A	09/05/11 A		YSW0035	YSW0153														
YSW0153	Removal of Ex U-Channel where clash with B. Wall	50	100	20/11/10 A	20/04/11 A	20/11/10 A	20/04/11 A		YSW0152	YSW0154														
YSW0154	Construction of Subsoil Drain	90	30	24/08/11 A	20/12/11	24/08/11 A	05/01/12	17d	YSW0153, YSW0165	YSW0155														
YSW0155	RC Concrete Barrier (above Ground Level)	120	0	20/12/11	18/04/12	06/01/12	04/05/12	17d	YSW0154, YSW0165	YSW1640, YSW1660														
Submarine Outfall																								
YSW0180	Coordination of HEC	53	100	17/05/10 A	08/07/10 A	17/05/10 A	08/07/10 A			YSW0350														
YSW0200	Submission and Approval of Ecologist	60	100	17/05/10 A	15/07/10 A	17/05/10 A	15/07/10 A			YSW0210														
YSW0210	Ecology Survey	90	100	16/07/10 A	11/02/11 A	16/07/10 A	11/02/11 A		YSW0200	YSW0350														
YSW0220	Submission and Approval of In. Hydro Survey	90	100	17/05/10 A	27/08/10 A	17/05/10 A	27/08/10 A			YSW0230														
YSW0230	Hydrographical Survey (YSW)	45	100	31/08/10 A	31/01/11 A	31/08/10 A	31/01/11 A		YSW0220	YSW0350														
YSW0240	Material Submission, Approval of HDPE pipe	93	100	17/05/10 A	31/03/11 A	17/05/10 A	31/03/11 A			YSW0250														
YSW0250	Submit and Approval of Method Statement for HDD	120	100	24/09/10 A	25/03/11 A	24/09/10 A	25/03/11 A		YSW0240	YSW0260, YSW0270, YSW0340														
YSW0260	Submission of HDD Method Statement to HEC	14	100	26/01/11 A	24/03/11 A	26/01/11 A	24/03/11 A		YSW0250	YSW0320, YSW0340														
YSW0270	Additional G.I. Boreholes (YSW)	62	100	06/11/10 A	19/01/11 A	06/11/10 A	19/01/11 A		YSW0250	YSW0280, YSW0320														
YSW0280	Submission of propose alignment to the Eng	14	100	02/02/11 A	04/03/11 A	02/02/11 A	04/03/11 A		YSW0270	YSW0290, YSW0310, YSW0340														
YSW0290	Submission of Marine Notice	60	100	31/01/11 A	29/03/11 A	31/01/11 A	29/03/11 A		YSW0280	YSW0350														
YSW0310	Construction of Entry Pit and Preparation Work	39	100	15/03/11 A	31/03/11 A	15/03/11 A	31/03/11 A		YSW0280	YSW0320, YSW0330														
YSW0320	Prepare of HDD Drill Rig Set-up (YSW)	39	100	02/04/11 A	28/04/11 A	02/04/11 A	28/04/11 A		YSW0260, YSW0270, YSW0310	YSW0330, YSW0350														
YSW0330	Establishment of HDD plant & equipment	14	100	09/04/11 A	14/04/11 A	09/04/11 A	14/04/11 A		YSW0310, YSW0320	YSW0340														
YSW0340	Setting up at drillhole location	7	100	19/04/11 A	28/04/11 A	19/04/11 A	28/04/11 A		YSW0250, YSW0260, YSW0280,	YSW0350														
YSW0350	Drill pilot hole and reaming hole - NS400 - 530m	123	55	29/04/11 A	24/11/11	29/04/11 A	16/06/11	-160d	YSW0040, YSW0180, YSW0210,	YSW0360														
YSW0360	Installation of NS400 HDPE 530m	14	0	24/11/11	08/12/11	17/06/11	30/06/11	-160d	YSW0350	SKW1181, YSW0365, YSW0370,														
YSW0365	Set up of Silt Curtain as per EP	30	0	08/12/11	07/01/12	20/07/13	18/08/13	590d	YSW0360	YSW0370														
YSW0370	Dredging of Marine Deposit for Diffuser (YSW)	60	0	07/01/12	07/03/12	19/08/13	17/10/13	590d	YSW0360, YSW0365	YSW0380														
E&M Works - YSW STP																								
E&M0360	Delivery of MBR Memb. Mod. (MBR Tk4)	137	100	18/06/11 A	21/06/11 A	18/06/11 A	21/06/11 A		E&M0160	E&M0510														
E&M0370	Delivery of MBR Membrane Modules - 2nd Shipment	150	0	30/09/11	26/02/12	29/09/11	25/02/12	-1d	E&M0160	E&M0520														
E&M0380	Delivery of Grit Removal Equipment	180	0	18/11/11	16/05/12	29/05/11	24/11/11	-174d	E&M0150	E&M0530														
E&M0390	Delivery of Coarse Screens	162	0	19/10/11	29/03/12	02/04/11	10/09/11	-201d	E&M0110	E&M0540														
E&M0400	Delivery of Fine Screens	180	0	18/11/11	16/05/12	29/05/11	24/11/11	-174d	E&M0120	E&M0550														
E&M0410	Delivery of Pumps	162	0	18/11/11	28/04/12	02/04/11	10/09/11	-231d	E&M0130	E&M0560														
E&M0420	Delivery of Submersible Mixers	162	0	19/10/11	29/03/12	01/07/11	09/12/11	-111d	E&M0140	E&M0570														
E&M0440	Delivery of Sludge Dewatering Equipment	180	0	18/11/11	16/05/12	02/04/11	28/09/11	-231d	E&M0170	E&M0580														
E&M0450	Delivery of Valves, Pipes & Fittings	180	0	18/11/11	16/05/12	28/07/11	23/01/12	-114d	E&M0180	E&M0590, E&M0605														
E&M0460	Delivery of Penstocks	180	0	18/11/11	16/05/12	11/07/11	06/01/12	-131d	E&M0190	E&M0600														

Start date 05/05/10
 Finish date 10/11/14
 Data date 30/09/11
 Run date 16/10/11
 Page number 3A
 Primavera Systems, Inc.

- Early bar
- Progress bar
- Critical bar
- Summary bar
- Progress point
- Critical point
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(Marked on 30 Sep 2011)

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E&M0470	Delivery of Instruments	180	0	18/11/11	16/05/12	08/11/11	05/05/12	-11d	E&M0200	E&M0610								
E&M0480	Delivery of MCC LVSB	177	0	18/11/11	13/05/12	02/04/11	25/09/11	-231d	E&M0210	E&M0620								
E&M0490	Delivery of BS Equipment	180	0	29/11/11	26/05/12	30/08/11	25/02/12	-91d	E&M0220	E&M0630								
E&M0500	Delivery FS Equipment	180	0	29/11/11	26/05/12	27/09/11	24/03/12	-63d	E&M0230	E&M0330, E&M0640								
E&M0510	Install Membrane Modules in MBR Tank no. 4	90	0	03/11/11	31/01/12	02/04/11	30/06/11	-215d	E&M0360, YSW0710, YSW0820	KD0115								
Sok Kwu Wan																		
Preliminary																		
SKW0250	Approval of Environmental Team	16	100	17/05/10 A	01/06/10 A	17/05/10 A	01/06/10 A		KD0020	SKW0260								
SKW0260	Baseline monitoring (Air & Noise)	14	100	02/06/10 A	15/06/10 A	02/06/10 A	15/06/10 A		SKW0250	SKW0242, SKW0265, SKW0592,								
SKW0265	Baseline Monitoring Submission (A & N)	14	100	16/06/10 A	08/07/10 A	16/06/10 A	08/07/10 A		SKW0260	SKW0242, SKW0592, SKW0681,								
Section W3 - Footpath Diversion in Portion G																		
Civil & Geotechnical Works																		
SKW0240	Site Clearance	21	100	17/05/10 A	06/06/10 A	17/05/10 A	06/06/10 A			SKW0241								
SKW0241	Initial Survey	9	100	07/06/10 A	15/06/10 A	07/06/10 A	15/06/10 A		SKW0240	SKW0242								
SKW0242	Excavation to formation for Bay 1 to 5	50	100	16/06/10 A	11/08/10 A	16/06/10 A	11/08/10 A		SKW0241, SKW0260, SKW0265	SKW0251								
SKW0251	Drill & Install Dowel Bar for Bay 1 & 3	20	100	02/08/10 A	01/09/10 A	02/08/10 A	01/09/10 A		SKW0242	SKW0301								
SKW0301	Erect Formwork mesh & weephole for Bay 1 & 3	12	100	02/09/10 A	15/09/10 A	02/09/10 A	15/09/10 A		SKW0251	SKW0311								
SKW0311	Concreting for Bay 1 & 3	12	100	19/06/10 A	29/09/10 A	19/06/10 A	29/09/10 A		SKW0301	SKW0321								
SKW0321	Drilling & install Dowel Bar for Bay 2 & 5	6	100	30/09/10 A	06/10/10 A	30/09/10 A	06/10/10 A		SKW0311	SKW0331								
SKW0331	Erect Formwork mesh & weephole for Bay 2 & 5	7	100	07/10/10 A	13/10/10 A	07/10/10 A	13/10/10 A		SKW0321	SKW0341								
SKW0341	Concreting for Bay 2 & 5	7	100	14/10/10 A	20/10/10 A	14/10/10 A	20/10/10 A		SKW0331	SKW0351								
SKW0351	Excavation to formation for Bay 6 to 9	20	100	21/10/10 A	10/11/10 A	21/10/10 A	10/11/10 A		SKW0341	SKW0361								
SKW0361	Drill & install dowel Bar for Bay 4 & 7	6	100	11/11/10 A	16/11/10 A	11/11/10 A	16/11/10 A		SKW0351	SKW0371								
SKW0371	Erect formwork mesh & weephole for Bay 4 & 7	7	100	11/11/10 A	16/11/10 A	11/11/10 A	16/11/10 A		SKW0361	SKW0381								
SKW0381	Concreting for Bay 4 & 7	7	100	17/11/10 A	23/11/10 A	17/11/10 A	23/11/10 A		SKW0371	SKW0391								
SKW0391	Drill & install dowel Bar for Bay 6 & 9	3	100	24/11/10 A	27/11/10 A	24/11/10 A	27/11/10 A		SKW0381	SKW0401								
SKW0401	Erect formwork mesh & weephole for Bay 6 & 9	7	100	28/11/10 A	05/12/10 A	28/11/10 A	05/12/10 A		SKW0391	SKW0411								
SKW0411	Concreting for Bay 6 & 9	7	100	06/12/10 A	12/12/10 A	06/12/10 A	12/12/10 A		SKW0401	SKW0421								
SKW0421	Drill & install dowel Bar for Bay 8	1	100	13/12/10 A	13/12/10 A	13/12/10 A	13/12/10 A		SKW0411	SKW0431								
SKW0431	Erect formwork mesh & weephole for Bay 8	4	100	15/12/10 A	21/12/10 A	15/12/10 A	21/12/10 A		SKW0421	SKW0441								
SKW0441	Concreting for Bay 8	4	100	22/12/10 A	27/12/10 A	22/12/10 A	27/12/10 A		SKW0431	SKW0461								
SKW0461	Excavation for no fine concrete Bay (1-9)	3	100	26/07/11 A	28/07/11 A	26/07/11 A	28/07/11 A		SKW0441	SKW0471								
SKW0471	Concreting for no-fine concrete	7	100	01/02/11 A	07/02/11 A	01/02/11 A	07/02/11 A		SKW0461	SKW0481								
SKW0481	Installation of Wall tie & stone facing	14	100	08/02/11 A	11/02/11 A	08/02/11 A	11/02/11 A		SKW0471	SKW0491								
SKW0491	Construction of Gabion Wall	7	100	08/02/11 A	14/02/11 A	08/02/11 A	14/02/11 A		SKW0481	SKW0501								
SKW0501	Place Geotextile	3	100	08/01/11 A	28/02/11 A	08/01/11 A	28/02/11 A		SKW0491	SKW0511								
SKW0511	Backfill behind the retaining wall to approx +4	7	100	11/01/11 A	28/02/11 A	11/01/11 A	28/02/11 A		SKW0501	SKW0521								
SKW0521	Watermain Laying and Diversion	14	100	01/04/11 A	10/05/11 A	01/04/11 A	10/05/11 A		SKW0511	SKW0531								
SKW0531	Concreting for Pavement	7	100	02/06/11 A	30/07/11 A	02/06/11 A	30/07/11 A		SKW0521	SKW0541								
SKW0541	Installation of Flower Pot	7	0	30/09/11	06/10/11	23/02/11	02/03/11	-219d	SKW0531	SKW0551								
SKW0551	Permanent Footpath Diversion	1	100	30/07/11 A	30/07/11 A	30/07/11 A	30/07/11 A		SKW0541	KD0050, SKW1261, SKW1311								
Section W4 - Slope Works in Portions H & I																		
Geotechnical Works																		
SKW0588	Construct scaffolding access	30	100	15/06/10 A	14/07/10 A	15/06/10 A	14/07/10 A		KD0020	SKW0590								
SKW0590	Site Clearance for Slope	100	100	15/07/10 A	22/10/10 A	15/07/10 A	22/10/10 A		SKW0588	SKW0591								
SKW0591	Initial Survey for Slope	28	100	21/09/10 A	18/10/10 A	21/09/10 A	18/10/10 A		SKW0590	SKW0592								
SKW0592	Temporary Rockfall fence at ex Footpath	43	100	19/10/10 A	06/01/11 A	19/10/10 A	06/01/11 A		SKW0260, SKW0265, SKW0591	SKW05931								
SKW05931	Construction of Haul Road (To +21mPD)	50	100	28/11/10 A	30/12/10 A	28/11/10 A	30/12/10 A		SKW0592	SKW05932								
SKW05932	Construction of Haul Road (To +42mPD)	60	100	15/12/10 A	31/01/11 A	15/12/10 A	31/01/11 A		SKW05931	SKW05933, SKW05940, SKW0595								
SKW05933	Excavation of Rock Berm (+50mPD to +42.5mPD)	30	100	01/03/11 A	03/05/11 A	01/03/11 A	03/05/11 A		SKW05932	SKW05934								
SKW05934	Excavation of Rock Berm (+42.5mPD to +35mPD)	30	100	04/05/11 A	31/05/11 A	04/05/11 A	31/05/11 A		SKW05933	SKW05935, SKW05941								
SKW05935	Excavation of Rock Berm (+35mPD to +27.5mPD)	30	100	02/07/11 A	30/09/11 A	02/07/11 A	30/09/11 A		SKW05934	SKW05936								
SKW05936	Excavation of Rock Berm (+27.5mPD to +20mPD)	30	40	15/09/11 A	17/10/11	15/09/11 A	20/04/11	-180d	SKW05935	SKW05937, SKW05942								
SKW05937	Excavation of Rock Berm (+20mPD to +12.5mPD)	30	0	18/10/11	16/11/11	21/04/11	20/05/11	-180d	SKW05936	SKW05938								
SKW05938	Excavation of Rock Berm (+12.5mPD to +5mPD)	28	0	17/11/11	14/12/11	21/05/11	17/06/11	-180d	SKW05937	SKW05943, SKW1311, SKW1371								

Start date	05/05/10		Early bar
Finish date	10/11/14		Progress bar
Data date	30/09/11		Critical bar
Run date	16/10/11		Summary bar
Page number	4A		Progress point
			Critical point
			Summary point
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SKW05940	Slope Drainage & Misc. at 50mPD	60	100	01/04/11 A	03/05/11 A	01/04/11 A	03/05/11 A		SKW05932	SKW05941	[Gantt bar: 01/04/11 to 03/05/11]											
SKW05941	Slope Drainage & Misc. (+50 to +35mPD)	60	80	04/05/11 A	11/10/11	04/05/11 A	20/04/11	-174d	SKW05934, SKW05940	SKW05942	[Gantt bar: 04/05/11 to 11/10/11]											
SKW05942	Slope Drainage & Misc. (+35 to +20mPD)	58	0	18/10/11	14/12/11	21/04/11	17/06/11	-180d	SKW05936, SKW05941	SKW05943	[Gantt bar: 18/10/11 to 14/12/11]											
SKW05943	Slope Drainage & Misc. (+20 to +5mPD)	59	0	15/12/11	11/02/12	18/06/11	15/08/11	-180d	SKW05938, SKW05942	KD0060	[Gantt bar: 15/12/11 to 11/02/12]											
SKW0595	Rock Meshing & Rockfall Fence	260	0	30/09/11	15/06/12	29/11/10	15/08/11	-305d	SKW05932	KD0060	[Gantt bar: 30/09/11 to 15/06/12]											
Section W5 - P.S. No. 1 in Portion D																						
Civil & Geotechnical Works																						
SKW0651	Site Clearance	7	100	17/05/10 A	23/05/10 A	17/05/10 A	23/05/10 A		KD0020	SKW0652	[Gantt bar: 17/05/10 to 23/05/10]											
SKW0652	Initial Survey	7	100	24/05/10 A	30/05/10 A	24/05/10 A	30/05/10 A		SKW0651	SKW0661, SKW0681	[Gantt bar: 24/05/10 to 30/05/10]											
SKW0661	Transplantation for uncommon vegetation	30	100	31/05/10 A	29/06/10 A	31/05/10 A	29/06/10 A		SKW0652	SKW0681	[Gantt bar: 31/05/10 to 29/06/10]											
SKW0681	Excavate to lower the working platform to +3mPD	49	100	30/06/10 A	17/08/10 A	30/06/10 A	17/08/10 A		SKW0260, SKW0265, SKW0652	SKW0691	[Gantt bar: 30/06/10 to 17/08/10]											
SKW0691	ELS to +2.2mPD	40	100	18/08/10 A	26/09/10 A	18/08/10 A	26/09/10 A		SKW0681	SKW0721	[Gantt bar: 18/08/10 to 26/09/10]											
SKW0721	Excavate to formation	92	100	17/09/10 A	31/03/11 A	17/09/10 A	31/03/11 A		SKW0691	SKW0741	[Gantt bar: 17/09/10 to 31/03/11]											
Structural Works																						
SKW0741	Base Slab (BSD2 & BSD3)	15	100	20/04/11 A	28/07/11 A	20/04/11 A	28/07/11 A		SKW0721	SKW0751	[Gantt bar: 20/04/11 to 28/07/11]											
SKW0751	Wall & Column (CA1-3,CB1-3,CC1-3, CD1-2) Approx.	14	100	01/09/11 A	30/09/11 A	01/09/11 A	30/09/11 A		SKW0741	SKW0761	[Gantt bar: 01/09/11 to 30/09/11]											
SKW0761	Base Slab (BSD1) to +3.98	14	100	01/09/11 A	30/09/11 A	01/09/11 A	30/09/11 A		SKW0751	SKW0771	[Gantt bar: 01/09/11 to 30/09/11]											
SKW0771	Wall & Column (CA1-3,CB1-3,CC1-3, CD1-2) to +6.3	14	0	30/09/11	13/10/11	27/01/11	09/02/11	-246d	SKW0761	SKW0781	[Gantt bar: 30/09/11 to 13/10/11]											
SKW0781	Base Slab (GSB1-3,GSC1-5,GSD1-2)	14	0	13/10/11	26/10/11	09/02/11	22/02/11	-246d	SKW0771	SKW0791	[Gantt bar: 13/10/11 to 26/10/11]											
SKW0791	Base Slab (GSE1 & GSF1)	14	0	26/10/11	08/11/11	22/02/11	07/03/11	-246d	SKW0781	SKW0801	[Gantt bar: 26/10/11 to 08/11/11]											
SKW0801	Wall & Column (CE1-3, CF1-3)	14	0	08/11/11	21/11/11	07/03/11	20/03/11	-246d	SKW0791	SKW0811	[Gantt bar: 08/11/11 to 21/11/11]											
SKW0811	Ground Beam (GB1-1,2 GB2-1,2 GB3-1, GBA-1, GBB1-4)	14	0	22/11/11	05/12/11	21/03/11	03/04/11	-246d	SKW0801	SKW0821	[Gantt bar: 22/11/11 to 05/12/11]											
SKW0821	Wall & Column (CA1-3,CB1-3,CC1-3, CD1-2) to +10.	14	0	06/12/11	19/12/11	04/04/11	17/04/11	-246d	SKW0811	SKW0831	[Gantt bar: 06/12/11 to 19/12/11]											
SKW0831	Roof Beams & Parapet	14	0	20/12/11	02/01/12	18/04/11	01/05/11	-246d	SKW0821	E&M1101, E&M1102, E&M1103	[Gantt bar: 20/12/11 to 02/01/12]											
SKW0841	ABWF installation	45	0	20/12/11	02/02/12	18/04/11	01/06/11	-246d	SKW0831	E&M1101, E&M1102, E&M1103	[Gantt bar: 20/12/11 to 02/02/12]											
SKW0861	300mm U-channel & 675mm Step Channel	168	0	03/01/12	18/06/12	01/06/11	15/11/11	-216d	SKW0831, SKW0841	KD0070	[Gantt bar: 03/01/12 to 18/06/12]											
Section W6 - Sewer and PS.No.2 in Portions E&H																						
Civil & Geotechnical Works																						
SKW0881	Site Clearance	7	100	17/05/10 A	23/05/10 A	17/05/10 A	23/05/10 A		KD0020	SKW0891	[Gantt bar: 17/05/10 to 23/05/10]											
SKW0891	Plant mobilization	7	100	17/05/10 A	23/05/10 A	17/05/10 A	23/05/10 A		SKW0881	SKW0892	[Gantt bar: 17/05/10 to 23/05/10]											
SKW0892	Initial Survey	30	100	24/05/10 A	22/06/10 A	24/05/10 A	22/06/10 A		SKW0891	SKW0901	[Gantt bar: 24/05/10 to 22/06/10]											
SKW0901	Tree Transplantation	30	100	23/06/10 A	22/07/10 A	23/06/10 A	22/07/10 A		SKW0892	SKW0921	[Gantt bar: 23/06/10 to 22/07/10]											
SKW0921	Cut Slope & U-Channel	14	100	23/07/10 A	31/01/11 A	23/07/10 A	31/01/11 A		SKW0260, SKW0265, SKW0901	SKW0931, SKW0951	[Gantt bar: 23/07/10 to 31/01/11]											
SKW0931	Hoarding & Fencing	14	100	15/09/10 A	07/10/10 A	15/09/10 A	07/10/10 A		SKW0921	SKW0951	[Gantt bar: 15/09/10 to 07/10/10]											
SKW0951	Excavate to formation	106	100	04/10/10 A	13/06/11 A	04/10/10 A	13/06/11 A		SKW0921, SKW0931	SKW0961, SKW0971	[Gantt bar: 04/10/10 to 13/06/11]											
SKW0961	Mass Conc. Retaining Wall	257	0	30/09/11	12/06/12	04/03/11	15/11/11	-210d	SKW0951	KD0080	[Gantt bar: 30/09/11 to 12/06/12]											
SKW1491	Concrete Trough (ChA0+45 - ChA1+75)	180	100	01/03/11 A	31/08/11 A	01/03/11 A	31/08/11 A		PRE0100	SKW1511	[Gantt bar: 01/03/11 to 31/08/11]											
SKW1511	Twin DN150 DI Rising Main (ChA0+45 - ChA5+79)	150	70	16/05/11 A	13/11/11	16/05/11 A	09/08/11	-96d	SKW1491	SKW1531	[Gantt bar: 16/05/11 to 13/11/11]											
SKW1531	Extent village sewers S163.1 & S164.1	34	0	14/11/11	17/12/11	10/08/11	12/09/11	-96d	SKW1511	SKW1581	[Gantt bar: 14/11/11 to 17/12/11]											
SKW1581	Construct Manhole no. S163 & S164	34	0	18/12/11	20/01/12	13/09/11	16/10/11	-96d	SKW1531	KD0080, SKW15112	[Gantt bar: 18/12/11 to 20/01/12]											
Structural Works																						
SKW0971	Base Slab to -3.2mPD	14	100	02/05/11 A	31/08/11 A	02/05/11 A	31/08/11 A		SKW0951	SKW0981	[Gantt bar: 02/05/11 to 31/08/11]											
SKW0981	Basement Beam (BBB-1,BBC-1,BBD-1)	14	20	01/09/11 A	11/10/11	01/09/11 A	31/12/10	-283d	SKW0971	SKW0991	[Gantt bar: 01/09/11 to 11/10/11]											
SKW0991	Wall & Column to +1.5mPD	14	0	11/10/11	25/10/11	01/01/11	14/01/11	-283d	SKW0981	SKW1001	[Gantt bar: 11/10/11 to 25/10/11]											
SKW1001	Base Slab (BSC-4) to +3mPD	14	0	25/10/11	08/11/11	15/01/11	28/01/11	-283d	SKW0991	SKW1011	[Gantt bar: 25/10/11 to 08/11/11]											
SKW1011	Wall & Column to +5.35mPD	14	0	08/11/11	22/11/11	29/01/11	11/02/11	-283d	SKW1001	SKW1021	[Gantt bar: 08/11/11 to 22/11/11]											
SKW1021	Ground Slab	20	0	22/11/11	12/12/11	12/02/11	03/03/11	-283d	SKW1011	SKW1031	[Gantt bar: 22/11/11 to 12/12/11]											
SKW1031	Ground Beam	14	0	12/12/11	26/12/11	04/03/11	17/03/11	-283d	SKW1021	SKW1041	[Gantt bar: 12/12/11 to 26/12/11]											
SKW1041	Wall & Column to +9.35mPD	14	0	26/12/11	09/01/12	18/03/11	31/03/11	-283d	SKW1031	SKW1051	[Gantt bar: 26/12/11 to 09/01/12]											
SKW1051	Roof Beams & Parapet	14	0	09/01/12	23/01/12	01/04/11	14/04/11	-283d	SKW1041	E&M2101, E&M2102, E&M2103	[Gantt bar: 09/01/12 to 23/01/12]											
SKW1061	ABWF installation (wet tray/dry tray)	90	0	09/01/12	08/04/12	18/04/11	16/07/11	-266d	SKW1051	E&M2101, E&M2102, E&M2103	[Gantt bar: 09/01/12 to 08/04/12]											
SKW1081	375mm U-channel with catchpits	215	0	23/01/12	25/08/12	15/04/11	15/11/11	-283d	SKW1051	KD0080	[Gantt bar: 23/01/12 to 25/08/12]											
E&M Works (PS2)																						
Submission & Delivery																						
E&M2001	Submission of Pumps	198	95	17/05/10 A	09/10/11	17/05/10 A	02/02/11	-249d	KD0020	E&M2011	[Gantt bar: 17/05/10 to 09/10/11]											
E&M2002	Submission of Gen-Set	198	95	17/05/10 A	09/10/11	17/05/10 A	02/02/11	-249d		E&M2012	[Gantt bar: 17/05/10 to 09/10/11]											

Start date	05/05/10	■ Early bar
Finish date	10/11/14	■ Progress bar
Data date	30/09/11	■ Critical bar
Run date	16/10/11	■ Summary bar
Page number	5A	▲ Progress point
		▲ Critical point
		▲ Summary point
		▲ Start milestone point
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Leader Civil Engineering Corp. Ltd.
Contract No. DC/2009/13
Construction of Sewage Treatment Works at YSW & SKW
3-month Rolling Programme (Oct 2011 - Dec 2011)

(Marked on 30 Sep 2011)

Date	Revision	Checked	Approved
30/09/10	Revision 0	StL	VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2011											
											JUL	AUG	SEP	OCT	NOV	DEC	2012	JAN	FEB			
E&M2003	Submission of DeO System	198	95	17/05/10 A	09/10/11	17/05/10 A	02/02/11	-249d		E&M2013	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2004	Submission of LV SB & MCC	271	95	17/05/10 A	13/10/11	17/05/10 A	13/02/11	-242d		E&M2014	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2005	Submission of Instrumentation	243	95	17/05/10 A	12/10/11	17/05/10 A	31/01/11	-253d		E&M2015	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2006	Submission of FS System	243	95	17/05/10 A	12/10/11	17/05/10 A	14/01/11	-270d		E&M2016	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2007	Submission of BS System	243	95	17/05/10 A	12/10/11	17/05/10 A	14/01/11	-270d		E&M2017	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2011	Delivery of Pumps	150	0	09/10/11	07/03/12	03/02/11	02/07/11	-249d	E&M2001	E&M2101	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2012	Delivery of Gen-Set	150	0	09/10/11	07/03/12	03/02/11	02/07/11	-249d	E&M2002	E&M2102	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2013	Delivery of DeO System	150	0	09/10/11	07/03/12	03/02/11	02/07/11	-249d	E&M2003	E&M2103	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2014	Delivery of LV SB & MCC	150	0	30/09/11	26/02/12	03/12/10	01/05/11	-301d	E&M2004	E&M2104	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2015	Delivery of Instrumentation	90	0	12/10/11	10/01/12	01/02/11	01/05/11	-253d	E&M2005	E&M2105	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2016	Delivery of FS Equipment	107	0	12/10/11	27/01/12	15/01/11	01/05/11	-270d	E&M2006	E&M0350, E&M2106	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2017	Delivery of BS Equipment	107	0	12/10/11	27/01/12	15/01/11	01/05/11	-270d	E&M2007	E&M2107	[Gantt bar: Oct 2011 - Jan 2012]											
Installation, T&C																						
E&M2105	Install Instrumentation	55	0	23/01/12	18/03/12	02/05/11	25/06/11	-266d	E&M2015, SKW1051, SKW1061	E&M2140	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2106	Install FS Equipment	55	0	27/01/12	22/03/12	02/05/11	25/06/11	-270d	E&M2016, SKW1051, SKW1061	E&M2140	[Gantt bar: Oct 2011 - Jan 2012]											
E&M2107	Install BS Equipment	55	0	27/01/12	22/03/12	02/05/11	25/06/11	-270d	E&M2017, SKW1051, SKW1061	E&M2110, E&M2140	[Gantt bar: Oct 2011 - Jan 2012]											
Section W7 - SKW STW, Sewer and Submarine Outfall																						
Submarine Outfall																						
SKW1130	Approval of IHS Consultant	180	100	17/05/10 A	27/08/10 A	17/05/10 A	27/08/10 A			SKW1131	[Gantt bar: Oct 2011 - Jan 2012]											
SKW1131	Hydrographical Survey (SKW)	300	100	01/02/11 A	28/02/11 A	01/02/11 A	28/02/11 A		KD0020, SKW1130	SKW1231	[Gantt bar: Oct 2011 - Jan 2012]											
SKW1141	Baseline Monitoring (Water)	213	100	27/07/10 A	31/12/10 A	27/07/10 A	31/12/10 A		SKW0260, SKW0265	SKW1151	[Gantt bar: Oct 2011 - Jan 2012]											
SKW1151	Set up Temporary Working Platform	185	100	15/06/11 A	30/09/11 A	15/06/11 A	30/09/11 A		PRE0090, SKW1141	SKW1171	[Gantt bar: Oct 2011 - Jan 2012]											
SKW1171	ELS for HDD Set-up (SKW)	120	100	01/09/11 A	30/09/11 A	01/09/11 A	30/09/11 A		SKW1151	SKW1181	[Gantt bar: Oct 2011 - Jan 2012]											
SKW STW																						
Submission & Delivery (E&M)																						
E&M3010	Delivery of MBR M.M. - 1st shipment for Temp STP	150	0	30/09/11	26/02/12	10/12/13	09/05/14	803d	E&M0160	E&M3170	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3030	Delivery of Grit Removal Equipment	180	0	18/11/11	16/05/12	31/08/11	26/02/12	-80d	E&M0150	E&M3190	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3060	Delivery of Fine Screens	136	0	18/11/11	02/04/12	15/08/11	28/12/11	-96d	E&M0120	E&M3210	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3070	Delivery of Pumps	136	0	18/11/11	02/04/12	15/08/11	28/12/11	-96d	E&M0130	E&M3220	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3080	Delivery of Submersible Mixers	180	0	19/10/11	16/04/12	15/09/11	12/03/12	-35d	E&M0140	E&M3230	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3090	Delivery of Sludge Dewatering Equipment	210	0	18/11/11	15/06/12	18/07/11	12/02/12	-124d	E&M0170	E&M3240	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3100	Delivery of Valves, Pipes & Fittings	180	0	18/11/11	16/05/12	23/09/13	22/03/14	675d	E&M0180	E&M3250	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3110	Delivery of Penstocks	180	0	18/11/11	16/05/12	06/10/13	04/04/14	688d	E&M0190	E&M3260	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3130	Delivery of Instruments	180	0	18/11/11	16/05/12	20/12/13	18/06/14	763d	E&M0200	E&M3270	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3140	Delivery of MCC LVSB	180	0	18/11/11	16/05/12	09/05/11	04/11/11	-194d	E&M0210	E&M3261	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3150	Delivery of BS Equipment	180	0	29/11/11	26/05/12	08/10/13	06/04/14	680d	E&M0220	E&M3291	[Gantt bar: Oct 2011 - Jan 2012]											
E&M3160	Delivery of FS Equipment	180	0	29/11/11	26/05/12	14/01/12	11/07/12	46d	E&M0230	E&M0340, E&M3300	[Gantt bar: Oct 2011 - Jan 2012]											
Construction of Grid A-G																						
SKW1261	Excavate for SKW STW Structure (Grid A-G)	164	10	30/07/11 A	02/03/12	30/07/11 A	27/07/11	-219d	SKW0551	SKW1271, SKW1371	[Gantt bar: Oct 2011 - Jan 2012]											
Construction of Grid G-N																						
SKW1311	Excavate for SKW STW Structure (Grid G-N)	36	0	15/12/11	19/01/12	29/06/11	03/08/11	-169d	SKW0551, SKW0598	SKW1321	[Gantt bar: Oct 2011 - Jan 2012]											
Rising Main																						
SKW1481	Subm, Approval & Delivery of DI pipes	120	100	17/05/10 A	28/02/11 A	17/05/10 A	28/02/11 A		KD0020	SKW1501	[Gantt bar: Oct 2011 - Jan 2012]											
SKW1501	Concrete Trough (ChB0+00 - ChB1+20)	300	100	15/08/11 A	30/09/11 A	15/08/11 A	30/09/11 A		PRE0100, SKW1481	SKW1521	[Gantt bar: Oct 2011 - Jan 2012]											
SKW1521	Twin DN150 DI Rising Main (ChB0+00 - ChA4+55)	250	50	15/08/11 A	01/02/12	15/08/11 A	16/03/12	44d	SKW1501	SKW1541	[Gantt bar: Oct 2011 - Jan 2012]											
Section W8 - Landscape Softworks in All Portions																						
SKW1591	Tree Survey	21	100	17/05/10 A	06/06/10 A	17/05/10 A	06/06/10 A		KD0020	SKW1621	[Gantt bar: Oct 2011 - Jan 2012]											
SKW1611	Preservation & Protection of Trees	822	62	17/05/10 A	07/08/12	17/05/10 A	07/08/12	0	KD0020	KD0100, SKW1631	[Gantt bar: Oct 2011 - Jan 2012]											
SKW1621	Transplantation at SKW	60	100	07/06/10 A	05/10/10 A	07/06/10 A	05/10/10 A		SKW1591		[Gantt bar: Oct 2011 - Jan 2012]											

