JOB NO.: TCS01216/21

WSD Contract No.: 3/WSD/20 -

Reclaimed Water Supply to Sheung Shui and Fanling

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT (NO.12) – NOVEMBER 2022

PREPARED FOR

WATER SUPPLIES DEPARTMENT

Quality Index

Date	Reference No.	Prepared By	Approved By
9 December 2022	TCS01216/21/600/R0056v1	Martin Li Environmental Consultant	TW Tam Environmental Team Leader

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1	9 December 2022	First Submission

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Date: 14th December 2022

Project Manager
Water Supplies Department
Immigration Tower, 7 Gloucester Road,
Wan Chai, Hong Kong
Attn: Mr. Tim Wong

Dear Sir,

Agreement No. CE67/2017(WS)
Reclaimed Water Supply to Sheung Shi and Fanling – Investigation, Design and Construction
Independent Environmental Checker (IEC) Services for
Shek Wu Hui Water Reclamation Plant under Contract No. 3/WSD/20

Monthly EM&A Monitoring Report for November 2022

We refer to the monthly EM&A Report for November 2022 for WSD Contract No.: 3/WSD/20 – Reclaimed Water Supply to Sheung Shui and Fanling certified by the Environmental Team Leader on 9th December 2022. Please note we have no adverse comments on the captioned submission. The captioned submission is hereby verified in accordance with the requirement stipulated in Condition 3.4 of Environmental Permit No. FEP-01/470/2013.

Should you have any query, please feel free to contact the undersigned at 6113 2368.

Yours Sincerely,

Vega Wong
Independent Environmental Checker
c.c.
- ET Leader –- AUES (Attn: Mr. T.W. Tam) [by Email: twtam@fordbusiness.com]
- Resident Engineer – Binnies Hong Kong Limited (Attn: Mr. Chester Chan) [by Email: chancw@binnies.com]

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 **12th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1** to **30 November 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.

Table ES-1 Environmental monitoring activities in the Reporting Period

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	**4**

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

Environmental Aspect	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Construction Noise	$L_{eq(30min)}$ 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-3 Environmental Complaint Summaries in the Reporting Month

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 November 2022	0	0	NA

ES.09 In addition, no complaint 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

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 November 2022	0	0	NA

Table ES-5 Environmental Prosecution Summaries in the Reporting Month

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 November 2022	0	0	NA

REPORTING CHANGE

ES.11 No report change in the reporting period.

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 ***3, 10, 17*** and ***24 November 2022***. No non-compliance was noted during the site inspection.

ES.13 No site visit was undertaken by EPD and AFCD within the Reporting Period. IEC inspection was conducted on 30 November 2022.

FUTURE KEY ISSUES

ES.14 Rebar fixing and formwork erection will be the major construction work in the coming month. Noise mitigation measures such as using soft face hammer for hammering work and erect barrier for wood/steel bar cutting machines were recommended to reduce noise impact.

ES.15 In addition, concreting work for reinforced concrete structure of ReWPS and HCF would also be conducted in the coming month. The Contractor should pay attention to potential water quality impact from concreting works and implement measure to collect spilt cement/concrete washings during concreting works.

ES.16 As the coming month will be dry season, the Contractor was general reminded to paid attention to air quality mitigation measures such as regularly water at dry haul road and cover any stockpile on site when not in use to reduce dust generation.

ES.17 Details of the future issues in the coming month are described in Section 9.4.

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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 (ReWPS), 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 **12th** monthly EM&A report to presenting the monitoring results and inspection findings from ***1*** to ***30 November 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***.
- Construction of reinforced concrete structure of ReWPS and HCF
- Rebar fixing work at ReWPS and HCF
- Formwork erection work at ReWPS and HCF
- Scaffolding work at ReWPS and HCF
- Excavation for extension of working area at ReWPS (2 Excavator)

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***.

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

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

Item	Description	Licence/Permit Status		
		Ref. no.	Effective Date	Expiry Date
4	Water Pollution Control Ordinance – Discharge Licence	Discharge Licence No.: WT00039707-2021	17 Nov 2021	30 Nov 2026
5	Construction Noise Permit	CNP No. GW-RN0880-22	27 Sept 2022	26 Jan 2023

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

Monitoring Location	Action Level	Limit Level in dB(A)
	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 the 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	Rion NC – 73

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

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***.

Table 3-8-1 Monitoring of Measures to Minimize Disturbance to Waterbirds on the Ng Tung, Sheung Yue and Shek Sheung 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 enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to construction activities throughout 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.

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***.

Table 3-9-1 Ecological Monitoring Stations

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

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

Noise

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.

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

Event	Action			
	ET	**IEC**	**ER**	**Contractor**
Action Level Exceedance	1. Notify the IEC, ER and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the monitoring data submitted by the ET; 2. Review the construction methods and proposed remedial measures by the Contractor, and advise the ET and ER if the proposed remedial measures would be sufficient; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify the Contractor; 3. Require the Contractor to propose remedial measures for the analyzed noise problem; 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to the ER and IEC and copy to the ET; 2. Implement noise mitigation proposals.
Limit Level Exceedance	1. Identify sources. 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase the monitoring frequency; 5. Carry out analysis of the Contractor's working procedures with the ER and Contractor to determine possible mitigations to be implemented; 6. Inform IEC, ER, EPD and Contractor the causes and	1. Discuss amongst the ER, ET and Contractor on the potential remedial actions; 2. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analyzed noise problems; 4. Ensure remedial measures are properly implemented; 5. If exceedance continues,	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial action to the ER and IEC and copy to the ET within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit

Event	Action			
	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

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

(*) W*aterbird 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))
11-Nov-22	15:30	62
16-Nov-22	9:20	61
23-Nov-22	11:20	58
29-Nov-22	9:33	60
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***.

Table 5-1-1 Representative Waterbirds

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

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 total bird species and 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 at Point Count Locations in the Reporting Month

Category	Number of Species	Abundance
All Avifauna	43	677
Waterbirds	16	284

Table 5-2-2 Abundance of Representative Waterbirds at Point Count Locations in the Reporting Month

Common Name	Species Name	Chinese Name	Abundance
Chinese Pond Heron	Ardeola bacchus	池鷺	26
Eastern Cattle Egret	Bubulcus coromandus	牛背鷺	59
Grey Heron	Ardea cinerea	蒼鷺	35
Great Egret	Ardea alba	大白鷺	11
Little Egret	Egretta garzetta	小白鷺	31
Great Cormorant	Phalacrocorax carbo	普通鸕鷀	81

5.2.3 The result was compared with the baseline data and decline in all waterbirds were recorded. 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 Similar to the account in the report of previous months, in addition to the birds recorded form the point count, a considerable number of the six representative birds from the results from the transect count were still present within the survey area, and have been simply excluded from the analysis. This is especially true for Grey Herons, Great Egrets and Little Egrets, all three species have significantly large numbers recorded within the survey transects instead of point count locations.

5.2.5 As suggested in previous reporting months, the change in habitats of Long Valley Nature Park (LVNP) (e.g. maintenance of shallow-water habitats in the reprofiled agricultural lands and low-lying areas) make it more attractive wetland habitats compared to the study area and may have caused waterbirds to deprioritize activities within the study area.

5.2.6 In addition, it is also suggested by the surveyors that the tidal influence of the Rivers may restrict the availability of foraging and roosting sites for the waterbirds as some segments of the transect (including point count locations) are still entirely flood during surveys with tide as low as 1 meter which makes difficulties for waterbird species to forage on. This may further encourage the waterbirds utilizing the more attractive habitats in the nearby LVNP.

5.2.7 Given that the anthropogenic activities recorded were similar to the previous month and no large instances of disturbance (only use of crane and scaffolding works) caused by construction works of the project were recorded by the surveyor, it is suggested the decline in numbers of Little Egrets are not related to the construction works. No action and limit level exceedance was therefore considered triggered in the Reporting Month.

5.2.8 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)	1.1067	-
Reused in this Contract (Inert) (in '000 m^3)	0	-
Reused in other Contracts/ Projects (Inert) (in '000 m^3)	0	-
Disposal as Public Fill (Inert) (in '000 m^3)	1.1067	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)	0.0206	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 ***3, 10, 17*** and ***24 November 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***.

Table 7-2-1 Site Observations

Date	Findings / Deficiencies	Follow-Up Status
3 November 2022	• Free-standing chemical containers should be placed inside drip tray. (Near ReWPS)	Chemical containers were removed from site.
10 November 2022	• The Contractor was advised to dispose construction waste regularly within site area.	Construction waste was disposed regularly.
17 November 2022	• No adverse environmental issue was observed during site inspection.	NA
27 November 2022	• Debris near the wood cutting machine should be cleaned properly. (Near HCF)	Debris near the wood cutting machine was removed.

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

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 November 2022	0	0	NA

Table 8-1-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 November 2022	0	0	NA

Table 8-1-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 November 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***.

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

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 Noise	• Keep all vehicles/plants in good condition to minimize noise impact; • Shut down the plants when not in used; • Provided quiet powered mechanical equipment to use onsite; • Avoided using multiple vehicles at the same time as far as practicable
Water Quality	• All the surface runoff are collected to sedimentation pit and tanks for 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. • Standby sedimentation tanks were provided on site to ensure sufficient sedimentation capacity. • Complied with the requirement under the discharge license. • Avoid spilt concrete during concreting works • Haul road was hard paved to reduce muddy runoff during rainy days.
Waste and Chemical Management	• Disposal of C&D wastes to any designated public filling facility and/or landfill followed a trip ticket system; • Debris and refuse generated on-site collected regularly; • Oils and fuels were stored in designated areas; • Kept the site tidy and clean.

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:

- Construction of reinforced concrete structure of ReWPS and HCF
- Rebar fixing work at ReWPS and HCF
- Formwork erection work at ReWPS and HCF
- Scaffolding work at ReWPS and HCF

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;
- Ensure all surface runoff are diverted to sedimentation pit and tanks properly;
- Sufficient stock of standby pump should be available on site for pumping the runoff water/wastewater to the sedimentation tank.
- Collect spilt cement/concrete washings during concreting works to avoid water quality impact
- Cover the dusty stockpile on site to reduce potential fugitive dust quality impact;
- Spraying water at dry haul road more frequently to reduce dust generation;
- All the vehicles should be properly washed prior leaving the site;
- Erect barrier for wood/steel bar cutting machine;
- Use Quiet powered mechanical equipment (QPME) whenever applicable;
- Minimize the number of plants used at the same time to reduce cumulative noise impact;
- Properly management of general refuse and chemical waste generated on site.

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

10.1.1 This is **12th** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1** to **30 November 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 decline in waterbirds were recorded in the Reporting Period, the cause of 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 ***3, 10, 17*** and ***24 November 2022***. The mitigation measures implemented was considered satisfactory. No non-compliance observed during the site inspection.

10.2 RECOMMENDATIONS

10.2.1 Rebar fixing and formwork erection will also be the major construction work in the coming month. Noise mitigation measures such as using soft face hammer for hammering work and erect barrier for wood/steel bar cutting machines were recommended to reduce noise impact.

10.2.2 In addition, concreting work for reinforced concrete structure of ReWPS and HCF would also be conducted in the coming month. The Contractor should pay attention to potential water quality impact from concreting works and implement measure to collect spilt cement/concrete washings during concreting works.

10.2.3 As the coming month will be dry season, the Contractor was general reminded to paid attention to air quality mitigation measures such as regularly water at dry haul road and cover any stockpile on site when not in use to reduce dust generation.

10.2.4 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

N

830100 E

841700 N

841600 N

SURGE VESSEL

UNDERGROUND FLOWMETER CHAMBER

ANCILLARY ROOMS

MOTOR HALL

RECLAIMED WATER REFILLING STATION WITH UNDERGEOUND WATER TANK

ANCILLARY ROOMS

BUFFER TANK

HYPO-CHLORINATION CONTACT TANK

INLET CHAMBER

SHEUNG SHUI SLAUGHTER HOUSE

TO BE CONNECTED WITH PROPOSED PEOMENADE TO BE CONSTRUCTED BY OTHERS

NG TUNG RIVER (RIVER INDUS)

Ramp

Platform

Outfall

CUL

FP

TS

Road

Sheung Shui Slaughter House

PLAN
SCALE 1 : 400

N

830300 E

SHEUNG YUE RIVER 石上河

FU TEI AU ROAD 導管

CHUK WAN STREET

污水處理廠
Sewage Treatment Works

SHEK SHEUNG

SITE PLAN
SCALE 1 : 5000

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFED.
2. THE BASE PLAN IS EXTRACTED FROM SURVEY SHEET NOS. 2-SE ADN 3-SW.
3. TOP SLABS OF STRUCTURES ARE NOT SHOWN FOR CLARITY.

LEGEND:

- SITE BOUNDARY OF SWHWRP
- FENCING
- EVA
- PLANTER GREENING AREA
- GRASSCRETE
- RIVERSIDE PROMENADE
- GROUND LEVEL
- TREE (INDICATIVE)
- F/P — FOOTPATH
- MANHOLE/CABLE PIT
- ACCESS GATE

Revision	Date	Description		Initial
	Designed	Checked	Drawn	Checked
Initial	CWC	GC	SZ	GC
Date	02/21	02/21	02/21	02/21

Approved

Contract No.
3 / WSD / 20

Contract Title
RECLAIMED WATER SUPPLY TO SHEUNG SHUI AND FANLING

Drawing Title
GENERAL ARRANGEMENT OF SWHWRP - GENERAL PLAN

Drawing No.
401582/B&V/WRP/GA/101

Revision
-

Scale
AS SHOWN

水務署 Water Supplies Department

BINNIES HONG KONG LIMITED
賓尼斯工程顧問有限公司

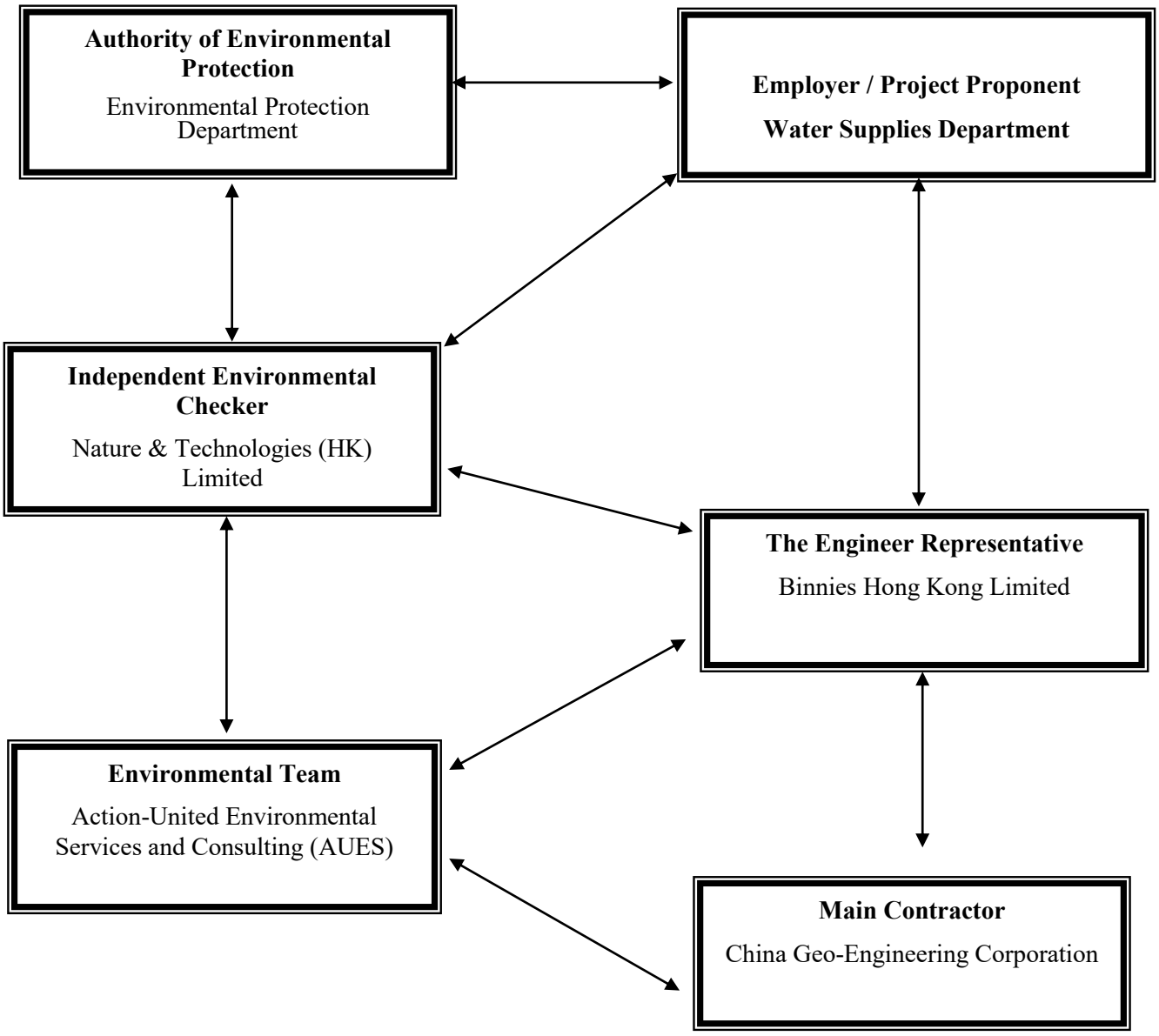
Plot Date: 3/15/2021 11:20:19 AM

File Name: BIM 360://401582 - Sheung Shui & Fanling Reclaimed Water IDC/BV-401582-WRP-SI-N.rvt

Appendix B

Project Organization

Project Organization Chart



Contact Details of Key Personnel for the Project

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	Independent Environmental Checker	Vega Wong	2877 3122	vegawong@nt.com.hk
CGC	Site Agent	Wong Fai	9785 2545	3wsd20@gmail.com
CGC	Environmental Officer	Walter Man	6711 9155	cgc.walterman@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

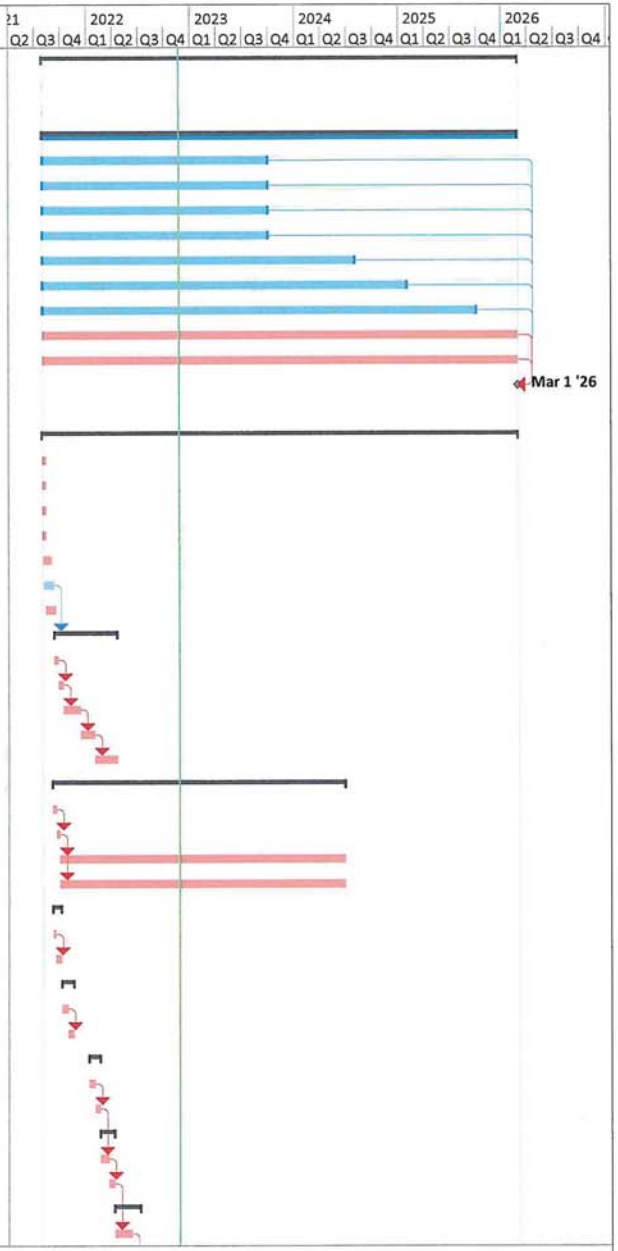
Legend:

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

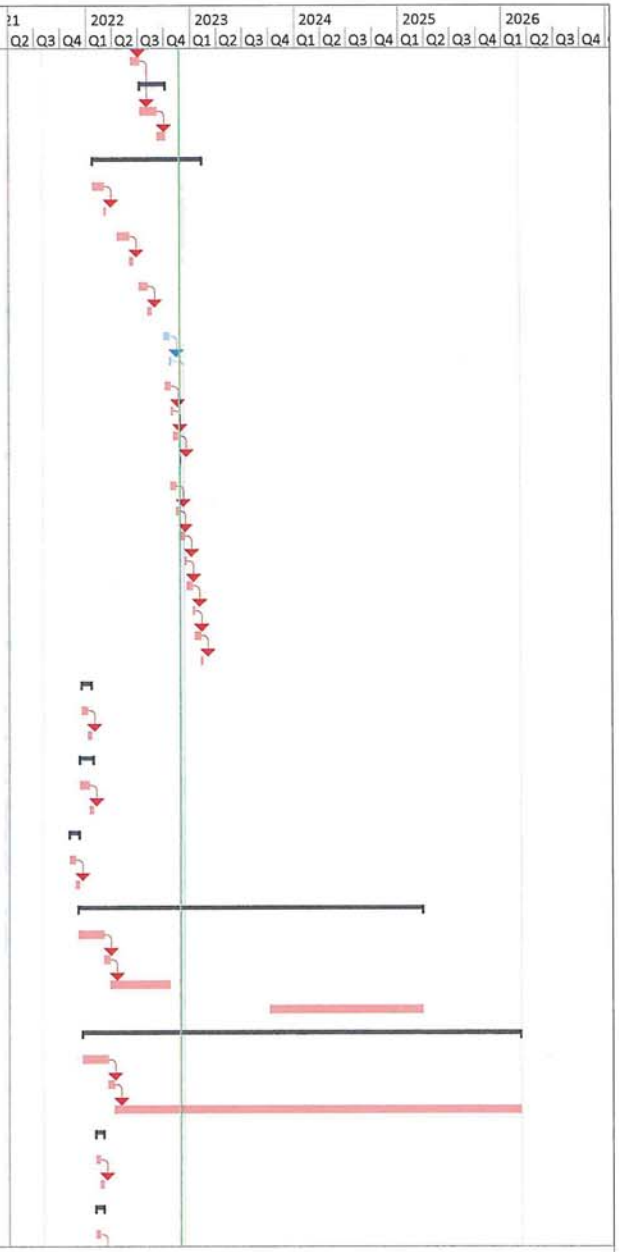
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1	**Key Dates**	**1676 days**	**Jul 30 '21**	**Mar 1 '26**			
2	Contract Date	1 day	Jul 30 '21	Jul 30 '21			
3	Starting Date	1 day	Jul 30 '21	Jul 30 '21			
4	**Contract Period**	**1675 days**	**Jul 31 '21**	**Mar 1 '26**			
5	Section 1 - Shek Wu Hui Water Reclamation Plant (SWHWRP)	791 days	Jul 31 '21	Sep 29 '23			14FF
6	Section 2 - Landscaping works of SWHWRP	791 days	Jul 31 '21	Sep 29 '23			14FF
7	Section 3 - Modification of Table Hill Reclaimed Water Service Reservoir	791 days	Jul 31 '21	Sep 29 '23			14FF
8	Section 4 - Mainlaying works in part 3 of the Site	791 days	Jul 31 '21	Sep 29 '23			14FF
9	Section 5 - Mainlaying works in part 4 of the Site	1095 days	Jul 31 '21	Jul 29 '24			14FF
10	Section 6 - Mainlaying works in part 5 of the Site	1279 days	Jul 31 '21	Jan 29 '25			14FF
11	Section 7 - Mainlaying works in part 6 of the Site	1522 days	Jul 31 '21	Sep 29 '25			14FF
12	Section 8 - Mainlaying works in part 7 of the Site & remaining WM works	1675 days	Jul 31 '21	Mar 1 '26			14FF
13	Section 9 - Conversion works of reclaimed water	1675 days	Jul 31 '21	Mar 1 '26			14FF
14	**Contract Completion date**	**0 days**	**Mar 1 '26**	**Mar 1 '26**		**5FF,6FF,7FF,8FF,9FF,1**	
15							
16	**Preliminary & General**	**1676 days**	**Jul 30 '21**	**Mar 1 '26**			
17	Submission of Draft Safety Plan	14 days	Jul 30 '21	Aug 12 '21			
18	Submission of Draft Environmental Management Plan	14 days	Jul 30 '21	Aug 12 '21			
19	Submission of Sub-contractor Management Plan	14 days	Jul 30 '21	Aug 12 '21			
20	Notification & request for UU record from utility undertakers	14 days	Jul 30 '21	Aug 12 '21			
21	Submission and acceptance of selection procedure for supplier	29 days	Aug 3 '21	Aug 31 '21			
22	Submission and acceptance of selection procedure for subcontractor	35 days	Aug 3 '21	Sep 6 '21			24
23	Agreement on preliminary office layout	35 days	Aug 12 '21	Sep 15 '21			
24	Provision of Project Manager's Accommodation	222 days	Sep 10 '21	Apr 19 '22		22	
25	Submission and acceptance of subletting package	14 days	Sep 10 '21	Sep 23 '21			26
26	Selection of Subcontractor	18 days	Sep 24 '21	Oct 11 '21		25	27
27	Submission and acceptance of design and material	60 days	Oct 12 '21	Dec 10 '21		26	28
28	Manufacture and delivery of MiC office	50 days	Dec 11 '21	Jan 29 '22		27	29
29	Erection of Project Manager's Accommodation	80 days	Jan 30 '22	Apr 19 '22		28	
30	**Selection of Traffic Consultant**	**1027 days**	**Sep 3 '21**	**Jun 25 '24**			
31	Submission and acceptance of subletting package	14 days	Sep 3 '21	Sep 16 '21			32
32	Selection of traffic consultant	13 days	Sep 17 '21	Sep 29 '21		31	33,34
33	XP application for different Sections	1000 days	Sep 30 '21	Jun 25 '24		32	
34	TTA application and Attend TMLG Meetings for different Sections	1000 days	Sep 30 '21	Jun 25 '24		32	
35	**Selection of Concrete Supplier**	**29 days**	**Sep 6 '21**	**Oct 4 '21**			
36	Submission and acceptance of subletting package	9 days	Sep 6 '21	Sep 14 '21			37
37	Selection of concrete supplier	20 days	Sep 15 '21	Oct 4 '21		36	
38	**Selection of Subcontractor for Excavation and ELS Works at SWHWRP**	**42 days**	**Oct 7 '21**	**Nov 17 '21**			
39	Submission and acceptance of subletting package	21 days	Oct 7 '21	Oct 27 '21			40
40	Selection of subcontractor	21 days	Oct 28 '21	Nov 17 '21		39	
41	**Selection of Subcontractor for Structural Works**	**39 days**	**Jan 10 '22**	**Feb 17 '22**			
42	Submission and acceptance of subletting package	21 days	Jan 10 '22	Jan 30 '22			43
43	Selection of subcontractor	18 days	Jan 31 '22	Feb 17 '22		42	45
44	**Selection of Subcontractor for Roadworks**	**51 days**	**Feb 18 '22**	**Apr 9 '22**			
45	Submission and acceptance of subletting package	30 days	Feb 18 '22	Mar 19 '22		43	46
46	Selection of subcontractor	21 days	Mar 20 '22	Apr 9 '22		45	48
47	**Selection of Subcontractor for Architectural Works**	**90 days**	**Apr 10 '22**	**Jul 8 '22**			
48	Submission and acceptance of subletting package	60 days	Apr 10 '22	Jun 8 '22		46	49



Project: 3WSD20 Programme
Date: Nov 22 '22

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

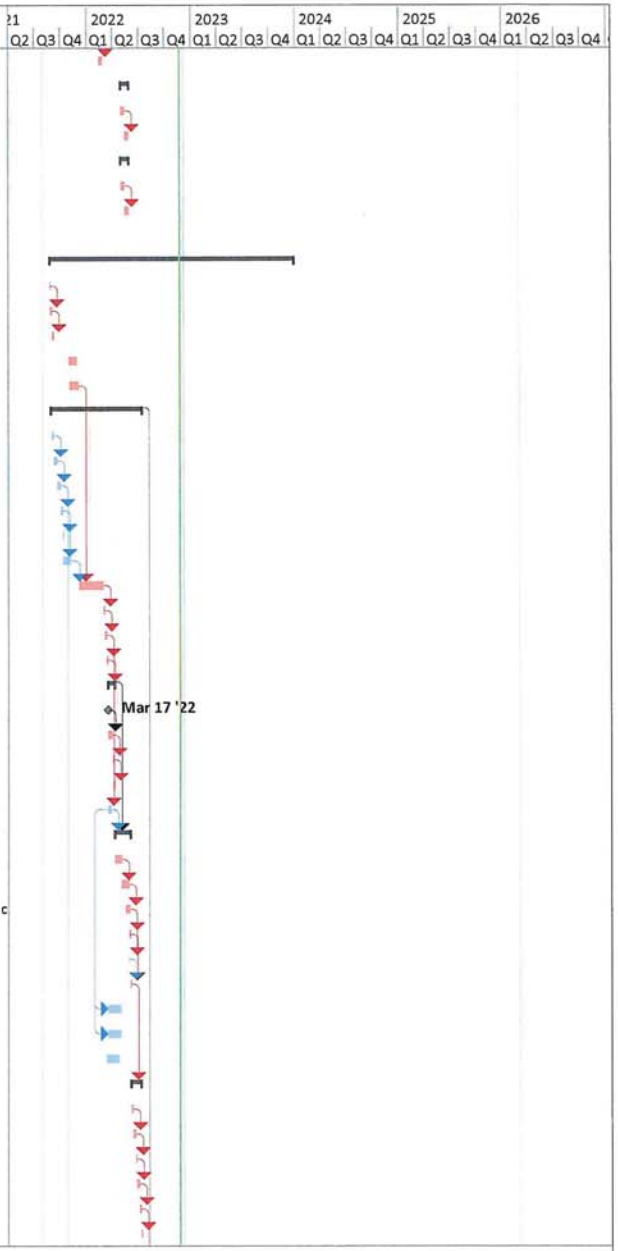
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
49	Selection of subcontractor	30 days	Jun 9 '22	Jul 8 '22		48	51
50	**Selection of Subcontractor for Landscape Works**	**90 days**	**Jul 9 '22**	**Oct 6 '22**			
51	Submission and acceptance of subletting package	60 days	Jul 9 '22	Sep 6 '22		49	52
52	Selection of subcontractor	30 days	Sep 7 '22	Oct 6 '22		51	
53	**Selection of Subcontractor for Mainlaying Works**	**382 days**	**Jan 24 '22**	**Feb 9 '23**			
54	Submission and acceptance of subletting package - open trench (for Section 4)	40 days	Jan 24 '22	Mar 4 '22			55
55	Selection of subcontractor - open trench (for Section 4)	7 days	Mar 5 '22	Mar 11 '22		54	
56	Submission and acceptance of subletting package - open trench (for Section 5)	43 days	Apr 20 '22	Jun 1 '22			57
57	Selection of subcontractor - open trench (for Section 5)	14 days	Jun 2 '22	Jun 15 '22		56	
58	Submission and acceptance of subletting package - open trench (SC-028)	30 days	Jul 6 '22	Aug 4 '22			59
59	Selection of subcontractor - open trench (SC-028)	14 days	Aug 5 '22	Aug 18 '22		58	
60	Submission and acceptance of subletting package - open trench (Shek Wu Hui) (SC-035)	21 days	Sep 26 '22	Oct 16 '22			61
61	Selection of subcontractor - open trench (Shek Wu Hui) (SC-035)	7 days	Oct 17 '22	Oct 23 '22		60	1167
62	Submission and acceptance of subletting package - open trench (Remaining) (SC-036)	21 days	Oct 3 '22	Oct 23 '22			63
63	Selection of subcontractor - open trench (Remaining) (SC-036)	7 days	Oct 24 '22	Oct 30 '22		62	64
64	Submission and acceptance of subletting package - road marking	21 days	Oct 31 '22	Nov 20 '22		63	65
65	Selection of subcontractor - road marking	7 days	Nov 21 '22	Nov 27 '22		64	
66	Submission and acceptance of subletting package - trenchless (SC-029)	21 days	Oct 21 '22	Nov 10 '22			67
67	Selection of subcontractor - trenchless (SC-029)	7 days	Nov 11 '22	Nov 17 '22		66	68
68	Submission and acceptance of subletting package - trenchless (SC-050)	21 days	Nov 18 '22	Dec 8 '22		67	69
69	Selection of subcontractor - trenchless (SC-050)	7 days	Dec 9 '22	Dec 15 '22		68	70
70	Submission and acceptance of subletting package - trenchless (SC-051)	21 days	Dec 16 '22	Jan 5 '23		69	71
71	Selection of subcontractor - trenchless (SC-051)	7 days	Jan 6 '23	Jan 12 '23		70	72
72	Submission and acceptance of subletting package - trenchless (SC-052)	21 days	Jan 13 '23	Feb 2 '23		71	73
73	Selection of subcontractor - trenchless (SC-052)	7 days	Feb 3 '23	Feb 9 '23		72	
74	**Selection of Supplier for Survey Equipment**	**35 days**	**Dec 13 '21**	**Jan 16 '22**			
75	Submission and acceptance of subletting package	21 days	Dec 13 '21	Jan 2 '22			76
76	Selection of subcontractor	14 days	Jan 3 '22	Jan 16 '22		75	
77	**Selection of Supplier for Computer Facilities**	**47 days**	**Dec 7 '21**	**Jan 22 '22**			
78	Submission and acceptance of subletting package	33 days	Dec 7 '21	Jan 8 '22			79
79	Selection of subcontractor	14 days	Jan 9 '22	Jan 22 '22		78	
80	**Selection of Environment Team**	**35 days**	**Nov 1 '21**	**Dec 5 '21**			
81	Submission and acceptance of subletting package	21 days	Nov 1 '21	Nov 21 '21			82
82	Selection of Environment Team	14 days	Nov 22 '21	Dec 5 '21		81	
83	**BEAM Plus**	**1208 days**	**Dec 1 '21**	**Mar 22 '25**			
84	Submission and acceptance of subletting package	90 days	Dec 1 '21	Feb 28 '22			85
85	Selection of BEAM plus consultant	21 days	Mar 1 '22	Mar 21 '22		84	86
86	BEAM Plus PA submission	210 days	Mar 22 '22	Oct 17 '22		85	
87	BEAM Plus FA submission	540 days	Sep 30 '23	Mar 22 '25			
88	**BIM**	**1537 days**	**Dec 16 '21**	**Mar 1 '26**			
89	Submission and acceptance of subletting package	90 days	Dec 16 '21	Mar 15 '22			90
90	Selection of BIM consultant	21 days	Mar 16 '22	Apr 5 '22		89	91
91	Execution of BIM (rebar BIM, CSD and CBWD coordination and production)	1426 days	Apr 6 '22	Mar 1 '26		90	
92	**Selection of Contractor's Designer for foundation works**	**28 days**	**Feb 1 '22**	**Feb 28 '22**			
93	Submission and acceptance of subletting package	14 days	Feb 1 '22	Feb 14 '22			94
94	Selection of Contractor's Designer	14 days	Feb 15 '22	Feb 28 '22		93	
95	**Selection of Independent Checking Engineer (ICE) for Permanent Works (foundation)**	**28 days**	**Feb 1 '22**	**Feb 28 '22**			
96	Submission and acceptance of subletting package	14 days	Feb 1 '22	Feb 14 '22			97



