JOB NO.: TCS01216/21

WSD Contract No.: 3/WSD/20 -

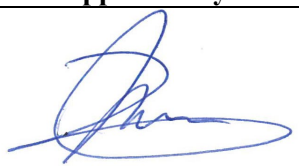
Reclaimed Water Supply to Sheung Shui and Fanling

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT (NO.30) – MAY 2024

PREPARED FOR

WATER SUPPLIES DEPARTMENT

Quality Index

Date	Reference No.	Prepared By	Approved By
12 June 2024	TCS01216/21/600/R0105v1	 Martin Li Environmental Consultant	 TW Tam Environmental Team Leader

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1	12 June 2024	First Submission

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Date: 13th June 2024

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 May 2024

We refer to the monthly EM&A Report for May 2024 for WSD Contract No.: 3/WSD/20 – Reclaimed Water Supply to Sheung Shui and Fanling certified by the Environmental Team Leader on 12th June 2024. 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 8493 5543.

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 **30th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1** to **31 May 2024** (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	**5**
Ecology	Waterbirds	**5**
Site Inspection / Audit	ET, the Contractor and RE joint site Environmental Inspection	**5**

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 – 31 May 2024	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 – 31 May 2024	0	0	NA

Table ES-5 Environmental Prosecution Summaries in the Reporting Month

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 May 2024	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 ***2, 10, 16, 23 and 30 May 2024***. No non-compliance was noted during the site inspection.

ES.13 IEC inspection was conducted on ***10 May 2024***.

FUTURE KEY ISSUES

ES.14 E&M work at ReWPS & HCF, and fence wall construction work at SWHWRP will be the major construction work in the coming month. The Contractor should pay attention to potential water quality impact from fence wall construction work and waste impact from E&M Work, and implement mitigation measures according to the ISEMM.

ES.15 As the wet season has approached, the Contractor was general reminded to paid attention to water quality mitigation measures such as ensure sufficient wastewater treatment facilities capacity is provided on site and keep review on the temporary drainage system to avoid water quality impact arise from the Project.

ES.16 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 December 2021***. Also, construction activities of the Contract were commencement on ***7 December 2021***.

1.1.11 This is **30th** monthly EM&A report to presenting the monitoring results and inspection findings from ***1*** to ***31 May 2024*** 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 major 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***.
- ReWPS (Pump Hall & Pump sump) – installation of solar panel, external wall AGT along riverside, pipe laying along riverside
- Construction of roof footpath
- External Works at Site-wide Area – Pipe laying in water meter room, installation of Temporary Main Gate

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-RN0265-24	27 Mar 2024	26 Aug 2024

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 – 75

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 **5** 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))
3-May-24	11:16	60
7-May-24	9:30	60
18-May-24	9:00	64
25-May-24	9:15	64
30-May-24	13:05	61
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 ***Four (4)*** 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	30	381
Waterbirds	9	137

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	13
Grey Heron	Ardea cinerea	蒼鷺	0
Great Egret	Ardea alba	大白鷺	12
Little Egret	Egretta garzetta	小白鷺	55
Great Cormorant	Phalacrocorax carbo	普通鸕鷀	0

5.2.3 The result was compared with the monthly data, and decline in abundance of waterbird, Chinese Pond Heron and Little Egret 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 As discussed in previous reporting period, the decline of individual waterbird species should not be the result of increased disturbances from the Project or its surrounding on-going projects, as increased disturbance would discourage multiple waterbird species from foraging near the transect and point count locations instead. Thus it is concluded that the decline in the two bird species are not related to the construction works of the Project.

5.2.5 In addition, the construction works by other Projects around the survey transects observed in previous month are still active during the reporting month. A playback device for bird calls was seen to be installed near the pond in T1 during the survey in early April 2023 by other Project but the playback device was not switched on during the report month. However, Egret dummies were observed being tied on the trees of the same pond since the survey on 17th October 2023 and may attract roosting ardeids. This may potentially lower the number of waterbirds and representative waterbirds visiting P1 and P2 as the birds would be incentivized to forage away from these two points and in the pond instead.

5.2.6 Road enhancement and sewerage system upgrade works by other Project along T2 near P3 was observed to operate and be extended to P4 during the survey on 17th April 2024. The use of excavators and crane trucks were also observed on 23rd May 2024 at P4 and P3 respectively, resulting in the increased disturbance level at these count locations.

5.2.7 An extension of this sewerage system upgrade was observed to be in operation at the Eastern bank of Shek Sheung River near P5 since the survey in late August 2023. Machinery and stockpiles were observed within its construction area, which may be a potential source of disturbance that discourages birds from foraging near P5.

5.2.8 The construction work by other Project near P7 was also observed active throughout the entire reporting month. Piling works of the same construction was also observed at T3, roughly midway between P6 and P7, and since the survey on 11th September 2023, excavators were observed on the opposite bank to the survey transect. Additionally, concrete blocks attached by metal bars were placed in the river next to the piling site were observed during the survey on 29th November 2023. Moreover, a pit construction work was observed during the survey on 5th April 2024.

5.2.9 The construction works by other Project, which located in a cleared area between Sheung Yue River and the Sheung Shui Slaughterhouse, was observed to have started since the early January 2024, and involved excavation and drilling works. The excavated pit was seen to be filled halfway during the survey on 31st May 2024.

5.2.10 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)	0.346	-
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)	0.346	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)	0.006	SENT

7. SITE INSPECTION

7.1 REQUIREMENTS

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

7.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

7.2.1 In the Reporting Month, weekly regular site inspection by the RE, the Main Contractor and ET was carried out on ***2, 10, 16, 23 and 30 May 2024*** 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
2 May 2024	• No environmental issue was observed during site inspection	NA
10 May 2024	• No environmental issue was observed during site inspection	NA
16 May 2024	• No environmental issue was observed during site inspection	NA
23 May 2024	• Chemical container should be removed or placed inside drip tray.	Chemical container was removed to designated storage area.
30 May 2024	• No environmental issue was observed during site inspection	NA

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 – 31 May 2024	0	0	NA

Table 8-1-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 May 2024	0	0	NA

Table 8-1-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 May 2024	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***. An as-built drawing of site temporary drainage 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:

- ReWPS (Pump Hall & Pump sump) – construction of Permanent Fence Wall, installation of Architectural Canopy and Fins, installation of Floor Tile of RWPS Roof
- Installation of Permanent Gate
- External Works at Site-wide Area
- HCF – Landscape Area on roof

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:

Fence wall construction and cable laying work at SWHWRP

- Cover the excavated material from pipe laying work with impervious sheet to avoid water quality impact during rainy days.
- Restrict operation time of PME from 07:00 to 19:00 on any working day;

General

- 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.
- 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;
- Use Quiet powered mechanical equipment (QPME) whenever applicable;
- Minimize the number of plants used at the same time to reduce cumulative noise impact;
- Proper management of general refuse and chemical waste generated on site.
- Keep review the temporary drainage system on site during rainy reason
- Chemical label for chemical container should be regularly checked and provided.
- Sufficient secondary containment for chemical containers should be provided at work area.

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

10.1.1 This is **30th** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1** to **31 May 2024**.

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 ***2, 10, 16, 23 and 30 May 2024***. The mitigation measures implemented was considered satisfactory. No non-compliance observed during the site inspection.

10.2 RECOMMENDATIONS

10.2.1 E&M work at ReWPS & HCF, and fence wall construction work at SWHWRP will be the major construction work in the coming month. The Contractor should pay attention to potential water quality impact from fence wall construction work and waste impact from E&M Work, and implement mitigation measures according to the ISEMM.

10.2.2 As the coming month will be wet season, the Contractor was general reminded to paid attention to water quality mitigation measures such as ensure sufficient wastewater treatment facilities capacity is provided on site and keep review on the temporary drainage system to avoid water quality impact arise from the Project.

10.2.3 The Contractor was reminded to pay attention to the key issues for the coming month mentioned in Section 9.4.

Appendix A

Location of Shek Wu Hui Water Reclamation Plant

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

FU TEI AU ROAD

導管

SHEUNG YUE RIVER

石上河

SHEK SHEUNG

CHUK WAN STREET

污水處理廠
Sewage Treatment Works

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

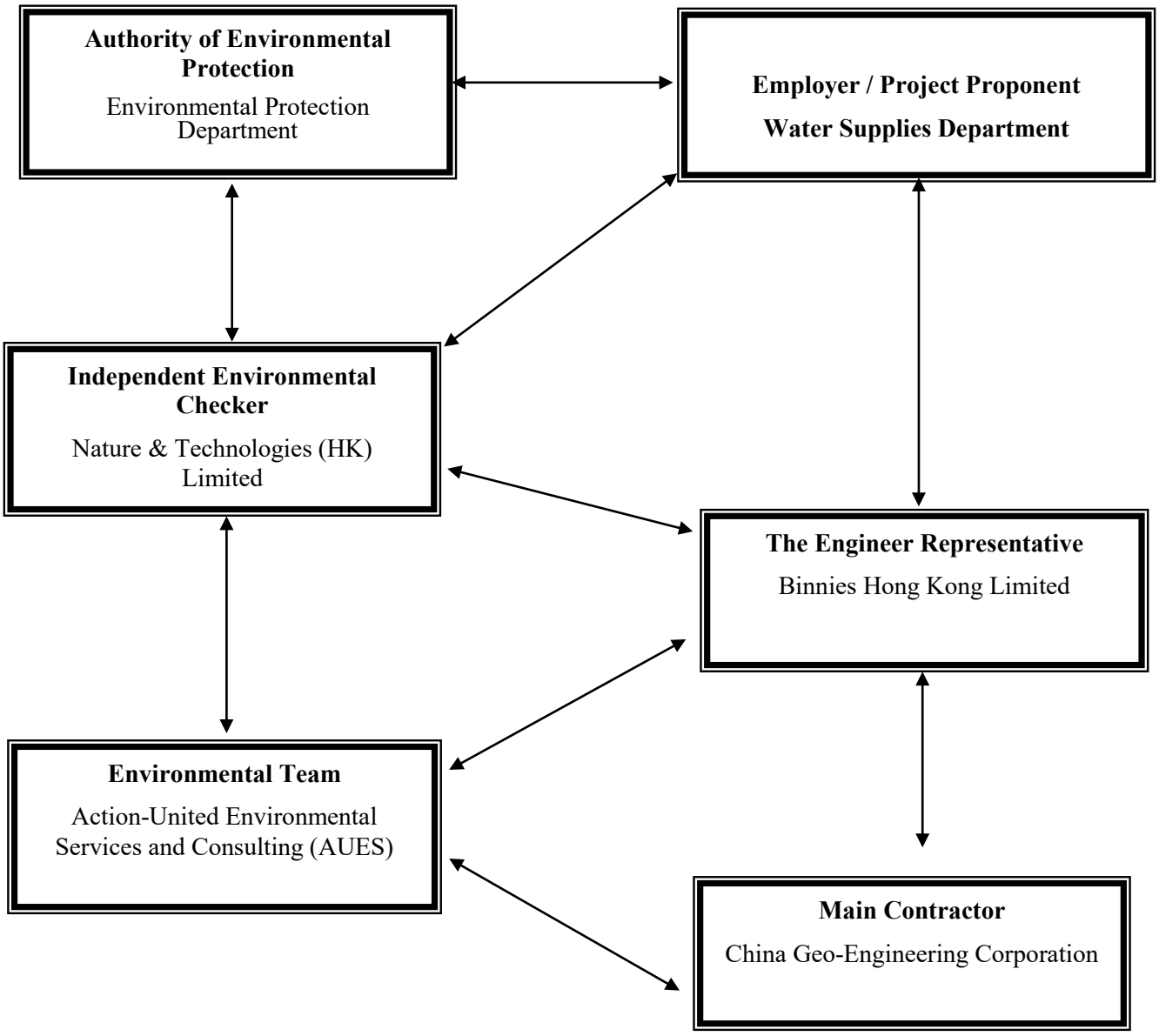
Plot Date: 3/15/2021 11:20:19 AM

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	2830 5638	tim_cw_wong@wsd.gov.hk
Binnies	Senior Resident Engineer	Anny Yuen	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	Edward Tse	9612 5536	3wsd20@gmail.com
AUES	Environmental Team Leader	T. W. Tam	3059 6059	twtam@fordbusiness.com
AUES	Environmental Consultant	Martin Li	3059 6059	martinli@fordbusiness.com

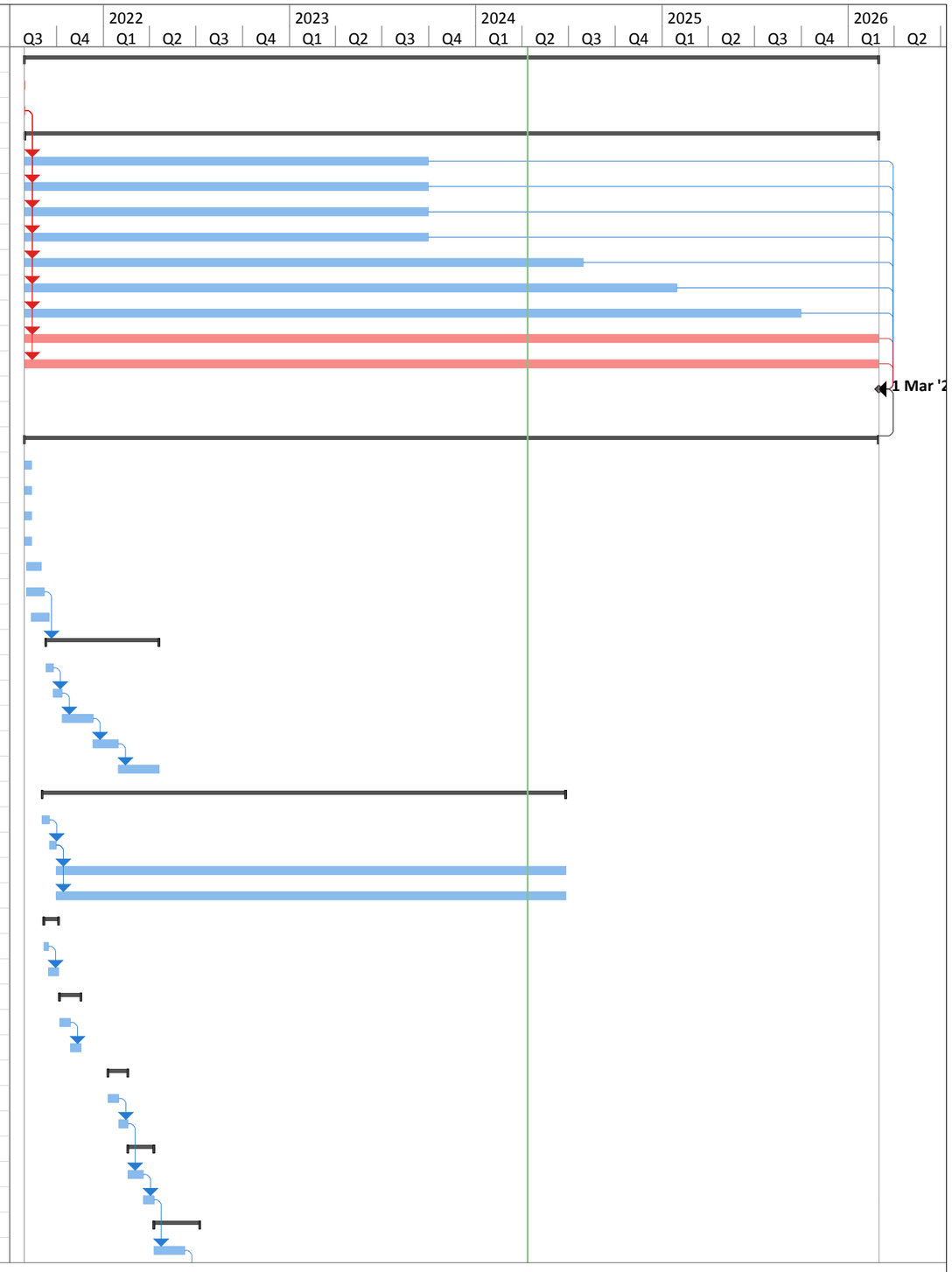
Legend:

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

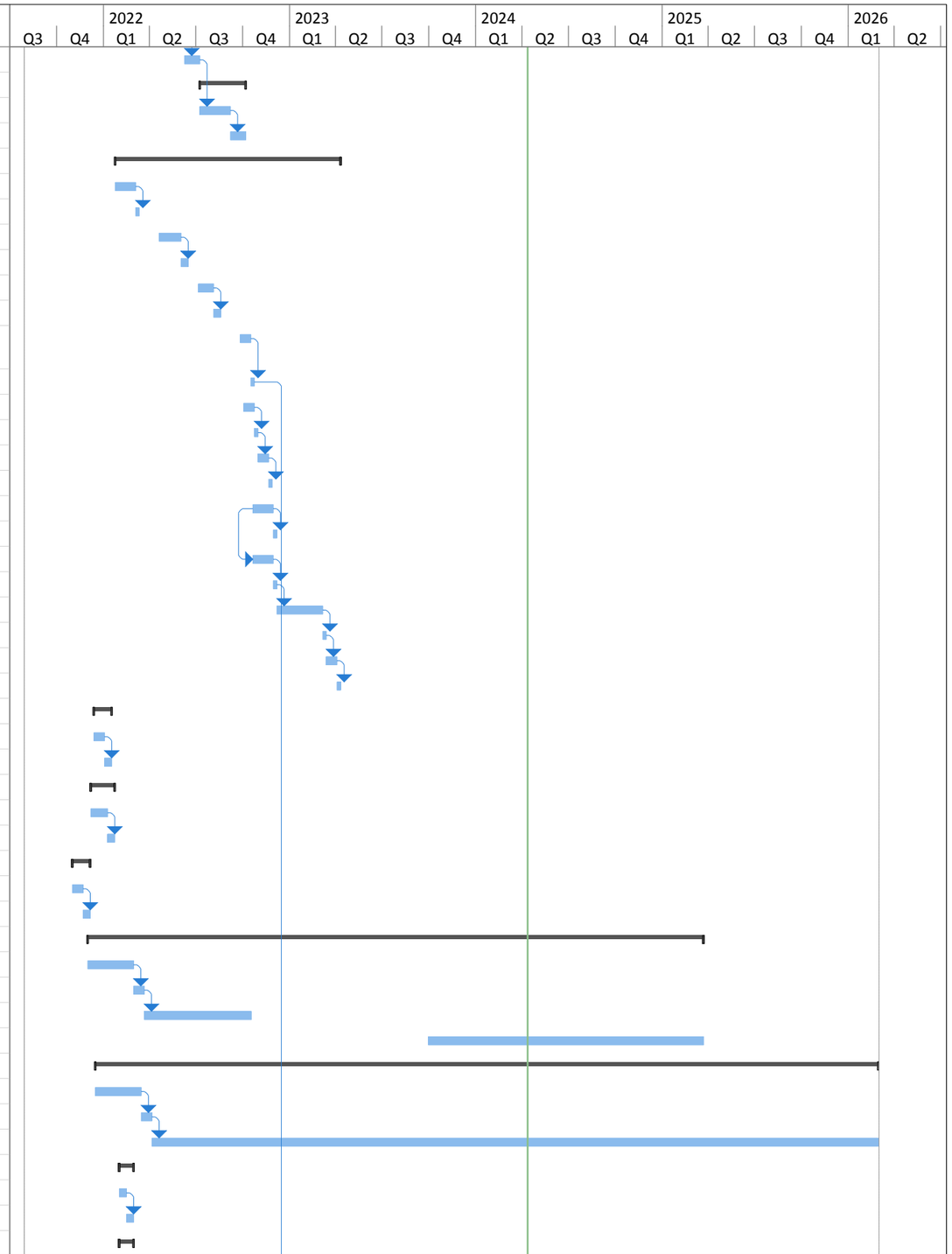
ID	Task Name	Duration	Start	Finish	% Complete
1	**Key Dates**	**1676 days**	**30/7/21**	**1/3/26**	**0%**
2	Contract Date	1 day	30/7/21	30/7/21	0%
3	Starting Date	1 day	30/7/21	30/7/21	0%
4	**Contract Period**	**1675 days**	**31/7/21**	**1/3/26**	**0%**
5	Section 1 - Shek Wu Hui Water Reclamation Plant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



Project: 3WSD20 Programme
Programme Rev. 27
(up to 31 March 2024)

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	% Complete
49	Selection of subcontractor	30 days	9/6/22	8/7/22	0%
50	**Selection of Subcontractor for Landscape Works**	**90 days**	**9/7/22**	**6/10/22**	**0%**
51	Submission and acceptance of subletting package	60 days	9/7/22	6/9/22	0%
52	Selection of subcontractor	30 days	7/9/22	6/10/22	0%
53	**Selection of Subcontractor for Mainlaying Works**	**442 days**	**24/1/22**	**10/4/23**	**0%**
54	Submission and acceptance of subletting package - open trench (for Section 4)	40 days	24/1/22	4/3/22	0%
55	Selection of subcontractor - open trench (for Section 4)	7 days	5/3/22	11/3/22	0%
56	Submission and acceptance of subletting package - open trench (for Section 5)	43 days	20/4/22	1/6/22	0%
57	Selection of subcontractor - open trench (for Section 5)	14 days	2/6/22	15/6/22	0%
58	Submission and acceptance of subletting package - open trench (SC-028)	30 days	6/7/22	4/8/22	0%
59	Selection of subcontractor - open trench (SC-028)	14 days	5/8/22	18/8/22	0%
60	Submission and acceptance of subletting package - open trench (Shek Wu Hui) (SC-035)	21 days	26/9/22	16/10/22	0%
61	Selection of subcontractor - open trench (Shek Wu Hui) (SC-035)	7 days	17/10/22	23/10/22	0%
62	Submission and acceptance of subletting package - open trench (Remaining) (SC-036)	21 days	3/10/22	23/10/22	0%
63	Selection of subcontractor - open trench (Remaining) (SC-036)	7 days	24/10/22	30/10/22	0%
64	Submission and acceptance of subletting package - road marking	21 days	31/10/22	20/11/22	0%
65	Selection of subcontractor - road marking	7 days	21/11/22	27/11/22	0%
66	Submission and acceptance of subletting package - trenchless (SC-029)	40 days	21/10/22	29/11/22	0%
67	Selection of subcontractor - trenchless (SC-029)	7 days	30/11/22	6/12/22	0%
68	Submission and acceptance of subletting package - trenchless (SC-042)	40 days	21/10/22	29/11/22	0%
69	Selection of subcontractor - trenchless (SC-042)	7 days	30/11/22	6/12/22	0%
70	Submission and acceptance of subletting package - trenchless (SC-051)	90 days	7/12/22	6/3/23	0%
71	Selection of subcontractor - trenchless (SC-051)	7 days	7/3/23	13/3/23	0%
72	Submission and acceptance of subletting package - trenchless (SC-052)	21 days	14/3/23	3/4/23	0%
73	Selection of subcontractor - trenchless (SC-052)	7 days	4/4/23	10/4/23	0%
74	**Selection of Supplier for Survey Equipment**	**35 days**	**13/12/21**	**16/1/22**	**0%**
75	Submission and acceptance of subletting package	21 days	13/12/21	2/1/22	0%
76	Selection of subcontractor	14 days	3/1/22	16/1/22	0%
77	**Selection of Supplier for Computer Facilities**	**47 days**	**7/12/21**	**22/1/22**	**0%**
78	Submission and acceptance of subletting package	33 days	7/12/21	8/1/22	0%
79	Selection of subcontractor	14 days	9/1/22	22/1/22	0%
80	**Selection of Environment Team**	**35 days**	**1/11/21**	**5/12/21**	**0%**
81	Submission and acceptance of subletting package	21 days	1/11/21	21/11/21	0%
82	Selection of Environment Team	14 days	22/11/21	5/12/21	0%
83	**BEAM Plus**	**1208 days**	**1/12/21**	**22/3/25**	**0%**
84	Submission and acceptance of subletting package	90 days	1/12/21	28/2/22	0%
85	Selection of BEAM plus consultant	21 days	1/3/22	21/3/22	0%
86	BEAM Plus PA submission	210 days	22/3/22	17/10/22	0%
87	BEAM Plus FA submission	540 days	30/9/23	22/3/25	0%
88	**BIM**	**1536 days**	**16/12/21**	**28/2/26**	**0%**
89	Submission and acceptance of subletting package	90 days	16/12/21	15/3/22	0%
90	Selection of BIM consultant	21 days	16/3/22	5/4/22	0%
91	Execution of BIM (rebar BIM, CSD and CBWD coordination and production)	1425 days	6/4/22	28/2/26	0%
92	**Selection of Contractor's Designer for foundation works**	**28 days**	**1/2/22**	**28/2/22**	**0%**
93	Submission and acceptance of subletting package	14 days	1/2/22	14/2/22	0%
94	Selection of Contractor's Designer	14 days	15/2/22	28/2/22	0%
95	**Selection of Independent Checking Engineer (ICE) for Permanent Works (foundation)**	**28 days**	**1/2/22**	**28/2/22**	**0%**



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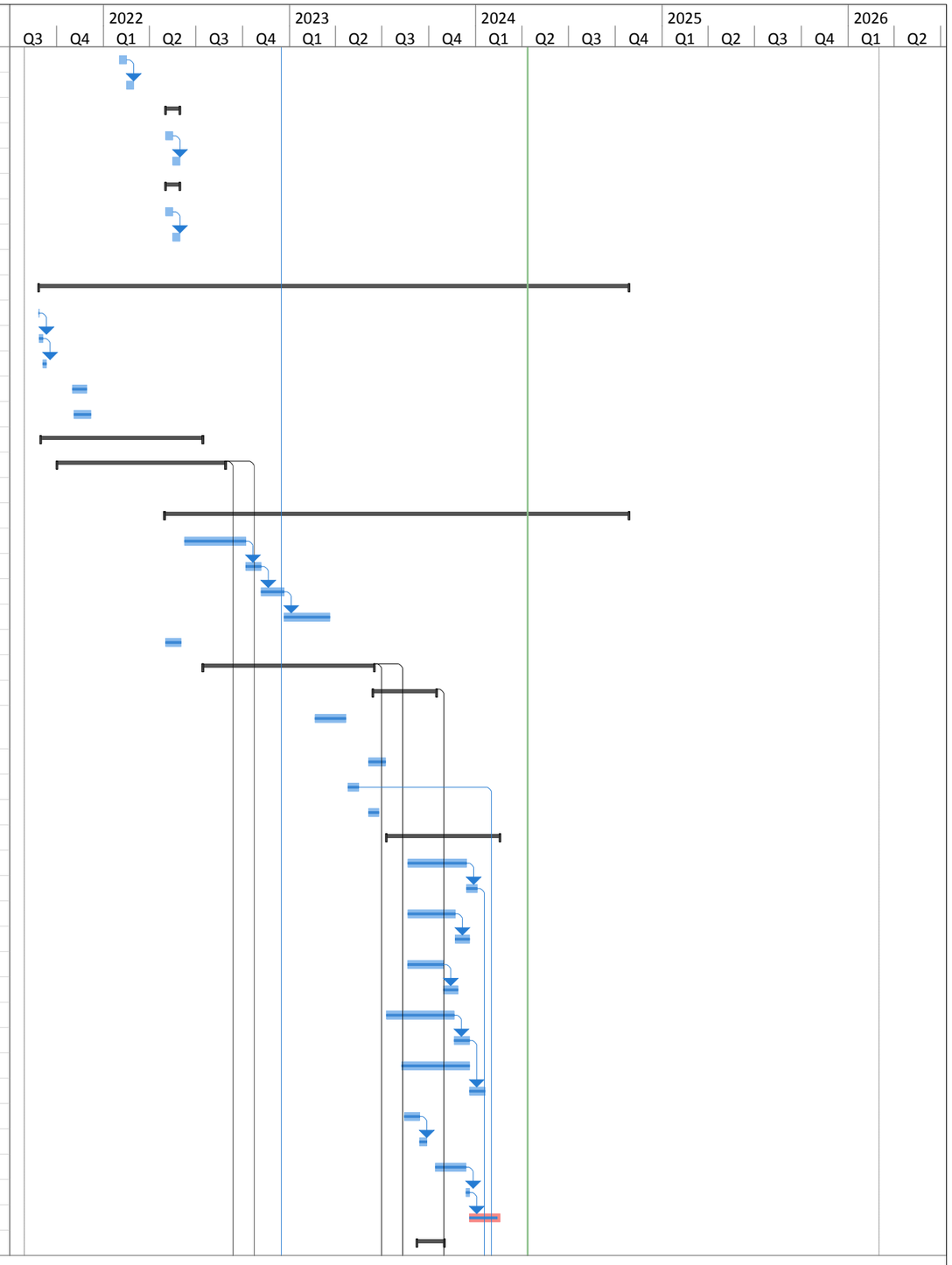
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