Start date	05/05/10		Early bar
Finish date	10/11/14		Progress bar
Data date	30/09/11		Critical bar
Run date	16/10/11		Summary bar
Page number	6A		Progress point
			Critical point
			Summary point
			Start milestone point
			Finish milestone point

Leader Civil Engineering Corp. Ltd.
 Contract No. DC/2009/13
Construction of Sewage Treatment Works at YSW & SKW
 3-month Rolling Programme (Oct 2011 - Dec 2011)

Date	Revision	Checked	Approved
30/09/10	Revision 0	StL	VC

(Marked on 30 Sep 2011)

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2011					2012		
											JUL	AUG	SEP	OCT	NOV	DEC	JAN	
+Project Key Date																		
		603	0	05/05/10 A	31/01/12	05/05/10 A	15/08/11	-169d										
+Preliminary (Civil)																		
		191	100	17/05/10 A	23/11/10 A	17/05/10 A	23/11/10 A		KD0020									
Preliminary (E&M)																		
Technical Submission																		
	+Process Design of SKWSTW & YSWSTW	518	92	17/05/10 A	16/10/11	17/05/10 A	30/06/11	-108d										
	+Hydraulic Design	509	95	17/05/10 A	07/10/11	17/05/10 A	30/06/11	-99d										
	+Equipment Submission & Approval	561	58	17/05/10 A	28/11/11	17/05/10 A	07/11/11	-21d										
	+Drawings Submission & Approval	493	84	24/06/10 A	29/10/11	24/06/10 A	30/07/11	-91d										
	+Statutory Submission	189	0	29/11/11	04/06/12	01/07/11	10/11/14	851d										
Yung Shue Wan																		
+Preliminary																		
		229	100	17/05/10 A	31/12/10 A	17/05/10 A	31/12/10 A											
+Section W 1 - Slope Works in Portion A & C																		
		534	96	17/05/10 A	01/11/11	17/05/10 A	30/09/11	-78d										
Section W 2 - YSW STW & Submarine Outfall																		
	+Civil & Structural Work	702	57	17/05/10 A	18/04/12	17/05/10 A	04/07/12	78d										
	+Submarine Outfall	660	85	17/05/10 A	07/03/12	17/05/10 A	17/10/13	590d										
	+E&M Works - YSW STP	344	6	18/06/11 A	26/05/12	02/04/11 A	05/05/12	-21d										
Sok Kwu Wan																		
+Preliminary																		
		53	100	17/05/10 A	08/07/10 A	17/05/10 A	08/07/10 A											
Section W 3 - Footpath Diversion in Portion G																		
	+Civil & Geotechnical Works	508	98	17/05/10 A	06/10/11	17/05/10 A	30/07/11	-219d										
Section W 4 - Slope Works in Portions H & I																		
	+Geotechnical Works	732	53	15/06/10 A	15/06/12	15/06/10 A	30/09/11	-305d										
Section W 5 - P.S. No. 1 in Portion D																		
	+Civil & Geotechnical Works	319	100	17/05/10 A	31/03/11 A	17/05/10 A	31/03/11 A											
	+Structural Works	426	12	20/04/11 A	18/06/12	27/01/11 A	15/11/11	-216d										
Section W 6 - Sewer and PS No.2 in Portions E&H																		
	+Civil & Geotechnical Works	758	57	17/05/10 A	12/06/12	17/05/10 A	15/11/11	-210d										
	+Structural Works	481	4	02/05/11 A	25/08/12	01/01/11 A	15/11/11	-283d										
E&M Works (PS2)																		
	+Submission & Delivery	661	61	17/05/10 A	07/03/12	17/05/10 A	02/07/11	-249d										
	+Installation, T&C	59	0	23/01/12	22/03/12	02/05/11	25/06/11	-270d										
Section W 7 - SKW STW, Sewer and Submarine Outfall																		
	+Submarine Outfall	502	100	17/05/10 A	30/09/11 A	17/05/10 A	30/09/11 A											

Start date	05/05/10		Early bar
Finish date	10/11/14		Progress bar
Data date	30/09/11		Critical bar
Run date	17/10/11		Summary bar
Page number	1A		Progress point
			Critical point
			Summary point
			Start milestone point
			Finish milestone point

Leader Civil Engineering Corp. Ltd.
 Contract No. DC/2009/13
Construction of Sewage Treatment Works at YSW & SKW
 3-month Rolling Programme (Oct 2011 - Dec 2011)
"Outline"

(Marked on 30 Sep 2011)

Date	Revision	Checked	Approved
30/09/10	Revision 0	StL	VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2011					2012		
											JUL	AUG	SEP	OCT	NOV	DEC	JAN	
SKW STW																		
	+Submission & Delivery (E&M)	260	0	30/09/11	15/06/12	09/05/11	18/06/14	733d										
	+Construction of Grid A-G	164	10	30/07/11 A	02/03/12	30/07/11 A	27/07/11	-219d										
	+Construction of Grid G-N	36	0	15/12/11	19/01/12	29/06/11	03/08/11	-169d										
	+Rising Main	626	81	17/05/10 A	01/02/12	17/05/10 A	16/03/12	44d										
	+Section W 8 - Landscape Softworks in All Portions	813	65	17/05/10 A	07/08/12	17/05/10 A	07/08/12	0										

Start date 05/05/10
 Finish date 10/11/14
 Data date 30/09/11
 Run date 17/10/11
 Page number 2A
 Primavera Systems, Inc.

- Early bar
- Progress bar
- Critical bar
- Summary bar
- ▲ Progress point
- ▼ Critical point
- Summary point
- ◆ Start milestone point
- ◆ Finish milestone point

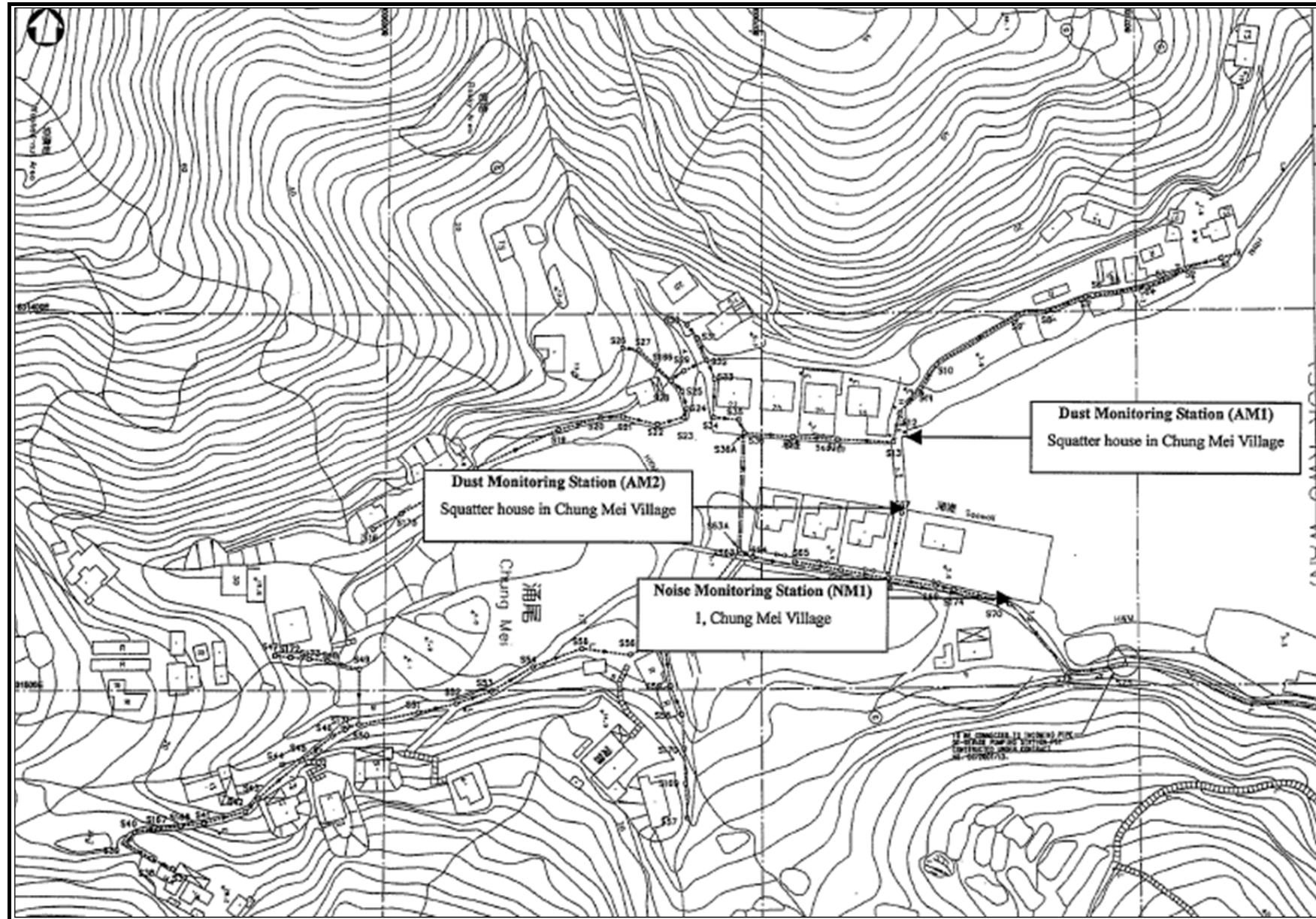
Leader Civil Engineering Corp. Ltd.
 Contract No. DC/2009/13
 Construction of Sewage Treatment Works at YSW & SKW
 3-month Rolling Programme (Oct 2011 - Dec 2011)

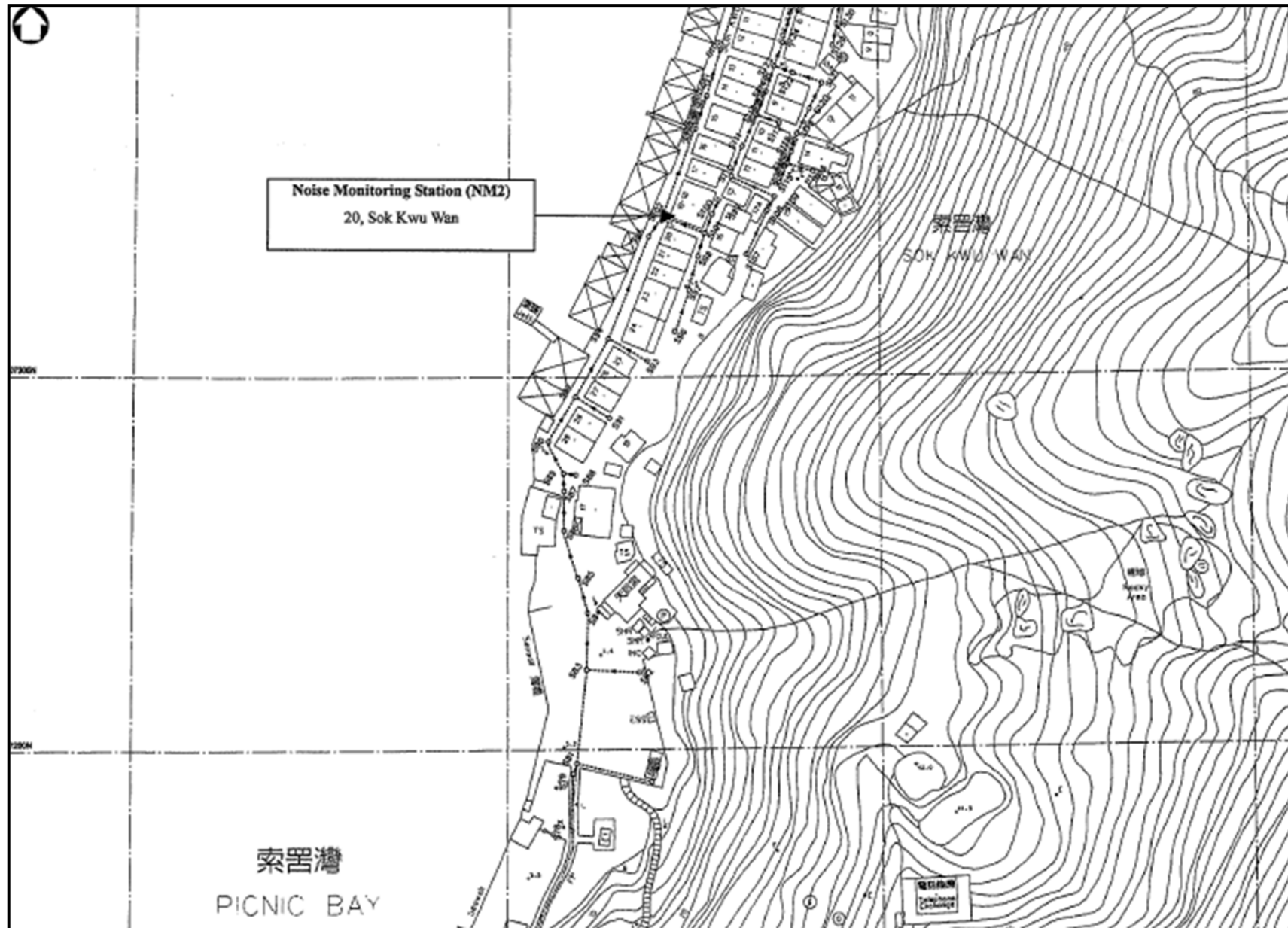
(Marked on 30 Sep 2011)

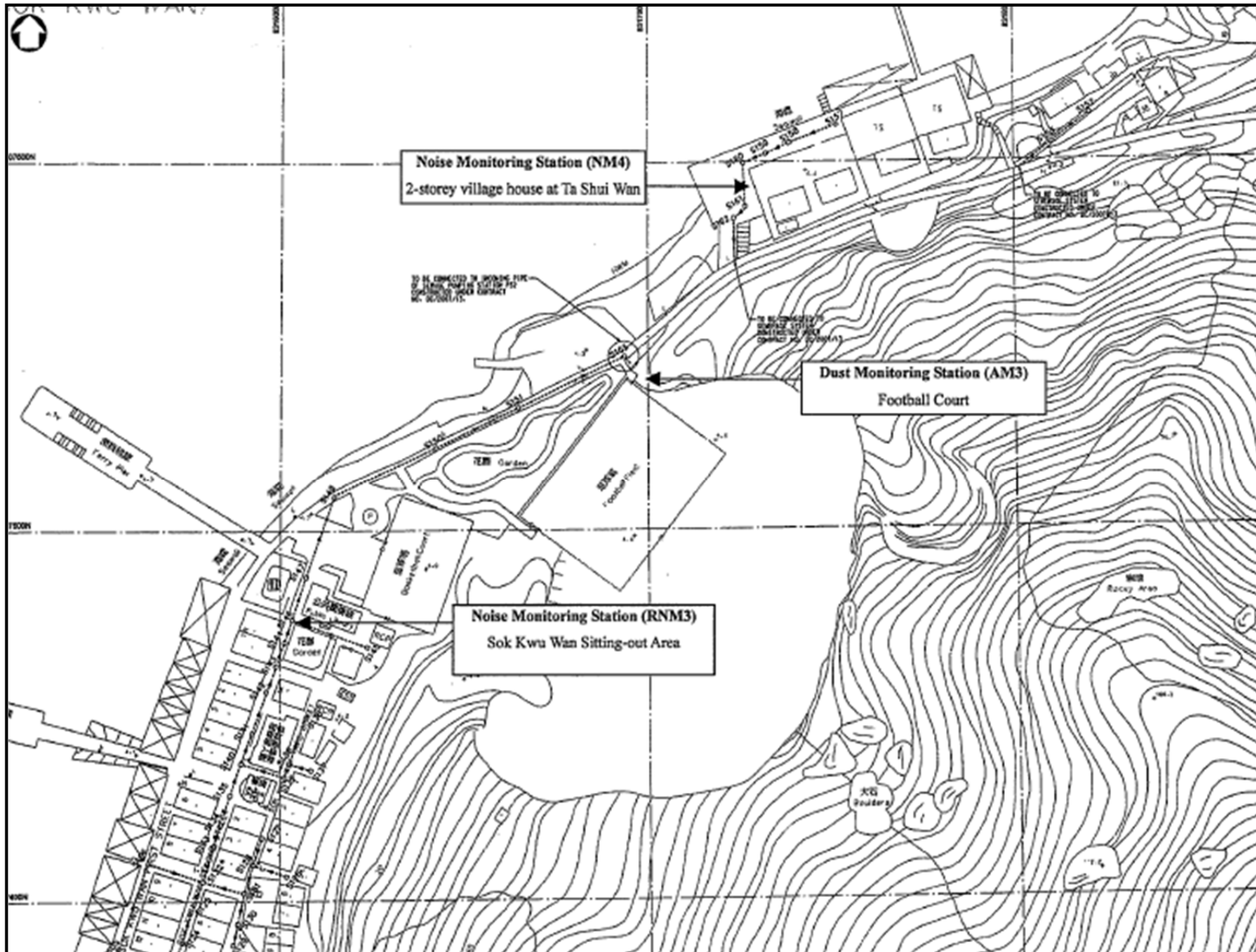
Date	Revision	Checked	Approved
30/09/10	Revision 0	StL	VC

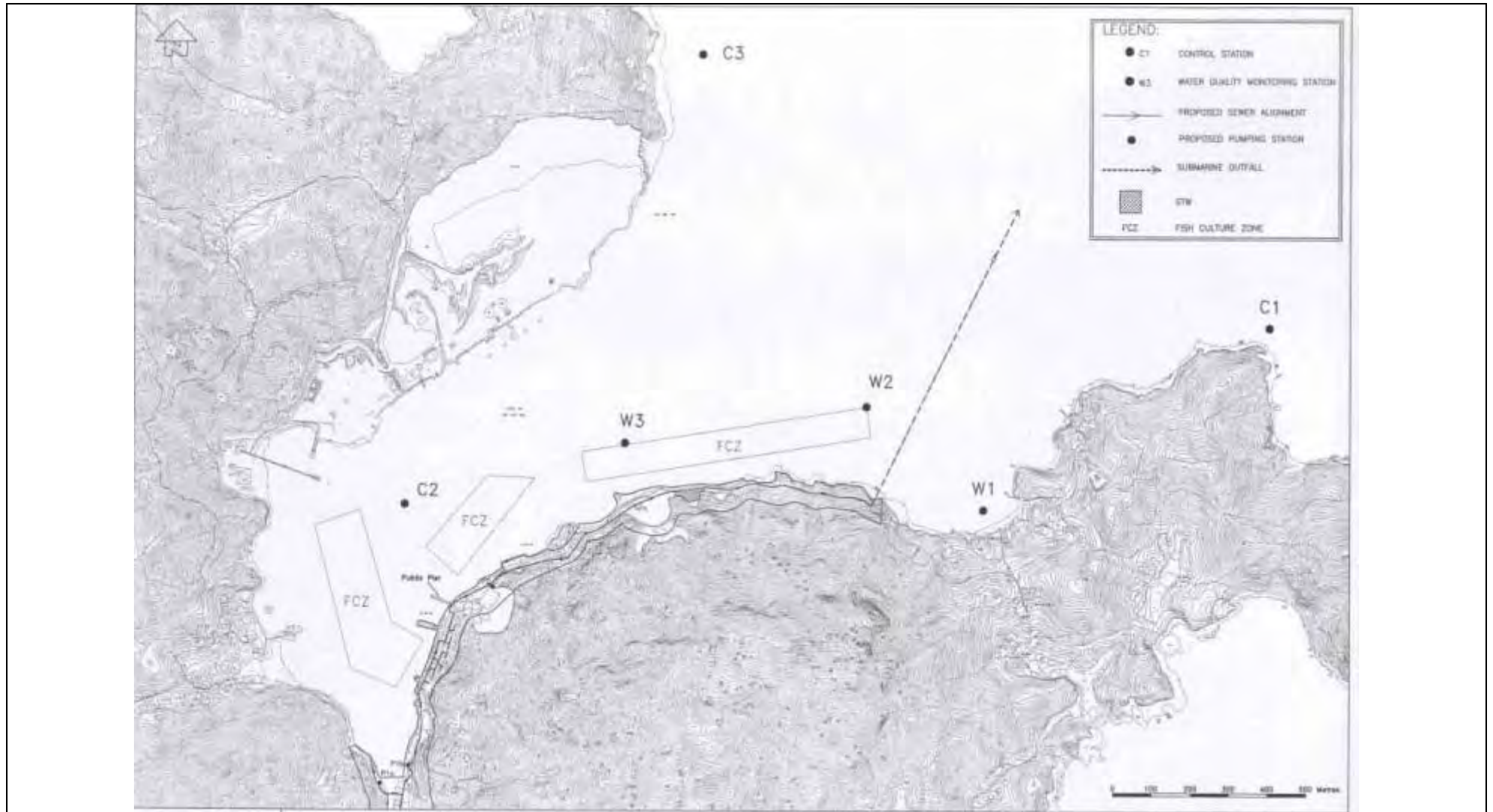
Appendix D

Location of Monitoring Stations (Air Quality / Construction Noise / Water Quality)









Appendix E

Monitoring Equipments Calibration Certificate



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE.
 VILLAGE OF CLEVELAND, OH 45002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jun 02, 2011 Rootsometer S/N 0438320 Ta (K) - 294
 Operator Tisch Orifice I.D. - 1941 Pa (mm) - 754.38

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4660	3.3	2.00
2	NA	NA	1.00	1.0410	6.4	4.00
3	NA	NA	1.00	0.9310	8.1	5.00
4	NA	NA	1.00	0.8830	8.9	5.50
5	NA	NA	1.00	0.7310	13.0	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0017	0.6833	1.4185	0.9956	0.6791	0.8829
0.9975	0.9582	2.0061	0.9914	0.9524	1.2486
0.9952	1.0690	2.2429	0.9892	1.0625	1.3959
0.9942	1.1260	2.3524	0.9882	1.1191	1.4641
0.9887	1.3526	2.8371	0.9827	1.3444	1.7657
Qstd slope (m) = 2.11693			Qa slope (m) = 1.32558		
intercept (b) = -0.02568			intercept (b) = -0.01598		
coefficient (r) = 0.99993			coefficient (r) = 0.99993		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

$$Vstd = \text{Diff. Vol}[(Pa - \text{Diff. Hg})/760](298/Ta)$$

$$Qstd = Vstd/Time$$

$$Va = \text{Diff Vol} [(Pa - \text{Diff Hg})/Pa]$$

$$Qa = Va/Time$$

For subsequent flow rate calculations:

$$Qstd = 1/m\{ [\text{SQRT}(H2O(Pa/760)(298/Ta))] - b\}$$

$$Qa = 1/m\{ [\text{SQRT}(H2O(Ta/Pa))] - b\}$$

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Squatter house in Chung Mei Village	Date of Calibration: 30-Aug-11
Location ID : AM1	Next Calibration Date: 30-Oct-11
	Technician: Mr. Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1001	Corrected Pressure (mm Hg)	750.75
Temperature (°C)	30.9	Temperature (K)	304

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11693
Model->	5025A	Qstd Intercept ->	-0.02568
Serial # ->	1941		

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5	5	10	1.482	58	56.53	Slope = 33.0652 Intercept = 7.3819 Corr. coeff. = 1.0000
13	4.1	4.1	8.2	1.343	53	51.65	
10	2.9	2.9	5.8	1.132	46	44.83	
7	1.7	1.7	3.4	0.869	37	36.06	
5	0.8	0.8	1.6	0.600	28	27.29	

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

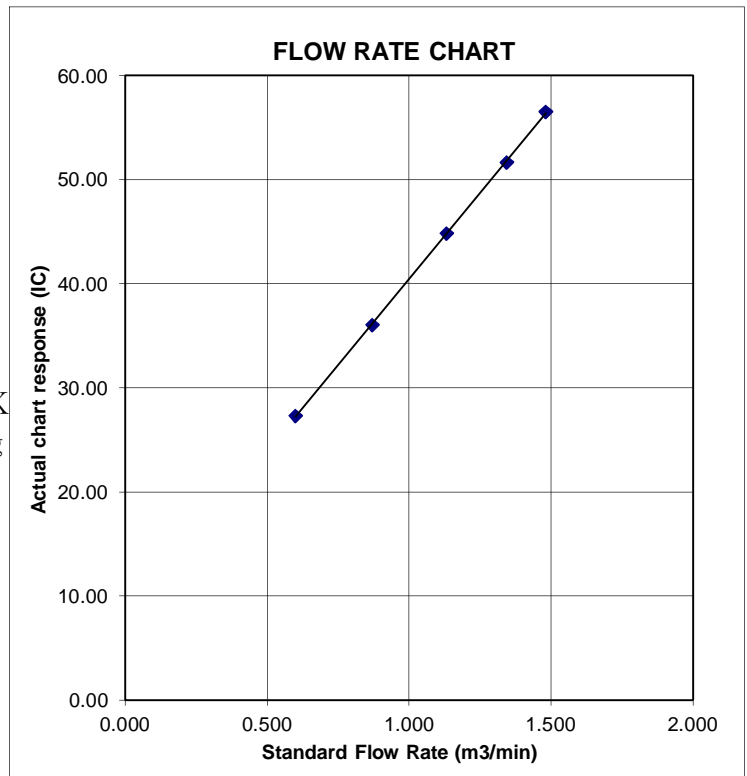
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Squatter house in Chung Mei Village
 Location ID : AM2

Date of Calibration: 30-Aug-11
 Next Calibration Date: 30-Oct-11
 Technician: Mr. Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1001	Corrected Pressure (mm Hg)	750.75
Temperature (°C)	30.9	Temperature (K)	304

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11693
Model->	5025A	Qstd Intercept ->	-0.02568
Serial # ->	1941		

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.9	5.9	11.8	1.609	58	56.53	Slope = 27.9593 Intercept = 11.3495 Corr. coeff. = 0.9999
13	4.3	4.3	8.6	1.376	51	49.70	
10	3.1	3.1	6.2	1.170	45	43.86	
7	1.9	1.9	3.8	0.918	38	37.03	
5	0.9	0.9	1.8	0.636	30	29.24	

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

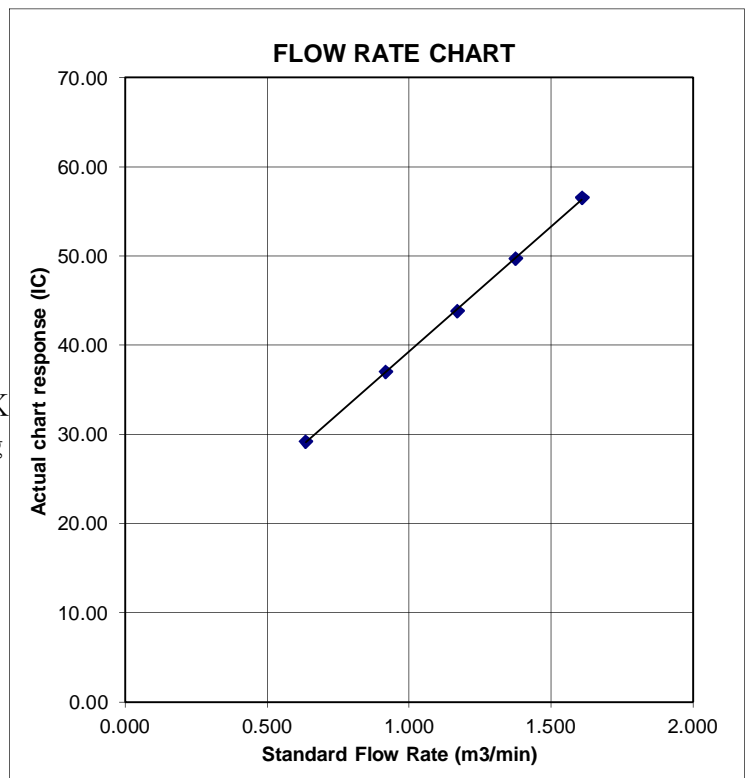
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Football court
 Location ID : AM3