Project: 3WSD20 Programme
Date: Nov 22 '22

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
97	Selection of ICE for Permanent Works	14 days	Feb 15 '22	Feb 28 '22		96	
98	**Selection of Contractor's Designer for Civil & Structural Works**	**28 days**	**May 3 '22**	**May 30 '22**			
99	Submission and acceptance of subletting package	14 days	May 3 '22	May 16 '22			100
100	Selection of Contractor's Designer	14 days	May 17 '22	May 30 '22		99	
101	**Selection of Independent Checking Engineer (ICE) for Permanent Works (Civil & Structural)**	**28 days**	**May 3 '22**	**May 30 '22**			
102	Submission and acceptance of subletting package	14 days	May 3 '22	May 16 '22			103
103	Selection of ICE for Permanent Works	14 days	May 17 '22	May 30 '22		102	
104							
105	**Section 1 & 2 - Construction of SWHWRP and Landscaping Works**	**855 days**	**Aug 27 '21**	**Dec 29 '23**			
106	Access Date (part 1 of the Site)	1 day	Aug 27 '21	Aug 27 '21			107
107	Site clearance	7 days	Aug 28 '21	Sep 3 '21		106	108
108	Initial survey	7 days	Sep 4 '21	Sep 10 '21		107	
109	Installation of monitoring instruments and take initial readings	28 days	Nov 1 '21	Nov 28 '21			
110	Environmental baseline montioring by ET	33 days	Nov 4 '21	Dec 6 '21			118
111	**Foundation Works - ReWPS**	**318 days**	**Aug 31 '21**	**Jul 14 '22**			**182**
112	Submission and approval of subletting package for pre-drilling works	7 days	Aug 31 '21	Sep 6 '21			113
113	Selection of pre-drilling subcontractor	13 days	Sep 7 '21	Sep 19 '21		112	114
114	Pre-drilling works (15 nos.)	12 days	Sep 20 '21	Oct 1 '21		113	147,115
115	Pre-drill log report and Point Load Test	6 days	Oct 2 '21	Oct 7 '21		114	117,116
116	CE-020 _ Inclement Weather in October 2021	3 days	Oct 8 '21	Oct 10 '21		115	
117	Design review for foundation works	28 days	Oct 8 '21	Nov 4 '21		115	118
118	Piling works (54 nos. of pre-bored H piles) - Total length = 2387m	85 days	Dec 7 '21	Mar 1 '22		110,117	119
119	CE-040 _ Inclement Weather in February 2022	3.5 days	Mar 2 '22	Mar 5 '22		118	120
120	Installation of King Post	7 days	Mar 5 '22	Mar 12 '22		119	127FS+3 days,121
121	CE-041 _ Inclement Weather in March 2022	5 days	Mar 12 '22	Mar 17 '22		120	122
122	**Testing of pre-bored H-pile - tension load test**	**23.5 days**	**Mar 17 '22**	**Apr 9 '22**		**121**	**128**
123	Site ready for setting up of tension load test	0 days	Mar 17 '22	Mar 17 '22			124
124	(CE-044) EoT due to Shortage of Acetylene Gas Supply	15 days	Mar 17 '22	Apr 1 '22		123	125
125	Setting up of load test	4.5 days	Apr 1 '22	Apr 5 '22		124	126
126	Tension Load Test	4 days	Apr 6 '22	Apr 9 '22		125	
127	Sheet piling works for ELS - 300 pcs (length 12m)	10 days	Mar 15 '22	Mar 25 '22		120FS+3 days	128,135SS,136SS
128	**Excavation works (6900m3) and ELS installation**	**54.5 days**	**Apr 10 '22**	**Jun 3 '22**		**122,127**	
129	(CE-044) EoT due to Shortage of Acetylene Gas Supply	24 days	Apr 10 '22	May 3 '22			130
130	ELS installation and excavation	25 days	May 4 '22	May 28 '22		129	131FS-11 days
131	Welding of pile head capping plate	15 days	May 18 '22	Jun 1 '22		130FS-11 days	132FS-3 days,133FS-6 c
132	CE-052 _ Inclement Weather in May 2022 (under assessment)	4.5 days	May 30 '22	Jun 3 '22		131FS-3 days	134
133	Laying of blinding layer (1st pour)	1 day	May 27 '22	May 27 '22		131FS-6 days	134
134	Laying of blinding layer (2nd pour)	3 days	Jun 3 '22	Jun 6 '22		132,133	138
135	Submission and acceptance of method statement for pile cap construction	45 days	Mar 15 '22	Apr 29 '22		127SS	
136	Submission and acceptance of water proofing material	45 days	Mar 15 '22	Apr 29 '22		127SS	
137	Concrete mix submission, plant trial and acceptance of Grade 50 concrete	45 days	Mar 9 '22	Apr 22 '22			
138	**Construction of pile cap**	**34.5 days**	**Jun 6 '22**	**Jul 10 '22**		**134**	
139	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	Jun 6 '22	Jun 12 '22			140
140	Installation of water proofing system and testing	10 days	Jun 13 '22	Jun 22 '22		139	141
141	CE-025 _ GI works of Contract ND/2021/01	2 days	Jun 23 '22	Jun 24 '22		140	142
142	Rebar fixing	10 days	Jun 25 '22	Jul 4 '22		141	143
143	Concreting of pile cap (996 m3)	6 days	Jul 5 '22	Jul 10 '22		142	144,145
144	Backfilling to pile cap top level	4 days	Jul 11 '22	Jul 14 '22		143	



Project: 3WSD20 Programme
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Task
Split
Milestone
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Project Summary
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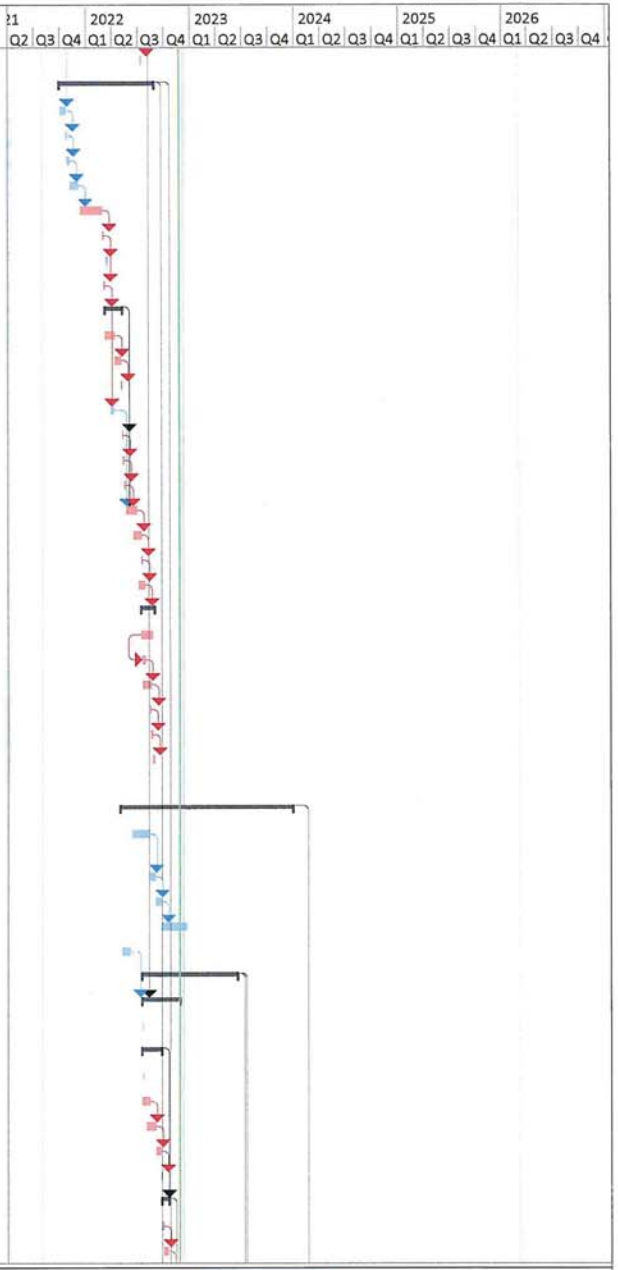
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
145	Rebar fixing (horizontal bars at starter bars from pile cap)	3 days	Jul 12 '22	Jul 14 '22		143	
146	**Foundation Works - HCF**	**331 days**	**Oct 2 '21**	**Aug 28 '22**			**297FS+60 days,328**
147	Pre-drilling works (25 nos.)	20 days	Oct 2 '21	Oct 21 '21		114	148
148	CE-020 _ Inclement Weather in October 2021	3 days	Oct 22 '21	Oct 24 '21		147	149
149	Pre-drill log report and Point Load Test	11 days	Oct 25 '21	Nov 4 '21		148	150
150	Design review for foundation works	30 days	Nov 5 '21	Dec 4 '21		149	151
151	Piling works - HCF (56 nos. of pre-bored H piles) - Total length = 1871m	77 days	Dec 14 '21	Feb 28 '22		150	152
152	CE-040 _ Inclement Weather in February 2022	3.5 days	Mar 1 '22	Mar 4 '22		151	154,153FS+6 days
153	Testing of pre-bored H-pile - proof drilling	7 days	Mar 10 '22	Mar 17 '22		152FS+6 days	
154	CE-041 _ Inclement Weather in March 2022	5 days	Mar 4 '22	Mar 9 '22		152	155,159FS+17 days
155	**Testing of pre-bored H-pile - compression load test**	**60.5 days**	**Mar 9 '22**	**May 8 '22**		**154**	**163,160**
156	(CE-044) EoT due to Shortage of Acetylene Gas Supply	35 days	Mar 9 '22	Apr 13 '22			157
157	Construction of mini-piles and setting up of load test	21 days	Apr 13 '22	May 4 '22		156	158
158	Compression load test	4.5 days	May 4 '22	May 8 '22		157	
159	Sheet piling works for ELS - 425 pcs (length 6m)	13 days	Mar 26 '22	Apr 8 '22	3	154FS+17 days	163
160	CE-025 _ GI works of Contract ND/2021/01	2 days	May 9 '22	May 10 '22		155	161
161	CE-052 _ Inclement Weather in May 2022 (under assessment)	4.5 days	May 11 '22	May 15 '22		160	162
162	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	May 15 '22	May 21 '22		161	163
163	Excavation works (7600m3)	37 days	May 22 '22	Jun 27 '22		155,159,162	164FS-12 days
164	Welding of pile head capping plate	28 days	Jun 16 '22	Jul 13 '22		163FS-12 days	165
165	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	Jul 14 '22	Jul 17 '22		164	166FS-14 days
166	Laying of blinding layer	22 days	Jul 4 '22	Jul 25 '22		165FS-14 days	167FS-14 days
167	**Construction of pile cap**	**48 days**	**Jul 12 '22**	**Aug 28 '22**		**166FS-14 days**	
168	Formwork erection	40 days	Jul 12 '22	Aug 20 '22			169SS+4 days
169	Installation of water proofing system and testing	12 days	Jul 16 '22	Jul 27 '22		168SS+4 days	170FS-10 days
170	Rebar fixing	31 days	Jul 18 '22	Aug 17 '22		169FS-10 days	171FS-7 days
171	Concreting of pile cap - 1600m3	5 days	Aug 11 '22	Aug 15 '22		170FS-7 days	172
172	Concreting of pile cap - 400m3	6 days	Aug 16 '22	Aug 21 '22		171	173
173	Concreting of pile cap - 1000m3	7 days	Aug 22 '22	Aug 28 '22		172	
174							
175	**Construction of SWHWRP**	**605 days**	**May 1 '22**	**Dec 26 '23**			**539FF**
176	Submission and acceptance of DfMA proposal for bathroom unit, valves chamber, water refilling station	60 days	Jun 9 '22	Aug 7 '22			177
177	Selection of Supplier for DfMA	21 days	Aug 8 '22	Aug 28 '22		176	178
178	Manufacture of DfMA Precast Segments	20 days	Aug 29 '22	Sep 17 '22		177	179
179	Installation of DfMA segments	90 days	Sep 18 '22	Dec 16 '22		178	
180	Submission and acceptance of method statement for construction of ReWPS and HCF	30 days	May 3 '22	Jun 1 '22			182
181	**Construction of RC structure of ReWPS**	**334 days**	**Jul 15 '22**	**Jun 13 '23**			**398,293**
182	**Construction of basement (below ground) - Grid Line 1-4**	**133 days**	**Jul 15 '22**	**Nov 24 '22**		**111,180**	
183	Removal of ELS strut and wailing (2nd layer)	2 days	Jul 15 '22	Jul 16 '22			
184	Construction of external walls, W6, W8-W15, beams and slabs (+0mPD to +3.6mPD)	69 days	Jul 15 '22	Sep 21 '22			190
185	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	Jul 15 '22	Jul 18 '22			
186	Scaffolding and Falsework erection	28 days	Jul 15 '22	Aug 11 '22			187FS-13 days
187	Formwork erection	34 days	Jul 30 '22	Sep 1 '22		186FS-13 days	188
188	Rebar fixing (up to +7.2mPD) and formwork erection (up to +3.6mPD)	18 days	Sep 2 '22	Sep 19 '22		187	189
189	Concreting	2 days	Sep 20 '22	Sep 21 '22		188	
190	Construction of external walls, W6, W8-W15 (+3.6mPD to +5.7mPD)	25 days	Sep 22 '22	Oct 16 '22		184	194
191	C.J. preparation at +3.6mPD	7 days	Sep 22 '22	Sep 28 '22			192
192	Formwork erection	15 days	Sep 29 '22	Oct 13 '22		191	193



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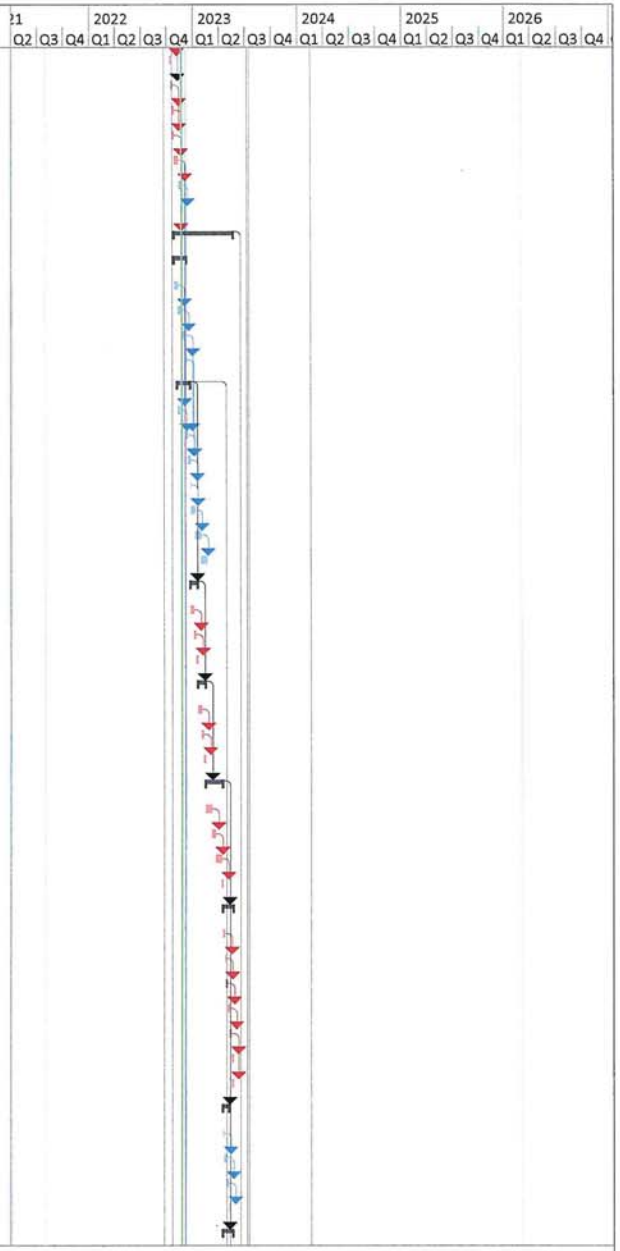
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
193	Concreting	3 days	Oct 14 '22	Oct 16 '22		192	
194	Removal of formwork (+0mPD to +5.7mPD)	4 days	Oct 17 '22	Oct 20 '22		190	196,195
195	Rectification of exposed piles between G.L. 4-5	7 days	Oct 21 '22	Oct 27 '22		194	197
196	Installation and testing of water proofing system (+0mPD to +5.7mPD)	7 days	Oct 21 '22	Oct 27 '22		194	197,200
197	Backfilling of general fill material (+0mPD to +4.4mPD)	14 days	Oct 28 '22	Nov 10 '22		196,195	249,198
198	Removal of ELS strut and wailing	7 days	Nov 11 '22	Nov 17 '22		197	199
199	Removal of ELS sheet piles	7 days	Nov 18 '22	Nov 24 '22		198	
200	**Construction of Superstructure (above ground) - Grid Line 1-4**	**207 days**	**Oct 28 '22**	**May 22 '23**		**196**	**385,376**
201	Construction of Beams and Slabs at +7.2mPD	42 days	Oct 28 '22	Dec 8 '22			
202	Falsework erection	11 days	Oct 28 '22	Nov 7 '22			203,207
203	Formwork erection	14 days	Nov 8 '22	Nov 21 '22		202	204
204	Rebar fixing	14 days	Nov 22 '22	Dec 5 '22		203	205,208
205	Concreting (+5.7mPD to +7.2mPD)	3 days	Dec 6 '22	Dec 8 '22		204	209
206	Construction of Beams and Slabs at +9.1mPD	46 days	Nov 8 '22	Dec 23 '22			489,214
207	Falsework erection	8 days	Nov 8 '22	Nov 15 '22		202	208
208	Formwork erection	8 days	Dec 6 '22	Dec 13 '22		204,207	209
209	Rebar fixing	8 days	Dec 14 '22	Dec 21 '22		205,208	210
210	Concreting (+7.2mPD to +9.1mPD)	2 days	Dec 22 '22	Dec 23 '22		209	211
211	Removal of formwork and falsework	14 days	Dec 24 '22	Jan 6 '23		210	212
212	Watertightness test	21 days	Jan 7 '23	Jan 27 '23		211	213
213	Installation of internal finishing works for basement	21 days	Jan 28 '23	Feb 17 '23		212	
214	Construction of Walls and Columns (+7.2mPD to +15.2mPD)	26 days	Dec 24 '22	Jan 18 '23		206	218
215	Scaffolding erection and rebar fixing	12 days	Dec 24 '22	Jan 4 '23			216
216	Formwork erection	7 days	Jan 5 '23	Jan 11 '23		215	217
217	Concreting	7 days	Jan 12 '23	Jan 18 '23		216	
218	Construction of Walls and Columns (+9.1mPD to +15.2mPD)	26 days	Jan 19 '23	Feb 13 '23		214	222
219	Scaffolding erection and rebar fixing	12 days	Jan 19 '23	Jan 30 '23			220
220	Formwork erection	7 days	Jan 31 '23	Feb 6 '23		219	221
221	Concreting	7 days	Feb 7 '23	Feb 13 '23		220	
222	Construction of Beams and Slabs at +15.2mPD	60 days	Feb 14 '23	Apr 14 '23		218	235,227,240,245
223	Falsework erection	21 days	Feb 14 '23	Mar 6 '23			224
224	Formwork erection	14 days	Mar 7 '23	Mar 20 '23		223	225
225	Rebar fixing	21 days	Mar 21 '23	Apr 10 '23		224	226
226	Concreting	4 days	Apr 11 '23	Apr 14 '23		225	
227	Installation of internal finishing works for Grid Line 1-4 above ground	38 days	Apr 15 '23	May 22 '23		222	
228	Mass concrete for cable trench	7 days	Apr 15 '23	Apr 21 '23			229
229	Waterproofing system at slabs	3 days	Apr 22 '23	Apr 24 '23		228	230
230	Epoxy painting on floor finish	7 days	Apr 25 '23	May 1 '23		229	231
231	Plaster and paint at wall and soffit	7 days	May 2 '23	May 8 '23		230	232
232	Chequer plate system at cable trench and aerator room	7 days	May 9 '23	May 15 '23		231	233,234
233	Steel grating floor system at chemical storage rooms	7 days	May 16 '23	May 22 '23		232	
234	SS door and aluminum louver	7 days	May 16 '23	May 22 '23		232	
235	Construction of Parapet Walls (+15.2mPD to +16.6mPD)	21 days	Apr 15 '23	May 5 '23		222	
236	Scaffolding erection	2 days	Apr 15 '23	Apr 16 '23			237
237	Rebar fixing	10 days	Apr 17 '23	Apr 26 '23		236	238
238	Formwork erection	7 days	Apr 27 '23	May 3 '23		237	239
239	Concreting	2 days	May 4 '23	May 5 '23		238	
240	Construction of Staircase ST1, ST2 (+0mPD to +7.2mPD)	36 days	Apr 15 '23	May 20 '23		222	



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Task
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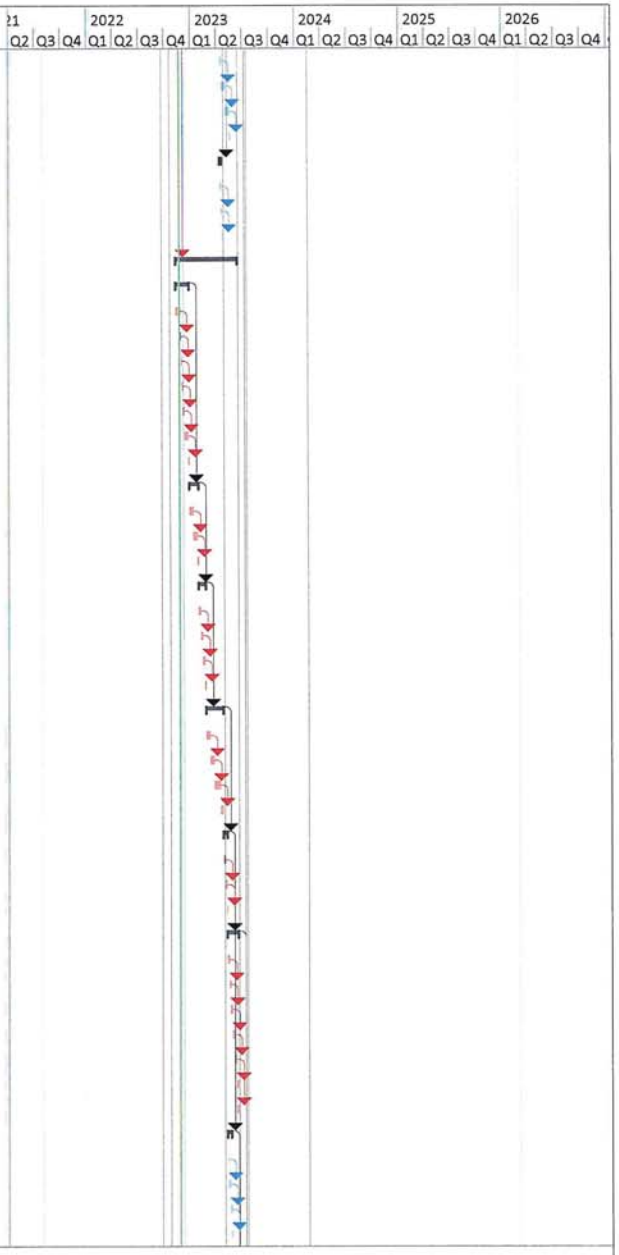
Critical
Critical Split
Progress
Manual Progress

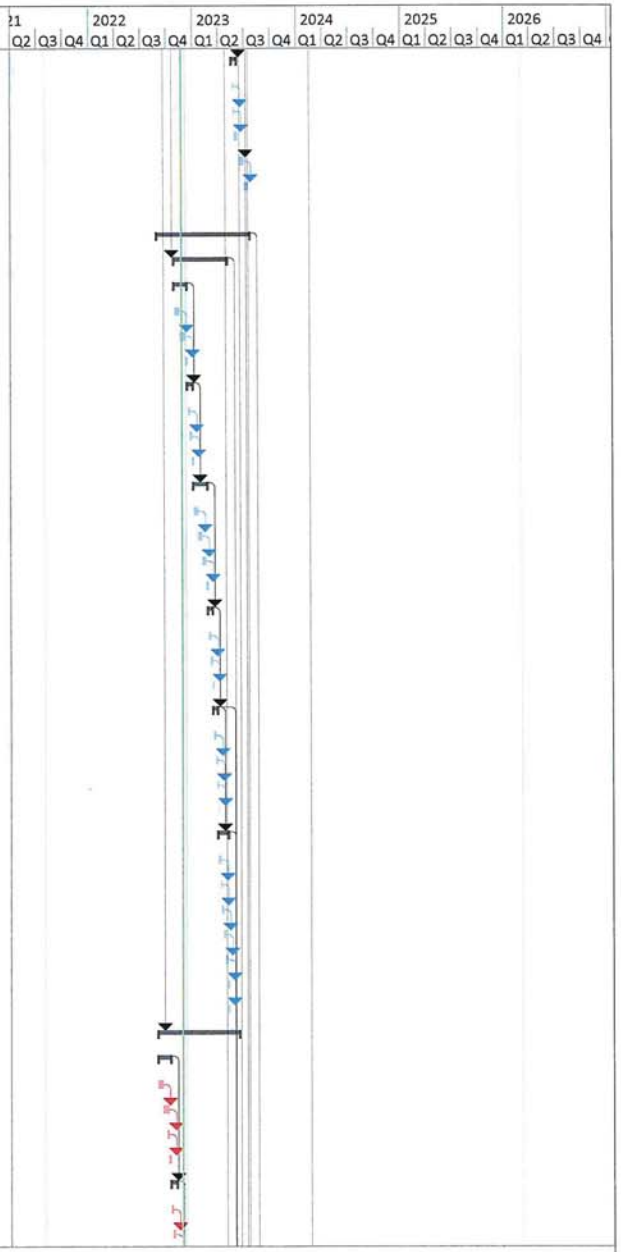
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
241	Scaffolding and falsework erection	5 days	Apr 15 '23	Apr 19 '23			242
242	Rebar fixing	14 days	Apr 20 '23	May 3 '23		241	243
243	Formwork erection	14 days	May 4 '23	May 17 '23		242	244
244	Concreting	3 days	May 18 '23	May 20 '23		243	
245	Construction of Staircase ST3 (+13.5mPD to +15.45mPD)	7 days	Apr 15 '23	Apr 21 '23		222	
246	Installation of precast segments	3 days	Apr 15 '23	Apr 17 '23			247
247	Rebar fixing	3 days	Apr 18 '23	Apr 20 '23		246	248
248	Concreting and curing of concrete	1 day	Apr 21 '23	Apr 21 '23		247	
249	**Construction of Superstructure (above ground) - Grid Line 4-6**	**215 days**	**Nov 11 '22**	**Jun 13 '23**		**197**	
250	Construction of base slab (+4.45mPD to +5.95mPD & +5.6mPD to +7.1mPD)	46 days	Nov 11 '22	Dec 26 '22			258
251	Open-cut excavation to formation level	14 days	Nov 11 '22	Nov 24 '22			252
252	Welding of pile head capping plate (11 nos.)	4 days	Nov 25 '22	Nov 28 '22		251	253
253	Installation of water proofing system and testing	3 days	Nov 29 '22	Dec 1 '22		252	254
254	Laying of blinding layer	4 days	Dec 2 '22	Dec 5 '22		253	255
255	Formwork erection	4 days	Dec 6 '22	Dec 9 '22		254	256
256	Rebar fixing	14 days	Dec 10 '22	Dec 23 '22		255	257
257	Concreting	3 days	Dec 24 '22	Dec 26 '22		256	
258	Construction of Walls and Columns (+5.95mPD to +13.25mPD)	32 days	Dec 27 '22	Jan 27 '23		250	262
259	Scaffolding erection and formwork erection	14 days	Dec 27 '22	Jan 9 '23			260
260	Rebar fixing and formwork erection	14 days	Jan 10 '23	Jan 23 '23		259	261
261	Concreting	4 days	Jan 24 '23	Jan 27 '23		260	
262	Construction of Beams and Slabs at +11.8mPD	25 days	Jan 28 '23	Feb 21 '23		258	267
263	Scaffolding and falsework erection	7 days	Jan 28 '23	Feb 3 '23			264
264	Formwork erection	7 days	Feb 4 '23	Feb 10 '23		263	265
265	Rebar fixing	7 days	Feb 11 '23	Feb 17 '23		264	266
266	Concreting and curing of concrete	4 days	Feb 18 '23	Feb 21 '23		265	
267	Construction of Beams and Slabs at +13.25mPD	60 days	Feb 22 '23	Apr 22 '23		262	272
268	Scaffolding and falsework erection	14 days	Feb 22 '23	Mar 7 '23			269
269	Formwork erection	14 days	Mar 8 '23	Mar 21 '23		268	270
270	Rebar fixing	21 days	Mar 22 '23	Apr 11 '23		269	271
271	Concreting and curing of concrete	11 days	Apr 12 '23	Apr 22 '23		270	
272	Construction of Bearing walls and Slabs (+5.95mPD to +7.2mPD)	14 days	Apr 23 '23	May 6 '23		267	276,284
273	Rebar fixing	6 days	Apr 23 '23	Apr 28 '23			274
274	Formwork erection	7 days	Apr 29 '23	May 5 '23		273	275
275	Concreting	1 day	May 6 '23	May 6 '23		274	
276	Installation of internal finishing works for Grid Line 4-6	38 days	May 7 '23	Jun 13 '23		272	508
277	Mass concrete for cable trench	7 days	May 7 '23	May 13 '23			278
278	Waterproofing system at slabs	3 days	May 14 '23	May 16 '23		277	279
279	Epoxy painting on floor finish	7 days	May 17 '23	May 23 '23		278	280
280	Plaster and paint at wall and soffit	7 days	May 24 '23	May 30 '23		279	281
281	Chequer plate system at cable trench and aerator room	7 days	May 31 '23	Jun 6 '23		280	282,283
282	Steel grating floor system at chemical storage rooms	7 days	Jun 7 '23	Jun 13 '23		281	
283	SS door and aluminum louver	7 days	Jun 7 '23	Jun 13 '23		281	
284	Construction of Parapet Walls (+13.25mPD to +14.65mPD)	14 days	May 7 '23	May 20 '23		272	289
285	Scaffolding erection	1 day	May 7 '23	May 7 '23			286
286	Rebar fixing	7 days	May 8 '23	May 14 '23		285	287
287	Formwork erection	5 days	May 15 '23	May 19 '23		286	288
288	Concreting	1 day	May 20 '23	May 20 '23		287	



Project: 3WSD20 Programme
Date: Nov 22 '22

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
289	Construction of Staircase ST3 (+7.1mPD to +13.5mPD)	18 days	May 21 '23	Jun 7 '23		284	
290	Installation of precast segments	3 days	May 21 '23	May 23 '23			291
291	Rebar fixing	3 days	May 24 '23	May 26 '23		290	292
292	Concreting and curing of concrete	12 days	May 27 '23	Jun 7 '23		291	
293	Construction of water proofing system at roof slab of ReWPS	15 days	Jun 14 '23	Jun 28 '23		181	294
294	Water tightness test for roof slab of ReWPS	15 days	Jun 29 '23	Jul 13 '23		293	
295							
296	**Construction of RC structure of HCF**	**328 days**	**Aug 29 '22**	**Jul 22 '23**			**398**
297	**Construction of Superstructure (above ground) - Grid Line 1-3**	**189 days**	**Oct 28 '22**	**May 4 '23**		**146FS+60 days**	**489**
298	Construction of Columns and Walls (+5.55mPD to +9.30mPD)	46 days	Oct 28 '22	Dec 12 '22			302
299	Scaffolding erection and formwork erection	18 days	Oct 28 '22	Nov 14 '22			300
300	Rebar fixing and formwork erection	21 days	Nov 15 '22	Dec 5 '22		299	301
301	Concreting	7 days	Dec 6 '22	Dec 12 '22		300	
302	Construction of Columns and Walls (+9.30mPD to +13.00mPD)	21 days	Dec 13 '22	Jan 2 '23		298	306
303	Scaffolding erection and formwork erection	7 days	Dec 13 '22	Dec 19 '22			304
304	Rebar fixing and formwork erection	7 days	Dec 20 '22	Dec 26 '22		303	305
305	Concreting	7 days	Dec 27 '22	Jan 2 '23		304	
306	Construction of Beams and Slabs at +13.00mPD	50 days	Jan 3 '23	Feb 21 '23		302	311
307	Scaffolding and falsework erection	14 days	Jan 3 '23	Jan 16 '23			308
308	Formwork erection	14 days	Jan 17 '23	Jan 30 '23		307	309
309	Rebar fixing	14 days	Jan 31 '23	Feb 13 '23		308	310
310	Concreting and curing of concrete	8 days	Feb 14 '23	Feb 21 '23		309	
311	Construction of Bearing walls and Slabs (+5.55mPD to +7.1mPD)	17 days	Feb 22 '23	Mar 10 '23		306	315
312	Formwork erection	7 days	Feb 22 '23	Feb 28 '23			313
313	Rebar fixing and formwork erection	7 days	Mar 1 '23	Mar 7 '23		312	314
314	Concreting	3 days	Mar 8 '23	Mar 10 '23		313	
315	Construction of Parapet Walls (+13.00mPD to +15.1mPD)	17 days	Mar 11 '23	Mar 27 '23		311	362,320
316	Scaffolding erection	7 days	Mar 11 '23	Mar 17 '23			317
317	Rebar fixing	5 days	Mar 18 '23	Mar 22 '23		316	318
318	Formwork erection	4 days	Mar 23 '23	Mar 26 '23		317	319
319	Concreting	1 day	Mar 27 '23	Mar 27 '23		318	
320	Installation of internal finishing works for Grid Line 1-3	38 days	Mar 28 '23	May 4 '23		315	507
321	Mass concrete for cable trench	7 days	Mar 28 '23	Apr 3 '23			322
322	Waterproofing system at slabs	3 days	Apr 4 '23	Apr 6 '23		321	323
323	Epoxy painting on floor finish	7 days	Apr 7 '23	Apr 13 '23		322	324
324	Plaster and paint at wall and soffit	7 days	Apr 14 '23	Apr 20 '23		323	325
325	Chequer plate system at cable trench and aerator room	7 days	Apr 21 '23	Apr 27 '23		324	326,327
326	Steel grating floor system at chemical storage rooms	7 days	Apr 28 '23	May 4 '23		325	
327	SS door and aluminum louver	7 days	Apr 28 '23	May 4 '23		325	
328	**Construction of Superstructure (above ground) - Grid Line 3-7**	**286 days**	**Aug 29 '22**	**Jun 10 '23**		**146**	
329	Construction of Walls W2, W3, W5, W6 and columns within G.L. 3-5	45 days	Aug 29 '22	Oct 12 '22			334
330	Scaffolding erection and Formwork erection	17 days	Aug 29 '22	Sep 14 '22			331
331	Rebar fixing and Formwork erection	21 days	Sep 15 '22	Oct 5 '22		330	332FS-7 days
332	Concreting of walls W2, W3 and Columns	7 days	Sep 29 '22	Oct 5 '22		331FS-7 days	333
333	Concreting of walls W5, W6 and Columns	7 days	Oct 6 '22	Oct 12 '22		332	
334	Construction of remaining walls and columns within G.L. 3-5	21 days	Oct 13 '22	Nov 2 '22		329	338
335	Scaffolding erection and Formwork erection	7 days	Oct 13 '22	Oct 19 '22			336
336	Rebar fixing and Formwork erection	7 days	Oct 20 '22	Oct 26 '22		335	337



