PROJECT NO.: TCS/00553/11

CONTRACT NO. DC/2010/02 –
DRAINAGE IMPROVEMENT IN SHUEN WAN AND SHEK WU WAI

ENVIRONMENTAL MONITORING AND AUDIT MONTHLY REPORT (NO.3) – SEPTEMBER 2011

PREPARED FOR
KWAN LEE-KULY JOINT VENTURE

Quality Index

Date	Reference No.	Prepared By	Certified by
		(Environmental Consultant)	(Environmental Team Leader)
13 October 2011	TCS00553/11/600/R0038v2		
		Nicola Hon	T.W. Tam

Ver	Date	Description
1	11 Oct 2011	First submission
2	13 Oct 2011	Amended against IEC's comments on 13 Oct 2011

ENVIRON

Ref.: DSDSHUWNEM00_0_0241L.11 13th Oct 2011

Drainage Services Department
Projects and Development Branch
Drainage Projects Division
40/F, 44/F & 45/F., Revenue Tower
5 Gloucester Road,
Wan Chai, Hong Kong

By Post and Fax (2827 8700)

Attention : Mr. Ronald Siu (Engr / Drainage Projects 19)

Dear Mr. Siu,

Re: Agreement No. DP 01/2010
Services as Independent Environmental Checker for the Drainage Improvement Works in Sha Tin and Tai Po under Contract No. DC/2010/02
Monthly Environmental Monitoring and Audit Report for Sep 2011

Reference is made to Environment Team's submission of the Monthly Environmental Monitoring and Audit Report for Sep 2011 by Email on 11th Oct 2011 (entitled "DC/2010/22 - Monthly Impact EM&AReport (Contract 2) - September 2011") and the subsequent revision of the report by Email on 13th Oct 2011.

Please be informed that we have no further comment on the captioned revised report. We write to verify the captioned submission in accordance with Condition 5.4 of EP-303/2008.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

Tony Cheng
Independent Environmental Checker

c.c.	AUES	Attn: Mr. T. W. Tam	By Fax: 2959 6079
	Kwan Lee-Kuly JV	Attn: Mr. W. K. Chan	By Fax: 2674 6688

Q:\Projects\DSDSHUWNEM00\Corr\Out\DSDSHUWNEM00_0_0241L.11.doc

www.environcorp.com ENVIRON Hong Kong Ltd. 英環香港有限公司
Room 2310, China Resources Building, 26 Harbour Road, Wan Chai, Hong Kong T: 852.3743 0788 F: 852.3548 6988

EXECUTIVE SUMMARY

ES.01. This is the **3rd** month EM&A report for designated works of Contract 2 under Environmental Permit No.EP-303/2008, covering a period from **1 to 30 September 2011** (hereinafter 'the Reporting Period').

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

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

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Construction Noise	Leq (30min) Daytime	***25***
Water Quality	Local Stream Water Sampling - W1 and W2	***14***
	Local Stream Water Sampling - W3 and W4	***14***
	Hydrological characteristics measurement – H1 and H2	***5***
	Hydrological characteristics measurement – H3 and H4	***5***
Inspection / Audit	Monthly Environmental Site Inspection and audit by Environmental Team and IEC	***1***
	Regular weekly Environmental inspection by the Contractor and Site Representative Engineer	***4***
Landscape & Visual	Bi-weekly Inspection by a registered Landscape Architect	***2***

ES.03. According to updated EM&A Manual Section 6.17, ecological monitoring is conducted by the IEC. Furthermore, a registered Landscape Architect as member of the ET is employed by the Contractor to undertake landscape and visual inspection.

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.04. No exceedance in construction noise monitoring is recorded in this Reporting Period. No Notification of Exceedance (NOE) was therefore issued. For water quality monitoring, a total of 60 Action/Limit Level exceedances, namely 41 Limit level exceedances in dissolved oxygen, 16 Action/Limit Level exceedances in turbidity and 3 Action/Limit Level exceedances in suspended solids were recorded in this Reporting Period. NOEs were issued to notify EPD, IEC, the Contractor and RE. According to construction activities records provided by KLKVJ, all the exceedances are considered not due to the work under the Project. 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
Construction Noise	Leq_{30min} Daytime	0	0	0	0	0
Water Quality	DO	**0**	**41**	**41**	Not related Contract 2	Not required
	Turbidity	**5**	**11**	**16**		
	SS	**2**	**1**	**3**		
Hydrological Characteristics	Water Flow	0	0	0	0	0
	Water Depth	0	0	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
1 – 30 September 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
1 – 30 September 2011	0	0	NA

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 September 2011	0	0	NA

REPORTING CHANGE

ES.07. In this reporting month, there are no any changes to be report.

SITE INSPECTION BY EXTERNAL PARTIES

ES.08. No site inspection was undertaken by external parties i.e. EPD or AFCD within the Reporting Period.

FUTURE KEY ISSUES

ES.09. During wet season (April to November), muddy water and other water quality pollutants via site surface water runoff into the local stream Wah Ha River would be the key issue in the forth-coming month. Mitigation measures for water quality should therefore be fully implemented.

ES.10. On the other hand, construction noise should be other key environmental issue during sheet-piling process. The noise mitigation measures accordingly should be necessary to implement.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

PROJECT BACKGROUND

1.01 ***Kwan Lee-Kuly Joint Venture*** (hereinafter 'KLKJV') has been awarded by Drainage Services Department (hereinafter 'DSD') of the Contract No. DC/2010/02 - Drainage Improvement in Shuen Wan and Shek Wu Wai (hereinafter 'the Project'). The Project is scheduled to commence in May 2011 and complete in March 2014 for about 35 months.

1.02 The works to be executed under the Project are located in Shuen Wan and Shek Wu Wai. The works mainly comprise construction of about 735 metres long single-cell box culvert along Tung Tsz Road in Shuen Wan, Tai Po and construction of about 15 m long three-cell box culvert in Shek Wu Wai, San Tin .

1.03 For the Project, the construction work at Tung Tsz Road Shuen Wan (hereinafter 'the Contract 2') is part of the Drainage Improvement works amongst Shatin and Tai Po and it is defined as a "Designated Project" which controlled under Environmental Permit EP-303/2008. Currently, DSD has another Contract DC/2009/22 (hereinafter 'the Contract 1') ongoing for construction at Shuen Wan working area which under the same Environmental Permit and the updated Environmental Monitoring and Audit Manual (hereinafter 'the Updated EM&A Manual'). Both DSD contract's site boundary at Shuen Wan are shown in ***Appendix A***. On the other hand, Shek Wu Wai San Tin is a non-designated project work and no environmental monitoring and audit is request to carry out.

1.04 In order to effectively implement the environmental protection measures stipulated in the Project Profile (hereinafter 'the PP'), Environmental Impact Assessment Report (hereinafter "the EIAR'), Environmental Permit EP303/2008, a corresponding EM&A Manual have been prepared to outline the environmental monitoring and auditing (hereinafter 'the EM&A') programme undertake for the Contracts 1 and 2.

1.05 KLKJV has commissioned Action-United Environmental Services and Consulting (AUES) as an independent environmental team (hereinafter 'the ET') to implement the EM&A program for the environmental protection of the Project. Due to the construction of Contracts 1 and 2 carry out is just about the time, a Proposal Environmental Monitoring Programme and Methodology (hereinafter the "PEMPM") was prepared and submitted to describe EM&A programme would be undertaken during construction period of the Contract 2.

1.06 The baseline monitoring of EM&A program has been performed by the Contract 1 ET. Although Action and Limit levels of environmental performance criteria have established by the Contract 1 ET, the Action/Limit levels re-establishment to use the Contract 2 was conducted by the Contract 2 ET. The re-established environment performance criteria has accepted by the IEC and also submitted to the EPD seek for endorsement.

1.07 This is the **3rd** monthly EM&A report for Contract 2 presenting the monitoring results and inspection findings for the reporting period from **1 to 30 September 2011**.

REPORT STRUCTURE

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

SECTION 1 **INTRODUCTION**
SECTION 2 **PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS AND SUBMISSION**
SECTION 3 **EM&A PROGRAM REQUIREMENT FOR THE PROJECT**
SECTION 4 **IMPACT MONITORING RESULTS**
SECTION 5 **WASTE MANAGEMENT**
SECTION 6 **SITE INSPECTIONS**
SECTION 7 **ENVIRONMENTAL COMPLAINTS AND NON-COMPLIANCE**
SECTION 8 **IMPLEMENTATION STATUES OF MITIGATION MEASURES**
SECTION 9 **IMPACT FORECAST**
SECTION 10 **CONCLUSIONS AND RECOMMENDATION**

2.0 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS AND SUBMISSION

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 programs are enclosed in ***Appendix C*** and the major construction activities undertaken at Tung Tsz Road, Shuen Wan in this report period are listed below:.

- Driving sheetpiles for Bays 20 to 23;
- Excavation and installation of lateral shoring system for Bays 20 to 23;
- Laying of rockfill and blinding for Bays 20 to 23;
- Fixing of reinforcement for base slab of Bay 20;
- Erection of formwork for base slab of Bay 20; and
- Concrete casting of base slab of Bay 20.

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)	In Progress
2	Chemical waste Producer Registration	In Progress
3	Water Pollution Control Ordinance (Discharge License) WT00009528-2011	Valid to 31 July 2016
4	Billing Account for Disposal of Construction Waste (Account No.: 7012838)	Effective
5	Construction Noise permit	In Progress

2.04 The "Proposal Environmental Monitoring Programme and Methodology (R0006 Version 2)" was set out in accordance with the Updated Environmental Monitoring and Audit Manual. It was approved by the ER and agreed with the Independent Environmental Checker (IEC) and submitted to the EPD for endorsement.

2.05 For Contract 2 of the Project, no Baseline Monitoring Report was issued by the ETL. However, a new set of the Action/ Limit levels as used to Contract 2 were proposed by ET. It had been accepted by the IEC and also submitted to the EPD seek for endorsement.

3.0 EM&A PROGRAM REQUIREMENT FOR THE CONTRACT 2

3.01 The EM&A requirements set out in the PP, EIAR, Environmental Permit EP303/2008 (hereinafter 'the EP'), and the associated updated EM&A Manual, are presented below sub-section.

MONITORING PARAMETERS

3.02 According to the EIAR and the updated EM&A Manual, The monitoring parameters of each environmental aspect summarized in ***Table 3-1*** will be performed as under the Project.

Table 3-1 Summary of Monitoring Parameters

Environmental Aspect	Parameters	
Construction Noise	• A-weighted equivalent continuous sound pressure level (30min) (hereinafter 'Leq(30min)' during the normal working hours; and • A-weighted equivalent continuous sound pressure level (5min) (hereinafter 'Leq(5min)' for construction work during the restricted hours.	
Water Quality	• In Situ Measurement	Temperature, Dissolved Oxygen, Dissolved Oxygen Saturation, pH and Turbidity
	• Laboratory Analysis	Suspended Solids (hereinafter 'SS')
Hydrological Characteristics	The water flow and depth measurement onsite	
*Ecology	Monitor and audit the proper implementation of mitigation measures stipulated in EIA report and the updated EM&A Manual	
Landscape & Visual	Inspect and audit the implementation and maintenance of landscape and visual mitigation measures	

*Remarks: * the monitoring is carried out by IEC*

MONITORING LOCATIONS

3.03 Monitoring locations have been proposed in the updated EM&A Manual. Graphic plot to show in ***Appendix D*** and summarized in ***Table 3-2***.

Table 3-2 Designated Monitoring Locations of the EM&A Programme

Aspect	Location ID	Address
Construction Noise	M1	14, Shuen Wan Chim Uk
	AL1	Joint Village Office for Villages in Shuen Wan, Tai PO
	M2	150, San Tau Kok
	M3	31, Wai Ha
	M4	Block 15, T rèasure Spot Garden
Water Quality	(#) W1	Between the Shuen Wan Marsh and ECA • Co-ordinates: E839301, N836386 • Existing River Bed Level: +1.75mPD).
	W2	Between Tolo Harbour and Proposed Penstock • Co-ordinates: E839542, N836184 • Exiting River Bed Level: +1.48mPD)
	(*) W3	Upstream of Tung Tze Shan Road • Co-ordinates: E838760, N836714 • Exiting River Bed Level: +5.08mPD)
	W4	Wai Ha Village 29D • Co-ordinates: E838865, N836621 • Exiting River Bed Level: +4.05mPD)
Hydrological	H1	Between the Shuen Wan Marsh and ECA • Coordinates: E839306, N836379)
	H2	Route 10 Sam Kung Temple • Coordinates: E839163, N836433

Aspect	Location ID	Address
	H3	Upstream of Tung Tze Shan Road • Coordinates: E838760, N836714
	H4	Wai Ha Village 29D • Coordinates: E838865, N836621
Ecology	Areas within 100m of the works boundary under Contract 2	
Landscape & Visual	As within and adjacent to the construction sites and works areas under the Contract 2,	

Remarks:
(#) Control Station of Contract 1, however impact station of Contract 2
(*) Control Station of Contract 2

MONITORING FREQUENCY

3.04 The monitoring frequency and duration as specified in the updated EM&A Manual are summarized below.

Construction Noise

Frequency: Once a week during 0700-1900 on normal weekdays for Leq30min

If the construction work is undertake at restricted hour, the monitoring frequency of construction noise will be conducted in accordance with the related Construction Noise Permit requirement issued by EPD as follow

- 3 consecutive Leq5min at restrict hour from 1700 – 2300;
- 3 consecutive Leq5min for restrict hour from 2300 – 0700 next day;
- 3 consecutive Leq5min for Sunday or public holiday from 0700 – 1900;

Duration: Throughout the construction period when the major construction activities are undertaken

Water Quality

Frequency: Three times a week. The interval between 2 sets monitoring are not less than 36 hours

Duration: During the construction phase of Contract 2 to undertake (in accordance with the Updated EM&A Manual Section 4.27).

Hydrological Characteristics

Frequency: Once per week at mid-flood and mid-ebb tides

Duration: During the construction phase of Contract 2 to undertake; and one year after the construction is complete as operation phase monitoring (in accordance with the Updated EM&A Manual Section 4.32).

Ecology

3.05 In according with Section 6.17 of the Updated EM&A Manual, ecological monitoring should be conducted by the Independent Environmental Checker (hereinafter 'IEC'). Monitoring programme details should be agreed with the Agriculture, Fisheries and Conservation Department (AFCD). Moreover, the IEC should submit reports on the findings of each monitoring trip, and a final report summarizing the monitoring results over the entire monitoring period to AFCD and Environmental Protection Department (EPD). Hence, no monitoring or surveying should be carried out by ET of the Project.

Landscape & Visual

3.06 According to Section 7.4 of the Updated EM&A Manual, site inspection bi-weekly should be performed to check the implementation and maintenance of landscape and visual mitigation measures whether to full realize.

MONITORING EQUIPMENT

Noise Monitoring

3.07 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 noise monitoring. The sound level meter shall be checked with an acoustic calibrator. The wind speed shall be check with a portable wind speed meter, which capable to measure wind speed in m/s.

Water Quality Monitoring

3.08 **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 DO level in the range of 0 – 20mg L-1 and 0 – 200% saturation; and temperature of 0 – 45 degree Celsius.

3.09 **pH Meter** – The instrument shall consist of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It shall be readable to 0.1 pH in arrange of 0 to 14.

3.10 **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.

3.11 **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.

3.12 **Water Depth Detector** – A portable, battery-operated echo sounder should be used for the determination of water depth at each designated monitoring station. The unit can either be hand held or affixed to the bottom of the work boat.

3.13 **Sample Containers and Storage** – Water samples for SS should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen).

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

Hydrological Characteristics

3.15 **Water Depth Detector** - A portable, battery-operated echo sounder shall be used for the determination of water depth at each designated monitoring station.

3.16 **Stream water flow Equipment** –A portable, battery-operated flow meter should be used for the determination of water flow rate at each designated monitoring location and record in m^3/s.

3.17 The monitoring equipment using for the Project's EM&A program were proposed by the ET and verified by the IEC prior commencement of the monitoring. Details of the equipment used for impact monitoring are listed in ***Table 3-3***.

Table 3-3 Monitoring Equipment Used in EM&A Program

Equipment	Model
Construction Noise	
Integrating Sound Level Meter	B&K Type 2238
Calibrator	B&K Type 4231
Portable Wind Speed Indicator	Testo Anemometer
Water quality	
Water Depth Detector	Eagle Sonar
Water Sampler	A transparent PVC cylinder / bucket

Equipment	Model
Thermometer & DO meter	DO Meter YSI 55
pH meter	Extech EC500
Turbidimeter	Hach 2100Q
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	'Willow' 33-litre plastic cool box
Suspended Solids	HOKLAS-accredited laboratory (ALS Technichem (HK) Pty Ltd)
Hydrological Characteristics	
Water flow meter	GLOBAL WATER model FP211
Water Depth Detector	Eagle Sonar or an appropriate steel ruler or rope with appropriate weight

MONITORING METHODOLOGY

Noise Monitoring

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

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

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

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

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

Water Quality

3.23 Water quality monitoring are conducted at the depth below:-

- Three depths: 1m below water surface, 1m above river bed and at mid-depth when the water depth exceeds 6m, or
- If the water depth is between 3m and 6m, two depths: 1m below water surface and 1m above river bed, and or
- If the water depth is less than 3m, 1 sample at mid-depth is taken

3.24 Water depths are determined prior to measurement and sampling, using a portable battery operated depth detector, brand named 'Eagle Sonar', if the depths exceed 1.5 meter. If the depth between 1.5 meter and 1 meter, plastic tape measurement tied with appropriate weight are used the depth estimation. For the depth well below 1 meter, an appropriate steel ruler or rope with appropriate weight are used for the depth measurement.

3.25 A transparent PVC cylinder, with a capacity of not less than 2 litres, is used for water sampling. The water sampler is lowered into the water body at a predetermined depth. The trigger system of the sampler is activated with a messenger and opening ends of the sampler are closed accordingly then the sample of water is collected. If the water depth is less than 500mm, a water bucket is be used as a water sampler to minimize the possibility of the latching system disturbing sediment during water sampling

3.26 A portable YSI 55 DO Meter is used for in-situ DO measurement. The DO meter is capable of measuring DO in the range of 0 - 20 mg/L and 0 - 200 % saturation and checked against water saturated ambient air on each monitoring day prior to monitoring. Although the DO Meter automatically compensates ambient water temperature to a standard temperature of 20^0C for ease of comparison of the data under the changing reality, the temperature readings of the DO Meter are be recorded in the field data sheets. The equipment calibration is performed on quarterly basis.

3.27 A portable Extech EC500 pH Meter is used for in-situ pH measurement. The pH meter is capable of measuring pH in the range of 0 – 14 and readable to 0.1. Standard buffer solutions of pH 7 and pH 10 are used for calibration of the instrument before and after measurement. The equipment calibration is performed on quarterly basis.

3.28 A portable Hach 2100Q Turbidity Meter is be used for in-situ turbidity measurement. The turbidity meter is capable of measuring turbidity in the range of 0 – 1000 NTU. The equipment calibration is performed on quarterly basis.

3.29 Water samples are contained in screw-cap PE (Poly-Ethylene) bottles, which are provided and pretreated and 'PE' (Poly-Ethylene) sampling bottles provided and pre-treated according to corresponding analytical requirements. Where appropriate, the sampling bottles are rinsed with the water to be contained. Water sample is then transferred from the sampler to the sample bottles.

3.30 One liter or 500 mL water sample are collected from each depth for SS determination. The collected samples are stored in a cool box maintained at 4^0C and delivered to laboratory upon completion of the sampling by end of each sampling day.

3.31 All water samples are analyzed with Suspended Solids (SS) as specified in the updated *EM&A Manual* by a local HOKLAS-accredited testing laboratory (ALS Technichem (HK) Pty Ltd HOKLAS registration no. 66). SS are determined by the laboratory upon receipt of the water samples using HOKLAS accredited analytical method. The detection limits and testing method are shown below in ***Table 3-4***. The certificate of ALS Technichem (HK) Pty Ltd is provided in ***Appendix E***.

Table 3-4 Testing Method and Detection limit of Suspended Solids

Determinant	Testing Method	Detection Limit
Suspended solid	Determination use HOKLAS accredited analytical methods namely ALS Method EA-025 (based on APHA 2540 D)	2mg/L

Hydrological Characteristics

3.32 A portable, water flow meter, brand named "*GLOBAL WATER model FP211*" are used to determine the water current flow at the designated monitoring stations. A water flow velocity is measured at mid depth of current water body or 0.5m below water level.

3.33 Water depths are determined prior to measurement, using a portable battery operated depth detector, brand named 'Eagle Sonar', if the depths exceed 1.5 meter. If the depth between 1.5 meter and 1 meter, plastic tape measurement tied with appropriate weight are used the depth estimation. For the depths well below 1 meter, an appropriate steel ruler or rope with appropriate weight are used for the depth measurement.

DATA MANAGEMENT AND DATA QA/QC CONTROL

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

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

OTHERS MONITORING IMPLEMENTATION FOR THE CONTRACT

Ecology

3.36 Ecological monitoring and reporting should be performed by IEC. No equipment and procedure are presented in the EM&A Monthly Report.

Landscape and Visual

3.37 A registered Landscape Architect as member of the ET is employed by the Contractor to undertake site inspection. Site inspection will undertake at least once every two weeks throughout the construction period to ensure compliance with the intended aims of the mitigation measures are proposed in the EIA and the updated EM&A Manual, implemented by the Contractor.

DETERMINATION OF ACTION/LIMIT (A/L) LEVELS

3.38 The re-established performance criteria for construction noise, water quality and hydrological, namely Action and Limit levels is used for Contract 2 are listed in ***Tables 3-5, 3-6,*** and ***3-7***.

Table 3-5 Action and Limit Levels for Construction Noise

Location	Time Period	Action Level in dB(A)	Limit Level in dB(A)
M1, AL1, M2, M3, M4	Daytime 0700 – 1900 hrs on normal weekdays	When one documented complaint is received	> 75* dB(A)
	1900 – 2300 on all days and 0700 – 2300 on general holidays (including Sundays		60/65/70 dB(A)**
	2300 – 0700 on all days		45/50/55 dB(A)**

Note: * *Reduces to 70dB(A) for schools and 65dB(A) during the school examination periods.*
** *To be selected based on the Area Sensitivity Rating of A/B/C, and the conditions of the applicable CNP(s) must be followed*

Table 3-6 Action and Limit Levels for Water Quality

Parameter	Performance Criteria	Impact Station		
		W1	W2	W4
DO Concentration (mg/L)	Action Level	7.27	7.26	9.27
	Limit Level	7.05	6.44	7.98
pH	Action Level	NA	NA	NA
	Limit Level	6 - 9	6 - 9	6 - 9
Turbidity (NTU)	Action Level	4.77	2.46	3.32
	Limit Level	5.26	3.42	4.52
Suspended Solids (mg/L)	Action Level	9.73	8.89	6.98
	Limit Level	10.77	9.75	7.66

Notes:

- *The proposed Action/Limit Levels of DO are established to be used 5%-ile/1%-ile of all the baseline data;*
- *The proposed Action/Limit Levels of Turbidity and SS are established to be used 95%-ile/99%-ile of all the baseline data;*
- *For DO, non-compliance of the water quality limits occur is when monitoring result lower than the action/limit levels;*
- *For turbidity and SS, non-compliance of the water quality limits occurs is when monitoring result higher than the limits; and*
- *For pH, non-compliance of the quality limit occur is when monitoring result lower than 6 and higher than 9; and*
- *All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary*

Table 3-7 Action and Limit Levels for Hydrological Characteristics

Parameter	Acceptance Criteria	Monitoring Station	
		H1	H2
Water Depth (m)	Action Level	0.08 (80% of baseline water depth)	0.40 (80% of baseline water depth)
	Limit Level	0.06 (60% of baseline water depth)	0.30 (60% of baseline water depth)
Water Flow Rate (m3/s)	Action Level	120% of control station's water flow rate on the same day of measurement	120% of control station's water flow rate on the same day of measurement
	Limit Level	140% of control station's water flow rate on the same day of measurement	140% of control station's water flow rate on the same day of measurement

3.39 The locations H3 and H4 are a reference measurement point in order to monitor any changes in the hydrological characteristics of Wai Ha River arising from the work Contract 2 to affect the Shuen Wan Marsh.

3.40 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***.

EQUIPMENT CALIBRATION

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

3.42 All the water quality monitoring equipment such as the DO, pH and Turbidity meters are calibrated by HOKLAS accredited laboratory of three month intervals.

3.43 A portable, water flow meter, brand named "*GLOBAL WATER model FP211*" is calibrated in yearly basis.

3.44 All updated calibration certificates of the monitoring equipment used for the impact monitoring program in this reporting period are attached in ***Appendix E***.

METEOROLOGICAL INFORMATION

3.45 The meteorological information during the construction phase is obtained from Tai Po and Shatin Stations of the Hong Kong Observatory (HKO). The meteorological data during the impact monitoring days are summarized in ***Appendix H***

4.0 IMPACT MONITORING RESULTS

4.01 The monitoring schedule had been issued to relevant parties on **29 August 2011** which presented in ***Appendix G***. The works undertaken during the reporting period are illustrated in ***Appendix C.*** The monitoring results are presented in the following sub-sections.

