

JOB No.: TCS01267/22



CEDD SERVICE CONTRACT NO. WD/07/2022

**YUEN LONG SOUTH FIRST PHASE DEVELOPMENT -
ENVIRONMENTAL TEAM**

**MONTHLY ENVIRONMENTAL MONITORING AND AUDIT
REPORT – MAY 2024**

PREPARED FOR

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

Date	Reference No.	Prepared By	Certified By
17 June 2024	TCS01267/22/600/R0191v2	 Nicola Hon (Environmental Consultant)	 Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	13 June 2024	First Submission
2	17 June 2024	Amended according to the IEC's comment

Our Ref: TCS01267/22/300/L0192

AECOM
12/F, Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, Hong Kong

Attn: Mr. Alex Chan

18 June 2024
By email

Dear Sir,

Re: Contract No. WD/07/2022
Yuen Long South First Phase Development – Environmental Team
Monthly Environmental Monitoring and Audit Report – May 2024

We would like to certify the captioned report pursuant to Condition 3.4 of the Environmental Permit No. EP-548/2018/A, EP-549/2018, EP-550/2018/A, EP-551/2018/A and EP-553/2018/A for the Yuen Long South First Phase Development.

Should you have any queries or require further information, please feel free to contact us or the undersigned at Tel: 2959-6059 or Fax: 2959-6079.

Yours sincerely,
For and on Behalf of
Ford Business International Limited



Tam Tak Wing
Environmental Team Leader

Encl.

cc	CEDD	Mr. Ng Kam Leung, Julian	By email
	Telexmax (IEC)	Mr. Nelson TAM	By email



Our Ref. : TEEM/816/24/L/147/JYT
Job No. : TM0816-22
Date : 18 June 2024

By Email

AECOM Asia Co., Ltd.
12/F, Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, Hong Kong

Attn.: Mr. Alex Chan

Dear Alex,

Agreement No. WD/06/2022
Yuen Long South First Phase Development –
Independent Environmental Checker
Verification for Monthly EM&A Report (May 2024)

With reference to the Monthly Environmental Monitoring and Audit (EM&A) Report – May 2024 (Issue 2) as submitted by the Environmental Team in June 2024, we have no adverse comment on this submission which are related to designated projects. We are pleased to inform that we hereby verify the captioned submission in accordance with Condition 3.4 of the Environmental Permit No. EP-548/2018/A, EP-549/2018, EP-550/2018/A, EP-551/2018/A and EP-553/2018/A for the Yuen Long South First Phase Development.

Should you have any queries, please do not hesitate to contact the undersigned at (852) 3610 8701 or our Mr. Michael Fong at (852) 3610 8706 or our Mr. Vince Lo at (852) 3610 8787 or our Mr. Jacky Tsang at (852) 3610 8735.

Yours faithfully,

For and on behalf of
Telemax Environmental and Energy Management Limited



Ir Nelson Tam
Independent Environmental Checker (IEC)

c.c. Ford Business International Ltd. (ET) - Attn: Mr. Tam Tak Wing / Ms. Nicola Hon

EM / NT / MF / VL / JYT



EXECUTIVE SUMMARY

INTRODUCTION

ES.01 This is the Monthly Environmental Monitoring and Audit (EM&A) Report, presenting the monitoring results and inspection findings for the Project for the reporting period from **1st to 31st May 2024** (hereinafter called ‘the Reporting Period’).

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

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

Environmental Aspect	Monitoring Parameter	Monitoring Station/ Location	Number of Monitoring
Air Quality	1-hour Total Suspended Particulates (TSP)	DM-1, DM-2	30 sessions
Noise	Leq30mins	CM1a, CM2a, CM3, CM4 and CM8a	20 sessions
Water Quality	Dissolved oxygen, dissolved oxygen saturation (DO%), temperature, turbidity, salinity, pH and suspended solids (SS)	M1a, M2a, M3, M4, U3, U4a, M5a, M6a, D2a, M7a, U1b, U2a & EIS-1a	14 days
Site Inspection	Site Audit for implementation of mitigation measures	Contract 1	5 events
		Contract 2	4 events
		Contract 3	5 events

ACTION AND LIMIT (A/L) LEVELS EXCEEDANCE

ES.03 In the Reporting Period, exceedances of Action / Limit Levels on air quality and noise were not recorded. However, there were 2 Action Level and 20 Limit Level exceedance on water quality were recorded. The summary of exceedances recorded in the Reporting Period is shown table below.