Project: 3WSD20 Programme
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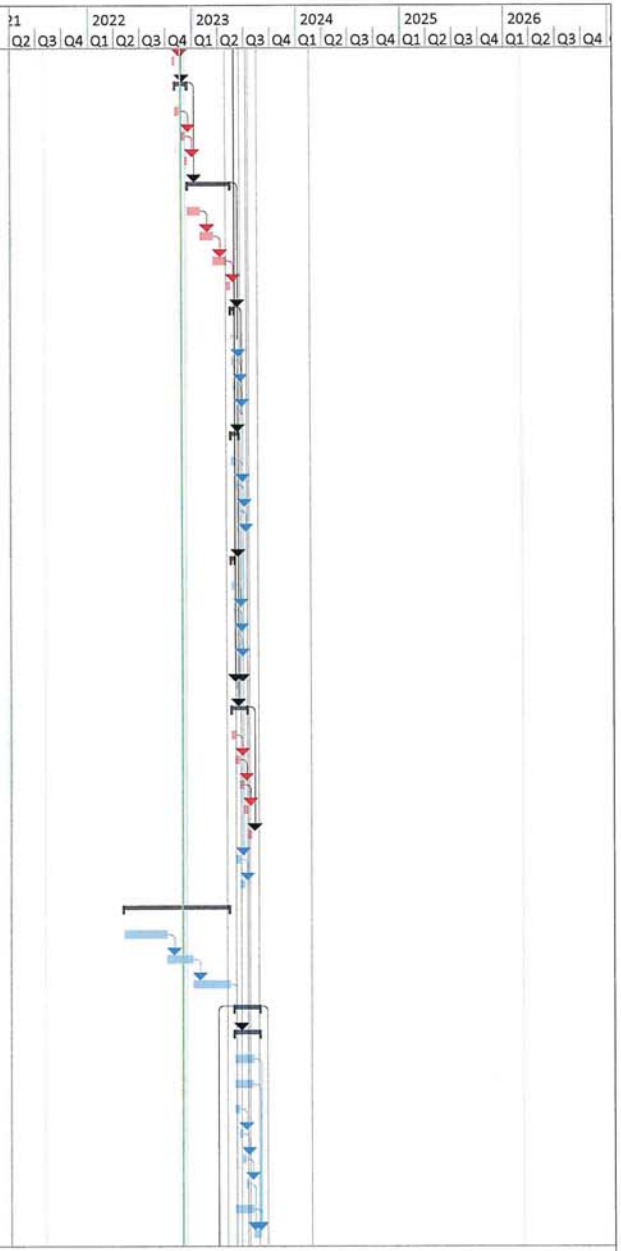
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
337	Concreting	7 days	Oct 27 '22	Nov 2 '22		336	
338	Construction of walls and columns within G.L. 5-7	42 days	Nov 3 '22	Dec 14 '22		334	342
339	Scaffolding erection and Formwork erection	21 days	Nov 3 '22	Nov 23 '22			340
340	Rebar fixing and Formwork erection	14 days	Nov 24 '22	Dec 7 '22		339	341
341	Concreting	7 days	Dec 8 '22	Dec 14 '22		340	
342	Construction of Beams and Slabs at +10.4mPD and +10.8mPD	150 days	Dec 15 '22	May 13 '23		338	347,352,357,363
343	Scaffolding and falsework erection	45 days	Dec 15 '22	Jan 28 '23			344
344	Formwork erection	45 days	Jan 29 '23	Mar 14 '23		343	345
345	Rebar fixing	45 days	Mar 15 '23	Apr 28 '23		344	346
346	Concreting and curing of concrete	15 days	Apr 29 '23	May 13 '23		345	
347	Construction of Parapet Walls (+10.4mPD/+10.8mPD to +12.5mPD)	14 days	May 14 '23	May 27 '23		342	362
348	Scaffolding erection	1 day	May 14 '23	May 14 '23			349
349	Rebar fixing	7 days	May 15 '23	May 21 '23		348	350
350	Formwork erection	5 days	May 22 '23	May 26 '23		349	351
351	Concreting	1 day	May 27 '23	May 27 '23		350	369
352	Construction of Staircase ST01 (+7.1mPD to +11.35mPD)	28 days	May 14 '23	Jun 10 '23		342	
353	Scaffolding and falsework erection	14 days	May 14 '23	May 27 '23			354
354	Rebar fixing	7 days	May 28 '23	Jun 3 '23		353	355
355	Formwork erection	5 days	Jun 4 '23	Jun 8 '23		354	356
356	Concreting	2 days	Jun 9 '23	Jun 10 '23		355	
357	Construction of Staircase ST02 (+10.4mPD to +13.95mPD)	14 days	May 14 '23	May 27 '23		342	
358	Scaffolding and falsework erection	7 days	May 14 '23	May 20 '23			359
359	Rebar fixing	3 days	May 21 '23	May 23 '23		358	360
360	Formwork erection	3 days	May 24 '23	May 26 '23		359	361
361	Concreting	1 day	May 27 '23	May 27 '23		360	
362	Backfilling of general fill material up to +7.2mPD, and removal of ELS	8 days	May 28 '23	Jun 4 '23		347,315	
363	**Watertightness test in stages**	**56 days**	**May 14 '23**	**Jul 8 '23**		**342**	**368**
364	Inlet Channel and Outlet Channel	14 days	May 14 '23	May 27 '23			365
365	On duty contact tank	14 days	May 28 '23	Jun 10 '23		364	366
366	Standby contact tank	14 days	Jun 11 '23	Jun 24 '23		365	367
367	Overall water retaining structure at HCF	14 days	Jun 25 '23	Jul 8 '23		366	
368	Installation of internal finishing works for Grid Line 3-7	14 days	Jul 9 '23	Jul 22 '23		363	
369	Construction of water proofing system at roof slab of HCF	15 days	May 28 '23	Jun 11 '23		351	370
370	Water tightness test for roof slab of HCF	15 days	Jun 12 '23	Jun 26 '23		369	
371	**Provisional of Fire Service, Flushing and Fresh Water Supply by WSD**	**370 days**	**May 1 '22**	**May 5 '23**			
372	WWO542 design submission for Fire Service, Flushing and Fresh Water Supply	150 days	May 1 '22	Sep 27 '22			373
373	Acceptance of WWO542 submission by WSD	90 days	Sep 28 '22	Dec 26 '22		372	374
374	Provision of water supply to Part 1 by WSD	130 days	Dec 27 '22	May 5 '23		373	385
375	**Construction of roadworks**	**90 days**	**May 23 '23**	**Aug 20 '23**			**516,390,393SS**
376	**Construction of fence wall**	**90 days**	**May 23 '23**	**Aug 20 '23**		**200**	
377	Type-2 & Type-3 fence wall at West side (198m)	66 days	May 23 '23	Jul 27 '23			384
378	Type-1 fence wall at East side (189m)	63 days	May 23 '23	Jul 24 '23			384
379	Type-3 fence wall at North side (44m)	15 days	May 23 '23	Jun 6 '23			380
380	Type-4 fence wall at middle (28m)	10 days	Jun 7 '23	Jun 16 '23		379	381
381	Type-2 & Type-3 fence wall at South side (37m)	13 days	Jun 17 '23	Jun 29 '23		380	382
382	Installation of Gate 1 and Gate 2	7 days	Jun 30 '23	Jul 6 '23		381	384
383	Fabrication of steelworks	66 days	May 23 '23	Jul 27 '23			384
384	Installation of wall finishes and steelworks	24 days	Jul 28 '23	Aug 20 '23		378,377,382,383	



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Task
Split
Milestone
Summary
Project Summary
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Inactive Milestone
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Manual Summary Rollup
Manual Summary
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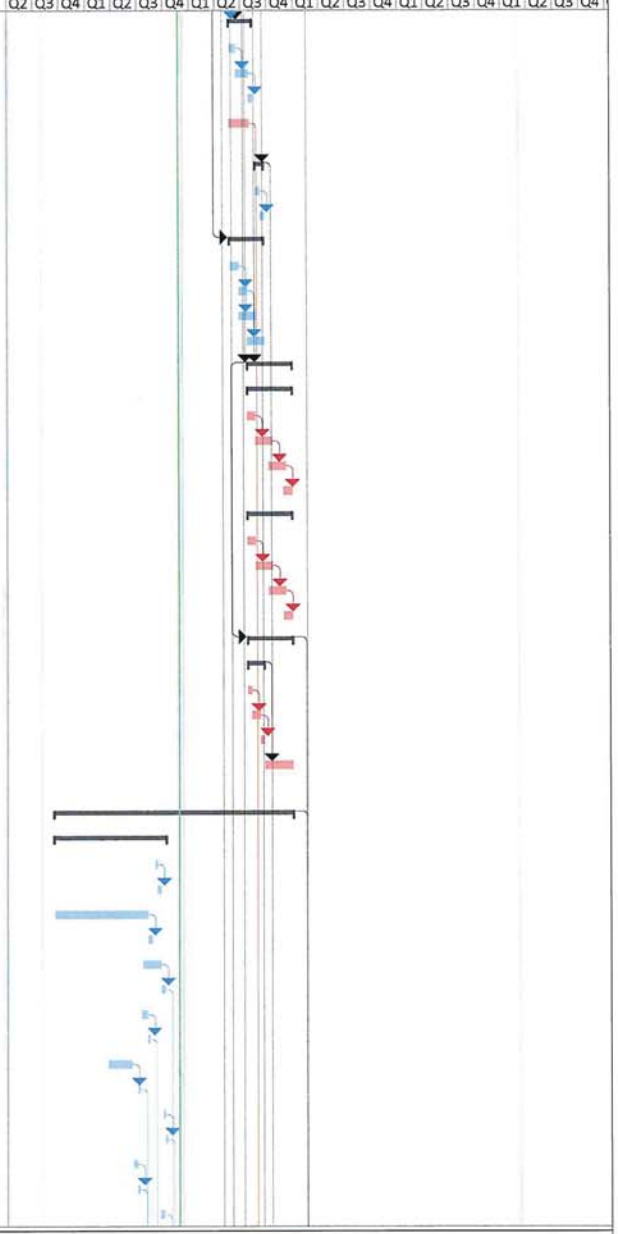
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
385	**Construction of underground utilities**	**81 days**	**May 23 '23**	**Aug 11 '23**		**200,374**	
386	Laying of pipe work system outside ReWPS and HCF	21 days	May 23 '23	Jun 12 '23			387
387	Construction of chambers and water refilling station	45 days	Jun 13 '23	Jul 27 '23		386	388
388	Installation of surge vessels	15 days	Jul 28 '23	Aug 11 '23		387	
389	Construction of underground utilities (Drainage, Telecom ducts, CLP cable ducts & drawpits, Fire Service, Flushing & Fresh Water, etc.)	70 days	May 23 '23	Jul 31 '23			515
390	**Construction of EVA road pavement**	**30 days**	**Aug 21 '23**	**Sep 19 '23**		**375**	**522**
391	Construction of road pavement near ReWPS	15 days	Aug 21 '23	Sep 4 '23			392
392	Construction of road pavement near HCF	15 days	Sep 5 '23	Sep 19 '23		391	
393	**Design submission and fabrication of steelwork system for the aluminum fin**	**120 days**	**May 23 '23**	**Sep 19 '23**		**375SS**	
394	Design submission of steelwork system for vertical aluminum fin at ReWPS	30 days	May 23 '23	Jun 21 '23			395,396
395	Design submission of steelwork system for horizontal aluminum fin at HCF	30 days	Jun 22 '23	Jul 21 '23		394	397
396	Fabrication of vertical aluminum fin for ReWPS	60 days	Jun 22 '23	Aug 20 '23		394	
397	Fabrication of horizontal aluminum fin for HCF	60 days	Jul 22 '23	Sep 19 '23		395	
398	**Installation of architectural works**	**157 days**	**Jul 23 '23**	**Dec 26 '23**		**181,296**	**409SS**
399	**Installation of architectural works near ReWPS**	**157 days**	**Jul 23 '23**	**Dec 26 '23**			
400	Erection of working platform	28 days	Jul 23 '23	Aug 19 '23			401
401	Laying of artificial granite tile at external wall	60 days	Aug 20 '23	Oct 18 '23		400	402FS-14 days
402	Installation of steelworks	60 days	Oct 5 '23	Dec 3 '23		401FS-14 days	403FS-7 days
403	Installation of cladding	30 days	Nov 27 '23	Dec 26 '23		402FS-7 days	
404	**Installation of architectural works near HCF**	**157 days**	**Jul 23 '23**	**Dec 26 '23**			
405	Erection of working platform	28 days	Jul 23 '23	Aug 19 '23			406
406	Laying of artificial granite tile at external wall	60 days	Aug 20 '23	Oct 18 '23		405	407FS-14 days
407	Installation of steelworks	60 days	Oct 5 '23	Dec 3 '23		406FS-14 days	408FS-7 days
408	Installation of cladding	30 days	Nov 27 '23	Dec 26 '23		407FS-7 days	
409	**Landscape works**	**158 days**	**Jul 23 '23**	**Dec 27 '23**		**398SS**	**540FF**
410	**Landscape works at roof top**	**58 days**	**Jul 23 '23**	**Sep 18 '23**			**414**
411	Installation of composite timber decking with pedestal	14 days	Jul 23 '23	Aug 5 '23			412
412	Laying of artificial granite floor tile / paver block	30 days	Aug 6 '23	Sep 4 '23		411	413
413	Construciton of roof drainage system	14 days	Sep 5 '23	Sep 18 '23		412	
414	Landscape works within SWHWRP	100 days	Sep 19 '23	Dec 27 '23		410	
415							
416	**E&M Works of SWHWRP**	**838 days**	**Sep 13 '21**	**Dec 29 '23**			**539FF**
417	**Design and Submission Stage**	**392 days**	**Sep 13 '21**	**Oct 9 '22**			
418	Submission of Surge Analysis Report	7 days	Aug 30 '22	Sep 5 '22			419
419	Acceptance of Surge Analysis Report	14 days	Sep 6 '22	Sep 19 '22		418	
420	Submission and review of Reclaimed Water Main Pumps	326 days	Sep 13 '21	Aug 4 '22			421
421	Acceptance of Reclaimed Water Main Pumps	14 days	Aug 5 '22	Aug 18 '22		420	
422	Submission and review of Surge Vessels and Air Compressors	63 days	Jul 18 '22	Sep 18 '22			423
423	Acceptance of Surge Vessels and Air Compressors	14 days	Sep 19 '22	Oct 2 '22		422	457
424	Submission and review of Penstock & Stoplog	20 days	Jul 13 '22	Aug 1 '22			425
425	Acceptance of Penstock & Stoplog	7 days	Aug 2 '22	Aug 8 '22		424	459
426	Submission and review of Chemical Dosing System & Static In-line Mixer	83 days	Mar 18 '22	Jun 8 '22			427
427	Acceptance of Chemical Dosing System & Static In-line Mixer	7 days	Jun 29 '22	Jul 5 '22		426	461,463
428	Submission and review of Air Blower and Air Diffuser	7 days	Sep 26 '22	Oct 2 '22			429
429	Acceptance of Air Blower and Air Diffuser	7 days	Oct 3 '22	Oct 9 '22		428	465
430	Submission and review of Lifting Appliances	14 days	Jun 14 '22	Jun 27 '22			431
431	Acceptance of Lifting Appliances	7 days	Jun 28 '22	Jul 4 '22		430	467
432	Submission and review of Minor Mechanical Equipment	14 days	Sep 16 '22	Sep 29 '22			433



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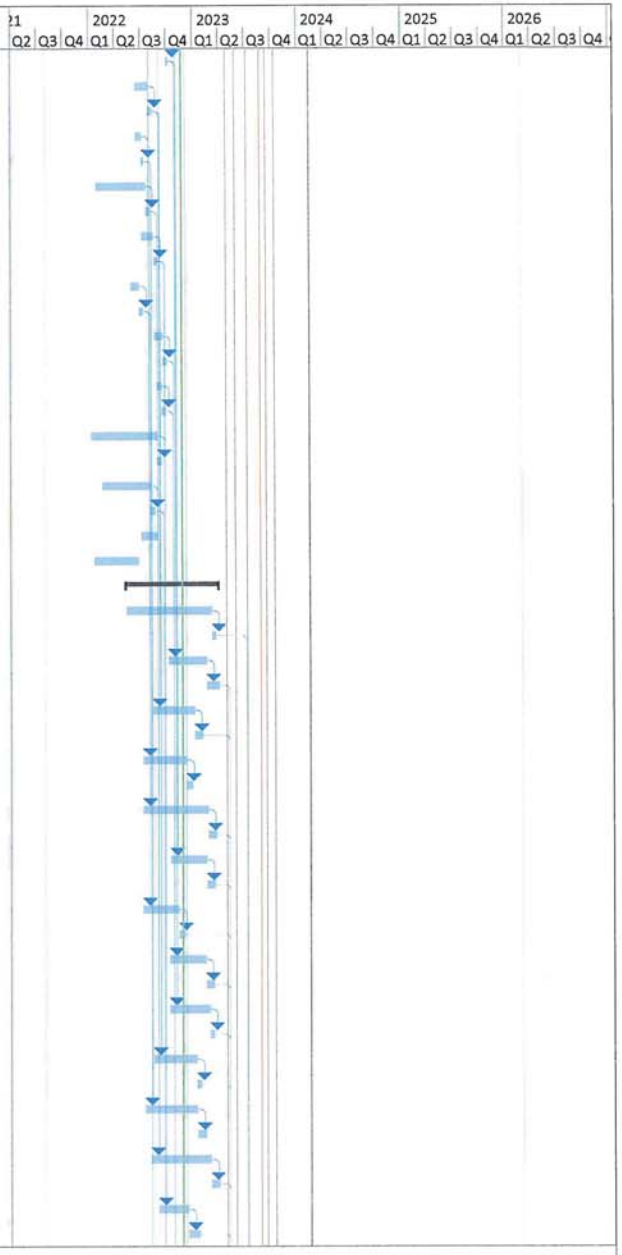
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
433	Acceptance of Minor Mechanical Equipment	7 days	Sep 30 '22	Oct 6 '22		432	469,471
434	Submission and review of LV switchboard	45 days	Jun 14 '22	Jul 28 '22			435
435	Acceptance of LV switchboard	14 days	Jul 29 '22	Aug 11 '22		434	473
436	Submission and review of DCS	21 days	Jun 14 '22	Jul 4 '22			437
437	Acceptance of DCS	7 days	Jul 5 '22	Jul 11 '22		436	475
438	Submission and review of Instrumenation & Water Monitoring Equipment	174 days	Jan 26 '22	Jul 18 '22			439
439	Acceptance of Instrumenation & Water Monitoring Equipment	14 days	Jul 19 '22	Aug 1 '22		438	477
440	Submission and review of Misc. Electrical Items	42 days	Jul 4 '22	Aug 14 '22			441
441	Acceptance of Misc. Electrical Items	14 days	Aug 15 '22	Aug 28 '22		440	479,487
442	Submission and review of Fire Services Equipment	30 days	May 27 '22	Jun 25 '22			443
443	Acceptance of Fire Services Equipment	14 days	Jun 26 '22	Jul 9 '22		442	481
444	Submission and review of MVAC Equipment	30 days	Aug 17 '22	Sep 15 '22			445
445	Acceptance of MVAC Equipment	14 days	Sep 16 '22	Sep 29 '22		444	483
446	Submission and review of Plumbing & Drainage Equipment	14 days	Aug 30 '22	Sep 12 '22			447
447	Acceptance of Plumbing & Drainage Equipment	14 days	Sep 13 '22	Sep 26 '22		446	485FS-30 days
448	Submission and review of General Arrangement Drawing	234 days	Jan 7 '22	Aug 28 '22			449
449	Acceptance of General Arrangement Drawing	14 days	Aug 29 '22	Sep 11 '22		448	
450	Submission and review of Civil Requirement Drawing	169 days	Feb 15 '22	Aug 2 '22			451
451	Acceptance of Civil Requirement Drawing	16 days	Aug 3 '22	Aug 18 '22		450	526FS+30 days
452	Submission and acceptance of method statement for E&M installation works	60 days	Jul 1 '22	Aug 29 '22			
453	CSD, CBWD coordination	157 days	Jan 17 '22	Jun 22 '22			
454	**Procurement and Delivery of Equipment**	**325 days**	**May 10 '22**	**Mar 30 '23**			
455	Procerement and manufacturing of Reclaimed Water Main Pumps (6 nos.)	300 days	May 10 '22	Mar 5 '23			456
456	Delivery of Reclaimed Water Main Pumps (6 nos.)	14 days	Mar 6 '23	Mar 19 '23		455	494
457	Procerement and manufacturing of Surge Vessels and Air Compressors	134 days	Oct 3 '22	Feb 13 '23		423	458
458	Delivery of Surge Vessels and Air Compressors	45 days	Feb 14 '23	Mar 30 '23		457	496
459	Procerement and manufacturing of Penstock & Stoplog	147 days	Aug 9 '22	Jan 2 '23		425	460
460	Delivery of Penstock & Stoplog	28 days	Jan 3 '23	Jan 30 '23		459	495
461	Procerement and manufacturing of Chemical Dosing System	153 days	Jul 6 '22	Dec 5 '22		427	462
462	Delivery of Chemical Dosing System	21 days	Dec 6 '22	Dec 26 '22		461	
463	Procerement and manufacturing of Static In-line Mixer	228 days	Jul 6 '22	Feb 18 '23		427	464
464	Delivery of Static In-line Mixer	30 days	Feb 19 '23	Mar 20 '23		463	498
465	Procerement and manufacturing of Air Blower and Air Diffuser	127 days	Oct 10 '22	Feb 13 '23		429	466
466	Delivery of Air Blower and Air Diffuser	30 days	Feb 14 '23	Mar 15 '23		465	497
467	Procerement and manufacturing of Lifting Appliances	127 days	Jul 5 '22	Nov 8 '22		431	468
468	Delivery of Lifting Appliances	21 days	Nov 9 '22	Nov 29 '22		467	493
469	Procerement and manufacturing of Sump Pumps	127 days	Oct 7 '22	Feb 10 '23		433	470
470	Delivery of Sump Pumps	30 days	Feb 11 '23	Mar 12 '23		469	503
471	Procerement and manufacturing of Pipework and Valves	141 days	Oct 7 '22	Feb 24 '23		433	472
472	Delivery of Pipework and Valves	14 days	Feb 25 '23	Mar 10 '23		471	499
473	Procerement and manufacturing of LV switchboard	150 days	Aug 12 '22	Jan 8 '23		435	474
474	Delivery of LV switchboard	16 days	Jan 9 '23	Jan 24 '23		473	505
475	Procerement and manufacturing of DCS	184 days	Jul 12 '22	Jan 11 '23		437	476
476	Delivery of DCS	30 days	Jan 12 '23	Feb 10 '23		475	
477	Procerement and manufacturing of Instrumenation and Water Monitoring Equipment	210 days	Aug 2 '22	Feb 27 '23		439	478
478	Delivery of Instrumenation and Water Monitoring Equipment	30 days	Feb 28 '23	Mar 29 '23		477	501
479	Procerement and manufacturing of Misc. Electrical Items (PV Panel, Earthing & Cables, etc)	103 days	Aug 29 '22	Dec 9 '22		441	480
480	Delivery of Misc. Electrical Items (PV Panel, Earthing & Cables, etc)	40 days	Dec 10 '22	Jan 18 '23		479	492,504



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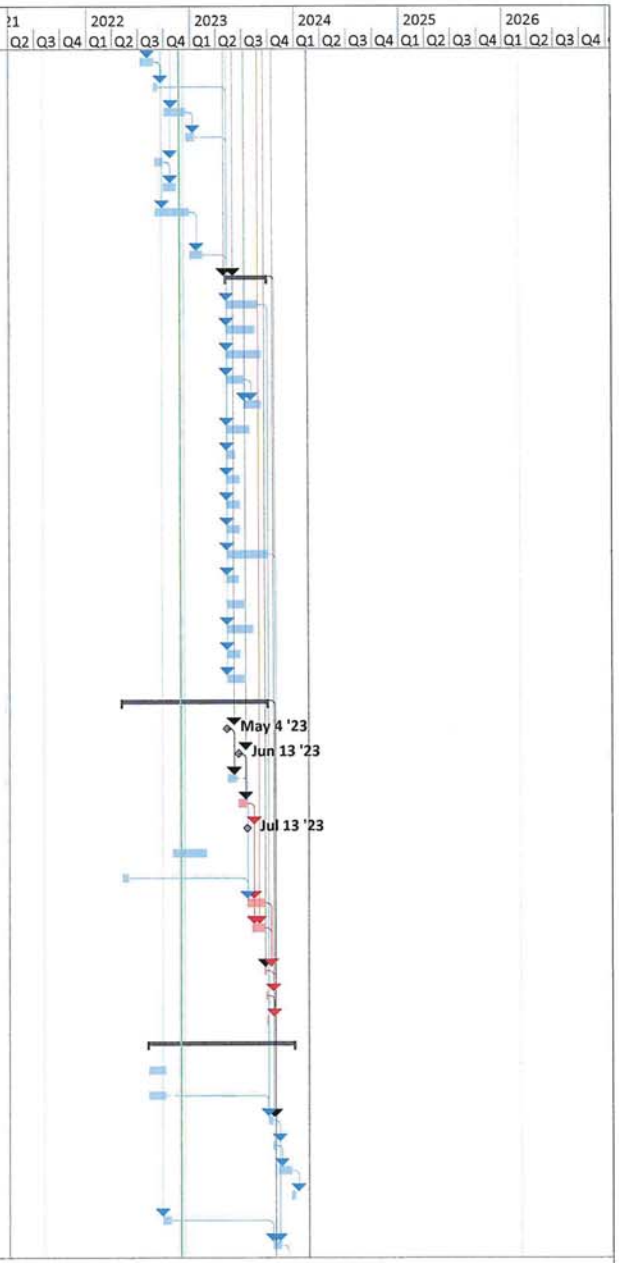
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
481	Procerement and manufacturing of Fire Services Equipment	46 days	Jul 10 '22	Aug 24 '22		443	482
482	Delivery of Fire Services Equipment	14 days	Aug 25 '22	Sep 7 '22		481	490
483	Procerement and manufacturing of MVAC Equipment	76 days	Sep 30 '22	Dec 14 '22		445	484
484	Delivery of MVAC Equipment	30 days	Dec 15 '22	Jan 13 '23		483	491
485	Procerement and manufacturing of Plumbing & Drainage Equipment	30 days	Aug 28 '22	Sep 26 '22		447FS-30 days	486
486	Delivery of Plumbing & Drainage Equipment	45 days	Sep 27 '22	Nov 10 '22		485	
487	Procerement and manufacturing of Misc. Electrical Items (Cables, Cable Containment, Lightings)	120 days	Aug 29 '22	Dec 26 '22		441	488
488	Delivery of Misc. Electrical Items (Cables, Cable Containment, Lightings)	45 days	Dec 27 '22	Feb 9 '23		487	500
489	**Installation Works**	**143 days**	**May 5 '23**	**Sep 24 '23**		**297,206**	**529**
490	Installation FS Equipment	110 days	May 5 '23	Aug 22 '23		482	522
491	Installation of MVAC Equipment	100 days	May 5 '23	Aug 12 '23		484	
492	Installation of BS Equipment	120 days	May 5 '23	Sep 1 '23		480	
493	Installation of Lifting Appliance (12 nos.)	60 days	May 5 '23	Jul 3 '23		468	494
494	Installation of Reclaimed Water Pumps (6 Nos.)	60 days	Jul 4 '23	Sep 1 '23		456,493	
495	Installation of penstocks (10 nos.) & Stoplogs (2 nos.)	80 days	May 5 '23	Jul 23 '23		460	
496	Installation of Surge Vessel (4 Nos.) & Air Compressor (4 Nos.)	30 days	May 5 '23	Jun 3 '23		458	
497	Installation of Air Blower (2 Nos.) & Air Diffuser (1 set)	45 days	May 5 '23	Jun 18 '23		466	
498	Installation of tanks (14 nos.) & Chemical Pumps (12 nos.)	45 days	May 5 '23	Jun 18 '23		464	
499	Installation of Pipeworks (DI, Chemical pipe, Air pipe)	45 days	May 5 '23	Jun 18 '23		472	
500	Installation of Cabling, MCC & DCS	143 days	May 5 '23	Sep 24 '23		488	527
501	Installation of Instrumentation and Monitoring Stations	40 days	May 5 '23	Jun 13 '23		478	
502	Installation of ELV System (CCTV & Access Control)	60 days	May 5 '23	Jul 3 '23			
503	Installation of Plumbing & Drainage Equipment	90 days	May 5 '23	Aug 2 '23		470	
504	Installation of PV Panels	45 days	May 5 '23	Jun 18 '23		480	
505	Installation of LV Switchborad / MCC	60 days	May 5 '23	Jul 3 '23		474	
506	**Power Energization Related Items**	**512 days**	**May 1 '22**	**Sep 24 '23**			**529,522**
507	CLP Room Ready for BS installation (HCF)	0 days	May 4 '23	May 4 '23		320	509
508	CLP Room Ready for BS installation (ReWPS)	0 days	Jun 13 '23	Jun 13 '23		276	510
509	Installation of BS Equipment (HCF)	30 days	May 5 '23	Jun 3 '23		507	514
510	Installation of BS Equipment (ReWPS)	30 days	Jun 14 '23	Jul 13 '23		508	514,515,511
511	Handover of Transformer Room to CLP	0 days	Jul 13 '23	Jul 13 '23		510	
512	CLP meter application	120 days	Oct 24 '22	Feb 20 '23			
513	Cable laying by CLP in DSD's EVA	21 days	May 1 '22	May 21 '22			514
514	Lead time for CLP installation works	60 days	Jul 14 '23	Sep 11 '23		509,510,513	516
515	CLP's Inspection for Transformer Room(ReWPS), CLP Room(HCF), draw pit and accsociated cable ducts	42 days	Aug 1 '23	Sep 11 '23		510,389	516
516	CLP to install Transformers and Cabling	7 days	Sep 12 '23	Sep 18 '23		375,514,515	517
517	Power Energization from CLP Transformer to LVSB	3 days	Sep 19 '23	Sep 21 '23		516	518
518	Power Energization from LVSB to All Equipment	3 days	Sep 22 '23	Sep 24 '23		517	
519	**FS / DG Inspection Related Items**	**514 days**	**Aug 1 '22**	**Dec 27 '23**			
520	VAC Desgin Submission to FSD	60 days	Aug 1 '22	Sep 29 '22			
521	FS related statutory submission to FSD	60 days	Aug 1 '22	Sep 29 '22			522
522	T&C of FS Related Installation (Integrated Test & Rehearsal)	14 days	Sep 25 '23	Oct 8 '23		390,490,506,521	523,527
523	Submission of FSI 314 & 501	7 days	Oct 9 '23	Oct 15 '23		522	524FS+14 days
524	Target FS Inpsection	45 days	Oct 30 '23	Dec 13 '23		523FS+14 days	525
525	Obtain FSD approval letter (Form FS172 Fire Certificate)	14 days	Dec 14 '23	Dec 27 '23		524	
526	DG Design Submission to FSD	30 days	Sep 18 '22	Oct 17 '22		451FS+30 days	527
527	DG Inspection	30 days	Oct 9 '23	Nov 7 '23		500,522,526	528



Project: 3WSD20 Programme
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Task
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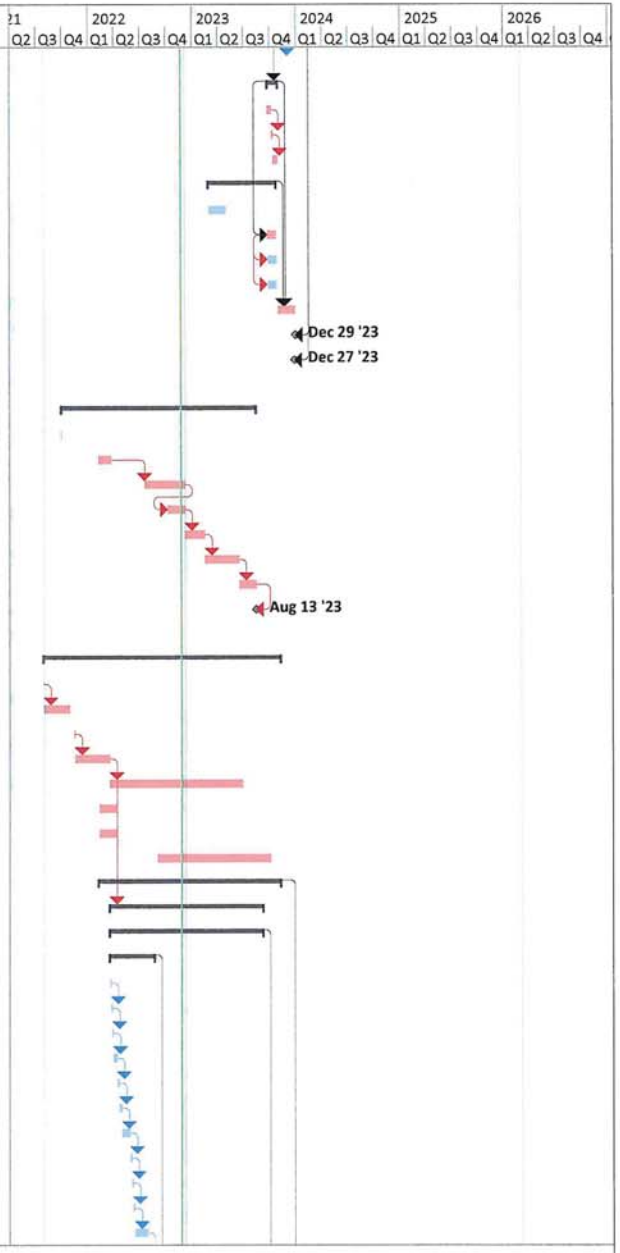
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
528	Obtain DG License	1 day	Nov 8 '23	Nov 8 '23		527	
529	**Preliminary Test of Equipment**	**36 days**	**Sep 25 '23**	**Oct 30 '23**		**489,506**	**538,535SS**
530	Inspection of Equipment/System with SOR	14 days	Sep 25 '23	Oct 8 '23			531
531	Trial Run of Equipment/System	5 days	Oct 9 '23	Oct 13 '23		530	532
532	Site Acceptance Test of Equipment/Systems with SOR	17 days	Oct 14 '23	Oct 30 '23		531	
533	**Submission**	**239 days**	**Feb 28 '23**	**Oct 24 '23**			**538**
534	Submission of Testing Procedures & Commissioning Plan	60 days	Feb 28 '23	Apr 28 '23			
535	Submission of As Fitted Drawings	30 days	Sep 25 '23	Oct 24 '23		529SS	536SS,537SS
536	Submission of Manual	30 days	Sep 25 '23	Oct 24 '23		535SS	
537	Submission of Training Material	30 days	Sep 25 '23	Oct 24 '23		535SS	
538	**System Commissioning Test**	**60 days**	**Oct 31 '23**	**Dec 29 '23**		**529,533**	
539	Planned completion for section 1	0 days	Dec 29 '23	Dec 29 '23		175FF,416FF	
540	Planned completion for section 2	0 days	Dec 27 '23	Dec 27 '23		409FF	
541							
542	**Section 3 - Modification of Table Hill Reclaimed Water Service Reservoir**	**682 days**	**Oct 1 '21**	**Aug 13 '23**			
543	Access Date (part 2 of the Site)	1 day	Oct 1 '21	Oct 1 '21			
544	Initial survey and condition survey	45 days	Feb 7 '22	Mar 23 '22			545FS+117 days
545	Design submission and acceptance of the supplementary dosing and dyeing system (E&M)	141 days	Jul 19 '22	Dec 6 '22		544FS+117 days	546FS-60 days
546	Submission and acceptance of method statement for supplementary dosing and dyeing system	60 days	Oct 8 '22	Dec 6 '22		545FS-60 days	547
547	Construction of chemical room	70 days	Dec 7 '22	Feb 14 '23		546	548
548	Installation of supplementary dosing and dyeing system	120 days	Feb 15 '23	Jun 14 '23		547	549
549	T&C of E&M equipment	60 days	Jun 15 '23	Aug 13 '23		548	550FF
550	Planned completion for section 3	0 days	Aug 13 '23	Aug 13 '23		549FF	
551							
552	**Section 4 - Water main laying works in part 3 of the Site**	**830.5 days**	**Jul 30 '21**	**Nov 7 '23**			
553	Access Date (part 3 of the Site)	1 day	Jul 30 '21	Jul 30 '21			554
554	Initial survey (utility survey, condition survey, initial photo)	90 days	Jul 31 '21	Oct 28 '21		553	
555	1st TMLG meeting	1 day	Nov 15 '21	Nov 15 '21			556
556	Application and approval of XP and TTA, including local consultation	122 days	Nov 16 '21	Mar 17 '22		555	557,562
557	Implementation of TTA by stages	465 days	Mar 18 '22	Jun 25 '23		556	
558	Procurement and Delivery of pipes, fittings and related materials	60 days	Feb 10 '22	Apr 10 '22			
559	Submission and acceptance of method statement and material	60 days	Feb 10 '22	Apr 10 '22			
560	Excavation of Inspection Pit	396 days	Sep 1 '22	Oct 1 '23			
561	**Mainlaying by open trench method (RW03 & RW43)**	**638.5 days**	**Feb 7 '22**	**Nov 7 '23**			**914FF**
562	**RW03 : DN600 DI pipe - 1092m**	**537 days**	**Mar 18 '22**	**Sep 5 '23**		**556**	
563	**Team A : CH000 - CH550**	**537 days**	**Mar 18 '22**	**Sep 5 '23**			**749**
564	**CH450 - CH550 (100m)**	**157 days**	**Mar 18 '22**	**Aug 21 '22**			**579**
565	TTA establishment	3 days	Mar 18 '22	Mar 20 '22			566
566	CE-041 _ Inclement Weather in March 2022	4.5 days	Mar 21 '22	Mar 25 '22		565	567
567	Hard material excavation and disposal	3 days	Mar 25 '22	Mar 28 '22		566	568
568	Soil excavation , laying sheetpile and disposal	14 days	Mar 28 '22	Apr 11 '22		567	569
569	Obstruction of unchart 900mm pipe	7 days	Apr 11 '22	Apr 18 '22		568	570
570	Pending for setting out of DSD	10 days	Apr 18 '22	Apr 28 '22		569	571
571	Amendment of ELS	28 days	Apr 28 '22	May 26 '22		570	572
572	CE-052 _ Inclement Weather in May 2022 (under assessment)	6 days	May 26 '22	Jun 1 '22		571	573
573	Treatment of bedding	4 days	Jun 1 '22	Jun 5 '22		572	574
574	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	Jun 5 '22	Jun 11 '22		573	575
575	Pipe laying D.I. & PE (DSD's pipe)	45 days	Jun 12 '22	Jul 26 '22		574	576