MONITORING RESULTS SHARING

4.02 Environmental Permit EP-203/2008 was issued on 25 February 2008 by EPD which adopted for both Contracts 1 and 2 of DSD construction at Shuen Wan. Also, the EM&A programme of both contracts are undertaken in accordance with the same updated EM&A Manual which has to be carried out during construction period. According to the updated EM&A manual, designated monitoring Locations M1 and AL1 for noise monitoring stations, Locations W1 and W2 for water quality monitoring stations, and Locations H1 and H2 for hydrological measurement are requested to perform at both Contracts 1 and 2. Since Contract 1 has already commenced in January 2011, those results measured by Contract 1 would be shared for the Contract 2. This recommendation has been accepted by IEC and submitted to EPD.

RESULTS OF CONSTRUCTION NOISE MONITORING

4.03 In reporting period, all noise monitoring results at the designated locations M1, AL1, M2, M3 and M4 are summarized in ***Table 4-1***. The detail monitoring data are presented in ***Appendix I***.

Table 4-1 Summary of Construction Noise Monitoring Results, dB(A)

Date	Leq30min (dB(A))				
	M1(#)	AL1(#)	M2(*)	M3(*)	M4(*)
1-Sep-11	61.3	62.7	--	--	--
3-Sep-11	--	--	59.7	68.8	71.2
8-Sep-11	59.8	59.2	--	--	--
9-Sep-11	--	--	61.5	70.8	69.8
15-Sep-11	58.2	58.3	--	--	--
17-Sep-11	--	--	59.0	69.7	67.7
22-Sep-11	70.2	64.7	--	--	--
24-Sep-11	--	--	68.7	68.2	59.8
28-Sep-11	61.0	65.9	--	--	--
30-Sep-11	--	--	58.6	69.4	67.6
Limit Level	**>75 dB(A)**				

Remarks:

(#) *The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.*

(*) *The monitoring is undertaken under free field situation. A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines*

4.04 The sound meter was set in a free field situation at the designated monitoring locations M2, M3 and M4, therefore, a façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines. For Location A1 and AN1, the monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.

4.05 No noise complaint (which is an Action Level exceedance) was received in this reporting period. As shown in ***Table 4-1,*** all the noise monitoring result are well below 75dB(A) and no Action or Limit Level exceedance was triggered during this reporting period. The graphical plot is shown in ***Appendix J***.

RESULTS OF LOCAL STREAM WATER QUALITY MONITORING

4.06 In this Reporting Period, **14** sampling days were performed at all designated measurement Points W1, W2, W3 and W4 for local stream water quality monitoring by the Contracts 1 and 2. The monitoring results including in-situ measurements and laboratory testing results are provided in ***Appendix I***. The graphical plots are shown in ***Appendix J***.

4.07 Monitoring results of 3 key parameters: dissolved oxygen (DO), turbidity and suspended solids in this Reporting Period, are summarized in ***Table 4-2***.

Table 4-2 Water Quality Results Summary in Reporting Period

Sampling date	DO (mg/L)				Turbidity (NTU)				SS (mg/L)			
	W1	W2	W3*	W4	W1	W2	W3*	W4	W1	W2	W3*	W4
1-Sep-11	**4.12**	**4.33**	7.18	**6.91**	3.6	**3.8**	1.54	1.96	2.60	3.00	<2.00	<2.00
3-Sep-11	**6.00**	**5.30**	7.32	**6.18**	2.9	***2.9***	1.76	***3.76***	1.40	1.80	<2.00	<2.00
6-Sep-11	**4.61**	**4.13**	5.86	**6.22**	3.4	***2.9***	1.49	3.10	3.40	3.20	<2.00	<2.00
8-Sep-11	**4.38**	**4.31**	5.66	**5.77**	2.5	2.4	1.83	3.25	2.50	1.30	6.00	6.00
10-Sep-11	**5.82**	7.27	6.88	**7.01**	**8.5**	**4.7**	3.60	2.96	3.60	4.00	6.00	<2.00
12-Sep-11	**3.82**	**5.32**	6.44	**6.45**	4.5	1.9	2.66	3.27	2.00	4.40	<2.00	<2.00
15-Sep-11	**4.58**	**5.48**	6.09	**6.29**	**8.5**	**5.4**	1.89	2.76	4.80	2.20	<2.00	<2.00
17-Sep-11	**5.63**	**5.03**	5.73	**5.80**	**22.9**	**4.5**	1.81	3.19	6.40	1.00	<2.00	<2.00
20-Sep-11	**5.37**	**5.11**	6.26	**6.34**	**6.3**	1.9	1.75	***3.31***	6.80	2.60	<2.00	<2.00
22-Sep-11	**3.10**	**4.66**	4.49	**5.01**	***5.1***	**8.7**	2.18	3.13	6.60	5.20	<2.00	<2.00
24-Sep-11	**2.88**	**4.55**	6.43	**6.29**	3.2	1.3	1.42	3.04	5.40	***9.20***	<2.00	<2.00
26-Sep-11	**3.62**	**5.31**	5.36	**5.47**	3.2	***2.8***	1.61	2.32	**11.00**	***9.00***	<2.00	<2.00
28-Sep-11	**3.33**	**6.08**	5.91	**6.05**	4	1.4	1.70	2.95	8.00	6.00	<2.00	<2.00
30-Sep-11	**3.96**	**4.82**	5.52	**5.79**	**7.6**	**6**	1.84	3.24	5.6	3.4	<2.00	<2.00

Remarks:
- (*) Control Station
- *Bold and Italic is exceeded Action Level*
- *Bold with underline is exceeded Limit Level*

4.08 During the Reporting Period, field measurements showed that stream water temperatures were within 25.7℃ to 32.9℃and pH values within 7.05 to 8.25. Furthermore, salinity measured at W1 and W2 were detected respectively as 2.1-23.4 ppt and 15.2-25.7 ppt.

4.09 A statistics of exceedances for the three parameters: dissolved oxygen (DO), turbidity and suspended solids is shown in ***Table 4-3***.

Table 4-3 Statistics Water Quality Exceedance in the Reporting Period

Station	DO		Turbidity		SS		Total Exceedance	
	Action	Limit	Action	Limit	Action	Limit	Action	Limit
W1	0	14	1	5	0	1	**1**	**20**
W2	0	13	3	6	2	0	**5**	**19**
W4	0	14	1	0	0	0	**1**	**14**
No of Exceedance	**0**	**41**	**5**	**11**	**2**	**1**	**7**	**53**

4.10 As shown in **Table 4-3**, a total of 60 Action/Limit Level exceedances, namely 41 Limit level exceedances in dissolved oxygen, 16 Action/Limit Level exceedances in turbidity and 3 Action/Limit Level exceedances in suspended solids were recorded in this Reporting Period. NOEs were issued to notify EPD, IEC, the Contractor and RE upon confirmation of the results.

4.11 For the exceedances of turbidity and suspended solids, Contractor reported that excavation of box culvert foundation from Bay 20 to Bay 23 was in progress during the captioned exceedance days. Such activities may lead to increase of turbidity or suspended solids levels for the nearby stream by washed out from stockpiles of dusty materials, excavated surface or dusty haul roads, etc. To prevent the impact to the existing stream, precautionary measures such as construction of temporary artificial precipitation stream to remove the suspended solids from wastewater to maintain the water quality of downstream by laying geotextile filter and stone below stream was

implemented on site. Moreover, no direct wastewater discharged or site runoff from the construction site to the Wai Ha River is occurred during the course of monitoring. It is noted the construction work area is located at downstream of Locations W3 and W4, therefore, the water quality at Locations W3 and W4 affected by the Project is unlikely. Furthermore, tidal effect were affecting the monitoring results of Stations W1(+1.75mPD) and W2(+1.48mPD). It is concluded that the exceedances were not due to the Project.

4.12 In the regard of the dissolved oxygen exceedances, the construction activities during the DO exceedances as reported by the Contractor comprised none of DO depleting characteristics. It is concluded that all the exceedances were not due to the Project.

4.13 Anyhow, KLKJV should be fully implemented the required water quality mitigation measures in accordance with the updated EM&A Manual stipulation during construction under the Project. In particular when excavation and the associated box culvert construction works are undertaken near Wai Ha River, all construction wastewater or runoff generated from work area should be treated and drained to the designated discharge point.

RESULTS OF HYDROLOGICAL CHARACTERISTICS MONITORING

4.14 In this Reporting Period, hydrological characteristics measurement at H3 and H4 were carried out on 3, 10, 17, 24 and 30 September 2011. Contract 1 Environmental Team also performed the hydrological characteristics monitoring at H1 and H2 on 3, 10, 17, 24 and 30 September 2011. The monitoring data of H1 and H2 provided by DC/2009/22 is showed ***Appendix I***. The detailed H3 and H4 measurement results in this Reporting Period are presented in ***Tables 4-4***.

Table 4-4 Detailed monitoring results of hydrological characteristics at H3 and H4

Date	Measurement Time	Tide Condition	River Width (m)	Water Depth (m)	Cut Section (m^2)	Velocity Flow Rate (m/s)	Average Volumetric Flow Rate (Q), m^3/s
Measurement Point: H3							
3 Sep 11	11:28	Flood	7.45	0.08	0.5960	0.8	0.477
	15:13	Ebb	7.45	0.10	0.7450	0.7	0.522
10 Sep 11	15:31	Flood	7.45	0.08	0.5960	0.6	0.358
	10:37	Ebb	7.45	0.08	0.5960	0.7	0.417
17 Sep 11	10:17	Flood	7.45	0.06	0.4470	0.3	0.134
	15:21	Ebb	7.45	0.08	0.5960	0.4	0.238
24 Sep 11	10:11	Flood	7.45	0.08	0.5960	0.5	0.298
	14:31	Ebb	7.45	0.08	0.5960	0.6	0.358
30 Sep 11	10:02	Flood	7.45	0.08	0.5960	0.7	0.417
	14:17	Ebb	7.45	0.10	0.7450	0.7	0.522
Measurement Point: H4							
3 Sep 11	11:41	Flood	2.74	0.24	0.6576	0.2	0.132
	15:20	Ebb	2.74	0.30	0.8220	0.1	0.082
10 Sep 11	15:53	Flood	2.74	0.25	0.6850	0.2	0.137
	10;42	Ebb	2.74	0.24	0.6576	0.2	0.132
17 Sep 11	10:23	Flood	2.74	0.26	0.7124	0.1	0.071
	15:39	Ebb	2.74	0.27	0.7398	0.2	0.148
24 Sep 11	10:21	Flood	2.74	0.24	0.6576	0.2	0.132
	14:45	Ebb	2.74	0.26	0.7124	0.2	0.142
30 Sep 11	10:15	Flood	2.74	0.25	0.6850	0.1	0.069
	14:51	Ebb	2.74	0.26	0.7124	0.2	0.142

Remarks: Tide information extract from Tai Po Kau Station

Date	Time	Height(m)	Time	Height(m)	Time	Height(m)	Time	Height(m)
03 Sep 2011	01:23	2.3	07:02	0.8	14:02	1.7	18:57	1.1
10 Sep 2011	01:22	1.2	08:30	2.2	14:37	0.7	21:30	1.8
17 Sep 2011	00:35	2.1	06:18	0.9	12:55	1.7	17:41	1.2

Date	Time	Height(m)	Time	Height(m)	Time	Height(m)	Time	Height(m)
24 Sep 2011	06:23	2.2	13:29	0.8	20:16	1.7		
30 Sep 2011	05:13	0.6	12:05	2.1	17:15	1.1		

4.15 Hydrological characteristics results of the all measurement points are summarized in ***Tables 4-5*** and ***4-6***.

Table 4-5 Summarized Hydrological Characteristics of Water Depth, m

Date	Mid-Flood				Mid-Ebb			
	H1	H2	H3	H4	H1	H2	H3	H4
3-Sep-11	0.14	0.61	0.08	0.24	0.10	0.61	0.10	0.30
10-Sep-11	0.12	0.61	0.08	0.25	0.15	0.06	0.08	0.24
17-Sep-11	0.12	0.24	0.06	0.26	0.12	0.73	0.08	0.27
24-Sep-11	0.20	0.55	0.08	0.24	0.55	0.55	0.08	0.26
30-Sep-11	0.12	0.30	0.08	0.25	0.30	0.73	0.10	0.26

Table 4-6 Summarized Hydrological Characteristics of Average Volumetric flow rate (Q), m^3/s

Date	Mid-Flood				Mid-Ebb			
	H1	H2	H3	H4	H1	H2	H3	H4
3-Sep-11	0.150	0.377	0.477	0.132	0.225	0.377	0.522	0.082
10-Sep-11	0.075	1.130	0.358	0.137	0.150	0.502	0.417	0.132
17-Sep-11	0.075	0.377	0.134	0.071	0.150	0.691	0.238	0.148
24-Sep-11	0.075	0.377	0.298	0.132	0.375	0.628	0.358	0.142
30-Sep-11	0.075	0.754	0.417	0.069	0.375	1.319	0.522	0.142

4.16 To compare the monitoring data between the Reporting Period (rainy season) and baseline monitoring period, the currently water depth and volumetric flow rate has insignificant changed. Furthermore, water depth and water flow rate were found no exceedance in this reporting period.

5.0 WASTE MANAGEMENT

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

RECORDS OF WASTE QUANTITIES

5.02 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.

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

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

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) (m^3)	0	-
Reused in this Contract (Inert) (m^3)	0	-
Reused in other Projects (Inert) (m^3)	0	-
Disposal as Public Fill (Inert) (m^3)	0	-

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

Type of Waste	Quantity	Disposal Location
Recycled Metal (kg)	0	-
Recycled Paper / Cardboard Packing (kg)	0	-
Recycled Plastic (kg)	0	-
Chemical Wastes (kg)	0	-
General Refuses (m^3)	0	-

5.04 To control over the site performance on waste management, the Contractor shall ensure that all solid and liquid waste management works are in full compliance with the relevant license/permit requirements, such as the effluent discharge licence and the chemical waste producer registration. The Contractor is also reminded to implement the recommended environmental mitigation measures according to the EM&A Manual based on actual site conditions.

6.0 SITE INSPECTION

REGULAR SITE INSPECTION AND MONTHLY AUDIT

6.01 According to the Updated Environmental Monitoring and Audit Manual, regular site inspection to evaluate the project environmental performance should be carried out during construction phase. Weekly environmental site inspections had been carried out by the Contractor and RE on **7, 16, 21 and 28 September 2011**. Furthermore, joint site inspection with the IEC and ET was carried out on **16 September 2011**. No non-compliance was noted.

6.02 Observations for the site inspection and monthly audit within this Reporting Period are summarized in ***Table 6-1*** and monthly inspection checklist is attached in ***Appendix L***. Moreover, weekly site inspection checklists provided by the Contractor are also showed in ***Appendix L***.

Table 6-1 Site Inspection of Observations – Findings and Deficiencies

Date	Performed by	Findings / Deficiencies	Follow-Up Status
7 Sep 11	The Contractor and RE	NA	NA
16 Sep 11	The Contractor, ER, IEC and ET	• A chemical oil bucket located at site is stored without a drip tray. • The Contractor was reminded that Environmental Permit should be posted at the easy observed area.	• The deficiency was immediately resolved in the day • Not require for reminder.
21 Sep 11	The Contractor and RE	As reminder • Stagnant water should be removed after raining. • The weed should be cleared	Not require for reminder.
28 Sep 11	The Contractor and RE	No observation was found at Shuen Wan project site	NA

LANDSCAPE AND VISUAL INSPECTION

6.03 In this Reporting Period, landscape and visual inspection was carried on 5th and 23rd September 2011. The stand-alone of monthly Landscape & Visual Report (September 2011) signed by the registered Landscape Architect attach at ***Appendix M***.

6.04 According to monthly Landscape & Visual Report (September 2011), mitigation measures implemented in reporting period list as below:

Table 6-2 Landscape & Visual Inspection of Observations

Parameter	Observation	Recommendation
Visual Screen	• A section of temporary hoardings have been erected from west to east parts of Tung Tsz Road opposite to San Tau Kwok. • No hoardings have been erected along the rest of the proposed works area since neither construction works nor any associated preparation works have been commenced.	No specific recommendation is required
Contaminant / Sediment Control	• No direct discharge of contaminants or any polluted fluid was observed within the active works area. All used water and underground water was collected and drained into filtration beds and a sedimentation tanks before the discharge. • As observed, a sheet of PVC liner was overlaid along the filtration beds within the active works area. This practice could lower the chance of contaminating the vegetation in the adjacent Shuen Wan marsh.	Regular monitoring should be conducted to ensure no direct discharge or leakage of contaminants or any polluted fluid into the adjacent Wai Ha River

Parameter	Observation	Recommendation
Pollution Control	• Drained water from underground was observed to be filtered in the sedimentation tank and filtration beds before the discharge. • As observed, a sheet of PVC liner was overlaid along the filtration beds within the active works area. This practice could lower the chance of contaminating the vegetation in the adjacent Shuen Wan marsh. No direct discharge of water into the adjacent Wai Ha River was observed.	No specific recommendation is required
Existing Trees within Works Area	• Tree felling has not yet been conducted within the working area. Clearance of herbaceous vegetation within the fenced area was observed during the monitoring • All trees within the Project area were recorded generally in fair health conditions. Four uprooted trees, including T011, T011A, T011B and T011C, were observed and was reported in *Monthly EM&A Report for August 2011*. As informed by the Contractor, these trees were found uprooted when the Project Team commenced the works in July 2011.	• Within the active works area, proper Tree Protection Zones (TPZs) should be demarcated for retained trees and trees to be transplanted which would be directly affected by the construction work. In addition, if necessary, these retained trees or trees to be transplanted shall be watered regularly to maintain their health. • Disturbance is prohibited in all TPZs. In any practical circumstances, the contractor should follow Section 8 of Annex 4 of the approved Landscape Plan for protecting the existing trees from any potential damages resulting from construction works.
Construction Light	No construction light impact to the surrounding villages and to Plover Cove as all construction activities and construction sites are halted at 1800. No construction light at night is provided by the Main Contractor.	No specific recommendation is required

6.05 The next bi-weekly Landscape & Visual Monitoring in October 2011 is scheduled to be conducted in the week of 3rd and 17th October 2011.

7.0 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

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

Table 7-1 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
20 July – 31 August 2011	0	0	NA
1 – 30 September 2011	0	0	NA

Table 7-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
20 July – 31 August 2011	0	0	NA
1 – 30 September 2011	0	0	NA

Table 7-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
20 July – 31 August 2011	0	0	NA
1 – 30 September 2011	0	0	NA

8.0 IMPLEMENTATION STATUS OF MITIGATION MEASURES

8.01 The environmental mitigation measures that recommended in the Updated Environmental Monitoring and Audit Manual covered the issues of dust, noise and waste and they are summarized as follows:

Noise Mitigation Measure

(a) Only well-maintained plant should be operated on-site and plant shall be serviced regularly during the construction program;

(b) Silencers or mufflers on construction equipment should be utilized and shall be properly maintained during the construction program;

(c) Mobile plant, if any, should be sited as far from NSRs as possible;

(d) 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;

(e) 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;

(f) Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities;

(g) Use of quieter plants to carry out the construction tasks proposed for the Project;

(h) Use about 3.5m high of temporary noise barriers as screened the noisy PMEs to carry out construction of box culvert and site clearance.

(i) Low Impact Method, such as using PMEs smaller in size and to be enclosed by noise enclosure, should be adopted for the construction of box culvert and pipe laying in Wai Ha; and

(j) Use of noise enclosure during the works area for pipe laying in Wai Ha.

Dust Mitigation Measure

8.02 Implementation of mitigation measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices including but not limited to the following:

(a) Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved road, with complete coverage, particularly during dry weather;

(b) Use of frequent watering for particularly dusty static construction areas and areas close to ASRs;

(c) Tarpaulin covering of all dusty vehicle loads transported to, from and between site location;

(d) Establishment and use of vehicle wheel and body washing facilities at the exit points of the site;

(e) Routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs;

(f) Stockpiled excavated materials should be covered with tarpaulin and should be removed offsite within 24 hours to avoid any odour nuisance arising.

Local Stream Water Quality Mitigation Measure

(a) Before commencing any site formation work, all sewer and drainage connections shall be sealed to prevent debris, soil, sand etc. from entering public sewers/drains;

(b) Temporary ditches shall be provided to facilitate run-off discharge into appropriate watercourses, via a silt retention pond. No site run-off shall enter the fishponds at Shuen Wan;

(c) Sand/silt removal facilities such as sand traps, silt traps and sediment basins shall be provided to remove sand/silt particles from runoff to meet the requirements of the Technical Memorandum standard under the Water Pollution Control Ordinance. The design of silt removal facilities shall be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures shall be inspected monthly and maintained to ensure proper and efficient operation al all times and particularly during rainstorms

(d) Water pumped out from excavated pits shall be discharged into sill removal facilities;

(e) During rainstorms, exposed slope/soil surfaces shall be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms as summarized in ProPECC PN 1/94 shall be followed

(f) Exposed soil areas shall be minimized to reduce potential for increased siltation and contamination of runoff

(g) Earthwork final surfaces shall be well compacted and subsequent permanent work or surface protection shall be immediately performed to reduce the potential of soil erosion;

(h) Open stockpiles of construction materials or construction wastes on-site shall be covered with tarpaulin or similar fabric during rainstorms;

(i) For the construction of the box culvert next to the existing channel of the Wai Ha River, sand bags should be deployed around the boundary of the works trench to prevent muddy water ingress into the adjacent CA or Wai Ha River. Sand bags should also be used to surround the excavated trench. Generally, the sand bags will be placed up to a height 01 300mm to provide adequate allowance for the built-up water level during rainstorm event. With sand bags in place surface runoff will be intercepted and flow to Wai Ha River or collected by the existing drainage system as usual;

(j) For the construction of the box culvert in the extreme northeast corner of Shuen Wan Marsh Conservation Area sand bags should be deployed along the limit of the works area to prevent muddy water ingress into the CA. Sand bags should be placed to a height 0.1 at least 300mm from ground level and +2.5 mPD (whichever is greater) to provide adequate allowance for the built-up water level during rainstorm events Unpolluted surface runoff within the works area should then be collected and directed into the existing drainage system;

(k) Sheet-piles, which would be installed around the works trench near the Conservation Area, would be extended above ground level for about 2m to serve as hoardings to isolate the works site;

(l) Tarpaulin sheets would be used to cover the excavation areas during heavy rainstorms. This would prevent the ingress of rainwater into the trench minimizing the risk of muddy water getting into Wai Ha River and the adjacent Conservation Area;

(m) Any concrete washing water would be contained inside the works site surrounded by the extended sheet piles. A pump sump at the bottom 0f the trench would be provided to pump any excess water during concrete washing;

(n) Stockpiling the excavated materials adjacent to the Conservation Area would not be allowed. The excavated materials would be either removed off site immediately after excavation, or stockpile at location(s) away from the Conservation Area. The stockpile locations shall be approved by the site engineer;

(o) Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering the Wai Ha River and fish ponds at Shuen Wan. Stockpiles of cement and other construction materials should be kept covered when not being used.

(p) Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities to prevent spillage of fuels and solvents to nearby water bodies, 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 01 the largest tank The bund should be drained of rainwater after a rain event

(q) Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site. A licensed contractor would be responsible for appropriate disposal and maintenance of these facilities;

(r) The excavation works within the upstream end of the existing river channel of the Wai Ha River for the construction of the proposed box culvert should be carried out in dry condition. Containment measures such as bunds and barriers shall be used within the affected length of the river channel and the excavation works restricted to within an enclosed dry section of the channel. The excavation works within Wai Ha River shall be restricted to the period from October to April

Waste Mitigation Measures

(a) The Contractor shall observe and comply with the Waste Disposal Ordinance (WDO) and its subsidiary regulations.

(b) The Contractor shall submit to the Engineer for approval a Waste Management Plan with appropriate mitigation measures including the allocation of an area for waste segregation and shall ensure that the day-to-day site operations comply with the approved waste management plan.

(c) The Contractor shall minimise the generation of waste from his work. Avoidance and minimisation of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.

(d) The reuse and recycling of waste shall be practised as far as possible. The recycled materials shall include paper/cardboard, timber and metal etc.

(e) The Contractor shall ensure that Construction and Demolition (C&D) materials are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt shall be reused in earth filling, reclamation or site formation works. The C&D waste which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled where possible and, as the last resort, disposal of at landfills.

(f) The Contractor shall record the amount of wastes generated, recycled and disposed of (including the disposal sites). The Contractor shall use a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill.

(g) In order to avoid dust or odour impacts, any vehicles leaving a works area carrying construction waste or public fill shall have their load covered.

(h) To avoid the excessive use of wood, reusable steel shutters shall be used as a preferred alternative to formwork and falsework where possible.

(i) The Contractor shall observe and comply with the Waste Disposal (Chemical Waste) (General) Regulation. The Contractor shall apply for registration as chemical waste producer under the Waste Disposal (Chemical Waste) (General) Regulation when chemical waste is produced. All chemical waste shall be properly stored, labeled, packaged and collected in accordance with the Regulation.

8.03 KLKJV had been implementing the required environmental mitigation measures according to the Updated Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by KLKJV in this Reporting Period are summarized in ***Table 8-1***.

Table 8-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Water Quality	• Wastewater were appropriately treated by treatment facilities; • Drainage channels were provided to convey run-off into the treatment facilities; and • Drainage systems were regularly and adequately maintained.
Air Quality	• Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather; • Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers; • 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.
Noise	• Good site practices to limit noise emissions at the sources; • Use of quite plant and working methods; • Use of site hoarding or other mass materials as noise barrier to screen noise at ground level of NSRs; • Use of shrouds/temporary noise barriers to screen noise from relatively static PMEs; • Scheduling of construction works nearly Tung Tsz Road; and • Alternative use of plant items within one worksite, where practicable.

