

JOB NO.: TCS01216/21

WSD Contract No.: 3/WSD/20 -

Reclaimed Water Supply to Sheung Shui and Fanling

MONTHLY ENVIRONMENTAL MONITORING & AUDIT Report (NO.7) – June 2022

PREPARED FOR WATER SUPPLIES DEPARTMENT

Quality Index				
Date	Refere	ence No.	Prepared By	Approved By
14 July 2022	TCS01216/21	/600/R0042v2	Http	Phone
				TW Tam
			Martin Li	Environmental Team
			Environmental Consultant	Leader
x 7 •	D (

Version	Date	Description
1	11 July 2022	First Submission
2	14 July 2022	Amended against ER's comments



EXECUTIVE SUMMARY

- ES.01 Water Supplies Department (WSD) is the Project Proponent and the Permit Holder of **Reclaimed Water Supply to Sheung Shui and Fanling** (hereinafter referred as "the Contract Works"), which is a Designated Project to be implemented under Further Environmental Permit number FEP-01/470/2013 (hereinafter referred as "the FEP-01/470/2013" or "the FEP").
- ES.02 In according with the Updated EM&A Manual stipulation and the location of Contract Works, only construction noise monitoring and waterbird of ecological monitoring are required during the construction phase of the Contract Works.
- ES.03 As part of the EM&A programme, Baseline Monitoring Report which determined Action and Limit Levels (A/L Levels) based on the baseline data, has been verified by Independent Environmental Checker (IEC) and submitted to EPD endorsement on 24 November 2021. Also, construction activities under the Contract Works were commenced on 7 December 2021.
- ES.04 This is the 7th monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from 1 to 30 June 2022 (hereinafter 'the Reporting Period').

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.06 Environmental monitoring activities under the EM&A programme in the Reporting Period are summarized in the following table.

Environmental Aspect	Environmental Monitoring Parameters / Inspection	Total Occasions during Reporting Period
Construction Noise	L _{eq(30min)} Daytime	4
Ecology	Waterbirds	5
Site Inspection / Audit	ET, the Contractor and RE joint site Environmental Inspection	5

 Table ES-1
 Environmental monitoring activities in the Reporting Period

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.07 In the Reporting Period, no construction noise limit level exceedance construction noise was recorded and no noise complaint (i.e. Action Level) was received. No action and limit level exceedance for waterbirds survey was recorded in the Reporting Period. No Notifications of Exceedances (NOEs) was issued to the Resident Engineer (RE), IEC and the Main Contractor. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

 Table ES-2
 Breach of Action and Limit (A/L) Levels in the Reporting Period

Environmentel	Monitoring	Action	T ::4	Event & Action		
Environmental Monitoring Aspect Parameters		Action Level		NOE Issued	Investigation	Corrective Actions
Construction Noise	Leq(30min) Daytime	0	0	0	0	0
Ecology	Waterbirds Abundance	0	0	0	0	0

ENVIRONMENTAL COMPLAINT

ES.08 No environmental complaint was recorded or received in this Reporting Month. The statistics of environmental complaint are summarized in the following table.

Table ES-3Environmental Complaint Summaries in the Reporting Month

Domonting Dowind	Environmental Complaint Statistics			
Reporting Period	Frequency	Cumulative	Complaint Nature	
1 – 30 June 2022	0	0	NA	



ES.09 In addition, no complaints received and emergency events relating to violation of environmental legislation for illegal dumping and landfilling were received.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.10 No environmental summons or successful prosecution was recorded in this Reporting Month. The statistics of summons or successful prosecutions are summarized in the following tables.

 Table ES-4
 Environmental Summons Summaries in the Reporting Month

Departing Davied	Environmental Summons Statistics			
Reporting Period	Frequency	Cumulative	Complaint Nature	
1 – 30 June 2022	0	0	NA	

Table ES-5 Environmental Prosecution Summaries in the Reporting Month

Donouting Douiod	Environmental Prosecution Statistics			
Reporting Period	Frequency	Cumulative	Complaint Nature	
1 – 30 June 2022	0	0	NA	

REPORTING CHANGE

ES.11 Site temporary drainage plan was included in Appendix K of the report.

SITE INSPECTION

- ES.12 Weekly site inspections to evaluate the site environmental performance have been carried out by the RE, ET and the Main Contractor on 2, 9, 16, 23 and 30 June 2022. No non-compliance was noted during the site inspection.
- ES.13 No site visit was undertaken by AFCD within the Reporting Period. EPD and IEC inspection was conducted on 23 June 2022.

FUTURE KEY ISSUES

- ES.14 Excavation works will be still the major construction work in the coming month. Air quality and construction noise mitigation measures for the excavation work such as spraying water during the operation, using quiet plants or mobile noise barriers should be implemented in accordance with the EM&A requirement.
- ES.15 As a general recommendation during wet season, the Contractor was reminded that to paid special attention to water quality mitigation measures especially to prevent surface runoff into Ng Tung River and nearby water bodies/public areas.
- ES.16 Details of the future issues in the coming month are described in Section 9.4.



TABLE OF CONTENTS

1.		RODUCTION	1
	1.1	BACKGROUND	1
	1.2	REPORT STRUCTURE	2
2.		JECT ORGANIZATION AND CONSTRUCTION PROGRESS Project Organization Construction Progress Summary of Environmental Submissions	3 3 4 4
3.	SUM 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9 3.10	IMARY OF IMPACT MONITORING REQUIREMENTS GENERAL REQUIREMENT OF CONSTRUCTION NOISE MONITORING LOCATION OF CONSTRUCTION NOISE IMPACT MONITORING ACTION AND LIMIT LEVEL FOR CONSTRUCTION NOISE NOISE MONITORING METHODOLOGY MONITORING PROCEDURE DATA MANAGEMENT AND DATA QA/QC CONTROL REQUIREMENT OF WATERBIRDS ECOLOGICAL IMPACT MONITORING MONITORING METHODOLOGY FOR WATERBIRDS ECOLOGICAL IMPACT MONITORING EVENT ACTION PLAN	6 6 6 7 7 7 8 8 9
4.	CON	I STRUCTION NOISE MONITORING	11
	4.1	General	11
	4.2	Results of Noise Monitoring	11
5.	ECO	DLOGY WATERBIRD MONITORING	12
	5.1	General	12
	5.2	Results of Waterbirds Survey	12
6.	WAS	TE MANAGEMENT	14
	6.1	General Waste Management	14
	6.2	Records of Waste Quantities	14
7.	SITE	E INSPECTION	15
	7.1	Requirements	15
	7.2	Findings / Deficiencies During the Reporting Month	15
8.	ENV	IRONMENTAL COMPLAINT AND NON-COMPLIANCE	16
	8.1	Environmental Complaint, Summons and Prosecution	16
9.	IMP 9.1 9.2 9.3 9.4	LEMENTATION STATUS OF MITIGATION MEASURES GENERAL REQUIREMENTS IMPLEMENTATION STATUS OF THE MITIGATION MEASURES IN THE REPORTING PER 17 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH KEY ISSUES FOR THE COMING MONTH	17 17 IOD 17 17
10.	CON	ICLUSIONS AND RECOMMENDATIONS	19
	10.1	Conclusions	19
	10.2	Recommendations	19



LIST OF TABLES

- TABLE 2-3-1
 STATUS OF ENVIRONMENTAL LICENSES AND PERMITS
- TABLE 3-4-1
 ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE
- TABLE 3-5-1
 EQUIPMENT OF NOISE IMPACT MONITORING
- TABLE 3-8-1MONITORING OF MEASURES TO MINIMIZE DISTURBANCE TO WATERBIRDS ON THE NG
TUNG, SHEUNG YUE AND SHEK SHEUNG RIVERS
- TABLE 3-9-1
 ECOLOGICAL MONITORING STATIONS
- TABLE 3-10-1
 EVENT AND ACTION PLAN FOR CONSTRUCTION NOISE MONITORING
- TABLE 3-10-2
 EVENT AND ACTION PLAN OF ECOLOGICAL (WATERBIRDS) MONITORING
- TABLE 4-2-1
 Summaries of Noise Monitoring Results of CP-KTN-NMS5
- TABLE 5-1-1
 REPRESENTATIVE WATERBIRDS
- TABLE 5-2-1
 TOTAL BIRD SPECIES AND ABUNDANCE IN THE REPORTING MONTH
- TABLE 5-2-2
 ABUNDANCE OF REPRESENTATIVE WATERBIRDS IN THE REPORTING MONTH
- TABLE 6-2-1
 SUMMARY OF QUANTITIES OF INERT C&D MATERIALS
- TABLE 6-2-2SUMMARY OF QUANTITIES OF C&D WASTES
- TABLE 7-2-1SITE OBSERVATIONS
- TABLE 8-1-1
 STATISTICAL SUMMARY OF ENVIRONMENTAL COMPLAINTS
- TABLE 8-1-2
 STATISTICAL SUMMARY OF ENVIRONMENTAL SUMMONS
- TABLE 8-1-3
 STATISTICAL SUMMARY OF ENVIRONMENTAL PROSECUTION
- TABLE 9-1-1
 ENVIRONMENTAL MITIGATION MEASURES IMPLEMENTED IN THE REPORTING PERIOD

LIST OF APPENDICES

- APPENDIX A LOCATION OF SHEK WU HUI WATER RECLAMATION PLANT
- APPENDIX B PROJECT ORGANIZATION
- APPENDIX C MASTER CONSTRUCTION PROGRAM AND SITE OVERVIEW PHOTO IN THE REPORTING PERIOD
- APPENDIX D DESIGNATED NOISE MONITORING STATION LOCATION
- APPENDIX E VALID CALIBRATION CERTIFICATES OF MONITORING EQUIPMENT
- APPENDIX F MONITORING SCHEDULE OF THE REPORTING MONTH AND COMING MONTH
- APPENDIX G DATABASE OF MONITORING RESULT
- APPENDIX H GRAPHICAL PLOTS FOR MONITORING RESULT
- APPENDIX I MONTHLY SUMMARY WASTE FLOW TABLE
- APPENDIX J IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES (ISEMM)
- APPENDIX K SITE TEMPORARY DRAINAGE PLAN IN THE REPORTING PERIOD
- APPENDIX L WATERBIRDS SURVEY REPORT FOR THE REPORTING MONTH

1. INTRODUCTION

1.1 BACKGROUND

- 1.1.1 Water Supplies Department (WSD) is the Project Proponent of Utilization of Treated Sewage Effluent (TSE) from Shek Wu Hui Sewage Treatment Works. On 30th July 2021, China Geo-Engineering Corporation (hereinafter named as "the Main-Contractor") was awarded WSD Contract Works 3/WSD/20 Reclaimed Water Supply to Sheung Shui and Fanling (hereinafter referred as "the Contract Works").
- 1.1.2 The reclaimed water supply to Sheung Shui and Fanling (SSF) comprises a Shek Wu Hui Water Reclamation Plant (SWHWRP), part of pumping water mains to Table Hill Reclaimed Water Service Reservoir (TBHRWSR), and Kwu Tung North (KTN) New Development Area (NDA) and distribution water mains to SSF area.
- 1.1.3 The SWHWRP, which comprises Hypo-Chlorination Facilities (HCF) and Reclaimed Water Pumping Station (Reclaimed Water P/S), will be located at a long-stripped area between Ng Tung River and Sheung Shui Slaughter House at the northwest of the Shek Wu Hui Sewage Treatment Works (SWHSTW).
- 1.1.4 The HCF, which consists of a hypo-chlorination dosing plant, a chlorine contact tank, dye dosing system, water refilling station, other post-treatment facilitates and storage areas for chemicals, would produce reclaimed water by further treatment of the treated sewage effluent (TSE) pumped from the discharge outlet of the SWHSTW. The treatment capacity of the SWHWRP will be 73,000m3/day.
- 1.1.5 The Reclaimed Water P/S, which will be located at the northwest of the HCF, will receive reclaimed water by gravity from the HCF and deliver to the TBHRWSR serving SSF areas, Kwu Tung North Flushing Water Service Reservoir (KTN FLWSR) serving KTN NDA and Fanling North Flushing Water Service Reservoir (FLN FLWSR) serving Fanling North (FLN) NDA
- 1.1.6 This Work Contract mainly comprise construction of Shek Wu Hui Water Reclamation Plant and laying of the associated water main to produce reclaimed water for supply to the Northeast New Territories areas for non-potable used. It is estimated that about 22 million cubic metres of fresh water can be saved each year ultimately.
- 1.1.7 The construction of Shek Wu Hui Water Reclamation Plant under the Work Contract is a Designated Project to be implemented under Further Environmental Permit number FEP-01/470/2013 (hereinafter referred as "the FEP-01/470/2013" or "the FEP"). Location of Shek Wu Hui Water Reclamation Plant is shown in *Appendix A*.
- 1.1.8 The major work of the Work Contract under FEP included:
 - Civil engineering construction works, including structures, foundations and earthworks for the SWHWRP and ancillary buildings;
 - Electrical and mechanical (E&M), building services, fire services installations, and treatment process system engineering work;
 - Other associated systems and facilities for the SWHWRP.
- 1.1.9 Pursuant to the FEP stipulation, the Main Contractor has commissioned Action-United Environmental Services & Consulting (hereinafter referred as "AUES") as Environmental Team (hereinafter referred as "ET") perform relevant EM&A programme and as well as the associated duties.
- 1.1.10 As part of the EM&A programme, Baseline Monitoring Report which determined Action and Limit Levels (A/L Levels) based on the baseline data, has been verified by Independent Environmental Checker (IEC) and submitted to EPD endorsement on *24 November 2021*. Also, construction activities of the Contract were commencement on *7 December 2021*.

1.1.11 This is 7th monthly EM&A report to presenting the monitoring results and inspection findings from *1* to *30 June 2022* of the Reporting Period.

1.2 REPORT STRUCTURE

- 1.2.1 The report was structured into the following sections:-
 - Section 1 Introduction Section 2 **Project Organization and Construction Progress** Section 3 Summary of Impact Monitoring Requirements Section 4 Construction Noise Monitoring Section 5 Ecology Waterbirds Monitoring Section 6 Waste Management Section 7 Site Inspections Section 8 Environmental Complaints and Non-Compliance Section 9 Implementation Status of Mitigation Measures Section 10 Conclusions and Recommendations

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 **PROJECT ORGANIZATION**

2.1.1 The project organization is shown in *Appendix B*. The roles and responsibilities of the various parties involved in the EM&A process and the organizational structure of the organizations responsible for implementing the EM&A programme are outlined below.

Water Supplies Department (WSD)

2.1.2 WSD is the Project Proponent and the Permit Holder of the EP of the development of the Project and will assume overall responsibility for the project. An Independent Environmental Checker (IEC) shall be employed by WSD to audit the results of the EM&A works carried out by the ET.

Environmental Protection Department (EPD)

2.1.3 EPD is the statutory enforcement body for environmental protection matters in Hong Kong.

Engineer or Engineers Representative (ER)

- 2.1.4 The ER is responsible for overseeing the construction works and for ensuring that the works are undertaken by the Contractor in accordance with the specification and contract requirements. The duties and responsibilities of the ER with respect to EM&A are:
 - Supervise the Contractor's activities and ensure that the requirements in the Contract Works Specific EM&A Manual are fully complied with;
 - Inform the Contractor when action is required to reduce impacts in accordance with the Even and Action Plans;
 - Employ an IEC to audit the results of the EM&A works carried out by the ET; and
 - Comply with the agreed Event Contingency Plan in the event of any exceedance.

The Main Contractor

- 2.1.5 The Main Contractor is responsible perform construction works and for ensuring that the works are undertaken compliance with the specification and contract requirements. The duties and responsibilities of the Main Contractor with respect to EM&A are:
 - Employ an Environmental Team (ET) to undertake monitoring, laboratory analysis and reporting of environmental monitoring and audit;
 - Provide assistance to ET in carrying out monitoring and auditing;
 - Submit proposals on mitigation measures in case of exceedances of Action and Limit levels in accordance with the Event and Action Plans;
 - Implement measures to reduce impact where Action and Limit levels are exceeded; and
 - Adhere to the agreed procedures for carrying out compliant investigation.

Environmental Team (ET)

- 2.1.6 The ET is responsible perform implementation EM&A programmes of the Contract Works as stipulated in the Updated EM&A Manual ensure the works are fully compliance with environmental regulations. The duties and responsibilities of the ET with respect to EM&A are:
 - Set up all the required environmental monitoring stations;
 - Monitor various environmental parameters as required in the EM&A Manual;
 - Analyze the EM&A data and review the success of EM&A programme to cost effectively confirm the adequacy of mitigation measures implemented and the validity of the EIA predictions and to identify any adverse environmental impacts arising;
 - Carry out site inspection to investigate and audit the Contractors' site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and take proactive actions to pre-empt problems;
 - Audit and prepare audit reports on the environmental monitoring data and site environmental conditions;
 - Report on the EM&A results to the IEC, Contractor, the ER and EPD or its delegated representative;
 - Recommend suitable mitigation measures to the Contractor in the case of exceedance of



Action and Limit levels in accordance with the Event and Action Plans;

- Undertake regular and ad-hoc on-site audits / inspections and report to the Contractor and the ER of any potential non-compliance; and
- Follow up and close out non-compliance actions.

Independent Environmental Checker (IEC)

- 2.1.7 The duties and responsibilities of IEC with respect to EM&A are:
 - Review the EM&A works performed by the ET (at not less than monthly intervals);
 - Audit the monitoring activities and results (at not less than monthly intervals);
 - Report the audit results to the ER and EPD in parallel;
 - Review the EM&A reports (monthly summary reports) submitted by the ET;
 - Review the proposal on mitigation measures submitted by the Contractor in accordance with the Event and Action Plans;
 - Check the mitigation measures submitted by the Contractor in accordance with the Event and Action Plans;
 - Check the mitigation measures that have been recommended in the EIA and this Manual, and ensure they are properly implemented in a timely manner, when necessary;
 - Report the findings of site inspections and other environmental performance reviews to ER and EPD;
 - Coordinate the monitoring and auditing works for all the on-going contracts in the area in order to identify possible sources / causes of exceedances and recommend suitable remedial actions where appropriate; and
 - Coordinate the assessment and response to complaints / enquires from locals, green groups, district councils or the public at large.

2.2 CONSTRUCTION PROGRESS

•

- 2.2.1 In the Reporting Period, the construction activities of the Contract Works under FEP are listed in below. Moreover, the master construction program and site overview photo in the reporting period are enclosed in *Appendix C*.
 - Rebar fixing work for Reclaimed Water Pumping Station
 - Excavation and lateral support work for Hypo-Chlorination Facilities 3 excavators

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

- 2.3.1 To according with the FEP stipulation, the required documents has submitted to EPD for retention as listed below:
 - Project Location Plans;
 - Updated Environmental Monitoring and Audit Manual of Project Specific (*TCS01176/21/600/R0012v2*); and
 - Baseline Monitoring Report (*TCS01216/21/600/R0017v3*) for the Project.
- 2.3.2 Summary of the relevant permits, licenses, and/or notifications on environmental protection for the Project is presented in *Table 2-3-1*.

		Licence/Permit Status			
Item	Description	Ref. no.	Effective Date	Expiry Date	
1	Air Pollution Control	Notification was made	3 Aug 2021	Till the	
	(Construction Dust) Regulation	on 3 Aug 2021		Contract ends	
2	Waste Disposal Regulation –	Account No.: 7041397	8 Aug 2021	Till the	
	Billing Account for Disposal of			Contract ends	
	Construction Waste				
3	Chemical Waste Producer	Application was made	3 Aug 2021	Till the	
	Registration	on 3 Aug 2021		Contract ends	
4	Water Pollution Control	Discharge Licence No.:	17 Nov 2021	30 Nov 2026	
	Ordinance – Discharge Licence	WT00039707-2021			

 Table 2-3-1
 Status of Environmental Licenses and Permits



		Licence/Permit Status			
Item	Description	Ref. no.		Effective Date	Expiry Date
5	Construction Noise Permit	CNP GW-RN0478-22	No.	13 Jun 2022	12 Oct 2022



3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

3.1 GENERAL

3.1.1 According to the Updated EM&A Manual and the location of the Contract Works, only construction noise monitoring and waterbirds ecological of environmental monitoring are related the Contract Works during the construction phase. Details requirement of noise and waterbirds ecological impact monitoring are presented sub-sections as below.

3.2 **REQUIREMENT OF CONSTRUCTION NOISE MONITORING**

- 3.2.1 One set of $L_{eq(30min)}$ as 6 consecutive $L_{eq(5min)}$ between 0700-1900 hours on normal weekdays and once every week during course of works. If construction work necessary to carry out at other time periods, i.e. restricted time period (19:00 to 07:00 the next morning and whole day on public holidays) (hereinafter referred as "the restricted hours"), $L_{eq(5min)}$ measurement will be carried out in accordance with the CNP requirements. Supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference.
- 3.2.2 Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

3.3 LOCATION OF CONSTRUCTION NOISE IMPACT MONITORING

- 3.3.1 According to the Updated EM&A Manual of CEDD Contract No. NDO 14/2018 Advance and *First Stage Works of Kwu Tung North and Fanling North New Development Areas*, four noise sensitive receivers are designated on Fanling North New Development Areas for construction noise monitoring.
- 3.3.2 According to the geographic location of proposed Shek Wu Hui Water Reclamation Plant and all the recommended designated construction noise monitoring stations, only the designated noise monitoring station CP-KTN-NMS5 (prior named "CP-NMS7") shown in *Appendix D*, is located near the proposed Shek Wu Hui Water Reclamation Plant within 300m (distance about 110m). Therefore, the designated noise monitoring station CP-KTN-NMS5 is recommended for the Contract Works to undertake construction noise monitoring. If the recommended noise monitoring location CP-KTN-NMS5 not available, the ET shall propose alternative monitoring locations/additional monitoring locations and seek approval from the Supervisor of the proposal. When alternative/new monitoring location is proposed, the monitoring location shall be chosen based on the following criteria:
 - (i) at locations close to the major site activities which are likely to have noise impacts;
 - (ii) close to the noise sensitive receivers; and
 - (iii) for monitoring locations located in the vicinity of the sensitive receivers, care shall be taken to cause minimal disturbance to the occupants during monitoring.
- 3.3.3 The construction noise monitoring station shall normally be at a point 1 m from the exterior of the sensitive receivers building façade and be a position 1.2m above the ground. If there is problem with access to the normal monitoring position, an alternative position may be chosen, and a correction to the measurements shall be made to the free field measurements. The ET shall agree with the Supervisor on the monitoring station that is chosen for impact monitoring.

3.4 ACTION AND LIMIT LEVEL FOR CONSTRUCTION NOISE

3.4.1 The Action and Limit levels for construction noise are defined in *Table 3-4-1*. Should non-compliance of the criteria occur, action in accordance with the Action Plan which shown in Section 4 of this report, shall be carried out.



Table 3-4-1 Action and Limit Levels for Construction Noise

Manitaring Lagation	Action LevelLimit Level in dB(A			
Monitoring Location	Time Period: 0700-1900 hours on normal weekdays			
CP-KTN-NMS5	When one or more documented complaints are received	75 dB(A) ^{Note 1}		
Note 1: If works are to be carried out during restricted hours, the conditions stipulated in construction noise permit issued by the NCA have to be followed.				

3.5 NOISE MONITORING METHODOLOGY

Monitoring Equipment

3.5.1 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications was used for carrying out the noise monitoring. Noise equipment used for impact monitoring is listed in *Table 3-5-1*.

 Table 3-5-1
 Equipment of Noise Impact Monitoring

Equipment	Model
Integrating Sound Level Meter	Rion NL – 52
Calibrator	B&K 4231

Remark: Sound level meter IEC 60651:1979 (Type 1) was replaced by 60672 (Type 1) in 2002 (Ref: <u>https://webstore.iec.ch/publication/17086</u>

3.5.2 The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis. The valid calibration certificates of the monitoring equipment are shown in *Appendix E*.

3.6 MONITORING PROCEDURE

- 3.6.1 All noise measurements were performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). Leq_(30min) in six consecutive Leq_(5min) measurements was used as the monitoring parameter for the time period between 07:00-19:00 hours during the baseline monitoring.
- 3.6.2 In general, the sound level meter would be mounted on a tripod at a height of 1.2 m and placed at the assessment point and oriented such that the microphone was pointed to the site with the microphone facing perpendicular to the line of sight. The windshield would be fitted for all measurement. Where a measurement was to be carried out at a building, the assessment point would normally be at a position 1 m from the exterior of the building façade. Where a measurement was to be made for noise being received at a place other than a building, the assessment point would be at a position 1.2 m above the ground in a free-field situation, i.e. at least 3.5 m away from reflective surfaces such as adjacent buildings or walls.
- 3.6.3 Immediately prior to and following each noise measurement the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements would be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.
- 3.6.4 Noise measurements would not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed would be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

3.7 DATA MANAGEMENT AND DATA QA/QC CONTROL

3.7.1 The monitoring data recorded in the equipment would be downloaded directly from the equipment at each monitoring day. The downloaded monitoring data would input into a computerized database properly maintained and handled by the ET's in-house data recording and management system.



3.8 **REQUIREMENT OF WATERBIRDS ECOLOGICAL IMPACT MONITORING**

- 3.8.1 Where development under the NDAs project is undertaken within 200m (the maximum distance at which it is predicted there may be some disturbance, and hence a reduction in numbers, of large waterbirds) of the Ng Tung, Sheung Yue and Shek Sheung Rivers and Long Valley the monitoring protocol detailed in the updated EM&A Manual Table 12.1 should be followed. A transect should be undertaken throughout the sections of the rivers where NDA construction activities are proposed; as the sensitive receivers (large waterbirds) are easily visible, the transect route needs only follow one bank of the rivers. The transect route should remain the same during the different phases in order to ensure that data are comparable. Monitoring of large waterbirds should be conducted in pre-construction, construction and operational phases of the concerned development.
- 3.8.2 The proposed Shek Wu Hui Water Reclamation Plant location is located less than 200m to Ng Tung River, Sheung Yue River and Shek Sheung River, waterbirds ecological monitoring included pre-construction (i.e. baseline), construction (i.e. impact) and post-construction (i.e. operating) should be requires. The detailed monitoring protocol is listed in *Table 3-8-1*.

Tung, Sheung Yue and Snek Sneung Rivers			
Phase	Methodology		
Pre-construction (baseline)	Weekly transect at both high and low tides to identify and enumerate all bird species utilising the river channels for 12 months prior to the commencement of construction.		
Construction Weekly transect at both high and low tides to identify and enumerat bird species utilising the river channels and identify any sources of action or potential disturbance to birds due to construction activities throug the construction period.			
Post-construction	Weekly transect at both high and low tides to identify and enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to operational activities for 12 months following the completion of the construction period.		

Table 3-8-1Monitoring of Measures to Minimize Disturbance to Waterbirds on the Ng
Tung, Sheung Yue and Shek Sheung Rivers

3.8.3 Waterbirds ecological baseline monitoring at Ng Tung River, Sheung Yue River and Shek Sheung River was conducted by DSD between *December 2017* and *June 2019* (total 19 months baseline monitoring), in compliance with the Updated EM&A Manual. Thus, the action and limit levels and responses to evidence of disturbance to waterbirds using in Ng Tung, Sheung Yue and Shek Sheung Rivers will be made reference during construction phase of the Project.

3.9 MONITORING METHODOLOGY FOR WATERBIRDS ECOLOGICAL IMPACT MONITORING

3.9.1 Three transects and seven point count locations were selected at the Ng Tung, Sheung Yue and Shek Sheung River. These locations are shown in Appendix L and summarized in *Table 3-9-1*.

Monitoring Stations	Descriptions	Influenced by Tidal Action	
Transect T1			
Transect T2			
Point Count Location P1	Along Ng Tung Divor	No	
Point Count Location P2	Along Ng Tung River	NO	
Point Count Location P3			
Point Count Location P4			
Point Count Location P5	At Shek Sheung River	No	
Fount Count Location F5	(Low-flow Channel)	NO	
Transect T3	Along Shek Sheung River &	Yes	
Transect 15	Sheung Yue River	165	
Point Count Location P6	At Shek Sheung River	Yes	
Point Count Location P7	At Intersection between Sheung	Yes	
1 onit Count Location F /	Yue and Shek Sheung River	165	

Table 3-9-1Ecological Monitoring Stations

- 3.9.2 Surveys will be conducted on a weekly basis at both high and low tides (it is considered high tide when tidal levels are above 1.5m and low tide when tidal level are below 1.5m at Tsim Bei Tsui Station).
- 3.9.3 All avifauna species that were seen or heard would be identified and quantified along transects and at point count locations. Survey data would be recorded continuously by the surveyor as they walk along the transects, while survey data of each point count location would be collected for 5-minutes after surveyor reaches the designated point count location.
- 3.9.4 Noticeable behaviours such as breeding, nesting, roosting, feeding and presences of recently fledged juveniles were recorded and reported. In the case which such behaviours were observed for species of conservation importance, the Resident Engineer (RE), the Contractor and the Independent Environmental Checker (IEC) would be immediately notified after the survey such that the Contractor could review the current construction programme and minimize disturbances due to construction activities.

3.10 EVENT ACTION PLAN

<u>Noise</u>

3.10.1 Should non-compliance of the construction noise criteria occur, action in accordance with the Action Plan in **Table 3-10-1** shall be carried out.

F		Action						
Event		ET		IEC		ER		Contractor
Action Level	1.	Notify the IEC, ER	1.	Review the	1.	Confirm receipt	1.	Submit noise
Exceedance		and Contractor;		monitoring data		of notification		mitigation
	2.	Carry out		submitted by the		of failure in		proposals to
		investigation;		ET;		writing;		the ER and
	3.	Report the results of	2.	Review the	2.	Notify the		IEC and copy
		investigation to the		construction		Contractor;		to the ET;
		IEC, ER and			3.	1	2.	Implement
		Contractor;		proposed remedial		Contractor to		noise
	4.	Discuss with the		measures by the		propose		mitigation
		Contractor and		Contractor, and		remedial		proposals.
		formulate remedial		advise the ET and		measures for		
	_	measures;		ER if the proposed		the analyzed		
	5.	Increase monitoring		remedial measures		noise problem;		
		frequency to check		would be	4.			
		mitigation		sufficient;		remedial		
		effectiveness.	3.	Supervise the		measures are		
				implementation of		properly		
	-			remedial measures.		implemented.		
		Identify sources.	1.	Discuss amongst	1.	Confirm receipt	1.	
Exceedance	2.			the ER, ET and		of notification		immediate
		EPD and Contractor;		Contractor on the		of exceedance		action t
	3.	Repeat		potential remedial		in writing;		avoid
		measurements to		actions;	2.	Notify the		further
		confirm findings;	2.	Review the		Contractor.		exceedance
	4.	Increase the		Contractor's	3.	1	2.	Submit
		monitoring		remedial action		Contractor to		proposals fo
	_	frequency;		whenever		propose		remedial
	5.	Carry out analysis of		necessary to assure		remedial		action to th
		the Contractor's		their effectiveness		measures for		ER and IEC
		working procedures		and advise the ER		the analyzed		and copy t
		with the ER and	~	accordingly;		noise problems;		the ET withi
			3.	1	4.	Ensure		3 workin
		determine possible		implementation of		remedial		days o
		mitigations to be		remedial measures.		measures are		notification;
	_	implemented;				properly	3.	Implement
	6.	Inform IEC, ER,			_	implemented;		the agree
		EPD and Contractor			5.	If exceedance		proposals;
		the causes and				continues,	4.	Resubmit

Table 5-10-1 Event and Action Plan for Construction Noise	Table 3-10-1	Event and Action Plan for Construction Noise
---	--------------	--

 $\label{eq:loss_2021} CS01216\600\Report\Submission\Monthly\ EM\&A\ Report\Monthly\ Report\ -\ June\ 2022\R0042v2.doc\ Action-United\ Environmental\ Services\ and\ Consulting$



E 4		Action		
Event	ET	IEC	ER	Contractor
	 actions taken for the exceedances; 7. Assess the effectiveness of the Contractor's remedial action with the ER and keep the IEC informed of the results; 8. If exceedance stops, cease additional monitoring. 		consider what portion of work is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated.	proposals if problems still not under control; stop the relevant portion of works as determined by the ER until the exceedance is abated.