Date of Calibration: 30-Aug-11
 Next Calibration Date: 30-Oct-11
 Technician: Mr. Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1001	Corrected Pressure (mm Hg)	750.75
Temperature (°C)	30.9	Temperature (K)	304

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11693
Model->	5025A	Qstd Intercept ->	-0.02568
Serial # ->	1941		

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.4	5.4	10.8	1.540	51	49.70	Slope = 23.8212 Intercept = 12.9602 Corr. coeff. = 1.0000
13	4.1	4.1	8.2	1.343	46	44.83	
10	2.9	2.9	5.8	1.132	41	39.96	
7	1.6	1.6	3.2	0.844	34	33.14	
5	0.6	0.6	1.2	0.521	26	25.34	

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

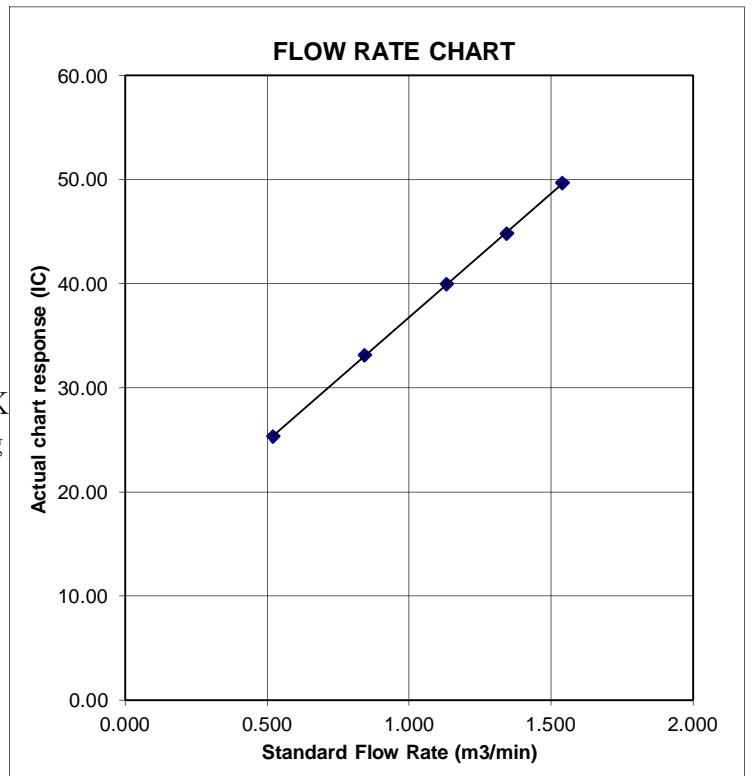
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

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



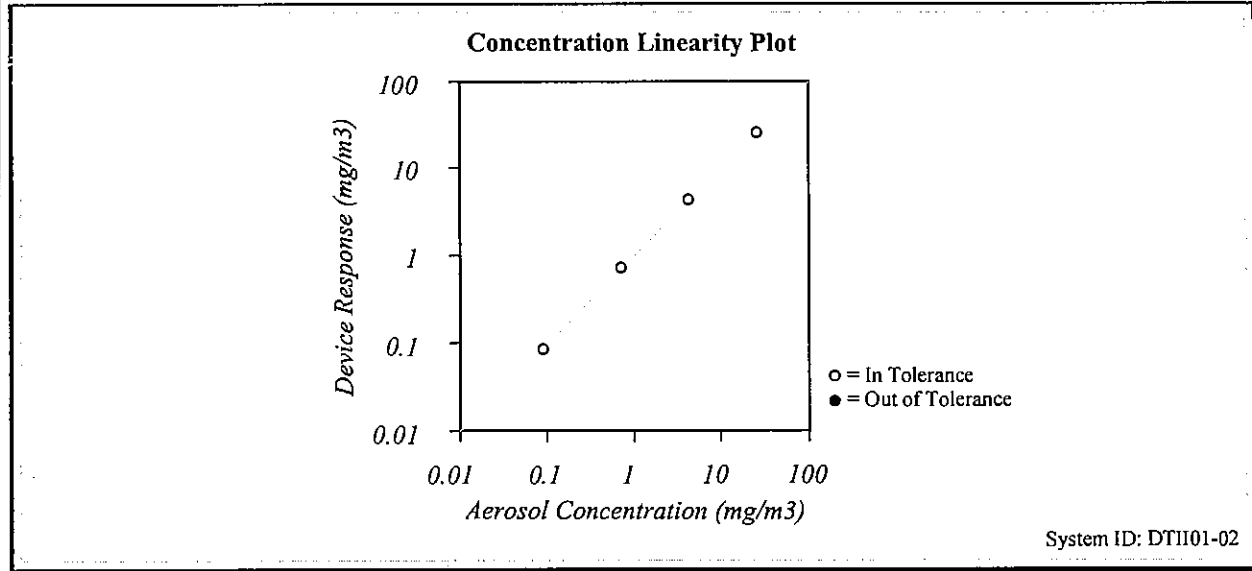


CERTIFICATE OF CALIBRATION AND TESTING

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	8520
Temperature	73.6 (23.1)	°F (°C)		
Relative Humidity	16	%RH	Serial Number	21060
Barometric Pressure	28.76 (973.9)	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 ³	0.000 :mg/m ³	0.001 :mg/m ³	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	07-30-10	01-30-11
Microbalance	E001324	01-04-11	01-04-12	Flow and Temperature	E003769	06-15-10	06-15-11
Pressure	E003511	11-12-10	11-12-11				

Final Function Check
 January 27, 2011

Calibrated Date

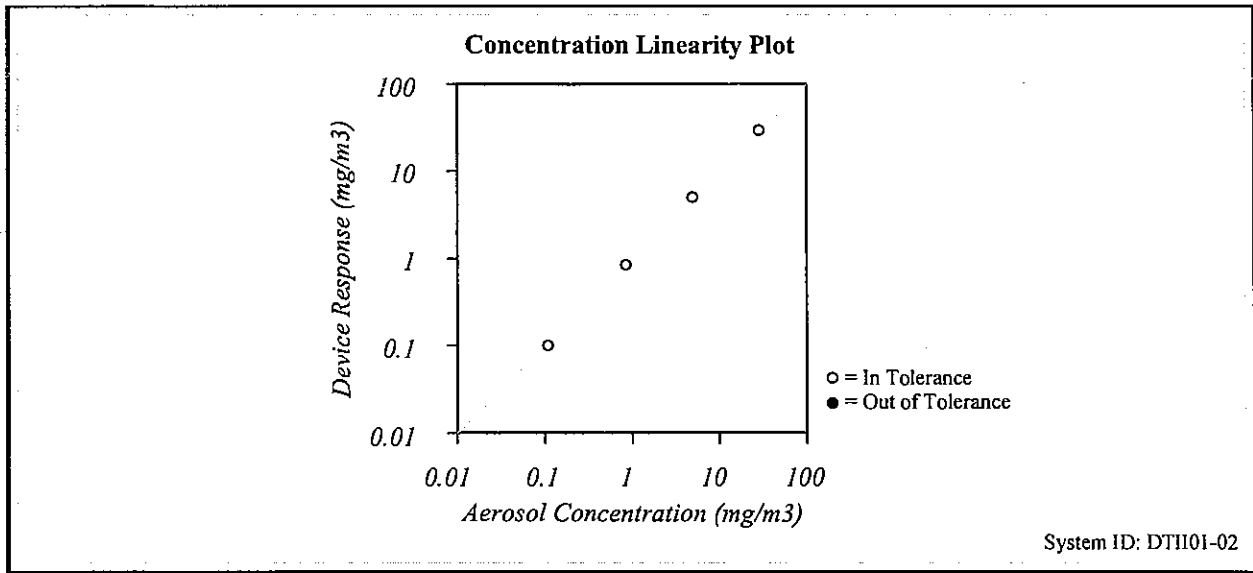


CERTIFICATE OF CALIBRATION AND TESTING

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	8520
Temperature	73.8 (23.2)	°F (°C)		
Relative Humidity	14	%RH	Serial Number	23080
Barometric Pressure	29.41 (995.9)	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 ³	0.000 :mg/m ³	0.001 :mg/m ³	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	01-27-11	07-27-11
Microbalance	E001324	01-04-11	01-04-12	Flow and Temperature	E003769	06-15-10	06-15-11
Pressure	E003511	11-12-10	11-12-11				

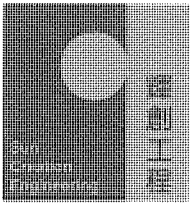
[Signature]

 Calibrated

Final Function Check

February 1, 2011

 Date



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C112202

Calibration Report

ITEM TESTED

DESCRIPTION : Integrating Sound Level Meter (EQ010)
MANUFACTURER : Bruel & Kjaer
MODEL NO. : 2238
SERIAL NO. : 2285721

TEST CONDITIONS

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

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 18 April 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 :


L L Cheung

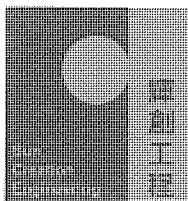
Date : 19 April 2011

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 : 2713428 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

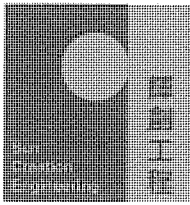
UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L _{AFP}	A	F	94.00	1	94.0	± 0.7

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 _{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

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 _{AFP}	A	F	94.00	1	94.0	Ref.
	L _{ASP}		S			94.0	± 0.1
	L _{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

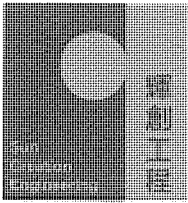
UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L _{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L _{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L _{ASP}	S	Continuous		106.0	Ref.	
	L _{ASMax}		500 ms		101.9	-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 _{AFP}	A	F	94.00	31.5 Hz	54.6	-39.4 ± 1.5
					63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.7	-16.1 ± 1.0
					250 Hz	85.2	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	92.8	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.7	-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 _{CFP}	C	F	94.00	31.5 Hz	91.1	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.2	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-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 _{Aeq}	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5		
								1/10 ²	90	89.6	± 0.5	
								60 sec.	1/10 ³	80	79.3	± 1.0
								5 min.	1/10 ⁴	70	69.9	± 1.0

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

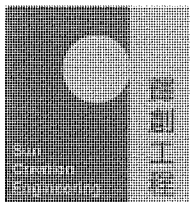
- Uncertainties of Applied Value :
 - 94 dB : 31.5 Hz - 125 Hz : ± 0.40 dB
 - 250 Hz - 500 Hz : ± 0.30 dB
 - 1 kHz : ± 0.20 dB
 - 2 kHz : ± 0.40 dB
 - 4 kHz : ± 0.50 dB
 - 8 kHz : ± 0.70 dB
 - 12.5 kHz : ± 1.20 dB
 - 104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
 - 114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
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



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C112201

Certificate of Calibration

This is to certify that the equipment

Description : Acoustical Calibrator (EQ082)

Manufacturer : Bruel & Kjaer

Model No. : 4231

Serial No. : 2713428

*has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C112201.*

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 : 19 April 2011

Certified by :

K C Lee

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

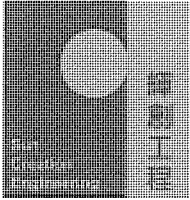
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

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. : C112201

Calibration Report

ITEM TESTED

DESCRIPTION : Acoustical Calibrator (EQ082)
MANUFACTURER : Bruel & Kjaer
MODEL NO. : 4231
SERIAL NO. : 2713428

TEST CONDITIONS

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

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 18 April 2011

JOB NO. : IC11-0947

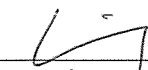
TEST RESULTS

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 :


L L Cheung

Date : 19 April 2011

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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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

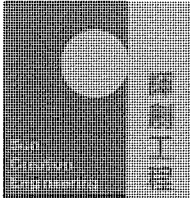
Tel: 2927 2606

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.



ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: MR BEN TAM
CLIENT: ACTION UNITED ENVIRO SERVICES
ADDRESS: RM A 20/F., GOLDEN KING IND BLDG,
NO. 35-41 TAI LIN PAI ROAD,
KWAI CHUNG,
N.T., HONG KONG.

WORK ORDER: HK1119232
LABORATORY: HONG KONG
DATE RECEIVED: 16/08/2011
DATE OF ISSUE: 17/08/2011

PROJECT: --

COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of ALS will be followed.

Scope of Test: Dissolved Oxygen, pH, Salinity and Temperature
Description: YSI Professional Plus
Brand Name: YSI
Model No.: YSI Professional Plus
Serial No.: 10G101946
Equipment No.: --
Date of Calibration: 16 August, 2011

NOTES

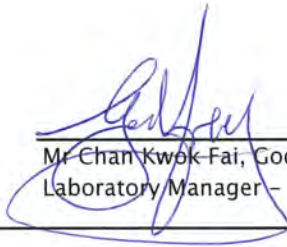
This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

Address

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

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


Mr Chan Kwok-Fai, Godfrey
Laboratory Manager - Hong Kong

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Page 1 of 2

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1119232
Date of Issue: 17/08/2011
Client: ACTION UNITED ENVIRO SERVICES



Description: YSI Professional Plus
Brand Name: YSI
Model No.: YSI Professional Plus
Serial No.: 10G101946
Equipment No.: --
Date of Calibration: 16 August, 2011

Date of next Calibration: 16 November, 2011

Parameters:

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
4.61	4.76	0.15
6.82	7.00	0.18
8.12	8.31	0.19
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)
4.00	4.10	0.10
7.00	7.06	0.06
10.00	9.92	-0.08
Tolerance Limit (±unit)		0.20

Salinity

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

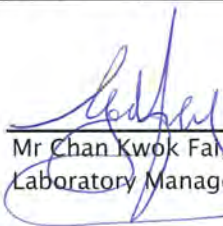
Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0.00	0.00	--
10.00	10.22	2.2
20.00	20.28	1.4
30.00	30.57	1.9
Tolerance Limit (±%)		10.0

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)
9.5	9.1	-0.4
22.0	21.6	-0.4
35.5	35.1	-0.4
Tolerance Limit (°C)		2.0


 Mr Chan Kwok Fai, Godfrey
 Laboratory Manager - Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1120797
Date of Issue: 08/09/2011
Client: ACTION UNITED ENVIRO SERVICES



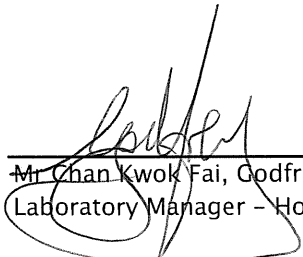
Description: Turbidimeter
Brand Name: HACH
Model No.: 2100P
Serial No.: 950900008735
Equipment No.: --
Date of Calibration: 06 September, 2011 Date of next Calibration: 06 December, 2011

Parameters:

Turbidity

Method Ref: ALPHA 21st Ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0.00	0.23	--
4.00	3.83	-4.3
40.0	38.4	-4.0
80.0	82.1	2.6
400	408	2.0
800	802	0.3
	Tolerance Limit ($\pm\%$)	10.0


Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong



Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong
香港新界葵涌永業街1-3號忠信針織中心11樓

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a
為香港認可處執行機關根據認可諮詢委員會建議而接受的

HOKLAS Accredited Laboratory
「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as listed in the HOKLAS Directory of Accredited Laboratories within the test category of
此實驗所符合ISO / IEC 17025 : 2005 –《測試及校正實驗所能力的通用規定》所訂的要求，獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定
測試或校正工作

Environmental Testing
環境測試

This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).
這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作
(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive
香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator
執行幹事 陳成城
Issue Date : 5 May 2009
簽發日期：二零零九年五月五日

Registration Number : **HOKLAS 066**
註冊號碼：

Date of First Registration : 15 September 1995
首次註冊日期：一九九五年九月十五日



Appendix F

Event/Action Plan

Air Quality

EVENT	ACTION	IC(E)	ER	CONTRACTOR
	ET			
ACTION LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IC(E) and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IC(E) and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IC(E) and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IC(E) and ER; 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
LIMIT LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Notify IC(E), ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IC(E), agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Construction Noise

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

Water Quality

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sampling day	<ol style="list-style-type: none"> Repeat in-situ measurement on the next day of exceedance to confirm findings; Identify source(s) of impact; Inform ICE, Contractor, ER, EPD and AFCD; and Check monitoring data, all plant, equipment and Contractor's working methods. 	<ol style="list-style-type: none"> Check monitoring data submitted by ET and Contractor's working methods 	<ol style="list-style-type: none"> Confirm receipt of notification of non-compliance in writing; and Notify Contractor 	<ol style="list-style-type: none"> Information the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; and Amend working methods if appropriate
2. Exceedance for two or more consecutive sampling days	<ol style="list-style-type: none"> Same as the above; Inform ICE, Contractor, ER, EPD and AFCD; Discuss mitigation measures with IC(E), RE and Contractor; Ensure well implementation of mitigation measures; and Increase the monitoring frequency to daily until no exceedance of Action Level 	<ol style="list-style-type: none"> Same as the above; Discuss with ET and Contractor on possible remedial actions; Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; and Supervise the implementation of mitigation measures. 	<ol style="list-style-type: none"> Discuss with IC(E) on the proposed mitigation measures; Ensure well implementation of mitigation measures; and Assess the effectiveness of the implemented mitigation measures 	<ol style="list-style-type: none"> Same as the above; Check all plant and equipment and consider changes of working methods; Submit proposal of additional mitigation measures to ER within 3 working days of notification and discuss with ET, IC(E), and ER; and Implement the agreed mitigation measures
LIMIT LEVEL				
1. Exceedance for one sampling day	<ol style="list-style-type: none"> Repeat in-situ measurement on the next day of exceedance to confirm findings; Identify source(s) of impact; Inform ICE, Contractor, ER, EPD and AFCD; Check monitoring data, all plant, equipment and Contractor's working methods; and Discuss mitigation measures with IC(E), RE and Contractor 	<ol style="list-style-type: none"> Check monitoring data submitted by ET and Contractor's working method Discuss with ER and Contractor on possible remedial actions; and Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly 	<ol style="list-style-type: none"> Confirm receipt of notification failure in writing; and Discuss with IC(E), ET and Contractor on the proposed mitigation measures; and Request Contractor to review the working methods 	<ol style="list-style-type: none"> Inform the ER and confirm notification of the failure in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; and Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET and ER
2. Exceedance for two or more consecutive sampling days	<ol style="list-style-type: none"> Same as the above; Ensure mitigation measures are implemented; and Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days 	<ol style="list-style-type: none"> Same as the above; and Supervise the Implementation of mitigation measures 	<ol style="list-style-type: none"> Same as the above; Ensure well implementation of mitigation measures Make agreement on the mitigation measures to be implemented; and Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of limit level 	<ol style="list-style-type: none"> Same as the above; Take immediate action to avoid further exceedance; Implement the agreed mitigation measures; Resubmit proposals of mitigation measures if problem still not under control; and As directed by the Engineer, to slow down or to stop all or part of the construction activities until no exceedance of Limit Level.

Appendix G

Monitoring Data Sheet

24-hour TSP Monitoring Data Sheet

Air Quality Monitoring - 24-hour TSP Monitoring data sheet

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP (oC)	STANDARD			INITIAL FILTER WEIGHT (g)	FINAL FILTER WEIGHT (g)	WEIGHT DUST COLLECTED (g)	DUST 24-hour TSP IN AIR (ug/m ³)
		INITIAL	FINAL	ACTUAL (min)	MIN	MAX	AVG		AVG PRESS (hPa)	FLOW RATE (m3/min)	AIR VOLUME (std m3)				
24-hour TSP Monitoring Results - AM1															
4-Oct-11	24252	11095.18	11119.15	1438.20	30	34	32.0	25.6	1013.6	0.74	1070	2.7274	2.8357	0.1083	101
10-Oct-11	24280	11119.15	11142.87	1423.20	30	33	31.5	26.4	1011.8	0.73	1034	2.7363	2.8024	0.0661	64
15-Oct-11	24304	11142.87	11166.72	1431.00	29	32	30.5	25.1	1012.2	0.70	1000	2.8977	2.9636	0.0659	66
21-Oct-11	24278	11166.72	11190.58	1431.60	30	33	31.5	24.8	1014.3	0.73	1045	2.7394	2.8693	0.1299	124
27-Oct-11	24333	11190.58	11214.14	1413.60	29	32	30.5	23.3	1017.8	0.70	995	2.9086	2.9767	0.0681	68
24-hour TSP Monitoring Results - AM2															
4-Oct-11	24249	9605.01	9628.74	1423.80	29	33	31.0	25.6	1013.6	0.70	999	2.7833	2.8842	0.1009	101
10-Oct-11	24257	9628.74	9652.65	1434.60	30	34	32.0	26.4	1011.8	0.74	1055	2.7598	2.8019	0.0421	40
15-Oct-11	24281	9652.65	9676.53	1432.80	29	33	31.0	24	1015.3	0.71	1011	2.7396	2.8044	0.0648	64
21-Oct-11	24320	9676.53	9700.25	1423.20	29	32	30.5	24.8	1014.3	0.69	976	2.733	2.8463	0.1133	116
27-Oct-11	24318	9700.25	9723.97	1423.20	30	33	31.5	23.3	1017.8	0.73	1034	2.8776	2.9798	0.1022	99
24-hour TSP Monitoring Results - AM3															
4-Oct-11	24251	5161.41	5185.18	1426.20	30	33	31.5	25.6	1013.6	0.78	1108	2.7418	2.8059	0.0641	58
10-Oct-11	24246	5185.18	5208.91	1423.80	30	33	31.5	26.4	1011.8	0.77	1102	2.7959	2.8409	0.0450	41
15-Oct-11	24282	5208.91	5232.34	1405.80	29	33	31.0	25.1	1012.2	0.76	1063	2.7524	2.9053	0.1529	144
21-Oct-11	24317	5232.34	5256.23	1433.40	30	33	31.5	24.8	1014.3	0.78	1117	2.8714	2.9234	0.0520	47
27-Oct-11	24320	5256.23	5280.09	1431.60	29	32	30.5	23.3	1017.8	0.74	1063	2.8681	3.0012	0.1331	125

Marine Water Quality Monitoring Data Sheet

Contract No. DC/2009/13

Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan



Sok Kwu Wan

Date 4-Oct-11

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
			East	North									
2011/10/4 17:39	W1	ME	832950	807715	2.3	1.200	26.50	5.60	83.1	4.6	31.43	8.12	9.4
						1.250	26.50	5.65	83.8	4.1	31.44	8.11	
2011/10/4 17:29	W2	ME	832592	807971	12.6	0.995	26.60	5.67	84.2	4.3	31.48	8.12	8.0
						1.000	26.60	5.58	82.9	3.9	31.48	8.12	
						6.300	26.60	5.43	80.7	4.2	31.48	8.15	9.2
						6.335	26.60	5.73	85.1	4.4	31.47	8.06	
						11.600	26.60	5.26	78.2	4.7	31.47	8.09	7.2
11.650	26.50	5.24	77.8	4.9	31.44	8.02							
2011/10/4 17:14	W3	ME	832039	807886	12.4	1.000	26.60	5.67	84.3	3.9	31.44	8.12	7.9
						1.020	26.60	5.62	83.5	4.5	31.48	8.12	
						6.200	26.60	5.48	81.5	4.2	31.49	8.15	9.2
						6.210	26.60	5.33	79.3	4.6	31.49	8.13	
						11.400	26.60	5.14	76.5	4.7	31.49	8.09	8.4
11.350	26.60	5.21	77.4	4.2	31.49	8.09							
2011/10/4 17:46	C1	ME	833692	808170	13.7	1.000	26.60	5.54	82.4	4.6	31.47	8.11	7.3
						1.000	26.60	5.54	82.3	5.0	31.45	8.11	
						6.800	26.60	5.83	86.8	4.6	31.46	8.06	10.2
						6.750	26.60	5.46	81.2	5.0	31.49	8.10	
						12.700	26.60	5.35	79.5	4.4	31.50	8.25	19.7
12.650	26.60	5.22	77.7	5.2	31.50	8.11							
2011/10/4 17:05	C2	ME	831483	807763	10.8	1.000	26.60	5.61	83.4	4.2	31.50	8.13	9.0
						0.950	26.60	5.63	83.8	4.8	31.50	8.13	
						5.400	26.60	5.40	80.4	4.9	31.52	8.10	10.3
						5.400	26.60	5.23	77.8	4.6	31.55	8.11	
						9.800	26.60	5.34	79.5	4.0	31.60	8.10	9.3
						9.850	26.60	5.32	79.1	4.5	31.60	8.11	
2011/10/4 18:03	C3	ME	832219	808853	13.6	1.000	26.50	5.79	86.1	4.6	31.45	8.14	9.6
						1.000	26.50	5.76	85.5	4.3	31.47	8.14	
						6.800	26.60	5.82	86.5	4.8	31.50	8.10	8.9
						6.800	26.60	5.69	84.6	5.0	31.50	8.10	
						12.600	26.60	5.71	84.9	5.0	31.51	8.10	10.6
						12.600	26.60	5.66	84.2	4.3	31.51	8.11	
2011/10/4 8:26	W1	MF	832949	807715	2.4	1.200	26.60	5.62	83.6	4.3	31.47	8.12	9.8
						1.200	26.60	5.51	81.9	3.8	31.48	8.12	
2011/10/4 8:17	W2	MF	832602	807994	12.5	1.000	26.60	6.02	89.5	4.6	31.45	8.25	9.1
						0.950	26.60	5.98	89.0	4.2	31.46	8.22	
						6.250	26.70	5.93	88.2	4.4	31.50	8.20	8.3
						6.250	26.70	5.75	85.6	4.8	31.48	8.16	
						11.500	26.70	5.85	87.1	4.6	31.51	8.17	9.8
11.500	26.70	5.70	84.8	4.9	31.51	8.13							
2011/10/4 8:14	W3	MF	832039	807896	12.8	1.000	26.70	5.41	80.3	3.8	31.33	8.07	6.5
						1.000	26.70	5.39	80.1	4.2	31.38	8.07	
						6.400	26.60	5.43	80.6	4.2	31.37	8.05	6.6
						6.400	26.60	5.37	79.7	3.9	31.37	8.07	
						11.800	26.60	5.39	80.2	4.6	31.54	8.18	6.8
11.800	26.60	5.45	81.2	4.8	31.55	8.08							
2011/10/4 8:41	C1	MF	833688	808168	13.6	1.000	26.60	5.32	79.2	4.8	31.49	8.11	9.3
						1.050	26.60	5.32	79.1	4.6	31.48	8.09	
						6.800	26.60	5.19	77.2	4.3	31.49	8.09	8.1
						6.800	26.60	5.14	76.4	4.7	31.48	8.11	
						12.600	26.60	5.27	78.4	4.9	31.48	8.11	7.9
						12.600	26.60	5.33	79.3	5.0	31.48	8.11	
2011/10/4 8:00	C2	MF	831459	807761	10.5	1.000	26.60	5.36	79.6	4.4	31.37	7.99	11.7
						1.000	26.60	5.39	80.1	4.6	31.37	8.04	
						5.250	26.30	5.19	76.6	4.6	31.17	8.03	7.8
						5.250	26.30	5.17	76.3	4.2	31.17	8.03	
						9.500	26.30	5.37	79.3	4.7	31.16	8.11	9.8
						9.500	26.30	5.25	77.5	4.0	31.15	8.03	
2011/10/4 8:58	C3	MF	832209	808848	13.3	1.000	26.60	5.61	83.4	4.2	31.48	8.12	7.5
						1.000	26.60	5.56	82.7	4.9	31.49	8.12	
						6.650	26.60	5.11	76.0	3.9	31.47	8.15	9.8
						6.650	26.60	5.25	78.0	4.5	31.47	8.13	
						12.300	26.60	5.17	76.9	4.0	31.48	8.12	6.1
						12.300	26.60	5.16	76.8	4.7	31.48	8.12	

MF- Mid Flood Tide
ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan**



Sok Kwu Wan

Date 6-Oct-11

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
			East	North									
2011/10/6 8:48	W1	ME	832956	807724	2.8	1.4	26.40	5.66	83.9	3.6	31.63	8.06	4.3
						1.4	26.40	5.58	82.7	4.2	31.58	8.09	
2011/10/6 8:34	W2	ME	832589	807968	12.7	1.000	26.40	5.79	85.8	5.0	31.55	8.11	7.9
						1.000	26.40	5.81	86.1	4.2	31.55	8.10	
						6.350	26.40	5.86	86.7	3.6	31.55	8.03	5.6
						6.350	26.40	5.73	84.9	4.0	31.55	8.06	
						11.700	26.30	5.76	85.3	4.2	31.52	8.18	5.5
						11.700	26.30	5.44	80.5	4.2	31.44	8.13	
2011/10/6 8:18	W3	ME	832036	807883	12.4	1.000	26.40	5.81	86.0	4.3	31.55	8.10	4.8
						1.000	26.40	5.81	86.0	3.9	31.55	8.08	
						6.200	26.40	5.84	86.4	4.2	31.56	8.10	7.1
						6.200	26.40	5.69	84.2	4.5	31.56	8.10	
						11.400	26.30	5.63	83.5	4.6	31.46	8.13	6.7
						11.400	26.30	5.26	77.9	4.1	31.51	8.09	
2011/10/6 8:59	C1	ME	833702	808189	13.5	1.000	26.40	5.83	86.4	3.9	31.55	8.07	6.0
						1.000	26.40	5.75	85.1	4.5	31.55	8.09	
						6.750	26.40	5.84	86.5	4.6	31.59	8.06	6.8
						6.750	26.40	5.69	84.4	4.7	31.62	8.08	
						12.500	26.30	5.65	83.8	3.9	31.46	8.23	6.0
						12.500	26.30	4.86	72.1	4.2	31.45	8.10	
2011/10/6 8:08	C2	ME	831479	807761	10.3	1.000	26.40	5.84	86.5	4.1	31.55	8.14	7.2
						1.000	26.40	5.79	85.8	4.4	31.55	8.13	
						5.150	26.30	5.78	85.7	5.0	31.56	8.10	4.8
						5.150	26.30	5.72	84.8	4.6	31.56	8.08	
						9.300	26.30	5.76	85.3	4.8	31.63	8.05	6.4
						9.300	26.30	5.72	84.9	5.0	31.64	8.09	
2011/10/6 9:17	C3	ME	832224	808877	13.6	1.000	26.40	5.78	85.6	4.5	31.55	8.17	7.6
						1.000	26.40	5.72	84.8	4.5	31.55	8.14	
						6.800	26.30	5.63	83.5	4.0	31.58	8.07	3.8
						6.800	26.30	5.62	83.3	4.4	31.58	8.08	
						12.600	26.20	5.69	84.2	4.6	31.41	8.10	5.5
						12.600	26.20	5.33	78.9	4.6	31.39	8.08	
2011/10/6 15:39	W1	MF	832990	807728	2.4	1.2	26.50	5.76	85.6	4.3	31.57	8.13	11.0
						1.2	26.50	5.83	86.5	4.4	31.57	8.12	
2011/10/6 15:22	W2	MF	832609	807968	12.8	1.000	26.50	6.48	93.7	4.6	31.40	8.10	3.7
						1.000	26.50	6.03	89.4	4.7	31.45	8.11	
						6.400	26.50	5.95	88.3	4.8	31.57	8.13	6.9
						6.400	26.50	5.92	87.9	4.2	31.57	8.12	
						11.800	26.20	5.87	87.1	4.3	31.58	8.11	4.5
						11.800	26.20	5.85	86.9	4.0	31.60	8.11	
2011/10/6 15:12	W3	MF	832039	807887	12.5	1.000	26.50	5.68	83.8	4.7	31.34	8.05	4.5
						1.000	26.50	5.61	82.8	4.4	31.35	8.06	
						6.250	26.30	5.61	83.0	4.1	31.46	8.09	4.7
						6.250	26.30	5.57	82.3	4.0	31.45	8.08	
						11.500	26.30	5.55	82.0	4.8	31.50	8.09	4.1
						11.500	26.30	5.18	76.5	4.6	31.50	8.07	
2011/10/6 15:51	C1	MF	833697	808165	13.6	1.000	26.50	6.40	95.0	4.8	31.53	8.31	5.7
						1.000	26.50	5.97	88.6	3.9	31.54	8.19	
						6.800	26.50	6.05	89.8	4.3	31.54	8.23	4.8
						6.800	26.50	5.94	88.2	3.8	31.54	8.22	
						12.600	26.40	5.96	88.5	4.3	31.55	8.22	5.3
						12.600	26.40	5.76	85.5	4.7	31.56	8.14	
2011/10/6 14:46	C2	MF	831450	807758	10.6	1.000	26.50	5.37	79.0	4.4	30.68	8.13	4.6
						1.000	26.50	5.33	78.4	4.5	30.69	8.10	
						5.300	26.30	5.38	79.1	4.6	30.68	8.04	4.0
						5.300	26.30	5.53	81.8	5.0	31.29	8.00	
						9.600	26.30	5.68	84.0	4.7	31.31	8.07	6.8
						9.600	26.30	5.82	86.0	4.8	31.24	8.04	
2011/10/6 16:19	C3	MF	832229	808876	13.8	1.000	26.50	5.96	88.5	4.8	31.55	8.09	5.2
						1.000	26.50	5.88	87.3	5.0	31.55	8.10	
						6.900	26.50	5.92	87.9	4.6	31.55	8.14	4.0
						6.900	26.50	5.87	87.1	5.0	31.55	8.12	
						12.800	26.30	5.92	87.9	4.2	31.60	8.18	4.2
						12.800	26.30	5.86	87.1	4.9	31.60	8.12	

