PROJECT NO.: TCS/00553/11

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

MONTHLY ENVIRONMENTAL MONITORING AND AUDIT REPORT (NO.6) – DECEMBER 2011

PREPARED FOR
KWAN LEE-KULY JOINT VENTURE

Quality Index

Date	Reference No.	Prepared By	Certified by
16 January 2012	TCS00553/11/600/R0077v2	Nicola Hon (Environmental Consultant)	T.W. Tam (Environmental Team Leader)

Ver.	Date	Description
1	11 January 2012	First submission
2	16 January 2012	Amended against IEC's comments on 12 January 2012

ENVIRON

Ref.: DSDSHUWNEM00_0_0315L.12

17th Jan 2012

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. H.K. Chan & Mr. Ronald Siu

Dear Sir,

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 Dec 2011

Reference is made to Environment Team's submission of the Monthly Environmental Monitoring and Audit Report for Dec 2011 by Email on 11th Jan 2012 (entitled "DC/2010/22 - Monthly EM&A Report (Contract 2) No.6 - December 2011") and the subsequent revision of the report by Email on 17th Jan 2012.

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

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EXECUTIVE SUMMARY

ES.01. This is the **6th** Monthly Environmental Monitoring and Audit (EM&A) Report for designated works of ***DSD Contract No. DC/2010/02 - Drainage Improvement in Shuen Wan and Shek Wu Wai*** (hereafter "Contract 2") under Environmental Permit No.EP-303/2008, covering a period from **1 to 31 December 2011** (hereinafter 'the Reporting Period').

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

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

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Construction Noise	Leq (30min) Daytime – M2, M3 & M4	15
	Leq (30min) Daytime – M1 & AL1	10
Water Quality	Local Stream Water Sampling - W1 and W2	13
	Local Stream Water Sampling - W3 and W4	13
	Hydrological characteristics measurement – H1 and H2	5
	Hydrological characteristics measurement – H3 and H4	5
Inspection / Audit	Monthly Environmental Site Inspection and audit by IEC	1
	Regular weekly Environmental inspection by the Contractor, ET and Site Representative Engineer	5
Landscape & Visual	Bi-weekly Inspection by a registered Landscape Architect	3

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. For water quality monitoring, a total of 55 Action/Limit Level exceedances, namely 26 Action/ Limit Level exceedances in dissolved oxygen, 20 Action/Limit Level exceedances in turbidity and 9 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 were considered not related to the works 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	**12**	**14**	**26**	Not related Contract 2	Not required
	Turbidity	**4**	**16**	**20**		
	SS	**1**	**8**	**9**		
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 – 31 December 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 – 31 December 2011	0	0	NA

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 December 2011	0	0	NA

REPORTING CHANGE

ES.07. No report changes were made in this Reporting Period.

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 dry season, dust mitigation measures to avoid fugitive dust emissions from loose soil surface or haul road would be a key issue in coming months.. Nevertheless, special attention should be paid on the muddy water and other water quality pollutants via site surface water runoff into the local stream Wah Ha River. Mitigation measures for water quality should therefore be fully implemented and maintained.

ES.10. On the other hand, construction noise would be the other key environmental issue during sheet-piling works. Therefore, noise mitigation measures should be properly implemented accordingly.

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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 **6th** Monthly EM&A Report for Contract 2 presenting the monitoring results and inspection findings for the reporting period from **1 to 31 December 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:.

Location	Construction Activities
Bay 20 to 22	• Backfilling • Removal of shoring and sheetpile
Bay 23 to 27	• Driving sheetpile for bays • Excavation and installation of lateral shoring system • Erection of formwork for base slab • Fixing of reinforcement for base slab
Bays 23 to 26	• Laying of rockfill • Laying of blinding
Bays 23 to 24	• Concrete casting of base slab

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)	Notified EPD on 17 October 2011
2	Chemical Waste Producer Registration (WPN5213-727-K2972-02)	Approved on 28 October 2011
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

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 or YSI Professional Plus
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 or YSI Professional Plus 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 or YSI Professional Plus 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)
Volumetric Flow Rate (Q), m^3/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 before each Reporting Period 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 this 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-Dec-11	50.5	55.1	-	-	-
3-Dec-11	-	-	66.1	69.7	52.7
8-Dec-11	49.3	53.5	-	-	-
10-Dec-11	-	-	68.0	66.1	62.7
15-Dec-11	47.5	53.8	66.7	66.7	53.5
22-Dec-11	53.2	58.0	-	-	-
24-Dec-11	-	-	68.7	63.4	57.6
29-Dec-11	47.8	57.7	-	-	-
31-Dec-11	-	-	73.4	69.9	51.5
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, **13** 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-Dec-11	7.38	***7.21***	5.68	**5.76**	2.2	1.2	1.22	2.23	7.40	2.20	2.00	2.00
3-Dec-11	7.46	7.38	5.09	**5.40**	1	2.1	0.93	0.99	1.00	1.40	2.00	2.00
6-Dec-11	***7.27***	***7.11***	6.17	**5.61**	1.1	2.1	28.75	**18.10**	1.40	4.40	63.00	**15.00**
8-Dec-11	***7.09***	***6.92***	5.59	**5.51**	***5***	***3***	2.23	3.19	4.80	3.20	2.00	2.00
10-Dec-11	8.23	8.34	6.58	**6.37**	1	**4.4**	1.94	**8.46**	6.00	2.20	24.00	2.00
13-Dec-11	7.48	7.42	6.44	**6.22**	1.8	1.8	3.23	***4.36***	2.00	3.60	2.00	2.00
15-Dec-11	**6.42**	***6.67***	7.15	**5.66**	**51.6**	**13.6**	2.15	**42.80**	**22.00**	8.60	2.00	**21.00**
17-Dec-11	7.52	***6.99***	6.60	**6.12**	**10.4**	**4.2**	2.23	**35.85**	***9.80***	5.20	2.00	**142.00**
20-Dec-11	7.34	7.43	6.68	**6.62**	2.1	***2.9***	2.79	**50.55**	1.00	3.00	2.00	**272.00**
22-Dec-11	***7.25***	***7***	7.14	**6.38**	1	1.2	1.56	**4.71**	1.00	3.60	2.00	3.00
24-Dec-11	7.48	7.49	7.91	**7.17**	**21.5**	**20.8**	3.54	**5.02**	**12.00**	**13.00**	2.00	2.00
29-Dec-11	***7.09***	***7***	6.90	**6.39**	3.5	**8.7**	1.87	2.87	4.20	**16.00**	2.00	2.00
31-Dec-11	7.39	***7.12***	6.63	**5.91**	2.1	**4.6**	1.85	2.36	2.80	3.60	2.00	2.00

(*) 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 15.5℃ to 23.1℃ and pH values within 7.27 to 8.65. Furthermore, salinity measured at W1 and W2 were detected respectively as 1.4-22.7 ppt and 12.0-25.4 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	**4**	**1**	**1**	**3**	**1**	**2**	**6**	**6**
W2	**8**	0	**2**	**6**	0	**2**	**10**	**8**
W4	0	**13**	**1**	**7**	0	**4**	**1**	**24**
No of Exceedance	**12**	**14**	**4**	**16**	**1**	**8**	**17**	**38**

4.10 As shown in ***Table 4-3***, a total of 55 Action/Limit Level exceedances, namely 26 Action/ Limit Level exceedances in dissolved oxygen, 20 Action/Limit Level exceedances in turbidity and 9 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 To investigate the cause of exceedance, the Contractor stated that the construction activities undertaken during the exceedance days included:-

Bay 20 to 22: Backfilling and removal of shoring and sheetpile
Bay 23 to 27: Driving sheetpile for bays; excavation and installation of lateral shoring system; erection of formwork for base slab and fixing of reinforcement for base slab
Bay 23 to 26: Laying of rockfill and laying of blinding
Bay 23 to 24: Concrete casting of base slab

4.12 The aforesaid construction 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 but it comprised none of DO depleting characteristics. To minimize the impact to the existing stream, precautionary measures such as sedimentation pit and temporary artificial precipitation stream to remove the suspended solids from wastewater to maintain the water quality of downstream. Based on the observation during regular site inspection with RE and Contractor, the implemented water quality mitigation measures such as the sedimentation pit and temporary artificial precipitation stream are effective. Such precautionary measures would modify and improve by the Contractor base on the actual situation and advice by RE and ET.

4.13 According to the daily report by the Contractor, construction works by others was observed at upstream of Wai Ha River which located right upstream of our impact location W4 on 9, 13, 14, 15, 17, 19, 20, 21, 22 December 2011. Since it located at downstream of Location W3, the monitoring results of W3 would not reflect the impact of works by others. It seriously polluted the water quality of the existing stream course and high concentrations of turbidity and SS were recorded at impact station W4 as well as downstream impact station W1 and W2. Besides, the recent major construction works of the Project are located at downstream of Locations W3 and W4. Therefore, the water quality at Locations W3 and W4 affected by the Project is unlikely and it is concluded that the exceedances were not works under the Project.

4.14 For exceedances in location W2, since 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.

4.15 KLKJV is reminded to fully implement 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.

4.16 The supplementary information includes the location map of recent major construction area and construction works by others as well as some site photo have been presented in ***Appendix N***.

RESULTS OF HYDROLOGICAL CHARACTERISTICS MONITORING

4.17 In this Reporting Period, hydrological characteristics measurement at H1, H2, H3 and H4 were carried out on **3, 10, 17, 24 and 31 December 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 Dec 11	9:07	Flood	7.45	0.3	2.2350	0.7	1.565
	14:16	Ebb	7.45	0.3	2.2350	0.8	1.788
10 Dec 11	11:10	Flood	7.45	0.3	2.2350	0.5	1.118
	15:07	Ebb	7.45	0.3	2.2350	0.4	0.894
17 Dec 11	16:21	Flood	7.45	0.3	2.2350	0.5	1.118
	11:15	Ebb	7.45	0.3	2.2350	0.6	1.341
24 Dec 11	16:48	Flood	7.45	0.3	2.2350	0.5	1.118
	10:55	Ebb	7.45	0.3	2.2350	0.5	1.118
31 Dec 11	10:00	Flood	7.45	0.3	2.2350	0.4	0.894
	17:05	Ebb	7.45	0.3	2.2350	0.5	1.118
Measurement Point: H4							
3 Dec 11	9:13	Flood	2.74	0.2	0.5480	0.2	0.110
	14:31	Ebb	2.74	0.2	0.5480	0.2	0.110

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
10 Dec 11	11:14	Flood	2.74	0.4	1.0960	0.3	0.329
	15:15	Ebb	2.74	0.4	1.0960	0.2	0.219
17 Dec 11	16:27	Flood	2.74	0.5	1.3700	0.3	0.411
	11:17	Ebb	2.74	0.4	1.0960	0.3	0.329
24 Dec 11	16:56	Flood	2.74	0.4	1.0960	0.2	0.219
	11:10	Ebb	2.74	0.4	1.0960	0.3	0.329
31 Dec 11	10:15	Flood	2.74	0.4	0.0000	0.2	0.000
	17:20	Ebb	2.74	0.4	1.0960	0.3	0.329

Remarks: Tide information extract from Tai Po Kau Station

Date	Time	Height(m)	Time	Height(m)	Time	Height(m)	Time	Height(m)
3 Dec 11	00:06	1.8	09:33	1.0	1745	1.8	21:59	1.5
10 Dec 11	01:41	0.6	10:25	1.5	13:54	1.3	19:07	2.4
17 Dec 11	08:16	0.7	15:37	1.7	1958	1.4	23:32	1.9
24 Dec 11	03:07	0.4	10:05	1.5	14:19	1.1	21:43	2.6
31 Dec 11	02:05	1.9	07:55	0.8	15:45	1.7	19:55	1.3

4.18 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 Dec 11	0.12	0.14	0.30	0.20	-	-	0.30	0.20
10 Dec 11	0.24	0.14	0.30	0.40	0.18	0.12	0.30	0.40
17 Dec 11	0.37	0.37	0.30	0.50	0.24	0.37	0.30	0.40
24 Dec 11	0.06	0.43	0.30	0.40	0.18	0.43	0.30	0.40
31 Dec 11	0.18	0.61	0.30	0.40	0.67	0.61	0.30	0.40

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 Dec 11	0.075	0.754	1.56	0.11	-	-	1.79	0.11
10 Dec 11	0.075	0.377	1.12	0.33	0.075	0.377	0.89	0.22
17 Dec 11	0.15	0.377	1.12	0.41	0.15	0.377	1.34	0.33
24 Dec 11	0.075	0.377	1.12	0.22	0.075	0.377	1.12	0.33
31 Dec 11	0.075	0.754	0.89	0.22	0.15	0.754	1.12	0.33

4.19 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)	80	Tuen Mum Area 38

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 license 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, ET and RE on **1, 7 15, 21 and 29 December 2011.** Also, joint site inspection with the IEC was carried out on **7 December 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 weekly inspection checklists are attached in ***Appendix L***.

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

Date	Findings / Deficiencies	Follow-Up Status
1 Dec 11	• Water spraying on haul road as a dust suppressive measure was carried out by the Contractor. However, excessive water was found direct discharge to the local drainage system. The Contractor is advised to control the amount of water for those works in the future.	The observation has been rectified before the site inspection on 7 Dec 2011.
7 Dec 11	• Open sand stockpiles were observed on site, the Contractor should cover it with tarpaulin sheet or other means to prevent fugitive dust. • Dust suppressive measures such as air spraying should be applied on the dry haul road.	The observations have been rectified before the site inspection on 21 Dec 2011.
15 Dec 11	• Open sand stockpiles were observed on site, the Contractor should cover it with tarpaulin sheet or other means to prevent fugitive dust.	The observation has been rectified before the site inspection on 21 Dec 2011.
21 Dec 11	• Free standing chemical container was observed on site, the Contractor should provide proper mitigation measures such as drip tray underneath and place it in the chemical storage area after use. • Stagnant water was observed on site, drying or filling off the ponding with gravels is advised.	The observations have been rectified before the site inspection on 29 Dec 2011
29 Dec 11	• Stagnant water was observed on site, the Contractor is advised to improve the drainage system of the ponding.	The observation has been rectified before the site inspection on 5 Jan 2012.

LANDSCAPE AND VISUAL INSPECTION

6.03 In this Reporting Period, landscape and visual inspection was carried on **2, 15 and 28 December 2011**. The stand-alone of monthly Landscape & Visual Report (**December 2011**) signed by the registered Landscape Architect attach at ***Appendix M***.

6.04 According to monthly Landscape & Visual Report (**December 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 /	• No direct discharge of contaminants or any	Regular monitoring should be

Parameter	Observation	Recommendation
Sediment Control	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.	conducted to ensure no direct discharge or leakage of contaminants or any polluted fluid into the adjacent Wai Ha River.
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. • Large stockpiles of soil were observed on 15th and 28th December 2011 at the bank of Wai Ha River to the southwest of Wai Ha. The Main Contractor was immediately contacted. It was found that the stockpiled soil was formed by other contractor for the excavation work other than the current Project. The soil was stockpiled along the river bank to ease the access of a small-scale dredger to undertake the excavation work in the section of the Wai Ha River located to the northeast of Tai Po Area 5 Sewage Treatment Works	• The contractor should prevent any contaminants and sediments from entering the sensitive water-based habitats and implement pollution control measures to minimize any adverse environmental impacts to the water body. • To prevent any potential contamination and pollution of the water body adjacent to the Project Area by any contract work other than the current Project, the contractor and the Project Proponent should have routine inspection within and adjacent to the Project Area and the Wai Ha River.
Existing Trees within Works Area	• No further tree felling work was observed in this month. Clearance of herbaceous vegetation within the fenced area was recorded. • All trees proposed to be retained within the Project Area were recorded generally in fair health conditions. However, excessive pruning and topping of the canopies of a series of trees Leucaena leucocephala (銀合歡) (Tree no. T069-T073 & T075) and Macaranga tanarius (血桐) (Tree no. T076) located close to the Project's site office were observed in the monitoring on 28th December 2011. All of these trees were proposed to be felled in accordance with the approved Tree Felling Application Report. The Main Contractor was immediately contacted and both the Main Contractor and the Project Proponent confirmed that no tree felling work has commenced on these tree groups. The pruning activity was conducted by other party for the contract other than the current Project. • Inadequate tree protection measure (such as no proper TPZ around the tree dripline area) was observed for an	• Within the active works area, proper TPZs should be demarcated for the retained trees and the trees to be transplanted that would be directly affected by the construction work. Any stockpiled soil observed around the tree trunk base of the retained tree T025 should be removed immediately and a proper TPZ should be established to prevent any disturbance from the construction work within the tree dripline area. 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 the construction works. In addition, the Main Contractor and the Project Proponent should have routine inspection on any tree remedial works conducted by other

Parameter	Observation	Recommendation
	existing tree T025, which is regarded as a "Retained Tree" in accordance with the approved Tree Felling Application Report. Stockpiled soil from the adjacent construction work was observed around the tree trunk base. • No significant signs of damage on other existing tree crowns, trunks and roots resulting from the construction works were observed in this monthly monitoring. • Three specimens (Tree No.: PH01, PH02 and PH03) of the protected shrub species of conservation interest Pavetta hongkongensis was transplanted to Area C under Contract 1 of the Project on 20th December 2011. The dead specimen (Tree No.: PH04, due to natural dieback) was remained at its original location.	party on the trees within the Project Area.
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 **January 2012** is scheduled to be conducted in the week of **9 and 23 January 2012**.

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
July 2011 –November 2011	0	0	NA
December 2011	0	0	NA

Table 7-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
July 2011 –November 2011	0	0	NA
December 2011	0	0	NA

Table 7-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
July 2011 –November 2011	0	0	NA
December 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 minimize the generation of waste from his work. Avoidance and minimization of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.

(d) The reuse and recycling of waste shall be practised as far as possible. The recycling 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.

Issues	Environmental Mitigation Measures
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.
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:-

- Construction of box culvert
- Installation of Sheet Piling.
- Trench Excavation
- Formwork erection

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;
- Ensure dust suppression measures are implemented properly;
- Disposal of empty engine oil containers within site area;
- 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 **6th** monthly EM&A report for Contract 2 presenting the monitoring results and inspection findings for the Reporting Period from **1 to 31 December 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 55 Action/Limit Level exceedances, namely 26 Action/ Limit Level exceedances in dissolved oxygen, 20 Action/Limit Level exceedances in turbidity and 9 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, ET and the RE on **1, 7 15, 21 and 29 December 2011**. Furthermore, joint site inspection with the IEC was carried out on **7 December 2011**. No non-compliance was indicated during the site inspection. In general, it was reminded that air mitigation measures such as covering of stockpile and watering at site exit should be maintained especially during dry season. The environmental performance of the Project was therefore considered satisfactory.

10.06 In this Reporting Period, landscape and visual inspection was carried on **2, 15 and 28 December 2011**. The stand-alone of monthly Landscape & Visual Report (**December 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 As excavation works of construction box culvert or a trench, surface runoff or water discharge to local stream course should be key environment aspect issue. The contractor is reminded that mitigation measures for water quality and ecology should be fully implemented.

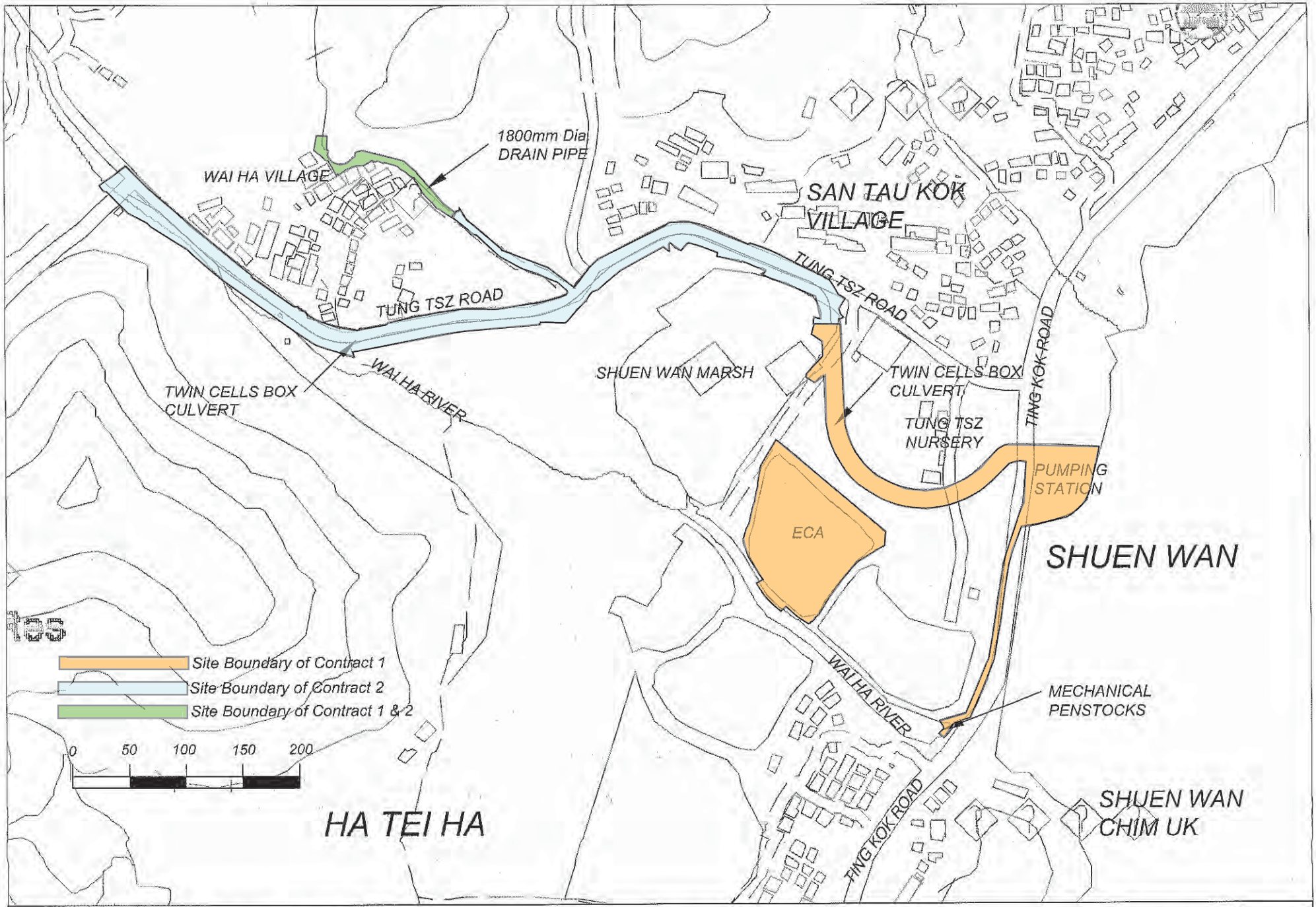
10.09 During dry season, special attention should be paid to the dust mitigation measures to avoid fugitive dust emissions from loose soil surface or haul road. On the other hand, construction noise should be other key environmental issue during sheet-piling process. The noise mitigation measures should be necessary to implement in accordance with EM&A Manual stipulation.

10.10 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.

10.11 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.

Appendix A

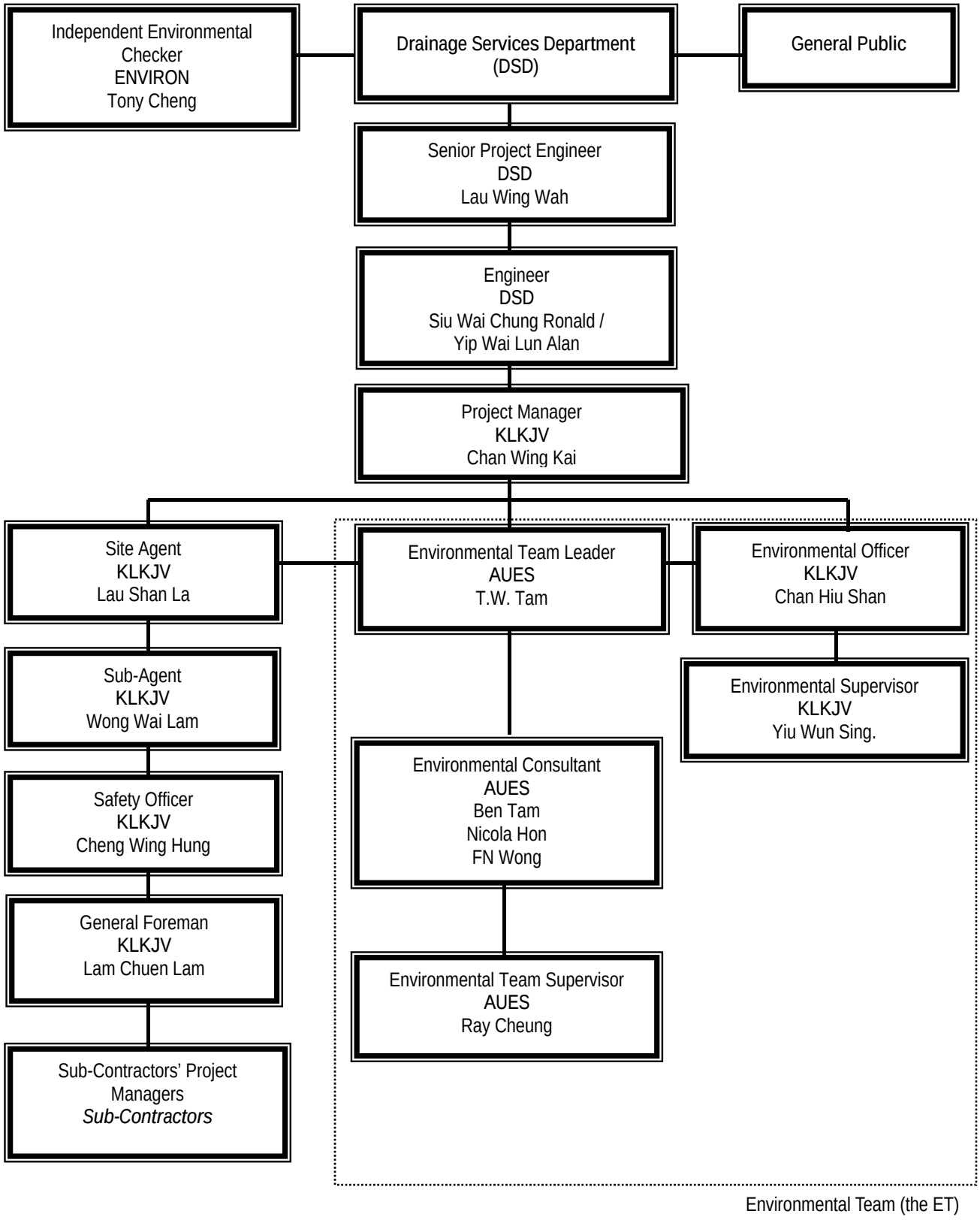
Site Location Plan
(DSD Contract 1 and Contract 2 at Shuen Wan)



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. Lau Shan La	2674 3888	2674 9988
KLKJV	Sub- Agent	Mr. Wong Wai Lam,	2674 3888	2674 9988
KLKJV	Technical Manager	Mr. Yeung Tai Yung	9674 9712	2674 9988
KLKJV	Site Forman	Mr. Lam Chuen Lam	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*

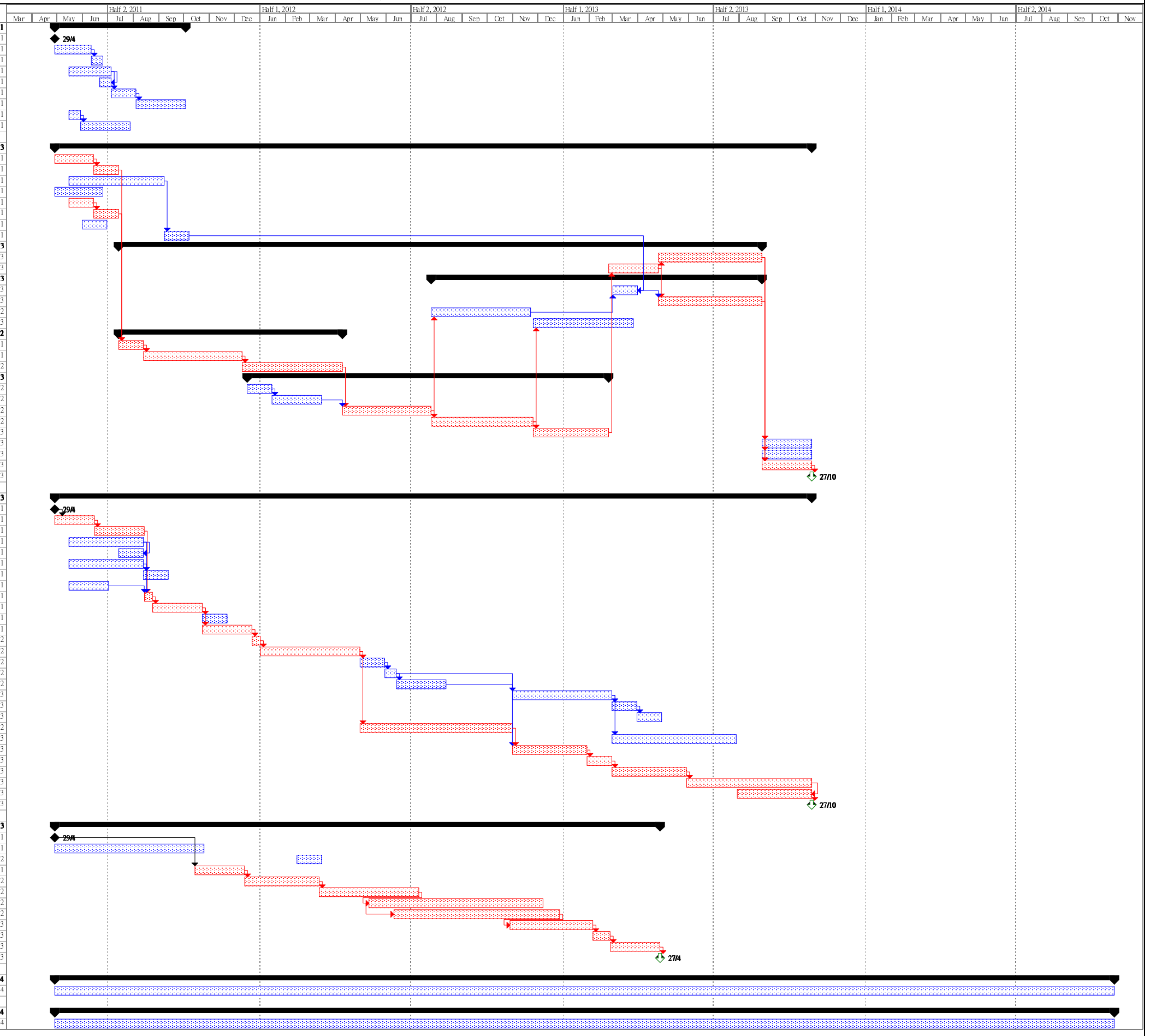
Appendix C

Master and Three Months Rolling Construction Programs

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

MASTER PROGRAMME (Rev. 1)

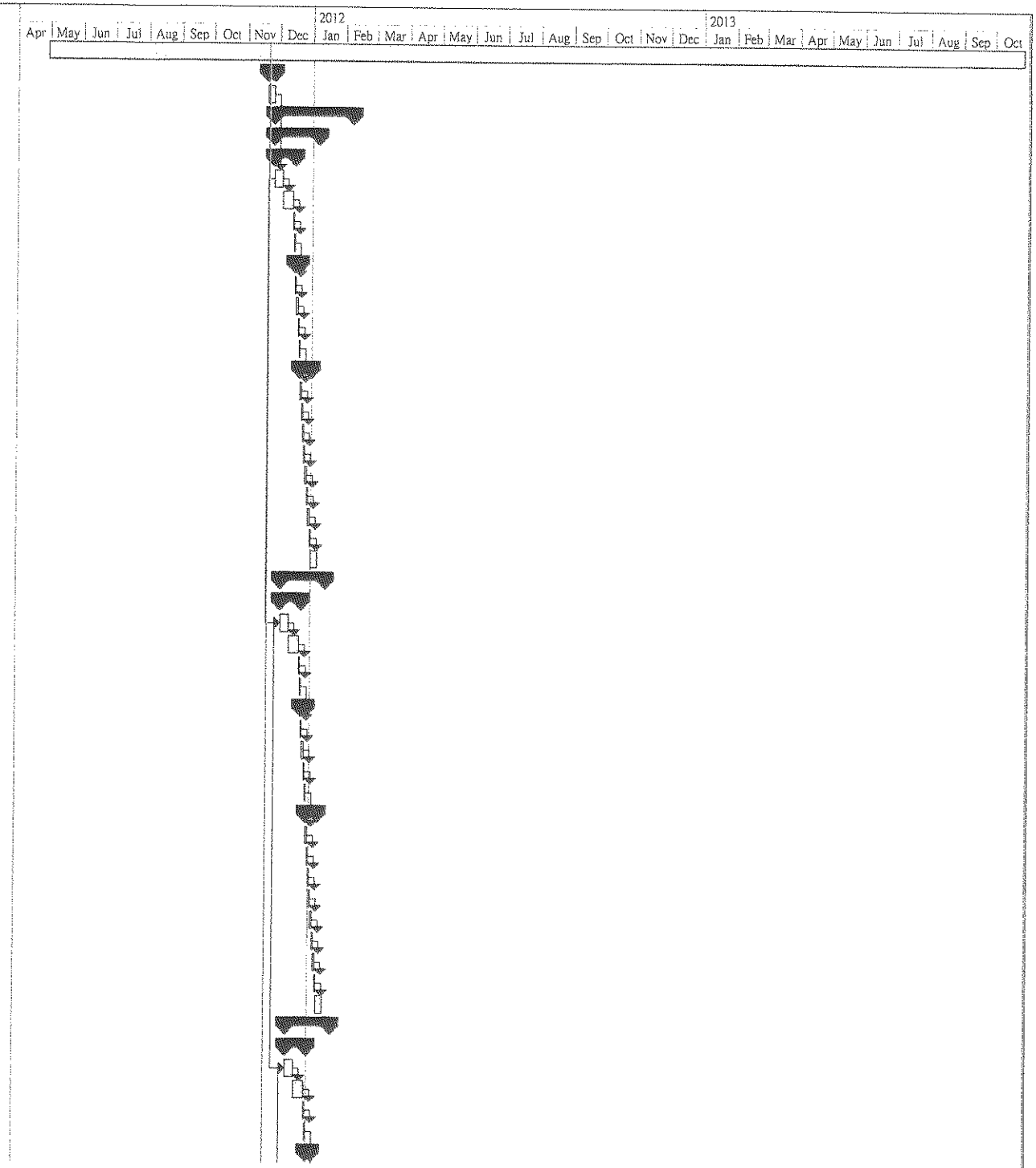
ID	Task Name	Duration	Start	Finish
1	**Preliminary Works**	**158 days**	**Fri 29/4/11**	**Mon 3/10/11**
2	Commencement of Works	0 days	Fri 29/4/11	Fri 29/4/11
3	Site Clearance	44 days	Fri 29/4/11	Sat 11/6/11
4	Record Survey	14 days	Sun 12/6/11	Sat 25/6/11
5	Design & Construction of Hoarding	51 days	Mon 16/5/11	Tue 5/7/11
6	Signboard (Type B)	14 days	Wed 22/6/11	Tue 5/7/11
7	Design & Approval of Engineer's Site Office	30 days	Wed 6/7/11	Thu 4/8/11
8	Construction of Engineer's Site Office	60 days	Fri 5/8/11	Mon 3/10/11
9	Pre-construction Condition Survey	14 days	Mon 16/5/11	Sun 29/5/11
10	Relocation of Existing Shrines (2 Nos.)	60 days	Mon 30/5/11	Thu 28/7/11
11				
12	**Section I (Construction Works in Shuen Wan)**	**913 days**	**Fri 29/4/11**	**Sun 27/10/13**
13	Design of TTA	47 days	Fri 29/4/11	Tue 14/6/11
14	Submission of TTA to TMLG for Approval	30 days	Wed 15/6/11	Thu 14/7/11
15	Excavation Permit	115 days	Mon 16/5/11	Wed 7/9/11
16	Submission & approval of caluclation & MS for BC (including trench ELS&slope)	58 days	Fri 29/4/11	Sat 25/6/11
17	Notify EPD on commencement (one month advance notice)	30 days	Mon 16/5/11	Tue 14/6/11
18	Tree Felling	30 days	Wed 15/6/11	Thu 14/7/11
19	Utility detection and diversion programme	30 days	Wed 1/6/11	Thu 30/6/11
20	Utilities Diversion	30 days	Thu 8/9/11	Fri 7/10/11
21	**Construction of Single Cell (approx. 724m)**	**776 days**	**Fri 15/7/11**	**Wed 28/8/13**
22	Intake of Box Culvert	125 days	Fri 26/4/13	Wed 28/8/13
23	from CH67 to CH100 (including cross road ducts) (Bay 1,2,3)	60 days	Mon 25/2/13	Thu 25/4/13
24	**Section 1**	**399 days**	**Thu 26/7/12**	**Wed 28/8/13**
25	Traffic Arragnement at Tung Tsz Road (CH50 to 270)	30 days	Sat 2/5/13	Sun 31/5/13
26	from CH100 to CH200 (Bay 4,5,6,7,8,9,10,11)	125 days	Fri 26/4/13	Wed 28/8/13
27	Construction of Refuse Collection Point	120 days	Thu 26/7/12	Thu 22/11/12
28	from CH200 to CH300 (including cross road ducts) (Bay 12,13,14,15,16,17,18,19)	121 days	Mon 26/11/12	Tue 26/3/13
29	**Section 2**	**270 days**	**Fri 15/7/11**	**Mon 9/4/12**
30	Traffic Arrangement at Tung Tsz Road	30 days	Fri 15/7/11	Sat 13/8/11
31	from CH300 to CH400 (Bay 20,21,22,23,24,25,26,27)	119 days	Sun 14/8/11	Sat 10/12/11
32	from CH400 to CH500 (Bay 28,29,30,31,32,33,34,35,36)	121 days	Sun 11/12/11	Mon 9/4/12
33	**Section 3**	**436 days**	**Sat 17/12/11**	**Sun 24/2/13**
34	Traffic Arrangement at Tung Tsz Road for crossing connection	30 days	Sat 17/12/11	Sun 15/1/12
35	Cross Box Culvert Connection	60 days	Mon 16/1/12	Thu 15/3/12
36	from CH500 to CH600 (Bay 37,38,39,40,41,42,43,44)	107 days	Tue 10/4/12	Wed 25/7/12
37	from CH600 to CH700 (Bay 45,46,47,48,49,50,51,52)	123 days	Thu 26/7/12	Sun 25/11/12
38	from CH700 to CH724 (Bay 53,54,55)	91 days	Mon 26/11/12	Sun 24/2/13
39	CCTV Inspection	60 days	Thu 29/8/13	Sun 27/10/13
40	Installation of Type 2 Railing at Upstream (CH67 to CH240)	60 days	Thu 29/8/13	Sun 27/10/13
41	Landscape Softwork	60 days	Thu 29/8/13	Sun 27/10/13
42	Completion of Section I	0 days	Sun 27/10/13	Sun 27/10/13
43				
44	**Section II (Construction Works in Shek Wu Wai)**	**913 days**	**Fri 29/4/11**	**Sun 27/10/13**
45	Commence of Works	0 days	Fri 29/4/11	Fri 29/4/11
46	Design of TTA	48 days	Fri 29/4/11	Wed 15/6/11
47	Submission of TTA to TMLG for Approval	60 days	Thu 16/6/11	Sun 14/8/11
48	Excavation Permit	90 days	Mon 16/5/11	Sat 13/8/11
49	Temp. Work Design	30 days	Fri 15/7/11	Sat 13/8/11
50	Site Investigation for Utilities	90 days	Mon 16/5/11	Sat 13/8/11
51	Submit Program for Utilities Divertion	30 days	Sun 14/8/11	Mon 12/9/11
52	Site Clearance and Tree Felling	48 days	Mon 16/5/11	Sat 2/7/11
53	Implement Stage 1 of TTA	10 days	Mon 15/8/11	Wed 24/8/11
54	Construction of Retaining Wall RW3 and RW4	60 days	Thu 25/8/11	Sun 23/10/11
55	Pipe Work	30 days	Mon 24/10/11	Tue 22/11/11
56	Temp. Steel Decking	60 days	Mon 24/10/11	Thu 22/12/11
57	Implement Stage 2 of TTA	10 days	Fri 23/12/11	Sun 1/1/12
58	Construction of Box Culvert along Castle Peak Road (West Bound) including demolition of ex. BC	120 days	Mon 2/1/12	Mon 30/4/12
59	Road Surfacing	30 days	Tue 1/5/12	Wed 30/5/12
60	Implement Stage 3 of TTA	14 days	Thu 31/5/12	Wed 13/6/12
61	Demolish Exisiting Box Culvert (East Bound)	60 days	Thu 14/6/12	Sun 12/8/12
62	Construction of Box Culvert along Castle Peak Road (East Bound)	120 days	Thu 1/11/12	Thu 28/2/13
63	Road Surfacing	30 days	Fri 1/3/13	Sat 30/3/13
64	Reinstate and Remove TTA	30 days	Sun 31/3/13	Mon 29/4/13
65	Utilities Divertion (300dia. Gas Main, 200dia. Water Main, Lighting Cable, CLP cable and 2x Cable TV	184 days	Tue 1/5/12	Wed 31/10/12
66	Utilities Divertion (100dia.Water Main, 4x100dia. NWT Duct, 4x100dia. HCC Duct, 100dia. PCCW Cal	150 days	Fri 1/3/13	Sun 28/7/13
67	Construction of Retaining Wall RW1 and RW2	90 days	Thu 1/11/12	Tue 29/1/13
68	Construction of Access Ramp	30 days	Wed 30/1/13	Thu 28/2/13
69	Installation of Type 2 Railing and Reconstruction of Flood Wall	90 days	Fri 1/3/13	Wed 29/5/13
70	Backfill and Reinstatement	151 days	Thu 30/5/13	Sun 27/10/13
71	Landscape Softwork	90 days	Tue 30/7/13	Sun 27/10/13
72	**Completion of Section II**	0 days	Sun 27/10/13	Sun 27/10/13
73				
74	**Section III (Construction Works in Wai Ha Village)**	**730 days**	**Fri 29/4/11**	**Sat 27/4/13**
75	Commence of Works	0 days	Fri 29/4/11	Fri 29/4/11
76	DSD's Excision	180 days	Fri 29/4/11	Tue 25/10/11
77	Site Clearance	30 days	Wed 15/2/12	Thu 15/3/12
78	Design of Precast Box	60 days	Sat 15/10/11	Tue 13/12/11
79	Submission for Approval	90 days	Wed 14/12/11	Mon 12/3/12
80	Supply Precast Box	120 days	Tue 13/3/12	Tue 10/7/12
81	Construction of Precast Box (approx. 200m)	210 days	Sat 12/5/12	Fri 7/12/12
82	Construction of 225dia. VC Pipe (approx. 200m)	200 days	Mon 11/6/12	Thu 27/12/12
83	Construction of 1500dia. Concrete Pipe (approx. 100m)	100 days	Mon 29/10/12	Tue 5/2/13
84	CCTV inspection of Concrete Pipe	21 days	Wed 6/2/13	Tue 26/2/13
85	Reinstatement Concrete Pavement	60 days	Wed 27/2/13	Sat 27/4/13
86	**Completion of Section III**	0 days	Sat 27/4/13	Sat 27/4/13
87				
88	**Section IV (Portion A1 and A2, Shuen Wan)**	**1278 days**	**Fri 29/4/11**	**Mon 27/10/14**
89	Landscape Establishment Works and preservation & protection of trees	1278 days	Fri 29/4/11	Mon 27/10/14
90				
91	**Section V (Portion B, Sheck Wu Wai)**	**1278 days**	**Fri 29/4/11**	**Mon 27/10/14**
92	Landscape Establishment Works and preservation & protection of trees	1278 days	Fri 29/4/11	Mon 27/10/14