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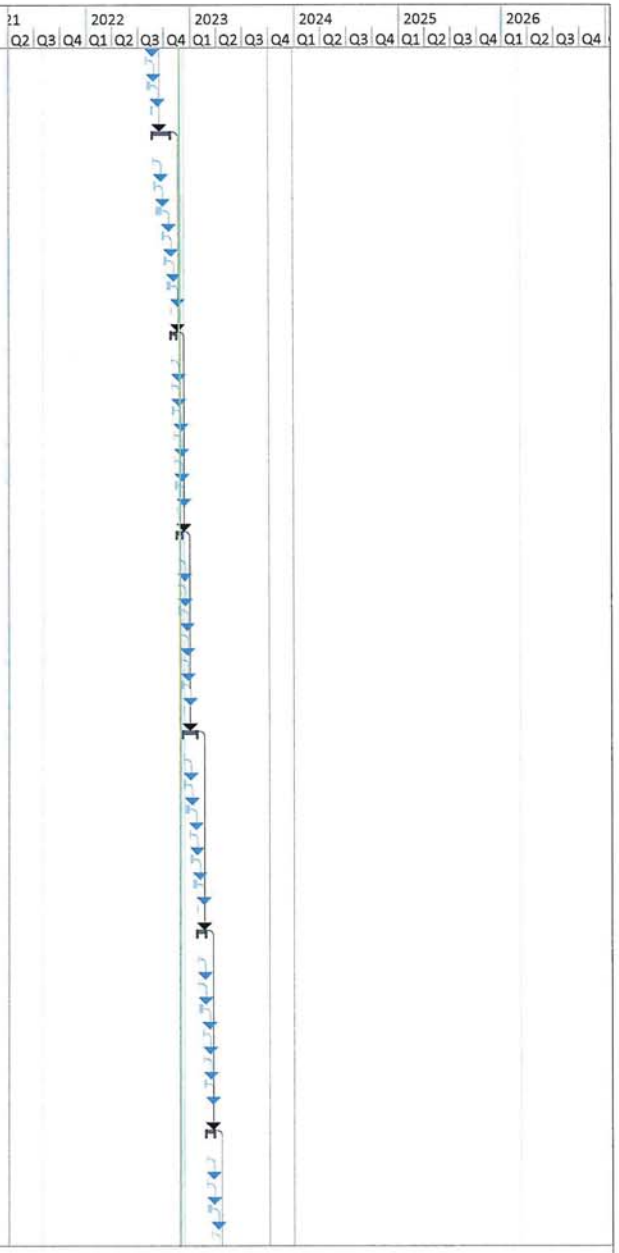
576	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	Jul 27 '22	Jul 30 '22		575	577
577	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	Jul 31 '22	Aug 13 '22		576	578
578	Reinstatement	8 days	Aug 14 '22	Aug 21 '22		577	
579	**CH420 - CH450 (30m)**	**63 days**	**Aug 22 '22**	**Oct 23 '22**		**564**	**587**
580	TTA establishment	2 days	Aug 22 '22	Aug 23 '22			581
581	Hard material excavation and disposal	7 days	Aug 24 '22	Aug 30 '22		580	582
582	Soil excavation , laying sheetpile and disposal	21 days	Aug 31 '22	Sep 20 '22		581	583
583	Treatment of bedding	7 days	Sep 21 '22	Sep 27 '22		582	584
584	Pipe laying D.I.	10 days	Sep 28 '22	Oct 7 '22		583	585
585	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	Oct 8 '22	Oct 21 '22		584	586
586	Reinstatement	2 days	Oct 22 '22	Oct 23 '22		585	
587	**CH390 - CH420 (30m)**	**20 days**	**Oct 24 '22**	**Nov 12 '22**		**579**	**595**
588	TTA establishment	1 day	Oct 24 '22	Oct 24 '22			589
589	Hard material excavation and disposal	1 day	Oct 25 '22	Oct 25 '22		588	590
590	Soil excavation , laying sheetpile and disposal	7 days	Oct 26 '22	Nov 1 '22		589	591
591	Treatment of bedding	1 day	Nov 2 '22	Nov 2 '22		590	592
592	Pipe laying D.I.	2 days	Nov 3 '22	Nov 4 '22		591	593
593	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	Nov 5 '22	Nov 11 '22		592	594
594	Reinstatement	1 day	Nov 12 '22	Nov 12 '22		593	
595	**CH360 - CH390 (30m)**	**20 days**	**Nov 13 '22**	**Dec 2 '22**		**587**	**603**
596	TTA establishment	1 day	Nov 13 '22	Nov 13 '22			597
597	Hard material excavation and disposal	1 day	Nov 14 '22	Nov 14 '22		596	598
598	Soil excavation , laying sheetpile and disposal	7 days	Nov 15 '22	Nov 21 '22		597	599
599	Treatment of bedding	1 day	Nov 22 '22	Nov 22 '22		598	600
600	Pipe laying D.I.	2 days	Nov 23 '22	Nov 24 '22		599	601
601	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	Nov 25 '22	Dec 1 '22		600	602
602	Reinstatement	1 day	Dec 2 '22	Dec 2 '22		601	
603	**CH290 - CH360 (70m)**	**50 days**	**Dec 3 '22**	**Jan 21 '23**		**595**	**611**
604	TTA establishment	1 day	Dec 3 '22	Dec 3 '22			605
605	Hard material excavation and disposal	4 days	Dec 4 '22	Dec 7 '22		604	606
606	Soil excavation , laying sheetpile and disposal	14 days	Dec 8 '22	Dec 21 '22		605	607
607	Treatment of bedding	4 days	Dec 22 '22	Dec 25 '22		606	608
608	Pipe laying D.I.	10 days	Dec 26 '22	Jan 4 '23		607	609
609	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	Jan 5 '23	Jan 18 '23		608	610
610	Reinstatement	3 days	Jan 19 '23	Jan 21 '23		609	
611	**CH250 - CH290 (40m)**	**30 days**	**Jan 22 '23**	**Feb 20 '23**		**603**	**619**
612	TTA establishment	1 day	Jan 22 '23	Jan 22 '23			613
613	Hard material excavation and disposal	2 days	Jan 23 '23	Jan 24 '23		612	614
614	Soil excavation , laying sheetpile and disposal	14 days	Jan 25 '23	Feb 7 '23		613	615
615	Treatment of bedding	2 days	Feb 8 '23	Feb 9 '23		614	616
616	Pipe laying D.I.	3 days	Feb 10 '23	Feb 12 '23		615	617
617	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	Feb 13 '23	Feb 19 '23		616	618
618	Reinstatement	1 day	Feb 20 '23	Feb 20 '23		617	
619	**CH210 - CH250 (40m)**	**30 days**	**Feb 21 '23**	**Mar 22 '23**		**611**	**627**
620	TTA establishment	1 day	Feb 21 '23	Feb 21 '23			621
621	Hard material excavation and disposal	2 days	Feb 22 '23	Feb 23 '23		620	622
622	Soil excavation , laying sheetpile and disposal	14 days	Feb 24 '23	Mar 9 '23		621	623
623	Treatment of bedding	2 days	Mar 10 '23	Mar 11 '23		622	624



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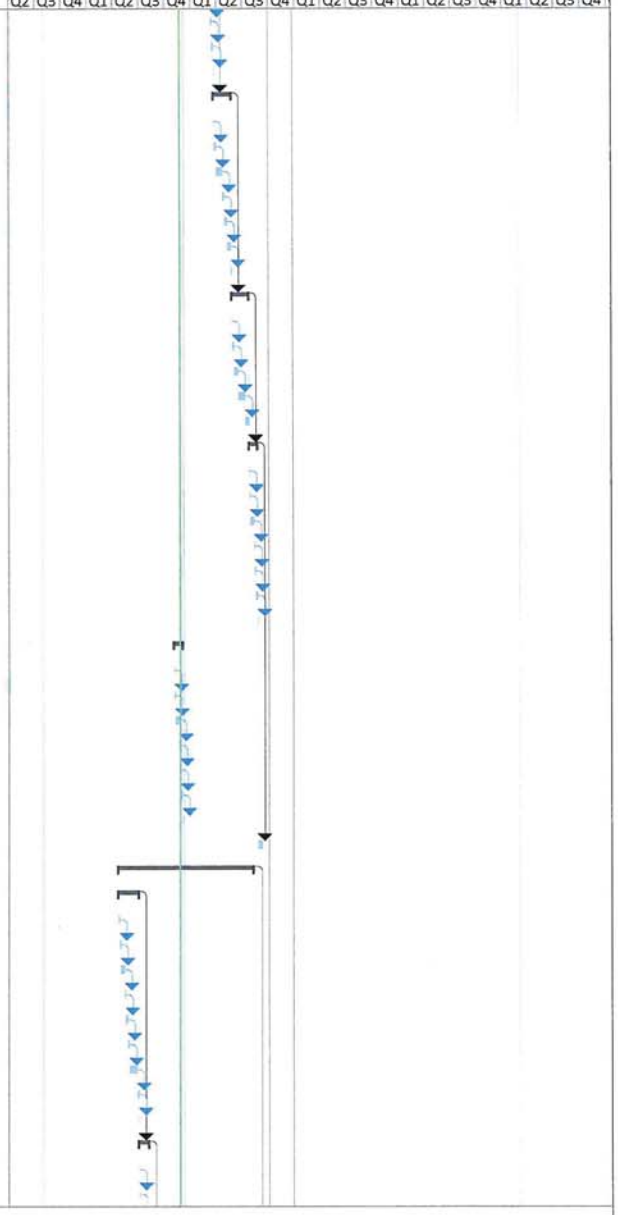
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
624	Pipe laying D.I.	3 days	Mar 12 '23	Mar 14 '23		623	625
625	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	Mar 15 '23	Mar 21 '23		624	626
626	Reinstatement	1 day	Mar 22 '23	Mar 22 '23		625	
627	**CH150 - CH210 (60m)**	**62 days**	**Mar 23 '23**	**May 23 '23**		**619**	**635**
628	TTA establishment	1 day	Mar 23 '23	Mar 23 '23			629
629	Hard material excavation and disposal	7 days	Mar 24 '23	Mar 30 '23		628	630
630	Soil excavation , laying sheetpile and disposal	21 days	Mar 31 '23	Apr 20 '23		629	631
631	Treatment of bedding	7 days	Apr 21 '23	Apr 27 '23		630	632
632	Pipe laying D.I.	10 days	Apr 28 '23	May 7 '23		631	633
633	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	May 8 '23	May 21 '23		632	634
634	Reinstatement	2 days	May 22 '23	May 23 '23		633	
635	**CH100 - CH150 (50m)**	**60 days**	**May 24 '23**	**Jul 22 '23**		**627**	**641**
636	TTA establishment	1 day	May 24 '23	May 24 '23			637
637	Removal of existing railing	7 days	May 25 '23	May 31 '23		636	638
638	Installation of mild steel pipe	14 days	Jun 1 '23	Jun 14 '23		637	639
639	Construction of thrust block	24 days	Jun 15 '23	Jul 8 '23		638	640
640	Reinstatement of railing	14 days	Jul 9 '23	Jul 22 '23		639	
641	**CH060 - CH100 (40m)**	**30 days**	**Jul 23 '23**	**Aug 21 '23**		**635**	**657**
642	TTA establishment	1 day	Jul 23 '23	Jul 23 '23			643
643	Hard material excavation and disposal	2 days	Jul 24 '23	Jul 25 '23		642	644
644	Soil excavation , laying sheetpile and disposal	14 days	Jul 26 '23	Aug 8 '23		643	645
645	Treatment of bedding	2 days	Aug 9 '23	Aug 10 '23		644	646
646	Pipe laying D.I.	3 days	Aug 11 '23	Aug 13 '23		645	647
647	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	Aug 14 '23	Aug 20 '23		646	648
648	Reinstatement	1 day	Aug 21 '23	Aug 21 '23		647	
649	**CH000 - CH060 (60m)**	**30 days**	**Nov 1 '22**	**Nov 30 '22**			
650	TTA establishment	1 day	Nov 1 '22	Nov 1 '22			651
651	Hard material excavation and disposal	2 days	Nov 2 '22	Nov 3 '22		650	652
652	Soil excavation , laying sheetpile and disposal	14 days	Nov 4 '22	Nov 17 '22		651	653
653	Treatment of bedding	2 days	Nov 18 '22	Nov 19 '22		652	654
654	Pipe laying D.I.	3 days	Nov 20 '22	Nov 22 '22		653	655
655	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	Nov 23 '22	Nov 29 '22		654	656
656	Reinstatement	1 day	Nov 30 '22	Nov 30 '22		655	
657	Pressure test, swabbing and CCTV	15 days	Aug 22 '23	Sep 5 '23		641	
658	**Team B : CH550 - CH1090 (540m)**	**473.5 days**	**Apr 20 '22**	**Aug 6 '23**			**749**
659	**CH970 - CH1010 (40m)**	**71.5 days**	**Apr 20 '22**	**Jun 30 '22**			**669**
660	TTA establishment	3 days	Apr 20 '22	Apr 22 '22			661
661	Hard material excavation and disposal	4 days	Apr 23 '22	Apr 26 '22		660	662
662	Soil excavation , laying sheetpile and disposal	14 days	Apr 27 '22	May 10 '22		661	663
663	Treatment of bedding	3 days	May 11 '22	May 13 '22		662	664
664	Pipe laying D.I.	7 days	May 14 '22	May 20 '22		663	665
665	CE-052 _ Inclement Weather in May 2022 (under assessment)	6 days	May 21 '22	May 26 '22		664	666
666	Backfilling sand/aggregate	27 days	May 27 '22	Jun 22 '22		665	667
667	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	Jun 23 '22	Jun 29 '22		666	668
668	Reinstatement	1 day	Jun 29 '22	Jun 30 '22		667	
669	**CH910 - CH970 (60m)**	**35 days**	**Jun 30 '22**	**Aug 4 '22**		**659**	**678**
670	TTA establishment	1 day	Jun 30 '22	Jul 1 '22			671
671	Hard material excavation and disposal	2 days	Jul 1 '22	Jul 3 '22		670	672



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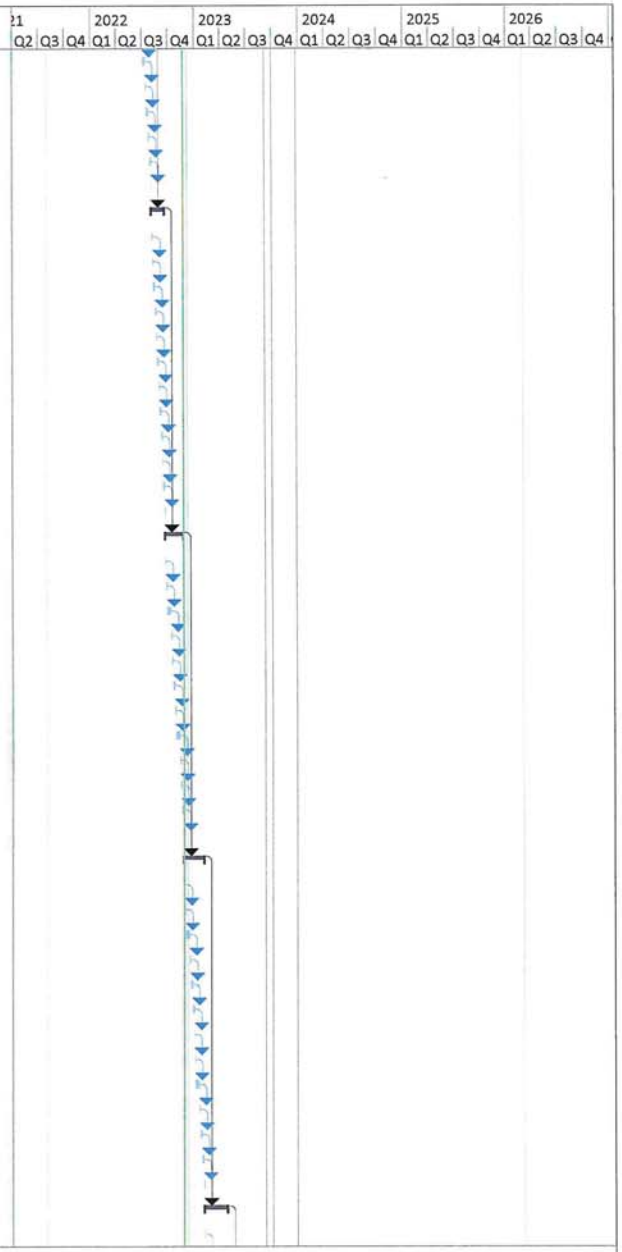
Split	Inactive Milestone	Manual Summary	Deadline			
Milestone	Inactive Summary	Start-only	Critical			
Summary	Manual Task	Finish-only	Critical Split			
Project Summary	Duration-only	External Tasks	Progress			

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
672	Soil excavation , laying sheetpile and disposal	10 days	Jul 3 '22	Jul 13 '22		671	673
673	Treatment of bedding	3 days	Jul 13 '22	Jul 16 '22		672	674
674	Pipe laying D.I.	7 days	Jul 16 '22	Jul 23 '22		673	675
675	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	Jul 23 '22	Jul 27 '22		674	676
676	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	Jul 27 '22	Aug 3 '22		675	677
677	Reinstatement	1 day	Aug 3 '22	Aug 4 '22		676	
678	**CH850 - CH910 (60m)**	**46 days**	**Aug 4 '22**	**Sep 19 '22**		**669**	**691**
679	TTA establishment	3 days	Aug 4 '22	Aug 7 '22			680
680	Hard material excavation and disposal (CH880 - CH910)	2 days	Aug 7 '22	Aug 9 '22		679	681
681	Soil excavation, laying sheetpile and disposal (CH880 - CH910)	7 days	Aug 9 '22	Aug 16 '22		680	682
682	Treatment of bedding (CH880 - CH910)	3 days	Aug 16 '22	Aug 19 '22		681	683
683	Pipe laying D.I. (CH880 - CH910)	2 days	Aug 19 '22	Aug 21 '22		682	684
684	Backfilling sand/aggregate, concurrent bend block/chambers (CH880 - CH910)	7 days	Aug 21 '22	Aug 28 '22		683	685
685	Hard material excavation and disposal (CH850 - CH880)	2 days	Aug 28 '22	Aug 30 '22		684	686
686	Soil excavation, laying sheetpile and disposal (CH850 - CH880)	7 days	Aug 30 '22	Sep 6 '22		685	687
687	Treatment of bedding (CH850 - CH880)	3 days	Sep 6 '22	Sep 9 '22		686	688
688	Pipe laying D.I. (CH850 - CH880)	2 days	Sep 9 '22	Sep 11 '22		687	689
689	Backfilling sand/aggregate, concurrent bend block/chambers (CH850 - CH880)	7 days	Sep 11 '22	Sep 18 '22		688	690
690	Reinstatement	1 day	Sep 18 '22	Sep 19 '22		689	
691	**CH750 - CH850 (100m)**	**64 days**	**Sep 19 '22**	**Nov 22 '22**		**678**	**704**
692	TTA establishment	2 days	Sep 19 '22	Sep 21 '22			693
693	Hard material excavation and disposal (CH800 - CH850)	3 days	Sep 21 '22	Sep 24 '22		692	694
694	Soil excavation , laying sheetpile and disposal (CH800 - CH850)	14 days	Sep 24 '22	Oct 8 '22		693	695
695	Treatment of bedding (CH800 - CH850)	3 days	Oct 8 '22	Oct 11 '22		694	696
696	Pipe laying D.I. (CH800 - CH850)	3 days	Oct 11 '22	Oct 14 '22		695	697
697	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	Oct 14 '22	Oct 21 '22		696	698
698	Hard material excavation and disposal (CH750 - CH800)	3 days	Oct 21 '22	Oct 24 '22		697	699
699	Soil excavation , laying sheetpile and disposal (CH750 - CH800)	14 days	Oct 24 '22	Nov 7 '22		698	700
700	Treatment of bedding (CH750 - CH800)	3 days	Nov 7 '22	Nov 10 '22		699	701
701	Pipe laying D.I. (CH750 - CH800)	3 days	Nov 10 '22	Nov 13 '22		700	702
702	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	Nov 13 '22	Nov 20 '22		701	703
703	Reinstatement	2 days	Nov 20 '22	Nov 22 '22		702	
704	**CH650 - CH750 (100m)**	**71 days**	**Nov 22 '22**	**Feb 1 '23**		**691**	**718**
705	TTA establishment	2 days	Nov 22 '22	Nov 24 '22			706
706	Hard material excavation and disposal (CH700 - CH750)	2 days	Nov 24 '22	Nov 26 '22		705	707
707	Soil excavation , laying sheetpile and disposal (CH700 - CH750)	14 days	Nov 26 '22	Dec 10 '22		706	708
708	Treatment of bedding (CH700 - CH750)	3 days	Dec 10 '22	Dec 13 '22		707	709
709	Pipe laying D.I. (CH700 - CH750)	7 days	Dec 13 '22	Dec 20 '22		708	710
710	Backfilling sand/aggregate, concurrent bend block/chambers (CH700 - CH750)	7 days	Dec 20 '22	Dec 27 '22		709	711
711	Reinstatement (CH700 - CH750)	1 day	Dec 27 '22	Dec 28 '22		710	712
712	Hard material excavation and disposal (CH650 - CH700)	2 days	Dec 28 '22	Dec 30 '22		711	713
713	Soil excavation , laying sheetpile and disposal (CH650 - CH700)	14 days	Dec 30 '22	Jan 13 '23		712	714
714	Treatment of bedding (CH650 - CH700)	3 days	Jan 13 '23	Jan 16 '23		713	715
715	Pipe laying D.I. (CH650 - CH700)	7 days	Jan 16 '23	Jan 23 '23		714	716
716	Backfilling sand/aggregate, concurrent bend block/chambers (CH650 - CH700)	7 days	Jan 23 '23	Jan 30 '23		715	717
717	Reinstatement	2 days	Jan 30 '23	Feb 1 '23		716	
718	**CH550 - CH650 (100m)**	**82 days**	**Feb 1 '23**	**Apr 24 '23**		**704**	**732**
719	TTA establishment	2 days	Feb 1 '23	Feb 3 '23			720



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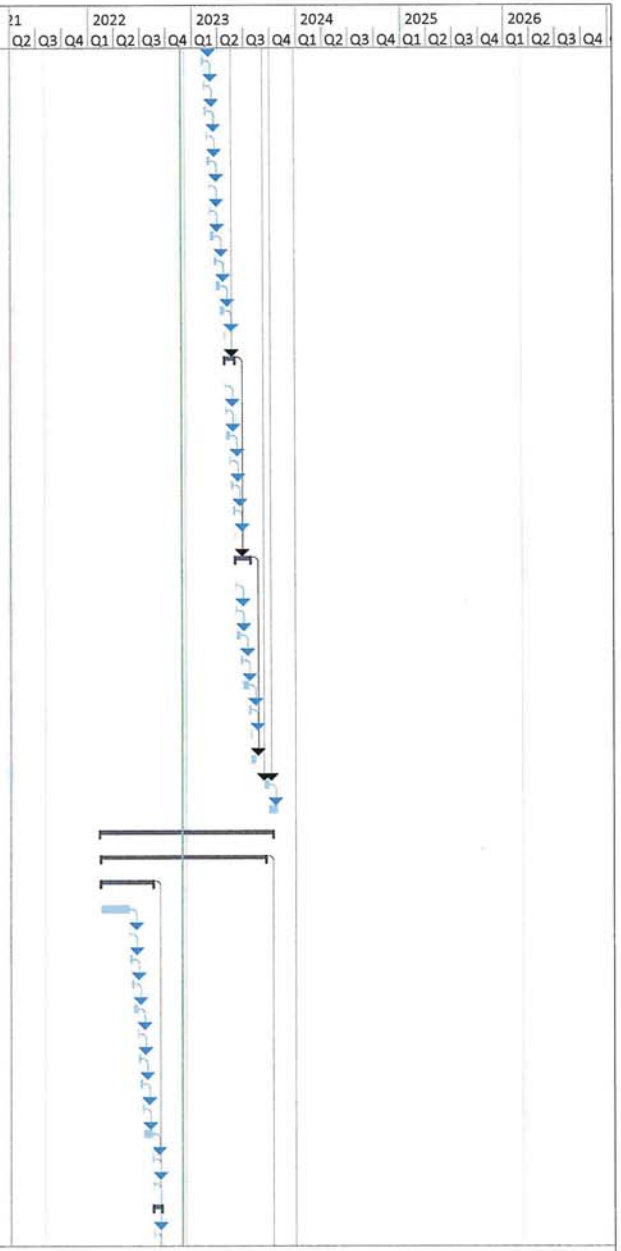
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
720	Hard material excavation and disposal (CH600 - CH650)	7 days	Feb 3 '23	Feb 10 '23		719	721
721	Soil excavation , laying sheetpile and disposal (CH600 - CH650)	3 days	Feb 10 '23	Feb 13 '23		720	722
722	Treatment of bedding (CH600 - CH650)	7 days	Feb 13 '23	Feb 20 '23		721	723
723	Pipe laying D.I. (CH600 - CH650)	2 days	Feb 20 '23	Feb 22 '23		722	724
724	Backfilling sand/aggregate, concurrent bend block/chambers (CH600 - CH650)	7 days	Feb 22 '23	Mar 1 '23		723	725
725	Reinstatement (CH600 - CH650)	1 day	Mar 1 '23	Mar 2 '23		724	726
726	Hard material excavation and disposal (CH550 - CH600)	2 days	Mar 2 '23	Mar 4 '23		725	727
727	Soil excavation , laying sheetpile and disposal (CH550 - CH600)	14 days	Mar 4 '23	Mar 18 '23		726	728
728	Treatment of bedding (CH550 - CH600)	7 days	Mar 18 '23	Mar 25 '23		727	729
729	Pipe laying D.I. (CH550 - CH600)	14 days	Mar 25 '23	Apr 8 '23		728	730
730	Backfilling sand/aggregate, concurrent bend block/chambers (CH550 - CH600)	14 days	Apr 8 '23	Apr 22 '23		729	731
731	Reinstatement	2 days	Apr 22 '23	Apr 24 '23		730	
732	**CH1010 - CH1040 (30m)**	**35 days**	**Apr 24 '23**	**May 29 '23**		**718**	**740**
733	TTA establishment	1 day	Apr 24 '23	Apr 25 '23			734
734	Hard material excavation and disposal	2 days	Apr 25 '23	Apr 27 '23		733	735
735	Soil excavation , laying sheetpile and disposal	14 days	Apr 27 '23	May 11 '23		734	736
736	Treatment of bedding	3 days	May 11 '23	May 14 '23		735	737
737	Pipe laying D.I.	7 days	May 14 '23	May 21 '23		736	738
738	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	May 21 '23	May 28 '23		737	739
739	Reinstatement	1 day	May 28 '23	May 29 '23		738	
740	**CH1040 - CH1090 (50m)**	**54 days**	**May 29 '23**	**Jul 22 '23**		**732**	**748**
741	TTA establishment	1 day	May 29 '23	May 30 '23			742
742	Hard material excavation and disposal	2 days	May 30 '23	Jun 1 '23		741	743
743	Soil excavation , laying sheetpile and disposal	14 days	Jun 1 '23	Jun 15 '23		742	744
744	Treatment of bedding	7 days	Jun 15 '23	Jun 22 '23		743	745
745	Pipe laying D.I.	21 days	Jun 22 '23	Jul 13 '23		744	746
746	Backfilling sand/aggregate, concurrent bend block/chambers	7 days	Jul 13 '23	Jul 20 '23		745	747
747	Reinstatement	2 days	Jul 20 '23	Jul 22 '23		746	
748	Pressure test, swabbing and CCTV	15 days	Jul 22 '23	Aug 6 '23		740	
749	Overall pressure test	15 days	Sep 6 '23	Sep 20 '23		563,658	750
750	Pipe connection and completion	30 days	Sep 21 '23	Oct 20 '23		749	
751	**RW43 : DN150 DI pipe - 1144m**	**608.5 days**	**Feb 7 '22**	**Oct 8 '23**			
752	**Team A CH430 to CH710 & CH970 to CH1144 (454m)**	**580.5 days**	**Feb 10 '22**	**Sep 13 '23**			**912**
753	**Team A CH640 to CH710 (20m)**	**184.5 days**	**Feb 10 '22**	**Aug 13 '22**			**901**
754	Pending for IIB of pipe fittings	99 days	Feb 10 '22	May 19 '22			755
755	TTA establishment	2 days	May 20 '22	May 21 '22		754	756
756	Hard material excavation and disposal	7 days	May 22 '22	May 28 '22		755	757
757	CE-052 _ Inclement Weather in May 2022 (under assessment)	6 days	May 29 '22	Jun 3 '22		756	758
758	Soil excavation , laying sheetpile and disposal	14 days	Jun 4 '22	Jun 17 '22		757	759
759	Treatment of bedding	3 days	Jun 18 '22	Jun 20 '22		758	760
760	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	Jun 21 '22	Jun 27 '22		759	761
761	Pipe laying D.I.	7 days	Jun 27 '22	Jul 4 '22		760	762
762	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	Jul 4 '22	Jul 8 '22		761	763
763	Works suspended by Sheung Shui Heung	30 days	Jul 8 '22	Aug 7 '22		762	764
764	Backfilling general fill and compaction	5 days	Aug 7 '22	Aug 12 '22		763	765
765	Reinstatement	1 day	Aug 12 '22	Aug 13 '22		764	767
766	**Team A CH490 to CH520 (30m)**	**30 days**	**Aug 13 '22**	**Sep 12 '22**			
767	TTA establishment	1 day	Aug 13 '22	Aug 14 '22		765	768



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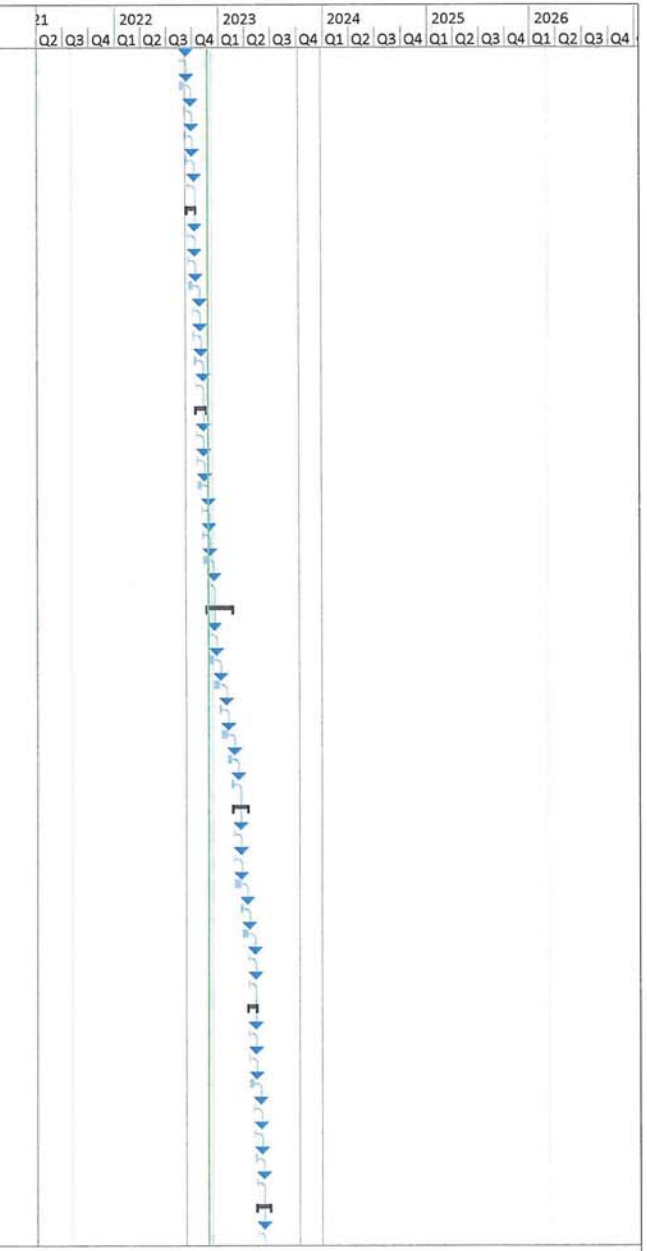
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
768	Hard material excavation and disposal	2 days	Aug 14 '22	Aug 16 '22		767	769
769	Soil excavation , laying sheetpile and disposal	14 days	Aug 16 '22	Aug 30 '22		768	770
770	Treatment of bedding	2 days	Aug 30 '22	Sep 1 '22		769	771
771	Pipe laying D.I.	3 days	Sep 1 '22	Sep 4 '22		770	772
772	Backfilling general fill and compaction	7 days	Sep 4 '22	Sep 11 '22		771	773
773	Reinstatement	1 day	Sep 11 '22	Sep 12 '22		772	775
774	**Team A CH460 to CH490 (30m)**	**30 days**	**Sep 12 '22**	**Oct 12 '22**			
775	TTA establishment	1 day	Sep 12 '22	Sep 13 '22		773	776
776	Hard material excavation and disposal	2 days	Sep 13 '22	Sep 15 '22		775	777
777	Soil excavation , laying sheetpile and disposal	14 days	Sep 15 '22	Sep 29 '22		776	778
778	Treatment of bedding	2 days	Sep 29 '22	Oct 1 '22		777	779
779	Pipe laying D.I.	3 days	Oct 1 '22	Oct 4 '22		778	780
780	Backfilling general fill and compaction	7 days	Oct 4 '22	Oct 11 '22		779	781
781	Reinstatement	1 day	Oct 11 '22	Oct 12 '22		780	783
782	**Team A CH430 to CH460 (30m)**	**37 days**	**Oct 12 '22**	**Nov 18 '22**			
783	TTA establishment	1 day	Oct 12 '22	Oct 13 '22		781	784
784	Hard material excavation and disposal	2 days	Oct 13 '22	Oct 15 '22		783	785
785	Soil excavation , laying sheetpile and disposal	14 days	Oct 15 '22	Oct 29 '22		784	786
786	Treatment of bedding	2 days	Oct 29 '22	Oct 31 '22		785	787
787	Pipe laying D.I.	3 days	Oct 31 '22	Nov 3 '22		786	788
788	Backfilling general fill and compaction	14 days	Nov 3 '22	Nov 17 '22		787	789
789	Reinstatement	1 day	Nov 17 '22	Nov 18 '22		788	791
790	**Team A CH520 to CH640 (120m) (crossing Po Wan Road)**	**91 days**	**Nov 18 '22**	**Feb 17 '23**			
791	TTA establishment	7 days	Nov 18 '22	Nov 25 '22		789	792
792	Hard material excavation and disposal	14 days	Nov 25 '22	Dec 9 '22		791	793
793	Soil excavation , laying sheetpile and disposal	21 days	Dec 9 '22	Dec 30 '22		792	794
794	Treatment of bedding	7 days	Dec 30 '22	Jan 6 '23		793	795
795	Pipe laying D.I.	21 days	Jan 6 '23	Jan 27 '23		794	796
796	Backfilling general fill and compaction	14 days	Jan 27 '23	Feb 10 '23		795	797
797	Reinstatement	7 days	Feb 10 '23	Feb 17 '23		796	799
798	**Team A CH970 to CH1025 (55m)**	**53 days**	**Feb 17 '23**	**Apr 11 '23**			
799	TTA establishment	1 day	Feb 17 '23	Feb 18 '23		797	800
800	Hard material excavation and disposal	2 days	Feb 18 '23	Feb 20 '23		799	801
801	Soil excavation , laying sheetpile and disposal	21 days	Feb 20 '23	Mar 13 '23		800	802
802	Treatment of bedding	7 days	Mar 13 '23	Mar 20 '23		801	803
803	Pipe laying D.I.	19 days	Mar 20 '23	Apr 8 '23		802	804
804	Backfilling general fill and compaction	2 days	Apr 8 '23	Apr 10 '23		803	805
805	Reinstatement	1 day	Apr 10 '23	Apr 11 '23		804	807
806	**Team A CH1025 to CH1065 (40m)**	**30 days**	**Apr 11 '23**	**May 11 '23**			
807	TTA establishment	1 day	Apr 11 '23	Apr 12 '23		805	808
808	Hard material excavation and disposal	2 days	Apr 12 '23	Apr 14 '23		807	809
809	Soil excavation , laying sheetpile and disposal	14 days	Apr 14 '23	Apr 28 '23		808	810
810	Treatment of bedding	2 days	Apr 28 '23	Apr 30 '23		809	811
811	Pipe laying D.I.	3 days	Apr 30 '23	May 3 '23		810	812
812	Backfilling general fill and compaction	7 days	May 3 '23	May 10 '23		811	813
813	Reinstatement	1 day	May 10 '23	May 11 '23		812	815
814	**Team A CH1065 to CH1125 (60m)**	**48 days**	**May 11 '23**	**Jun 28 '23**			
815	TTA establishment	1 day	May 11 '23	May 12 '23		813	816