Issues	Environmental Mitigation Measures
Waste and Chemical Management	• 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	• The site was generally kept tidy and clean.

9.0 IMPACT FORCAST

CONSTRUCTION ACTIVITIES FOR THE FORTH-COMING MONTH

9.01 Construction activities planned to be carried out next month at Shuen Wan is listed as below:-

- Driving sheetpiles;
- Excavation and installation of lateral shoring system for Bays 20 to 25;
- Formwork and concreting of Box Culvert;

9.02 Three months Rolling Construction Program is attached in ***Appendix C***

KEY ISSUES FOR THE COMING MONTH

9.03 According to construction activities carry out in coming months, key issues to be considered include:

- Implementation of dust suppression measures at all times;
- Disposal of empty engine oil containers within site area;
- Ensure dust suppression measures are implemented properly;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Discharge of site effluent to the nearby local stream or storm drainage, stockpiling or disposal of materials, and any dredging or construction area at this area are prohibited;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures.

10.0 CONCLUSIONS AND RECOMMENTATIONS

CONCLUSIONS

10.01 This is the **3rd** monthly EM&A report for Contract 2 presenting the monitoring results and inspection findings for the reporting period from **1 to 30 September 2011**.

10.02 No noise complaint (which is an Action Level exceedance) was received and no construction noise measurement results that exceeded the Limit Level were recorded in this Reporting Period. No NOE or the associated corrective actions were therefore issued.

10.03 For water quality monitoring, a total of 60 Action/Limit Level exceedances, namely 41 Limit level exceedances in dissolved oxygen, 16 Action/Limit Level exceedances in turbidity and 3 Action/Limit Level exceedances in suspended solids were recorded in this Reporting Period. NOEs were issued to notify EPD, IEC, the Contractor and RE upon confirmation of the results. According to information such as construction activities provided by KLKVJ, all the exceedances are considered not due to the Project. Furthermore, the hydrological characteristics of water depth and water flow rate were found no exceedance in this reporting period.

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

10.05 Weekly environmental site inspections had been carried out by the Contractor and the RE on **6, 16, 21 and 28 September 2011**. Furthermore, joint site inspection with the IEC and ET was carried out on **16 September 2011**. No non-compliance was indicated during the site inspection. In general, it was reminded that good house-keeping practice should be maintained. The environmental performance of the Project was therefore considered satisfactory.

10.06 In this Reporting Period, landscape and visual inspection was carried on 5th and 23rd September 2011. The stand-alone of monthly Landscape & Visual Report (September 2011) as signed by the registered Landscape Architect.

10.07 No site visit was undertaken by any external party in this Reporting Period.

RECOMMENDATIONS

10.08 During wet season, excavation works of construction box culvert or trench, ingression of surface runoff into Wai Ha River to be the key issue in coming months. The contractor is reminded that mitigation measures for water quality and ecology should be fully implemented.

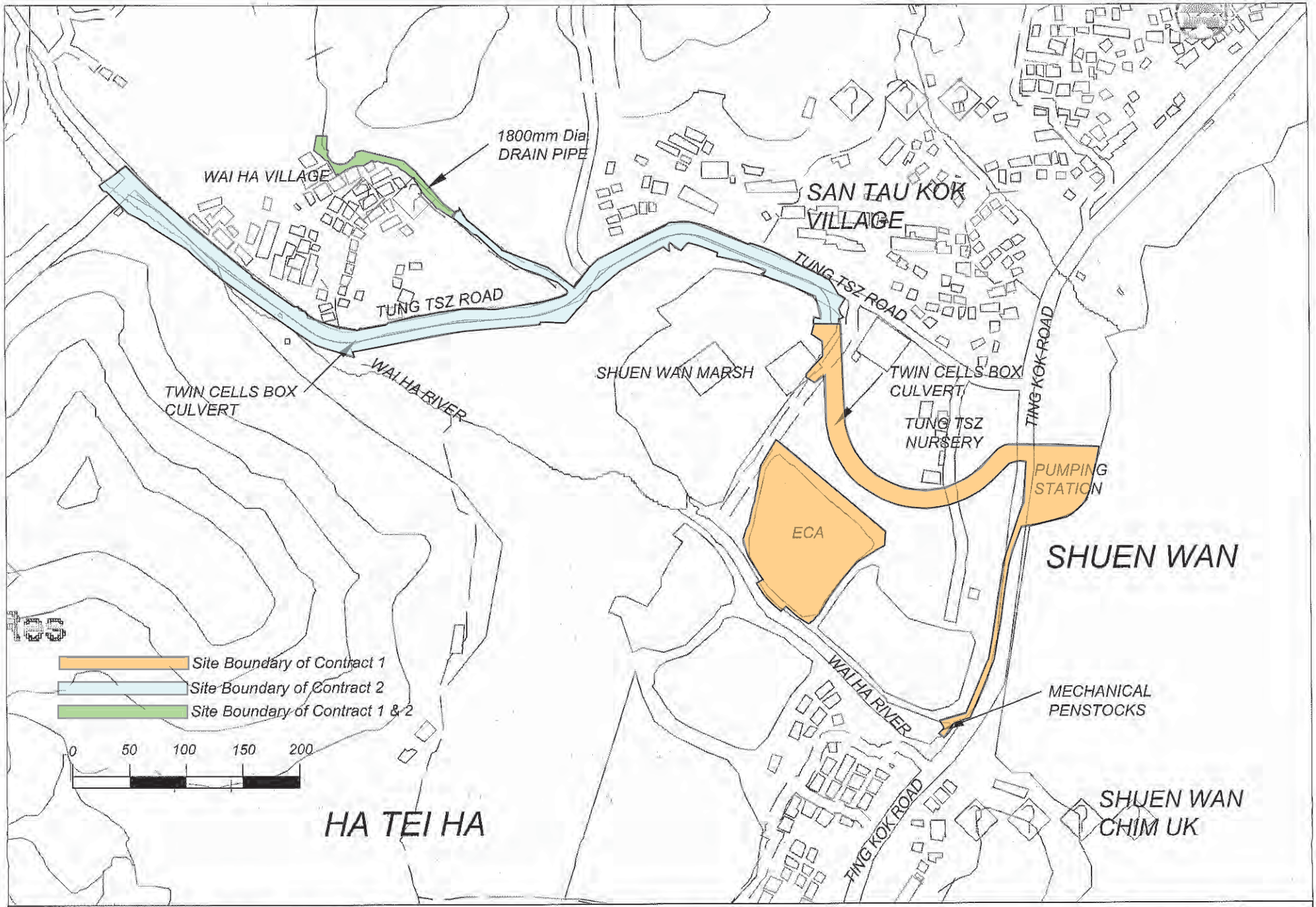
10.09 To control the site performance on waste management, the KLKJV shall ensure that all solid and liquid waste management works are fully in compliance with the relevant license/permit requirements, such as the effluent discharge licence and the chemical waste producer registration. KLKJV is also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

10.10 Baseline monitoring of water quality was conducted during typical Hong Kong dry season (November to March of next year). It is important that influence of the seasonal changes is taken into account when interpreting monitoring data of water quality obtained in the coming wet season. Review of the baseline conditions may need to be conducted regularly in particular during times of seasonal changes. If the baseline changes are evident, the environmental performance criteria should be re-established under agreement of the ER and IEC and submitted to the EPD for endorsement.

END OF TEXT

Appendix A

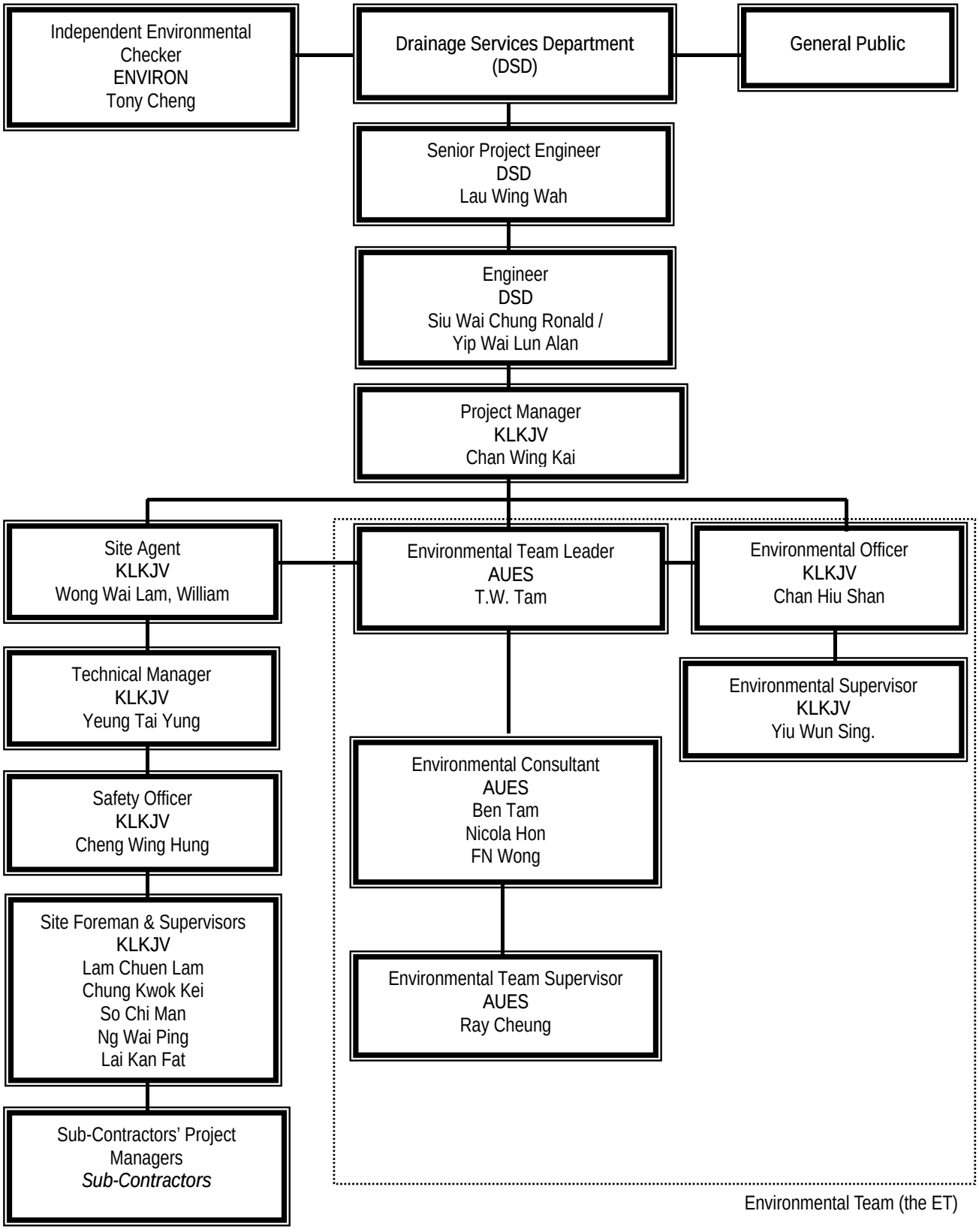
Site Location Plan
(DSD Contract 1 and Contract 2 at Shuen Wan)



Site Location Plan of DSD Contract 1 and Contract at Shuen Wan

Appendix B

Organization Chart and the Key Contact Person



Environmental Management Organization

Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
DSD	Employer	Mr. Luk Wai Hung	2594 7400	2827 8700
DSD	Senior Engineer	Mr. Lau Wing Wah	2594 7402	2827 8700
DSD	Engineer	Mr. Siu Wai Chung, Ronald	2594 7595	2827 8700
DSD	Engineer	Mr. Yip Wai Lun	2594 7359	2827 8700
DSD	Senior Inspector	Mr. Tso Si On	6778 2708	2827 8700
ENVIRON	Independent Environmental Checker	Mr. Tong Cheng	3743-0788	3548-6988
KLKJV	Project Director	Mr. Poon Chi Yeung Francis	2674 3888	2674 9988
KLKJV	Project Manager	Mr. Chan Wing Kai	2674 3888	2674 9988
KLKJV	Site Agent	Mr. Mok Chu Hung Tommy / Mr. Wong Wai Lam, William	2674 3888	2674 9988
KLKJV	Technical Manager	Mr. Yeung Tai Yung	9674 9712	2674 9988
KLKJV	Site Forman	Mr. Cheung Wai Hung	2674 3888	2674 9988
KLKJV	Environmental Officer	Miss. Chan Hiu Shan	2674 3888	2674 9988
KLKJV	Environmental Supervisor	Mr. Yiu Wun Sing	2674 3888	2674 9988
AUES	Environmental Team Leader	Mr. T.W. Tam	2959-6059	2959-6079
AUES	Senior Environmental Consultant	Mr. Wong Fu Nam	2959-6059	2959-6079
AUES	Environmental Consultant	Miss Nicola Hon	2959-6059	2959-6079
AUES	Environmental Consultant	Mr. Ben Tam	2959-6059	2959-6079
AUES	Environmental Team Supervisor	Mr. Ray Cheung	2959-6059	2959-6079

Legends:

DSD *(Employer) – Drainage Services Department*

DSD *(Engineer) – Drainage Services Department*

KLKJV *(Main Contractor) – Kwan Lee-Kuly Joint Venture*

ENVIRON *(IEC) – ENVIRON Hong Kong Limited*

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

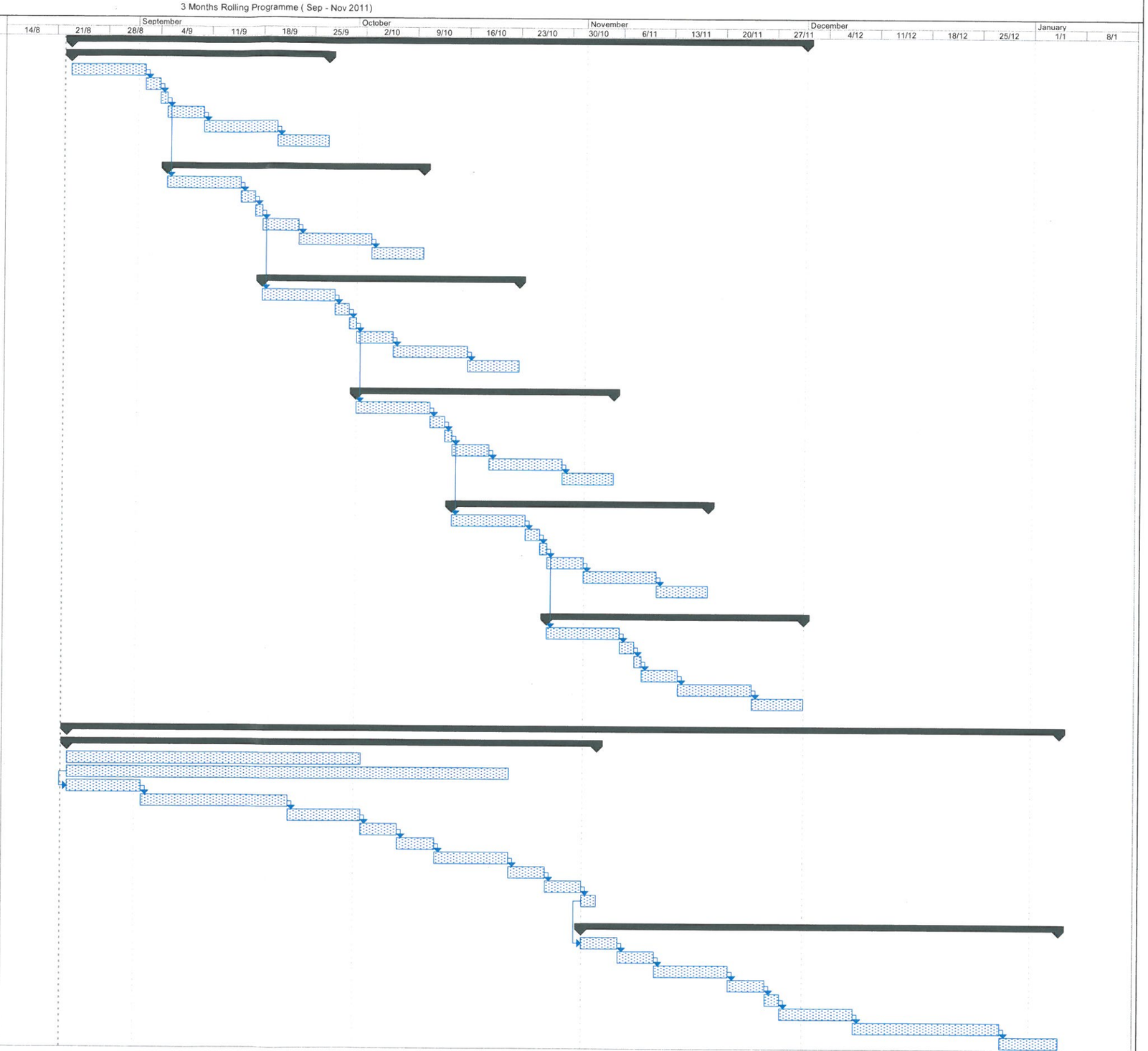
Appendix C

Master and Three Months Rolling Construction Programs

Contract No.: DC/2010/02
Contract Title: Drainage Improvement Works in Shuen Wan and Shek Wu Wai

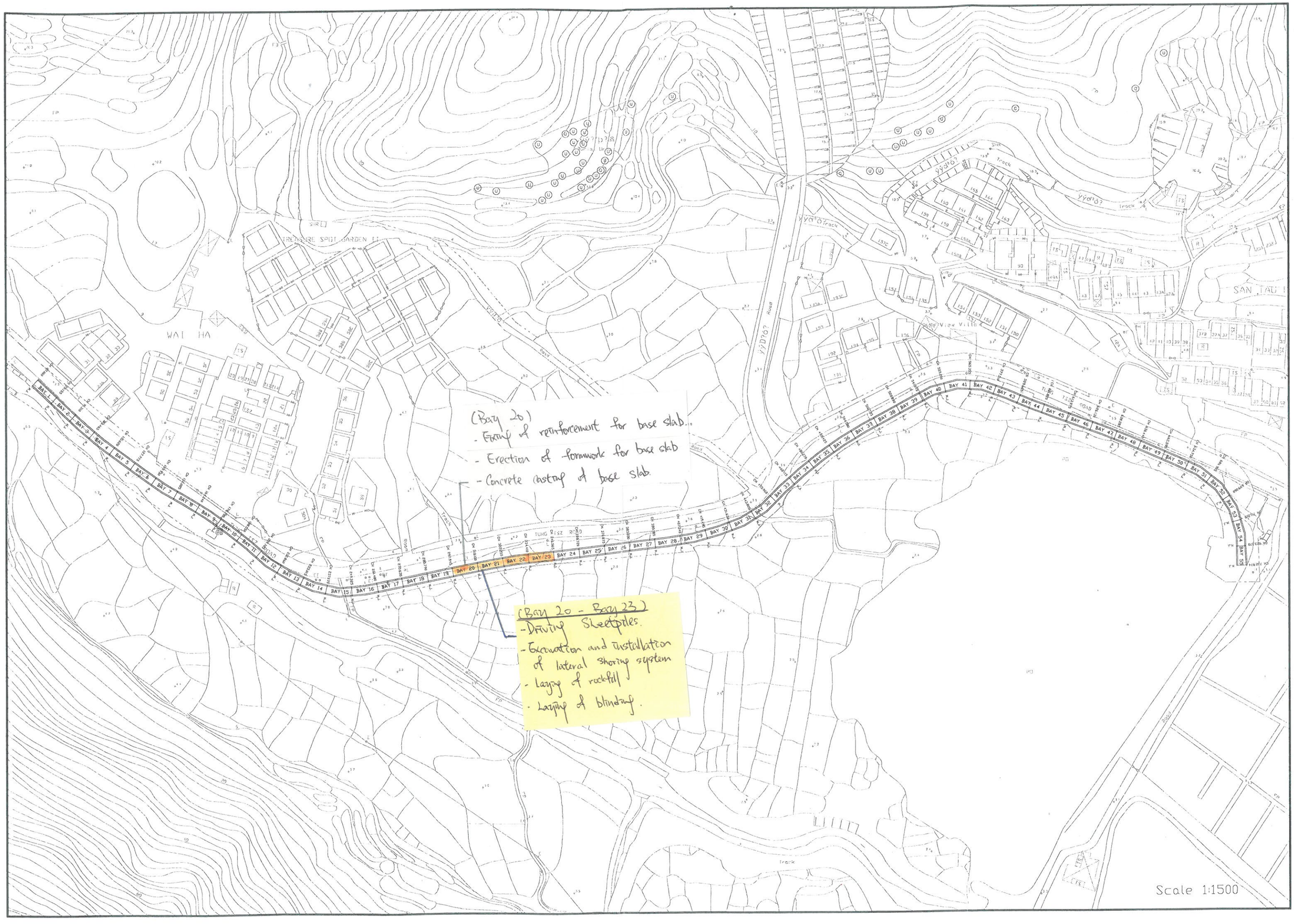
3 Months Rolling Programme (Sep - Nov 2011)

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Section I (Construction Works in Shuen Wan)**	**100 days**	**Tue 23/8/11**	**Wed 30/11/11**	
2	**Bay 20**	**35 days**	**Tue 23/8/11**	**Mon 26/9/11**	
3	Excavation & Installation of Lateral Support	10 days	Tue 23/8/11	Thu 1/9/11	
4	Laying Geogextile, Rubble Mound & Polythene sheet	2 days	Fri 2/9/11	Sat 3/9/11	3
5	Blinding Layer	1 day	Sun 4/9/11	Sun 4/9/11	4
6	Construction of Base Slab of Box Culvert	5 days	Mon 5/9/11	Fri 9/9/11	5
7	Construction of Top Slab of Box Culveert	10 days	Sat 10/9/11	Mon 19/9/11	6
8	Backfilling & Removal of Lateral Support	7 days	Tue 20/9/11	Mon 26/9/11	7
9					
10	**Bay 21**	**35 days**	**Mon 5/9/11**	**Sun 9/10/11**	
11	Excavation & Installation of Lateral Support	10 days	Mon 5/9/11	Wed 14/9/11	5
12	Laying Geogextile, Rubble Mound & Polythene sheet	2 days	Thu 15/9/11	Fri 16/9/11	11
13	Blinding Layer	1 day	Sat 17/9/11	Sat 17/9/11	12
14	Construction of Base Slab of Box Culvert	5 days	Sun 18/9/11	Thu 22/9/11	13
15	Construction of Top Slab of Box Culveert	10 days	Fri 23/9/11	Sun 2/10/11	14
16	Backfilling & Removal of Lateral Suppoort	7 days	Mon 3/10/11	Sun 9/10/11	15
17					
18	**Bay 22**	**35 days**	**Sun 18/9/11**	**Sat 22/10/11**	
19	Excavation & Installation of Lateral Support	10 days	Sun 18/9/11	Tue 27/9/11	13
20	Laying Geogextile, Rubble Mound & Polythene sheet	2 days	Wed 28/9/11	Thu 29/9/11	19
21	Blinding Layer	1 day	Fri 30/9/11	Fri 30/9/11	20
22	Construction of Base Slab of Box Culvert	5 days	Sat 1/10/11	Wed 5/10/11	21
23	Construction of Top Slab of Box Culveert	10 days	Thu 6/10/11	Sat 15/10/11	22
24	Backfilling & Removal of Lateral Suppoort	7 days	Sun 16/10/11	Sat 22/10/11	23
25					
26	**Bay 23**	**35 days**	**Sat 1/10/11**	**Fri 4/11/11**	
27	Excavation & Installation of Lateral Support	10 days	Sat 1/10/11	Mon 10/10/11	21
28	Laying Geogextile, Rubble Mound & Polythene sheet	2 days	Tue 11/10/11	Wed 12/10/11	27
29	Blinding Layer	1 day	Thu 13/10/11	Thu 13/10/11	28
30	Construction of Base Slab of Box Culvert	5 days	Fri 14/10/11	Tue 18/10/11	29
31	Construction of Top Slab of Box Culveert	10 days	Wed 19/10/11	Fri 28/10/11	30
32	Backfilling & Removal of Lateral Suppoort	7 days	Sat 29/10/11	Fri 4/11/11	31
33					
34	**Bay 24**	**35 days**	**Fri 14/10/11**	**Thu 17/11/11**	
35	Excavation & Installation of Lateral Support	10 days	Fri 14/10/11	Sun 23/10/11	29
36	Laying Geogextile, Rubble Mound & Polythene sheet	2 days	Mon 24/10/11	Tue 25/10/11	35
37	Blinding Layer	1 day	Wed 26/10/11	Wed 26/10/11	36
38	Construction of Base Slab of Box Culvert	5 days	Thu 27/10/11	Mon 31/10/11	37
39	Construction of Top Slab of Box Culveert	10 days	Tue 1/11/11	Thu 10/11/11	38
40	Backfilling & Removal of Lateral Suppoort	7 days	Fri 11/11/11	Thu 17/11/11	39
41					
42	**Bay 25**	**35 days**	**Thu 27/10/11**	**Wed 30/11/11**	
43	Excavation & Installation of Lateral Support	10 days	Thu 27/10/11	Sat 5/11/11	37
44	Laying Geogextile, Rubble Mound & Polythene sheet	2 days	Sun 6/11/11	Mon 7/11/11	43
45	Blinding Layer	1 day	Tue 8/11/11	Tue 8/11/11	44
46	Construction of Base Slab of Box Culvert	5 days	Wed 9/11/11	Sun 13/11/11	45
47	Construction of Top Slab of Box Culveert	10 days	Mon 14/11/11	Wed 23/11/11	46
48	Backfilling & Removal of Lateral Suppoort	7 days	Thu 24/11/11	Wed 30/11/11	47
49					
50	**Section II (Construction Works in Shuen Wan)**	**135 days**	**Tue 23/8/11**	**Wed 4/1/12**	
51	**Preliminary Works**	**72 days**	**Tue 23/8/11**	**Wed 2/11/11**	
52	Liaison with others	40 days	Tue 23/8/11	Sat 1/10/11	
53	Tree Felling & Tree Transplantation	60 days	Tue 23/8/11	Fri 21/10/11	
54	Construction of footing of Temp. Bridge	10 days	Tue 23/8/11	Thu 1/9/11	53SS
55	Construction of Temp. Bridge	20 days	Fri 2/9/11	Wed 21/9/11	54
56	Site Formation for Temp. Carriageway on Existing Drainage Channel	10 days	Thu 22/9/11	Sat 1/10/11	55
57	Provision of Temporary Road Lighting	5 days	Sun 2/10/11	Thu 6/10/11	56
58	Removal of Existing Road Lighting	5 days	Fri 7/10/11	Tue 11/10/11	57
59	Concreting Carriageway	10 days	Wed 12/10/11	Fri 21/10/11	58
60	Concreting Footpath	5 days	Sat 22/10/11	Wed 26/10/11	59
61	Erection of Parapet	5 days	Thu 27/10/11	Mon 31/10/11	60
62	Trail Run & Traffic Diversion	2 days	Tue 1/11/11	Wed 2/11/11	61
63					
64	**1st Box Culvert Construction**	**65 days**	**Tue 1/11/11**	**Wed 4/1/12**	
65	Implementation of Temp. Stream Diversion	5 days	Tue 1/11/11	Sat 5/11/11	62SS
66	Installation of Lateral Support	5 days	Sun 6/11/11	Thu 10/11/11	65
67	Demolish Existing Box Culvert	10 days	Fri 11/11/11	Sun 20/11/11	66
68	Excavation to Formation Level	5 days	Mon 21/11/11	Fri 25/11/11	67
69	Laying geogextile, Rock Fill & Blinding Layer	2 days	Sat 26/11/11	Sun 27/11/11	68
70	Construction of Base Slab of Box Culvert	10 days	Mon 28/11/11	Wed 7/12/11	69
71	Construction of Top Slab of Box Culvert	20 days	Thu 8/12/11	Tue 27/12/11	70
72	Backfilling & Reinstatement	8 days	Wed 28/12/11	Wed 4/1/12	71