Data Date: 29 April 2011
Printed on : 18 July 2011

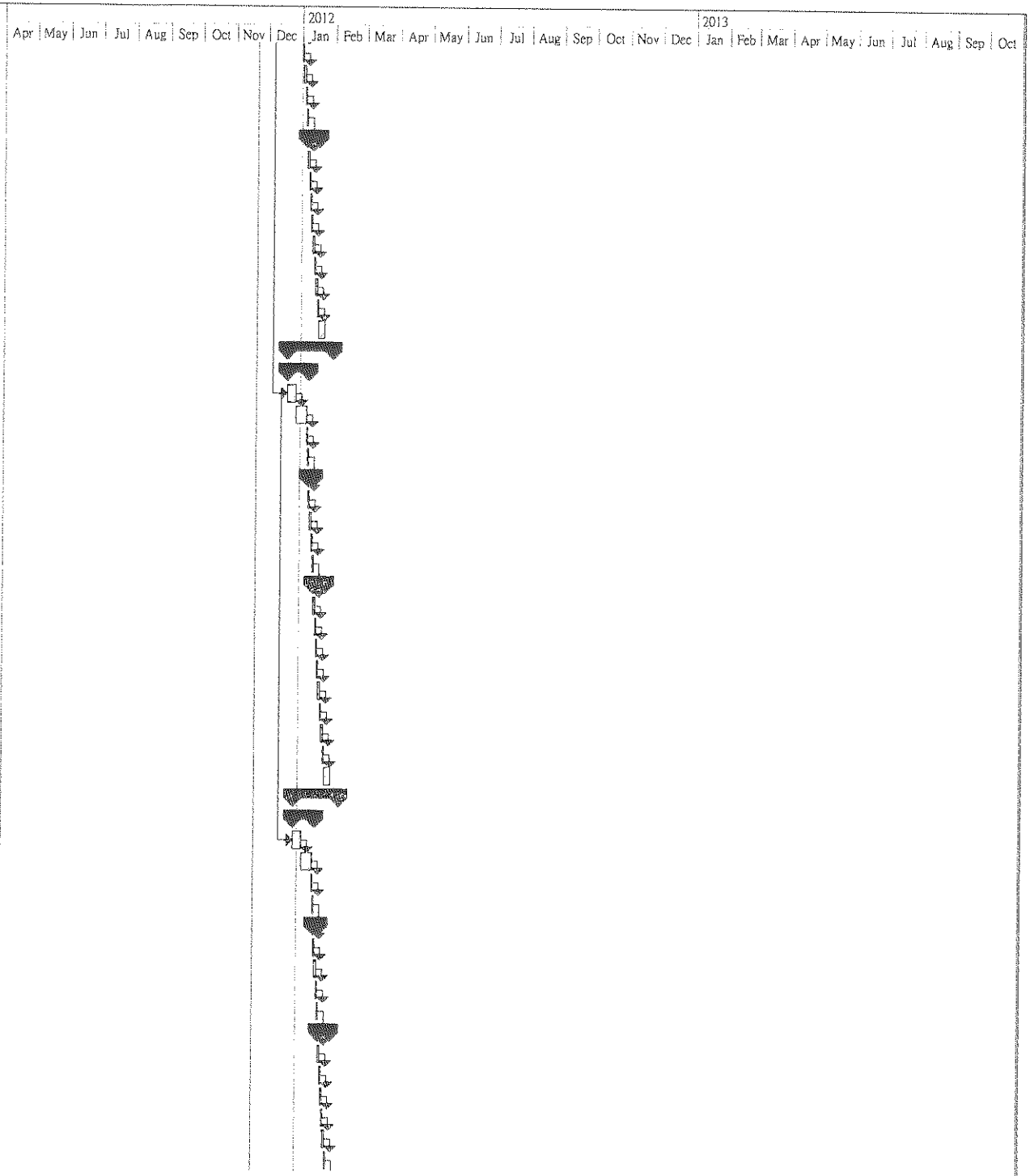
Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

ID	Task Name	Duration	Start	Finish	Predecessors
1	Contract Period	913 days	Fri 11/4/29	Sun 13/10/27	
2	Bay 20, 21, 22	6 days	Sun 11/11/20	Fri 11/11/25	
3	Backfill & removal sheetpile	6 days	Sun 11/11/20	Fri 11/11/25	
4	Bay 23, 24, 25, 26, 27	74 days	Sat 11/11/26	Tue 12/2/7	
5	Bay 23	42 days	Sat 11/11/26	Fri 12/1/6	
6	Excavation, sheetpile & shor	20 days	Sat 11/11/26	Thu 11/12/15	
7	Sheetpile	8 days	Sat 11/11/26	Sat 11/12/3	3
8	Excavation & shoring	10 days	Sun 11/12/4	Tue 11/12/13	7
9	Geotextile & rockfill	1 day	Wed 11/12/14	Wed 11/12/14	8
10	Blinding	1 day	Thu 11/12/15	Thu 11/12/15	9
11	Base slab	5 days	Fri 11/12/16	Tue 11/12/20	
12	formwork	1 day	Fri 11/12/16	Fri 11/12/16	10
13	rebar	2 days	Sat 11/12/17	Sun 11/12/18	12
14	kicker formwork	1 day	Mon 11/12/19	Mon 11/12/19	13
15	concrete	1 day	Tue 11/12/20	Tue 11/12/20	14
16	Wall & top slab	11 days	Wed 11/12/21	Sat 11/12/31	
17	backfill to kicker	2 days	Wed 11/12/21	Thu 11/12/22	15
18	concrete slab	1 day	Fri 11/12/23	Fri 11/12/23	17
19	remove shoring	1 day	Sat 11/12/24	Sat 11/12/24	18
20	wall rebar	1 day	Sun 11/12/25	Sun 11/12/25	19
21	interior formwork	2 days	Mon 11/12/26	Tue 11/12/27	20
22	slab rebar	1 day	Wed 11/12/28	Wed 11/12/28	21
23	exterior formwork	2 days	Thu 11/12/29	Fri 11/12/30	22
24	concrete	1 day	Sat 11/12/31	Sat 11/12/31	23
25	Backfill & removal sheetpile	6 days	Sun 12/1/1	Fri 12/1/6	24
26	Bay 24	42 days	Sun 11/12/4	Sat 12/1/14	
27	Excavation, sheetpile & shor	20 days	Sun 11/12/4	Fri 11/12/23	
28	Sheetpile	8 days	Sun 11/12/4	Sun 11/12/11	7SS+8 days
29	Excavation & shoring	10 days	Mon 11/12/12	Wed 11/12/21	28
30	Geotextile & rockfill	1 day	Thu 11/12/22	Thu 11/12/22	29
31	Blinding	1 day	Fri 11/12/23	Fri 11/12/23	30
32	Base slab	5 days	Sat 11/12/24	Wed 11/12/28	
33	formwork	1 day	Sat 11/12/24	Sat 11/12/24	31
34	rebar	2 days	Sun 11/12/25	Mon 11/12/26	33
35	kicker formwork	1 day	Tue 11/12/27	Tue 11/12/27	34
36	concrete	1 day	Wed 11/12/28	Wed 11/12/28	35
37	Wall & top slab	11 days	Thu 11/12/29	Sun 12/1/8	
38	backfill to kicker	2 days	Thu 11/12/29	Fri 11/12/30	36
39	concrete slab	1 day	Sat 11/12/31	Sat 11/12/31	38
40	remove shoring	1 day	Sun 12/1/1	Sun 12/1/1	39
41	wall rebar	1 day	Mon 12/1/2	Mon 12/1/2	40
42	interior formwork	2 days	Tue 12/1/3	Wed 12/1/4	41
43	slab rebar	1 day	Thu 12/1/5	Thu 12/1/5	42
44	exterior formwork	2 days	Fri 12/1/6	Sat 12/1/7	43
45	concrete	1 day	Sun 12/1/8	Sun 12/1/8	44
46	Backfill & removal sheetpile	6 days	Mon 12/1/9	Sat 12/1/14	45
47	Bay 25	42 days	Mon 11/12/12	Sun 12/1/22	
48	Excavation, sheetpile & shor	20 days	Mon 11/12/12	Sat 11/12/31	
49	Sheetpile	8 days	Mon 11/12/12	Mon 11/12/19	28SS+8 days
50	Excavation & shoring	10 days	Tue 11/12/20	Thu 11/12/29	49
51	Geotextile & rockfill	1 day	Fri 11/12/30	Fri 11/12/30	50
52	Blinding	1 day	Sat 11/12/31	Sat 11/12/31	51
53	Base slab	5 days	Sun 12/1/1	Thu 12/1/5	



Rev. 4

ID	Task Name	Duration	Start	Finish	Predecessors
54	formwork	1 day	Sun 12/1/1	Sun 12/1/1	52
55	rebar	2 days	Mon 12/1/2	Tue 12/1/3	54
56	kicker formwork	1 day	Wed 12/1/4	Wed 12/1/4	55
57	concrete	1 day	Thu 12/1/5	Thu 12/1/5	56
58	**Wall & top slab**	**11 days**	**Fri 12/1/6**	**Mon 12/1/16**	
59	backfill to kicker	2 days	Fri 12/1/6	Sat 12/1/7	57
60	concrete slab	1 day	Sun 12/1/8	Sun 12/1/8	59
61	remove shoring	1 day	Mon 12/1/9	Mon 12/1/9	60
62	wall rebar	1 day	Tue 12/1/10	Tue 12/1/10	61
63	interior formwork	2 days	Wed 12/1/11	Thu 12/1/12	62
64	slab rebar	1 day	Fri 12/1/13	Fri 12/1/13	63
65	exterior formwork	2 days	Sat 12/1/14	Sun 12/1/15	64
66	concrete	1 day	Mon 12/1/16	Mon 12/1/16	65
67	Backfill & removal sheetpile	6 days	Tue 12/1/17	Sun 12/1/22	66
68	**Bay 26**	**42 days**	**Tue 11/12/20**	**Mon 12/1/30**	
69	**Excavation, sheetpile & shor**	**20 days**	**Tue 11/12/20**	**Sun 12/1/8**	
70	Sheetpile	8 days	Tue 11/12/20	Tue 11/12/27	49SS+8 days
71	Excavation & shoring	10 days	Wed 11/12/28	Fri 12/1/6	70
72	Geotextile & rockfill	1 day	Sat 12/1/7	Sat 12/1/7	71
73	Blinding	1 day	Sun 12/1/8	Sun 12/1/8	72
74	**Base slab**	**5 days**	**Mon 12/1/9**	**Fri 12/1/13**	
75	formwork	1 day	Mon 12/1/9	Mon 12/1/9	73
76	rebar	2 days	Tue 12/1/10	Wed 12/1/11	75
77	kicker formwork	1 day	Thu 12/1/12	Thu 12/1/12	76
78	concrete	1 day	Fri 12/1/13	Fri 12/1/13	77
79	**Wall & top slab**	**11 days**	**Sat 12/1/14**	**Tue 12/1/24**	
80	backfill to kicker	2 days	Sat 12/1/14	Sun 12/1/15	78
81	concrete slab	1 day	Mon 12/1/16	Mon 12/1/16	80
82	remove shoring	1 day	Tue 12/1/17	Tue 12/1/17	81
83	wall rebar	1 day	Wed 12/1/18	Wed 12/1/18	82
84	interior formwork	2 days	Thu 12/1/19	Fri 12/1/20	83
85	slab rebar	1 day	Sat 12/1/21	Sat 12/1/21	84
86	exterior formwork	2 days	Sun 12/1/22	Mon 12/1/23	85
87	concrete	1 day	Tue 12/1/24	Tue 12/1/24	86
88	Backfill & removal sheetpile	6 days	Wed 12/1/25	Mon 12/1/30	87
89	**Bay 27**	**42 days**	**Wed 11/12/28**	**Tue 12/2/7**	
90	**Excavation, sheetpile & shor**	**20 days**	**Wed 11/12/28**	**Mon 12/1/16**	
91	Sheetpile	8 days	Wed 11/12/28	Wed 12/1/4	70SS+8 days
92	Excavation & shoring	10 days	Thu 12/1/5	Sat 12/1/14	91
93	Geotextile & rockfill	1 day	Sun 12/1/15	Sun 12/1/15	92
94	Blinding	1 day	Mon 12/1/16	Mon 12/1/16	93
95	**Base slab**	**5 days**	**Tue 12/1/17**	**Sat 12/1/21**	
96	formwork	1 day	Tue 12/1/17	Tue 12/1/17	94
97	rebar	2 days	Wed 12/1/18	Thu 12/1/19	96
98	kicker formwork	1 day	Fri 12/1/20	Fri 12/1/20	97
99	concrete	1 day	Sat 12/1/21	Sat 12/1/21	98
100	**Wall & top slab**	**11 days**	**Sun 12/1/22**	**Wed 12/2/1**	
101	backfill to kicker	2 days	Sun 12/1/22	Mon 12/1/23	99
102	concrete slab	1 day	Tue 12/1/24	Tue 12/1/24	101
103	remove shoring	1 day	Wed 12/1/25	Wed 12/1/25	102
104	wall rebar	1 day	Thu 12/1/26	Thu 12/1/26	103
105	interior formwork	2 days	Fri 12/1/27	Sat 12/1/28	104
106	slab rebar	1 day	Sun 12/1/29	Sun 12/1/29	105



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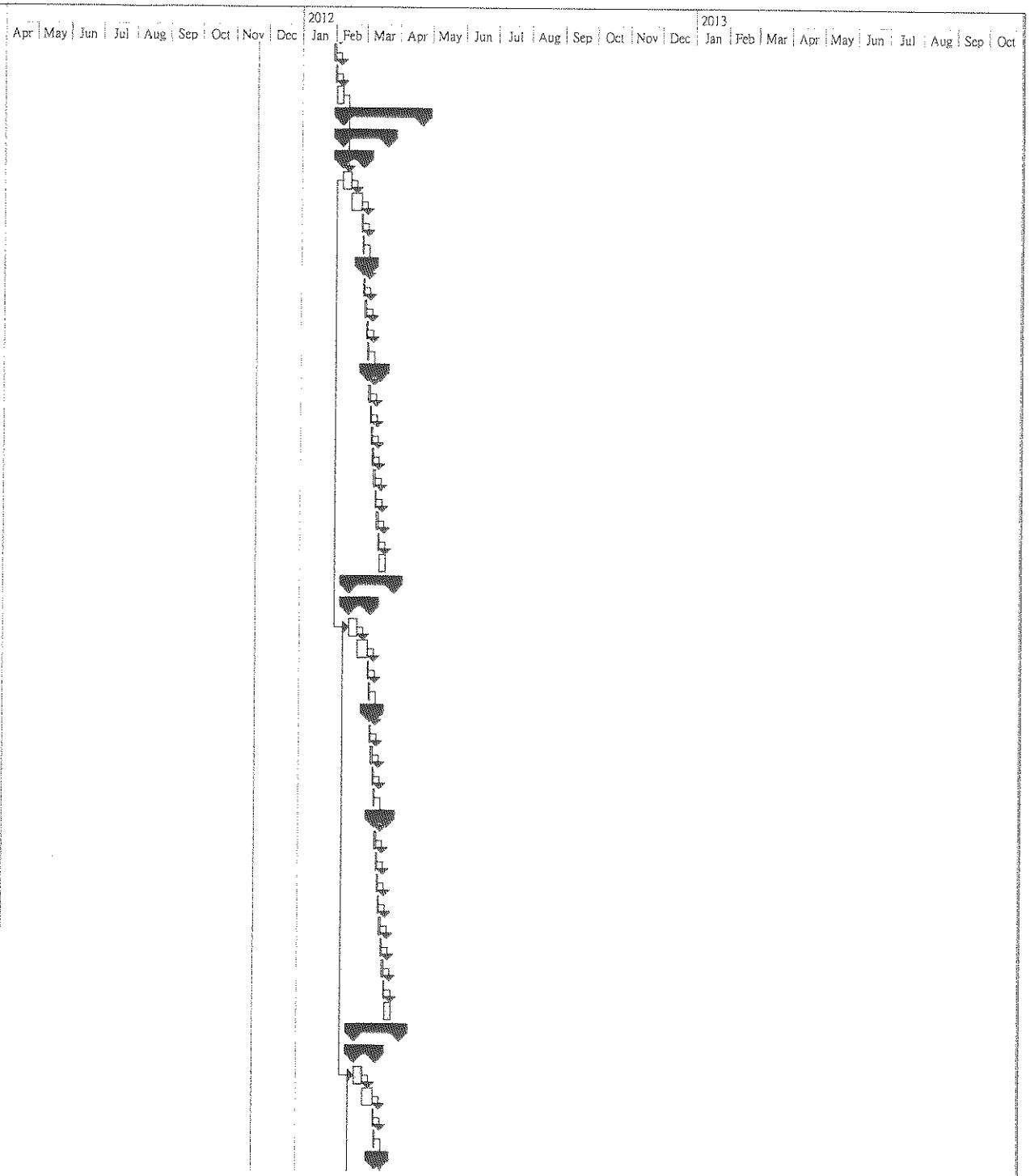
ID	Task Name	Duration	Start	Finish	Predecessors
107	exterior formwork	2 days	Mon 12/1/30	Tue 12/1/31	106
108	concrete	1 day	Wed 12/2/1	Wed 12/2/1	107
109	Backfill & removal sheetpile	6 days	Thu 12/2/2	Tue 12/2/7	108
110	**Bay 28, 29, 30, 31, 32**	**74 days**	**Wed 12/2/8**	**Sat 12/4/21**	
111	**Bay 28**	**42 days**	**Wed 12/2/8**	**Tue 12/3/20**	
112	**Excavation, sheetpile & shor**	**20 days**	**Wed 12/2/8**	**Mon 12/2/27**	
113	Sheetpile	8 days	Wed 12/2/8	Wed 12/2/15	109
114	Excavation & shoring	10 days	Thu 12/2/16	Sat 12/2/25	113
115	Geotextile & rockfill	1 day	Sun 12/2/26	Sun 12/2/26	114
116	Blinding	1 day	Mon 12/2/27	Mon 12/2/27	115
117	**Base slab**	**5 days**	**Tue 12/2/28**	**Sat 12/3/3**	
118	formwork	1 day	Tue 12/2/28	Tue 12/2/28	116
119	rebar	2 days	Wed 12/2/29	Thu 12/3/1	118
120	kicker formwork	1 day	Fri 12/3/2	Fri 12/3/2	119
121	concrete	1 day	Sat 12/3/3	Sat 12/3/3	120
122	**Wall & top slab**	**11 days**	**Sun 12/3/4**	**Wed 12/3/14**	
123	backfill to kicker	2 days	Sun 12/3/4	Mon 12/3/5	121
124	concrete slab	1 day	Tue 12/3/6	Tue 12/3/6	123
125	remove shoring	1 day	Wed 12/3/7	Wed 12/3/7	124
126	wall rebar	1 day	Thu 12/3/8	Thu 12/3/8	125
127	interior formwork	2 days	Fri 12/3/9	Sat 12/3/10	126
128	slab rebar	1 day	Sun 12/3/11	Sun 12/3/11	127
129	exterior formwork	2 days	Mon 12/3/12	Tue 12/3/13	128
130	concrete	1 day	Wed 12/3/14	Wed 12/3/14	129
131	Backfill & removal sheetpile	6 days	Thu 12/3/15	Tue 12/3/20	130
132	**Bay 29**	**42 days**	**Thu 12/2/16**	**Wed 12/3/28**	
133	**Excavation, sheetpile & shor**	**20 days**	**Thu 12/2/16**	**Tue 12/3/6**	
134	Sheetpile	8 days	Thu 12/2/16	Thu 12/2/23	113SS+8 days
135	Excavation & shoring	10 days	Fri 12/2/24	Sun 12/3/4	134
136	Geotextile & rockfill	1 day	Mon 12/3/5	Mon 12/3/5	135
137	Blinding	1 day	Tue 12/3/6	Tue 12/3/6	136
138	**Base slab**	**5 days**	**Wed 12/3/7**	**Sun 12/3/11**	
139	formwork	1 day	Wed 12/3/7	Wed 12/3/7	137
140	rebar	2 days	Thu 12/3/8	Fri 12/3/9	139
141	kicker formwork	1 day	Sat 12/3/10	Sat 12/3/10	140
142	concrete	1 day	Sun 12/3/11	Sun 12/3/11	141
143	**Wall & top slab**	**11 days**	**Mon 12/3/12**	**Thu 12/3/22**	
144	backfill to kicker	2 days	Mon 12/3/12	Tue 12/3/13	142
145	concrete slab	1 day	Wed 12/3/14	Wed 12/3/14	144
146	remove shoring	1 day	Thu 12/3/15	Thu 12/3/15	145
147	wall rebar	1 day	Fri 12/3/16	Fri 12/3/16	146
148	interior formwork	2 days	Sat 12/3/17	Sun 12/3/18	147
149	slab rebar	1 day	Mon 12/3/19	Mon 12/3/19	148
150	exterior formwork	2 days	Tue 12/3/20	Wed 12/3/21	149
151	concrete	1 day	Thu 12/3/22	Thu 12/3/22	150
152	Backfill & removal sheetpile	6 days	Fri 12/3/23	Wed 12/3/28	151
153	**Bay 30**	**42 days**	**Fri 12/2/24**	**Thu 12/4/5**	
154	**Excavation, sheetpile & shor**	**20 days**	**Fri 12/2/24**	**Wed 12/3/14**	
155	Sheetpile	8 days	Fri 12/2/24	Fri 12/3/2	134SS+8 days
156	Excavation & shoring	10 days	Sat 12/3/3	Mon 12/3/12	155
157	Geotextile & rockfill	1 day	Tue 12/3/13	Tue 12/3/13	156
158	Blinding	1 day	Wed 12/3/14	Wed 12/3/14	157
159	**Base slab**	**5 days**	**Thu 12/3/15**	**Mon 12/3/19**	



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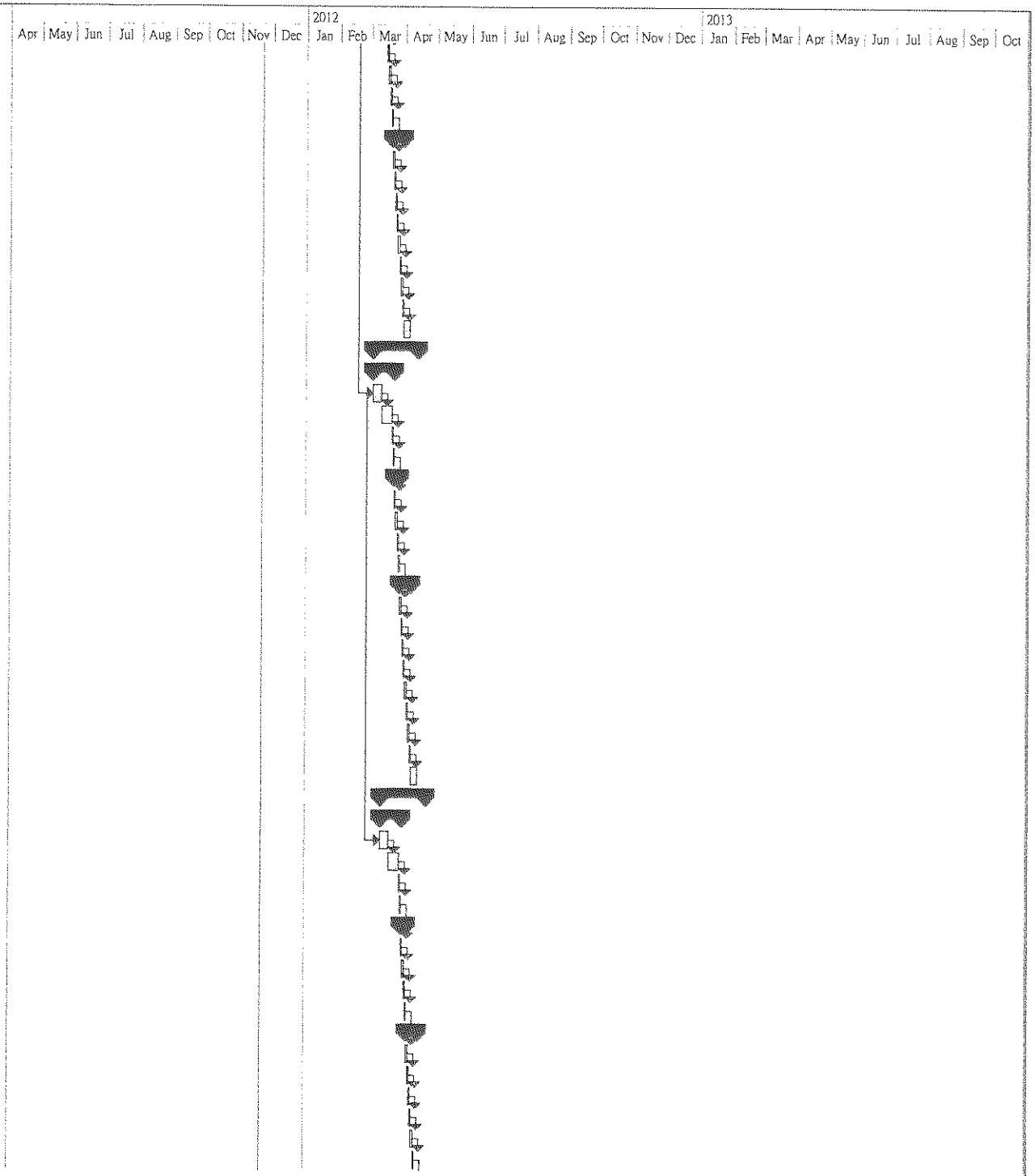
ID	Task Name	Duration	Start	Finish	Predecessors
160	formwork	1 day	Thu 12/3/15	Thu 12/3/15	158
161	rebar	2 days	Fri 12/3/16	Sat 12/3/17	160
162	kicker formwork	1 day	Sun 12/3/18	Sun 12/3/18	161
163	concrete	1 day	Mon 12/3/19	Mon 12/3/19	162
164	**Wall & top slab**	**11 days**	**Tue 12/3/20**	**Fri 12/3/30**	
165	backfill to kicker	2 days	Tue 12/3/20	Wed 12/3/21	163
166	concrete slab	1 day	Thu 12/3/22	Thu 12/3/22	165
167	remove shoring	1 day	Fri 12/3/23	Fri 12/3/23	166
168	wall rebar	1 day	Sat 12/3/24	Sat 12/3/24	167
169	interior formwork	2 days	Sun 12/3/25	Mon 12/3/26	168
170	slab rebar	1 day	Tue 12/3/27	Tue 12/3/27	169
171	exterior formwork	2 days	Wed 12/3/28	Thu 12/3/29	170
172	concrete	1 day	Fri 12/3/30	Fri 12/3/30	171
173	Backfill & removal sheetpile	6 days	Sat 12/3/31	Thu 12/4/5	172
174	Bay 31	42 days	Sat 12/3/3	Fri 12/4/13	
175	**Excavation, sheetpile & shor**	**20 days**	**Sat 12/3/3**	**Thu 12/3/22**	
176	Sheetpile	8 days	Sat 12/3/3	Sat 12/3/10	155SS+8 days
177	Excavation & shoring	10 days	Sun 12/3/11	Tue 12/3/20	176
178	Geotextile & rockfill	1 day	Wed 12/3/21	Wed 12/3/21	177
179	Blinding	1 day	Thu 12/3/22	Thu 12/3/22	178
180	**Base slab**	**5 days**	**Fri 12/3/23**	**Tue 12/3/27**	
181	formwork	1 day	Fri 12/3/23	Fri 12/3/23	179
182	rebar	2 days	Sat 12/3/24	Sun 12/3/25	181
183	kicker formwork	1 day	Mon 12/3/26	Mon 12/3/26	182
184	concrete	1 day	Tue 12/3/27	Tue 12/3/27	183
185	**Wall & top slab**	**11 days**	**Wed 12/3/28**	**Sat 12/4/7**	
186	backfill to kicker	2 days	Wed 12/3/28	Thu 12/3/29	184
187	concrete slab	1 day	Fri 12/3/30	Fri 12/3/30	186
188	remove shoring	1 day	Sat 12/3/31	Sat 12/3/31	187
189	wall rebar	1 day	Sun 12/4/1	Sun 12/4/1	188
190	interior formwork	2 days	Mon 12/4/2	Tue 12/4/3	189
191	slab rebar	1 day	Wed 12/4/4	Wed 12/4/4	190
192	exterior formwork	2 days	Thu 12/4/5	Fri 12/4/6	191
193	concrete	1 day	Sat 12/4/7	Sat 12/4/7	192
194	Backfill & removal sheetpile	6 days	Sun 12/4/8	Fri 12/4/13	193
195	Bay 32	42 days	Sun 12/3/11	Sat 12/4/21	
196	**Excavation, sheetpile & shor**	**20 days**	**Sun 12/3/11**	**Fri 12/3/30**	
197	Sheetpile	8 days	Sun 12/3/11	Sun 12/3/18	176SS+8 days
198	Excavation & shoring	10 days	Mon 12/3/19	Wed 12/3/28	197
199	Geotextile & rockfill	1 day	Thu 12/3/29	Thu 12/3/29	198
200	Blinding	1 day	Fri 12/3/30	Fri 12/3/30	199
201	**Base slab**	**5 days**	**Sat 12/3/31**	**Wed 12/4/4**	
202	formwork	1 day	Sat 12/3/31	Sat 12/3/31	200
203	rebar	2 days	Sun 12/4/1	Mon 12/4/2	202
204	kicker formwork	1 day	Tue 12/4/3	Tue 12/4/3	203
205	concrete	1 day	Wed 12/4/4	Wed 12/4/4	204
206	**Wall & top slab**	**11 days**	**Thu 12/4/5**	**Sun 12/4/15**	
207	backfill to kicker	2 days	Thu 12/4/5	Fri 12/4/6	205
208	concrete slab	1 day	Sat 12/4/7	Sat 12/4/7	207
209	remove shoring	1 day	Sun 12/4/8	Sun 12/4/8	208
210	wall rebar	1 day	Mon 12/4/9	Mon 12/4/9	209
211	interior formwork	2 days	Tue 12/4/10	Wed 12/4/11	210
212	slab rebar	1 day	Thu 12/4/12	Thu 12/4/12	211