ID	Task Name	Duration	Start	Finish	% Complete
96	Submission and acceptance of subletting package	14 days	1/2/22	14/2/22	0%
97	Selection of ICE for Permanent Works	14 days	15/2/22	28/2/22	0%
98	**Selection of Contractor's Designer for Civil & Structural Works**	**28 days**	**3/5/22**	**30/5/22**	**0%**
99	Submission and acceptance of subletting package	14 days	3/5/22	16/5/22	0%
100	Selection of Contractor's Designer	14 days	17/5/22	30/5/22	0%
101	**Selection of Independent Checking Engineer (ICE) for Permanent Works (Civil & Structural)**	**28 days**	**3/5/22**	**30/5/22**	**0%**
102	Submission and acceptance of subletting package	14 days	3/5/22	16/5/22	0%
103	Selection of ICE for Permanent Works	14 days	17/5/22	30/5/22	0%
104					
105	**Section 1 & 2 - Construction of SWHWRP and Landscaping Works**	**1158 days**	**27/8/21**	**27/10/24**	**85%**
106	Access Date (part 1 of the Site)	1 day	27/8/21	27/8/21	100%
107	Site clearance	7 days	28/8/21	3/9/21	100%
108	Initial survey	7 days	4/9/21	10/9/21	100%
109	Installation of monitoring instruments and take initial readings	28 days	1/11/21	28/11/21	100%
110	Environmental baseline montioring by ET	33 days	4/11/21	6/12/21	100%
111	**Foundation Works - ReWPS**	**318 days**	**31/8/21**	**14/7/22**	**100%**
146	**Foundation Works - HCF**	**330.5 days**	**2/10/21**	**28/8/22**	**100%**
174					
175	**Construction of SWHWRP**	**911 days**	**1/5/22**	**27/10/24**	**85%**
176	Submission and acceptance of DfMA proposal	120 days	9/6/22	6/10/22	100%
177	Selection of Designer & Supplier for DfMA	30 days	7/10/22	5/11/22	100%
178	Manufacture of DfMA Precast Segments	45 days	6/11/22	20/12/22	100%
179	Installation of DfMA segments	90 days	21/12/22	20/3/23	100%
180	Submission and acceptance of method statement for construction of ReWPS and HCF	30 days	3/5/22	1/6/22	100%
181	**Construction of RC structure of ReWPS**	**336.5 days**	**15/7/22**	**16/6/23**	**100%**
285	**Roof Works**	**125 days**	**13/6/23**	**16/10/23**	**100%**
290	Detailed Design for Internal Façade Treatment for Assess Road and Interior Fitting for Internal Rooms	60 days	20/2/23	20/4/23	100%
291	Fitting out Works for Motor Hall & Maintenance Room	33 days	5/6/23	7/7/23	100%
292	Waterproofing & Fitting out Works for Pump Hall	21 days	25/4/23	16/5/23	100%
293	Fitting out Works for Other Rooms	20 days	5/6/23	24/6/23	100%
294	**Steelworks and Staircases**	**223 days**	**10/7/23**	**17/2/24**	**99%**
295	Ordering and Manufacturing of Louvres	115 days	21/8/23	13/12/23	100%
296	Installation of Louvres	21 days	14/12/23	3/1/24	100%
297	Ordering and Manufacturing of Steel Doors	93 days	21/8/23	21/11/23	100%
298	Installation of Steel Doors	28 days	22/11/23	19/12/23	100%
299	Ordering and Manufacturing of Roller Shutter	70 days	21/8/23	29/10/23	100%
300	Installation of Roller Shutter	28 days	30/10/23	26/11/23	100%
301	Ordering and Manufacturing of FRP Staircase ST1	133 days	10/7/23	19/11/23	100%
302	Installation of Staircase ST1	30 days	20/11/23	19/12/23	100%
303	Ordering and Manufacturing of FRP Staircase ST2	133 days	9/8/23	19/12/23	100%
304	Installation of Staircase ST2	30 days	20/12/23	18/1/24	100%
305	Ordering and Manufacturing of Chequer Plates	30 days	14/8/23	12/9/23	100%
306	Installation of Chequer Plates at Switchroom	14 days	13/9/23	26/9/23	100%
307	Manufacturing of Concrete Staircase ST7 by DfMA	60 days	14/10/23	12/12/23	100%
308	Installation of Staircase ST7 and Concreting for Wet Joints	7 days	13/12/23	19/12/23	100%
309	Kerb and Railing Installation for ST7	60 days	20/12/23	17/2/24	90%
310	**Black Rainstorm Signal on 8 September 2023**	**54 days**	**8/9/23**	**31/10/23**	**100%**



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External Tasks
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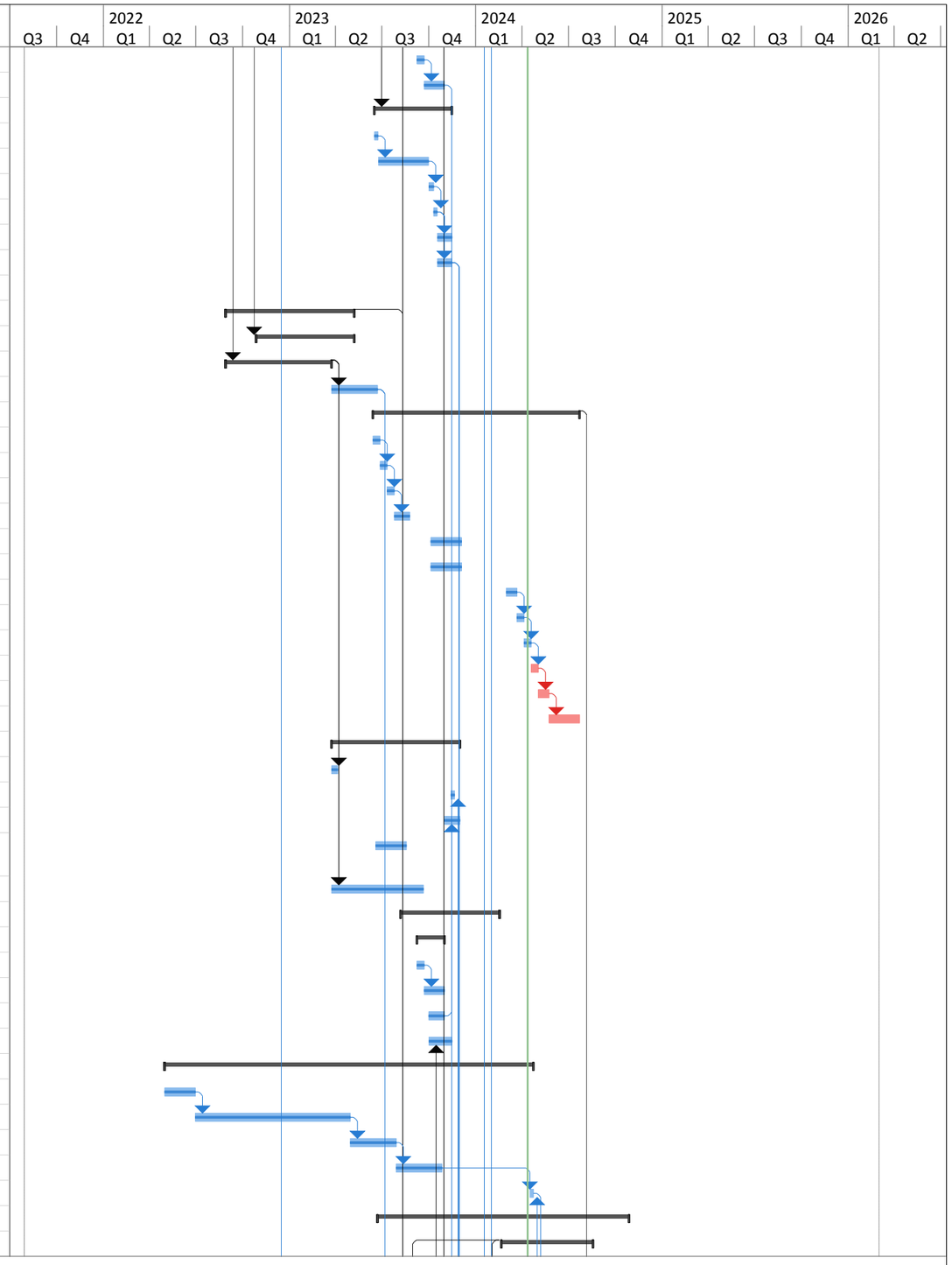
Critical Split
Progress
Manual Progress

ID	Task Name	Duration	Start	Finish	% Complete
311	Water Pumping and Cleaning of Flooded Pump Hall	14 days	8/9/23	21/9/23	100%
312	Remedial Works for Damaged Fitting out at Pump Hall due to Black Rainstorm	40 days	22/9/23	31/10/23	100%
313	**Pump Sump**	**152 days**	**16/6/23**	**15/11/23**	**100%**
314	Trial of Watertightness Test	7 days	16/6/23	23/6/23	100%
315	Additional Modification Works of Dividing Walls	98 days	24/6/23	30/9/23	100%
316	Water Infilling & Absoprtion	9 days	1/10/23	10/10/23	100%
317	Watertightness Test	7 days	10/10/23	17/10/23	100%
318	Application of Waterproofing Materials	28 days	18/10/23	15/11/23	100%
319	Site Clearance	28 days	18/10/23	15/11/23	100%
320					
321	**Construction of RC structure of HCF**	**252.5 days**	**28/8/22**	**7/5/23**	**100%**
322	**Construction of Superstructure (above ground) - Grid Line 1-3**	**192.5 days**	**27/10/22**	**7/5/23**	**100%**
351	**Construction of Superstructure (above ground) - Grid Line 3-7**	**208 days**	**28/8/22**	**24/3/23**	**100%**
394	Backfilling of general fill material up to +7.2mPD, and removal of ELS	90 days	24/3/23	22/6/23	100%
395	**Roof Works**	**405.5 days**	**13/6/23**	**22/7/24**	**72%**
396	Water tightness test for roof slab of HCF	14 days	13/6/23	27/6/23	100%
397	Construction of water proofing system at roof slab of HCF	14 days	27/6/23	11/7/23	100%
398	Construction of Screeding	14 days	11/7/23	25/7/23	100%
399	Construction of Drainage System	30 days	25/7/23	24/8/23	100%
400	Forming Additional Roof Opening at Outlet Channel	60 days	5/10/23	3/12/23	100%
401	Forming Additional Roof Opening at Inlet Channel	60 days	5/10/23	3/12/23	100%
402	Construction of Main Footpath	21 days	1/3/24	21/3/24	100%
403	Laying of Root Barrier	14 days	22/3/24	4/4/24	100%
404	Deposition of Aggregates	14 days	5/4/24	18/4/24	100%
405	Laying of Geotextile and Drainage Layer	14 days	19/4/24	2/5/24	0%
406	Deposition of Planting Soil	21 days	3/5/24	23/5/24	0%
407	Construction of Other Footpaths	60 days	24/5/24	22/7/24	0%
408	**Contact Tank**	**251.5 days**	**24/3/23**	**30/11/23**	**100%**
409	Overall water retaining structure at HCF	12 days	24/3/23	5/4/23	100%
410	Application of Floor Screeding to Level the Ground Slab	7 days	13/11/23	20/11/23	100%
411	Application of Waterproofing Materials	30 days	1/11/23	30/11/23	100%
412	Detailed Design for Internal Façade Treatment for Assess Road and Interior Fitting for Internal Rooms	60 days	19/6/23	17/8/23	100%
413	Fitting out Works for Rooms	180 days	24/3/23	20/9/23	100%
414	**Steelworks**	**194 days**	**7/8/23**	**16/2/24**	**100%**
427	**Black Rainstorm Signal on 8 September 2023**	**54 days**	**8/9/23**	**31/10/23**	**100%**
428	Water Pumping and Cleaning of Flooded Pipe Gallery	14 days	8/9/23	21/9/23	100%
429	Remedial Works for Damaged Fitting out at Pipe Gallery due to Black Rainstorm	40 days	22/9/23	31/10/23	100%
430	Re-Ordering of Flooded Waterproofing Materials for Contact Tank	31 days	1/10/23	31/10/23	100%
431	Additional Corridor at Chemical Room	45 days	1/10/23	15/11/23	100%
432	**Provisional of Fire Service, Flushing and Fresh Water Supply by WSD**	**723.5 days**	**1/5/22**	**23/4/24**	**99%**
433	WWO542 design submission for Fire Service, Flushing and Fresh Water Supply	60 days	1/5/22	29/6/22	100%
434	Withhold Acceptance of WWO542 submission by WSD due to EVA Issue	304 days	30/6/22	29/4/23	100%
435	Re-Submission of WWO542	90 days	30/4/23	28/7/23	100%
436	Acceptance of WWO542 by WSD	90 days	29/7/23	26/10/23	100%
437	Provision of water supply to Part 1 by WSD	7 days	16/4/24	23/4/24	0%
438	**Construction of roadworks**	**493.5 days**	**22/6/23**	**27/10/24**	**72%**
439	**Construction of fence wall**	**180 days**	**20/2/24**	**18/8/24**	**45%**



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Task
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Manual Summary Rollup
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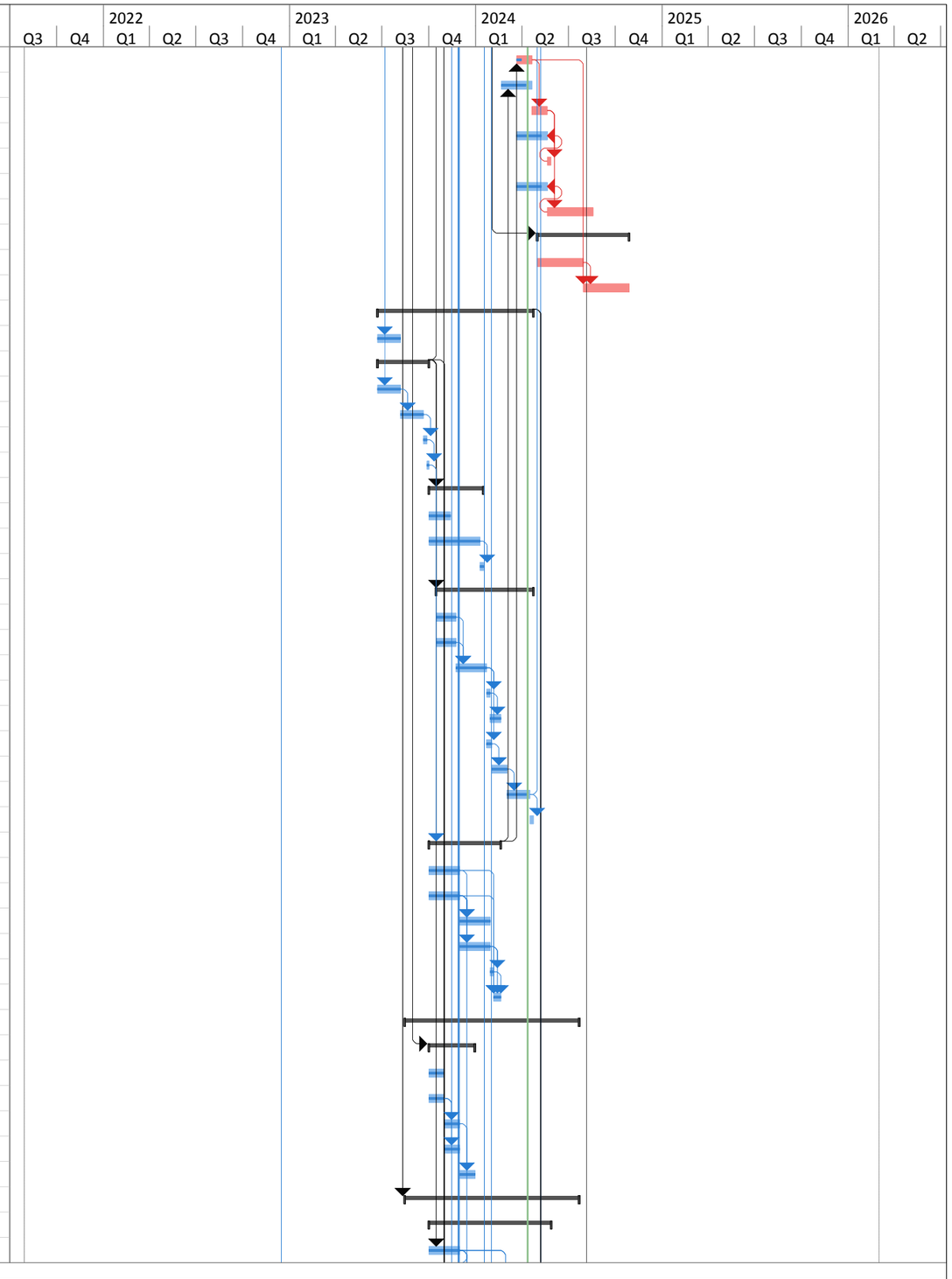
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

ID	Task Name	Duration	Start	Finish	% Complete
440	Upper Wall at Surge Vessel Area	30 days	21/3/24	20/4/24	30%
441	Upper Wall near Ng Tung River	60 days	20/2/24	20/4/24	80%
442	Upper Wall near STW	30 days	20/4/24	20/5/24	0%
443	Fabrication of Entrance Gates and Logo Feature	60 days	21/3/24	20/5/24	80%
444	Installation of Gate 1 and Gate 2	7 days	20/5/24	27/5/24	0%
445	Fabrication of steelworks	60 days	21/3/24	20/5/24	80%
446	Installation of wall finishes and steelworks	90 days	20/5/24	18/8/24	0%
447	**Construction of River Promenade**	**180 days**	**1/5/24**	**27/10/24**	**0%**
448	Detailed design of River Promenade	90 days	1/5/24	29/7/24	0%
449	Construction of River Promenade	90 days	30/7/24	27/10/24	0%
450	**Construction of underground utilities**	**306 days**	**22/6/23**	**23/4/24**	**99%**
451	Construction of CLP Drawpits and Ducts	45 days	22/6/23	6/8/23	100%
452	**EVA near Slaughter House**	**101 days**	**22/6/23**	**1/10/23**	**100%**
453	Fence Wall Footing	45 days	22/6/23	6/8/23	100%
454	UU and Chambers	45 days	6/8/23	20/9/23	100%
455	Backfilling of Type B Material	7 days	20/9/23	27/9/23	100%
456	Concreting of EVA	4 days	27/9/23	1/10/23	100%
457	**Surge Vessel Area**	**107 days**	**1/10/23**	**16/1/24**	**100%**
458	Fence Wall Footing	42 days	1/10/23	12/11/23	100%
459	UU and Chambers	100 days	1/10/23	9/1/24	100%
460	Backfilling of Type B Material	7 days	9/1/24	16/1/24	100%
461	**near STW**	**191 days**	**15/10/23**	**23/4/24**	**96%**
462	Fence Wall Footing	39 days	15/10/23	23/11/23	100%
463	UU and Chambers	39 days	15/10/23	23/11/23	100%
464	Construction of Additional Water Meter Room	60 days	23/11/23	22/1/24	100%
465	Backfilling of Type B Material	7 days	22/1/24	29/1/24	100%
466	Excavation & Installation of Watermains into Water Meter Room	21 days	29/1/24	19/2/24	100%
467	Falsework Dismantling inside Water Meter Room	10 days	22/1/24	1/2/24	100%
468	FS Pipe Installation inside Water Meter Room	30 days	1/2/24	2/3/24	100%
469	Plumbing and BS Installation inside Water Meter Room	45 days	2/3/24	16/4/24	90%
470	Fitting out Works for Water Meter Room	7 days	16/4/24	23/4/24	0%
471	**Riverside**	**141 days**	**1/10/23**	**19/2/24**	**100%**
472	Fence Wall Footing	60 days	1/10/23	30/11/23	100%
473	HKT Cable Drawpits and Ducts	60 days	1/10/23	30/11/23	100%
474	Water Refilling Station	60 days	30/11/23	29/1/24	100%
475	Drainage & Sewerage	60 days	30/11/23	29/1/24	100%
476	Construction of Sewage Pipe to Chun Wo up to Boundary Wall	7 days	29/1/24	5/2/24	100%
477	Backfilling of Type B Material	14 days	5/2/24	19/2/24	100%
478	**External Finishing Works**	**342.5 days**	**15/8/23**	**22/7/24**	**44%**
479	**Design submission and fabrication of steelwork system for the aluminum fin**	**90 days**	**1/10/23**	**30/12/23**	**100%**
480	Detailed Design for External Façade Treatment and Vertical Green Wall	30 days	1/10/23	31/10/23	100%
481	Design submission of steelwork system for vertical aluminum fin at ReWPS	30 days	1/10/23	31/10/23	100%
482	Design submission of steelwork system for horizontal aluminum fin at HCF	30 days	31/10/23	30/11/23	100%
483	Fabrication of vertical aluminum fin for ReWPS	30 days	31/10/23	30/11/23	100%
484	Fabrication of horizontal aluminum fin for HCF	30 days	30/11/23	30/12/23	100%
485	**Installation of architectural works**	**342.5 days**	**15/8/23**	**22/7/24**	**35%**
486	**Installation of architectural works for RWPS**	**240 days**	**1/10/23**	**28/5/24**	**59%**
487	Laying of artificial granite tile at the sides of slaughter house and CLP rooms	60 days	1/10/23	30/11/23	100%



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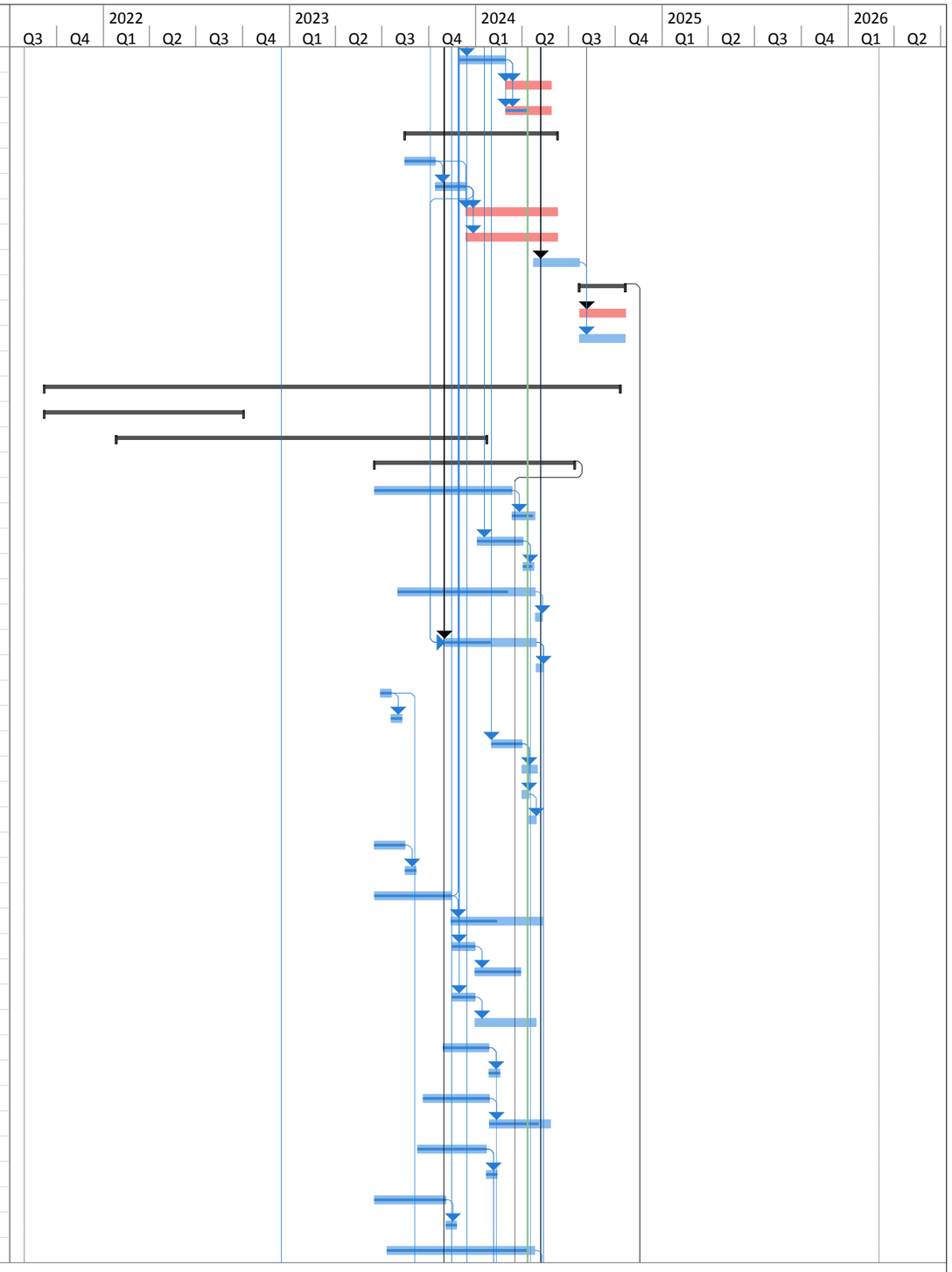
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	% Complete
488	Laying of artificial granite tile at other sides	90 days	30/11/23	28/2/24	100%
489	Installation of steelworks	90 days	28/2/24	28/5/24	0%
490	Installation of cladding	90 days	28/2/24	28/5/24	50%
491	**Installation of architectural works for HCF**	**300 days**	**15/8/23**	**9/6/24**	**25%**
492	Laying of artificial granite tile at riverside	60 days	15/8/23	13/10/23	100%
493	Laying of artificial granite tile at other sides	60 days	14/10/23	12/12/23	100%
494	Installation of steelworks	180 days	13/12/23	9/6/24	0%
495	Installation of cladding	180 days	13/12/23	9/6/24	0%
496	**Pavement Works**	**90 days**	**23/4/24**	**22/7/24**	**0%**
497	**Landscape works**	**90.5 days**	**22/7/24**	**20/10/24**	**0%**
498	Landscape works at roof top	90 days	23/7/24	20/10/24	0%
499	Landscape works within SWHWRP	90 days	22/7/24	20/10/24	0%
500					
501	**E&M Works of SWHWRP**	**1130 days**	**7/9/21**	**10/10/24**	**85%**
502	**Design and Submission Stage**	**391 days**	**7/9/21**	**2/10/22**	**100%**
539	**Procurement and Delivery of Equipment**	**727 days**	**26/1/22**	**22/1/24**	**100%**
576	**Installation Works except Main Pumps**	**393 days**	**16/6/23**	**13/7/24**	**82%**
577	Installation of FS Equipment	270 days	16/6/23	12/3/24	100%
578	SAT of FS Equipment	45 days	12/3/24	26/4/24	90%
579	Installation of MVAC Equipment	90 days	4/1/24	2/4/24	100%
580	SAT of MVAC Equipment	21 days	3/4/24	23/4/24	80%
581	Installation of Internal BS/lighting Equipment	270 days	1/8/23	26/4/24	80%
582	SAT of Internal BS/lighting Equipment	14 days	27/4/24	10/5/24	0%
583	Installation of External Lighting for EVA	180 days	1/11/23	28/4/24	50%
584	SAT of External Lighting for EVA	14 days	29/4/24	12/5/24	0%
585	Installation of Lifting Appliance at Motor Hall of RWPS	21 days	28/6/23	18/7/23	100%
586	SAT of Lifting Appliance at Motor Hall of RWPS	21 days	19/7/23	8/8/23	100%
587	Installation of Lifting Appliance at Pump Hall of RWPS	60 days	1/2/24	31/3/24	100%
588	SAT of Lifting Appliance at Pump Hall of RWPS	30 days	1/4/24	30/4/24	0%
589	Installation of Maintenance Room of RWPS	14 days	1/4/24	14/4/24	0%
590	SAT of Maintenance Room of RWPS	14 days	15/4/24	28/4/24	0%
591	Installation of Lifting Appliance at Pipe Gallery of HCF	60 days	16/6/23	15/8/23	100%
592	SAT of Lifting Appliance at Pipe Gallery of HCF	21 days	15/8/23	5/9/23	100%
593	Installation of Penstocks at HCF	150 days	16/6/23	13/11/23	100%
594	SAT of Penstocks at HCF	180 days	13/11/23	11/5/24	50%
595	Installation of Penstocks at RWPS	45 days	15/11/23	30/12/23	100%
596	SAT of Penstocks at RWPS	90 days	30/12/23	29/3/24	100%
597	Installation of Stoplogs at RWPS	45 days	15/11/23	30/12/23	100%
598	SAT of Stoplogs at RWPS	120 days	30/12/23	28/4/24	0%
599	Installation of Surge Vessel (4 Nos.) & Air Compressor (2 Nos.)	90 days	29/10/23	26/1/24	100%
600	SAT of Surge Vessel (4 Nos.) & Air Compressor (2 Nos.)	21 days	27/1/24	16/2/24	100%
601	Installation of Air Blower (2 Nos.) & Air Diffuser (1 set)	130 days	20/9/23	27/1/24	100%
602	SAT of Air Blower (2 Nos.) & Air Diffuser (1 set)	120 days	28/1/24	26/5/24	80%
603	Installation of tanks (14 nos.) & Chemical Pumps (12 nos.)	135 days	9/9/23	21/1/24	100%
604	SAT of Chemical Pumps (12 nos.)	21 days	22/1/24	11/2/24	100%
605	Installation of Pipeworks (DI, Chemical pipe, Air pipe)	140 days	16/6/23	3/11/23	100%
606	SAT of Pipeworks (DI, Chemical pipe, Air pipe)	21 days	3/11/23	24/11/23	100%
607	Installation of Cabling, MCC & DCS	290 days	11/7/23	25/4/24	95%