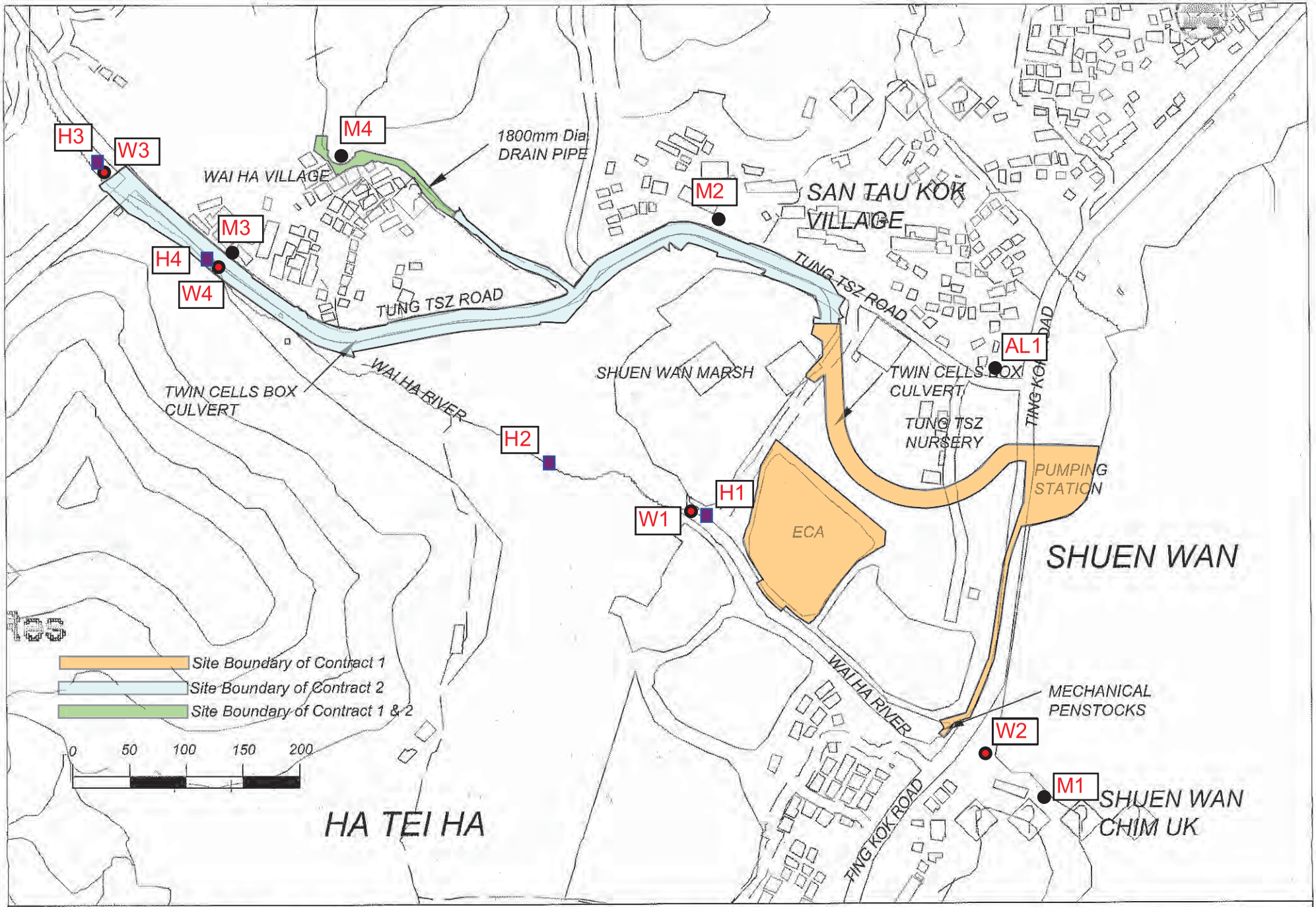
Date: 2011-8-22

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline


(Bay 20)
- Fixing of reinforcement for base slab.
- Erection of formwork for base slab
- Concrete casting of base slab.
(Bay 20 - Bay 23)
- Driving Sheetpiles.
- Excavation and installation of lateral shoring system
- Laying of rockfill
- Laying of blinding.
BAY 20
BAY 21
BAY 22
BAY 23
Scale 1:1500

Appendix D

Environmental Monitoring Locations



All Environmental Monitoring Locations

Appendix E

Calibration certificates of the monitoring equipment and Certificate of ALS Technichem (HK) Pty Ltd

Equipment Calibration List

Items	Aspect	Description of Equipment	Date of Calibration	Date of Next Calibration
1	Noise	Bruel & Kjaer Integrating Sound Level Meter (Serial No. 2285722)	18 May 11	18 May 12
2		Bruel & Kjaer Acoustical Calibrator (Serial No. 2326408)	04 May 11	04 May 12
3	Water	YSI DO Meter 55 (Serial No. 97F0837AM)	18 July 11	18 Oct 11
4		Extect EC500	18 Jul 11	18 Oct 11
5		Turbidimeter HACH 2100Q (Serial No.11030C008499)	13 Jun 11	13 Sep 11
6*		Turbidimeter HACH 2100p (Serial No. 950900008735)	06 Sep 11	06 Dec 11
7	Hydrological Characteristics	GLOBAL WATER model FP211 (Serial No.1124158766)	14 Jun 11	14 Jun 12

Note: *Calibration certificates will only be provided when monitoring equipment is re-calibrated or new.

ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR BEN TAM	**WORK ORDER:**	HK1120797
CLIENT:	ACTION UNITED ENVIRO SERVICES	**LABORATORY:**	HONG KONG
ADDRESS:	RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG.	**DATE RECEIVED:**	06/09/2011
		DATE OF ISSUE:	08/09/2011
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 aceptance criteria of ALS will be followed.

Scope of Test:	Turbidity
Description:	Turbidimeter
Brand Name:	HACH
Model No.:	2100P
Serial No.:	950900008735
Equipment No.:	--
Date of Calibration:	06 September, 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

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 (±%)	10.0

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

Appendix F

Event and Action Plan

Event Action Plan for Construction Noise

EVENT	ACTION			
	ET Leader	IEC	ER	Contractor
Action Level	1. Notify IEC and Contractor 2. Carry out investigation. 3. Report the results of investigation to the IEC, ER and Contractor. 4. Discuss with the Contractor and formulate remedial measures 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analyzed 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	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose 'remedial measures for the analyzed noise problem 4. Check remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC 2. Implement noise mitigation proposals
Limit Level	1. Notify IEC, ER, EPD and Contractor 2. Identify source. 3. Repeat measurements to confirm findings 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results 8. If exceedance stops, cease additional monitoring.	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	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analyzed noise problem 4. Check 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	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IEC within 3 working days of notification 3. Implement the agreed proposals 4. 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

Event and action Plan for Water Quality

Event	ET Leader	IEC	ER	Contractor
ACTION LEVEL				
Action level being exceeded by one sampling day	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC, Contractor and Engineer; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Repeat measurement on next day of exceedance.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Make agreement on mitigation measures to be implemented; 3. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes in working methods; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures.
Action level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC, Contractor and Engineer; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Prepare to increase the monitoring frequency to daily; 8. Repeat measurement on next day of exeedance.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Make agreement on mitigation measures to be implemented; 3. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes in working methods; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures
LIMIT LEVEL				
Limit level being exceeded by one sampling day	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform EPD, IEC, Contractor and Engineer; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit Level.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Request Contractor to critically review the working methods; 3. Make agreement on mitigation measures to be implemented; 4. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes in working methods; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures.
Limit level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform EPD, IEC, Contractor and Engineer; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Request Contractor to critically review the working methods; 3. Make agreement on mitigation measures to be implemented; 4. Assess effectiveness of implemented mitigation measures; 5. Consider and if necessary instruct Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit Level.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes in working methods; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures; 7. As directed by the Engineer, slow down or stop all or part of the construction activities until no exceedance of Limit level.

Event and action Plan for Hydrological Characteristics

Event	ET Leader	IEC	ER	Contractor
ACTION LEVEL				
Action level being exceeded by one sampling day	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC, Contractor and Engineer; 4. Check monitoring data, Contractor's working methods and any excavation works or dewatering processes; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Repeat measurement on next day of exceedance.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Make agreement on mitigation measures to be implemented; 3. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check working methods and any excavation works or dewatering processes; 4. Consider changes in working methods and plans; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures.
Action level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC, Contractor and Engineer; 4. Check monitoring data, Contractor's working methods and any excavation works or dewatering processes; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Prepare to increase the monitoring frequency to daily; 8. Repeat measurement on next day of exeedance.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Make agreement on mitigation measures to be implemented; 3. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check working methods and any excavation works or dewatering processes; 4. Consider changes in working methods and plans; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures
LIMIT LEVEL				
Limit level being exceeded by one sampling day	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform AFCD, IEC, Contractor and Engineer; 4. Check monitoring data, and Contractor's working methods and any excavation works or dewatering processes; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Request Contractor to critically review the working methods; 3. Make agreement on mitigation measures to be implemented; 4. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check working methods and any excavation works or dewatering processes; 4. Consider changes in working methods and plans; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures.
Limit level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform AFCD, IEC, Contractor and Engineer; 4. Check monitoring data and Contractor's working methods and any excavation works or dewatering processes; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Request Contractor to critically review the working methods; 3. Make agreement on mitigation measures to be implemented; 4. Assess effectiveness of implemented mitigation measures; 5. Consider and if necessary instruct Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit Level.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check working methods and any excavation works or dewatering processes; 4. Consider changes in working methods and plans; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures; 7. As directed by the Engineer, slow down or stop all or part of the construction activities until no exceedance of Limit level.

Appendix G

Monitoring Schedule in Reporting Period and the Coming Month

Monitoring Schedule in this Reporting Period – September 2011

Date		Stream Monitoring		Noise Monitoring
		Water Sampling	Flow Monitoring	
Thu	1-Sep-11	W1, W2, W3, W4		M1, AL1
Fri	2-Sep-11			
Sat	3-Sep-11	W1, W2, W3, W4	H1, H2, H3, H4	M2, M3, M4
Sun	4-Sep-11			
Mon	5-Sep-11			
Tue	6-Sep-11	W1, W2, W3, W4		
Wed	7-Sep-11			
Thu	8-Sep-11	W1, W2, W3, W4		M1, AL1
Fri	9-Sep-11			M2, M3, M4
Sat	10-Sep-11	W1, W2, W3, W4	H1, H2, H3, H4	
Sun	11-Sep-11			
Mon	12-Sep-11	W1, W2, W3, W4		
Tue	13-Sep-11			
Wed	14-Sep-11			
Thu	15-Sep-11	W1, W2, W3, W4		M1, AL1
Fri	16-Sep-11			
Sat	17-Sep-11	W1, W2, W3, W4	H1, H2, H3, H4	M2, M3, M4
Sun	18-Sep-11			
Mon	19-Sep-11			
Tue	20-Sep-11	W1, W2, W3, W4		
Wed	21-Sep-11			
Thu	22-Sep-11	W1, W2, W3, W4		M1, AL1
Fri	23-Sep-11			
Sat	24-Sep-11	W1, W2, W3, W4	H1, H2, H3, H4	M2, M3, M4
Sun	25-Sep-11			
Mon	26-Sep-11	W1, W2, W3, W4		
Tue	27-Sep-11			
Wed	28-Sep-11	W1, W2, W3, W4		M1, AL1
Thu	29-Sep-11			
Fri	30-Sep-11	W1, W2, W3, W4	H1, H2, H3, H4	M2, M3, M4

	Monitoring Day
	Sunday or Public Holiday

Monitoring Schedule in the coming month – October 2011

Date		Stream Monitoring		Noise Monitoring
		Water Sampling	Flow Monitoring	
Sat	1-Oct-11			
Sun	2-Oct-11			
Mon	3-Oct-11			
Tue	4-Oct-11	**W1, W2, W3, W4**		**M1, AL1M2, M3, M4**
Wed	5-Oct-11			
Thu	6-Oct-11			
Fri	7-Oct-11			
Sat	8-Oct-11	**W1, W2, W3, W4**	**H1, H2, H3, H4**	
Sun	9-Oct-11			
Mon	10-Oct-11			
Tue	11-Oct-11	**W1, W2, W3, W4**		
Wed	12-Oct-11			
Thu	13-Oct-11	**W1, W2, W3, W4**		**M1, AL1M2, M3, M4**
Fri	14-Oct-11			
Sat	15-Oct-11	**W1, W2, W3, W4**	**H1, H2, H3, H4**	
Sun	16-Oct-11			
Mon	17-Oct-11			
Tue	18-Oct-11	**W1, W2, W3, W4**		**M1, AL1M2, M3, M4**
Wed	19-Oct-11			
Thu	20-Oct-11	**W1, W2, W3, W4**		
Fri	21-Oct-11			
Sat	22-Oct-11	**W1, W2, W3, W4**	**H1, H2, H3, H4**	
Sun	23-Oct-11			
Mon	24-Oct-11			
Tue	25-Oct-11	**W1, W2, W3, W4**		**M1, AL1M2, M3, M4**
Wed	26-Oct-11			
Thu	27-Oct-11	**W1, W2, W3, W4**		
Fri	28-Oct-11			
Sat	29-Oct-11	**W1, W2, W3, W4**	**H1, H2, H3, H4**	
Sun	30-Oct-11			
Mon	31-Oct-11			

	Monitoring Day
	Sunday or Public Holiday

Appendix H

Meteorological Data of Reporting Period

Meteorological Data in Reporting Period

Date		Weather	Total Rainfall (mm)	Tai Po Station		Shatin Station	
				Mean Air Temp. (°C)	Mean Relative Humidity (%)	Wind Speed (km/h)	Wind Direction
1-Sep-11	Thu	Mainly cloudy with isolated showers.	0.1	28.3	78.7	6.5	N/NW
2-Sep-11	Fri	Light to moderate easterly winds.	0	28	83.5	8	E/NE
3-Sep-11	Sat	Light to moderate southeasterly winds.	22.6	27	80	18	E/NE
4-Sep-11	Sun	Mainly fine apart from isolated showers.	1.8	28.4	79.5	9	S/SW
5-Sep-11	Mon	Mainly fine.	0	29	80	7	S/SE
6-Sep-11	Tue	fine and hot	0	28.4	79.7	7.1	E/SE
7-Sep-11	Wed	Moderate southeasterly winds.	0.2	28.4	75	7.5	E/SE
8-Sep-11	Thu	Sunny periods	Trace	28.8	79.5	9	E/SE
9-Sep-11	Fri	Moderate to fresh easterly winds.	Trace	29.2	71.7	8.3	E/SE
10-Sep-11	Sat	fine and hot	2.6	28.9	72.5	10.3	E/NE
11-Sep-11	Sun	Fine and very hot.	20.4	27.4	82	12.7	E
12-Sep-11	Mon	Moderate to fresh northeasterly winds.	0.6	28	80	9.8	N/NE
13-Sep-11	Tue	Mainly fine.	2.7	29.4	64.5	8.5	E/SE
14-Sep-11	Wed	Moderate to fresh easterly winds.	2.7	28.9	72	8	E/SE
15-Sep-11	Thu	Light to moderate southeasterly winds.	10.9	27.4	81.7	11.2	E/SE
16-Sep-11	Fri	Mainly fine apart from isolated showers.	1	28.2	80.7	9.7	E/SE
17-Sep-11	Sat	Moderate southeasterly winds.	0.2	29.2	79.7	8.5	E/SE
18-Sep-11	Sun	fine and hot	0.5	28.8	77.2	9.1	E/NE
19-Sep-11	Mon	A few showers	16.6	27.6	80.5	13	E/NE
20-Sep-11	Tue	Light to moderate southwesterly winds.	Trace	24.6	78.7	9	N
21-Sep-11	Wed	Moderate to fresh northeasterly winds.	0	24.6	65.5	10.9	N/NE
22-Sep-11	Thu	Mainly cloudy with a few light rain patches	Trace	24.3	68	10.5	N/NE
23-Sep-11	Fri	Moderate southeasterly winds.	0.3	25.2	73.5	12.6	N/NE
24-Sep-11	Sat	A few showers	Trace	25.5	74	12.7	N/NE
25-Sep-11	Sun	Moderate to fresh easterly winds.	4.2	24.6	72.5	11.8	N/NE
26-Sep-11	Mon	Mainly cloudy with occasional showers.	0.2	26.9	77.5	9.7	E
27-Sep-11	Tue	Moderate to fresh east to northeasterly winds	Trace	27.9	77.5	7.4	N
28-Sep-11	Wed	A few squally showers	2.5	28.4	70.2	9.5	N/NE
29-Sep-11	Thu	NO. 8 SOUTHWEST GALE OR STORM SIGNAL	30.8	27.5	85	18.2	SE
30-Sep-11	Fri	Mainly cloudy with occasional showers.	2.7	27.4	86.5	14.6	SE

** The record was extracted from The Hong Kong Observatory Weather Stations*

Appendix I

Data Base of Monitoring Results

Construction Noise Measurement Data

Designated Monitoring Station – M1 (14, Shuen Wan Chim Uk)

Date	Start Time	1st Leq_{5min}	2nd Leq_{5min}	3rd Leq_{5min}	4th Leq_{5min}	5th Leq_{5min}	6th Leq_{5min}	Leq_{30min*}
1-Sep-11	09:43	-	-	-	-	-	-	61.3
8-Sep-11	10:21	-	-	-	-	-	-	59.8
15-Sep-11	10:39	-	-	-	-	-	-	58.2
22-Sep-11	09:07							70.2
28-Sep-11	13:36	-	-	-	-	-	-	61.0
Limit Level		**-**						**> 75 dB(A)**

(*)The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.

Designated Monitoring Station – AL1 (Joint Village Office for Villages in Shuen Wan, Tai PO)

Date	Start Time	1st Leq_{5min}	2nd Leq_{5min}	3rd Leq_{5min}	4th Leq_{5min}	5th Leq_{5min}	6th Leq_{5min}	Leq_{30min*}
1-Sep-11	10:27	-	-	-	-	-	-	62.7
8-Sep-11	11:25	-	-	-	-	-	-	59.2
15-Sep-11	10:03							58.3
22-Sep-11	09:58	-	-	-	-	-	-	64.7
28-Sep-11	14:11	-	-	-	-	-	-	65.9
Limit Level		**-**						**> 75 dB(A)**

(*)The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.

Designated Monitoring Station - M2 (150, San Tau Kok)

Date	Start Time	1st Leq_{5min}	2nd Leq_{5min}	3rd Leq_{5min}	4th Leq_{5min}	5th Leq_{5min}	6th Leq_{5min}	Leq_{30min}	Corrected* Leq_{30min}
3-Sep-11	10:53	57.7	51.6	57.6	56.8	57.2	57.1	56.7	59.7
9-Sep-11	14:18	57.4	58.2	60.4	56.5	58.2	59.3	58.5	61.5
17-Sep-11	14:50	54.6	56.2	55.9	56.3	56.1	56.6	56.0	59.0
24-Sep-11	15:56	65.4	64.6	67.1	65.3	65.1	66.2	65.7	68.7
30-Sep-11	11:05	52.7	53.4	55.6	56.2	56.8	57.1	55.6	58.6
Limit Level		**-**						**> 75 dB(A)**	

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

Designated Monitoring Station – M3 (31,Wai Ha)

Date	Start Time	1st Leq_{5min}	2nd Leq_{5min}	3rd Leq_{5min}	4th Leq_{5min}	5th Leq_{5min}	6th Leq_{5min}	Leq_{30min}	Corrected* Leq_{30min}
3-Sep-11	11:24	67.2	64.9	64.4	65.7	65.7	66.3	65.8	68.8
9-Sep-11	13:45	67.2	66.5	68.4	68.7	68.1	67.4	67.8	70.8
17-Sep-11	14:17	67.1	66.8	67.5	66.4	66.1	65.9	66.7	69.7
24-Sep-11	14:45	63.7	66.4	66.6	63.5	64.9	65.1	65.2	68.2
30-Sep-11	10:28	67.2	65.4	66.3	67.1	63.6	67.4	66.4	69.4
Limit Level		**-**						**> 75 dB(A)**	

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

Designated Monitoring Station – M4 (Block 15, Treasure Spot Garden)

Date	Start Time	1st Leq_{5min}	2nd Leq_{5min}	3rd Leq_{5min}	4th Leq_{5min}	5th Leq_{5min}	6th Leq_{5min}	Leq_{30min}	Corrected* Leq_{30min}
3-Sep-11	13:04	67.7	66.8	71.3	67.4	66.5	67.5	68.2	71.2
9-Sep-11	14:50	66.6	67.3	65.2	66.8	66.5	67.9	66.8	69.8
17-Sep-11	15:25	63.7	64.8	66.2	64.5	63.9	64.6	64.7	67.7
24-Sep-11	15:21	56.7	55.4	58.1	56.4	56.2	57.6	56.8	59.8
30-Sep-11	13:08	65.2	64.3	64.7	64.1	65.6	63.4	64.6	67.6
Limit Level		**-**						**> 75 dB(A)**	

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

Location		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W3 (control)	Action/ Limit Level	n/a		n/a		n/a		n/a		n/a	
W4 (impact)		Action	9.27	Action	n/a	Action	3.32	Action	n/a	Action	6.98
		Limit	7.98	Limit	n/a	Limit	4.52	Limit	n/a	Limit	7.66

Date	1-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	14:16	<1	28.5	28.5	4.12	4.1	49	49.0	3.6	3.6	7.33	7.3	2.6	2.6
			28.5		4.12		49		3.6		7.33		2.6	
W2 (Impact)	14:40	<1	29.5	29.5	4.33	4.3	53	53.0	3.8	3.8	7.54	7.5	3	3.0
			29.5		4.33		53		3.8		7.54		3	
W3 (control)	15:24	0.10	28.9	28.7	7.21	7.2	83.9	83.0	1.75	1.5	7.8	7.7	<2	2.0
			28.5		7.14		82.1		1.32		7.6		<2	
W4 (impact)	15:51	0.23	27.8	28.0	7.08	6.9	80.6	78.5	2.05	2.0	7.9	7.9	<2	2.0
			28.1		6.74		76.3		1.87		7.8		<2	

Date	3-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	15:31	<1	29.9	29.9	6	6.0	74	74.0	2.9	2.9	7.23	7.2	1.4	1.4
			29.9		6		74		2.9		7.23		1.4	
W2 (Impact)	16:05	1.00	31	31.0	5.3	5.3	64	64.0	2.9	2.9	7.6	7.6	1.8	1.8
			31		5.3		64		2.9		7.6		1.8	
W3 (control)	11:26	0.08	26.8	27.0	6.47	7.3	83.4	91.8	2.01	1.8	7.8	7.8	<2	2.0
			27.1		8.16		100.2		1.5		7.8		<2	
W4 (impact)	11:37	0.25	26.5	26.7	5.34	6.2	78.3	81.7	3.87	3.8	7.9	8.0	<2	2.0
			26.9		7.02		85.1		3.64		8		<2	