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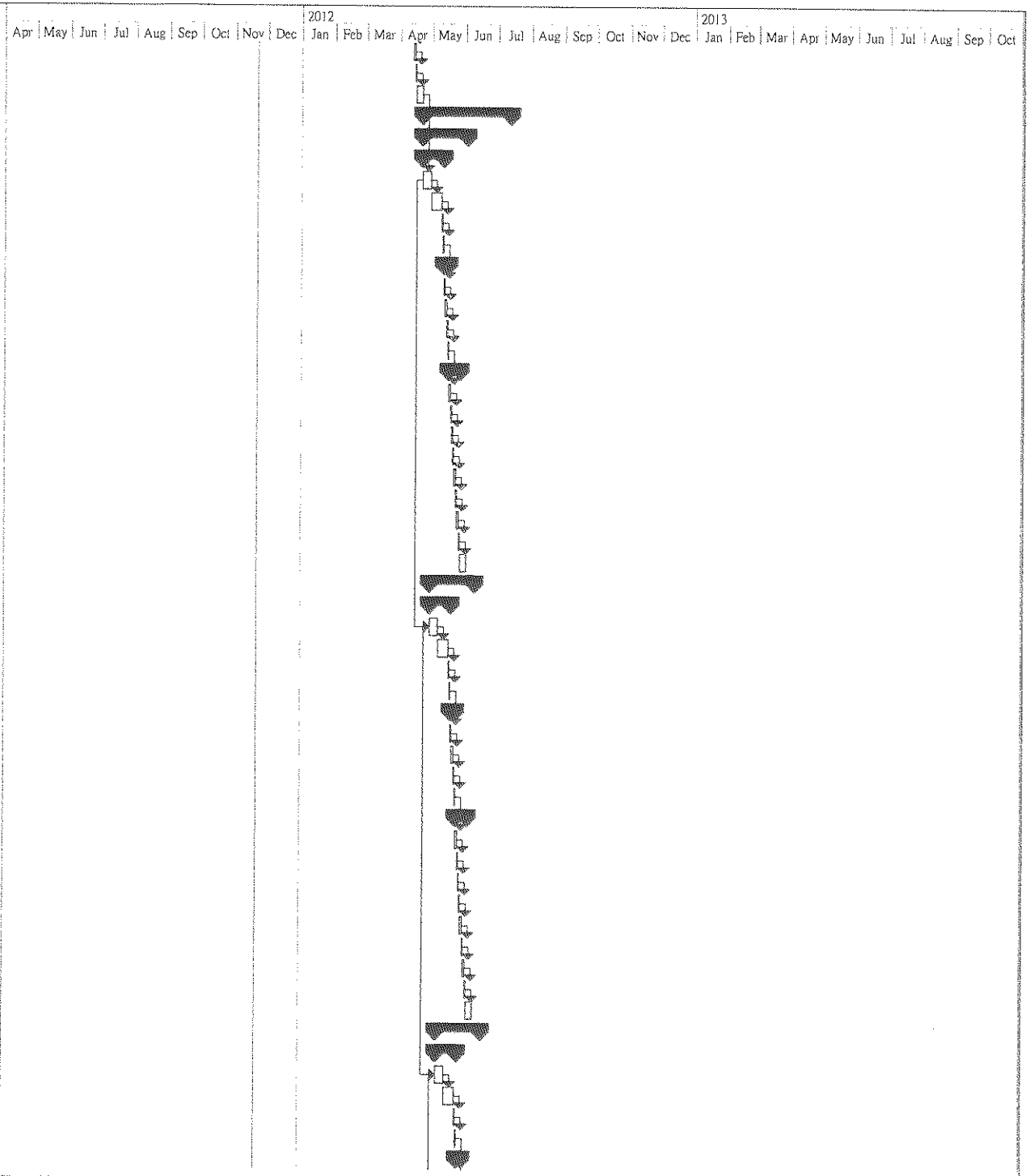
ID	Task Name	Duration	Start	Finish	Predecessors
213	exterior formwork	2 days	Fri 12/4/13	Sat 12/4/14	212
214	concrete	1 day	Sun 12/4/15	Sun 12/4/15	213
215	Backfill & removal sheetpile	6 days	Mon 12/4/16	Sat 12/4/21	214
216	**Bay 33, 34, 35, 36, 37, 38**	**82 days**	**Sun 12/4/22**	**Thu 12/7/12**	
217	**Bay 33**	**42 days**	**Sun 12/4/22**	**Sat 12/6/2**	
218	**Excavation, sheetpile & shor**	**20 days**	**Sun 12/4/22**	**Fri 12/5/11**	
219	Sheetpile	8 days	Sun 12/4/22	Sun 12/4/29	215
220	Excavation & shoring	10 days	Mon 12/4/30	Wed 12/5/9	219
221	Geotextile & rockfill	1 day	Thu 12/5/10	Thu 12/5/10	220
222	Blinding	1 day	Fri 12/5/11	Fri 12/5/11	221
223	**Base slab**	**5 days**	**Sat 12/5/12**	**Wed 12/5/16**	
224	formwork	1 day	Sat 12/5/12	Sat 12/5/12	222
225	rebar	2 days	Sun 12/5/13	Mon 12/5/14	224
226	kicker formwork	1 day	Tue 12/5/15	Tue 12/5/15	225
227	concrete	1 day	Wed 12/5/16	Wed 12/5/16	226
228	**Wall & top slab**	**11 days**	**Thu 12/5/17**	**Sun 12/5/27**	
229	backfill to kicker	2 days	Thu 12/5/17	Fri 12/5/18	227
230	concrete slab	1 day	Sat 12/5/19	Sat 12/5/19	229
231	remove shoring	1 day	Sun 12/5/20	Sun 12/5/20	230
232	wall rebar	1 day	Mon 12/5/21	Mon 12/5/21	231
233	interior formwork	2 days	Tue 12/5/22	Wed 12/5/23	232
234	slab rebar	1 day	Thu 12/5/24	Thu 12/5/24	233
235	exterior formwork	2 days	Fri 12/5/25	Sat 12/5/26	234
236	concrete	1 day	Sun 12/5/27	Sun 12/5/27	235
237	Backfill & removal sheetpile	6 days	Mon 12/5/28	Sat 12/6/2	236
238	**Bay 34**	**42 days**	**Mon 12/4/30**	**Sun 12/6/10**	
239	**Excavation, sheetpile & shor**	**20 days**	**Mon 12/4/30**	**Sat 12/5/19**	
240	Sheetpile	8 days	Mon 12/4/30	Mon 12/5/7	219SS+8 days
241	Excavation & shoring	10 days	Tue 12/5/8	Thu 12/5/17	240
242	Geotextile & rockfill	1 day	Fri 12/5/18	Fri 12/5/18	241
243	Blinding	1 day	Sat 12/5/19	Sat 12/5/19	242
244	**Base slab**	**5 days**	**Sun 12/5/20**	**Thu 12/5/24**	
245	formwork	1 day	Sun 12/5/20	Sun 12/5/20	243
246	rebar	2 days	Mon 12/5/21	Tue 12/5/22	245
247	kicker formwork	1 day	Wed 12/5/23	Wed 12/5/23	246
248	concrete	1 day	Thu 12/5/24	Thu 12/5/24	247
249	**Wall & top slab**	**11 days**	**Fri 12/5/25**	**Mon 12/6/4**	
250	backfill to kicker	2 days	Fri 12/5/25	Sat 12/5/26	248
251	concrete slab	1 day	Sun 12/5/27	Sun 12/5/27	250
252	remove shoring	1 day	Mon 12/5/28	Mon 12/5/28	251
253	wall rebar	1 day	Tue 12/5/29	Tue 12/5/29	252
254	interior formwork	2 days	Wed 12/5/30	Thu 12/5/31	253
255	slab rebar	1 day	Fri 12/6/1	Fri 12/6/1	254
256	exterior formwork	2 days	Sat 12/6/2	Sun 12/6/3	255
257	concrete	1 day	Mon 12/6/4	Mon 12/6/4	256
258	Backfill & removal sheetpile	6 days	Tue 12/6/5	Sun 12/6/10	257
259	**Bay 35**	**42 days**	**Tue 12/5/8**	**Mon 12/6/18**	
260	**Excavation, sheetpile & shor**	**20 days**	**Tue 12/5/8**	**Sun 12/5/27**	
261	Sheetpile	8 days	Tue 12/5/8	Tue 12/5/15	240SS+8 days
262	Excavation & shoring	10 days	Wed 12/5/16	Fri 12/5/25	261
263	Geotextile & rockfill	1 day	Sat 12/5/26	Sat 12/5/26	262
264	Blinding	1 day	Sun 12/5/27	Sun 12/5/27	263
265	**Base slab**	**5 days**	**Mon 12/5/28**	**Fri 12/6/1**	



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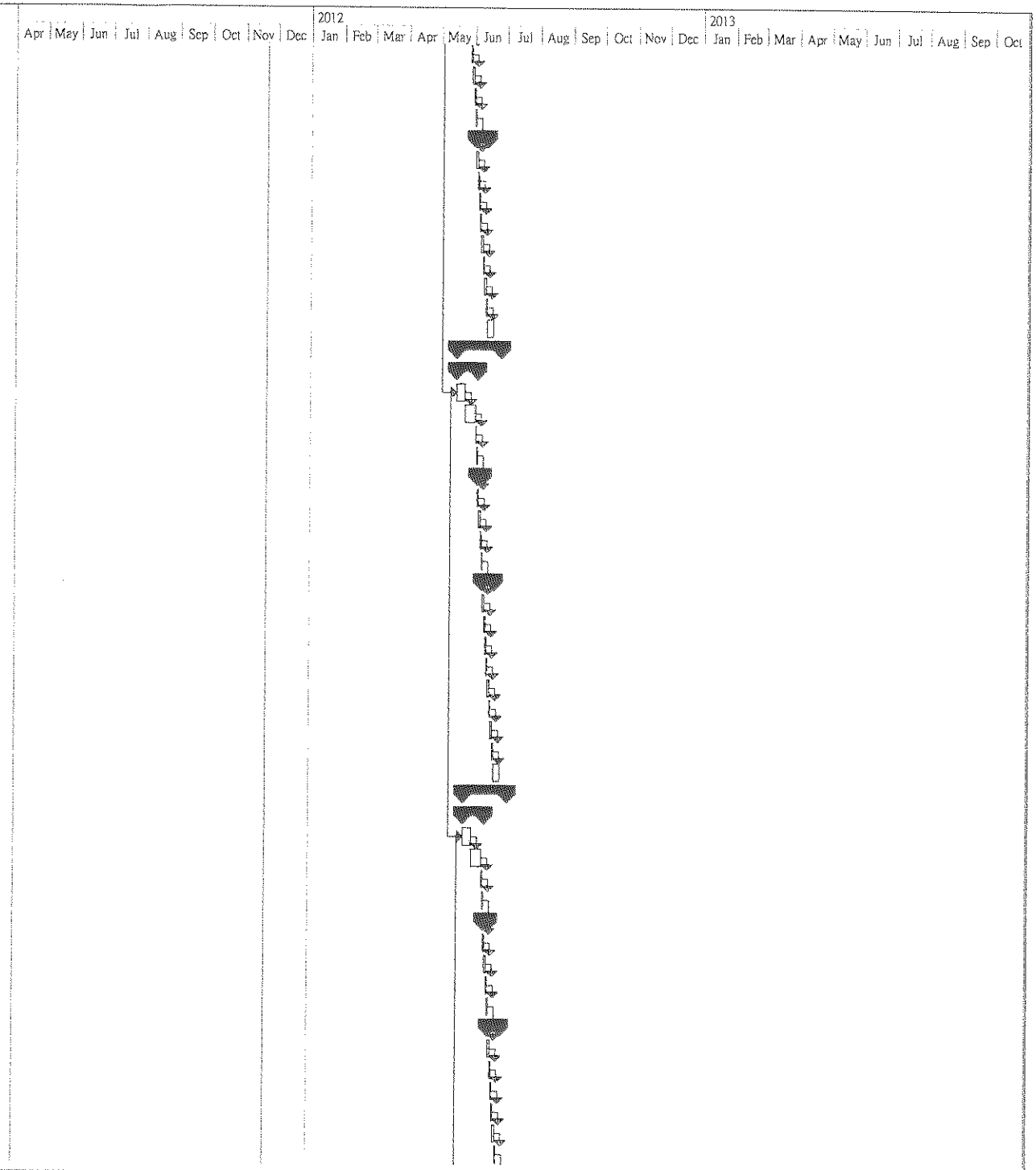
ID	Task Name	Duration	Start	Finish	Predecessors
266	formwork	1 day	Mon 12/5/28	Mon 12/5/28	264
267	rebar	2 days	Tue 12/5/29	Wed 12/5/30	266
268	kicker formwork	1 day	Thu 12/5/31	Thu 12/5/31	267
269	concrete	1 day	Fri 12/6/1	Fri 12/6/1	268
270	**Wall & top slab**	**11 days**	**Sat 12/6/2**	**Tue 12/6/12**	
271	backfill to kicker	2 days	Sat 12/6/2	Sun 12/6/3	269
272	concrete slab	1 day	Mon 12/6/4	Mon 12/6/4	271
273	remove shoring	1 day	Tue 12/6/5	Tue 12/6/5	272
274	wall rebar	1 day	Wed 12/6/6	Wed 12/6/6	273
275	interior formwork	2 days	Thu 12/6/7	Fri 12/6/8	274
276	slab rebar	1 day	Sat 12/6/9	Sat 12/6/9	275
277	exterior formwork	2 days	Sun 12/6/10	Mon 12/6/11	276
278	concrete	1 day	Tue 12/6/12	Tue 12/6/12	277
279	Backfill & removal sheetpile	6 days	Wed 12/6/13	Mon 12/6/18	278
280	**Bay 36**	**42 days**	**Wed 12/5/16**	**Tue 12/6/26**	
281	**Excavation, sheetpile & shor**	**20 days**	**Wed 12/5/16**	**Mon 12/6/4**	
282	Sheetpile	8 days	Wed 12/5/16	Wed 12/5/23	261SS+8 days
283	Excavation & shoring	10 days	Thu 12/5/24	Sat 12/6/2	282
284	Geotextile & rockfill	1 day	Sun 12/6/3	Sun 12/6/3	283
285	Blinding	1 day	Mon 12/6/4	Mon 12/6/4	284
286	**Base slab**	**5 days**	**Tue 12/6/5**	**Sat 12/6/9**	
287	formwork	1 day	Tue 12/6/5	Tue 12/6/5	285
288	rebar	2 days	Wed 12/6/6	Thu 12/6/7	287
289	kicker formwork	1 day	Fri 12/6/8	Fri 12/6/8	288
290	concrete	1 day	Sat 12/6/9	Sat 12/6/9	289
291	**Wall & top slab**	**11 days**	**Sun 12/6/10**	**Wed 12/6/20**	
292	backfill to kicker	2 days	Sun 12/6/10	Mon 12/6/11	290
293	concrete slab	1 day	Tue 12/6/12	Tue 12/6/12	292
294	remove shoring	1 day	Wed 12/6/13	Wed 12/6/13	293
295	wall rebar	1 day	Thu 12/6/14	Thu 12/6/14	294
296	interior formwork	2 days	Fri 12/6/15	Sat 12/6/16	295
297	slab rebar	1 day	Sun 12/6/17	Sun 12/6/17	296
298	exterior formwork	2 days	Mon 12/6/18	Tue 12/6/19	297
299	concrete	1 day	Wed 12/6/20	Wed 12/6/20	298
300	Backfill & removal sheetpile	6 days	Thu 12/6/21	Tue 12/6/26	299
301	**Bay 37**	**41 days**	**Thu 12/5/24**	**Tue 12/7/3**	
302	**Excavation, sheetpile & shor**	**20 days**	**Thu 12/5/24**	**Tue 12/6/12**	
303	Sheetpile	8 days	Thu 12/5/24	Thu 12/5/31	282SS+8 days
304	Excavation & shoring	10 days	Fri 12/6/1	Sun 12/6/10	303
305	Geotextile & rockfill	1 day	Mon 12/6/11	Mon 12/6/11	304
306	Blinding	1 day	Tue 12/6/12	Tue 12/6/12	305
307	**Base slab**	**5 days**	**Wed 12/6/13**	**Sun 12/6/17**	
308	formwork	1 day	Wed 12/6/13	Wed 12/6/13	306
309	rebar	2 days	Thu 12/6/14	Fri 12/6/15	308
310	kicker formwork	1 day	Sat 12/6/16	Sat 12/6/16	309
311	concrete	1 day	Sun 12/6/17	Sun 12/6/17	310
312	**Wall & top slab**	**11 days**	**Mon 12/6/18**	**Thu 12/6/28**	
313	backfill to kicker	2 days	Mon 12/6/18	Tue 12/6/19	311
314	concrete slab	1 day	Wed 12/6/20	Wed 12/6/20	313
315	remove shoring	1 day	Thu 12/6/21	Thu 12/6/21	314
316	wall rebar	1 day	Fri 12/6/22	Fri 12/6/22	315
317	interior formwork	2 days	Sat 12/6/23	Sun 12/6/24	316
318	slab rebar	1 day	Mon 12/6/25	Mon 12/6/25	317



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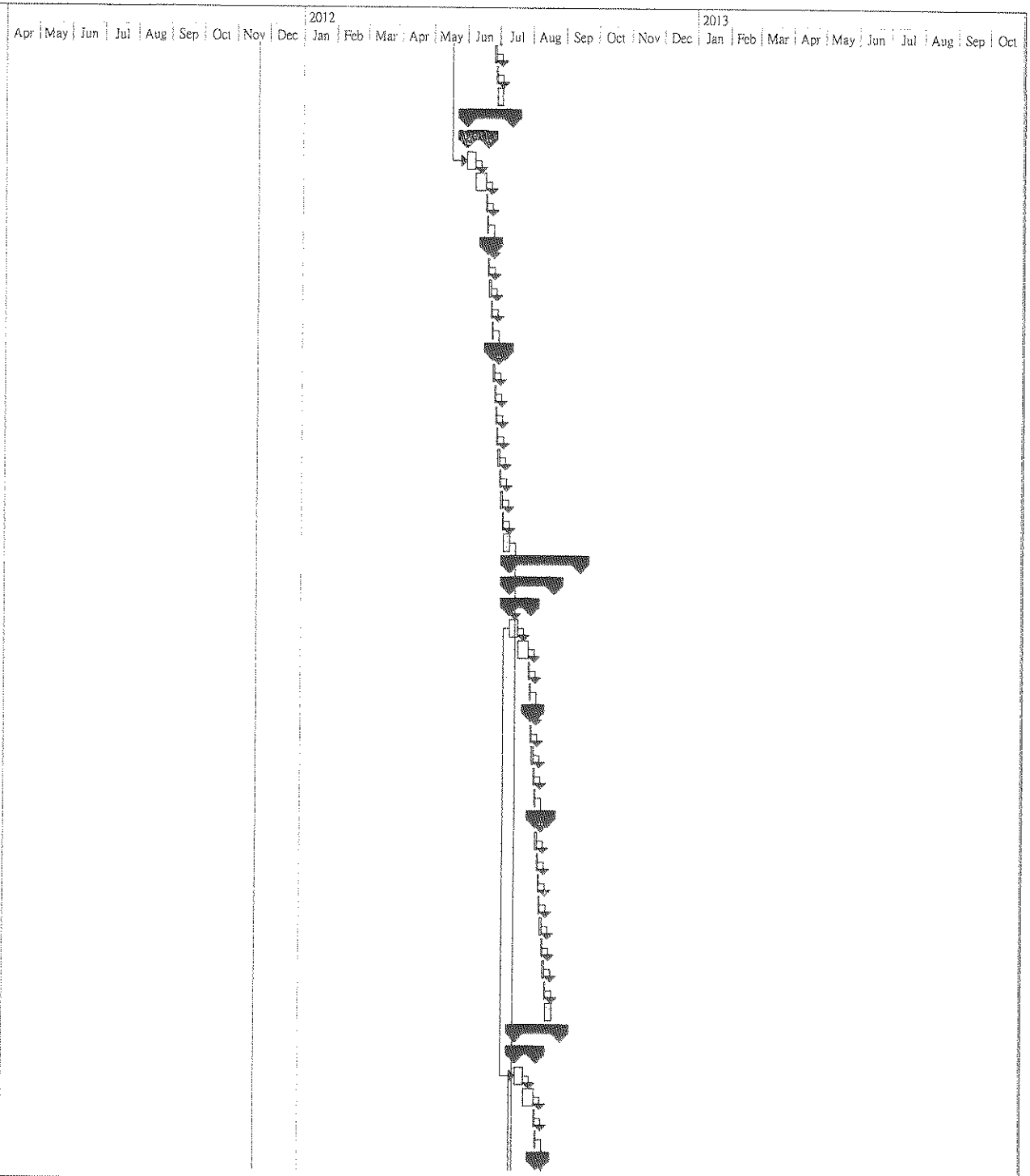
ID	Task Name	Duration	Start	Finish	Predecessors
319	exterior formwork	2 days	Tue 12/6/26	Wed 12/6/27	318
320	concrete	1 day	Thu 12/6/28	Thu 12/6/28	319
321	Backfill & removal sheetpile	5 days	Fri 12/6/29	Tue 12/7/3	320
322	**Bay 38**	**42 days**	**Fri 12/6/1**	**Thu 12/7/12**	
323	**Excavation, sheetpile & shor**	**20 days**	**Fri 12/6/1**	**Wed 12/6/20**	
324	Sheetpile	8 days	Fri 12/6/1	Fri 12/6/8	303SS+8 days
325	Excavation & shoring	10 days	Sat 12/6/9	Mon 12/6/18	324
326	Geotextile & rockfill	1 day	Tue 12/6/19	Tue 12/6/19	325
327	Blinding	1 day	Wed 12/6/20	Wed 12/6/20	326
328	**Base slab**	**5 days**	**Thu 12/6/21**	**Mon 12/6/25**	
329	formwork	1 day	Thu 12/6/21	Thu 12/6/21	327
330	rebar	2 days	Fri 12/6/22	Sat 12/6/23	329
331	kicker formwork	1 day	Sun 12/6/24	Sun 12/6/24	330
332	concrete	1 day	Mon 12/6/25	Mon 12/6/25	331
333	**Wall & top slab**	**11 days**	**Tue 12/6/26**	**Fri 12/7/6**	
334	backfill to kicker	2 days	Tue 12/6/26	Wed 12/6/27	332
335	concrete slab	1 day	Thu 12/6/28	Thu 12/6/28	334
336	remove shoring	1 day	Fri 12/6/29	Fri 12/6/29	335
337	wall rebar	1 day	Sat 12/6/30	Sat 12/6/30	336
338	interior formwork	2 days	Sun 12/7/1	Mon 12/7/2	337
339	slab rebar	1 day	Tue 12/7/3	Tue 12/7/3	338
340	exterior formwork	2 days	Wed 12/7/4	Thu 12/7/5	339
341	concrete	1 day	Fri 12/7/6	Fri 12/7/6	340
342	Backfill & removal sheetpile	6 days	Sat 12/7/7	Thu 12/7/12	341
343	**Bay 39, 40, 41, 42**	**66 days**	**Fri 12/7/13**	**Sun 12/9/16**	
344	**Bay 39**	**42 days**	**Fri 12/7/13**	**Thu 12/8/23**	
345	**Excavation, sheetpile & shor**	**20 days**	**Fri 12/7/13**	**Wed 12/8/1**	
346	Sheetpile	8 days	Fri 12/7/13	Fri 12/7/20	342
347	Excavation & shoring	10 days	Sat 12/7/21	Mon 12/7/30	346
348	Geotextile & rockfill	1 day	Tue 12/7/31	Tue 12/7/31	347
349	Blinding	1 day	Wed 12/8/1	Wed 12/8/1	348
350	**Base slab**	**5 days**	**Thu 12/8/2**	**Mon 12/8/6**	
351	formwork	1 day	Thu 12/8/2	Thu 12/8/2	349
352	rebar	2 days	Fri 12/8/3	Sat 12/8/4	351
353	kicker formwork	1 day	Sun 12/8/5	Sun 12/8/5	352
354	concrete	1 day	Mon 12/8/6	Mon 12/8/6	353
355	**Wall & top slab**	**11 days**	**Tue 12/8/7**	**Fri 12/8/17**	
356	backfill to kicker	2 days	Tue 12/8/7	Wed 12/8/8	354
357	concrete slab	1 day	Thu 12/8/9	Thu 12/8/9	356
358	remove shoring	1 day	Fri 12/8/10	Fri 12/8/10	357
359	wall rebar	1 day	Sat 12/8/11	Sat 12/8/11	358
360	interior formwork	2 days	Sun 12/8/12	Mon 12/8/13	359
361	slab rebar	1 day	Tue 12/8/14	Tue 12/8/14	360
362	exterior formwork	2 days	Wed 12/8/15	Thu 12/8/16	361
363	concrete	1 day	Fri 12/8/17	Fri 12/8/17	362
364	Backfill & removal sheetpile	6 days	Sat 12/8/18	Thu 12/8/23	363
365	**Bay 40**	**42 days**	**Sat 12/7/21**	**Fri 12/8/31**	
366	**Excavation, sheetpile & shor**	**20 days**	**Sat 12/7/21**	**Thu 12/8/9**	
367	Sheetpile	8 days	Sat 12/7/21	Sat 12/7/28	346SS+8 days
368	Excavation & shoring	10 days	Sun 12/7/29	Tue 12/8/7	367
369	Geotextile & rockfill	1 day	Wed 12/8/8	Wed 12/8/8	368
370	Blinding	1 day	Thu 12/8/9	Thu 12/8/9	369
371	**Base slab**	**5 days**	**Fri 12/8/10**	**Tue 12/8/14**	



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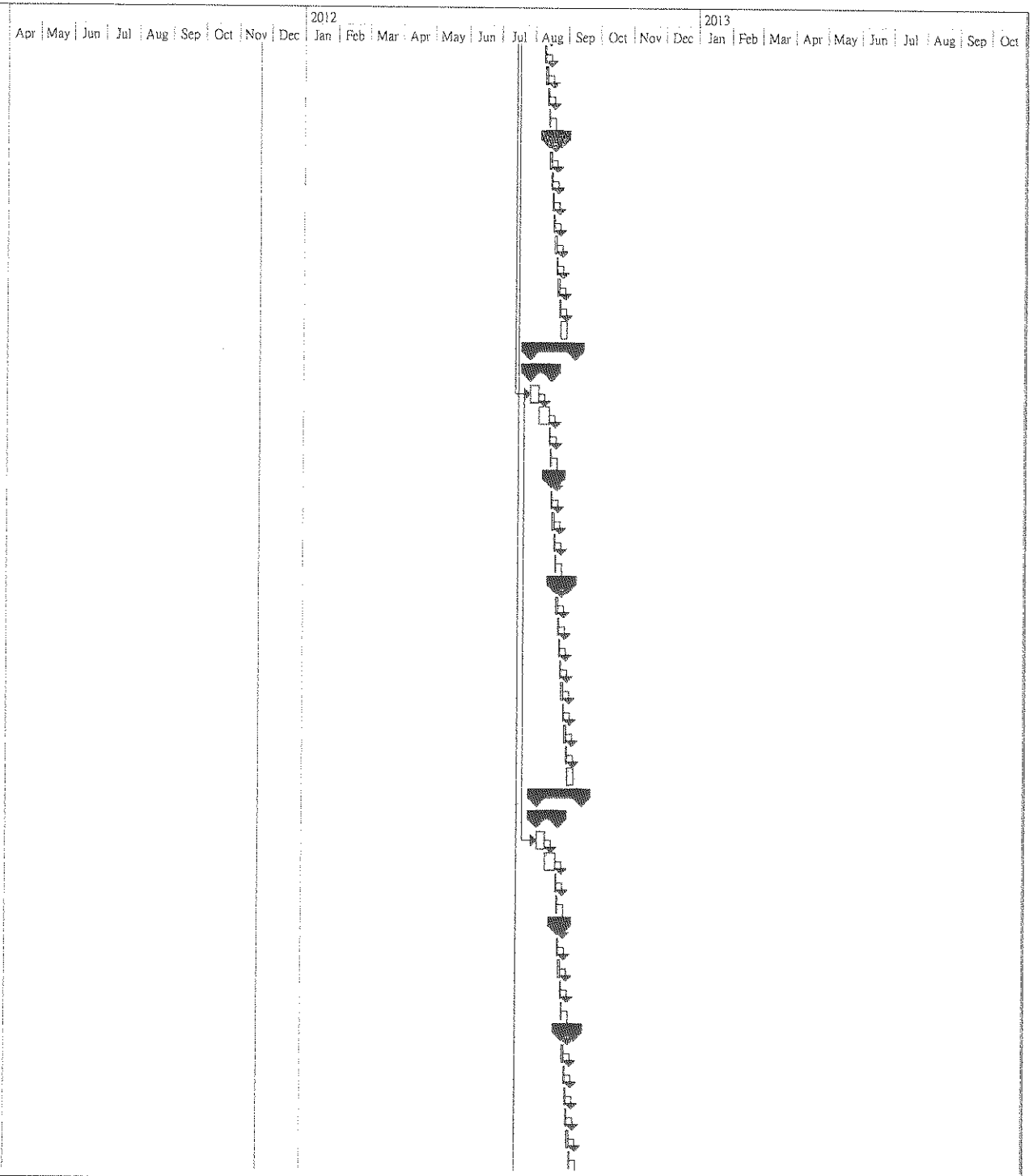
ID	Task Name	Duration	Start	Finish	Predecessors
372	formwork	1 day	Fri 12/8/10	Fri 12/8/10	370
373	rebar	2 days	Sat 12/8/11	Sun 12/8/12	372
374	kicker formwork	1 day	Mon 12/8/13	Mon 12/8/13	373
375	concrete	1 day	Tue 12/8/14	Tue 12/8/14	374
376	**Wall & top slab**	**11 days**	**Wed 12/8/15**	**Sat 12/8/25**	
377	backfill to kicker	2 days	Wed 12/8/15	Thu 12/8/16	375
378	concrete slab	1 day	Fri 12/8/17	Fri 12/8/17	377
379	remove shoring	1 day	Sat 12/8/18	Sat 12/8/18	378
380	wall rebar	1 day	Sun 12/8/19	Sun 12/8/19	379
381	interior formwork	2 days	Mon 12/8/20	Tue 12/8/21	380
382	slab rebar	1 day	Wed 12/8/22	Wed 12/8/22	381
383	exterior formwork	2 days	Thu 12/8/23	Fri 12/8/24	382
384	concrete	1 day	Sat 12/8/25	Sat 12/8/25	383
385	Backfill & removal sheetpile	6 days	Sun 12/8/26	Fri 12/8/31	384
386	**Bay 41**	**42 days**	**Sun 12/7/29**	**Sat 12/9/8**	
387	**Excavation, sheetpile & shor**	**20 days**	**Sun 12/7/29**	**Fri 12/8/17**	
388	Sheetpile	8 days	Sun 12/7/29	Sun 12/8/5	367SS+8 days
389	Excavation & shoring	10 days	Mon 12/8/6	Wed 12/8/15	388
390	Geotextile & rockfill	1 day	Thu 12/8/16	Thu 12/8/16	389
391	Blinding	1 day	Fri 12/8/17	Fri 12/8/17	390
392	**Base slab**	**5 days**	**Sat 12/8/18**	**Wed 12/8/22**	
393	formwork	1 day	Sat 12/8/18	Sat 12/8/18	391
394	rebar	2 days	Sun 12/8/19	Mon 12/8/20	393
395	kicker formwork	1 day	Tue 12/8/21	Tue 12/8/21	394
396	concrete	1 day	Wed 12/8/22	Wed 12/8/22	395
397	**Wall & top slab**	**11 days**	**Thu 12/8/23**	**Sun 12/9/2**	
398	backfill to kicker	2 days	Thu 12/8/23	Fri 12/8/24	396
399	concrete slab	1 day	Sat 12/8/25	Sat 12/8/25	398
400	remove shoring	1 day	Sun 12/8/26	Sun 12/8/26	399
401	wall rebar	1 day	Mon 12/8/27	Mon 12/8/27	400
402	interior formwork	2 days	Tue 12/8/28	Wed 12/8/29	401
403	slab rebar	1 day	Thu 12/8/30	Thu 12/8/30	402
404	exterior formwork	2 days	Fri 12/8/31	Sat 12/9/1	403
405	concrete	1 day	Sun 12/9/2	Sun 12/9/2	404
406	Backfill & removal sheetpile	6 days	Mon 12/9/3	Sat 12/9/8	405
407	**Bay 42**	**42 days**	**Mon 12/8/6**	**Sun 12/9/16**	
408	**Excavation, sheetpile & shor**	**20 days**	**Mon 12/8/6**	**Sat 12/8/25**	
409	Sheetpile	8 days	Mon 12/8/6	Mon 12/8/13	388SS+8 days
410	Excavation & shoring	10 days	Tue 12/8/14	Thu 12/8/23	409
411	Geotextile & rockfill	1 day	Fri 12/8/24	Fri 12/8/24	410
412	Blinding	1 day	Sat 12/8/25	Sat 12/8/25	411
413	**Base slab**	**5 days**	**Sun 12/8/26**	**Thu 12/8/30**	
414	formwork	1 day	Sun 12/8/26	Sun 12/8/26	412
415	rebar	2 days	Mon 12/8/27	Tue 12/8/28	414
416	kicker formwork	1 day	Wed 12/8/29	Wed 12/8/29	415
417	concrete	1 day	Thu 12/8/30	Thu 12/8/30	416
418	**Wall & top slab**	**11 days**	**Fri 12/8/31**	**Mon 12/9/10**	
419	backfill to kicker	2 days	Fri 12/8/31	Sat 12/9/1	417
420	concrete slab	1 day	Sun 12/9/2	Sun 12/9/2	419
421	remove shoring	1 day	Mon 12/9/3	Mon 12/9/3	420
422	wall rebar	1 day	Tue 12/9/4	Tue 12/9/4	421
423	interior formwork	2 days	Wed 12/9/5	Thu 12/9/6	422
424	slab rebar	1 day	Fri 12/9/7	Fri 12/9/7	423



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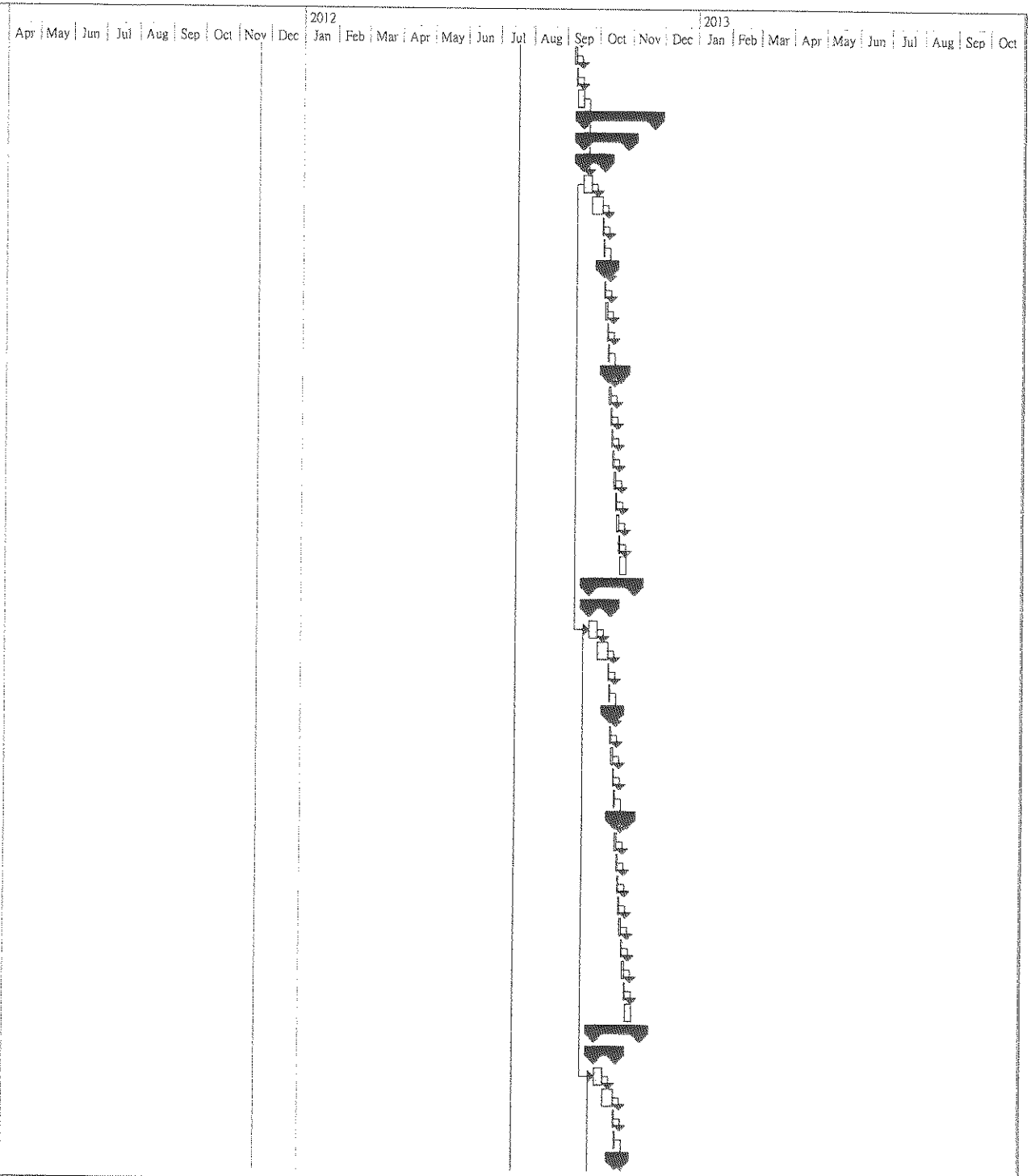
ID	Task Name	Duration	Start	Finish	Predecessors
425	exterior formwork	2 days	Sat 12/9/8	Sun 12/9/9	424
426	concrete	1 day	Mon 12/9/10	Mon 12/9/10	425
427	Backfill & removal sheetpile	6 days	Tue 12/9/11	Sun 12/9/16	426
428	**Bay 43, 44, 45, 46**	**66 days**	**Mon 12/9/17**	**Wed 12/11/21**	
429	**Bay 43**	**42 days**	**Mon 12/9/17**	**Sun 12/10/28**	
430	**Excavation, sheetpile & sho**	**20 days**	**Mon 12/9/17**	**Sat 12/10/6**	
431	Sheetpile	8 days	Mon 12/9/17	Mon 12/9/24	427
432	Excavation & shoring	10 days	Tue 12/9/25	Thu 12/10/4	431
433	Geotextile & rockfill	1 day	Fri 12/10/5	Fri 12/10/5	432
434	Blinding	1 day	Sat 12/10/6	Sat 12/10/6	433
435	**Base slab**	**5 days**	**Sun 12/10/7**	**Thu 12/10/11**	
436	formwork	1 day	Sun 12/10/7	Sun 12/10/7	434
437	rebar	2 days	Mon 12/10/8	Tue 12/10/9	436
438	kicker formwork	1 day	Wed 12/10/10	Wed 12/10/10	437
439	concrete	1 day	Thu 12/10/11	Thu 12/10/11	438
440	**Wall & top slab**	**11 days**	**Fri 12/10/12**	**Mon 12/10/22**	
441	backfill to kicker	2 days	Fri 12/10/12	Sat 12/10/13	439
442	concrete slab	1 day	Sun 12/10/14	Sun 12/10/14	441
443	remove shoring	1 day	Mon 12/10/15	Mon 12/10/15	442
444	wall rebar	1 day	Tue 12/10/16	Tue 12/10/16	443
445	interior formwork	2 days	Wed 12/10/17	Thu 12/10/18	444
446	slab rebar	1 day	Fri 12/10/19	Fri 12/10/19	445
447	exterior formwork	2 days	Sat 12/10/20	Sun 12/10/21	446
448	concrete	1 day	Mon 12/10/22	Mon 12/10/22	447
449	Backfill & removal sheetpile	6 days	Tue 12/10/23	Sun 12/10/28	448
450	**Bay 44**	**42 days**	**Tue 12/9/25**	**Mon 12/11/5**	
451	**Excavation, sheetpile & sho**	**20 days**	**Tue 12/9/25**	**Sun 12/10/14**	
452	Sheetpile	8 days	Tue 12/9/25	Tue 12/10/2	431SS+8 days
453	Excavation & shoring	10 days	Wed 12/10/3	Fri 12/10/12	452
454	Geotextile & rockfill	1 day	Sat 12/10/13	Sat 12/10/13	453
455	Blinding	1 day	Sun 12/10/14	Sun 12/10/14	454
456	**Base slab**	**5 days**	**Mon 12/10/15**	**Fri 12/10/19**	
457	formwork	1 day	Mon 12/10/15	Mon 12/10/15	455
458	rebar	2 days	Tue 12/10/16	Wed 12/10/17	457
459	kicker formwork	1 day	Thu 12/10/18	Thu 12/10/18	458
460	concrete	1 day	Fri 12/10/19	Fri 12/10/19	459
461	**Wall & top slab**	**11 days**	**Sat 12/10/20**	**Tue 12/10/30**	
462	backfill to kicker	2 days	Sat 12/10/20	Sun 12/10/21	460
463	concrete slab	1 day	Mon 12/10/22	Mon 12/10/22	462
464	remove shoring	1 day	Tue 12/10/23	Tue 12/10/23	463
465	wall rebar	1 day	Wed 12/10/24	Wed 12/10/24	464
466	interior formwork	2 days	Thu 12/10/25	Fri 12/10/26	465
467	slab rebar	1 day	Sat 12/10/27	Sat 12/10/27	466
468	exterior formwork	2 days	Sun 12/10/28	Mon 12/10/29	467
469	concrete	1 day	Tue 12/10/30	Tue 12/10/30	468
470	Backfill & removal sheetpile	6 days	Wed 12/10/31	Mon 12/11/5	469
471	**Bay 45**	**42 days**	**Wed 12/10/3**	**Tue 12/11/13**	
472	**Excavation, sheetpile & sho**	**20 days**	**Wed 12/10/3**	**Mon 12/10/22**	
473	Sheetpile	8 days	Wed 12/10/3	Wed 12/10/10	452SS+8 days
474	Excavation & shoring	10 days	Thu 12/10/11	Sat 12/10/20	473
475	Geotextile & rockfill	1 day	Sun 12/10/21	Sun 12/10/21	474
476	Blinding	1 day	Mon 12/10/22	Mon 12/10/22	475
477	**Base slab**	**5 days**	**Tue 12/10/23**	**Sat 12/10/27**	