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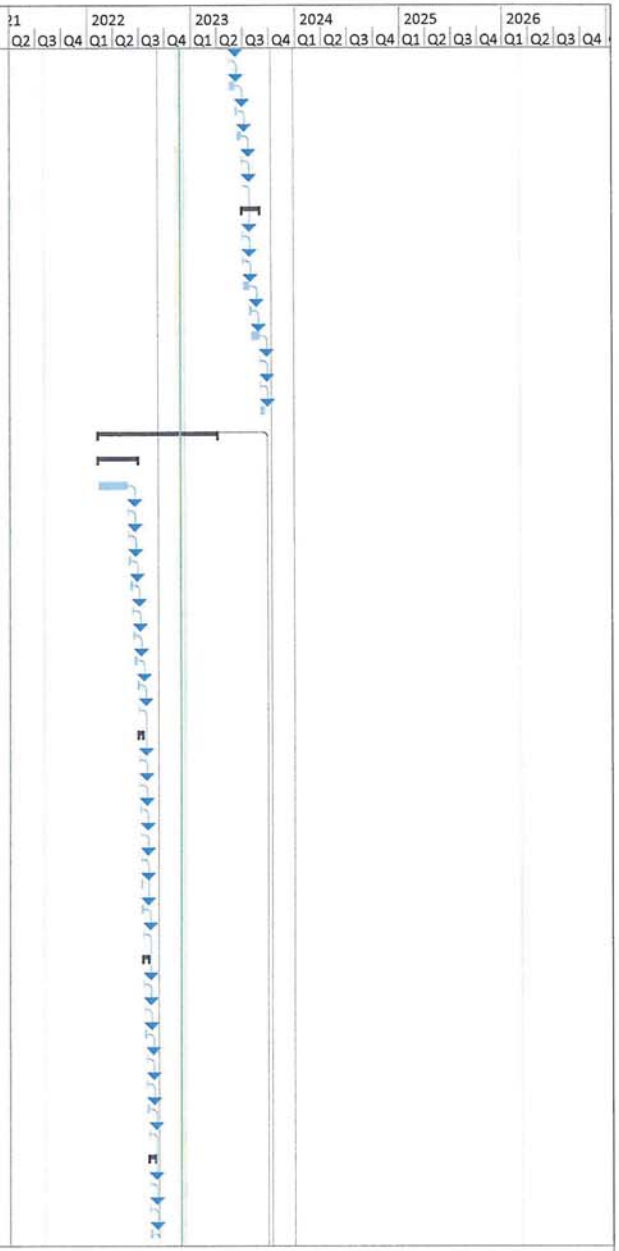
816	Hard material excavation and disposal	2 days	May 12 '23	May 14 '23		815	817
817	Soil excavation , laying sheetpile and disposal	21 days	May 14 '23	Jun 4 '23		816	818
818	Treatment of bedding	7 days	Jun 4 '23	Jun 11 '23		817	819
819	Pipe laying D.I.	14 days	Jun 11 '23	Jun 25 '23		818	820
820	Backfilling general fill and compaction	2 days	Jun 25 '23	Jun 27 '23		819	821
821	Reinstatement	1 day	Jun 27 '23	Jun 28 '23		820	823
822	**Team A CH1125 to CH1144 (19m)**	**62 days**	**Jun 28 '23**	**Aug 29 '23**			
823	TTA establishment	1 day	Jun 28 '23	Jun 29 '23		821	824
824	Hard material excavation and disposal	2 days	Jun 29 '23	Jul 1 '23		823	825
825	Soil excavation , laying sheetpile and disposal	21 days	Jul 1 '23	Jul 22 '23		824	826
826	Treatment of bedding	7 days	Jul 22 '23	Jul 29 '23		825	827
827	Pipe laying D.I.	28 days	Jul 29 '23	Aug 26 '23		826	828
828	Backfilling general fill and compaction	2 days	Aug 26 '23	Aug 28 '23		827	829
829	Reinstatement	1 day	Aug 28 '23	Aug 29 '23		828	830
830	Pressure test, swabbing and CCTV	15 days	Aug 29 '23	Sep 13 '23		829	
831	**Team B CH000 to CH430 (430m)**	**419.5 days**	**Feb 7 '22**	**Apr 2 '23**			**912**
832	**Team B CH210 to CH235 (25m)**	**141.5 days**	**Feb 7 '22**	**Jun 28 '22**			
833	Pending for release of TTA from other Contractor	102 days	Feb 7 '22	May 19 '22			834
834	TTA establishment	1 day	May 20 '22	May 20 '22		833	835
835	Hard material excavation and disposal	2 days	May 21 '22	May 22 '22		834	836
836	CE-052 _ Inclement Weather in May 2022 (under assessment)	6 days	May 23 '22	May 28 '22		835	837
837	Soil excavation , laying sheetpile and disposal	7 days	May 29 '22	Jun 4 '22		836	838
838	Treatment of bedding	3 days	Jun 5 '22	Jun 7 '22		837	839
839	Pipe laying D.I.	3 days	Jun 8 '22	Jun 10 '22		838	840
840	Backfilling general fill and compaction	10 days	Jun 11 '22	Jun 20 '22		839	841
841	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	Jun 21 '22	Jun 27 '22		840	842
842	Reinstatement	1 day	Jun 27 '22	Jun 28 '22		841	844
843	**Team B CH180 to CH210 (30m)**	**15 days**	**Jun 28 '22**	**Jul 13 '22**			
844	TTA establishment	1 day	Jun 28 '22	Jun 29 '22		842	845
845	Hard material excavation and disposal	1 day	Jun 29 '22	Jun 30 '22		844	846
846	Soil excavation , laying sheetpile and disposal	3 days	Jun 30 '22	Jul 3 '22		845	847
847	Treatment of bedding	1 day	Jul 3 '22	Jul 4 '22		846	848
848	Pipe laying D.I.	1 day	Jul 4 '22	Jul 5 '22		847	850,849
849	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	Jul 5 '22	Jul 9 '22		848	
850	Backfilling general fill and compaction	7 days	Jul 5 '22	Jul 12 '22		848	851
851	Reinstatement	1 day	Jul 12 '22	Jul 13 '22		850	853
852	**Team B CH235 to CH270 (35m)**	**21 days**	**Jul 13 '22**	**Aug 3 '22**			
853	TTA establishment	1 day	Jul 13 '22	Jul 14 '22		851	854
854	Hard material excavation and disposal	2 days	Jul 14 '22	Jul 16 '22		853	855
855	Soil excavation , laying sheetpile and disposal	7 days	Jul 16 '22	Jul 23 '22		854	856
856	Treatment of bedding	1 day	Jul 23 '22	Jul 24 '22		855	857
857	Pipe laying D.I.	2 days	Jul 24 '22	Jul 26 '22		856	858
858	Backfilling general fill and compaction	7 days	Jul 26 '22	Aug 2 '22		857	859
859	Reinstatement	1 day	Aug 2 '22	Aug 3 '22		858	861
860	**Team B CH270 to CH310 (40m)**	**23 days**	**Aug 3 '22**	**Aug 26 '22**			
861	TTA establishment	1 day	Aug 3 '22	Aug 4 '22		859	862
862	Hard material excavation and disposal	2 days	Aug 4 '22	Aug 6 '22		861	863
863	Soil excavation , laying sheetpile and disposal	7 days	Aug 6 '22	Aug 13 '22		862	864



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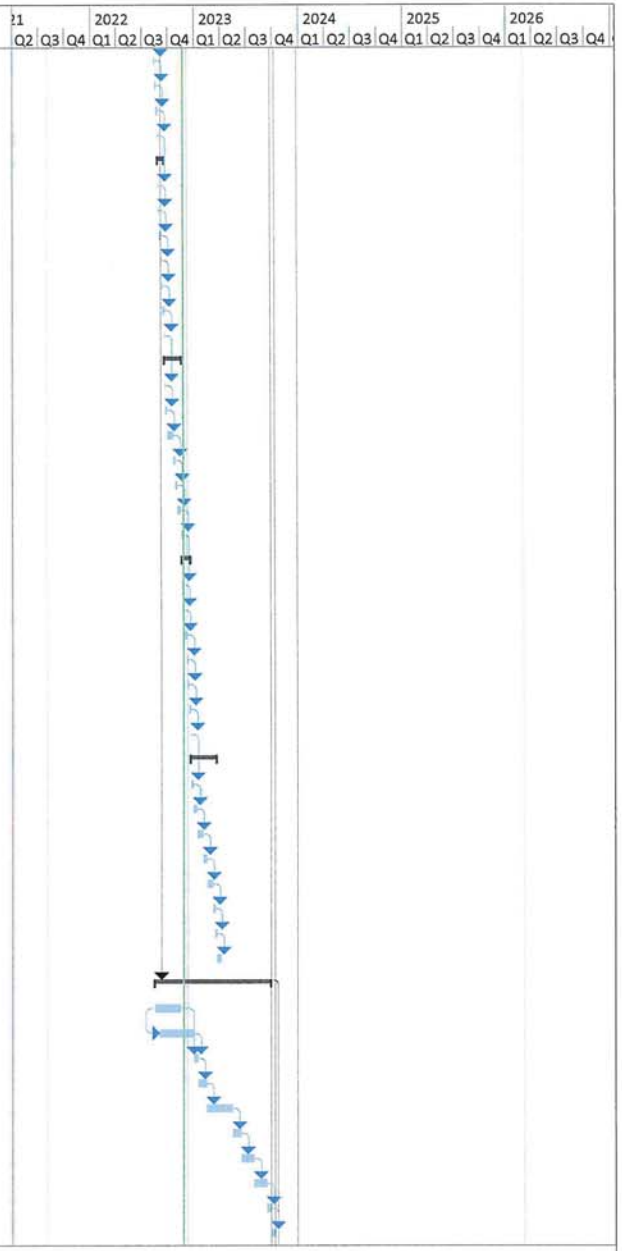
864	Treatment of bedding	2 days	Aug 13 '22	Aug 15 '22		863	865
865	Pipe laying D.I.	3 days	Aug 15 '22	Aug 18 '22		864	866
866	Backfilling general fill and compaction	7 days	Aug 18 '22	Aug 25 '22		865	867
867	Reinstatement	1 day	Aug 25 '22	Aug 26 '22		866	869
868	**Team B CH310 to CH340 (30m)**	**23 days**	**Aug 26 '22**	**Sep 18 '22**			
869	TTA establishment	1 day	Aug 26 '22	Aug 27 '22		867	870
870	Hard material excavation and disposal	2 days	Aug 27 '22	Aug 29 '22		869	871
871	Soil excavation , laying sheetpile and disposal	7 days	Aug 29 '22	Sep 5 '22		870	872
872	Treatment of bedding	2 days	Sep 5 '22	Sep 7 '22		871	873
873	Pipe laying D.I.	3 days	Sep 7 '22	Sep 10 '22		872	874
874	Backfilling general fill and compaction	7 days	Sep 10 '22	Sep 17 '22		873	875
875	Reinstatement	1 day	Sep 17 '22	Sep 18 '22		874	877
876	**Team B CH0 to CH150 (150m)**	**60 days**	**Sep 18 '22**	**Nov 17 '22**			
877	TTA establishment	1 day	Sep 18 '22	Sep 19 '22		875	878
878	Hard material excavation and disposal	7 days	Sep 19 '22	Sep 26 '22		877	879
879	Soil excavation , laying sheetpile and disposal	21 days	Sep 26 '22	Oct 17 '22		878	880
880	Treatment of bedding	7 days	Oct 17 '22	Oct 24 '22		879	881
881	Pipe laying D.I.	7 days	Oct 24 '22	Oct 31 '22		880	882
882	Backfilling gerneral fill and compaction	14 days	Oct 31 '22	Nov 14 '22		881	883
883	Reinstatement	3 days	Nov 14 '22	Nov 17 '22		882	885
884	**Team B CH150 to CH180 (30m)**	**30 days**	**Nov 17 '22**	**Dec 17 '22**			
885	TTA establishment	1 day	Nov 17 '22	Nov 18 '22		883	886
886	Hard material excavation and disposal	2 days	Nov 18 '22	Nov 20 '22		885	887
887	Soil excavation , laying sheetpile and disposal	14 days	Nov 20 '22	Dec 4 '22		886	888
888	Treatment of bedding	2 days	Dec 4 '22	Dec 6 '22		887	889
889	Pipe laying D.I.	3 days	Dec 6 '22	Dec 9 '22		888	890
890	Backfilling general fill and compaction	7 days	Dec 9 '22	Dec 16 '22		889	891
891	Reinstatement	1 day	Dec 16 '22	Dec 17 '22		890	893
892	**Team B CH340 to CH430 (90m) (Shek Shueng River)**	**91 days**	**Dec 17 '22**	**Mar 18 '23**			
893	TTA establishment	7 days	Dec 17 '22	Dec 24 '22		891	894
894	Hard material excavation and disposal	14 days	Dec 24 '22	Jan 7 '23		893	895
895	Soil excavation , laying sheetpile and disposal	21 days	Jan 7 '23	Jan 28 '23		894	896
896	Treatment of bedding	14 days	Jan 28 '23	Feb 11 '23		895	897
897	Pipe laying D.I.	21 days	Feb 11 '23	Mar 4 '23		896	898
898	Backfilling general fill and compaction	7 days	Mar 4 '23	Mar 11 '23		897	899
899	Reinstatement	7 days	Mar 11 '23	Mar 18 '23		898	900
900	Pressure test, swabbing and CCTV	15 days	Mar 18 '23	Apr 2 '23		899	
901	**Team C CH710 to CH970 (260m) -within the scope of Shueng Shui Hueng**	**406 days**	**Aug 13 '22**	**Sep 23 '23**		**753**	**912**
902	Pending agreement of Shueng Shui Hueng villagers	90 days	Aug 13 '22	Nov 11 '22			904,903SS+16 days
903	XP application for alternative alignment of watermain	120 days	Aug 29 '22	Dec 27 '22		902SS+16 days	904
904	TTA establishment	15 days	Dec 27 '22	Jan 11 '23		902,903	905
905	Hard material excavation and disposal	30 days	Jan 11 '23	Feb 10 '23		904	906
906	Soil excavation , laying sheetpile and disposal	90 days	Feb 10 '23	May 11 '23		905	907
907	Treatment of bedding	30 days	May 11 '23	Jun 10 '23		906	908
908	Pipe laying D.I.	45 days	Jun 10 '23	Jul 25 '23		907	909
909	Backfilling general fill and compaction	45 days	Jul 25 '23	Sep 8 '23		908	910
910	Reinstatement	15 days	Sep 8 '23	Sep 23 '23		909	911
911	Pressure test, swabbing and CCTV	15 days	Sep 23 '23	Oct 8 '23		910	



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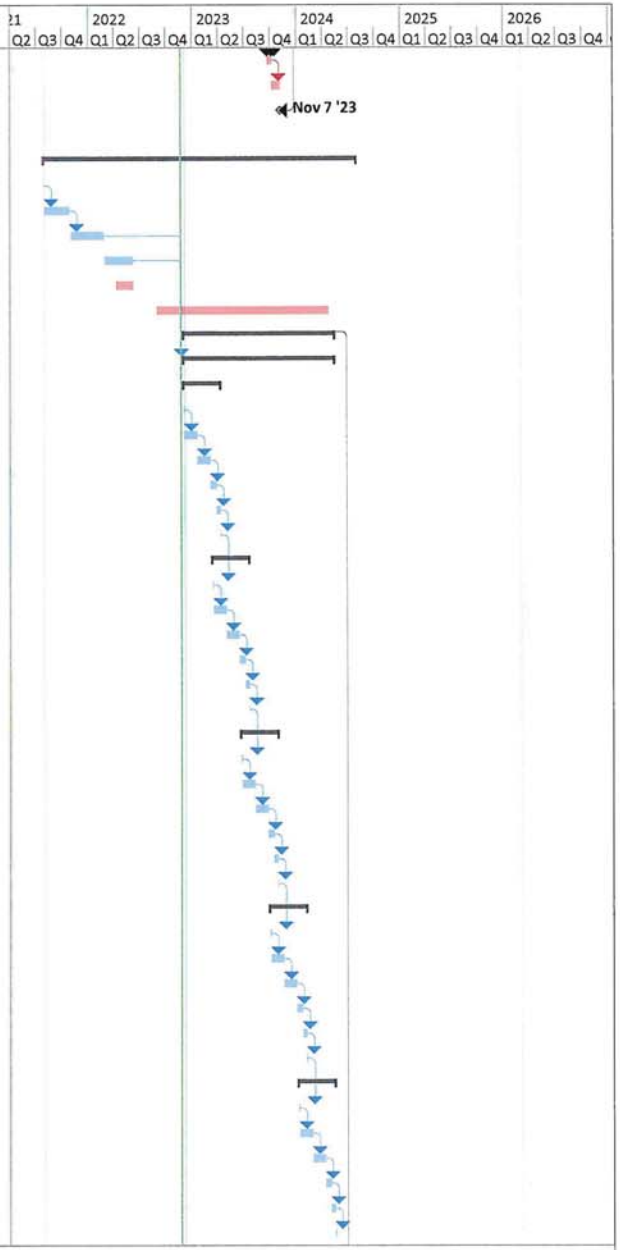
912	Overall pressure testing	15 days	Sep 23 '23	Oct 8 '23		752,831,901	913
913	Pipe connection and completion	30 days	Oct 8 '23	Nov 7 '23		912	
914	Planned completion for section 4	0 days	Nov 7 '23	Nov 7 '23		561FF	
915							
916	**Section 5 - Water main laying works in part 4 of the Site**	**1096 days**	**Jul 30 '21**	**Jul 29 '24**			
917	Access Date (part 4 of the Site)	1 day	Jul 30 '21	Jul 30 '21			918
918	Initial survey (utility survey, condition survey, initial photo)	90 days	Jul 31 '21	Oct 28 '21		917	919
919	Application and approval of XP and TTA	116 days	Nov 1 '21	Feb 24 '22		918	924
920	Procurement and Delivery of pipes, fittings and related materials	100 days	Feb 28 '22	Jun 7 '22			924
921	Submission and acceptance of method statement and material	60 days	Apr 11 '22	Jun 9 '22			
922	Excavation of Inspection Pit	600 days	Sep 1 '22	Apr 22 '24			
923	**Mainlaying by trenchless method (RW04)**	**530 days**	**Dec 1 '22**	**May 13 '24**			**1141**
924	**RW04 : DN450 DI pipe (trenchless)**	**530 days**	**Dec 1 '22**	**May 13 '24**	**60**	**919,920**	
925	**Wo Tai Street (70m) - TBM Method**	**130 days**	**Dec 1 '22**	**Apr 9 '23**			
926	TTA implementation	3 days	Dec 1 '22	Dec 3 '22			927
927	Contruction of jacking pit and receiving pit	45 days	Dec 4 '22	Jan 17 '23		926	928
928	Trenchless works and pipe laying	45 days	Jan 18 '23	Mar 3 '23		927	929
929	Manhole / Chamber construction	21 days	Mar 4 '23	Mar 24 '23		928	930
930	Backfilling and compaction	14 days	Mar 25 '23	Apr 7 '23		929	931
931	Reinstatement	2 days	Apr 8 '23	Apr 9 '23		930	933FS-30 days
932	**Ma Sik Road (70m) - TBM Method**	**130 days**	**Mar 11 '23**	**Jul 18 '23**			
933	TTA implementation	3 days	Mar 11 '23	Mar 13 '23		931FS-30 days	934
934	Contruction of jacking pit and receiving pit	45 days	Mar 14 '23	Apr 27 '23		933	935
935	Trenchless works and pipe laying	45 days	Apr 28 '23	Jun 11 '23		934	936
936	Manhole / Chamber construction	21 days	Jun 12 '23	Jul 2 '23		935	937
937	Backfilling and compaction	14 days	Jul 3 '23	Jul 16 '23		936	938
938	Reinstatement	2 days	Jul 17 '23	Jul 18 '23		937	940FS-30 days
939	**Luen Chit Street (70m) - TBM Method**	**130 days**	**Jun 19 '23**	**Oct 26 '23**			
940	TTA implementation	3 days	Jun 19 '23	Jun 21 '23		938FS-30 days	941
941	Contruction of jacking pit and receiving pit	45 days	Jun 22 '23	Aug 5 '23		940	942
942	Trenchless works and pipe laying	45 days	Aug 6 '23	Sep 19 '23		941	943
943	Manhole / Chamber construction	21 days	Sep 20 '23	Oct 10 '23		942	944
944	Backfilling and compaction	14 days	Oct 11 '23	Oct 24 '23		943	945
945	Reinstatement	2 days	Oct 25 '23	Oct 26 '23		944	947FS-30 days
946	**Luen Sum Road (70m) - TBM Method**	**130 days**	**Sep 27 '23**	**Feb 3 '24**			
947	TTA implementation	3 days	Sep 27 '23	Sep 29 '23		945FS-30 days	948
948	Contruction of jacking pit and receiving pit	45 days	Sep 30 '23	Nov 13 '23		947	949
949	Trenchless works and pipe laying	45 days	Nov 14 '23	Dec 28 '23		948	950
950	Manhole / Chamber construction	21 days	Dec 29 '23	Jan 18 '24		949	951
951	Backfilling and compaction	14 days	Jan 19 '24	Feb 1 '24		950	952
952	Reinstatement	2 days	Feb 2 '24	Feb 3 '24		951	954FS-30 days
953	**Fanling Lau Road (70m) - TBM Method**	**130 days**	**Jan 5 '24**	**May 13 '24**			
954	TTA implementation	3 days	Jan 5 '24	Jan 7 '24		952FS-30 days	955
955	Contruction of jacking pit and receiving pit	45 days	Jan 8 '24	Feb 21 '24		954	956
956	Trenchless works and pipe laying	45 days	Feb 22 '24	Apr 6 '24		955	957
957	Manhole / Chamber construction	21 days	Apr 7 '24	Apr 27 '24		956	958
958	Backfilling and compaction	14 days	Apr 28 '24	May 11 '24		957	959
959	Reinstatement	2 days	May 12 '24	May 13 '24		958	



Project: 3WSD20 Programme
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Task
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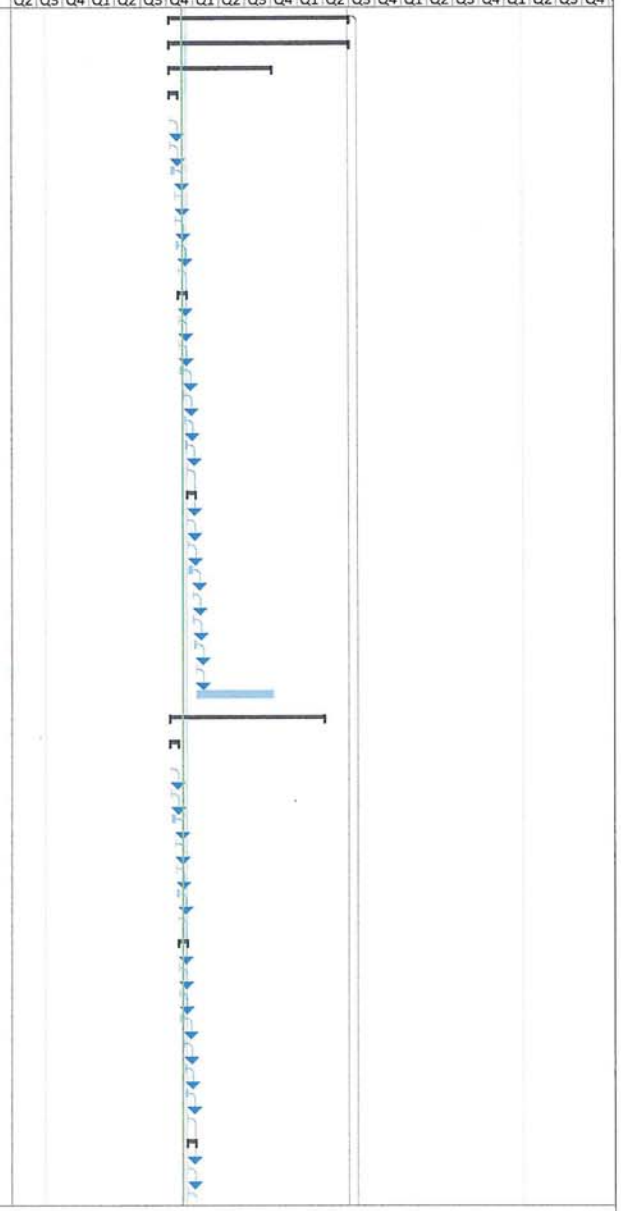
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
960	**Mainlaying by open trench method (RW04)**	**631 days**	**Oct 10 '22**	**Jul 1 '24**			**1141**
961	**RW04 : DN450 DI Pipe**	**631 days**	**Oct 10 '22**	**Jul 1 '24**			
962	Ma Sik Road CH1400 to CH1700 (300m)	360 days	Oct 10 '22	Oct 4 '23			
963	CH1400 to CH1430 (30m)	30 days	Oct 10 '22	Nov 8 '22			
964	TTA establishment	1 day	Oct 10 '22	Oct 10 '22			965
965	Hard material excavation and disposal	2 days	Oct 11 '22	Oct 12 '22		964	966
966	Soil excavation , laying sheetpile and disposal	14 days	Oct 13 '22	Oct 26 '22		965	967
967	Treatment of bedding	2 days	Oct 27 '22	Oct 28 '22		966	968
968	Pipe laying D.I.	3 days	Oct 29 '22	Oct 31 '22		967	969
969	Backfilling general fill and compaction	7 days	Nov 1 '22	Nov 7 '22		968	970
970	Reinstatement	1 day	Nov 8 '22	Nov 8 '22		969	972
971	CH1430 to CH1460 (30m)	30 days	Nov 9 '22	Dec 8 '22			
972	TTA establishment	1 day	Nov 9 '22	Nov 9 '22		970	973
973	Hard material excavation and disposal	2 days	Nov 10 '22	Nov 11 '22		972	974
974	Soil excavation , laying sheetpile and disposal	14 days	Nov 12 '22	Nov 25 '22		973	975
975	Treatment of bedding	2 days	Nov 26 '22	Nov 27 '22		974	976
976	Pipe laying D.I.	3 days	Nov 28 '22	Nov 30 '22		975	977
977	Backfilling general fill and compaction	7 days	Dec 1 '22	Dec 7 '22		976	978
978	Reinstatement	1 day	Dec 8 '22	Dec 8 '22		977	980
979	CH1460 to CH1490 (30m)	30 days	Dec 9 '22	Jan 7 '23			
980	TTA establishment	1 day	Dec 9 '22	Dec 9 '22		978	981
981	Hard material excavation and disposal	2 days	Dec 10 '22	Dec 11 '22		980	982
982	Soil excavation , laying sheetpile and disposal	14 days	Dec 12 '22	Dec 25 '22		981	983
983	Treatment of bedding	2 days	Dec 26 '22	Dec 27 '22		982	984
984	Pipe laying D.I.	3 days	Dec 28 '22	Dec 30 '22		983	985
985	Backfilling general fill and compaction	7 days	Dec 31 '22	Jan 6 '23		984	986
986	Reinstatement	1 day	Jan 7 '23	Jan 7 '23		985	987
987	CH1490 to 1700 (210m)	270 days	Jan 8 '23	Oct 4 '23	60	986	
988	Ma Sik Road CH1700 to CH2180 (480m)	540 days	Oct 10 '22	Apr 1 '24			
989	CH1700 to CH1730 (30m)	30 days	Oct 10 '22	Nov 8 '22			
990	TTA establishment	1 day	Oct 10 '22	Oct 10 '22			991
991	Hard material excavation and disposal	2 days	Oct 11 '22	Oct 12 '22		990	992
992	Soil excavation , laying sheetpile and disposal	14 days	Oct 13 '22	Oct 26 '22		991	993
993	Treatment of bedding	2 days	Oct 27 '22	Oct 28 '22		992	994
994	Pipe laying D.I.	3 days	Oct 29 '22	Oct 31 '22		993	995
995	Backfilling general fill and compaction	7 days	Nov 1 '22	Nov 7 '22		994	996
996	Reinstatement	1 day	Nov 8 '22	Nov 8 '22		995	998
997	CH1730 to CH1760 (30m)	30 days	Nov 9 '22	Dec 8 '22			
998	TTA establishment	1 day	Nov 9 '22	Nov 9 '22		996	999
999	Hard material excavation and disposal	2 days	Nov 10 '22	Nov 11 '22		998	1000
1000	Soil excavation , laying sheetpile and disposal	14 days	Nov 12 '22	Nov 25 '22		999	1001
1001	Treatment of bedding	2 days	Nov 26 '22	Nov 27 '22		1000	1002
1002	Pipe laying D.I.	3 days	Nov 28 '22	Nov 30 '22		1001	1003
1003	Backfilling general fill and compaction	7 days	Dec 1 '22	Dec 7 '22		1002	1004
1004	Reinstatement	1 day	Dec 8 '22	Dec 8 '22		1003	1006
1005	CH1760 to CH1790 (30m)	30 days	Dec 9 '22	Jan 7 '23			
1006	TTA establishment	1 day	Dec 9 '22	Dec 9 '22		1004	1007
1007	Hard material excavation and disposal	2 days	Dec 10 '22	Dec 11 '22		1006	1008