Environmental Aspect	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation Result	Corrective Actions
Air Quality	1-hour TSP	0	0	0	--	--
Construction Noise	L _{eq} (30min) Daytime	0	0	0	--	--
Water Quality	DO	0	0	0	Not project related	Not required
	Turbidity	0	12	2		
	SS	2	8	2		

ES.04 Exceedances of A/L levels were recorded on 4th and 21st May 2024. Notification of Exceedance (NOE) with preliminary investigation and on-site observation were issued to all concerned parties, i.e. ER, Contractor and IEC. In both the exceedance days, no major construction activities were conducted near the monitoring stations. Investigation reviewed that heavy rainstorms were recorded by Hong Kong Observatory on both exceedance days. Water quality at all the monitoring stations, including the control station, gradient station and impact station, were poor. It is suspected that runoff carried pollutants upstream to the monitoring stations leading to deterioration of water quality along the channel and river course. Investigation suggested that the exceedances in the Reporting Period were unlikely caused by the construction project, which was agreed by ER.

ES.05 Bi-weekly inspection of landscape and visual impact and mitigation measures were conducted by ET during the weekly site inspection. It was observed that six individual trees under Contract 2 transplanted to the nursery site were in fair condition. For Contract 3, the nursery site for

transplanted tree were properly maintained by the Contractor, and the transplanted trees were in fair health condition.

- ES.06 The Contractors are advised to implement the waste management plan and minimise the wastes generated through recycling or reusing. All mitigation measures stipulated in the Updated EM&A Manual and waste management plans shall be fully implemented.

SITE INSPECTION

- ES.07 In the Reporting Period, weekly joint site inspection to evaluate the site environmental performance had been carried out by the representatives of the Consultants, ET and the respective Contractor of Contract 1, Contract 2 and Contract 3. No non-compliance was noted during the site inspection. In addition, IEC carried out the joint site inspections for Contract 2 and Contractor 3 on 28th May 2024 and 27th May 2024 respectively.

ENVIRONMENTAL COMPLAINT

- ES.08 In the Reporting Month, no environmental complaint was received.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- ES.09 In the Reporting Month, no environmental summons and prosecutions were recorded.

REPORTING CHANGE

- ES.10 There is no reporting change in the Reporting Period.

FUTURE KEY ISSUES

- ES.11 During wet season, water quality mitigation measures shall be fully implemented in accordance with the Implementation Schedule for Environmental Mitigation Measures of the updated EM&A Manual.
- ES.12 In addition, the Contractor should fully implement the recommended air quality mitigation measures to minimize the impact of construction dust as far as practicable, in particular the contract works located near the village area.
- ES.13 Construction noise would be a key environmental issue during construction work of the Project. Noise mitigation measures such as using quiet plants and/ or using movable temporary noise barriers should be implemented as stipulated under EM&A Manual to ensure construction noise impacts at the NSRs comply with the noise criteria.

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 Yuen long South (YLS) is located to the immediate south of Yuen Long New Town and is positioned as Yuen Long New Town Extension. It will serve as one of the major sources of land supply to meet the territory's medium to long-term housing needs through comprehensive planning and improvement of infrastructure including the linkage to Yuen Long New Town and the Hung Shui Kui/Ha Tsuen New Development Area (HSK/HT NDA).
- 1.1.2 Planning Department (PlanD) and Civil Engineering and Development Department (CEDD) of the HKSAR jointly commissioned the Planning and Engineering Study (YLS P&E Study) under Agreement No. CE 35/2012 (CE) in November 2012 to carry out planning, engineering and environmental studies with view to formulating a development proposal for YLS Development. It confirmed the feasibility of implementing the proposal for YLS Development to meet the medium and long-term housing, social, economic and environmental needs, and formulated the implementation strategies and programme for the YLS Development with first population intake by the year of 2028.
- 1.1.3 YLS P&E Study Project is a Designated Project (DP) under Schedule 3 of the Environmental Impact Assessment Ordinance (EIAO). In November 2017, Environmental Impact Assessment (EIA) report for YLS Development was approved by Director of Environmental Protection pursuant to EIAO. The approved EIA report (AEIAR-215/2017), the approval letter with conditions and recommendations and the relevant Environmental Permit (EPs) issued subsequently. To implement the Project, there are various infrastructure items among some of which are classified as DPs under Schedule 2 of the EIA Ordinance.
- 1.1.4 Under the YLS P&E Study, YLS Development was tentatively to be implemented in four stages including Stage 1, Stage 2, Stage 3 and Stage 4. Subsequently, the Stage 2 is further split into (i) stage 2A (previously known as stage 2, phase 1) and (i i) stage 2B (previously known as stage 2 remaining works). The design and construction consultancies of YLS Development stage 1 works (under Agreement No. CE 32/2017 (CE)) and stage 2A works (under Agreement No. CE 58/2019 (CE)) commenced in February 2018 and March 2020 respectively. First population intake of YLS Development is expected in 2028.
- 1.1.5 Currently, YLS Development will be implemented by three phases, namely First Phase, Second Phase and Third Phase Development. The phasing plan of YLS Development is shown in *Appendix A*. The site formation and engineering infrastructure works to support the First Phase Development, covering stage 1 works and stage 2A works (hereafter referred to as “the Project”) is funded under the following PWP items:
- 1) PWP Item No. 7817CL – Yuen Long South Development – stage 1 works; and
 - 2) PWP Items No. 7872CL – Yuen Long South Development – stage 2 works – site formation and engineering infrastructure and stages 2B and 3 works – detailed design and site investigation.