Waterbird of Ecological

3.10.2 Should any exceedance encountered during construction phase, action in accordance with the Action Plan listed in *Table 3-10-2* shall be carried out.

Table 3-10-2	Event and Action Plan of Waterbirds of Ecological
	Event und Metion I fun of Water bir us of Ecological

Action Level	Response	Limit Level	Response
Construction Phase			
Decline in numbers	Investigate cause and	Decline in numbers	Investigate cause and
of all waterbird	if cause identified as	of all waterbird	if caused identified as
species relative to	related to NDAs	species relative to	related to NDAs
numbers during	project instigate	numbers during	project instigate
Baseline Monitoring	remedial action to	Baseline Monitoring	remedial action.
such that the Action	remove or reduce	such that the Limit	Review and adjust
Level response is	source of	Level response is	LVNP management
triggered.	disturbance.	triggered.	measures to improve
			conditions for
			affected species.
Decline in numbers	Investigate cause and	Decline in numbers	Investigate cause and
of any one waterbird	if cause identified as	of any one waterbird	if caused identified as
species occurring in		species occurring in	related to NDAs
significant numbers*	project instigate	significant numbers*	project instigate
during Baseline	remedial action to	during Baseline	remedial action.
Monitoring such that	remove or reduce	Monitoring such that	Review and adjust
the Action Level		the Limit Level	LVNP management
response is triggered.	disturbance.	response is triggered.	measures to improve
			conditions for
			affected species.

(*)

Waterbird numbers refer to combined numbers using the channels



4. CONSTRUCTION NOISE MONITORING

4.1 GENERAL

4.1.1 The noise monitoring schedule is presented in *Appendix* F and the monitoring results are presented in the following sections.

4.2 **RESULTS OF NOISE MONITORING**

4.2.1 In the Reporting Period, a total of 4 occasions noise monitoring were carried out at the designated location CP-KTN-NMS5. The sound level meter was set in free-field situation, and therefore, façade correction (+3dB) is added according to acoustical principles and EPD guidelines. The noise monitoring results at the designated locations are summarized in *Tables* 4-2-1. The detailed noise monitoring data is presented in *Appendix G* and the relevant graphical plot shown in *Appendix H*.

Table 4-2-1	Summaries of Noise Monitoring Results of CP-KTN-NMS5
-------------	--

Date	Start Time	L _{Aeq30min} (dB(A))
10-Jun-22	14:35	61
16-Jun-22	10:32	67
22-Jun-22	11:25	64
27-Jun-22	15:02	62
	Limit Level	75 dB(A)

Note: façade correction +3dB has added according to acoustical principles and EPD guidelines

- 4.2.2 During construction noise monitoring, no rain was encountered and wind speed is below 5m/s and gusts not exceeding 10m/s.
- 4.2.3 As shown in *Table 4-2-1*, the noise level measured at the designated monitoring location was below 75dB(A). Furthermore, there were no noise complaints (Action Level exceedance) received by the RE, Contractor, WSD or EPD in the Reporting Period. Therefore, no Action or Limit Level exceedance was triggered and no corrective action was therefore required.
- 4.2.4 During the reporting period, no construction work was carried out during restricted hours.

5. ECOLOGY WATERBIRD MONITORING

5.1 GENERAL

- 5.1.1 Ecological monitoring for waterbirds shall be performed as transects and point count surveys along Ng Tung River, Sheung Yue River and Shek Sheung River in accordance with general surveying practices.
- 5.1.2 The surveying shall be undertaken by a qualified ecologist and he/she shall be a member of the ET. Throughout the construction period, weekly transect shall be conducted at both high and low tides to identify and enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to construction activities.
- 5.1.3 Since occurrence of waterbirds has distinctive seasonal pattern, the construction phase data for all waterbirds and representative waterbirds shall be compared with the baseline data for the respective month and season. Total number of Waterbirds and six representative Waterbird species are used as an indicator of the level disturbance to water birds at each of the survey location. The representatives of waterbirds are listed in *Table 5-1-1*.

Species Name	Common Name	Chinese Name
Egretta garzetta	Little Egret	小白鷺
Ardea alba	Great Egret	大白鷺
Ardea cinerea	Grey Heron	蒼鷺
Ardeola bacchus	Chinese Pond Heron	池鷺
Bubulcus coromandus	Eastern Cattle Egret	牛背鷺
Phalacrocorax carbo	Great Cormorant	普通鸕鷀

Table 5-1-1Representative Waterbirds

5.2 **RESULTS OF WATERBIRDS SURVEY**

- 5.2.1 *Five* (5) occasion of waterbirds survey were conducted in the Reporting Month.
- 5.2.2 Abundance and diversity of key waterbirds species in the Reporting Month are summarized in **Table 5-2-1** and **Table 5-2-2**.

Table 5-2-1 Total Bird Species and Abundance in the Reporting Month

Category	Number of Species	Abundance	
All Avifauna	28	811	
Waterbirds	9	147	

Table 5-2-2 Total Bird Species and Abundance in the Reporting Month

Common Name	Species Name	Chinese Name	Abundance
Chinese Pond Heron	Ardeola bacchus	池鷺	38
Eastern Cattle Egret	Bubulcus coromandus	牛背鷺	4
Grey Heron	Ardea cinerea	蒼鷺	7
Great Egret	Ardea alba	大白鷺	19
Little Egret	Egretta garzetta	小白鷺	69
Great Cormorant	Phalacrocorax carbo	普通鸕鷀	0

- 5.2.3 The result was compared with the baseline data. A table showing the waterbirds abundance comparison with baseline data was provided in **Appendix L**. (Appendix C of the waterbirds survey report).
- 5.2.4 The total number of waterbirds, numbers of Chinese Pond Heron, Eastern Cattle Egret and Little Egrets was found declined compared to the baseline data. Although declined in number of waterbirds was recorded, it is concluded that the drop in numbers should be attributed to external factors such as population dynamics.

- 5.2.5 As suggested in previous reporting months, the cumulative effects of increased disturbance at the study area and more attractive wetland habitats at Long Valley Nature Park (LVNP) may have caused waterbirds to deprioritize activities within the study area. The hypothesis is supported by the accounts of the surveyor with the observation made in the survey. In addition, the tidal influence of the Rivers may restrict the availability of foraging and roosting sites for the waterbirds. This may further encourage the waterbirds utilizing the more attractive habitats in the nearby LVNP.
- 5.2.6 No site runoff and no specific instances of noise or activities from the construction site that has scared away waterbirds was observed during the survey in the Reporting Period. No action and limit level exceedance was therefore considered triggered in the Reporting Month.
- 5.2.7 The details of the waterbirds survey for the Reporting Month can be referred to the full waterbirds survey report provided in **Appendix L**.



6. WASTE MANAGEMENT

6.1 GENERAL WASTE MANAGEMENT

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

6.2 **RECORDS OF WASTE QUANTITIES**

- 6.2.1 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.
- 6.2.2 The quantities of waste for disposal in this Reporting Period are summarized in *Tables 6-2-1* and *6-2-2* and the Monthly Summary Waste Flow Table is shown in *Appendix I*. Whenever possible, materials were reused on-site as far as practicable.

Table 6-2-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) (in '000m ³)	4.3313	-
Reused in this Contract (Inert) (in '000 m ³)	0	-
Reused in other Contracts/ Projects (Inert) (in '000 m ³)	0.1613	Contract No.: SS J501
Disposal as Public Fill (Inert) (in '000 m ³)	4.1700	TM38

Table 6-2-2 Summary of Quantities of C&D Wastes

Type of Waste	Quantity	Disposal Location
Recycled Metal ('000kg)	0	-
Recycled Paper / Cardboard Packing ('000kg)	0	-
Recycled Plastic ('000kg)	0	-
Chemical Wastes ('000kg)	0	-
General Refuses ('000m ³)	0.0017	SENT

7. SITE INSPECTION

7.1 **REQUIREMENTS**

7.1.1 According to the approved Updated EM&A Manual, the environmental site inspection shall be formulation by ET Leader. Weekly environmental site inspections should carry out to confirm the environmental performance.

7.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

- 7.2.1 In the Reporting Month, weekly regular site inspection by the RE, the Main Contractor and ET was carried out on *2*, *9*, *16*, *23* and *30 June 2022* to evaluate site environmental performance of the Contract Works. During the site inspections, no non-compliance was noted.
- 7.2.2 The findings/deficiencies of the Contract Works observed that during the weekly site inspection are listed in *Table 7-2-1*.

Date	Findings / Deficiencies	Follow-Up Status
2 June 2022	• No adverse environmental issue was observed during site inspection.	NA
8 June 2022	• No adverse environmental issue was observed during site inspection.	NA
16 June 2022	• Empty cement bag should be treated properly to reduce dust generation.	Empty cement bags were disposed properly.
24 June 2022	• Stagnant water should be removed to prevent mosquito breeding. (HCF)	Stagnant water at HCF was removed.
30 June 2022	 Chemical containers should be placed inside drip tray to avoid land contamination. Sand bag bund near the river body should be properly maintained to ensure all the surface runoff are directed to the sedimentation pit. 	removed from site. Sand bag bund was

Table 7-2-1Site Observations



8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

8.1 Environmental Complaint, Summons and Prosecution

8.1.1 For the Contract Works, no environmental complaint, summons and prosecution was received in the Reporting Period. The statistical summary table of environmental complaint is presented in *Tables 8-1-1, 8-1-2* and *8-1-3*.

Table 8-1-1 Statistical Summary of Environmental Complaints

Domenting Devied	Environmental Complaint Statistics								
Reporting Period	Frequency	Cumulative	Complaint Nature						
1 – 30 June 2022	0	0	NA						

Table 8-1-2 Statistical Summary of Environmental Summons

Donorting Doriod	Enviro	Environmental Summons Statistics									
Reporting Period	Frequency	Cumulative	Complaint Nature								
1 – 30 June 2022	0	0	NA								

Table 8-1-3 Statistical Summary of Environmental Prosecution

Domonting Domind	Environmental Prosecution Statistics								
Reporting Period	Frequency	Cumulative	Complaint Nature						
1 – 30 June 2022	0	0	NA						

9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

9.1 GENERAL REQUIREMENTS

9.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved Updated EM&A Manual covered the issues of dust, noise, water and waste and they are summarized presented in *Appendix J.*

9.2 IMPLEMENTATION STATUS OF THE MITIGATION MEASURES IN THE REPORTING PERIOD

9.2.1 The Contract Works shall be implementing the required environmental mitigation measures according to the approved Updated EM&A Manual as subject to the site condition. Environmental mitigation measures implemented by the Main Contractor in this Reporting Month are summarized in *Table 9-1-1*. A. site temporary drainage layout plan is shown in *Appendix K*.

Issues	Environmental Mitigation Measures
Air Quality	All vehicles must be washed before leaving the site
	Sprayed water during excavation works
	• Stockpile of dusty material was covered entirely with impervious sheeting or sprayed with water so as to maintain the entire surface wet;
	• Water spraying on haul road and dry site area was provided regularly; and
	• Where a vehicle leaving the works site is carrying a load of dusty materials, the load has covered entirely with clean impervious sheeting;
Constriction	Keep all vehicles/plants in good condition to minimize noise impact
Noise	Shut down the plants when not in used.
	 Provided quiet powered mechanical equipment to use onsite;
Water	• All the surface runoff are collected to sedimentation pit and tanks for
Quality	sedimentation prior discharged
	• Sand bag bund was provided along the boundary of the site area near Ng Tung River to divert the surface runoff to sedimentation pit and avoid direct discharge of surface runoff.
	• Standby water pumps were provided on site to pump the runoff water
	collected at pit to the sedimentation tank for sedimentation.
	Complied with the requirement under the discharge license.
Waste and	• Disposal of C&D wastes to any designated public filling facility and/or
Chemical	landfill followed a trip ticket system;
Management	 Debris and refuse generated on-site collected regularly;
	 Oils and fuels were stored in designated areas;
	Kept the site tidy and clean.

 Table 9-1-1
 Environmental Mitigation Measures Implemented in the Reporting Period

9.3 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

- 9.3.1 The tentative construction works schedule of the Contract Works under FEP in the coming month are listed below:
 - Rebar fixing work for Reclaimed Water Pumping Station
 - Excavation and lateral support work for Hypo-Chlorination Facilities

9.4 KEY ISSUES FOR THE COMING MONTH

- 9.4.1 Key issues to be considered in the coming month for the Contract Works under FEP include:
 - Ensure the sand bag bund at site boundary near the Ng Tung River is properly maintained to avoid muddy discharge during heavy rain;
 - Ensure sufficient capacity of sedimentation pit and tanks for wastewater sedimentation;
 - Sufficient stock of standby pump should be available on site for pumping the runoff water/wastewater to the sedimentation tank.
 - Cover the dusty stockpile on site to reduce potential fugitive dust quality impact;
 - All the vehicles should be properly washed prior leaving the site;

•



- Use Quiet powered mechanical equipment (QPME) whenever applicable;
 - Minimize the number of plants used at the same time to reduce cumulative noise impact;
- Regular clearance of stagnant water after rainy days;
- Properly manage of general refuse and chemical waste generated on site.



10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

- 10.1.1 This is 7th monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from 1 to 30 June 2022.
- 10.1.2 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 the Reporting Period. No NOEs or the associated corrective actions were therefore issued.
- 10.1.3 Five (5) occasions of the weekly waterbirds survey has been taken in the Reporting Period. Although decrease in the waterbirds abundance was recorded in the Reporting Period, the cause of abundance decline was considered unlikely due to the Project. No action and limit level exceedance was considered triggered in the Reporting Month.
- 10.1.4 No documented complaint, notification of summons or successful prosecution was received by either the RE or WSD or the Main Contractor.
- 10.1.5 Weekly site inspection by the RE, ET and the Main Contractor had carried out on 2, 8, 16, 24 and 30 June 2022. The mitigation measures implemented was considered satisfactory. No non-compliance observed during the site inspection.

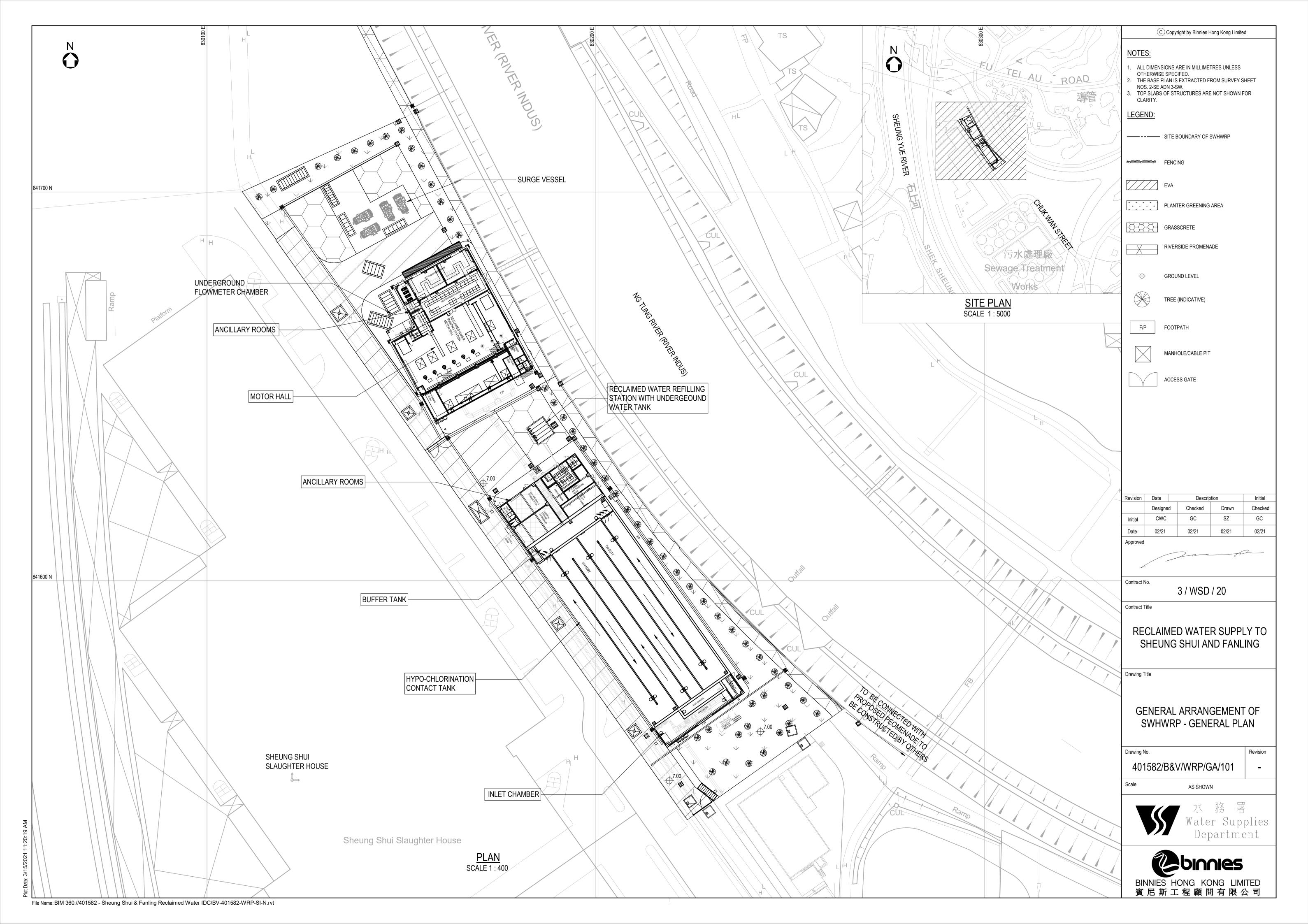
10.2 RECOMMENDATIONS

- 10.2.1 Excavation works will be still the major construction work in the coming month. Air quality and construction noise mitigation measures for the excavation work such as spraying water during the operation, using quiet plants or mobile noise barriers should be implemented in accordance with the EM&A requirement.
- 10.2.2 As a general recommendation during wet season, the Contractor was reminded that to paid special attention to water quality mitigation measures especially to prevent surface runoff into Ng Tung River and nearby water bodies/public areas.
- 10.2.3 The Contractor was reminded to pay attention to the key issues for the coming month mentioned in Section 9.4.



Appendix A

Location of Shek Wu Hui Water Reclamation Plant



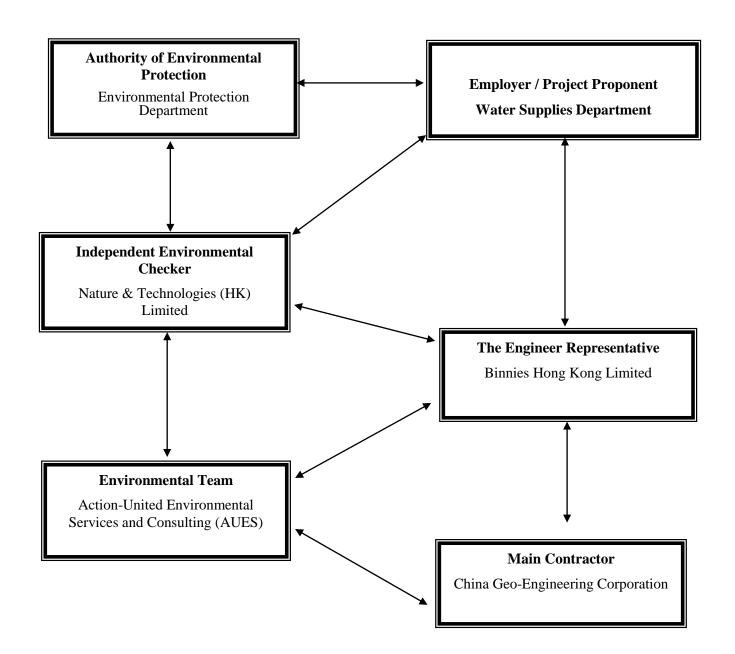


Appendix B

Project Organization



Project Organization Chart





Organization	Project Role	Name of Key Staff	Tel No.	Email
WSD	Project Proponent	Tim Wong	2829 5638	tim_cw_wong@wsd.gov.hk
Binnies	Senior Resident Engineer	S.H. Chung	2608 7380	sre.3wsd20@gmail.com
Binnies	Resident Engineer	Chester Chan,	2608 7380	chancw@binnies.com
N&T	N&T Independent Environmental Checker		2877 3122	vegawong@nt.com.hk
CGC	Site Agent	Chan Tsz Kin	6874 8835	3wsd20@gmail.com
CGC	Environmental Officer	Luke Chung	6488 0975	3wsd20@gmail.com
AUES	Environmental Team Leader	T. W. Tam	2959 6059	twtam@fordbusiness.com
AUES	Environmental Consultant	Nicola Hon	2959 6059	nicolahon@fordbusiness.com
AUES	Environmental Consultant	Martin Li	2959 6059	martinli@fordbusiness.com
AUES	Assistant Environmental Consultant	Fai So	2959 6059	faiso@fordbusiness.com

Contact Details of Key Personnel for the Project

Legend:

WSD (Employer) – Water Supplies Department Binnies (Engineer Representative) – Binnies Hong Kong Limited CGC (Main Contractor) –China Geo-Engineering Corporation N&T (IEC) –Nature & Technologies (HK) Limited AUES (ET) – Action-United Environmental Services and Consulting (AUES)



Appendix C

Master Construction Program and Site Overview Photo in the Reporting Period

ID	Task Name				Duration	Start	Finish	TRA	Notes	02	03 04 03		2023 Q4 Q1 Q2 Q3
1	Key Dates				1676 days	Jul 30 '21	Mar 1 '26						
2	Contract Date				1 day	Jul 30 '21	Jul 30 '21						
3	Starting Date				1 day	Jul 30 '21	Jul 30 '21						
4	Contract Period				1675 days	Jul 31 '21	Mar 1 '26						
5	Section 1 - Shek Wu Hui	Water Reclamation Plant (SV	VHWRP)		791 days	Jul 31 '21	Sep 29 '23						-
6	Section 2 - Landscaping	works of SWHWRP			791 days	Jul 31 '21	Sep 29 '23						
7	Section 3 - Modification	of Table Hill Reclaimed Wate	er Service Reservoi	ir	791 days	Jul 31 '21	Sep 29 '23						-
8	Section 4 - Mainlaying w	orks in part 3 of the Site			791 days	Jul 31 '21	Sep 29 '23						
9	Section 5 - Mainlaying w	orks in part 4 of the Site			1095 days	Jul 31 '21	Jul 29 '24						
10	Section 6 - Mainlaying w	orks in part 5 of the Site			1279 days	Jul 31 '21	Jan 29 '25						
11	Section 7 - Mainlaying w	orks in part 6 of the Site			1522 days	Jul 31 '21	Sep 29 '25						
12	Section 8 - Mainlaying w	orks in part 7 of the Site & re	emaining WM wor	ks	1675 days	Jul 31 '21	Mar 1 '26						
13	Section 9 - Conversion w	vorks of reclaimed water			1675 days	Jul 31 '21	Mar 1 '26						
14	Contract Completion date				0 days	Mar 1 '26	Mar 1 '26						
15													
16	Preliminary & General				1676 days	Jul 30 '21	Mar 1 '26				1		
17	Submission of Draft Safety	Plan			14 days	Jul 30 '21	Aug 12 '21				•		
18	Submission of Draft Enviror	nmental Management Plan			14 days	Jul 30 '21	Aug 12 '21				•		
19	Submission of Sub-contract	tor Management Plan			14 days	Jul 30 '21	Aug 12 '21				•		
20	Notification & request for L	JU record from utility underta	akers		14 days	Jul 30 '21	Aug 12 '21				•		
21	Submission and acceptance	e of selection procedure for se	upplier		29 days	Aug 3 '21	Aug 31 '21				-		
22	Submission and acceptance	e of selection procedure for se	ubcontractor		35 days	Aug 3 '21	Sep 6 '21						
23	Agreement on preliminary	office layout			35 days	Aug 12 '21	Sep 15 '21						
24	Provision of Project Manag	er's Accommodation			222 days	Sep 10 '21	Apr 19 '22				×	-	
25	Submission and accepta	nce of subletting package			14 days	Sep 10 '21	Sep 23 '21						
26	Selection of Subcontract	tor			18 days	Sep 24 '21	Oct 11 '21						
27	Submission and accepta	nce of design and material			60 days	Oct 12 '21	Dec 10 '21						
28	Manufacture and delive	ry of MiC office			50 days	Dec 11 '21	Jan 29 '22						
29	Erection of Project Mana	ager's Accommodation			80 days	Jan 30 '22	Apr 19 '22						
30	Selection of Traffic Consult	tant			1027 days	Sep 3 '21	Jun 25 '24				1		
31	Submission and accepta	nce of subletting package			14 days	Sep 3 '21	Sep 16 '21						
32	Selection of traffic consu	ultant			13 days	Sep 17 '21	Sep 29 '21				Ι <mark>ξ</mark>		
33	XP application for different	ent Sections			1000 days	Sep 30 '21	Jun 25 '24						
34	TTA application and Atte	end TMLG Meetings for differ	rent Sections		1000 days	Sep 30 '21	Jun 25 '24						
35	Selection of Concrete Supp	blier			29 days	Sep 6 '21	Oct 4 '21				н		
36	Submission and accepta	nce of subletting package			9 days	Sep 6 '21	Sep 14 '21						
37	Selection of concrete su	pplier			20 days	Sep 15 '21	Oct 4 '21						
38	Selection of Subcontractor	for Excavation and ELS Worl	ks at SWHWRP		42 days	Oct 7 '21	Nov 17 '21				н		
39	Submission and accepta	nce of subletting package			21 days	Oct 7 '21	Oct 27 '21						
40	Selection of subcontract	tor			21 days	Oct 28 '21	Nov 17 '21				*		
41	Selection of Subcontractor	for Structural Works			39 days	Jan 10 '22	Feb 17 '22				п		
42	Submission and accepta	nce of subletting package			21 days	Jan 10 '22	Jan 30 '22						
43	Selection of subcontract	tor			18 days	Jan 31 '22	Feb 17 '22						
44	Selection of Subcontractor	for Roadworks			51 days	Feb 18 '22	Apr 9 '22						
45	Submission and accepta	nce of subletting package			30 days	Feb 18 '22	Mar 19 '22				i		
46	Selection of subcontract	tor			21 days	Mar 20 '22	Apr 9 '22					š	
47	Selection of Subcontractor	for Architectural Works			90 days	Apr 10 '22	Jul 8 '22					P1	
48	Submission and accepta	nce of subletting package			60 days	Apr 10 '22	Jun 8 '22						
		Task		Inactive Task		Manual Summ	ary Rollup		Extern	al Milesto	ne 🗇		Manual Progress
ъ.						Manual Summ			Deadlin		+		
-	t: 3WSD20 Programme	Milestone		Inactive Summary		Start-only	, . С		Critica				
Date:	Jun 28 '22	Summary		Manual Task		Finish-only	3		Critica				
		Project Summary		Duration-only		External Tasks							
		Project Summary		Duration-only		External Tasks			Progres	55			