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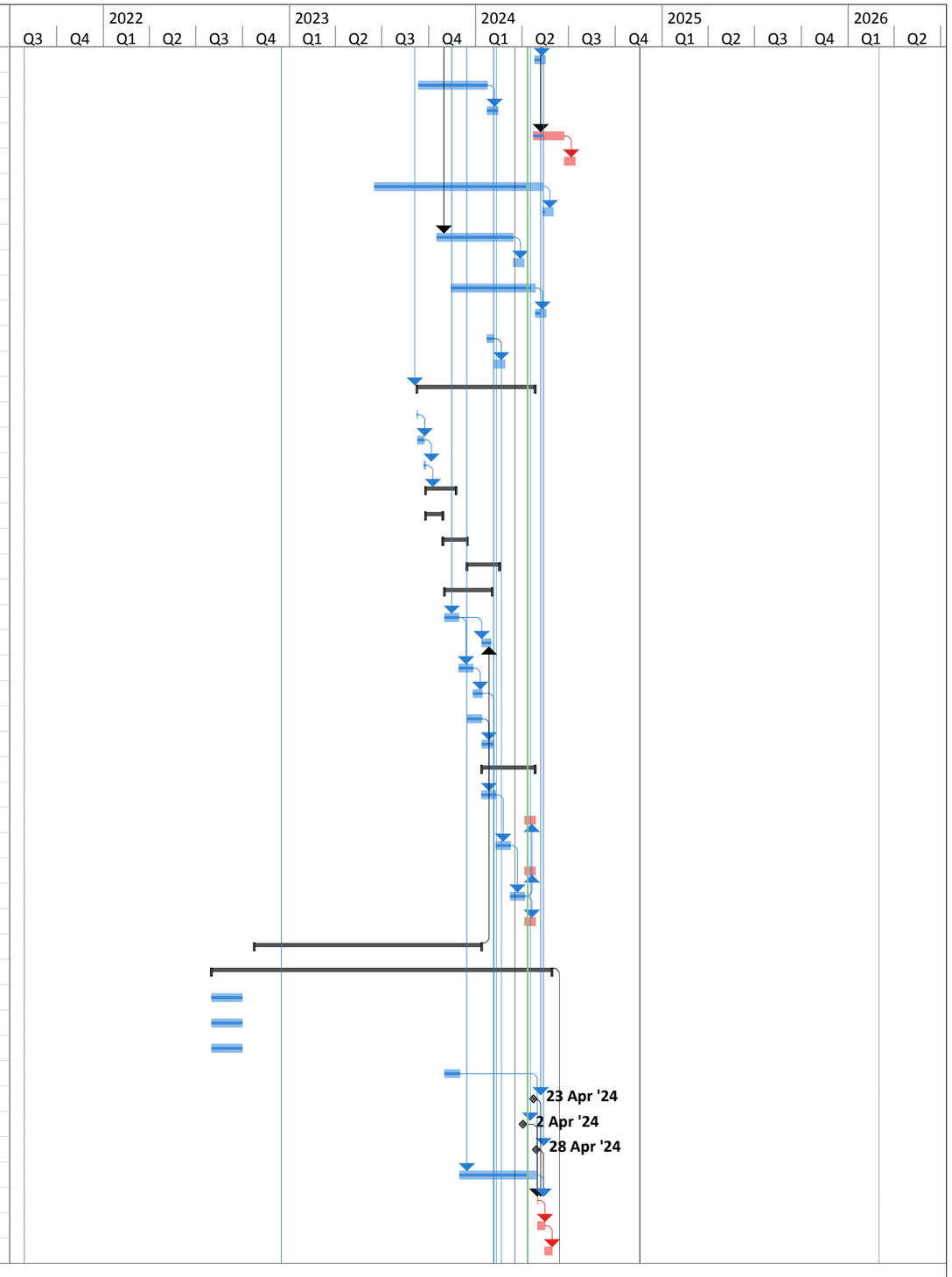
Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

ID	Task Name	Duration	Start	Finish	% Complete
608	SAT of MCC & DCS	21 days	26/4/24	16/5/24	50%
609	Installation of Instrumentation and Monitoring Stations	135 days	11/9/23	23/1/24	100%
610	SAT of Instrumentation and Monitoring Stations	21 days	24/1/24	13/2/24	95%
611	Installation of ELV System (CCTV & Access Control)	60 days	23/4/24	22/6/24	30%
612	SAT of ELV System (CCTV & Access Control)	21 days	22/6/24	13/7/24	0%
613	Installation of Plumbing & Drainage Equipment	330 days	16/6/23	11/5/24	90%
614	SAT of Plumbing & Drainage Equipment	21 days	11/5/24	1/6/24	20%
615	Installation of PV Panels	150 days	16/10/23	14/3/24	100%
616	SAT of PV Panels	21 days	14/3/24	4/4/24	0%
617	Installation of LV Switchborad / MCC	165 days	14/11/23	26/4/24	95%
618	SAT of LV Switchborad / MCC	21 days	27/4/24	17/5/24	40%
619	Installation of Flowmeter and BV for DN450 Overflow Pipe	14 days	23/1/24	5/2/24	100%
620	SAT of Flowmeter and BV for DN450 Overflow Pipe	21 days	6/2/24	26/2/24	0%
621	**Installation of Reclaimed Water Pumps (6 Nos.)**	**232 days**	**8/9/23**	**26/4/24**	**91%**
622	Black Rainstorm Signal on 8 September 2023	1 day	8/9/23	8/9/23	100%
623	Preliminary Investigation on the Flooded Pumps (5 Nos.)	13 days	9/9/23	21/9/23	100%
624	Ordering of Parts for Reparing based on Investigation Results	3 days	22/9/23	24/9/23	100%
625	**Delivery of Parts**	**60 days**	**25/9/23**	**23/11/23**	**100%**
630	**Detailed Investigation**	**34 days**	**25/9/23**	**28/10/23**	**100%**
634	**KTN Pump Repairing**	**48 days**	**29/10/23**	**15/12/23**	**100%**
639	**TBH Pump Repairing**	**64 days**	**15/12/23**	**16/2/24**	**100%**
646	**KTN Pump Installation**	**94 days**	**1/11/23**	**2/2/24**	**100%**
647	Installation of Pump No.1 (Good Condition)	28 days	1/11/23	28/11/23	100%
648	SAT for Pump No.1	18 days	13/1/24	30/1/24	100%
649	Installation of Pump No.2 (Repaired)	28 days	29/11/23	26/12/23	100%
650	SAT for Pump No.2	18 days	27/12/23	13/1/24	100%
651	Installation of Pump No.3 (Repaired)	28 days	16/12/23	12/1/24	100%
652	SAT for Pump No.3	21 days	13/1/24	2/2/24	100%
653	**TBH Pump Installation**	**105 days**	**13/1/24**	**26/4/24**	**57%**
654	Installation of Pump No.1 (Repaired)	28 days	13/1/24	9/2/24	100%
655	SAT for Pump No.1	21 days	6/4/24	26/4/24	0%
656	Installation of Pump No.2 (Repaired)	28 days	10/2/24	8/3/24	100%
657	SAT for Pump No.2	21 days	6/4/24	26/4/24	0%
658	Installation of Pump No.3 (Repaired)	28 days	9/3/24	5/4/24	100%
659	SAT for Pump No.3	21 days	6/4/24	26/4/24	0%
660	**Power Energization Related Items**	**446 days**	**24/10/22**	**12/1/24**	**0%**
667	**FS / DG Inspection Related Items**	**668 days**	**1/8/22**	**29/5/24**	**90%**
668	VAC Design Submission to FSD	60 days	1/8/22	29/9/22	100%
669	FS related statutory submission to FSD	60 days	1/8/22	29/9/22	100%
670	Submission of General Building Plan (GBP) to FSD	60 days	1/8/22	29/9/22	100%
671	Construction of Additional R.C. Corridor and Sealing off Roller Shutter Opening	30 days	1/11/23	30/11/23	100%
672	Completion of FS Water Supply	0 days	23/4/24	23/4/24	90%
673	Completion of MVAC	0 days	2/4/24	2/4/24	100%
674	Completion of EVA Lighting	0 days	28/4/24	28/4/24	90%
675	Direct Link Cabling to FSD Laid by HKT	150 days	30/11/23	28/4/24	90%
676	Submission of FSI 314 & 501	1 day	1/5/24	1/5/24	0%
677	Target FS Inpsection	14 days	2/5/24	15/5/24	0%
678	Obtain FSD approval letter (Form FS172 Fire Certificate)	14 days	16/5/24	29/5/24	0%



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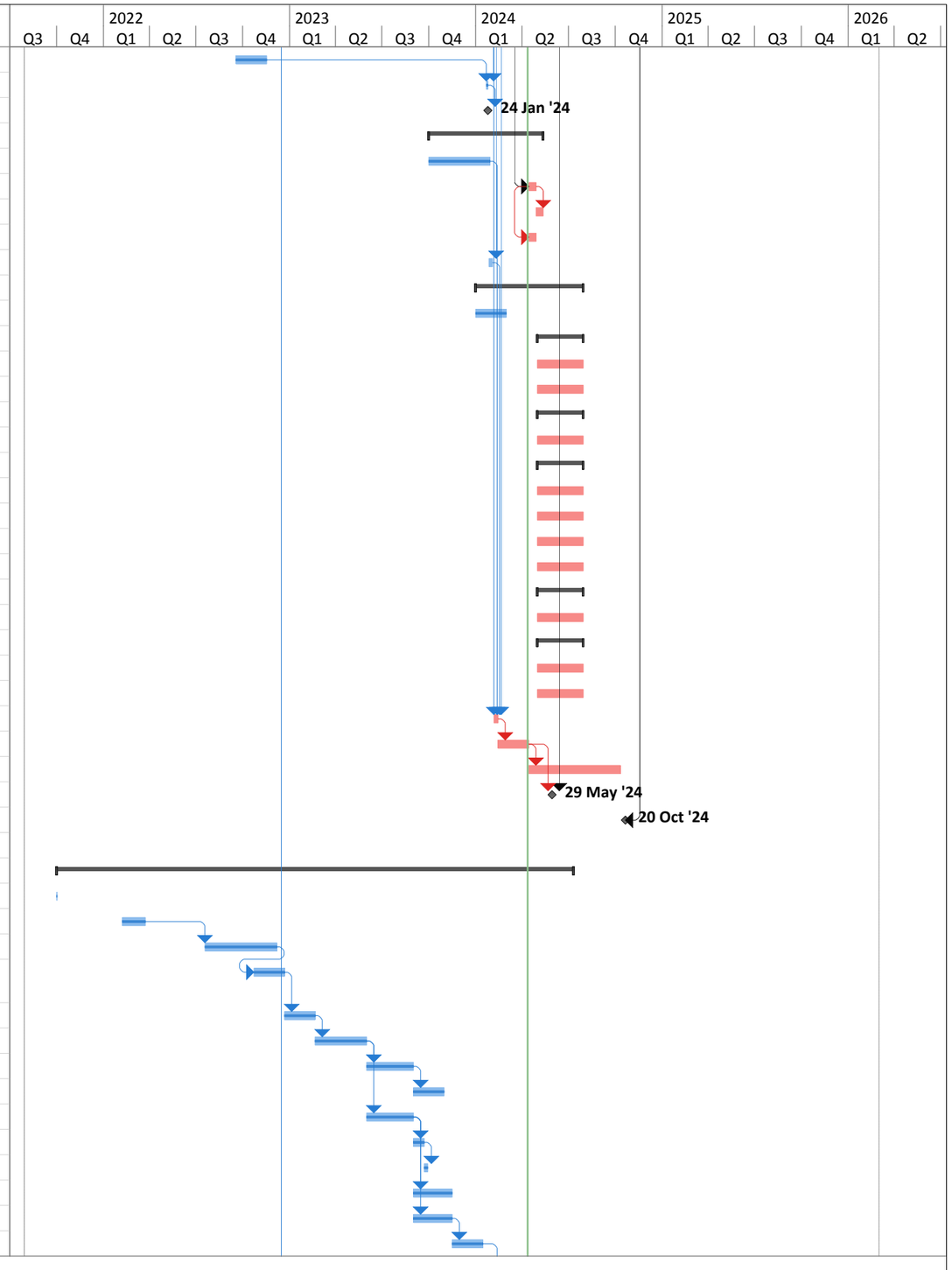
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

ID	Task Name	Duration	Start	Finish	% Complete
679	DG Design Submission to FSD	60 days	18/9/22	16/11/22	100%
680	DG Inspection	3 days	22/1/24	24/1/24	100%
681	Obtain DG License	0 days	24/1/24	24/1/24	100%
682	**Submission**	**224.5 days**	**1/10/23**	**12/5/24**	**74%**
683	Submission of Testing Procedures & Commissioning Plan	120 days	1/10/23	28/1/24	100%
684	Submission of As Fitted Drawings	14 days	14/4/24	28/4/24	0%
685	Submission of O&M Manual	14 days	28/4/24	12/5/24	0%
686	Submission of Training Material	14 days	14/4/24	28/4/24	0%
687	**Registration of Surge Vessels**	7 days	27/1/24	2/2/24	0%
688	**Interface Works**	**211 days**	**1/1/24**	**29/7/24**	**6%**
689	UV Building in DSD SWHEPP	60 days	1/1/24	29/2/24	100%
690	**MBR Building in DSD SWHSTW**	**90 days**	**1/5/24**	**29/7/24**	**0%**
691	Insatallation of 3 Additional Water Quality Monitoring Sensors	90 days	1/5/24	29/7/24	0%
692	Cabling works and 4G Megalink	90 days	1/5/24	29/7/24	0%
693	**KTN Flushing Water Service Reservoir**	**90 days**	**1/5/24**	**29/7/24**	**0%**
694	Interface Works with KTNFWSR and Megalink	90 days	1/5/24	29/7/24	0%
695	**Tai Po Tau No. 4 Raw Water Pumping Station**	**90 days**	**1/5/24**	**29/7/24**	**0%**
696	Installation of Workstations	90 days	1/5/24	29/7/24	0%
697	Megalink	90 days	1/5/24	29/7/24	0%
698	Gateway Panel	90 days	1/5/24	29/7/24	0%
699	Signal to WSD SCADA	90 days	1/5/24	29/7/24	0%
700	**WSD Kowloon Bay Office**	**90 days**	**1/5/24**	**29/7/24**	**0%**
701	Signal to WSD SCADA	90 days	1/5/24	29/7/24	0%
702	**WSD Kowloon Laboratory**	**90 days**	**1/5/24**	**29/7/24**	**0%**
703	Installation of Workstations	90 days	1/5/24	29/7/24	0%
704	Signal to WSD SCADA	90 days	1/5/24	29/7/24	0%
705	**Trial Run before T&C**	8 days	6/2/24	13/2/24	0%
706	**System Commissioning Test (2 nos. of Pumps)**	**60 days**	**14/2/24**	**13/4/24**	**0%**
707	**Operator Expertise Transfer Period (OETP)**	180 days	14/4/24	10/10/24	0%
708	Planned completion for section 1	0 days	29/5/24	29/5/24	0%
709	Planned completion for section 2	0 days	20/10/24	20/10/24	0%
710					
711	**Section 3 - Modification of Table Hill Reclaimed Water Service Reservoir**	**1014 days**	**1/10/21**	**10/7/24**	**88%**
712	Access Date (part 2 of the Site)	1 day	1/10/21	1/10/21	100%
713	Initial survey and condition survey	45 days	7/2/22	23/3/22	100%
714	Design submission and acceptance of the supplementary dosing and dyeing system (E&M)	141 days	19/7/22	6/12/22	100%
715	Submission and acceptance of method statement for supplementary dosing and dyeing system	60 days	23/10/22	21/12/22	100%
716	Selection of sub-contractor	60 days	22/12/22	19/2/23	100%
717	Construction of Chemical Dosing Room	101 days	20/2/23	31/5/23	100%
718	Hole Coring and Installation of Pipes into Service Reservoir	92 days	1/6/23	31/8/23	100%
719	Construction of Pipe Trough from Dosing Room to Service Reservoir	60 days	1/9/23	30/10/23	100%
720	Fitting out Works	92 days	1/6/23	31/8/23	100%
721	Watertightness Test of Roof Slab	21 days	1/9/23	21/9/23	100%
722	Waterproofing Application on Roof Slab	7 days	22/9/23	28/9/23	100%
723	Installation of Steelworks	76 days	1/9/23	15/11/23	100%
724	Installation of supplementary dosing and dyeing system	76 days	1/9/23	15/11/23	100%
725	SAT of E&M equipment	60 days	16/11/23	14/1/24	100%



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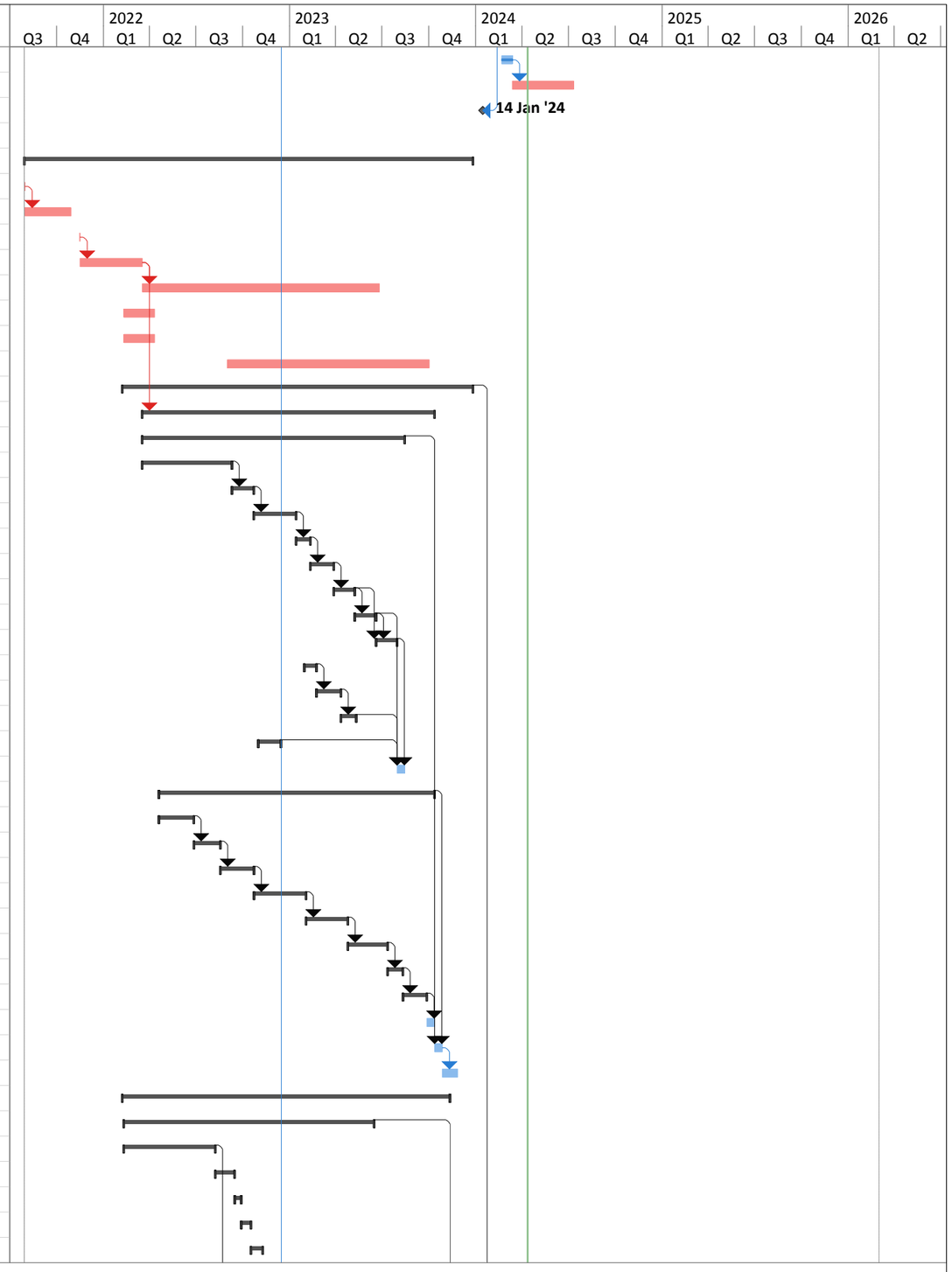
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	% Complete
726	Construction of Water Tank Structure	21 days	21/2/24	12/3/24	100%
727	Installation of Water Pumps	120 days	13/3/24	10/7/24	0%
728	Planned completion for section 3	0 days	14/1/24	14/1/24	0%
729					
730	**Section 4 - Water main laying works in part 3 of the Site**	**880 days**	**30/7/21**	**26/12/23**	**0%**
731	Access Date (part 3 of the Site)	1 day	30/7/21	30/7/21	0%
732	Initial survey (utility survey, condition survey, initial photo)	90 days	31/7/21	28/10/21	0%
733	1st TMLG meeting	1 day	15/11/21	15/11/21	0%
734	Application and approval of XP and TTA, including local consultation	122 days	16/11/21	17/3/22	0%
735	Implementation of TTA by stages	465 days	18/3/22	25/6/23	0%
736	Procurement and Delivery of pipes, fittings and related materials	60 days	10/2/22	10/4/22	0%
737	Submission and acceptance of method statement and material	60 days	10/2/22	10/4/22	0%
738	Excavation of Inspection Pit	396 days	1/9/22	1/10/23	0%
739	**Mainlaying by open trench method (RW03 & RW43)**	**688 days**	**7/2/22**	**26/12/23**	**0%**
740	**RW03 : DN600 DI pipe - 1092m (XP ID: 1301128, 1301129)**	**573.5 days**	**18/3/22**	**12/10/23**	**0%**
741	**Team A : CH000 - CH550**	**515 days**	**18/3/22**	**14/8/23**	**0%**
742	**CH450 - CH550 (100m)**	**176 days**	**18/3/22**	**9/9/22**	**0%**
758	**CH420 - CH450 (30m)**	**43 days**	**10/9/22**	**22/10/22**	**0%**
766	**CH390 - CH420 (30m)**	**83 days**	**23/10/22**	**13/1/23**	**0%**
774	**CH360 - CH390 (30m)**	**28 days**	**14/1/23**	**10/2/23**	**0%**
782	**CH300 - CH360 (60m)**	**46 days**	**11/2/23**	**28/3/23**	**0%**
790	**CH270 - CH300 (30m)**	**41 days**	**29/3/23**	**8/5/23**	**0%**
798	**CH190 - CH240 (50m)**	**42 days**	**9/5/23**	**19/6/23**	**0%**
806	**CH240 - CH270 (65m, Re-alignment)**	**41 days**	**20/6/23**	**30/7/23**	**0%**
814	**CH170 - CH190 (20m)**	**24 days**	**30/1/23**	**22/2/23**	**0%**
822	**CH120 - CH170 (50m)**	**48 days**	**23/2/23**	**11/4/23**	**0%**
828	**CH080 - CH120 (40m)**	**30 days**	**12/4/23**	**11/5/23**	**0%**
836	**CH020 - CH080 (60m)**	**44 days**	**1/11/22**	**14/12/22**	**0%**
844	Pressure test, swabbing and CCTV	15 days	31/7/23	14/8/23	0%
845	**Team B : CH550 - CH1090 (540m)**	**540.5 days**	**20/4/22**	**12/10/23**	**0%**
846	**CH970 - CH1010 (40m)**	**68.5 days**	**20/4/22**	**27/6/22**	**0%**
857	**CH930 - CH970 (40m)**	**52 days**	**27/6/22**	**18/8/22**	**0%**
866	**CH880 - CH930 (50m)**	**66 days**	**18/8/22**	**23/10/22**	**0%**
879	**CH780 - CH880 (100m)**	**102 days**	**23/10/22**	**2/2/23**	**0%**
892	**CH680 - CH780 (100m)**	**82 days**	**2/2/23**	**25/4/23**	**0%**
906	**CH580 - CH680 (100m)**	**78 days**	**25/4/23**	**12/7/23**	**0%**
920	**CH1010 - CH1040 (30m)**	**30 days**	**12/7/23**	**11/8/23**	**0%**
928	**CH1040 - CH1090 (50m)**	**47 days**	**11/8/23**	**27/9/23**	**0%**
936	Pressure test, swabbing and CCTV	15 days	27/9/23	12/10/23	0%
937	Overall pressure test	15 days	12/10/23	27/10/23	0%
938	Pipe connection and completion	30 days	27/10/23	26/11/23	0%
939	**RW43 : DN150 DI pipe - 1144m (XP ID: 1301130, 1301131)**	**643 days**	**7/2/22**	**11/11/23**	**0%**
940	**CH370 to CH850 (480m)**	**491 days**	**10/2/22**	**15/6/23**	**0%**
941	**Team A CH640 to CH680 (40m)**	**179.5 days**	**10/2/22**	**8/8/22**	**0%**
954	**Team A CH420 to CH450 (35m)**	**38 days**	**8/8/22**	**15/9/22**	**0%**
963	**Team A CH410 to CH420 (10m)**	**13 days**	**15/9/22**	**28/9/22**	**0%**
971	**Team A CH450 to CH500 (50m)**	**19 days**	**28/9/22**	**17/10/22**	**0%**
979	**Team A CH400 to CH410 (10m)**	**23 days**	**17/10/22**	**9/11/22**	**0%**



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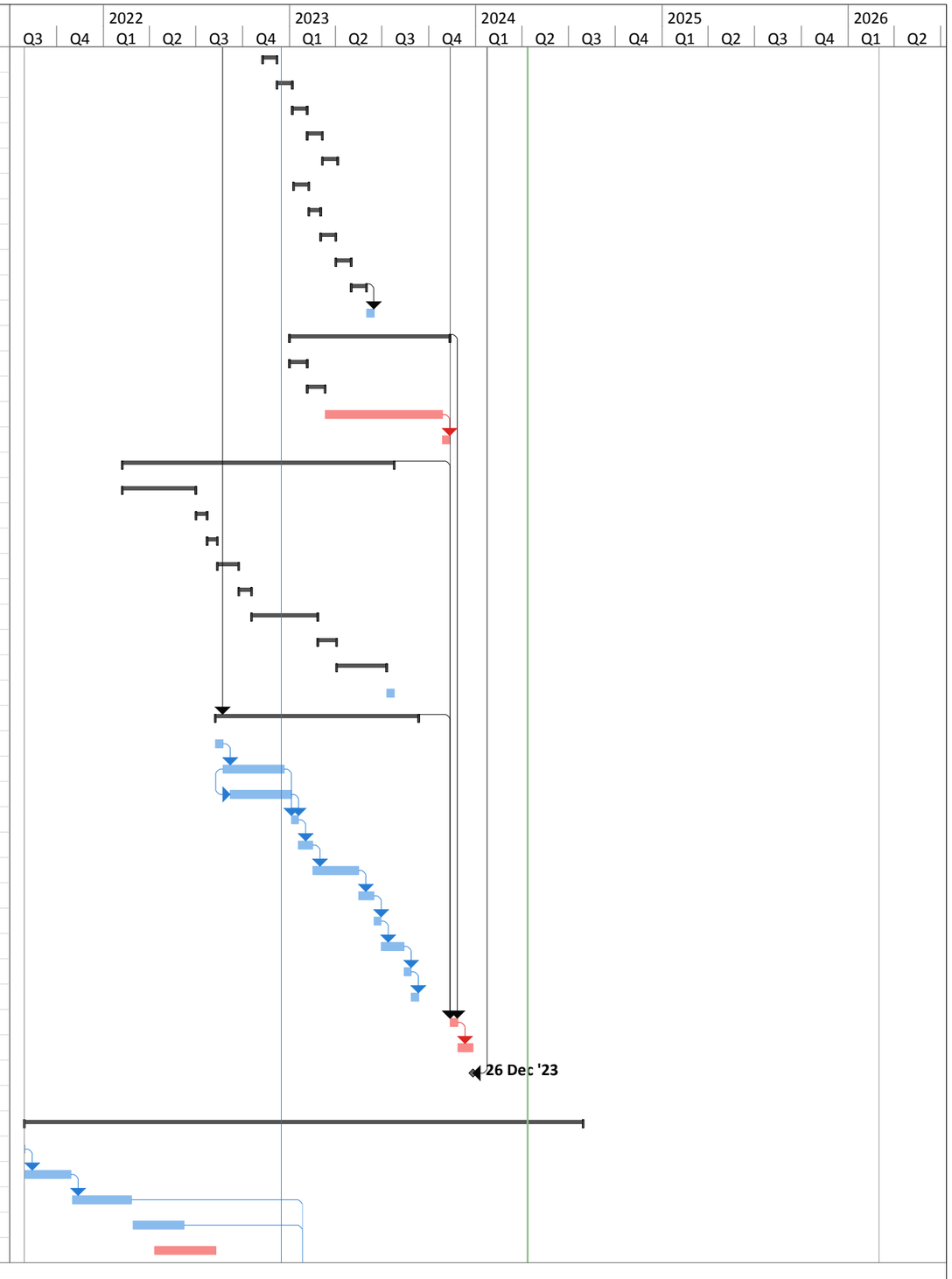
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