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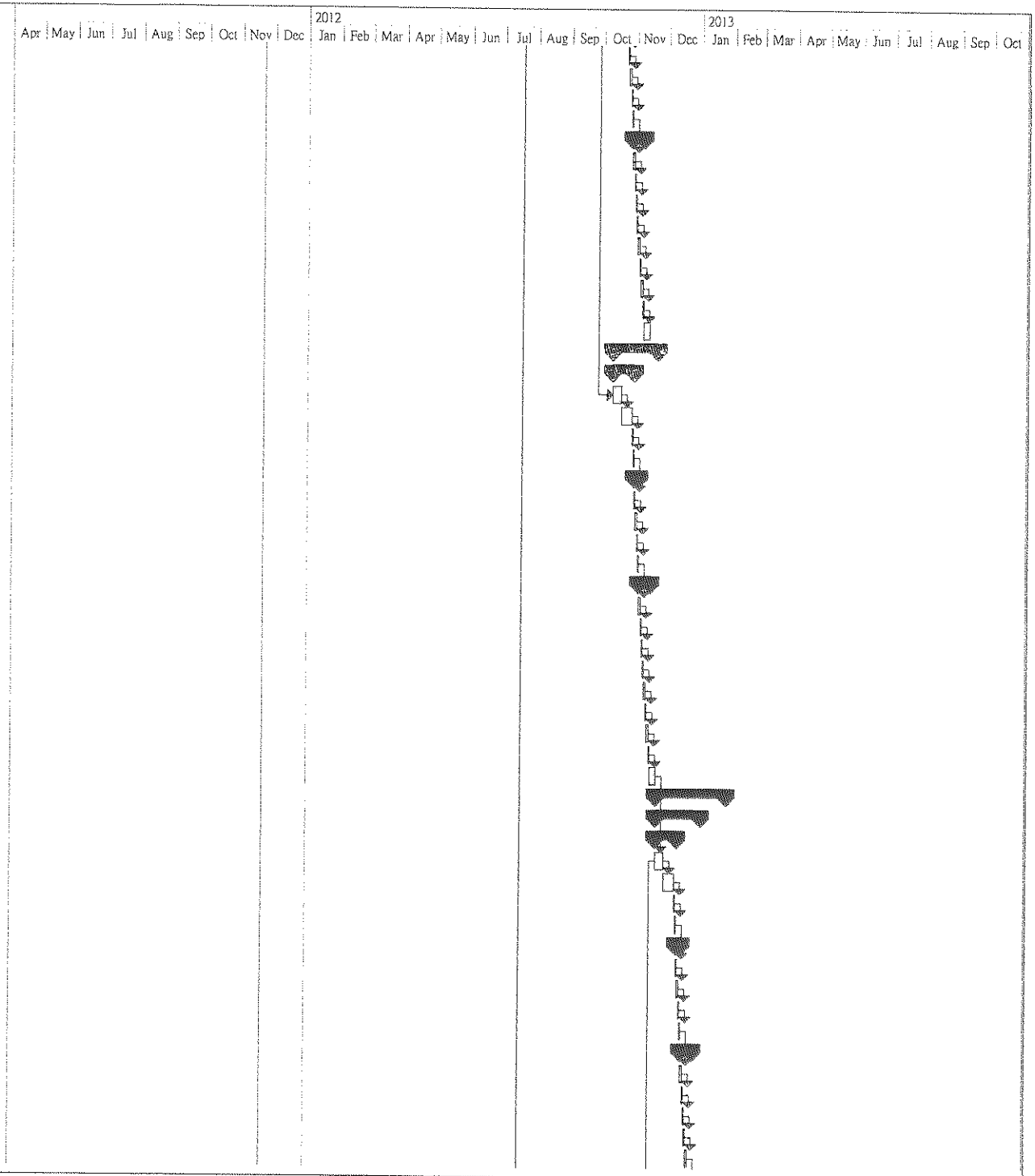
ID	Task Name	Duration	Start	Finish	Predecessors
478	formwork	1 day	Tue 12/10/23	Tue 12/10/23	476
479	rebar	2 days	Wed 12/10/24	Thu 12/10/25	478
480	kicker formwork	1 day	Fri 12/10/26	Fri 12/10/26	479
481	concrete	1 day	Sat 12/10/27	Sat 12/10/27	480
482	**Wall & top slab**	**11 days**	**Sun 12/10/28**	**Wed 12/11/7**	
483	backfill to kicker	2 days	Sun 12/10/28	Mon 12/10/29	481
484	concrete slab	1 day	Tue 12/10/30	Tue 12/10/30	483
485	remove shoring	1 day	Wed 12/10/31	Wed 12/10/31	484
486	wall rebar	1 day	Thu 12/11/1	Thu 12/11/1	485
487	interior formwork	2 days	Fri 12/11/2	Sat 12/11/3	486
488	slab rebar	1 day	Sun 12/11/4	Sun 12/11/4	487
489	exterior formwork	2 days	Mon 12/11/5	Tue 12/11/6	488
490	concrete	1 day	Wed 12/11/7	Wed 12/11/7	489
491	Backfill & removal sheetpile	6 days	Thu 12/11/8	Tue 12/11/13	490
492	**Bay 46**	**42 days**	**Thu 12/10/11**	**Wed 12/11/21**	
493	**Excavation, sheetpile & shor**	**20 days**	**Thu 12/10/11**	**Tue 12/10/30**	
494	Sheetpile	8 days	Thu 12/10/11	Thu 12/10/18	473SS+8 days
495	Excavation & shoring	10 days	Fri 12/10/19	Sun 12/10/28	494
496	Geotextile & rockfill	1 day	Mon 12/10/29	Mon 12/10/29	495
497	Blinding	1 day	Tue 12/10/30	Tue 12/10/30	496
498	**Base slab**	**5 days**	**Wed 12/10/31**	**Sun 12/11/4**	
499	formwork	1 day	Wed 12/10/31	Wed 12/10/31	497
500	rebar	2 days	Thu 12/11/1	Fri 12/11/2	499
501	kicker formwork	1 day	Sat 12/11/3	Sat 12/11/3	500
502	concrete	1 day	Sun 12/11/4	Sun 12/11/4	501
503	**Wall & top slab**	**11 days**	**Mon 12/11/5**	**Thu 12/11/15**	
504	backfill to kicker	2 days	Mon 12/11/5	Tue 12/11/6	502
505	concrete slab	1 day	Wed 12/11/7	Wed 12/11/7	504
506	remove shoring	1 day	Thu 12/11/8	Thu 12/11/8	505
507	wall rebar	1 day	Fri 12/11/9	Fri 12/11/9	506
508	interior formwork	2 days	Sat 12/11/10	Sun 12/11/11	507
509	slab rebar	1 day	Mon 12/11/12	Mon 12/11/12	508
510	exterior formwork	2 days	Tue 12/11/13	Wed 12/11/14	509
511	concrete	1 day	Thu 12/11/15	Thu 12/11/15	510
512	Backfill & removal sheetpile	6 days	Fri 12/11/16	Wed 12/11/21	511
513	**Bay 47, 48, 49, 50**	**66 days**	**Thu 12/11/22**	**Sat 13/1/26**	
514	**Bay 47**	**42 days**	**Thu 12/11/22**	**Wed 13/1/2**	
515	**Excavation, sheetpile & shor**	**20 days**	**Thu 12/11/22**	**Tue 12/12/11**	
516	Sheetpile	8 days	Thu 12/11/22	Thu 12/11/29	512
517	Excavation & shoring	10 days	Fri 12/11/30	Sun 12/12/9	516
518	Geotextile & rockfill	1 day	Mon 12/12/10	Mon 12/12/10	517
519	Blinding	1 day	Tue 12/12/11	Tue 12/12/11	518
520	**Base slab**	**5 days**	**Wed 12/12/12**	**Sun 12/12/16**	
521	formwork	1 day	Wed 12/12/12	Wed 12/12/12	519
522	rebar	2 days	Thu 12/12/13	Fri 12/12/14	521
523	kicker formwork	1 day	Sat 12/12/15	Sat 12/12/15	522
524	concrete	1 day	Sun 12/12/16	Sun 12/12/16	523
525	**Wall & top slab**	**11 days**	**Mon 12/12/17**	**Thu 12/12/27**	
526	backfill to kicker	2 days	Mon 12/12/17	Tue 12/12/18	524
527	concrete slab	1 day	Wed 12/12/19	Wed 12/12/19	526
528	remove shoring	1 day	Thu 12/12/20	Thu 12/12/20	527
529	wall rebar	1 day	Fri 12/12/21	Fri 12/12/21	528
530	interior formwork	2 days	Sat 12/12/22	Sun 12/12/23	529



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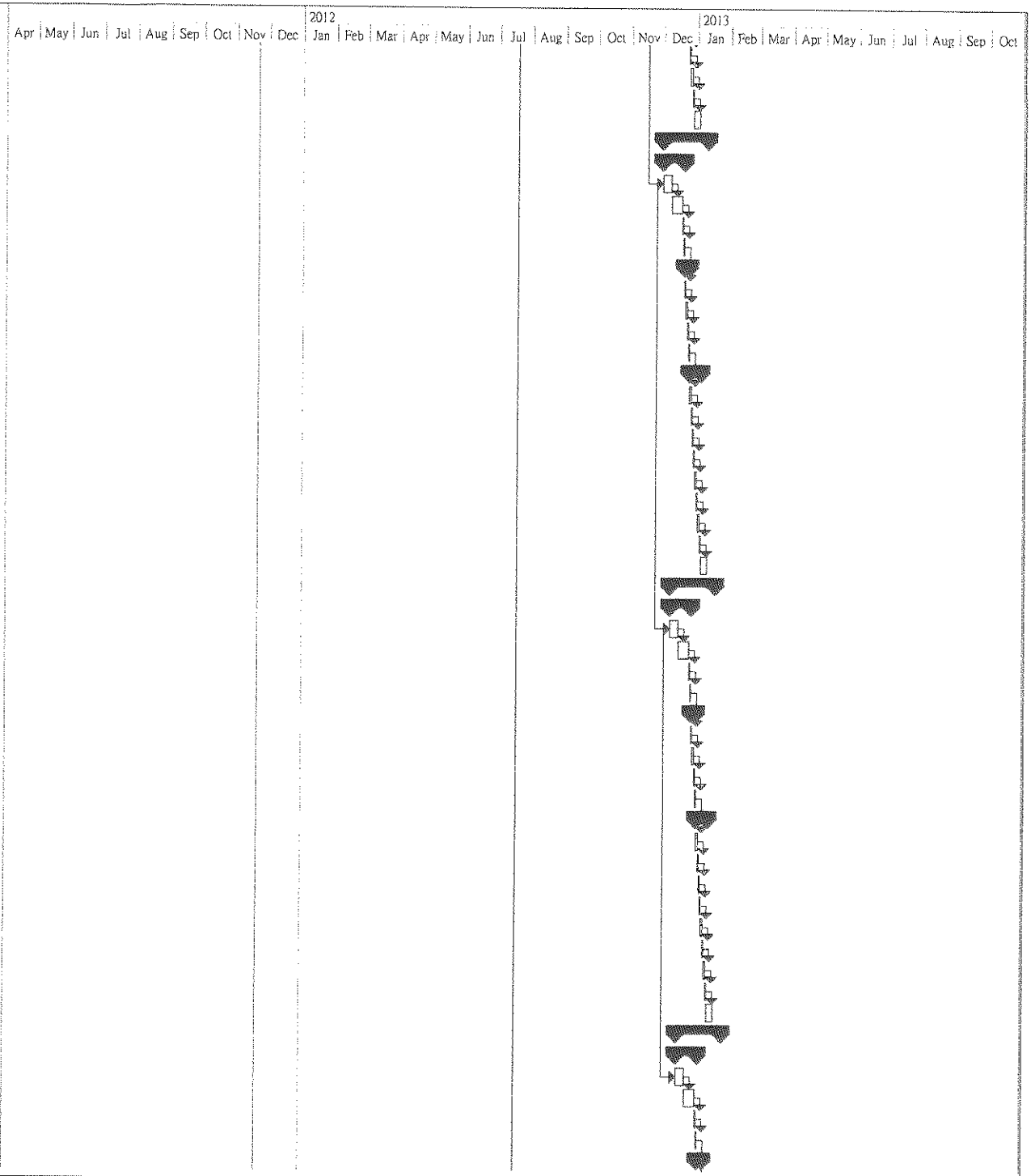
ID	Task Name	Duration	Start	Finish	Predecessors
531	slab rebar	1 day	Mon 12/12/24	Mon 12/12/24	530
532	exterior formwork	2 days	Tue 12/12/25	Wed 12/12/26	531
533	concrete	1 day	Thu 12/12/27	Thu 12/12/27	532
534	Backfill & removal sheetpil	6 days	Fri 12/12/28	Wed 13/1/2	533
535	**Bay 48**	**42 days**	**Fri 12/11/30**	**Thu 13/1/10**	
536	**Excavation, sheetpile & sho**	**20 days**	**Fri 12/11/30**	**Wed 12/12/19**	
537	Sheetpile	8 days	Fri 12/11/30	Fri 12/12/7	516SS+8 days
538	Excavation & shoring	10 days	Sat 12/12/8	Mon 12/12/17	537
539	Geotextile & rockfill	1 day	Tue 12/12/18	Tue 12/12/18	538
540	Blinding	1 day	Wed 12/12/19	Wed 12/12/19	539
541	**Base slab**	**5 days**	**Thu 12/12/20**	**Mon 12/12/24**	
542	formwork	1 day	Thu 12/12/20	Thu 12/12/20	540
543	rebar	2 days	Fri 12/12/21	Sat 12/12/22	542
544	kicker formwork	1 day	Sun 12/12/23	Sun 12/12/23	543
545	concrete	1 day	Mon 12/12/24	Mon 12/12/24	544
546	**Wall & top slab**	**11 days**	**Tue 12/12/25**	**Fri 13/1/4**	
547	backfill to kicker	2 days	Tue 12/12/25	Wed 12/12/26	545
548	concrete slab	1 day	Thu 12/12/27	Thu 12/12/27	547
549	remove shoring	1 day	Fri 12/12/28	Fri 12/12/28	548
550	wall rebar	1 day	Sat 12/12/29	Sat 12/12/29	549
551	interior formwork	2 days	Sun 12/12/30	Mon 12/12/31	550
552	slab rebar	1 day	Tue 13/1/1	Tue 13/1/1	551
553	exterior formwork	2 days	Wed 13/1/2	Thu 13/1/3	552
554	concrete	1 day	Fri 13/1/4	Fri 13/1/4	553
555	Backfill & removal sheetpil	6 days	Sat 13/1/5	Thu 13/1/10	554
556	**Bay 49**	**42 days**	**Sat 12/12/8**	**Fri 13/1/18**	
557	**Excavation, sheetpile & sho**	**20 days**	**Sat 12/12/8**	**Thu 12/12/27**	
558	Sheetpile	8 days	Sat 12/12/8	Sat 12/12/15	537SS+8 days
559	Excavation & shoring	10 days	Sun 12/12/16	Tue 12/12/25	558
560	Geotextile & rockfill	1 day	Wed 12/12/26	Wed 12/12/26	559
561	Blinding	1 day	Thu 12/12/27	Thu 12/12/27	560
562	**Base slab**	**5 days**	**Fri 12/12/28**	**Tue 13/1/1**	
563	formwork	1 day	Fri 12/12/28	Fri 12/12/28	561
564	rebar	2 days	Sat 12/12/29	Sun 12/12/30	563
565	kicker formwork	1 day	Mon 12/12/31	Mon 12/12/31	564
566	concrete	1 day	Tue 13/1/1	Tue 13/1/1	565
567	**Wall & top slab**	**11 days**	**Wed 13/1/2**	**Sat 13/1/12**	
568	backfill to kicker	2 days	Wed 13/1/2	Thu 13/1/3	566
569	concrete slab	1 day	Fri 13/1/4	Fri 13/1/4	568
570	remove shoring	1 day	Sat 13/1/5	Sat 13/1/5	569
571	wall rebar	1 day	Sun 13/1/6	Sun 13/1/6	570
572	interior formwork	2 days	Mon 13/1/7	Tue 13/1/8	571
573	slab rebar	1 day	Wed 13/1/9	Wed 13/1/9	572
574	exterior formwork	2 days	Thu 13/1/10	Fri 13/1/11	573
575	concrete	1 day	Sat 13/1/12	Sat 13/1/12	574
576	Backfill & removal sheetpil	6 days	Sun 13/1/13	Fri 13/1/18	575
577	**Bay 50**	**42 days**	**Sun 12/12/16**	**Sat 13/1/26**	
578	**Excavation, sheetpile & sho**	**20 days**	**Sun 12/12/16**	**Fri 13/1/4**	
579	Sheetpile	8 days	Sun 12/12/16	Sun 12/12/23	558SS+8 days
580	Excavation & shoring	10 days	Mon 12/12/24	Wed 13/1/2	579
581	Geotextile & rockfill	1 day	Thu 13/1/3	Thu 13/1/3	580
582	Blinding	1 day	Fri 13/1/4	Fri 13/1/4	581
583	**Base slab**	**5 days**	**Sat 13/1/5**	**Wed 13/1/9**	



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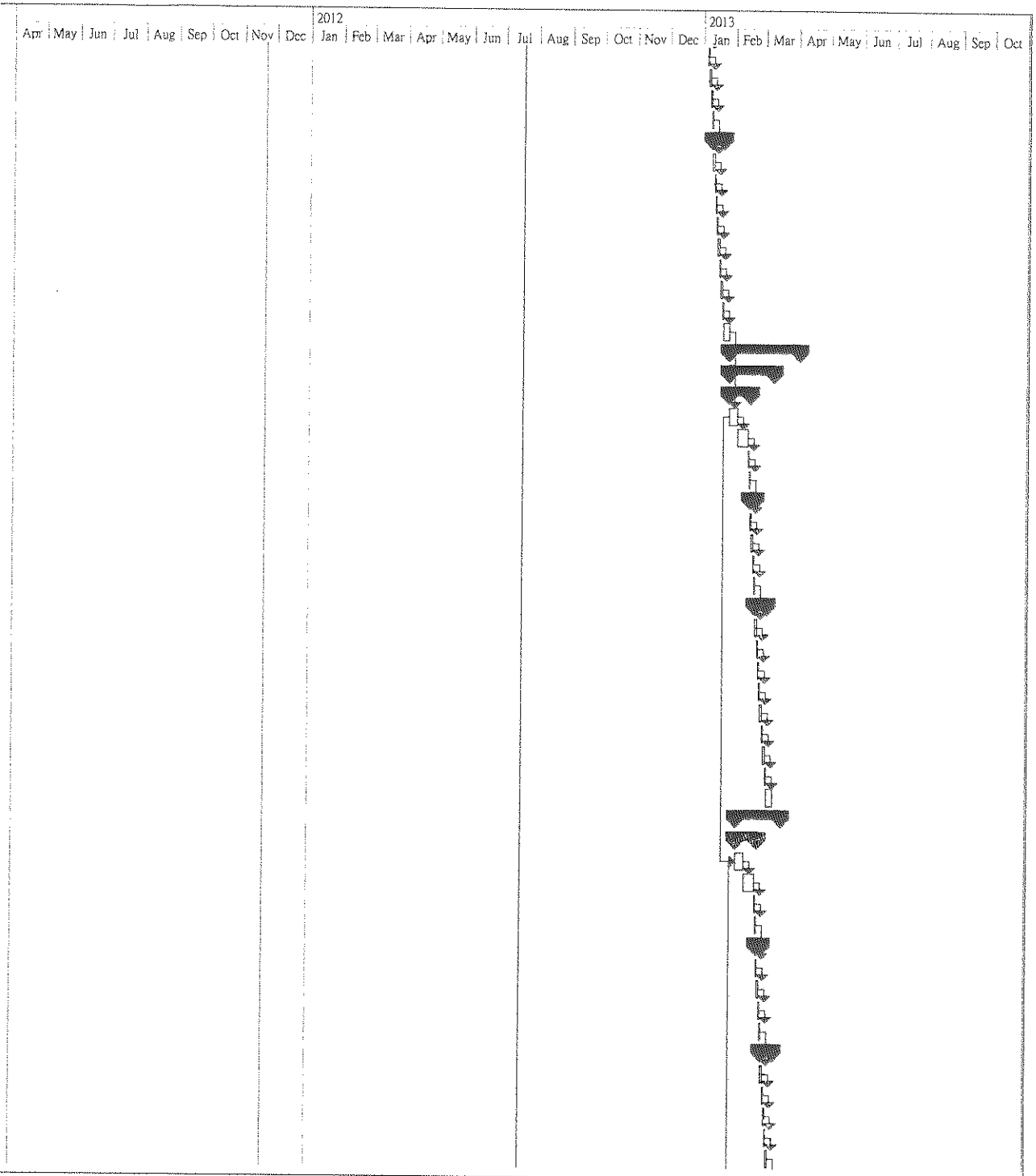
ID	Task Name	Duration	Start	Finish	Predecessors
584	formwork	1 day	Sat 13/1/5	Sat 13/1/5	582
585	rebar	2 days	Sun 13/1/6	Mon 13/1/7	584
586	kicker formwork	1 day	Tue 13/1/8	Tue 13/1/8	585
587	concrete	1 day	Wed 13/1/9	Wed 13/1/9	586
588	**Wall & top slab**	**11 days**	**Thu 13/1/10**	**Sun 13/1/20**	
589	backfill to kicker	2 days	Thu 13/1/10	Fri 13/1/11	587
590	concrete slab	1 day	Sat 13/1/12	Sat 13/1/12	589
591	remove shoring	1 day	Sun 13/1/13	Sun 13/1/13	590
592	wall rebar	1 day	Mon 13/1/14	Mon 13/1/14	591
593	interior formwork	2 days	Tue 13/1/15	Wed 13/1/16	592
594	slab rebar	1 day	Thu 13/1/17	Thu 13/1/17	593
595	exterior formwork	2 days	Fri 13/1/18	Sat 13/1/19	594
596	concrete	1 day	Sun 13/1/20	Sun 13/1/20	595
597	Backfill & removal sheetpile	6 days	Mon 13/1/21	Sat 13/1/26	596
598	**Bay 51, 52, 53, 54**	**66 days**	**Sun 13/1/27**	**Tue 13/4/2**	
599	**Bay 51**	**42 days**	**Sun 13/1/27**	**Sat 13/3/9**	
600	**Excavation, sheetpile & sho**	**20 days**	**Sun 13/1/27**	**Fri 13/2/15**	
601	Sheetpile	8 days	Sun 13/1/27	Sun 13/2/3	597
602	Excavation & shoring	10 days	Mon 13/2/4	Wed 13/2/13	601
603	Geotextile & rockfill	1 day	Thu 13/2/14	Thu 13/2/14	602
604	Blinding	1 day	Fri 13/2/15	Fri 13/2/15	603
605	**Base slab**	**5 days**	**Sat 13/2/16**	**Wed 13/2/20**	
606	formwork	1 day	Sat 13/2/16	Sat 13/2/16	604
607	rebar	2 days	Sun 13/2/17	Mon 13/2/18	606
608	kicker formwork	1 day	Tue 13/2/19	Tue 13/2/19	607
609	concrete	1 day	Wed 13/2/20	Wed 13/2/20	608
610	**Wall & top slab**	**11 days**	**Thu 13/2/21**	**Sun 13/3/3**	
611	backfill to kicker	2 days	Thu 13/2/21	Fri 13/2/22	609
612	concrete slab	1 day	Sat 13/2/23	Sat 13/2/23	611
613	remove shoring	1 day	Sun 13/2/24	Sun 13/2/24	612
614	wall rebar	1 day	Mon 13/2/25	Mon 13/2/25	613
615	interior formwork	2 days	Tue 13/2/26	Wed 13/2/27	614
616	slab rebar	1 day	Thu 13/2/28	Thu 13/2/28	615
617	exterior formwork	2 days	Fri 13/3/1	Sat 13/3/2	616
618	concrete	1 day	Sun 13/3/3	Sun 13/3/3	617
619	Backfill & removal sheetpile	6 days	Mon 13/3/4	Sat 13/3/9	618
620	**Bay 52**	**42 days**	**Mon 13/2/4**	**Sun 13/3/17**	
621	**Excavation, sheetpile & sho**	**20 days**	**Mon 13/2/4**	**Sat 13/2/23**	
622	Sheetpile	8 days	Mon 13/2/4	Mon 13/2/11	601SS+8 days
623	Excavation & shoring	10 days	Tue 13/2/12	Thu 13/2/21	622
624	Geotextile & rockfill	1 day	Fri 13/2/22	Fri 13/2/22	623
625	Blinding	1 day	Sat 13/2/23	Sat 13/2/23	624
626	**Base slab**	**5 days**	**Sun 13/2/24**	**Thu 13/2/28**	
627	formwork	1 day	Sun 13/2/24	Sun 13/2/24	625
628	rebar	2 days	Mon 13/2/25	Tue 13/2/26	627
629	kicker formwork	1 day	Wed 13/2/27	Wed 13/2/27	628
630	concrete	1 day	Thu 13/2/28	Thu 13/2/28	629
631	**Wall & top slab**	**11 days**	**Fri 13/3/1**	**Mon 13/3/11**	
632	backfill to kicker	2 days	Fri 13/3/1	Sat 13/3/2	630
633	concrete slab	1 day	Sun 13/3/3	Sun 13/3/3	632
634	remove shoring	1 day	Mon 13/3/4	Mon 13/3/4	633
635	wall rebar	1 day	Tue 13/3/5	Tue 13/3/5	634
636	interior formwork	2 days	Wed 13/3/6	Thu 13/3/7	635



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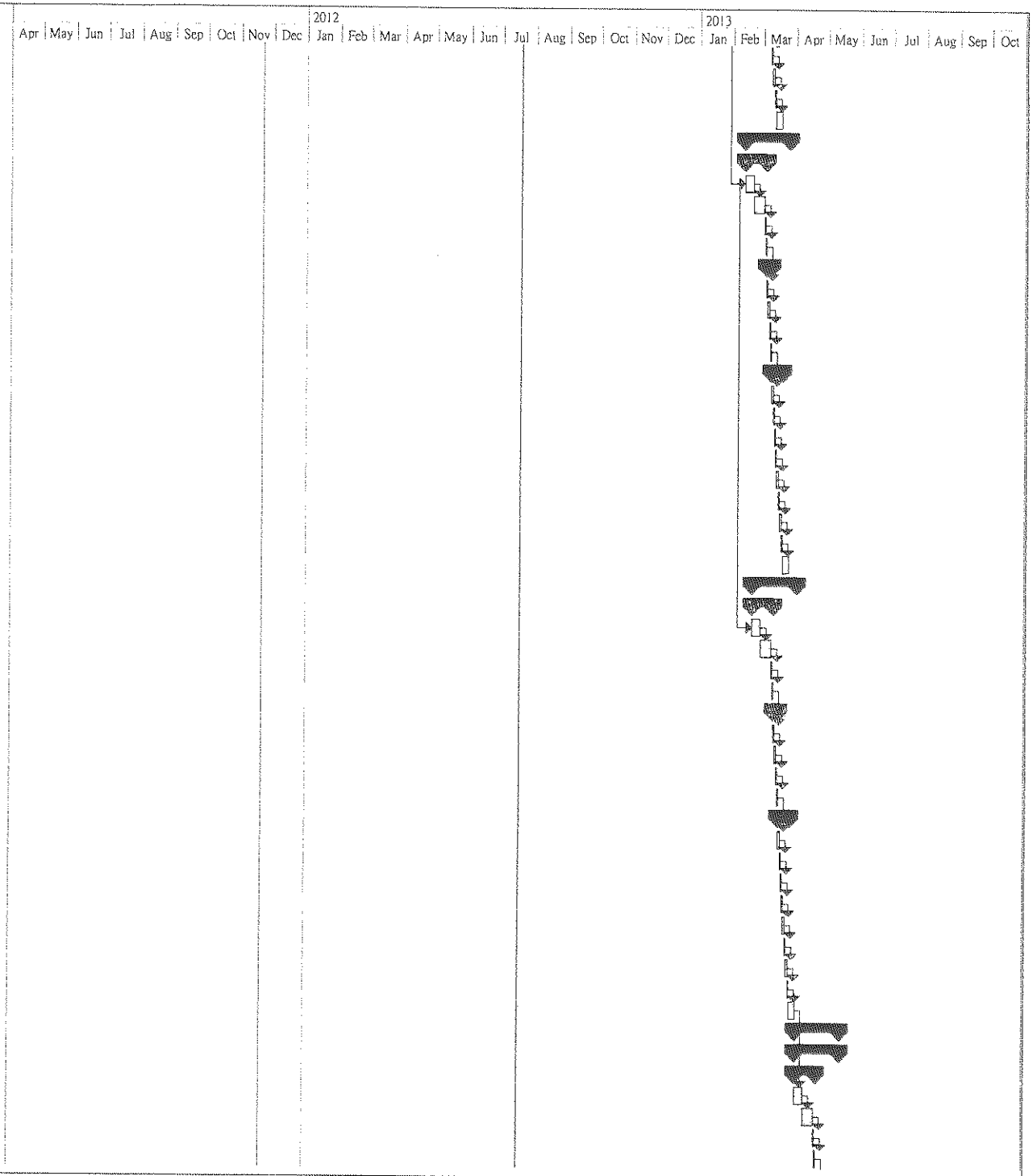
ID	Task Name	Duration	Start	Finish	Predecessors
637	slab rebar	1 day	Fri 13/3/8	Fri 13/3/8	636
638	exterior formwork	2 days	Sat 13/3/9	Sun 13/3/10	637
639	concrete	1 day	Mon 13/3/11	Mon 13/3/11	638
640	Backfill & removal sheetpile	6 days	Tue 13/3/12	Sun 13/3/17	639
641	**Bay 53**	**42 days**	**Tue 13/2/12**	**Mon 13/3/25**	
642	**Excavation, sheetpile & shor**	**20 days**	**Tue 13/2/12**	**Sun 13/3/3**	
643	Sheetpile	8 days	Tue 13/2/12	Tue 13/2/19	622SS+8 days
644	Excavation & shoring	10 days	Wed 13/2/20	Fri 13/3/1	643
645	Geotextile & rockfill	1 day	Sat 13/3/2	Sat 13/3/2	644
646	Blinding	1 day	Sun 13/3/3	Sun 13/3/3	645
647	**Base slab**	**5 days**	**Mon 13/3/4**	**Fri 13/3/8**	
648	formwork	1 day	Mon 13/3/4	Mon 13/3/4	646
649	rebar	2 days	Tue 13/3/5	Wed 13/3/6	648
650	kicker formwork	1 day	Thu 13/3/7	Thu 13/3/7	649
651	concrete	1 day	Fri 13/3/8	Fri 13/3/8	650
652	**Wall & top slab**	**11 days**	**Sat 13/3/9**	**Tue 13/3/19**	
653	backfill to kicker	2 days	Sat 13/3/9	Sun 13/3/10	651
654	concrete slab	1 day	Mon 13/3/11	Mon 13/3/11	653
655	remove shoring	1 day	Tue 13/3/12	Tue 13/3/12	654
656	wall rebar	1 day	Wed 13/3/13	Wed 13/3/13	655
657	interior formwork	2 days	Thu 13/3/14	Fri 13/3/15	656
658	slab rebar	1 day	Sat 13/3/16	Sat 13/3/16	657
659	exterior formwork	2 days	Sun 13/3/17	Mon 13/3/18	658
660	concrete	1 day	Tue 13/3/19	Tue 13/3/19	659
661	Backfill & removal sheetpile	6 days	Wed 13/3/20	Mon 13/3/25	660
662	**Bay 54**	**42 days**	**Wed 13/2/20**	**Tue 13/4/2**	
663	**Excavation, sheetpile & shor**	**20 days**	**Wed 13/2/20**	**Mon 13/3/11**	
664	Sheetpile	8 days	Wed 13/2/20	Wed 13/2/27	643SS+8 days
665	Excavation & shoring	10 days	Thu 13/2/28	Sat 13/3/9	664
666	Geotextile & rockfill	1 day	Sun 13/3/10	Sun 13/3/10	665
667	Blinding	1 day	Mon 13/3/11	Mon 13/3/11	666
668	**Base slab**	**5 days**	**Tue 13/3/12**	**Sat 13/3/16**	
669	formwork	1 day	Tue 13/3/12	Tue 13/3/12	667
670	rebar	2 days	Wed 13/3/13	Thu 13/3/14	669
671	kicker formwork	1 day	Fri 13/3/15	Fri 13/3/15	670
672	concrete	1 day	Sat 13/3/16	Sat 13/3/16	671
673	**Wall & top slab**	**11 days**	**Sun 13/3/17**	**Wed 13/3/27**	
674	backfill to kicker	2 days	Sun 13/3/17	Mon 13/3/18	672
675	concrete slab	1 day	Tue 13/3/19	Tue 13/3/19	674
676	remove shoring	1 day	Wed 13/3/20	Wed 13/3/20	675
677	wall rebar	1 day	Thu 13/3/21	Thu 13/3/21	676
678	interior formwork	2 days	Fri 13/3/22	Sat 13/3/23	677
679	slab rebar	1 day	Sun 13/3/24	Sun 13/3/24	678
680	exterior formwork	2 days	Mon 13/3/25	Tue 13/3/26	679
681	concrete	1 day	Wed 13/3/27	Wed 13/3/27	680
682	Backfill & removal sheetpile	6 days	Thu 13/3/28	Tue 13/4/2	681
683	**Bay 55**	**42 days**	**Wed 13/4/3**	**Tue 13/5/14**	
684	**Bay 55**	**42 days**	**Wed 13/4/3**	**Tue 13/5/14**	
685	**Excavation, sheetpile & shor**	**20 days**	**Wed 13/4/3**	**Mon 13/4/22**	
686	Sheetpile	8 days	Wed 13/4/3	Wed 13/4/10	682
687	Excavation & shoring	10 days	Thu 13/4/11	Sat 13/4/20	686
688	Geotextile & rockfill	1 day	Sun 13/4/21	Sun 13/4/21	687
689	Blinding	1 day	Mon 13/4/22	Mon 13/4/22	688