Date	6-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	10:00	<1	28.7	28.7	4.61	4.6	53	53.0	3.4	3.4	7.31	7.3	3.4	3.4
			28.7		4.61		53		3.4		7.31		3.4	
W2 (Impact)	9:26	1.00	30.3	30.3	4.13	4.1	45	45.0	2.9	2.9	7.47	7.5	3.2	3.2
			30.3		4.13		45		2.9		7.47		3.2	
W3 (control)	11:42	0.08	29.8	29.8	5.54	5.9	73.8	76.9	1.34	1.5	7.8	7.8	<2	2.0
			29.8		6.18		79.9		1.63		7.8		<2	
W4 (impact)	11:50	0.25	29.7	29.7	6.5	6.2	85.4	82.6	3.02	3.1	7.8	7.9	<2	2.0
			29.6		5.94		79.8		3.18		7.9		<2	

Date	8-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	11:00	<1	30	30.0	4.38	4.4	50	50.0	2.5	2.5	7.05	7.1	2.5	2.5
			30		4.38		50		2.5		7.05		2.5	
W2 (Impact)	10:30	1.00	30.2	30.2	4.31	4.3	51	51.0	2.4	2.4	7.44	7.4	1.3	1.3
			30.2		4.31		51		2.4		7.44		1.3	
W3 (control)	16:31	0.09	28.1	28.0	5.77	5.7	75.1	73.7	1.61	1.8	7.9	7.9	6	6.0
			27.9		5.55		72.3		2.04		7.9		6	
W4 (impact)	16:40	0.27	27.6	27.7	5.7	5.8	74.2	75.2	3.07	3.2	8.0	8.0	6	6.0
			27.8		5.83		76.1		3.42		7.9		6	

Date	10-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	10:39	<1	29.2	29.2	5.82	5.8	96	96.0	8.5	8.5	7.31	7.3	3.6	3.6
			29.2		5.82		96		8.5		7.31		3.6	
W2 (Impact)	11:17	<1	30.6	30.6	7.27	7.3	77	77.0	4.7	4.7	7.62	7.6	4	4.0
			30.6		7.27		77		4.7		7.62		4	
W3 (control)	15:31	0.08	28.2	28.1	6.71	6.9	83.2	85.0	3.07	3.6	7.8	7.8	6	6.0
			28		7.04		86.7		4.13		7.8		6	
W4 (impact)	15:53	0.25	27.9	27.8	7.05	7.0	87.2	86.2	2.84	3.0	7.9	7.9	<2	2.0
			27.6		6.97		85.1		3.07		7.8		<2	

Date	12-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	13:15	<1	30.1	30.1	3.82	3.8	45	45.0	4.5	4.5	7.2	7.2	2	2.0
			30.1		3.82		45		4.5		7.2		2	
W2 (Impact)	12:55	<1	30.1	30.1	5.32	5.3	66	66.0	1.9	1.9	7.6	7.6	4.4	4.4
			30.1		5.32		66		1.9		7.6		4.4	
W3 (control)	16:11	0.08	27.9	28.1	6.53	6.4	84.1	83.0	2.43	2.7	7.5	7.6	<2	2.0
			28.2		6.34		81.8		2.88		7.7		<2	
W4 (impact)	16:28	0.25	27.8	27.8	6.46	6.4	84.2	83.6	3.36	3.3	7.6	7.7	<2	2.0
			27.8		6.43		82.9		3.17		7.8		<2	

Date	15-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	13:41	<1	30.6	30.6	4.58	4.6	55	55.0	8.5	8.5	7.16	7.2	4.8	4.8
			30.6		4.58		55		8.5		7.16		4.8	
W2 (Impact)	14:10	<1	31.5	31.5	5.48	5.5	68	68.0	5.4	5.4	7.64	7.6	2.2	2.2
			31.5		5.48		68		5.4		7.64		2.2	
W3 (control)	11:36	0.09	27.9	27.8	6.02	6.1	74.1	75.0	2.04	1.9	7.8	7.9	<2	2.0
			27.7		6.16		75.8		1.74		7.9		<2	
W4 (impact)	11:47	0.30	27.5	27.4	6.37	6.3	78.4	77.3	2.62	2.8	7.9	7.9	<2	2.0
			27.3		6.21		76.2		2.89		7.9		<2	

Location		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W3 (control)	Action/ Limit Level	n/a		n/a		n/a		n/a		n/a	
W4 (impact)		Action	9.27	Action	n/a	Action	3.32	Action	n/a	Action	6.98
		Limit	7.98	Limit	n/a	Limit	4.52	Limit	n/a	Limit	7.66

Date	17-Sep-11												
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	14:10	<1	32.6	32.6	5.63	5.6	74	74.0	22.9	22.9	7.34	7.3	6.4	6.4
			32.6		5.63		74		22.9		7.34		6.4	
W2 (Impact)	14:40	<1	32.9	32.9	5.03	5.0	66	66.0	4.5	4.5	7.67	7.7	1	1.0
			32.9		5.03		66		4.5		7.67		1	
W3 (control)	13:50	0.08	30.5	30.6	5.76	5.7	74.9	74.6	1.7	1.8	8.1	8.2	<2	2.0
			30.7		5.69		74.3		1.92		8.3		<2	
W4 (impact)	14:06	0.27	30.1	30.0	5.96	5.8	76.6	74.7	3.27	3.2	8	8.0	<2	2.0
			29.8		5.63		72.7		3.11		7.9		<2	

Date	20-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	15:50	<1	27.6	27.6	5.37	5.4	64	64.0	6.3	6.3	7.2	7.2	6.8	6.8
			27.6		5.37		64		6.3		7.2		6.8	
W2 (Impact)	16:10	<1	29.7	29.7	5.11	5.1	62	62.0	1.9	1.9	7.65	7.7	2.6	2.6
			29.7		5.11		62		1.9		7.65		2.6	
W3 (control)	15:07	0.07	26.3	26.6	6.31	6.3	77.2	76.3	1.62	1.8	7.8	7.8	<2	2.0
			26.8		6.2		75.3		1.88		7.8		<2	
W4 (impact)	15:16	0.25	26.5	26.6	6.44	6.3	78.3	77.0	3.24	3.3	7.9	7.9	<2	2.0
			26.7		6.23		75.6		3.37		7.8		<2	

Date	22-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	8:50	<1	27.6	27.6	3.1	3.1	32	32.0	5.1	5.1	7.21	7.2	6.6	6.6
			27.6		3.1		32		5.1		7.21		6.6	
W2 (Impact)	8:10	<1	28.1	28.1	4.66	4.7	54	54.0	8.7	8.7	7.53	7.5	5.2	5.2
			28.1		4.66		54		8.7		7.53		5.2	
W3 (control)	15:40	0.07	26.1	26.2	4.66	4.5	58.2	56.4	2.48	2.2	8.3	8.2	<2	2.0
			26.3		4.31		54.6		1.87		8.1		<2	
W4 (impact)	15:50	0.26	25.6	25.7	4.88	5.0	60.4	62.1	2.81	3.1	8.2	8.3	<2	2.0
			25.8		5.14		63.7		3.45		8.3		<2	

Date	24-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	10:30	<1	26.5	26.5	2.88	2.9	27	27.0	3.2	3.2	7.2	7.2	5.4	5.4
			26.5		2.88		27		3.2		7.2		5.4	
W2 (Impact)	9:53	<1	26.7	26.7	4.55	4.6	51	51.0	1.3	1.3	7.68	7.7	9.2	9.2
			26.7		4.55		51		1.3		7.68		9.2	
W3 (control)	14:31	0.08	26.2	26.3	6.43	6.4	83.1	82.5	1.22	1.4	8.1	8.1	<2	2.0
			26.4		6.43		81.9		1.61		8		<2	
W4 (impact)	14:45	0.26	26.5	26.5	6.26	6.3	79.8	80.6	3.16	3.0	8	8.1	<2	2.0
			26.4		6.32		81.4		2.91		8.2		<2	

Date	26-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	12:00	<1	26.7	26.7	3.62	3.6	38	38.0	3.2	3.2	7.28	7.3	11	11.0
			26.7		3.62		38		3.2		7.28		11	
W2 (Impact)	11:25	<1	26.7	26.7	5.31	5.3	59	59.0	2.8	2.8	7.64	7.6	9	9.0
			26.7		5.31		59		2.8		7.64		9	
W3 (control)	13:02	0.08	27.3	27.2	5.39	5.4	67.2	66.9	1.73	1.6	8.1	8.2	<2	2.0
			27.1		5.32		66.5		1.48		8.2		<2	
W4 (impact)	13:03	0.24	27.2	27.2	5.52	5.5	69.6	69.1	2.67	2.3	8.1	8.1	<2	2.0
			27.2		5.42		68.6		1.97		8.1		<2	

Date	28-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	14:00	<1	28.7	28.7	3.33	3.3	41	41.0	4	4.0	7.41	7.4	8	8.0
			28.7		3.33		41		4		7.41		8	
W2 (Impact)	13:30	<1	29.2	29.2	6.08	6.1	73	73.0	1.4	1.4	7.77	7.8	6	6.0
			29.2		6.08		73		1.4		7.77		6	
W3 (control)	14:03	0.08	27.2	27.2	5.87	5.9	73.1	74.1	1.81	1.7	8	8.1	<2	2.0
			27.1		5.94		75.1		1.58		8.1		<2	
W4 (impact)	14:08	0.26	26.9	27.0	6.11	6.0	76.9	75.7	3.08	2.9	7.9	8.0	<2	2.0
			27		5.98		74.4		2.81		8		<2	

Date	30-Sep-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	14:02	<1	27.9	27.9	3.96	4.0	46	46.0	7.6	7.6	7.25	7.3	5.6	5.6
			27.9		3.96		46		7.6		7.25		5.6	
W2 (Impact)	14:35	<1	28	28.0	4.82	4.8	57	57.0	6	6.0	7.49	7.5	3.4	3.4
			28		4.82		57		6		7.49		3.4	
W3 (control)	14:17	0.10	26.2	26.2	5.63	5.5	73.6	72.7	1.64	1.8	8	8.1	<2	2.0
			26.1		5.41		71.7		2.03		8.1		<2	
W4 (impact)	14:53	0.26	26.1	26.2	5.75	5.8	74.9	75.1	3.17	3.2	8.1	8.1	<2	2.0
			26.2		5.83		75.3		3.3		8		<2	

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 1/9/2011

Weather : Rainy

Monitoring Location	W1	W2	
Time (hhmm)	14:16	14:40	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	<1	
pH value	7.33	7.54	
Salinity (ppt)	15.9	21.9	
Temperature (^{o}C)	28.5	29.5	
Turbidity (NTU)	3.6	3.8	3.8
DO (mg/L)	4.12	4.33	
DO Saturation (%)	49%	53%	
Suspended Solids (mg/L)	2.6	3.0	3.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Alisun Lai		1/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 3/9/2011

Weather : Cloudy

Monitoring Location	**W1**	**W2**	
Time (hhmm)	15:31	16:05	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	1	
pH value	7.23	7.60	
Salinity (ppt)	2.1	16	
Temperature (^{o}C)	29.9	31	
Turbidity (NTU)	2.9	2.9	2.9
DO (mg/L)	6.00	5.39	
DO Saturation (%)	74%	64%	
Suspended Solids (mg/L)	1.4	1.8	1.8

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		3/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 6/9/2011

Weather : Sunny

Monitoring Location	**W1**	**W2**	
Time (hhmm)	10:00	9:26	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	1	
pH value	7.31	7.47	
Salinity (ppt)	13.1	21.3	
Temperature (^{o}C)	28.7	30.3	
Turbidity (NTU)	3.40	2.9	2.9
DO (mg/L)	4.61	4.13	
DO Saturation (%)	53%	45%	
Suspended Solids (mg/L)	3.4	3.2	3.2

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		6/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 8/9/2011

Weather : Sunny

Monitoring Location	**W1**	**W2**	
Time (hhmm)	11:00	10:30	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	1	
pH value	7.05	7.44	
Salinity (ppt)	16.4	21.8	
Temperature (^{o}C)	30.0	30.2	
Turbidity (NTU)	2.5	2.4	2.4
DO (mg/L)	4.38	4.31	
DO Saturation (%)	50%	51%	
Suspended Solids (mg/L)	2.6	1.3	1.3

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		8/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 10/9/2011

Weather : Sunny

Monitoring Location	**W1**	**W2**	
Time (hhmm)	10:39	11:17	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	<1	
pH value	7.31	7.62	
Salinity (ppt)	19.9	22.7	
Temperature (^{o}C)	29.2	30.6	
Turbidity (NTU)	8.5	4.7	4.7
DO (mg/L)	5.82	7.27	
DO Saturation (%)	96%	77%	
Suspended Solids (mg/L)	3.6	4.0	4.0

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		10/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 12/9/2011

Weather : Sunny

Monitoring Location	**W1**	**W2**	
Time (hhmm)	13:15	12:55	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	<1	
pH value	7.20	7.60	
Salinity (ppt)	16	21.6	
Temperature (^{o}C)	30.1	30.1	
Turbidity (NTU)	4.5	1.9	1.9
DO (mg/L)	3.82	5.32	
DO Saturation (%)	45%	66%	
Suspended Solids (mg/L)	2.0	4.4	4.4

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		12/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 15/9/2011

Weather : Sunny

Monitoring Location	**W1**	**W2**	
Time (hhmm)	13:41	14:10	
Tide Mode	Mid-ebb		
River Condition	Turbid	Turbid	
Water Depth (m)	<1	<1	
pH value	7.16	7.64	
Salinity (ppt)	10.5	17.3	
Temperature (^{o}C)	30.6	31.5	
Turbidity (NTU)	8.5	5.4	5.4
DO (mg/L)	4.58	5.46	
DO Saturation (%)	55%	68%	
Suspended Solids (mg/L)	4.8	2.2	2.2

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		15/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 17/9/2011

Weather : Sunny

Monitoring Location	**W1**	**W2**	
Time (hhmm)	14:10	14:40	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	<1	
pH value	7.34	7.67	
Salinity (ppt)	2.3	16.9	
Temperature (^{o}C)	32.6	32.9	
Turbidity (NTU)	22.9	4.5	4.5
DO (mg/L)	5.63	5.03	
DO Saturation (%)	74%	66%	
Suspended Solids (mg/L)	6.40	1.0	1.0

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		17/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 20/9/2011

Weather : Cloudy

Monitoring Location	**W1**	**W2**	
Time (hhmm)	15:50	16:10	
Tide Mode	Mid-ebb		
River Condition	Slightly Turbid	Slightly Turbid	
Water Depth (m)	<1	<1	
pH value	7.20	7.65	
Salinity (ppt)	2.2	15.2	
Temperature (^{o}C)	27.6	29.7	
Turbidity (NTU)	6.3	1.9	1.9
DO (mg/L)	5.37	5.11	
DO Saturation (%)	64%	62%	
Suspended Solids (mg/L)	6.80	2.60	2.60

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		20/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 22/9/2011

Weather : Sunny

Monitoring Location	**W1**	**W2**	
Time (hhmm)	8:50	8:10	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	<1	
pH value	7.21	7.53	
Salinity (ppt)	20.6	24.2	
Temperature (^{o}C)	27.6	28.1	
Turbidity (NTU)	5.1	8.7	8.7
DO (mg/L)	3.10	4.66	
DO Saturation (%)	32%	54%	
Suspended Solids (mg/L)	6.6	5.2	5.2

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		22/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 24/9/2011

Weather : Cloudy

Monitoring Location	**W1**	**W2**	
Time (hhmm)	10:30	9:53	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	<1	
pH value	7.20	7.66	
Salinity (ppt)	23.4	24.9	
Temperature (^{o}C)	26.5	26.7	
Turbidity (NTU)	3.2	1.3	1.3
DO (mg/L)	2.88	4.55	
DO Saturation (%)	27%	51%	
Suspended Solids (mg/L)	5.4	9.2	9.2

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		24/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 26/9/2011

Weather : Sunny

Monitoring Location	**W1**	**W2**	
Time (hhmm)	12:00	11:25	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	<1	
pH value	7.28	7.64	
Salinity (ppt)	23.3	25.7	
Temperature (^{o}C)	26.7	26.7	
Turbidity (NTU)	3.2	2.8	2.8
DO (mg/L)	3.62	5.31	
DO Saturation (%)	38%	59%	
Suspended Solids (mg/L)	11.0	9.0	9.0

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		26/9/2011

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 28/9/2011

Weather : Cloudy

Monitoring Location	W1	W2	
Time (hhmm)	14:00	13:30	
Tide Mode	Mid-ebb		
River Condition	Normal	Normal	
Water Depth (m)	<1	<1	
pH value	7.41	7.77	
Salinity (ppt)	23.4	25.7	
Temperature (^{o}C)	28.7	29.2	
Turbidity (NTU)	4.0	1.4	1.4
DO (mg/L)	3.33	6.08	
DO Saturation (%)	41%	73%	
Suspended Solids (mg/L)	8.0	6.0	6.0

Remark or Observation : TYPhoon Standby Signal No.1(Typhoon :NETSAT)

	Name	Signature	Date
Prepared By :	Alisun Lai		28/9/2011

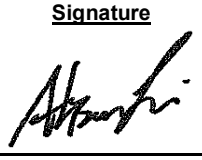
Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 30/9/2011

Weather : Cloudy

Monitoring Location	**W1**	**W2**	
Time (hhmm)	14:02	14:35	
Tide Mode	Mid-ebb		
River Condition	Slightly Turbid	Slightly Turbid	
Water Depth (m)	<1	<1	
pH value	7.25	7.49	
Salinity (ppt)	20.2	21	
Temperature (^{o}C)	27.9	28	
Turbidity (NTU)	7.6	6.0	6.0
DO (mg/L)	3.96	4.82	
DO Saturation (%)	46%	57%	
Suspended Solids (mg/L)	5.6	3.4	3.4

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Alisun Lai		30/9/2011

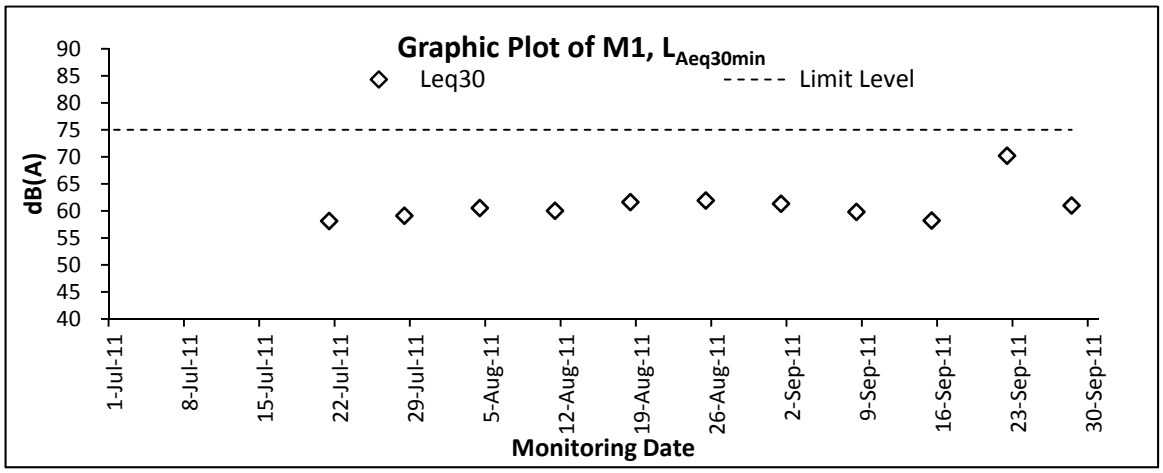
Location	Position	Tide	Date	Time	Weather	Water Depth (m)*	Water Flow (m/s)	Water Flow (m^3/s)
H1	Mid	Flood	3-Sep-2011	11:30	Cloudy	0.14	0.12	0.150
H1	Mid	Flood	10-Sep-2011	16:55	Sunny	0.12	0.06	0.075
H1	Mid	Flood	17-Sep-2011	10:00	Sunny	0.12	0.06	0.075
H1	Mid	Flood	24-Sep-2011	16:00	Cloudy	0.2	0.06	0.075
H1	Mid	Flood	30-Sep-2011	8:30	Cloudy	0.12	0.06	0.075
H2	Mid	Flood	3-Sep-2011	10:45	Cloudy	0.61	0.06	0.377
H2	Mid	Flood	10-Sep-2011	16:30	Sunny	0.61	0.18	1.130
H2	Mid	Flood	17-Sep-2011	10:30	Sunny	0.24	0.06	0.377
H2	Mid	Flood	24-Sep-2011	15:42	Cloudy	0.55	0.06	0.377
H2	Mid	Flood	30-Sep-2011	9:00	Cloudy	0.3	0.12	0.754
H1	Mid	Ebb	3-Sep-2011	15:31	Sunny	0.1	0.18	0.225
H1	Mid	Ebb	10-Sep-2011	10:45	Sunny	0.15	0.12	0.150
H1	Mid	Ebb	17-Sep-2011	14:10	Sunny	0.12	0.12	0.150
H1	Mid	Ebb	24-Sep-2011	10:30	Cloudy	0.55	0.30	0.375
H1	Mid	Ebb	30-Sep-2011	14:02	Cloudy	0.3	0.30	0.375
H2	Mid	Ebb	3-Sep-2011	15:50	Sunny	0.61	0.06	0.377
H2	Mid	Ebb	10-Sep-2011	11:00	Sunny	0.06	0.08	0.502
H2	Mid	Ebb	17-Sep-2011	14:21	Sunny	0.73	0.11	0.691
H2	Mid	Ebb	24-Sep-2011	11:00	Cloudy	0.55	0.10	0.628
H2	Mid	Ebb	30-Sep-2011	13:40	Cloudy	0.73	0.21	1.319

* : Since the water levels were too low for the depth detector to determine, a tape measure was used for estimation.

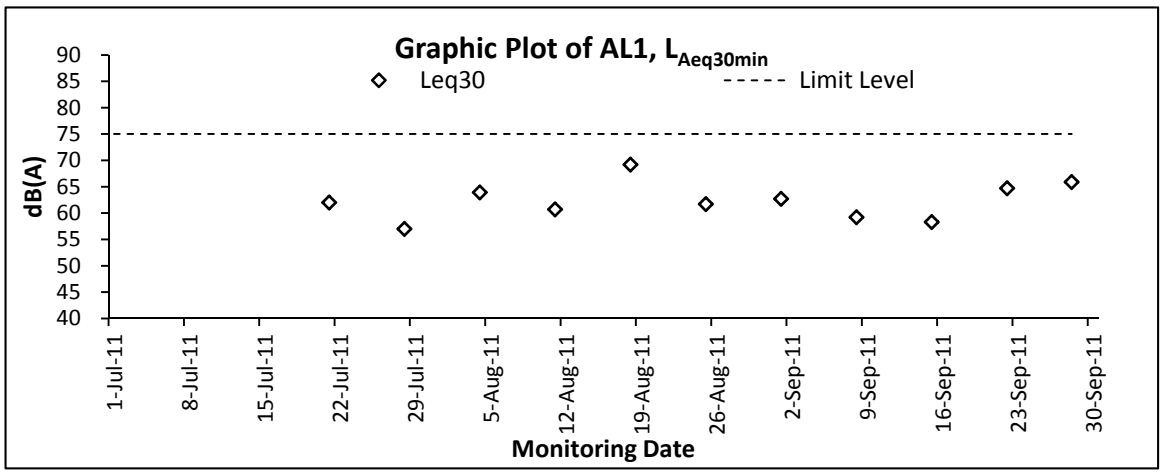
Appendix J

Graphical Plots of Impact Monitoring – Noise, Water Quality and Hydrological Characteristics

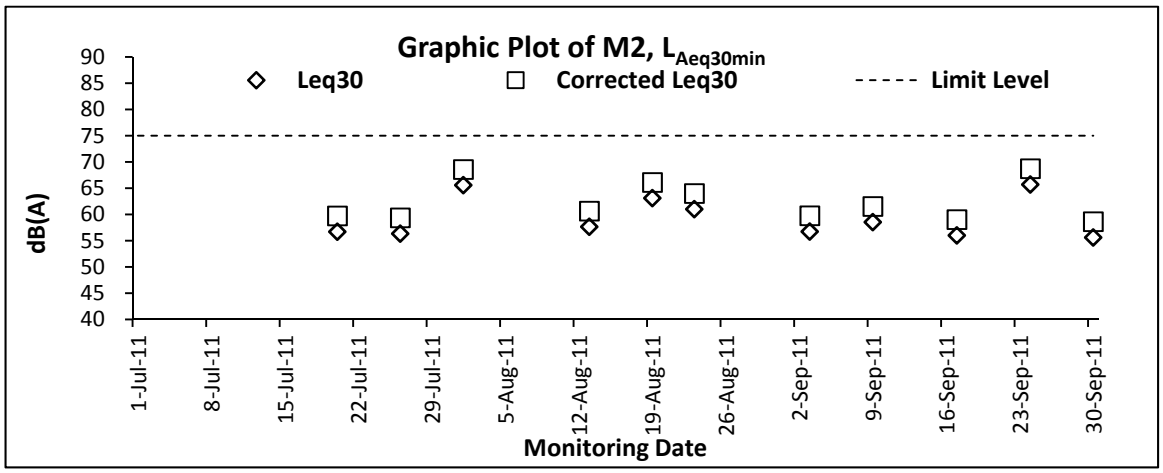
Graphic Plot – Construction Noise



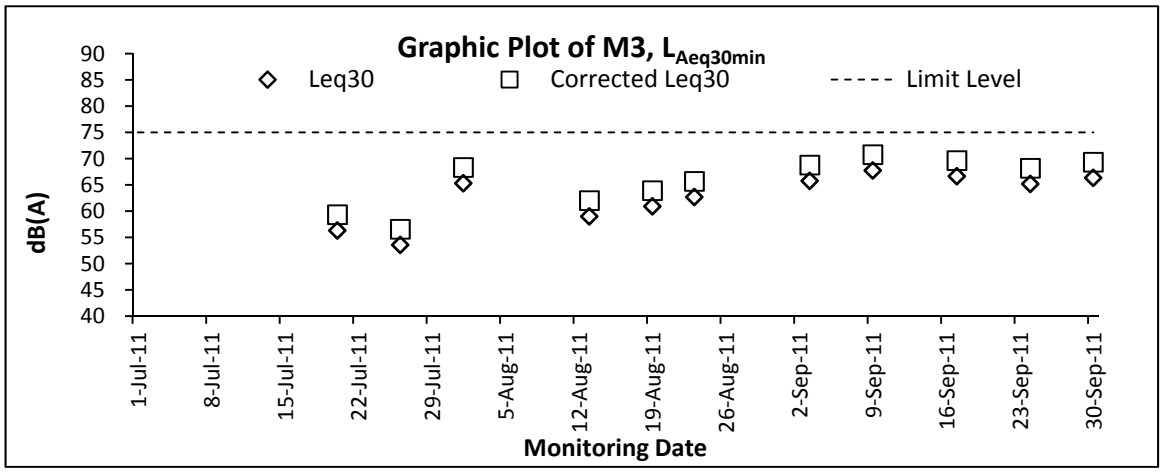
Remark: The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.