ID	Task Name	Duration	Start	Finish	% Complete
987	**Team A CH370 to CH400 (30m)**	**28 days**	**9/11/22**	**7/12/22**	**0%**
995	**Team A CH500 to CH550 (50m)**	**30 days**	**7/12/22**	**6/1/23**	**0%**
1003	**Team A CH550 to CH580 (30m)**	**29 days**	**6/1/23**	**4/2/23**	**0%**
1011	**Team A CH580 to CH610 (30m)**	**30 days**	**4/2/23**	**6/3/23**	**0%**
1019	**Team A CH610 to CH640 (30m)**	**30 days**	**6/3/23**	**5/4/23**	**0%**
1027	**Team A CH640 to CH680 (40m) _ re-alignmet**	**30 days**	**9/1/23**	**7/2/23**	**0%**
1035	**Team A CH680 to CH740 (60m) _ re-alignmet**	**23 days**	**8/2/23**	**2/3/23**	**0%**
1043	**Team A CH740 to CH770 (30m) _ re-alignmet**	**30 days**	**3/3/23**	**1/4/23**	**0%**
1051	**Team A CH770 to CH810 (30m) _ re-alignmet**	**30 days**	**2/4/23**	**1/5/23**	**0%**
1059	**Team A CH810 to CH850 (30m) _ re-alignmet**	**30 days**	**2/5/23**	**31/5/23**	**0%**
1067	Pressure test, swabbing and CCTV	15 days	1/6/23	15/6/23	0%
1068	**CH850 to CH1130 (280m)**	**315 days**	**1/1/23**	**11/11/23**	**0%**
1069	**Team A1 CH1115 to CH1130 (15m)**	**35 days**	**1/1/23**	**4/2/23**	**0%**
1077	**Team A1 CH1130 to CH1145 (15m)**	**35 days**	**5/2/23**	**11/3/23**	**0%**
1085	Team A1 CH850 to CH1115 (265m)	230 days	12/3/23	27/10/23	0%
1086	Pressure test, swabbing and CCTV	15 days	28/10/23	11/11/23	0%
1087	**CH000 to CH370 (370m)**	**533.5 days**	**7/2/22**	**25/7/23**	**0%**
1088	**Team B CH220 to CH245 (25m)**	**144.5 days**	**7/2/22**	**1/7/22**	**0%**
1099	**Team B CH190 to CH220 (30m)**	**22 days**	**1/7/22**	**23/7/22**	**0%**
1108	**Team B CH245 to CH285 (40m)**	**20 days**	**23/7/22**	**12/8/22**	**0%**
1116	**Team B CH285 to CH315 (30m)**	**42 days**	**12/8/22**	**23/9/22**	**0%**
1125	**Team B CH315 to CH340 (25m)**	**25 days**	**23/9/22**	**18/10/22**	**0%**
1133	**Team B CH0 to CH150 (150m)**	**130 days**	**18/10/22**	**25/2/23**	**0%**
1142	**Team B CH150 to CH190 (40m)**	**37 days**	**25/2/23**	**3/4/23**	**0%**
1150	**Team B CH340 to CH370 (30m)**	**98 days**	**3/4/23**	**10/7/23**	**0%**
1158	Pressure test, swabbing and CCTV	15 days	10/7/23	25/7/23	0%
1159	**CH710 to CH970 (260m) -within the scope of Shueng Shui Hueng**	**399 days**	**8/8/22**	**11/9/23**	**0%**
1160	CE-068 _ Inclement Weather in August 2022	15 days	8/8/22	23/8/22	0%
1161	Pending agreement of Shueng Shui Hueng villagers	120 days	23/8/22	21/12/22	0%
1162	XP application for alternative alignment of watermain	120 days	6/9/22	4/1/23	0%
1163	TTA establishment	14 days	4/1/23	18/1/23	0%
1164	Hard material excavation and disposal	28 days	18/1/23	15/2/23	0%
1165	Soil excavation , laying sheetpile and disposal	90 days	15/2/23	16/5/23	0%
1166	Treatment of bedding	30 days	16/5/23	15/6/23	0%
1167	Pipe laying D.I.	14 days	15/6/23	29/6/23	0%
1168	Backfilling general fill and compaction	45 days	29/6/23	13/8/23	0%
1169	Reinstatement	14 days	13/8/23	27/8/23	0%
1170	Pressure test, swabbing and CCTV	15 days	27/8/23	11/9/23	0%
1171	Overall pressure testing	15 days	12/11/23	26/11/23	0%
1172	Pipe connection and completion	30 days	27/11/23	26/12/23	0%
1173	Planned completion for section 4	0 days	26/12/23	26/12/23	0%
1174					
1175	**Section 5 - Water main laying works in part 4 of the Site**	**1096 days**	**30/7/21**	**29/7/24**	**0%**
1176	Access Date (part 4 of the Site)	1 day	30/7/21	30/7/21	0%
1177	Initial survey (utility survey, condition survey, initial photo)	90 days	31/7/21	28/10/21	0%
1178	Application and approval of XP and TTA	116 days	1/11/21	24/2/22	0%
1179	Procurement and Delivery of pipes, fittings and related materials	100 days	28/2/22	7/6/22	0%
1180	Submission and acceptance of method statement and material	120 days	11/4/22	8/8/22	0%



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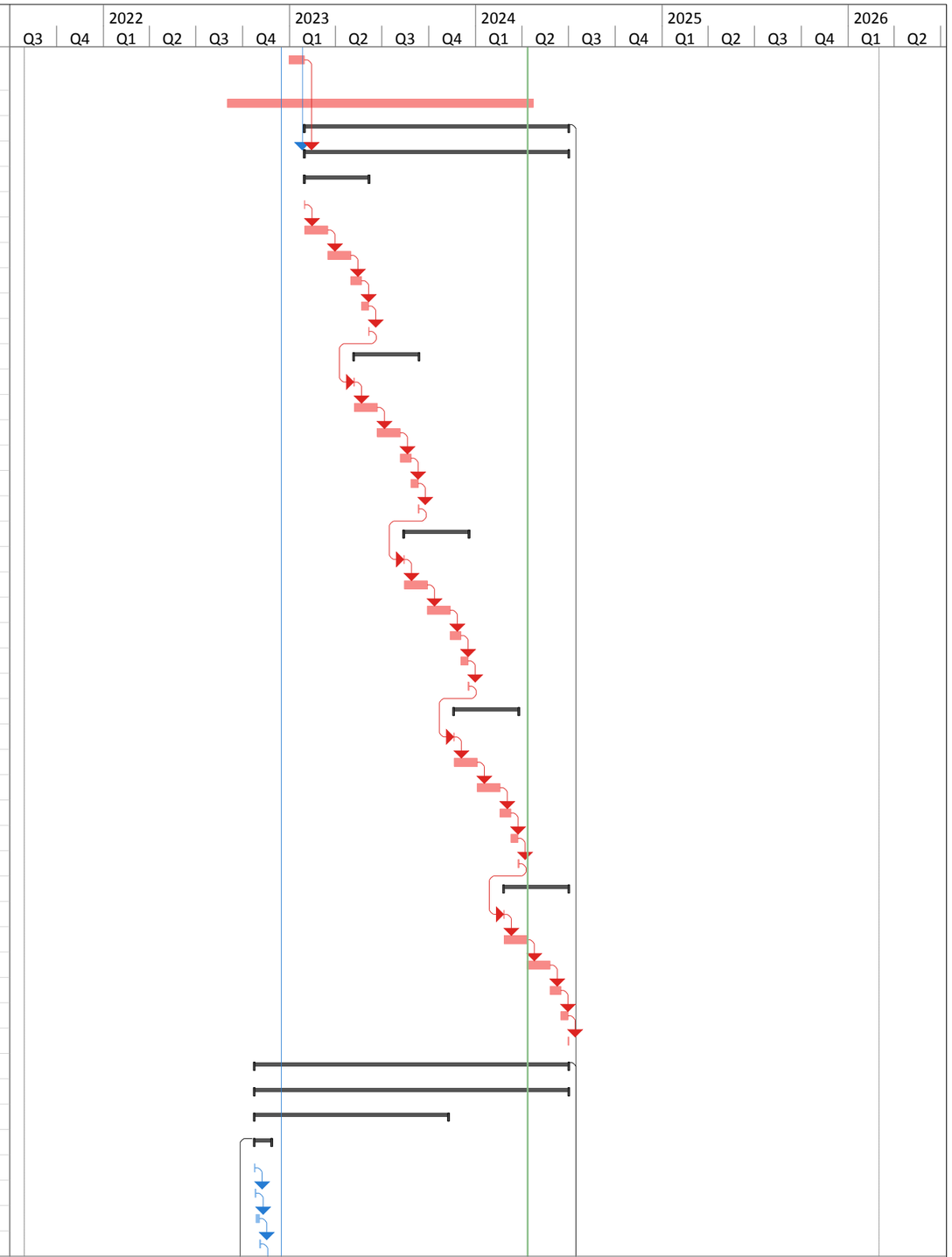
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

ID	Task Name	Duration	Start	Finish	% Complete
1181	Submission and acceptance of method statement and temp work design for trenchless works	30 days	31/12/22	29/1/23	0%
1182	Excavation of Inspection Pit	600 days	1/9/22	22/4/24	0%
1183	**Mainlaying by trenchless method (RW04)**	**519 days**	**30/1/23**	**1/7/24**	**0%**
1184	**RW04 : DN450 DI pipe (trenchless)**	**519 days**	**30/1/23**	**1/7/24**	**0%**
1185	**Wo Tai Street (70m) - TBM Method**	**127 days**	**30/1/23**	**5/6/23**	**0%**
1186	TTA implementation	1 day	30/1/23	30/1/23	0%
1187	Contruction of jacking pit and receiving pit	45 days	31/1/23	16/3/23	0%
1188	Trenchless works and pipe laying	45 days	17/3/23	30/4/23	0%
1189	Manhole / Chamber construction	21 days	1/5/23	21/5/23	0%
1190	Backfilling and compaction	14 days	22/5/23	4/6/23	0%
1191	Reinstatement	1 day	5/6/23	5/6/23	0%
1192	**Ma Sik Road (70m) - TBM Method**	**128 days**	**7/5/23**	**11/9/23**	**0%**
1193	TTA implementation	1 day	7/5/23	7/5/23	0%
1194	Contruction of jacking pit and receiving pit	45 days	8/5/23	21/6/23	0%
1195	Trenchless works and pipe laying	45 days	22/6/23	5/8/23	0%
1196	Manhole / Chamber construction	21 days	6/8/23	26/8/23	0%
1197	Backfilling and compaction	14 days	27/8/23	9/9/23	0%
1198	Reinstatement	2 days	10/9/23	11/9/23	0%
1199	**Luen Chit Street (70m) - TBM Method**	**128 days**	**13/8/23**	**18/12/23**	**0%**
1200	TTA implementation	1 day	13/8/23	13/8/23	0%
1201	Contruction of jacking pit and receiving pit	45 days	14/8/23	27/9/23	0%
1202	Trenchless works and pipe laying	45 days	28/9/23	11/11/23	0%
1203	Manhole / Chamber construction	21 days	12/11/23	2/12/23	0%
1204	Backfilling and compaction	14 days	3/12/23	16/12/23	0%
1205	Reinstatement	2 days	17/12/23	18/12/23	0%
1206	**Luen Sum Road (70m) - TBM Method**	**128 days**	**19/11/23**	**25/3/24**	**0%**
1207	TTA implementation	1 day	19/11/23	19/11/23	0%
1208	Contruction of jacking pit and receiving pit	45 days	20/11/23	3/1/24	0%
1209	Trenchless works and pipe laying	45 days	4/1/24	17/2/24	0%
1210	Manhole / Chamber construction	21 days	18/2/24	9/3/24	0%
1211	Backfilling and compaction	14 days	10/3/24	23/3/24	0%
1212	Reinstatement	2 days	24/3/24	25/3/24	0%
1213	**Fanling Lau Road (70m) - TBM Method**	**128 days**	**25/2/24**	**1/7/24**	**0%**
1214	TTA implementation	1 day	25/2/24	25/2/24	0%
1215	Contruction of jacking pit and receiving pit	45 days	26/2/24	10/4/24	0%
1216	Trenchless works and pipe laying	45 days	11/4/24	25/5/24	0%
1217	Manhole / Chamber construction	21 days	26/5/24	15/6/24	0%
1218	Backfilling and compaction	14 days	16/6/24	29/6/24	0%
1219	Reinstatement	2 days	30/6/24	1/7/24	0%
1220	**Mainlaying by open trench method (RW04)**	**617 days**	**24/10/22**	**1/7/24**	**0%**
1221	**RW04 : DN450 DI Pipe**	**617 days**	**24/10/22**	**1/7/24**	**0%**
1222	Ma Sik Road CH1400 to CH1700 (300m) (XP ID: 1301142, 1301146, 1301149)	381 days	24/10/22	8/11/23	0%
1223	CH1420 to CH1450 (30m)	34 days	24/10/22	26/11/22	0%
1224	TTA establishment	1 day	24/10/22	24/10/22	0%
1225	Hard material excavation and disposal	2 days	25/10/22	26/10/22	0%
1226	Soil excavation , laying sheetpile and disposal	7 days	27/10/22	2/11/22	0%
1227	Treatment of bedding	2 days	3/11/22	4/11/22	0%



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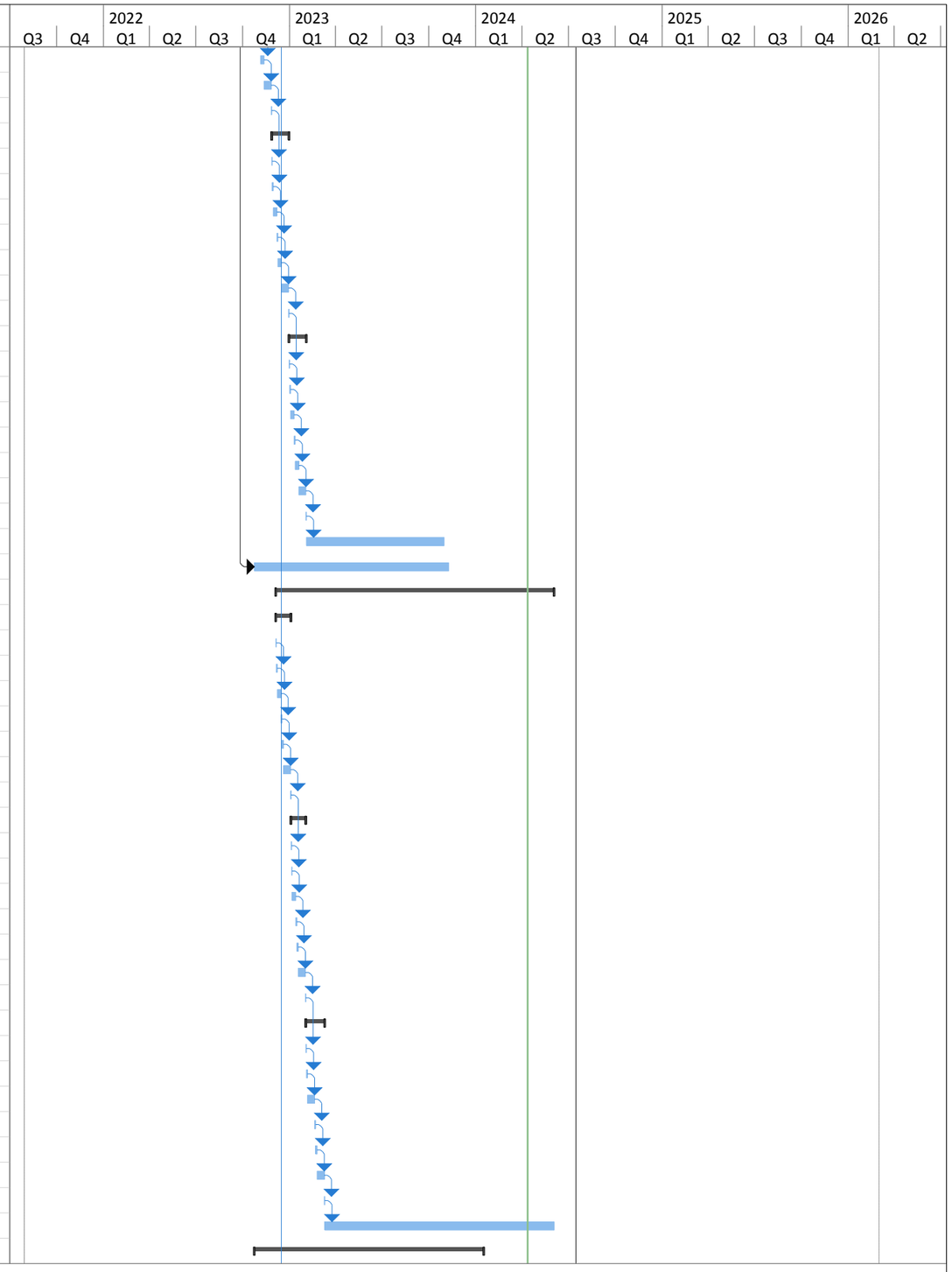
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

ID	Task Name	Duration	Start	Finish	% Complete
1228	Pipe laying D.I.	7 days	5/11/22	11/11/22	0%
1229	Backfilling general fill and compaction	14 days	12/11/22	25/11/22	0%
1230	Reinstatement	1 day	26/11/22	26/11/22	0%
1231	CH1450 to CH1480 (30m)	34 days	27/11/22	30/12/22	0%
1232	TTA establishment	1 day	27/11/22	27/11/22	0%
1233	Hard material excavation and disposal	2 days	28/11/22	29/11/22	0%
1234	Soil excavation , laying sheetpile and disposal	7 days	30/11/22	6/12/22	0%
1235	Treatment of bedding	2 days	7/12/22	8/12/22	0%
1236	Pipe laying D.I.	7 days	9/12/22	15/12/22	0%
1237	Backfilling general fill and compaction	14 days	16/12/22	29/12/22	0%
1238	Reinstatement	1 day	30/12/22	30/12/22	0%
1239	CH910 to CH960 (50m)	34 days	31/12/22	2/2/23	0%
1240	TTA establishment	1 day	31/12/22	31/12/22	0%
1241	Hard material excavation and disposal	2 days	1/1/23	2/1/23	0%
1242	Soil excavation , laying sheetpile and disposal	7 days	3/1/23	9/1/23	0%
1243	Treatment of bedding	2 days	10/1/23	11/1/23	0%
1244	Pipe laying D.I.	7 days	12/1/23	18/1/23	0%
1245	Backfilling general fill and compaction	14 days	19/1/23	1/2/23	0%
1246	Reinstatement	1 day	2/2/23	2/2/23	0%
1247	CH1490 to 1700 (210m)	270 days	3/2/23	30/10/23	0%
1248	Construction of valve chambers	381 days	24/10/22	8/11/23	0%
1249	Ma Sik Road CH1700 to CH2180 (480m) (XP ID: 1301142, 1301146, 1301149)	546 days	5/12/22	2/6/24	0%
1250	CH1920 to CH1950 (30m)	30 days	5/12/22	3/1/23	0%
1251	TTA establishment	1 day	5/12/22	5/12/22	0%
1252	Hard material excavation and disposal	2 days	6/12/22	7/12/22	0%
1253	Soil excavation , laying sheetpile and disposal	7 days	8/12/22	14/12/22	0%
1254	Treatment of bedding	2 days	15/12/22	16/12/22	0%
1255	Pipe laying D.I.	3 days	17/12/22	19/12/22	0%
1256	Backfilling general fill and compaction	14 days	20/12/22	2/1/23	0%
1257	Reinstatement	1 day	3/1/23	3/1/23	0%
1258	CH1950 to CH1990 (40m)	29 days	4/1/23	1/2/23	0%
1259	TTA establishment	1 day	4/1/23	4/1/23	0%
1260	Hard material excavation and disposal	1 day	5/1/23	5/1/23	0%
1261	Soil excavation , laying sheetpile and disposal	7 days	6/1/23	12/1/23	0%
1262	Treatment of bedding	2 days	13/1/23	14/1/23	0%
1263	Pipe laying D.I.	3 days	15/1/23	17/1/23	0%
1264	Backfilling general fill and compaction	14 days	18/1/23	31/1/23	0%
1265	Reinstatement	1 day	1/2/23	1/2/23	0%
1266	CH1990 to CH2020 (30m)	37 days	2/2/23	10/3/23	0%
1267	TTA establishment	1 day	2/2/23	2/2/23	0%
1268	Hard material excavation and disposal	2 days	3/2/23	4/2/23	0%
1269	Soil excavation , laying sheetpile and disposal	14 days	5/2/23	18/2/23	0%
1270	Treatment of bedding	2 days	19/2/23	20/2/23	0%
1271	Pipe laying D.I.	3 days	21/2/23	23/2/23	0%
1272	Backfilling general fill and compaction	14 days	24/2/23	9/3/23	0%
1273	Reinstatement	1 day	10/3/23	10/3/23	0%
1274	CH1790 to 2180 (390m)	450 days	11/3/23	2/6/24	0%
1275	Ma Sik Road CH2180 to CH2400 (220m) (XP ID: 1301142, 1301146, 1301149)	450 days	24/10/22	16/1/24	0%



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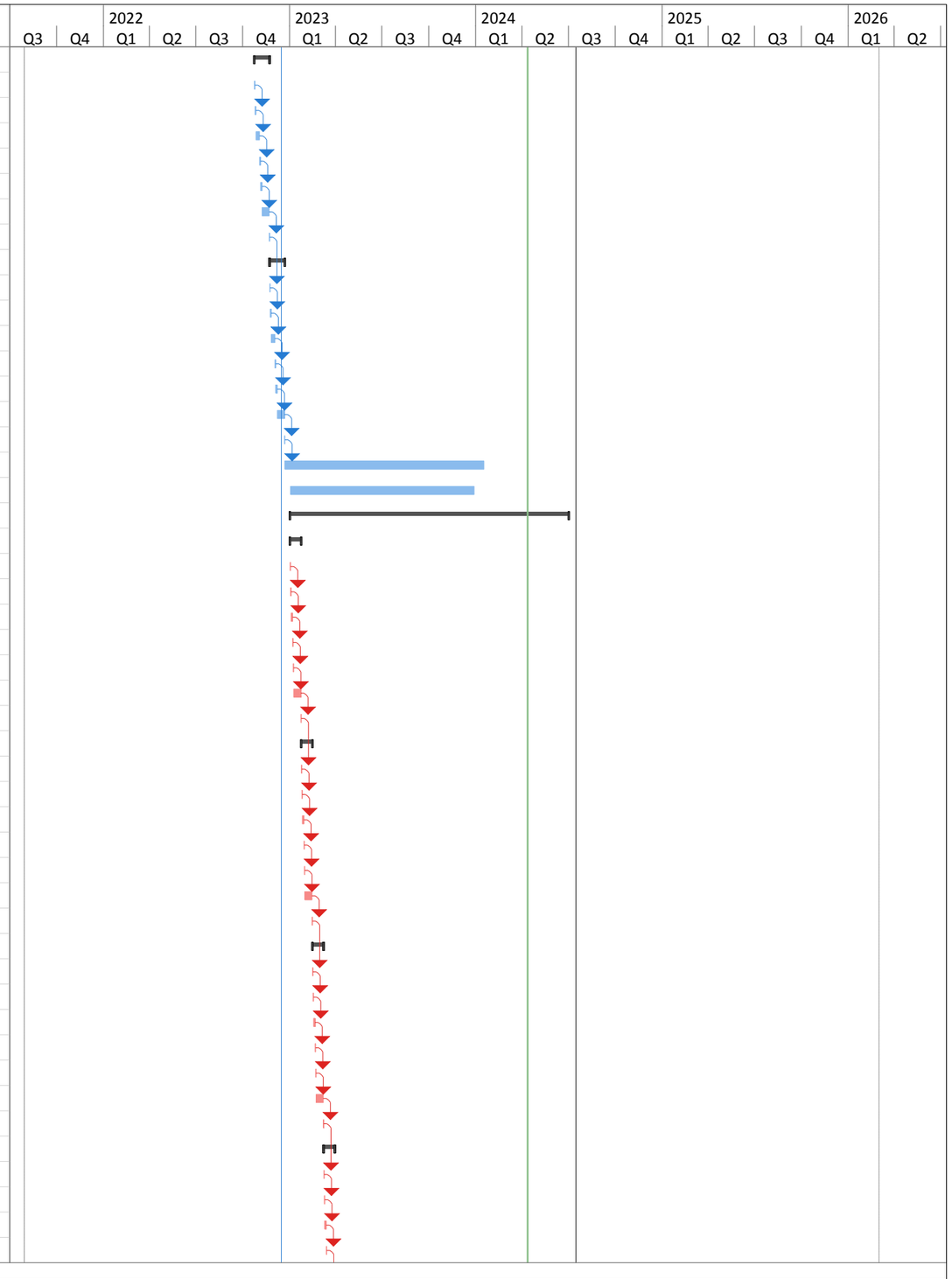
Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

ID	Task Name	Duration	Start	Finish	% Complete
1276	CH2210 to CH2240 (30m)	30 days	24/10/22	22/11/22	0%
1277	TTA establishment	1 day	24/10/22	24/10/22	0%
1278	Hard material excavation and disposal	2 days	25/10/22	26/10/22	0%
1279	Soil excavation , laying sheetpile and disposal	7 days	27/10/22	2/11/22	0%
1280	Treatment of bedding	2 days	3/11/22	4/11/22	0%
1281	Pipe laying D.I.	3 days	5/11/22	7/11/22	0%
1282	Backfilling general fill and compaction	14 days	8/11/22	21/11/22	0%
1283	Reinstatement	1 day	22/11/22	22/11/22	0%
1284	CH2240 to CH2270 (30m)	30 days	23/11/22	22/12/22	0%
1285	TTA establishment	1 day	23/11/22	23/11/22	0%
1286	Hard material excavation and disposal	2 days	24/11/22	25/11/22	0%
1287	Soil excavation , laying sheetpile and disposal	7 days	26/11/22	2/12/22	0%
1288	Treatment of bedding	2 days	3/12/22	4/12/22	0%
1289	Pipe laying D.I.	3 days	5/12/22	7/12/22	0%
1290	Backfilling general fill and compaction	14 days	8/12/22	21/12/22	0%
1291	Reinstatement	1 day	22/12/22	22/12/22	0%
1292	CH2270 to CH2400 (130m)	390 days	23/12/22	16/1/24	0%
1293	Ma Sik Road CH2400 to CH2600 (200m) (XP ID: 1301142, 1301146, 1301149)	360 days	3/1/23	28/12/23	0%
1294	Tin Ping Road (1377m) (XP ID: 1309070, 1310475)	547 days	2/1/23	1/7/24	0%
1295	CH450 to CH480 (30m)	22 days	2/1/23	23/1/23	0%
1296	TTA establishment	1 day	2/1/23	2/1/23	0%
1297	Hard material excavation and disposal	1 day	3/1/23	3/1/23	0%
1298	Soil excavation , laying sheetpile and disposal	3 days	4/1/23	6/1/23	0%
1299	Treatment of bedding	1 day	7/1/23	7/1/23	0%
1300	Pipe laying D.I.	1 day	8/1/23	8/1/23	0%
1301	Backfilling general fill and compaction	14 days	9/1/23	22/1/23	0%
1302	Reinstatement	1 day	23/1/23	23/1/23	0%
1303	CH480 to CH510 (30m)	22 days	24/1/23	14/2/23	0%
1304	TTA establishment	1 day	24/1/23	24/1/23	0%
1305	Hard material excavation and disposal	1 day	25/1/23	25/1/23	0%
1306	Soil excavation , laying sheetpile and disposal	3 days	26/1/23	28/1/23	0%
1307	Treatment of bedding	1 day	29/1/23	29/1/23	0%
1308	Pipe laying D.I.	1 day	30/1/23	30/1/23	0%
1309	Backfilling general fill and compaction	14 days	31/1/23	13/2/23	0%
1310	Reinstatement	1 day	14/2/23	14/2/23	0%
1311	CH510 to CH540 (30m)	22 days	15/2/23	8/3/23	0%
1312	TTA establishment	1 day	15/2/23	15/2/23	0%
1313	Hard material excavation and disposal	1 day	16/2/23	16/2/23	0%
1314	Soil excavation , laying sheetpile and disposal	3 days	17/2/23	19/2/23	0%
1315	Treatment of bedding	1 day	20/2/23	20/2/23	0%
1316	Pipe laying D.I.	1 day	21/2/23	21/2/23	0%
1317	Backfilling general fill and compaction	14 days	22/2/23	7/3/23	0%
1318	Reinstatement	1 day	8/3/23	8/3/23	0%
1319	CH540 to CH570 (30m)	22 days	9/3/23	30/3/23	0%
1320	TTA establishment	1 day	9/3/23	9/3/23	0%
1321	Hard material excavation and disposal	1 day	10/3/23	10/3/23	0%
1322	Soil excavation , laying sheetpile and disposal	3 days	11/3/23	13/3/23	0%
1323	Treatment of bedding	1 day	14/3/23	14/3/23	0%