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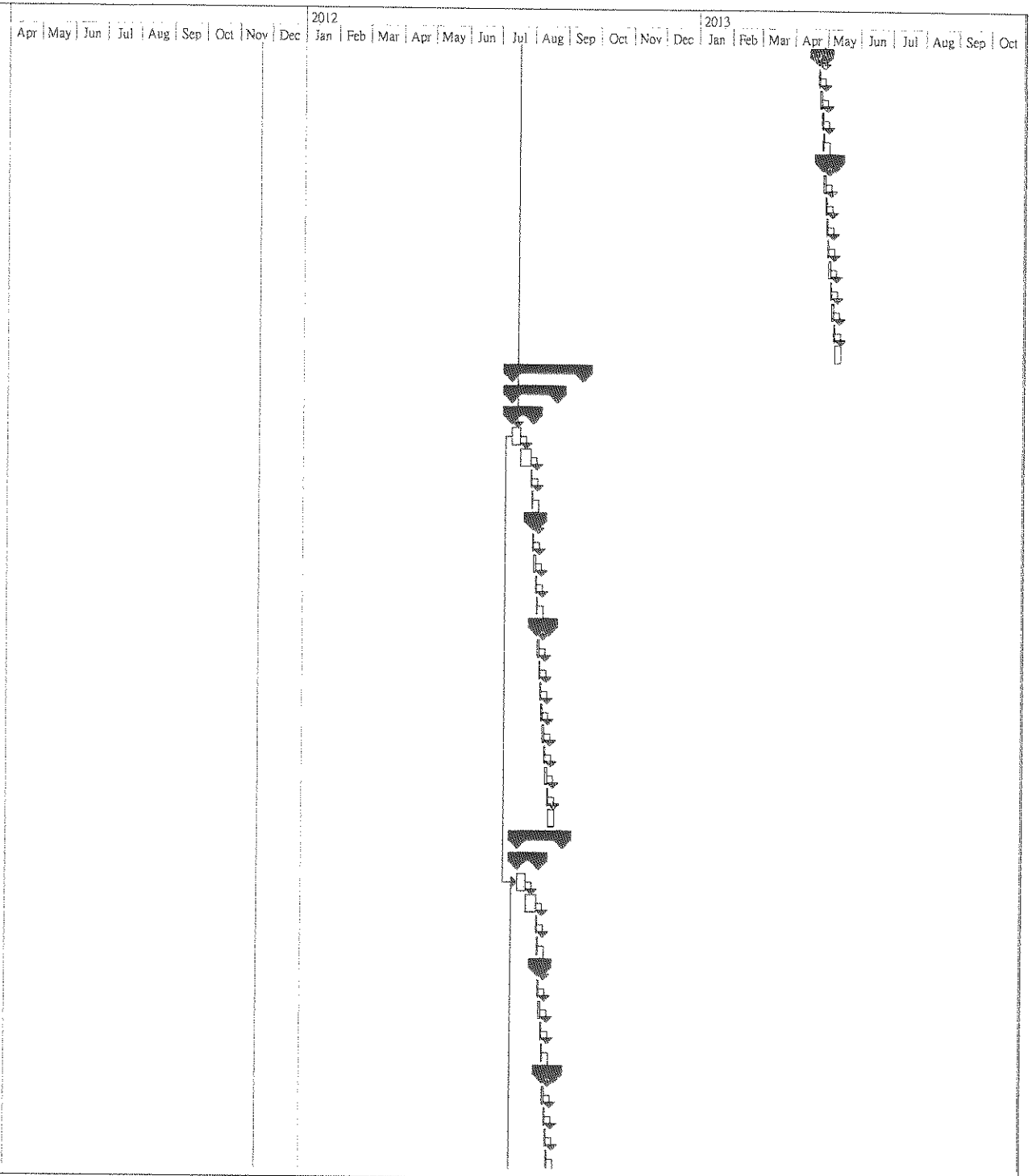
ID	Task Name	Duration	Start	Finish	Predecessors
690	**Base slab**	**5 days**	**Tue 13/4/23**	**Sat 13/4/27**	
691	formwork	1 day	Tue 13/4/23	Tue 13/4/23	689
692	rebar	2 days	Wed 13/4/24	Thu 13/4/25	691
693	kicker formwork	1 day	Fri 13/4/26	Fri 13/4/26	692
694	concrete	1 day	Sat 13/4/27	Sat 13/4/27	693
695	**Wall & top slab**	**11 days**	**Sun 13/4/28**	**Wed 13/5/8**	
696	backfill to kicker	2 days	Sun 13/4/28	Mon 13/4/29	694
697	concrete slab	1 day	Tue 13/4/30	Tue 13/4/30	696
698	remove shoring	1 day	Wed 13/5/1	Wed 13/5/1	697
699	wall rebar	1 day	Thu 13/5/2	Thu 13/5/2	698
700	interior formwork	2 days	Fri 13/5/3	Sat 13/5/4	699
701	slab rebar	1 day	Sun 13/5/5	Sun 13/5/5	700
702	exterior formwork	2 days	Mon 13/5/6	Tue 13/5/7	701
703	concrete	1 day	Wed 13/5/8	Wed 13/5/8	702
704	Backfill & removal sheetpile	6 days	Thu 13/5/9	Tue 13/5/14	703
705	**Bay 16, 17, 18, 19**	**66 days**	**Fri 12/7/13**	**Sun 12/9/16**	
706	**Bay 19**	**42 days**	**Fri 12/7/13**	**Thu 12/8/23**	
707	**Excavation, sheetpile & shor**	**20 days**	**Fri 12/7/13**	**Wed 12/8/1**	
708	Sheetpile	8 days	Fri 12/7/13	Fri 12/7/20	342
709	Excavation & shoring	10 days	Sat 12/7/21	Mon 12/7/30	708
710	Geotextile & rockfill	1 day	Tue 12/7/31	Tue 12/7/31	709
711	Blinding	1 day	Wed 12/8/1	Wed 12/8/1	710
712	**Base slab**	**5 days**	**Thu 12/8/2**	**Mon 12/8/6**	
713	formwork	1 day	Thu 12/8/2	Thu 12/8/2	711
714	rebar	2 days	Fri 12/8/3	Sat 12/8/4	713
715	kicker formwork	1 day	Sun 12/8/5	Sun 12/8/5	714
716	concrete	1 day	Mon 12/8/6	Mon 12/8/6	715
717	**Wall & top slab**	**11 days**	**Tue 12/8/7**	**Fri 12/8/17**	
718	backfill to kicker	2 days	Tue 12/8/7	Wed 12/8/8	716
719	concrete slab	1 day	Thu 12/8/9	Thu 12/8/9	718
720	remove shoring	1 day	Fri 12/8/10	Fri 12/8/10	719
721	wall rebar	1 day	Sat 12/8/11	Sat 12/8/11	720
722	interior formwork	2 days	Sun 12/8/12	Mon 12/8/13	721
723	slab rebar	1 day	Tue 12/8/14	Tue 12/8/14	722
724	exterior formwork	2 days	Wed 12/8/15	Thu 12/8/16	723
725	concrete	1 day	Fri 12/8/17	Fri 12/8/17	724
726	Backfill & removal sheetpile	6 days	Sat 12/8/18	Thu 12/8/23	725
727	**Bay 18**	**42 days**	**Sat 12/7/21**	**Fri 12/8/31**	
728	**Excavation, sheetpile & shor**	**20 days**	**Sat 12/7/21**	**Thu 12/8/9**	
729	Sheetpile	8 days	Sat 12/7/21	Sat 12/7/28	708SS+8 days
730	Excavation & shoring	10 days	Sun 12/7/29	Tue 12/8/7	729
731	Geotextile & rockfill	1 day	Wed 12/8/8	Wed 12/8/8	730
732	Blinding	1 day	Thu 12/8/9	Thu 12/8/9	731
733	**Base slab**	**5 days**	**Fri 12/8/10**	**Tue 12/8/14**	
734	formwork	1 day	Fri 12/8/10	Fri 12/8/10	732
735	rebar	2 days	Sat 12/8/11	Sun 12/8/12	734
736	kicker formwork	1 day	Mon 12/8/13	Mon 12/8/13	735
737	concrete	1 day	Tue 12/8/14	Tue 12/8/14	736
738	**Wall & top slab**	**11 days**	**Wed 12/8/15**	**Sat 12/8/25**	
739	backfill to kicker	2 days	Wed 12/8/15	Thu 12/8/16	737
740	concrete slab	1 day	Fri 12/8/17	Fri 12/8/17	739
741	remove shoring	1 day	Sat 12/8/18	Sat 12/8/18	740
742	wall rebar	1 day	Sun 12/8/19	Sun 12/8/19	741



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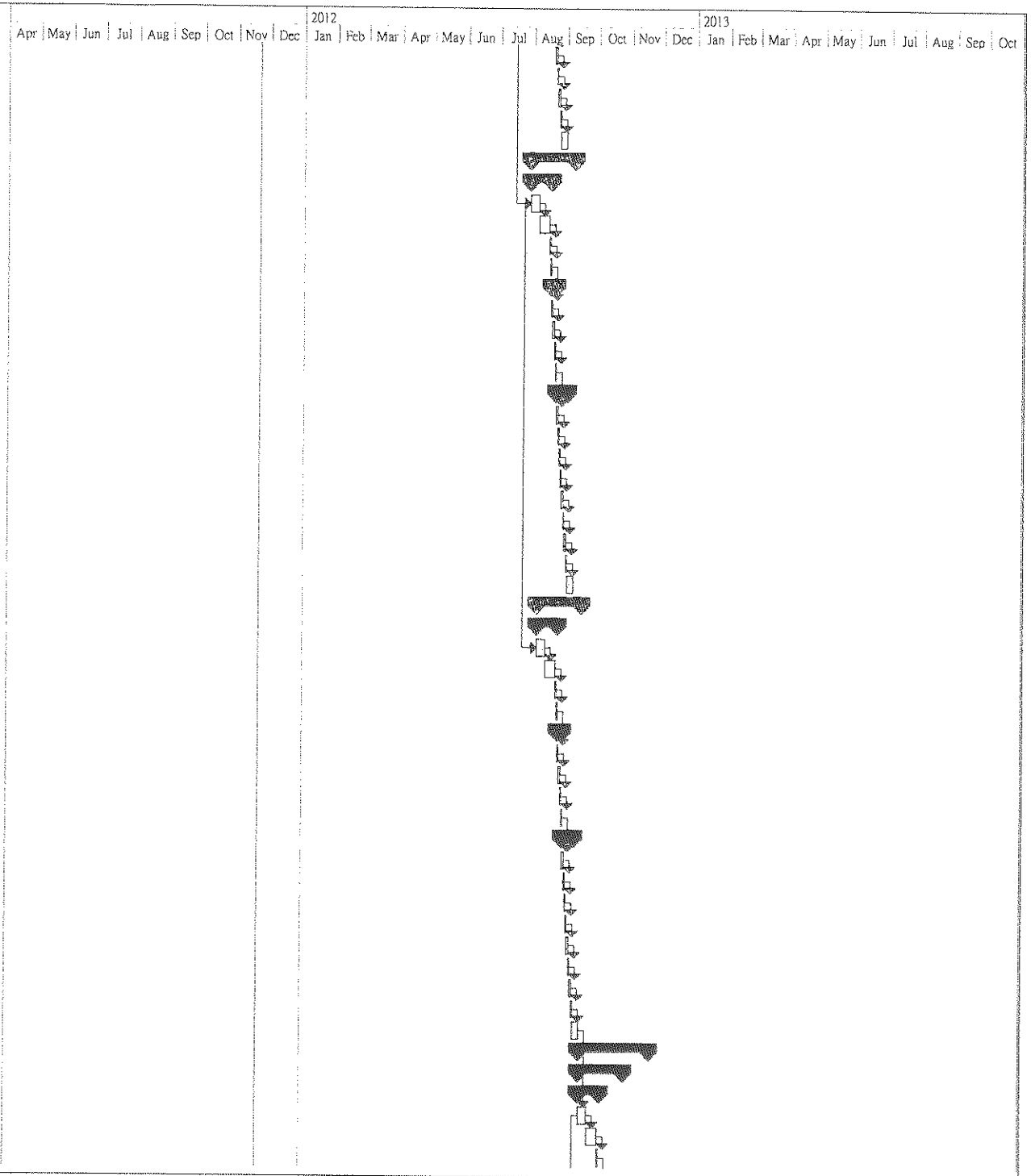
ID	Task Name	Duration	Start	Finish	Predecessors
743	interior formwork	2 days	Mon 12/8/20	Tue 12/8/21	742
744	slab rebar	1 day	Wed 12/8/22	Wed 12/8/22	743
745	exterior formwork	2 days	Thu 12/8/23	Fri 12/8/24	744
746	concrete	1 day	Sat 12/8/25	Sat 12/8/25	745
747	Backfill & removal sheetpile	6 days	Sun 12/8/26	Fri 12/8/31	746
748	**Bay 17**	**42 days**	**Sun 12/7/29**	**Sat 12/9/8**	
749	**Excavation, sheetpile & shor**	**20 days**	**Sun 12/7/29**	**Fri 12/8/17**	
750	Sheetpile	8 days	Sun 12/7/29	Sun 12/8/5	729SS+8 days
751	Excavation & shoring	10 days	Mon 12/8/6	Wed 12/8/15	750
752	Geotextile & rockfill	1 day	Thu 12/8/16	Thu 12/8/16	751
753	Blinding	1 day	Fri 12/8/17	Fri 12/8/17	752
754	**Base slab**	**5 days**	**Sat 12/8/18**	**Wed 12/8/22**	
755	formwork	1 day	Sat 12/8/18	Sat 12/8/18	753
756	rebar	2 days	Sun 12/8/19	Mon 12/8/20	755
757	kicker formwork	1 day	Tue 12/8/21	Tue 12/8/21	756
758	concrete	1 day	Wed 12/8/22	Wed 12/8/22	757
759	**Wall & top slab**	**11 days**	**Thu 12/8/23**	**Sun 12/9/2**	
760	backfill to kicker	2 days	Thu 12/8/23	Fri 12/8/24	758
761	concrete slab	1 day	Sat 12/8/25	Sat 12/8/25	760
762	remove shoring	1 day	Sun 12/8/26	Sun 12/8/26	761
763	wall rebar	1 day	Mon 12/8/27	Mon 12/8/27	762
764	interior formwork	2 days	Tue 12/8/28	Wed 12/8/29	763
765	slab rebar	1 day	Thu 12/8/30	Thu 12/8/30	764
766	exterior formwork	2 days	Fri 12/8/31	Sat 12/9/1	765
767	concrete	1 day	Sun 12/9/2	Sun 12/9/2	766
768	Backfill & removal sheetpile	6 days	Mon 12/9/3	Sat 12/9/8	767
769	**Bay 16**	**42 days**	**Mon 12/8/6**	**Sun 12/9/16**	
770	**Excavation, sheetpile & shor**	**20 days**	**Mon 12/8/6**	**Sat 12/8/25**	
771	Sheetpile	8 days	Mon 12/8/6	Mon 12/8/13	750SS+8 days
772	Excavation & shoring	10 days	Tue 12/8/14	Thu 12/8/23	771
773	Geotextile & rockfill	1 day	Fri 12/8/24	Fri 12/8/24	772
774	Blinding	1 day	Sat 12/8/25	Sat 12/8/25	773
775	**Base slab**	**5 days**	**Sun 12/8/26**	**Thu 12/8/30**	
776	formwork	1 day	Sun 12/8/26	Sun 12/8/26	774
777	rebar	2 days	Mon 12/8/27	Tue 12/8/28	776
778	kicker formwork	1 day	Wed 12/8/29	Wed 12/8/29	777
779	concrete	1 day	Thu 12/8/30	Thu 12/8/30	778
780	**Wall & top slab**	**11 days**	**Fri 12/8/31**	**Mon 12/9/10**	
781	backfill to kicker	2 days	Fri 12/8/31	Sat 12/9/1	779
782	concrete slab	1 day	Sun 12/9/2	Sun 12/9/2	781
783	remove shoring	1 day	Mon 12/9/3	Mon 12/9/3	782
784	wall rebar	1 day	Tue 12/9/4	Tue 12/9/4	783
785	interior formwork	2 days	Wed 12/9/5	Thu 12/9/6	784
786	slab rebar	1 day	Fri 12/9/7	Fri 12/9/7	785
787	exterior formwork	2 days	Sat 12/9/8	Sun 12/9/9	786
788	concrete	1 day	Mon 12/9/10	Mon 12/9/10	787
789	Backfill & removal sheetpile	6 days	Tue 12/9/11	Sun 12/9/16	788
790	**Bay 12, 13, 14, 15**	**66 days**	**Mon 12/9/17**	**Wed 12/11/21**	
791	**Bay 15**	**42 days**	**Mon 12/9/17**	**Sun 12/10/28**	
792	**Excavation, sheetpile & shor**	**20 days**	**Mon 12/9/17**	**Sat 12/10/6**	
793	Sheetpile	8 days	Mon 12/9/17	Mon 12/9/24	789
794	Excavation & shoring	10 days	Tue 12/9/25	Thu 12/10/4	793
795	Geotextile & rockfill	1 day	Fri 12/10/5	Fri 12/10/5	794



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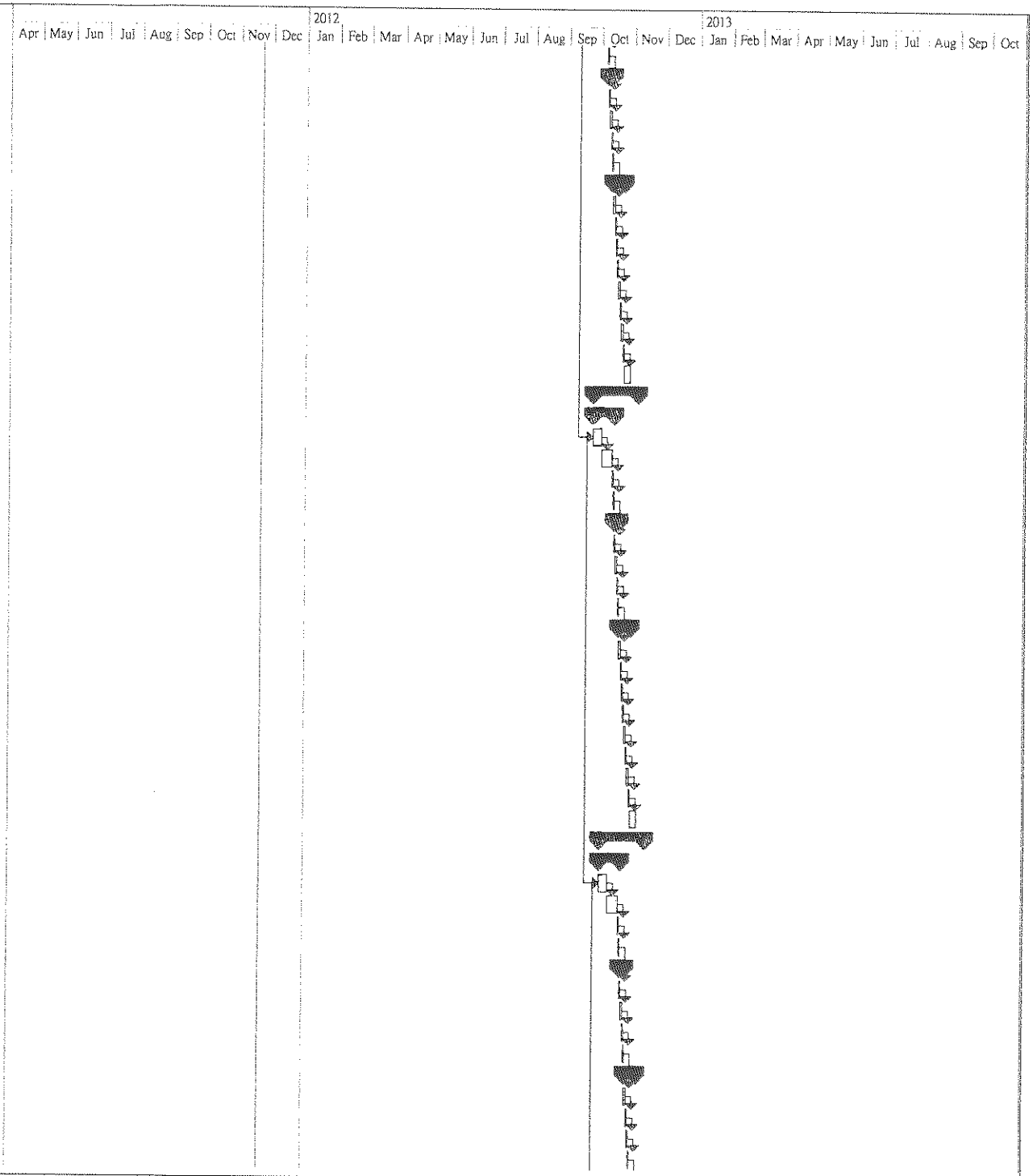
ID	Task Name	Duration	Start	Finish	Predecessors
796	Blinding	1 day	Sat 12/10/6	Sat 12/10/6	795
797	**Base slab**	**5 days**	**Sun 12/10/7**	**Thu 12/10/11**	
798	formwork	1 day	Sun 12/10/7	Sun 12/10/7	796
799	rebar	2 days	Mon 12/10/8	Tue 12/10/9	798
800	kicker formwork	1 day	Wed 12/10/10	Wed 12/10/10	799
801	concrete	1 day	Thu 12/10/11	Thu 12/10/11	800
802	**Wall & top slab**	**11 days**	**Fri 12/10/12**	**Mon 12/10/22**	
803	backfill to kicker	2 days	Fri 12/10/12	Sat 12/10/13	801
804	concrete slab	1 day	Sun 12/10/14	Sun 12/10/14	803
805	remove shoring	1 day	Mon 12/10/15	Mon 12/10/15	804
806	wall rebar	1 day	Tue 12/10/16	Tue 12/10/16	805
807	interior formwork	2 days	Wed 12/10/17	Thu 12/10/18	806
808	slab rebar	1 day	Fri 12/10/19	Fri 12/10/19	807
809	exterior formwork	2 days	Sat 12/10/20	Sun 12/10/21	808
810	concrete	1 day	Mon 12/10/22	Mon 12/10/22	809
811	Backfill & removal sheetpile	6 days	Tue 12/10/23	Sun 12/10/28	810
812	**Bay 14**	**42 days**	**Tue 12/9/25**	**Mon 12/11/5**	
813	**Excavation, sheetpile & shor**	**20 days**	**Tue 12/9/25**	**Sun 12/10/14**	
814	Sheetpile	8 days	Tue 12/9/25	Tue 12/10/2	793SS+8 days
815	Excavation & shoring	10 days	Wed 12/10/3	Fri 12/10/12	814
816	Geotextile & rockfill	1 day	Sat 12/10/13	Sat 12/10/13	815
817	Blinding	1 day	Sun 12/10/14	Sun 12/10/14	816
818	**Base slab**	**5 days**	**Mon 12/10/15**	**Fri 12/10/19**	
819	formwork	1 day	Mon 12/10/15	Mon 12/10/15	817
820	rebar	2 days	Tue 12/10/16	Wed 12/10/17	819
821	kicker formwork	1 day	Thu 12/10/18	Thu 12/10/18	820
822	concrete	1 day	Fri 12/10/19	Fri 12/10/19	821
823	**Wall & top slab**	**11 days**	**Sat 12/10/20**	**Tue 12/10/30**	
824	backfill to kicker	2 days	Sat 12/10/20	Sun 12/10/21	822
825	concrete slab	1 day	Mon 12/10/22	Mon 12/10/22	824
826	remove shoring	1 day	Tue 12/10/23	Tue 12/10/23	825
827	wall rebar	1 day	Wed 12/10/24	Wed 12/10/24	826
828	interior formwork	2 days	Thu 12/10/25	Fri 12/10/26	827
829	slab rebar	1 day	Sat 12/10/27	Sat 12/10/27	828
830	exterior formwork	2 days	Sun 12/10/28	Mon 12/10/29	829
831	concrete	1 day	Tue 12/10/30	Tue 12/10/30	830
832	Backfill & removal sheetpile	6 days	Wed 12/10/31	Mon 12/11/5	831
833	**Bay 13**	**42 days**	**Wed 12/10/3**	**Tue 12/11/13**	
834	**Excavation, sheetpile & shor**	**20 days**	**Wed 12/10/3**	**Mon 12/10/22**	
835	Sheetpile	8 days	Wed 12/10/3	Wed 12/10/10	814SS+8 days
836	Excavation & shoring	10 days	Thu 12/10/11	Sat 12/10/20	835
837	Geotextile & rockfill	1 day	Sun 12/10/21	Sun 12/10/21	836
838	Blinding	1 day	Mon 12/10/22	Mon 12/10/22	837
839	**Base slab**	**5 days**	**Tue 12/10/23**	**Sat 12/10/27**	
840	formwork	1 day	Tue 12/10/23	Tue 12/10/23	838
841	rebar	2 days	Wed 12/10/24	Thu 12/10/25	840
842	kicker formwork	1 day	Fri 12/10/26	Fri 12/10/26	841
843	concrete	1 day	Sat 12/10/27	Sat 12/10/27	842
844	**Wall & top slab**	**11 days**	**Sun 12/10/28**	**Wed 12/11/7**	
845	backfill to kicker	2 days	Sun 12/10/28	Mon 12/10/29	843
846	concrete slab	1 day	Tue 12/10/30	Tue 12/10/30	845
847	remove shoring	1 day	Wed 12/10/31	Wed 12/10/31	846
848	wall rebar	1 day	Thu 12/11/1	Thu 12/11/1	847



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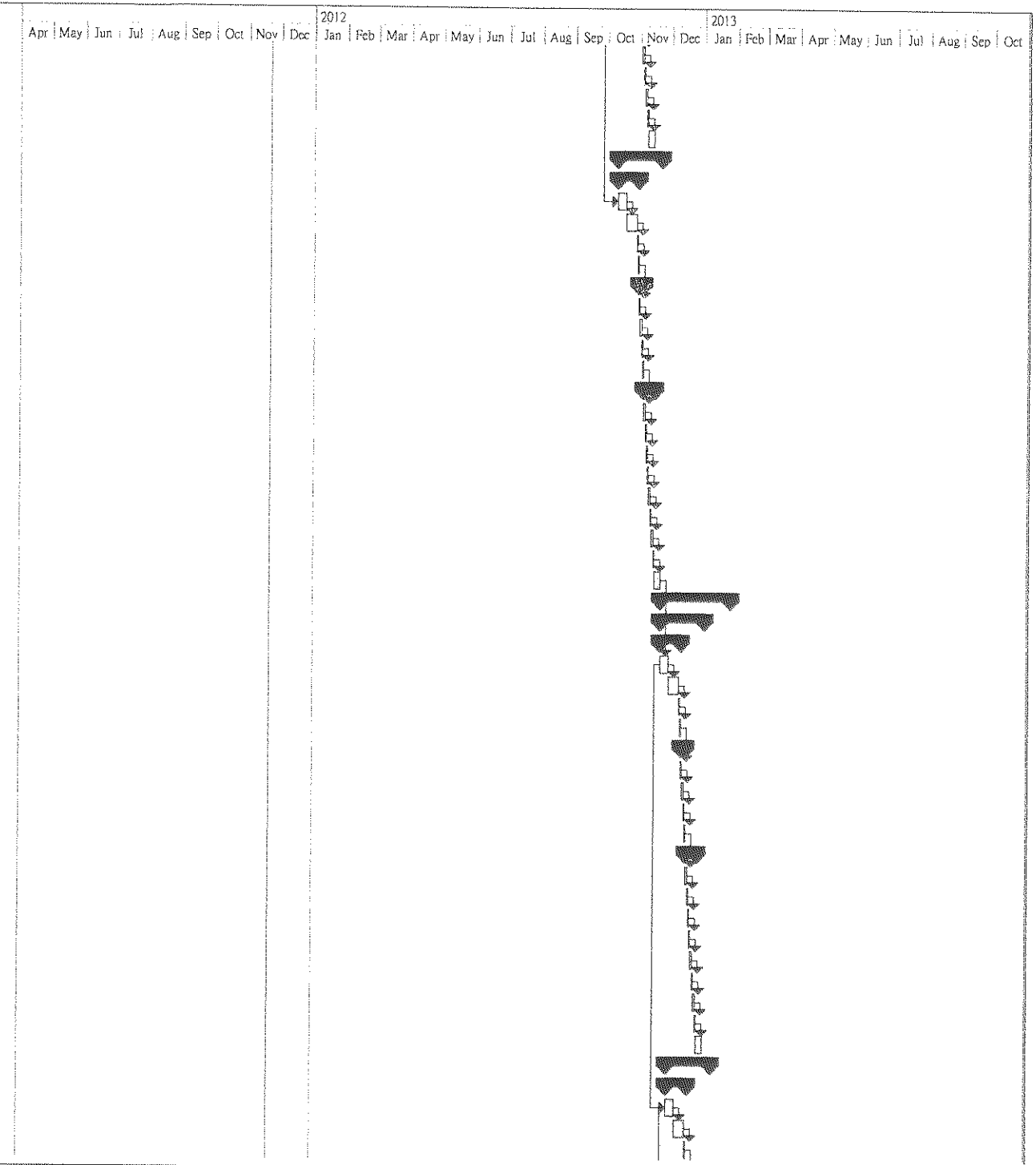
ID	Task Name	Duration	Start	Finish	Predecessors
849	interior formwork	2 days	Fri 12/11/2	Sat 12/11/3	848
850	slab rebar	1 day	Sun 12/11/4	Sun 12/11/4	849
851	exterior formwork	2 days	Mon 12/11/5	Tue 12/11/6	850
852	concrete	1 day	Wed 12/11/7	Wed 12/11/7	851
853	Backfill & removal sheetpile	6 days	Thu 12/11/8	Tue 12/11/13	852
854	**Bay 12**	**42 days**	**Thu 12/10/11**	**Wed 12/11/21**	
855	**Excavation, sheetpile & shor**	**20 days**	**Thu 12/10/11**	**Tue 12/10/30**	
856	Sheetpile	8 days	Thu 12/10/11	Thu 12/10/18	835SS+8 days
857	Excavation & shoring	10 days	Fri 12/10/19	Sun 12/10/28	856
858	Geotextile & rockfill	1 day	Mon 12/10/29	Mon 12/10/29	857
859	Blinding	1 day	Tue 12/10/30	Tue 12/10/30	858
860	**Base slab**	**5 days**	**Wed 12/10/31**	**Sun 12/11/4**	
861	formwork	1 day	Wed 12/10/31	Wed 12/10/31	859
862	rebar	2 days	Thu 12/11/1	Fri 12/11/2	861
863	kicker formwork	1 day	Sat 12/11/3	Sat 12/11/3	862
864	concrete	1 day	Sun 12/11/4	Sun 12/11/4	863
865	**Wall & top slab**	**11 days**	**Mon 12/11/5**	**Thu 12/11/15**	
866	backfill to kicker	2 days	Mon 12/11/5	Tue 12/11/6	864
867	concrete slab	1 day	Wed 12/11/7	Wed 12/11/7	866
868	remove shoring	1 day	Thu 12/11/8	Thu 12/11/8	867
869	wall rebar	1 day	Fri 12/11/9	Fri 12/11/9	868
870	interior formwork	2 days	Sat 12/11/10	Sun 12/11/11	869
871	slab rebar	1 day	Mon 12/11/12	Mon 12/11/12	870
872	exterior formwork	2 days	Tue 12/11/13	Wed 12/11/14	871
873	concrete	1 day	Thu 12/11/15	Thu 12/11/15	872
874	Backfill & removal sheetpile	6 days	Fri 12/11/16	Wed 12/11/21	873
875	**Bay 8, 9, 10, 11**	**66 days**	**Thu 12/11/22**	**Sat 13/1/26**	
876	**Bay 11**	**42 days**	**Thu 12/11/22**	**Wed 13/1/2**	
877	**Excavation, sheetpile & shor**	**20 days**	**Thu 12/11/22**	**Tue 12/12/11**	
878	Sheetpile	8 days	Thu 12/11/22	Thu 12/11/29	874
879	Excavation & shoring	10 days	Fri 12/11/30	Sun 12/12/9	878
880	Geotextile & rockfill	1 day	Mon 12/12/10	Mon 12/12/10	879
881	Blinding	1 day	Tue 12/12/11	Tue 12/12/11	880
882	**Base slab**	**5 days**	**Wed 12/12/12**	**Sun 12/12/16**	
883	formwork	1 day	Wed 12/12/12	Wed 12/12/12	881
884	rebar	2 days	Thu 12/12/13	Fri 12/12/14	883
885	kicker formwork	1 day	Sat 12/12/15	Sat 12/12/15	884
886	concrete	1 day	Sun 12/12/16	Sun 12/12/16	885
887	**Wall & top slab**	**11 days**	**Mon 12/12/17**	**Thu 12/12/27**	
888	backfill to kicker	2 days	Mon 12/12/17	Tue 12/12/18	886
889	concrete slab	1 day	Wed 12/12/19	Wed 12/12/19	888
890	remove shoring	1 day	Thu 12/12/20	Thu 12/12/20	889
891	wall rebar	1 day	Fri 12/12/21	Fri 12/12/21	890
892	interior formwork	2 days	Sat 12/12/22	Sun 12/12/23	891
893	slab rebar	1 day	Mon 12/12/24	Mon 12/12/24	892
894	exterior formwork	2 days	Tue 12/12/25	Wed 12/12/26	893
895	concrete	1 day	Thu 12/12/27	Thu 12/12/27	894
896	Backfill & removal sheetpile	6 days	Fri 12/12/28	Wed 13/1/2	895
897	**Bay 10**	**42 days**	**Fri 12/11/30**	**Thu 13/1/10**	
898	**Excavation, sheetpile & shor**	**20 days**	**Fri 12/11/30**	**Wed 12/12/19**	
899	Sheetpile	8 days	Fri 12/11/30	Fri 12/12/7	878SS+8 days
900	Excavation & shoring	10 days	Sat 12/12/8	Mon 12/12/17	899
901	Geotextile & rockfill	1 day	Tue 12/12/18	Tue 12/12/18	900



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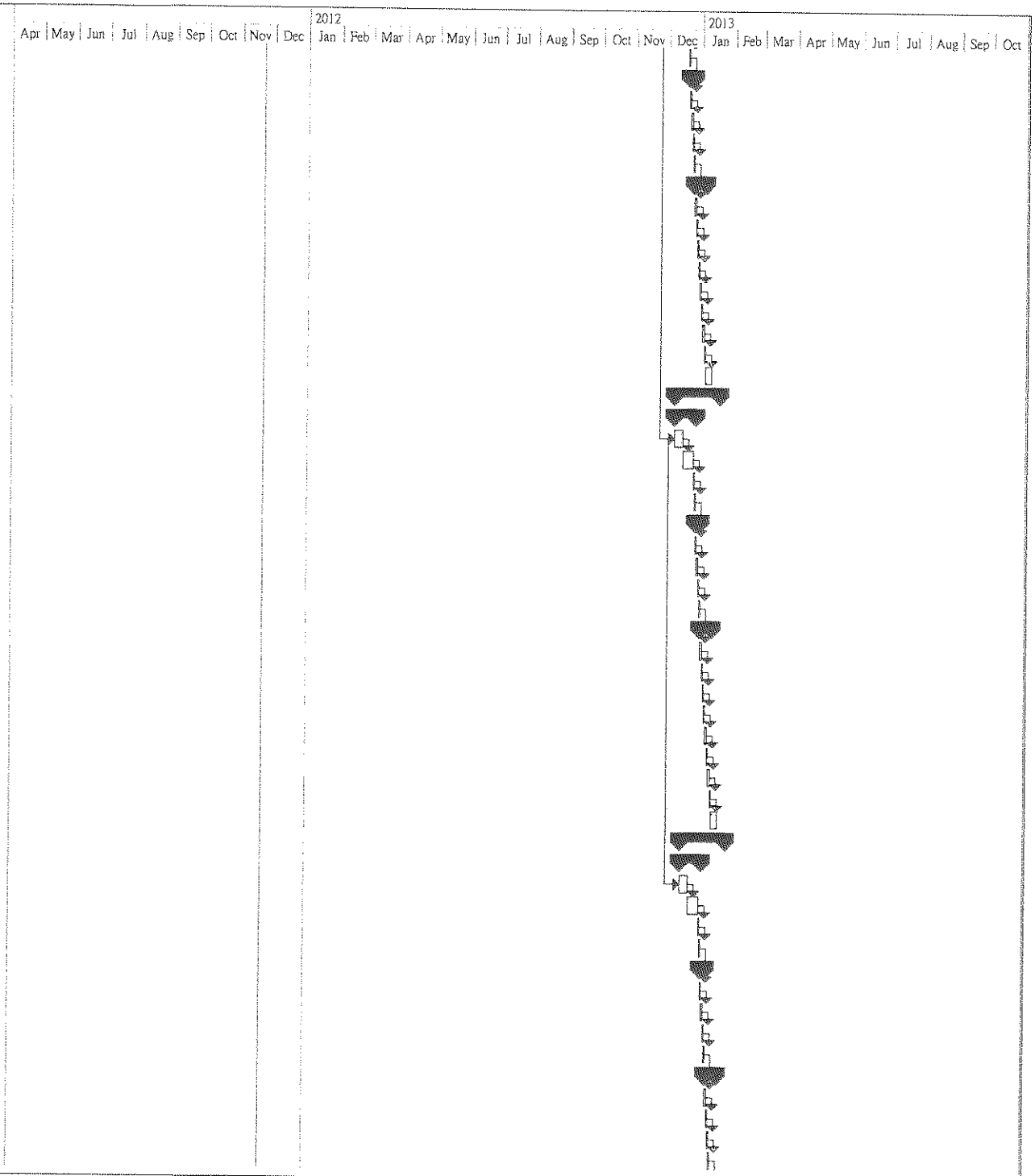
ID	Task Name	Duration	Start	Finish	Predecessors
902	Blinding	1 day	Wed 12/12/19	Wed 12/12/19	901
903	**Base slab**	**5 days**	**Thu 12/12/20**	**Mon 12/12/24**	
904	formwork	1 day	Thu 12/12/20	Thu 12/12/20	902
905	rebar	2 days	Fri 12/12/21	Sat 12/12/22	904
906	kicker formwork	1 day	Sun 12/12/23	Sun 12/12/23	905
907	concrete	1 day	Mon 12/12/24	Mon 12/12/24	906
908	**Wall & top slab**	**11 days**	**Tue 12/12/25**	**Fri 13/1/4**	
909	backfill to kicker	2 days	Tue 12/12/25	Wed 12/12/26	907
910	concrete slab	1 day	Thu 12/12/27	Thu 12/12/27	909
911	remove shoring	1 day	Fri 12/12/28	Fri 12/12/28	910
912	wall rebar	1 day	Sat 12/12/29	Sat 12/12/29	911
913	interior formwork	2 days	Sun 12/12/30	Mon 12/12/31	912
914	slab rebar	1 day	Tue 13/1/1	Tue 13/1/1	913
915	exterior formwork	2 days	Wed 13/1/2	Thu 13/1/3	914
916	concrete	1 day	Fri 13/1/4	Fri 13/1/4	915
917	Backfill & removal sheetpile	6 days	Sat 13/1/5	Thu 13/1/10	916
918	**Bay 9**	**42 days**	**Sat 12/12/8**	**Fri 13/1/18**	
919	**Excavation, sheetpile & shor**	**20 days**	**Sat 12/12/8**	**Thu 12/12/27**	
920	Sheetpile	8 days	Sat 12/12/8	Sat 12/12/15	899SS+8 days
921	Excavation & shoring	10 days	Sun 12/12/16	Tue 12/12/25	920
922	Geotextile & rockfill	1 day	Wed 12/12/26	Wed 12/12/26	921
923	Blinding	1 day	Thu 12/12/27	Thu 12/12/27	922
924	**Base slab**	**5 days**	**Fri 12/12/28**	**Tue 13/1/1**	
925	formwork	1 day	Fri 12/12/28	Fri 12/12/28	923
926	rebar	2 days	Sat 12/12/29	Sun 12/12/30	925
927	kicker formwork	1 day	Mon 12/12/31	Mon 12/12/31	926
928	concrete	1 day	Tue 13/1/1	Tue 13/1/1	927
929	**Wall & top slab**	**11 days**	**Wed 13/1/2**	**Sat 13/1/12**	
930	backfill to kicker	2 days	Wed 13/1/2	Thu 13/1/3	928
931	concrete slab	1 day	Fri 13/1/4	Fri 13/1/4	930
932	remove shoring	1 day	Sat 13/1/5	Sat 13/1/5	931
933	wall rebar	1 day	Sun 13/1/6	Sun 13/1/6	932
934	interior formwork	2 days	Mon 13/1/7	Tue 13/1/8	933
935	slab rebar	1 day	Wed 13/1/9	Wed 13/1/9	934
936	exterior formwork	2 days	Thu 13/1/10	Fri 13/1/11	935
937	concrete	1 day	Sat 13/1/12	Sat 13/1/12	936
938	Backfill & removal sheetpile	6 days	Sun 13/1/13	Fri 13/1/18	937
939	**Bay 8**	**42 days**	**Sun 12/12/16**	**Sat 13/1/26**	
940	**Excavation, sheetpile & shor**	**20 days**	**Sun 12/12/16**	**Fri 13/1/4**	
941	Sheetpile	8 days	Sun 12/12/16	Sun 12/12/23	920SS+8 days
942	Excavation & shoring	10 days	Mon 12/12/24	Wed 13/1/2	941
943	Geotextile & rockfill	1 day	Thu 13/1/3	Thu 13/1/3	942
944	Blinding	1 day	Fri 13/1/4	Fri 13/1/4	943
945	**Base slab**	**5 days**	**Sat 13/1/5**	**Wed 13/1/9**	
946	formwork	1 day	Sat 13/1/5	Sat 13/1/5	944
947	rebar	2 days	Sun 13/1/6	Mon 13/1/7	946
948	kicker formwork	1 day	Tue 13/1/8	Tue 13/1/8	947
949	concrete	1 day	Wed 13/1/9	Wed 13/1/9	948
950	**Wall & top slab**	**11 days**	**Thu 13/1/10**	**Sun 13/1/20**	
951	backfill to kicker	2 days	Thu 13/1/10	Fri 13/1/11	949
952	concrete slab	1 day	Sat 13/1/12	Sat 13/1/12	951
953	remove shoring	1 day	Sun 13/1/13	Sun 13/1/13	952
954	wall rebar	1 day	Mon 13/1/14	Mon 13/1/14	953