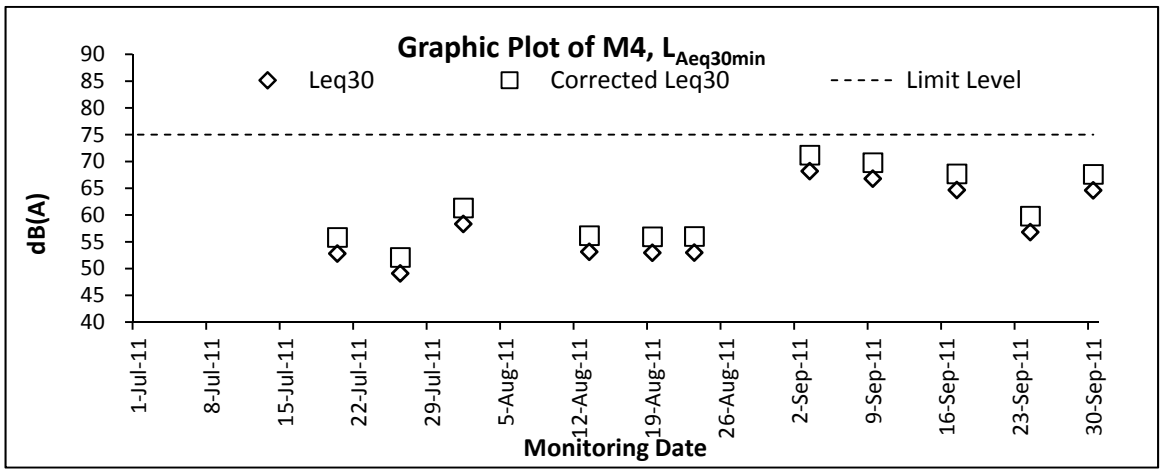
Remark: The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.



Remark: The monitoring is undertaken under free field situation. A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines

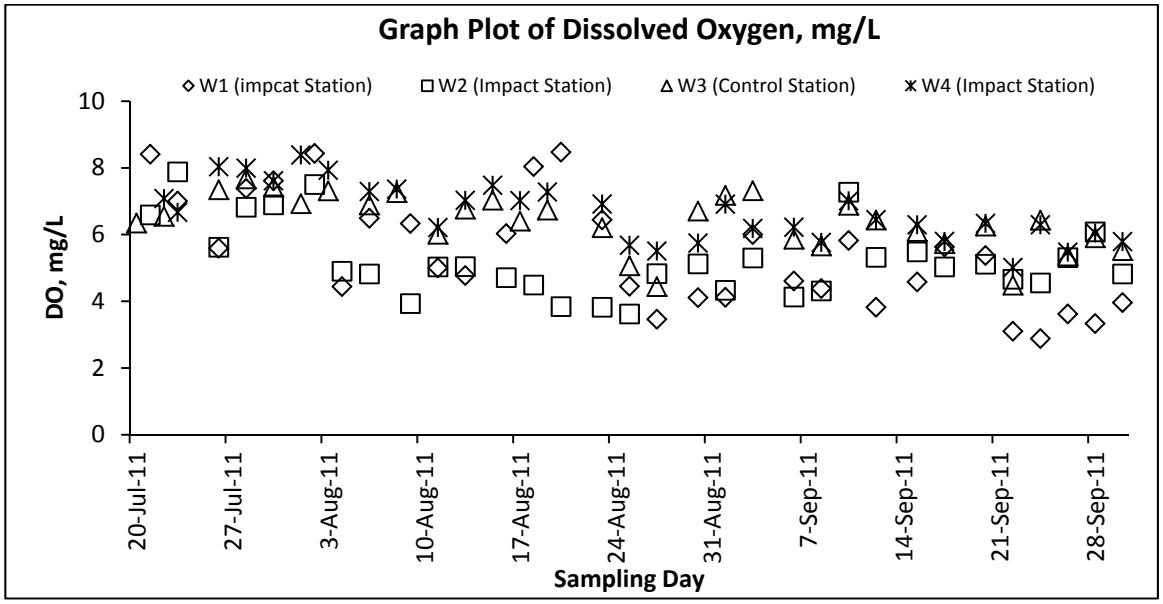


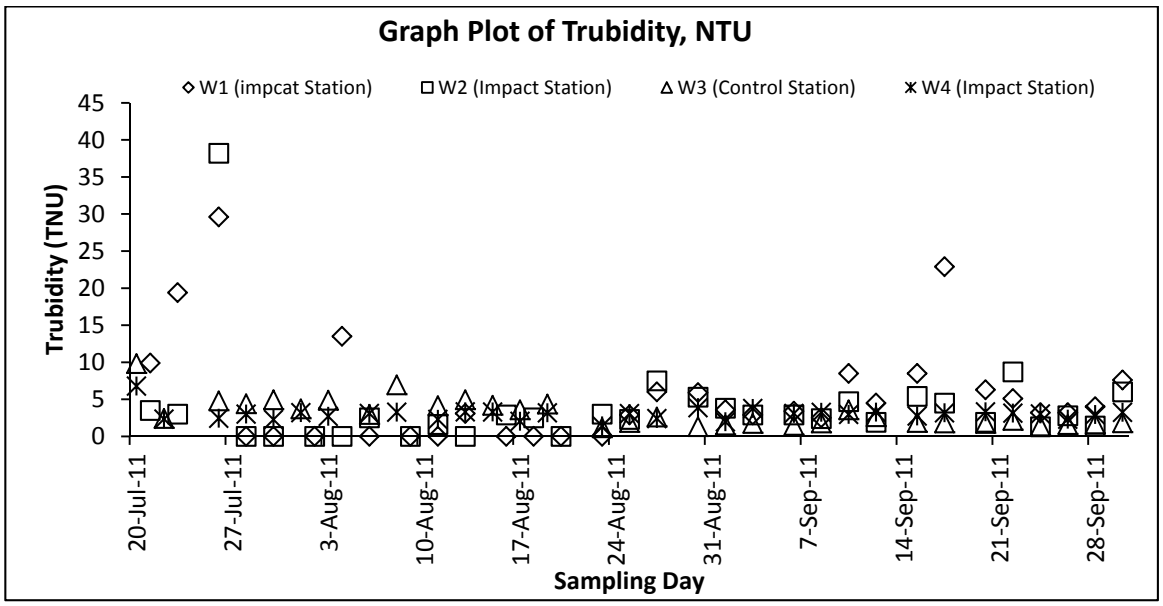
Remark: The monitoring is undertaken under free field situation. A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines

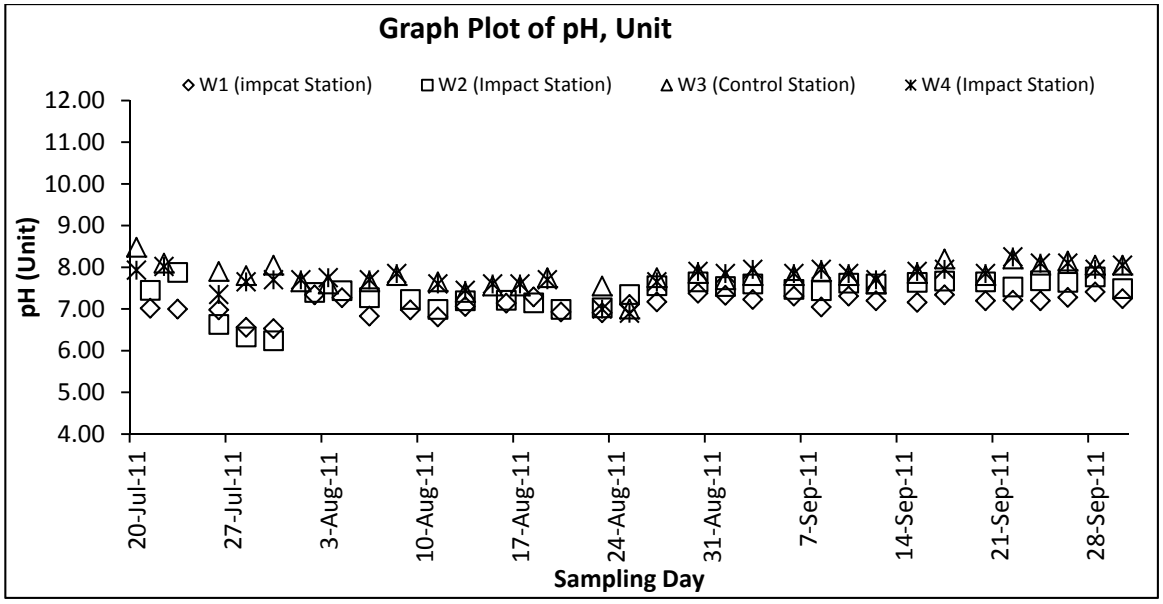


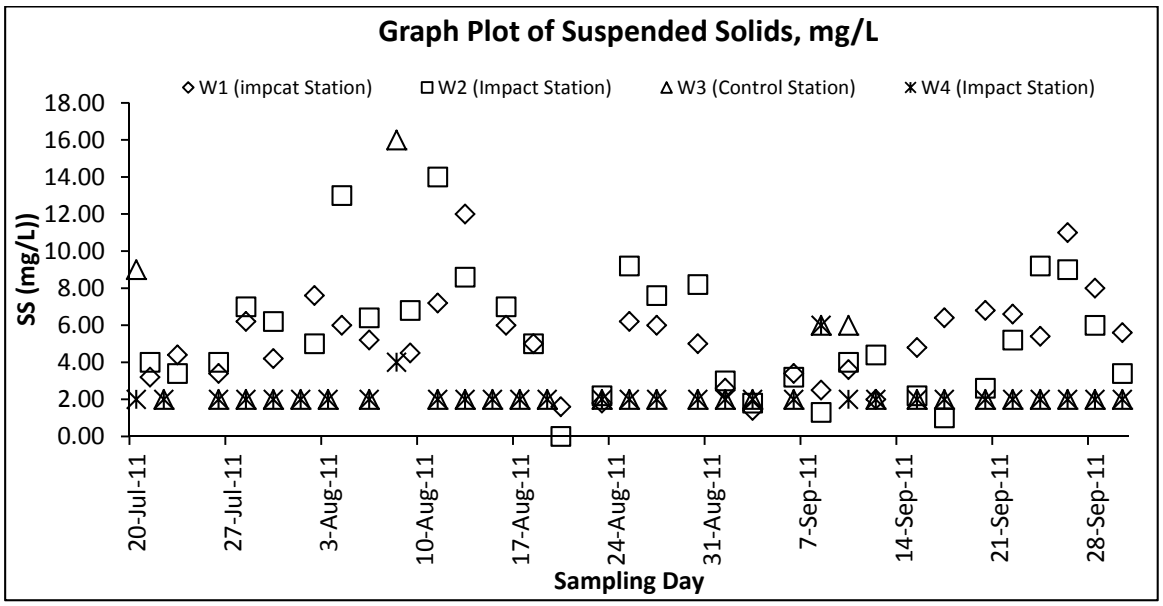
Remark: The monitoring is undertaken under free field situation. A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines

Graphic Plot – Water Quality

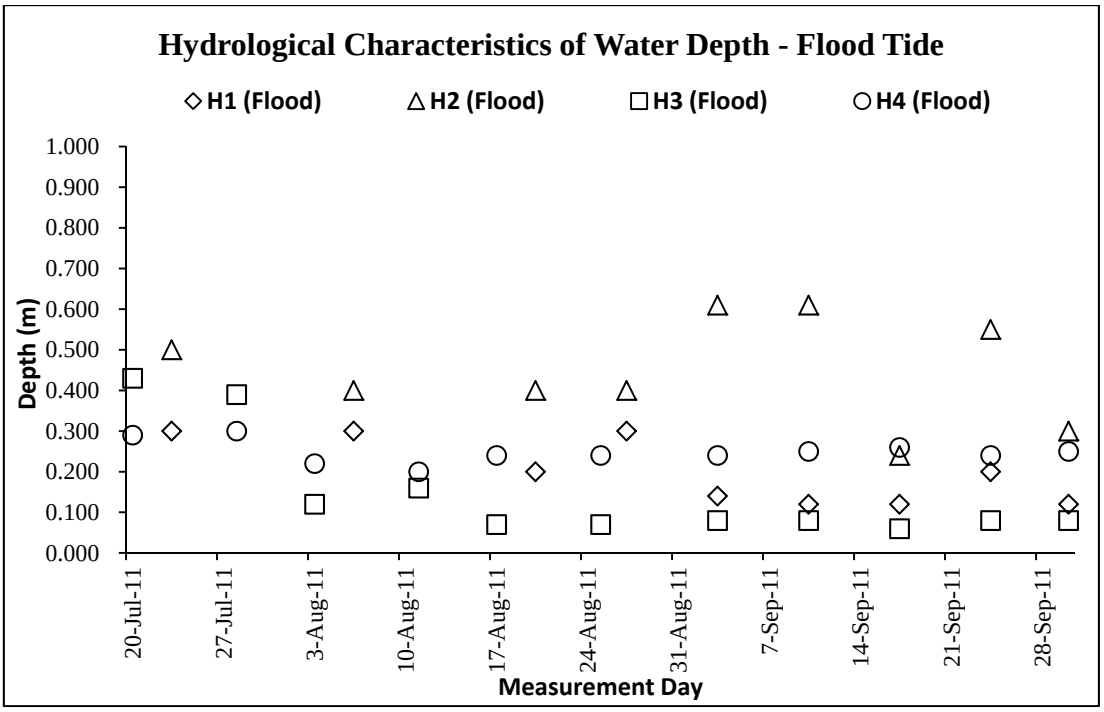


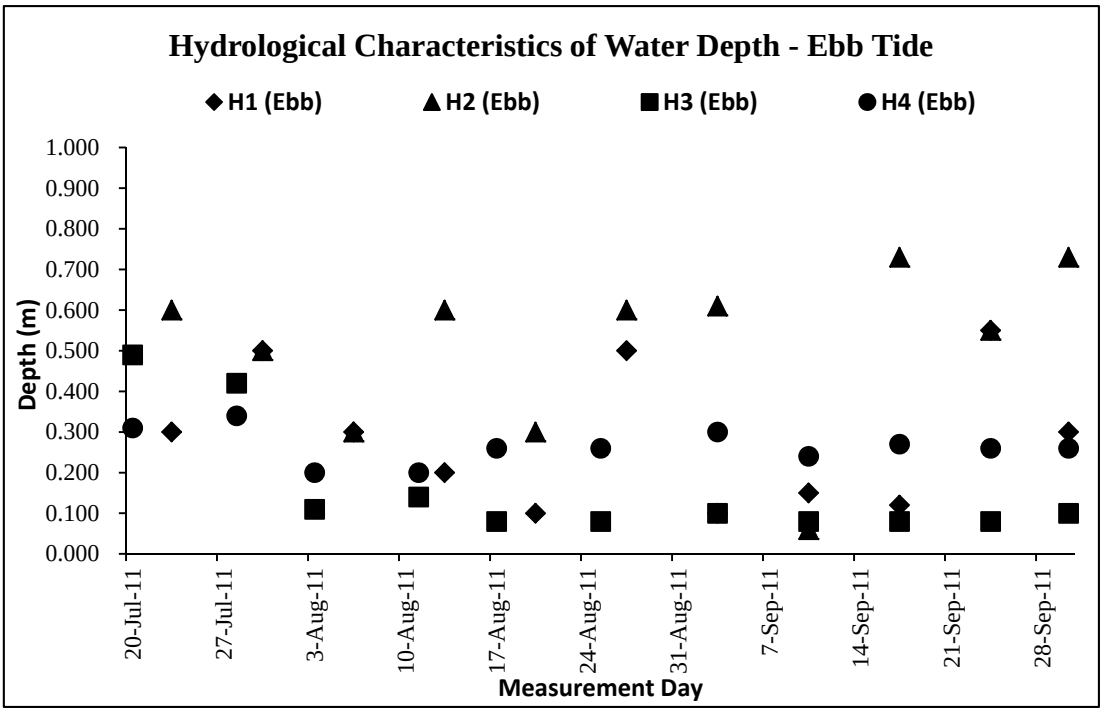




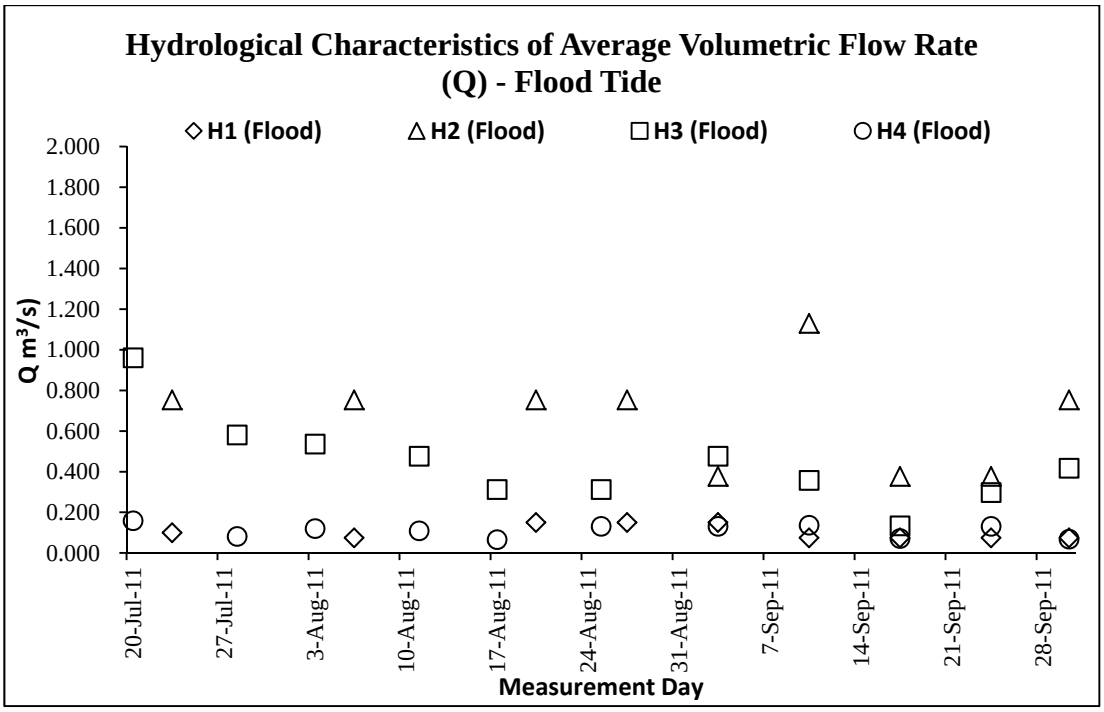

Graph Plot of Suspended Solids, mg/L
W1 (impcat Station)
W2 (Impact Station)
W3 (Control Station)
W4 (Impact Station)
SS (mg/L))
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
20-Jul-11
27-Jul-11
3-Aug-11
10-Aug-11
17-Aug-11
24-Aug-11
31-Aug-11
7-Sep-11
14-Sep-11
21-Sep-11
28-Sep-11
Sampling Day

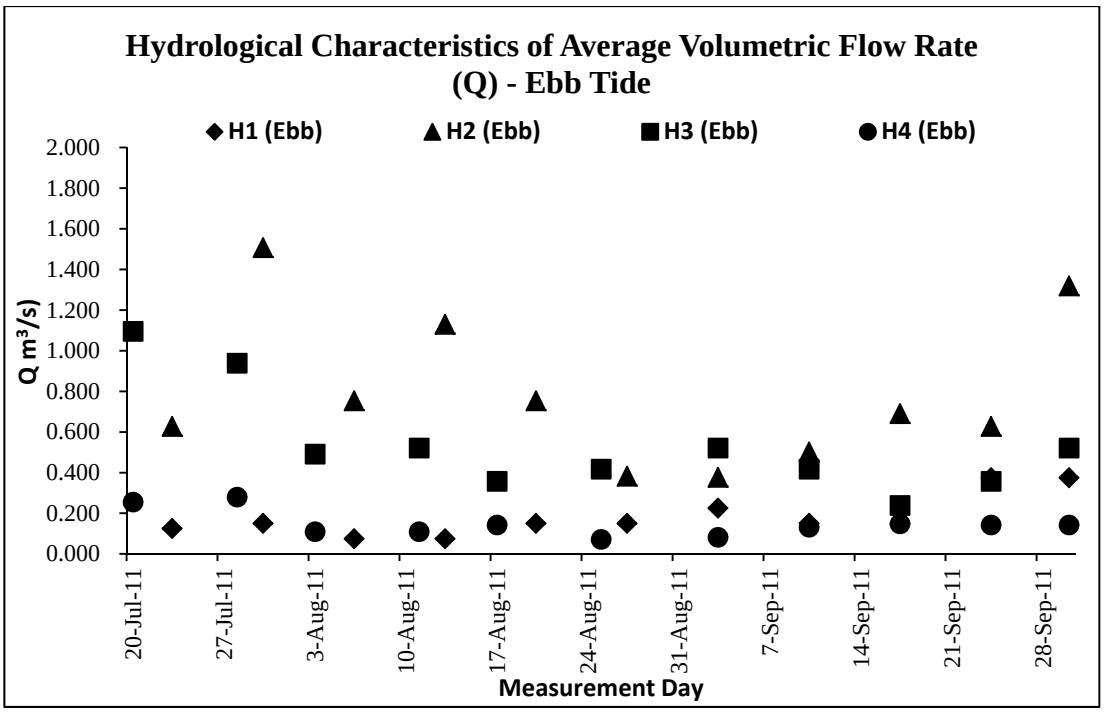
Graphic Plot – Hydrological Characteristics (Water Depth)





Graphic Plot – Hydrological Characteristics (Water Flow Rate)





Appendix K

Monthly Summary Waste Flow Table

Name of Department: DSD Contract No.: DC/2010/02

Monthly Summary Waste Flow Table for __2011__ (Year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Apr	Nil	-	-	-	-	-	-	-	-	-	-
May	Nil	-	-	-	-	-	-	-	-	-	-
June	Nil	-	-	-	-	-	-	-	-	-	-
Sub-Total	**Nil**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
July	Nil	-	-	-	-	-	-	-	-	-	-
Aug	0.7855	0	0	0.7855	0	0	0	0	0	0	0
Sept	Nil	0	0	0	0	0	0	0	0	0	0
Oct											
Nov											
Dec											
Total	**0.7855**	**0**	**0**	**0.7855**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*

Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
23	1	10	0	10	2	5	2	1	1	3

Notes:

(1) The performance targets are given in ETWB Technical Circular PS Clause 6(14).
(2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
(4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m3. (ETWB Technical Circular PS Clause 5(4)(b) refers). [Delete Note (4) and the table above on the forecast, where inapplicable].

Summary Table for Work Processes or Activities Requiring Timber for Temporary Works

Contract No. : DC/2010/02

Contract Title : Drainage Improvement Works in Shuen Wan and Shek Wu Wai

Item No.	Description of Works Process or Activity [see note (a) below]	Justifications for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (m3)	Actual Quantities used (m3)	Remarks
1.	Formwork for concreting	Easy handle by manpower	1.5	1.5	
2.					
3.					
4.					
5.					
6.					
7.					
8.					
		Total Estimated Quantity of Timber Used	1.5		

Notes:

a. The Contractor shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.

b. The summary table shall be submitted to the *Architect/Engineer's Representative monthly together with the Waste Flow Table for review and monitoring in accordance with the ETWB Technical Circular 19/2005 PS sub-clause 5(5) in Appendix C.