1.2 PROJECT SCOPE

- 1.2.1 The scopes of the Project comprise the following principal work elements:
Works under PWP Item No. 7817CL :-
- (a) Site formation works and decontamination works, if any, for the Sites VR1.1 , VR2.1 and R2.2
 - (b) Construction of Road L 1 A and L 18 including widening existing roads and construction of new roads, to provide access to the Site R2.2 and connect to Tai Tong Road and Tai Shu Ha Road West
 - (c) Construction of Road L2 to provide access to the Site VR2.1 and connect to Lam Tai West Road
 - (d) Construction of Road L3 to provide access to the Site VR1.1 and connect to Long Hon Road
 - (e) Construction of slopes and retaining walls associated with Road L 1 A and L 18
 - (f) Construction of Common Utility Tunnel along part of Lam Tai East Road and Road L 1A

- (g) Improvement of Kung Um Road/ Kiu Hing Road between Sham Chung Road and Shap Pat Heung Road and associated road junctions by decking of Yuen Long Nullah and modification of drainage structure at junction of Yuen Long Nullah and Yuen Long bypass Floodway
- (h) Provision of other infrastructure to serve the sites as mentioned in (a) above to be formed under the Project
- (i) Provision of associated road junction improvement, street lighting, traffic aids, utility diversion, geotechnical, drainage, sewerage, water supply landscaping and environmental mitigation works

Works under PWP Item No. 7872CL :-

- (a) Reconstruction of Tong Yan San Tsuen (TYST) Interchange and Associated Works
 - Construction of new primary distributor roads with partly depressed roads and underpass
 - Construction/ modification of slip roads
 - Construction of junction connecting TYST Interchange, Shan Ha Road and Long Hon Road
 - Construction of noise mitigation measures
 - Construction of associated footpaths, cycle tracks and subways
- (b) Construction of New Roads
 - Construction of Road 01 (Part) with associated footpaths, pedestrian crossing and refuge island
 - Construction of Road 02 (Part) with associated footpaths, pedestrian crossing and refuge island
 - Construction of eastbound left-turn lane at the approach road of Shap Pat Heung Interchange heading to Pok Oi Interchange
- (c) Site Formation for Multi-storey Building (MSB) Sites
 - Site Formation works and decontamination works
 - Realignment/ widening/ extension of a section of Tong Tai Road
- (d) Construction/ modification of section of Kung Um Road at south of Yuen Long Highway
- (e) Construction/ modification of section of Wong Nai Tun Tsuen Road and Kiu Hing Road
- (f) Construction/ modification of section of Lam Tai East Road and Lam Yu Road
- (g) Provision of associated road junction improvement, street lighting, traffic aids, utility diversion, geotechnical, drainage, sewerage, water supply, landscaping and environmental mitigation works

Works from other projects to be entrusted

- (a) Construction of ON1600 watermains from HSKIHT NOA project

1.2.2 The Project will be delivered under three CEDD works contracts as below:-

- (a) CEDD Contract No. YL/2021/03 - Site Formation and Infrastructure Works for Yuen Long South First Phase Development - Contract 1
- (b) CEDD Contract No. YL/2021/04 - Site Formation and Infrastructure Works for Yuen Long South First Phase Development - Contract 2 (the designated works of Contract 2 are governed by EP-549/2018 & EP-553/2018/A)
- (c) CEDD Contract No. YL/2022/01 - Site Formation and Infrastructure Works for Yuen Long South First Phase Development - Contract 3 (the designated works of Contract 3 are governed by EP-548/2018/A, EP-549/2018, EP-550/2018/A, EP-551/2018/A)

1.2.3 The general layout of YLS First Phase Development is shown in [Appendix A](#).

1.3 DESIGNATED WORKS

- 1.3.1 To implement the Project, there are various infrastructure items among some of which are classified as DPs under *Schedule 2 of the EIA Ordinance*. In general, the designated works of YLS First Phase Development are governed by five Environmental Permits. The relevant EPs under the YLS First Phase Development and the respective Work Contracts are summarized in [Table 1-1](#) and the Schedule 2 Designated Project under YLS First Phase Development are shown in [Appendix B](#).