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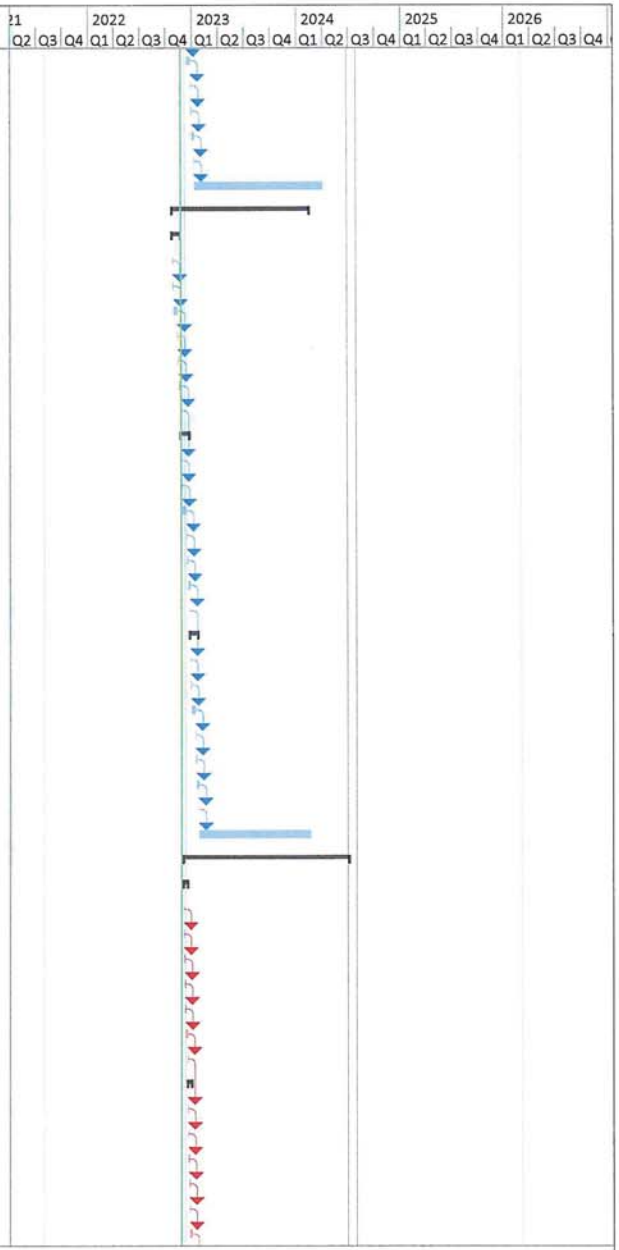
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1008	Soil excavation , laying sheetpile and disposal	14 days	Dec 12 '22	Dec 25 '22		1007	1009
1009	Treatment of bedding	2 days	Dec 26 '22	Dec 27 '22		1008	1010
1010	Pipe laying D.I.	3 days	Dec 28 '22	Dec 30 '22		1009	1011
1011	Backfilling general fill and compaction	7 days	Dec 31 '22	Jan 6 '23		1010	1012
1012	Reinstatement	1 day	Jan 7 '23	Jan 7 '23		1011	1013
1013	CH1790 to 2180 (390m)	450 days	Jan 8 '23	Apr 1 '24	60	1012	
1014	Ma Sik Road CH2180 to CH2600 (420m)	480 days	Oct 24 '22	Feb 15 '24			
1015	CH2180 to CH2210 (30m)	30 days	Oct 24 '22	Nov 22 '22			
1016	TTA establishment	1 day	Oct 24 '22	Oct 24 '22			1017
1017	Hard material excavation and disposal	2 days	Oct 25 '22	Oct 26 '22		1016	1018
1018	Soil excavation , laying sheetpile and disposal	14 days	Oct 27 '22	Nov 9 '22		1017	1019
1019	Treatment of bedding	2 days	Nov 10 '22	Nov 11 '22		1018	1020
1020	Pipe laying D.I.	3 days	Nov 12 '22	Nov 14 '22		1019	1021
1021	Backfilling general fill and compaction	7 days	Nov 15 '22	Nov 21 '22		1020	1022
1022	Reinstatement	1 day	Nov 22 '22	Nov 22 '22		1021	1024
1023	CH2210 to CH2240 (30m)	30 days	Nov 23 '22	Dec 22 '22			
1024	TTA establishment	1 day	Nov 23 '22	Nov 23 '22		1022	1025
1025	Hard material excavation and disposal	2 days	Nov 24 '22	Nov 25 '22		1024	1026
1026	Soil excavation , laying sheetpile and disposal	14 days	Nov 26 '22	Dec 9 '22		1025	1027
1027	Treatment of bedding	2 days	Dec 10 '22	Dec 11 '22		1026	1028
1028	Pipe laying D.I.	3 days	Dec 12 '22	Dec 14 '22		1027	1029
1029	Backfilling general fill and compaction	7 days	Dec 15 '22	Dec 21 '22		1028	1030
1030	Reinstatement	1 day	Dec 22 '22	Dec 22 '22		1029	1032
1031	CH2240 to CH2270 (30m)	30 days	Dec 23 '22	Jan 21 '23			
1032	TTA establishment	1 day	Dec 23 '22	Dec 23 '22		1030	1033
1033	Hard material excavation and disposal	2 days	Dec 24 '22	Dec 25 '22		1032	1034
1034	Soil excavation , laying sheetpile and disposal	14 days	Dec 26 '22	Jan 8 '23		1033	1035
1035	Treatment of bedding	2 days	Jan 9 '23	Jan 10 '23		1034	1036
1036	Pipe laying D.I.	3 days	Jan 11 '23	Jan 13 '23		1035	1037
1037	Backfilling general fill and compaction	7 days	Jan 14 '23	Jan 20 '23		1036	1038
1038	Reinstatement	1 day	Jan 21 '23	Jan 21 '23		1037	1039
1039	CH2270 to CH2600 (330m)	390 days	Jan 22 '23	Feb 15 '24	60	1038	
1040	Tin Ping Road (1377m)	579 days	Dec 1 '22	Jul 1 '24			
1041	CH450 to CH480 (30m)	15 days	Dec 1 '22	Dec 15 '22			
1042	TTA establishment	1 day	Dec 1 '22	Dec 1 '22			1043
1043	Hard material excavation and disposal	1 day	Dec 2 '22	Dec 2 '22		1042	1044
1044	Soil excavation , laying sheetpile and disposal	3 days	Dec 3 '22	Dec 5 '22		1043	1045
1045	Treatment of bedding	1 day	Dec 6 '22	Dec 6 '22		1044	1046
1046	Pipe laying D.I.	1 day	Dec 7 '22	Dec 7 '22		1045	1047
1047	Backfilling general fill and compaction	7 days	Dec 8 '22	Dec 14 '22		1046	1048
1048	Reinstatement	1 day	Dec 15 '22	Dec 15 '22		1047	1050
1049	CH480 to CH510 (30m)	15 days	Dec 16 '22	Dec 30 '22			
1050	TTA establishment	1 day	Dec 16 '22	Dec 16 '22		1048	1051
1051	Hard material excavation and disposal	1 day	Dec 17 '22	Dec 17 '22		1050	1052
1052	Soil excavation , laying sheetpile and disposal	3 days	Dec 18 '22	Dec 20 '22		1051	1053
1053	Treatment of bedding	1 day	Dec 21 '22	Dec 21 '22		1052	1054
1054	Pipe laying D.I.	1 day	Dec 22 '22	Dec 22 '22		1053	1055
1055	Backfilling general fill and compaction	7 days	Dec 23 '22	Dec 29 '22		1054	1056



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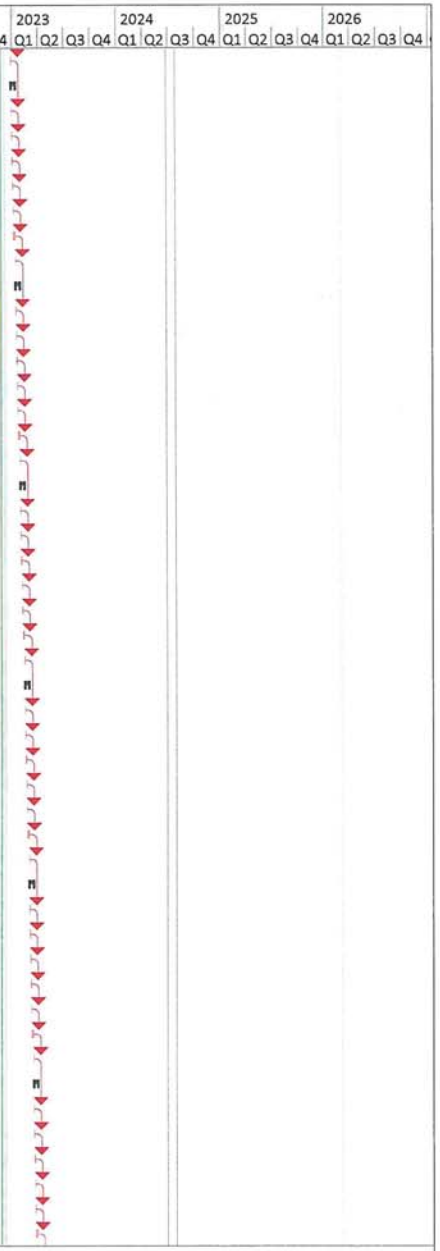
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1056	Reinstatement	1 day	Dec 30 '22	Dec 30 '22		1055	1058
1057	CH510 to CH540 (30m)	15 days	Dec 31 '22	Jan 14 '23			
1058	TTA establishment	1 day	Dec 31 '22	Dec 31 '22		1056	1059
1059	Hard material excavation and disposal	1 day	Jan 1 '23	Jan 1 '23		1058	1060
1060	Soil excavation , laying sheetpile and disposal	3 days	Jan 2 '23	Jan 4 '23		1059	1061
1061	Treatment of bedding	1 day	Jan 5 '23	Jan 5 '23		1060	1062
1062	Pipe laying D.I.	1 day	Jan 6 '23	Jan 6 '23		1061	1063
1063	Backfilling general fill and compaction	7 days	Jan 7 '23	Jan 13 '23		1062	1064
1064	Reinstatement	1 day	Jan 14 '23	Jan 14 '23		1063	1066
1065	CH540 to CH570 (30m)	15 days	Jan 15 '23	Jan 29 '23			
1066	TTA establishment	1 day	Jan 15 '23	Jan 15 '23		1064	1067
1067	Hard material excavation and disposal	1 day	Jan 16 '23	Jan 16 '23		1066	1068
1068	Soil excavation , laying sheetpile and disposal	3 days	Jan 17 '23	Jan 19 '23		1067	1069
1069	Treatment of bedding	1 day	Jan 20 '23	Jan 20 '23		1068	1070
1070	Pipe laying D.I.	1 day	Jan 21 '23	Jan 21 '23		1069	1071
1071	Backfilling general fill and compaction	7 days	Jan 22 '23	Jan 28 '23		1070	1072
1072	Reinstatement	1 day	Jan 29 '23	Jan 29 '23		1071	1074
1073	CH570 to CH610 (30m)	15 days	Jan 30 '23	Feb 13 '23			
1074	TTA establishment	1 day	Jan 30 '23	Jan 30 '23		1072	1075
1075	Hard material excavation and disposal	1 day	Jan 31 '23	Jan 31 '23		1074	1076
1076	Soil excavation , laying sheetpile and disposal	3 days	Feb 1 '23	Feb 3 '23		1075	1077
1077	Treatment of bedding	1 day	Feb 4 '23	Feb 4 '23		1076	1078
1078	Pipe laying D.I.	1 day	Feb 5 '23	Feb 5 '23		1077	1079
1079	Backfilling general fill and compaction	7 days	Feb 6 '23	Feb 12 '23		1078	1080
1080	Reinstatement	1 day	Feb 13 '23	Feb 13 '23		1079	1082
1081	CH610 to CH640 (30m)	15 days	Feb 14 '23	Feb 28 '23			
1082	TTA establishment	1 day	Feb 14 '23	Feb 14 '23		1080	1083
1083	Hard material excavation and disposal	1 day	Feb 15 '23	Feb 15 '23		1082	1084
1084	Soil excavation , laying sheetpile and disposal	3 days	Feb 16 '23	Feb 18 '23		1083	1085
1085	Treatment of bedding	1 day	Feb 19 '23	Feb 19 '23		1084	1086
1086	Pipe laying D.I.	1 day	Feb 20 '23	Feb 20 '23		1085	1087
1087	Backfilling general fill and compaction	7 days	Feb 21 '23	Feb 27 '23		1086	1088
1088	Reinstatement	1 day	Feb 28 '23	Feb 28 '23		1087	1090
1089	CH640 to CH670 (30m)	15 days	Mar 1 '23	Mar 15 '23			
1090	TTA establishment	1 day	Mar 1 '23	Mar 1 '23		1088	1091
1091	Hard material excavation and disposal	1 day	Mar 2 '23	Mar 2 '23		1090	1092
1092	Soil excavation , laying sheetpile and disposal	3 days	Mar 3 '23	Mar 5 '23		1091	1093
1093	Treatment of bedding	1 day	Mar 6 '23	Mar 6 '23		1092	1094
1094	Pipe laying D.I.	1 day	Mar 7 '23	Mar 7 '23		1093	1095
1095	Backfilling general fill and compaction	7 days	Mar 8 '23	Mar 14 '23		1094	1096
1096	Reinstatement	1 day	Mar 15 '23	Mar 15 '23		1095	1098
1097	CH670 to CH710 (30m)	15 days	Mar 16 '23	Mar 30 '23			
1098	TTA establishment	1 day	Mar 16 '23	Mar 16 '23		1096	1099
1099	Hard material excavation and disposal	1 day	Mar 17 '23	Mar 17 '23		1098	1100
1100	Soil excavation , laying sheetpile and disposal	3 days	Mar 18 '23	Mar 20 '23		1099	1101
1101	Treatment of bedding	1 day	Mar 21 '23	Mar 21 '23		1100	1102
1102	Pipe laying D.I.	1 day	Mar 22 '23	Mar 22 '23		1101	1103
1103	Backfilling general fill and compaction	7 days	Mar 23 '23	Mar 29 '23		1102	1104



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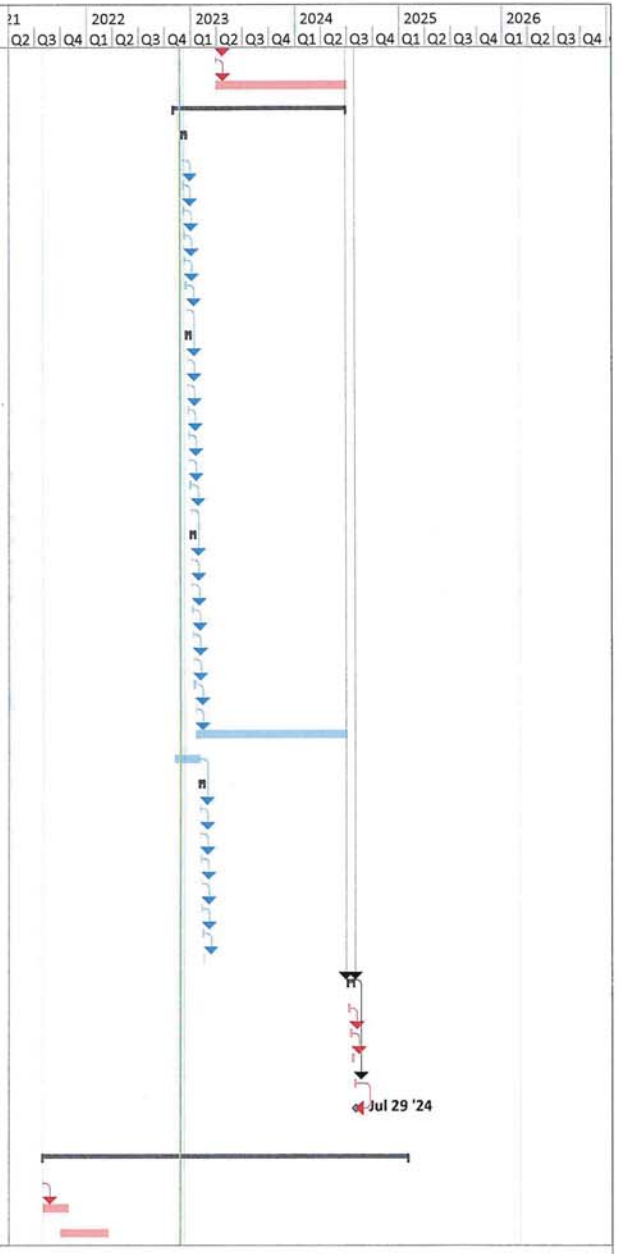
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1104	Reinstatement	1 day	Mar 30 '23	Mar 30 '23		1103	1105
1105	Remaining Section of Tin Ping Road (1287m)	459 days	Mar 31 '23	Jul 1 '24		1104	
1106	Sha Tau Kok Road (869m)	605 days	Nov 1 '22	Jun 27 '24			
1107	CH3580 to CH3550 (30m)	15 days	Dec 1 '22	Dec 15 '22			
1108	TTA establishment	1 day	Dec 1 '22	Dec 1 '22			1109
1109	Hard material excavation and disposal	1 day	Dec 2 '22	Dec 2 '22		1108	1110
1110	Soil excavation , laying sheetpile and disposal	3 days	Dec 3 '22	Dec 5 '22		1109	1111
1111	Treatment of bedding	1 day	Dec 6 '22	Dec 6 '22		1110	1112
1112	Pipe laying D.I.	1 day	Dec 7 '22	Dec 7 '22		1111	1113
1113	Backfilling general fill and compaction	7 days	Dec 8 '22	Dec 14 '22		1112	1114
1114	Reinstatement	1 day	Dec 15 '22	Dec 15 '22		1113	1116
1115	CH3550 to CH3520 (30m)	15 days	Dec 16 '22	Dec 30 '22			
1116	TTA establishment	1 day	Dec 16 '22	Dec 16 '22		1114	1117
1117	Hard material excavation and disposal	1 day	Dec 17 '22	Dec 17 '22		1116	1118
1118	Soil excavation , laying sheetpile and disposal	3 days	Dec 18 '22	Dec 20 '22		1117	1119
1119	Treatment of bedding	1 day	Dec 21 '22	Dec 21 '22		1118	1120
1120	Pipe laying D.I.	1 day	Dec 22 '22	Dec 22 '22		1119	1121
1121	Backfilling general fill and compaction	7 days	Dec 23 '22	Dec 29 '22		1120	1122
1122	Reinstatement	1 day	Dec 30 '22	Dec 30 '22		1121	1124
1123	CH3520 to CH3490 (30m)	15 days	Dec 31 '22	Jan 14 '23			
1124	TTA establishment	1 day	Dec 31 '22	Dec 31 '22		1122	1125
1125	Hard material excavation and disposal	1 day	Jan 1 '23	Jan 1 '23		1124	1126
1126	Soil excavation , laying sheetpile and disposal	3 days	Jan 2 '23	Jan 4 '23		1125	1127
1127	Treatment of bedding	1 day	Jan 5 '23	Jan 5 '23		1126	1128
1128	Pipe laying D.I.	1 day	Jan 6 '23	Jan 6 '23		1127	1129
1129	Backfilling general fill and compaction	7 days	Jan 7 '23	Jan 13 '23		1128	1130
1130	Reinstatement	1 day	Jan 14 '23	Jan 14 '23		1129	1131
1131	Remaining Section of Sha Tau Kok Road	530 days	Jan 15 '23	Jun 27 '24		1130	
1132	Interface coordination with Contract ND/2019/04	90 days	Nov 1 '22	Jan 29 '23			1134
1133	CH2600 to CH2800 (200m)	15 days	Jan 30 '23	Feb 13 '23			
1134	TTA establishment	1 day	Jan 30 '23	Jan 30 '23		1132	1135
1135	Hard material excavation and disposal	1 day	Jan 31 '23	Jan 31 '23		1134	1136
1136	Soil excavation , laying sheetpile and disposal	3 days	Feb 1 '23	Feb 3 '23		1135	1137
1137	Treatment of bedding	1 day	Feb 4 '23	Feb 4 '23		1136	1138
1138	Pipe laying D.I.	1 day	Feb 5 '23	Feb 5 '23		1137	1139
1139	Backfilling general fill and compaction	7 days	Feb 6 '23	Feb 12 '23		1138	1140
1140	Reinstatement	1 day	Feb 13 '23	Feb 13 '23		1139	
1141	**Overall testing**	**21 days**	**Jul 2 '24**	**Jul 22 '24**		**923,960**	**1145**
1142	Swabbing	7 days	Jul 2 '24	Jul 8 '24			1143
1143	CCTV	7 days	Jul 9 '24	Jul 15 '24		1142	1144
1144	Hydrostatic pressure test	7 days	Jul 16 '24	Jul 22 '24		1143	
1145	Pipe connection and completion	7 days	Jul 23 '24	Jul 29 '24		1141	1146FF
1146	Planned completion for section 5	0 days	Jul 29 '24	Jul 29 '24		1145FF	
1147							
1148	**Section 6 - Water main laying works in part 5 of the Site**	**1280 days**	**Jul 30 '21**	**Jan 29 '25**			
1149	Access Date (part 5 of the Site)	1 day	Jul 30 '21	Jul 30 '21			1150
1150	Initial survey (utility survey, condition survey, initial photo)	90 days	Jul 31 '21	Oct 28 '21		1149	
1151	Application and approval of XP and TTA	167 days	Oct 1 '21	Mar 16 '22			



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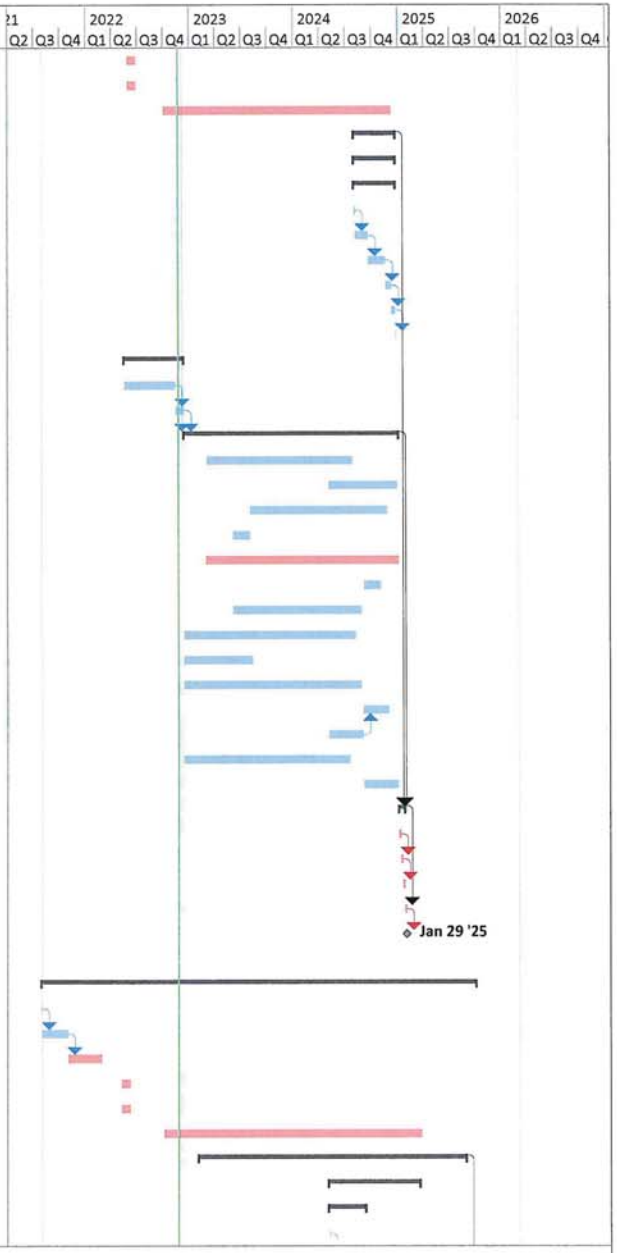
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1152	Procurement and Delivery of pipes, fittings and related materials	30 days	May 30 '22	Jun 28 '22			
1153	Submission and acceptance of method statement and material	30 days	May 30 '22	Jun 28 '22			
1154	Excavation of Inspection Pit	800 days	Oct 3 '22	Dec 10 '24			
1155	**Mainlaying by trenchless method**	**145 days**	**Aug 1 '24**	**Dec 23 '24**			**1182**
1156	**RW06 : DN300 DI pipe (trenchless)**	**145 days**	**Aug 1 '24**	**Dec 23 '24**			
1157	**Jocky Club Road (100m) - TBM Method**	**145 days**	**Aug 1 '24**	**Dec 23 '24**			
1158	TTA implementation	3 days	Aug 1 '24	Aug 3 '24			1159
1159	Contruction of jacking pit and receiving pit	45 days	Aug 4 '24	Sep 17 '24		1158	1160
1160	Trenchless works and pipe laying	60 days	Sep 18 '24	Nov 16 '24		1159	1161
1161	Manhole / Chamber construction	21 days	Nov 17 '24	Dec 7 '24		1160	1162
1162	Backfilling and compaction	14 days	Dec 8 '24	Dec 21 '24		1161	1163
1163	Reinstatement	2 days	Dec 22 '24	Dec 23 '24		1162	
1164	**Contractor's Design and Construction of distribution mains**	**210 days**	**May 16 '22**	**Dec 11 '22**			
1165	Submission and acceptance of detailed design proposal	180 days	May 16 '22	Nov 11 '22			1166
1166	Site investigation and liaison with relevant parties	30 days	Nov 12 '22	Dec 11 '22		1165	1167
1167	**Mainlaying by open trench method**	**752 days**	**Dec 12 '22**	**Jan 1 '25**		**1166,61**	**1182**
1168	RW41 (DN150) - Sheung Shui Tung Hing Road (288m)	510 days	Mar 1 '23	Jul 22 '24			
1169	RW42 (DN150) - No name road in Sheung Shui Heung (210m)	240 days	May 1 '24	Dec 26 '24			
1170	RW71 (DN150) - Jockey Club Road (308m)	480 days	Aug 1 '23	Nov 22 '24			
1171	RW44 (DN150) - Jockey Club Road (38m)	60 days	Jun 1 '23	Jul 30 '23			
1172	RW11 (DN150) - Fung Nam Road (480m)	673 days	Mar 1 '23	Jan 1 '25	30		
1173	RW46 (DN150) - Fung Nam Lane (38m)	60 days	Sep 1 '24	Oct 30 '24			
1174	RW06 (DN300) - Lung Sum Avenue (290m)	450 days	Jun 1 '23	Aug 23 '24			
1175	RW05 (DN400) - Jockey Club Road (377m)	600 days	Dec 12 '22	Aug 2 '24	15		
1176	RW15 (DN150) - Sun Fung Road / Sun Shing Road (390m)	240 days	Dec 12 '22	Aug 8 '23			
1177	RW18 (DN150) - San Hong Street (464m)	620 days	Dec 12 '22	Aug 22 '24			
1178	RW20 (DN150) - Sun Wing Street (52m)	90 days	Aug 29 '24	Nov 26 '24		1179	
1179	RW45 (DN150) - Tsun Fu Street (82m)	120 days	May 1 '24	Aug 28 '24			1178
1180	RW14 (DN150) - Fu Hing Street (372m)	580 days	Dec 12 '22	Jul 13 '24			
1181	RW21 (DN150) - Sun Fat Street (105m)	120 days	Sep 1 '24	Dec 29 '24			
1182	Overall testing	21 days	Jan 2 '25	Jan 22 '25		1155,1167	1186
1183	Swabbing	7 days	Jan 2 '25	Jan 8 '25			1184
1184	CCTV	7 days	Jan 9 '25	Jan 15 '25		1183	1185
1185	Hydrostatic pressure test	7 days	Jan 16 '25	Jan 22 '25		1184	
1186	Pipe connection and completion	7 days	Jan 23 '25	Jan 29 '25		1182	1187
1187	Planned completion for section 6	0 days	Jan 29 '25	Jan 29 '25		1186	
1188							
1189	**Section 7 - Water main laying works in part 6 of the Site**	**1523 days**	**Jul 30 '21**	**Sep 29 '25**			
1190	Access Date (part 6 of the Site)	1 day	Jul 30 '21	Jul 30 '21			1191
1191	Initial survey (utility survey, condition survey, initial photo)	90 days	Jul 31 '21	Oct 28 '21		1190	1192
1192	Application and approval of XP and TTA	117 days	Nov 1 '21	Feb 25 '22		1191	
1193	Procurement and Delivery of pipes, fittings and related materials	30 days	May 7 '22	Jun 5 '22			
1194	Submission and acceptance of method statement and material	30 days	May 7 '22	Jun 5 '22			
1195	Excavation of Inspection Pit	900 days	Oct 3 '22	Mar 20 '25			
1196	**Mainlaying by trenchless method**	**937 days**	**Feb 1 '23**	**Aug 25 '25**			**1317**
1197	**RW05 : DN400 DI pipe (trenchless)**	**320 days**	**May 1 '24**	**Mar 16 '25**			
1198	**Fu Hing Street (75m) - TBM Method**	**130 days**	**May 1 '24**	**Sep 7 '24**			
1199	TTA implementation	3 days	May 1 '24	May 3 '24			1200



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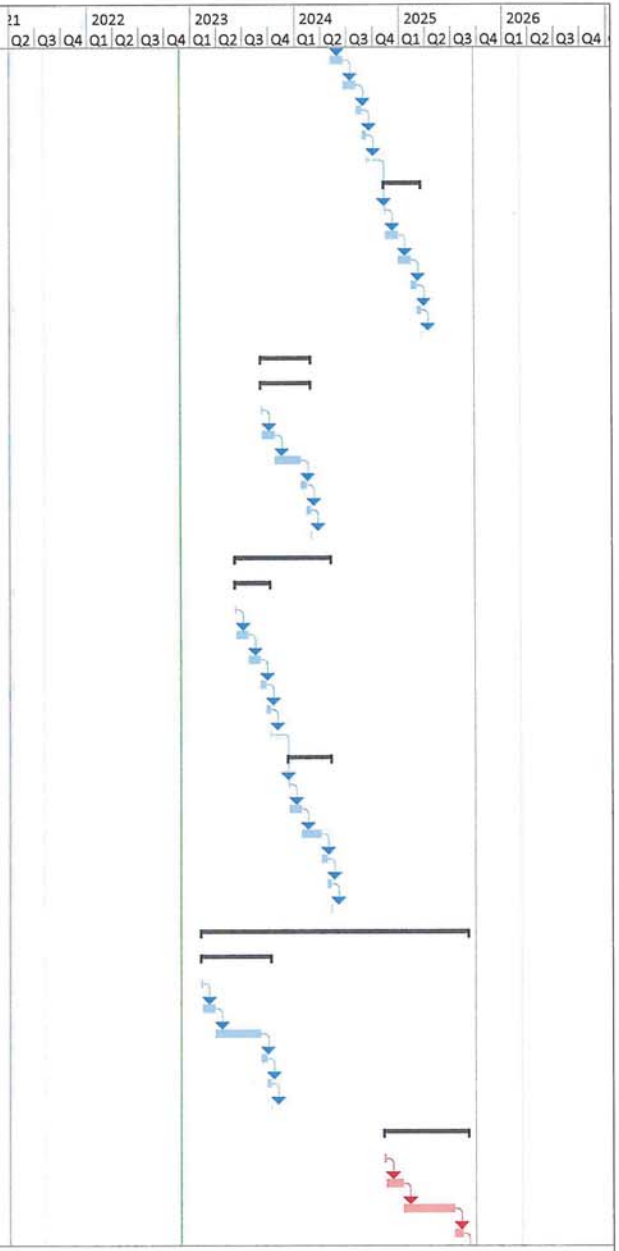
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1200	Contruction of jacking pit and receiving pit	45 days	May 4 '24	Jun 17 '24		1199	1201
1201	Trenchless works and pipe laying	45 days	Jun 18 '24	Aug 1 '24		1200	1202
1202	Manhole / Chamber construction	21 days	Aug 2 '24	Aug 22 '24		1201	1203
1203	Backfilling and compaction	14 days	Aug 23 '24	Sep 5 '24		1202	1204
1204	Reinstatement	2 days	Sep 6 '24	Sep 7 '24		1203	1206FS+60 days
1205	**Luen Sum Road (70m) - TBM Method**	**130 days**	**Nov 7 '24**	**Mar 16 '25**			
1206	TTA implementation	3 days	Nov 7 '24	Nov 9 '24		1204FS+60 days	1207
1207	Contruction of jacking pit and receiving pit	45 days	Nov 10 '24	Dec 24 '24		1206	1208
1208	Trenchless works and pipe laying	45 days	Dec 25 '24	Feb 7 '25		1207	1209
1209	Manhole / Chamber construction	21 days	Feb 8 '25	Feb 28 '25		1208	1210
1210	Backfilling and compaction	14 days	Mar 1 '25	Mar 14 '25		1209	1211
1211	Reinstatement	2 days	Mar 15 '25	Mar 16 '25		1210	
1212	**RW05 : DN300 DI pipe (trenchless)**	**175 days**	**Sep 1 '23**	**Feb 22 '24**			
1213	**Ma Sik Road (180m) - TBM Method**	**175 days**	**Sep 1 '23**	**Feb 22 '24**			
1214	TTA implementation	3 days	Sep 1 '23	Sep 3 '23			1215
1215	Contruction of jacking pit and receiving pit	45 days	Sep 4 '23	Oct 18 '23		1214	1216
1216	Trenchless works and pipe laying	90 days	Oct 19 '23	Jan 16 '24		1215	1217
1217	Manhole / Chamber construction	21 days	Jan 17 '24	Feb 6 '24		1216	1218
1218	Backfilling and compaction	14 days	Feb 7 '24	Feb 20 '24		1217	1219
1219	Reinstatement	2 days	Feb 21 '24	Feb 22 '24		1218	
1220	**RW08 : DN400 DI pipe (trenchless)**	**336 days**	**Jun 1 '23**	**May 1 '24**			
1221	**Wo Muk Road (60m) - TBM Method**	**124 days**	**Jun 1 '23**	**Oct 2 '23**			
1222	TTA implementation	3 days	Jun 1 '23	Jun 3 '23			1223
1223	Contruction of jacking pit and receiving pit	42 days	Jun 4 '23	Jul 15 '23		1222	1224
1224	Trenchless works and pipe laying	42 days	Jul 16 '23	Aug 26 '23		1223	1225
1225	Manhole / Chamber construction	21 days	Aug 27 '23	Sep 16 '23		1224	1226
1226	Backfilling and compaction	14 days	Sep 17 '23	Sep 30 '23		1225	1227
1227	Reinstatement	2 days	Oct 1 '23	Oct 2 '23		1226	1229FS+60 days
1228	**Wo Tai Street (100m) - TBM Method**	**152 days**	**Dec 2 '23**	**May 1 '24**			
1229	TTA implementation	3 days	Dec 2 '23	Dec 4 '23		1227FS+60 days	1230
1230	Contruction of jacking pit and receiving pit	42 days	Dec 5 '23	Jan 15 '24		1229	1231
1231	Trenchless works and pipe laying	70 days	Jan 16 '24	Mar 25 '24		1230	1232
1232	Manhole / Chamber construction	21 days	Mar 26 '24	Apr 15 '24		1231	1233
1233	Backfilling and compaction	14 days	Apr 16 '24	Apr 29 '24		1232	1234
1234	Reinstatement	2 days	Apr 30 '24	May 1 '24		1233	
1235	**RW09 : DN450 DI pipe (trenchless)**	**937 days**	**Feb 1 '23**	**Aug 25 '25**			
1236	**San Wang Road (435m) - TBM Method**	**245 days**	**Feb 1 '23**	**Oct 3 '23**			
1237	TTA implementation	3 days	Feb 1 '23	Feb 3 '23			1238
1238	Contruction of jacking pit and receiving pit	45 days	Feb 4 '23	Mar 20 '23		1237	1239
1239	Trenchless works and pipe laying	160 days	Mar 21 '23	Aug 27 '23		1238	1240
1240	Manhole / Chamber construction	21 days	Aug 28 '23	Sep 17 '23		1239	1241
1241	Backfilling and compaction	14 days	Sep 18 '23	Oct 1 '23		1240	1242
1242	Reinstatement	2 days	Oct 2 '23	Oct 3 '23		1241	
1243	**MTRC (315m) - TBM Method**	**298 days**	**Nov 1 '24**	**Aug 25 '25**			
1244	TTA implementation	7 days	Nov 1 '24	Nov 7 '24			1245
1245	Contruction of jacking pit and receiving pit	60 days	Nov 8 '24	Jan 6 '25		1244	1246
1246	Trenchless works and pipe laying	180 days	Jan 7 '25	Jul 5 '25		1245	1247
1247	Manhole / Chamber construction	30 days	Jul 6 '25	Aug 4 '25		1246	1248



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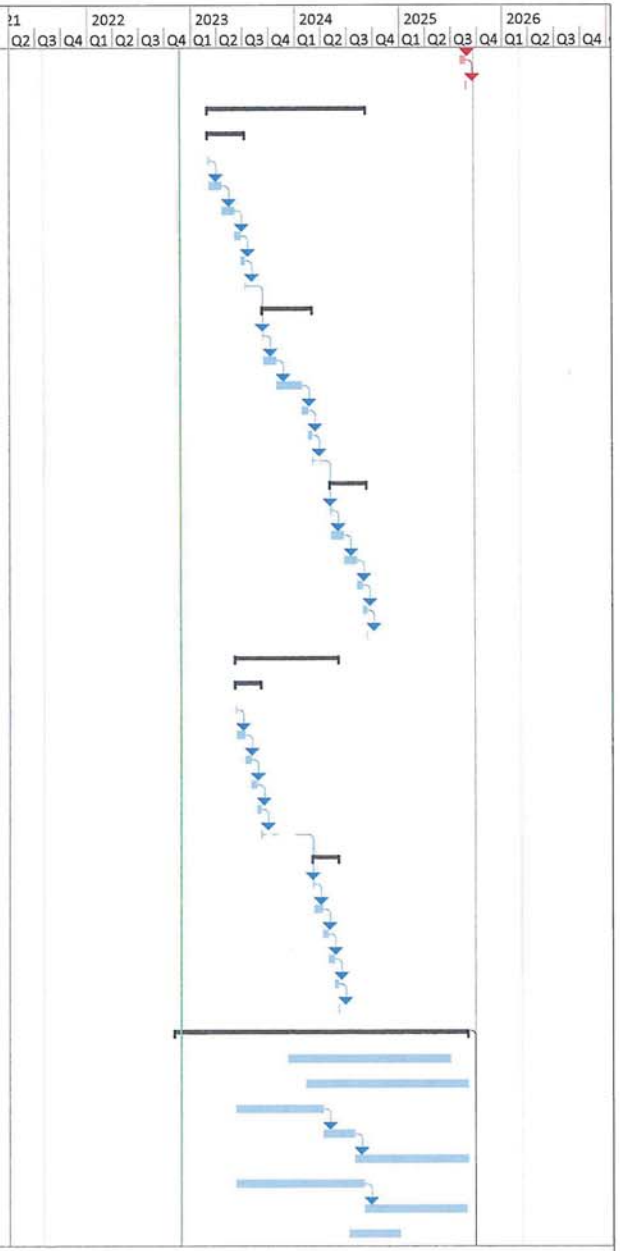
Date: Nov 22 '22