Г	Task Name			Duration	Start	Finish	TRA	Notes			2023		2025 Q2 Q3 Q4 Q1 Q2 Q3	2026
49	Selection of subcontract	or		30 days	Jun 9 '22	Jul 8 '22			Q2 Q3 C		3 Q4 Q1 Q2	Q3 Q4 Q1	<u> </u>	04 01 02
50	Selection of Subcontractor	for Landscape Works		90 days	Jul 9 '22	Oct 6 '22			_	r+-	-			
1		nce of subletting package		60 days	Jul 9 '22	Sep 6 '22			-	±				
2	Selection of subcontract	or		30 days	Sep 7 '22	Oct 6 '22					*			
3	Selection of Subcontractor	for Mainlaying Works		188 days	Jan 24 '22	Jul 30 '22								
4	Submission and accepta	nce of subletting package - open trench (for Section	on 4)	40 days	Jan 24 '22	Mar 4 '22								
5	Selection of subcontract	or - open trench (for Section 4)		7 days	Mar 5 '22	Mar 11 '22				+				
6	Submission and accepta	nce of subletting package - open trench (for Section	on 5)	43 days	Apr 20 '22	Jun 1 '22								
57	Selection of subcontract	or - open trench (for Section 5)		14 days	Jun 2 '22	Jun 15 '22				*				
8	Submission and accepta	nce of subletting package - open trench (for Section	on 6)	21 days	Jun 23 '22	Jul 13 '22								
59	Selection of subcontract	or - open trench (for Section 6)		14 days	Jul 14 '22	Jul 27 '22				*				
50	Submission and accepta	nce of subletting package - open trench (for Section	on 7)	24 days	Jun 30 '22	Jul 23 '22								
51		or - open trench (for Section 7)		7 days	Jul 24 '22	Jul 30 '22			-	1	•			
52		nce of subletting package - open trench (for Section	on 8)	24 days	Jun 30 '22	Jul 23 '22								
53		or - open trench (for Section 8)		7 days	Jul 24 '22	Jul 30 '22					•			
64		nce of subletting package - open trench (for Section	on 9)	24 days	Jun 30 '22	Jul 23 '22								
55		or - open trench (for Section 9)		7 days	Jul 24 '22	Jul 30 '22					•			
66		nce of subletting package - trenchless		21 days	Jun 23 '22	Jul 13 '22								
67	Selection of subcontract			14 days	Jul 14 '22	Jul 27 '22								
58	Selection of Supplier for Su			35 days	Dec 13 '21	Jan 16 '22				-				
59		nce of subletting package		21 days	Dec 13 '21	Jan 2 '22				-				
70	Selection of subcontract			14 days	Jan 3 '22	Jan 16 '22			_	*				
71	Selection of Supplier for Co	omputer Facilities		47 days	Dec 7 '21	Jan 22 '22			-	-				
/2		nce of subletting package		33 days	Dec 7 '21	Jan 8 '22			_					
'3	Selection of subcontract			14 days	Jan 9 '22	Jan 22 '22			_	+				
74	Selection of Environment 1	eam		35 days	Nov 1 '21	Dec 5 '21				-				
75	Submission and accepta	nce of subletting package		21 days	Nov 1 '21	Nov 21 '21								
76	Selection of Environmer	it Team		14 days	Nov 22 '21	Dec 5 '21				*				
77	BEAM Plus			1208 days	Dec 1 '21	Mar 22 '25								
78	Submission and accepta	nce of subletting package		90 days	Dec 1 '21	Feb 28 '22			_					
79	Selection of BEAM plus	consultant		21 days	Mar 1 '22	Mar 21 '22				*				
80	BEAM Plus PA submissio	n		210 days	Mar 22 '22	Oct 17 '22				*				
81	BEAM Plus FA submissio	n		540 days	Sep 30 '23	Mar 22 '25								
82	BIM			1537 days	Dec 16 '21	Mar 1 '26								
83	Submission and accepta	nce of subletting package		90 days	Dec 16 '21	Mar 15 '22								
84	Selection of BIM consult	ant		21 days	Mar 16 '22	Apr 5 '22				*				
85	Execution of BIM (rebar	BIM, CSD and CBWD coordination and production)	1426 days	Apr 6 '22	Mar 1 '26				*				
36	Selection of Contractor's D	esigner for foundation works		28 days	Feb 1 '22	Feb 28 '22				н				
37	Submission and accepta	nce of subletting package		14 days	Feb 1 '22	Feb 14 '22				•				
88	Selection of Contractor's	s Designer		14 days	Feb 15 '22	Feb 28 '22				*				
89	Selection of Independent C	checking Engineer (ICE) for Permanent Works (for	undation)	28 days	Feb 1 '22	Feb 28 '22				-				
90	Submission and accepta	nce of subletting package		14 days	Feb 1 '22	Feb 14 '22				• _				
91	Selection of ICE for Pern	nanent Works		14 days	Feb 15 '22	Feb 28 '22				*				
92	Selection of Contractor's D	esigner for Civil & Structural Works		28 days	May 3 '22	May 30 '22				н				
93	Submission and accepta	nce of subletting package		14 days	May 3 '22	May 16 '22				■ _				
94	Selection of Contractor's	-		14 days	May 17 '22	May 30 '22				*				
95	Selection of Independent (checking Engineer (ICE) for Permanent Works (Civ	il & Structural)	28 days	May 3 '22	May 30 '22				н				
96	Submission and accepta	nce of subletting package		14 days	May 3 '22	May 16 '22								
		Task	nactive Task		Manual Summ	ary Rollun		External	l Milestone	\$	Manual Prog	1955		
			active Milestone		Manual Summ			Deadline		•	ivianuai i 10g	4000		
	: 3WSD20 Programme		active Summary	0	Start-only			Critical		-	_			
ate: Ji	un 28 '22		Ianual Task		Finish-only			Critical						
					External Tasks	-		Progress						
		Project Summary	uration-only		LATEINAI TASKS			Progress	>					
						Page 2								

ר כ	Fask Name				Duration	Start	Finish	TRA	Notes		2022 03 Q4 Q1 Q2 Q3	2023 3 04 01 02 0
97	Selection of ICE for Peri	manent Works			14 days	May 17 '22	May 30 '22					
98												
99	Section 1 & 2 - Construction	of SWHWRP and Landso	caping Works		825 days	Aug 27 '21	Nov 29 '23					
100	Access Date (part 1 of the	Site)			1 day	Aug 27 '21	Aug 27 '21				Ч	
101	Site clearance				7 days	Aug 28 '21	Sep 3 '21				Ϋ́,	
102	Initial survey				7 days	Sep 4 '21	Sep 10 '21				*	
103	Installation of monitoring i	nstruments and take in	itial readings		28 days	Nov 1 '21	Nov 28 '21					
104	Environmental baseline me	ontioring by ET			33 days	Nov 4 '21	Dec 6 '21				-	
105	Foundation Works - ReWF	S			321 days	Aug 31 '21	Jul 17 '22					
106	Submission and approv	al of subletting package	for pre-drilling works		7 days	Aug 31 '21	Sep 6 '21				Ь	
107	Selection of pre-drilling	subcontractor			13 days	Sep 7 '21	Sep 19 '21					
108	Pre-drilling works (15 n	os.)			12 days	Sep 20 '21	Oct 1 '21		5 x 4d/hole			
109	Pre-drill log report and	Point Load Test			6 days	Oct 2 '21	Oct 7 '21				F	
110	Design review for found	lation works			28 days	Oct 8 '21	Nov 4 '21				* _	
111	Piling works (54 nos. of	pre-bored H piles) - Tot	tal length = 2387m		88 days	Dec 7 '21	Mar 4 '22					
112	Installation of King Post				7 days	Mar 5 '22	Mar 11 '22				K	
113	Testing of pre-bored H-	pile - tension load test			29 days	Mar 12 '22	Apr 9 '22			1		
114	Shortage of Acetyler	ne Gas			15 days	Mar 12 '22	Mar 26 '22			1		
115	Setting up of load te	st			7 days	Mar 27 '22	Apr 2 '22			1		
L16	Tension Load Test				7 days	Apr 3 '22	Apr 9 '22				*	
117	Sheet piling works for E	LS - 300 pcs (length 12r	n)		10 days	Mar 15 '22	Mar 24 '22					
118	Excavation works (6900	m3) and ELS installation	n		56 days	Apr 10 '22	Jun 4 '22					
119	Shortage of Acetyler				24 days	Apr 10 '22	May 3 '22					
120	ELS installation and				25 days	May 4 '22	May 28 '22					
121	Welding of pile head	capping plate			13 days	May 23 '22	Jun 4 '22					
122	Laying of blinding layer				3 days	, Jun 5 '22	Jun 7 '22					
123	Submission and accepta	ance of method stateme	ent for pile cap construe	ction	45 days	Mar 15 '22	Apr 28 '22					
124	Submission and accepta				45 days	Mar 15 '22	Apr 28 '22					
125	Concrete mix submissic			rete	45 days	Mar 9 '22	Apr 22 '22					
126	Construction of pile cap				38 days	Jun 8 '22	Jul 15 '22			-		
127		proofing system and te	esting		14 days	Jun 8 '22	Jun 21 '22					
128	Rebar fixing				21 days	Jun 22 '22	Jul 12 '22			-		
129	Concreting of pile ca	p (996 m3)			3 days	Jul 13 '22	Jul 15 '22					
130	Backfilling to pile cap to				2 days	Jul 16 '22	Jul 17 '22					
131	Foundation Works - HCF	p			325 days	Oct 2 '21	Aug 22 '22			-		
132	Pre-drilling works (25 n	os.)			20 days	Oct 2 '21	Oct 21 '21		5 x 4d/hole			
133	Pre-drill log report and				11 days	Oct 22 '21	Nov 1 '21					
134	Design review for found				30 days	Nov 2 '21	Dec 1 '21					
135	Piling works - HCF (56 n		s) - Total length = 1871n	n	72 days	Dec 21 '21	Mar 2 '22					
136	Testing of pre-bored H-		,		7 days	Mar 7 '22	Mar 13 '22					
137	Testing of pre-bored H-		test		62 days	Mar 7 '22	May 7 '22					
138	Shortage of Acetyler				36 days	Mar 7 '22	Apr 11 '22					
139		-piles and setting up of	load test		21 days	Apr 12 '22	May 2 '22					
140	Compression load te				5 days	May 3 '22	May 7 '22			-		
140	Sheet piling works for E)		15 days	Mar 23 '22	Apr 6 '22	3	60 pcs/day		↓	
	Excavation works (7600		1		49 days	May 8 '22	Jun 25 '22	5	oo pesi uay	-		
142 143												
	Welding of pile head ca	hhilik higin			14 days	Jun 12 '22	Jun 25 '22			-		
144	Laying of blinding layer				3 days	Jun 26 '22	Jun 28 '22				h	
		Task		Inactive Task		Manual Summ	ary Rollup		Externa	l Milestone	e \$	Manual Progress
. ·		Split				Manual Summ			Deadlin		+	
-	: 3WSD20 Programme	Milestone	•	Inactive Summary		Start-only	E		Critical			
Jate: J	un 28 '22	Summary	-	Manual Task	-	Finish-only	3		Critical	Snlit		_
		1 Juninal y		ivianual Lask		• 1 HISH-OILLY			Cinical	υμπ		

Q4	2024	02	Q3 Q4	2025	5 02	02	04	202	26	02
U4	QI	Q2	<u>us u</u>	+ Q1	QZ	US	Q4		<u> </u>	<u>u</u> s
-										

D T	ask Name	Duration	Start	Finish	TRA	Notes		03 0	2022 4 Q1 Q2 Q3	2023	02 04
145	Construction of pile cap	52 days	Jun 29 '22	Aug 19 '22			Q2			U4 UI U2	<u> </u>
146	Installation of water proofing system and testing (1/3)	14 days	Jun 29 '22	Jul 12 '22		From G.L. 1			-		
147	Rebar fixing (1/3)	14 days	Jul 6 '22	Jul 19 '22							
148	Concreting of pile cap (1/3) - 920m3	3 days	Jul 20 '22	Jul 22 '22					1		
149	Installation of water proofing system and testing (1/3)	14 days	Jul 13 '22	Jul 26 '22					1		
150	Rebar fixing (1/3)	14 days	Jul 20 '22	Aug 2 '22							
151	Concreting of pile cap (1/3) - 920m3	3 days	Aug 3 '22	Aug 5 '22							
152	Installation of water proofing system and testing (1/3)	14 days	Jul 27 '22	Aug 9 '22					1		
153	Rebar fixing (1/3)	14 days	Aug 3 '22	Aug 16 '22							
154	Concreting of pile cap (1/3) - 920m3	3 days	Aug 17 '22	Aug 19 '22							
155	Backfilling to pile cap top level	3 days	Aug 20 '22	Aug 22 '22							
156											
157	Construction of SWHWRP	537 days	May 1 '22	Oct 19 '23					P		
158	Submission and acceptance of DfMA proposal for bathroom unit, valves chamber, water refilling station	60 days	Jun 9 '22	Aug 7 '22							
159	Selection of Supplier for DfMA	21 days	Aug 8 '22	Aug 28 '22							
160	Manufacture of DfMA Precast Segments	60 days	Aug 29 '22	Oct 27 '22					*		
161	Installation of DfMA segments	90 days	Oct 28 '22	Jan 25 '23							1
162	Submission and acceptance of method statement for construction of ReWPS and HCF	30 days	May 3 '22	Jun 1 '22							
163	Construction of RC structure of ReWPS	270 days	Jul 18 '22	Apr 13 '23					*	I)	
164	Construction of basement (below ground)	91 days	Jul 18 '22	Oct 16 '22					P	- 1	
165	Removal of ELS strut and wailing (2nd layer)	2 days	Jul 18 '22	Jul 19 '22					Ы		
166	Construction of external walls, W6, W8-W15, beams and slabs (+0mPD to +5.6mPD)	51 days	Jul 20 '22	Sep 8 '22					–		
167	Scaffolding erection and rebar fixing	28 days	Jul 20 '22	Aug 16 '22							
168	Falsework and Formwork erection	21 days	Aug 17 '22	Sep 6 '22							
169	Concreting	2 days	Sep 7 '22	Sep 8 '22							
170	Removal of formwork	3 days	Sep 9 '22	Sep 11 '22							
171	Installation and testing of water proofing system	7 days	Sep 12 '22	Sep 18 '22							
172	Backfilling and removal of ELS strut and wailing (1st layer)	4 days	Sep 19 '22	Sep 22 '22					i		
173	Construction of external walls, W6, W8-W15 (+5.6mPD to +7.2mPD)	20 days	Sep 23 '22	Oct 12 '22						•	
174	Scaffolding erection and rebar fixing	7 days	Sep 23 '22	Sep 29 '22							
175	Formwork erection	6 days	Sep 30 '22	Oct 5 '22							1
176	Concreting	1 day	Oct 6 '22	Oct 6 '22							1
177	Removal of formwork	1 day	Oct 7 '22	Oct 7 '22							1
178	Installation and testing of water proofing system	5 days	Oct 8 '22	Oct 12 '22							1
179	Backfilling from +5.6mPD to +7.2mPD	4 days	Oct 13 '22	Oct 16 '22							
180	Construction of Staircase ST1, ST2 (+0mPD to +7.2mPD)	38 days	Aug 27 '22	Oct 3 '22					-	1	1
181	Scaffolding and falsework erection	7 days	Aug 27 '22	Sep 2 '22							
182	Rebar fixing	14 days	Sep 3 '22	Sep 16 '22							1
183	Formwork erection	14 days	Sep 17 '22	Sep 30 '22							
184	Concreting	3 days	Oct 1 '22	Oct 3 '22						' I I	
185	Removal of ELS sheet piles	7 days	Oct 17 '22	Oct 23 '22							
186	Construction of Superstructure (above ground) - Grid Line 4-6	203 days	Sep 23 '22	Apr 13 '23							
187	Construction of base slab (+4.45mPD to +5.95mPD & +5.6mPD to +7.1mPD)	21 days	Sep 23 '22	Oct 13 '22							
188	Installation of water proofing system	7 days	Sep 23 '22	Sep 29 '22							
189	Rebar fixing	7 days	Sep 30 '22	Oct 6 '22			_			5	
190	Formwork erection	5 days	Oct 7 '22	Oct 11 '22							
191	Concreting	2 days	Oct 12 '22	Oct 13 '22			_				
192	Construction of Columns (+5.95mPD to +13.25mPD)	28 days	Oct 14 '22	Nov 10 '22							
	Task Inactive Task		Manual Sumn	nary Rollup		External	Milesto	ne	\$	Manual Prog	ress
Project	3WSD20 Programme Split Inactive Milestone \diamond		Manual Sumn	nary		Deadlin	e		÷		
-	In 28 '22 Milestone Inactive Summary		Start-only	C		Critical					
Date. J	Summary Manual Task		Finish-only	3		Critical	Split				
			External Task				3				

									a	-	
	2024	~ ~	aa	~ ~	2025	aa	a a	~	2026	5	
2 Q3 Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
•											
٦											
1											
gress				_							

ID	Task Name				Duration	Start	Finish	TRA	Notes	02		2022 Q1 Q2 (03 04	2023	02 03
193	Scaffolding ere	ction and rebar fixing			14 days	Oct 14 '22	Oct 27 '22	_			<u> </u>				
194	Formwork erec	tion			7 days	Oct 28 '22	Nov 3 '22						K		
195	Concreting				7 days	Nov 4 '22	Nov 10 '22						Ť		
196	Construction of Be	aring walls and Slabs (+	5.95mPD to +7.2mPD)		14 days	Nov 11 '22	Nov 24 '22						K		
197	Rebar fixing				7 days	Nov 11 '22	Nov 17 '22						Б		
198	Formwork erec	tion			4 days	Nov 18 '22	Nov 21 '22								
199	Concreting and	curing of concrete			3 days	Nov 22 '22	Nov 24 '22								
200	Construction of Be	aring walls (+7.2mPD to	+13.25mPD)		14 days	Nov 25 '22	Dec 8 '22						- 	1	
201	Rebar fixing				7 days	Nov 25 '22	Dec 1 '22						F		
202	Formwork erec	tion			4 days	Dec 2 '22	Dec 5 '22							1	
203	Concreting and	curing of concrete			3 days	Dec 6 '22	Dec 8 '22							†	
204	Construction of Be	ams and Slabs at +11.8r	mPD		28 days	Dec 9 '22	Jan 5 '23							%	
205	Scaffolding and	falsework erection			7 days	Dec 9 '22	Dec 15 '22							Ы	
206	Formwork erec	tion			3 days	Dec 16 '22	Dec 18 '22								
207	Rebar fixing				14 days	Dec 19 '22	Jan 1 '23							x	
208	Concreting and	curing of concrete			4 days	Jan 2 '23	Jan 5 '23								
209	Construction of Be	ams and Slabs at +13.25	SmPD		60 days	Jan 6 '23	Mar 6 '23							F	
210	Scaffolding and	falsework erection			14 days	Jan 6 '23	Jan 19 '23								
211	Formwork erec	tion			14 days	Jan 20 '23	Feb 2 '23								
212	Rebar fixing				21 days	Feb 3 '23	Feb 23 '23								
213	Concreting and	curing of concrete			11 days	Feb 24 '23	Mar 6 '23								
214	Installation of inte	rnal finishing works for (Grid Line 4-6		38 days	Mar 7 '23	Apr 13 '23								
215	Mass concrete	for cable trench			7 days	Mar 7 '23	Mar 13 '23							Ь	
216	Waterproofing	system at slabs			3 days	Mar 14 '23	Mar 16 '23								
217	Epoxy painting	on floor finish			7 days	Mar 17 '23	Mar 23 '23								
218	Plaster and pai	nt at wall and soffit			7 days	Mar 24 '23	Mar 30 '23								
219	Chequer plate	system at cable trench a	nd aerator room		7 days	Mar 31 '23	Apr 6 '23								
220	Steel grating flo	oor system at chemical s	torage rooms		7 days	Apr 7 '23	Apr 13 '23								
221	SS door and alu	minum louver			7 days	Apr 7 '23	Apr 13 '23								
222	Construction of Pa	rapet Walls (+13.25mPE	D to +14.65mPD)		14 days	Mar 7 '23	Mar 20 '23							🛃	
223	Scaffolding ere	ction			1 day	Mar 7 '23	Mar 7 '23							Ь	
224	Rebar fixing				7 days	Mar 8 '23	Mar 14 '23								
225	Formwork erec	tion			5 days	Mar 15 '23	Mar 19 '23								
226	Concreting				1 day	Mar 20 '23	Mar 20 '23								
227	Construction of St	aircase ST3 (+7.1mPD to	+13.5mPD)		18 days	Jan 6 '23	Jan 23 '23							F	
228	Installation of	precast segments			3 days	Jan 6 '23	Jan 8 '23							Ь	
229	Rebar fixing	-			3 days	Jan 9 '23	Jan 11 '23								
230	Concreting and	curing of concrete			12 days	Jan 12 '23	Jan 23 '23								
231	Construction of Supe	rstructure (above grour	nd) - Grid Line 1-4		179 days	Oct 17 '22	Apr 13 '23						–		
232	Construction of Be	ams and Slabs at +7.2m	PD		45 days	Oct 17 '22	Nov 30 '22						-		
233	Falsework erec	tion			14 days	Oct 17 '22	Oct 30 '22						•		
234	Formwork erec	tion			14 days	Oct 31 '22	Nov 13 '22								
235	Rebar fixing				14 days	Nov 14 '22	Nov 27 '22						🕇		
236	Concreting				3 days	Nov 28 '22	Nov 30 '22								
237	Construction of Be	ams and Slabs at +9.1m	PD		46 days	Oct 31 '22	Dec 15 '22						┝╋		
238	Falsework erec				8 days	Oct 31 '22	Nov 7 '22			_					
239	Formwork ered	tion			8 days	Nov 28 '22	Dec 5 '22			_			🛉		
240	Rebar fixing				8 days	Dec 6 '22	Dec 13 '22								
		Task		Inactive Task		Manual Summa	ry Rollup		Extern	nal Milestor	ne 🗇			Manual Pro	ogress
Decision	+ 2WCD20 Due and the	Split		Inactive Milestone		Manual Summa			Deadl	ine	+				
	t: 3WSD20 Programme	Milestone	•	Inactive Summary		Start-only	E		Critic						
Date: J	Jun 28 '22	Summary		Manual Task		Finish-only	3			al Split					
				A CONTRACTOR A CONTRACT		ver vertig	_		CILLO	···· ~ p' ***					

	2024				2025				202	26	
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	01	26 Q2	Q3
				_							

ID .	Task Name				Duration	Start	Finish	TRA	Notes	02 0	2022 Q3 Q4 Q1 Q2	03 0	2023	
241	Concreting				2 days	Dec 14 '22	Dec 15 '22				$\omega \perp \alpha + 1 $			
242	Removal of formw	ork and falsework			7 days	Dec 16 '22	Dec 22 '22						*	
243	Watertightness te	st			14 days	Dec 23 '22	Jan 5 '23						K	
244	Installation of inte	rnal finishing works for	basement		14 days	Jan 6 '23	Jan 19 '23							
245	Construction of W	alls and Columns (+7.2	mPD to +15.2mPD)		21 days	Dec 1 '22	Dec 21 '22						H I	
246	Scaffolding ere	ction and rebar fixing			7 days	Dec 1 '22	Dec 7 '22						R.	
247	Formwork erec	tion			7 days	Dec 8 '22	Dec 14 '22						Ř	
248	Concreting				7 days	Dec 15 '22	Dec 21 '22						T	
249	Construction of W	alls and Columns (+9.1	mPD to +15.2mPD)		21 days	Dec 16 '22	Jan 5 '23						H	
250	Scaffolding ere	ction and rebar fixing			7 days	Dec 16 '22	Dec 22 '22						T.	
251	Formwork erec	tion			7 days	Dec 23 '22	Dec 29 '22						Ť	
252	Concreting				7 days	Dec 30 '22	Jan 5 '23						K	
253	Construction of Be	ams and Slabs at +15.2	2mPD		60 days	Jan 6 '23	Mar 6 '23						- 🎽	
254	Falsework erec	tion			21 days	Jan 6 '23	Jan 26 '23							
255	Formwork erec	tion			14 days	Jan 27 '23	Feb 9 '23							
256	Rebar fixing				21 days	Feb 10 '23	Mar 2 '23							
257	Concreting				4 days	Mar 3 '23	Mar 6 '23						1	
258	Installation of inte	rnal finishing works for	Grid Line 1-4 above gro	ound	38 days	Mar 7 '23	Apr 13 '23						7	i
259	Mass concrete	for cable trench			7 days	Mar 7 '23	Mar 13 '23						- I -	
260	Waterproofing	system at slabs			3 days	Mar 14 '23	Mar 16 '23							
261	Epoxy painting	on floor finish			7 days	Mar 17 '23	Mar 23 '23							
262	Plaster and pair	nt at wall and soffit			7 days	Mar 24 '23	Mar 30 '23							
263	Chequer plate s	system at cable trench	and aerator room		7 days	Mar 31 '23	Apr 6 '23							
264	Steel grating flo	oor system at chemical	storage rooms		7 days	Apr 7 '23	Apr 13 '23							†
265	SS door and alu	minum louver			7 days	Apr 7 '23	Apr 13 '23							♥
266	Construction of Pa	rapet Walls (+15.2mPD	D to +16.6mPD)		21 days	Mar 7 '23	Mar 27 '23						- A	
267	Scaffolding ere	ction			2 days	Mar 7 '23	Mar 8 '23						Ь	
268	Rebar fixing				10 days	Mar 9 '23	Mar 18 '23							
269	Formwork erec	tion			7 days	Mar 19 '23	Mar 25 '23							
270	Concreting				2 days	Mar 26 '23	Mar 27 '23							
271	Construction of St	aircase ST3 (+13.5mPD	to +15.45mPD)		7 days	Mar 7 '23	Mar 13 '23						1	
272	Installation of p	precast segments			3 days	Mar 7 '23	Mar 9 '23						Ь	
273	Rebar fixing				3 days	Mar 10 '23	Mar 12 '23						5	
274	Concreting and	curing of concrete			1 day	Mar 13 '23	Mar 13 '23							
275	Construction of water p	roofing system at roof	slab of ReWPS		15 days	Mar 28 '23	Apr 11 '23						1	
276	Water tightness test for	roof slab of ReWPS			15 days	Apr 12 '23	Apr 26 '23							*
277														
278	Construction of RC struc	ture of HCF			303 days	Aug 23 '22	Jun 21 '23					r	-	┿┿
279	Construction of Supe	rstructure (above grou	ind) - Grid Line 1-3		137 days	Aug 23 '22	Jan 6 '23					🕂	-	
280	Construction of Co	lumns (+5.55mPD to +	13.00mPD)		14 days	Aug 23 '22	Sep 5 '22					M		
281	Scaffolding ere	ction and rebar fixing			7 days	Aug 23 '22	Aug 29 '22					Б		
282	Formwork erec	tion			4 days	Aug 30 '22	Sep 2 '22							
283	Concreting				3 days	Sep 3 '22	Sep 5 '22							
284	Construction of W	all W8 (+5.8mPD to +1	0.4mPD)		14 days	Sep 6 '22	Sep 19 '22					🕅		
285	Scaffolding ere	ction and Rebar fixing			8 days	Sep 6 '22	Sep 13 '22					Ь		
286	Formwork erec	tion			5 days	Sep 14 '22	Sep 18 '22							
287	Concreting				1 day	Sep 19 '22	Sep 19 '22							
288	Construction of Be	aring walls and Slabs (-	+5.55mPD to +7.1mPD)		14 days	Sep 20 '22	Oct 3 '22							
		Tesh		Lucitor T 1		Mar. 10	D - ¹¹		P .	-1 \ C1			1.1	Dura
		Task		Inactive Task		Manual Summa				al Milestone			Manual	Progress
Project	: 3WSD20 Programme	Split				Manual Summa			Deadli		+			
	un 28 '22	Milestone	♦	Inactive Summary	1	Start-only	E		Critica					
		Summary		Manual Task		Finish-only	3		Critica					
		Project Summary		Duration-only		External Tasks			Progre	SS				

	2024				2025				202	26	
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	01	26 Q2	Q3
				_							

ID	Task Name				Du	uration	Start	Finish	TRA	Notes	02 0	2022 Q3 Q4 Q1 Q2	03 04	2023	Q2 Q3	2
289	Rebar fixing				7 c	days	Sep 20 '22	Sep 26 '22								,
290	Formwork erec	ction			4 c	days	Sep 27 '22	Sep 30 '22								
291	Concreting and	l curing of concrete			3 0	days	Oct 1 '22	Oct 3 '22					1			
292	Construction of Co	olumns (+10.4mPD to +13	8.00mPD)		7 c	days	Oct 4 '22	Oct 10 '22								
293	Scaffolding ere	ection and Rebar fixing			4 c	days	Oct 4 '22	Oct 7 '22					Ь			
294	Formwork erec	ction			2 c	days	Oct 8 '22	Oct 9 '22								
295	Concreting				1 c	day	Oct 10 '22	Oct 10 '22								
296	Construction of Be	eams and Slabs at +13.00r	mPD		50) days	Oct 11 '22	Nov 29 '22					1			
297	Scaffolding and	d falsework erection			14	days	Oct 11 '22	Oct 24 '22								
298	Formwork erec	ction			14	l days	Oct 25 '22	Nov 7 '22								
299	Rebar fixing				14	l days	Nov 8 '22	Nov 21 '22								
300	Concreting and	l curing of concrete			8 c	days	Nov 22 '22	Nov 29 '22								
301	Installation of inte	ernal finishing works for G	rid Line 1-3		38	8 days	Nov 30 '22	Jan 6 '23								
302	Mass concrete	for cable trench			7 c	days	Nov 30 '22	Dec 6 '22					ŀ			
303	Waterproofing	system at slabs			3 0	days	Dec 7 '22	Dec 9 '22								
304	Epoxy painting	on floor finish			7 c	days	Dec 10 '22	Dec 16 '22								
305	Plaster and pai	nt at wall and soffit			7 c	days	Dec 17 '22	Dec 23 '22								
306	Chequer plate	system at cable trench an	d aerator room		7 c	days	Dec 24 '22	Dec 30 '22						K		
307	Steel grating flo	oor system at chemical sto	orage rooms		7 c	days	Dec 31 '22	Jan 6 '23						*		
308	SS door and alu				7 c	days	Dec 31 '22	Jan 6 '23						1		
309	Construction of Pa	arapet Walls (+13.00mPD	to +15.1mPD)		14	days	Nov 30 '22	Dec 13 '22					6			
310	Scaffolding ere		-			day	Nov 30 '22	Nov 30 '22					Ь			
311	Rebar fixing					days	Dec 1 '22	Dec 7 '22								
312	Formwork erec	ction				days	Dec 8 '22	Dec 12 '22						+		
313	Concreting					day	Dec 13 '22	Dec 13 '22						+		
314	-	erstructure (above ground	d) - Grid Line 3-7			, 51 days	Aug 23 '22	May 10 '23							⊢	
315	-	olumns (+4.55mPD to +10				l days	Aug 23 '22	Sep 5 '22					HD I			
316		ction and rebar fixing				days	Aug 23 '22	Aug 29 '22					Ь			
317	Formwork ered					days	Aug 30 '22	Sep 2 '22								
318	Concreting					, days	Sep 3 '22	Sep 5 '22					+			
319	-	/alls W1, W7, W19, W20,	W29			days	Sep 6 '22	Sep 26 '22								
320		ection and Rebar fixing) days	Sep 6 '22	Sep 15 '22					Ь			
321	Formwork ered					days	Sep 16 '22	Sep 22 '22								
322	Concreting					, days	Sep 23 '22	Sep 26 '22					+			
323		/alls W9, W13, W14, W37	, W38) days	Sep 27 '22	Oct 6 '22					l 📩			
324	Scaffolding ere	ection and Rebar fixing	·			days	Sep 27 '22	Oct 2 '22					Ь			
325	Formwork ered	-				days	Oct 3 '22	Oct 5 '22								
326	Concreting					day	Oct 6 '22	Oct 6 '22								
327	Construction of W	/alls W2 to W6				, B days	Oct 7 '22	Nov 3 '22								
328	Scaffolding ere	ction and Rebar fixing				, I days	Oct 7 '22	Oct 20 '22								
329	Formwork ered	-) days	Oct 21 '22	Oct 30 '22								
330	Concreting					days	Oct 31 '22	Nov 3 '22								
331	-	/alls W10, W11, W15, W1	6. W12. W35. W36) days	Nov 4 '22	Nov 13 '22								
332		ection and Rebar fixing	-,,co,co			days	Nov 4 '22	Nov 9 '22								
333	Formwork ered					days	Nov 10 '22	Nov 12 '22								
334	Concreting					days day	Nov 13 '22	Nov 12 22					+	.		
335		eams and Slabs at +10.4m	PD and +10.8mPD			50 days	Nov 14 '22	Apr 12 '23						·		
336		d falsework erection				5 days	Nov 14 '22	Dec 28 '22								
550							1107 17 22							-)		
		Task		Inactive Task			Manual Summ	ary Rollup		External	Mileston	e 🔶]	Manual	Progress	
Projec	et: 3WSD20 Programme	Split		Inactive Milestone			Manual Summ	nary 📕		Deadline		+				
-	Jun 28 '22	Milestone	•	Inactive Summary			Start-only	C		Critical						
- uit.		Summary		Manual Task			Finish-only	а		Critical S	Split					
		1														