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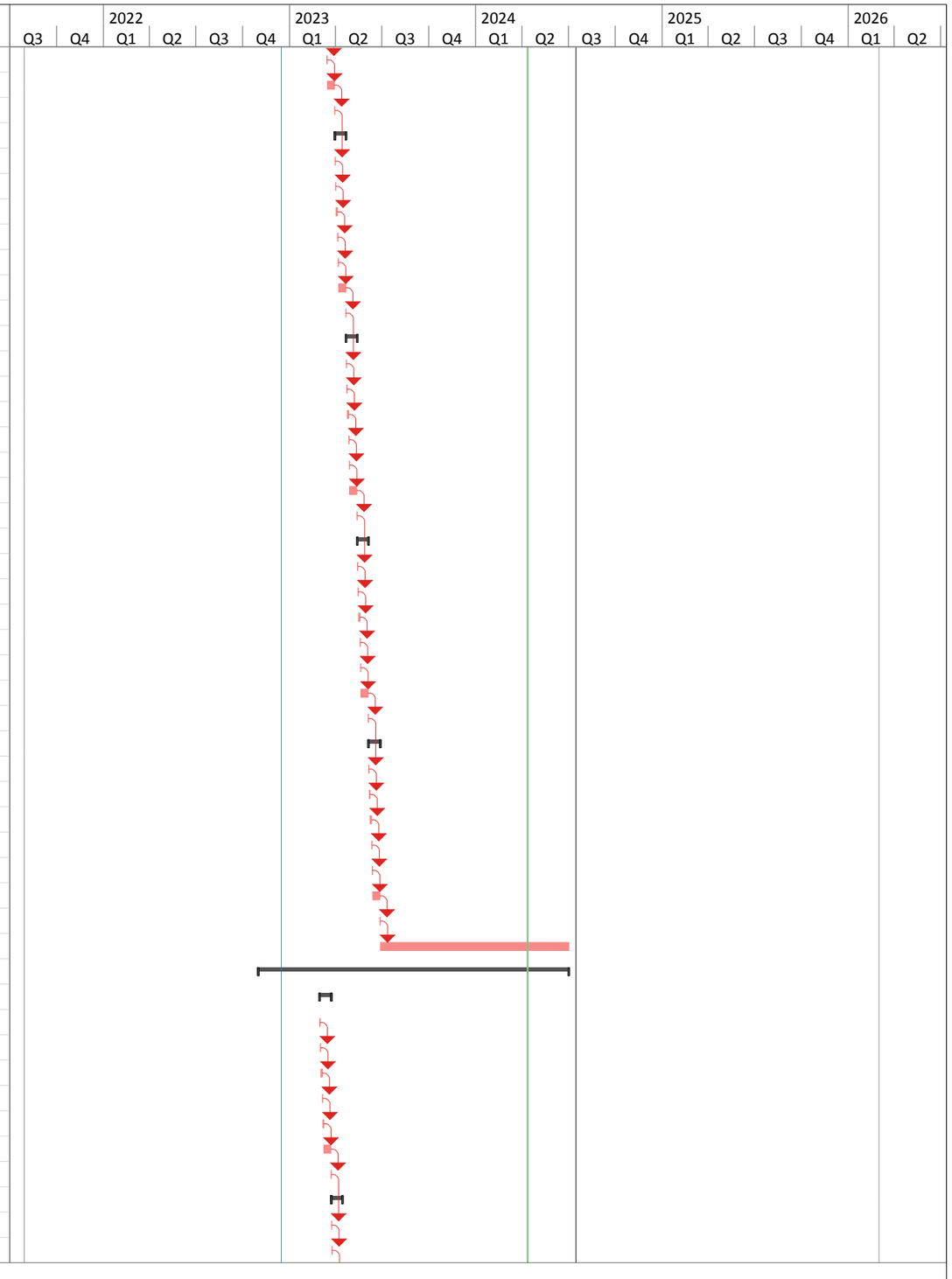
(up to 31 March 2024)

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	% Complete
1324	Pipe laying D.I.	1 day	15/3/23	15/3/23	0%
1325	Backfilling general fill and compaction	14 days	16/3/23	29/3/23	0%
1326	Reinstatement	1 day	30/3/23	30/3/23	0%
1327	CH570 to CH610 (30m)	22 days	31/3/23	21/4/23	0%
1328	TTA establishment	1 day	31/3/23	31/3/23	0%
1329	Hard material excavation and disposal	1 day	1/4/23	1/4/23	0%
1330	Soil excavation , laying sheetpile and disposal	3 days	2/4/23	4/4/23	0%
1331	Treatment of bedding	1 day	5/4/23	5/4/23	0%
1332	Pipe laying D.I.	1 day	6/4/23	6/4/23	0%
1333	Backfilling general fill and compaction	14 days	7/4/23	20/4/23	0%
1334	Reinstatement	1 day	21/4/23	21/4/23	0%
1335	CH610 to CH640 (30m)	22 days	22/4/23	13/5/23	0%
1336	TTA establishment	1 day	22/4/23	22/4/23	0%
1337	Hard material excavation and disposal	1 day	23/4/23	23/4/23	0%
1338	Soil excavation , laying sheetpile and disposal	3 days	24/4/23	26/4/23	0%
1339	Treatment of bedding	1 day	27/4/23	27/4/23	0%
1340	Pipe laying D.I.	1 day	28/4/23	28/4/23	0%
1341	Backfilling general fill and compaction	14 days	29/4/23	12/5/23	0%
1342	Reinstatement	1 day	13/5/23	13/5/23	0%
1343	CH640 to CH670 (30m)	22 days	14/5/23	4/6/23	0%
1344	TTA establishment	1 day	14/5/23	14/5/23	0%
1345	Hard material excavation and disposal	1 day	15/5/23	15/5/23	0%
1346	Soil excavation , laying sheetpile and disposal	3 days	16/5/23	18/5/23	0%
1347	Treatment of bedding	1 day	19/5/23	19/5/23	0%
1348	Pipe laying D.I.	1 day	20/5/23	20/5/23	0%
1349	Backfilling general fill and compaction	14 days	21/5/23	3/6/23	0%
1350	Reinstatement	1 day	4/6/23	4/6/23	0%
1351	CH670 to CH710 (30m)	23 days	5/6/23	27/6/23	0%
1352	TTA establishment	1 day	5/6/23	5/6/23	0%
1353	Hard material excavation and disposal	2 days	6/6/23	7/6/23	0%
1354	Soil excavation , laying sheetpile and disposal	3 days	8/6/23	10/6/23	0%
1355	Treatment of bedding	1 day	11/6/23	11/6/23	0%
1356	Pipe laying D.I.	1 day	12/6/23	12/6/23	0%
1357	Backfilling general fill and compaction	14 days	13/6/23	26/6/23	0%
1358	Reinstatement	1 day	27/6/23	27/6/23	0%
1359	Remaining Section of Tin Ping Road (1287m)	370 days	28/6/23	1/7/24	0%
1360	Sha Tau Kok Road (869m)	609 days	1/11/22	1/7/24	0%
1361	CH3580 to CH3550 (30m)	23 days	1/3/23	23/3/23	0%
1362	TTA establishment	1 day	1/3/23	1/3/23	0%
1363	Hard material excavation and disposal	1 day	2/3/23	2/3/23	0%
1364	Soil excavation , laying sheetpile and disposal	3 days	3/3/23	5/3/23	0%
1365	Treatment of bedding	1 day	6/3/23	6/3/23	0%
1366	Pipe laying D.I.	2 days	7/3/23	8/3/23	0%
1367	Backfilling general fill and compaction	14 days	9/3/23	22/3/23	0%
1368	Reinstatement	1 day	23/3/23	23/3/23	0%
1369	CH3550 to CH3520 (30m)	22 days	24/3/23	14/4/23	0%
1370	TTA establishment	1 day	24/3/23	24/3/23	0%
1371	Hard material excavation and disposal	1 day	25/3/23	25/3/23	0%



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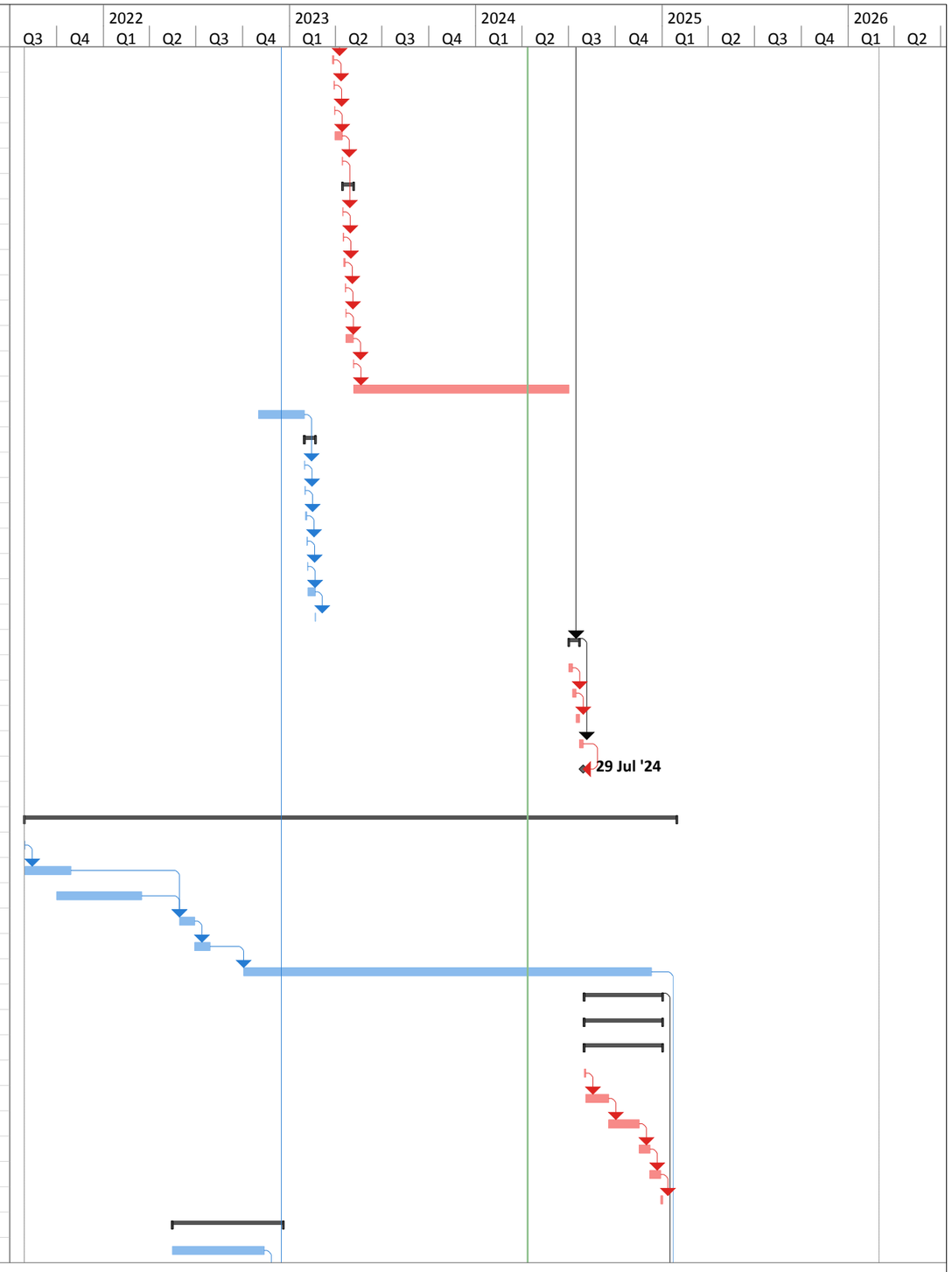
Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

ID	Task Name	Duration	Start	Finish	% Complete
1372	Soil excavation , laying sheetpile and disposal	3 days	26/3/23	28/3/23	0%
1373	Treatment of bedding	1 day	29/3/23	29/3/23	0%
1374	Pipe laying D.I.	1 day	30/3/23	30/3/23	0%
1375	Backfilling general fill and compaction	14 days	31/3/23	13/4/23	0%
1376	Reinstatement	1 day	14/4/23	14/4/23	0%
1377	CH3520 to CH3490 (30m)	22 days	15/4/23	6/5/23	0%
1378	TTA establishment	1 day	15/4/23	15/4/23	0%
1379	Hard material excavation and disposal	1 day	16/4/23	16/4/23	0%
1380	Soil excavation , laying sheetpile and disposal	3 days	17/4/23	19/4/23	0%
1381	Treatment of bedding	1 day	20/4/23	20/4/23	0%
1382	Pipe laying D.I.	1 day	21/4/23	21/4/23	0%
1383	Backfilling general fill and compaction	14 days	22/4/23	5/5/23	0%
1384	Reinstatement	1 day	6/5/23	6/5/23	0%
1385	Remaining Section of Sha Tau Kok Road	422 days	7/5/23	1/7/24	0%
1386	Interface coordination with Contract ND/2019/04	90 days	1/11/22	29/1/23	0%
1387	CH2600 to CH2800 (200m)	22 days	30/1/23	20/2/23	0%
1388	TTA establishment	1 day	30/1/23	30/1/23	0%
1389	Hard material excavation and disposal	1 day	31/1/23	31/1/23	0%
1390	Soil excavation , laying sheetpile and disposal	3 days	1/2/23	3/2/23	0%
1391	Treatment of bedding	1 day	4/2/23	4/2/23	0%
1392	Pipe laying D.I.	1 day	5/2/23	5/2/23	0%
1393	Backfilling general fill and compaction	14 days	6/2/23	19/2/23	0%
1394	Reinstatement	1 day	20/2/23	20/2/23	0%
1395	**Overall testing**	**21 days**	**2/7/24**	**22/7/24**	**0%**
1396	Swabbing	7 days	2/7/24	8/7/24	0%
1397	CCTV	7 days	9/7/24	15/7/24	0%
1398	Hydrostatic pressure test	7 days	16/7/24	22/7/24	0%
1399	Pipe connection and completion	7 days	23/7/24	29/7/24	0%
1400	Planned completion for section 5	0 days	29/7/24	29/7/24	0%
1401					
1402	**Section 6 - Water main laying works in part 5 of the Site**	**1280 days**	**30/7/21**	**29/1/25**	**0%**
1403	Access Date (part 5 of the Site)	1 day	30/7/21	30/7/21	0%
1404	Initial survey (utility survey, condition survey, initial photo)	90 days	31/7/21	28/10/21	0%
1405	Application and approval of XP and TTA	167 days	1/10/21	16/3/22	0%
1406	Procurement and Delivery of pipes, fittings and related materials	30 days	30/5/22	28/6/22	0%
1407	Submission and acceptance of method statement and material	30 days	29/6/22	28/7/22	0%
1408	Excavation of Inspection Pit	800 days	3/10/22	10/12/24	0%
1409	**Mainlaying by trenchless method**	**154 days**	**1/8/24**	**1/1/25**	**0%**
1410	**RW06 : DN300 DI pipe (trenchless)**	**154 days**	**1/8/24**	**1/1/25**	**0%**
1411	**Jocky Club Road (100m) - TBM Method**	**154 days**	**1/8/24**	**1/1/25**	**0%**
1412	TTA implementation	3 days	1/8/24	3/8/24	0%
1413	Contruction of jacking pit and receiving pit	45 days	4/8/24	17/9/24	0%
1414	Trenchless works and pipe laying	60 days	18/9/24	16/11/24	0%
1415	Manhole / Chamber construction	21 days	17/11/24	7/12/24	0%
1416	Backfilling and compaction	21 days	8/12/24	28/12/24	0%
1417	Reinstatement	4 days	29/12/24	1/1/25	0%
1418	**Contractor's Design and Construction of distribution mains**	**218 days**	**16/5/22**	**19/12/22**	**0%**
1419	Submission and acceptance of detailed design proposal	180 days	16/5/22	11/11/22	0%



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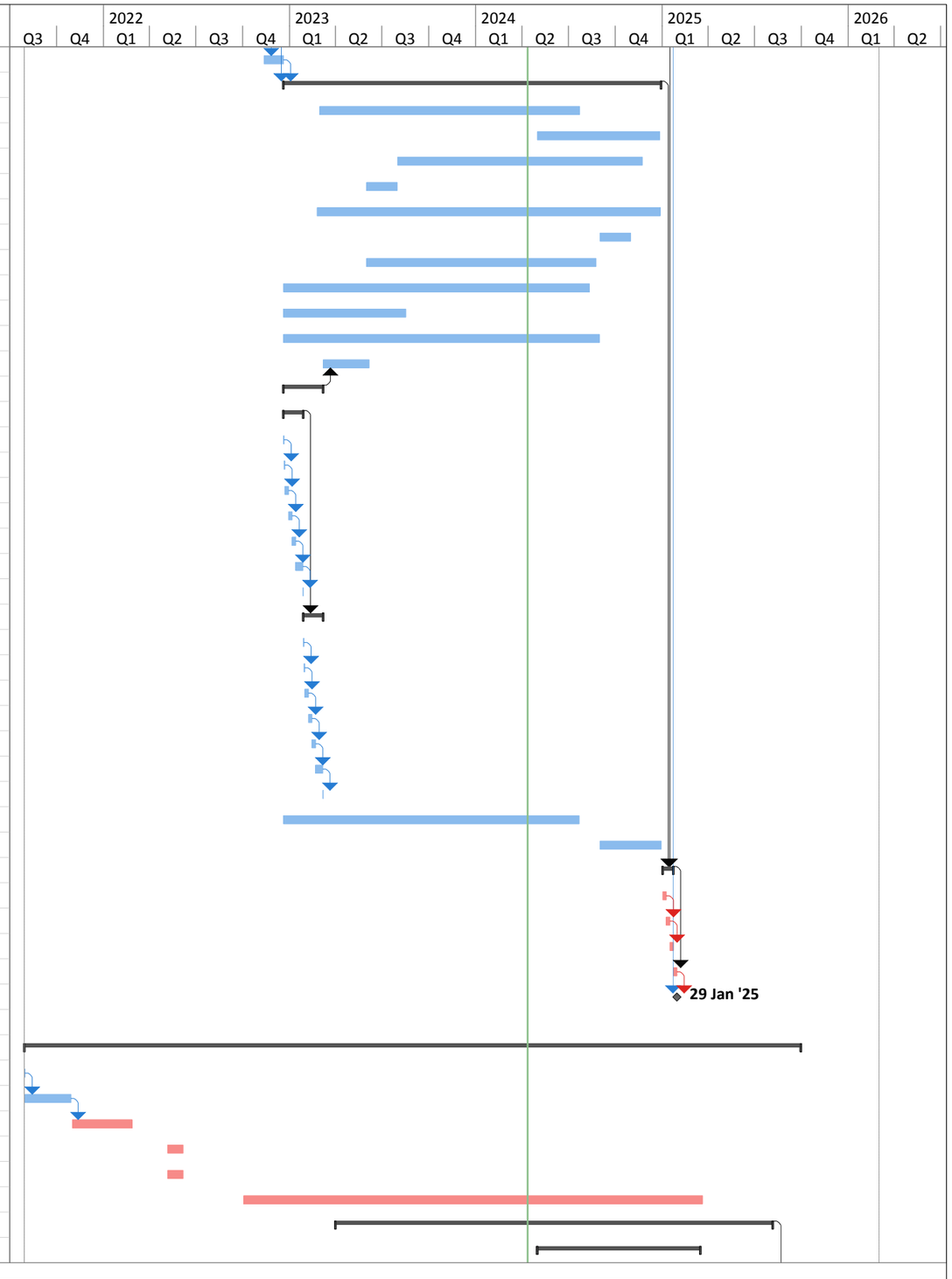
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

ID	Task Name	Duration	Start	Finish	% Complete
1420	Site investigation and liaison with relevant parties	38 days	12/11/22	19/12/22	0%
1421	**Mainlaying by open trench method (XP ID: 1301135, 1301136)**	**741 days**	**20/12/22**	**29/12/24**	**0%**
1422	RW41 (DN150) - Sheung Shui Tung Hing Road (288m)	510 days	1/3/23	22/7/24	0%
1423	RW42 (DN150) - No name road in Sheung Shui Heung (210m)	240 days	1/5/24	26/12/24	0%
1424	RW71 (DN150) - Jockey Club Road (308m)	480 days	1/8/23	22/11/24	0%
1425	RW44 (DN150) - Jockey Club Road (38m)	60 days	1/6/23	30/7/23	0%
1426	RW11 (DN150) - Fung Nam Road (480m)	673 days	24/2/23	27/12/24	0%
1427	RW46 (DN150) - Fung Nam Lane (38m)	60 days	1/9/24	30/10/24	0%
1428	RW06 (DN300) - Lung Sum Avenue (290m)	450 days	1/6/23	23/8/24	0%
1429	RW05 (DN400) - Jockey Club Road (377m)	600 days	20/12/22	10/8/24	0%
1430	RW15 (DN150) - Sun Fung Road / Sun Shing Road (390m)	240 days	20/12/22	16/8/23	0%
1431	RW18 (DN150) - San Hong Street (464m)	620 days	20/12/22	30/8/24	0%
1432	RW20 (DN150) - Sun Wing Street (52m)	90 days	8/3/23	5/6/23	0%
1433	**RW45 (DN150) - Tsun Fu Street (82m)**	**78 days**	**20/12/22**	**7/3/23**	**0%**
1434	**CH000 - CH040**	**39 days**	**20/12/22**	**27/1/23**	**0%**
1435	TTA establishment	1 day	20/12/22	20/12/22	0%
1436	Hard material excavation and disposal	2 days	21/12/22	22/12/22	0%
1437	Soil excavation , laying sheetpile and disposal	7 days	23/12/22	29/12/22	0%
1438	Treatment of bedding	7 days	30/12/22	5/1/23	0%
1439	Pipe laying D.I.	7 days	6/1/23	12/1/23	0%
1440	Backfilling general fill and compaction	14 days	13/1/23	26/1/23	0%
1441	Reinstatement	1 day	27/1/23	27/1/23	0%
1442	**CH040 - CH082**	**39 days**	**28/1/23**	**7/3/23**	**0%**
1443	TTA establishment	1 day	28/1/23	28/1/23	0%
1444	Hard material excavation and disposal	2 days	29/1/23	30/1/23	0%
1445	Soil excavation , laying sheetpile and disposal	7 days	31/1/23	6/2/23	0%
1446	Treatment of bedding	7 days	7/2/23	13/2/23	0%
1447	Pipe laying D.I.	7 days	14/2/23	20/2/23	0%
1448	Backfilling general fill and compaction	14 days	21/2/23	6/3/23	0%
1449	Reinstatement	1 day	7/3/23	7/3/23	0%
1450	RW14 (DN150) - Fu Hing Street (372m)	580 days	20/12/22	21/7/24	0%
1451	RW21 (DN150) - Sun Fat Street (105m)	120 days	1/9/24	29/12/24	0%
1452	Overall testing	21 days	2/1/25	22/1/25	0%
1453	Swabbing	7 days	2/1/25	8/1/25	0%
1454	CCTV	7 days	9/1/25	15/1/25	0%
1455	Hydrostatic pressure test	7 days	16/1/25	22/1/25	0%
1456	Pipe connection and completion	7 days	23/1/25	29/1/25	0%
1457	Planned completion for section 6	0 days	29/1/25	29/1/25	0%
1458					
1459	**Section 7 - Water main laying works in part 6 of the Site**	**1523 days**	**30/7/21**	**29/9/25**	**0%**
1460	Access Date (part 6 of the Site)	1 day	30/7/21	30/7/21	0%
1461	Initial survey (utility survey, condition survey, initial photo)	90 days	31/7/21	28/10/21	0%
1462	Application and approval of XP and TTA	117 days	1/11/21	25/2/22	0%
1463	Procurement and Delivery of pipes, fittings and related materials	30 days	7/5/22	5/6/22	0%
1464	Submission and acceptance of method statement and material	30 days	7/5/22	5/6/22	0%
1465	Excavation of Inspection Pit	900 days	3/10/22	20/3/25	0%
1466	**Mainlaying by trenchless method**	**858 days**	**1/4/23**	**5/8/25**	**0%**
1467	**RW05 : DN400 DI pipe (trenchless)**	**320 days**	**1/5/24**	**16/3/25**	**0%**



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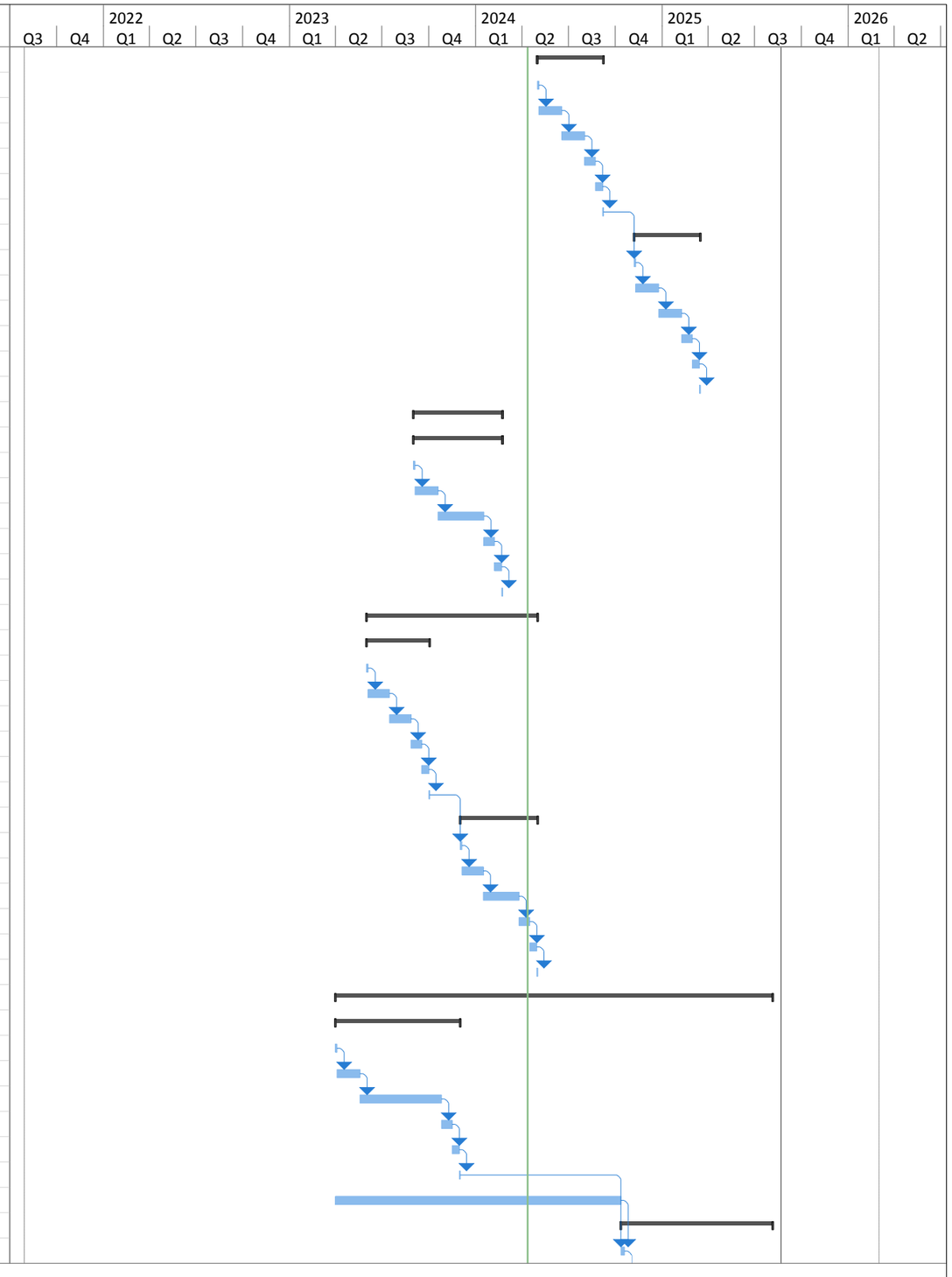
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