Appendix L

Inspection and Auditing Checklist

Kwan Lee - Kuly JV

Drainage Services Department
Contract No. DC/2010/02
Contract Title: Drainage Improvement Works in Shuen Wan and Shek Wu Wai
Weekly Environmental Walk (No. 016.)
Environmental Inspection Checklist

Date of Inspection: 7 September 2011 Time 0845
Weather: : ~~Sunny/Fine~~/Overcast/~~Drizzle/Rain/Storm/Hazy~~ Temperature: 28 °C
Wind: Calm/~~Light/Breeze/Strong~~ Humidity: High/~~Moderate/Low~~
Locations: a. SHEK WU WAI d. Area 1
b. TUNG TSZ ROAD
c. Area 2

Person(s) making the inspection:

Name in Block Letters	Designation	Organization
HO WING CHEONG	AIOW	DSD
LAU SIU CHUEN	WSI	DSD
YIP SIU HONG	SITE AGENT	KLKJV
WONG WAI LAM	SUB-AGENT	KLKJV
CHAN HIU SHAN	EO	KLKJV

	YES	NO	N/A	REMARK
1 GENERAL				
a. Environmental Permit (EP) copy at site entrance	(✓)	( )	( )	
b. Environmental posters/notices at place of work	(✓)	( )	( )	
c. Site kept clean and tidy	(✓)	( )	( )	
d. Engine shut off when not in use	(✓)	( )	( )	
e. Proper maintenance of site plant and equipment	(✓)	( )	( )	
f Other: Please specify	( )	( )	(✓)	
2. AIR POLLUTION				
a. Site Perimeter Hoardings provided as required	(✓)	( )	( )	
b. Haul Road paved or kept wet	(✓)	( )	( )	
c. Water spraying during loading and unloading of dusty material	(✓)	( )	( )	
d. Exposed stockpile & dusty materials in storage wetted or covered by tarpaulin as required	(✓)	( )	( )	
e. Dust suppression measures taken and/or dust Screen erected for dusty site activities	(✓)	( )	( )	
f. Wheel washing bays provided at site vehicle exits and maintained in good working order	( )	( )	(✓)	
g. Vehicle wheels washed before leaving site	(✓)	( )	( )	
h. Dump trucks fitted with mechanical tarpaulin cover	(✓)	( )	( )	
i. Dusty loads on vehicles covered by tarpaulin	(✓)	( )	( )	
j. Vehicle speed control (8KM/hr) on site	(✓)	( )	( )	
k. Black smoke emission control from site plant	(✓)	( )	( )	
l. No opening burning of debris on site	(✓)	( )	( )	
m Use of Ultra Low Surphur Diesel (ULSD) for constructional plant and equipment	(✓)	( )	( )	
n. Other: Please specify	( )	( )	(✓)	
3 WATER POLLUTION				
a. Tightly sealed closed grab excavator used for river channel excavation works	(✓)	( )	( )	
b. River excavation works sections by sections as required	( )	( )	(✓)	
c. Splashing of sediment avoided during transfer	(✓)	( )	( )	
d. Floating debris in river cleared	(✓)	( )	( )	
e. Leakage from plant & vessel avoided	(✓)	( )	( )	
f. Wheel washing bay desilted regularly	( )	( )	(✓)	
g. Temporary drainage diversion provided as required	(✓)	( )	( )	
h. Site run-off towards silt traps	(✓)	( )	( )	
i. Silt traps & drainages cleared Sand bags provided at site entrance and around road gullies as necessary	(✓)	( )	( )	
j. Water Discharge License applied as necessary	(✓)	( )	( )	
k. Wastewater treated as required	(✓)	( )	( )	
l. Treated effluent reused and recycled	( )	( )	(✓)	

	YES	NO	N/A	REMARK
m. Chemical toilets provided as necessary	( )	( )	(✓)	
n. Heavy Rainstorm Response Procedure displayed	(✓)	( )	( )	
o. Other: Please specify	( )	( )	(✓)	
4. NOISE POLLUTION				
a. Temporary noise barriers installed at designated locations as required in EP	( )	( )	(✓)	
b. Noisy plant and equipment sited away from noisy sensitive receiver as possible	( )	( )	(✓)	
c. Air Compressors and portable percussive breakers with Noise Emission Labels	( )	( )	(✓)	
d. Pneumatic percussive breakers fitted with sound mufflers	( )	( )	(✓)	
e. Engine flap covers kept closed of construction plant during operations	( )	( )	(✓)	
Excavator breaker tip wrapped with sound insulating material for breaking work				
f. Noise baffles/screens to noisy machines/site activities as necessary	( )	( )	(✓)	
g. Valid Construction Noise Permits (CNP) for works in restricted hours	( )	( )	(✓)	
h. Full compliance with CNP conditions	( )	( )	(✓)	
i. Other: Please specify	( )	( )	(✓)	
5 RESOURCES MANAGEMENT				
a. Site Perimeter Hoardings made of metal	( )	( )	(✓)	
b. Restricted use of hardwood in formwork	( )	( )	(✓)	
c. Low VOC or water based paint selected as possible	( )	( )	(✓)	
d. Approved larvicide/insecticide for mosquito control work	(✓)	( )	( )	
e. Designated material storage containers/areas	(✓)	( )	( )	
f. Proper storage of materials	(✓)	( )	( )	
g. Other: Please specify	( )	( )	(✓)	
6. WASTE MANAGEMENT				
a. Designated area for sorting and temporary storage of C & D materials on site	(✓)	( )	( )	
b. Proper sorting of inert and non-inert materials	(✓)	( )	( )	
c. Recycle bins for recycling of different materials	(✓)	( )	( )	
d. Rubbish bins for general rubbish	(✓)	( )	( )	
e. Measures taken to avoid cross contamination of different wastes	(✓)	( )	( )	
f. Disposed of regularly to avoid excessive accumulation	(✓)	( )	( )	
g. Trip tickets and EPD chits duly completed and used in C & D waste disposal	( )	( )	(✓)	
h. Registration as Chemical Waste Producer as required	( )	( )	(✓)	
i. Chemical wastes properly labeled and packaged	( )	( )	(✓)	
j. Chemical wastes pending collection stored properly to avoid leakage	( )	( )	(✓)	
Used trip tickets kept for chemical waste disposal				
k.. Proper handling of contaminated soil samples in land contamination investigation work	( )	( )	(✓)	
l. Proper storage of contaminated soil samples in land contamination investigation work	( )	( )	(✓)	
m Other: Please specify	( )	( )	(✓)	
7 CHEMICALS MANAGEMENT				
a. Dangerous Goods kept below exempted quantities on site or otherwise suitable DG store provided	( )	( )	(✓)	
b. Proper containers for carrying plant fuel or site chemicals	(✓)	( )	( )	
c. Containers carrying plant fuel or site chemicals with suitable chemical labels	(✓)	( )	( )	
d. Fuel drums and containers carrying site chemicals kept closed when not in use	( )	( )	(✓)	
e. Chemicals stored in dry, cool and sheltered place	( )	( )	(✓)	
f. No smoking/ignition source notice displayed near fuel/chemical storage area	(✓)	( )	( )	
g. Suitable fire extinguishers put aside for ready use	(✓)	( )	( )	
h. Chemicals kept away from plant fuel	( )	( )	(✓)	
i. Containers carrying plant fuel or site chemicals placed on drip trays or otherwise store area suitably bunded	( )	( )	(✓)	
Emergency spillage procedure posted	( )	( )	(✓)	
j. Others: Please specify	( )	( )	(✓)	

8 OTHERS	YES	NO	N/A	REMARK
a. Existing trees and vegetation maintained and protected as required	(✓)	( )	( )	
b. Materials & Plant kept way from existing trees and vegetation	(✓)	( )	( )	
c. Target fauna species re-located and protected as required	( )	( )	(✓)	
d. Topsoil conserved and re-use in landscape works	( )	( )	(✓)	
e. Night-time lighting controlled to minimize glare	( )	( )	(✓)	
f. Others: Please specify	( )	( )	(✓)	

9. OTHER COMMENTS

a. _____
b. _____
c. _____

Signed By

Name: CHAN HIU SHAN
Environmental Officer

Signed By

Name & Title: Ho Wing Cheong AM(S)/DPE
Engineer's Nominated Site Representative

Kwan Lee - Kuly JV

Drainage Services Department
Contract No. DC/2010/02
Contract Title: Drainage Improvement Works in Shuen Wan and Shek Wu Wai
Weekly Environmental Walk (No. 017)
Environmental Inspection Checklist

Date of Inspection: 16 September 2011 Time 1000
Weather: ~~Sunny~~/Fine/~~Overcast/Drizzle/Rain/Storm/Hazy~~ Temperature: 30 °C
Wind: Calm/~~Light/Breeze/Strong~~ Humidity: High/~~Moderate/Low~~
Locations: a. SHEK WU WAI d. Area 1
b. TUNG TSZ ROAD
c. Area 2

Person(s) making the inspection:

Name in Block Letters	Designation	Organisation
SIU WAI CHUNG	ER	DSD
YIP WAI LUN	ER	DSD
TSO SI ON	SIOW	DSD
LI CHI KEUNG	IOW	DSD
HO WING CHEONG	AIOW	DSD
LAU SIU CHUEN	WSI	DSD
WONG WAI LAM	SITE AGENT	KLKJV
CHAN HIU SHAN	EO	KLKJV
T.W. TAM	E.T. LEADER	AUES
JUSTION YE	IEC	ENVIRON

	YES	NO	N/A	REMARK
1 GENERAL				
a. Environmental Permit (EP) copy at site entrance	( )	(✓)	( )	
b. Environmental posters/notices at place of work	(✓)	( )	( )	
c. Site kept clean and tidy	(✓)	( )	( )	
d. Engine shut off when not in use	(✓)	( )	( )	
e. Proper maintenance of site plant and equipment	(✓)	( )	( )	
f Other: Please specify	( )	( )	(✓)	
2. AIR POLLUTION				
a. Site Perimeter Hoardings provided as required	(✓)	( )	( )	
b. Haul Road paved or kept wet	(✓)	( )	( )	
c. Water spraying during loading and unloading of dusty material	(✓)	( )	( )	
d. Exposed stockpile & dusty materials in storage wetted or covered by tarpaulin as required	(✓)	( )	( )	
e. Dust suppression measures taken and/or dust Screen erected for dusty site activities	(✓)	( )	( )	
f. Wheel washing bays provided at site vehicle exits and maintained in good working order	( )	( )	(✓)	
g. Vehicle wheels washed before leaving site	(✓)	( )	( )	
h. Dump trucks fitted with mechanical tarpaulin cover	(✓)	( )	( )	
i. Dusty loads on vehicles covered by tarpaulin	(✓)	( )	( )	
j. Vehicle speed control (8KM/hr) on site	(✓)	( )	( )	
k. Black smoke emission control from site plant	(✓)	( )	( )	
l. No opening burning of debris on site	(✓)	( )	( )	
m Use of Ultra Low Surphur Diesel (ULSD) for constructional plant and equipment	(✓)	( )	( )	
n. Other: Please specify	( )	( )	(✓)	
3 WATER POLLUTION				
a. Tightly sealed closed grab excavator used for river channel excavation works	(✓)	( )	( )	
b. River excavation works sections by sections as required	( )	( )	(✓)	
c. Splashing of sediment avoided during transfer	(✓)	( )	( )	
d. Floating debris in river cleared	(✓)	( )	( )	
e. Leakage from plant & vessel avoided	(✓)	( )	( )	
f. Wheel washing bay desilted regularly	( )	( )	(✓)	
g. Temporary drainage diversion provided as required	(✓)	( )	( )	
h. Site run-off towards silt traps	(✓)	( )	( )	
i. Silt traps & drainages cleared	(✓)	( )	( )	
Sand bags provided at site entrance and around road gullies as necessary				

	YES	NO	N/A	REMARK
j. Water Discharge License applied as necessary	(✓)	( )	( )	
k. Wastewater treated as required	(✓)	( )	( )	
l. Treated effluent reused and recycled	( )	( )	(✓)	
m. Chemical toilets provided as necessary	( )	( )	(✓)	
n. Heavy Rainstorm Response Procedure displayed	(✓)	( )	( )	
o. Other: Please specify	( )	( )	(✓)	
4. NOISE POLLUTION				
a. Temporary noise barriers installed at designated locations as required in EP	( )	( )	(✓)	
b. Noisy plant and equipment sited away from noisy sensitive receiver as possible	( )	( )	(✓)	
c. Air Compressors and portable percussive breakers with Noise Emission Labels	( )	( )	(✓)	
d. Pneumatic percussive breakers fitted with sound mufflers	( )	( )	(✓)	
e. Engine flap covers kept closed of construction plant during operations	( )	( )	(✓)	
Excavator breaker tip wrapped with sound insulating material for breaking work				
f. Noise baffles/screens to noisy machines/site activities as necessary	( )	( )	(✓)	
g. Valid Construction Noise Permits (CNP) for works in restricted hours	( )	( )	(✓)	
h. Full compliance with CNP conditions	( )	( )	(✓)	
i. Other: Please specify	( )	( )	(✓)	
5 RESOURCES MANAGEMENT				
a. Site Perimeter Hoardings made of metal	( )	( )	(✓)	
b. Restricted use of hardwood in formwork	( )	( )	(✓)	
c. Low VOC or water based paint selected as possible	( )	( )	(✓)	
d. Approved larvicide/insecticide for mosquito control work	(✓)	( )	( )	
e. Designated material storage containers/areas	(✓)	( )	( )	
f. Proper storage of materials	(✓)	( )	( )	
g. Other: Please specify	( )	( )	(✓)	
6. WASTE MANAGEMENT				
a. Designated area for sorting and temporary storage of C & D materials on site	(✓)	( )	( )	
b. Proper sorting of inert and non-inert materials	(✓)	( )	( )	
c. Recycle bins for recycling of different materials	(✓)	( )	( )	
d. Rubbish bins for general rubbish	( )	(✓)	( )	
e. Measures taken to avoid cross contamination of different wastes	(✓)	( )	( )	
f. Disposed of regularly to avoid excessive accumulation	(✓)	( )	( )	
g. Trip tickets and EPD chits duly completed and used in C & D waste disposal	( )	( )	(✓)	
h. Registration as Chemical Waste Producer as required	( )	( )	(✓)	
i. Chemical wastes properly labeled and packaged	( )	( )	(✓)	
j. Chemical wastes pending collection stored properly to avoid leakage	( )	( )	(✓)	
Used trip tickets kept for chemical waste disposal				
k.. Proper handling of contaminated soil samples in land contamination investigation work	( )	( )	(✓)	
l. Proper storage of contaminated soil samples in land contamination investigation work	( )	( )	(✓)	
m Other: Please specify	( )	( )	(✓)	
7 CHEMICALS MANAGEMENT				
a. Dangerous Goods kept below exempted quantities on site or otherwise suitable DG store provided	( )	( )	(✓)	
b. Proper containers for carrying plant fuel or site chemicals	(✓)	( )	( )	
c. Containers carrying plant fuel or site chemicals with suitable chemical labels	(✓)	( )	( )	
d. Fuel drums and containers carrying site chemicals kept closed when not in use	( )	( )	(✓)	
e. Chemicals stored in dry, cool and sheltered place	(✓)	( )	( )	
f. No smoking/ignition source notice displayed near fuel/chemical storage area	(✓)	( )	( )	
g. Suitable fire extinguishers put aside for ready use	(✓)	( )	( )	
h. Chemicals kept away from plant fuel	( )	( )	(✓)	
i. Containers carrying plant fuel or site chemicals placed on drip trays or otherwise store area suitably bunded	( )	( )	(✓)	
Emergency spillage procedure posted	( )	( )	(✓)	
j. Others: Please specify	( )	( )	(✓)	

	YES	NO	N/A	REMARK
8 OTHERS				
a. Existing trees and vegetation maintained and protected as required	(✓)	( )	( )	
b. Materials & Plant kept way from existing trees and vegetation	(✓)	( )	( )	
c. Target fauna species re-located and protected as required	( )	( )	(✓)	
d. Topsoil conserved and re-use in landscape works	( )	( )	(✓)	
e. Night-time lighting controlled to minimize glare	( )	( )	(✓)	
f. Others: Please specify	( )	( )	(✓)	

9. OTHER COMMENTS

a. _____
b. _____
c. _____

Signed By

Name: CHAN HIU SHAN
Environmental Officer

Signed By

AGO W/ D19 B

Name & Title: HO WING CHEUNG
Engineer's Nominated Site Representative

Kwan Lee - Kuly JV

Drainage Services Department
Contract No. DC/2010/02
Contract Title: Drainage Improvement Works in Shuen Wan and Shek Wu Wai
Weekly Environmental Walk (No. 018)
Environmental Inspection Checklist

Date of Inspection: 21 September 2011 Time 1000
Weather: ~~Sunny~~/Fine/~~Overcast~~/~~Drizzle~~/~~Rain~~/~~Storm~~/~~Hazy~~ Temperature: 30 °C
Wind: Calm/~~Light~~/~~Breeze~~/~~Strong~~ Humidity: ~~High~~/Moderate/~~Low~~
Locations: a. SHEK WU WAI d. Area 1
b. TUNG TSZ ROAD
c. Area 2

Person(s) making the inspection:

Name in Block Letters	Designation	Organisation
HO WING CHEONG	AIOW	DSD
LAU SIU CHUEN	WSI	DSD
WONG WAI LAM	SITE AGENT	KLKJV
CHAN HIU SHAN	EO	KLKJV

	YES	NO	N/A	REMARK
1 GENERAL				
a. Environmental Permit (EP) copy at site entrance	(✓)	( )	( )	
b. Environmental posters/notices at place of work	(✓)	( )	( )	
c. Site kept clean and tidy	(✓)	( )	( )	
d. Engine shut off when not in use	(✓)	( )	( )	
e. Proper maintenance of site plant and equipment	(✓)	( )	( )	
f Other: Please specify	( )	( )	(✓)	
2. AIR POLLUTION				
a. Site Perimeter Hoardings provided as required	(✓)	( )	( )	
b. Haul Road paved or kept wet	(✓)	( )	( )	
c. Water spraying during loading and unloading of dusty material	(✓)	( )	( )	
d. Exposed stockpile & dusty materials in storage wetted or covered by tarpaulin as required	(✓)	( )	( )	
e. Dust suppression measures taken and/or dust Screen erected for dusty site activities	(✓)	( )	( )	
f. Wheel washing bays provided at site vehicle exits and maintained in good working order	( )	( )	(✓)	
g. Vehicle wheels washed before leaving site	(✓)	( )	( )	
h. Dump trucks fitted with mechanical tarpaulin cover	(✓)	( )	( )	
i. Dusty loads on vehicles covered by tarpaulin	(✓)	( )	( )	
j. Vehicle speed control (8KM/hr) on site	(✓)	( )	( )	
k. Black smoke emission control from site plant	(✓)	( )	( )	
l. No opening burning of debris on site	(✓)	( )	( )	
m Use of Ultra Low Surphur Diesel (ULSD) for constructional plant and equipment	(✓)	( )	( )	
n. Other: Please specify	( )	( )	(✓)	
3 WATER POLLUTION				
a. Tightly sealed closed grab excavator used for river channel excavation works	(✓)	( )	( )	
b. River excavation works sections by sections as required	( )	( )	(✓)	
c. Splashing of sediment avoided during transfer	(✓)	( )	( )	
d. Floating debris in river cleared	(✓)	( )	( )	
e. Leakage from plant & vessel avoided	(✓)	( )	( )	
f. Wheel washing bay desilted regularly	( )	( )	(✓)	
g. Temporary drainage diversion provided as required	(✓)	( )	( )	
h. Site run-off towards silt traps	(✓)	( )	( )	
i. Silt traps & drainages cleared Sand bags provided at site entrance and around road gullies as necessary	(✓)	( )	( )	
j. Water Discharge License applied as necessary	(✓)	( )	( )	
k. Wastewater treated as required	(✓)	( )	( )	
l. Treated effluent reused and recycled	( )	( )	(✓)	
m. Chemical toilets provided as necessary	( )	( )	(✓)	

	YES	NO	N/A	REMARK
n. Heavy Rainstorm Response Procedure displayed	(✓)	( )	( )	
o. Other: Please specify	( )	( )	(✓)	
4. NOISE POLLUTION				
a. Temporary noise barriers installed at designated locations as required in EP	( )	( )	(✓)	
b. Noisy plant and equipment sited away from noisy sensitive receiver as possible	( )	( )	(✓)	
c. Air Compressors and portable percussive breakers with Noise Emission Labels	( )	( )	(✓)	
d. Pneumatic percussive breakers fitted with sound mufflers	( )	( )	(✓)	
e. Engine flap covers kept closed of construction plant during operations	( )	( )	(✓)	
Excavator breaker tip wrapped with sound insulating material for breaking work				
f. Noise baffles/screens to noisy machines/site activities as necessary	( )	( )	(✓)	
g. Valid Construction Noise Permits (CNP) for works in restricted hours	( )	( )	(✓)	
h. Full compliance with CNP conditions	( )	( )	(✓)	
i. Other: Please specify	( )	( )	(✓)	
5 RESOURCES MANAGEMENT				
a. Site Perimeter Hoardings made of metal	( )	( )	(✓)	
b. Restricted use of hardwood in formwork	( )	( )	(✓)	
c. Low VOC or water based paint selected as possible	( )	( )	(✓)	
d. Approved larvicide/insecticide for mosquito control work	(✓)	( )	( )	
e. Designated material storage containers/areas	(✓)	( )	( )	
f. Proper storage of materials	(✓)	( )	( )	
g. Other: Please specify	( )	( )	(✓)	
6. WASTE MANAGEMENT				
a. Designated area for sorting and temporary storage of C & D materials on site	(✓)	( )	( )	
b. Proper sorting of inert and non-inert materials	(✓)	( )	( )	
c. Recycle bins for recycling of different materials	(✓)	( )	( )	
d. Rubbish bins for general rubbish	(✓)	( )	( )	
e. Measures taken to avoid cross contamination of different wastes	(✓)	( )	( )	
f. Disposed of regularly to avoid excessive accumulation	(✓)	( )	( )	
g. Trip tickets and EPD chits duly completed and used in C & D waste disposal	( )	( )	(✓)	
h. Registration as Chemical Waste Producer as required	( )	( )	(✓)	
i. Chemical wastes properly labeled and packaged	( )	( )	(✓)	
j. Chemical wastes pending collection stored properly to avoid leakage	( )	( )	(✓)	
Used trip tickets kept for chemical waste disposal				
k.. Proper handling of contaminated soil samples in land contamination investigation work	( )	( )	(✓)	
l. Proper storage of contaminated soil samples in land contamination investigation work	( )	( )	(✓)	
m Other: Please specify	( )	( )	(✓)	
7 CHEMICALS MANAGEMENT				
a. Dangerous Goods kept below exempted quantities on site or otherwise suitable DG store provided	( )	( )	(✓)	
b. Proper containers for carrying plant fuel or site chemicals	(✓)	( )	( )	
c. Containers carrying plant fuel or site chemicals with suitable chemical labels	(✓)	( )	( )	
d. Fuel drums and containers carrying site chemicals kept closed when not in use	( )	( )	(✓)	
e. Chemicals stored in dry, cool and sheltered place	( )	( )	(✓)	
f. No smoking/ignition source notice displayed near fuel/chemical storage area	(✓)	( )	( )	
g. Suitable fire extinguishers put aside for ready use	(✓)	( )	( )	
h. Chemicals kept away from plant fuel	( )	( )	(✓)	
i. Containers carrying plant fuel or site chemicals placed on drip trays or otherwise store area suitably bunded	( )	( )	(✓)	
Emergency spillage procedure posted	( )	( )	(✓)	
j. Others: Please specify	( )	( )	(✓)	

8 OTHERS

	YES	NO	N/A	REMARK
a. Existing trees and vegetation maintained and protected as required	(✓)	( )	( )	
b. Materials & Plant kept way from existing trees and vegetation	(✓)	( )	( )	
c. Target fauna species re-located and protected as required	( )	( )	(✓)	
d. Topsoil conserved and re-use in landscape works	( )	( )	(✓)	
e. Night-time lighting controlled to minimize glare	( )	( )	(✓)	
f. Others: Please specify	( )	( )	(✓)	

9. OTHER COMMENTS

a. Stagnant water should be removed (Ann. 2).
b. The weed should be cleared. (Ann. 1)
c.