Project Summary

Duration-only

External Tasks

Progress

_

	2024				2025				202	26	
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	01	Q2	Q3
_											

D	Task Name				Duration	Start	Finish	TRA	Notes		2022 Q4 Q1 Q2	03 04	2023 Q1 Q2	
337	Formwork ere	ction			45 days	Dec 29 '22	Feb 11 '23				<u> U4 U1 U2</u>	<u>u</u> s <u>U</u> 4		
338	Rebar fixing				45 days	Feb 12 '23	Mar 28 '23							
339	Concreting an	d curing of concrete			15 days	Mar 29 '23	Apr 12 '23							
340	Construction of P	arapet Walls (+10.4mP	PD/+10.8mPD to +12.5m	1PD)	14 days	Apr 13 '23	Apr 26 '23						 	
341	Scaffolding er	ection			1 day	Apr 13 '23	Apr 13 '23						h h	
342	Rebar fixing				7 days	Apr 14 '23	Apr 20 '23							
343	Formwork ere	ction			5 days	Apr 21 '23	Apr 25 '23							
344	Concreting				1 day	Apr 26 '23	Apr 26 '23							
345	Construction of S	taircase ST01 (+7.1mPI	D to +11.35mPD)		28 days	Apr 13 '23	May 10 '23							
346	Scaffolding an	d falsework erection			14 days	Apr 13 '23	Apr 26 '23							
347	Rebar fixing				7 days	Apr 27 '23	May 3 '23							
348	Formwork ere	ction			5 days	May 4 '23	May 8 '23							
349	Concreting				2 days	May 9 '23	May 10 '23							-
350	Construction of S	taircase ST02 (+10.4mF	PD to +13.95mPD)		14 days	Apr 13 '23	Apr 26 '23							
351		d falsework erection			7 days	Apr 13 '23	Apr 19 '23							
352	Rebar fixing				3 days	Apr 20 '23	Apr 22 '23							
353	Formwork ere	ction			3 days	Apr 23 '23	Apr 25 '23							
354	Concreting				1 day	Apr 26 '23	Apr 26 '23							
355	Watertightness test	in stages			56 days	Apr 13 '23	Jun 7 '23							$\ $
356	Inlet Channel and	-			14 days	Apr 13 '23	Apr 26 '23							
357	On duty contact t				14 days	Apr 27 '23	May 10 '23							
358	Standby contact t				14 days	May 11 '23	May 24 '23							
359		aining structure at HCF	:		14 days	May 25 '23	Jun 7 '23							
360		al finishing works for G			14 days	Jun 8 '23	Jun 21 '23							+
361	Construction of water p	-			15 days	Apr 27 '23	May 11 '23							T
362	Water tightness test for				15 days	May 12 '23	May 26 '23							-
363	-		drant notable flushing	, cleansing & irrigation wa		May 1 '22	Oct 27 '22				_			
505	supply	sion of street fire fly			100 00 35	Widy 1 22	00027 22							
364	Construction of roadwo	orks			150 days	Feb 13 '23	Jul 12 '23						₩+	⊢
365	Construction of fence	e wall			90 days	Feb 13 '23	May 13 '23							
366	Type-1 fence wal	at East side (189m)			63 days	Feb 13 '23	Apr 16 '23							
367	Type-2 & Type-3	fence wall at West side	e (198m)		66 days	Feb 13 '23	Apr 19 '23							
368	Type-3 fence wal	at North side (44m)			15 days	Feb 13 '23	Feb 27 '23							
369	Type-2 & Type-3	fence wall at South side	e (37m)		13 days	Feb 28 '23	Mar 12 '23							
370	Type-4 fence wal	at middle (28m)			10 days	Mar 13 '23	Mar 22 '23							
371	Installation of Ga	te 1 and Gate 2			7 days	Mar 23 '23	Mar 29 '23							
372	Fabrication of ste	elworks			66 days	Feb 13 '23	Apr 19 '23							
373	Installation of wa	II finishes and steelwor	rks		24 days	Apr 20 '23	May 13 '23							
374	Construction of unde	erground utilities			60 days	May 14 '23	Jul 12 '23							41
375		rk system outside ReW	VPS and HCF		30 days	May 14 '23	Jun 12 '23							
376	Construction of c	hambers and water ref	filling station		45 days	May 14 '23	Jun 27 '23							
377	Installation of sur				15 days	Jun 28 '23	Jul 12 '23							
378	Construction of u	-		em, cable ducting, CLP cat		May 14 '23	Jul 12 '23							
379	Construction of EVA ro				30 days	Jul 13 '23	Aug 11 '23							
380		pavement near ReWP	2S		15 days	Jul 13 '23	Jul 27 '23							
381		pavement near HCF			15 days	Jul 28 '23	Aug 11 '23							
382	Installation of architect				120 days	Jun 22 '23	Oct 19 '23							₩
383		ectural works near ReV	WPS		60 days	Jun 22 '23	Aug 20 '23							-
		Task		Inactive Task		Manual Summ	nary Rollup		External	Milestone	\$		Manual Prog	gress
Project	t: 3WSD20 Programme	Split		Inactive Milestone		Manual Summ	nary		Deadline	e	+			
	lun 28 '22	Milestone	•	Inactive Summary	0	Start-only	E		Critical					
Dait.	un 20 22	Summary		Manual Task		Finish-only	С		Critical	Split				
		Project Summary		Duration-only		External Tasks	s		Progress					
		1 · · · ·		-										

	2024				2025				202	6	
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
-											
				_							

D	Task Name				Duration	Start	Finish	TRA	Notes		2022 Q4 Q1 Q2	03 04	2023	02 02
384	Erection of worki	ng platform			7 days	Jun 22 '23	Jun 28 '23					Q3 Q4		
385	Laying of artificia	l granite tile at externa	al wall		30 days	Jun 29 '23	Jul 28 '23							📥
386	Installation of ste	elworks			30 days	Jul 15 '23	Aug 13 '23							
387	Installation of cla	dding			14 days	Aug 7 '23	Aug 20 '23							1 🔰
388	Installation of archit	ectural works near HC	F		60 days	Aug 21 '23	Oct 19 '23							
389	Erection of worki	ng platform			7 days	Aug 21 '23	Aug 27 '23							
390	Laying of artificia	l granite tile at externa	al wall		30 days	Aug 28 '23	Sep 26 '23							
391	Installation of ste	elworks			30 days	Sep 13 '23	Oct 12 '23							1
392	Installation of cla	dding			14 days	Oct 6 '23	Oct 19 '23							
393	Landscape works				160 days	Jun 22 '23	Nov 28 '23							♥━━━━
394	Landscape works at roo	of top			60 days	Jun 22 '23	Aug 20 '23							
395	Installation of comp	osite timber decking w	vith pedestal		15 days	Jun 22 '23	Jul 6 '23							
396	Laying of artificial gr	anite floor tile / paver	block		30 days	Jul 7 '23	Aug 5 '23							
397	Construciton of roof	drainage system			15 days	Aug 6 '23	Aug 20 '23							
398	Landscape works withir	n SWHWRP			100 days	Aug 21 '23	Nov 28 '23							
399														
400	E&M Works of SWHWRP				811 days	Sep 10 '21	Nov 29 '23							
401	Design and Submission	Stage			472 days	Sep 10 '21	Dec 25 '22						ı	
402	Submission and acce	ptance of Surge Analy	sis Report		272 days	Oct 12 '21	Jul 10 '22							
403	Submission and acce	ptance of Reclaimed V	Nater Main Pumps		306 days	Sep 10 '21	Jul 12 '22					5		
404	Submission and acce	ptance of Surge Vesse	els and Air Compressors		115 days	Jun 30 '22	Oct 22 '22							
405	Submission and acce	ptance of Penstock &	Stoplog		247 days	Nov 1 '21	Jul 5 '22					Ь		
406	Submission and acce	ptance of Chemical Do	osing System & Static In-I	line Mixer	212 days	Dec 6 '21	Jul 5 '22					Ь		
407	Submission and acce	ptance of Air Blower a	and Air Diffuser		56 days	Jun 30 '22	Aug 24 '22							
408	Submission and acce	ptance of Lifting Appli	ances		42 days	May 24 '22	Jul 4 '22				-	Ь		
409	Submission and acce	ptance of Minor Mech	nanical Equipment		63 days	Jun 30 '22	Aug 31 '22							
410	Submission and acce	ptance of LV switchbo	bard		52 days	Jun 20 '22	Aug 10 '22							
411	Submission and acce	eptance of DCS			72 days	Jun 30 '22	Sep 9 '22							
412	Submission and acce	ptance of Instrumena	tion & Water Monitoring	g Equipment	156 days	Jan 17 '22	Jun 21 '22							
413	Submission and acce	ptance of Misc. Electr	ical Items		162 days	Jan 17 '22	Jun 27 '22							
414	Submission and acce	ptance of Fire Service	s Equipment		175 days	Jul 4 '22	Dec 25 '22						Ы	
415	Submission and acce	ptance of MVAC Equip	oment		129 days	Jun 20 '22	Oct 26 '22							
416	Submission and acce	eptance of Plumbing &	Drainage Equipment		38 days	Jul 2 '22	Aug 8 '22							
417	Submission and acce	ptance of General Arr	angement Drawing		157 days	Jan 17 '22	Jun 22 '22							
418	Submission and acce	ptance of Civil Require	ement Drawing		121 days	Feb 15 '22	Jun 15 '22				-	~		
419	Submission and acce	ptance of method stat	tement for E&M installat	ion works	55 days	Nov 1 '22	Dec 25 '22							
420	CSD, CBWD coordina	ation			157 days	Jan 17 '22	Jun 22 '22							
421	Procurement and Deliv				327 days	Jun 22 '22	May 14 '23							₩
422	Reclaimed Water Ma				270 days	Jul 13 '22	Apr 8 '23							$ \parallel $
423	Surge Vessels and Ai				179 days	Oct 23 '22	Apr 19 '23							
424	Penstock & Stoplog	•			264 days	Jul 6 '22	Mar 26 '23					*		
425	Chemical Dosing Sys	tem			206 days	Jul 6 '22	Jan 27 '23			_		+		
426	Static In-line Mixer				265 days	Jul 6 '22	Mar 27 '23					+		
427	Air Blower and Air D	iffuser			144 days	Aug 25 '22	Jan 15 '23							
428	Lifting Appliances				168 days	Jul 5 '22	Dec 19 '22			-		+		
429	Sump Pumps				159 days	Sep 1 '22	Feb 6 '23			_				
430	Pipework and Valves	5			164 days	Sep 1 '22	Feb 11 '23			_				
431	LV switchboard				277 days	Aug 11 '22	May 14 '23							
		1												<u></u>
		Task		Inactive Task		Manual Summa	ary Rollup		Extern	al Milestone	\diamond	1	Manual P	rogress
Project	t: 3WSD20 Programme	Split		Inactive Milestone		Manual Summa	ary		Deadli	ne	+			
	Jun 28 '22	Milestone	•	Inactive Summary		Start-only	C		Critica	1				
uto. J		Summary		Manual Task		Finish-only	Э		Critica	l Split				
		Project Summary		Duration-only		External Tasks			Progre	22				

1	2024				2025	1	1		202	26	Q3
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
_											
6											
-											
- 1											
_											
	I										

D Tas	sk Name				Duration	Start	Finish	TRA	Notes	02 03	2022 Q4 Q1 Q2	03 04	2023 01 02
432	DCS				205 days	Sep 10 '22	Apr 2 '23						
433	Instrumenation and	Water Monitoring Equi	ipment		296 days	Jun 22 '22	Apr 13 '23						
434	Misc. Electrical Items	(PV Panel, Earthing &	Cables, etc)		216 days	Jun 28 '22	Jan 29 '23					*	
435	Fire Services Equipm	ent			69 days	Oct 27 '22	Jan 3 '23						
436	MVAC Equipment				123 days	Aug 28 '22	Dec 28 '22						
437	Plumbing & Drainage	Equipment			76 days	Aug 9 '22	Oct 23 '22						
438	Misc. Electrical Items	(Cables, Cable Contair	nment, Lightings)		178 days	Jun 28 '22	Dec 22 '22						
439	Installation Works				135 days	Apr 14 '23	Aug 26 '23						
440	Installation FS Equipr	nent			110 days	Apr 14 '23	Aug 1 '23						
441	Installation of MVAC	Equipment			100 days	Apr 14 '23	Jul 22 '23						
442	Installation of BS Equ	ipment			120 days	Apr 14 '23	Aug 11 '23						
443	Installation of Lifting	Appliance (12 nos.)			60 days	Apr 14 '23	Jun 12 '23						
444	Installation of Reclair	med Water Pumps (6 N	Nos.)		75 days	Jun 13 '23	Aug 26 '23						
445	Installation of pensto	ocks (10 nos.) & Stoplog	gs (2 nos.)		80 days	Apr 14 '23	Jul 2 '23						
446	Installation of Surge	Vessel (4 Nos.) & Air Co	ompressor (4 Nos.)		30 days	Apr 20 '23	May 19 '23						
447	-	wer (2 Nos.) & Air Diffu			30 days	Apr 14 '23	, May 13 '23						
448		14 nos.) & Chemical Pu			30 days	May 27 '23	Jun 25 '23			-			
449		orks (DI, Chemical pipe			45 days	Apr 17 '23	May 31 '23						
450	Installation of Cablin		-/ - /		90 days	Apr 14 '23	Jul 12 '23						
451		mentation and Monitor	ring Stations		60 days	Apr 14 '23	Jun 12 '23			-			
452		stem (CCTV & Access C	-		60 days	Apr 14 '23	Jun 12 '23			-			
453		ing & Drainage Equipm			90 days	Apr 14 '23	Jul 12 '23			-			
454	Installation of PV Par				45 days	Apr 14 '23	May 28 '23			-			
455	FS / DG Inspection Rela				435 days	Jul 16 '22	Sep 23 '23			-		0	
456	VAC Desgin Submissi				60 days	Aug 1 '22	Sep 29 '22			-			
457	FS related statutory				60 days	Aug 1 '22 Aug 1 '22	Sep 29 '22			-			
458		stallation (Integrated To	oct & Pohoarcal)		14 days	Aug 1 22 Aug 12 '23	Aug 25 '23			_			
459	Submission of FS 314					Aug 12 23 Aug 26 '23	Sep 8 '23			_			
		A 201			14 days	Sep 9 '23							
460	Target FS Inpsection	lattar (Farm FC172 Fire	o Cortificato)		1 day		Sep 9 '23						
461		letter (Form FS172 Fire	e certificate)		14 days	Sep 10 '23	Sep 23 '23			_			
462	DG Design Submissio	n to FSD			30 days	Jul 16 '22	Aug 14 '22			_			
463	DG Inspection				30 days	Jul 13 '23	Aug 11 '23			_			
464	Obtain DG License				1 day	Aug 12 '23	Aug 12 '23			_			
465	Power Energization Rel				482 days	May 1 '22	Aug 25 '23				-		•
466	CLP Room Ready for		-		1 day	Jan 7 '23	Jan 7 '23			_			ןׂ ↓
467		BS installation (ReWPS	S)		1 day	Apr 14 '23	Apr 14 '23			_			1
468	Installation of BS Equ	1 , ,			98 days	Jan 8 '23	Apr 15 '23						
469	Installation of BS Equ				60 days	Apr 15 '23	Jun 13 '23						
470	CLP meter applicatio				120 days	Oct 24 '22	Feb 20 '23						
471	Cable laying by CLP in				21 days	May 1 '22	May 21 '22						
472	Lead time for CLP ins				60 days	Jun 14 '23	Aug 12 '23						
473	•	Transformer Room(ReV	WPS), CLP Room(HCF), d	raw pit and accsociate	d cable 21 days	May 29 '23	Jun 18 '23						
474	ducts CLP to install Transfo	rmers and Cabling			7 days	Aug 13 '23	Aug 19 '23			-			
474		rom CLP Transformer t	to LVSB		3 days	Aug 13 23 Aug 20 '23	Aug 19 23 Aug 22 '23			-			
476	-	rom LVSB to All Equipn			3 days	Aug 20 23 Aug 23 '23	Aug 22 23 Aug 25 '23			-			
477	Preliminary Test of Equ		ment		35 days	Aug 23 23 Aug 27 '23	Aug 25 23 Sep 30 '23			-			
478		ient/System with SOR			14 days		Sep 30 23			-			
478 479	Trial Run of Equipme				7 days	Aug 27 '23 Sep 10 '23	Sep 9 23 Sep 16 '23			-			
T/J					/ uays	2ch 10 52	2ch 10 52						
		Task		Inactive Task		Manual Summ	ary Rollup		Externa	al Milestone	\diamond	Ν	Manual Progr
roject. 2	SWSD20 Programme	Split		Inactive Milestone		Manual Summ	ary		Deadlin	ne	÷		
Date: Jun		Milestone	•	Inactive Summary		Start-only	E		Critical	l			
au. Juli		Summary	·	Manual Task		Finish-only	з		Critical	l Split			
		Project Summary		Duration-only		External Tasks			Progres				

	2024				2025				202	6	
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
-				-							

ID	Task Name	Duration	Start	Finish	TRA N	lotes	Q2 03	2022 Q4 Q1 Q2	2023 Q3 Q4 Q1	
480	Site Acceptance Test of Equipment/Systems with SOR	35 days	Aug 27 '23	Sep 30 '23						
481	Submission	210 days	Feb 28 '23	Sep 25 '23					E E	
482	Submission of Testing Procedures & Commissioning Plan	60 days	Feb 28 '23	Apr 28 '23						
483	Submission of As Fitted Drawings	30 days	Aug 27 '23	Sep 25 '23						
484	Submission of Manual	30 days	Aug 27 '23	Sep 25 '23						>
485	Submission of Training Material	30 days	Aug 27 '23	Sep 25 '23						
486	System Commissioning Test	60 days	Oct 1 '23	Nov 29 '23						*
487	Planned completion for section 1	0 days	Nov 29 '23	Nov 29 '23						
488	Planned completion for section 2	0 days	Nov 28 '23	Nov 28 '23						
489										
490	Section 3 - Modification of Table Hill Reclaimed Water Service Reservoir	684 days	Oct 1 '21	Aug 15 '23						1
491	Access Date (part 2 of the Site)	1 day	Oct 1 '21	Oct 1 '21				I		
492	Initial survey and condition survey	45 days	Feb 7 '22	Mar 23 '22				—		
493	Design submission and acceptance of the supplementary dosing and dyeing system (E&M)	180 days	Mar 24 '22	Sep 19 '22						
494	Submission and acceptance of method statement for supplementary dosing and dyeing system	60 days	Sep 20 '22	Nov 18 '22						
495	Construction of civil works	90 days	Nov 19 '22	Feb 16 '23					*	
496	Installation of supplementary dosing and dyeing system	90 days	Feb 17 '23	May 17 '23						
497	T&C of E&M equipment	90 days	May 18 '23	Aug 15 '23						
498	Planned completion for section 3	0 days	Aug 15 '23	Aug 15 '23						┥ Au
499										
500	Section 4 - Water main laying works in part 3 of the Site	852 days	Jul 30 '21	Nov 28 '23			-			
501	Access Date (part 3 of the Site)	1 day	Jul 30 '21	Jul 30 '21			h			
502	Initial survey (utility survey, condition survey, initial photo)	90 days	Jul 31 '21	Oct 28 '21				-		
503	1st TMLG meeting	1 day	Nov 15 '21	Nov 15 '21				5		
504	Application and approval of XP and TTA, including local consultation	122 days	Nov 16 '21	Mar 17 '22						
505	Implementation of TTA by stages	465 days	Mar 18 '22	Jun 25 '23				The second se		
506	Procurement and Delivery of pipes, fittings and related materials	60 days	Feb 10 '22	Apr 10 '22						
507	Submission and acceptance of method statement and material	60 days	Feb 10 '22	Apr 10 '22				-		
508	Mainlaying by open trench method (RW03 & RW43)	660 days	Feb 7 '22	Nov 28 '23						
509	RW03 : DN600 DI pipe - 1092m	561 days	Mar 18 '22	Sep 29 '23				· · · · · · · · · · · · · · · · · · ·		1
510	Team A : CH000 - CH550	561 days	Mar 18 '22	Sep 29 '23			_			 1
511	CH450 - CH550 (100m)	136 days	Mar 18 '22	Jul 31 '22					Ŋ	
512	TTA establishment	3 days	Mar 18 '22	Mar 20 '22			_	<u>L</u>		
513	Hard material excavation and disposal	3 days	Mar 21 '22	Mar 23 '22						
514	Soil excavation, laying sheetpile and disposal	14 days	Mar 24 '22	Apr 6 '22			_	<u> </u>		
515	Obstruction of unchart 900mm pipe	7 days	Apr 7 '22	Apr 13 '22				<u>5</u>		
516	Pending for setting out of DSD	10 days	Apr 14 '22	Apr 23 '22						
517	Amendment of ELS	28 days	Apr 24 '22	May 21 '22						
518	Treatment of bedding	4 days	May 22 '22	May 25 '22				5		
519	Pipe laying D.I. & PE (DSD's pipe)	45 days	May 26 '22	Jul 9 '22			_			
520	Backfilling sand/aggregate, concurrent bend block	14 days	Jul 10 '22	Jul 23 '22						
521	Reinstatement	8 days	Jul 24 '22	Jul 31 '22				1	1	
522	CH420 - CH450 (30m)	30 days	Aug 1 '22	Aug 30 '22					ř	
523	TTA establishment	1 day	Aug 1 '22	Aug 1 '22					5	
524	Hard material excavation and disposal	2 days	Aug 2 '22	Aug 3 '22					5	
525	Soil excavation, laying sheetpile and disposal	14 days	Aug 4 '22	Aug 17 '22					5	
	Treatment of bedding	2 days	Aug 18 '22	Aug 19 '22					5	
526		3 days	Aug 20 '22	Aug 22 '22					5	
526 527	Pipe laying D.I.									
	Task Inactive Task		Manual Summ	ary Rollup		External	Milestone	\$	Manua	1 Progress
527	Task Inactive Task	↓ ↓	Manual Summ Manual Summ			External Deadline		\$ •	Manua	l Progress
527 Projec	t: 3WSD20 Programme	¢						\$ •	Manua	l Progress
527 Projec	t: 3WSD20 Programme Task Inactive Task Inactive Milestone	¢	Manual Summ	ary		Deadline	2	* *	_	l Progress

	2024	2025		2026
Q4	Q1 Q2 Q3 Q4	01 0	2 Q3 Q4	Q1 Q2 Q3
		<u> </u>		
n				
	Nov 29 '23			
	Nov 28 '23			
A	100 20 25			
Aug 15	5 '23			
1				
Ŋ				
-				

ID	Task Name				Duration	Start	Finish	TRA	Notes			02 04	2023 Q1 Q2 Q3
528	Backfilling sand	/aggregate, concurren	t bend block		7 days	Aug 23 '22	Aug 29 '22				<u>0 U4 U1 U2</u>		QI Q2 Q3
529	Reinstatement				1 day	Aug 30 '22	Aug 30 '22					†	
530	CH390 - CH420 (30)m)			30 days	Aug 31 '22	Sep 29 '22					🖌	
531	TTA establishm	ent			1 day	Aug 31 '22	Aug 31 '22					Ъ	
532	Hard material e	excavation and disposa	I		2 days	Sep 1 '22	Sep 2 '22					5	
533	Soil excavation	, laying sheetpile and o	disposal		14 days	Sep 3 '22	Sep 16 '22					 	
534	Treatment of b	edding			2 days	Sep 17 '22	Sep 18 '22					5	
535	Pipe laying D.I.				3 days	Sep 19 '22	Sep 21 '22					5	
536	Backfilling sand	/aggregate, concurren	nt bend block		7 days	Sep 22 '22	Sep 28 '22					l 🕴	
537	Reinstatement				1 day	Sep 29 '22	Sep 29 '22					1	
538	CH360 - CH390 (30)m)			30 days	Sep 30 '22	Oct 29 '22					F	
539	TTA establishm	ent			1 day	Sep 30 '22	Sep 30 '22					Ъ	
540	Hard material e	excavation and disposa	I		2 days	Oct 1 '22	Oct 2 '22					5	
541	Soil excavation	, laying sheetpile and o	disposal		14 days	Oct 3 '22	Oct 16 '22						
542	Treatment of b	edding			2 days	Oct 17 '22	Oct 18 '22					5	
543	Pipe laying D.I.				3 days	Oct 19 '22	Oct 21 '22						
544	Backfilling sand	/aggregate, concurren	nt bend block		7 days	Oct 22 '22	Oct 28 '22						
545	Reinstatement				1 day	Oct 29 '22	Oct 29 '22					Ĭ	
546	CH290 - CH360 (70)m)			63 days	Oct 30 '22	Dec 31 '22					严	ſ
547	TTA establishm	ent			2 days	Oct 30 '22	Oct 31 '22					5	
548	Hard material e	excavation and disposa	I		7 days	Nov 1 '22	Nov 7 '22						
549	Soil excavation	, laying sheetpile and o	disposal		21 days	Nov 8 '22	Nov 28 '22					1	_
550	Treatment of b	edding			7 days	Nov 29 '22	Dec 5 '22						
551	Pipe laying D.I.				10 days	Dec 6 '22	Dec 15 '22						
552	-	/aggregate, concurren	it bend block		14 days	Dec 16 '22	Dec 29 '22					i	1
553	Reinstatement				2 days	Dec 30 '22	Dec 31 '22						Ľ
554	CH250 - CH290 (40				30 days	Jan 1 '23	Jan 30 '23						Ă
555	TTA establishm				1 day	Jan 1 '23	Jan 1 '23						5
556		excavation and disposa			2 days	Jan 2 '23	Jan 3 '23						5
557		, laying sheetpile and o	disposal		14 days	Jan 4 '23	Jan 17 '23						5
558	Treatment of b	edding			2 days	Jan 18 '23	Jan 19 '23						5
559	Pipe laying D.I.				3 days	Jan 20 '23	Jan 22 '23						5
560	-	/aggregate, concurren	it bend block		7 days	Jan 23 '23	Jan 29 '23						1
561	Reinstatement				1 day	Jan 30 '23	Jan 30 '23						l ⊥
562	CH210 - CH250 (40	-			30 days	Jan 31 '23	Mar 1 '23						Ä
563	TTA establishm				1 day	Jan 31 '23	Jan 31 '23						
564		excavation and disposa			2 days	Feb 1 '23	Feb 2 '23						5
565		, laying sheetpile and o	disposal		14 days	Feb 3 '23	Feb 16 '23						Š.
566	Treatment of b	edding			2 days	Feb 17 '23	Feb 18 '23						<u> </u>
567	Pipe laying D.I.				3 days	Feb 19 '23	Feb 21 '23			_			1
568		/aggregate, concurren	it bend block		7 days	Feb 22 '23	Feb 28 '23						F.
569	Reinstatement	<u> </u>			1 day	Mar 1 '23	Mar 1 '23			_			
570	CH150 - CH210 (60				62 days	Mar 2 '23	May 2 '23			_			
571	TTA establishm				1 day	Mar 2 '23	Mar 2 '23			_			↓
572		excavation and disposa			7 days	Mar 3 '23	Mar 9 '23			_			
573		, laying sheetpile and o	disposal		21 days	Mar 10 '23	Mar 30 '23			_			
574 575	Treatment of b Pipe laying D.I.	edding			7 days 10 days	Mar 31 '23 Apr 7 '23	Apr 6 '23 Apr 16 '23			_			
575	ר ואָכ ומאוווע ט.ו.				10 0895	-τρι / 2 3	API 10 23						1
		Task		Inactive Task		Manual Summa	ary Rollup		Extern	al Milestone	\$	I	Manual Progress
Projec	t: 3WSD20 Programme	Split		Inactive Milestone		Manual Summa	ary 🗖		Deadli	ne	+		
	Jun 28 '22	Milestone		Inactive Summary		Start-only	E		Critica	1			
2 a.O.		Summary	·	Manual Task		Finish-only	Э		Critica	l Split			
		Project Summary		Duration-only		External Tasks			Progre				

Q4	2024	02	02	04	2025	02	02	04	202	26	Q3
		Q2	<u>U</u> S	Q4	QI	QΖ	<u></u>	Q4			US
				_							