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1248	Backfilling and compaction	18 days	Aug 5 '25	Aug 22 '25		1247	1249
1249	Reinstatement	3 days	Aug 23 '25	Aug 25 '25		1248	
1250	**RW05 : DN300 DI pipe (trenchless)**	**555 days**	**Mar 1 '23**	**Sep 5 '24**			
1251	**Ling Shan Road (60m) - HDD Method**	**130 days**	**Mar 1 '23**	**Jul 8 '23**			
1252	TTA implementation	3 days	Mar 1 '23	Mar 3 '23			1253
1253	Contruction of jacking pit and receiving pit	45 days	Mar 4 '23	Apr 17 '23		1252	1254
1254	Trenchless works and pipe laying	45 days	Apr 18 '23	Jun 1 '23		1253	1255
1255	Manhole / Chamber construction	21 days	Jun 2 '23	Jun 22 '23		1254	1256
1256	Backfilling and compaction	14 days	Jun 23 '23	Jul 6 '23		1255	1257
1257	Reinstatement	2 days	Jul 7 '23	Jul 8 '23		1256	1259FS+60 days
1258	**San Wan Road Roundabout (130m) - HDD Method**	**175 days**	**Sep 7 '23**	**Feb 28 '24**			
1259	TTA implementation	3 days	Sep 7 '23	Sep 9 '23		1257FS+60 days	1260
1260	Contruction of jacking pit and receiving pit	45 days	Sep 10 '23	Oct 24 '23		1259	1261
1261	Trenchless works and pipe laying	90 days	Oct 25 '23	Jan 22 '24		1260	1262
1262	Manhole / Chamber construction	21 days	Jan 23 '24	Feb 12 '24		1261	1263
1263	Backfilling and compaction	14 days	Feb 13 '24	Feb 26 '24		1262	1264
1264	Reinstatement	2 days	Feb 27 '24	Feb 28 '24		1263	1266FS+60 days
1265	**Pak Fung Road (70m) - HDD Method**	**130 days**	**Apr 29 '24**	**Sep 5 '24**			
1266	TTA implementation	3 days	Apr 29 '24	May 1 '24		1264FS+60 days	1267
1267	Contruction of jacking pit and receiving pit	45 days	May 2 '24	Jun 15 '24		1266	1268
1268	Trenchless works and pipe laying	45 days	Jun 16 '24	Jul 30 '24		1267	1269
1269	Manhole / Chamber construction	21 days	Jul 31 '24	Aug 20 '24		1268	1270
1270	Backfilling and compaction	14 days	Aug 21 '24	Sep 3 '24		1269	1271
1271	Reinstatement	2 days	Sep 4 '24	Sep 5 '24		1270	
1272	**RW05 : DN300 DI pipe (trenchless)**	**362 days**	**Jun 1 '23**	**May 27 '24**			
1273	**Fanling Way (35m) - Hand Shield Method**	**91 days**	**Jun 1 '23**	**Aug 30 '23**			
1274	TTA implementation	3 days	Jun 1 '23	Jun 3 '23			1275
1275	Contruction of jacking pit and receiving pit	30 days	Jun 4 '23	Jul 3 '23		1274	1276
1276	Trenchless works and pipe laying	21 days	Jul 4 '23	Jul 24 '23		1275	1277
1277	Manhole / Chamber construction	21 days	Jul 25 '23	Aug 14 '23		1276	1278
1278	Backfilling and compaction	14 days	Aug 15 '23	Aug 28 '23		1277	1279
1279	Reinstatement	2 days	Aug 29 '23	Aug 30 '23		1278	1281FS+180 days
1280	**CLP Station (35m) - Hand Shield Method**	**91 days**	**Feb 27 '24**	**May 27 '24**			
1281	TTA implementation	3 days	Feb 27 '24	Feb 29 '24		1279FS+180 days	1282
1282	Contruction of jacking pit and receiving pit	30 days	Mar 1 '24	Mar 30 '24		1281	1283
1283	Trenchless works and pipe laying	21 days	Mar 31 '24	Apr 20 '24		1282	1284
1284	Manhole / Chamber construction	21 days	Apr 21 '24	May 11 '24		1283	1285
1285	Backfilling and compaction	14 days	May 12 '24	May 25 '24		1284	1286
1286	Reinstatement	2 days	May 26 '24	May 27 '24		1285	
1287	**Mainlaying by open trench method**	**1028 days**	**Nov 1 '22**	**Aug 24 '25**			**1317**
1288	RW07 (DN300) - Ma Sik Road (360m)	570 days	Dec 1 '23	Jun 22 '25			
1289	RW05 (DN400) - Jockey Club Road (681m)	570 days	Feb 1 '24	Aug 23 '25			
1290	RW05 (DN300) - Jockey Club Road (720m)	306 days	Jun 1 '23	Apr 1 '24			1291
1291	RW05 (DN300) - Pik Fung Road (270m)	110 days	Apr 2 '24	Jul 20 '24		1290	1292
1292	RW05 (DN300) - Sun Wan Road (945m)	400 days	Jul 21 '24	Aug 24 '25	30	1291	
1293	RW08 (DN400) - Fanling Lau Road (750m)	450 days	Jun 1 '23	Aug 23 '24			1294
1294	RW08 (DN400) - Lok Yip Road (616m)	360 days	Aug 24 '24	Aug 18 '25		1293	
1295	RW17 (DN150) - Sun Shing Road (114m)	180 days	Jul 1 '24	Dec 27 '24			



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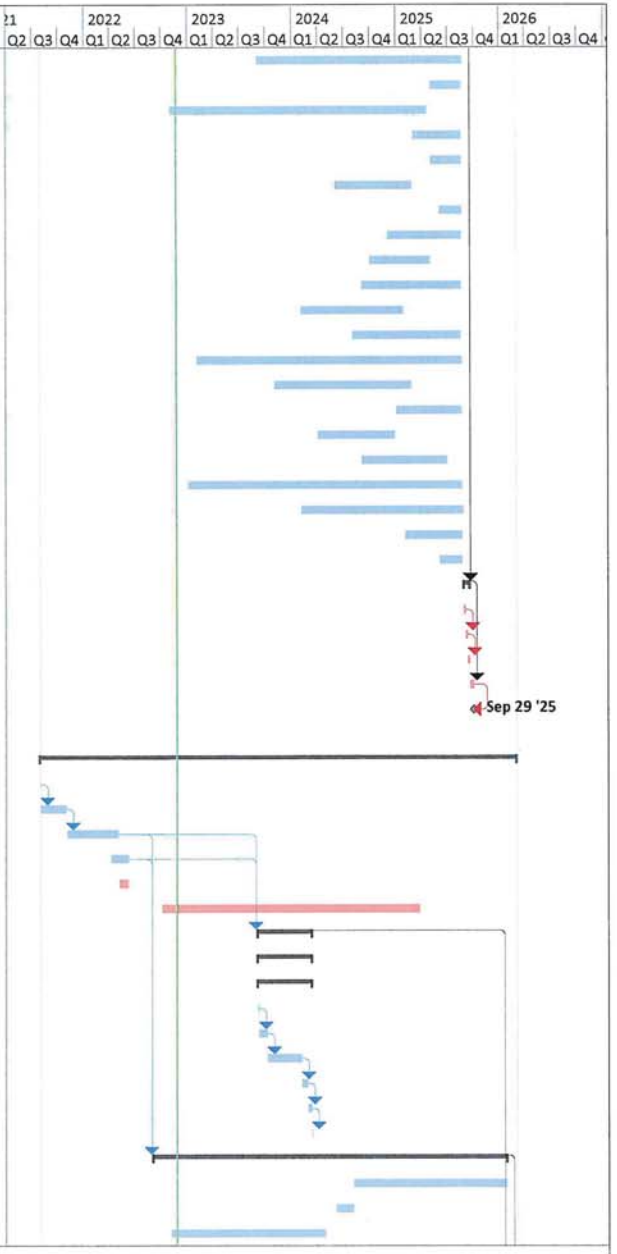
Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1296	RW16 (DN250) - Sun Fung Road / Lung Sum Avenue (741m)	720 days	Sep 1 '23	Aug 20 '25			
1297	RW47 (DN100) - Ben Lun Building (82m)	110 days	May 1 '25	Aug 18 '25			
1298	RW22 (DN150) - Chi Cheong Street (877m)	900 days	Nov 1 '22	Apr 18 '25			
1299	RW24 (DN150) - Chi Ming Street (120m)	170 days	Mar 1 '25	Aug 17 '25			
1300	RW49 (DN150) - San Wan Road (75m)	110 days	May 1 '25	Aug 18 '25			
1301	RW23 (DN150) - Lung Wan Street (171m)	270 days	Jun 1 '24	Feb 25 '25			
1302	RW69 (DN150) - Lung Sum Lane (60m)	80 days	Jun 1 '25	Aug 19 '25			
1303	RW25 (DN150) - Road to Fanling Wai (330m)	260 days	Dec 1 '24	Aug 17 '25			
1304	RW26 (DN150) - Ka Siu Road (133m)	210 days	Oct 1 '24	Apr 28 '25			
1305	RW27 (DN150) - Fanling Station Road (273m)	350 days	Sep 1 '24	Aug 16 '25			
1306	RW34 (DN150) - Fan Leng Lau (380m)	360 days	Feb 1 '24	Jan 25 '25			
1307	RW36 (DN150) - Lok Fung Street (495m)	380 days	Aug 1 '24	Aug 15 '25			
1308	RW13 (DN150) - Wo Tai Street (630m)	930 days	Feb 1 '23	Aug 18 '25			
1309	RW28 (DN150) - Wo Mun Street (312m)	480 days	Nov 1 '23	Feb 22 '25			
1310	RW31 (DN150) - Luen Cheong Street (185m)	230 days	Jan 1 '25	Aug 18 '25			
1311	RW32 (DN150) - Luen Shing Street (185m)	270 days	Apr 1 '24	Dec 26 '24			
1312	RW33 (DN150) - Luen Hing Street (199m)	300 days	Sep 1 '24	Jun 27 '25			
1313	RW30 (DN150) - Luen On Street / Luen Wo Road / Luen Fai Street (649m)	960 days	Jan 2 '23	Aug 18 '25			
1314	RW29 (DN150) - Wo Muk Street / Luen Hing Street (360m)	570 days	Feb 1 '24	Aug 23 '25			
1315	RW12 (DN150) - Luen Chit Street (120m)	200 days	Feb 1 '25	Aug 19 '25			
1316	RW55 (DN150) - Mount One (44m)	80 days	Jun 1 '25	Aug 19 '25			
1317	Overall testing	21 days	Aug 26 '25	Sep 15 '25		1196,1287	1321
1318	Swabbing	7 days	Aug 26 '25	Sep 1 '25			1319
1319	CCTV	7 days	Sep 2 '25	Sep 8 '25		1318	1320
1320	Hydrostatic pressure test	7 days	Sep 9 '25	Sep 15 '25		1319	
1321	Pipe connection and completion	14 days	Sep 16 '25	Sep 29 '25		1317	1322FF
1322	Planned completion for section 7	0 days	Sep 29 '25	Sep 29 '25		1321FF	
1323							
1324	**Section 8 - Water main laying works in part 7 of the Site**	**1676 days**	**Jul 30 '21**	**Mar 1 '26**			
1325	Access Date (part 7 of the Site)	1 day	Jul 30 '21	Jul 30 '21			1326
1326	Initial survey (utility survey, condition survey, initial photo)	90 days	Jul 31 '21	Oct 28 '21		1325	1327
1327	Application and approval of XP and TTA	180 days	Nov 1 '21	Apr 29 '22		1326	1331,1340
1328	Procurement and Delivery of pipes, fittings and related materials	60 days	Apr 6 '22	Jun 4 '22			1331,1340
1329	Submission and acceptance of method statement and material	30 days	May 6 '22	Jun 4 '22			
1330	Excavation of Inspection Pit	900 days	Oct 3 '22	Mar 20 '25			
1331	**Mainlaying by trenchless method**	**190 days**	**Sep 1 '23**	**Mar 8 '24**		**1328,1327**	**1480**
1332	**RW05 : DN300 DI pipe (trenchless)**	**190 days**	**Sep 1 '23**	**Mar 8 '24**			
1333	**Jocky Club Road (110m) - TBM Method**	**190 days**	**Sep 1 '23**	**Mar 8 '24**			
1334	TTA implementation	3 days	Sep 1 '23	Sep 3 '23			1335
1335	Contruction of jacking pit and receiving pit	30 days	Sep 4 '23	Oct 3 '23		1334	1336
1336	Trenchless works and pipe laying	120 days	Oct 4 '23	Jan 31 '24		1335	1337
1337	Manhole / Chamber construction	21 days	Feb 1 '24	Feb 21 '24		1336	1338
1338	Backfilling and compaction	14 days	Feb 22 '24	Mar 6 '24		1337	1339
1339	Reinstatement	2 days	Mar 7 '24	Mar 8 '24		1338	
1340	**Mainlaying by open trench method**	**1243 days**	**Sep 1 '22**	**Jan 25 '26**		**1328,1327**	**1480**
1341	RW38 (DN150) - Yip Cheong Street (351m)	540 days	Aug 1 '24	Jan 22 '26			
1342	RW39 (DN150) - Yip Cheong Street (14m)	60 days	Jun 1 '24	Jul 30 '24			
1343	RW37 (DN150) - Yip Wo Street (420m)	540 days	Nov 1 '22	Apr 23 '24			



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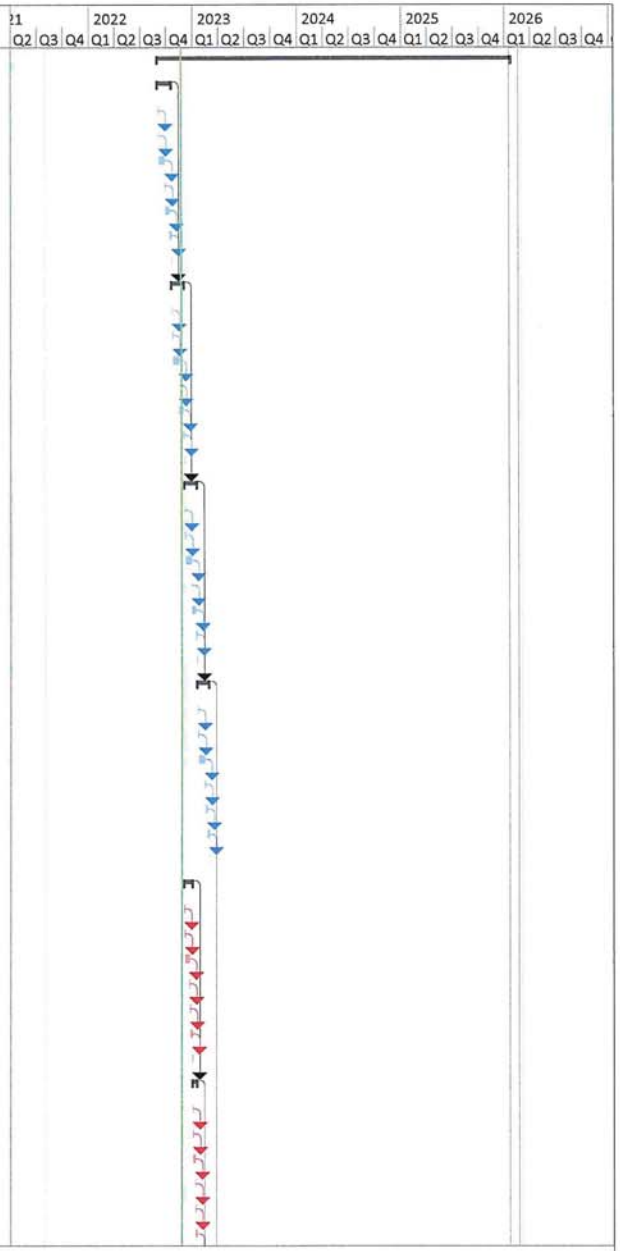
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

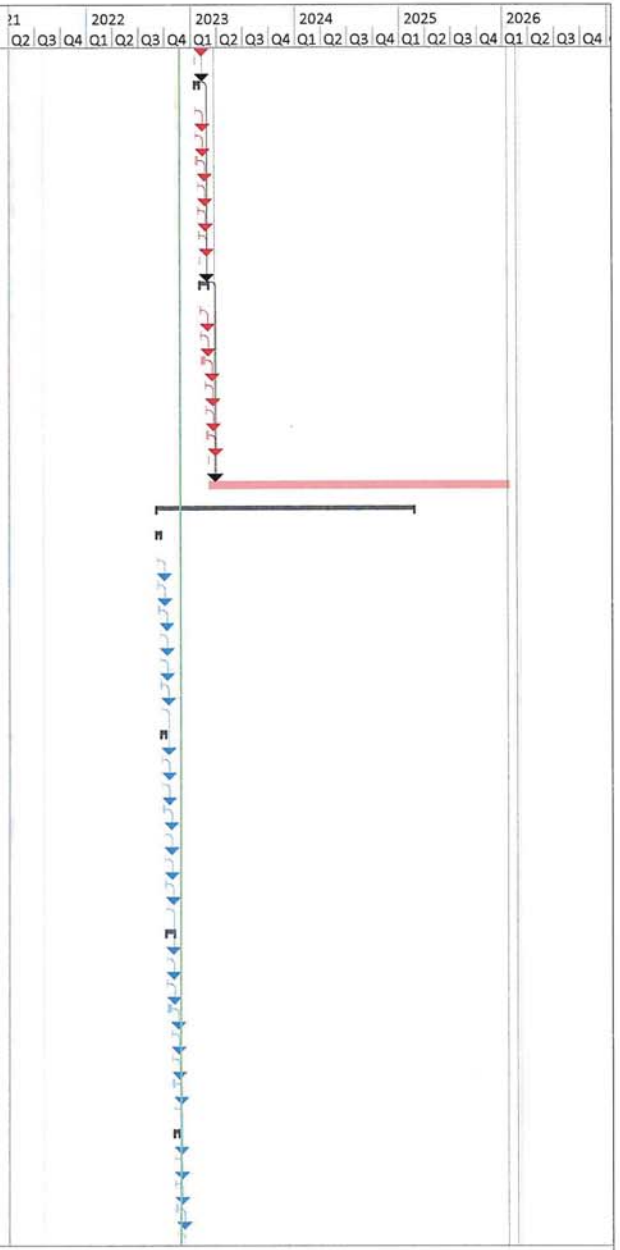
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1344	RW10 (DN300) - On Lok Mun Street (930m)	1243 days	Sep 1 '22	Jan 25 '26			
1345	CH550 to CH580 (30m)	49 days	Sep 1 '22	Oct 19 '22			1353
1346	TTA establishment	2 days	Sep 1 '22	Sep 2 '22			1347
1347	Hard material excavation and disposal	2 days	Sep 3 '22	Sep 4 '22		1346	1348
1348	Soil excavation , laying sheetpile and disposal	21 days	Sep 5 '22	Sep 25 '22		1347	1349
1349	Treatment of bedding	2 days	Sep 26 '22	Sep 27 '22		1348	1350
1350	Pipe laying D.I.	14 days	Sep 28 '22	Oct 11 '22		1349	1351
1351	Backfilling general fill and compaction	7 days	Oct 12 '22	Oct 18 '22		1350	1352
1352	Reinstatement	1 day	Oct 19 '22	Oct 19 '22		1351	
1353	CH520 to CH550 (30m)	44 days	Oct 20 '22	Dec 2 '22		1345	1361
1354	TTA establishment	1 day	Oct 20 '22	Oct 20 '22			1355
1355	Hard material excavation and disposal	2 days	Oct 21 '22	Oct 22 '22		1354	1356
1356	Soil excavation , laying sheetpile and disposal	21 days	Oct 23 '22	Nov 12 '22		1355	1357
1357	Treatment of bedding	1 day	Nov 13 '22	Nov 13 '22		1356	1358
1358	Pipe laying D.I.	14 days	Nov 14 '22	Nov 27 '22		1357	1359
1359	Backfilling general fill and compaction	4 days	Nov 28 '22	Dec 1 '22		1358	1360
1360	Reinstatement	1 day	Dec 2 '22	Dec 2 '22		1359	
1361	CH490 to CH520 (30m)	44 days	Dec 3 '22	Jan 15 '23		1353	1369
1362	TTA establishment	1 day	Dec 3 '22	Dec 3 '22			1363
1363	Hard material excavation and disposal	2 days	Dec 4 '22	Dec 5 '22		1362	1364
1364	Soil excavation , laying sheetpile and disposal	21 days	Dec 6 '22	Dec 26 '22		1363	1365
1365	Treatment of bedding	1 day	Dec 27 '22	Dec 27 '22		1364	1366
1366	Pipe laying D.I.	14 days	Dec 28 '22	Jan 10 '23		1365	1367
1367	Backfilling general fill and compaction	4 days	Jan 11 '23	Jan 14 '23		1366	1368
1368	Reinstatement	1 day	Jan 15 '23	Jan 15 '23		1367	
1369	CH580 to CH610 (30m)	42 days	Jan 16 '23	Feb 26 '23		1361	1409
1370	TTA establishment	2 days	Jan 16 '23	Jan 17 '23			1371
1371	Hard material excavation and disposal	2 days	Jan 18 '23	Jan 19 '23		1370	1372
1372	Soil excavation , laying sheetpile and disposal	21 days	Jan 20 '23	Feb 9 '23		1371	1373
1373	Treatment of bedding	2 days	Feb 10 '23	Feb 11 '23		1372	1374
1374	Pipe laying D.I.	7 days	Feb 12 '23	Feb 18 '23		1373	1375
1375	Backfilling general fill and compaction	7 days	Feb 19 '23	Feb 25 '23		1374	1376
1376	Reinstatement	1 day	Feb 26 '23	Feb 26 '23		1375	
1377	CH170 to CH200 (30m)	30 days	Dec 1 '22	Dec 30 '22			1385
1378	TTA establishment	2 days	Dec 1 '22	Dec 2 '22			1379
1379	Hard material excavation and disposal	2 days	Dec 3 '22	Dec 4 '22		1378	1380
1380	Soil excavation , laying sheetpile and disposal	14 days	Dec 5 '22	Dec 18 '22		1379	1381
1381	Treatment of bedding	2 days	Dec 19 '22	Dec 20 '22		1380	1382
1382	Pipe laying D.I.	2 days	Dec 21 '22	Dec 22 '22		1381	1383
1383	Backfilling general fill and compaction	7 days	Dec 23 '22	Dec 29 '22		1382	1384
1384	Reinstatement	1 day	Dec 30 '22	Dec 30 '22		1383	
1385	CH140 to CH170 (30m)	16 days	Dec 31 '22	Jan 15 '23		1377	1393
1386	TTA establishment	1 day	Dec 31 '22	Dec 31 '22			1387
1387	Hard material excavation and disposal	1 day	Jan 1 '23	Jan 1 '23		1386	1388
1388	Soil excavation , laying sheetpile and disposal	7 days	Jan 2 '23	Jan 8 '23		1387	1389
1389	Treatment of bedding	1 day	Jan 9 '23	Jan 9 '23		1388	1390
1390	Pipe laying D.I.	1 day	Jan 10 '23	Jan 10 '23		1389	1391
1391	Backfilling general fill and compaction	4 days	Jan 11 '23	Jan 14 '23		1390	1392



Project: 3WSD20 Programme
Date: Nov 22 '22

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

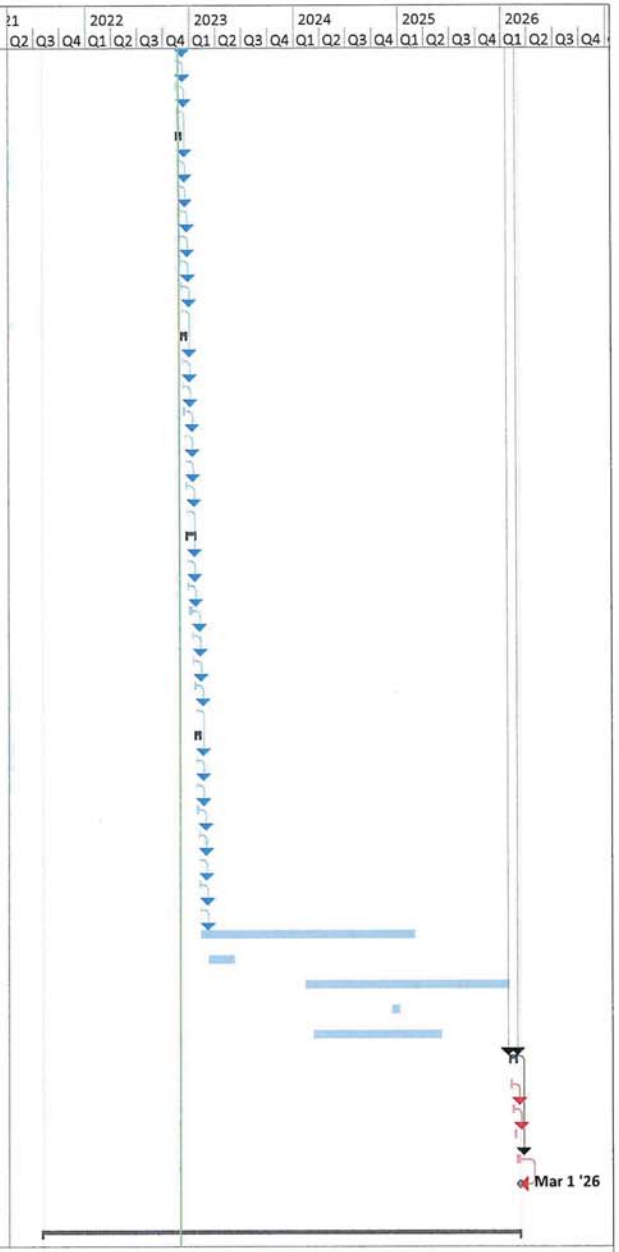
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1392	Reinstatement	1 day	Jan 15 '23	Jan 15 '23		1391	
1393	CH110 to CH140 (30m)	16 days	Jan 16 '23	Jan 31 '23		1385	1401
1394	TTA establishment	1 day	Jan 16 '23	Jan 16 '23			1395
1395	Hard material excavation and disposal	1 day	Jan 17 '23	Jan 17 '23		1394	1396
1396	Soil excavation , laying sheetpile and disposal	7 days	Jan 18 '23	Jan 24 '23		1395	1397
1397	Treatment of bedding	1 day	Jan 25 '23	Jan 25 '23		1396	1398
1398	Pipe laying D.I.	1 day	Jan 26 '23	Jan 26 '23		1397	1399
1399	Backfilling general fill and compaction	4 days	Jan 27 '23	Jan 30 '23		1398	1400
1400	Reinstatement	1 day	Jan 31 '23	Jan 31 '23		1399	
1401	CH580 to CH610 (30m)	30 days	Feb 1 '23	Mar 2 '23		1393	1409
1402	TTA establishment	2 days	Feb 1 '23	Feb 2 '23			1403
1403	Hard material excavation and disposal	2 days	Feb 3 '23	Feb 4 '23		1402	1404
1404	Soil excavation , laying sheetpile and disposal	14 days	Feb 5 '23	Feb 18 '23		1403	1405
1405	Treatment of bedding	2 days	Feb 19 '23	Feb 20 '23		1404	1406
1406	Pipe laying D.I.	2 days	Feb 21 '23	Feb 22 '23		1405	1407
1407	Backfilling general fill and compaction	7 days	Feb 23 '23	Mar 1 '23		1406	1408
1408	Reinstatement	1 day	Mar 2 '23	Mar 2 '23		1407	
1409	Remaining Section of On Lok Mun Street (840m)	1060 days	Mar 3 '23	Jan 25 '26		1369,1401	
1410	RW35 (DN150) - On Chuen Street (720m)	904 days	Sep 1 '22	Feb 20 '25			
1411	CH000 to CH060 (60m)	16 days	Sep 1 '22	Sep 16 '22			
1412	TTA establishment	1 day	Sep 1 '22	Sep 1 '22			1413
1413	Hard material excavation and disposal	1 day	Sep 2 '22	Sep 2 '22		1412	1414
1414	Soil excavation , laying sheetpile and disposal	7 days	Sep 3 '22	Sep 9 '22		1413	1415
1415	Treatment of bedding	1 day	Sep 10 '22	Sep 10 '22		1414	1416
1416	Pipe laying D.I.	1 day	Sep 11 '22	Sep 11 '22		1415	1417
1417	Backfilling general fill and compaction	4 days	Sep 12 '22	Sep 15 '22		1416	1418
1418	Reinstatement	1 day	Sep 16 '22	Sep 16 '22		1417	1420
1419	CH230 to CH260 (30m)	16 days	Sep 17 '22	Oct 2 '22			
1420	TTA establishment	1 day	Sep 17 '22	Sep 17 '22		1418	1421
1421	Hard material excavation and disposal	1 day	Sep 18 '22	Sep 18 '22		1420	1422
1422	Soil excavation , laying sheetpile and disposal	7 days	Sep 19 '22	Sep 25 '22		1421	1423
1423	Treatment of bedding	1 day	Sep 26 '22	Sep 26 '22		1422	1424
1424	Pipe laying D.I.	1 day	Sep 27 '22	Sep 27 '22		1423	1425
1425	Backfilling general fill and compaction	4 days	Sep 28 '22	Oct 1 '22		1424	1426
1426	Reinstatement	1 day	Oct 2 '22	Oct 2 '22		1425	1428
1427	CH200 to CH230 (30m)	29 days	Oct 3 '22	Oct 31 '22			
1428	TTA establishment	1 day	Oct 3 '22	Oct 3 '22		1426	1429
1429	Hard material excavation and disposal	2 days	Oct 4 '22	Oct 5 '22		1428	1430
1430	Soil excavation , laying sheetpile and disposal	14 days	Oct 6 '22	Oct 19 '22		1429	1431
1431	Treatment of bedding	2 days	Oct 20 '22	Oct 21 '22		1430	1432
1432	Pipe laying D.I.	2 days	Oct 22 '22	Oct 23 '22		1431	1433
1433	Backfilling general fill and compaction	7 days	Oct 24 '22	Oct 30 '22		1432	1434
1434	Reinstatement	1 day	Oct 31 '22	Oct 31 '22		1433	1436
1435	CH170 to CH200 (30m)	16 days	Nov 1 '22	Nov 16 '22			
1436	TTA establishment	1 day	Nov 1 '22	Nov 1 '22		1434	1437
1437	Hard material excavation and disposal	1 day	Nov 2 '22	Nov 2 '22		1436	1438
1438	Soil excavation , laying sheetpile and disposal	7 days	Nov 3 '22	Nov 9 '22		1437	1439
1439	Treatment of bedding	1 day	Nov 10 '22	Nov 10 '22		1438	1440



Project: 3WSD20 Programme
Date: Nov 22 '22

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

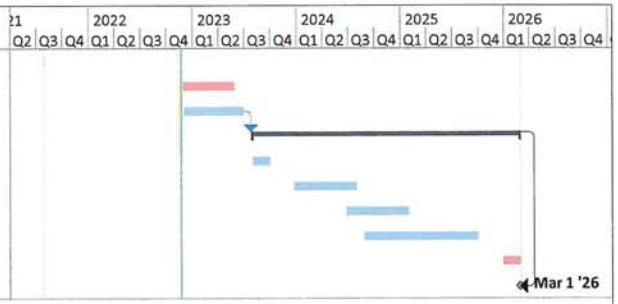
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1440	Pipe laying D.I.	1 day	Nov 11 '22	Nov 11 '22		1439	1441
1441	Backfilling general fill and compaction	4 days	Nov 12 '22	Nov 15 '22		1440	1442
1442	Reinstatement	1 day	Nov 16 '22	Nov 16 '22		1441	1444
1443	CH500 to CH530 (30m)	16 days	Nov 17 '22	Dec 2 '22			
1444	TTA establishment	1 day	Nov 17 '22	Nov 17 '22		1442	1445
1445	Hard material excavation and disposal	1 day	Nov 18 '22	Nov 18 '22		1444	1446
1446	Soil excavation , laying sheetpile and disposal	7 days	Nov 19 '22	Nov 25 '22		1445	1447
1447	Treatment of bedding	1 day	Nov 26 '22	Nov 26 '22		1446	1448
1448	Pipe laying D.I.	1 day	Nov 27 '22	Nov 27 '22		1447	1449
1449	Backfilling general fill and compaction	4 days	Nov 28 '22	Dec 1 '22		1448	1450
1450	Reinstatement	1 day	Dec 2 '22	Dec 2 '22		1449	1452
1451	CH530 to CH560 (30m)	16 days	Dec 3 '22	Dec 18 '22			
1452	TTA establishment	1 day	Dec 3 '22	Dec 3 '22		1450	1453
1453	Hard material excavation and disposal	1 day	Dec 4 '22	Dec 4 '22		1452	1454
1454	Soil excavation , laying sheetpile and disposal	7 days	Dec 5 '22	Dec 11 '22		1453	1455
1455	Treatment of bedding	1 day	Dec 12 '22	Dec 12 '22		1454	1456
1456	Pipe laying D.I.	1 day	Dec 13 '22	Dec 13 '22		1455	1457
1457	Backfilling general fill and compaction	4 days	Dec 14 '22	Dec 17 '22		1456	1458
1458	Reinstatement	1 day	Dec 18 '22	Dec 18 '22		1457	1460
1459	CH560 to CH590 (30m)	29 days	Dec 19 '22	Jan 16 '23			
1460	TTA establishment	1 day	Dec 19 '22	Dec 19 '22		1458	1461
1461	Hard material excavation and disposal	2 days	Dec 20 '22	Dec 21 '22		1460	1462
1462	Soil excavation , laying sheetpile and disposal	14 days	Dec 22 '22	Jan 4 '23		1461	1463
1463	Treatment of bedding	2 days	Jan 5 '23	Jan 6 '23		1462	1464
1464	Pipe laying D.I.	2 days	Jan 7 '23	Jan 8 '23		1463	1465
1465	Backfilling general fill and compaction	7 days	Jan 9 '23	Jan 15 '23		1464	1466
1466	Reinstatement	1 day	Jan 16 '23	Jan 16 '23		1465	1468
1467	CH590 to CH610 (30m)	16 days	Jan 17 '23	Feb 1 '23			
1468	TTA establishment	1 day	Jan 17 '23	Jan 17 '23		1466	1469
1469	Hard material excavation and disposal	1 day	Jan 18 '23	Jan 18 '23		1468	1470
1470	Soil excavation , laying sheetpile and disposal	7 days	Jan 19 '23	Jan 25 '23		1469	1471
1471	Treatment of bedding	1 day	Jan 26 '23	Jan 26 '23		1470	1472
1472	Pipe laying D.I.	1 day	Jan 27 '23	Jan 27 '23		1471	1473
1473	Backfilling general fill and compaction	4 days	Jan 28 '23	Jan 31 '23		1472	1474
1474	Reinstatement	1 day	Feb 1 '23	Feb 1 '23		1473	1475
1475	Remaining Section of On Chuen Street (630m)	750 days	Feb 2 '23	Feb 20 '25	60	1474	
1476	Coordination with ND/2019/04	90 days	Mar 1 '23	May 29 '23			
1477	RW09 (DN450) - Wo Hing Road (436m)	720 days	Feb 1 '24	Jan 20 '26			
1478	RW60 (DN150) - Tee from RW09 (14m)	29 days	Dec 1 '24	Dec 29 '24	14		
1479	RW40 (DN200) - Tai Wo Service Road West (420m)	450 days	Mar 1 '24	May 24 '25	30		
1480	Overall testing	21 days	Jan 26 '26	Feb 15 '26		1340,1331	1484
1481	Swabbing	7 days	Jan 26 '26	Feb 1 '26			1482
1482	CCTV	7 days	Feb 2 '26	Feb 8 '26		1481	1483
1483	Hydrostatic pressure test	7 days	Feb 9 '26	Feb 15 '26		1482	
1484	Pipe connection and completion	14 days	Feb 16 '26	Mar 1 '26		1480	1485FF
1485	Planned completion for section 8	0 days	Mar 1 '26	Mar 1 '26		1484FF	
1486							
1487	**Section 9 - Conversion works to effect the supply of reclaimed water**	**1676 days**	**Jul 30 '21**	**Mar 1 '26**			