ID	Task Name	Duration	Start	Finish	% Complete
1468	**Fu Hing Street (75m) - TBM Method**	**130 days**	**1/5/24**	**7/9/24**	**0%**
1469	TTA implementation	3 days	1/5/24	3/5/24	0%
1470	Contruction of jacking pit and receiving pit	45 days	4/5/24	17/6/24	0%
1471	Trenchless works and pipe laying	45 days	18/6/24	1/8/24	0%
1472	Manhole / Chamber construction	21 days	2/8/24	22/8/24	0%
1473	Backfilling and compaction	14 days	23/8/24	5/9/24	0%
1474	Reinstatement	2 days	6/9/24	7/9/24	0%
1475	**Luen Sum Road (70m) - TBM Method**	**130 days**	**7/11/24**	**16/3/25**	**0%**
1476	TTA implementation	3 days	7/11/24	9/11/24	0%
1477	Contruction of jacking pit and receiving pit	45 days	10/11/24	24/12/24	0%
1478	Trenchless works and pipe laying	45 days	25/12/24	7/2/25	0%
1479	Manhole / Chamber construction	21 days	8/2/25	28/2/25	0%
1480	Backfilling and compaction	14 days	1/3/25	14/3/25	0%
1481	Reinstatement	2 days	15/3/25	16/3/25	0%
1482	**RW05 : DN300 DI pipe (trenchless)**	**175 days**	**1/9/23**	**22/2/24**	**0%**
1483	**Ma Sik Road (180m) - TBM Method**	**175 days**	**1/9/23**	**22/2/24**	**0%**
1484	TTA implementation	3 days	1/9/23	3/9/23	0%
1485	Contruction of jacking pit and receiving pit	45 days	4/9/23	18/10/23	0%
1486	Trenchless works and pipe laying	90 days	19/10/23	16/1/24	0%
1487	Manhole / Chamber construction	21 days	17/1/24	6/2/24	0%
1488	Backfilling and compaction	14 days	7/2/24	20/2/24	0%
1489	Reinstatement	2 days	21/2/24	22/2/24	0%
1490	**RW08 : DN400 DI pipe (trenchless)**	**336 days**	**1/6/23**	**1/5/24**	**0%**
1491	**Wo Muk Road (60m) - TBM Method**	**124 days**	**1/6/23**	**2/10/23**	**0%**
1492	TTA implementation	3 days	1/6/23	3/6/23	0%
1493	Contruction of jacking pit and receiving pit	42 days	4/6/23	15/7/23	0%
1494	Trenchless works and pipe laying	42 days	16/7/23	26/8/23	0%
1495	Manhole / Chamber construction	21 days	27/8/23	16/9/23	0%
1496	Backfilling and compaction	14 days	17/9/23	30/9/23	0%
1497	Reinstatement	2 days	1/10/23	2/10/23	0%
1498	**Wo Tai Street (100m) - TBM Method**	**152 days**	**2/12/23**	**1/5/24**	**0%**
1499	TTA implementation	3 days	2/12/23	4/12/23	0%
1500	Contruction of jacking pit and receiving pit	42 days	5/12/23	15/1/24	0%
1501	Trenchless works and pipe laying	70 days	16/1/24	25/3/24	0%
1502	Manhole / Chamber construction	21 days	26/3/24	15/4/24	0%
1503	Backfilling and compaction	14 days	16/4/24	29/4/24	0%
1504	Reinstatement	2 days	30/4/24	1/5/24	0%
1505	**RW09 : DN450 DI pipe (trenchless)**	**858 days**	**1/4/23**	**5/8/25**	**0%**
1506	**San Wang Road (435m) - TBM Method**	**245 days**	**1/4/23**	**1/12/23**	**0%**
1507	TTA implementation	3 days	1/4/23	3/4/23	0%
1508	Contruction of jacking pit and receiving pit	45 days	4/4/23	18/5/23	0%
1509	Trenchless works and pipe laying	160 days	19/5/23	25/10/23	0%
1510	Manhole / Chamber construction	21 days	26/10/23	15/11/23	0%
1511	Backfilling and compaction	14 days	16/11/23	29/11/23	0%
1512	Reinstatement	2 days	30/11/23	1/12/23	0%
1513	Submission and acceptance of method statement by MTRC	560 days	1/4/23	11/10/24	0%
1514	**MTRC (315m) - TBM Method**	**298 days**	**12/10/24**	**5/8/25**	**0%**
1515	TTA implementation	7 days	12/10/24	18/10/24	0%



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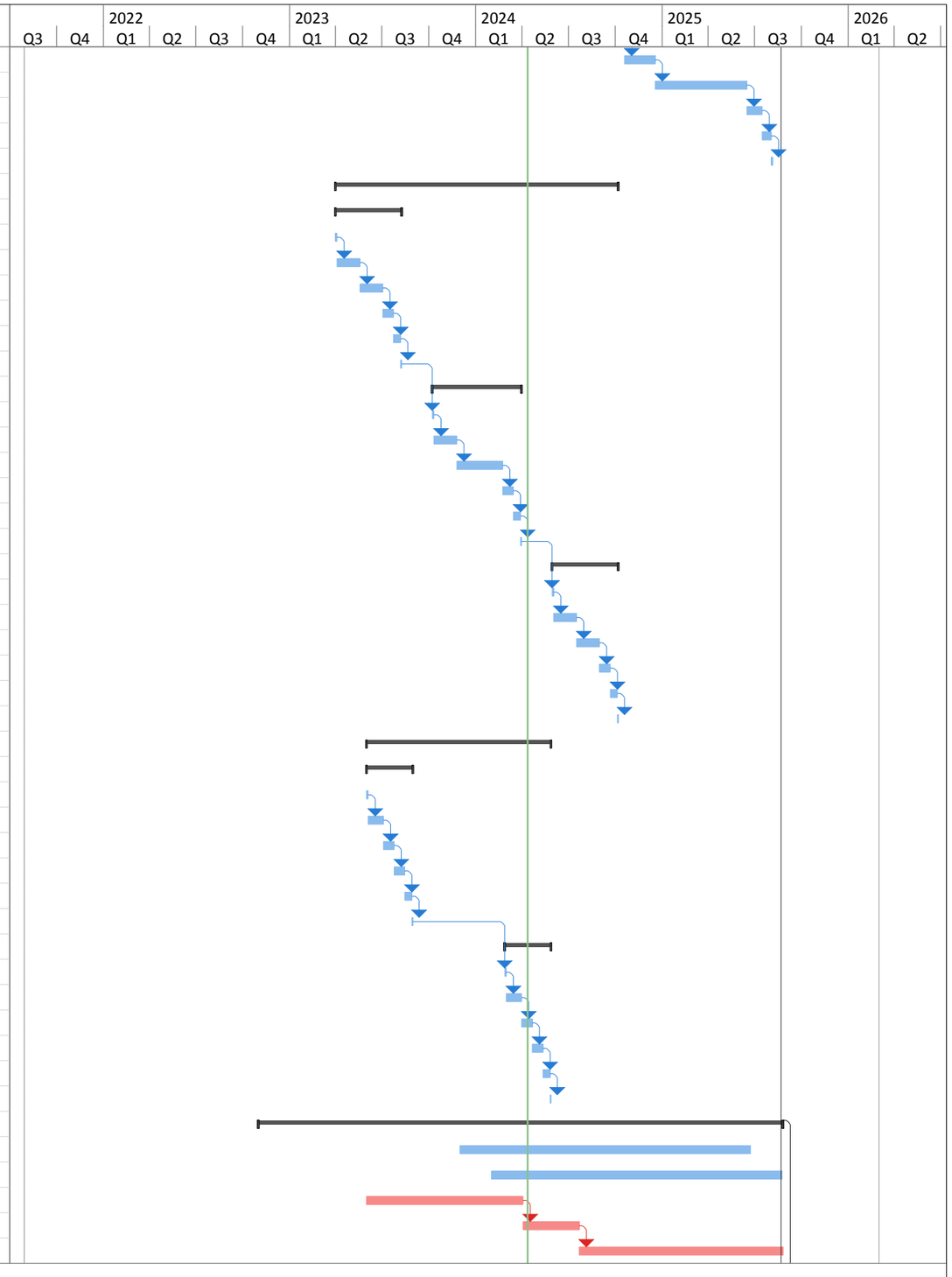
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	% Complete
1516	Contruction of jacking pit and receiving pit	60 days	19/10/24	17/12/24	0%
1517	Trenchless works and pipe laying	180 days	18/12/24	15/6/25	0%
1518	Manhole / Chamber construction	30 days	16/6/25	15/7/25	0%
1519	Backfilling and compaction	18 days	16/7/25	2/8/25	0%
1520	Reinstatement	3 days	3/8/25	5/8/25	0%
1521	**RW05 : DN300 DI pipe (trenchless)**	**555 days**	**1/4/23**	**6/10/24**	**0%**
1522	**Ling Shan Road (60m) - HDD Method**	**130 days**	**1/4/23**	**8/8/23**	**0%**
1523	TTA implementation	3 days	1/4/23	3/4/23	0%
1524	Contruction of jacking pit and receiving pit	45 days	4/4/23	18/5/23	0%
1525	Trenchless works and pipe laying	45 days	19/5/23	2/7/23	0%
1526	Manhole / Chamber construction	21 days	3/7/23	23/7/23	0%
1527	Backfilling and compaction	14 days	24/7/23	6/8/23	0%
1528	Reinstatement	2 days	7/8/23	8/8/23	0%
1529	**San Wan Road Roundabout (130m) - HDD Method**	**175 days**	**8/10/23**	**30/3/24**	**0%**
1530	TTA implementation	3 days	8/10/23	10/10/23	0%
1531	Contruction of jacking pit and receiving pit	45 days	11/10/23	24/11/23	0%
1532	Trenchless works and pipe laying	90 days	25/11/23	22/2/24	0%
1533	Manhole / Chamber construction	21 days	23/2/24	14/3/24	0%
1534	Backfilling and compaction	14 days	15/3/24	28/3/24	0%
1535	Reinstatement	2 days	29/3/24	30/3/24	0%
1536	**Pak Fung Road (70m) - HDD Method**	**130 days**	**30/5/24**	**6/10/24**	**0%**
1537	TTA implementation	3 days	30/5/24	1/6/24	0%
1538	Contruction of jacking pit and receiving pit	45 days	2/6/24	16/7/24	0%
1539	Trenchless works and pipe laying	45 days	17/7/24	30/8/24	0%
1540	Manhole / Chamber construction	21 days	31/8/24	20/9/24	0%
1541	Backfilling and compaction	14 days	21/9/24	4/10/24	0%
1542	Reinstatement	2 days	5/10/24	6/10/24	0%
1543	**RW05 : DN300 DI pipe (trenchless)**	**362 days**	**1/6/23**	**27/5/24**	**0%**
1544	**Fanling Way (35m) - Hand Shield Method**	**91 days**	**1/6/23**	**30/8/23**	**0%**
1545	TTA implementation	3 days	1/6/23	3/6/23	0%
1546	Contruction of jacking pit and receiving pit	30 days	4/6/23	3/7/23	0%
1547	Trenchless works and pipe laying	21 days	4/7/23	24/7/23	0%
1548	Manhole / Chamber construction	21 days	25/7/23	14/8/23	0%
1549	Backfilling and compaction	14 days	15/8/23	28/8/23	0%
1550	Reinstatement	2 days	29/8/23	30/8/23	0%
1551	**CLP Station (35m) - Hand Shield Method**	**91 days**	**27/2/24**	**27/5/24**	**0%**
1552	TTA implementation	3 days	27/2/24	29/2/24	0%
1553	Contruction of jacking pit and receiving pit	30 days	1/3/24	30/3/24	0%
1554	Trenchless works and pipe laying	21 days	31/3/24	20/4/24	0%
1555	Manhole / Chamber construction	21 days	21/4/24	11/5/24	0%
1556	Backfilling and compaction	14 days	12/5/24	25/5/24	0%
1557	Reinstatement	2 days	26/5/24	27/5/24	0%
1558	**Mainlaying by open trench method**	**1029 days**	**1/11/22**	**25/8/25**	**0%**
1559	RW07 (DN300) - Ma Sik Road (360m)	570 days	1/12/23	22/6/25	0%
1560	RW05 (DN400) - Jockey Club Road (681m) (XP ID: 1316661, 1301141)	570 days	1/2/24	23/8/25	0%
1561	RW05 (DN300) - Jockey Club Road (720m) (XP ID: 1316661, 1301141)	307 days	1/6/23	2/4/24	0%
1562	RW05 (DN300) - Pik Fung Road (270m)	110 days	3/4/24	21/7/24	0%
1563	RW05 (DN300) - Sun Wan Road (945m)	400 days	22/7/24	25/8/25	0%



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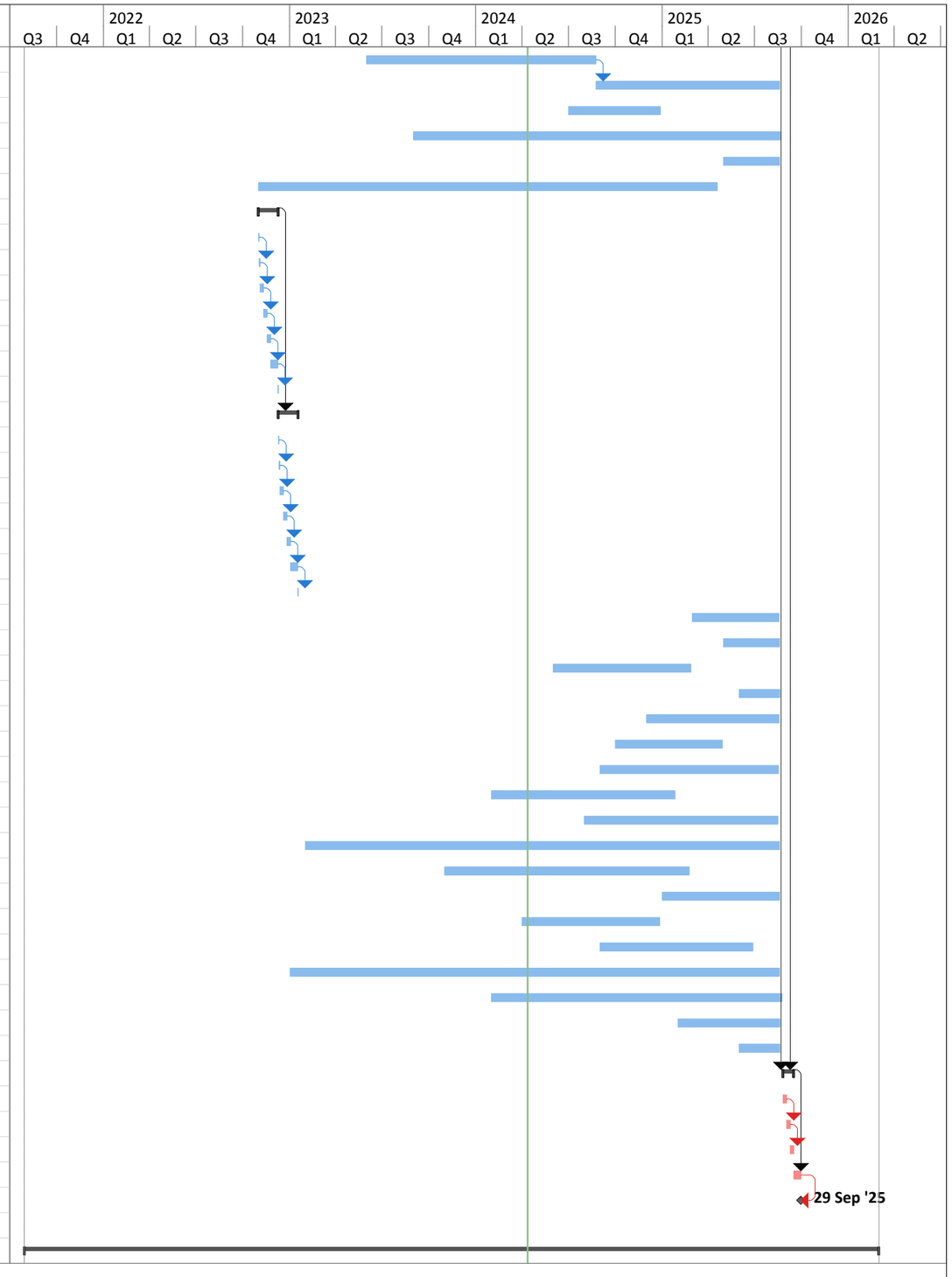
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

ID	Task Name	Duration	Start	Finish	% Complete
1564	RW08 (DN400) - Fanling Lau Road (750m) (XP ID: 1310580, 1310468)	450 days	1/6/23	23/8/24	0%
1565	RW08 (DN400) - Lok Yip Road (616m)	360 days	24/8/24	18/8/25	0%
1566	RW17 (DN150) - Sun Shing Road (114m)	180 days	1/7/24	27/12/24	0%
1567	RW16 (DN250) - Sun Fung Road / Lung Sum Avenue (741m)	720 days	1/9/23	20/8/25	0%
1568	RW47 (DN100) - Ben Lun Building (82m)	110 days	1/5/25	18/8/25	0%
1569	RW22 (DN150) - Chi Cheong Street (877m) (XP ID: 1310864)	900 days	1/11/22	18/4/25	0%
1570	**CH630 - CH700**	**39 days**	**1/11/22**	**9/12/22**	**0%**
1571	TTA establishment	1 day	1/11/22	1/11/22	0%
1572	Hard material excavation and disposal	2 days	2/11/22	3/11/22	0%
1573	Soil excavation , laying sheetpile and disposal	7 days	4/11/22	10/11/22	0%
1574	Treatment of bedding	7 days	11/11/22	17/11/22	0%
1575	Pipe laying D.I.	7 days	18/11/22	24/11/22	0%
1576	Backfilling general fill and compaction	14 days	25/11/22	8/12/22	0%
1577	Reinstatement	1 day	9/12/22	9/12/22	0%
1578	**CH040 - CH082**	**39 days**	**10/12/22**	**17/1/23**	**0%**
1579	TTA establishment	1 day	10/12/22	10/12/22	0%
1580	Hard material excavation and disposal	2 days	11/12/22	12/12/22	0%
1581	Soil excavation , laying sheetpile and disposal	7 days	13/12/22	19/12/22	0%
1582	Treatment of bedding	7 days	20/12/22	26/12/22	0%
1583	Pipe laying D.I.	7 days	27/12/22	2/1/23	0%
1584	Backfilling general fill and compaction	14 days	3/1/23	16/1/23	0%
1585	Reinstatement	1 day	17/1/23	17/1/23	0%
1586	RW24 (DN150) - Chi Ming Street (120m)	170 days	1/3/25	17/8/25	0%
1587	RW49 (DN150) - San Wan Road (75m)	110 days	1/5/25	18/8/25	0%
1588	RW23 (DN150) - Lung Wan Street (171m)	270 days	1/6/24	25/2/25	0%
1589	RW69 (DN150) - Lung Sum Lane (60m)	80 days	1/6/25	19/8/25	0%
1590	RW25 (DN150) - Road to Fanling Wai (330m)	260 days	1/12/24	17/8/25	0%
1591	RW26 (DN150) - Ka Siu Road (133m)	210 days	1/10/24	28/4/25	0%
1592	RW27 (DN150) - Fanling Station Road (273m)	350 days	1/9/24	16/8/25	0%
1593	RW34 (DN150) - Fan Leng Lau (380m) (XP ID: 1310580, 1310468)	360 days	1/2/24	25/1/25	0%
1594	RW36 (DN150) - Lok Fung Street (495m)	380 days	1/8/24	15/8/25	0%
1595	RW13 (DN150) - Wo Tai Street (630m)	930 days	1/2/23	18/8/25	0%
1596	RW28 (DN150) - Wo Mun Street (312m)	480 days	1/11/23	22/2/25	0%
1597	RW31 (DN150) - Luen Cheong Street (185m)	230 days	1/1/25	18/8/25	0%
1598	RW32 (DN150) - Luen Shing Street (185m)	270 days	1/4/24	26/12/24	0%
1599	RW33 (DN150) - Luen Hing Street (199m)	300 days	1/9/24	27/6/25	0%
1600	RW30 (DN150) - Luen On Street / Luen Wo Road / Luen Fai Street (649m)	960 days	2/1/23	18/8/25	0%
1601	RW29 (DN150) - Wo Muk Street / Luen Hing Street (360m)	570 days	1/2/24	23/8/25	0%
1602	RW12 (DN150) - Luen Chit Street (120m)	200 days	1/2/25	19/8/25	0%
1603	RW55 (DN150) - Mount One (44m)	80 days	1/6/25	19/8/25	0%
1604	Overall testing	21 days	26/8/25	15/9/25	0%
1605	Swabbing	7 days	26/8/25	1/9/25	0%
1606	CCTV	7 days	2/9/25	8/9/25	0%
1607	Hydrostatic pressure test	7 days	9/9/25	15/9/25	0%
1608	Pipe connection and completion	14 days	16/9/25	29/9/25	0%
1609	Planned completion for section 7	0 days	29/9/25	29/9/25	0%
1610					
1611	**Section 8 - Water main laying works in part 7 of the Site**	**1676 days**	**30/7/21**	**1/3/26**	**0%**



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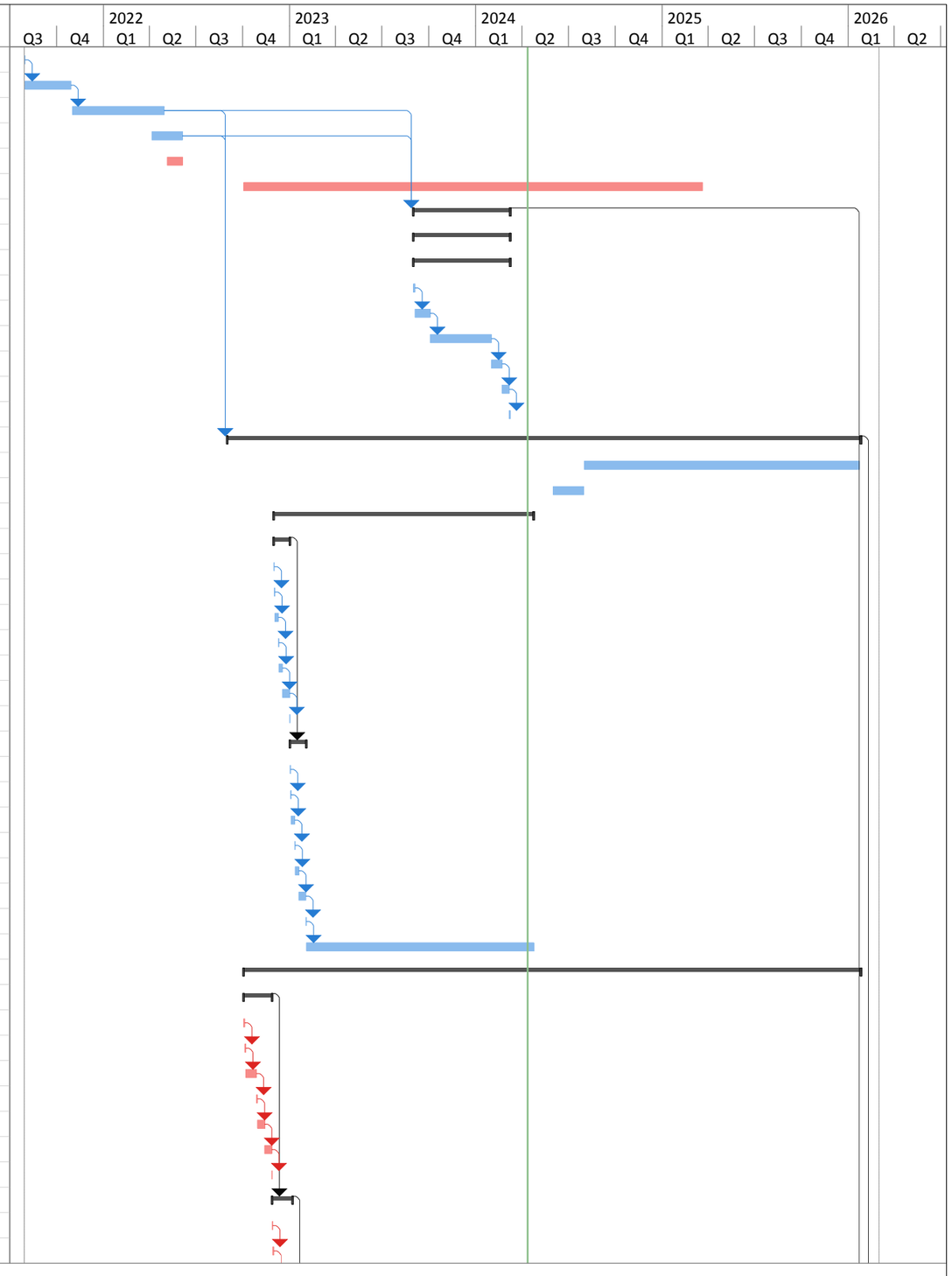
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

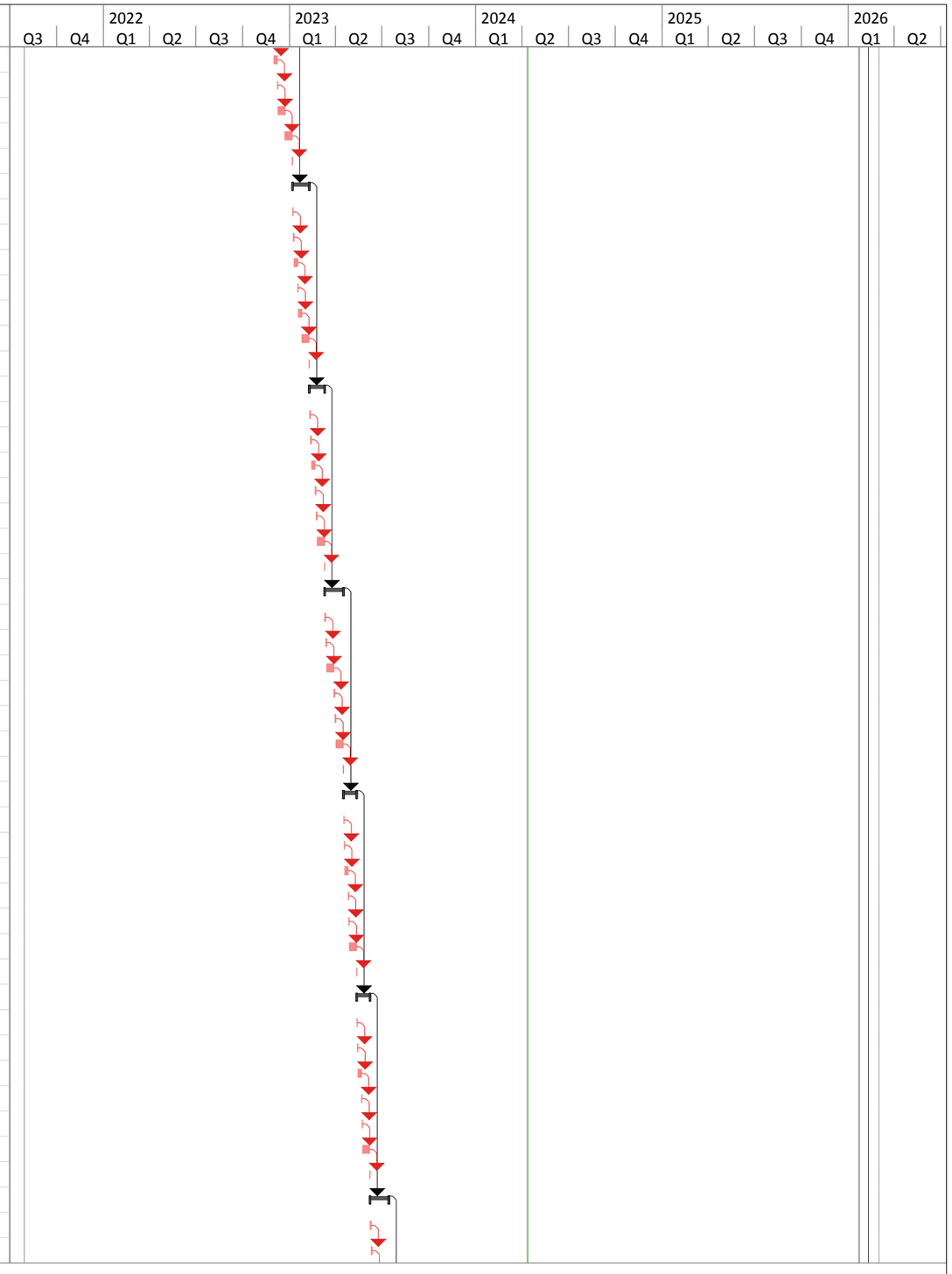
ID	Task Name	Duration	Start	Finish	% Complete
1612	Access Date (part 7 of the Site)	1 day	30/7/21	30/7/21	0%
1613	Initial survey (utility survey, condition survey, initial photo)	90 days	31/7/21	28/10/21	0%
1614	Application and approval of XP and TTA	180 days	1/11/21	29/4/22	0%
1615	Procurement and Delivery of pipes, fittings and related materials	60 days	6/4/22	4/6/22	0%
1616	Submission and acceptance of method statement and material	30 days	6/5/22	4/6/22	0%
1617	Excavation of Inspection Pit	900 days	3/10/22	20/3/25	0%
1618	**Mainlaying by trenchless method**	**190 days**	**1/9/23**	**8/3/24**	**0%**
1619	**RW05 : DN300 DI pipe (trenchless)**	**190 days**	**1/9/23**	**8/3/24**	**0%**
1620	**Jocky Club Road (110m) - TBM Method**	**190 days**	**1/9/23**	**8/3/24**	**0%**
1621	TTA implementation	3 days	1/9/23	3/9/23	0%
1622	Contruction of jacking pit and receiving pit	30 days	4/9/23	3/10/23	0%
1623	Trenchless works and pipe laying	120 days	4/10/23	31/1/24	0%
1624	Manhole / Chamber construction	21 days	1/2/24	21/2/24	0%
1625	Backfilling and compaction	14 days	22/2/24	6/3/24	0%
1626	Reinstatement	2 days	7/3/24	8/3/24	0%
1627	**Mainlaying by open trench method**	**1243 days**	**1/9/22**	**25/1/26**	**0%**
1628	RW38 (DN150) - Yip Cheong Street (351m)	540 days	1/8/24	22/1/26	0%
1629	RW39 (DN150) - Yip Cheong Street (14m)	60 days	1/6/24	30/7/24	0%
1630	**RW37 (DN150) - Yip Wo Street (420m) (XP ID: 1309054)**	**510 days**	**1/12/22**	**23/4/24**	**0%**
1631	CH210 to CH300 (90m)	32 days	1/12/22	1/1/23	0%
1632	TTA establishment	1 day	1/12/22	1/12/22	0%
1633	Hard material excavation and disposal	1 day	2/12/22	2/12/22	0%
1634	Soil excavation , laying sheetpile and disposal	7 days	3/12/22	9/12/22	0%
1635	Treatment of bedding	1 day	10/12/22	10/12/22	0%
1636	Pipe laying D.I.	7 days	11/12/22	17/12/22	0%
1637	Backfilling general fill and compaction	14 days	18/12/22	31/12/22	0%
1638	Reinstatement	1 day	1/1/23	1/1/23	0%
1639	CH300 to CH360 (60m)	32 days	2/1/23	2/2/23	0%
1640	TTA establishment	1 day	2/1/23	2/1/23	0%
1641	Hard material excavation and disposal	1 day	3/1/23	3/1/23	0%
1642	Soil excavation , laying sheetpile and disposal	7 days	4/1/23	10/1/23	0%
1643	Treatment of bedding	1 day	11/1/23	11/1/23	0%
1644	Pipe laying D.I.	7 days	12/1/23	18/1/23	0%
1645	Backfilling general fill and compaction	14 days	19/1/23	1/2/23	0%
1646	Reinstatement	1 day	2/2/23	2/2/23	0%
1647	Remaining section of Yip Wo Street (270m)	446 days	3/2/23	23/4/24	0%
1648	RW10 (DN300) - On Lok Mun Street (930m) (XP ID: 1301294, 1311241)	1211 days	3/10/22	25/1/26	0%
1649	CH930 to CH980 (50m)	56 days	3/10/22	27/11/22	0%
1650	TTA establishment	2 days	3/10/22	4/10/22	0%
1651	Hard material excavation and disposal	2 days	5/10/22	6/10/22	0%
1652	Soil excavation , laying sheetpile and disposal	21 days	7/10/22	27/10/22	0%
1653	Treatment of bedding	2 days	28/10/22	29/10/22	0%
1654	Pipe laying D.I.	14 days	30/10/22	12/11/22	0%
1655	Backfilling general fill and compaction	14 days	13/11/22	26/11/22	0%
1656	Reinstatement	1 day	27/11/22	27/11/22	0%
1657	CH840 to CH930 (90m)	40 days	28/11/22	6/1/23	0%
1658	TTA establishment	1 day	28/11/22	28/11/22	0%
1659	Hard material excavation and disposal	2 days	29/11/22	30/11/22	0%