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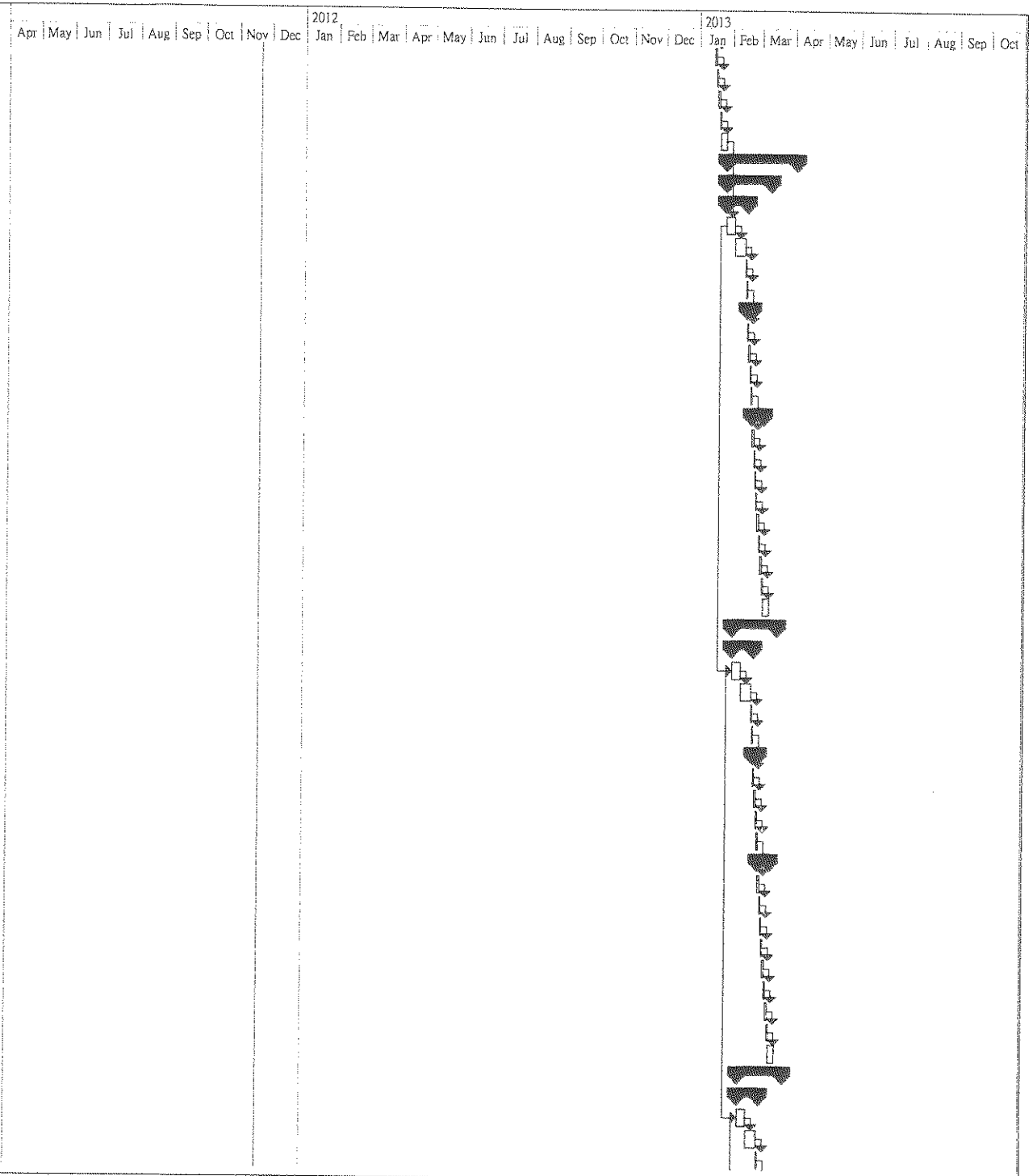
ID	Task Name	Duration	Start	Finish	Predecessors
955	interior formwork	2 days	Tue 13/1/15	Wed 13/1/16	954
956	slab rebar	1 day	Thu 13/1/17	Thu 13/1/17	955
957	exterior formwork	2 days	Fri 13/1/18	Sat 13/1/19	956
958	concrete	1 day	Sun 13/1/20	Sun 13/1/20	957
959	Backfill & removal sheetpile	6 days	Mon 13/1/21	Sat 13/1/26	958
960	**Bay 4, 5, 6, 7**	**66 days**	**Sun 13/1/27**	**Tue 13/4/2**	
961	**Bay 7**	**42 days**	**Sun 13/1/27**	**Sat 13/3/9**	
962	**Excavation, sheetpile & shor**	**20 days**	**Sun 13/1/27**	**Fri 13/2/15**	
963	Sheetpile	8 days	Sun 13/1/27	Sun 13/2/3	959
964	Excavation & shoring	10 days	Mon 13/2/4	Wed 13/2/13	963
965	Geotextile & rockfill	1 day	Thu 13/2/14	Thu 13/2/14	964
966	Blinding	1 day	Fri 13/2/15	Fri 13/2/15	965
967	**Base slab**	**5 days**	**Sat 13/2/16**	**Wed 13/2/20**	
968	formwork	1 day	Sat 13/2/16	Sat 13/2/16	966
969	rebar	2 days	Sun 13/2/17	Mon 13/2/18	968
970	kicker formwork	1 day	Tue 13/2/19	Tue 13/2/19	969
971	concrete	1 day	Wed 13/2/20	Wed 13/2/20	970
972	**Wall & top slab**	**11 days**	**Thu 13/2/21**	**Sun 13/3/3**	
973	backfill to kicker	2 days	Thu 13/2/21	Fri 13/2/22	971
974	concrete slab	1 day	Sat 13/2/23	Sat 13/2/23	973
975	remove shoring	1 day	Sun 13/2/24	Sun 13/2/24	974
976	wall rebar	1 day	Mon 13/2/25	Mon 13/2/25	975
977	interior formwork	2 days	Tue 13/2/26	Wed 13/2/27	976
978	slab rebar	1 day	Thu 13/2/28	Thu 13/2/28	977
979	exterior formwork	2 days	Fri 13/3/1	Sat 13/3/2	978
980	concrete	1 day	Sun 13/3/3	Sun 13/3/3	979
981	Backfill & removal sheetpile	6 days	Mon 13/3/4	Sat 13/3/9	980
982	**Bay 6**	**42 days**	**Mon 13/2/4**	**Sun 13/3/17**	
983	**Excavation, sheetpile & shor**	**20 days**	**Mon 13/2/4**	**Sat 13/2/23**	
984	Sheetpile	8 days	Mon 13/2/4	Mon 13/2/11	963SS+8 days
985	Excavation & shoring	10 days	Tue 13/2/12	Thu 13/2/21	984
986	Geotextile & rockfill	1 day	Fri 13/2/22	Fri 13/2/22	985
987	Blinding	1 day	Sat 13/2/23	Sat 13/2/23	986
988	**Base slab**	**5 days**	**Sun 13/2/24**	**Thu 13/2/28**	
989	formwork	1 day	Sun 13/2/24	Sun 13/2/24	987
990	rebar	2 days	Mon 13/2/25	Tue 13/2/26	989
991	kicker formwork	1 day	Wed 13/2/27	Wed 13/2/27	990
992	concrete	1 day	Thu 13/2/28	Thu 13/2/28	991
993	**Wall & top slab**	**11 days**	**Fri 13/3/1**	**Mon 13/3/11**	
994	backfill to kicker	2 days	Fri 13/3/1	Sat 13/3/2	992
995	concrete slab	1 day	Sun 13/3/3	Sun 13/3/3	994
996	remove shoring	1 day	Mon 13/3/4	Mon 13/3/4	995
997	wall rebar	1 day	Tue 13/3/5	Tue 13/3/5	996
998	interior formwork	2 days	Wed 13/3/6	Thu 13/3/7	997
999	slab rebar	1 day	Fri 13/3/8	Fri 13/3/8	998
1000	exterior formwork	2 days	Sat 13/3/9	Sun 13/3/10	999
1001	concrete	1 day	Mon 13/3/11	Mon 13/3/11	1000
1002	Backfill & removal sheetpile	6 days	Tue 13/3/12	Sun 13/3/17	1001
1003	**Bay 5**	**42 days**	**Tue 13/2/12**	**Mon 13/3/25**	
1004	**Excavation, sheetpile & shor**	**20 days**	**Tue 13/2/12**	**Sun 13/3/3**	
1005	Sheetpile	8 days	Tue 13/2/12	Tue 13/2/19	984SS+8 days
1006	Excavation & shoring	10 days	Wed 13/2/20	Fri 13/3/1	1005
1007	Geotextile & rockfill	1 day	Sat 13/3/2	Sat 13/3/2	1006



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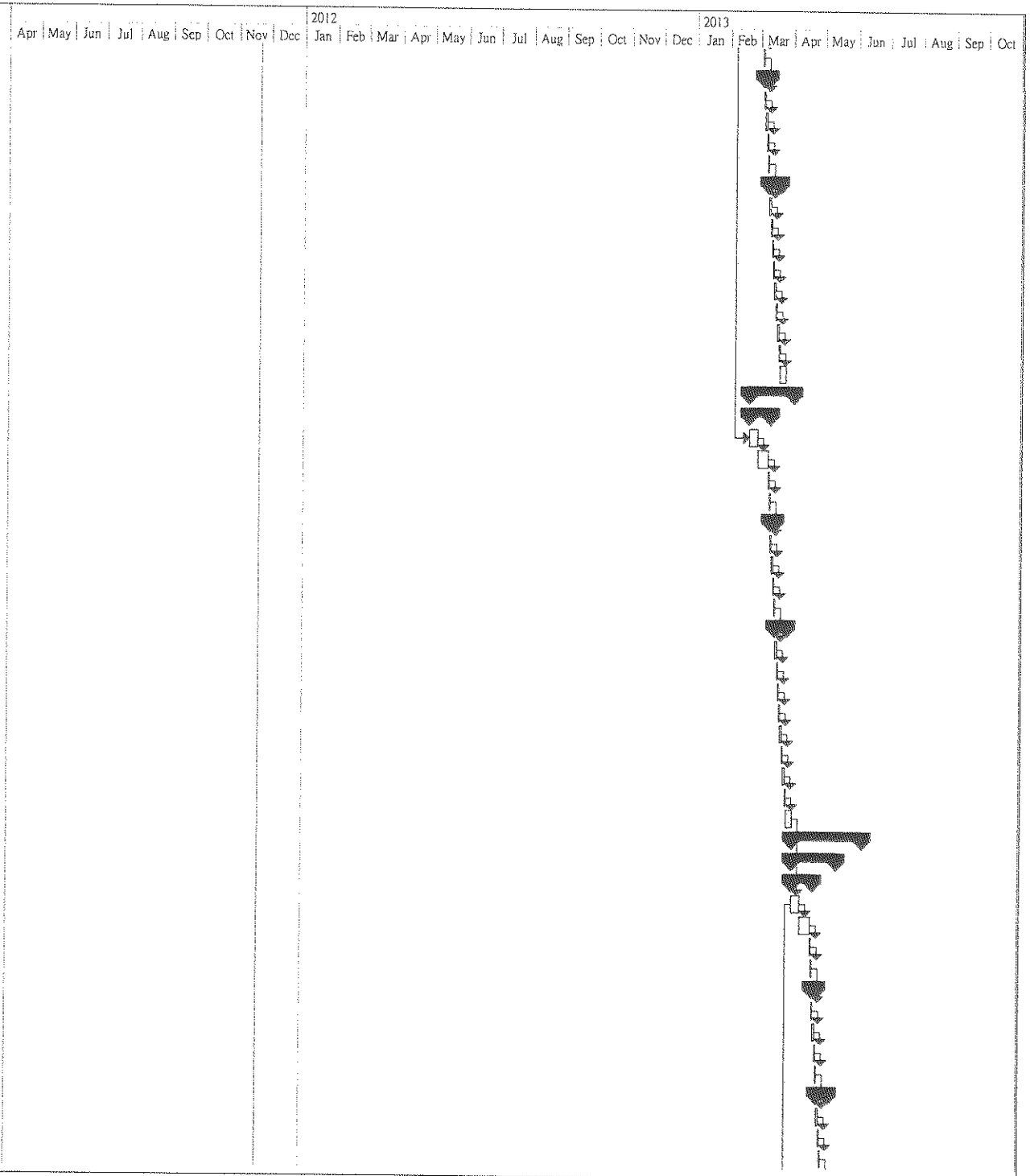
ID	Task Name	Duration	Start	Finish	Predecessors
1008	Blinding	1 day	Sun 13/3/3	Sun 13/3/3	1007
1009	Base slab	5 days	Mon 13/3/4	Fri 13/3/8	
1010	formwork	1 day	Mon 13/3/4	Mon 13/3/4	1008
1011	rebar	2 days	Tue 13/3/5	Wed 13/3/6	1010
1012	kicker formwork	1 day	Thu 13/3/7	Thu 13/3/7	1011
1013	concrete	1 day	Fri 13/3/8	Fri 13/3/8	1012
1014	Wall & top slab	11 days	Sat 13/3/9	Tue 13/3/19	
1015	backfill to kicker	2 days	Sat 13/3/9	Sun 13/3/10	1013
1016	concrete slab	1 day	Mon 13/3/11	Mon 13/3/11	1015
1017	remove shoring	1 day	Tue 13/3/12	Tue 13/3/12	1016
1018	wall rebar	1 day	Wed 13/3/13	Wed 13/3/13	1017
1019	interior formwork	2 days	Thu 13/3/14	Fri 13/3/15	1018
1020	slab rebar	1 day	Sat 13/3/16	Sat 13/3/16	1019
1021	exterior formwork	2 days	Sun 13/3/17	Mon 13/3/18	1020
1022	concrete	1 day	Tue 13/3/19	Tue 13/3/19	1021
1023	Backfill & removal sheetpile	6 days	Wed 13/3/20	Mon 13/3/25	1022
1024	Bay 4	42 days	Wed 13/2/20	Tue 13/4/2	
1025	Excavation, sheetpile & shor	20 days	Wed 13/2/20	Mon 13/3/11	
1026	Sheetpile	8 days	Wed 13/2/20	Wed 13/2/27	1005SS+8 days
1027	Excavation & shoring	10 days	Thu 13/2/28	Sat 13/3/9	1026
1028	Geotextile & rockfill	1 day	Sun 13/3/10	Sun 13/3/10	1027
1029	Blinding	1 day	Mon 13/3/11	Mon 13/3/11	1028
1030	Base slab	5 days	Tue 13/3/12	Sat 13/3/16	
1031	formwork	1 day	Tue 13/3/12	Tue 13/3/12	1029
1032	rebar	2 days	Wed 13/3/13	Thu 13/3/14	1031
1033	kicker formwork	1 day	Fri 13/3/15	Fri 13/3/15	1032
1034	concrete	1 day	Sat 13/3/16	Sat 13/3/16	1033
1035	Wall & top slab	11 days	Sun 13/3/17	Wed 13/3/27	
1036	backfill to kicker	2 days	Sun 13/3/17	Mon 13/3/18	1034
1037	concrete slab	1 day	Tue 13/3/19	Tue 13/3/19	1036
1038	remove shoring	1 day	Wed 13/3/20	Wed 13/3/20	1037
1039	wall rebar	1 day	Thu 13/3/21	Thu 13/3/21	1038
1040	interior formwork	2 days	Fri 13/3/22	Sat 13/3/23	1039
1041	slab rebar	1 day	Sun 13/3/24	Sun 13/3/24	1040
1042	exterior formwork	2 days	Mon 13/3/25	Tue 13/3/26	1041
1043	concrete	1 day	Wed 13/3/27	Wed 13/3/27	1042
1044	Backfill & removal sheetpile	6 days	Thu 13/3/28	Tue 13/4/2	1043
1045	Bay 1, 2, 3, intake	66 days	Wed 13/4/3	Fri 13/6/7	
1046	Bay 3	42 days	Wed 13/4/3	Tue 13/5/14	
1047	Excavation, sheetpile & shor	20 days	Wed 13/4/3	Mon 13/4/22	
1048	Sheetpile	8 days	Wed 13/4/3	Wed 13/4/10	1044
1049	Excavation & shoring	10 days	Thu 13/4/11	Sat 13/4/20	1048
1050	Geotextile & rockfill	1 day	Sun 13/4/21	Sun 13/4/21	1049
1051	Blinding	1 day	Mon 13/4/22	Mon 13/4/22	1050
1052	Base slab	5 days	Tue 13/4/23	Sat 13/4/27	
1053	formwork	1 day	Tue 13/4/23	Tue 13/4/23	1051
1054	rebar	2 days	Wed 13/4/24	Thu 13/4/25	1053
1055	kicker formwork	1 day	Fri 13/4/26	Fri 13/4/26	1054
1056	concrete	1 day	Sat 13/4/27	Sat 13/4/27	1055
1057	Wall & top slab	11 days	Sun 13/4/28	Wed 13/5/8	
1058	backfill to kicker	2 days	Sun 13/4/28	Mon 13/4/29	1056
1059	concrete slab	1 day	Tue 13/4/30	Tue 13/4/30	1058
1060	remove shoring	1 day	Wed 13/5/1	Wed 13/5/1	1059



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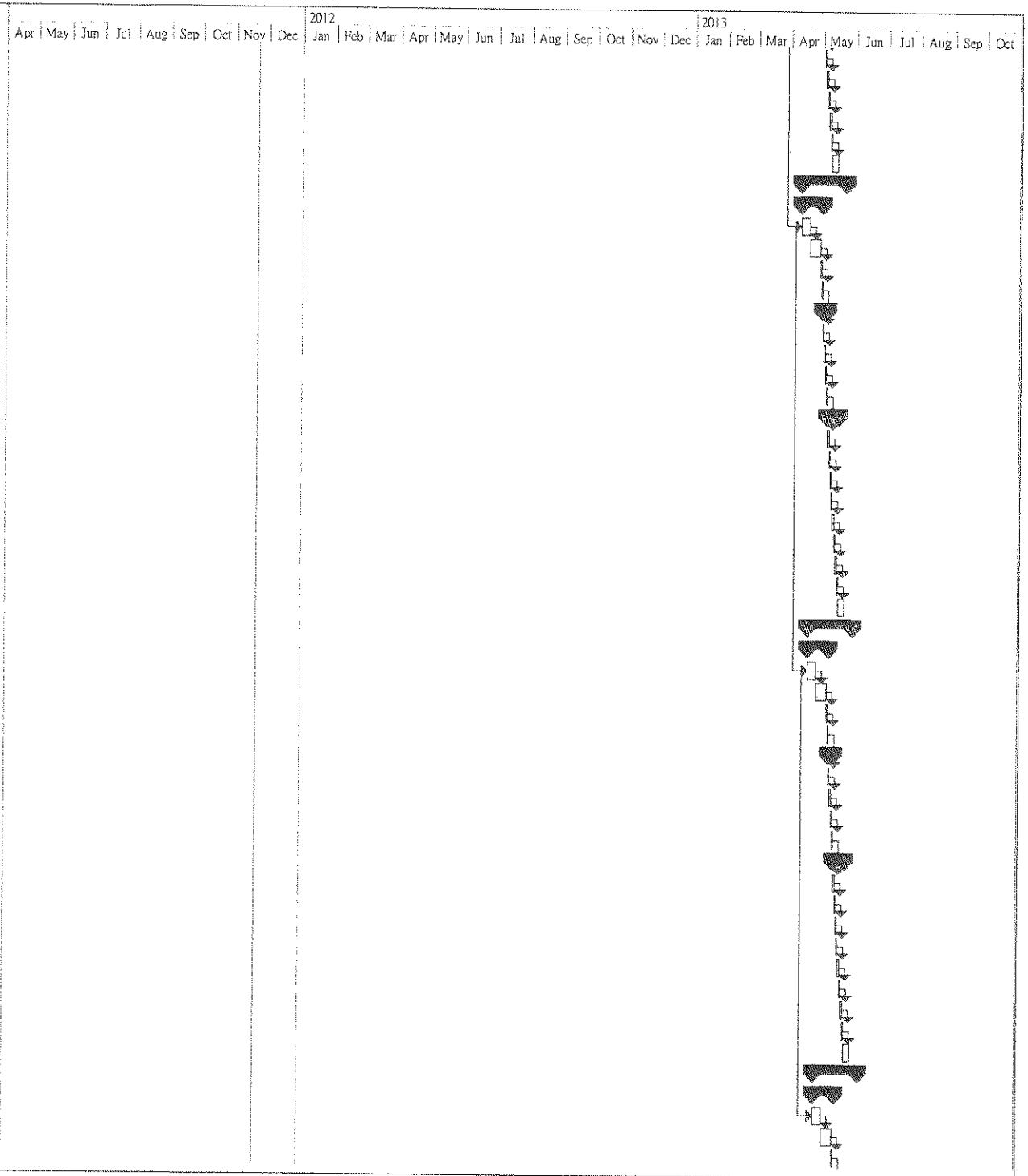
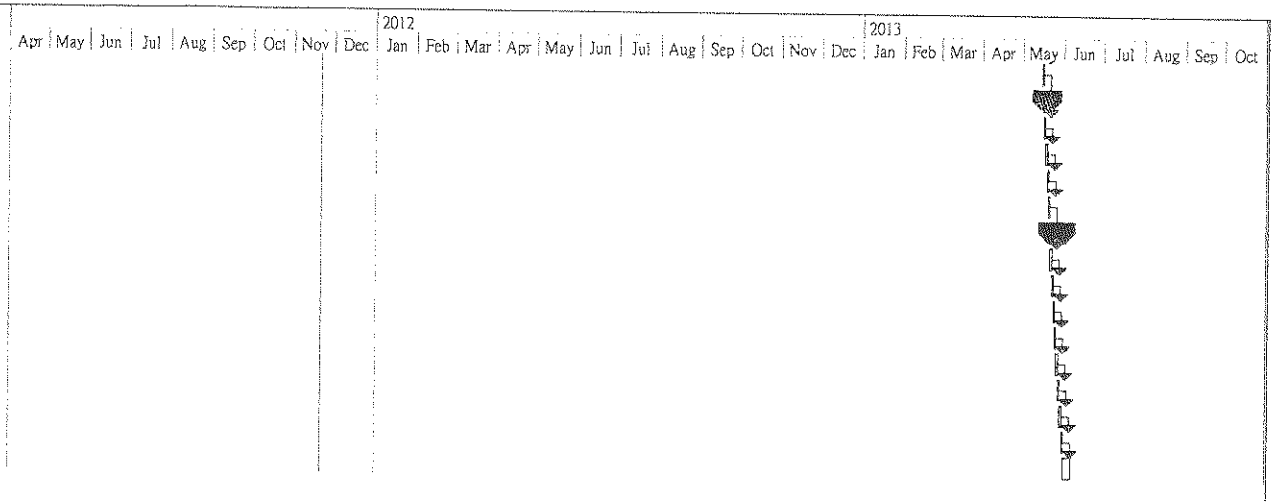
ID	Task Name	Duration	Start	Finish	Predecessors
1061	wall rebar	1 day	Thu 13/5/2	Thu 13/5/2	1060
1062	interior formwork	2 days	Fri 13/5/3	Sat 13/5/4	1061
1063	slab rebar	1 day	Sun 13/5/5	Sun 13/5/5	1062
1064	exterior formwork	2 days	Mon 13/5/6	Tue 13/5/7	1063
1065	concrete	1 day	Wed 13/5/8	Wed 13/5/8	1064
1066	Backfill & removal sheetpile	6 days	Thu 13/5/9	Tue 13/5/14	1065
1067	**Bay 2**	**42 days**	**Thu 13/4/11**	**Wed 13/5/22**	
1068	**Excavation, sheetpile & shor**	**20 days**	**Thu 13/4/11**	**Tue 13/4/30**	
1069	Sheetpile	8 days	Thu 13/4/11	Thu 13/4/18	1048SS+8 days
1070	Excavation & shoring	10 days	Fri 13/4/19	Sun 13/4/28	1069
1071	Geotextile & rockfill	1 day	Mon 13/4/29	Mon 13/4/29	1070
1072	Blinding	1 day	Tue 13/4/30	Tue 13/4/30	1071
1073	**Base slab**	**5 days**	**Wed 13/5/1**	**Sun 13/5/5**	
1074	formwork	1 day	Wed 13/5/1	Wed 13/5/1	1072
1075	rebar	2 days	Thu 13/5/2	Fri 13/5/3	1074
1076	kicker formwork	1 day	Sat 13/5/4	Sat 13/5/4	1075
1077	concrete	1 day	Sun 13/5/5	Sun 13/5/5	1076
1078	**Wall & top slab**	**11 days**	**Mon 13/5/6**	**Thu 13/5/16**	
1079	backfill to kicker	2 days	Mon 13/5/6	Tue 13/5/7	1077
1080	concrete slab	1 day	Wed 13/5/8	Wed 13/5/8	1079
1081	remove shoring	1 day	Thu 13/5/9	Thu 13/5/9	1080
1082	wall rebar	1 day	Fri 13/5/10	Fri 13/5/10	1081
1083	interior formwork	2 days	Sat 13/5/11	Sun 13/5/12	1082
1084	slab rebar	1 day	Mon 13/5/13	Mon 13/5/13	1083
1085	exterior formwork	2 days	Tue 13/5/14	Wed 13/5/15	1084
1086	concrete	1 day	Thu 13/5/16	Thu 13/5/16	1085
1087	Backfill & removal sheetpile	6 days	Fri 13/5/17	Wed 13/5/22	1086
1088	**Bay 1**	**42 days**	**Fri 13/4/19**	**Thu 13/5/30**	
1089	**Excavation, sheetpile & shor**	**20 days**	**Fri 13/4/19**	**Wed 13/5/8**	
1090	Sheetpile	8 days	Fri 13/4/19	Fri 13/4/26	1069SS+8 days
1091	Excavation & shoring	10 days	Sat 13/4/27	Mon 13/5/6	1090
1092	Geotextile & rockfill	1 day	Tue 13/5/7	Tue 13/5/7	1091
1093	Blinding	1 day	Wed 13/5/8	Wed 13/5/8	1092
1094	**Base slab**	**5 days**	**Thu 13/5/9**	**Mon 13/5/13**	
1095	formwork	1 day	Thu 13/5/9	Thu 13/5/9	1093
1096	rebar	2 days	Fri 13/5/10	Sat 13/5/11	1095
1097	kicker formwork	1 day	Sun 13/5/12	Sun 13/5/12	1096
1098	concrete	1 day	Mon 13/5/13	Mon 13/5/13	1097
1099	**Wall & top slab**	**11 days**	**Tue 13/5/14**	**Fri 13/5/24**	
1100	backfill to kicker	2 days	Tue 13/5/14	Wed 13/5/15	1098
1101	concrete slab	1 day	Thu 13/5/16	Thu 13/5/16	1100
1102	remove shoring	1 day	Fri 13/5/17	Fri 13/5/17	1101
1103	wall rebar	1 day	Sat 13/5/18	Sat 13/5/18	1102
1104	interior formwork	2 days	Sun 13/5/19	Mon 13/5/20	1103
1105	slab rebar	1 day	Tue 13/5/21	Tue 13/5/21	1104
1106	exterior formwork	2 days	Wed 13/5/22	Thu 13/5/23	1105
1107	concrete	1 day	Fri 13/5/24	Fri 13/5/24	1106
1108	Backfill & removal sheetpile	6 days	Sat 13/5/25	Thu 13/5/30	1107
1109	**Intake**	**42 days**	**Sat 13/4/27**	**Fri 13/6/7**	
1110	**Excavation, sheetpile & shor**	**20 days**	**Sat 13/4/27**	**Thu 13/5/16**	
1111	Sheetpile	8 days	Sat 13/4/27	Sat 13/5/4	1090SS+8 days
1112	Excavation & shoring	10 days	Sun 13/5/5	Tue 13/5/14	1111
1113	Geotextile & rockfill	1 day	Wed 13/5/15	Wed 13/5/15	1112

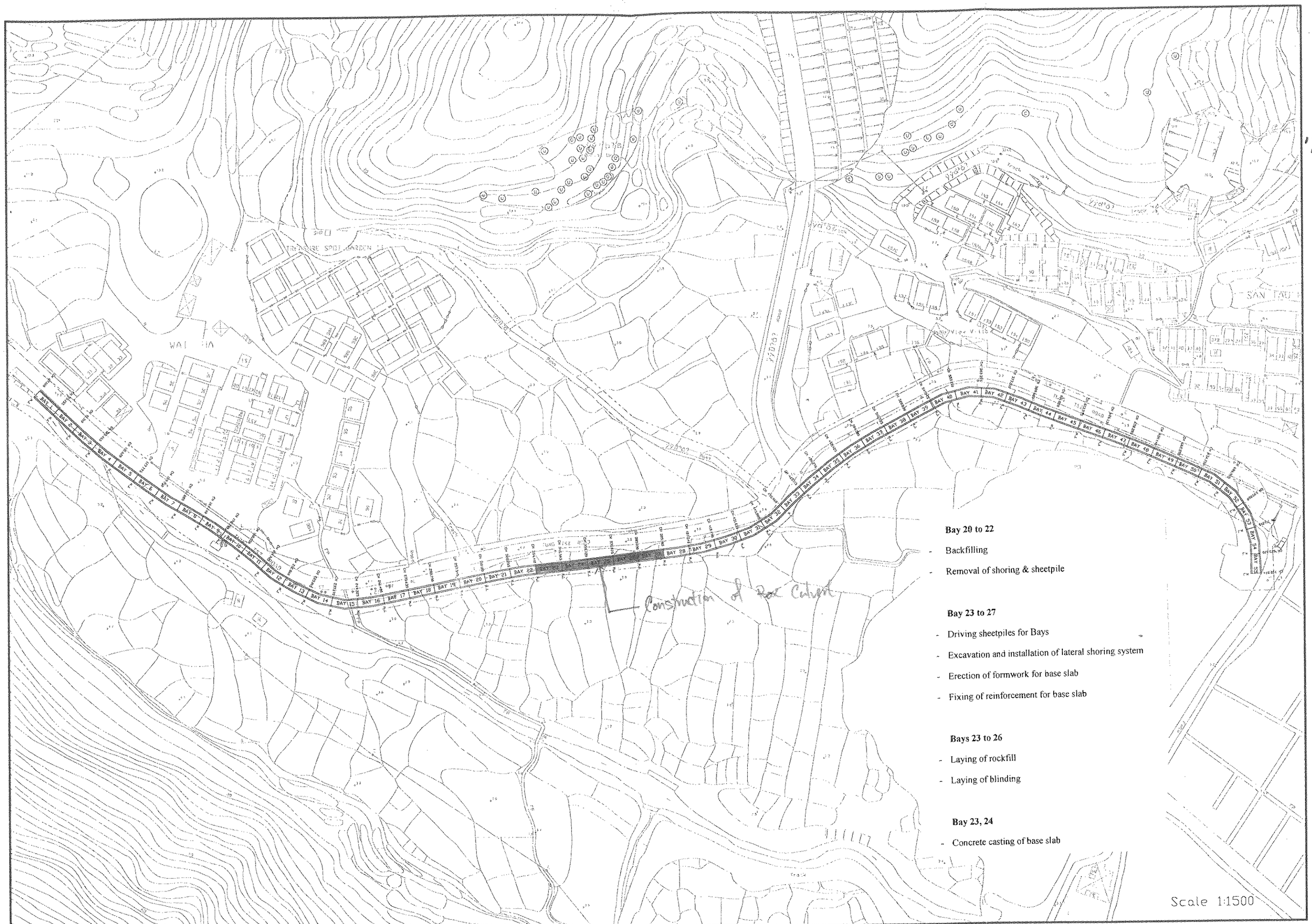


Rev. 4

ID	Task Name	Duration	Start	Finish	Predecessors
1114	Blinding	1 day	Thu 13/5/16	Thu 13/5/16	1113
1115	**Base slab**	**5 days**	**Fri 13/5/17**	**Tue 13/5/21**	
1116	formwork	1 day	Fri 13/5/17	Fri 13/5/17	1114
1117	rebar	2 days	Sat 13/5/18	Sun 13/5/19	1116
1118	kicker formwork	1 day	Mon 13/5/20	Mon 13/5/20	1117
1119	concrete	1 day	Tue 13/5/21	Tue 13/5/21	1118
1120	**Wall & top slab**	**11 days**	**Wed 13/5/22**	**Sat 13/6/1**	
1121	backfill to kicker	2 days	Wed 13/5/22	Thu 13/5/23	1119
1122	concrete slab	1 day	Fri 13/5/24	Fri 13/5/24	1121
1123	remove shoring	1 day	Sat 13/5/25	Sat 13/5/25	1122
1124	wall rebar	1 day	Sun 13/5/26	Sun 13/5/26	1123
1125	interior formwork	2 days	Mon 13/5/27	Tue 13/5/28	1124
1126	slab rebar	1 day	Wed 13/5/29	Wed 13/5/29	1125
1127	exterior formwork	2 days	Thu 13/5/30	Fri 13/5/31	1126
1128	concrete	1 day	Sat 13/6/1	Sat 13/6/1	1127
1129	Backfill & removal sheetpils	6 days	Sun 13/6/2	Fri 13/6/7	1128



Rev. 4



Bay 20 to 22

- Backfilling
- Removal of shoring & sheetpile

Bay 23 to 27

- Driving sheetpiles for Bays
- Excavation and installation of lateral shoring system
- Erection of formwork for base slab
- Fixing of reinforcement for base slab

Bays 23 to 26

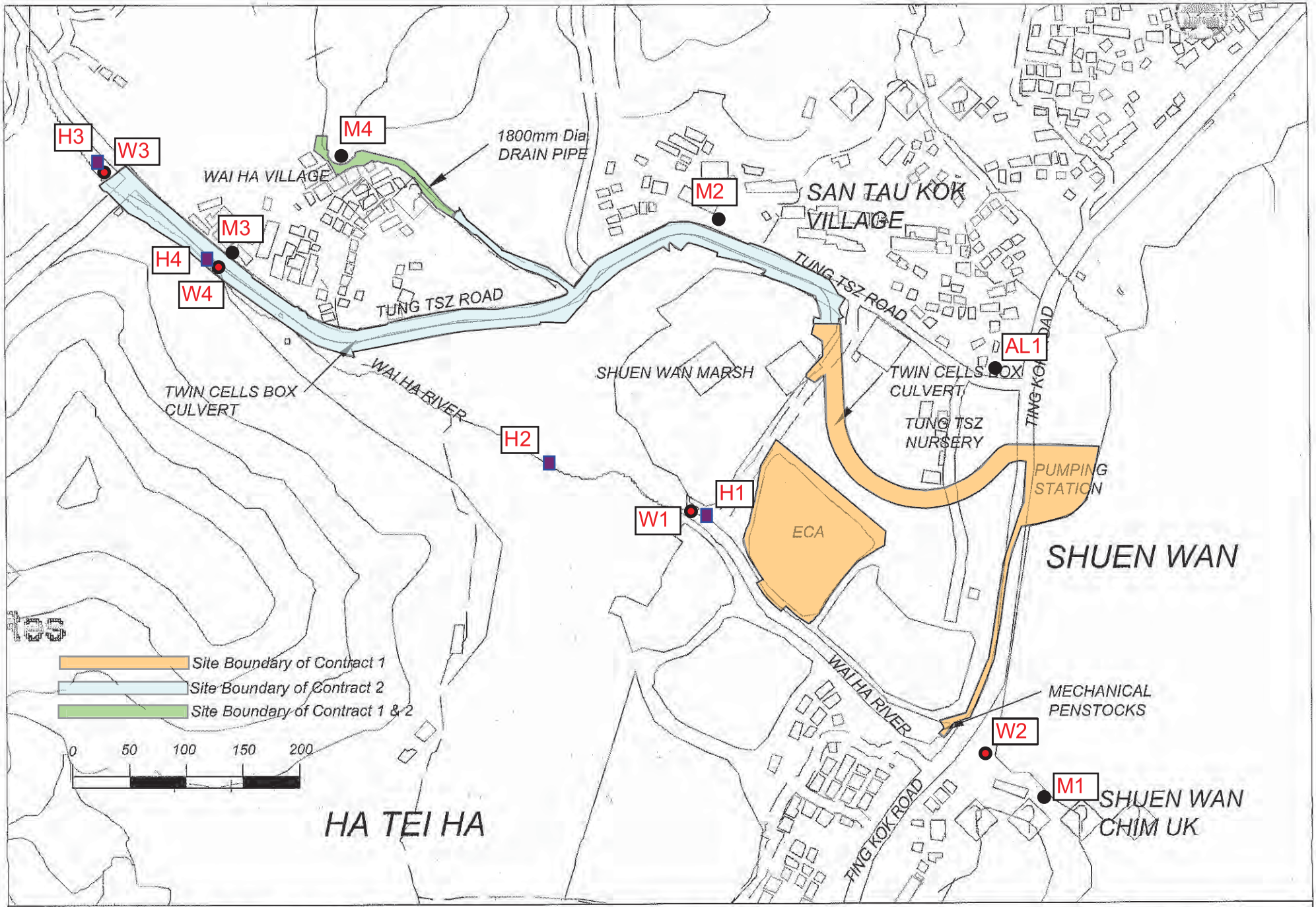
- Laying of rockfill
- Laying of blinding

Bay 23, 24

- Concrete casting of base slab

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 Professional Plus (Serial No. 10G101946)	16 Nov 11	16 Feb 12
4*		Turbidimeter HACH 2100p (Serial No. 11030C008499)	21 Sep 11	21 Dec 11
5*		YSI SOnde 6820/ 650MDS (Serial No. 02J0912/08K0788 AA	16 Dec 11	16Mar 12
6	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:**	HK1129081
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:**	09/12/2011
		DATE OF ISSUE:	16/12/2011
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:	Dissolved Oxygen, pH, Salinity, Temperature and Turbidity
Description:	YSI Sonde
Brand Name:	YSI
Model No.:	YSI 6820 / 650MDS
Serial No.:	02J0912/02K0788 AA
Equipment No.:	--
Date of Calibration:	16 December, 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: HK1129081
Date of Issue: 16/12/2011
Client: ACTION UNITED ENVIRO SERVICES