Project: 3WSD20 Programme
Date: Nov 22 '22

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1488	Access Date	1 day	Jul 30 '21	Jul 30 '21			
1489	Initial survey by stages	180 days	Dec 1 '22	May 29 '23			
1490	Liaison, coordination and enabling work for conversion	210 days	Dec 1 '22	Jun 28 '23			1491
1491	**Conversion works**	**944 days**	**Aug 1 '23**	**Mar 1 '26**		**1490**	**1497FF**
1492	Section 4 (Part 3) - 3 nos.	60 days	Aug 1 '23	Sep 29 '23			
1493	Section 5 (Part 4) - 11 nos.	220 days	Dec 23 '23	Jul 29 '24			
1494	Section 6 (Part 5) - 11 nos.	220 days	Jun 24 '24	Jan 29 '25			
1495	Section 7 (Part 6) - 40 nos.	400 days	Aug 26 '24	Sep 29 '25			
1496	Section 8 (Part 7) - 3 nos.	60 days	Jan 1 '26	Mar 1 '26			
1497	Planned completion for section 9	0 days	Mar 1 '26	Mar 1 '26		1491FF	



Project: 3WSD20 Programme
Date: Nov 22 '22

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

SITE OVERVIEW PHOTO IN THE REPORTING PERIOD

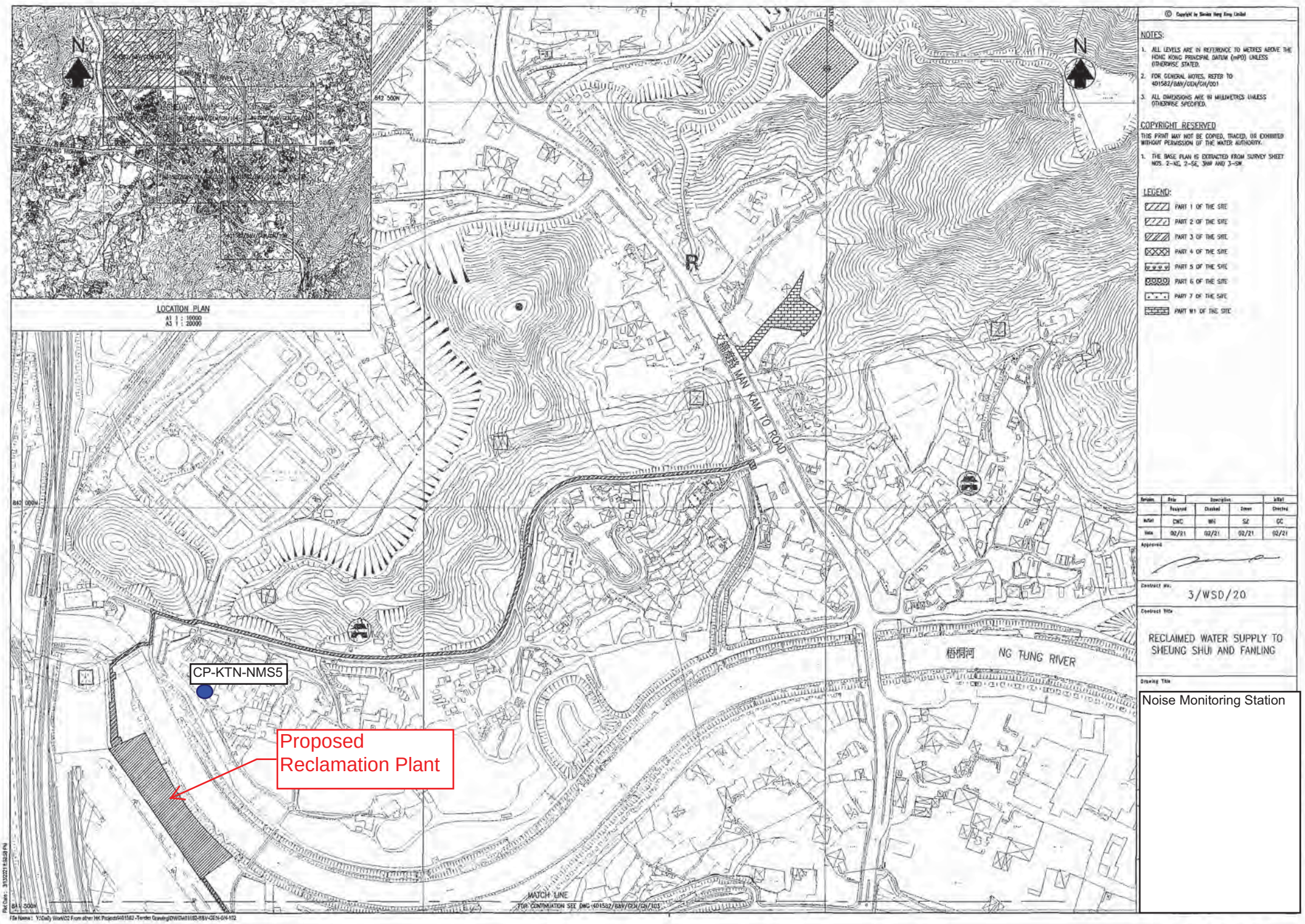
Formwork erection and scaffolding work at HCF

Formwork erection and scaffolding work at ReWSP

Excavation for extension of working area at ReWPS

Appendix D

Location of Designated Noise Monitoring Station CP-KTN-NMS5



NOTES:

1. ALL LEVELS ARE IN REFERENCE TO METRES ABOVE THE HONG KONG PRINCIPAL DATUM (mPD) UNLESS OTHERWISE STATED.
2. FOR GENERAL NOTES, REFER TO 401582/GAN/GEN/GN/001
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

1. THE BASE PLAN IS EXTRACTED FROM SURVEY SHEET NOS. 2-NG, 2-SE, 3NW AND 3-SW.

LEGEND:

- PART 1 OF THE SITE
- PART 2 OF THE SITE
- PART 3 OF THE SITE
- PART 4 OF THE SITE
- PART 5 OF THE SITE
- PART 6 OF THE SITE
- PART 7 OF THE SITE
- PART W1 OF THE SITE

Revision	Date	Description			Initial
	Designed	Checked	Drawn	Checked
Initial	CWC	WH	SZ	GC
Date	02/21	02/21	02/21	02/21

Approved

Contract No.
3/WSD/20

Contract Title
RECLAIMED WATER SUPPLY TO SHEUNG SHUI AND FANLING

Drawing Title
Noise Monitoring Station

Plot Date: 3/03/2021 8:03:28 PM
File Name: Y:\Daily Work\CC From other HK Projects\401582-Tender Drawing\DWG\401582-BSV-GEN-GN-102

Appendix E

Valid Calibration Certificates of Monitoring Equipment

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C224779
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC22-1539) Date of Receipt / 收件日期 : 4 August 2022

Description / 儀器名稱 : Sound Level Calibrator (EQ085)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-73
Serial No. / 編號 : 10655561
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 / 測試條件

Temperature / 溫度 : (23 ± 2)°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 : 20 August 2022

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification & user's specified acceptance criteria.
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 : H T Wong, Assistant Engineer

Certified By 核證 : K C Lee, Engineer

Date of Issue 簽發日期 : 23 August 2022

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

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C224779
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	C223647
CL281	Multifunction Acoustic Calibrator	AV210017
TST150A	Measuring Amplifier	C221750

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	User's Spec.	Uncertainty of Measured Value (Hz)
1	0.953	1 kHz ± 6 %	± 1

Remarks : - The user's specified acceptance criteria (user's spec.) is a customer pre-defined operating tolerance of the UUT, suitable for one's own intended use.

- 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.

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

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C221365
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC22-0258) Date of Receipt / 收件日期 : 14 February 2022

Description / 儀器名稱	:	Sound Level Meter (EQ018)
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NL-52
Serial No. / 編號	:	00809405
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 / 測試條件

Temperature / 溫度 : (23 ± 2)°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 : 12 March 2022

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

Tested By 測試 : K C Lee, Engineer

Certified By 核證 : H C Chan, Engineer

Date of Issue 簽發日期 : 16 March 2022

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

Certificate of Calibration
校正證書

Certificate No. : C221365
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	C220381
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				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.0	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L_A	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

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

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.3

Certificate of Calibration
校正證書

Certificate No. : C221365
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.9	-16.1 ± 1.5
					250 Hz	85.4	-8.6 ± 1.4
					500 Hz	90.8	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.0	+1.2 ± 1.6
					4 kHz	94.7	+1.0 ± 1.6
					8 kHz	92.9	-1.1 (+2.1 ; -3.1)
					16 kHz	85.5	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_C	C	Fast	94.00	63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.1	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.6	-0.2 ± 1.6
					4 kHz	92.9	-0.8 ± 1.6
					8 kHz	91.0	-3.0 (+2.1 ; -3.1)
					16 kHz	83.5	-8.5 (+3.5 ; -17.0)

Certificate of Calibration
校正證書

Certificate No. : C221365
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 16463

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	16 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 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.

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Appendix F

Monitoring Schedule of the Reporting Month and Coming Month

The Reporting Monitoring Schedule (November 2022)

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

✓	Monitoring Day
	Sunday or Public Holiday

The Coming Month Monitoring Schedule (December 2022)

Date		Noise Monitoring (Leq30min)	Ecology Monitoring (Water Bird) *Note*
Thu	1-Dec-22		
Fri	2-Dec-22		
Sat	3-Dec-22		
Sun	4-Dec-22		
Mon	5-Dec-22		
Tue	6-Dec-22		✓
Wed	7-Dec-22	✓	
Thu	8-Dec-22		
Fri	9-Dec-22		
Sat	10-Dec-22		
Sun	11-Dec-22		
Mon	12-Dec-22		
Tue	13-Dec-22		
Wed	14-Dec-22		
Thu	15-Dec-22		✓
Fri	16-Dec-22	✓	
Sat	17-Dec-22		
Sun	18-Dec-22		
Mon	19-Dec-22		
Tue	20-Dec-22		
Wed	21-Dec-22		✓
Thu	22-Dec-22	✓	
Fri	23-Dec-22		
Sat	24-Dec-22		
Sun	25-Dec-22		
Mon	26-Dec-22		
Tue	27-Dec-22		
Wed	28-Dec-22	✓	
Thu	29-Dec-22		✓
Fri	30-Dec-22		
Sat	31-Dec-22		

Note:

Ecology monitoring dates are tentative and are subject to change

✓	Monitoring Day
	Sunday or Public Holiday

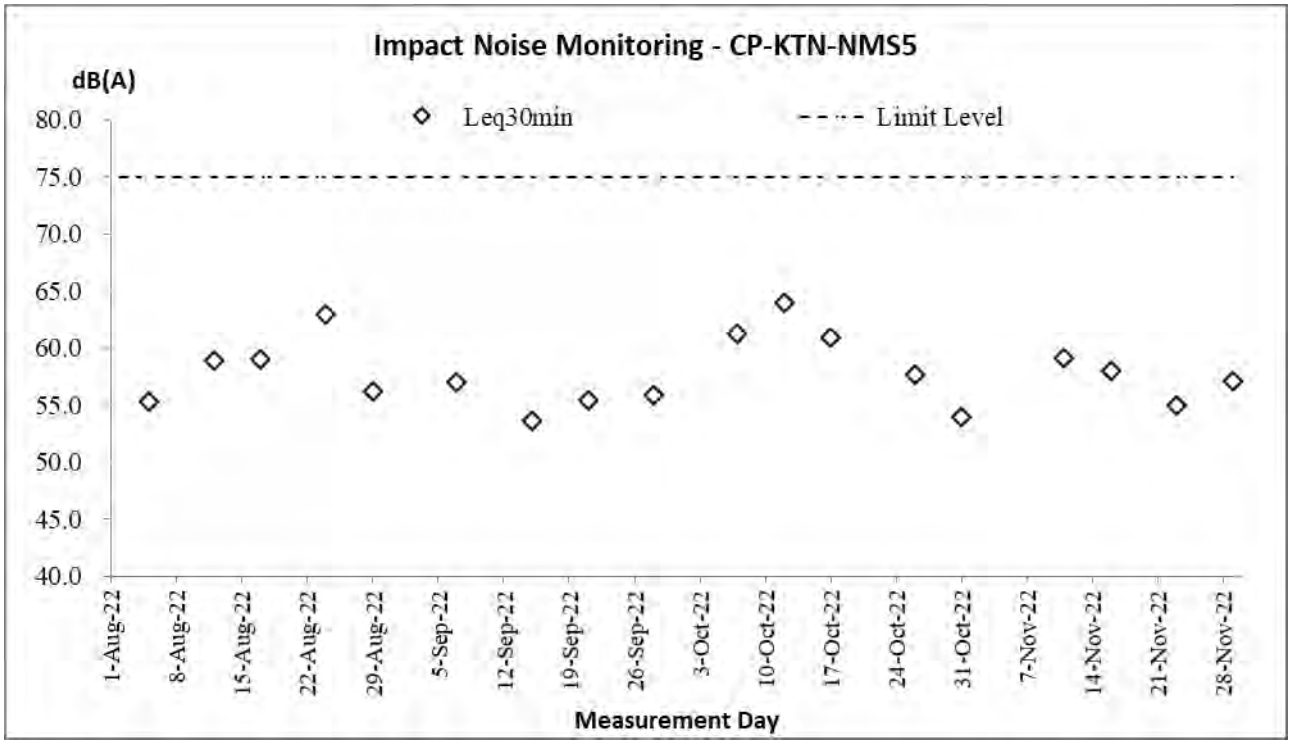
Appendix G

Database of Monitoring Result

Daytime Noise Measurement Results (dB) at CP-KTN-NMS5																				
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)	Corrected Leq30min dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)		
11-Nov-22	15:30	58.9	61.1	51.2	59.1	60.9	56.6	59.9	63.4	55.5	57.3	58.9	54.1	57.9	61.1	54.5	60.6	62.2	54.4	59.1	62.1
16-Nov-22	9:20	60.3	63.1	50.8	57.2	63.3	51.8	57.9	64.1	52.2	58.0	63.9	53.0	56.6	62.8	52.2	56.9	62.7	52.1	58.0	61.0
23-Nov-22	11:20	52.3	54.8	50.6	58.0	61.8	51.7	52.5	55.6	49.8	53.8	55.4	50.5	55.0	57.4	52.2	55.3	62.2	50.7	54.9	57.9
29-Nov-22	9:33	55.9	58.2	52.0	58.0	59.8	54.5	56.9	59.3	54.2	57.5	59.8	54.2	58.4	60.5	54.0	55.5	59.1	51.5	57.2	60.2

Appendix H

Graphical Plots for Monitoring Result


Impact Noise Monitoring - CP-KTN-NMS5
dB(A)
Leq30min
Limit Level
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
1-Aug-22
8-Aug-22
15-Aug-22
22-Aug-22
29-Aug-22
5-Sep-22
12-Sep-22
19-Sep-22
26-Sep-22
3-Oct-22
10-Oct-22
17-Oct-22
24-Oct-22
31-Oct-22
7-Nov-22
14-Nov-22
21-Nov-22
28-Nov-22
Measurement Day

Appendix I

Monthly Summary Waste Flow Table

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

Monthly Summary Waste Flow Table for _2022___ (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
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	4.5178	0	0	0.39	4.1278	0	0	0	0	0	0.0057
June	6.3073	0	0	1.6148	4.6925	0	0	0	0	0	0.0017
July	0.8427	0	0	0	0.8427	0	0	0	0	0	0.0078
Aug	0.3786	0	0	0	0.3786	0	0	0	0	0	0.0071
Sept	0.1839	0	0	0	0.1839	0	0	0.0144	0	0	0.0154
Oct	0.1182	0	0	0	0.1182	0	0	0	0	0	0.0070
Nov	1.1067	0	0	0	1.1067	0	0	0	0	0	0.0206
Dec											
Total	18.3658	0	0	2.0048	16.361	0	0	0.0144	0	0	0.0726

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?
Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)							
Construction Dust Impact							
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 and the exit point should be paved with concrete, bituminous materials 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 sheltered on the top and the 3 sides.					
Noise Impact (Construction Phase)							
S4.9	N1	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 Quality Impact (Construction Phase)							
S5.7	W1	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

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?
		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, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff					

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 Management (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	**Good Site Practice** 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 Waste** The 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
Landscape and Visual (Construction)							
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 *Melastoma malabathricum, Diospyros vaccinioides, Gardenia jasminoides, Ixora chinensis, Ligustrum sinense, Litsea rotundifolia, Melastoma dodecandrum, Atalantia buxifolia, Rhodomyrtus tomentosa, Rhaphiolepis indica,* and *Rhododendron simsii* 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	Government / Developer / Detailed Design Consultant / Contractor	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 green site boundary fence. Details can refer to the ecological impact assessment (Chapter 13 of the EIA report).	To screen undesirable views of the works site.	Contractor	Throughout NDAs	Construction Phase	
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 (Construction 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

Legend:

Existing u-channel to be abandoned

Water Flow

Water Flow pumped cater level difference

Existing Channels

Sedimentation Pit
(5000W x 5000L x 3000D)

Proposed Sedimentation Tanks
2.4m x 6m x 2.4m(H) (2nos.)

Outlet B

ELS Pit
(28000W x 30000L
x 8800D)

Proposed Sedimentation Tanks
2.4m x 6m x 2.4m(H) (2nos.)

Existing UC to
be abandoned

SLAUGHTER HOUSE
BOUNDARY WALL

ELS Pit
(25000W x 80000L
x 3000D)

Upstream removed by others

NG TUNG RIVER (RIVER INDUS)

SHEET PILES

SHEET PILES

Footpath

Footbridge

Retaining Wall

Slaughter House Boundary Wall

Platform

Temporary Footpath

Paving Slab

Outfall

Outfall

Road

Appendix L

Waterbirds Survey Report for the Reporting Month

ecology
biodiversity
landscape

aec

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

Monthly Report for November 2022
(Issue 1)

Job Ref.: 21/2063/582 AUES-SWHTSE
Date: 7th December 2022

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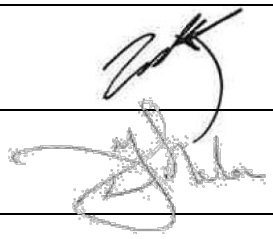
WSD Contract No. 3/WSD/20 - Reclaimed Water Supply to Sheung Shui and Fanling - Provision of EM&A (Ecological) Monitoring

Monthly Report for November 2022

(Issue 1)

December 2022

	Name	Signature
Prepared by:	**Nicholas Tam**	
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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 November 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**.

Table 1 Ecological Monitoring Stations

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

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 followed Figure 1 of the approved Baseline Monitoring Report (Ecology) (Version 1). 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.

Table 2 Representative Waterbirds

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

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.

3.3 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 Ng Tung, Sheung Yue and Shek Sheung Rivers during Construction Phase

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

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

3.4 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.

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

High Tide				Low Tide			
Date	**Time**	**Tide (m)**	**Weather**	**Date**	**Time**	**Tide (m)**	**Weather**
4-Nov-22	9:00	2.04	Cloudy	4-Nov-22	10:50	1.49	Cloudy
10-Nov-22	10:10	1.59	Sunny	8-Nov-22	15:00	1.18	Cloudy
14-Nov-22	15:30	1.67	Cloudy	18-Nov-22	9:55	1.05	Sunny
24-Nov-22	10:00	1.82	Rainy	22-Nov-22	14:10	1.06	Cloudy
29-Nov-22	15:00	1.57	Sunny	28-Nov-22	10:00	0.32	Sunny

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	43	677
Waterbirds	16	284

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

Common Name	Species Name	Chinese Name	Abundance
Chinese Pond Heron	*Ardeola bacchus*	池鷺	26
Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺	59
Grey Heron	*Ardea cinerea*	蒼鷺	35
Great Egret	*Ardea alba*	大白鷺	11
Little Egret	*Egretta garzetta*	小白鷺	31
Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀	81

5 ANALYSIS

5.1 The results 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**.

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

Category	Monthly					Seasonal				
	T-value	*df*	*p*	Action Level	Limit Level	T-value	*df*	*p*	Action Level	Limit Level
All Waterbirds	-3.343	6	0.007	*	*	-0.621	8	0.276		
Chinese Pond Heron	-3.202	7	0.008	*	*	-2.589	7	0.018	*	
Eastern Cattle Egret	No decline					No decline				
Grey Heron	-6.615	6	0.000	*	*	-2.752	11	0.009	*	*
Great Egret	-2.752	11	0.017	*	*	-2.537	6	0.022	*	
Little Egret	-6.101	6	0.000	*	*	-5.843	22	0.000	*	*
Great Cormorant	No decline					No decline				

* = level triggered

5.2 Declines in Chinese Pond Heron and Great Egret have triggered the action level compared to the Winter average. Declines in all waterbirds, Chinese Pond Heron, Grey Heron, Great Egret and Little Egret have triggered the Limit Level compared to the November average while Grey Heron and Little Egret also triggered the Limit Level when compared to the Winter average.

5.3 Similar to the account in the report of previous months, in addition to the birds recorded from the point count, the abundance of the representative waterbirds recorded from the transect count are shown in **Table 8**. According to the results from the transect count, a considerable number of the six representative birds were still present within the survey area, and have been simply excluded from the analysis. This is especially true for Grey Herons, Great Egrets and Little Egrets, all three species have significantly large numbers recorded within the survey transects instead of point count locations.

Table 8 Transect Count Abundance of Waterbirds in the Reporting Month

Common Name	Species Name	Chinese Name	Point Count Abundance	Transect Count Abundance
Chinese Pond Heron	*Ardeola bacchus*	池鷺	26	34
Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺	59	13
Grey Heron	*Ardea cinerea*	蒼鷺	35	69
Great Egret	*Ardea alba*	大白鷺	11	60
Little Egret	*Egretta garzetta*	小白鷺	31	51
Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀	81	138

5.4 As suggested in previous reporting months, the change in habitats of Long Valley Nature Park (e.g. maintenance of shallow-water habitats in the reprofiled agricultural lands and low-lying areas) is likely to attract more waterbirds present within LVNP instead of the Study Area.

5.5 It is also suggested by the surveyors that the tidal influence of the Rivers may restrict the availability of foraging and roosting sites for the waterbirds. As seen in photo 4 of **Appendix D**, some segments of the transect (including point count locations) are still entirely flooded even during surveys with tide as low as 1.05 meter, which makes it difficult for waterbird species to forage on. This may further encourage the waterbirds to utilize the more attractive habitats in the nearby LVNP.

5.6 Additionally**,** surveyors have recorded works involving laying concrete blocks using cranes across Ng Tung River at P2 and P3 since the survey dated on 4th November. According to documents found near the construction, the works are part of the North East New Territories Sewerage System Upgrade led by DSD. The movement of vehicles and noise produced by the laying works are also sources of disturbances that may discourage waterbirds from foraging near P2 and P3.

5.7 Given that the anthropogenic activities recorded were similar to the previous month, and no large instances of disturbance (only use of crane and scaffolding works) caused by the construction works of the project were recorded by the surveyor, it is suggested that the decline in the number of multiple species of waterbirds is not related to the construction works.

5.8 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. No further action is advised at the moment.

6 OBSERVATIONS

6.1 The types of Waterbird behavior observed during ecological monitoring are listed below:

- Flying
- Resting
- Foraging

6.2 The anthropogenic activities observed during ecological monitoring are listed in **Table 8.**

Table 9 Observations of the anthropogenic activities during the Ecological Monitoring in the Reporting Month

Location	Observations	
	Project Related	**Non-project Related**
T1 (PC1, PC2)	/	Fishing, laying of concrete blocks at P2
T2 (PC3, PC4)	Use of crane, scaffolding	Fishing, laying of concrete blocks at P3
T3 (PC6, PC7)	/	Fishing

7 REFERENCES

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

Common Name	Chinese Name	Scientific Name	Waterbird	Point Count Abundance	Transect Abundance
Little Grebe	小䴙䴘	*Tachybaptus ruficollis*	Y		+
Eurasian Spoonbill	白琵鷺	*Platalea leucorodia*	Y		+
Black-faced Spoonbill	黑臉琵鷺	*Platalea minor*	Y	1	
Chinese Pond Heron	池鷺	*Ardeola bacchus*	Y	26	++++
Eastern Cattle Egret	牛背鷺	*Bubulcus coromandus*	Y	59	++
Grey Heron	蒼鷺	*Ardea cinerea*	Y	35	+++++
Great Egret	大白鷺	*Ardea alba*	Y	11	+++++
Little Egret	小白鷺	*Egretta garzetta*	Y	31	+++++
Great Cormorant	普通鸕鷀	*Phalacrocorax carbo*	Y	81	+++++
Black Kite	黑鳶	*Milvus migrans*	N		+
Eastern Buzzard	普通鵟	*Buteo japonicus*	N	1	
White-breasted Waterhen	白胸苦惡鳥	*Amaurornis phoenicurus*	Y	4	
common moorhen	黑水雞	*Gallinula chloropus*	Y		+
Black-winged Stilt	黑翅長腳鷸	*Himantopus himantopus*	Y	15	++
Little ringed Plover	金眶鴴	*Charadrius dubius*	Y		+
Common Sandpiper	磯鷸	*Actitis hypoleucos*	Y	6	+
Green Sandpiper	白腰草鷸	*Tringa ochropus*	Y	4	+
Common Greenshank	青腳鷸	*Tringa nebularia*	Y	3	+
Spotted Dove	珠頸斑鳩	*Spilopelia chinensis*	N	7	+++
Greater Coucal	褐翅鴉鵑	*Centropus sinensis*	N		+
White-throated Kingfisher	白胸翡翠	*Halcyon smyrnensis*	Y	4	++
Common Kingfisher	普通翠鳥	*Alcedo atthis*	Y	2	+
Pied Kingfisher	斑魚狗	*Ceryle rudis*	Y	1	++
Alexandrine Parakeet	亞歷山大鸚鵡	*Psittacula eupatria*	N		+
Grey-chinned Minivet	灰喉山椒鳥	*Pericrocotus solaris*	N	23	+
Long-tailed Shrike	棕背伯勞	*Lanius schach*	N		+
Black Drongo	黑卷尾	*Dicrurus macrocercus*	N	2	
Hair-crested Drongo	髮冠卷尾	*Dicrurus hottentottus*	N		+
Red-billed Blue Magpie	紅嘴藍鵲	*Urocissa erythroryncha*	N	2	
Oriental Magpie	喜鵲	*Pica serica*	N	2	++
House Crow	家鴉	*Corvus splendens*	N		+
Collared Crow	白頸鴉	*Corvus torquatus*	Y	1	+
Large-billed Crow	大嘴烏鴉	*Corvus macrorhynchos*	N	1	
Cinereous Tit	蒼背山雀	*Parus cinereus*	N	13	+++
Red-whiskered Bulbul	紅耳鵯	*Pycnonotus jocosus*	N	56	+++++
Chinese Bulbul	白頭鵯	*Pycnonotus sinensis*	N	1	++
Barn Swallow	家燕	*Hirundo rustica*	N		++
Yellow-browed Warbler	黃眉柳鶯	*Phylloscopus inornatus*	N	31	+++++
Pallas's leaf Warbler	黃腰柳鶯	*Phylloscopus proregulus*	N	2	+
Dusky Warbler	褐柳鶯	*Phylloscopus fuscatus*	N	4	++
Yellow-bellied Prinia	黃腹鷦鶯	*Prinia flaviventris*	N	4	+

Common Name	Chinese Name	Scientific Name	Waterbird	Point Count Abundance	Transect Abundance
Plain Prinia	純色鷦鶯	*Prinia inornata*	N		+
Common Tailorbird	長尾縫葉鶯	*Orthotomus sutorius*	N	14	+++
Masked Laughingthrush	黑臉噪鸝	*Pterorhinus perspicillatus*	N	4	++++
Swinhoe's white-eye	暗綠繡眼鳥	*Zosterops simplex*	N	31	+++++
Crested Myna	八哥	*Acridotheres cristatellus*	N	121	+++++
Black-collared Starling	黑領椋鳥	*Gracupica nigricollis*	N	17	++++
Chinese Blackbird	烏鶇	*Turdus mandarinus*	N		+
Oriental Magpie Robin	鵲鴝	*Copsychus saularis*	N	1	+
Daurian Redstart	北紅尾鴝	*Phoenicurus auroreus*	N	4	++++
Stejneger's Stonechat	黑喉石(即鳥)	*Saxicola stejnegeri*	N	3	+
Scarlet-backed Flowerpecker	朱背啄花鳥	*Dicaeum cruentatum*	N		+
Fork-tailed Sunbird	叉尾太陽鳥	*Aethopyga christinae*	N	1	+
Eurasian Tree Sparrow	樹麻雀	*Passer montanus*	N	3	+
Grey Wagtail	灰鶺鴒	*Motacilla cinerea*	N	1	+
White Wagtail	白鶺鴒	*Motacilla alba*	N	42	+++++
Olive-backed Pipit	樹鷚	*Anthus hodgsoni*	N	2	+++
		Total Point Count Abundance		677	
		Total Waterbirds		284	

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

Appendix B Total Waterbird Abundance from Point Count

Survey Information				Number of Waterbirds	
Week	**Date**	**Time**	**Tide Level**	**Individuals Recorded**	**Total**
1	4/11/2022	9:00	High	47	78
	4/11/2022	10:50	Low	31	
2	8/11/2022	15:00	Low	24	49
	10/11/2022	10:10	High	25	
3	14/11/2022	15:30	High	35	53
	18/11/2022	9:55	Low	18	
4	22/11/2022	14:10	Low	19	53
	24/11/2022	10:00	High	34	
5	28/11/2022	10:00	Low	35	51
	29/11/2022	15:00	High	16	
			Survey Average		56.8
			Baseline	November Average	78
				Winter Average	60.77

Appendix C Abundance of Representative Waterbirds from Point Count

Representative Species		Recorded Abundance (Nov 2022)						Baseline	
Common Name	**Species Name**	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Average**	**Nov Average**	**Winter Average**
Chinese Pond Heron	*Ardeola bacchus*	8	7	7	3	1	5.2	11.25	9.21
Eastern Cattle Egret	*Bubulcus coromandus*	28	1	7	13	10	11.8	0.25	3.77
Grey Heron	*Ardea cinerea*	7	13	4	7	4	7	19.25	12.82
Great Egret	*Ardea alba*	1	6	0	1	3	2.2	7.25	5.15
Little Egret	*Egretta garzetta*	6	7	8	3	7	6.2	15.5	14.36
Great Cormorant	*Phalacrocorax carbo*	22	11	17	21	10	16.2	13.5	7.08

Appendix D Survey Photos

Photo 1 Works on current project at P4	**Photo 2** Works of other project (DSD) at T2 (4/11)
	
Photo 3 Works of other project (DSD) at P2 (28/11)	**Photo 4** Low tide (1.05m, 18/11) at P7
	
Photo 5 Grey Heron at P7	**Photo 6** Chinese Pond Heron at P2
	

Figure 1

Transect and Point Count Location

P4
P1
P3
P2
T1
T2
P7
P5
T3
P6

Proposed Shek Wu Hui Water Reclamation Plant
500m Survey Boundary
Proposed Retained Water Mains
Walk Transects
Point Count Locations

ecology biodiversity landscape aec

Project Title:

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

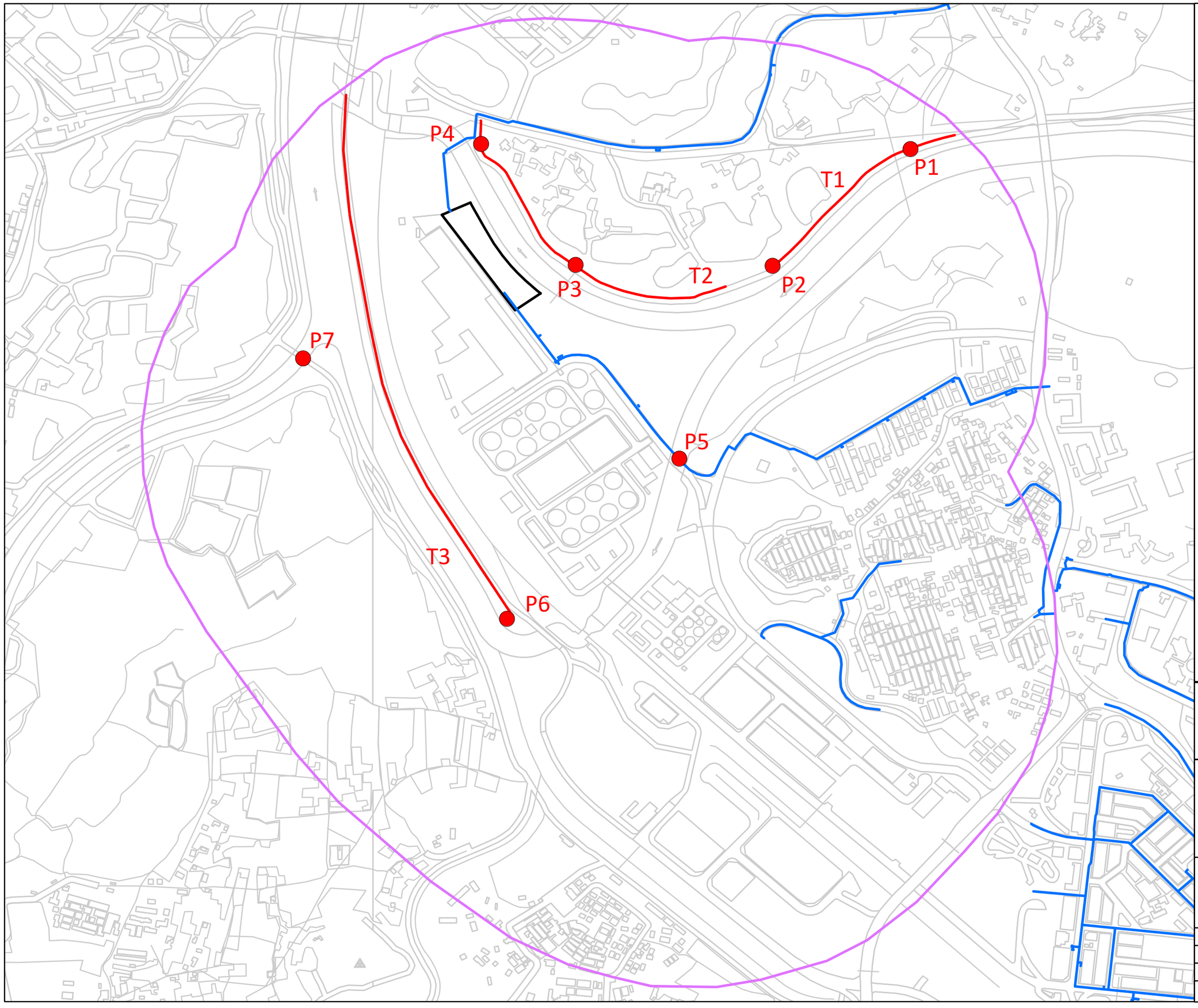
Figure Title:

Transect and Point Count Locations

Drawn by:	NT	Scale:	1:14,500 on A3
Checked By:	NT	Date:	5 July 2022
Approved by:	IY		
Figure Number:	Figure 1	Revision:	2

Figure 1a

Transect and Point Count Location (Zoomed In)



Proposed Shek Wu Hui Water Reclamation Plant

500m Survey Boundary

Proposed Retained Water Mains

Walk Transect

Point Count Locations

ecology biodiversity landscape aec

Project Title:

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

Figure Title:

Transect and Point Count Locations (zoomed in)

Drawn by:	NT	Scale: 1:6,000	on A3
Checked By:	NT	Date: 5 July 2022	
Approved by:	IY		
Figure Number:	Figure 1a	Revision: 2	