Signed By

Name: CHAN HIU SHAN
Environmental Officer

Signed By

Name & Title: HO WING CHEONG
Engineer's Nominated Site Representative

A1014/D19B

Kwan Lee - Kuly JV

Drainage Services Department
Contract No. DC/2010/02
Contract Title: Drainage Improvement Works in Shuen Wan and Shek Wu Wai
Weekly Environmental Walk (No. 019)
Environmental Inspection Checklist

Date of Inspection: 28 September 2011 Time 1430
Weather: ~~Sunny~~/Fine/~~Overcast~~/~~Drizzle~~/~~Rain~~/~~Storm~~/~~Hazy~~ Temperature: 31 ^{0}C
Wind: Calm/~~Light~~/~~Breeze~~/~~Strong~~ Humidity: ~~High~~/Moderate/~~Low~~
Locations: a. SHEK WU WAI d. Area 1
b. TUNG TSZ ROAD
c. Area 2

Person(s) making the inspection:

Name in Block Letters	Designation	Organisation
HO WING CHEONG	AIOW	DSD
LAU SIU CHUEN	WSI	DSD
WONG WAI LAM	SITE AGENT	KLKJV
CHAN HIU SHAN	EO	KLKJV

	YES	NO	N/A	REMARK
1 GENERAL				
a. Environmental Permit (EP) copy at site entrance	(✓)	( )	( )	
b. Environmental posters/notices at place of work	(✓)	( )	( )	
c. Site kept clean and tidy	(✓)	( )	( )	
d. Engine shut off when not in use	(✓)	( )	( )	
e. Proper maintenance of site plant and equipment	(✓)	( )	( )	
f Other: Please specify	( )	( )	(✓)	
2. AIR POLLUTION				
a. Site Perimeter Hoardings provided as required	(✓)	( )	( )	
b. Haul Road paved or kept wet	(✓)	( )	( )	
c. Water spraying during loading and unloading of dusty material	(✓)	( )	( )	
d. Exposed stockpile & dusty materials in storage wetted or covered by tarpaulin as required	(✓)	( )	( )	
e. Dust suppression measures taken and/or dust Screen erected for dusty site activities	(✓)	( )	( )	
f. Wheel washing bays provided at site vehicle exits and maintained in good working order	( )	( )	(✓)	
g. Vehicle wheels washed before leaving site	(✓)	( )	( )	
h. Dump trucks fitted with mechanical tarpaulin cover	(✓)	( )	( )	
i. Dusty loads on vehicles covered by tarpaulin	(✓)	( )	( )	
j. Vehicle speed control (8KM/hr) on site	(✓)	( )	( )	
k. Black smoke emission control from site plant	(✓)	( )	( )	
l. No opening burning of debris on site	(✓)	( )	( )	
m Use of Ultra Low Surphur Diesel (ULSD) for constructional plant and equipment	(✓)	( )	( )	
n. Other: Please specify	( )	( )	(✓)	
3 WATER POLLUTION				
a. Tightly sealed closed grab excavator used for river channel excavation works	(✓)	( )	( )	
b. River excavation works sections by sections as required	( )	( )	(✓)	
c. Splashing of sediment avoided during transfer	(✓)	( )	( )	
d. Floating debris in river cleared	(✓)	( )	( )	
e. Leakage from plant & vessel avoided	(✓)	( )	( )	
f. Wheel washing bay desilted regularly	( )	( )	(✓)	
g. Temporary drainage diversion provided as required	(✓)	( )	( )	
h. Site run-off towards silt traps	(✓)	( )	( )	
i. Silt traps & drainages cleared	(✓)	( )	( )	
Sand bags provided at site entrance and around road gullies as necessary				
j. Water Discharge License applied as necessary	(✓)	( )	( )	
k. Wastewater treated as required	(✓)	( )	( )	
l. Treated effluent reused and recycled	( )	( )	(✓)	
m. Chemical toilets provided as necessary	( )	( )	(✓)	

	YES	NO	N/A	REMARK
n. Heavy Rainstorm Response Procedure displayed	(✓)	( )	( )	
o. Other: Please specify	( )	( )	(✓)	
4. NOISE POLLUTION				
a. Temporary noise barriers installed at designated locations as required in EP	( )	( )	(✓)	
b. Noisy plant and equipment sited away from noisy sensitive receiver as possible	( )	( )	(✓)	
c. Air Compressors and portable percussive breakers with Noise Emission Labels	( )	( )	(✓)	
d. Pneumatic percussive breakers fitted with sound mufflers	( )	( )	(✓)	
e. Engine flap covers kept closed of construction plant during operations	( )	( )	(✓)	
Excavator breaker tip wrapped with sound insulating material for breaking work				
f. Noise baffles/screens to noisy machines/site activities as necessary	( )	( )	(✓)	
g. Valid Construction Noise Permits (CNP) for works in restricted hours	( )	( )	(✓)	
h. Full compliance with CNP conditions	( )	( )	(✓)	
i. Other: Please specify	( )	( )	(✓)	
5 RESOURCES MANAGEMENT				
a. Site Perimeter Hoardings made of metal	( )	( )	(✓)	
b. Restricted use of hardwood in formwork	( )	( )	(✓)	
c. Low VOC or water based paint selected as possible	( )	( )	(✓)	
d. Approved larvicide/insecticide for mosquito control work	(✓)	( )	( )	
e. Designated material storage containers/areas	(✓)	( )	( )	
f. Proper storage of materials	(✓)	( )	( )	
g. Other: Please specify	( )	( )	(✓)	
6. WASTE MANAGEMENT				
a. Designated area for sorting and temporary storage of C & D materials on site	(✓)	( )	( )	
b. Proper sorting of inert and non-inert materials	(✓)	( )	( )	
c. Recycle bins for recycling of different materials	(✓)	( )	( )	
d. Rubbish bins for general rubbish	(✓)	( )	( )	
e. Measures taken to avoid cross contamination of different wastes	(✓)	( )	( )	
f. Disposed of regularly to avoid excessive accumulation	(✓)	( )	( )	
g. Trip tickets and EPD chits duly completed and used in C & D waste disposal	( )	( )	(✓)	
h. Registration as Chemical Waste Producer as required	( )	( )	(✓)	
i. Chemical wastes properly labeled and packaged	( )	( )	(✓)	
j. Chemical wastes pending collection stored properly to avoid leakage	( )	( )	(✓)	
Used trip tickets kept for chemical waste disposal				
k.. Proper handling of contaminated soil samples in land contamination investigation work	( )	( )	(✓)	
l. Proper storage of contaminated soil samples in land contamination investigation work	( )	( )	(✓)	
m Other: Please specify	( )	( )	(✓)	
7 CHEMICALS MANAGEMENT				
a. Dangerous Goods kept below exempted quantities on site or otherwise suitable DG store provided	( )	( )	(✓)	
b. Proper containers for carrying plant fuel or site chemicals	(✓)	( )	( )	
c. Containers carrying plant fuel or site chemicals with suitable chemical labels	(✓)	( )	( )	
d. Fuel drums and containers carrying site chemicals kept closed when not in use	( )	( )	(✓)	
e. Chemicals stored in dry, cool and sheltered place	( )	( )	(✓)	
f. No smoking/ignition source notice displayed near fuel/chemical storage area	(✓)	( )	( )	
g. Suitable fire extinguishers put aside for ready use	(✓)	( )	( )	
h. Chemicals kept away from plant fuel	( )	( )	(✓)	
i. Containers carrying plant fuel or site chemicals placed on drip trays or otherwise store area suitably bunded	( )	( )	(✓)	
Emergency spillage procedure posted	( )	( )	(✓)	
j. Others: Please specify	( )	( )	(✓)	

8 OTHERS

	YES	NO	N/A	REMARK
a. Existing trees and vegetation maintained and protected as required	(✓)	( )	( )	
b. Materials & Plant kept way from existing trees and vegetation	(✓)	( )	( )	
c. Target fauna species re-located and protected as required	( )	( )	(✓)	
d. Topsoil conserved and re-use in landscape works	( )	( )	(✓)	
e. Night-time lighting controlled to minimize glare	( )	( )	(✓)	
f. Others: Please specify	( )	( )	(✓)	

9. OTHER COMMENTS

a. Drip tray should be provided. (SWW)

b.

c.

Signed By

Name: CHAN HIU SHAN
Environmental Officer

Signed By

Name & Title: HO WING CHEONG (AIOW/D19C)
Engineer's Nominated Site Representative

Environmental Site Inspection Checklist

Project:	***DSD Contract No. DC/2010/02***	**Inspected by**	**Checklist No.** **092011-01**
	Drainage Improvement in Shuen Wan and Shek Wu Wai	**IEC/IEC's Representative:**	Justin Ye
		RE/RE's Representative:	Ronald Siu / Tso Si-on
Inspection	**Tung Tsz Road, Shuen Wan**	**ETL/ ET's Representative:**	T.W. Tam
Date:	16 September 2011	**EO/EO's Representative:**	Chan Hiu Shan
Time:	10:00	**Contractor's Representative:**	Chan Wing Kai / Tommy Mok

PART A: **GENERAL INFORMATION** **Environmental Permit No.**

Weather: ☐ Sunny ☑ Fine ☐ Cloudy ☐ Rainy ☐ Calm ☑ **EP-303/2008**

Temperature: 31.2 ^{0}C

Humidity: ☑ High ☐ Moderate ☐ Low ☐ **N/A**

Wind: ☐ Strong ☐ Breeze ☐ Light ☑

Area Inspected

1. Box Culvert Bay 20 - 22
2.
3.

PART B: **SITE AUDIT**

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 1: Water Quality							
1.01	Is an effluent discharge license obtained for the Project?	☐	☑	☐	☐	☐	
1.02	Is the effluent discharged in accordance with the discharge licence?	☐	☑	☐	☐	☐	
1.03	Is the discharge of turbid water avoided?	☑	☐	☐	☐	☐	
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	☐	☐	☐	☑	☐	
1.05	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	☑	☐	☐	☐	☐	
1.06	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	☐	☑	☐	☐	☐	
1.07	Is drainage system well maintained?	☐	☐	☐	☐	☑	
1.08	As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	☑	☐	☐	☐	☐	
1.09	Are temporary exposed slopes properly covered?	☐	☐	☐	☐	☑	
1.10	Are earthworks final surfaces well compacted or protected?	☐	☐	☐	☐	☑	
1.11	Are manholes adequately covered or temporarily sealed?	☐	☑	☐	☐	☐	
1.12	Are there any procedures and equipment for rainstorm protection?	☑	☐	☐	☐	☐	
1.13	Are wheel washing facilities well maintained?	☑	☐	☐	☐	☐	
1.14	Is runoff from wheel washing facilities avoided?	☑	☐	☐	☐	☐	
1.15	Are there toilets provided on site?	☐	☑	☐	☐	☐	
1.16	Are toilets properly maintained?	☑	☐	☐	☐	☐	
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	☑	☐	☐	☐	☐	
1.18	Is the oil leakage or spillage avoided?	☑	☐	☐	☐	☐	
1.19	Are there any measures to prevent leaked oil from entering the drainage system?	☑	☐	☐	☐	☐	
1.20	Are there any measures to collect spilt cement and concrete washings during concreting works?	☑	☐	☐	☐	☐	
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	☐	☐	☐	☐	☑	
1.22	Are the oil interceptors/grease traps maintained properly?	☐	☐	☐	☐	☑	

Environmental Site Inspection Checklist

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?	☑	☐	☐	☐	☐	
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 50m3 capacities for sedimentation.	☐	☐	☐	☐	☑	
1.25	No excavation is undertaken in the settlement area.	☑	☐	☐	☐	☐	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	☑	☐	☐	☐	☐	
1.27	Mobile toilets should provide on site and located away the Wai Ha River course.	☐	☑	☐	☐	☐	
1.25	License collector should be employed for handling the sewage of mobile toilet.	☐	☑	☐	☐	☐	
Section 2: Air Quality							
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	☑	☐	☐	☐	☐	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?	☐	☑	☐	☐	☐	
2.03	Are the excavated materials sprayed with water during handling?	☑	☐	☐	☐	☐	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	☐	☐	☐	☐	☐	
2.05	Is the exposed earth properly treated within six months after the last construction activities?	☑	☐	☐	☐	☐	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?	☐	☑	☐	☐	☐	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?	☐	☐	☐	☐	☑	
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?	☐	☑	☐	☐	☐	
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	☐	☑	☐	☐	☐	
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	☑	☐	☐	☐	☐	
2.11	Is dark smoke emission from plant/equipment avoided?	☑	☐	☐	☐	☐	
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	☐	☐	☐	☐	☑	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?	☐	☑	☐	☐	☐	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	☐	☑	☐	☐	☐	
2.15	Is open burning avoided?	☑	☐	☐	☐	☐	
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.	☐	☐	☐	☐	☑	
Section 3: Noise							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	☐	☑	☐	☐	☐	
3.02	Is silenced equipment adopted?	☐	☑	☐	☐	☐	
3.03	Is idle equipment turned off or throttled down?	☐	☑	☐	☐	☐	
3.04	Are all plant and equipment well maintained and in good condition?	☐	☑	☐	☐	☐	
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	☑	☐	☐	☐	☐	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	☑	☐	☐	☐	☐	
3.07	Are air compressors fitted with valid noise emission labels during operation?	☑	☐	☐	☐	☐	
3.08	Are flaps and panels of mechanical equipment closed during operation?	☑	☐	☐	☐	☐	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	☐	☐	☐	☐	☑	

Environmental Site Inspection Checklist

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
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	☐	☐	☐	☐	☑	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	☑	☐	☐	☐	☐	
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).	☐	☑	☐	☐	☐	
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)	☑	☐	☐	☐	☐	
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).	☑	☐	☐	☐	☐	
Section 4: Waste/Chemical Management							
4.01	Waste Management Plan had been submit to Engineer for approval.	☐	☑	☐	☐	☐	
4.02	Are receptacles available for general refuse collection?	☐	☑	☐	☐	☐	
4.03	Is general refuse sorting or recycling implemented?	☑	☐	☐	☐	☐	
4.04	Is general refuse disposed of properly and regularly?	☐	☑	☐	☐	☐	
4.05	Is the Contractor registered as a chemical waste producer?	☑	☐	☐	☐	☐	In Progress
4.06	Are the chemical waste containers properly labelled?	☐	☑	☐	☐	☐	
4.07	Are the chemical wastes stored in proper storage areas?	☐	☑	☐	☐	☐	
4.08	Is the chemical waste storage area properly labelled?	☐	☑	☐	☐	☐	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	☐	☑	☐	☐	☐	
4.10	Are incompatible chemical wastes stored in different areas?	☐	☑	☐	☐	☐	
4.11	Are the chemical wastes disposed of by licensed collectors?	☐	☐	☐	☑	☐	Waiting chemical producer application
4.12	Are trip tickets for chemical wastes disposal available for inspection?	☐	☐	☐	☑	☐	Waiting chemical producer application
4.13	Are chemical/fuel storage areas bunded?	☐	☑	☐	☐	☐	
4.14	Are designated areas identified for storage and sorting of construction wastes?	☑	☐	☐	☐	☐	
4.15	Are construction wastes sorted (inert and non-inert) on site?	☑	☐	☐	☐	☐	
4.16	Are construction wastes reused?	☑	☐	☐	☐	☐	
4.17	Are construction wastes disposed of properly?	☐	☑	☐	☐	☐	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	☐	☑	☐	☐	☐	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	☐	☑	☐	☐	☐	
4.20	Are appropriate procedures followed if contaminated material exists?	☐	☐	☐	☐	☑	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	☐	☑	☐	☐	☐	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	☐	☑	☐	☐	☐	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	☐	☐	☐	☐	☑	
Section 5: Landscape & Visual							
5.01	Are retained and transplanted trees in health condition?	☑	☐	☐	☐	☐	
5.02	Are retained and transplanted trees properly protected?	☑	☐	☐	☐	☐	

Environmental Site Inspection Checklist

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
5.03	Are surgery works carried out for the damaged trees?	☑	☐	☐	☐	☐	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	☑	☐	☐	☐	☐	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	☐	☑	☐	☐	☐	
Section 6: Ecology							
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections of work area?	☐	☐	☐	☐	☑	
6.02	Prevent site effluent/runoff discharge to the seasonal wetlands at Wai Ha River?	☐	☑	☐	☐	☐	
6.03	Stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands at Wai Ha River are prohibited?	☐	☑	☐	☐	☐	
Section 7: Others							
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	☐	☑	☐	☐	☐	

Remarks

Follow up of last Site Inspection:

	
A power generator has been provided a drip tray to prevent land contamination	

Observations recorded in this Site Inspection: (16-09-2011)

	
(1) A chemical oil bucket located at site is stored without a drip tray	(1A) The deficiency was immediately resolved.

Reminder

- Environmental Permit should be posted at the easy observed of area
- The desilting system should be regular to maintain ensure it effective

IEC's representative	*RE's representative*	*ET's representative*	*EO's representative*	*Contractor's representative*
( )	( )	(T.W. Tam)	( )	( )

Appendix M

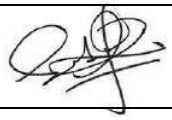
Monthly Landscape & Visual Report

Contract No. DC/2010/02 – Drainage Improvement Works in Shuen Wan and Shek Wu Wai

Bi-weekly Landscape & Visual Monitoring

EM&A (Landscape & Visual) Report September 2011 (Issue 1)

October 2011

	Name	Signature
Prepared & Reviewed by:	**Sandra KAM**	
Verified by:	**Ida YU**	
Date:	**7th October 2011**	

Asia Ecological Consultants Ltd
127 Commercial Centre, Palm Springs, Yuen Long, New Territories, Hong Kong
Tel. +852 2486 2885. Email: asiaecol@asiaecol.com.hk

Environmental
Resources
Management

21/F Lincoln House
979 King's Road
Taikoo Place
Island East
Hong Kong
Telephone : (852) 2271 3000
Facsimile : (852) 2723 5660
E-mail : post.hk@erm.com
http:// www.erm.com

14 October 2011

Kwan Lee – Kuly Joint Venture
Unit 6, 16/F, Yuen Long Trading Centre
33 Wang Yip Street West
Yuen Long, Hong Kong

Attn.: Nicola Hon

Our ref: 0125606_Cert01_20111014

Dear Shan,

Contract No. DC/2010/02 –
Drainage Improvement in Shuen Wan, Tai Po – Contract 2
Monthly EM&A (Landscape & Visual) Report

Reference is made to the Monthly EM&A (Landscape & Visual) Report – Contract 2 for the month of September 2011, please kindly note that we have no adverse comment on the report.

Should you have any queries, please feel free to contact the undersigned at 2271 3117.

Yours sincerely,
For ERM-Hong Kong, Limited

Christina Ip
Senior Landscape Architect

Registered Office
ERM-Hong Kong, Ltd
21/F Lincoln House
979 King's Road
Taikoo Place
Island East
Hong Kong

Offices worldwide

CONTENTS

LIST OF APPENDICE

1 INTRODUCTION

1.1.1 The Landscape and Visual Monitoring of the Project is conducted to fulfill Clauses 5.2 and 5.4 of EP-303/2008 and the monitoring requirements in accordance with Section 7 of the approved updated EM&A Manual (approved by EPD on December 2010) of the Project. A Baseline Review on updating the landscape and visual condition, and the mitigation measures of the Project (including Contracts 1 and 2 of the Project) was undertaken before the commencement of the Project. The review findings were updated in the Baseline Environmental Monitoring Report submitted to the EPD on 14 February 2011.

1.1.2 This monthly monitoring report will detail the scope of landscape and visual monitoring work, monitoring findings and observations, and any recommendation and advice on proper implementation of the landscape mitigation measures.

2 SCOPE OF MONITORING

2.1 Monitoring objectives

2.1.1 Landscape and Visual Monitoring of the Project should be conducted in a bi-weekly basis for checking the design, implementation and maintenance of the landscape and visual mitigation measures throughout the construction phase and in a quarterly basis during operational phase of the Project. Observations of any potential conflicts between the proposed mitigation measures and the project works carried out by the Contractors should be recorded. Recommendation and advice on proper implementation of the landscape mitigation measures should be provided to the Contractor for minimizing any potential impacts on the landscape and visual elements.

2.2 Monitoring during Construction Phase

2.2.1 The following landscape and visual mitigation measure should be implemented during the construction phase of the Project to minimize the potential impacts:

- *Visual Screen* – Use of hoardings as visual screens for the construction in the works areas;
- *Contaminant/ Sediment Control* – Use of temporary barriers, covers and drainage provision around the construction works as contaminant/ sediment control to prevent the contaminants and sediments from entering the sensitive water-based habitats;
- *Pollution Control* – Implementation of pollution control measures to minimize any adverse environmental impacts to the surrounding habitats;
- *Liaison with Nursery* (Not relevant to Contract 2 of the Project) – Liaison with the nursery operator as necessary to minimize any adverse impact to the daily operation and plant holding capacity of the nursery;

- *Existing Trees within Works Area* – Maintenance and protection of the existing trees, especially their crowns, trunks and roots, within work sites; and

- *Construction Light* – Provision of construction light should be controlled at night to avoid excessive glare to the surrounding villages and to Plover Cove.

2.3 Monitoring during Operational Phase

2.3.1 The following landscape and visual mitigation measure should be implemented during the operational phase of the Project to minimize the potential impacts:

- Viewing area formation by planting with shrubs, grasses and benches along the area;

- Architectural design of the pump house will help it fit into the existing suburban, natural to semi-natural surroundings (Not relevant to Contract 2 of the Project);

- Landscape design of pump house by providing sufficient planting around its boundary fence (Not relevant to Contract 2 of the Project);

- Enhancement planting along Tung Tsz Road with shrubs/ trees of suitable species to help protect the stream and marshes;

- Construction of box culvert should be with at least 1.0m soil depth for enhancement planting;

- Transplanting of existing affected trees to adjacent locations should be carried out;

- Preparation for transplanting is needed to allow sufficient time for root pruning and root ball preparation prior to transplanting; and

- Reinstatement of affected area should be carried out to check that the works areas are properly reinstated.

3 LANDSCAPE & VISUAL MONITORING RESULTS

3.1 Monitoring Date(s)

3.1.1 This monthly Landscape and Visual Monitoring (September 2011) was conducted to cover only areas of Contract 2 of the Project (i.e. the construction of a twin-cell box culvert close to Shuen Wan Conservation Area and Wai Ha River along Tung Tsz Road, and a drainage pipe near Wai Ha Village). The bi-weekly monitoring was conducted on 5th and 23rd September 2011.

3.1.2 All photos stated in this section are recorded in Appendix A.

3.2 Visual Screen

3.2.1 No follow-up action by the Contractor is required as from the *Monthly EM&A Report for August 2011*.

Observation

3.2.2 A section of temporary hoardings have been erected from west to east parts of Tung Tsz Road opposite to San Tau Kwok.

3.2.3 No hoardings have been erected along the rest of the proposed works area since neither construction works nor any associated preparation works have been commenced. **Photos 1-2** show the views of the erected hoardings in the area.

Recommendation

3.2.4 No specific recommendation is required.

3.3 Contaminant/ Sediment Control

3.3.1 No follow-up action by the Contractor is required as from the *Monthly EM&A Report for August 2011*.

Observation

3.3.2 No direct discharge of contaminants or any polluted fluid was observed within the active works area. All used water and underground water was collected and drained into filtration beds and a sedimentation tanks before the discharge (**Photo 3**). As observed, a sheet of PVC liner was overlaid along the filtration beds within the active works area. This practice could lower the chance of contaminating the vegetation in the adjacent Shuen Wan marsh.

Recommendation

3.3.3 Regular monitoring should be conducted to ensure no direct discharge or leakage of contaminants or any polluted fluid into the adjacent Wai Ha River.

3.4 Pollution Control

3.4.1 No follow-up action by the Contractor is required as from the *Monthly EM&A Report for August 2011*.

Observation

3.4.2 Drained water from underground was observed to be filtered in the sedimentation tank and filtration beds before the discharge (**Photo 3**). As observed, a sheet of PVC liner was overlaid along the filtration beds within the active works area. This practice could lower the chance of contaminating the vegetation in the adjacent Shuen Wan marsh. No direct discharge of water into the adjacent Wai Ha River was observed (P**hoto 4**).

Recommendation

3.4.3 No specific recommendation is required

3.5 Liaison with Nursery

3.5.1 The construction undertaken within Tung Tsz Nursery is restricted under Contract 1 of the Project. This monitoring item is not applicable to Contract 2 of the Project.

3.6 Existing Trees within Works Areas

Observation

3.6.1 Tree felling has not yet been conducted within the working area. Clearance of herbaceous vegetation within the fenced area was observed during the monitoring (**Photo 5**).

3.6.2 All trees within the Project area were recorded generally in fair health conditions. Four uprooted trees, including T011, T011A, T011B and T011C (**Photo 6**), were observed and was reported in *Monthly EM&A Report for August 2011*. As informed by the Contractor, these trees were found uprooted when the Project Team commenced the works in July 2011. The treatment of those four uprooted trees will be based on Section 3 of Method Statement for Tree Felling.

Recommendations

3.6.3 Within the active works area, proper Tree Protection Zones (TPZs) should be demarcated for retained trees and trees to be transplanted which would be directly affected by the construction work. In addition, if necessary, these retained trees or trees to be transplanted shall be watered regularly to maintain their health.

3.6.4 Disturbance is prohibited in all TPZs. In any practical circumstances, the contractor should follow Section 8 of Annex 4 of the approved Landscape Plan for protecting the existing trees from any potential damages resulting from construction works.

3.7 Construction Light

Observation

3.7.1 No construction light impact to the surrounding villages and to Plover Cove as all construction activities and construction sites are halted at 1800. No construction light at night is provided by the Main Contractor.

Recommendation

3.7.2 No specific recommendation is required.

4 AUDIT SCHEDULE

4.1.1 The next bi-weekly Landscape & Visual Monitoring in October 2011 is scheduled to be conducted in the week of 3rd and 17th October 2011.

Appendix A

Photographs

	
Photo 1 – Temporary hoardings have been erected around the active works area	**Photo 2 -** Temporary hoardings have been erected along Tung Tsz Road
	
Photo 3 – Sedimentation tank for drained water from underground	**Photo 4 –** Upper stream of Wa Ha River. No direct water discharge into the Wai Ha River since no active works area has been set up adjacent to the River.
	
Photo 5 – Clearance of herbaceous vegetation was observed within the active works area.	**Photo 6 –** Trees Nos. T11, T11A, T11B and T11C were found uprooted.