ID	Task Name				Durat	ion	Start	Finish	TRA	Notes		2022 3 Q4 Q1 Q2	03 04	2023 Q1 Q2 Q3	
576	Backfilling sand	d/aggregate, concurrent be	end block		14 da	ys	Apr 17 '23	Apr 30 '23							1
577	Reinstatement	t			2 days	s	May 1 '23	May 2 '23						+	
578	CH100 - CH150 (5	50m)			60 da	ys	May 3 '23	Jul 1 '23						*	
579	TTA establishm	nent			1 day		May 3 '23	May 3 '23						Ь	
580	Removal of exi	isting railing			7 days	s	May 4 '23	May 10 '23							
581	Installation of	mild steel pipe			14 da	ys	May 11 '23	May 24 '23						*	
582	Construction o	of thrust block			24 da	ys	May 25 '23	Jun 17 '23						*	
583	Reinstatement	t of railing			14 da	ys	Jun 18 '23	Jul 1 '23						*	
584	CH000 - CH100 (1	.00m)			30 da	ys	Jul 2 '23	Jul 31 '23						Α	
585	TTA establishm	nent			1 day		Jul 2 '23	Jul 2 '23						Ь	
586	Hard material	excavation and disposal			2 days	S	Jul 3 '23	Jul 4 '23						5	
587	Soil excavation	n, laying sheetpile and disp	osal		14 da	ys	Jul 5 '23	Jul 18 '23						*	
588	Treatment of b	bedding			2 days	s	Jul 19 '23	Jul 20 '23						, T	
589	Pipe laying D.I.				3 days	s	Jul 21 '23	Jul 23 '23						5	
590	Backfilling sand	d/aggregate, concurrent be	end block		7 days	S	Jul 24 '23	Jul 30 '23						7	
591	Reinstatement	t			1 day		Jul 31 '23	Jul 31 '23						· · · · · · · · · · · · · · · · · · ·	
592	Pressure test, swa	abbing and CCTV			60 da	ys	Aug 1 '23	Sep 29 '23						*	
593	Team B : CH550 - CH	11090 (540m)			465 d	ays	Apr 20 '22	Jul 28 '23				·			۲
594	CH970 - CH1010 ((40m)			72 da	ys	Apr 20 '22	Jun 30 '22					n		
595	TTA establishm	nent			3 days	s	Apr 20 '22	Apr 22 '22				Ь			
596	Hard material	excavation and disposal			4 days	s	Apr 23 '22	Apr 26 '22				5			
597	Soil excavation	n, laying sheetpile and disp	osal		14 da	ys	Apr 27 '22	May 10 '22							
598	Treatment of b	bedding			3 days	s	May 11 '22	May 13 '22							
599	Pipe laying D.I.				7 days	s	May 14 '22	May 20 '22				5			
600	Backfilling sand	d/aggregate			40 da	ys	May 21 '22	Jun 29 '22							
601	Reinstatement	t			1 day		Jun 30 '22	Jun 30 '22					+		
602	CH910 - CH970 (6	60m)			31 da	ys	Jul 1 '22	Jul 31 '22					Ι		
603	TTA establishm	nent			1 day		Jul 1 '22	Jul 1 '22					Ы		
604	Hard material	excavation and disposal			2 days	s	Jul 2 '22	Jul 3 '22					K		
605	Soil excavation	n, laying sheetpile and disp	osal		10 da	ys	Jul 4 '22	Jul 13 '22					K		
606	Treatment of b	bedding			3 days	s	Jul 14 '22	Jul 16 '22					1		
607	Pipe laying D.I.				7 days	S	Jul 17 '22	Jul 23 '22					K		
608	Backfilling sand	d/aggregate, concurrent be	end block		7 days	s	Jul 24 '22	Jul 30 '22							
609	Reinstatement	t			1 day		Jul 31 '22	Jul 31 '22							
610	CH850 - CH910 (6	60m)			46 da	ys	Aug 1 '22	Sep 15 '22					–		
611	TTA establishm	nent			3 days	s	Aug 1 '22	Aug 3 '22					Ы		
612	Hard material	excavation and disposal (Cl	H880 - CH910)		2 days	S	Aug 4 '22	Aug 5 '22					5		
613	Soil excavation	n, laying sheetpile and dispo	osal (CH880 - CH910)		7 days	S	Aug 6 '22	Aug 12 '22					🕇		
614	Treatment of b	oedding (CH880 - CH910)			3 days	s	Aug 13 '22	Aug 15 '22					<u> </u>		
615	Pipe laying D.I.	. (CH880 - CH910)			2 days	s	Aug 16 '22	Aug 17 '22					5		
616	Backfilling sand	d/aggregate, concurrent be	end block (CH880 - CH	1910)	7 days	s	Aug 18 '22	Aug 24 '22					L 👗		
617	Hard material	excavation and disposal (Cl	H850 - CH880)		2 days	s	Aug 25 '22	Aug 26 '22					5		
618	Soil excavation	n, laying sheetpile and dispo	osal (CH850 - CH880)		7 days	s	Aug 27 '22	Sep 2 '22					L K		
619	Treatment of b	bedding (CH850 - CH880)			3 days	s	Sep 3 '22	Sep 5 '22							
620	Pipe laying D.I.	. (CH850 - CH880)			2 days	S	Sep 6 '22	Sep 7 '22					📩		
621		d/aggregate, concurrent be	end block (CH850 - CH	1880)	7 days		Sep 8 '22	Sep 14 '22					📩		
622	Reinstatement				1 day		Sep 15 '22	Sep 15 '22					†		
623	CH750 - CH850 (1	.00m)			52 da	ys	Sep 16 '22	Nov 6 '22							
		Task		Inactive Task			Manual Summ				nal Milestone	\diamond		Manual Progress	
Projec	t: 3WSD20 Programme			Inactive Milestone			Manual Summ	hary		Dead		+			
	Jun 28 '22	Milestone	٠	Inactive Summary	0	-	Start-only	C		Critic					
		Summary		Manual Task			Finish-only	Э		Critic	al Split				
		Project Summary		Duration-only			External Tasks	3		Progr	ess				
		-													

	2024	oo			2025	oo	a a	~	202	6	
Q4	Q1	Q2	Q3 (<u>1</u> 4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
•											
				-							

D	Task Name			Duration	Start	Finish	TRA	Notes	02 02	2022 Q4 Q1 Q2 Q3	2023	
624	TTA establishm	ent		2 days	Sep 16 '22	Sep 17 '22		1		F		\uparrow
625	Hard material e	excavation and disposal (CH800 - CH	850)	3 days	Sep 18 '22	Sep 20 '22				E E		
626	Soil excavation	, laying sheetpile and disposal (CH8	00 - CH850)	9 days	Sep 21 '22	Sep 29 '22				1		
627	Treatment of b	edding (CH800 - CH850)		3 days	Sep 30 '22	Oct 2 '22					*	
628	Pipe laying D.I.	(CH800 - CH850)		2 days	Oct 3 '22	Oct 4 '22					5	
629	Backfilling sand	/aggregate, concurrent bend block		7 days	Oct 5 '22	Oct 11 '22					₹	
630	Hard material e	excavation and disposal (CH750 - CH	800)	3 days	Oct 12 '22	Oct 14 '22						
631	Soil excavation	, laying sheetpile and disposal (CH7	50 - CH800)	9 days	Oct 15 '22	Oct 23 '22					₹	
632	Treatment of b	edding (CH750 - CH800)		3 days	Oct 24 '22	Oct 26 '22					N	
633	Pipe laying D.I.	(CH750 - CH800)		2 days	Oct 27 '22	Oct 28 '22					N	
634	Backfilling sand	/aggregate, concurrent bend block		7 days	Oct 29 '22	Nov 4 '22					R .	
635	Reinstatement			2 days	Nov 5 '22	Nov 6 '22					1	
636	CH650 - CH750 (10	00m)		51 days	Nov 7 '22	Dec 27 '22					*	
637	TTA establishm	ent		2 days	Nov 7 '22	Nov 8 '22					Ъ	
638	Hard material e	excavation and disposal (CH700 - CH	750)	2 days	Nov 9 '22	Nov 10 '22						
639	Soil excavation	, laying sheetpile and disposal (CH7	00 - CH750)	9 days	Nov 11 '22	Nov 19 '22					*	
640	Treatment of b	edding (CH700 - CH750)		3 days	Nov 20 '22	Nov 22 '22					T	
641	Pipe laying D.I.	(CH700 - CH750)		7 days	Nov 23 '22	Nov 29 '22					*	
642	Backfilling sand	/aggregate, concurrent bend block	(CH700 - CH750)	2 days	Nov 30 '22	Dec 1 '22					*	
643	Reinstatement	(CH700 - CH750)		1 day	Dec 2 '22	Dec 2 '22					*	
644	Hard material e	excavation and disposal (CH650 - CH	700)	2 days	Dec 3 '22	Dec 4 '22					T	
645	Soil excavation	, laying sheetpile and disposal (CH6	50 - CH700)	9 days	Dec 5 '22	Dec 13 '22					X	
646		edding (CH650 - CH700)		3 days	Dec 14 '22	Dec 16 '22					X	
647		(CH650 - CH700)		, 7 days	Dec 17 '22	Dec 23 '22					*	
648		/aggregate, concurrent bend block	(CH650 - CH700)	2 days	Dec 24 '22	Dec 25 '22						
649	Reinstatement			2 days	Dec 26 '22	Dec 27 '22					+	
650	CH550 - CH650 (10	00m)		, 75 days	Dec 28 '22	Mar 12 '23						
651	TTA establishm	•		2 days	Dec 28 '22	Dec 29 '22					Ь	
652	Hard material e	excavation and disposal (CH600 - CH	650)	, 7 days	Dec 30 '22	Jan 5 '23					*	
653		, laying sheetpile and disposal (CH6	•	3 days	Jan 6 '23	Jan 8 '23					*	
654		edding (CH600 - CH650)	-	7 days	Jan 9 '23	Jan 15 '23					*	
655		(CH600 - CH650)		2 days	Jan 16 '23	Jan 17 '23					†	
656		/aggregate, concurrent bend block	(CH600 - CH650)	1 day	Jan 18 '23	Jan 18 '23					*	
657		(CH600 - CH650)		1 day	Jan 19 '23	Jan 19 '23					*	
658		excavation and disposal (CH550 - CH	600)	2 days	Jan 20 '23	Jan 21 '23						
659	Soil excavation	, laying sheetpile and disposal (CH5	50 - CH600)	14 days	Jan 22 '23	Feb 4 '23					*	
660		edding (CH550 - CH600)	-	7 days	Feb 5 '23	Feb 11 '23					*	
661		(CH550 - CH600)		14 days	Feb 12 '23	Feb 25 '23					*	
662		/aggregate, concurrent bend block	(CH550 - CH600)	14 days	Feb 26 '23	Mar 11 '23					*	
663	Reinstatement			1 day	Mar 12 '23	Mar 12 '23					+	
664	CH1010 - CH1040	(30m)		30 days	Mar 13 '23	Apr 11 '23						
665	TTA establishm			1 day	Mar 13 '23	Mar 13 '23					Ь	
666		excavation and disposal		2 days	Mar 14 '23	Mar 15 '23						
667		, laying sheetpile and disposal		14 days	Mar 16 '23	Mar 29 '23						
668	Treatment of b			3 days	Mar 30 '23	Apr 1 '23						
669	Pipe laying D.I.	''0		7 days	Apr 2 '23	Apr 8 '23						
670		/aggregate, concurrent bend block		2 days	Apr 9 '23	Apr 10 '23						
671	Reinstatement	,		1 day	Apr 11 '23	Apr 11 '23						
		Task	Inactive Task		Manual Summ			External	Milestone	\diamond	Manual Progress	
р.	t: 3WSD20 Programme	Split	Inactive Milestone		Manual Summ	ary		Deadline	2	+		
Protec		1				_						
	fun 28 '22	Milestone	Inactive Summary		Start-only	L		Critical				

Project Summary

Duration-only

Progress

External Tasks

Q4	2024 Q1	Q2	Q3	Q4	2025 Q1	Q2	Q3	Q4	202 Q1	26 Q2	Q3
_	1										
				_							

ID	Task Name				Duration	Start	Finish	TRA	Notes		2022		2023 Q4 Q1 Q2	03
672	CH1040 - CH1090) (50m)			48 days	Apr 12 '23	May 29 '23				<u>, 104 U1 </u>			
673	TTA establishr	nent			1 day	Apr 12 '23	Apr 12 '23						Ь	
674	Hard material	excavation and dispos	sal		2 days	Apr 13 '23	Apr 14 '23						<u></u>	
675	Soil excavation	n, laying sheetpile and	d disposal		14 days	Apr 15 '23	Apr 28 '23						*	
676	Treatment of	bedding			7 days	Apr 29 '23	May 5 '23							
677	Pipe laying D.I				21 days	May 6 '23	May 26 '23						*	
678	Backfilling san	d/aggregate, concurre	ent bend block		2 days	May 27 '23	May 28 '23						T I	
679	Reinstatemen	t			1 day	May 29 '23	May 29 '23						T	
680	Pressure test, swa	abbing and CCTV			60 days	May 30 '23	Jul 28 '23						*	•
681	Overall pressure test				30 days	Sep 30 '23	Oct 29 '23							*
682	Pipe connection and co	mpletion			30 days	Oct 30 '23	Nov 28 '23							ŗ
683	RW43 : DN150 DI pipe	- 1144m			600 days	Feb 7 '22	Sep 29 '23					_		—
684	Team A CH430 to CH	1710 & CH970 to CH11	144 (454m)		597 days	Feb 10 '22	Sep 29 '23					_		
685	Team A CH640 to	CH710 (20m)			140 days	Feb 10 '22	Jun 29 '22							
686	Pending for IIE	B of pipe fittings			99 days	Feb 10 '22	May 19 '22							
687	TTA establishr	nent			2 days	May 20 '22	May 21 '22					5		
688		excavation and dispos			7 days	May 22 '22	May 28 '22					5		
689		n, laying sheetpile and	d disposal		14 days	May 29 '22	Jun 11 '22					<u> </u>		
690	Treatment of	bedding			3 days	Jun 12 '22	Jun 14 '22					F_		
691	Pipe laying D.I				7 days	Jun 15 '22	Jun 21 '22					Ľ.		
692		eral fill and compaction	on		5 days	Jun 22 '22	Jun 26 '22					<u> </u>		
693	Reinstatemen				3 days	Jun 27 '22	Jun 29 '22							
694	Team A CH430 to				30 days	Jun 30 '22	Jul 29 '22					Ľ		
695	TTA establishr				1 day	Jun 30 '22	Jun 30 '22			_				
696		excavation and dispos			2 days	Jul 1 '22	Jul 2 '22			_		6		
697		n, laying sheetpile and	d disposal		14 days	Jul 3 '22	Jul 16 '22			_		<u></u>		
698	Treatment of	-			2 days	Jul 17 '22	Jul 18 '22			_		5		
699	Pipe laying D.I				3 days	Jul 19 '22	Jul 21 '22			_		5		
700		eral fill and compactio	วท		7 days	Jul 22 '22	Jul 28 '22			_		5		
701	Reinstatemen				1 day	Jul 29 '22	Jul 29 '22			_		h		
702	Team A CH460 to	• •			30 days	Jul 30 '22	Aug 28 '22			_				
703	TTA establishr				1 day	Jul 30 '22	Jul 30 '22			_		F		
704		excavation and dispos			2 days	Jul 31 '22	Aug 1 '22			_				
705		n, laying sheetpile and	d disposal		14 days	Aug 2 '22	Aug 15 '22			_				
706	Treatment of	-			2 days	Aug 16 '22	Aug 17 '22			_				
707	Pipe laying D.I				3 days	Aug 18 '22	Aug 20 '22			_				
708		eral fill and compactio	on		7 days	Aug 21 '22	Aug 27 '22			_				
709	Reinstatemen Team A CH490 to				1 day	Aug 28 '22	Aug 28 '22			_				
710					30 days	Aug 29 '22	Sep 27 '22			_				
711 712	TTA establishr	excavation and dispos			1 day 2 days	Aug 29 '22	Aug 29 '22			_				
712		•				Aug 30 '22	Aug 31 '22			_				
	Treatment of	n, laying sheetpile and	a disposal		14 days	Sep 1 '22	Sep 14 '22			_		- 📮		
714		÷			2 days	Sep 15 '22	Sep 16 '22			_				
715 716	Pipe laying D.I	eral fill and compactic			3 days 7 days	Sep 17 '22 Sep 20 '22	Sep 19 '22 Sep 26 '22			_				
						Sep 20 22	Sep 20 22 Sep 27 '22			_				
717	Reinstatemen		ing Do Wan Boad)		1 day					_				
718		CH640 (120m) (crossi	ing PO wan Koau)		91 days	Sep 28 '22	Dec 27 '22			_		- I I I	I	
719	TTA establishr				7 days	Sep 28 '22	Oct 4 '22							
		Task		Inactive Task		Manual Summ	nary Rollup		Extern	al Mileston	e 🗇		Manual Progres	ŝS
Project	t: 3WSD20 Programme	Split		Inactive Milestone		Manual Summ	nary		Deadli	ne	+			
	Jun 28 '22	Milestone	*	Inactive Summary	0	Start-only	C		Critica	1				
		Summary	I1	Manual Task		Finish-only	Э		Critica	l Split				
		Project Summary		Duration-only		External Tasks	S		Progre	SS				
		1					Page 15							
							Page 1							

	2024				2025				202	6	
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
	2024 Q1	Q2	Q3	Q4	2025 Q1	Q2	Q3	Q4	202 Q1	6 Q2	Q3
				_							

ID	Task Name				Duration	Start	Finish	TRA	Notes	02 02	2022 Q4 Q1 Q2 Q3	2023	02 02
720	Hard materia	excavation and dispos	al		14 days	Oct 5 '22	Oct 18 '22						<u>uz U</u> 3
721		n, laying sheetpile and			21 days	Oct 19 '22	Nov 8 '22			-		*	
722	Treatment of	bedding			7 days	Nov 9 '22	Nov 15 '22					K	
723	Pipe laying D.	Ι.			21 days	Nov 16 '22	Dec 6 '22					*	
724	Backfilling ge	neral fill and compaction	on		14 days	Dec 7 '22	Dec 20 '22					*	
725	Reinstatemer	nt			7 days	Dec 21 '22	Dec 27 '22					K	
726	Team A CH970 to	o CH1025 (55m)			62 days	Dec 28 '22	Feb 27 '23						
727	TTA establish	ment			1 day	Dec 28 '22	Dec 28 '22					5	
728	Hard materia	l excavation and dispos	al		2 days	Dec 29 '22	Dec 30 '22						
729	Soil excavatio	n, laying sheetpile and	l disposal		21 days	Dec 31 '22	Jan 20 '23					5	
730	Treatment of	bedding			7 days	Jan 21 '23	Jan 27 '23					K	
731	Pipe laying D.	l.			28 days	Jan 28 '23	Feb 24 '23					1	
732	Backfilling ger	neral fill and compaction	on		2 days	Feb 25 '23	Feb 26 '23					5	
733	Reinstatemer	ıt			1 day	Feb 27 '23	Feb 27 '23					5	
734	Team A CH1025	to CH1065 (40m)			30 days	Feb 28 '23	Mar 29 '23					H	
735	TTA establish	ment			1 day	Feb 28 '23	Feb 28 '23					5	
736	Hard materia	l excavation and dispos	al		2 days	Mar 1 '23	Mar 2 '23					5	
737	Soil excavatio	n, laying sheetpile and	l disposal		14 days	Mar 3 '23	Mar 16 '23					5	
738	Treatment of	bedding			2 days	Mar 17 '23	Mar 18 '23					5	
739	Pipe laying D.	Ι.			3 days	Mar 19 '23	Mar 21 '23					5	2
740	Backfilling ge	neral fill and compaction	on		7 days	Mar 22 '23	Mar 28 '23					5	·
741	Reinstatemer	it			1 day	Mar 29 '23	Mar 29 '23					5	
742	Team A CH1065	to CH1125 (60m)			62 days	Mar 30 '23	May 30 '23					-	-
743	TTA establish	ment			1 day	Mar 30 '23	Mar 30 '23					5	
744	Hard materia	excavation and dispos	al		2 days	Mar 31 '23	Apr 1 '23					5	
745	Soil excavatio	n, laying sheetpile and	l disposal		21 days	Apr 2 '23	Apr 22 '23					1	5
746	Treatment of	bedding			7 days	Apr 23 '23	Apr 29 '23					i	5
747	Pipe laying D.	Ι.			28 days	Apr 30 '23	May 27 '23						*
748	Backfilling ge	neral fill and compaction	on		2 days	May 28 '23	May 29 '23						5
749	Reinstatemer	ıt			1 day	May 30 '23	May 30 '23						5
750	Team A CH1125	to CH1144 (19m)			62 days	May 31 '23	Jul 31 '23						
751	TTA establish	ment			1 day	May 31 '23	May 31 '23						5
752	Hard materia	excavation and dispos	al		2 days	Jun 1 '23	Jun 2 '23						5
753	Soil excavatio	n, laying sheetpile and	l disposal		21 days	Jun 3 '23	Jun 23 '23						1
754	Treatment of	bedding			7 days	Jun 24 '23	Jun 30 '23						5
755	Pipe laying D.	I.			28 days	Jul 1 '23	Jul 28 '23						*
756	Backfilling ge	neral fill and compaction	on		2 days	Jul 29 '23	Jul 30 '23						5
757	Reinstatemer	nt			1 day	Jul 31 '23	Jul 31 '23						5
758	Pressure test, sw	abbing and CCTV			60 days	Aug 1 '23	Sep 29 '23						
759	Team B CH000 to C	H430 (430m)			447 days	Feb 7 '22	Apr 29 '23						• · · · · · · · · · · · · · · · · · · ·
760	Team B CH210 to	o CH235 (25m)			140 days	Feb 7 '22	Jun 26 '22				—		
761	Pending for re	elease of TTA from othe	er Contractor		102 days	Feb 7 '22	May 19 '22						
762	TTA establish	ment			1 day	May 20 '22	May 20 '22				5		
763	Hard materia	excavation and dispos	al		2 days	May 21 '22	May 22 '22				5		
764	Soil excavatio	n, laying sheetpile and	l disposal		9 days	May 23 '22	May 31 '22				*		
765	Treatment of	bedding			3 days	Jun 1 '22	Jun 3 '22				X		
766	Pipe laying D.	Ι.			3 days	Jun 4 '22	Jun 6 '22				X		
767	Backfilling ger	neral fill and compaction	on		19 days	Jun 7 '22	Jun 25 '22				*		
		Task		Inactive Task		Manual Summ	ary Rollun		External	l Milestone	\$	Manual P	Progress
-		Split				Manual Summ			Deadlin		•	ivialiaa I	* 251000
	t: 3WSD20 Programme	Milestone	•	Inactive Summary		Start-only	····. j ·		Critical				
Date:	Jun 28 '22		·	Manual Task		Finish-only	3		Critical				
		Summary											
		Project Summary		Duration-only		External Tasks	s		Progress	8			

	2024				2025				202	26	
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
•											
				_							

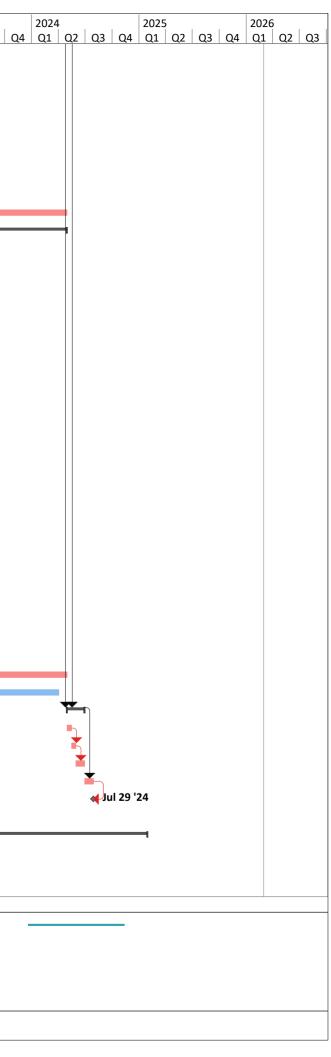
D T	Fask Name				Duration	Start	Finish	TRA	Notes		2022 Q4 Q1 Q2	202	
768	Reinstatemen	t			1 day	Jun 26 '22	Jun 26 '22				<u> U4 U1 U2</u>		<u> </u>
769	Team B CH180 to	CH210 (30m)			15 days	Jun 27 '22	Jul 11 '22						
770	TTA establishr				1 day	Jun 27 '22	Jun 27 '22						
771	Hard material	excavation and dispos	sal		1 day	Jun 28 '22	Jun 28 '22					*	
772	Soil excavatio	n, laying sheetpile and	d disposal		3 days	Jun 29 '22	Jul 1 '22					*	
773	Treatment of	bedding			1 day	Jul 2 '22	Jul 2 '22					*	
774	Pipe laying D.				1 day	Jul 3 '22	Jul 3 '22					K	
775	Backfilling ger	eral fill and compaction	วท		7 days	Jul 4 '22	Jul 10 '22					K	
776	Reinstatemen	t			1 day	Jul 11 '22	Jul 11 '22					F	
777	Team B CH235 to	CH270 (35m)			21 days	Jul 12 '22	Aug 1 '22					m in	
778	TTA establishr	nent			1 day	Jul 12 '22	Jul 12 '22					5	
779	Hard material	excavation and dispos	sal		2 days	Jul 13 '22	Jul 14 '22					5	
780	Soil excavatio	n, laying sheetpile and	d disposal		7 days	Jul 15 '22	Jul 21 '22					Γ ΄	
781	Treatment of	bedding			1 day	Jul 22 '22	Jul 22 '22					15	
782	Pipe laying D.				2 days	Jul 23 '22	Jul 24 '22						
783	Backfilling ger	eral fill and compaction	วท		7 days	Jul 25 '22	Jul 31 '22						
784	Reinstatemen	t			1 day	Aug 1 '22	Aug 1 '22						
785	Team B CH270 to	CH310 (40m)			30 days	Aug 2 '22	Aug 31 '22					H	
786	TTA establishr	nent			1 day	Aug 2 '22	Aug 2 '22						
787	Hard material	excavation and dispos	sal		2 days	Aug 3 '22	Aug 4 '22						
788	Soil excavatio	n, laying sheetpile and	d disposal		14 days	Aug 5 '22	Aug 18 '22						
789	Treatment of	bedding			2 days	Aug 19 '22	Aug 20 '22						
790	Pipe laying D.				3 days	Aug 21 '22	Aug 23 '22						
791	Backfilling ger	eral fill and compaction	วท		7 days	Aug 24 '22	Aug 30 '22						
792	Reinstatemen	t			1 day	Aug 31 '22	Aug 31 '22					h h	
793		CH430 (120m) (Shek	Shueng River)		91 days	Sep 1 '22	Nov 30 '22						
794	TTA establishr				7 days	Sep 1 '22	Sep 7 '22						
795		excavation and dispos			14 days	Sep 8 '22	Sep 21 '22						
796		n, laying sheetpile and	d disposal		21 days	Sep 22 '22	Oct 12 '22						
797	Treatment of	-			14 days	Oct 13 '22	Oct 26 '22						
798	Pipe laying D.				21 days	Oct 27 '22	Nov 16 '22					l 🕺	
799		eral fill and compaction	on		7 days	Nov 17 '22	Nov 23 '22					1 5	
800	Reinstatemen				7 days	Nov 24 '22	Nov 30 '22			_		l Š	
801	Team B CH150 to				30 days	Dec 1 '22	Dec 30 '22			_		🛄	
802	TTA establishr				1 day	Dec 1 '22	Dec 1 '22			_		1 5	
803		excavation and dispos			2 days	Dec 2 '22	Dec 3 '22			_		5	
804		n, laying sheetpile and	d disposal		14 days	Dec 4 '22	Dec 17 '22			_			
805	Treatment of	•			2 days	Dec 18 '22	Dec 19 '22					5	
806	Pipe laying D.				3 days	Dec 20 '22	Dec 22 '22			_		l 5	
807		ieral fill and compactio	on		7 days	Dec 23 '22	Dec 29 '22					L 5	
808	Reinstatemen				1 day	Dec 30 '22	Dec 30 '22			_		1 <u>j</u>	
809	Team B CH0 to C				60 days	Dec 31 '22	Feb 28 '23			_			
810	TTA establish				1 day	Dec 31 '22	Dec 31 '22			_			
811		excavation and dispos			7 days	Jan 1 '23	Jan 7 '23			_			
812		n, laying sheetpile and	a disposal		21 days	Jan 8 '23	Jan 28 '23			_			
813	Treatment of	-			7 days	Jan 29 '23 Feb 5 '23	Feb 4 '23			_		1	r
814	Pipe laying D.		•		7 days		Feb 11 '23			_			-
815	Backfilling ger	neral fill and compacti	ion		14 days	Feb 12 '23	Feb 25 '23)
		Task		Inactive Task		Manual Summ	nary Rollup		Extern	al Milestone	\$	Manu	al Progress
Duc		Split				Manual Summ			Deadl		+		-
	: 3WSD20 Programme	Milestone	•	Inactive Summary		Start-only	E		Critic				
Date: Ji	un 28 '22	Summary	·	Manual Task		Finish-only	3			al Split			
			-				s		Critici	- F - 44			

Q4	2024 Q1	Q2	Q3	Q4	2025 Q1	Q2	Q3	Q4	202 Q1	26 Q2	Q3
_	1										
				_							

ID	Task Name					Duration	Start	Finish	TRA	Notes	02	Q3 Q4 C	022	03 04	2023 Q1 Q2 0	3
816	Reinstatement					3 days	Feb 26 '23	Feb 28 '23				<u></u>		<u> </u>		1
817	Pressure test, swa	bbing and CCTV				60 days	Mar 1 '23	Apr 29 '23								
818	Team C CH710 to CH	970 (260m) -within the sc	ope of Shueng Shui H	Hueng		269 days	Apr 4 '22	Dec 28 '22							-1	\neg
819	Pending for releas	e of STLA				90 days	Apr 4 '22	Jul 2 '22						5		
820	TTA establishment	t				7 days	Jul 3 '22	Jul 9 '22						5		
821	Hard material exca	avation and disposal				21 days	Jul 10 '22	Jul 30 '22						*		
822	Soil excavation, la	ying sheetpile and dispose	al			60 days	Jul 31 '22	Sep 28 '22								
823	Treatment of bedo	ding				28 days	Sep 29 '22	Oct 26 '22						*		
824	Pipe laying D.I.					21 days	Oct 27 '22	Nov 16 '22						*		
825	Backfilling general	fill and compaction				28 days	Nov 17 '22	Dec 14 '22							5	
826	Reinstatement					14 days	Dec 15 '22	Dec 28 '22							i₹	
827	Pressure test, swabbi	ng and CCTV				60 days	Dec 29 '22	Feb 26 '23								
828	Overall pressure testing					30 days	Sep 30 '23	Oct 29 '23								*
829	Pipe connection and con	npletion				30 days	Oct 30 '23	Nov 28 '23								ì
830	Planned completion for sec	tion 4				0 days	Nov 28 '23	Nov 28 '23								
831																
832	Section 5 - Water main laying	works in part 4 of the Site	9			1096 days	Jul 30 '21	Jul 29 '24				0				
833	Access Date (part 4 of the S	ite)				1 day	Jul 30 '21	Jul 30 '21				h				
834	Initial survey (utility survey,	condition survey, initial p	hoto)			90 days	Jul 31 '21	Oct 28 '21								
835	Application and approval of	XP and TTA				116 days	Nov 1 '21	Feb 24 '22								
836	Procurement and Delivery of	of pipes, fittings and relate	ed materials			100 days	Feb 28 '22	Jun 7 '22								
837	Submission and acceptance	of method statement and	d material			60 days	Apr 11 '22	Jun 9 '22					_			
838	Mainlaying by trenchless m	nethod (RW04)				487 days	Nov 7 '22	Mar 7 '24						— (-		
839	DN450 DI pipe (6 location	ons , total length 237m)				487 days	Nov 7 '22	Mar 7 '24	60					*		
840	TTA implementation					487 days	Nov 7 '22	Mar 7 '24								
841	Contruction of jacking	g pit and receiving pit				360 days	Nov 14 '22	Nov 8 '23		30d/pit				- -		
842	Trenchless works and	pipe laying				330 days	Jan 13 '23	Dec 8 '23								
843	Manhole / Chamber of	construction				300 days	Mar 14 '23	Jan 7 '24								
844	Backfilling and compa	action				270 days	May 13 '23	Feb 6 '24								
845	Reinstatement					240 days	Jul 12 '23	Mar 7 '24								
846	Mainlaying by open trench	method (RW04)				669 days	Jul 2 '22	Apr 30 '24								
847	RW04 : DN450 DI Pipe					669 days	Jul 2 '22	Apr 30 '24								
848	Tin Ping Road (1377m	ו)				669 days	Jul 2 '22	Apr 30 '24								
849	CH050 to CH080 (3	30m)				30 days	Jul 2 '22	Jul 31 '22						-		
850	TTA establishm	ent				1 day	Jul 2 '22	Jul 2 '22						5		
851	Hard material e	excavation and disposal				3 days	Jul 3 '22	Jul 5 '22						5		
852	Soil excavation	, laying sheetpile and disp	osal			14 days	Jul 6 '22	Jul 19 '22						Ľ,		
853	Treatment of b	edding				2 days	Jul 20 '22	Jul 21 '22						5		
854	Pipe laying D.I.					2 days	Jul 22 '22	Jul 23 '22						5		
855	Backfilling gene	eral fill and compaction				7 days	Jul 24 '22	Jul 30 '22						5		
856	Reinstatement					1 day	Jul 31 '22	Jul 31 '22						5		
857	CH080 to CH110 (3	30m)				31 days	Aug 1 '22	Aug 31 '22						†		
858	TTA establishm	ent				2 days	Aug 1 '22	Aug 2 '22			1			5		
859	Hard material e	excavation and disposal				3 days	Aug 3 '22	Aug 5 '22						5		
860	Soil excavation	, laying sheetpile and disp	oosal			14 days	Aug 6 '22	Aug 19 '22								
861	Treatment of b	edding				2 days	Aug 20 '22	Aug 21 '22						5		
862	Pipe laying D.I.					2 days	Aug 22 '22	Aug 23 '22						5		
863	Backfilling gene	eral fill and compaction				7 days	Aug 24 '22	Aug 30 '22						5		
		Task		Inactive Task			Manual Summa	ary Rollup		Externa	l Milestor	ne			Manual Progress	
Draine	+ 3WSD20 Dragromma	Split		Inactive Milestone			Manual Summa	ary		Deadlin	le	+				
-	t: 3WSD20 Programme Jun 28 '22	Milestone	•	Inactive Summary	-	1	Start-only	E		Critical						
Date: J	ull 20 22	Summary		Manual Task			Finish-only	з		Critical						
		Project Summary		Duration-only			External Tasks			Progres						
1																