MF- Mid Flood Tide
ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan**



Sok Kwu Wan

Date 8-Oct-11

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
			East	North									
2011/10/8 9:47	W1	ME	832957	807741	2.4	1.2	26.30	6.26	92.7	4.2	31.56	8.17	4.1
						1.2	26.40	5.97	88.5	3.6	31.67	8.14	
2011/10/8 9:36	W2	ME	932601	807981	12.6	1.000	26.40	5.63	83.5	3.8	31.62	8.09	2.9
						1.000	26.40	5.67	84.1	4.3	31.62	8.09	
						6.300	26.40	5.72	84.8	4.0	31.59	8.14	3.2
						6.300	26.30	5.74	85.0	3.7	31.63	8.12	
						11.600	26.30	5.76	85.3	4.3	31.64	8.09	9.0
						11.600	26.30	5.65	83.7	4.1	31.64	8.10	
2011/10/8 9:22	W3	ME	832036	807899	12.8	1.000	26.40	5.82	86.0	4.2	31.54	8.06	4.5
						1.000	26.40	5.86	86.6	3.7	31.55	8.06	
						6.400	26.30	5.57	82.3	3.6	31.59	8.20	3.1
						6.400	26.20	5.66	83.8	3.1	31.61	8.14	
						11.800	26.20	5.55	82.2	4.1	31.66	8.20	4.5
						11.800	26.20	5.54	82.1	4.2	31.66	8.14	
2011/10/8 9:59	C1	ME	833693	808183	13.7	1.000	26.30	5.93	87.8	3.8	31.54	8.10	1.8
						1.000	26.30	5.81	86.2	3.6	31.65	8.09	
						6.850	26.30	5.81	86.2	4.4	31.67	8.12	3.7
						6.850	26.30	5.76	85.3	2.6	31.67	8.10	
						12.700	26.30	5.74	85.1	3.9	31.67	8.06	3.7
						12.700	26.30	5.82	86.3	3.9	31.68	8.06	
2011/10/8 9:36	C2	ME	831459	807758	10.7	1.000	26.20	5.71	84.5	3.8	31.43	7.96	4.6
						1.000	26.20	5.68	84.1	4.3	31.43	7.95	
						5.350	26.20	5.52	81.6	2.6	31.59	8.00	3.6
						5.350	26.20	5.59	82.7	4.8	31.60	8.03	
						9.700	26.30	5.43	80.2	3.6	31.64	8.12	14.1
						9.700	26.30	5.37	79.3	3.1	31.62	8.10	
2011/10/8 10:27	C3	ME	832219	808876	13.9	1.000	26.30	5.80	85.9	4.0	31.67	8.10	6.7
						1.000	26.30	5.82	86.2	4.8	31.67	8.10	
						6.950	26.30	5.90	87.4	3.7	31.67	8.16	3.7
						6.950	26.30	5.84	86.5	5.0	31.67	8.13	
						12.900	26.30	5.91	87.7	5.0	31.67	8.14	5.8
						12.900	26.30	5.85	86.6	4.8	31.68	8.12	
2011/10/8 17:13	W1	MF	832987	807715	2.6	1.3	26.40	5.82	86.3	2.8	31.66	8.11	3.4
						1.3	26.40	5.85	86.7	2.8	31.66	8.11	
2011/10/8 16:58	W2	MF	832595	807976	12.6	1.000	26.40	6.19	91.7	4.7	31.36	8.16	3.7
						1.000	26.40	6.07	90.1	3.1	31.59	8.15	
						6.300	26.40	5.96	88.3	3.6	31.60	8.14	4.8
						6.300	26.30	5.95	88.1	4.4	31.61	8.15	
						11.600	26.30	5.86	86.8	4.8	31.64	8.14	5.2
						11.600	26.30	5.85	86.5	3.0	31.64	8.14	
2011/10/8 16:45	W3	MF	832057	807898	12.9	1.000	26.30	5.49	81.30	4.8	31.56	8.05	2.5
						1.000	26.40	5.48	81.20	4.0	31.57	8.05	
						6.450	26.30	5.58	82.60	3.6	31.54	8.20	4.3
						6.450	26.20	5.60	82.80	3.8	31.61	8.12	
						11.900	26.20	5.69	84.10	4.1	31.65	8.34	3.6
						11.900	26.20	5.83	86.20	4.0	31.66	8.13	
2011/10/8 17:29	C1	MF	833725	808179	13.2	1.000	26.30	6.15	90.90	4.8	31.41	8.17	4.2
						1.000	26.30	6.06	89.80	3.6	31.64	8.16	
						6.600	26.30	5.98	88.60	4.3	31.66	8.13	4.6
						6.600	26.30	5.89	87.20	4.6	31.66	8.14	
						12.200	26.30	5.92	87.70	3.9	31.66	8.15	4.7
						12.200	26.30	5.91	87.50	4.4	31.67	8.14	
2011/10/8 16:32	C2	MF	831459	807761	10.5	1.000	26.40	5.89	87.4	4.0	31.66	8.06	6.4
						1.000	26.40	5.83	86.4	4.4	31.66	8.08	
						5.250	26.40	5.83	86.5	4.3	31.66	8.15	5.0
						5.250	26.40	5.77	85.5	4.2	31.66	8.11	
						9.500	26.40	5.82	86.2	4.7	31.66	8.07	4.4
						9.500	26.40	5.82	86.4	4.6	31.67	8.12	
2011/10/8 17:49	C3	MF	832228	808876	13.5	1.000	26.30	5.92	87.8	4.0	31.66	8.13	6.4
						1.000	26.30	5.93	87.8	3.1	31.67	8.13	
						6.750	26.30	5.93	87.8	3.0	31.67	8.12	7.0
						6.750	26.30	5.90	87.4	2.6	31.67	8.12	
						12.500	26.30	5.92	87.6	3.8	31.67	8.11	4.5
						12.500	26.30	5.89	87.2	3.7	31.68	8.13	

MF- Mid Flood Tide
ME- Mid Ebb tide

Contract No. DC/2009/13

Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan



Sok Kwu Wan

Date 10-Oct-11

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
			East	North									
2011/10/10 11:41	W1	ME	832954	807728	2.3	1.15	26.30	5.99	88.7	4.2	31.66	8.10	7.8
						1.15	26.30	6.03	89.4	3.8	31.70	8.08	
2011/10/10 11:33	W2	ME	832589	807991	12.6	1.000	26.30	5.99	88.8	3.6	31.68	8.15	6.5
						1.000	26.30	6.02	89.1	3.7	31.68	8.13	
						6.300	26.30	6.01	89.0	2.7	31.68	8.19	6.1
						6.300	26.30	6.10	90.4	4.6	31.70	8.10	
						11.600	26.30	5.99	88.7	3.6	31.69	8.26	11.9
						11.600	26.20	6.19	91.5	4.7	31.71	8.11	
2011/10/10 11:20	W3	ME	832036	807916	12.3	1.000	26.40	5.92	87.6	3.9	31.41	8.04	7.9
						1.000	26.40	5.74	85.1	3.7	31.62	8.05	
						6.150	26.30	5.78	85.7	2.6	31.65	8.05	6.8
						6.150	26.30	5.76	85.3	3.3	31.66	8.05	
						11.300	26.30	5.77	85.5	4.2	31.66	8.29	5.8
						11.300	26.30	5.96	88.3	4.3	31.69	8.15	
2011/10/10 12:01	C1	ME	833697	808179	13.6	1.000	26.50	6.18	91.8	2.6	31.57	8.20	9.7
						1.000	26.50	5.97	88.7	4.3	31.57	8.16	
						6.800	26.50	5.88	87.4	4.0	31.58	8.11	8.3
						6.800	26.50	5.83	86.7	3.2	31.58	8.10	
						12.600	26.50	5.78	86.0	3.1	31.58	8.06	3.0
						12.600	26.40	5.71	84.8	3.8	31.61	8.09	
2011/10/10 11:10	C2	ME	831458	807759	10.6	1.000	26.60	5.43	80.7	3.9	31.51	7.95	5.6
						1.000	26.60	5.33	79.3	4.2	31.57	7.96	
						5.300	26.60	5.35	79.6	3.6	31.57	8.00	4.3
						5.300	26.60	5.25	78.1	4.8	31.57	7.99	
						9.600	26.50	5.36	79.6	4.7	31.52	8.06	5.3
						9.600	26.50	5.04	74.7	3.9	31.41	8.01	
2011/10/10 12:16	C3	ME	832218	808877	13.8	1.000	26.50	5.68	84.5	3.3	31.58	8.06	3.7
						1.000	26.50	5.66	84.2	4.3	31.58	8.05	
						6.900	26.50	5.75	85.5	4.2	31.58	8.18	4.7
						6.900	26.50	5.74	85.3	4.8	31.59	8.09	
						12.800	26.50	5.78	85.8	4.0	31.60	8.10	4.6
						12.800	26.50	5.72	84.9	3.5	31.60	8.07	
2011/10/10 17:20	W1	MF	832990	807743	2.5	1.25	26.50	5.62	83.5	4.0	31.59	8.05	3.7
						1.25	26.60	5.73	84.8	3.9	31.64	8.02	
2011/10/10 17:08	W2	MF	832608	807977	12.4	1.000	26.50	5.68	84.5	3.9	31.58	8.05	3.6
						1.000	26.50	5.67	84.3	4.4	31.58	8.04	
						6.200	26.50	5.71	85.0	2.8	31.59	7.91	6.0
						6.200	26.50	5.71	84.8	3.0	31.59	8.01	
						11.400	26.50	5.76	85.5	3.8	31.59	8.00	4.6
						11.400	26.40	5.30	78.6	3.4	31.61	8.00	
2011/10/10 16:55	W3	MF	832031	807898	12.6	1.000	26.60	5.55	82.6	2.7	31.58	8.04	7.0
						1.000	26.60	5.57	82.9	3.1	31.58	8.03	
						6.300	26.50	5.69	84.6	3.4	31.58	8.17	3.6
						6.300	26.50	5.66	84.1	4.1	31.60	8.10	
						11.600	26.50	5.70	84.7	4.1	31.60	7.95	5.4
						11.600	26.40	5.65	83.8	4.0	31.62	8.02	
2011/10/10 17:34	C1	MF	833684	808186	13.2	1.000	26.20	5.82	85.9	3.6	31.37	8.06	6.5
						1.000	26.20	5.84	86.2	3.9	31.37	8.06	
						6.600	26.20	5.87	86.6	2.9	31.40	8.05	6.3
						6.600	26.10	5.86	86.4	4.1	31.43	8.07	
						12.200	26.10	5.96	87.8	3.0	31.46	8.01	4.1
						12.200	26.10	5.94	87.5	3.8	31.47	8.01	
2011/10/10 16:41	C2	MF	831458	807761	10.4	1.000	26.50	5.75	85.5	4.3	31.58	7.90	11.1
						1.000	26.50	5.69	84.6	3.2	31.58	7.98	
						5.200	26.50	5.67	84.3	4.7	31.58	8.03	5.0
						5.200	26.50	5.71	84.9	3.7	31.59	8.08	
						9.400	26.50	5.74	85.3	2.4	31.59	8.11	11.7
						9.400	26.50	5.61	83.3	4.4	31.61	8.07	
2011/10/10 17:50	C3	MF	832242	808881	13.5	1.000	26.10	5.81	85.7	2.7	31.43	8.06	4.8
						1.000	26.10	5.83	86.0	3.9	31.43	8.06	
						6.750	26.10	5.97	88.0	4.4	31.47	8.02	8.0
						6.750	26.10	5.97	88.1	5.0	31.48	8.03	
						12.500	26.10	5.88	86.7	5.3	31.48	8.08	4.7
						12.500	26.10	5.88	86.7	4.8	31.48	8.07	

MF- Mid Flood Tide
ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan**



Sok Kwu Wan

Date 12-Oct-11

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
			East	North									
2011/10/12 17:36	W1	ME	832956	807740	2.7	1.35	26.10	6.03	104.5	4.1	31.46	8.27	8.7
						1.35	26.10	6.02	101.8	3.9	31.47	8.26	
2011/10/12 17:23	W2	ME	832624	807988	12.6	1.000	26.10	5.97	95.3	4.4	30.93	8.20	6.4
						1.000	26.10	5.96	93.1	4.2	31.35	8.18	
						6.300	26.10	5.89	84.8	4.3	31.12	8.08	8.3
						6.300	26.10	5.86	78.6	4.4	31.13	8.04	
						11.600	26.10	5.89	79.3	4.3	31.19	8.08	7.5
						11.600	26.10	5.88	83.2	4.4	31.22	8.07	
2011/10/12 17:17	W3	ME	832056	807898	12.8	1.000	26.10	5.92	89.9	4.3	31.33	8.13	6.6
						1.000	26.10	5.92	90.0	5.0	31.33	8.12	
						6.400	26.10	5.91	90.0	4.6	31.36	8.11	6.4
						6.400	26.10	5.91	89.5	4.4	31.39	8.11	
						11.800	26.10	5.94	85.7	4.7	31.40	8.15	7.5
						11.800	26.10	5.91	82.3	4.1	31.40	8.11	
2011/10/12 17:44	C1	ME	833704	808179	13.8	1.000	26.10	6.00	96.4	4.5	31.43	8.23	5.8
						1.000	26.10	5.99	95.3	4.1	31.43	8.22	
						6.900	26.10	5.97	94.0	3.2	31.43	8.20	6.2
						6.900	26.10	5.99	92.5	3.4	31.44	8.22	
						12.800	26.10	5.99	93.4	3.9	31.50	8.22	7.6
						12.800	26.00	5.98	93.9	4.7	31.56	8.17	
2011/10/12 17:02	C2	ME	831474	807759	10.3	1.000	26.10	5.88	88.6	3.8	30.98	8.07	2.8
						1.000	26.10	5.87	89.1	5.0	30.99	8.06	
						5.150	26.10	5.88	89.7	3.6	31.18	8.07	6.0
						5.150	26.10	5.89	89.8	4.4	31.18	8.08	
						9.300	26.10	5.83	64.1	4.8	31.31	8.00	6.9
						9.300	26.10	5.84	63.9	3.6	31.31	8.01	
2011/10/12 18:00	C3	ME	832241	808863	13.9	1.000	26.20	5.97	96.3	4.7	31.45	8.22	8.9
						1.000	26.20	5.97	95.7	4.3	31.44	8.22	
						6.950	26.20	5.97	94.2	4.8	31.43	8.23	8.0
						6.950	26.20	5.89	91.9	5.0	31.42	8.12	
						12.900	26.20	5.89	92.7	4.8	31.45	8.11	9.9
						12.900	26.20	5.89	91.0	4.6	31.45	8.12	
2011/10/12 11:53	W1	MF	832961	807746	2.5	1.25	26.20	5.69	90.8	4.1	30.42	7.84	8.4
						1.25	26.20	5.67	91.1	3.8	30.91	7.81	
2011/10/12 11:44	W2	MF	832597	807994	12.4	1.000	26.00	5.92	92.6	4.8	31.34	8.09	6.3
						1.000	26.10	5.89	90.9	5.0	31.38	8.08	
						6.200	26.10	5.87	89.3	4.8	31.38	8.05	10.4
						6.200	26.10	5.87	89.6	4.2	31.38	8.05	
						11.400	26.10	5.86	88.8	4.3	31.38	8.04	9.4
						11.400	26.10	5.86	88.1	4.4	31.37	8.04	
2011/10/12 11:29	W3	MF	832036	807896	12.2	1.000	26.00	6.45	87.8	4.6	31.28	7.62	4.5
						1.000	26.10	6.12	85.8	3.7	31.29	7.74	
						6.100	26.10	5.89	83.3	3.6	31.31	8.86	8.0
						6.100	26.10	5.86	82.9	3.0	31.31	8.40	
						11.200	26.10	5.57	96.3	3.0	31.32	8.09	7.0
						11.200	26.10	5.64	89.2	3.8	31.33	8.04	
2011/10/12 12:12	C1	MF	833687	808167	13.6	1.000	26.20	6.27	91.0	4.0	31.44	8.64	10.0
						1.000	26.20	6.22	90.7	4.0	31.43	8.57	
						6.800	26.20	6.02	91.4	4.8	31.47	8.30	9.5
						6.800	26.20	6.00	90.0	4.3	31.46	8.26	
						12.600	26.20	5.95	90.3	4.6	31.47	8.20	10.6
						12.600	26.20	5.95	90.3	4.6	31.47	8.20	
2011/10/12 11:09	C2	MF	831459	807759	10.4	1.000	26.10	5.79	84.7	4.4	31.36	7.95	8.0
						1.000	26.10	5.83	67.5	3.9	31.24	8.00	
						5.200	26.10	5.92	45.7	2.4	31.36	8.13	6.5
						5.200	26.10	5.77	42.1	3.8	31.29	7.92	
						9.400	26.10	5.76	39.1	4.8	31.64	7.91	10.5
						9.400	26.10	5.74	37.5	3.6	31.65	7.88	
2011/10/12 12:28	C3	MF	832219	808883	13.5	1.000	26.20	5.97	99.6	4.7	31.10	8.23	7.8
						1.000	26.20	6.30	91.2	4.8	31.35	8.68	
						6.750	26.20	6.19	90.6	4.9	31.35	8.53	9.1
						6.750	26.20	6.10	91.0	5.1	31.35	8.41	
						12.500	26.20	6.03	90.8	4.8	31.36	8.31	6.5
						12.500	26.20	6.02	90.2	4.3	31.36	8.29	

MF- Mid Flood Tide
ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan**



Sok Kwu Wan

Date 14-Oct-11

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
			East	North									
2011/10/14 17:43	W1	ME	832957	807741	2.5	1.25	26.20	5.89	88.0	4.3	31.46	8.08	7.8
						1.25	26.20	5.86	87.1	4.4	31.46	8.08	
2011/10/14 17:31	W2	ME	832601	807992	12.6	1.000	26.20	5.86	88.4	3.6	31.44	8.08	4.4
						1.000	26.20	5.85	88.3	2.7	31.44	8.08	
						6.300	26.20	5.89	89.4	4.3	31.43	8.11	4.8
						6.300	26.20	5.79	88.2	3.9	31.44	8.11	
						11.600	26.20	5.94	87.4	4.2	31.45	8.18	5.2
						11.600	26.10	5.90	88.4	4.3	31.48	8.10	
2011/10/14 17:19	W3	ME	832035	807898	12.8	1.000	26.30	5.84	90.0	4.0	31.47	8.08	4.7
						1.000	26.30	5.83	89.1	4.3	31.43	8.06	
						6.400	26.30	5.75	88.1	3.8	31.41	8.20	3.7
						6.400	26.20	5.80	88.2	3.9	31.45	8.11	
						11.800	26.20	5.78	87.0	4.1	31.47	8.16	4.2
						11.800	26.10	5.65	87.6	4.2	31.49	8.11	
2011/10/14 17:53	C1	ME	833700	808178	13.4	1.000	26.40	5.86	92.0	4.6	31.44	8.13	3.8
						1.000	26.40	5.84	91.6	4.0	31.44	8.11	
						6.700	26.20	5.70	90.9	3.9	31.47	8.13	5.6
						6.700	26.20	5.75	90.2	4.4	31.46	8.12	
						12.400	26.20	5.65	89.7	4.1	31.46	8.12	8.0
						12.400	26.20	5.66	89.1	2.8	31.47	8.12	
2011/10/14 17:07	C2	ME	831458	807757	10.5	1.000	26.40	5.81	85.8	4.1	31.41	8.06	5.4
						1.000	26.40	5.81	86.4	3.8	31.41	8.06	
						5.250	26.40	5.75	84.8	3.8	31.42	8.06	6.2
						5.250	26.30	5.70	86.3	3.5	31.39	8.19	
						9.500	26.20	5.65	86.8	3.4	31.45	8.12	7.2
						9.500	26.10	5.62	88.6	3.5	31.49	8.12	
2011/10/14 18:19	C3	ME	832208	808871	13.6	1.000	26.40	5.85	88.1	3.2	31.41	8.06	5.1
						1.000	26.40	5.81	87.6	4.3	31.40	8.07	
						6.800	26.30	5.77	88.9	4.3	31.39	7.98	3.6
						6.800	26.20	5.84	87.7	4.4	31.44	8.05	
						12.600	26.20	5.75	87.6	4.5	31.45	8.15	8.8
						12.600	26.20	5.71	87.2	4.4	31.48	8.09	
2011/10/14 13:49	W1	MF	832981	807752	2.4	1.2	26.70	5.73	91.0	4.1	30.82	8.05	5.3
						1.2	26.60	5.81	88.1	3.9	31.38	8.06	
2011/10/14 13:38	W2	MF	832608	807991	12.8	1.000	26.40	5.85	91.3	3.6	31.40	8.12	5.1
						1.000	26.30	5.87	90.7	3.2	31.42	8.12	
						6.400	26.20	5.80	90.1	4.5	31.45	8.10	4.2
						6.400	26.20	5.81	89.1	3.3	31.45	8.10	
						11.800	26.20	5.75	89.0	4.6	31.46	8.11	4.4
						11.800	26.20	5.71	89.3	4.8	31.48	8.10	
2011/10/14 13:15	W3	MF	832031	807899	12.4	1.000	26.30	5.81	85.4	4.1	30.70	8.03	3.6
						1.000	26.40	5.79	83.5	4.3	31.06	8.04	
						6.200	26.20	5.74	85.9	4.3	31.42	8.12	5.2
						6.200	26.20	5.71	85.8	4.4	31.45	8.09	
						11.400	26.20	5.65	85.9	4.6	31.46	8.09	6.2
						11.400	26.20	5.66	86.8	4.7	31.47	8.12	
2011/10/14 14:08	C1	MF	833693	808183	13.5	1.000	26.20	5.87	87.1	3.6	31.49	8.09	3.7
						1.000	26.20	5.88	90.0	3.9	31.49	8.10	
						6.750	26.40	5.81	90.3	3.8	31.45	8.06	3.5
						6.750	26.40	5.81	88.3	3.5	31.46	8.06	
						12.500	26.30	5.65	87.0	3.3	31.46	8.09	8.0
						12.500	26.30	5.66	87.2	2.4	31.47	8.09	
2011/10/14 13:05	C2	MF	831458	807757	10.6	1.000	26.20	5.78	86.9	4.6	31.00	7.97	2.2
						1.000	26.20	5.81	87.0	3.8	31.09	8.00	
						5.300	26.30	5.83	88.5	4.1	31.31	8.06	5.8
						5.300	26.20	5.84	86.7	4.4	31.35	8.05	
						9.600	26.20	5.51	84.9	3.6	31.29	8.18	2.7
						9.600	26.20	5.26	77.3	3.8	31.31	8.11	
2011/10/14 14:29	C3	MF	832219	808878	13.2	1.000	26.60	5.78	90.6	3.6	31.11	8.09	4.2
						1.000	26.50	5.80	90.4	3.7	31.32	8.08	
						6.600	26.20	5.91	88.9	3.8	31.41	8.14	5.8
						6.600	26.20	5.88	88.5	4.2	31.44	8.10	
						12.200	26.20	5.74	88.2	4.4	31.46	8.06	2.7
						12.200	26.20	5.71	87.3	4.0	31.47	8.08	

MF- Mid Flood Tide
ME- Mid Ebb tide

Contract No. DC/2009/13

Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan



Sok Kwu Wan

Date 18-Oct-11

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
			East	North									
10/18/2011 14:52:07	W1	ME	832978	807742	2.4	1.200	26.30	6.10	90.1	3.5	31.30	8.21	3.2
10/18/2011 14:52:11						1.200	26.30	6.11	90.2	3.5	31.36	8.11	
10/18/2011 14:51:02	W2	ME	832606	807984	12.4	1.000	26.30	6.21	91.7	4.2	31.16	8.42	6.7
10/18/2011 14:51:06						1.000	26.30	6.20	91.6	4.3	31.26	8.35	
10/18/2011 14:51:41						6.200	26.30	6.10	90.3	5.0	31.29	8.08	4.2
10/18/2011 14:51:45						6.200	26.30	6.16	91.1	4.5	31.34	8.13	
10/18/2011 14:51:55						11.600	26.30	6.16	91.1	4.5	31.34	8.13	4.3
10/18/2011 14:51:59						11.400	26.30	6.13	90.6	4.5	31.29	8.12	
10/18/2011 14:40:11	W3	ME	832035	807889	12.8	1.100	26.30	6.15	90.9	3.9	31.30	8.02	4.4
10/18/2011 14:40:15						1.100	26.30	6.16	91.1	3.8	31.30	8.08	
10/18/2011 14:40:22						6.400	26.30	6.06	89.6	4.1	31.28	8.16	3.6
10/18/2011 14:40:27						6.400	26.30	6.14	90.8	4.2	31.31	8.13	
10/18/2011 14:40:35						11.800	26.20	6.14	90.6	5.0	31.36	8.15	6.5
10/18/2011 14:40:38						11.800	26.20	6.19	91.5	4.8	31.38	8.16	
10/18/2011 15:20:16	C1	ME	833683	808170	13.9	1.100	26.10	6.47	95.1	3.6	31.06	8.09	3.8
10/18/2011 15:20:20						1.100	26.10	6.41	94.5	3.6	31.39	8.08	
10/18/2011 15:20:33						6.800	26.30	6.05	89.4	3.8	31.32	8.08	4.9
10/18/2011 15:20:37						6.900	26.30	6.07	89.7	3.8	31.32	8.10	
10/18/2011 15:20:47						12.800	26.30	5.99	88.5	4.5	31.32	8.19	3.8
10/18/2011 15:20:51						12.800	26.30	6.03	89.1	4.5	31.33	8.16	
10/18/2011 14:29:07	C2	ME	831459	807759	10.7	1.000	26.30	5.99	88.6	2.5	31.31	8.09	3.2
10/18/2011 14:29:14						1.000	26.30	6.05	89.5	2.5	31.30	8.29	
10/18/2011 14:29:18						5.500	26.30	6.17	91.3	3.7	31.33	8.19	4.3
10/18/2011 14:29:24						5.500	26.30	6.21	91.8	3.7	31.39	8.31	
10/18/2011 14:29:28						9.700	26.20	6.27	92.7	6.8	31.49	8.12	6.6
10/18/2011 14:29:54						9.700	26.30	6.16	91.1	6.7	31.45	8.05	
10/18/2011 15:48:40	C3	ME	832211	808879	13.4	1.000	26.20	6.27	92.6	4.6	31.25	8.09	4.4
10/18/2011 15:48:43						1.000	26.20	6.26	92.4	4.6	31.26	8.10	
10/18/2011 15:48:53						6.700	26.20	6.28	92.7	4.5	31.40	8.09	3.0
10/18/2011 15:48:59						6.700	26.10	6.24	92.2	4.5	31.39	8.09	
10/18/2011 15:49:07						12.300	26.10	6.21	91.7	5.0	31.49	8.03	5.0
10/18/2011 15:49:11						12.300	26.10	6.19	91.3	5.1	31.50	8.08	
10/18/2011 11:19:40	W1	MF	832949	807748	2.7	1.300	26.10	6.24	92.0	4.0	31.49	8.09	5.7
10/18/2011 11:19:44						1.300	26.10	6.28	92.7	4.0	31.50	8.10	
10/18/2011 11:11:42	W2	MF	832611	807989	12.8	1.000	26.10	6.26	92.4	5.8	31.38	8.10	6.1
10/18/2011 11:11:46						1.000	26.10	6.25	92.2	5.8	31.35	8.09	
10/18/2011 11:11:52						6.400	26.10	6.24	92.0	5.1	31.49	8.31	3.4
10/18/2011 11:11:56						6.400	26.10	6.24	92.1	5.0	31.49	8.17	
10/18/2011 11:12:04						11.800	26.10	6.25	92.1	5.6	31.50	8.27	4.1
10/18/2011 11:12:08						11.800	26.10	6.27	92.4	5.6	31.50	8.13	
10/18/2011 10:59:42	W3	MF	832035	807887	12.4	1.000	26.30	6.27	92.7	2.4	31.29	8.08	2.7
10/18/2011 10:59:47						1.000	26.30	6.26	92.6	2.4	31.28	8.07	
10/18/2011 11:00:59						6.300	26.10	6.35	93.6	3.6	31.44	8.06	4.3
10/18/2011 11:01:04						6.200	26.10	6.33	93.4	3.6	31.49	8.08	
10/18/2011 11:01:11						11.300	26.10	6.34	93.5	7.5	31.50	8.13	7.5
10/18/2011 11:01:15						11.300	26.10	6.32	93.2	7.3	31.50	8.09	
10/18/2011 11:31:40	C1	MF	833713	808189	13.6	1.100	26.10	6.33	93.2	4.6	31.20	8.09	4.9
10/18/2011 11:32:04						1.100	26.10	6.36	93.7	4.6	31.42	8.08	
10/18/2011 11:32:08						6.800	26.10	6.34	93.5	5.8	31.48	8.08	5.2
10/18/2011 11:32:17						6.800	26.10	6.34	93.5	5.8	31.49	8.06	
10/18/2011 11:32:21						12.500	26.10	6.31	93.0	5.2	31.50	8.08	3.6
10/18/2011 11:32:34						12.500	26.10	6.26	92.3	5.3	31.50	8.08	
10/18/2011 10:46:13	C2	MF	831468	807757	10.6	1.100	26.10	5.77	85.2	3.0	31.48	8.12	1.8
10/18/2011 10:46:21						1.100	26.10	5.76	84.9	3.1	31.48	8.10	
10/18/2011 10:46:34						5.300	26.10	5.82	85.9	3.2	31.49	8.09	3.3
10/18/2011 10:46:43						5.300	26.10	5.62	82.8	3.2	31.49	8.06	
10/18/2011 10:47:25						9.800	26.10	5.67	83.7	3.6	31.48	8.03	3.0
10/18/2011 10:47:50						9.800	26.10	5.62	82.9	3.6	31.49	8.02	
10/18/2011 11:49:06	C3	MF	832244	808876	13.7	1.100	26.10	6.25	92.2	3.4	31.25	8.08	3.3
10/18/2011 11:49:10						1.100	26.10	6.24	92.0	3.5	31.25	8.07	
10/18/2011 11:49:19						6.900	26.10	6.25	92.2	4.6	31.49	8.06	3.5
10/18/2011 11:49:23						6.900	26.10	6.23	91.8	4.6	31.49	8.07	
10/18/2011 11:49:34						12.700	26.10	6.16	90.9	4.5	31.50	8.08	2.5
10/18/2011 11:49:38						12.700	26.10	6.13	90.4	4.5	31.50	8.08	