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

Parameters:

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

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

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

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

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

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

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

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

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

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

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

Parameters:

Turbidity **Method Ref: APHA 21st Ed. 2130B**

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

Mr Chan Kwok Fai, Godfrey
Laboratory Manager – Hong Kong

ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR RAY CHEUNG	**WORK ORDER:**	HK1121907
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:**	17/09/2011
		DATE OF ISSUE:	27/09/2011
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.:	2100Q
Serial No.:	11030C008499
Equipment No.:	--
Date of Calibration:	21 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: HK1121907
Date of Issue: 27/09/2011
Client: ACTION UNITED ENVIRO SERVICES

Description: Turbidimeter
Brand Name: HACH
Model No.: 2100Q
Serial No.: 11030C008499
Equipment No.: --
Date of Calibration: 21 September, 2011 Date of next Calibration: 21 December, 2011

Parameters:

Turbidity **Method Ref: ALPHA 21st Ed. 2130B**

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0.00	0.14	--
4.00	4.18	4.5
40.0	40.6	1.5
80.0	80.2	0.3
400	391	-2.3
800	829	3.6
	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 – December 2011

Date		Stream Monitoring		Noise Monitoring
		Water Sampling	Flow Monitoring	
Thu	1-Dec-11	W1, W2, W3, W4		M1, AL1
Fri	2-Dec-11			
Sat	3-Dec-11	W1, W2, W3, W4	H1, H2, H3, H4	M2, M3, M4
Sun	4-Dec-11			
Mon	5-Dec-11			
Tue	6-Dec-11	W1, W2, W3, W4		
Wed	7-Dec-11			
Thu	8-Dec-11	W1, W2, W3, W4		M1, AL1
Fri	9-Dec-11			
Sat	10-Dec-11	W1, W2, W3, W4	H1, H2, H3, H4	M2, M3, M4
Sun	11-Dec-11			
Mon	12-Dec-11			
Tue	13-Dec-11	W1, W2, W3, W4		
Wed	14-Dec-11			
Thu	15-Dec-11	W1, W2, W3, W4		M1, AL1,M2, M3, M4
Fri	16-Dec-11			
Sat	17-Dec-11	W1, W2, W3, W4	H1, H2, H3, H4	
Sun	18-Dec-11			
Mon	19-Dec-11			
Tue	20-Dec-11	W1, W2, W3, W4		
Wed	21-Dec-11			
Thu	22-Dec-11	W1, W2, W3, W4		M1, AL1
Fri	23-Dec-11			
Sat	24-Dec-11	W1, W2, W3, W4	H1, H2, H3, H4	M2, M3, M4
Sun	25-Dec-11			
Mon	26-Dec-11			
Tue	27-Dec-11			
Wed	28-Dec-11			
Thu	29-Dec-11	W1, W2, W3, W4		M1, AL1
Fri	30-Dec-11			
Sat	31-Dec-11	W1, W2, W3, W4	H1, H2, H3, H4	M2, M3, M4

	Monitoring Day
	Sunday or Public Holiday

Monitoring Schedule in the coming month – January 2012

Date		Stream Monitoring		Noise Monitoring
		Water Sampling	Flow Monitoring	
Sun	1-Jan-12			
Mon	2-Jan-12			
Tue	3-Jan-12	**W1, W2, W3, W4**		
Wed	4-Jan-12			
Thu	5-Jan-12	**W1, W2, W3, W4**		**M1, AL1,M2, M3, M4**
Fri	6-Jan-12			
Sat	7-Jan-12	**W1, W2, W3, W4**	**H1, H2, H3, H4**	
Sun	8-Jan-12			
Mon	9-Jan-12			
Tue	10-Jan-12	**W1, W2, W3, W4**		
Wed	11-Jan-12			
Thu	12-Jan-12	**W1, W2, W3, W4**		**M1, AL1,M2, M3, M4**
Fri	13-Jan-12			
Sat	14-Jan-12	**W1, W2, W3, W4**	**H1, H2, H3, H4**	
Sun	15-Jan-12			
Mon	16-Jan-12			
Tue	17-Jan-12	**W1, W2, W3, W4**		
Wed	18-Jan-12			
Thu	19-Jan-12	**W1, W2, W3, W4**		**M1, AL1,M2, M3, M4**
Fri	20-Jan-12			
Sat	21-Jan-12	**W1, W2, W3, W4**	**H1, H2, H3, H4**	
Sun	22-Jan-12			
Mon	23-Jan-12			
Tue	24-Jan-12			
Wed	25-Jan-12			
Thu	26-Jan-12	**W1, W2, W3, W4**		**M1, AL1,M2, M3, M4**
Fri	27-Jan-12			
Sat	28-Jan-12	**W1, W2, W3, W4**	**H1, H2, H3, H4**	
Sun	29-Jan-12			
Mon	30-Jan-12			
Tue	31-Jan-12		**H1, H2, H3, H4**	

	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-Dec-11	Thu	Mainly cloudy with relatively low visibility	0	17	71.5	11	N
2-Dec-11	Fri	Moderate easterly winds	0	13.9	56	14.3	N/NW
3-Dec-11	Sat	Sunny intervals	0	13.9	61	11	N/NE
4-Dec-11	Sun	Moderate northeasterly winds,	0	16.5	59.7	6.6	E
5-Dec-11	Mon	Mainly cloudy.	1.2	19.1	70	9.5	N/NE
6-Dec-11	Tue	Moderate easterly winds, occasionally fresh offshore.	1.2	19.8	81.5	6.6	N
7-Dec-11	Wed	Mainly cloudy.	0	22.4	78.7	6.2	N/NE
8-Dec-11	Thu	Fresh northerly winds, occasionally strong offshore.	0	18.5	61.7	14	NN/W
9-Dec-11	Fri	Moderate northerly winds	Trace	14.1	55.5	14.2	N/NE
10-Dec-11	Sat	fine and dry.	0	12.9	44.2	12.7	N/NE
11-Dec-11	Sun	It will be fine and very dry.	0	12.6	41.5	7.5	N/NE
12-Dec-11	Mon	Fine and dry.	0	14.1	42.5	6.5	NE
13-Dec-11	Tue	Moderate northeasterly winds	Trace	15.2	50.2	6	N/NE
14-Dec-11	Wed	It will be fine and very dry.	0	18.8	57.5	5.1	N/NE
15-Dec-11	Thu	Moderate to fresh northerly winds.	0	18.5	59	6.5	NE
16-Dec-11	Fri	Mainly cloudy.	0	16	51.7	11.4	NE
17-Dec-11	Sat	fine and dry.	Trace	15.6	61.8	11.7	N/NE
18-Dec-11	Sun	Mainly cloudy.	Trace	15.2	65.7	6.6	N/NE
19-Dec-11	Mon	Moderate northeasterly winds.	0	15.4	69.5	8.1	N/NE
20-Dec-11	Tue	Mainly cloudy.	Trace	16.8	74.9	6.7	N/NE
21-Dec-11	Wed	Mainly cloudy.	0	18.6	70.2	6.5	N/NE
22-Dec-11	Thu	Moderate north to northeasterly winds.	0	17	62.7	9.2	N/NE
23-Dec-11	Fri	Fine and dry.	0	13.8	60	12.6	NE
24-Dec-11	Sat	Mainly cloudy.	0	12.7	59	7.7	NE
25-Dec-11	Sun	Holiday					
26-Dec-11	Mon	Holiday					
27-Dec-11	Tue	Holiday					
28-Dec-11	Wed	Mainly cloudy.	0	16.8	74.2	6.4	N
29-Dec-11	Thu	Moderate north to northeasterly winds.	0	17.4	75	21.5	N/NE
30-Dec-11	Fri	Moderate northeasterly winds	Trace	17.2	75	9.5	N
31-Dec-11	Sat	Fine and dry.	0.4	16.7	74.2	9.2	N

** 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-Dec-11	14:00	-	-	-	-	-	-	50.5
8-Dec-11	12:33	-	-	-	-	-	-	49.3
15-Dec-11	11:33							47.5
22-Dec-11	13:04	-	-	-	-	-	-	53.2
29-Dec-11	12:07							47.8
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 Leq5min	2nd Leq5min	3rd Leq5min	4th Leq5min	5th Leq5min	6th Leq5min	Leq30min*
1-Dec-11	14:40	-	-	-	-	-	-	55.1
8-Dec-11	13:06	-	-	-	-	-	-	53.5
15-Dec-11	12:05							53.8
22-Dec-11	13:41	-	-	-	-	-	-	58.0
29-Dec-11	11:33	-	-	-	-	-	-	57.7
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-Dec-11	15:46	60.8	61.5	59.4	64.2	61.7	66.8	63.1	66.1
10-Dec-11	13:00	62.8	65.0	62.4	62.4	67.4	67.0	65.0	68.0
15-Dec-11	11:33	65.4	53.4	62.8	68.5	59.7	57.9	63.7	66.7
24-Dec-11	10:34	66.5	65.9	55.6	59.9	66.3	69.3	65.7	68.7
31-Dec-11	11:09	69.7	61.2	72.2	69.8	74.3	62.5	70.4	73.4
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 – 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-Dec-11	14:19	62.9	62.0	55.7	70.2	69.2	67.1	66.7	69.7
10-Dec-11	11:30	63.0	65.0	59.6	64.1	62.0	63.2	63.1	66.1
15-Dec-11	10:30	59.6	59.2	47.1	70.2	61.3	56.9	63.7	66.7
24-Dec-11	9:30	60.5	58.3	54.1	64.1	59.5	60.4	60.4	63.4
31-Dec-11	10:06	58.1	64.1	66.4	69.2	70.5	64.1	66.9	69.9
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-Dec-11	14:56	49.5	47.6	50.3	50.4	50.1	49.7	49.7	52.7
10-Dec-11	13:33	65.1	62.0	53.0	50.5	46.5	56.8	59.7	62.7
15-Dec-11	11:02	56.5	48.6	48.3	48.2	42.2	40.2	50.5	53.5
24-Dec-11	10:02	54.6	53.6	58.2	54.3	50.8	52.3	54.6	57.6
31-Dec-11	10:38	48.7	50.2	47.6	50.9	44.0	46.5	48.5	51.5
Limit Level		-						**> 75 dB(A)**	

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

DSD Contract No. DC/2010/02

Contract No. - Drainage Improvement in Shuen Wan and Shek Wu Wai

Summary of Water Quality Monitoring Results

AUES

Location		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1 (impact)	Action/ Limit Level	Action	7.27	Action	n/a	Action	4.77	Action	n/a	Action	9.73
		Limit	7.05	Limit	n/a	Limit	5.26	Limit	n/a	Limit	10.77
W2 (impact)		Action	7.26	Action	n/a	Action	2.46	Action	n/a	Action	8.89
		Limit	6.44	Limit	n/a	Limit	3.42	Limit	n/a	Limit	9.75
W3 (control)		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-Dec-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	16:30	<1	21.7	21.7	7.38	7.4	85	85.0	2.2	2.2	7.46	7.5	7.4	7.4
			21.7		7.38		85		2.2		7.46		7.4	
W2 (Impact)	16:50	<1	22.8	22.8	7.21	7.2	83	83.0	1.2	1.2	7.97	8.0	2.2	2.2
			22.8		7.21		83		1.2		7.97		2.2	
W3 (control)	10:30	0.30	20	20.3	5.67	5.7	64.4	65.0	1.19	1.2	7.9	8.0	<2	2.0
			20.5		5.68		65.6		1.24		8		<2	
W4 (impact)	11:15	0.40	21	21.4	5.73	5.8	63	64.0	2.18	2.2	8	8.2	<2	2.0
			21.8		5.78		65		2.27		8.3		<2	

Date	3-Dec-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	13:15	<1	19.8	19.8	7.46	7.5	85	85.0	1	1.0	7.8	7.8	1	1.0
			19.8		7.46		85		1		7.8		1	
W2 (Impact)	13:00	<1	19.4	19.4	7.38	7.4	84	84.0	2.1	2.1	7.78	7.8	1.4	1.4
			19.4		7.38		84		2.1		7.78		1.4	
W3 (control)	13:12	0.30	17.2	17.2	5.09	5.1	61.7	61.2	0.94	0.9	8.7	8.7	<2	2.0
			17.1		5.08		60.7		0.91		8.6		<2	
W4 (impact)	13:28	0.20	17.1	17.1	5.37	5.4	63.8	64.1	1.01	1.0	8.5	8.5	<2	2.0
			17.1		5.42		64.3		0.97		8.5		<2	

Date	6-Dec-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	10:20	<1	20.9	20.9	7.27	7.3	78	78.0	1.1	1.1	7.63	7.6	1.4	1.4
			20.9		7.27		78		1.1		7.63		1.4	
W2 (Impact)	9:53	<1	21.2	21.2	7.11	7.1	76	76.0	2.1	2.1	8.47	8.5	4.4	4.4
			21.2		7.11		76		2.1		8.47		4.4	
W3 (control)	13:20	0.30	22.8	23.0	6.16	6.2	72	72.4	28.6	28.8	7.4	7.6	63	63.0
			23.1		6.18		72.7		28.9		7.7		63	
W4 (impact)	13:35	0.40	22.5	22.8	5.58	5.6	65	65.2	17.9	18.1	7.9	8.0	15	15.0
			23		5.63		65.3		18.3		8.1		15	

Date	8-Dec-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	12:00	<1	23.1	23.1	7.09	7.1	74	74.0	5	5.0	7.51	7.5	4.8	4.8
			23.1		7.09		74		5		7.51		4.8	
W2 (Impact)	11:34	<1	22	22.0	6.92	6.9	72	72.0	3	3.0	7.69	7.7	3.2	3.2
			22		6.92		72		3		7.69		3.2	
W3 (control)	11:25	0.30	21.5	21.8	5.57	5.6	64.6	65.7	2.18	2.2	8.1	8.3	<2	2.0
			22		5.61		66.7		2.28		8.4		<2	
W4 (impact)	11:45	0.40	21.7	22.0	5.47	5.5	63.4	64.0	3.09	3.2	8.4	8.5	<2	2.0
			22.3		5.55		64.5		3.28		8.5		<2	

Date	10-Dec-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	11:25	<1	16.7	16.7	8.23	8.2	85	85.0	1	1.0	7.49	7.5	6	6.0
			16.7		8.23		85		1		7.49		6	
W2 (Impact)	11:10	<1	17.7	17.7	8.34	8.3	83	83.0	4.4	4.4	8.04	8.0	2.2	2.2
			17.7		8.34		83		4.4		8.04		2.2	
W3 (control)	11:15	0.30	17	17.6	6.55	6.6	69.1	70.0	1.84	1.9	7.5	7.6	24	24.0
			18.1		6.61		70.8		2.04		7.7		24	
W4 (impact)	11:30	0.40	17.2	17.5	6.26	6.4	66.7	67.9	8.17	8.5	8.1	8.1	2	2.0
			17.8		6.47		69		8.75		8.1		2	

Date	13-Dec-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	13:30	<1	19.8	19.8	7.48	7.5	78	78.0	1.8	1.8	7.51	7.5	2	2.0
			19.8		7.48		78		1.8		7.51		2	
W2 (Impact)	13:50	<1	19.2	19.2	7.42	7.4	78	78.0	1.8	1.8	7.99	8.0	3.6	3.6
			19.2		7.42		78		1.8		7.99		3.6	
W3 (control)	12:25	0.30	18.5	19.0	6.4	6.4	69	69.7	3.22	3.2	8	8.3	2	2.0
			19.4		6.48		70.3		3.24		8.6		2	
W4 (impact)	12:35	0.40	18.5	18.9	6.2	6.2	67.3	67.7	4.29	4.4	7.8	7.9	2	2.0
			19.3		6.24		68		4.43		7.9		2	

Date	15-Dec-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	14:30	<1	21.5	21.5	6.42	6.4	72	72.0	51.6	51.6	7.5	7.5	22	22.0
			21.5		6.42		72		51.6		7.5		22	
W2 (Impact)	15"04	<1	21.6	21.6	6.67	6.7	74	74.0	13.6	13.6	7.97	8.0	8.6	8.6
			21.6		6.67		74		13.6		7.97		8.6	
W3 (control)	10:50	0.30	19.5	19.6	6.99	7.1	59	59.9	2.08	2.1	8	8.1	<2	2.0
			19.7		7.3		60.7		2.21		8.2		<2	
W4 (impact)	11:15	0.40	19.7	20.1	5.58	5.7	62.1	63.0	42.2	42.8	8.3	8.4	21	21.0
			20.4		5.74		63.8		43.4		8.4		21	

DSD Contract No. DC/2010/02

Contract No. - Drainage Improvement in Shuen Wan and Shek Wu Wai

Summary of Water Quality Monitoring Results

AUES

Location		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1 (impact)	**Action/ Limit Level**	Action	7.27	Action	n/a	Action	4.77	Action	n/a	Action	9.73
		Limit	7.05	Limit	n/a	Limit	5.26	Limit	n/a	Limit	10.77
W2 (impact)		Action	7.26	Action	n/a	Action	2.46	Action	n/a	Action	8.89
		Limit	6.44	Limit	n/a	Limit	3.42	Limit	n/a	Limit	9.75
W3 (control)		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-Dec-11											
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DO (%)**		**Turbidity (NTU)**		**pH**		**SS(mg/L)**	
W1(impact)	16:30	<1	19.3	19.3	7.52	7.5	83	83.0	10.4	10.4	8.2	8.2	9.8	9.8
			19.3		7.52		83		10.4		8.2		9.8	
W2 (Impact)	16:52	<1	19.7	19.7	6.99	7.0	78	78.0	4.2	4.2	8.2	8.2	5.2	5.2
			19.7		6.99		78		4.2		8.2		5.2	
W3 (control)	11:00	0.30	17.5	18.1	6.38	6.6	69.3	71.3	2.21	2.2	8.3	8.4	<2	2.0
			18.6		6.82		73.3		2.25		8.4		<2	
W4 (impact)	11:20	0.40	18.5	18.8	6.1	6.1	65.9	66.1	35.5	35.9	8.2	8.3	142	142.0
			19		6.13		66.3		36.2		8.3		142	

Date	20-Dec-11											
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DO (%)**		**Turbidity (NTU)**		**pH**		**SS(mg/L)**	
W1(impact)	9:26	<1	19.4	19.4	7.34	7.3	71	71.0	2.1	2.1	7.5	7.5	1	1.0
			19.4		7.34		71		2.1		7.5		1	
W2 (Impact)	9:06	<1	18.9	18.9	7.43	7.4	72	72.0	2.9	2.9	7.79	7.8	3	3.0
			18.9		7.43		72		2.9		7.79		3	
W3 (control)	11:40	0.30	18.7	19.0	6.65	6.7	71.3	71.7	2.79	2.8	8	8.1	<2	2.0
			19.3		6.7		72		2.79		8.2		<2	
W4 (impact)	11:55	0.40	19.5	19.7	6.62	6.6	72.8	72.9	50.5	50.6	7.9	8.0	272	272.0
			19.9		6.61		73		50.6		8		272	

Date	22-Dec-11											
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DO (%)**		**Turbidity (NTU)**		**pH**		**SS(mg/L)**	
W1(impact)	10:43	<1	22.4	22.4	7.25	7.3	78	78.0	1	1.0	7.27	7.3	1	1.0
			22.4		7.25		78		1		7.27		1	
W2 (Impact)	10:23	<1	22.8	22.8	7	7.0	76	76.0	1.2	1.2	7.46	7.5	3.6	3.6
			22.8		7		76		1.2		7.46		3.6	
W3 (control)	10:10	0.30	18.1	18.6	7.14	7.1	76.9	77.0	1.61	1.6	7.6	7.7	<2	2.0
			19.1		7.14		77		1.51		7.7		<2	
W4 (impact)	10:25	0.40	19.2	19.4	6.37	6.4	69.8	69.9	4.47	4.7	7.6	7.7	3	3.0
			19.6		6.39		70		4.94		7.7		3	

Date	24-Dec-11											
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DO (%)**		**Turbidity (NTU)**		**pH**		**SS(mg/L)**	
W1(impact)	12:41	<1	17.4	17.4	7.48	7.5	77	77.0	21.5	21.5	7.71	7.7	12	12.0
			17.4		7.48		77		21.5		7.71		12	
W2 (Impact)	12:15	<1	15.8	15.8	7.49	7.5	74	74.0	20.8	20.8	7.95	8.0	13	13.0
			15.8		7.49		74		20.8		7.95		13	
W3 (control)	10:50	0.30	15.3	15.5	7.89	7.9	79.6	79.7	3.04	3.5	8	8.2	<2	2.0
			15.7		7.93		79.8		4.04		8.4		<2	
W4 (impact)	11:05	0.40	15.5	15.9	7.2	7.2	75	74.2	5.88	5.0	7.6	7.7	<2	2.0
			16.3		7.14		73.3		4.16		7.8		<2	

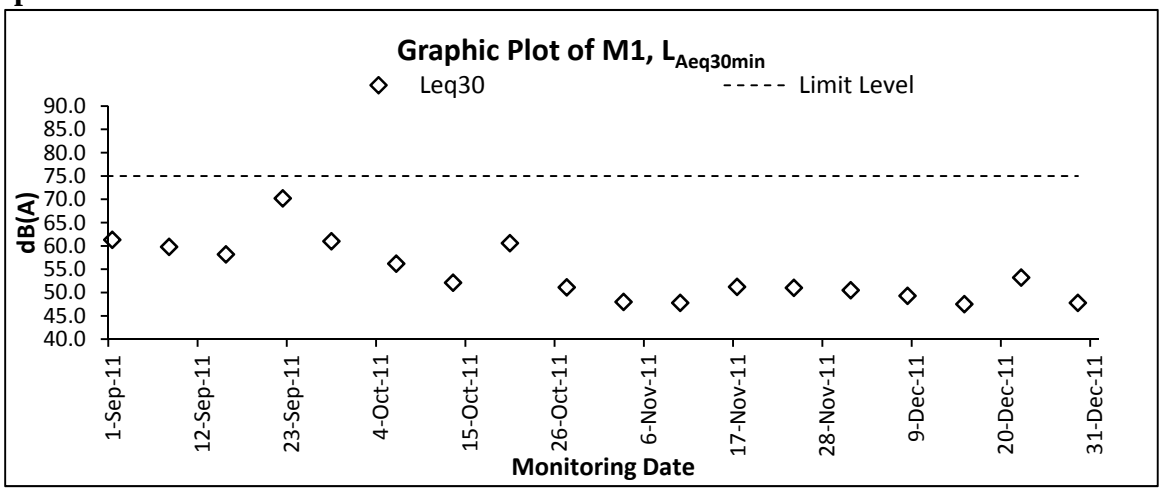
Date	29-Dec-11											
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DO (%)**		**Turbidity (NTU)**		**pH**		**SS(mg/L)**	
W1(impact)	15:00	<1	21.3	21.3	7.09	7.1	76	76.0	3.5	3.5	7.56	7.6	4.2	4.2
			21.3		7.09		76		3.5		7.56		4.2	
W2 (Impact)	15:19	<1	20.7	20.7	7	7.0	76	76.0	8.7	8.7	7.86	7.9	16	16.0
			20.7		7		76		8.7		7.86		16	
W3 (control)	10:30	0.30	18.5	18.8	6.91	6.9	74.8	74.4	1.73	1.9	8	8.1	<2	2.0
			19		6.89		74		2		8.2		<2	
W4 (impact)	10:45	0.40	19.2	19.5	6.38	6.4	69.7	69.9	2.68	2.9	8.3	8.3	<2	2.0
			19.7		6.4		70		3.05		8.3		<2	

Date	31-Dec-11											
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DO (%)**		**Turbidity (NTU)**		**pH**		**SS(mg/L)**	
W1(impact)	16:30	<1	20.4	20.4	7.39	7.4	80	80.0	2.1	2.1	7.96	8.0	2.8	2.8
			20.4		7.39		80		2.1		7.96		2.8	
W2 (Impact)	16:45	<1	20.7	20.7	7.12	7.1	80	80.0	4.6	4.6	8.14	8.1	3.6	3.6
			20.7		7.12		80		4.6		8.14		3.6	
W3 (control)	9:50	0.30	18.5	18.8	6.7	6.6	70	70.4	1.83	1.9	8	8.1	<2	2.0
			19.1		6.55		70.7		1.87		8.2		<2	
W4 (impact)	10:10	0.40	19	19.4	5.9	5.9	65	65.3	2.13	2.4	8.1	8.2	<2	2.0
			19.7		5.92		65.6		2.58		8.3		<2	

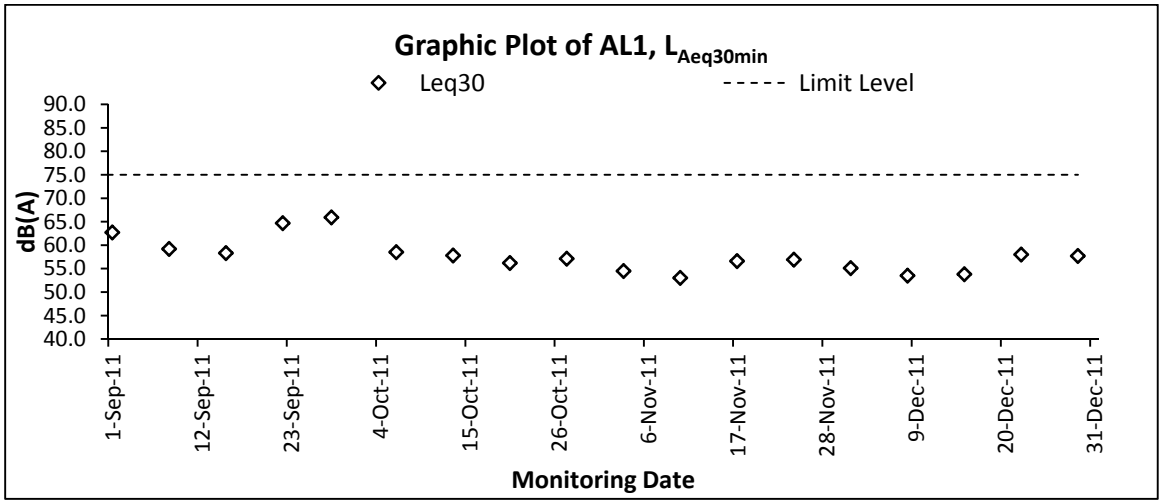
Appendix J

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

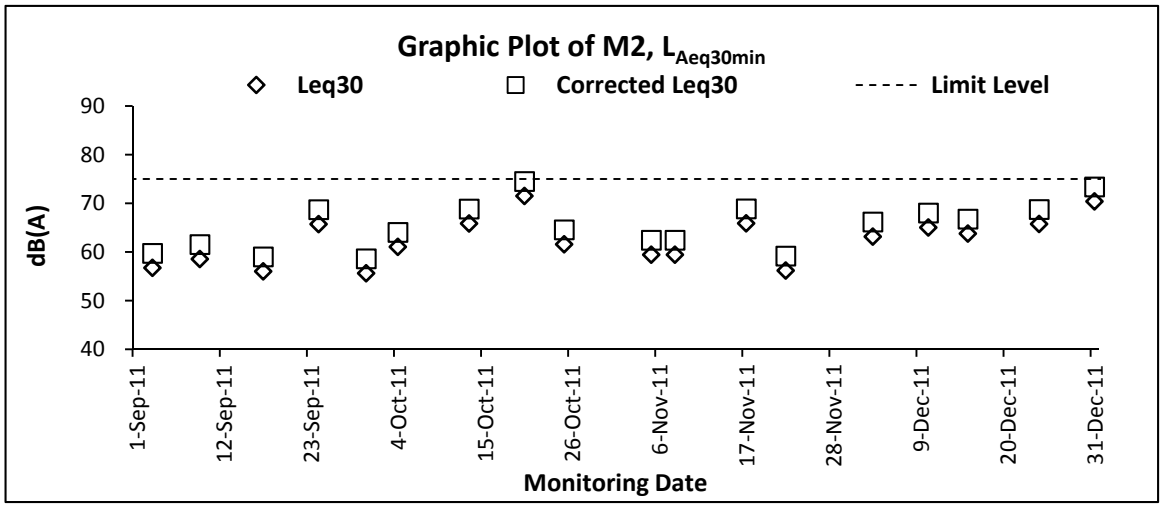
Graphic Plot – Construction Noise



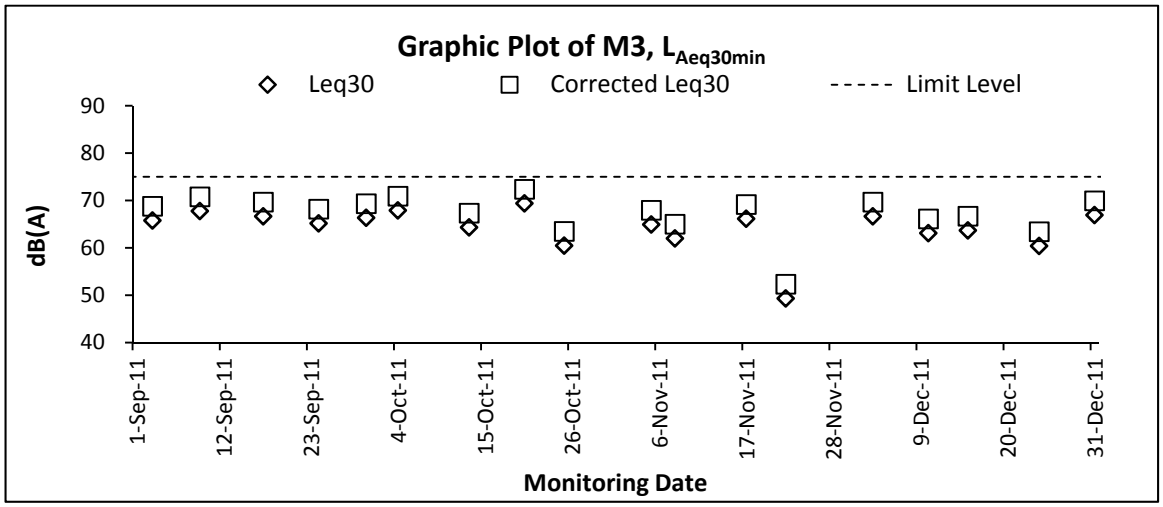
Remark: The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.



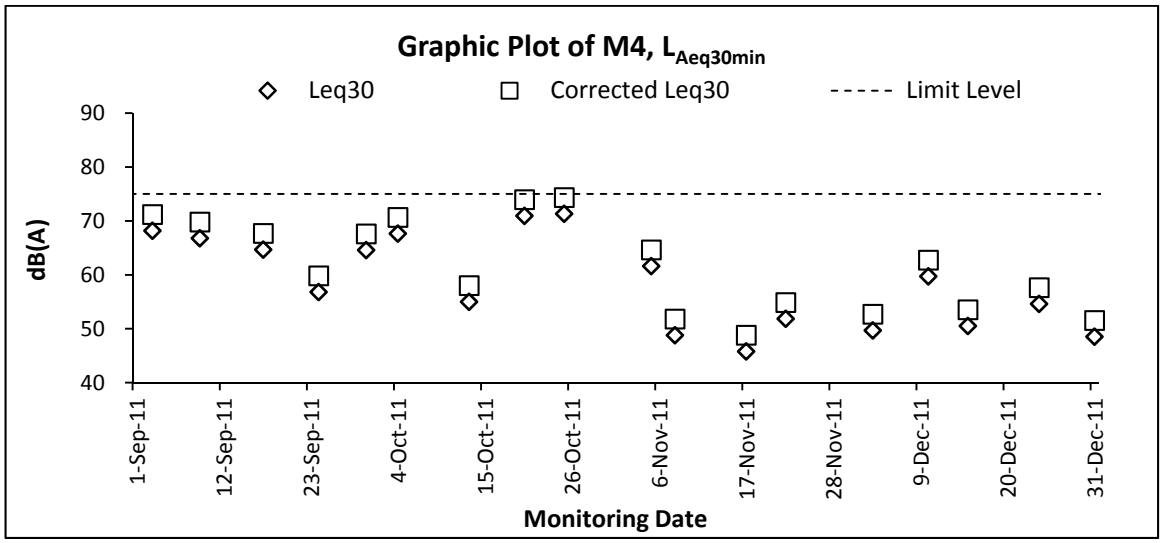
Remark: The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.



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

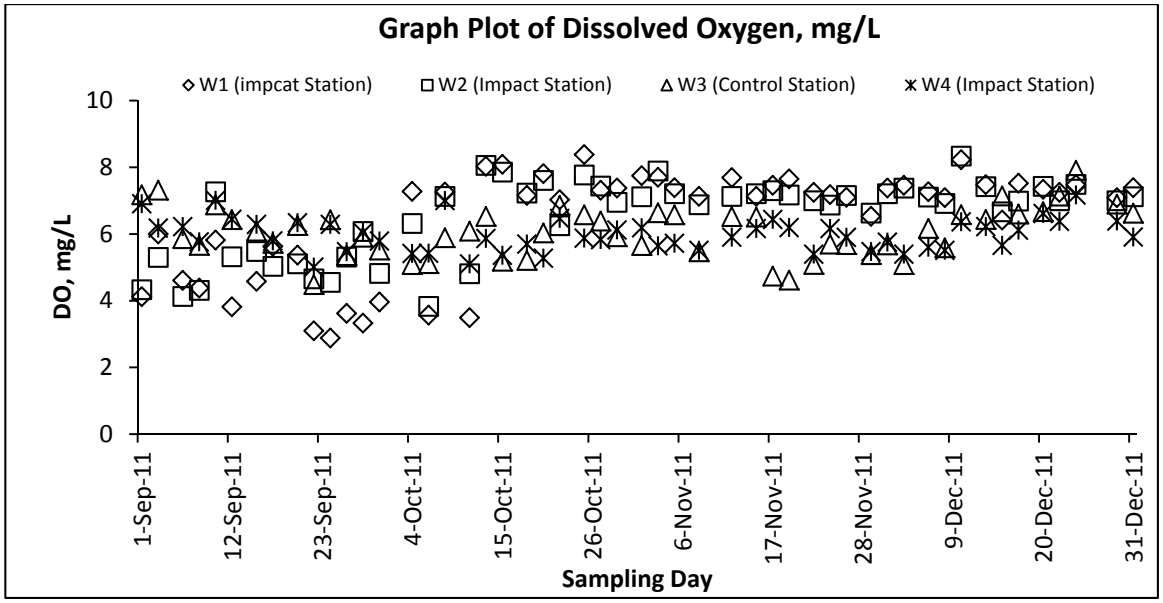


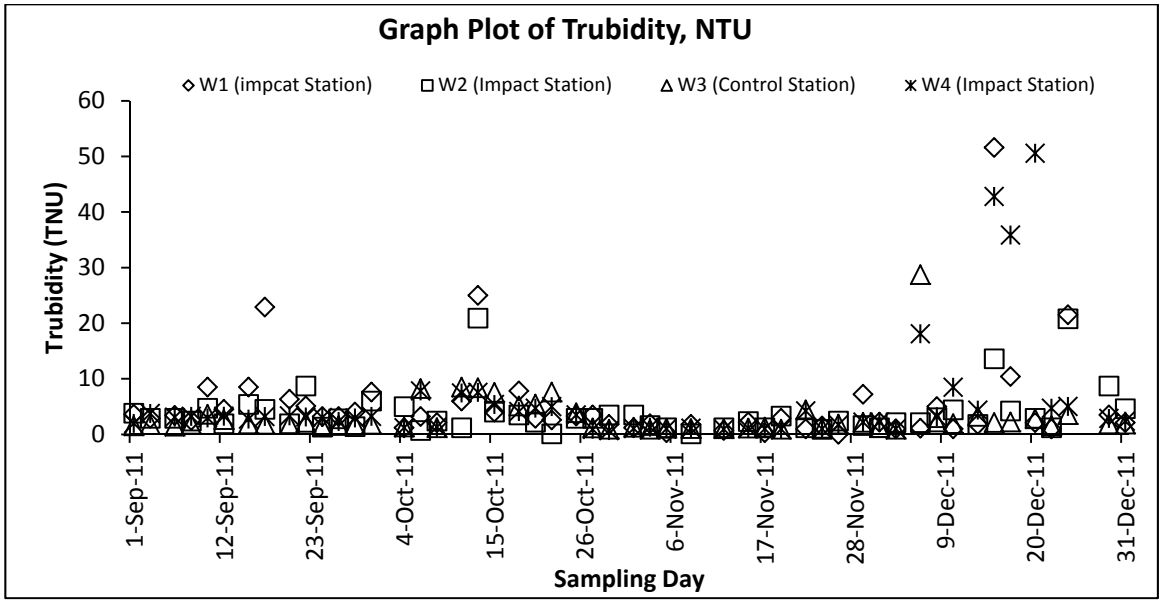
Remark: The monitoring is undertaken under free field situation. A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines