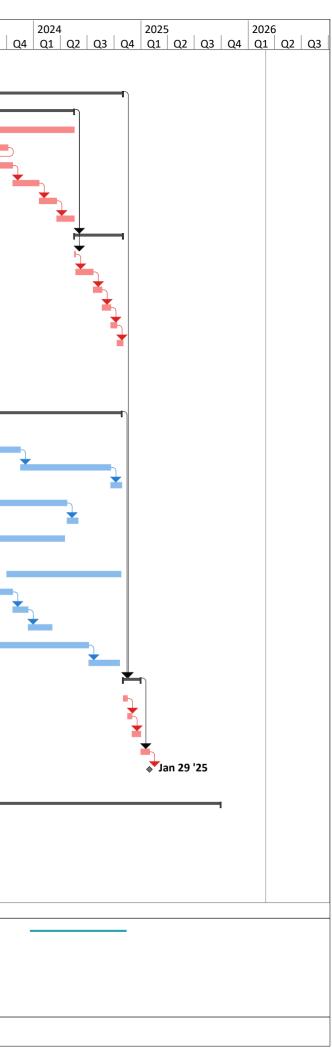
		1
2024	2025	2026
Q4 Q1 Q2 Q3 C	Q4 Q1 Q2 Q3 Q4	Q1 Q2 Q3
Ĭ I		
Nov 28 '23		

)	Task Name				Duration	Start	Finish	TRA	Notes		2022 3 Q4 Q1 Q	2023 2 Q3 Q4 Q1 Q2 Q
864	Reinstatement				1 day	Aug 31 '22	Aug 31 '22	_			<u>, 44 UI U</u>	
865	CH110 to CH140 (30m)			30 days	Sep 1 '22	Sep 30 '22					H
866	TTA establishm	ent			1 day	Sep 1 '22	Sep 1 '22					
867	Hard material	excavation and dispos	al		3 days	Sep 2 '22	Sep 4 '22					†
868	Soil excavation	, laying sheetpile and	disposal		14 days	Sep 5 '22	Sep 18 '22					1 X
869	Treatment of b	edding			2 days	Sep 19 '22	Sep 20 '22					↓ ★
870	Pipe laying D.I.				2 days	Sep 21 '22	Sep 22 '22					†
871	Backfilling gene	eral fill and compactio	n		7 days	Sep 23 '22	Sep 29 '22					†
872	Reinstatement				1 day	Sep 30 '22	Sep 30 '22					↓ ★
873	Remaining Section	of Tin Ping Road (128	87m)		578 days	Oct 1 '22	Apr 30 '24					•
874	Ma Sik Road (1323m)				665 days	Jul 6 '22	Apr 30 '24					ı
875	CH1400 to CH143	0 (30m)			30 days	Jul 6 '22	Aug 4 '22					н
876	TTA establishm	ent			1 day	Jul 6 '22	Jul 6 '22					Ь
877	Hard material	excavation and dispos	al		3 days	Jul 7 '22	Jul 9 '22					5
878	Soil excavation	, laying sheetpile and	disposal		14 days	Jul 10 '22	Jul 23 '22					
879	Treatment of b	edding			2 days	Jul 24 '22	Jul 25 '22					
380	Pipe laying D.I.				2 days	Jul 26 '22	Jul 27 '22					
381	Backfilling gene	eral fill and compactio	n		7 days	Jul 28 '22	Aug 3 '22					
882	Reinstatement				1 day	Aug 4 '22	Aug 4 '22					5
883	CH1430 to CH146	0 (30m)			31 days	Aug 5 '22	Sep 4 '22					
884	TTA establishm	ient			2 days	Aug 5 '22	Aug 6 '22					
885	Hard material	excavation and dispos	al		3 days	Aug 7 '22	Aug 9 '22					
886		, laying sheetpile and			, 14 days	Aug 10 '22	Aug 23 '22					
387	Treatment of b				2 days	Aug 24 '22	Aug 25 '22					
888	Pipe laying D.I.	-			2 days	Aug 26 '22	Aug 27 '22					
889		eral fill and compactio	n		7 days	Aug 28 '22	Sep 3 '22					
890	Reinstatement				1 day	Sep 4 '22	Sep 4 '22					
891	CH1460 to CH149				30 days	Sep 5 '22	Oct 4 '22			-		
892	TTA establishm				1 day	Sep 5 '22	Sep 5 '22					
893		excavation and dispos	al		3 days	Sep 6 '22	Sep 8 '22			_		
894		, laying sheetpile and			14 days	Sep 9 '22	Sep 22 '22					
895	Treatment of b				2 days	Sep 23 '22	Sep 22 22			_		
896	Pipe laying D.I.	•			2 days	Sep 25 22 Sep 25 '22	Sep 24 22					
397		eral fill and compactio	n		7 days	Sep 27 '22	Oct 3 '22					
898	Reinstatement				1 day	Oct 4 '22	Oct 4 '22					
899		of Ma Sik Road (123	3m)		574 days	Oct 5 '22	Apr 30 '24					
900	Sha Tau Kok Road (8	-	51117		580 days	Sep 1 '22	Apr 30 24		1.5m/day			
901	Overall testing	55117			60 days	May 1 '24	Jun 29 '24		1.5117 day			
902	•					May 1 '24	May 15 '24			_		
902 903	Swabbing CCTV				15 days 15 days	May 1 24 May 16 '24	May 30 '24			-		
903 904	Hydrostatic pressure tes	+					Jun 29 '24			-		
	Pipe connection and compl				30 days	May 31 '24 Jun 30 '24	Jun 29 24 Jul 29 '24			-		
905 206					30 days					_		
906	Planned completion for sec	1011 5			0 days	Jul 29 '24	Jul 29 '24			_		
907	Soction 6 Motor main lawing	works in part F of the	- Sito		1200 40.00	Jul 20 124	Jan 29 '25			_		
908	Section 6 - Water main laying	-	e sile		1280 days	Jul 30 '21				- [
909	Access Date (part 5 of the S		tial phote)		1 day	Jul 30 '21	Jul 30 '21			- 🎙		
910	Initial survey (utility survey,				90 days	Jul 31 '21	Oct 28 '21			-		
911	Application and approval of	XP and TTA			167 days	Oct 1 '21	Mar 16 '22					
		Task		Inactive Task		Manual Summ	nary Rollup		Extern	al Milestone	\diamond	Manual Progress
	A DUCDOO D	Split				Manual Summ			Deadli		÷	
	t: 3WSD20 Programme	Milestone	•	Inactive Summary		Start-only	E		Critica			
vate: .	lun 28 '22	Summary		 Manual Task 		Finish-only	-		Critica			
		Project Summary		Duration-only		External Tasks			Progre			
		rioject Summary		· Duration-only		LATCHIAL LASKS	, ,		Progre	00		

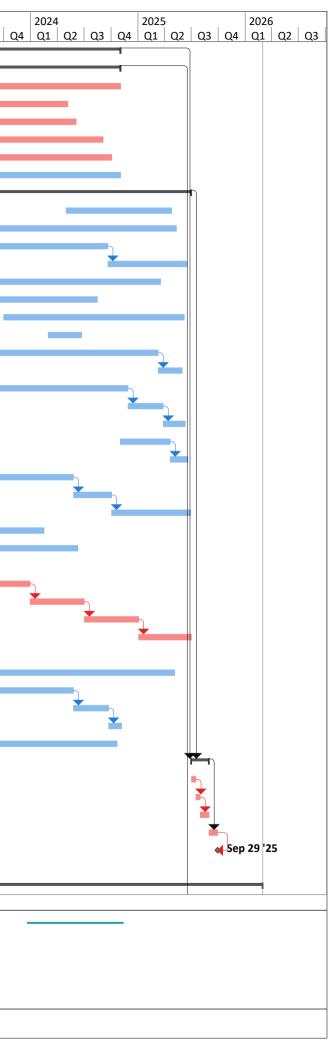


D	Task Name	Duration	Start	Finish	TRA	Notes	Q2 Q3 Q4 Q1 Q2	2023
912	Procurement and Delivery of pipes, fittings and related materials	30 days	May 30 '22	Jun 28 '22				
913	Submission and acceptance of method statement and material	30 days	May 30 '22	Jun 28 '22				
914	Mainlaying by trenchless method	519 days	Jun 1 '23	Oct 31 '24				F
915	DN400, DN300 DI pipe (2 locations , total length 126m)	353 days	Jun 1 '23	May 18 '24	30			F
916	TTA implementation	353 days	Jun 1 '23	May 18 '24				C
917	Contruction of jacking pit and receiving pit	120 days	Jun 8 '23	Oct 5 '23		30d/pit		Le la
918	Trenchless works and pipe laying	60 days	Aug 23 '23	Oct 21 '23				
919	Manhole / Chamber construction	90 days	Oct 22 '23	Jan 19 '24				
920	Backfilling and compaction	60 days	Jan 20 '24	Mar 19 '24				
921	Reinstatement	60 days	Mar 20 '24	May 18 '24				
22	DN150 DI pipe (1 location , total length 33m)	166 days	May 19 '24	Oct 31 '24	15			
23	TTA implementation	4 days	May 19 '24	May 22 '24				
24	Contruction of jacking pit and receiving pit	60 days	May 23 '24	Jul 21 '24		30d/pit		
25	Trenchless works and pipe laying	30 days	Jul 22 '24	Aug 20 '24				
26	Manhole / Chamber construction	30 days	Aug 21 '24	Sep 19 '24				
27	Backfilling and compaction	21 days	Sep 20 '24	Oct 10 '24				
28	Reinstatement	21 days	Oct 11 '24	Oct 31 '24				
29	Contractor's Design and Construction of distribution mains	60 days	May 16 '22	Jul 14 '22				
30	Submission and acceptance of detailed design proposal	30 days	May 16 '22	Jun 14 '22				
31	Site investigation and liaison with relevant parties	30 days	Jun 15 '22	Jul 14 '22			- X)
32	Mainlaying by open trench method	836 days	Jul 15 '22	Oct 27 '24			i	
33	RW41 (DN150) - Sheung Shui Tung Hing Road (288m)	280 days	Jul 15 '22	Apr 20 '23				
34	RW42 (DN150) - No name road in Sheung Shui Heung (210m)	210 days	Apr 21 '23	Nov 16 '23				*
35	RW71 (DN150) - Jockey Club Road (308m)	308 days	Nov 17 '23	Sep 19 '24				
36	RW44 (DN150) - Jockey Club Road (38m)	38 days	Sep 20 '24	Oct 27 '24				
37	RW11 (DN150) - Fung Nam Road (480m)	510 days	Dec 1 '22	Apr 23 '24	30			
38	RW46 (DN150) - Fung Nam Lane (38m)	38 days	Apr 24 '24	May 31 '24				
39	RW06 (DN300) - Lung Sum Avenue (290m)	290 days	Jul 1 '23	Apr 15 '24				
40	RW05 (DN400) - Jockey Club Road (377m)	392 days	Jul 15 '22	Aug 10 '23	15			
941	RW15 (DN150) - Sun Fung Road / Sun Shing Road (390m)	390 days	Oct 1 '23	Oct 24 '24				
42	RW18 (DN150) - San Hong Street (464m)	464 days	Jul 15 '22	Oct 21 '23				
43	RW20 (DN150) - Sun Wing Street (52m)	52 days	Oct 22 '23	Dec 12 '23				
44	RW45 (DN150) - Tsun Fu Street (82m)	82 days	Dec 13 '23	Mar 3 '24				
45	RW14 (DN150) - Fu Hing Street (372m)	372 days	Jul 1 '23	Jul 6 '24				
46	RW21 (DN150) - Sun Fat Street (105m)	105 days	Jul 7 '24	Oct 19 '24				
47	Overall testing	60 days	Nov 1 '24	Dec 30 '24				
48	Swabbing	15 days	Nov 1 '24	Nov 15 '24				
49	CCTV	15 days	Nov 16 '24	Nov 30 '24				
950	Hydrostatic pressure test	30 days	Dec 1 '24	Dec 30 '24				
951	Pipe connection and completion	30 days	Dec 31 '24	Jan 29 '25				
52	Planned completion for section 6	0 days	Jan 29 '25	Jan 29 '25				
953								
54	Section 7 - Water main laying works in part 6 of the Site	1523 days	Jul 30 '21	Sep 29 '25				
955	Access Date (part 6 of the Site)	1 day	Jul 30 '21	Jul 30 '21				
56	Initial survey (utility survey, condition survey, initial photo)	90 days	Jul 31 '21	Oct 28 '21				
57	Application and approval of XP and TTA	117 days	Nov 1 '21	Feb 25 '22				
958	Procurement and Delivery of pipes, fittings and related materials	30 days	May 7 '22	Jun 5 '22				
959	Submission and acceptance of method statement and material	30 days	May 7 '22	Jun 5 '22				
	Task Inactive Tas		Manual Summ				al Milestone \diamond	Manual Prog
oject	: 3WSD20 Programme Split Inactive Mi		Manual Summ			Deadl		
	Inactive Sur 28 '22 Milestone	mmary	Start-only	E		Critica	al	

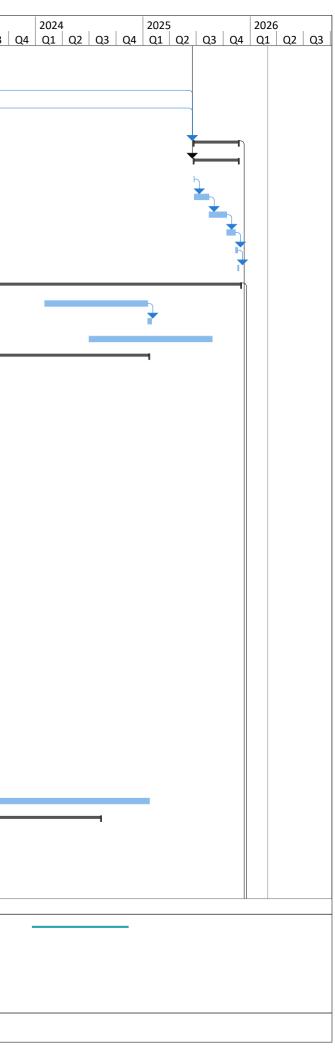
	Task		Inactive Task		Manual Summary Rollup		External Milestone	\diamond	Manual Progress
Project: 3WSD20 Programme	Split		Inactive Milestone		Manual Summary	1	Deadline	+	
Date: Jun 28 '22	Milestone	♦	Inactive Summary	1	Start-only	C	Critical		
	Summary		Manual Task		Finish-only	3	Critical Split		
	Project Summary		Duration-only		External Tasks		Progress		



D	Task Name				Duration	Start	Finish	TRA	Notes		2022 Q4 Q1 Q2	02 0	
960	Mainlaying by trenchless n	ethod			733 days	Nov 1 '22	Nov 2 '24			<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>			
961	DN450, DN400, DN300 I	I pipe (13 locations	, total length 1028m)		733 days	Nov 1 '22	Nov 2 '24	21				🕇	
962	TTA implementation				733 days	Nov 1 '22	Nov 2 '24					-	
963	Contruction of jacking	g pit and receiving pit			546 days	Nov 8 '22	May 6 '24		21d/pit				
964	Trenchless works and	pipe laying			514 days	Jan 7 '23	Jun 3 '24	30				L	
965	Manhole / Chamber of	onstruction			546 days	Mar 8 '23	Sep 3 '24						
966	Backfilling and compa	ction			516 days	May 7 '23	Oct 3 '24						
967	Reinstatement				486 days	Jul 6 '23	Nov 2 '24						
968	Mainlaying by open trench	method			1093 days	Jul 5 '22	Jul 1 '25						
969	RW07 (DN300) - Ma Sik	Road (360m)			360 days	May 1 '24	Apr 25 '25						
970	RW05 (DN400) - Jockey	Club Road (681m)			681 days	Jul 1 '23	May 11 '25						
971	RW05 (DN300) - Jackey	Club Road (720m)			720 days	Oct 1 '22	Sep 19 '24					-	
972	RW05 (DN300) - Pik Fun	g Road (270m)			270 days	Sep 20 '24	Jun 16 '25						
973	RW05 (DN300) - Sun Wa	n Road (945m)			975 days	Jul 18 '22	Mar 18 '25	30					
974	RW08 (DN400) - Fanling	Lau Road (750m)			750 days	Jul 28 '22	Aug 15 '24						
975	RW08 (DN400) - Lok Yip				616 days	Oct 1 '23	Jun 7 '25			1			
976	RW17 (DN150) - Sun Shi				114 days	Mar 1 '24	Jun 22 '24			1			
977	RW16 (DN250) - Sun Fur		venue (741m)		, 741 days	Mar 1 '23	Mar 10 '25			1			
978	RW47 (DN100) - Tee to S				82 days	Mar 11 '25	May 31 '25			1			
979	RW22 (DN150) - San Wa				877 days	Jul 5 '22	Nov 27 '24						
980	RW24 (DN150) - Chi Min				120 days	Nov 28 '24	Mar 27 '25						
981	RW49 (DN150) - San Wa				75 days	Mar 28 '25	Jun 10 '25						
982	RW23 (DN150) - Lung W				171 days	Nov 1 '24	Apr 20 '25						
983	RW69 (DN150) - Lung Su				60 days	Apr 21 '25	Jun 19 '25			-			
984	RW25 (DN150) - Road to				330 days	Jul 1 '23	May 25 '24			-			
985	RW26 (DN150) - Ka Siu F				130 days	May 26 '24	Oct 2 '24			_			
986	RW27 (DN150) - Fanling				270 days	Oct 3 '24	Jun 29 '25			_			
987	RW34 (DN150) - Road Te				380 days	Feb 1 '23	Feb 15 '24			-			
988	RW36 (DN150) - Lok Fun		1		495 days	Feb 1 '23	Jun 9 '24			-			
989	RW13 (DN150) - Wo Tai				270 days	Jul 7 '22	Apr 2 '23						
990	RW28 (DN150) - Wo Mu				270 days	Apr 3 '23	Dec 29 '23						
991	RW31 (DN150) - Luen Ch	. ,			185 days	Dec 30 '23	Jul 1 '24						
992	RW32 (DN150) - Luen Sh				185 days	Jul 2 '24	Jan 2 '25						
993	RW33 (DN150) - Luen Hi				180 days	Jan 3 '25	Jul 1 '25						
994	RW13 (DN150) - Wo Tai				371 days	Jul 21 '22	Jul 26 '23			-			
995	RW30 (DN150) - Luen O		and / Luon Eni Stroot (6/	(m)	649 days	Jul 27 '23	May 5 '25			-			
996	RW29 (DN150) - Wo Mu	•		5117	360 days	Jun 1 '23	May 25 '24			-			_
990 997	RW12 (DN150) - Luen Ch	-			120 days	May 26 '24	Sep 22 '24			-			
997	RW55 (DN150) - Mount				44 days	Sep 23 '24	Nov 5 '24			-			
998	RW03 (DN150) - Mount RW03 (DN450) - Jockey		way (810m)		810 days	Aug 4 '22	Oct 21 '24			-			
999 1000			ωαλ (οτομμ)		60 days	Aug 4 '22 Jul 2 '25				-			
	Overall testing					Jul 2 25 Jul 2 25	Aug 30 '25 Jul 16 '25			-			
1001	Swabbing CCTV				15 days					-			
1002		•			15 days	Jul 17 '25	Jul 31 '25			-			
1003	Hydrostatic pressure tes				30 days	Aug 1 '25	Aug 30 '25			-			
1004	Pipe connection and compl				30 days	Aug 31 '25	Sep 29 '25			_			
1005	Planned completion for sec	lion /			0 days	Sep 29 '25	Sep 29 '25			-			
L006	Section 9 Water main laving	works in part 7 of the	a Sita		1676 days	11 20 '21	Mar 1 '26						
1007	Section 8 - Water main laying	works in part 7 of the			1676 days	Jul 30 '21	Mar 1 '26						
		Task		Inactive Task		Manual Summa	ary Rollun		Fytom	l Milestone	\$		Manual Progres
		Split				Manual Summa			Deadlin				ivianuai r 10glet
-	: 3WSD20 Programme		•		~		ary E		Critical		-		
Date: J	un 28 '22	Milestone	~	Inactive Summary		Start-only							
		Summary		Manual Task		Finish-only	2		Critical				
		Project Summary		Duration-only		External Tasks			Progres	s			

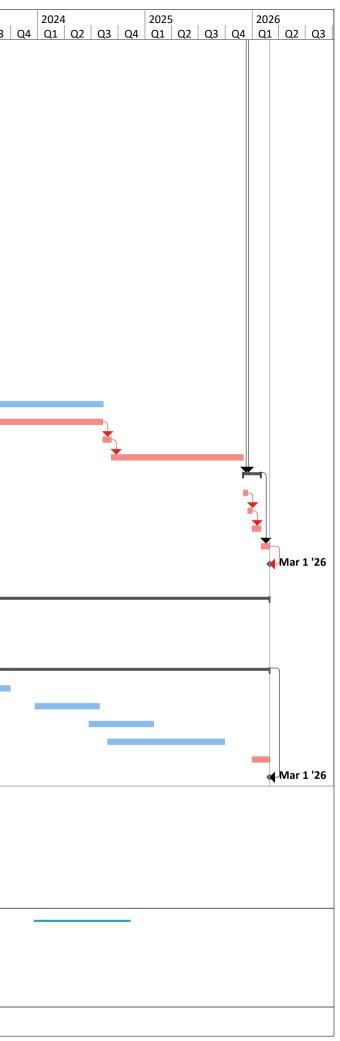


ID Task Nam	ne				Duration	Start	Finish	TRA	Notes		2022 3 Q4 Q1 Q2		2023
1008 Acces	ss Date (part 7 of the S	iite)			1 day	Jul 30 '21	Jul 30 '21		-				
1009 Initial	l survey (utility survey,	condition survey, initi	al photo)		90 days	Jul 31 '21	Oct 28 '21						
1010 Applic	cation and approval of	f XP and TTA			180 days	Nov 1 '21	Apr 29 '22				*		
1011 Procu	urement and Delivery	of pipes, fittings and re	lated materials		60 days	Apr 6 '22	Jun 4 '22				-		
1012 Subm	nission and acceptance	of method statement	and material		30 days	May 6 '22	Jun 4 '22						
1013 Mainl	laying by trenchless n	nethod			154 days	Jun 23 '25	Nov 23 '25						
1014 DN	N300 DI pipe (1 locati	ons , total length 58m)		154 days	Jun 23 '25	Nov 23 '25						
1015	TTA implementation				2 days	Jun 23 '25	Jun 24 '25						
1016	Contruction of jackin	g pit and receiving pit			50 days	Jun 25 '25	Aug 13 '25						
1017	Trenchless works and	l pipe laying			60 days	Aug 14 '25	Oct 12 '25						
1018	Manhole / Chamber	construction			30 days	Oct 13 '25	Nov 11 '25						
1019	Backfilling and compa	action			7 days	Nov 12 '25	Nov 18 '25						
1020	Reinstatement				5 days	Nov 19 '25	Nov 23 '25						
1021 Mainl	laying by open trench	method			1247 days	Jul 4 '22	Dec 1 '25					F	
1022 RV	W38 (DN150) - Yip Che	ong Street (351m)			351 days	Feb 1 '24	Jan 16 '25						
1023 RV	W39 (DN150) - Yip Che	ong Street (14m)			14 days	Jan 17 '25	Jan 30 '25						
1024 RV	N37 (DN150) - Yip Wo	Street (420m)			420 days	Jul 1 '24	Aug 24 '25						
1025 RV	W10 (DN300) - On Lok	Mun Street (930m)			934 days	Jul 4 '22	Jan 22 '25						
1026	CH000 to CH030 (30r	n)			30 days	Jul 4 '22	Aug 2 '22					H I	
1027	TTA establishmen	t			2 days	Jul 4 '22	Jul 5 '22					Ч	
1028	Hard material exc	avation and disposal			2 days	Jul 6 '22	Jul 7 '22					5	
1029	Soil excavation, la	aying sheetpile and disp	oosal		14 days	Jul 8 '22	Jul 21 '22					1	
1030	Treatment of bed	ding			2 days	Jul 22 '22	Jul 23 '22					5	
1031	Pipe laying D.I.				2 days	Jul 24 '22	Jul 25 '22					Ι Γ	
1032	Backfilling general	fill and compaction			7 days	Jul 26 '22	Aug 1 '22					1 K	
1033	Reinstatement				1 day	Aug 2 '22	Aug 2 '22					5	
1034	CH030 to CH060 (30r	n)			31 days	Aug 3 '22	Sep 2 '22					H .	
1035	TTA establishmen	t			2 days	Aug 3 '22	Aug 4 '22					5	
1036	Hard material exc	avation and disposal			2 days	Aug 5 '22	Aug 6 '22					1 K	
1037	Soil excavation, la	aying sheetpile and disp	oosal		14 days	Aug 7 '22	Aug 20 '22					1	
1038	Treatment of bed	ding			2 days	Aug 21 '22	Aug 22 '22					5	
1039	Pipe laying D.I.				3 days	Aug 23 '22	Aug 25 '22					5	
1040	Backfilling general	fill and compaction			7 days	Aug 26 '22	Sep 1 '22					5	
1041	Reinstatement				1 day	Sep 2 '22	Sep 2 '22						
1042	CH600 to CH900 (30r	n)			33 days	Sep 3 '22	Oct 5 '22					-	
1043	TTA establishmen	t			2 days	Sep 3 '22	Sep 4 '22					5	
1044	Hard material exc	avation and disposal			3 days	Sep 5 '22	Sep 7 '22					5	
1045	Soil excavation, la	ying sheetpile and disp	oosal		14 days	Sep 8 '22	Sep 21 '22						
1046	Treatment of bed	ding			2 days	Sep 22 '22	Sep 23 '22					†	
1047	Pipe laying D.I.				4 days	Sep 24 '22	Sep 27 '22						
1048		fill and compaction			7 days	Sep 28 '22	Oct 4 '22						
1049	Reinstatement	•			1 day	Oct 5 '22	Oct 5 '22						
		On Lok Mun Street (84	40m)		840 days	Oct 6 '22	Jan 22 '25						
	W35 (DN150) - On Chu	•			768 days	Jul 6 '22	Aug 11 '24					·	
	CH650 to CH680 (30r				33 days	Jul 6 '22	Aug 7 '22					н	
1053	TTA establishmen	-			2 days	Jul 6 '22	Jul 7 '22					Ь	
1054		avation and disposal			3 days	Jul 8 '22	Jul 10 '22					K	
1055		aying sheetpile and disp	oosal		14 days	Jul 11 '22	Jul 24 '22					 	
		Trada		Transfer (T) 1		M. 10	D -11			-1 M ⁻¹	<u>^</u>		(and D
		Task		Inactive Task		Manual Summ				al Milestone	\$	M	Manual Progress
Project: 3WSD2	20 Programme	Split		Inactive Milestone		Manual Summ	lary		Deadl		+		
Date: Jun 28 '22	2	Milestone	♦	Inactive Summary		Start-only	C		Critica				
		Summary		Manual Task		Finish-only	3		Critica	al Split			
		Project Summary		Duration-only		External Tasks	5		Progre	ess			



ID .	Task Name	Duration	Start	Finish	TRA	Notes	2022 2023 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3
1056	Treatment of bedding	2 days	Jul 25 '22	Jul 26 '22			
1057	Pipe laying D.I.	4 days	Jul 27 '22	Jul 30 '22			
1058	Backfilling general fill and compaction	7 days	Jul 31 '22	Aug 6 '22			
1059	Reinstatement	1 day	Aug 7 '22	Aug 7 '22			
1060	CH620 to CH650 (30m)	16 days	Aug 8 '22	Aug 23 '22			н
1061	TTA establishment	1 day	Aug 8 '22	Aug 8 '22			
1062	Hard material excavation and disposal	1 day	Aug 9 '22	Aug 9 '22			
1063	Soil excavation, laying sheetpile and disposal	7 days	Aug 10 '22	Aug 16 '22			
1064	Treatment of bedding	1 day	Aug 17 '22	Aug 17 '22			
1065	Pipe laying D.I.	1 day	Aug 18 '22	Aug 18 '22			5
1066	Backfilling general fill and compaction	4 days	Aug 19 '22	Aug 22 '22			
1067	Reinstatement	1 day	Aug 23 '22	Aug 23 '22			
1068	CH590 to CH620 (30m)	29 days	Aug 24 '22	Sep 21 '22			F1
1069	TTA establishment	1 day	Aug 24 '22	Aug 24 '22			
1070	Hard material excavation and disposal	2 days	Aug 25 '22	Aug 26 '22			
1071	Soil excavation, laying sheetpile and disposal	14 days	Aug 27 '22	Sep 9 '22			
1072	Treatment of bedding	2 days	Sep 10 '22	Sep 11 '22			
1073	Pipe laying D.I.	2 days	Sep 12 '22	Sep 13 '22			
1074	Backfilling general fill and compaction	7 days	Sep 14 '22	Sep 20 '22			
1075	Reinstatement	1 day	Sep 21 '22	Sep 21 '22			
1076	Remaining Section of On Chuen Street (630m)	690 days	Sep 22 '22	Aug 11 '24	60		
1077	RW09 (DN150) - Wo Hing Road (436m)	436 days	Jun 1 '23	Aug 9 '24			
1078	RW60 (DN150) - Tee from RW09 (14m)	29 days	Aug 10 '24	Sep 7 '24	14		
1079	RW40 (DN150) - Tai Wo Service Road West (420m)	450 days	Sep 8 '24	Dec 1 '25	30		
1080	Overall testing	60 days	Dec 2 '25	Jan 30 '26			
1081	Swabbing	15 days	Dec 2 '25	Dec 16 '25			
1082	CCTV	15 days	Dec 17 '25	Dec 31 '25			
1083	Hydrostatic pressure test	30 days	Jan 1 '26	Jan 30 '26			
1084	Pipe connection and completion	30 days	Jan 31 '26	Mar 1 '26			
1085	Planned completion for section 8	0 days	Mar 1 '26	Mar 1 '26			
1086							
1087	Section 9 - Conversion works to effect the supply of reclaimed water	1676 days	Jul 30 '21	Mar 1 '26			
1088	Access Date	1 day	Jul 30 '21	Jul 30 '21			
1089	Initial survey by stages	180 days	Jul 1 '22	Dec 27 '22			
1090	Liaison, coordination and enabling work for conversion	300 days	Aug 1 '22	May 27 '23			
1091	Conversion works	944 days	Aug 1 '23	Mar 1 '26			
1092	Section 4 (Part 3) - 3 nos.	60 days	Aug 1 '23	Sep 29 '23			
1093	Section 5 (Part 4) - 11 nos.	220 days	Dec 23 '23	Jul 29 '24			
1094	Section 6 (Part 5) - 11 nos.	220 days	Jun 24 '24	Jan 29 '25			
1095	Section 7 (Part 6) - 40 nos.	400 days	Aug 26 '24	Sep 29 '25			
1096	Section 8 (Part 7) - 3 nos.	60 days	Jan 1 '26	Mar 1 '26			
1097	Planned completion for section 9	0 days	Mar 1 '26	Mar 1 '26			