MF- Mid Flood Tide

ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan**



Sok Kwu Wan

Date 20-Oct-11

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
			East	North									
2011/10/20 8:33	W1	ME	832983	807746	2.4	1.2	26.00	6.71	98.4	3.0	30.79	8.26	7.1
						1.2	26.00	6.61	96.9	3.2	30.96	8.24	
2011/10/20 8:22	W2	ME	832598	807977	12.4	1.000	26.00	6.68	98.0	4.0	31.04	8.12	4.5
						1.000	26.00	6.66	97.8	4.2	31.10	8.10	
						6.200	25.90	6.50	95.4	4.3	31.12	8.06	6.8
						6.200	25.90	6.33	92.8	3.5	31.12	8.07	
						11.400	25.90	6.51	95.5	3.2	31.12	8.01	5.1
						11.400	25.90	6.41	94.1	3.8	31.13	8.04	
2011/10/20 8:14	W3	ME	832051	807899	12.8	1.000	25.70	6.08	89.0	3.6	31.25	8.22	4.1
						1.000	25.70	6.03	88.3	3.2	31.35	8.20	
						6.400	25.70	6.11	89.5	3.3	31.42	8.09	5.9
						6.400	25.70	6.09	89.2	4.0	31.42	8.09	
						11.800	25.70	5.91	86.5	3.8	31.41	8.10	6.6
						11.800	25.70	5.89	86.3	3.6	31.41	8.11	
2011/10/20 8:40	C1	ME	833702	808181	13.5	1.000	26.10	6.88	101.3	3.2	31.04	8.18	4.4
						1.000	26.10	6.86	101.0	3.7	31.04	8.16	
						6.750	26.10	6.77	99.5	4.4	31.07	8.04	7.8
						6.750	26.10	6.60	97.0	3.9	31.09	8.04	
						12.500	26.00	6.59	96.8	4.1	31.10	8.19	4.9
						12.500	26.00	6.50	95.5	3.7	31.11	8.15	
2011/10/20 8:04	C2	ME	831459	807758	10.6	1.000	25.80	6.35	93.0	3.6	31.21	8.21	4.9
						1.000	25.80	6.32	92.6	4.3	31.21	8.20	
						5.300	25.80	6.39	93.7	3.0	31.32	8.04	3.4
						5.300	25.80	6.41	94.1	4.2	31.35	8.27	
						9.600	25.80	5.75	84.4	3.9	31.48	8.03	3.8
						9.600	25.80	5.56	81.5	3.6	31.47	8.05	
2011/10/20 8:59	C3	ME	832219	808876	13.6	1.000	26.10	6.71	98.6	3.5	31.06	8.12	4.3
						1.000	26.10	6.60	97.1	2.6	31.07	8.11	
						6.800	26.00	6.63	97.4	3.1	31.10	8.12	5.1
						6.800	26.00	6.56	96.4	3.4	31.11	8.12	
						12.600	26.00	6.36	93.5	3.0	31.14	8.17	4.1
						12.600	26.00	6.32	92.9	3.5	31.15	8.08	
2011/10/20 17:30	W1	MF	832975	807744	2.6	1.3	25.90	6.67	98.0	2.9	31.21	8.12	5.1
						1.3	25.90	6.66	97.8	2.8	31.19	8.28	
2011/10/20 17:24	W2	MF	832608	807976	12.9	1.000	26.20	6.71	98.8	3.4	31.03	8.13	10.9
						1.000	26.20	6.78	99.8	4.1	31.02	8.13	
						6.450	26.00	6.96	102.3	3.3	31.13	8.11	4.6
						6.450	26.00	6.80	99.9	2.9	31.18	8.03	
						11.900	26.00	6.72	98.8	2.8	31.16	8.06	3.9
						11.900	26.00	6.77	99.4	3.1	31.15	8.10	
2011/10/20 17:10	W3	MF	832039	807890	12.3	1.000	26.10	6.89	100.7	4.4	30.11	8.15	4.5
						1.000	26.10	6.82	100.2	3.6	30.93	8.14	
						6.150	26.10	6.81	100.1	3.9	31.07	8.31	4.7
						6.150	26.00	6.85	100.6	2.2	31.11	8.22	
						11.300	26.00	6.78	99.5	3.4	31.16	8.28	9.6
						11.300	25.90	6.74	99.0	3.1	31.19	8.17	
2011/10/20 17:44	C1	MF	833698	808169	13.8	1.000	25.90	6.80	99.9	3.4	31.15	8.10	3.5
						1.000	25.90	6.87	101.1	3.2	31.15	8.16	
						6.900	26.00	6.68	98.1	3.5	31.15	8.30	5.7
						6.900	26.00	6.71	98.5	3.9	31.15	8.18	
						12.800	26.00	6.59	96.9	4.0	31.20	8.35	4.2
						12.800	26.10	6.64	97.6	4.2	31.25	8.26	
2011/10/20 16:58	C2	MF	832608	807757	10.5	1.000	26.10	6.59	96.8	4.1	31.03	8.07	2.4
						1.000	26.10	6.56	96.5	3.3	31.03	8.07	
						5.250	26.10	6.48	95.3	4.9	31.03	8.07	7.3
						5.250	26.10	6.48	95.3	3.4	31.04	8.07	
						9.500	26.10	6.53	96.0	3.2	31.14	8.15	5.0
						9.500	26.10	6.52	95.9	3.9	31.15	8.11	
2011/10/20 17:53	C3	MF	832039	808879	13.5	1.000	26.10	6.51	95.7	3.8	31.05	8.07	4.1
						1.000	26.10	6.52	95.9	4.2	31.04	8.09	
						6.750	26.10	6.42	94.5	3.7	31.10	8.07	8.3
						6.750	26.10	6.45	94.8	3.1	31.10	8.06	
						12.500	26.10	6.44	94.7	4.2	31.20	7.90	3.9
						12.500	26.10	6.49	95.4	3.4	31.25	8.02	

MF- Mid Flood Tide
ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan**



Sok Kwu Wan

Date 22-Oct-11

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
			East	North									
2011/10/22 8:39	W1	ME	832971	807745	2.6	1.3	23.60	6.80	77.9	3.8	30.84	8.30	4.7
						1.3	23.50	6.72	74.2	4.2	30.97	8.00	
2011/10/22 8:33	W2	ME	832590	807971	12.4	1.000	23.80	6.83	88.9	4.4	30.94	8.20	5.7
						1.000	23.70	6.65	81.4	3.6	30.45	8.40	
						6.200	23.60	6.69	80.8	4.0	30.79	8.20	5.0
						6.200	23.50	6.58	82.2	4.3	30.79	8.30	
						11.400	23.40	6.44	78.4	4.0	32.37	8.20	7.0
						11.400	23.50	6.32	77.6	4.8	32.46	8.10	
2011/10/22 8:21	W3	ME	832028	807898	12.6	1.000	24.30	6.85	88.5	4.3	31.55	8.30	12.0
						1.000	24.30	6.79	87.9	4.0	31.56	8.10	
						6.300	23.80	6.54	86.9	3.6	32.52	8.00	12.6
						6.300	23.80	6.43	85.0	4.2	32.55	8.20	
						11.600	23.80	6.36	83.4	3.9	32.53	8.20	6.5
						11.600	23.70	6.47	84.8	3.7	32.47	8.30	
2011/10/22 8:52	C1	ME	833684	808162	13.2	1.000	23.80	6.46	83.9	3.9	30.88	8.30	8.1
						1.000	23.20	6.31	81.2	4.2	30.49	8.30	
						6.600	23.60	6.86	80.1	4.3	31.90	8.30	5.4
						6.600	23.50	6.55	77.6	3.1	31.83	8.00	
						12.200	23.70	6.63	76.8	3.9	31.66	8.20	4.4
						12.200	23.20	6.70	79.1	4.2	31.35	8.40	
2011/10/22 8:08	C2	ME	831469	807759	10.8	1.000	24.80	7.02	88.4	3.6	30.63	8.00	5.6
						1.000	24.60	7.31	87.6	4.4	30.49	8.30	
						5.400	23.90	6.83	82.8	3.9	31.36	8.20	8.1
						5.400	24.10	6.64	83.6	2.7	31.36	8.20	
						9.800	23.80	6.55	81.7	4.2	32.33	8.30	6.3
						9.800	23.70	6.38	80.9	4.0	32.40	8.20	
2011/10/22 9:17	C3	ME	832246	808870	13.4	1.000	24.30	6.70	88.5	4.4	31.37	8.30	9.8
						1.000	24.30	6.53	87.9	3.0	31.49	8.40	
						6.700	24.10	6.31	86.9	3.3	30.85	8.40	6.6
						6.700	24.10	6.28	85.0	4.6	30.94	8.10	
						12.400	23.80	6.19	83.4	4.9	32.30	8.20	4.5
						12.400	23.80	6.07	84.8	4.8	32.35	8.10	
2011/10/22 14:58	W1	MF	832963	807725	2.3	1.15	23.40	6.33	88.60	2.9	30.67	8.30	5.7
						1.15	23.40	6.47	84.80	3.8	30.64	8.20	
2011/10/22 14:50	W2	MF	832614	807999	12.5	1.000	24.20	6.90	92.40	4.4	30.31	8.30	9.5
						1.000	24.10	6.81	93.00	3.7	30.36	8.20	
						6.250	24.30	6.36	88.70	3.6	30.80	8.00	6.7
						6.250	24.30	6.23	81.60	4.4	30.80	8.20	
						11.500	23.80	6.06	82.40	4.7	32.40	8.10	5.0
						11.500	22.90	6.17	86.80	4.2	32.48	8.30	
2011/10/22 14:38	W3	MF	832028	807896	12.9	1.000	24.00	6.99	88.60	2.5	30.62	8.30	6.1
						1.000	23.90	6.88	86.80	3.9	30.68	8.20	
						6.450	23.10	6.72	83.30	4.2	31.50	8.30	6.2
						6.450	23.40	6.73	85.40	3.4	31.25	8.30	
						11.900	23.70	6.44	86.00	3.7	32.20	8.40	5.0
						11.900	23.80	6.55	82.10	3.9	32.24	8.20	
2011/10/22 15:16	C1	MF	833716	808180	13.3	1.000	23.70	6.81	90.10	3.6	32.23	8.10	6.1
						1.000	23.80	6.95	92.40	4.1	32.40	8.30	
						6.650	23.70	6.43	86.90	3.2	31.38	8.20	6.0
						6.650	23.60	6.55	88.00	3.0	31.48	8.20	
						12.300	23.10	6.08	80.40	4.2	32.36	8.20	6.0
						12.300	23.00	6.09	81.50	4.3	32.97	8.40	
2011/10/22 14:25	C2	MF	831479	807761	10.8	1.000	24.70	6.84	95.80	4.2	30.32	7.90	6.7
						1.000	24.50	6.77	96.30	3.6	30.86	8.20	
						5.400	24.10	6.49	92.40	4.0	31.47	8.30	5.8
						5.400	24.00	6.33	91.90	2.8	31.96	8.20	
						9.800	23.90	6.03	93.60	3.2	32.46	8.10	4.0
						9.800	23.80	6.09	90.80	4.3	32.44	8.30	
2011/10/22 15:37	C3	MF	832209	808854	13.4	1.000	24.20	6.48	90.10	2.6	30.36	8.20	5.2
						1.000	24.30	6.30	88.40	3.0	30.84	8.40	
						6.700	24.10	6.01	83.20	3.4	31.80	8.40	4.2
						6.700	23.80	6.19	86.10	4.7	31.99	8.30	
						12.400	23.70	6.29	84.70	4.6	32.55	8.30	3.1
						12.400	23.60	6.33	80.90	5.2	32.43	8.10	

MF- Mid Flood Tide

ME- Mid Ebb tide

Contract No. DC/2009/13

Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan



Sok Kwu Wan

Date 24-Oct-11

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
			East	North									
2011/10/24 10:11	W1	ME	832961	807723	2.7	1.35	24.10	6.67	82.7	4.1	30.37	8.20	3.6
						1.35	23.80	6.53	81.9	3.9	30.55	8.30	
2011/10/24 10:03	W2	ME	832616	807993	12.3	1.000	24.50	6.94	89.9	3.4	30.93	8.20	4.3
						1.000	24.20	6.80	88.4	3.5	30.40	8.30	
						6.150	24.10	6.76	87.2	3.9	30.64	8.30	6.8
						6.150	24.00	6.62	87.6	4.3	30.60	8.30	
						11.300	23.80	6.54	84.9	5.0	31.25	8.20	4.7
						11.300	23.60	6.40	83.2	4.7	31.31	8.30	
2011/10/24 9:51	W3	ME	832038	807879	12.8	1.000	24.90	6.94	90.0	3.6	30.98	8.20	4.1
						1.000	24.70	6.50	90.8	4.7	31.48	8.40	
						6.400	23.80	6.61	87.6	4.1	31.13	8.30	3.1
						6.400	24.60	6.48	87.2	4.2	32.38	8.20	
						11.800	24.20	6.57	85.3	4.4	32.20	8.10	3.0
						11.800	23.70	6.83	85.1	2.6	32.61	8.30	
2011/10/24 10:25	C1	ME	833718	808190	13.7	1.000	24.20	7.01	85.2	4.0	31.77	8.20	3.0
						1.000	24.30	7.00	83.9	4.4	31.25	8.20	
						6.850	23.80	6.91	80.7	4.4	32.26	8.30	3.8
						6.850	23.60	6.88	80.1	3.0	32.26	8.10	
						12.700	23.20	6.70	77.6	3.7	32.21	8.40	3.1
						12.700	23.40	6.64	79.3	3.3	32.26	8.30	
2011/10/24 9:38	C2	ME	831460	807756	10.6	1.000	24.30	6.83	91.4	4.4	30.36	8.20	5.3
						1.000	24.60	6.77	90.3	3.4	30.93	8.10	
						5.300	23.80	6.55	88.4	3.6	31.25	8.30	2.9
						5.300	24.10	6.40	87.6	4.1	31.56	8.20	
						9.600	23.40	6.76	88.1	3.9	32.19	8.30	2.3
						9.600	23.70	6.38	89.3	2.5	32.00	8.30	
2011/10/24 10:46	C3	ME	832219	808871	13	1.000	24.90	7.03	88.6	4.8	31.44	8.20	4.8
						1.000	24.50	6.98	87.2	3.6	31.63	8.20	
						6.500	23.90	6.97	84.7	4.7	32.48	8.30	3.2
						6.500	23.60	6.91	84.3	3.9	32.20	8.40	
						12.000	24.10	6.88	81.9	3.5	32.90	8.20	4.1
						12.000	24.00	6.70	80.8	4.4	32.82	8.30	
2011/10/24 16:12	W1	MF	832977	807746	2.8	1.4	23.70	6.74	89.4	3.6	31.91	8.40	4.5
						1.4	23.60	6.59	87.5	3.8	32.20	8.30	
2011/10/24 15:59	W2	MF	832601	807993	12.5	1.000	24.20	7.09	89.9	3.8	30.38	8.10	5.0
						1.000	23.90	7.01	90.3	2.7	30.41	8.30	
						6.250	24.30	6.83	87.6	2.7	31.47	8.30	3.9
						6.250	23.60	6.76	88.0	3.9	31.38	8.40	
						11.500	23.80	6.92	85.5	4.0	32.91	8.30	3.4
						11.500	23.70	6.70	84.5	3.4	32.23	8.20	
2011/10/24 15:49	W3	MF	832056	807902	12.9	1.000	24.30	6.73	89.5	3.2	30.31	8.20	4.4
						1.000	24.60	6.72	90.7	4.3	30.45	8.40	
						6.450	23.90	6.61	90.3	5.0	31.92	8.30	4.0
						6.450	24.10	6.54	88.4	3.1	31.31	8.20	
						11.900	24.00	6.59	89.7	4.3	32.44	8.20	10.1
						11.900	23.60	6.50	86.2	3.6	32.93	8.30	
2011/10/24 16:28	C1	MF	833696	808189	13.6	1.000	24.70	6.72	90.2	4.4	30.83	8.30	6.4
						1.000	24.10	6.78	90.0	4.2	30.83	8.40	
						6.800	23.80	6.34	88.8	4.0	31.60	8.40	5.3
						6.800	24.30	6.36	89.2	3.8	31.56	8.20	
						12.600	23.10	6.23	84.9	4.8	32.34	8.20	6.7
						12.600	23.70	6.19	85.3	4.3	32.93	8.50	
2011/10/24 15:36	C2	MF	831459	807759	10.9	1.000	24.90	7.12	92.0	3.9	29.56	8.40	6.1
						1.000	24.10	7.09	91.9	4.8	30.37	8.20	
						5.450	23.80	6.80	90.8	4.0	31.32	8.20	4.2
						5.450	23.60	6.76	92.3	3.1	31.16	8.10	
						9.900	23.70	6.77	88.4	4.3	32.29	8.30	9.1
						9.900	23.20	6.83	89.5	3.1	32.34	8.30	
2011/10/24 16:47	C3	MF	832246	808877	13.1	1.000	24.60	6.46	88.3	3.6	30.99	8.10	3.4
						1.000	24.30	6.33	87.4	3.9	31.96	8.30	
						6.550	24.00	6.37	87.9	4.4	32.20	8.20	6.3
						6.550	23.80	6.43	89.1	2.8	32.22	8.30	
						12.100	23.10	6.31	88.3	2.3	32.26	8.30	5.3
						12.100	23.30	6.35	87.2	4.8	32.29	8.00	

MF- Mid Flood Tide

ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan**



Sok Kwu Wan

Date 26-Oct-11

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
			East	North									
2011/10/26 11:22	W1	ME	832956	807746	2.8	1.4	23.70	6.32	84.6	4.83	30.80	8.10	3.4
						1.4	23.60	6.44	86.4	3.12	31.65	8.20	
2011/10/26 11:09	W2	ME	832602	807979	13	1.000	23.90	6.95	84.3	2.38	28.63	8.40	9.1
						1.000	23.70	6.90	86.9	4.12	29.72	8.20	
						6.500	23.40	6.75	85.8	3.36	30.38	8.30	3.8
						6.500	23.30	6.63	83.2	4.72	31.61	8.30	
						12.000	23.20	6.82	83.6	3.41	31.30	8.10	5.1
						12.000	23.60	6.59	84.8	2.51	30.94	8.30	
2011/10/26 10:58	W3	ME	832032	807895	12.9	1.000	24.10	7.03	88.4	4.32	31.55	8.10	3.9
						1.000	24.80	6.95	87.2	3.65	31.62	8.20	
						6.450	23.50	6.83	86.1	2.98	32.56	8.30	5.4
						6.450	23.60	6.77	85.9	4.40	32.65	8.20	
						11.900	23.70	6.38	89.2	3.35	32.98	8.00	3.8
						11.900	23.80	6.40	88.3	4.38	32.86	8.20	
2011/10/26 11:38	C1	ME	833700	808191	14.1	1.000	23.70	6.59	89.1	4.59	30.38	8.30	4.4
						1.000	23.20	6.27	88.4	3.60	30.12	8.40	
						7.050	23.60	6.38	87.2	4.38	31.85	8.30	2.5
						7.050	23.40	6.19	86.3	4.41	31.64	8.20	
						13.100	23.30	6.02	87.5	3.62	33.19	8.20	3.9
						13.100	23.50	6.38	87.7	4.97	33.85	8.20	
2011/10/26 10:46	C2	ME	831450	807756	10.4	1.000	24.20	6.85	89.5	4.18	30.61	8.40	2.7
						1.000	23.90	6.91	88.4	3.91	31.78	8.30	
						5.200	23.60	6.77	86.8	2.44	32.43	8.30	4.4
						5.200	24.30	6.56	87.9	3.62	33.62	8.20	
						9.400	23.50	5.96	85.1	3.74	32.41	8.30	5.0
						9.400	23.60	6.17	84.9	3.68	32.95	8.10	
2011/10/26 11:57	C3	ME	832212	808878	13.8	1.000	23.10	6.31	88.5	5.36	32.48	8.30	5.2
						1.000	23.40	6.09	87.4	4.82	31.36	8.00	
						6.900	23.50	5.86	83.8	4.48	32.89	8.20	3.9
						6.900	23.70	5.74	82.1	3.96	32.69	8.40	
						12.800	23.30	5.92	81.5	4.72	32.89	8.20	4.6
						12.800	23.00	5.98	82.3	3.61	32.93	8.30	
2011/10/26 17:12	W1	MF	832945	807756	2.7	1.35	23.60	6.81	80.80	4.3	30.56	8.20	4.3
						1.35	24.20	6.94	84.30	4.0	31.10	8.30	
2011/10/26 16:33	W2	MF	832599	807983	12.8	1.000	24.10	6.86	90.20	3.8	31.49	8.40	4.8
						1.000	23.80	6.70	90.00	4.1	31.83	8.30	
						6.400	23.60	6.83	88.30	3.4	31.06	8.20	2.7
						6.400	23.10	6.44	87.30	4.1	31.12	8.20	
						11.800	23.00	6.43	86.90	4.3	31.99	8.30	7.2
						11.800	23.40	6.59	87.70	3.8	32.63	8.00	
2011/10/26 16:48	W3	MF	832029	807896	12.6	1.000	23.60	6.94	83.20	3.9	31.45	8.20	7.8
						1.000	23.20	6.87	84.70	4.3	31.36	8.40	
						6.300	23.50	6.77	85.90	3.2	31.38	8.20	6.7
						6.300	23.60	6.62	86.00	4.8	31.43	8.10	
						11.600	23.20	6.38	81.90	2.3	32.40	8.30	5.3
						11.600	23.00	6.19	80.40	3.9	32.96	8.20	
2011/10/26 17:38	C1	MF	833702	808176	13.4	1.000	23.80	6.84	88.10	2.4	31.23	8.30	7.4
						1.000	23.60	6.88	87.60	3.6	31.64	8.20	
						6.700	23.70	6.76	83.20	4.5	32.00	8.10	8.4
						6.700	23.20	6.92	83.40	3.8	32.36	8.10	
						12.400	23.50	6.63	85.60	5.3	32.64	8.00	8.1
						12.400	23.70	6.70	83.90	5.0	32.55	8.30	
2011/10/26 16:33	C2	MF	831465	807762	10.9	1.000	23.70	6.94	89.40	3.9	29.43	8.30	7.7
						1.000	23.40	6.83	88.30	4.2	30.38	8.20	
						5.450	23.10	6.82	89.20	3.4	31.47	8.30	4.4
						5.450	22.90	6.91	89.40	3.9	31.94	8.40	
						9.900	22.80	6.77	89.00	3.5	32.02	8.40	4.3
						9.900	23.20	6.79	89.20	4.2	31.80	8.00	
2011/10/26 17:57	C3	MF	832219	808878	13.6	1.000	23.60	7.16	90.30	4.4	30.53	8.10	8.1
						1.000	23.10	7.02	92.40	3.6	30.31	8.20	
						6.800	24.00	7.18	88.10	3.8	31.33	8.20	3.8
						6.800	23.70	7.14	88.20	4.8	31.96	8.40	
						12.600	23.10	7.00	84.90	2.4	32.24	8.40	3.5
						12.600	22.80	6.91	85.70	2.6	33.16	8.30	

MF- Mid Flood Tide
ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works
at Yung Shue Wan and Sok Kwu Wan**



Sok Kwu Wan

Date 28-Oct-11

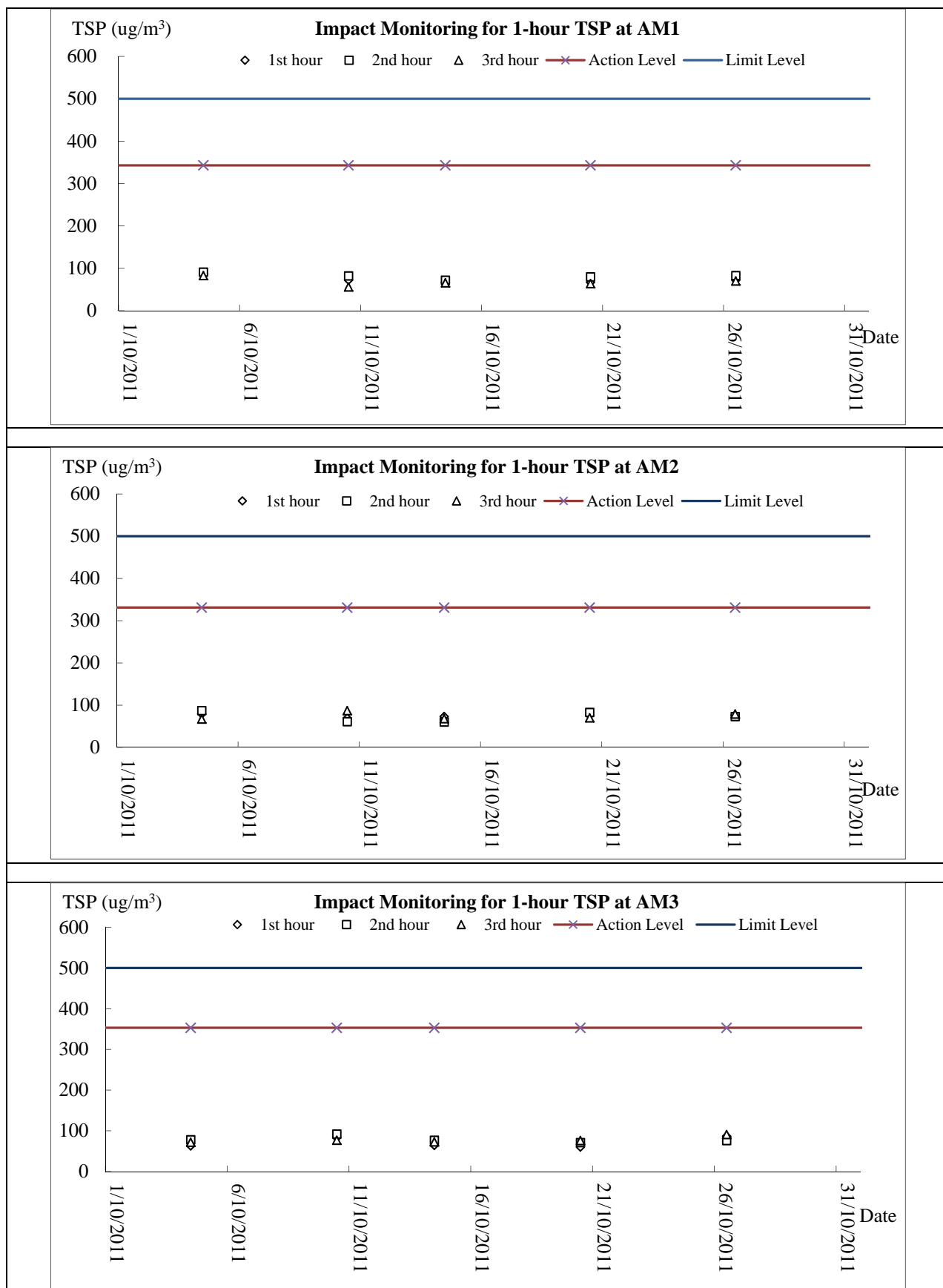
Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/10/28 13:08	W1	ME	832951	807743	2.5	1.25	25.20	6.79	96.3	2.8	32.22	8.10	2.6
						1.25	24.80	6.96	98.4	2.7	31.18	8.20	
2011/10/28 12:59	W2	ME	832590	807995	12.6	1.000	25.20	7.32	97.9	3.1	30.33	8.30	2.9
						1.000	25.00	7.09	99.7	3.3	30.39	8.20	
						6.300	25.40	6.53	96.5	2.8	31.48	8.20	3.2
						6.300	25.40	6.65	94.3	2.7	31.45	8.10	
						11.600	24.90	6.34	98.3	2.6	31.38	8.10	2.8
						11.600	24.90	6.53	99.1	3.1	31.39	8.30	
2011/10/28 12:51	W3	ME	832036	807869	12.8	1.000	25.20	7.13	100.7	2.4	30.31	8.20	3.9
						1.000	25.20	7.24	99.5	2.6	30.95	8.10	
						6.400	25.20	6.99	97.6	4.2	31.78	8.20	2.2
						6.400	25.30	6.85	97.8	3.4	31.76	8.20	
						11.800	24.80	6.38	96.3	3.0	32.23	8.00	2.0
						11.800	24.90	6.64	95.5	2.5	32.65	8.20	
2011/10/28 13:21	C1	ME	833701	808183	13.4	1.000	25.20	6.95	100.0	3.2	30.45	8.30	2.4
						1.000	25.30	6.85	102.3	3.4	30.38	8.20	
						6.700	25.40	6.75	99.4	2.8	31.40	8.00	3.2
						6.700	25.30	6.62	98.5	3.3	31.32	8.10	
						12.400	25.10	6.44	101.3	2.3	32.89	8.20	2.5
						12.400	25.00	6.55	97.6	2.8	32.85	8.20	
2011/10/28 12:38	C2	ME	831459	807758	10.5	1.000	25.00	7.23	102.9	2.5	30.39	8.00	1.9
						1.000	25.20	7.16	101.3	3.2	30.42	8.10	
						5.250	24.80	7.09	100.8	3.7	31.96	8.00	2.0
						5.250	24.50	7.18	100.1	4.4	31.56	8.20	
						9.500	25.10	7.12	101.3	3.4	32.38	8.30	4.1
						9.500	25.00	6.97	100.6	2.5	32.43	8.10	
2011/10/28 13:43	C3	ME	832219	808876	13.6	1.000	24.80	6.88	100.8	3.0	30.84	8.30	3.7
						1.000	24.70	6.73	101.8	3.2	30.38	8.20	
						6.800	24.60	6.75	100.8	3.8	31.11	8.10	8.3
						6.800	24.60	6.31	99.5	3.1	31.16	8.30	
						12.600	24.30	6.33	99.4	2.3	31.38	8.10	4.1
						12.600	24.30	6.45	97.1	3.2	31.56	8.40	
2011/10/28 17:36	W1	MF	832991	807728	2.4	1.2	24.30	7.19	96.80	3.2	30.75	8.20	4.3
						1.2	24.80	6.94	97.50	3.9	30.12	8.40	
2011/10/28 17:28	W2	MF	832584	807995	12.8	1.000	25.20	7.15	99.50	3.6	30.65	8.20	2.8
						1.000	25.20	7.23	98.30	4.3	30.38	8.30	
						6.400	24.70	6.88	96.30	5.1	31.38	8.30	4.7
						6.400	24.70	6.75	98.50	4.4	31.61	8.20	
						11.800	24.30	6.77	95.40	3.8	32.67	8.20	3.4
						11.800	24.60	6.44	95.20	4.2	32.34	8.20	
2011/10/28 17:15	W3	MF	832039	807881	12.4	1.000	25.60	7.03	101.30	2.7	30.84	8.20	5.0
						1.000	25.30	7.18	100.80	3.3	30.19	8.30	
						6.200	24.80	6.70	99.80	4.9	31.38	8.30	3.4
						6.200	24.70	6.95	95.30	2.5	31.42	8.20	
						11.400	24.20	6.65	94.30	2.6	31.85	8.10	4.6
						11.400	24.30	6.44	95.70	4.1	32.17	8.30	
2011/10/28 17:49	C1	MF	833716	808190	13.5	1.000	25.50	7.01	100.30	4.3	30.18	8.30	3.3
						1.000	25.50	7.12	99.80	4.5	30.91	8.20	
						6.750	24.80	6.81	97.50	3.5	30.50	8.30	2.7
						6.750	24.90	6.64	96.50	3.7	30.34	8.40	
						12.500	24.50	6.38	95.40	4.4	31.78	8.40	3.0
						12.500	24.60	6.76	95.30	4.9	32.43	8.10	
2011/10/28 17:03	C2	MF	831459	807758	10.6	1.000	24.90	7.18	102.90	3.4	30.38	8.00	2.1
						1.000	24.80	7.03	101.30	4.2	30.31	8.30	
						5.300	24.20	6.83	101.70	2.6	31.53	8.10	4.3
						5.300	24.60	6.95	100.40	4.0	31.67	8.00	
						9.600	23.90	6.77	99.40	3.2	32.81	8.20	3.9
						9.600	24.10	6.81	98.90	4.4	32.05	8.40	
2011/10/28 18:05	C3	MF	832246	808845	13.2	1.000	25.20	7.18	101.40	2.4	30.56	8.20	4.2
						1.000	25.20	7.09	100.80	3.9	30.97	8.30	
						6.600	25.10	6.85	97.30	3.8	31.61	8.10	5.2
						6.600	25.20	6.96	94.50	5.1	31.77	8.20	
						12.200	24.50	6.70	95.30	4.6	32.83	8.20	1.6
						12.200	24.30	6.63	94.00	4.9	32.84	8.30	