Project: 3WSD20 Programme
Programme Rev. 27
(up to 31 March 2024)

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	

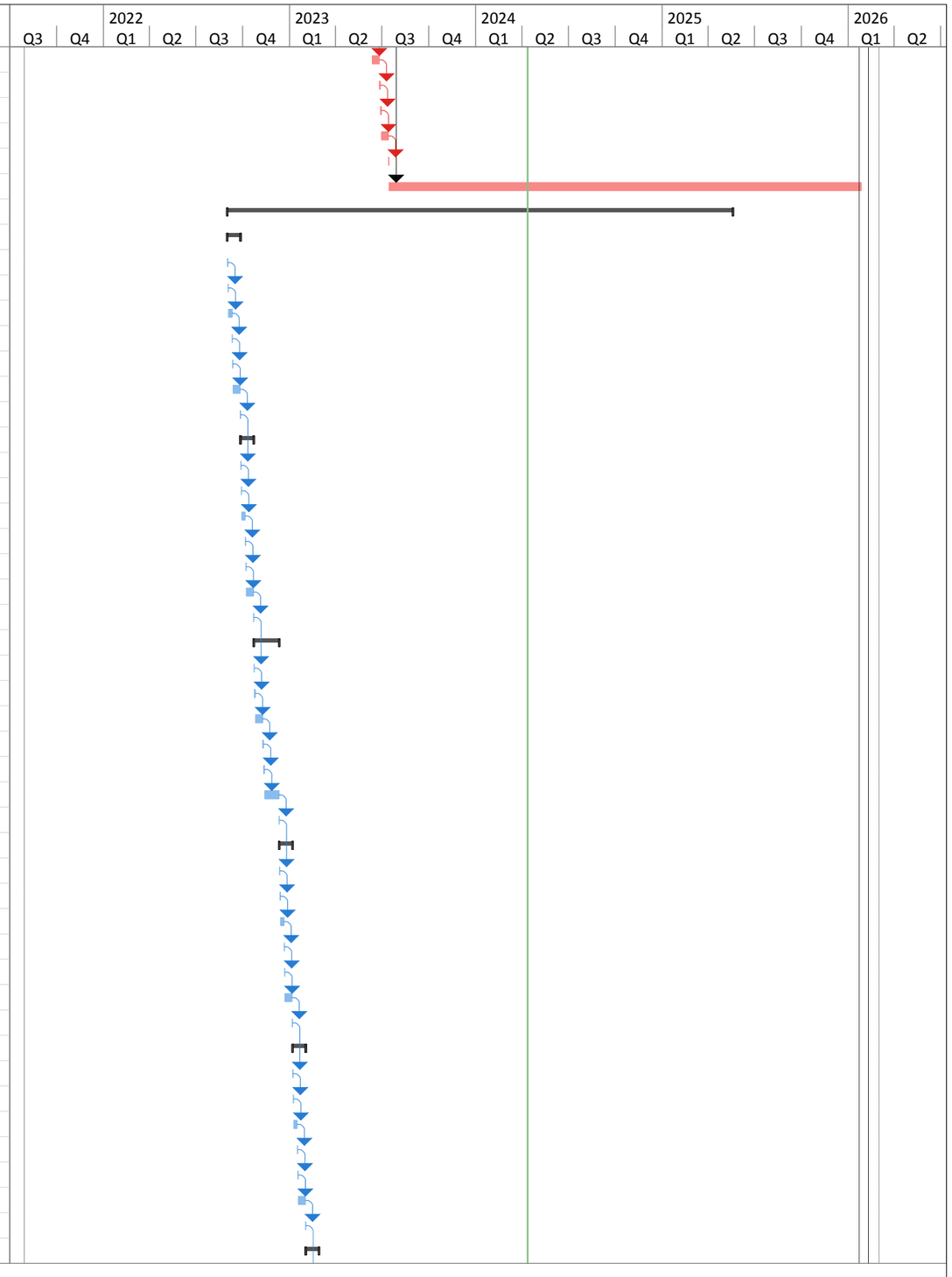
ID	Task Name	Duration	Start	Finish	% Complete
1660	Soil excavation , laying sheetpile and disposal	7 days	1/12/22	7/12/22	0%
1661	Treatment of bedding	1 day	8/12/22	8/12/22	0%
1662	Pipe laying D.I.	14 days	9/12/22	22/12/22	0%
1663	Backfilling general fill and compaction	14 days	23/12/22	5/1/23	0%
1664	Reinstatement	1 day	6/1/23	6/1/23	0%
1665	CH800 to CH840 (40m)	33 days	7/1/23	8/2/23	0%
1666	TTA establishment	1 day	7/1/23	7/1/23	0%
1667	Hard material excavation and disposal	2 days	8/1/23	9/1/23	0%
1668	Soil excavation , laying sheetpile and disposal	7 days	10/1/23	16/1/23	0%
1669	Treatment of bedding	1 day	17/1/23	17/1/23	0%
1670	Pipe laying D.I.	7 days	18/1/23	24/1/23	0%
1671	Backfilling general fill and compaction	14 days	25/1/23	7/2/23	0%
1672	Reinstatement	1 day	8/2/23	8/2/23	0%
1673	CH980 to CH1000 (20m)	30 days	9/2/23	10/3/23	0%
1674	TTA establishment	2 days	9/2/23	10/2/23	0%
1675	Hard material excavation and disposal	2 days	11/2/23	12/2/23	0%
1676	Soil excavation , laying sheetpile and disposal	7 days	13/2/23	19/2/23	0%
1677	Treatment of bedding	2 days	20/2/23	21/2/23	0%
1678	Pipe laying D.I.	2 days	22/2/23	23/2/23	0%
1679	Backfilling general fill and compaction	14 days	24/2/23	9/3/23	0%
1680	Reinstatement	1 day	10/3/23	10/3/23	0%
1681	CH830 to CH860 (30m)	37 days	11/3/23	16/4/23	0%
1682	TTA establishment	2 days	11/3/23	12/3/23	0%
1683	Hard material excavation and disposal	2 days	13/3/23	14/3/23	0%
1684	Soil excavation , laying sheetpile and disposal	14 days	15/3/23	28/3/23	0%
1685	Treatment of bedding	2 days	29/3/23	30/3/23	0%
1686	Pipe laying D.I.	2 days	31/3/23	1/4/23	0%
1687	Backfilling general fill and compaction	14 days	2/4/23	15/4/23	0%
1688	Reinstatement	1 day	16/4/23	16/4/23	0%
1689	CH800 to CH830 (30m)	26 days	17/4/23	12/5/23	0%
1690	TTA establishment	1 day	17/4/23	17/4/23	0%
1691	Hard material excavation and disposal	1 day	18/4/23	18/4/23	0%
1692	Soil excavation , laying sheetpile and disposal	7 days	19/4/23	25/4/23	0%
1693	Treatment of bedding	1 day	26/4/23	26/4/23	0%
1694	Pipe laying D.I.	1 day	27/4/23	27/4/23	0%
1695	Backfilling general fill and compaction	14 days	28/4/23	11/5/23	0%
1696	Reinstatement	1 day	12/5/23	12/5/23	0%
1697	CH110 to CH140 (30m)	26 days	13/5/23	7/6/23	0%
1698	TTA establishment	1 day	13/5/23	13/5/23	0%
1699	Hard material excavation and disposal	1 day	14/5/23	14/5/23	0%
1700	Soil excavation , laying sheetpile and disposal	7 days	15/5/23	21/5/23	0%
1701	Treatment of bedding	1 day	22/5/23	22/5/23	0%
1702	Pipe laying D.I.	1 day	23/5/23	23/5/23	0%
1703	Backfilling general fill and compaction	14 days	24/5/23	6/6/23	0%
1704	Reinstatement	1 day	7/6/23	7/6/23	0%
1705	CH080 to CH110 (30m)	37 days	8/6/23	14/7/23	0%
1706	TTA establishment	2 days	8/6/23	9/6/23	0%
1707	Hard material excavation and disposal	2 days	10/6/23	11/6/23	0%



Project: 3WSD20 Programme
Programme Rev. 27
(up to 31 March 2024)

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	

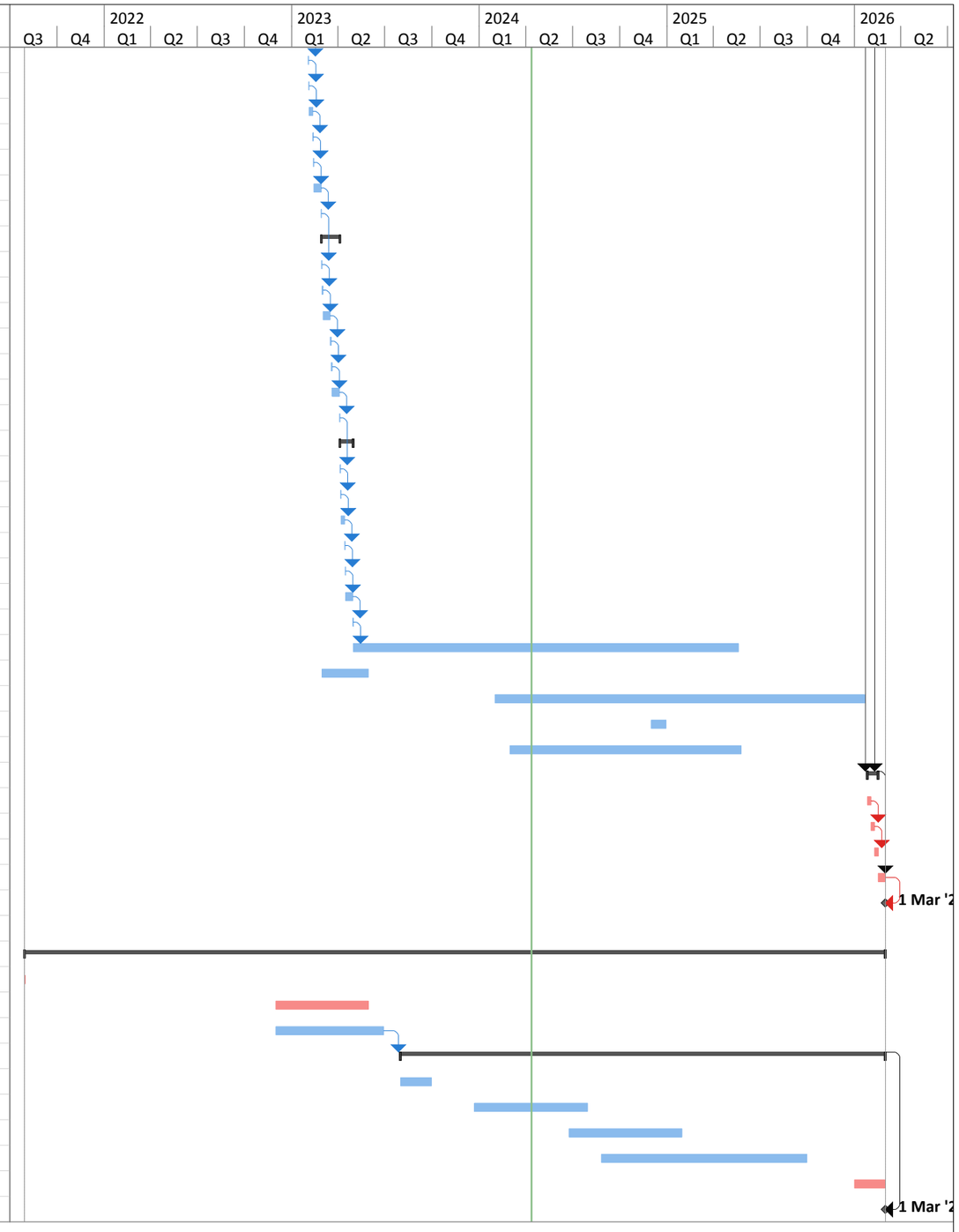
ID	Task Name	Duration	Start	Finish	% Complete
1708	Soil excavation , laying sheetpile and disposal	14 days	12/6/23	25/6/23	0%
1709	Treatment of bedding	2 days	26/6/23	27/6/23	0%
1710	Pipe laying D.I.	2 days	28/6/23	29/6/23	0%
1711	Backfilling general fill and compaction	14 days	30/6/23	13/7/23	0%
1712	Reinstatement	1 day	14/7/23	14/7/23	0%
1713	Remaining Section of On Lok Mun Street (840m)	926 days	15/7/23	25/1/26	0%
1714	RW35 (DN150) - On Chuen Street (720m) (XP ID: 1301294, 1311241)	992 days	1/9/22	19/5/25	0%
1715	CH590 to CH610 (30m)	26 days	1/9/22	26/9/22	0%
1716	TTA establishment	1 day	1/9/22	1/9/22	0%
1717	Hard material excavation and disposal	1 day	2/9/22	2/9/22	0%
1718	Soil excavation , laying sheetpile and disposal	7 days	3/9/22	9/9/22	0%
1719	Treatment of bedding	1 day	10/9/22	10/9/22	0%
1720	Pipe laying D.I.	1 day	11/9/22	11/9/22	0%
1721	Backfilling general fill and compaction	14 days	12/9/22	25/9/22	0%
1722	Reinstatement	1 day	26/9/22	26/9/22	0%
1723	CH560 to CH590 (30m)	26 days	27/9/22	22/10/22	0%
1724	TTA establishment	1 day	27/9/22	27/9/22	0%
1725	Hard material excavation and disposal	1 day	28/9/22	28/9/22	0%
1726	Soil excavation , laying sheetpile and disposal	7 days	29/9/22	5/10/22	0%
1727	Treatment of bedding	1 day	6/10/22	6/10/22	0%
1728	Pipe laying D.I.	1 day	7/10/22	7/10/22	0%
1729	Backfilling general fill and compaction	14 days	8/10/22	21/10/22	0%
1730	Reinstatement	1 day	22/10/22	22/10/22	0%
1731	CH530 to CH560 (30m)	50 days	23/10/22	11/12/22	0%
1732	TTA establishment	1 day	23/10/22	23/10/22	0%
1733	Hard material excavation and disposal	2 days	24/10/22	25/10/22	0%
1734	Soil excavation , laying sheetpile and disposal	14 days	26/10/22	8/11/22	0%
1735	Treatment of bedding	2 days	9/11/22	10/11/22	0%
1736	Pipe laying D.I.	2 days	11/11/22	12/11/22	0%
1737	Backfilling general fill and compaction	28 days	13/11/22	10/12/22	0%
1738	Reinstatement	1 day	11/12/22	11/12/22	0%
1739	CH500 to CH530 (30m)	26 days	12/12/22	6/1/23	0%
1740	TTA establishment	1 day	12/12/22	12/12/22	0%
1741	Hard material excavation and disposal	1 day	13/12/22	13/12/22	0%
1742	Soil excavation , laying sheetpile and disposal	7 days	14/12/22	20/12/22	0%
1743	Treatment of bedding	1 day	21/12/22	21/12/22	0%
1744	Pipe laying D.I.	1 day	22/12/22	22/12/22	0%
1745	Backfilling general fill and compaction	14 days	23/12/22	5/1/23	0%
1746	Reinstatement	1 day	6/1/23	6/1/23	0%
1747	CH230 to CH260 (30m)	26 days	7/1/23	1/2/23	0%
1748	TTA establishment	1 day	7/1/23	7/1/23	0%
1749	Hard material excavation and disposal	1 day	8/1/23	8/1/23	0%
1750	Soil excavation , laying sheetpile and disposal	7 days	9/1/23	15/1/23	0%
1751	Treatment of bedding	1 day	16/1/23	16/1/23	0%
1752	Pipe laying D.I.	1 day	17/1/23	17/1/23	0%
1753	Backfilling general fill and compaction	14 days	18/1/23	31/1/23	0%
1754	Reinstatement	1 day	1/2/23	1/2/23	0%
1755	CH200 to CH230 (30m)	26 days	2/2/23	27/2/23	0%



Project: 3WSD20 Programme
Programme Rev. 27
(up to 31 March 2024)

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	% Complete
1756	TTA establishment	1 day	2/2/23	2/2/23	0%
1757	Hard material excavation and disposal	1 day	3/2/23	3/2/23	0%
1758	Soil excavation , laying sheetpile and disposal	7 days	4/2/23	10/2/23	0%
1759	Treatment of bedding	1 day	11/2/23	11/2/23	0%
1760	Pipe laying D.I.	1 day	12/2/23	12/2/23	0%
1761	Backfilling general fill and compaction	14 days	13/2/23	26/2/23	0%
1762	Reinstatement	1 day	27/2/23	27/2/23	0%
1763	CH170 to CH200 (30m)	36 days	28/2/23	4/4/23	0%
1764	TTA establishment	1 day	28/2/23	28/2/23	0%
1765	Hard material excavation and disposal	2 days	1/3/23	2/3/23	0%
1766	Soil excavation , laying sheetpile and disposal	14 days	3/3/23	16/3/23	0%
1767	Treatment of bedding	2 days	17/3/23	18/3/23	0%
1768	Pipe laying D.I.	2 days	19/3/23	20/3/23	0%
1769	Backfilling general fill and compaction	14 days	21/3/23	3/4/23	0%
1770	Reinstatement	1 day	4/4/23	4/4/23	0%
1771	CH000 to CH060 (60m)	26 days	5/4/23	30/4/23	0%
1772	TTA establishment	1 day	5/4/23	5/4/23	0%
1773	Hard material excavation and disposal	1 day	6/4/23	6/4/23	0%
1774	Soil excavation , laying sheetpile and disposal	7 days	7/4/23	13/4/23	0%
1775	Treatment of bedding	1 day	14/4/23	14/4/23	0%
1776	Pipe laying D.I.	1 day	15/4/23	15/4/23	0%
1777	Backfilling general fill and compaction	14 days	16/4/23	29/4/23	0%
1778	Reinstatement	1 day	30/4/23	30/4/23	0%
1779	Remaining Section of On Chuen Street (630m)	750 days	1/5/23	19/5/25	0%
1780	Coordination with ND/2019/04	90 days	1/3/23	29/5/23	0%
1781	RW09 (DN450) - Wo Hing Road (436m)	720 days	1/2/24	20/1/26	0%
1782	RW60 (DN150) - Tee from RW09 (14m)	29 days	1/12/24	29/12/24	0%
1783	RW40 (DN200) - Tai Wo Service Road West (420m)	450 days	1/3/24	24/5/25	0%
1784	Overall testing	21 days	26/1/26	15/2/26	0%
1785	Swabbing	7 days	26/1/26	1/2/26	0%
1786	CCTV	7 days	2/2/26	8/2/26	0%
1787	Hydrostatic pressure test	7 days	9/2/26	15/2/26	0%
1788	Pipe connection and completion	14 days	16/2/26	1/3/26	0%
1789	Planned completion for section 8	0 days	1/3/26	1/3/26	0%
1790					
1791	**Section 9 - Conversion works to effect the supply of reclaimed water**	**1676 days**	**30/7/21**	**1/3/26**	**0%**
1792	Access Date	1 day	30/7/21	30/7/21	0%
1793	Initial survey by stages	180 days	1/12/22	29/5/23	0%
1794	Liaison, coordination and enabling work for conversion	210 days	1/12/22	28/6/23	0%
1795	**Conversion works**	**944 days**	**1/8/23**	**1/3/26**	**0%**
1796	Section 4 (Part 3) - 3 nos.	60 days	1/8/23	29/9/23	0%
1797	Section 5 (Part 4) - 11 nos.	220 days	23/12/23	29/7/24	0%
1798	Section 6 (Part 5) - 11 nos.	220 days	24/6/24	29/1/25	0%
1799	Section 7 (Part 6) - 40 nos.	400 days	26/8/24	29/9/25	0%
1800	Section 8 (Part 7) - 3 nos.	60 days	1/1/26	1/3/26	0%
1801	Planned completion for section 9	0 days	1/3/26	1/3/26	0%



Project: 3WSD20 Programme
Programme Rev. 27
(up to 31 March 2024)

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		

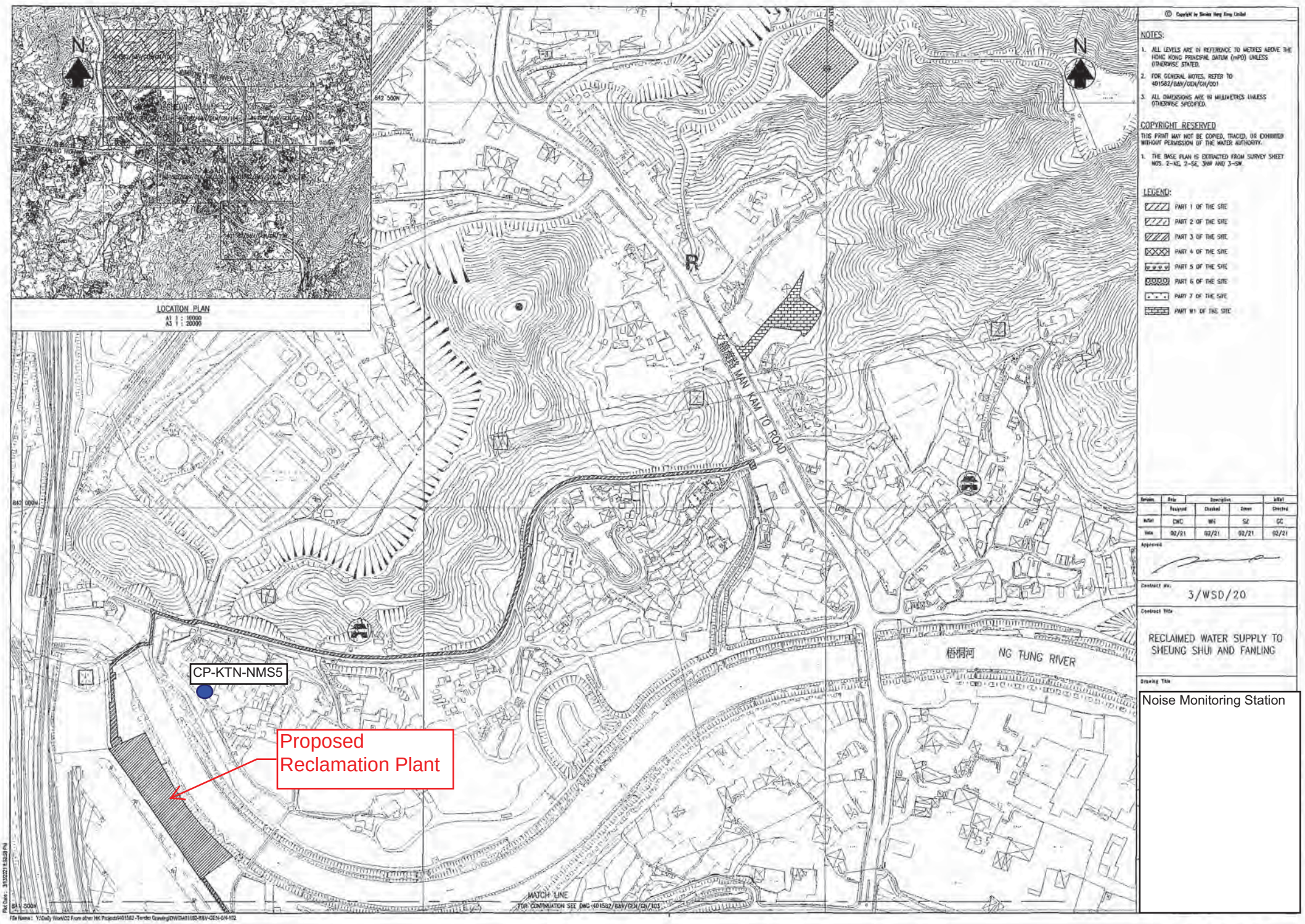
SITE OVERVIEW PHOTO IN THE REPORTING PERIOD

Construction of Water Tank and associated pipeline

Fitting of Water Meter Room

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. : C236947
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC23-2369) Date of Receipt / 收件日期 : 23 November 2023

Description / 儀器名稱 : Sound Level Meter (EQ015)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-52
Serial No. / 編號 : 00142581
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 : 3 December 2023

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed specified limits.
These limits refer to manufacturer's published tolerances as requested by the customer.
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

Tested By 測試 : H T Wong
Assistant Engineer

Certified By 核證 : K C Lee
Engineer

Date of Issue 簽發日期 : 4 December 2023

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. : C236947
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	C230306
CL281	Multifunction Acoustic Calibrator	CDK2302738

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 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	93.9	± 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	93.9 (Ref.)
				104.00		103.9
				114.00		113.9

IEC 61672 Class 1 Limit : ± 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 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	93.9	Ref.
			Slow			93.9	± 0.3

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6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (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	77.8	-16.1 ± 1.5
					250 Hz	85.4	-8.6 ± 1.4
					500 Hz	90.8	-3.2 ± 1.4
					1 kHz	93.9	Ref.
					2 kHz	94.8	+1.2 ± 1.6
					4 kHz	94.4	+1.0 ± 1.6
					8 kHz	92.7	-1.1 (+2.1 ; -3.1)
					16 kHz	86.9	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (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	94.0	0.0 ± 1.4
					1 kHz	93.9	Ref.
					2 kHz	93.4	-0.2 ± 1.6
					4 kHz	92.6	-0.8 ± 1.6
					8 kHz	90.8	-3.0 (+2.1 ; -3.1)
					16 kHz	85.0	-8.5 (+3.5 ; -17.0)

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Remarks : - UUT Microphone Model No. : UC-59 & S/N : 22275

- Mfr's Limit : 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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輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C236944
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC23-2369) Date of Receipt / 收件日期 : 23 November 2023

Description / 儀器名稱 : Sound Calibrator (EQ083)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-74
Serial No. / 編號 : 34246492
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 : 3 December 2023

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed specified limits.
These limits refer to manufacturer's published tolerances as requested by the customer.
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
- Hottinger Brüel & Kjær Calibration Laboratory, Denmark
- 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 : 4 December 2023