	Task		Inactive Task		Manual Summary Rollu	p	External Milestone	\diamond	Manual Progress
Project: 3WSD20 Programme	Split		Inactive Milestone		Manual Summary	1	Deadline	+	
Date: Jun 28 '22	Milestone	٠	Inactive Summary	-	Start-only	E	Critical		
	Summary	1	Manual Task		Finish-only	3	Critical Split		
	Project Summary		Duration-only		External Tasks		Progress		
					Pag	e 23			





SITE OVERVIEW PHOTO IN THE REPORTING PERIOD

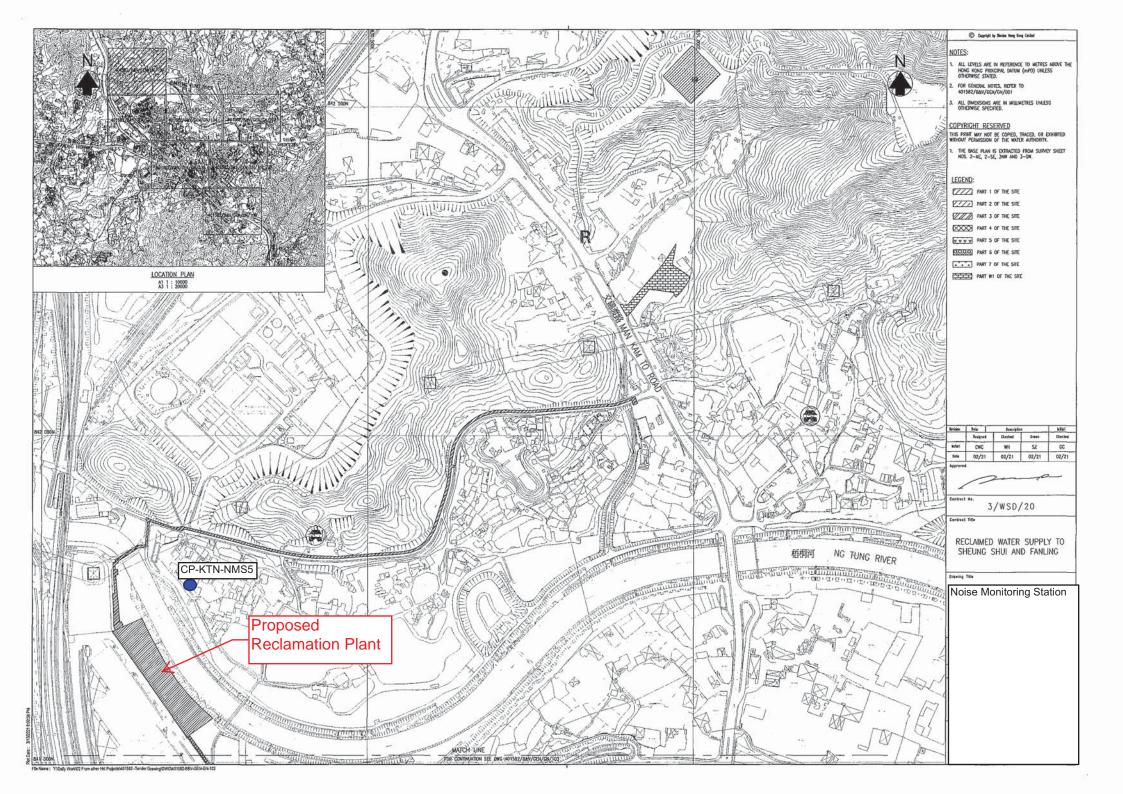


Excavation and lateral support work for Hypo-Chlorination Facilities



Appendix D

Location of Designated Noise Monitoring Station CP-KTN-NMS5





Appendix E

Valid Calibration Certificates of Monitoring Equipment



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C216479 證書編號

ITEM TESTED / 送檢項	目	(Job No. / 序引編號:IC21-2189)	Date of Receipt / 收件日期: 25 October 2021
Description / 儀器名稱 :	:	Sound Level Meter (EQ016)	
Manufacturer / 製造商 :	:	Rion	
Model No. / 型號 :	:	NL-52	
Serial No. / 編號 :	:	00464681	
Supplied By / 委託者 :	:	Action-United Environmental Services ar	nd Consulting
		Unit A, 20/F., Gold King Industrial Build	ling,
		35-41 Tai Lin Pai Road, Kwai Chung, N.	Т.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50 ± 25)%

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 9 November 2021

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only. The results do not exceed manufacturer's specification. The results are detailed in the subsequent page(s).

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試

K P Cheuk

Project Engineer

K C/Lee Engineer

Certified By 核證

Date of Issue 簽發日期

:

10 November 2021

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 - 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓 Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C216479 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- 2. Self-calibration was performed before the test.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C210084
CL281	Multifunction Acoustic Calibrator	AV210017

- 5. Test procedure : MA101N.
- 6. Results :
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level

	UUT	Setting		Applie	d Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L _A	Α	Fast	94.00	1	93.6	± 1.1

6.1.2 Linearity

	UU	Г Setting		Applied	d Value	UUT
Range	Function	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 130	L _A	А	Fast	94.00	1	93.6 (Ref.)
				104.00		103.6
				114.00		113.6

IEC 61672 Class 1 Spec. : \pm 0.6 dB per 10 dB step and \pm 1.1 dB for overall different.

6.2 Time Weighting

	UUT	Setting		Applie	d Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L _A	А	Fast	94.00	1	93.6	Ref.
			Slow			93.6	± 0.3

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C216479 證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

		Setting		Appl	ied Value	UUT	IEC 61672
Range	Function	Frequency Time		Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L _A	А	Fast	94.00	63 Hz	67.3	-26.2 ± 1.5
					125 Hz	77.4	-16.1 ± 1.5
					250 Hz	84.9	-8.6 ± 1.4
					500 Hz	90.4	-3.2 ± 1.4
					1 kHz	93.6	Ref.
					2 kHz	94.8	$+1.2 \pm 1.6$
					4 kHz	94.6	$+1.0 \pm 1.6$
					8 kHz	92.6	-1.1 (+2.1 ; -3.1)
					16 kHz	85.7	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

		Setting		Appli	ed Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Level Freq.		Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L _C	С	Fast	94.00	63 Hz	92.7	$\textbf{-0.8} \pm 1.5$
					125 Hz	93.4	-0.2 ± 1.5
					250 Hz	93.6	0.0 ± 1.4
					500 Hz	93.6	0.0 ± 1.4
					1 kHz	93.6	Ref.
					2 kHz	93.5	-0.2 ± 1.6
					4 kHz	92.8	$\textbf{-0.8} \pm 1.6$
					8 kHz	90.7	-3.0 (+2.1 ; -3.1)
					16 kHz	83.7	-8.5 (+3.5 ; -17.0)

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Certificate of Calibration 校正證書

Certificate No. : C216479 證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 17434

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :	94 dB :	63 Hz - 125 Hz	$\pm 0.35 \text{ dB}$
		250 Hz - 500 Hz	$\pm 0.30 \text{ dB}$
		1 kHz	$\pm 0.20 \text{ dB}$
		2 kHz - 4 kHz	$\pm 0.35 \text{ dB}$
		8 kHz	$\pm 0.45 \text{ dB}$
		16 kHz	$\pm 0.70 \text{ dB}$
	104 dB :	1 kHz	$\pm 0.10 \text{ dB}$ (Ref. 94 dB)
	114 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)

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

Note :

Only the original copy or the laboratory's certified true copy is valid.

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

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Sun Creation Engineering Limited Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C214361 證書編號

ITEM TESTED / 送檢項目	(Job No. / 序引編號:IC21-1345)	Date of Receipt / 收件日期:8	3 July 2021								
Description / 儀器名稱 :	Sound Calibrator (EQ082)										
Manufacturer / 製造商 :	Brüel & Kjær										
Model No. / 型號 :	4231										
Serial No. / 編號 :	2713428										
Supplied By / 委託者 :	Action-United Environmental Services and Consulting										
	Unit A, 20/F., Gold King Industrial Building,										
	35-41 Tai Lin Pai Road, Kwai Chung, N.T.										
TEST CONDITIONS / 測詞	TEST CONDITIONS / 測試條件										
Temperature / 溫度 : (23	$(\pm 2)^{\circ}C$	Relative Humidity / 相對濕度 : (50 ± 25)%								
Line Voltage / 電壓 :											

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 24 July 2021

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only. The results do not exceed manufacturer's specification. The results are detailed in the subsequent page(s).

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

 Tested By
 :
 Chence

 測試
 K P Cheuk

 Project Engineer

 Certified By
 :

 K C Lee
 簽發日期

 Engineer

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Sun Creation Engineering Limited Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C214361 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- 2. The results presented are the mean of 3 measurements at each calibration point.
- 3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C213954
CL281	Multifunction Acoustic Calibrator	AV210017
TST150A	Measuring Amplifier	C201309

- 4. Test procedure : MA100N.
- 5. Results :
- 5.1 Sound Level Accuracy

- 2				
	UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
	Nominal Value	(dB)	(dB)	(dB)
	94 dB, 1 kHz	94.0	± 0.2	± 0.2
	114 dB, 1 kHz	114.1		

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	1.000 0	$1 \text{ kHz} \pm 0.1 \%$	± 0.1

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

Note :

Only the original copy or the laboratory's certified true copy is valid.

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

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Appendix F

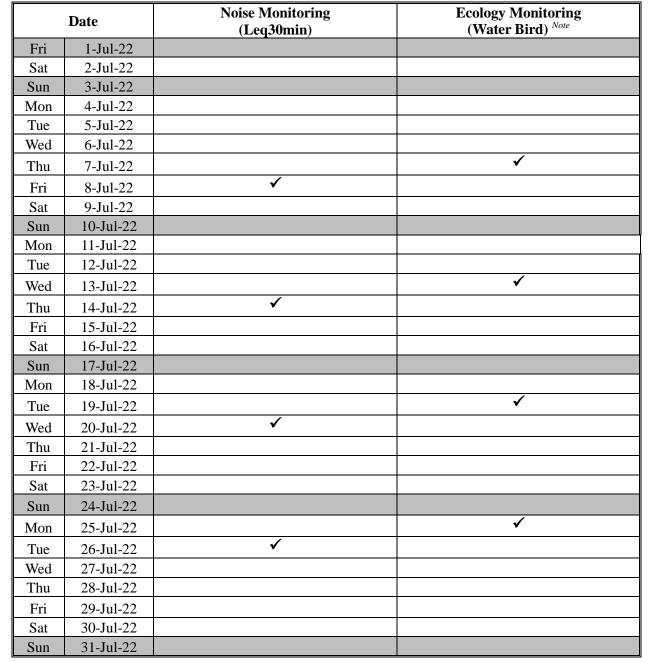
Monitoring Schedule of the Reporting Month and Coming Month

	Date	Noise Monitoring (Leq30min)	Ecology Monitoring (Water Bird)
Wed	1-Jun-22		✓ (High Tide)
Thu	2-Jun-22		
Fri	3-Jun-22		✓ (Low Tide)
Sat	4-Jun-22		
Sun	5-Jun-22		✓ (High Tide)
Mon	6-Jun-22		
Tue	7-Jun-22		
Wed	8-Jun-22		
Thu	9-Jun-22		
Fri	10-Jun-22	✓	
Sat	11-Jun-22		✓ (Low Tide)
Sun	12-Jun-22		
Mon	13-Jun-22		
Tue	14-Jun-22		
Wed	15-Jun-22		
Thu	16-Jun-22	✓	✓ (High Tide)
Fri	17-Jun-22		
Sat	18-Jun-22		
Sun	19-Jun-22		
Mon	20-Jun-22		
Tue	21-Jun-22		
Wed	22-Jun-22	✓	
Thu	23-Jun-22		✓ (Low Tide)
Fri	24-Jun-22		
Sat	25-Jun-22		✓ (High Tide)
Sun	26-Jun-22		
Mon	27-Jun-22	✓	✓ (Low Tide)
Tue	28-Jun-22		
Wed	29-Jun-22		
Thu	30-Jun-22		✓ (High Tide)

The Reporting Monitoring Schedule (June 2022)

✓	Monitoring Day
	Sunday or Public Holiday





The Coming Month Monitoring Schedule (July 2022)

AUES

Note:

Ecology monitoring dates are tentative and are subject to change

✓	Monitoring Day
	Sunday or Public Holiday



Appendix G

Database of Monitoring Result



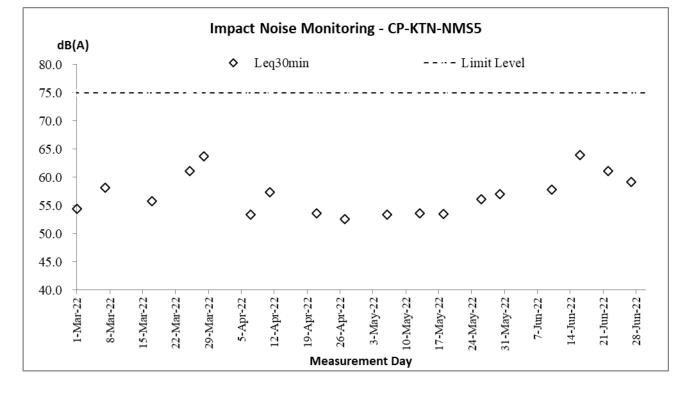
Daytime No	Daytime Noise Measurement Results (dB) at CP-KTN-NMS5																				
	Start 1st Leq (5min)		nin)	2nd	Leq (51	min)	3rd	3rd Leq (5min) 4th		h Leq (5min) 5t		5th	5th Leq (5min)		6th Leq (5min)			Log20min	Corrected		
Date	Start Time	Leq,	L10,	L90,	Leq,	L10,	L90,	Leq,	L10,	L90,	Leq,	L10,	L90,	Leq,	L10,	L90,	Leq,	L10,	L90,	Leq30min, dB(A)	Leq30min
	Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	uD(A)	dB(A)
10-Jun-22	14:35	58.9	62.4	56.3	57.5	61.8	55.7	57.8	62.1	55.9	58.6	63.2	56.8	56.1	61.9	56.2	57.1	62.3	55.7	57.8	60.8
16-Jun-22	10:32	66.2	66.6	65.5	65.8	66.6	65.2	64.5	65.5	63.4	61.4	62.9	59.3	61.4	62.7	59.7	61.1	62.6	59.5	63.9	66.9
22-Jun-22	11:25	62.5	63.5	60.5	55.8	57.0	54.0	55.0	56.0	53.5	56.6	58.0	54.5	59.6	61.5	56.5	65.9	68.5	62.5	61.1	64.1
27-Jun-22	15:02	60.0	60.9	59.1	62.4	64.9	59.9	58.8	60.8	56.6	57.6	58.5	55.9	56.2	56.6	54.2	56.6	58.2	54.6	59.2	62.2



Appendix H

Graphical Plots for Monitoring Result







Appendix I

Monthly Summary Waste Flow Table

Appendix 22

Contract No. : <u>3/WSD/20</u> Contact Name: <u>Reclaimed Water Supply to Sheung Shui and Fanling</u>

		Actual Quanti	ties of Inert C&D	Materials Generate	ed Monthly		Act	ual Quantities of Co	&D Wastes G	enerated Mo	nthly
Month	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)
Jan	0.3031	0	0	0	0.3031	0	0	0	0	0	0.0016
Feb	0.5411	0	0	0	0.5411	0	0	0	0	0	0.0019
Mar	0.8459	0	0	0	0.8459	0	0	0	0	0	0.0014
Apr	3.2205	0	0	0	3.2205	0	0	0	0	0	0.0024
May	4.1278	0	0	0	4.1278	0	0	0	0	0	0.0057
June	4.3313	0	0	0.1613	4.1700	0	0	0	0	0	0.0017
Sub-total	13.3697	0	0	0.1613	13.2084	0	0	0	0	0	0.0147
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	13.3697	0	0	0.1613	13.2084	0	0	0	0	0	0.0147

Monthly Summary Waste Flow Table for _2022___ (year)

	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)	
25.472	5.386	0	0	25.472	0	0	0	0	0	0.3885	

Notes: (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

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

(3) The quantities of C&D material indicated in the half-yearly status report should be in tonnes. If the project offices do not have information on the densities of the material for the time being, they could initially adopt the following conversion factors for reporting purpose: insitu densities of rock and soil to be 2.5 tonnes/m3 and 2.0 tonnes/m3 respectively; and densities of imported rock and soil to be 2.0 tonnes/m3 and 1.8 tonnes/m3 respectively.

(4) Boken concrete and bitumen = 2.4 tonnes/m3

(5) Conversion to 1000m3 for general refuse is weight in 1000kg multiply by 0.002



Appendix J

Implementation Schedule for Environmental Mitigation Measures (ISEMM)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		n Measures (Applicable to ALL Project Components, including DPs and Non-D) Ps)		- -	•	•
	uction Dust		1	•	•	1	1
S3.8	D1	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.7 L/m2 to achieve the respective dust removal efficiencies.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2	The Contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D3	 Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase: Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities or hard cores; When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		 The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; Any skip hoist for material transport should be totally enclosed by impervious sheeting; and Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area 					
Nainali		sheltered on the top and the 3 sides.					
S4.9	Nİ	 struction Phase) Implement the following good site management practices: only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; and material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	Control construction airborne noise	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
S4.9	N2	Install temporary site hoarding (approx. 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
			zone of NSRs through partial screening.				
S4.9	N3	Install movable noise barriers, full enclosure and acoustic mat, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
S4.9	N4	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
S4.9	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
Water G	Quality Impa	nct (Construction Phase)					
S5.7	Ŵ1	 Construction Runoff In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures should be provided and the Storm Water Pollution Control Plan is given below. Storm Water Pollution Control Plan At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the Contractor prior to the commencement of construction. Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications 	Control construction runoff	Contractor	All construction sites	Construction phase	WPCO, EIAO, TM-EIAO

EM&A .og Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Measures 7	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
	 where the influent is pumped. The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the Contractor prior to the commencement of construction. Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. Measures should be taken to minimize the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. All open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, s					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		 during storm events. All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds. 					
S5.7	W2	 Sewage from Workforce Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed Contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measures. 	Handling of site sewage	Contractor	All construction sites	Construction phase	WPCO, EIAO, TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
Waste l	Managemer	nt (Construction Waste)					
S7.6	WM1	 Waste Reduction Measures Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; proper storage and site practices to minimize the potential for damage and contamination of construction materials; plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 	Reduce waste generation	Contractor	All construction sites where practicable	Prior to the commencement of construction	Waste Disposal Ordinance
S7.6	WM2	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM3	 <u>Good Site Practice</u> The following good site practices are recommended throughout the construction activities: nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; provision of sufficient waste disposal points and regular collection for disposal; appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; 	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM4	Storage of Waste The following recommendation should be implemented to minimize the impacts:	Minimize waste from storage impacts	Contractor	All construction	Construction phase	Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		 waste such as soil should be handled and stored well to ensure secure containment; stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; different locations should be designated to stockpile each material to enhance reuse; 			sites		
S7.6	WM5	Collection and Transportation of WasteThe following recommendation should minimize the impacts:• remove waste in timely manner;• employ the trucks with cover or enclosed containers for waste transportation;• obtain relevant waste disposal permits from the appropriate authorities; and• disposal of waste should be done at licensed waste disposal facilities.	Minimize waste from storage impacts	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM6	 Excavated and C&D Material Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public filling areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: maintain temporary stockpiles and reuse excavated fill material for backfilling; carry out on-site sorting; deliver surplus artificial hard materials to Tuen Mun Area 38 recycling plant or its successor for recycling into subsequent useful products; make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; implement a recording system for the amount of waste generated, recycled and disposed of for checking; Standard formwork should be used as far as practicable in order to minimize the arising of C&D waste. The use of more durable formwork (e.g. metal hoarding) or plastic facing should be encouraged in order to enhance the possibility of recycling. The purchasing of construction materials should be carefully planned in order to avoid over ordering and wastage. Wheel wash facilities have to be provided at the site entrance before the trucks leaving the works area. 	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	 Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No. 19/2005
S7.6	WM8	 Chemical Waste If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	 Waste Disposal (Chemical Waste) General) Regulation Code of Practice on the Packaging, Labelling and

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.					Storage of Chemical Waste
S7.6	WM9	 General Waste General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance
S7.6	WM10	 Sewage The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts. 	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM11	Topsoil reuse – Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. This is considered a general measure for good site practice.	Good site practice	Contractor / Project Proponent	Onsite	Construction Phase	 ETWB Technical Circular (Works) No.29/2004
Landsc	ape and Vis	sual (Construction)				1	
S.12.9 MM3	LV5	Open Space Provision - the principles adopted in the RODP planning ensure that public open space systems are incorporated. All requirements for open space areas stipulated in the planning documents for the formulation of the Preliminary Layout Plan should be adhered to.	Reprovision of open space. Enhance visual amenity of the area and improve the overall landscape character	Government Developer / Detailed Design Consultant / Contractor	Onsite as stipulated in the planning documents for the formulation of the Preliminary Layout Plan	Prior to Construction and Construction Phase	Hong Kong Planning Standards and Guidelines (HKPSG) issued by the Planning Department (As at Aug 2011); Sustainable Building Design Guidelines
S.12.9 MM4	LV6	Tree Protection & Preservation – Exiting trees to be retained within the Project Site should be carefully protected during construction. In particular OVTs will be preserved according to ETWB Technical Circular (Works) No. 29/2004. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to	Protect and Preserve Trees	Government Developer / Detailed Design Consultant / Contractor	Onsite as stipulated in the planning documents for the formulation of	Prior to Construction and Construction Phase	ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		undertaking any works adjacent to all retained trees, including trees in Contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.			the Preliminary Layout Plan		
S.12.9 MM5	LV7	Tree Transplantation – Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.	Transplant Trees where suitable for transplantation	Government Developer / Detailed Design Consultant / Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit
S.12.9 MM7	LV9	Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006. Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots. Compensatory planting for shrubs should be considered in suitable locations. Native species such as <i>Melastoma malabathricum, Diospyros vaccinioides,</i> <i>Gardenia jasminoides, Ixora chinensis, Ligustrum sinense, Litsea rotundifolia,</i> <i>Melastoma dodecandrum, Atalantia buxifolia, Rhodomyrtus tomentosa,</i> <i>Rhaphiolepis indica,</i> and <i>Rhododendron simsii</i> are suggested.	Compensate for trees and shrubs lost due to the Project.	Government Developer / Detailed Design Consultant / Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004
S.12.9 MM9	LV11	Vertical Greening – Planting of climbers to grow up vertical surfaces were appropriate (e.g. building edges, piers).	Soften hard surfaces and	Project Proponent /	On appropriate	Prior to Construction,	ETWB TCW No. 11/2004 – Cyber

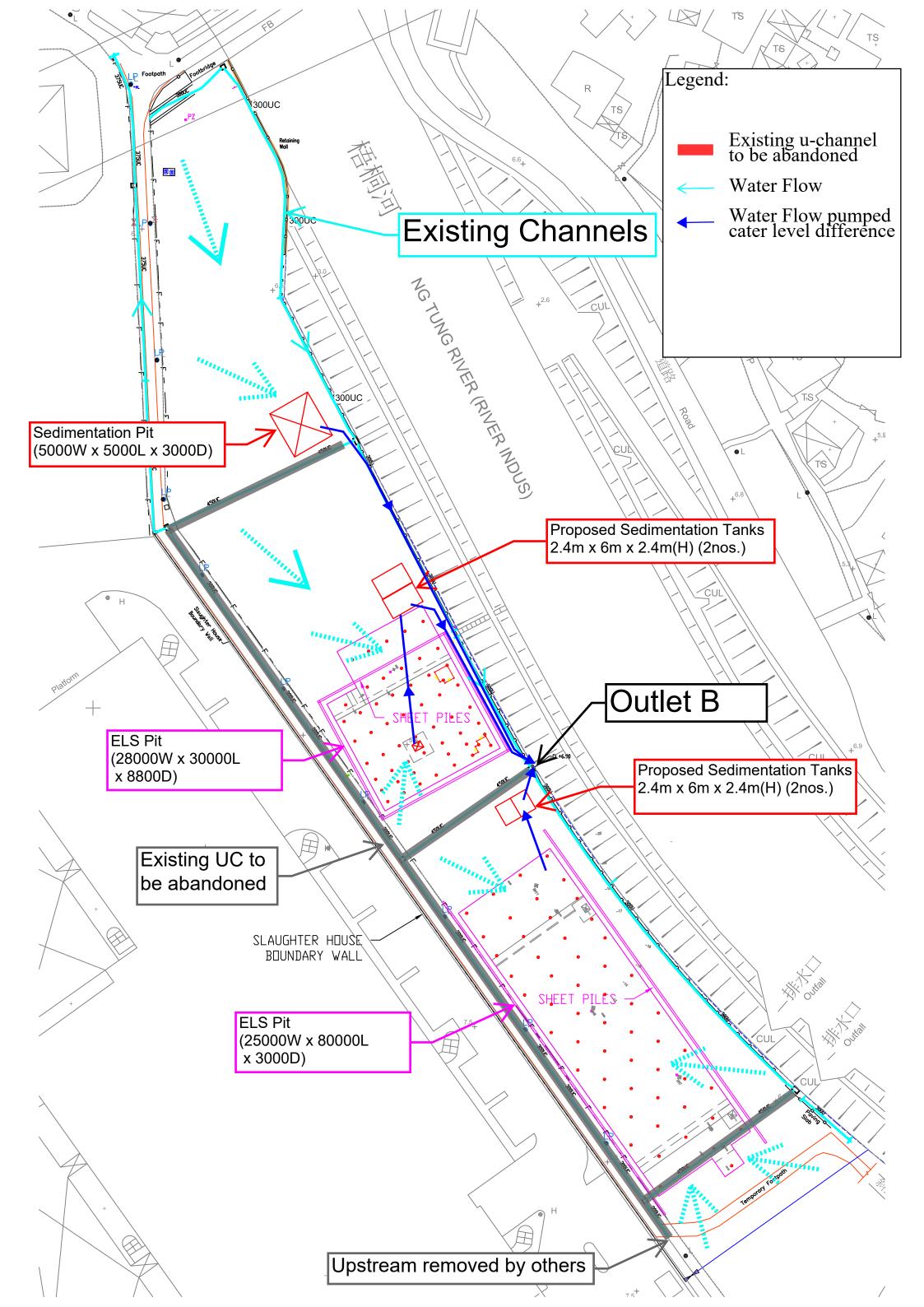
EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
			facilities	Detailed Design Consultant / Contractor / Maintenance Authority	structures	Construction Phase & Maintenance in Operation Phase	Manual for Greening
S.12.9 MM10	LV12	Green Roof – Roof greening where appropriate should be established on proposed buildings as per the guidelines stated. These guidelines provide further details including information regarding structural loading, design, maintenance, etc. considerations as well as providing information on what types of plants might be suitable.	Reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VSRs at high levels. Provide greening.	Project Proponent / Detailed Design Consultant / Contractor / Maintenance Authority	On appropriate buildings	Prior to Construction, Construction Phase & Maintenance in Operation Phase	CIBSE HK Branch, Technical Guidelines for Green Roof Systems in Hong Kong (2011); ArchSD/Urbis Study on Green Roof Application in HK (2007)
S.12.9 MM11	LV13	Screen Planting – Tall screen/buffer trees and shrubs should be planted. This measure may additionally form part of the compensatory planting.	To screen proposed structures such as roads and buildings. Improve compatibility with the surrounding environment and create a pleasant pedestrian environment	Developer / Detailed Design	Along roads, around suitable built structures, or around VSRs to contain their view out to the NDA Maintenance and create a pleasant Contractor structures	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWBTC 3/2006
S12.9 MM14.5	LV20	Screen Hoarding – Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, nonreflective, recessive colours be used. Any works areas near the ecological sensitive areas should erect 2m high dull	To screen undesirable views of the works site.	Contractor	Throughout NDAs	Construction Phase	
		green site boundary fence. Details can refer to the ecological impact assessment (Chapter 13 of the EIA report).					
S12.9	LV21	Light Control – Construction day and night time lighting should be controlled to	To minimize glare	Government /	Throughout	Construction	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
MM14.6		minimize glare impact to adjacent VSRs during the Construction phase. Street and night time lighting shall also be controlled to minimize glare impact to adjacent VSRs during the operation phase.	impact to adjacent VSRs	Developer / Contractor	NDAs	and Operation Phases	
Ecology	(Construc	tion Phase)		•	•	•	
S.13.9	E13	Review design and construction methods for bridges, especially those on the Sheung Yue and tidal Ng Tung Rivers, and adopt measures which minimize impacts on rivers and disturbance and fragmentation impacts on fauna. No construction during ardeid breeding season (1 March to 31 July) along Sheung Yue River north and east of KTN area D1-5 and east of D1-9 and C2-3 and restriction of working hours on new pedestrian bridges over the Sheung Yue River and tidal Ng Tung River to 09.00 to 17.30 during the ardeid breeding season (1 March to 31 July). Provision of alternative foraging habitat along main river channels for large waterbirds.	Minimize impacts on rivers and disturbance and fragmentation impacts on fauna.	Project Proponent / Detailed Design Consultant / Contractor	Along and within the Sheung Yue, Ng Tung and Shek Sheung Rivers	Detailed design and construction phases.	TM-EIAO.
S.13.9	E16	Creation of Green Corridors along the Sheung Yue, Ng Tung and Shek Sheung Rivers, retention and provision of screen plantings where feasible; provision of Open Space areas and development areas along river corridors; Design and erection of 2m high solid dull green site barrier fence between river channel and any active works area along or adjacent to Ng Tung, Sheung Yue and Shek Sheung Rivers. Ng Tung, Sheung Yue and Shek Sheung Rivers screen planting.	Minimize disturbance to waterbirds using Ng Tung, Sheung Yue and Shek Sheung River channels.	Detailed Design Consultant / Contractor	Ng Tung, Sheung Yue and Shek Sheung Rivers	Detailed design and construction phases.	TM-EIAO.
S.13.9	E19	Use opaque, non-transparent, non-reflective noise barriers for all construction sites. Unnecessary lighting should be avoided.	Minimize mortality impacts on birds.	Contractor	All construction sites	Construction phase.	TM-EIAO.