MF- Mid Flood Tide
ME- Mid Ebb tide

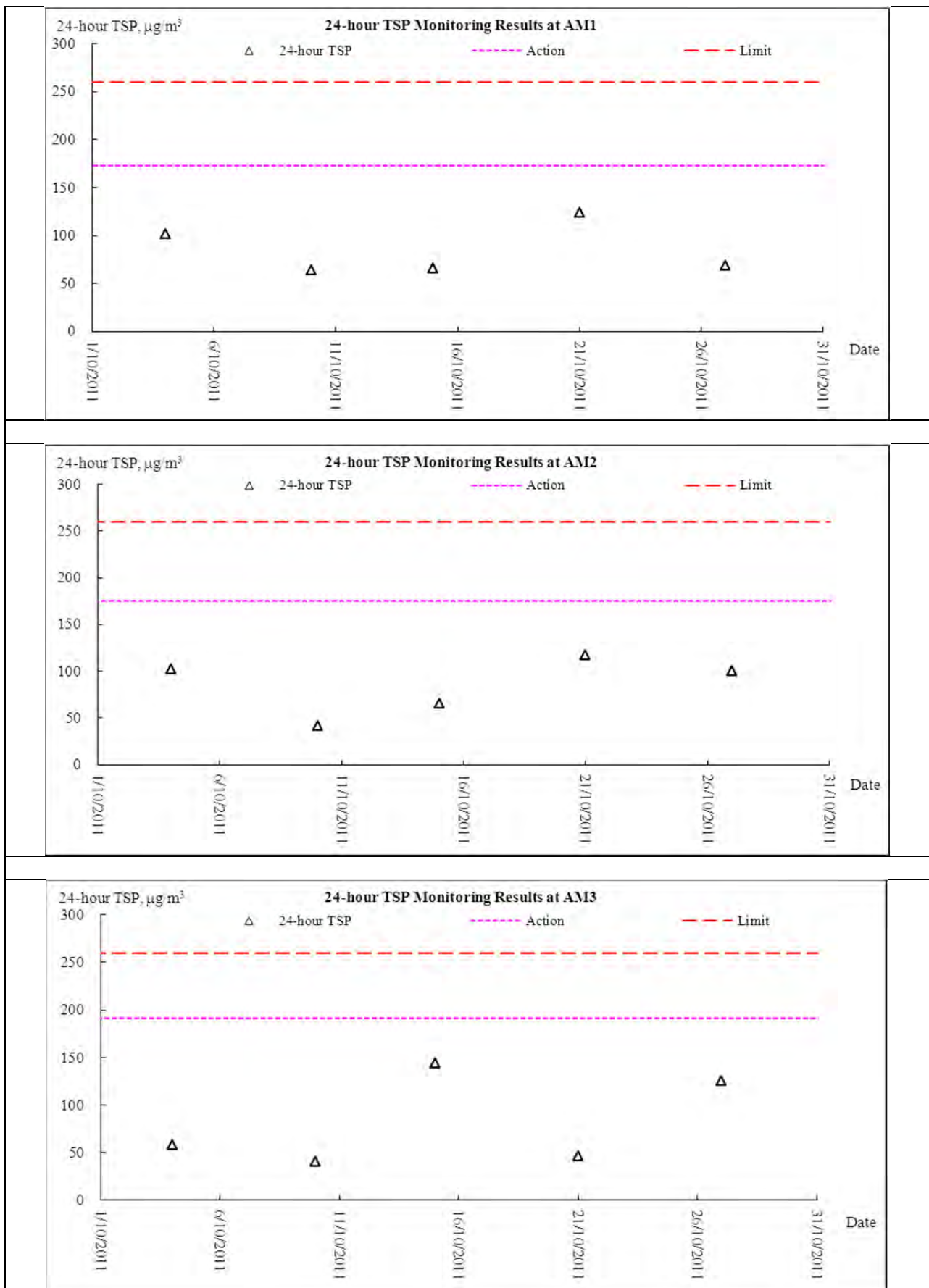
Appendix H

Graphical Plots of Monitoring Results

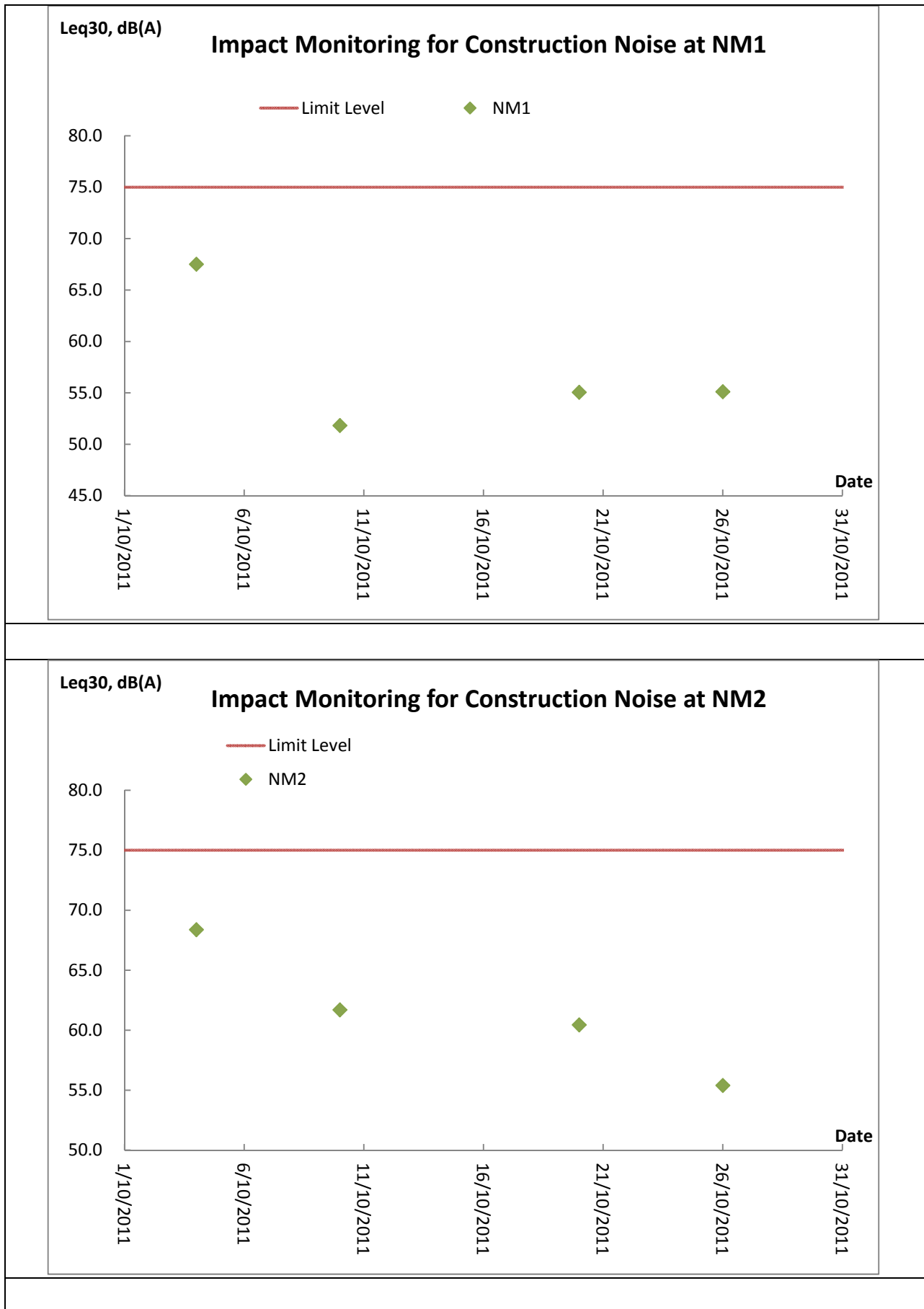
Air Quality Monitoring – 1 hour TSP Monitoring

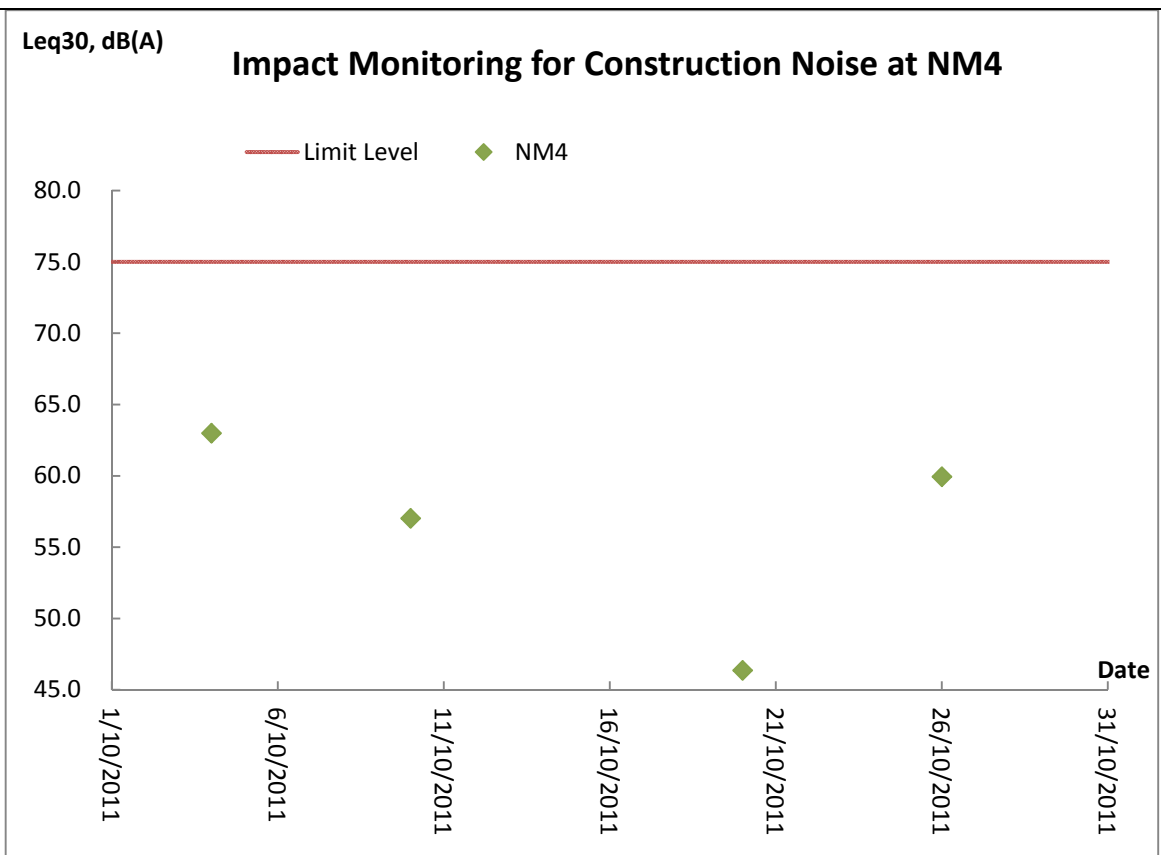
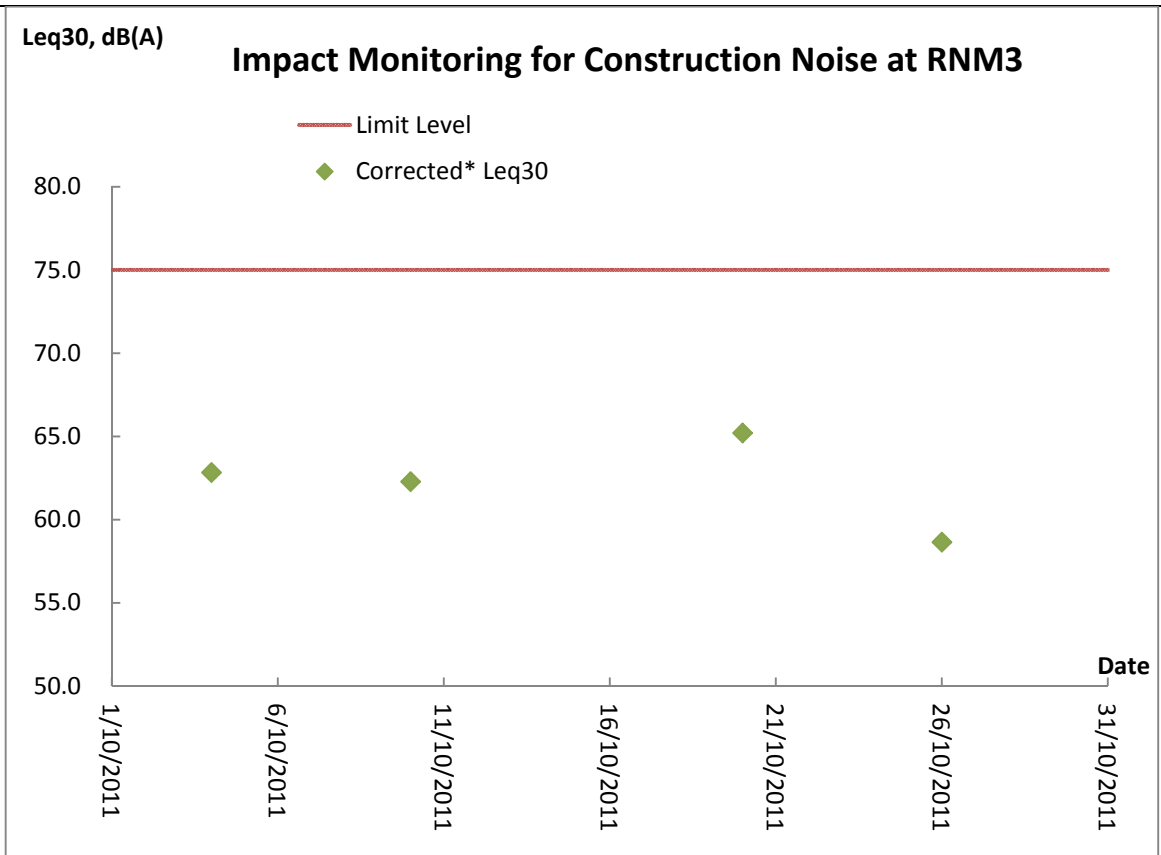


Air Quality Monitoring – 24 hour TSP Monitoring

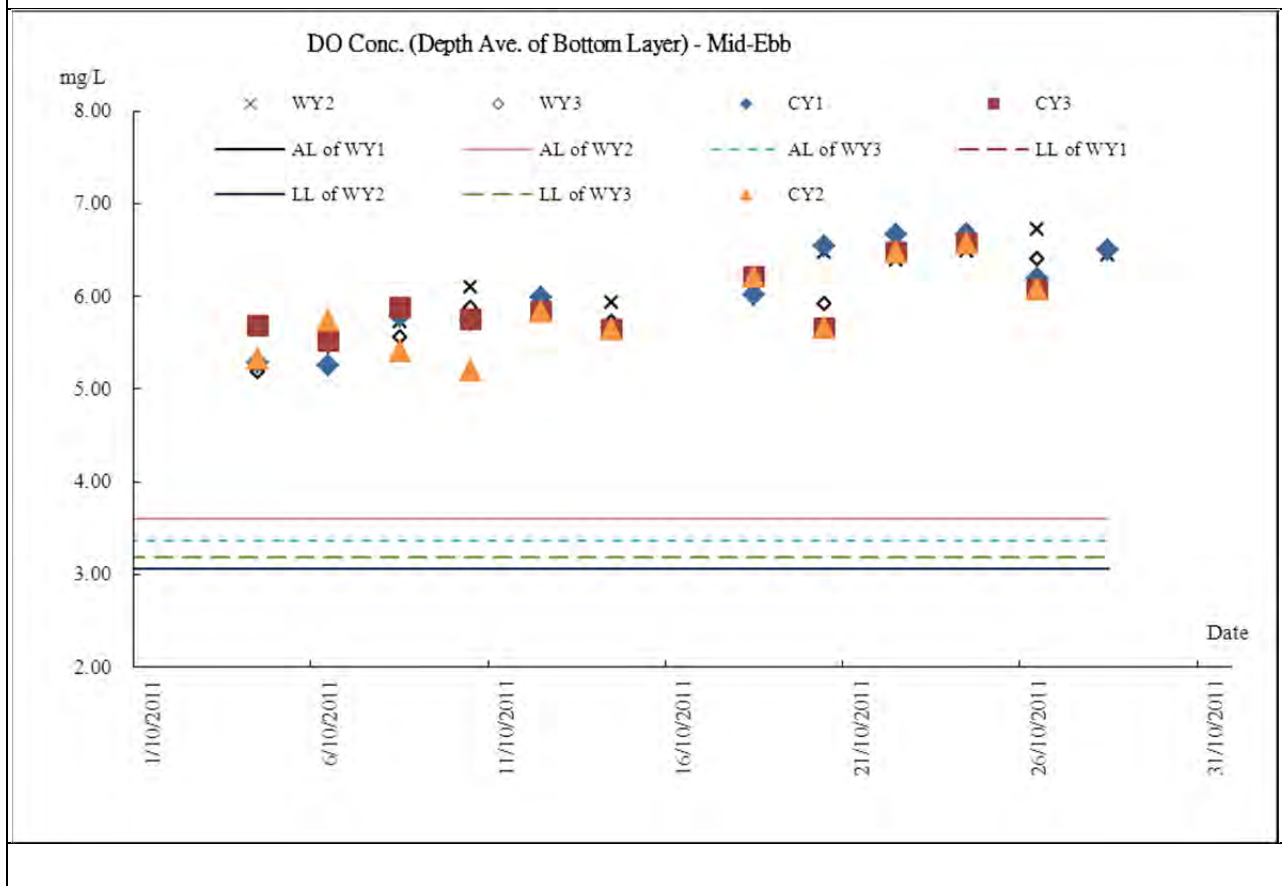
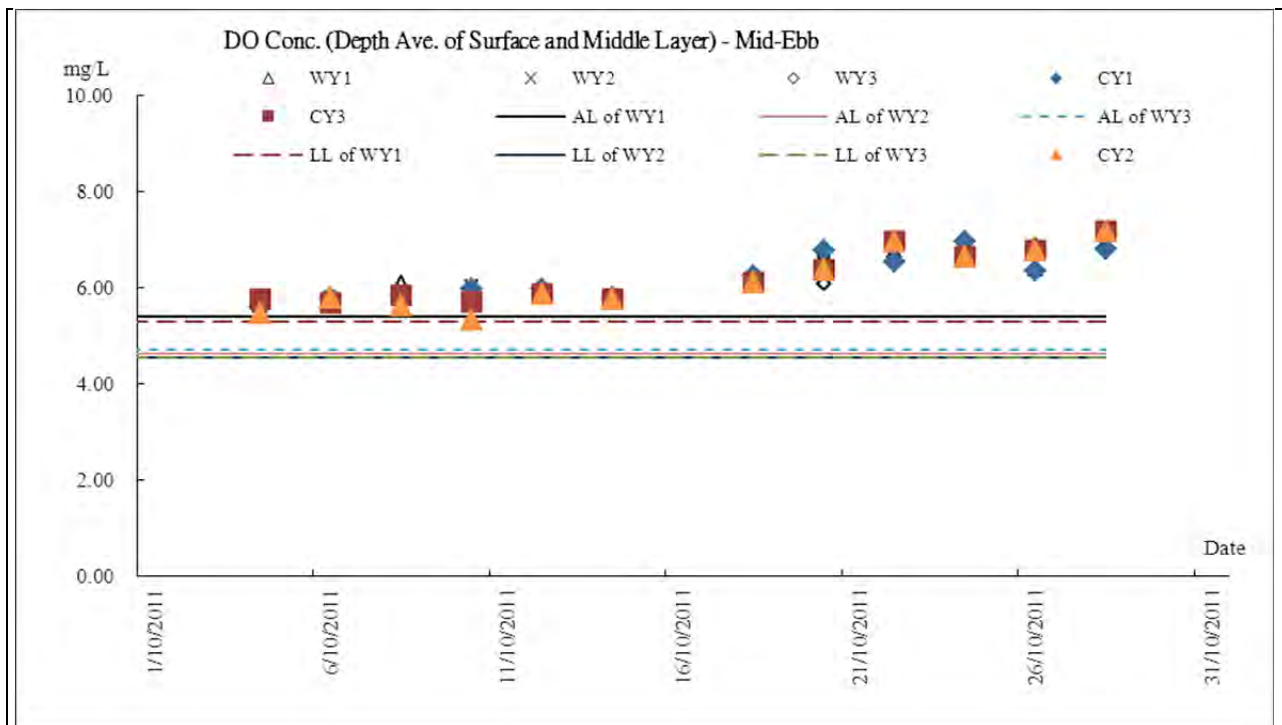


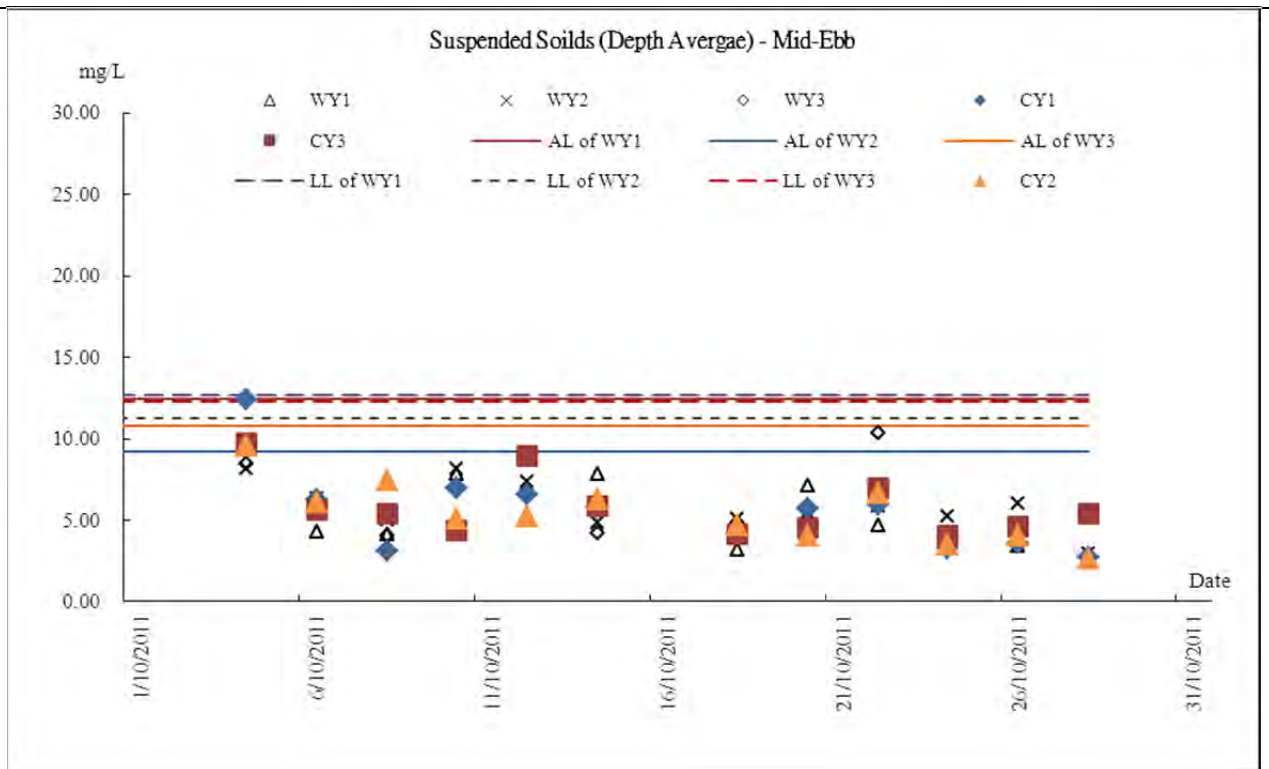
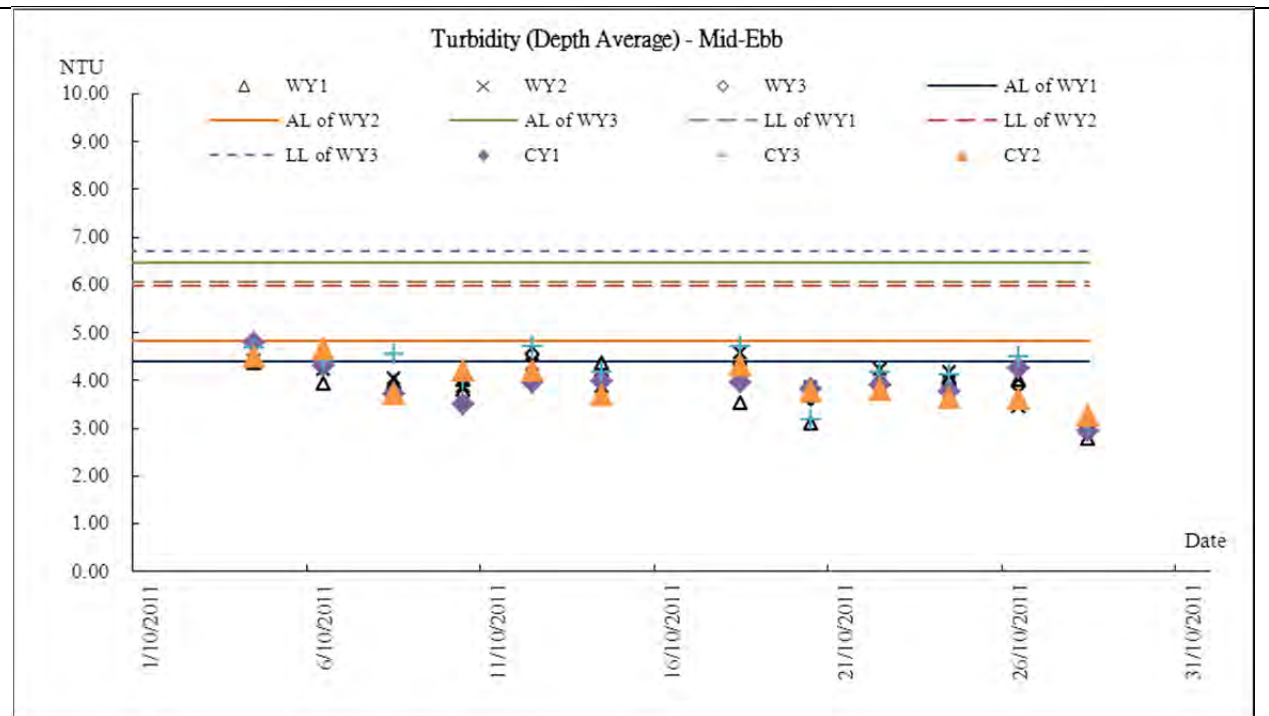
Construction Noise Monitoring