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
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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	C233799
CL281	Multifunction Acoustic Calibrator	CDK2302738
TST150A	Measuring Amplifier	C221750

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Limit (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.05	± 0.3	± 0.20

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Limit	Uncertainty of Measured Value (Hz)
1	1.002	1 kHz ± 1 %	± 1

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

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

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

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Appendix F

Monitoring Schedule of the Reporting Month and Coming Month

The Reporting Monitoring Schedule (May 2024)

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

✓	Monitoring Day
	Sunday or Public Holiday

The Coming Month Monitoring Schedule (June 2024)

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

Note:

Ecology monitoring dates are tentative and are subject to change

✓	Monitoring Day
	Sunday or Public Holiday

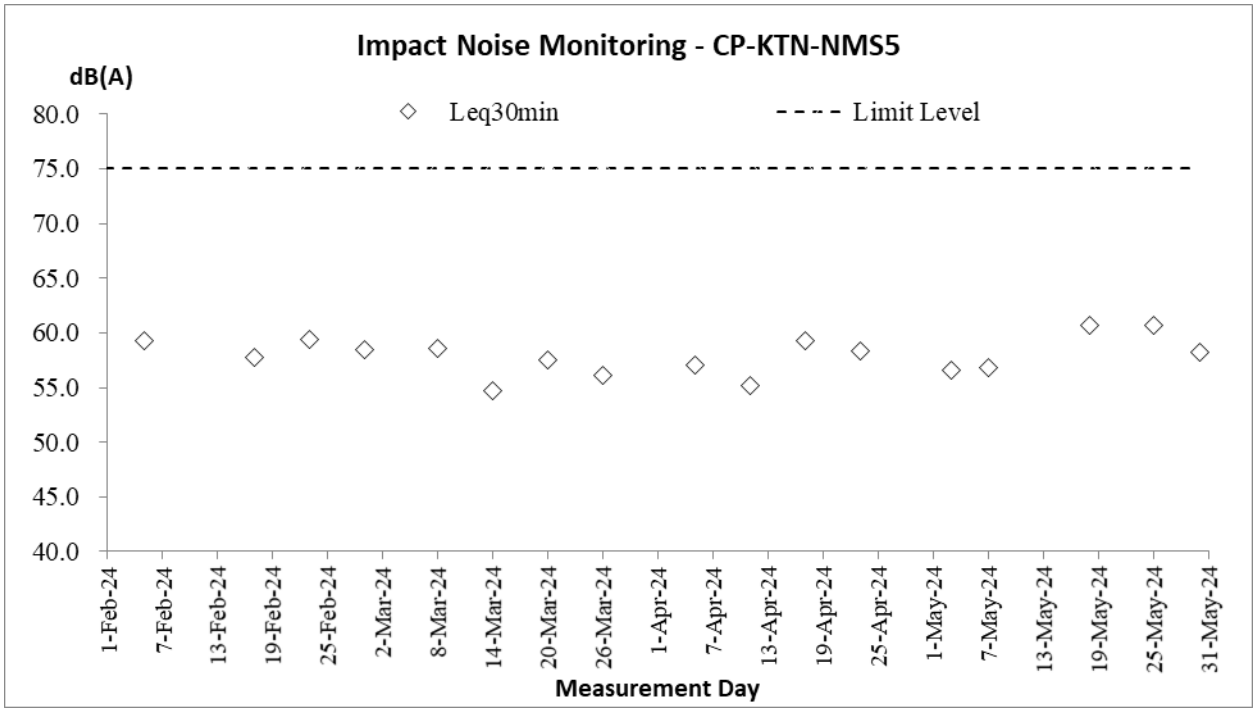
Appendix G

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)		
3-May-24	11:16	58.8	60.5	54.6	57.8	59.9	54.3	57.0	59.4	53.7	55.0	56.7	53.0	53.9	55.4	52.1	54.5	57.1	52.8	56.5	59.5
7-May-24	9:30	62.4	57.9	51.6	52.3	53.8	51.0	53.1	54.3	51.0	53.1	54.4	51.6	53.5	54.8	51.5	55.0	55.5	51.4	56.8	59.8
18-May-24	9:00	60.3	63.5	56.0	60.8	64.0	55.5	59.7	62.5	55.0	61.6	65.5	56.5	60.9	64.5	56.0	60.4	64.0	55.5	60.7	63.7
25-May-24	9:15	60.4	63.1	58.8	58.2	60.5	55.0	61.9	64.7	59.3	62.3	65.0	59.9	60.8	64.2	59.1	59.6	62.5	56.7	60.7	63.7
30-May-24	13:05	58.2	61.8	51.1	57.6	60.3	50.4	59.6	62.2	52.0	57.3	60.7	51.3	58.6	62.0	52.2	57.4	60.4	52.6	58.2	61.2

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-Feb-24
7-Feb-24
13-Feb-24
19-Feb-24
25-Feb-24
2-Mar-24
8-Mar-24
14-Mar-24
20-Mar-24
26-Mar-24
1-Apr-24
7-Apr-24
13-Apr-24
19-Apr-24
25-Apr-24
1-May-24
7-May-24
13-May-24
19-May-24
25-May-24
31-May-24
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 2024

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	0.259	0	0	0	0.259	0	0	0	0	0	0.008
Feb	0.177	0	0	0	0.177	0	0	0	0	0	0.003
Mar	0.485	0	0	0	0.485	0	0	0	0	0	0.007
Apr	0.179	0	0	0	0.179	0	0	0	0	0	0.004
May	0.346	0	0	0	0.346	0	0	0	0	0	0.006
June											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	1.447	0	0	0	1.447	0	0	0	0	0	0.026

Data updated as of 31 May 2024

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

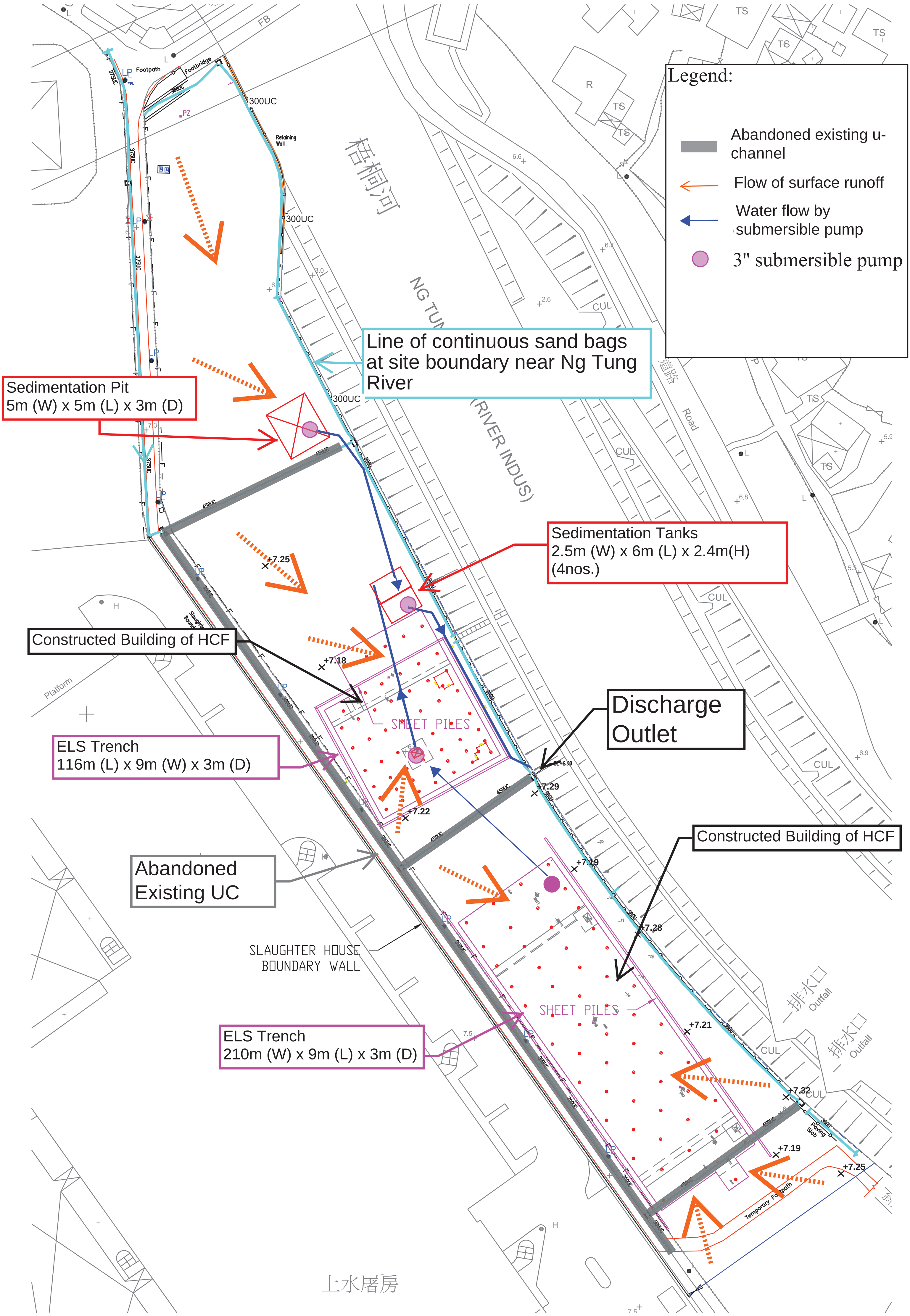
EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		undertaking any works adjacent 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

As-built Drawing of Site Temporary Drainage



Legend:
Abandoned existing u-channel
Flow of surface runoff
Water flow by submersible pump
3" submersible pump
Line of continuous sand bags at site boundary near Ng Tung River
Sedimentation Pit
5m (W) x 5m (L) x 3m (D)
Sedimentation Tanks
2.5m (W) x 6m (L) x 2.4m(H)
(4nos.)
Constructed Building of HCF
Discharge Outlet
ELS Trench
116m (L) x 9m (W) x 3m (D)
Abandoned Existing UC
Constructed Building of HCF
ELS Trench
210m (W) x 9m (L) x 3m (D)
SLAUGHTER HOUSE BOUNDARY WALL
SHEET PILES
SHEET PILES
梧桐河
NG TUNG RIVER (RIVER INDUS)
Road
上水屠房
排水口 Outfall
排水口 Outfall
Footpath
Footbridge
Retaining Wall
Platform
Temporary Footpath

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 May 2024
(Issue 1)

Job Ref.: 21/2063/582 AUES-SWHTSE
Date: 5th June 2024

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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 May 2024

(Issue 1)

June 2024

	Name	Signature
Prepared by:	**Nicholas Tam**	
Reviewed by:	**Ida Yu**	
Date:	**5th June 2024**	

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

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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 May 2024.

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 levels 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 walked along the transects, while survey data of each point count location would be collected for 5-minutes after surveyor reached 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 would 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 numbers 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 locations. 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

Survey data from each month is compared to the baseline monitoring data. Baseline monitoring data was downloaded and extracted from the Baseline Monitoring Report retrieved from the following hyperlink (the extracted summer dataset of the baseline monitoring data is shown in **Appendix D**): https://www.epd.gov.hk/eia/register/english/permit/fep1792018/documents/blmrev1/pdf/blmrev1.pdf. 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.

3.2 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	Investigate cause(s) and if cause(s) identified as related to NDAs project instigate remedial action	Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the	Investigate cause(s) and if cause(s) identified as related to the NDAs project instigate remedial action.

Action Level	Response	Limit Level	Response
Monitoring such that the Action Level response is triggered.	to remove or reduce source of disturbance.	Limit Level response is triggered.	Review and adjust project's Long Valley Nature Park (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(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.

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

4 RESULTS

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

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**
30-Apr-24	16:00	2.13	Cloudy	03-May-24	12:00	1.38	Windy
09-May-24	14:00	1.86	Windy	08-May-24	15:00	1.04	Cloudy
16-May-24	15:00	2.09	Sunny	17-May-24	11:00	1.48	Sunny
23-May-24	10:00	2.64	Cloudy	22-May-24	14:00	1.12	Rainy
30-May-24	14:00	2.38	Rainy	31-May-24	10:00	1.37	Rainy

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	30	381
Waterbirds	9	137

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	13
Grey Heron	*Ardea cinerea*	蒼鷺	0
Great Egret	*Ardea alba*	大白鷺	12
Little Egret	*Egretta garzetta*	小白鷺	55
Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀	0

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	-2.014	7	0.042	*		-2.899	5	0.017	*	
Chinese Pond Heron	-4.387	12	0.000	*	*	-6.914	8	0.000	*	*
Eastern Cattle Egret	No decline					No decline				
Grey Heron	No decline					-1.866	37	0.035	*	
Great Egret	No decline					-0.191	5	0.428		
Little Egret	-4.235	12	0.001	*	*	-6.317	8	0.000	*	*
Great Cormorant	No decline					No decline				

* = level triggered

5.2 In this reporting month, decline in waterbird have triggered the action levels when compared to the monthly and seasonal data, while Chinese Pond Herons and Little Egrets have triggered the limit levels when compared to the monthly and seasonal data, and decline in Grey Herons has also triggered the action level when compared to the seasonal data. Nonetheless, considerable abundances of Chinese Pond Heron (101), Grey Heron (8) and Little Egret (30) were recorded in flight or foraging in the channel from transect surveys in the reporting month.

5.3 As discussed in previous reports, the decline of individual waterbird species should not be the result of increased disturbances from the Project or surrounding on-going projects, as increased disturbance would discourage multiple waterbird species from foraging near the transects and point count locations instead. Thus, it is suggested that construction of the current project did not directly cause the decline in these two bird species.

5.4 Nevertheless, other construction and anthropogenic activities around the survey transects have still been active during the reporting month and the following activities were noted.

5.5 A playback device for bird calls was seen to be installed by AECOM near the pond in T1 since the survey on 3rd April 2023, however the playback device was not switched on during the surveys in the reporting month. Egret dummies were observed being tied on the trees of the same pond since the survey on 17th October 2023, which are assumed to attract roosting ardeids. This may potentially lower the number of waterbirds and representative waterbirds visiting P1 and P2 as the birds might be incentivized to forage and roost in the pond but away from these two point count locations.

5.6 Road enhancement and sewerage system upgrade works by DSD along T2 near P3 were active throughout the surveying month, this construction was extended to P4 since the survey on 17th April 2024, where excavators were in use (Photo 2 of **Appendix E**). The use of crane trucks were also observed on the pavement next to P3 since the survey on 23rd May 2024 (Photo 3 of **Appendix E**), and hence the disturbance level at P3 is expected to increase.

5.7 An extension of the sewerage system upgrade works (Section 5.6) has been in operation at the Eastern bank of Shek Sheung River near P5, since the survey on 23rd August 2023. Machinery and stockpiles have been present within its construction area, which may be a potential source of disturbance that discourages birds from foraging near P5.

5.8 The construction by Civil Engineering and Development Department (CEDD) near P7 was observed active throughout the entire reporting month. A pit was observed to be constructed during the survey on 5th April 2023. Piling works of the same construction was also observed at T3, roughly midway between P6 and P7, and since the survey on 11th September 2023, excavators have been used on the opposite bank to the survey transect as well. Concrete blocks with metal bars attached have been placed in the river next to the piling site since the survey on 29th November 2023.

5.9 An unknown construction works owned by Build King – Richwell Engineering Joint Venture (BKREJV) was observed to have started since the survey on 9th January 2024. The construction was located in a cleared area between Sheung Yue River and the Sheung Shui Slaughterhouse, and involved excavation and drilling works. During the survey on 31st May 2024, the excavated pit was seen to be filled halfway (Photo 4 of **Appendix E**).

5.10 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 8 Observations of the anthropogenic activities during the Ecological Monitoring in the Reporting Month

Location	Observations	
	Project Related	Non-project Related
T1 (PC1, PC2)	/	Fishing, placement of egret dummies at nearby pond (AECOM)
T2 (PC3, PC4)	Excavators observed in Project Site	Sewerage system upgrade and road enhancement (DSD)
PC5	/	Placement of construction materials on riverbank (part of the sewerage system upgrade by DSD)
T3 (PC6, PC7)	/	Fishing, piling works at P7 and along T3 (CEDD), excavation and drilling works (BKREJV), planting in cylindrical tubes and laying of concrete blocks

7 REFERENCES

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

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

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

Common Name	Chinese Name	Scientific Name	Waterbird	Point Count Abundance	Transect Abundance
Black-crowned Night Heron	夜鷺	*Nycticorax nycticorax*	Y	1	++
Chinese Pond Heron	池鷺	*Ardeola bacchus*	Y	26	+++++
Eastern Cattle Egret	牛背鷺	*Bubulcus coromandus*	Y	13	+++
Grey Heron	蒼鷺	*Ardea cinerea*	Y		+
Great Egret	大白鷺	*Ardea alba*	Y	12	+++
Little Egret	小白鷺	*Egretta garzetta*	Y	55	+++++
Great Cormorant	普通鸕鷀	*Phalacrocorax carbo*	Y		+
Black Kite	黑鳶	*Milvus migrans*	N	2	+
White-breasted Waterhen	白胸苦惡鳥	*Amaurornis phoenicurus*	Y	1	+
common moorhen	黑水雞	*Gallinula chloropus*	Y		+
Common Sandpiper	磯鷸	*Actitis hypoleucos*	Y	4	
Common Greenshank	青腳鷸	*Tringa nebularia*	Y	24	+
Spotted Dove	珠頸斑鳩	*Spilopelia chinensis*	N	18	+++++
Greater Coucal	褐翅鴉鵑	*Centropus sinensis*	N		+
Asian Koel	噪鵑	*Eudynamys scolopaceus*	N	9	+++
Large Hawk-cuckoo	大鷹鵑	*Hierococcyx sparverioides*	N	1	++
House swift	小白腰雨燕	*Apus nipalensis*	N		+
Pied Kingfisher	斑魚狗	*Ceryle rudis*	Y		+
Alexandrine Parakeet	亞歷山大鸚鵡	*Psittacula eupatria*	N	3	++
Black Drongo	黑卷尾	*Dicrurus macrocercus*	N		+
Red-billed Blue Magpie	紅嘴藍鵲	*Urocissa erythroryncha*	N		+
Oriental Magpie	喜鵲	*Pica serica*	N	1	++
Collared Crow	白頸鴉	*Corvus torquatus*	Y	1	
Japanese TIt	日本山雀	*Parus minor*	N	1	+++
Red-whiskered Bulbul	紅耳鵯	*Pycnonotus jocosus*	N	9	++
Chinese Bulbul	白頭鵯	*Pycnonotus sinensis*	N	2	++
Barn Swallow	家燕	*Hirundo rustica*	N	11	+++
Yellow-browed Warbler	黃眉柳鶯	*Phylloscopus inornatus*	N		+
Dusky Warbler	褐柳鶯	*Phylloscopus fuscatus*	N		+
Yellow-bellied Prinia	黃腹鷦鶯	*Prinia flaviventris*	N	2	+
Common Tailorbird	長尾縫葉鶯	*Orthotomus sutorius*	N	1	+
Masked Laughingthrush	黑臉噪鶥	*Pterorhinus perspicillatus*	N	4	++
Swinhoe's white-eye	暗綠繡眼鳥	*Zosterops simplex*	N	3	+
Crested Myna	八哥	*Acridotheres cristatellus*	N	134	+++++
Common Myna	家八哥	*Acridotheres tristis*	N	1	
Black-collared Starling	黑領椋鳥	*Gracupica nigricollis*	N	26	+++++
Oriental Magpie Robin	鵲鴝	*Copsychus saularis*	N	3	+
House Sparrow	家麻雀	*Passer domesticus*	N	3	+
Eurasian Tree Sparrow	樹麻雀	*Passer montanus*	N	6	+
White Wagtail	白鶺鴒	*Motacilla alba*	N	4	++
		Total Point Count Abundance		381	

Common Name	Chinese Name	Scientific Name	Waterbird	Point Count Abundance	Transect Abundance
		Total Waterbirds		137	

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	30-Apr-24	16:00	High	13	45
	03-May-24	12:00	Low	32	
2	08-May-24	15:00	Low	11	25
	09-May-24	14:00	High	14	
3	16-May-24	15:00	High	4	10
	17-May-24	11:00	Low	6	
4	22-May-24	14:00	Low	21	34
	23-May-24	10:00	High	13	
5	30-May-24	14:00	High	7	23
	31-May-24	10:00	Low	16	
			Survey Average		27.4
			Baseline	May Average	41.44
				Summer Average	45.34

Appendix C Abundance of Representative Waterbirds from Point Count

Representative Species		Recorded Abundance (May 2024)						Baseline	
Common Name	**Species Name**	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Average**	**May Average**	**Summer Average**
Chinese Pond Heron	*Ardeola bacchus*	6	6	1	9	4	5.2	15	16.18
Eastern Cattle Egret	*Bubulcus coromandus*	5	1	0	5	2	2.6	2.33	3.32
Grey Heron	*Ardea cinerea*	0	0	0	0	0	0	0	0.55
Great Egret	*Ardea alba*	3	0	0	5	4	2.4	1.67	2.61
Little Egret	*Egretta garzetta*	7	13	9	13	13	11	20	20.53
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0	0	0	0

Appendix D Baseline Survey Data (Summer)

** Only include data from "All Waterbirds" and the six representative waterbird species for data analysis*

Representative Species		Recorded Abundance (Summer Baseline)							
Common Name	**Species Name**	**06-04-18**	**13-04-18**	**19-04-18**	**27-04-18**	**04-05-18**	**11-05-18**	**17-05-18**	**25-05-18**
All Waterbirds		37	71	78	52	59	47	48	50
Chinese Pond Heron	*Ardeola bacchus*	9	27	21	10	17	16	14	19
Eastern Cattle Egret	*Bubulcus coromandus*	5	9	24	15	13	0	2	1
Grey Heron	*Ardea cinerea*	0	0	0	0	0	0	0	0
Great Egret	*Ardea alba*	2	6	2	5	6	5	1	2
Little Egret	*Egretta garzetta*	16	24	30	22	18	18	29	28
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0	0	0	0
Representative Species		**Recorded Abundance (Summer Baseline)**							
Common Name	**Species Name**	**01-06-18**	**04-06-18**	**15-06-18**	**20-06-18**	**26-06-18**	**01-07-18**	**13-07-18**	**16-07-18**
All Waterbirds		68	63	55	51	50	59	40	43
Chinese Pond Heron	*Ardeola bacchus*	26	25	23	18	20	24	13	18
Eastern Cattle Egret	*Bubulcus coromandus*	8	8	5	5	3	2	2	3
Grey Heron	*Ardea cinerea*	0	0	0	0	0	0	0	0
Great Egret	*Ardea alba*	3	4	2	5	4	3	2	2
Little Egret	*Egretta garzetta*	29	26	25	23	21	29	23	20
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0	0	0	0
Representative Species		**Recorded Abundance (Summer Baseline)**							
Common Name	**Species Name**	**27-07-18**	**10-08-18**	**13-08-18**	**24-08-18**	**27-08-18**	**07-09-18**	**10-09-18**	**21-09-18**
All Waterbirds		47	39	41	33	35	25	48	54
Chinese Pond Heron	*Ardeola bacchus*	17	14	19	10	14	6	16	13
Eastern Cattle Egret	*Bubulcus coromandus*	0	0	1	1	0	0	0	1
Grey Heron	*Ardea cinerea*	0	0	0	0	0	3	3	9
Great Egret	*Ardea alba*	3	2	3	0	3	3	6	4
Little Egret	*Egretta garzetta*	27	21	18	18	15	9	21	18
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0	0	0	0
Representative Species		**Recorded Abundance (Summer Baseline)**							
Common Name	**Species Name**	**26-09-18**	**04-04-19**	**10-04-19**	**18-04-10**	**22-04-19**	**03-05-19**	**08-05-19**	**17-05-19**
All Waterbirds		48	30	30	48	39	34	28	23
Chinese Pond Heron	*Ardeola bacchus*	19	11	12	11	13	16	10	4
Eastern Cattle Egret	*Bubulcus coromandus*	0	3	0	0	3	3	0	0
Grey Heron	*Ardea cinerea*	6	0	0	0	0	0	0	0
Great Egret	*Ardea alba*	7	1	2	2	0	0	1	0
Little Egret	*Egretta garzetta*	14	14	15	25	23	14	16	18
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0	0	0	0
Representative Species		**Recorded Abundance (Summer Baseline)**							
Common Name	**Species Name**	**20-05-19**	**31-05-19**	**05-06-19**	**14-06-19**	**18-06-19**			
All Waterbirds		45	39	33	40	57			
Chinese Pond Heron	*Ardeola bacchus*	23	16	15	18	23			
Eastern Cattle Egret	*Bubulcus coromandus*	2	0	0	0	7			
Grey Heron	*Ardea cinerea*	0	0	0	0	0			
Great Egret	*Ardea alba*	0	0	2	3	2			
Little Egret	*Egretta garzetta*	19	20	16	17	22			
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0			

Appendix E Survey Photos

Photo 1 Excavators observed at project site at P4 (16/5/2024)	**Photo 2** Road construction at T2 near P4 (22/5/2024)
	
Photo 3 Extension of road construction at T2 near P3 (23/5/2024)	**Photo 4** Drilling machine and excavator at BKREJV construction site at T3 (31/5/2024)
	
Photo 5 Remote boating at P2 (9/5/2024)	**Photo 6** Great Cormorant at T3 (3/5/2024)
	

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

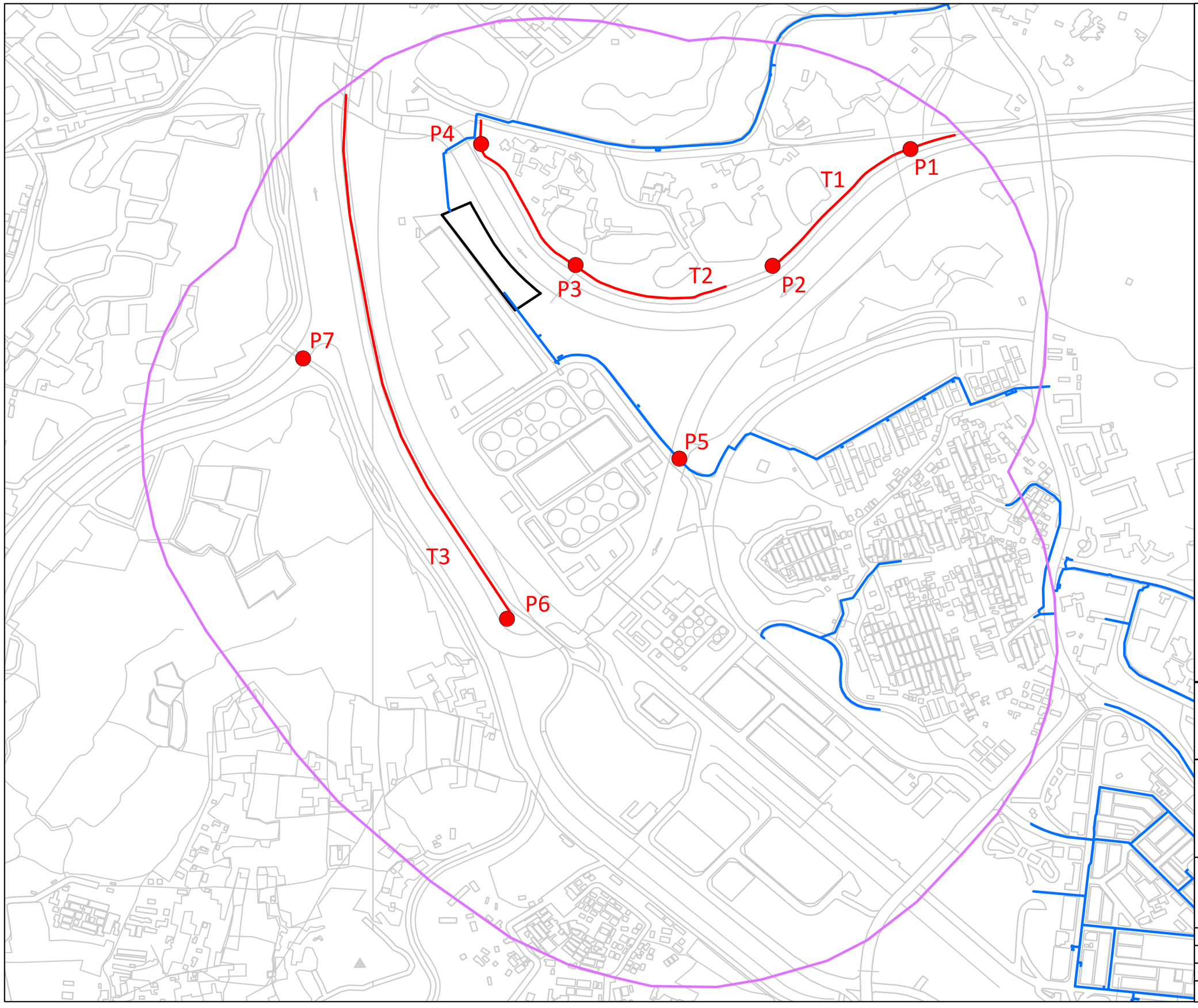
Figure Title:

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