Appendix K

Site Temporary Drainage Plan in the Reporting Period





Appendix L

Waterbirds Survey Report for the Reporting Month



WSD Contract No. 3/WSD/20 - Reclaimed Water Supply to Sheung Shui and Fanling - Provision of EM&A (Ecological) Monitoring

Monthly Report for June 2022 (Issue 1)

> Job Ref.: 21/2063/582 AUES-SWHTSE Date: 11th July 2022

> > www.aechk.hk



WSD Contract No. 3/WSD/20 - Reclaimed Water Supply to Sheung Shui and Fanling - Provision of EM&A (Ecological) Monitoring

Monthly Report for June 2022

(Issue 1)

July 2022

1

	Name	Signature
Prepared by:	Nicholas Tam	and the second s
Reviewed by:	lda Yu	Eda yr
Date:	11 th July 2022	0

Job Ref.: 21/2063/582 AUES-SWHTSE

CONTENTS

1
2
3
4
5
5
•

LIST OF TABLES

Table 1	Ecological Mo	nitoring Stations
---------	---------------	-------------------

- Table 2 Representative Waterbirds
- Table 3Action and Limit Levels and Responses to Evidence of Disturbance to Waterbirds using Ng
Tung, Sheung Yue and Shek Sheung Rivers during Construction Phase
- Table 4Weather Conditions and Tidal Information of Survey Dates in the Reporting Month
- Table 5
 Total Bird Species and Abundance at Point Count Locations in the Reporting Month
- Table 6
 Abundance of Representative Waterbirds at Point Count Locations in the Reporting Month
- Table 7T-test Result for Waterbirds in the Reporting Month
- Table 8Observations during the Ecological Monitoring in the Reporting Month

LIST OF APPENDICES

- Appendix A Recorded Bird Species and their Abundance in the Reporting Month
- Appendix B Total Waterbird Abundance from Point Count
- Appendix C Abundance of Representative Waterbirds from Point Count

LIST OF FIGURES

- Figure 1 Transect and Point Count Locations
- Figure 1a Transect and Point Count Locations (Zoomed In)

1 INTRODUCTION

- 1.1 According to Section 12.3.2.5 of "Updated EM&A Manual for Advance And First Stage Works of Kwu Tung North and Fanling North New Development Areas", monitor of measures to minimise disturbance to waterbirds on Ng Tung, Sheung Tue and Shek Sheung Rivers is required.
- 1.2 aec Ltd. has been appointed by Action-United Environmental Services & Consulting (AUES) to conduct weekly transect bird surveys at high and low tides along Ng Tung River, Sheung Yue River and Shek Sheung River; and identify sources of actual and potential disturbances to birds due to construction activities of WSD Contract No. 3/WSD/20 Reclaimed Water Supply to Sheung Shui and Fanling. As instructed by the Contractor, the commencement date of the survey was in the week of 10th January 2022. This monthly report summarises the monitoring findings in June 2022.

2 MONITORING METHODOLOGY

2.1 The survey methodology references the methodology stated in approved Baseline Monitoring Report (Ecology) (Version 1) (prepared by Cinotech Consultants Limited (2019)) under "Contract No. SPW 08/2019 – Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1". Three transects and seven point count locations were selected within the 500m boundary of Ng Tung, Sheung Yue and Shek Sheung River. These locations are shown in Figure 1 and summarized in Table 1.

Monitoring Stations	Descriptions	Influenced by Tidal Action	
Transect T1			
Transect T2			
Point Count Location P1	Along Ng Tung Divor	No	
Point Count Location P2	Along Ng Tung River	No	
Point Count Location P3			
Point Count Location P4			
Point Count Location P5	At Shek Sheung River	Νο	
	(Low-flow Channel)		
Transect T3	Along Shek Sheung River &	Yes	
Transeet 15	Sheung Yue River	103	
Point Count Location P6	At Shek Sheung River	Yes	
Point Count Location P7	At Intersection between Sheung	Yes	
	Yue and Shek Sheung River	res	

Table 1 Ecological Monitoring Stations

- 2.2 Surveys were conducted on a weekly basis at both high and low tides (it is considered high tide when tidal levels are above 1.5m and low tide when tidal level are below 1.5m at Tsim Bei Tsui Station).
- 2.3 All avifauna species that were seen or heard were identified and quantified along transects and at point count locations. Survey data would be recorded continuously by the surveyor as they walk along the transects, while survey data of each point count location would be collected for 5-minutes after surveyor reaches the designated point count location. During the surveys, the utilisation of Ng Tung River, Sheung Yue River and Shek Shui River and their immediate environs/habitats by waterbirds will be focused. For comparison and data analysis, the transect routes and point count locations of T1, T2, and P1 to P4 were adjusted to the opposite side of Ng Tung River as the original transects were inaccessible due to various construction projects.



- 2.4 Noticeable behaviours such as breeding, nesting, roosting, feeding and presence of recently fledged juveniles were recorded and reported. In the case which such behaviours were observed for species of conservation importance, the Resident Engineer (RE), the Contractor and the Independent Environmental Checker (IEC) would be immediately notified after the survey such that the Contractor could review the current construction programme and minimize disturbances due to construction activities.
- 2.5 Weather conditions, tidal information, time of the survey and other noticeable activities occurring within the vicinity of the survey area were recorded.

3 ANALYTICAL METHODOLOGY

3.1 Total number of waterbirds and six representative waterbird species (listed in **Table 2**) are used as an indicator of the level disturbance to waterbirds at each of the survey location. Species listed as wetland-dependant according to Carey *et al.* (2001) are defined as waterbirds. A significant decline in the abundance of all or representative waterbirds would indicate a high level of disturbance.

Common Name	Species Name	Chinese Name
Chinese Pond Heron	Ardeola bacchus	池鷺
Eastern Cattle Egret	Bubulcus coromandus	牛背鷺
Grey Heron	Ardea cinerea	蒼鷺
Great Egret	Ardea alba	大白鷺
Little Egret	Egretta garzetta	小白鷺
Great Cormorant	Phalacrocorax carbo	普通鸕鷀

Table 2 Representative Waterbirds

3.2 Survey data from each month is compared to the baseline monitoring data. When a decline in the total number of Waterbirds or the number of the representative Waterbird species is recorded the survey data would be compared to the baseline data (from Shek Wu Hui Effluent Polishing Plant Baseline Monitoring Report (Ecology) by Cinotech Consultants Limited, 2019) using a two-sample one-tailed Student's t-test assuming unequal variance to analyse whether the decline is significant.

If the collected data for the reporting month shows a significant difference at the 95% confidence level, the action level will be triggered. If the collected data for the reporting month shows a significant difference at the 99% confidence level, the limit level is triggered and corresponding suggestions would be given to minimize the disturbances according to **Table 3**.

Table 3 Action and Limit Levels and Responses to Evidence of Disturbance to Waterbirds using NgTung, Sheung Yue and Shek Sheung Rivers during Construction Phase

Action Level	Response	Limit Level	Response
Decline in numbers	Investigate cause(s) and	Decline in numbers of all	Investigate cause(s) and
of all waterbird species	if cause(s) identified as	waterbird species	if cause(s) identified as
relative to numbers	related to NDAs project	relative to numbers	related to the NDAs
during Baseline	instigate remedial action	during Baseline	project instigate
Monitoring such that the	to remove or reduce	Monitoring such that the	remedial action.
Action Level response is	source of disturbance.	Limit Level response is	Review and adjust
triggered.		triggered.	project's Long Valley
			Nature Park (LVNP)
			management measures

Monthly Progress Report for June 2022 (Issue 1)

Action Level	tion Level Response Limit Level		Response		
			to improve conditions		
			for affected species.		
Decline in numbers of	Investigate cause(s) and	Decline in numbers of	Investigate cause(s) and		
any one Waterbird	if cause(s) identified as	any one Waterbird	if cause(s) identified as		
species occurring in	related to NDAs project	species occurring in	related to the NDAs		
significant numbers*	instigate remedial action	significant numbers*	project instigate		
during Baseline	to remove or reduce	during Baseline	remedial action.		
Monitoring such that the	source of disturbance.	Monitoring such that the	Review and adjust		
Action Level response is		Limit Level response is	project's LVNP		
triggered.		triggered.	management measures		
			to improve conditions		
			for affected species.		

Note: Whether numbers are significant depend on species and season after collection and evaluation of baseline survey data.

3.3 In order to increase the sample size and reduce the random error on each survey day, survey data would be collectively analysed on a monthly basis. The collective data of each month is also compared to the baseline data of the respective month and season instead of the entire data set, to account for the seasonal variation in the abundance of waterbirds. In this study, the Winter season is defined as October to March, while the Summer season is defined as April to September.

4 RESULTS

4.1 The weather conditions and tide levels on the survey dates are listed in the table below.

High Tide			Low Tide				
Date	Time	Tide (m)	Weather	Date	Time	Tide (m)	Weather
1-Jun-22	9:15	2.5	Sunny	3-Jun-22	16:00	1.47	Cloudy
5-Jun-22	15:00	2.2	Sunny	11-Jun-22	15:00	1	Rainy
16-Jun-22	14:00	1.7	Cloudy	12-Jun-22	13:30	1.1	Cloudy
25-Jun-22	11:00	1.65	Sunny	23-Jun-22	11:00	1.23	Sunny
30-Jun-22	14:00	1.75	Rainy	27-Jun-22	14:00	1.03	Cloudy

Table 4 Weather Conditions and Tidal Information of Survey Dates in the Reporting Month

4.2 Abundance and diversity of total bird species and key species are summarized in **Tables 5** and **6** respectively. Detailed list of avifauna recorded is provided in **Appendix A**.

Table 5 Total Bird Species and Abundance at Point Count Locations in the Reporting Month

Category	Number of Species	Abundance
All Avifauna	28	811
Waterbirds	9	147

Table 6 Abundance of Representative Waterbirds at Point Count Locations in the Reporting Month

Common Name	Species Name Chinese Name		Abundance
Chinese Pond Heron	nd Heron Ardeola bacchus 池鷺		38
Eastern Cattle Egret	Bubulcus coromandus	牛背鷺	4
Grey Heron	Ardea cinerea	蒼鷺	7
Great Egret	Ardea alba	大白鷺	19
Little Egret	Egretta garzetta	小白鷺	69



Monthly Progress Report for June 2022 (Issue 1)

Common Name	Species Name	Chinese Name	Abundance
Great Cormorant	Phalacrocorax carbo	普通鸕鷀	0

5 ANALYSIS

5.1 The result of Student's t-test for all waterbirds and representative waterbirds are compiled in **Table 7** respectively. Further details are provided in **Appendices B** and **C**.

			Monthly					Seasonal		
Category	T-value	df	p	Action Level	Limit Level	T-value	df	р	Action Level	Limit Level
All Waterbirds	-3.883	11	0.001	*	*	-3.833	7	0.003	*	*
Chinese Pond Heron	-5.612	9	0.000	*	*	-4.269	6	0.003	*	*
Eastern Cattle Egret	-2.597	11	0.012	*		-2.629	31	0.007	*	*
Grey Heron			No decline	5				No decline	2	
Great Egret			No decline	5				No decline	2	
Little Egret	-2.942	7	0.011	*		-2.656	5	0.023	*	
Great Cormorant			No decline	<u>è</u>				No decline	2	

Table 7 T-test Result for Waterbirds in the Reporting Month

* = level triggered

- 5.2 The decline in the number of waterbirds, Chinese Pond Heron, Eastern Cattle Egret have triggered the Limit Level for the seasonal comparison, while decline in number of Little Egrets have triggered the Action Level in both monthly and seasonal comparison.
- 5.3 As stated in the report of previous months, 42 Chinese Pond Herons and 64 Little Egrets have been recorded from the surveyed transects, showing that a considerable number of Chinese Pond Herons and Little Egrets are still active within the survey area, and are simply excluded from the analysis. Although only 4 Eastern Cattle Egrets were recorded from surveyed transects, a disturbance that only causes Eastern Cattle Egrets to avoid the study area is unlikely. Thus the drastic drop in numbers specifically for Eastern Cattle Egrets should be attributed to external factors such as population dynamics.
- 5.4 Additionally, as suggested in previous reporting months, the change in habitats of Long Valley Nature Park (e.g. maintenance of shallow water in the reprofiled agricultural land or low-lying areas) attracting more birds to be active within LVNP instead of the Study Area. This hypothesis is supported by the accounts of the surveyor, who observed a number of ardeids in flight above LVNP, which are excluded from both the point count and transect counts due to extent of the Study Area. In addition, the tidal influence of the Rivers may restrict the availability of foraging and roosting sites for the waterbirds. This may further encourage the waterbirds utilising the more attractive habitats in the nearby LVNP.
- 5.5 Given that the anthropogenic activities recorded were similar to the previous month, and no large instances of disturbance caused by the construction works of the project were recorded by the surveyor, it is suggested that the decline in numbers of waterbird and representative species are not related to the construction works.
- 5.6 Monitoring work will be continued next month to evaluate any construction impact on waterbirds. The construction site should continue keeping the best site practice in noise control to minimize disturbance caused to waterbirds.



6 OBSERVATIONS

- 6.1 Waterbird behavior observed during ecological monitoring is listed below:
 - Flying
 - Resting
 - Foraging
- 6.2 The anthropogenic activities observed during ecological monitoring is listed in **Table 8**

Table 8 Observations during the Ecological Monitoring in the Reporting Month

Location	Observations	
T1 (PC1, PC2)	Fishing, remote boating	
T2 (PC3, PC4)	Fishing	
T3 (PC6, PC7)	Fishing	

7 **REFERENCES**

Carey, G.J., Chalmers, M.L., Diskin, D.A., Kennerley, P.R., Leader, P.J., Leven, M.R., Lewthwaite, R.W., Melville, D.S., Turnbull, M., and Young, L. 2001. The Avifauna of Hong Kong. Hong Kong Bird Watching Society, Hong Kong.

Cinotech Consultants Limited. 2019. Contract No. SPW 08/2019 Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1 Baseline Monitoring Report (Ecology) (Version 1). Accessed from <u>https://shekwuhui.cinotech.hk/?page_id=24</u> in Jan 2022.



Appendix A Recorded Bird Species and their Abundance in the Reporting Month

Common Name	Chinese Name	Scientific Name	Waterbird	Point Count Abundance	Transect Abundance	
Chinese Pond Heron	池鷺	Ardeola bacchus	Y	38	+++++	
Eastern Cattle Egret	牛背鷺	Bubulcus coromandus	Y	4	+	
Grey Heron	蒼鷺	Ardea cinerea	Y	7	+	
Great Egret	大白鷺	Ardea alba	Y	19	++	
Little Egret	小白鷺	Egretta garzetta	Y	69	+++++	
Black Kite	黑鳶	Milvus migrans	Ν	1	+	
White-breasted Waterhen	白胸苦惡鳥	Amaurornis phoenicurus	Y	2	+	
Common Sandpiper	磯鷸	Actitis hypoleucos	Y		+	
Spotted Dove	珠頸斑鳩	Spilopelia chinensis	Ν	67	+++++	
Greater Coucal	褐翅鴉鵑	Centropus sinensis	Ν		+	
Asian Koel	噪鵑	Eudynamys scolopaceus	Ν	24	+++	
White-throated Kingfisher	白胸翡翠	Halcyon smyrnensis	Y	5	+	
Common Kingfisher	普通翠鳥	Alcedo atthis	Y	2	+	
Pied Kingfisher	斑魚狗	Ceryle rudis	Y	1	+	
Long-tailed Shrike	棕背伯勞	Lanius schach	N		+	
Black Drongo	黑卷尾	Dicrurus macrocercus	Ν		+	
Red-billed Blue Magpie	紅嘴藍鵲	Urocissa erythroryncha	Ν		+	
Oriental Magpie	喜鵲	Pica serica	Ν	5	+	
Collared Crow	白頸鴉	Corvus torquatus	Y		+	
Cinereous Tit	蒼背山雀	Parus cinereus	Ν	4	+++	
Red-whiskered Bulbul	紅耳鵯	Pycnonotus jocosus	Ν	44	++++	
Chinese Bulbul	白頭鵯	Pycnonotus sinensis	Ν	18	+++	
Barn Swallow	家燕	Hirundo rustica	Ν	33	+++	
Yellow-bellied Prinia	黃腹鷦鶯	Prinia flaviventris	Ν	16	+++	
Plain Prinia	純色鷦鶯	Prinia inornata	Ν	1	+	
Common Tailorbird	長尾縫葉鶯	Orthotomus sutorius	Ν	13	++	
Masked Laughingthrush	黑臉噪鶥	Pterorhinus perspicillatus	Ν	20	+++++	
Swinhoe's white-eye	暗綠繡眼鳥	Zosterops simplex	Ν	10	++++	
Crested Myna	八哥	Acridotheres cristatellus	Ν	301	+++++	
Black-collared Starling	黑領椋鳥	Gracupica nigricollis	Ν	52	+++++	
White-shouldered Starling	灰背椋鳥	Sturnia sinensis	Ν		+	
Oriental Magpie Robin	鵲鴝	Copsychus saularis	N	8	++	
Eurasian Tree Sparrow	樹麻雀	Passer montanus	N	30	++	
Scaly-Breasted Munia	斑文鳥	Lonchura punctulata	N	3	+	
White Wagtail	白鶺鴒	Motacilla alba	Ν	14	++	
	1	Total Point Count Abundance	1	811		
		Total Waterbirds		147	1	

For transect abundance, +: 1-10, ++: 11-20, +++: 21-30, ++++: 31-40, +++++: >40



Survey Information				Number of Waterbirds		
Week	Date	Time	Tide Level	Individuals Recorded	Total	
1	1-Jun-22	9:15	High	9	24	
T	3-Jun-22	16:00	Low	15	24	
2	5-Jun-22	15:00	High	13	12	
2	11-Jun-22	15:00	Low	29	42	
3	12-Jun-22	13:30	Low	17	22	
3	16-Jun-22	14:00	High	16	33	
4	23-Jun-22	11:00	Low	19	23	
4	25-Jun-22	11:00	High	4	23	
5	27-Jun-22	14:00	Low	21	25	
5	30-Jun-22	14:00	High	4	25	
				Survey Average	29.4	
				June Average	50.33	
				Summer Average	45.34	

Representative Species		Recorded Abundance (Jun 2022)					Baseline		
Common Name	Species Name	Week 1	Week 2	Week 3	Week 4	Week 5	Average	June Average	Summer Average
Chinese Pond Heron	Ardeola bacchus	2	11	12	7	6	7.6	20.33	16.18
Eastern Cattle Egret	Bubulcus coromandus	2	0	0	2	0	0.8	4	3.32
Grey Heron	Ardea cinerea	3	1	1	1	1	1.4	0	0.55
Great Egret	Ardea alba	5	5	5	1	3	3.8	2.89	2.61
Little Egret	Egretta garzetta	10	23	13	10	13	13.8	22	20.53
Great Cormorant	Phalacrocorax carbo	0	0	0	0	0	0	0	0

Appendix C Abundance of Representative Waterbirds from Point Count



Appendix D Survey Photos

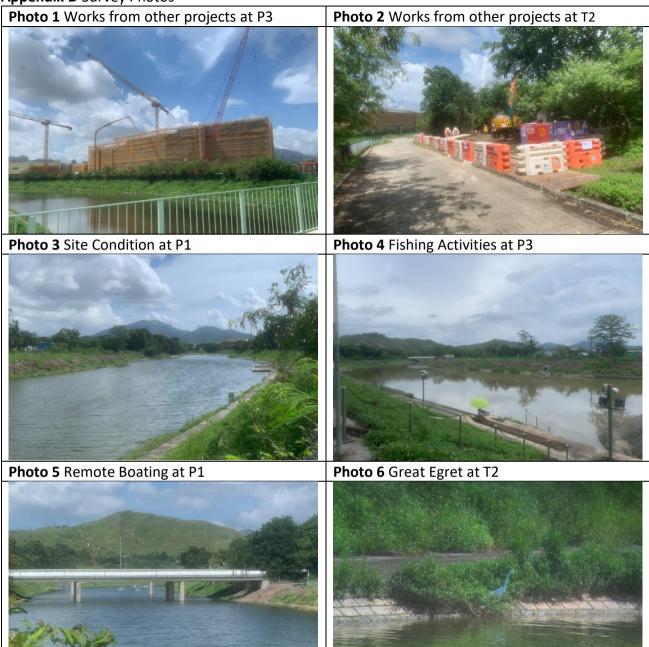
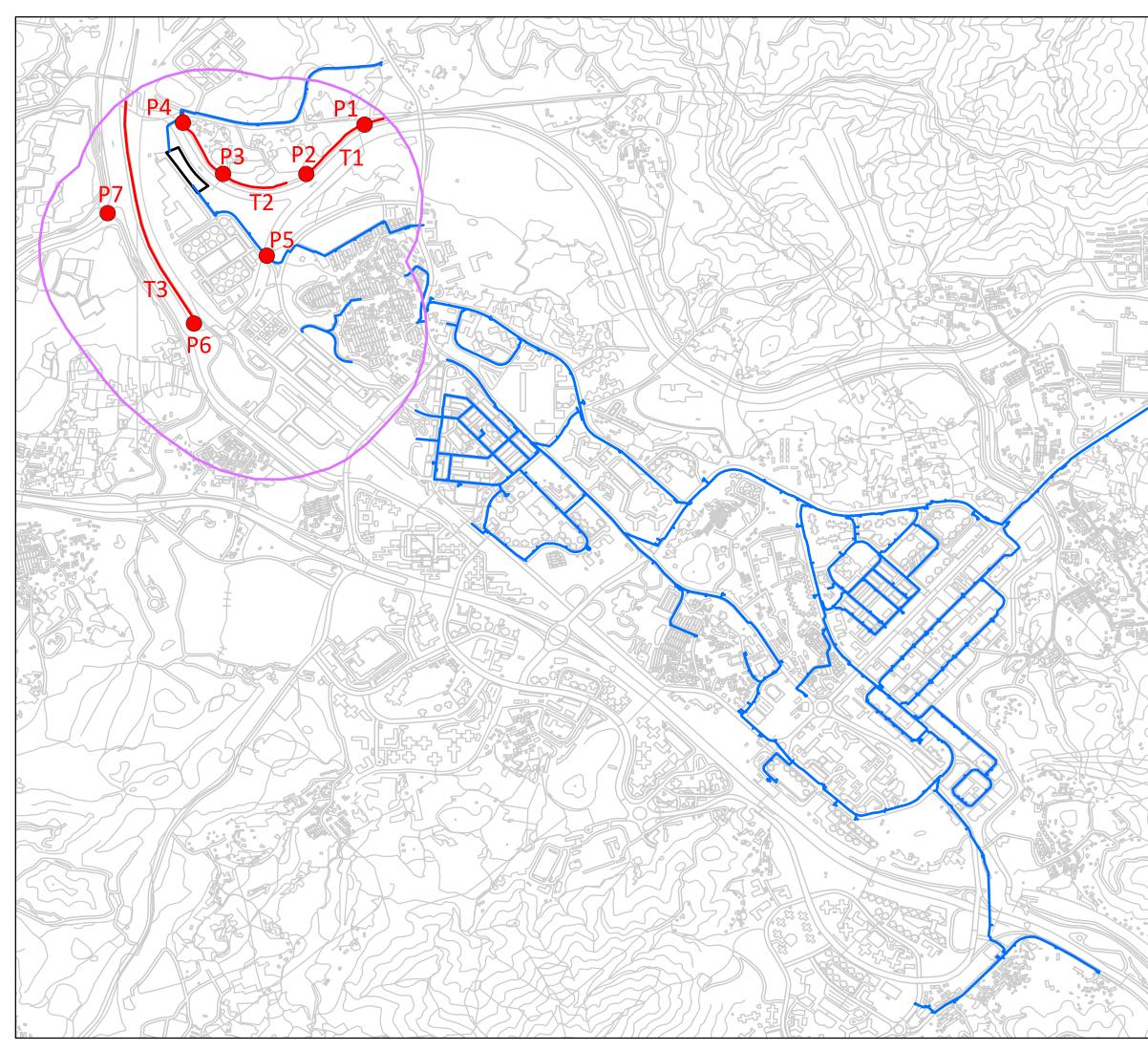


Figure 1

Transect and Point Count Location



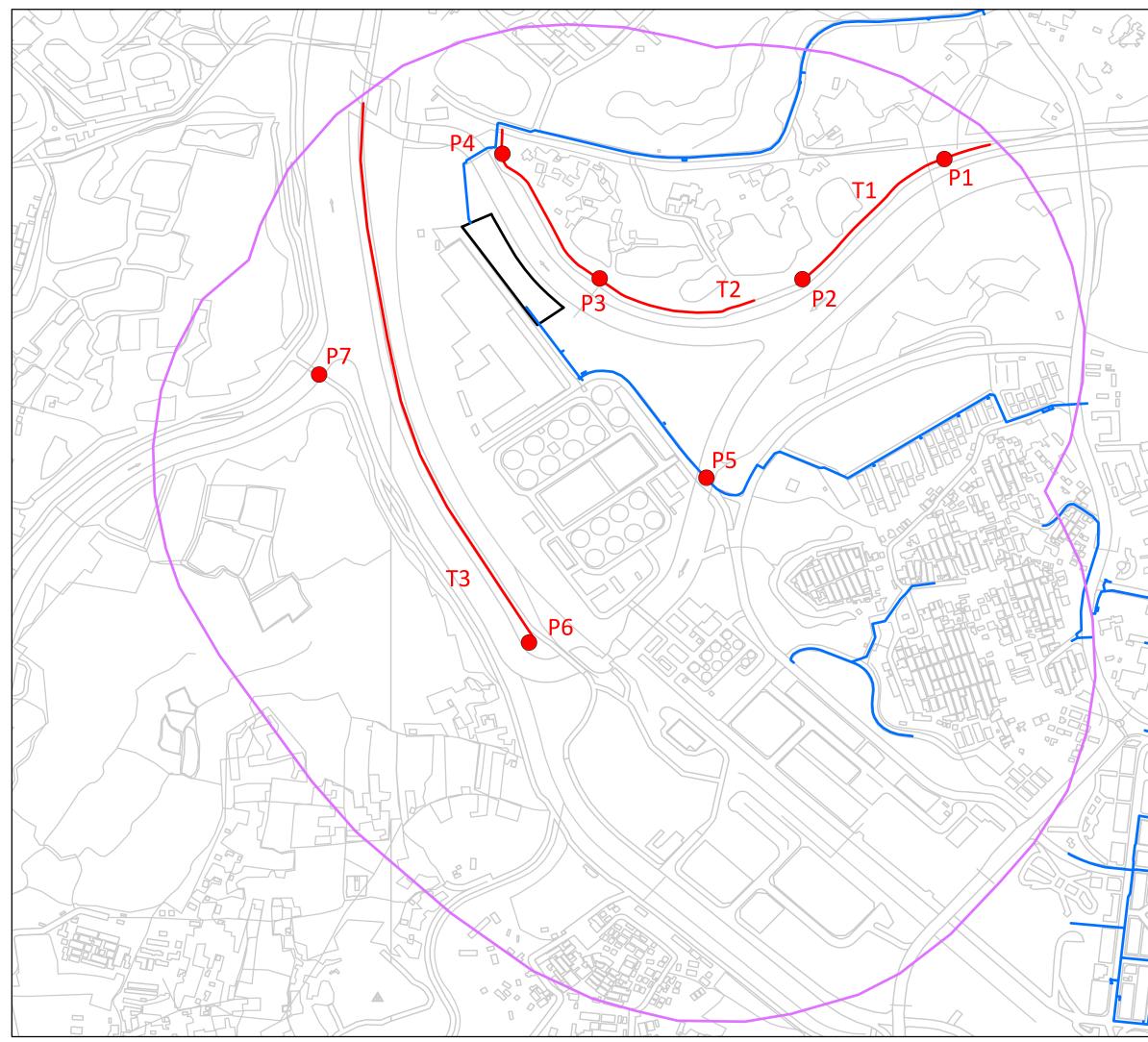


6 53			d Shek Wu	Hui Wate	r Reclai	mation
		Plant	rvey Boun	darv		
				l Water Ma	ains	
	_	Walk Tra				
7 2 1 4 2 5			unt Locatio	ons		
XX						
T (
The sta						
PERS						
THE						
° KER						
NHA						_
		ecolog biodive	y prsity	\searrow	ae	
		landsca		\frown		
JINE	Project	Titler				_
	Project	nue.				
TYKKU /	Rec			No. 3/WSD to Sheung S		Fanling -
Zor X (4	neci			Ecological)		
- VY YA						
	Figure	Fitle:				
		Trans	sect and Po	int Count Lo	ocations	
	Drawn	by:	NT	Scale:	1:14,50)0 on A3
HANK &	Checke		NT	Date:	5 July	
	Approv		IY			Devicit
	Figure	Number:	Fig	ure 1		Revision: 2

Figure 1a

Transect and Point Count Location (Zoomed In)





	Proposed Shek Wu Plant	Hui Water Reclamation
\forall	500m Survey Bound	darv
	Proposed Retained	
	Walk Transect	
	Point Count Locatio	anc.
		2112
\bigcirc		
20		
1		
IN F		
11-LAR		
	1	
245		
	ecology	
	biodiversity	Xaec
30	landscape	
	Project Title:	
		No. 3/WSD/20 - o Sheung Shui and Fanling -
		cological) Monitoring
	1	
VXX	Figure Title:	
V VER	Transect and Point Cou	nt Locations (zoomed in)
	Drawn by: NT	Scale: 1:6,000 on A3
	Checked By: NT Approved by: IY	Date: 5 July 2022
		Revision:
	Figu	ire 1a