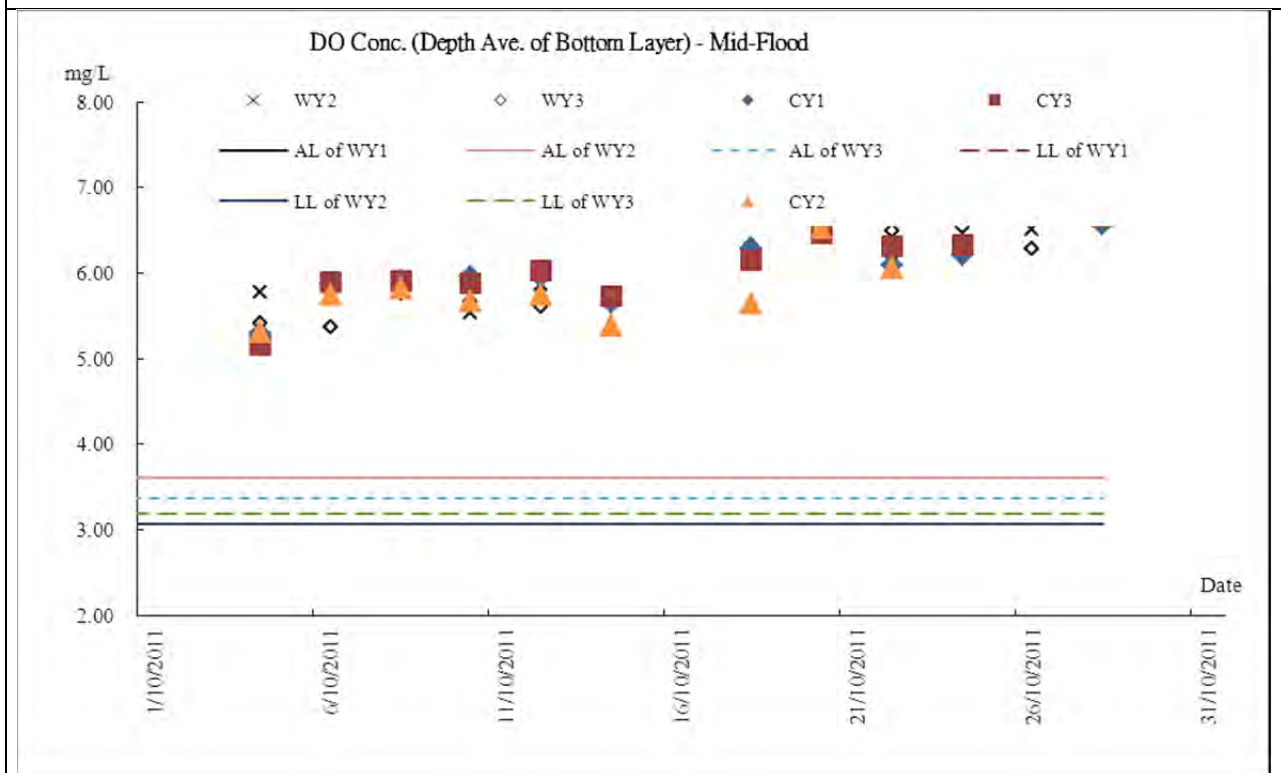
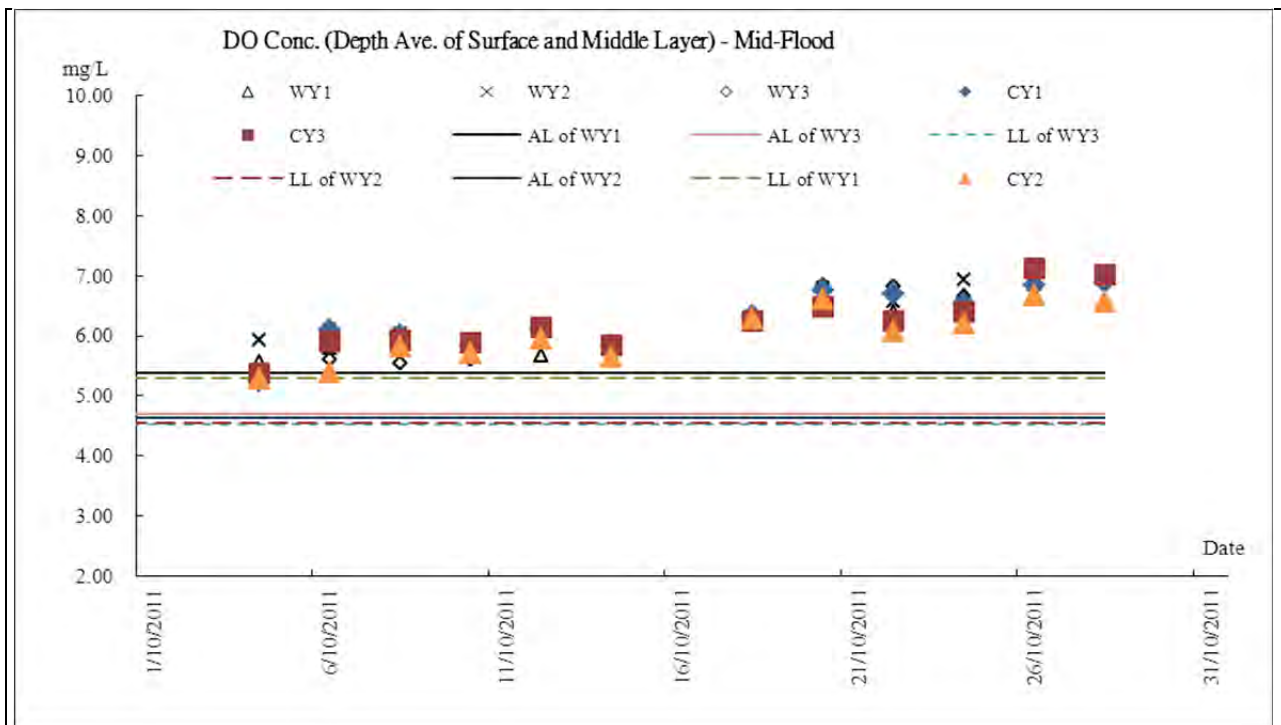


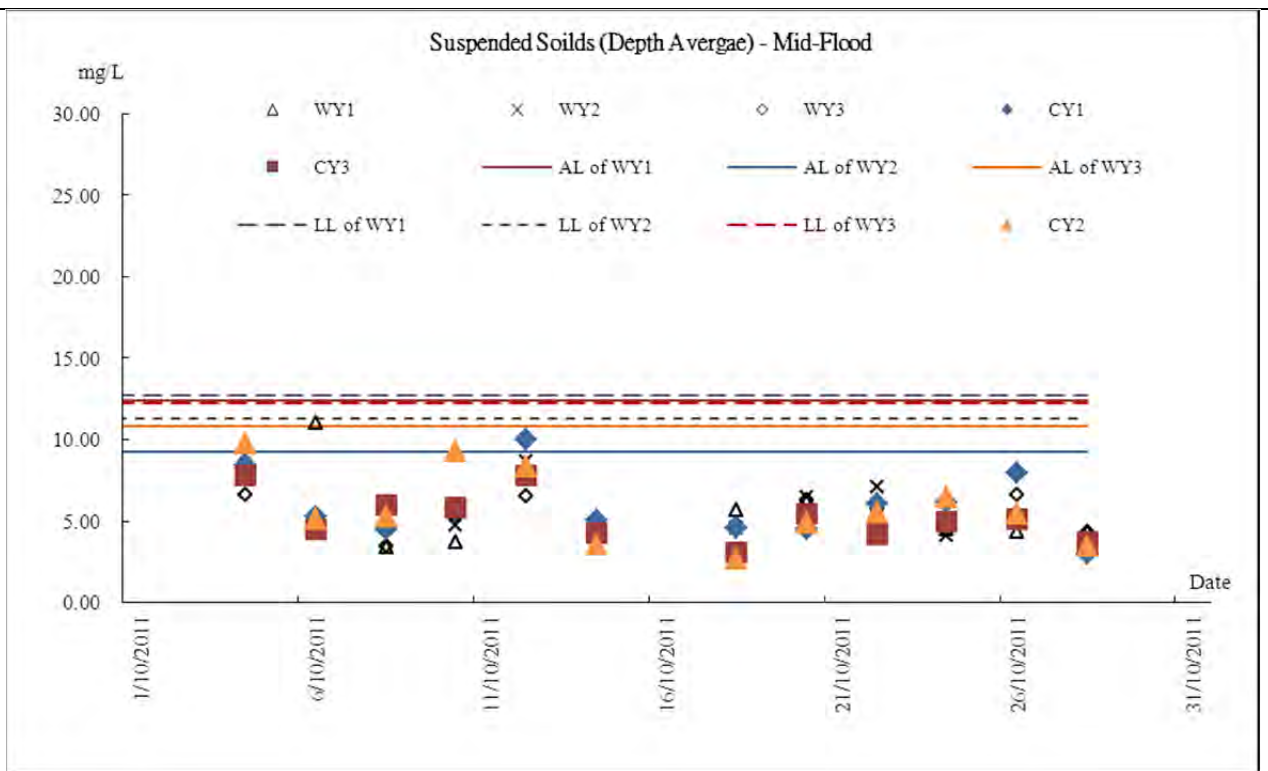
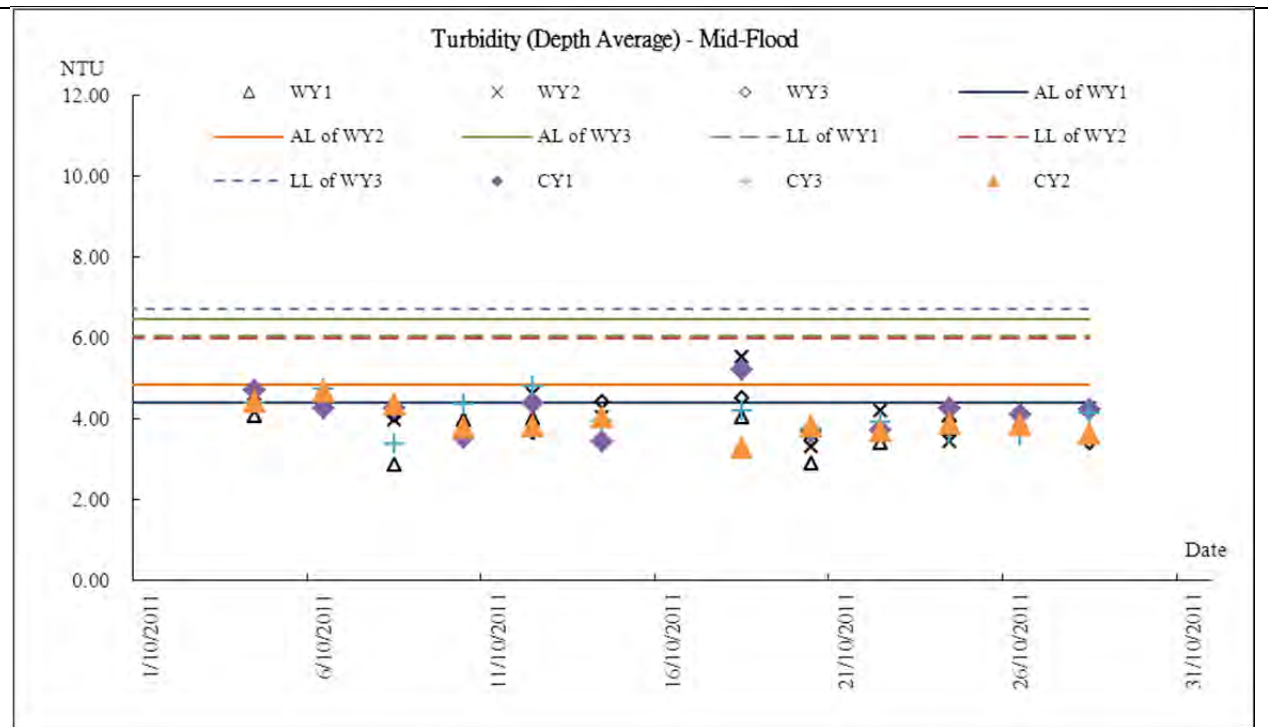
Marine Water Quality Monitoring - Mid-Ebb Tide





Marine Water Quality Monitoring - Mid-Flood Tide





Appendix I

Meteorological Information

Meteorological Data Extracted from HKO during the Reporting Period

Date		Weather
1-Oct-11	Sat	Fine.
2-Oct-11	Sun	STANDBY SIGNAL NO. 1
3-Oct-11	Mon	The Strong Wind Signal, No. 3
4-Oct-11	Tue	Fresh northeasterly winds
5-Oct-11	Wed	Moderate northeasterly winds
6-Oct-11	Thu	Mainly cloudy with one or two light rain patches.
7-Oct-11	Fri	Mainly cloudy.
8-Oct-11	Sat	Mainly cloudy
9-Oct-11	Sun	Mainly cloudy
10-Oct-11	Mon	Moderate to fresh east to northeasterly winds.
11-Oct-11	Tue	Mainly fine and dry.
12-Oct-11	Wed	Light to moderate easterly winds.
13-Oct-11	Thu	rainy
14-Oct-11	Fri	Moderate east to northeasterly winds
15-Oct-11	Sat	mainly fine
16-Oct-11	Sun	Mainly fine and dry.
17-Oct-11	Mon	mainly fine
18-Oct-11	Tue	Mainly fine and dry.
19-Oct-11	Wed	Moderate east to northeasterly winds
20-Oct-11	Thu	Dry with some haze
21-Oct-11	Fri	Light to moderate east to northeasterly winds.
22-Oct-11	Sat	Mainly fine and dry.
23-Oct-11	Sun	Fine.
24-Oct-11	Mon	Light to moderate easterly winds.
25-Oct-11	Tue	Dry with sunny intervals.
26-Oct-11	Wed	Moderate to fresh east to northeasterly winds.
27-Oct-11	Thu	Mainly fine.
28-Oct-11	Fri	Moderate east to northeasterly winds,
29-Oct-11	Sat	Mainly cloudy.
30-Oct-11	Sun	Moderate northeasterly winds.
31-Oct-11	Mon	Mainly fine and dry.

Appendix J
Monthly Summary Waste Flow Table

Monthly Summary Waste Flow Table for October 2011

Month	Actual Quantities of Inert C&D Materials Generated Monthly												Actual Quantities of C&D Wastes Generated Monthly										
	Total Quantity Generated (a) = (c)+(d)+(e)		Hard Rock and Large Broken Concrete (b)		Reused in the Contract (c)		Reused in other Projects (d)		Disposed as Public Fill (e)		Imported Fill (f)		Metals		Paper/ cardboard packaging		Plastics		Chemical Waste		Others, e.g. rubbish		
	(in '000m ³)		(in '000m ³)		(in '000m ³)		(in '000m ³)		(in '000m ³)		(in '000m ³)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in tonne)		
	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	
2010	4.522	0.030	0.068	0.104	0.488	0.000	0.000	0.000	0.000	4.033	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.460
Jan	0.985	3.045	0.003	0.013	0.120	0.419	0.000	2.626	0.865	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.240
Feb	0.377	0.000	0.000	0.043	0.000	0.000	0.000	0.000	0.377	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350
Mar	0.758	1.175	0.002	0.106	0.006	0.000	0.000	1.175	0.752	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.360
Apr	1.135	1.339	0.017	0.025	0.112	0.180	0.000	1.159	1.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.830	5.160
May	0.614	1.362	0.030	0.036	0.014	0.400	0.000	0.962	0.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.150	0.860
Jun	0.505	1.014	0.000	0.022	0.000	0.060	0.000	0.954	0.505	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.610	1.510
Sub-total	8.8954	7.9653	0.1184	0.3497	0.7397	1.0590	0.0000	6.8760	8.1558	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	15.5900	28.9400
Jul	0.824	1.077	0.000	0.004	0.000	0.000	0.000	1.077	0.824	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.000	0.510
Aug	0.491	3.519	0.004	0.006	0.000	0.000	0.000	3.519	0.491	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.990	1.830
Sep	0.074	1.473	0.037	0.004	0.000	0.000	0.000	1.473	0.074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	23.030	2.420
Oct	0.145	1.674	0.000	0.007	0.000	0.000	0.000	1.674	0.145	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.330	6.850
Nov																							
Dec																							
Total	10.4296	15.7083	0.1596	0.3710	0.740	1.059	0.000	14.619	9.6899	0.0303	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.94	40.55
	26.138		0.531		1.799		14.619		9.720		0.000		0.000		0.000		0.000		0.000		108.49		

Remark: Assume 1.0 m³ vehicle dump load = 1.6 tonnes C&D materials

YSW: Yung Shue Wan

SKW: Sok Kwu Wan

Appendix K

Weekly Site Inspection Checklist

Project: TCS/00512/09
Construction of Sewage Treatment Works at
Yung Shue Wan and Sok Kwu Wan

Inspected by _____
 ETL/ ET's Representative: Nicola Hon
 RE's Representative: Joseph Ng
 Contractor's Representative: Edwin Leung
 IEC's Representative: _____

Date: 4 October 2011 Time: 14:00

PART A: GENERAL INFORMATION

Environmental Permit No.

Weather: Sunny Fine Cloudy Rainy
 Temperature: 23.8 °C
 Humidity: High Moderate Low
 Wind: Strong Breeze Light Calm

EP- 281/2007A

Area Inspected
 1 Sok Kwu Wan

PART B: SITE AUDIT

Note:	Not Obs.:	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-up actions N/A: Not Applicable						
<i>Section 1: Water Quality</i>							
1.01	Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02	Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03	Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Remark 1
1.05	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07	Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08	As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09	Are temporary exposed slopes properly covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10	Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12	Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13	Are wheel washing facilities well maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14	Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.18	Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19	Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20	Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22	Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
1.23	Is used bentonite recycled where appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m ³ capacities for sedimentation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.25	No excavation is undertaken in the settlement area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.27	Mobile toilets should provide on site and located away the stream course.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.28	License collector should be employed for handling the sewage of mobile toilet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.29	Is ponding /stand water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.30	Is open stockpiles well covered by impermeable sheet?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 2: Air Quality							
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.03	Are the excavated materials sprayed with water during handling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05	Is the exposed earth properly treated within six months after the last construction activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	Is dark smoke emission from plant/equipment avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.15	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 3: Noise							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.02	Is silenced equipment adopted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.03	Is idle equipment turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04	Are all plant and equipment well maintained and in good condition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.07	Are air compressors fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
3.08	Are flaps and panels of mechanical equipment closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 4: Waste/Chemical Management							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	Are the chemical waste containers and storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical container or equipment provided with drip tray?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Remark 2
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	Are chemical/fuel storage areas bounded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note: Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-up actions N/A: Not Applicable		Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
Section 5: Landscape & Visual							
5.01	Are retained and transplanted trees in health condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Refer to Monthly EM&A report -- Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refer to tree photos
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 6: Others							
6.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

(Sok Kwu Wan)

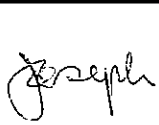


Remarks:

Findings of Site Inspection: (4 October 2011)

Follow up:

1. Drip tray should be provided for all chemical containers.
2. Silt curtain should be reinstated after storm as appropriate.

The transplanted and retained uncommon tree species trees were found to be labeled, fenced and protected.

IEC's representative	RE's representative	ET's representative	EO's representative	Contractor's representative
()	 (Joseph)	 (Nicola Hon)	 ()	()

Project: TCS/00512/09
Construction of Sewage Treatment Works at
Yung Shue Wan and Sok Kwu Wan

Inspected by _____
 ETL/ ET's Representative: TW Tam
 RE's Representative: Joseph Ng
 Contractor's Representative: Edwin Leung
 IEC's Representative: Selina Leung

Date: 11 October 2011

Time: 9:30

PART A: GENERAL INFORMATION

Environmental Permit No.

Weather: Sunny Fine Cloudy Rainy
 Temperature: 24.8 °C
 Humidity: High Moderate Low
 Wind: Strong Breeze Light Calm

EP- 281/2007A

Area Inspected
 1 Sok Kwu Wan

PART B: SITE AUDIT

Note:	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
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Section 1: Water Quality

Note:	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.01 Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02 Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03 Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04 Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.05 Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06 Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07 Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08 As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09 Are temporary exposed slopes properly covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10 Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11 Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12 Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13 Are wheel washing facilities well maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14 Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15 Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
-1.16 Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17 Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.18 Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19 Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20 Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.21 Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22 Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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1.23	Is used bentonite recycled where appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m ³ capacities for sedimentation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.25	No excavation is undertaken in the settlement area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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1.30	Is open stockpiles well covered by impermeable sheet?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 2: Air Quality							
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.03	Are the excavated materials sprayed with water during handling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05	Is the exposed earth properly treated within six months after the last construction activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	Is dark smoke emission from plant/equipment avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.15	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 3: Noise							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.02	Is silenced equipment adopted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.03	Is idle equipment turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04	Are all plant and equipment well maintained and in good condition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.07	Are air compressors fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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3.08	Are flaps and panels of mechanical equipment closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 4: Waste/Chemical Management							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	Are the chemical waste containers and storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical container or equipment provided with drip tray?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	Are chemical/fuel storage areas bounded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Refer to Monthly EML&S report - Appendix M
5.03	Are surgery works carried out for the damaged trees?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 7: Others							
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.02	Are the warning sign or larvicidal oil record shown clearly at the construction site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Remarks

Findings of Site Inspection (11 October 2011):

Follow up:

No environmental issue was observed during the site inspection.

- The transplanted and retained uncommon tree species trees were found to be labelled, staked and protected

Selina

Joseph

TW Tam

ky so

(SELINA LEUNG)

(Joseph)

(TW Tam)

(ky so)

Project: TCS/00512/09
Construction of Sewage Treatment Works at
Yung Shue Wan and Sok Kwu Wan

Inspected by _____
 ETL/ ET's Representative: _____
 RE's Representative: _____
 Contractor's Representative: _____
 IEC's Representative: _____
 Checklist No. TCS512B-181011
Ray Cheung
Joseph W. C.
Edwin Leung

 Time: 14:00

Date: 18-10-2011

PART A: GENERAL INFORMATION

Weather: Sunny Fine Cloudy Rainy

Temperature: _____ °C

Humidity: High Moderate Low

Wind: Strong Breeze Light Calm

Environmental Permit No.

EP- 281/2007A

Area Inspected
 1 Sok Kwu Wan

PART B: SITE AUDIT

Note:	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
Section 1: Water Quality						
1.01 Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02 Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03 Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(Remark 1)
1.04 Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.05 Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06 Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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2.11	Is dark smoke emission from plant/equipment avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.15	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 3: Noise							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.02	Is silenced equipment adopted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.03	Is idle equipment turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04	Are all plant and equipment well maintained and in good condition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.07	Are air compressors fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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3.08	Are flaps and panels of mechanical equipment closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 4: Waste/Chemical Management							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	Are the chemical waste containers and storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical container or equipment provided with drip tray?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	Are chemical/fuel storage areas bounded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note:	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-up actions N/A: Not Applicable						
Section 5: Landscape & Visual						
5.01	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Refer to Monthly EM&A report - Appendix M
5.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.03	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 6: Others						
6.01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

(Sok Kwu Wan)

Remarks:

Findings of Site Inspection: (18-10-2011): Follow up:

① Sedimentation tank under concrete plant has to be cleaned up to restore its desilting functioning.
(Portion L2)

The transplanted and retained uncommon tree species trees were found to be labeled, fenced and protected.

IEC's representative RE's representative ET's representative EO's representative Contractor's representative

 Joseph Kiow Ray Cheung P. Leung (H. S. Leung) (K. Y. Leung)

Operational Team – Weekly Site Inspection and Audit Checklist – Sok Kwu Wan



00512/09

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan

Inspected by

ETL/ ET's Representative:

RE's Representative:

Contractor's Representative:

IEC's Representative:

Time:

Checklist No. TCS512B-2F1011

Ray Cheung

Joseph Ng

K.Y. So

25-10-2017

Environmental Permit No.

EP- 281/2007A

A: GENERAL INFORMATION

Weather: Sunny Fine Cloudy Rainy

Temperature: _____ °C

Wind: High Moderate Low

Force: Strong Breeze Light Calm

Inspected at Sok Kwu Wan

B: SITE AUDIT

Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
n 1: Water Quality						
Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are temporary exposed slopes properly covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are wheel washing facilities well maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there toilets provided on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are toilets properly maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are the vehicle and plant servicing areas paved and located within paved areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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1.23 Is used bentonite recycled where appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.24 Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m ³ capacities for sedimentation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.25 No excavation is undertaken in the settlement area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.26 Concreting wastes water should be neutralized below the pH Action Levels before discharge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.27 Mobile toilets should provide on site and located away the stream course.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.28 License collector should be employed for handling the sewage of mobile toilet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.29 Is ponding /stand water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.30 Is open stockpiles well covered by impermeable sheet?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 2: Air Quality						
2.01 Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.02 Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.03 Are the excavated materials sprayed with water during handling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.04 Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05 Is the exposed earth properly treated within six months after the last construction activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06 Are the access roads sprayed with water to maintain the entire road surface wet or paved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07 Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.08 Is the load on vehicles covered entirely by clean impervious sheeting?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.09 Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.10 Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11 Is dark smoke emission from plant/equipment avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12 Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13 Are site vehicles travelling within the speed limit not more than 15km/hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.14 Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.15 Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.16 Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 3: Noise						
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3.03 Is idle equipment turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04 Are all plant and equipment well maintained and in good condition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05 Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06 Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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Section 4: Waste/Chemical Management							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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4.08	Is the chemical container or equipment provided with drip tray?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Environmental Team – Weekly Site Inspection and Audit Checklist – Sok Kwu Wan



Note:	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable						
Section 5: Landscape & Visual						
5.01 Are retained and transplanted trees in health condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Refer to Monthly EM&A report - Appendix M
5.02 Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.03 Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04 Is damage to trees outside site boundary due to construction activities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05 Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 6: Others						
6.01 Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

(Sok Kwu Wan)

Remarks:

Findings of Site Inspection: (25-10-2011): Follow up:

The sediment in sedimentation tank was full and has to be cleaned up.

This observation to be followed up since 18 Oct 2011.

Joseph.

The transplanted and retained uncommon tree species trees were found to be labeled, fenced and protected.

IEC's representative RE's representative ET's representative EO's representative Contractor's representative

Joseph

Ray

[Signature]

(Joseph)

(Ray)

([Signature])

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Appendix L

Implementation Schedule of Mitigation Measures

Implementation Schedule of Air Quality Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines
					D	C	O	
Construction Phase								
3.32	2.34	Installation of 2m high solid fences around the construction site of Pumping Station P2.	Work site / during construction	Contractor		√		
3.34	2.34	Adopting the following good site practices and follow the dust control requirements of the Air Pollution Control (Construction Dust) Regulation: <ul style="list-style-type: none"> • Stockpiles of imported material kept on site should be contained within hoardings, dampened and / or covered during dry and windy weather; • Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses; • Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like. • Any vehicle used for moving sands, aggregates and construction waste should have properly fitting side and tail boards. Materials should not be loaded to a level higher than the side and tail boards, and should be covered by a clean tarpaulin. 	Work site / during construction	All contractors		√		EIAO-TM, APCO, Air Pollution Control (Construction Dust) Regulation
3.36	Section 2	1 hour and 24 hour dust monitoring and site audit	Designated air monitoring locations / throughout construction period	Contractor/ Environmental Team		√		EM&A Manual

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

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

N/A Not applicable

Implementation Schedule of Noise Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location/Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
Construction Phase								
4.41-4.43	3.19	<ul style="list-style-type: none"> • Use of quiet PME for the construction of the pumping stations • Use of temporary noise barrier during the construction of Pumping Station P1a 	Work site /during the construction of Pumping Stations	Contractor		√		EIAO-TM, NCO
4.44 – 4.49	3.19	<p>Implementation of following measures during the sewer construction:</p> <ul style="list-style-type: none"> • Use of quiet PME or method; • Restriction on the number plant (1 item for each type of plant); and • Good Site Practices <ul style="list-style-type: none"> ➤ Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. ➤ Mobile plant, if any, should be sited as far away from NSRs as possible. ➤ Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. ➤ Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. ➤ Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. 	Work site /during the construction of Sewer.	Contractor		√		

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location/Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
4.50 – 4.53	3.19	<ul style="list-style-type: none"> Use of noise screening structures such as acoustic shed and barrier wherever practicable and feasible in areas with sufficient clearance and headroom. Adoption of manual working method wherever practicable and feasible in areas where the worksites of the proposed sewer alignment are located less than 20 m from the residential NSRs and less than 30 m from the temple (THT) and the public library. Use of PME for the construction of the section of sewer between the NSR and the Pumping Station P1a should not be allowed during the excavation work of Pumping Station P1a. 	Work site /during the construction of Sewer.	Contractor		√		
4.60	Section 35	Noise monitoring	Designated noise monitoring locations / throughout construction period	Contractor/ Environmental Team		√		EM&A Manual

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

Implementation Schedule of Water Quality Control Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location (duration /completion of measures)	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines
					D	C	O	
Construction Phase								
5.77	4.35	No-dig method using Horizontal Directional Drilling (HDD) would be used for the installation of outfall pipe of about 480 m from shore to minimize the potential water quality impacts arising from the dredging works required for the submarine outfall construction. Silt curtains will be installed around the exit area of the pilot drill.	Marine works site / During construction of submarine outfall	Contractor		√		
5.73 – 5.78	4.36	Dredging Works Implementation of following measures during the dredging works: <ul style="list-style-type: none"> dredging should be undertaken using closed grab dredgers with a maximum total production rate of 55m³/hr; deployment of 2-layer silt curtains with the first layer enclosing the grab and the second layer at around 50m from the dredging area while dredging works are in progress; dredging operation should be undertaken during ebb tide only; all vessels should be sized such that adequate clearance (i.e. minimum clearance of 0.6m) is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; all pipe leakages should be repaired promptly and plant should not be operated with leaking pipes; excess material should be cleaned from the decks and exposed fittings of barges before the vessel is moved; adequate freeboard (i.e. minimum of 200mm) should be maintained on barges to ensure that decks are not washed by wave action; all barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; loading of barges should be controlled to prevent splashing of dredged material to the surrounding water, and barges should not be filled to a level which will cause the overflow of materials or polluted water during loading or transportation; and 	Marine works site and at the identified water sensitive receivers/ During construction	Contractor		√		

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location (duration /completion of measures)	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines
					D	C	O	
		<ul style="list-style-type: none"> the decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard. 						
5.79	4.37	<p><u>Construction Run-off and Drainage</u></p> <p>Implementation of the following site practices outlined in ProPECC PN 1/94 for “Construction Site Drainage”</p> <ul style="list-style-type: none"> Provision of perimeter channels to intercept storm-runoff from outside the site. These should be constructed in advance of site formation works and earthworks. Works programmes should be designed to minimize works areas at any one time, thus minimizing exposed soil areas and reducing the potential for increased siltation and runoff. Sand / silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove the sand / silt particles from run-off. These facilities should be properly and regularly maintained. These facilities should be carefully planned to ensure that they would be installed at appropriate locations to capture all surface water generated on site. Careful programming of the works to minimise soil excavation works during rainy seasons. Exposed soil surface should be protected by paving or hydroseeding as soon as possible to reduce the potential of soil erosion. Trench excavation should be avoided in the wet season, and if necessary, these should be excavated and backfilled in short sections. Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric 	Construction works sites	Contractor		√		ProPECC PN 1/94
5.80	4.38	<p><u>General Construction Activities</u></p> <p>Debris and rubbish generated on-site should be collected, handled and disposed of properly to avoid entering the nearby coastal waters and stormwater drains. All fuel tanks and storage areas should be provided</p>	Construction works sites	Contractor		√		

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location (duration /completion of measures)	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines
					D	C	O	
		with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. Open drainage channels and culverts near the works areas should be covered to block the entrance of large debris and refuse.						
5.81	4.39	<u>Wastewater Arising from Workforce</u> Portable toilets should be provided by the Contractors, where necessary, to handle sewage from the workforce. The Contractor should also be responsible for waste disposal and maintenance practices.	Construction works sites	Contractor		√		
5.96	Section 4	Water quality monitoring	Designated water monitoring locations/ throughout construction period	Contractor		√		EM&A Manual

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

N/A Not applicable

Implementation Schedule of Sediment Contamination Mitigation Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines
					D	C	O	
6.17	5.3	Follow the requirement and procedures for dredged mud disposal specified under the WBTC No. 34/2002.	Marine works site / during dredging works	Contractor		√		WBTC No. 34/2002
6.18	5.4	Implement appropriate dredging methods which have been incorporated into the recommended water quality mitigation measures.	Marine works site, during dredging works	Contractor		√		
6.19	5.5	During the transportation and disposal of the dredged sediment, the following measures should be taken: <ul style="list-style-type: none"> • Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved. • Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic self monitoring devices as specified by the DEP. 	Marine works site and at the identified sensitive receivers	Contractor		√		