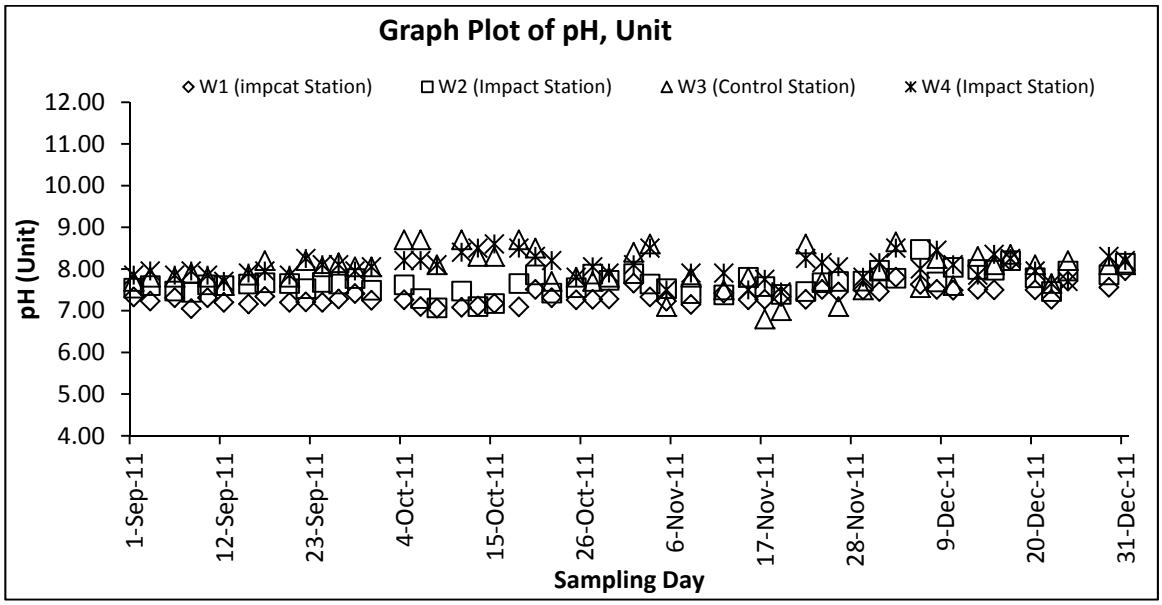


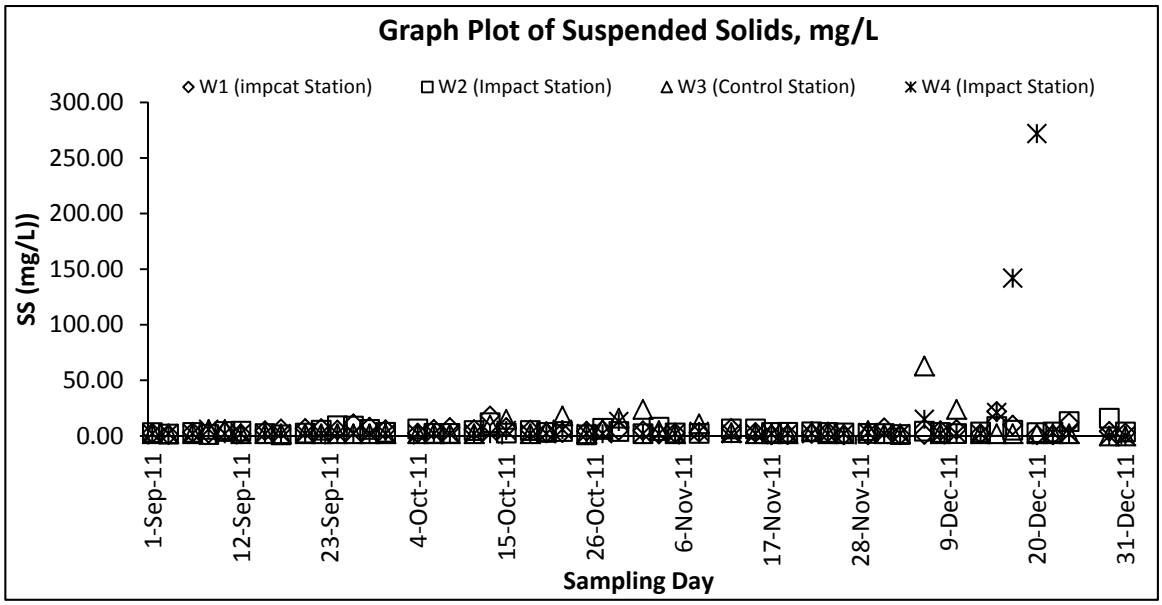
Remark: The monitoring is undertaken under free field situation. A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines

Graphic Plot – Water Quality

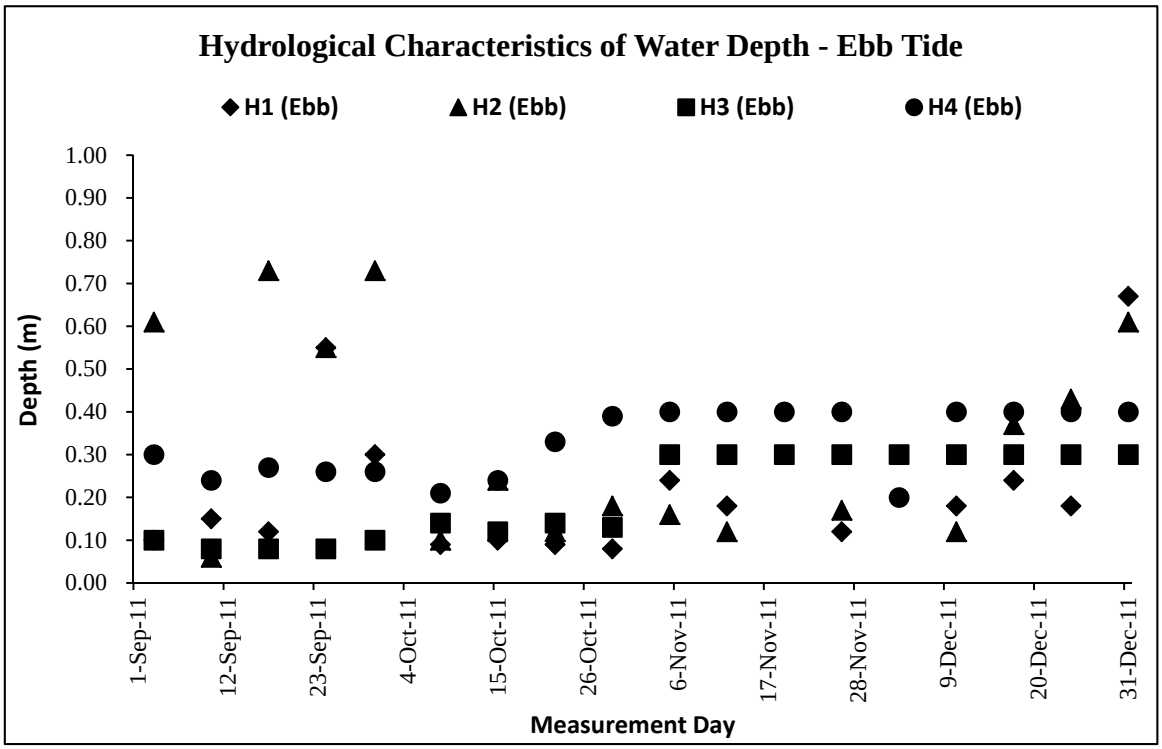


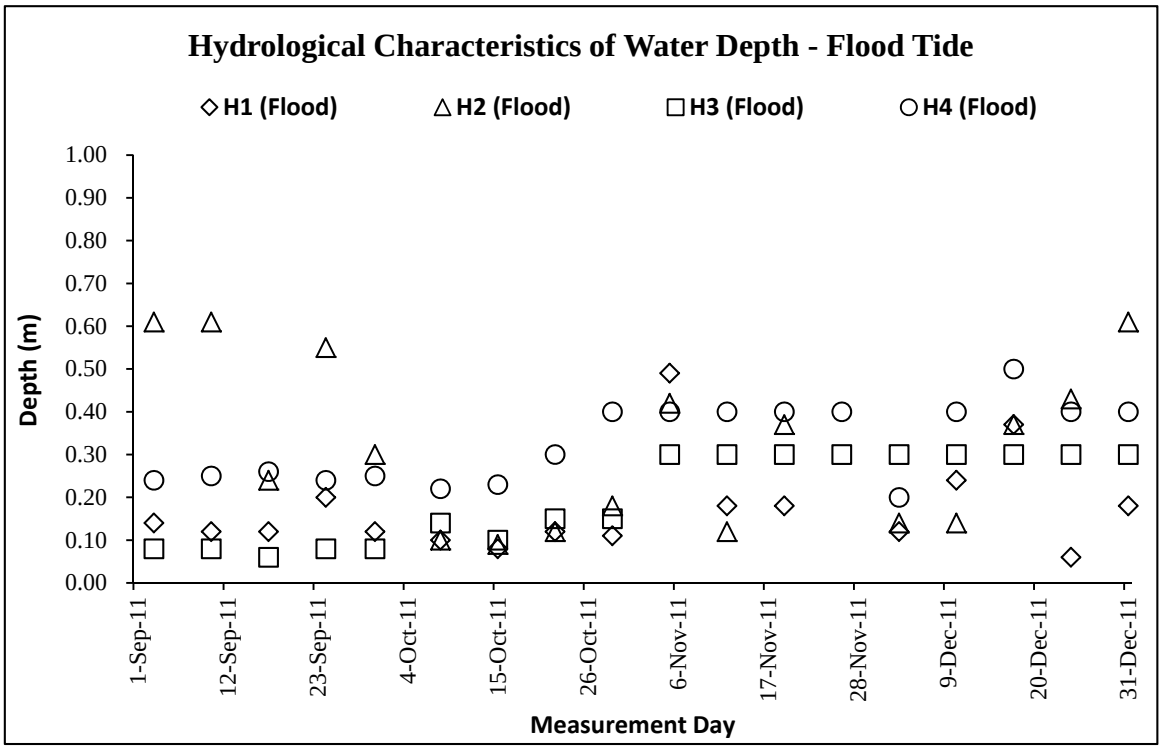



Graph Plot of pH, Unit
W1 (impcat Station)
W2 (Impact Station)
W3 (Control Station)
W4 (Impact Station)
pH (Unit)
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
1-Sep-11
12-Sep-11
23-Sep-11
4-Oct-11
15-Oct-11
26-Oct-11
6-Nov-11
17-Nov-11
28-Nov-11
9-Dec-11
20-Dec-11
31-Dec-11
Sampling Day

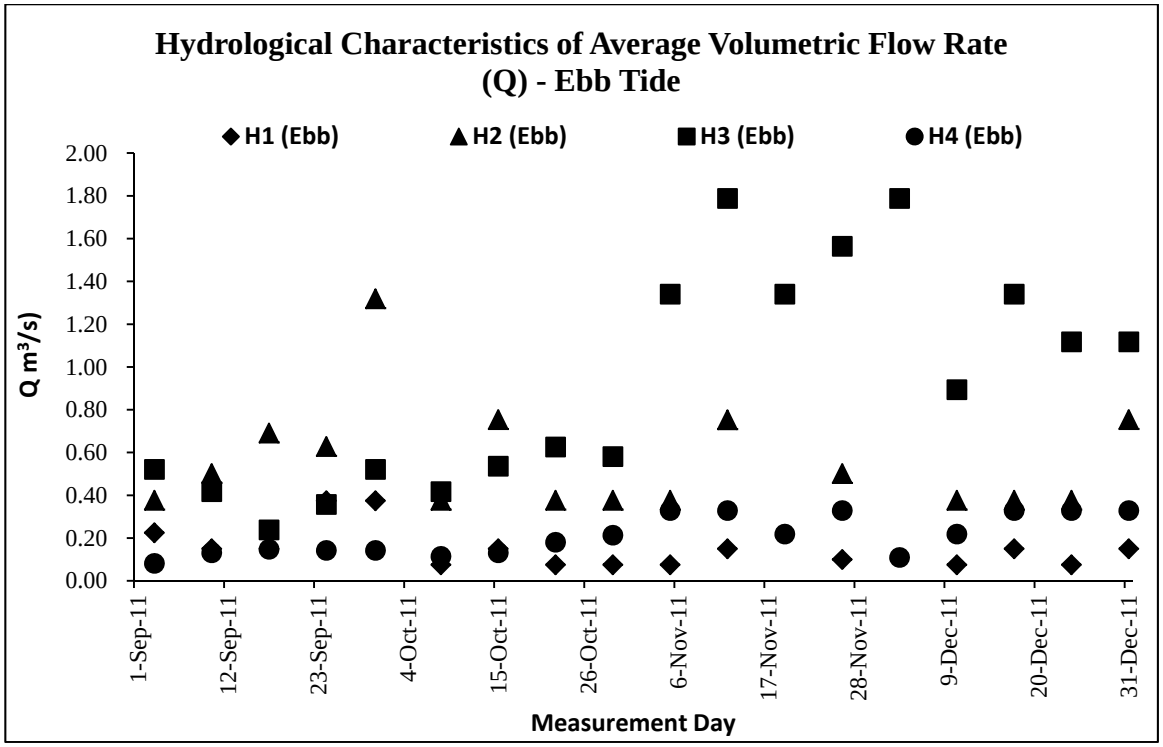

Graph Plot of Suspended Solids, mg/L
W1 (impcat Station)
W2 (Impact Station)
W3 (Control Station)
W4 (Impact Station)
SS (mg/L))
300.00
250.00
200.00
150.00
100.00
50.00
0.00
1-Sep-11
12-Sep-11
23-Sep-11
4-Oct-11
15-Oct-11
26-Oct-11
6-Nov-11
17-Nov-11
28-Nov-11
9-Dec-11
20-Dec-11
31-Dec-11
Sampling Day

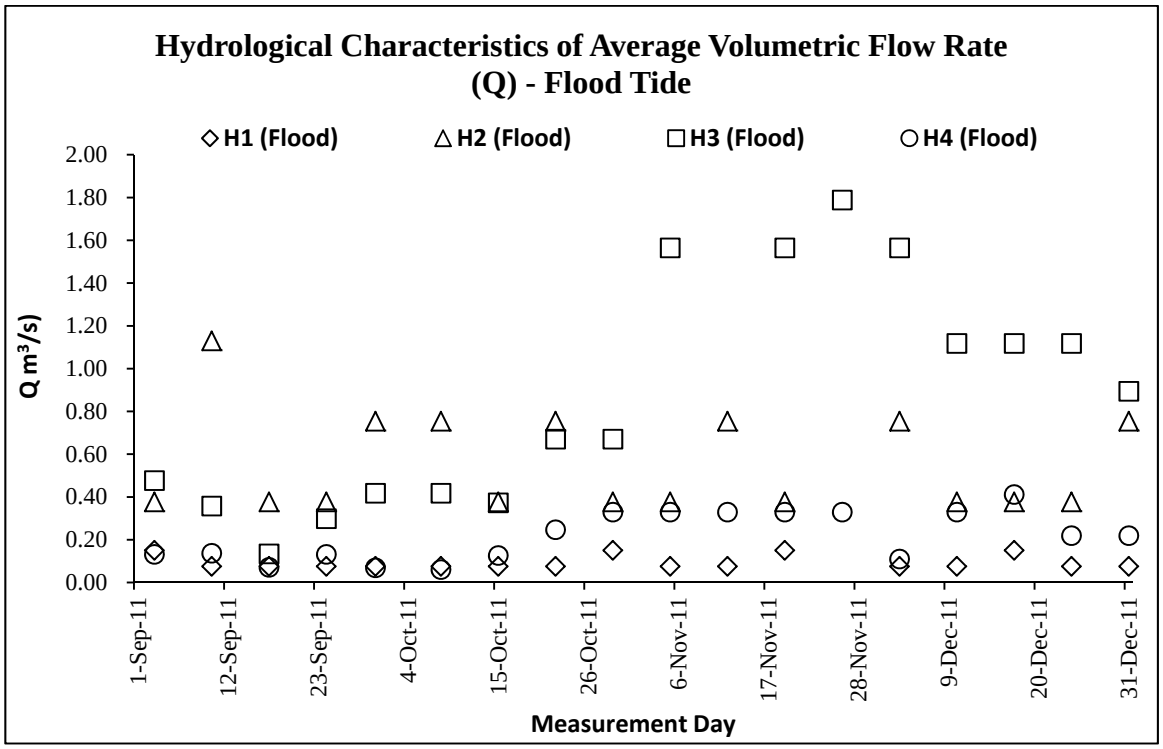
Graphic Plot – Hydrological Characteristics (Water Depth)





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	Nil	0	0	0	0	0	0	0	0	0	0.02
Nov	Nil	0	0	0	0	0	0	0	0	0	0.045
Dec	0.08	0	0	0	0.08	0	0	0	0	0	0
Total	**0.8655**	**0**	**0**	**0.7855**	**0.08**	**0**	**0**	**0**	**0**	**0**	**0.065**

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	2.2	1.7	
2.					
3.					
4.					
5.					
6.					
7.					
8.					
		Total Estimated Quantity of Timber Used	2.2		

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

Environmental Site Inspection Checklist

Project:	***DSD Contract No. DC/2010/02***	**Inspected by**	**Checklist No.** **DC1002-01122011**
	Drainage Improvement in Shuen Wan and Shek Wu Wai	**IEC/IEC's Representative:**	-
		RE/RE's Representative:	-
Inspection:	**Tung Tsz Road, Shuen Wan**	**ETL/ ET's Representative:**	Wong Hok Yin
Date:	1 December 2011	**EO/EO's Representative:**	Chan Hiu Shan
Time:	11:00	**Contractor's Representative:**	Chan Hiu Shan

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

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

Temperature: 18.7 ^{0}C

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

Wind: ☐ Strong ☑ Breeze ☐ Light

Area Inspected

1. Box Culvert Bay 20 - 23
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?	☐	☐	☐	☑	☐	Remark 1
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?	☐	☑	☐	☐	☐	
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?	☐	☑	☐	☐	☐	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	☐	☑	☐	☐	☐	
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 (24-11-2011):

Nil	

Observations recorded in this Site Inspection (1-12-2011):

	
1. Water spraying on haul road as a dust suppressive measure was carried out by the Contractor. However, excessive water was found direct discharge to the local drainage system. The Contractor is advised to control the amount of water for those works in the future.	

IEC's representative	***RE's representative***	***ET's representative***	***EO's representative***	***Contractor's representative***
( )	( )	(Wong Hok Yin)	( )	( )

Environmental Site Inspection Checklist

Project:	***DSD Contract No. DC/2010/02***	**Inspected by**	**Checklist No.** DC1002-07122011
	Drainage Improvement in Shuen Wan and Shek Wu Wai	**IEC/IEC's Representative:**	Justin Ye
		RE/RE's Representative:	Lau Siu Chuen
Inspection:	**Tung Tsz Road, Shuen Wan**	**ETL/ ET's Representative:**	Ben Tam
Date:	7 December 2011	**EO/EO's Representative:**	Chan Hiu Shan
Time:	11:00	**Contractor's Representative:**	Chan Hiu Shan

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

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

Temperature: 22.3 °C

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

Wind: ☐ Strong ☑ Breeze ☐ Light

Area Inspected

1. Box Culvert Bay 20 - 23
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?	☐	☐	☐	☑	☐	Remark 1
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?	☐	☐	☐	☑	☐	Remark 2
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?	☐	☑	☐	☐	☐	
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?	☐	☑	☐	☐	☐	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	☐	☑	☐	☐	☐	
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 (1-12-2011):

No wastewater discharge to the local drainage system was observed.	

Observations recorded in this Site Inspection (7-12-2011):

	
1. Open sand stockpiles were observed on site, the Contractor should cover it with tarpaulin sheet or other means to prevent fugitive dust.	2. Dust suppressive measures such as air spraying should be applied on the dry haul road.

IEC's representative	*RE's representative*	*ET's representative*	*EO's representative*	*Contractor's representative*
( )	( )	(Ben Tam)	( )	( )

Environmental Site Inspection Checklist

Project:	***DSD Contract No. DC/2010/02***	**Inspected by**	**Checklist No.** **DC1002-15122011**
	Drainage Improvement in Shuen Wan and Shek Wu Wai	**IEC/IEC's Representative:**	
		RE/RE's Representative:	Lau Siu Chuen
Inspection:	**Tung Tsz Road, Shuen Wan**	**ETL/ ET's Representative:**	Wong Hok Yin
Date:	15 December 2011	**EO/EO's Representative:**	Chan Hiu Shan
Time:	11:00	**Contractor's Representative:**	Chan Hiu Shan

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

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

Temperature: 19.2 ^{0}C

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

Wind: ☐ Strong ☑ Breeze ☐ Light

Area Inspected

1. Box Culvert Bay 20 - 23
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?	☐	☐	☐	☑	☐	Remark 1
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?	☐	☑	☐	☐	☐	
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?	☐	☑	☐	☐	☐	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	☐	☑	☐	☐	☐	
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 (7-12-2011):

Open sand stockpiles were still observed on site, the Contractor should cover it with tarpaulin sheet or other means to prevent fugitive dust.	

Observations recorded in this Site Inspection (15-12-2011):

 1. Open sand stockpiles were observed on site, the Contractor should cover it with tarpaulin sheet or other means to prevent fugitive dust.	

IEC's representative	*RE's representative*	*ET's representative*	*EO's representative*	*Contractor's representative*
( )	( )	(Wong Hok Yin)	( )	( )

Environmental Site Inspection Checklist

Project:	***DSD Contract No. DC/2010/02***	**Inspected by**	**Checklist No.** **DC1002-21122011**
	Drainage Improvement in Shuen Wan and Shek Wu Wai	**IEC/IEC's Representative:**	
		RE/RE's Representative:	Lau Siu Chuen
Inspection:	**Tung Tsz Road, Shuen Wan**	**ETL/ ET's Representative:**	Ben Tam
Date:	21 December 2011	**EO/EO's Representative:**	Chan Hiu Shan
Time:	11:00	**Contractor's Representative:**	Chan Hiu Shan

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

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

Temperature: 19.5 ^{0}C

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

Wind: ☐ Strong ☑ Breeze ☐ Light

Area Inspected

1. Box Culvert Bay 23 - 27
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?	☐	☐	☐	☑	☐	**Remark 2**
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?	☐	☑	☐	☐	☐	
4.06	Are the chemical waste containers properly labelled?	☐	☑	☐	☐	☐	
4.07	Are the chemical wastes stored in proper storage areas?	☐	☐	☐	☑	☐	**Remark 1**
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?	☐	☑	☐	☐	☐	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	☐	☑	☐	☐	☐	
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 (15-12-2011):

Watering for the open stockpiles to minimize fugitive dust was observed.

Observations recorded in this Site Inspection (21-12-2011):

1. Free standing chemical container was observed on site, the Contractor should provide proper mitigation measures such as drip tray underneath and place it in the chemical storage area after use.

2. Stagnant water was observed on site, drying or filling off the ponding with gravels is advised.

IEC's representative	*RE's representative*	*ET's representative*	*EO's representative*	*Contractor's representative*
( )	( )	(Ben Tam)	( )	( )

Environmental Site Inspection Checklist

Project:	***DSD Contract No. DC/2010/02***	**Inspected by**	**Checklist No.** **DC1002-29122011**
	Drainage Improvement in Shuen Wan and Shek Wu Wai	**IEC/IEC's Representative:**	
		RE/RE's Representative:	Lau Siu Chuen
Inspection:	**Tung Tsz Road, Shuen Wan**	**ETL/ ET's Representative:**	Tony Wong
Date:	29 December 2011	**EO/EO's Representative:**	Chan Hiu Shan
Time:	11:00	**Contractor's Representative:**	Chan Hiu Shan

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

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

Temperature: 17.7 ^{0}C

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

Wind: ☐ Strong ☑ Breeze ☐ Light

Area Inspected

1. Box Culvert Bay 23 - 27
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?	☐	☐	☐	☑	☐	**Remark 1**
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?	☐	☑	☐	☐	☐	
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?	☐	☑	☐	☐	☐	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	☐	☑	☐	☐	☐	
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 (21-12-2011):

1. Free standing chemical container was found to be removed. 2. Stagnant water was still observed; further improvement on the drainage system is suggested.	

Observations recorded in this Site Inspection (29-12-2011):

	
1. Stagnant water was observed on site, the Contractor is advised to improve the drainage system of the ponding.	

IEC's representative	*RE's representative*	*ET's representative*	*EO's representative*	*Contractor's representative*
( )	( )	(Tony Wong)	( )	( )

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 December 2011 (Issue 1)

January 2012

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 December 2011 (Issue 1)

January 2012

	Name	Signature
Prepared & Reviewed by:	**Sean FONG**	
Verified by:	**Ida YU**	
Date:	**3rd January 2012**	

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09 January 2012

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_20120109

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 December 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

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979 King's Road
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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 in the works areas under Contract 2 of the Project.

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 (December 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 2nd, 15th and 28th December 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 November 2011*.

Observation

3.2.2 A section of temporary hoardings, in the form of construction barriers, have been erected from west to east parts along Tung Tsz Road and 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 November 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 a filtration bed and a sedimentation tank placed along the southern part of the active works areas opposite to Wai Ha 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 to the south.

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 November 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 polluted water from the active works area into the adjacent Wai Ha River was observed (**Photo 4**). However, large stockpiles of soil were observed on 15th and 28th December 2011 at the bank of Wai Ha River to the southwest of Wai Ha (**Photo 5**). The Main Contractor was immediately contacted. It was found that

the stockpiled soil was formed by other contractor for the excavation work other than the current Project. The soil was stockpiled along the river bank to ease the access of a small-scale dredger to undertake the excavation work in the section of the Wai Ha River located to the northeast of Tai Po Area 5 Sewage Treatment Works (**Photos 6-7**).

Recommendation

3.4.3 The contractor should prevent any contaminants and sediments from entering the sensitive water-based habitats and implement pollution control measures to minimize any adverse environmental impacts to the water body.

3.4.4 To prevent any potential contamination and pollution of the water body adjacent to the Project Area by any contract work other than the current Project, the contractor and the Project Proponent should have routine inspection within and adjacent to the Project Area and the Wai Ha River.

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

3.6.1 Tree Protection Zones (TPZs) were not yet demarcated for the retained trees within the active construction areas in accordance with the recommendation stated in the *Monthly EM&A Report for November 2011*.

Observation

3.6.2 No further tree felling work was observed in this month. Clearance of herbaceous vegetation within the fenced area was recorded.

3.6.3 All trees proposed to be retained within the Project Area were recorded generally in fair health conditions. However, excessive pruning and topping of the canopies of a series of trees *Leucaena leucocephala* (銀合歡) (Tree no. T069 – T073 and T075) and *Macaranga tanarius* (血桐) (Tree no. T076) located close to the Project's site office were observed in the monitoring on 28th December 2011 (**Photos 8-9**). All of these trees were proposed to be felled in accordance with the approved Tree Felling Application Report. The Main Contractor was immediately contacted and both the Main Contractor and the Project Proponent confirmed that no tree felling work has commenced on these tree groups. The pruning activity was conducted by other party for the contract other than the current Project.

3.6.4 Inadequate tree protection measure (such as no proper TPZ around the tree dripline area) was observed for an existing tree T025, which is regarded as a "Retained Tree" in accordance with the approved Tree Felling Application Report (**Photo 10**). Stockpiled soil from the adjacent construction work was observed around the tree trunk base.

3.6.5 No significant signs of damage on other existing tree crowns, trunks and roots resulting from the construction works were observed in this monthly monitoring.

3.6.6 Three specimens (Tree No.: PH01, PH02 and PH03) of the protected shrub species of conservation interest *Pavetta hongkongensis* was transplanted to Area C under Contract 1 of the Project on 20th December 2011 (**Photos 11-12**). The dead specimen (Tree No.: PH04, due to natural dieback) was remained at its original location (**Photo 13**).

Recommendations

3.6.7 Within the active works area, proper TPZs should be demarcated for the retained trees and the trees to be transplanted that would be directly affected by the construction work. Any stockpiled soil observed around the tree trunk base of the retained tree T025 should be removed immediately and a proper TPZ should be established to prevent any disturbance from the construction work within the tree dripline area. If necessary, these retained trees or trees to be transplanted shall be watered regularly to maintain their health.

3.6.8 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 the construction works. In addition, the Main Contractor and the Project Proponent should have routine inspection on any tree remedial works conducted by other party on the trees within the Project Area.

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 January 2012 is scheduled to be conducted in the weeks of 9th and 23rd January 2012.

Appendix A

Photographs

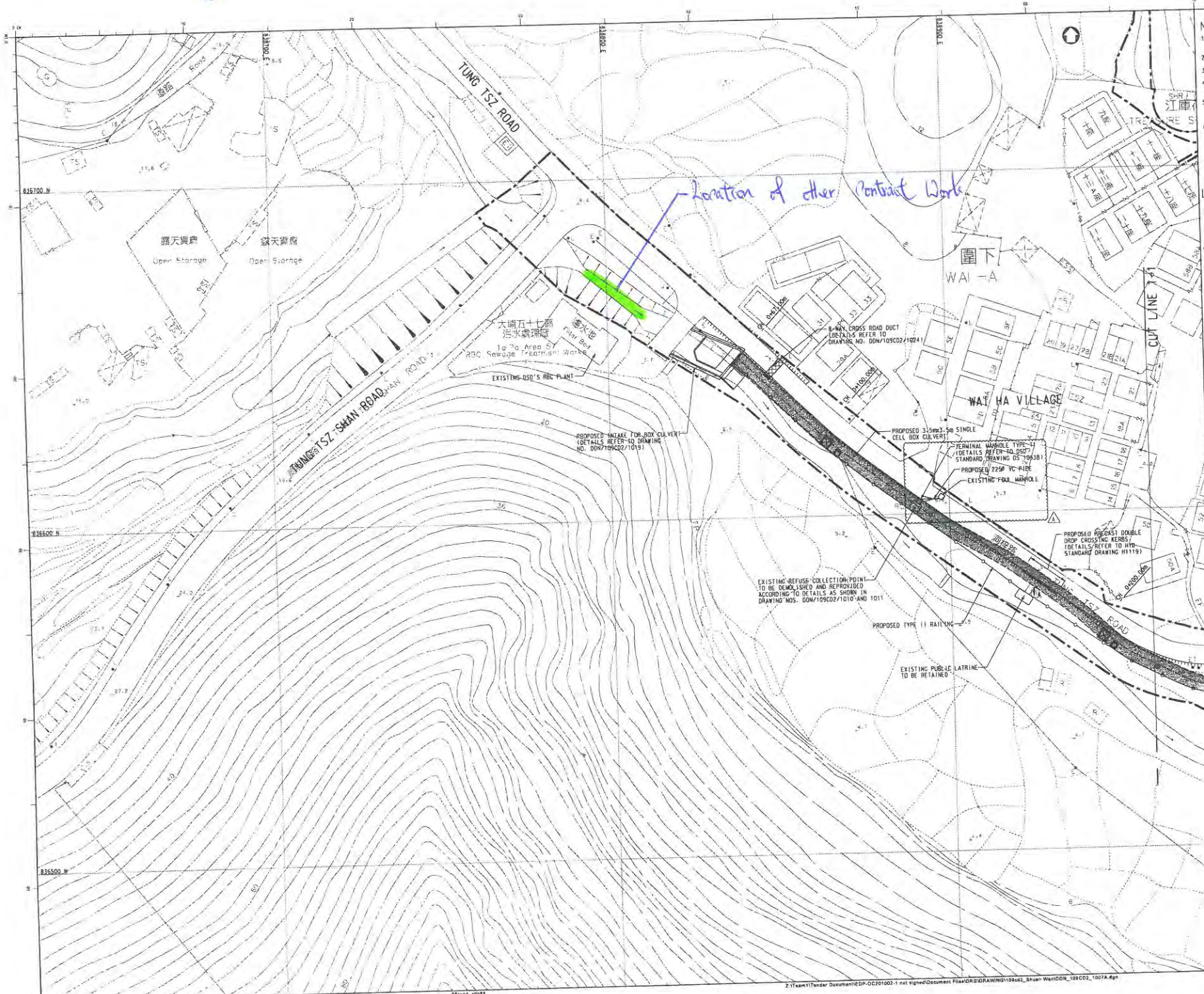
	
Photo 1 – Temporary hoardings have been erected around the active works area	**Photo 2** - Temporary hoardings have been erected along Tung Tsz Road
	
Photo 3 – Sedimentation tank for water drained from the underground	**Photo 4 –** Upper stream of Wa Ha River. No direct water discharge into the Wai Ha River since no active construction work from the Project has been commenced adjacent to the River.
	
Photo 5 – Stockpiled soil was observed at the bank of the Wai Ha River during the monitoring on 28th December 2011.	**Photo 6** – Excavation work was conducted by other contractor in the Wai Ha River on 14th December 2011 (Photo provided by the Main Contractor).

	
Photo 7 – Soil was stockpiled at the bank of the Wai Ha River for the excavation work (Photo provided by the Main Contractor).	**Photo 8** – Excessive pruning and topping of T075 and T076.
	
Photo 9 – Excessive pruning and topping of T069-T073.	**Photo 10 –** No proper TPZ has been established around the Tree T025 and stockpiled soil was observed around the tree trunk base.
	
Photo 11 – The protected shrubs of *P. hongkongensis* (PH01 and PH02) were transplanted, leaving the wood debris at their original locations.	**Photo 12**. The protected shrub of *P. hongkongensis* (PH03) was transplanted and the excavated planted hole was filled with stones after the transplantation.

	
Photo 13 – The dead *P. hongkongensis* PH04 was remained in the same location.	

Appendix N

Supplementary Information for the Water Quality Exceedance



NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
2. ALL LEVELS ARE IN METRES ABOVE P.D.H.K.
3. ALL GRIDS REFER TO HONG KONG 1980 GRID.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. DDN/109CD2/1003-1005.
5. UNLESS OTHERWISE SPECIFIED, ALL CHAINAGE INDICATED ARE MEASURED FROM CENTRE LINE OF THE PROPOSED BOX CULVERT.
6. THE CONTRACTOR SHALL COORDINATE WITH UTILITIES UNDERTAKINGS FOR THE TEMPORARY DIVERSION OF LAMP POSTS, FIRE HYDRANTS AND CABLE TOWERS AND REINSTATEMENT TO FACILITATE THE CONSTRUCTION OF DRAINAGE WORKS.
7. DETAILS OF HYD'S EXISTING PLANTERS SHALL BE REFERRED TO HYD STANDARD DRAWING H5103.

LEGEND:

- MH01 — PROPOSED MANHOLE
- PROPOSED INTAKE STRUCTURES TO PIPELINES
- LIMIT OF WORKS AREA
- PROPOSED BOX CULVERT
- PROPOSED PRECAST CONCRETE KERBS TYPE K2 (DETAILS REFER TO HYD STANDARD DRAWING H1118)
- PROPOSED TYPE 2 RAILING (DETAILS REFER TO HYD STANDARD DRAWING H2130)

No.	date	description	initial
A	10 FEB 2011	GENERAL REVISION	S.C. CHAN T/DM

REVISION

	name		date
designed	SIGNED	K.C. TAM	14 DEC 2010
drawn	SIGNED	C.F. HEUNG	14 DEC 2010
checked	SIGNED	W.C. SIU	10 JAN 2011
vetted	SIGNED	W.W. LAU	11 JAN 2011

approved

SIGNED K.K. CHAN 12 JAN 2011
Chief Engineer / DP Date

contract no. DC/2010/02

file no. DP/B/4109CD

project no. 4109CD

contract

DRAINAGE IMPROVEMENT WORKS IN SHUEN WAN AND SHEK WU WAI

drawing title

GENERAL LAYOUT FOR WORKS IN SHUEN WAN

(SHEET 2 OF 4)

drawing no. DDN/109CD2/1007A

scale 1 : 500

office

DRAINAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION

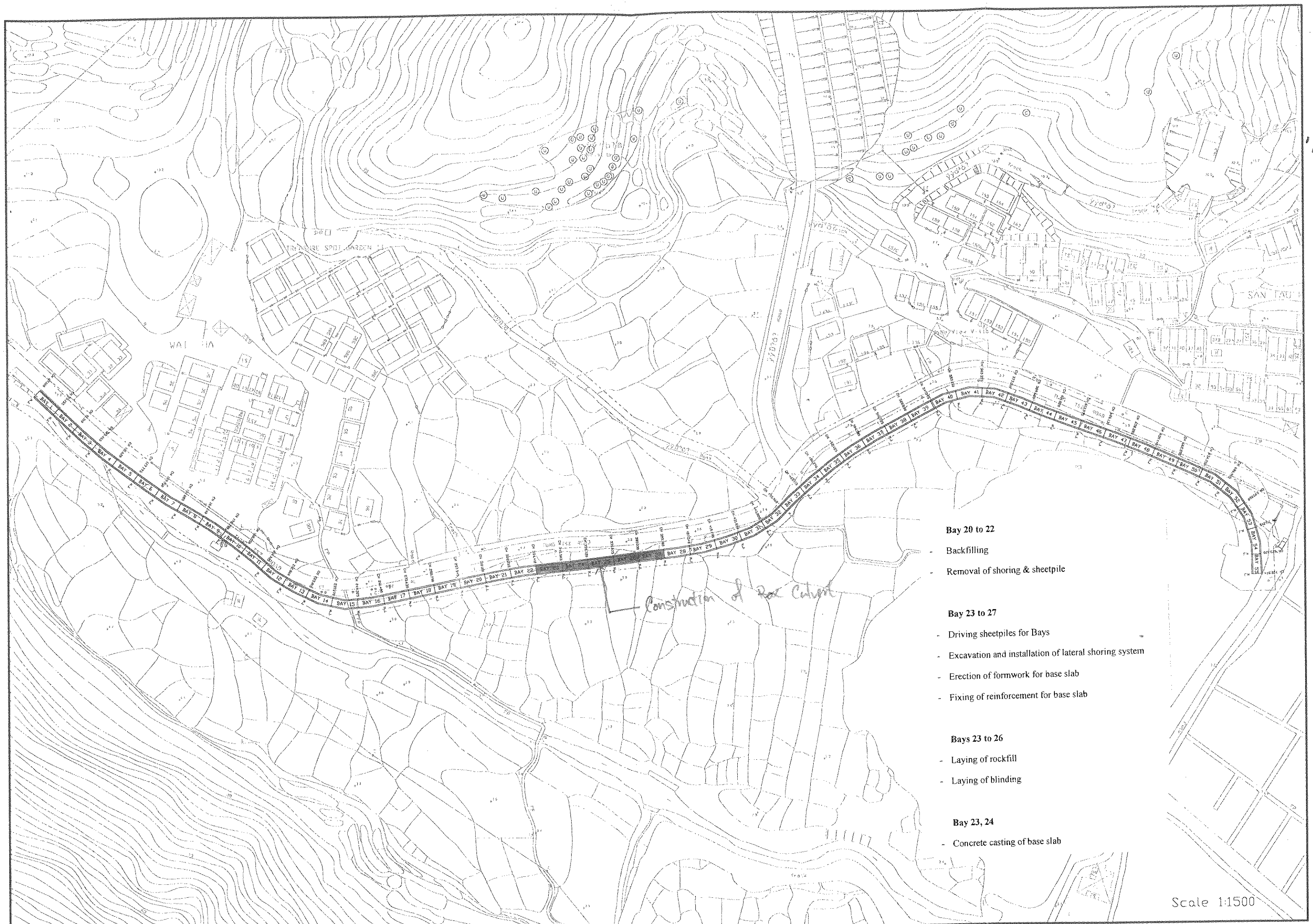
A1 841x594

A1_TR_Grey_Win_510_cmyp.plt PLOTPEN.TBL $$colortable$$ $$rend_attr$$ Z:\Team1\Tender Document\EDP-DC201002-1 not signed\Document Files\DRG\DRAWING\109cd2_Shuen Wan\DDN_109CD2_1007A.dgn

location of other Contract works

location of Main Site Activity

Scale 1:1500



Bay 20 to 22

- Backfilling
- Removal of shoring & sheetpile

Bay 23 to 27

- Driving sheetpiles for Bays
- Excavation and installation of lateral shoring system
- Erection of formwork for base slab
- Fixing of reinforcement for base slab

Bays 23 to 26

- Laying of rockfill
- Laying of blinding

Bay 23, 24

- Concrete casting of base slab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14/12/2011 10:48


14/12/2011 10:50


14/12/2011 10:51


14/12/2011 10:52