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

N/A Not applicable

Implementation Schedule of Solid Waste Management Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
Construction Phase								
7.14	6.4	<u>Good site practices</u> <ul style="list-style-type: none"> Nomination of an approved person, such as a site manager, to be responsible for implementation of good site practices, arranging for collection and effective disposal to an appropriate facility, of all wastes generated at the site Training (proper waste management and chemical handling procedure) should be provided for site staffs Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. Provision of sufficient waste disposal points and regular collection for disposal. Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility. Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. Maintain records of the quantities of wastes generated, recycled and disposed. 	Work sites/During construction	Contractor		√		Waste Disposal Ordinance (Cap.54)
7.15	6.5	To monitor the disposal of C&D waste at landfills and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.	Work sites/During construction	Contractor		√		WBTC No. 21/2002
7.16	6.6	Recommendations to achieve waste reduction include: <ul style="list-style-type: none"> segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; to encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated 	Work sites/During construction	Contractor		√		WBTC No. 4/98, 5/98

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
		by the work force; <ul style="list-style-type: none"> any unused chemicals or those with remaining functional capacity should be recycled; use of reusable non-timber formwork to reduce the amount of C&D material; prior to disposal of C&D waste, it is recommended that wood, steel and other metals should be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill; proper storage and site practices to minimise the potential for damage or contamination of construction materials; and plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. 						
7.18	6.7	<u>General Site Wastes</u> <ul style="list-style-type: none"> A collection area for construction site waste should be provided where waste can be stored prior to removal from site An enclosed and covered area for the collection of the waste is recommended to reduce 'wind blow' of light material 	Work sites/During construction	Contractor		√		Public Health and Municipal Services Ordinance (Cap. 132)
7.19-7.20	6.8 – 6.9	<u>Chemical Wastes</u> <ul style="list-style-type: none"> After use, chemical waste should be handled according to the Code of Practice on the Package, Labelling and Storage of Chemical Wastes Any unused chemicals or those with remaining functional capacity should be recycled Waste should be properly stored on site within suitably designed containers and should be collected by an approved licensed waste collectors for disposal at the Chemical Waste Treatment Facility or other licenced facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordance. 	Work sites/During construction	Contractor		√		Waste Disposal (Chemical Waste) (General) Regulation, Code of Practice on the Packaging Labelling and Storage of Chemical Wastes

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
		<ul style="list-style-type: none"> Any service shop and minor maintenance facilities should be located on hard standing within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should be undertaken within the designated areas equipped control these discharges 						
7.21-7.22	6.10 – 6.11	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> The C&D waste should be separated on-site into three categories: <ul style="list-style-type: none"> ➤ public fill, the inert portion of the C&D material (e.g. concrete and rubble), which should be re-used on-site or disposed of at a public filling area; ➤ C&D waste for re-use and / or recycling, the non-inert portion of the C&D material, (e.g. steel and other metals, woods, glass and plastic); ➤ C&D waste which cannot be re-used and / or recycled (e.g. wood, glass and plastic) Where possible, inert material should be re-used on-site Where practicable, steel and other metals should be separated for re-use and/or recycling prior to disposal of C&D material 	During all construction phases	Contractors		√		WBTC No. 4/98, 5/98, 21/2002, 25/99, 12/2000

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

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

N/A Not applicable

Implementation Schedule of Ecological Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation & Guidelines
					D	C	O	
Construction Phase								
8.157	7.2	<u>Terrestrial Ecology</u> <ul style="list-style-type: none"> Labeling and fencing of the uncommon tree species Avoidance of use of woodland habitats as Works Area, in particular where trees are located 	Work sites / during construction phase	Contractor		√		
8.159 – 8.160	7.3	<u>Subtidal Ecology</u> Use of HDD technique Dredging <ul style="list-style-type: none"> Use of closed-grab dredger Deploy silt curtains during dredging. 	Marine works site / during dredging works	Contractor		√		
8.161	7.4	Site runoff <ul style="list-style-type: none"> Construction and maintenance of sand / silt removal facilities Silt curtains Timing of earthworks Coverage of sand / fill piles during storms. Barriers along the landward side of Pumping Station P2 site boundary (to prevent site runoff from entering area with Romer's Tree Frog) 	All work sites / during construction phase	Contractor		√		

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

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

N/A Not applicable

Implementation Schedule of Fisheries Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines
					D	C	O	
9.29	8.3	Use of closed grab dredging and silt curtains around the immediate dredging area and low dredging rates as recommended in Water Quality of the EIA report	Marine works site, during dredging works	Contractor		√		TM on EIA Process
9.32	Section 8	Water quality monitoring (see Implementation Schedule for Water Quality Control Measures)	Designated monitoring locations / throughout construction period and 1 year following operation of the STW	Contractor and Environmental Team		√	√	EM&A Manual

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

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

N/A Not applicable

Implementation Schedule of Landscape and Visual Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
Construction Phase								
10.74	9.10	Retaining existing trees and minimizing damage to vegetation by close coordination and on site alignment adjusted of rising main and gravity sewer pipelines.	All sites	Contractor		√		WBTC No. 14/2002
		Careful and efficient transplanting of affected trees to temporary or final transplant location (the proposed tree to be transplanted is a semi-mature <i>Macaranga tanarius</i> and is located at the proposed Pumping Station P2 location).	All sites	Contractor		√		WBTC No. 14/2002
		Short excavation and immediate backfilling sections upon completion of works to reduce active site area.	All sites	Contractor		√		
		Screening of site construction works by use of hoarding that is appropriate to its site.	All sites	Contractor		√		WBTC No. 19/2001
		Conservation of topsoil for reuse.	All sites	Contractor		√		
		Night-time light source from marine fleets should be directed away from the residential units.	Outfall area.	Contractor		√		

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

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

N/A Not applicable

Appendix M

Tree Inspection Report

經緯園藝有限公司

Melofield Nursery & Landscape Contractor Ltd

元朗下攸田村 125 號 125, Ha Yau Tin Tsuen, Yuen Long, N.T.

TEL: (852) 2572-0048 FAX: (822)2573-9099 E-mail: melofield@netvigator.com

Contract No. DC/2009/13

Project Name: Construction of Sewage Treatment Works at
Yung Shue Wan and Sok Kwu Wan

Sok Kwu Wan

Tree Inspection Report for *Celtis timorensis*

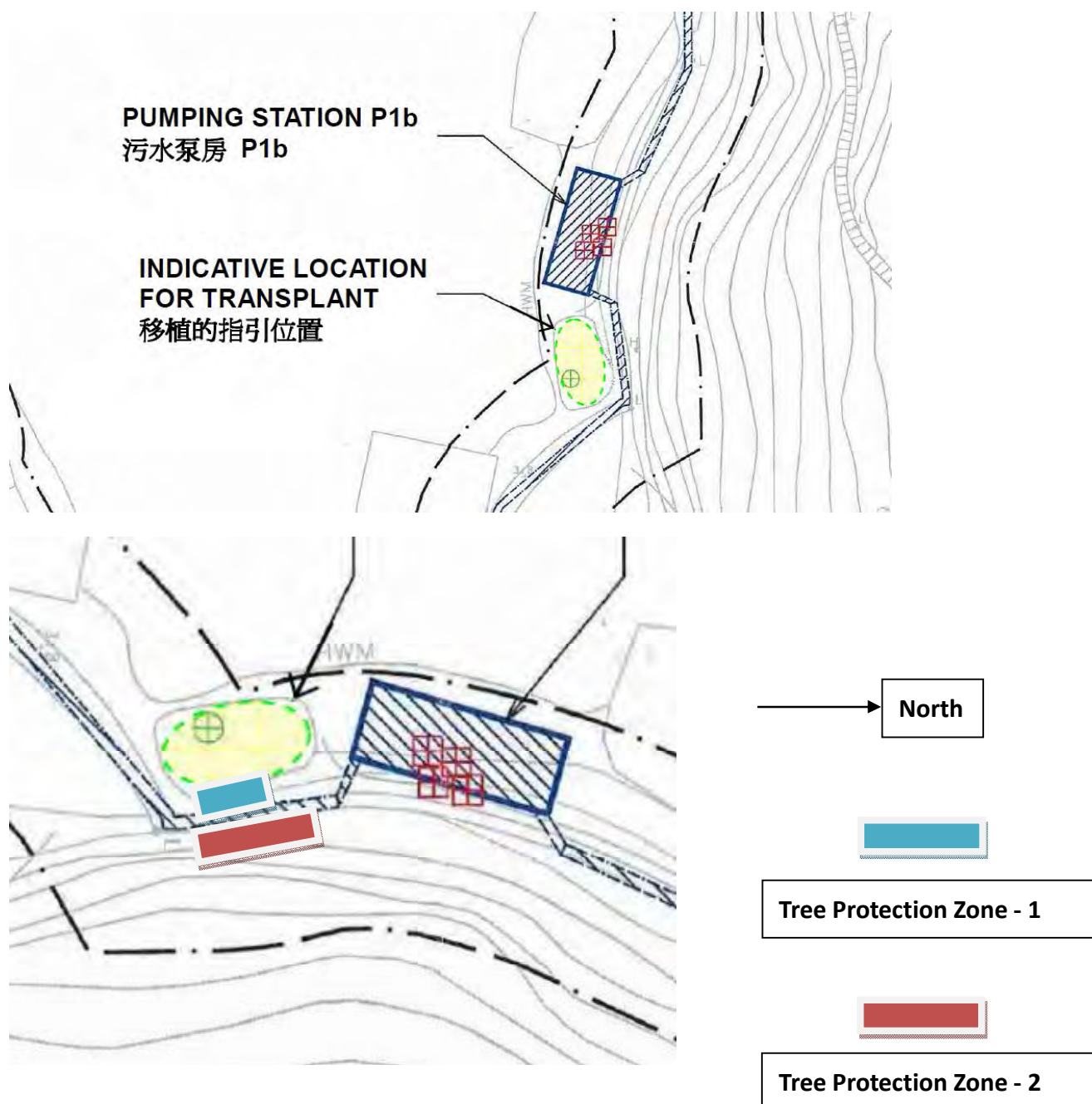
CT7, CT8, CT9, CT10 &
CT_1A,CT_2A,CT_3A,CT_4A,CT_5A,CT_6A,CT_7A

Inspection Date : 10-10-2011



1. Introduction

According to the requirement in the Environmental Permit EP-281/2007/A, the uncommon tree species, *Celtis timorensis*, found in the pumping station P1b area as shown in figure below shall be properly transplanted to the area immediately south of the Pumping Station P1b before commencement of construction of the Pumping Station P1b



This Tree Inspection Report describes the bi weekly monitoring result of the *Celtis timorensis*, (Label CT7, CT8, CT9, CT10(Original planted) & CT_1A to CT_7A (which were additionally planted as a contingency proposal in case CT7, CT8, CT9 & CT10 could not recovered).

2. Summary of Inspection

Date of Inspection	10October 2011, around 13:30
Location	A soil ground adjacent to the Pumping Station P1b Chung Mei, at Sok Kwu Wan, Lamma Island.
Weather	Cloudy, the vegetation are located under the shade of existing trees.
The labeled <i>Celtis timorensis</i> under Tree Protection Zone 1	CT7, CT8, CT9 & CT10
The labeled <i>Celtis timorensis</i> under Tree Protection Zone 2	CT_1A, CT_2A, CT_3A, CT_4A, CT_5A, CT_6A & CT_7A,

3. Proposed Bi Weekly Inspection Schedule

Month	Actual / proposed Inspection Date
July, 2011	14 and 25 July 2011
August, 2011	9 and 26 August 2011
September, 2011	5 and 23 September 2011
October 2011	10 and 24 October 2011

4. Summary of Inspection Result

Tree No	Speciation	Health Status
CT7	<i>Celtis timorensis</i>	Very Poor
CT8	<i>Celtis timorensis</i>	Very Poor
CT9	<i>Celtis timorensis</i>	Very Poor
CT10	<i>Celtis timorensis</i>	Very Poor
CT_1A	<i>Celtis timorensis</i>	Poor
CT_2A	<i>Celtis timorensis</i>	Poor
CT_3A	<i>Celtis timorensis</i>	Poor
CT_4A	<i>Celtis timorensis</i>	Poor
CT_5A	<i>Celtis timorensis</i>	Poor
CT_6A	<i>Celtis timorensis</i>	Poor
CT_7A	<i>Celtis timorensis</i>	Poor

Inspection parameters or criteria

- Good Leaves and stem grown very lush, additional or larger in size of leaves can be observed in each inspection
- Fair Green leaves can be found. No major unhealthy condition of the plant is observed. The condition is stable.
- Poor Fewer green leaves than usual are observed. No new leaf is grown and the condition keep stable. The bark is dry. The plant is weak.
- Very Poor No new green leaf or bud can be observed. The bark is dry. The plant is weak.

5. Description of Inspection Results:

CT7 to CT10

CT7

The condition of this tree is poor. No bud was found in the top of the twig.
The bark is dry. No significant improvement in health. The plant is weak.

CT8

The condition of this tree is poor. No bud was found in the top of the twig.
The bark is dry. No significant improvement in health. The plant is weak.

CT9

The condition of this tree is poor. Few buds were found in the top of the twig.
The bark is dry. No significant improvement in health. The plant is weak.

CT10

The condition of this tree is poor. No bud was found in the top of the twig.
The bark is dry. No significant improvement in health. The plant is weak.

CT_1A to CT_7A

CT_1A

The condition of this tree is poor. Less leaves were growth on the branches.
The bark is dry. The plant is weak.

CT_2A

The condition of this tree is poor. No bud was found in the top of the twig.
The bark is dry. No significant improvement in health. The plant is weak.

CT_3A

The condition of this tree is poor. Some leaves were found wilting. The bark
is dry. No significant improvement in health. The plant is weak.

CT_4A

The condition of this tree is poor. Some new leaves were found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

CT_5A

The condition of this tree is poor. Some new leaves were found on the branches. The bark is dry. The plant is weak.

CT_6A

The condition of this tree is poor. Less leaves were growth on the branches. The bark is dry. The plant is weak.

CT_7A

The condition of this tree is poor. Found some leaves wilt. The bark is dry. No Signification improvement in health. The plant is weak.

Overall Condition

The overall health conditions of CT7-10 in Tree protection Zone 1 were not satisfactory. They may better recover under this warm and rainy weather. Remove any insect found on the plant physically to prevent the bud attacked by leaf-feeding insect. No pesticide should be used when the plants are weak.

In the Tree Protection Zone 2, the condition of CT_1A-7A is Poor. Regular watering and weeding will be carried out during dry weather.

Annex A

**Photo Records of Tree CT7, CT8, CT9, CT10,
CT_1A, CT_2A, CT_3A, CT_4A, CT_5A, CT_6A & CT_7A**

Tree ID: CT7

Photo 1: Overall view of CT7



Current Status: Poor

Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT8

Photo 2: Overall view of CT8



Current Status: Poor

Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT9

Photo 3: Overall view of CT9

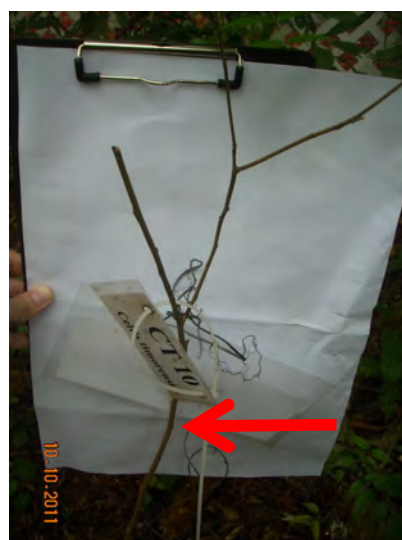


Current Status: Poor

Justification: Few bud were found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT10

Photo 4: Overall view of CT10



Current Status: Poor

Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT_1A

Photo 5: Overall view of CT_1A



Current Status: Poor

Justification: Less leaves were growth on the branches. The bark is dry. The plant is weak.

Tree ID:CT_2A

Photo 6: Overall view of CT_2A



Current Status: Poor

Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT_3A

Photo 7: Overall view of CT_3A



Current Status: Poor

Justification: Found some leaves wilt. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT_4A

Photo 8: Overall view of CT_4A



Current Status: Poor

Justification: Some new leaves grown was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT_5A

Photo 9: Overall view of CT_5A



Current Status: Poor

Justification:

Some new leaves grown was found on the branches. The bark is dry. The plant is weak.

Tree ID: CT_6A

Photo 10: Overall view of CT_6A



Current Status: Poor

Justification: Less leaves were growth on the branches. The bark is dry. The plant is weak.

Tree ID: CT_7A

Photo 11: Overall view of CT_7A



Current Status: Poor

Justification: Found some leaves wilt. The bark is dry. No signification improvement in health. The plant is weak.

經緯園藝有限公司

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Contract No. DC/2009/13

Project Name: Construction of Sewage Treatment Works at
Yung Shue Wan and Sok Kwu Wan

Sok Kwu Wan

Tree Inspection Report for *Celtis timorensis*

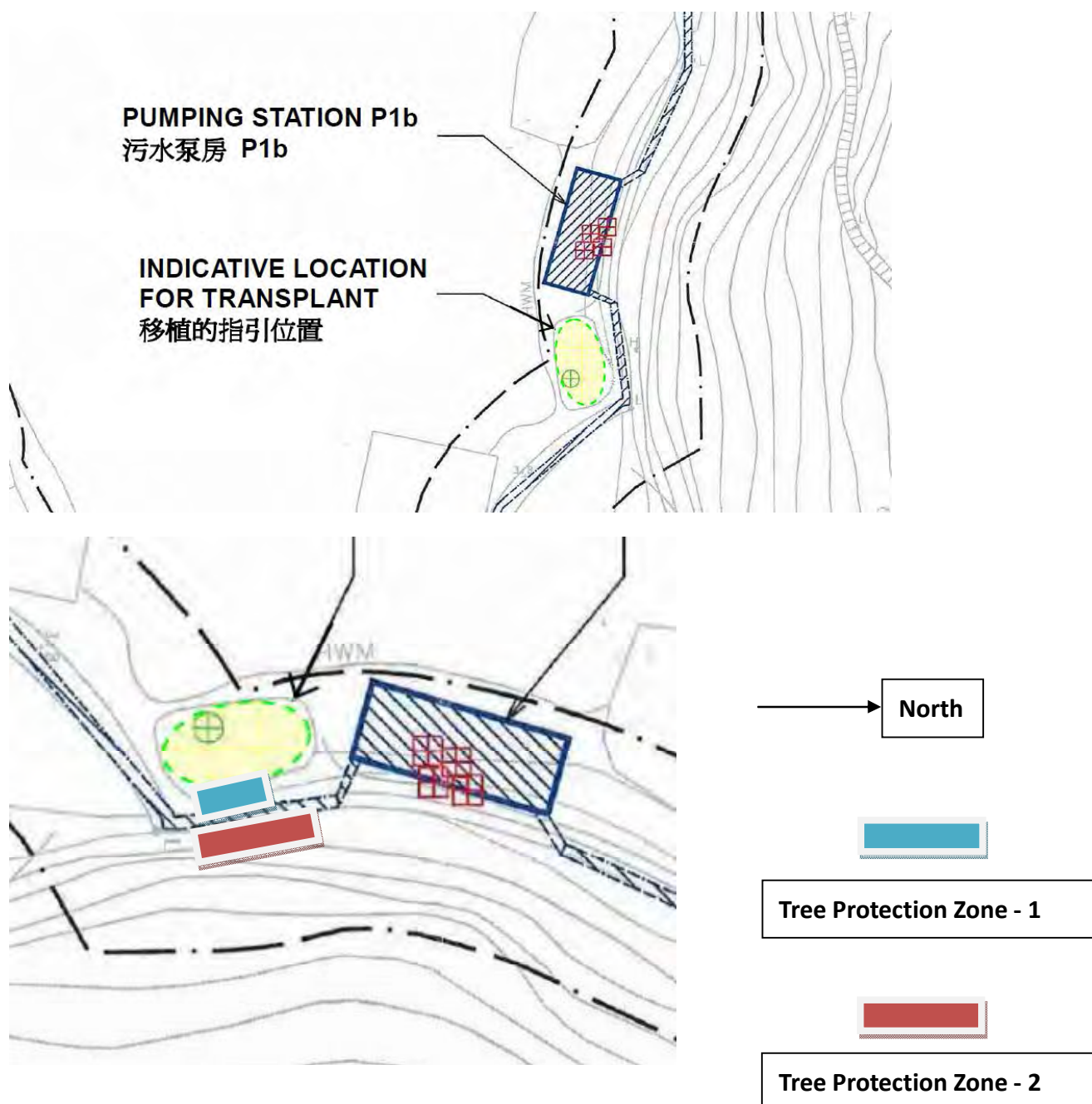
CT7, CT8, CT9, CT10 &
CT_1A,CT_2A,CT_3A,CT_4A,CT_5A,CT_6A,CT_7A

Inspection Date : 24-10-2011



1. Introduction

According to the requirement in the Environmental Permit EP-281/2007/A, the uncommon tree species, *Celtis timorensis*, found in the pumping station P1b area as shown in figure below shall be properly transplanted to the area immediately south of the Pumping Station P1b before commencement of construction of the Pumping Station P1b



This Tree Inspection Report describes the bi weekly monitoring result of the *Celtis timorensis*, (Label CT7, CT8, CT9, CT10(Original planted) & CT_1A to CT_7A (which were additionally planted as a contingency proposal in case CT7, CT8, CT9 & CT10 could not recovered).

2. Summary of Inspection

Date of Inspection	24 October 2011, around 13:30
Location	A soil ground adjacent to the Pumping Station P1b Chung Mei, at Sok Kwu Wan, Lamma Island.
Weather	Cloudy, the vegetation are located under the shade of existing trees.
The labeled <i>Celtis timorensis</i> under Tree Protection Zone 1	CT7, CT8, CT9 & CT10
The labeled <i>Celtis timorensis</i> under Tree Protection Zone 2	CT_1A, CT_2A, CT_3A, CT_4A, CT_5A, CT_6A & CT_7A,

3. Proposed Bi Weekly Inspection Schedule

Month	Actual / proposed Inspection Date
July, 2011	14 and 25 July 2011
August, 2011	9 and 26 August 2011
September, 2011	5 and 23 September 2011
October, 2011	10 and 24 October 2011

4. Summary of Inspection Result

Tree No	Speciation	Health Status
CT7	<i>Celtis timorensis</i>	Very Poor
CT8	<i>Celtis timorensis</i>	Very Poor
CT9	<i>Celtis timorensis</i>	Very Poor
CT10	<i>Celtis timorensis</i>	Very Poor
CT_1A	<i>Celtis timorensis</i>	Poor
CT_2A	<i>Celtis timorensis</i>	Poor
CT_3A	<i>Celtis timorensis</i>	Poor
CT_4A	<i>Celtis timorensis</i>	Poor
CT_5A	<i>Celtis timorensis</i>	Poor
CT_6A	<i>Celtis timorensis</i>	Poor
CT_7A	<i>Celtis timorensis</i>	Poor

Inspection parameters or criteria

- Good Leaves and stem grown very lush, additional or larger in size of leaves can be observed in each inspection
- Fair Green leaves can be found. No major unhealthy condition of the plant is observed. The condition is stable.
- Poor Fewer green leaves than usual are observed. No new leaf is grown and the condition keep stable. The bark is dry. The plant is weak.
- Very Poor No new green leaf or bud can be observed. The bark is dry. The plant is weak.

5. Description of Inspection Results:

CT7 to CT10

CT7

The condition of this tree is poor. No bud was found in the top of the twig.
The bark is dry. No significant improvement in health. The plant is weak.

CT8

The condition of this tree is poor. No bud was found in the top of the twig.
The bark is dry. No significant improvement in health. The plant is weak.

CT9

The condition of this tree is poor. Few buds were found in the top of the twig.
The bark is dry. No significant improvement in health. The plant is weak.

CT10

The condition of this tree is poor. No bud was found in the top of the twig.
The bark is dry. No significant improvement in health. The plant is weak.

CT_1A to CT_7A

CT_1A

The condition of this tree is poor. Less leaves were growth on the branches.
The bark is dry. The plant is weak.

CT_2A

The condition of this tree is poor. No bud was found in the top of the twig.
The bark is dry. No significant improvement in health. The plant is weak.

CT_3A

The condition of this tree is poor. Some leaves were found wilting. The bark
is dry. No significant improvement in health. The plant is weak.

CT_4A

The condition of this tree is poor. Some new leaves were found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

CT_5A

The condition of this tree is poor. Some new leaves were found on the branches. The bark is dry. The plant is weak.

CT_6A

The condition of this tree is poor. Less leaves were growth on the branches. The bark is dry. The plant is weak.

CT_7A

The condition of this tree is poor. Found some leaves wilt. The bark is dry. No Signification improvement in health. The plant is weak.

Overall Condition

The overall health conditions of CT7-10 in Tree protection Zone 1 were not satisfactory. They may better recover under this warm and rainy weather. Remove any insect found on the plant physically to prevent the bud attacked by leaf-feeding insect. No pesticide should be used when the plants are weak.

In the Tree Protection Zone 2, the condition of CT_1A-7A is Poor. Regular watering and weeding will be carried out during dry weather.

Annex A

**Photo Records of Tree CT7, CT8, CT9, CT10,
CT_1A, CT_2A, CT_3A, CT_4A, CT_5A, CT_6A & CT_7A**

Tree ID: CT7

Photo 1: Overall view of CT7

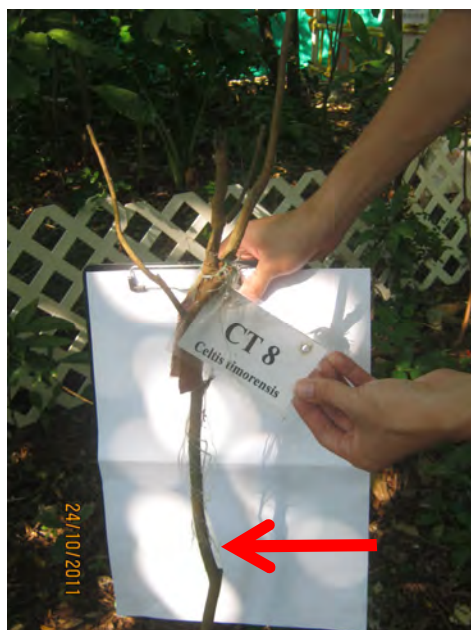


Current Status: Poor

Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT8

Photo 2: Overall view of CT8



Current Status: Poor

Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT9

Photo 3: Overall view of CT9



Current Status: Poor

Justification: Few bud were found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT10

Photo 4: Overall view of CT10

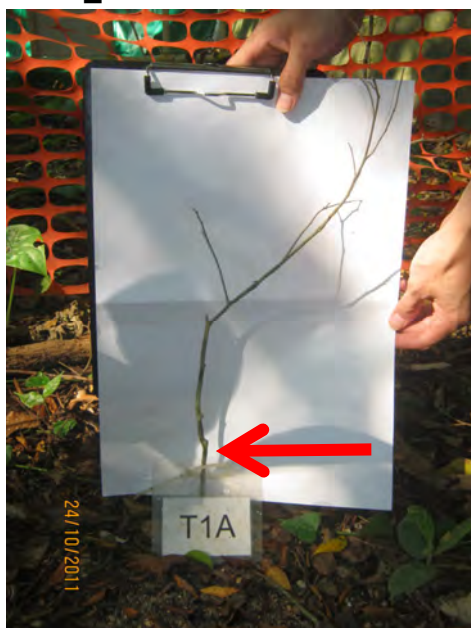


Current Status: Poor

Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT_1A

Photo 5: Overall view of CT_1A



Current Status: Poor

Justification: Less leaves were growth on the branches. The bark is dry. The plant is weak.

Tree ID:CT_2A

Photo 6: Overall view of CT_2A



Current Status: Poor

Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT_3A

Photo 7: Overall view of CT_3A

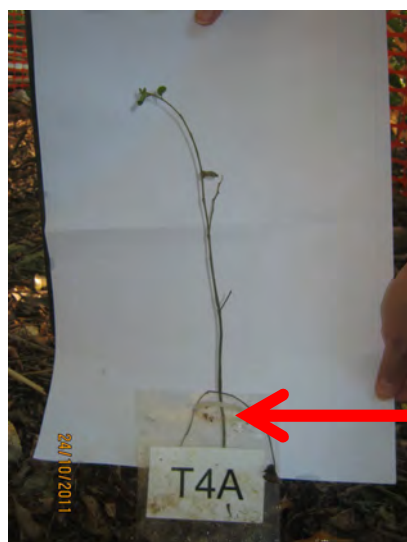


Current Status: Poor

Justification: Found some leaves wilt. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT_4A

Photo 8: Overall view of CT_4A

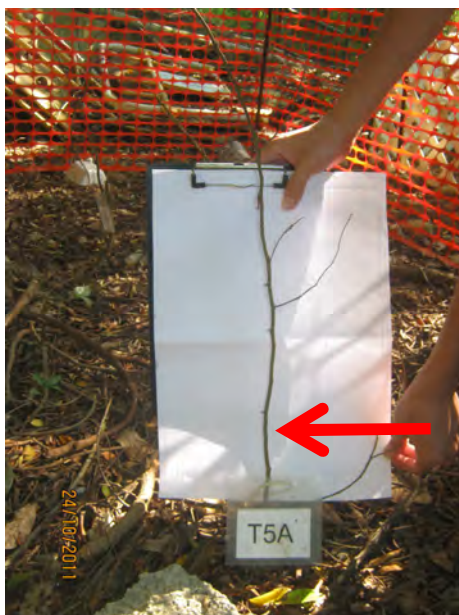


Current Status: Poor

Justification: Some new leaves grown was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

Tree ID: CT_5A

Photo 9: Overall view of CT_5A



Current Status: Poor

Justification:

Some new leaves grown was found on the branches. The bark is dry. The plant is weak.

Tree ID: CT_6A

Photo 10: Overall view of CT_6A

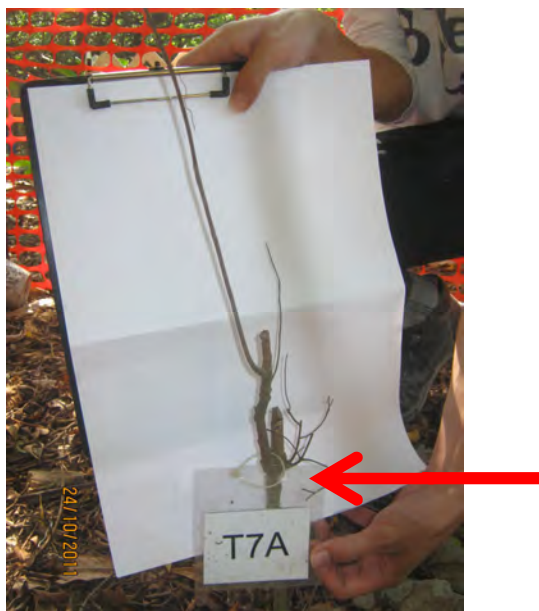


Current Status: Poor

Justification: Less leaves were growth on the branches. The bark is dry. The plant is weak.

Tree ID: CT_7A

Photo 11: Overall view of CT_7A



Current Status: Poor

Justification: Found some leaves wilt. The bark is dry. No signification improvement in health. The plant is weak.