Table 1-1 Summary of Schedule 2 Designated Project under YLS First Phase Development

DP Reference No.	EP	Designated Project	Contract Works	C2	C3
DP2	EP-548/2018/A	Construction of New Primary Distributor Roads (Tong Yan San Tsuen Interchange) for Housing Sites in YLS.	Reconstruction of Tong Yan San Tsuen Interchange		√
DP3	EP-549/2018	Construction of Two New District Distributor Roads (Road D1 to Road D2) for Housing Sites in YLS	C2: Construction of proposed Road D1, Road D2, Road L1A, Road L1B and slip road at the existing Shap Pat Heung Interchange C3: Improvement to sections of existing Shan Ha Road, Long Hon Road and Tong Tai Road, and other road works	√	√
DP5	EP-550/2018/A	Construction of Slip Roads at Tong Yan San Tsuen Interchange for Housing Sites in YLS	Reconstruction of Tong Yan San Tsuen Interchange		√
DP6	EP-551/2018/A	Construction of Partly Depressed Road / Underpass Located at Tin Shui Wai West Interchange and Full Enclosures at Tong Yan San Tsuen Interchange	Reconstruction of Tong Yan San Tsuen Interchange		√
DP10	EP-553/2018/A	Yuen Long Nullah Revitalisation / Decking along Kung Um Road and Kiu Hing Road for Housing Sites in YLS	Nullah deckings at various locations	√	

NOTE: DP reference no is according to approved EIA report (AEIAR-215/2017) and EM&A Manual (AEIAR-215/2017)

1.4 IMPLEMENTATION OF EM&A PROGRAMME

- 1.4.1 Ford Business International Limited (hereinafter called “Ford”) was awarded the CEDD Agreement Contract No. WD/07/2022 – Yuen Long South First Phase Development - Environmental Team (hereinafter called “the Service Contract”) on 26 October 2022. The Contractor period is 78 months which covered the construction period and the first-year operation period for the Works Contracts 1, 2 and 3 under the YLS First Phase Development (hereinafter named as “the Project”).
- 1.4.2 In accordance with relevant EPs condition 2.4, an updated EM&A Manual for YLS First Phase Development (Rev.10) (hereinafter named as “updated EM&A Manual”) has been submitted to EPD to include the latest EM&A requirement in accordance with the information and recommendation described in the EIA Report and by taking into account any specific site conditions that may be changed before the construction of the Project. It outlines the monitoring and audit programme for the Project for the construction phase and provided systematic procedures for monitoring, auditing and minimizing environmental impacts ensure compliance with the EIA recommendations.
- 1.4.3 In accordance with the updated EM&A Manual, baseline monitoring for air quality, noise and water quality monitoring was conducted by the ET of YLS First Phase Development at the agreed monitoring locations from 8 March 2023 to 4 June 2023. The Baseline Monitoring Report (Report ref.: TCS01267/22/600/R0044v4) which was verified by the Independent Environmental Checker (hereinafter referred as “the IEC”), was submitted to EPD on 7 July 2023.
- 1.4.4 According to the Project’s programme, the various infrastructure items, which are classified as DPs under *Schedule 2 of the EIA Ordinance*, are tentatively scheduled to commence in December 2023. Nevertheless, in light of the commencement of construction works at non-EP area of the Project, the EM&A Programme in relevant sections was initiated on 13th July 2023 to fulfill the contractual and EM&A Manual requirements.

1.4.5 This is the Monthly EM&A Report, presenting the monitoring results and inspection findings for the Project, for the reporting period from **1st to 31st May 2024** (hereinafter called ‘the Reporting Period).

1.5 REPORT STRUCTURE

1.5.1 The Monthly EM&A Report is structured into the following sections:-

Section 1	<i>Introduction</i>
Section 2	<i>Project Organization and Construction Progress</i>
Section 3	<i>Summary of Impact Monitoring Requirements under the Contract</i>
Section 4	<i>Air Quality Monitoring</i>
Section 5	<i>Construction Noise Monitoring</i>
Section 6	<i>Water Quality Monitoring</i>
Section 7	<i>Ecology Monitoring</i>
Section 8	<i>Waste Management</i>
Section 9	<i>Site Inspections</i>
Section 10	<i>Environmental Complaints and Non-Compliances</i>
Section 11	<i>Implementation Status of Mitigation Measures</i>
Section 12	<i>Conclusions and Recommendations</i>

2 CONSTRUCTION PROGRESS AND PROJECT ORGANISATION

2.1 CONSTRUCTION CONTRACT PACKAGING

2.1.1 To facilitate the project management and implementation, the site formation and engineering infrastructure works to support First Phase Development will be delivered under CEDD three works contracts as follows: -

- Contract 1 (CEDD Contract no.: YL/2021/03)
- Contract 2 (CEDD Contract no.: YL/2021/04)
- Contract 3 (CEDD Contract no.: YL/2022/01)

CEDD Contract No. YL/2021/03 - Site Formation and Infrastructure Works for Yuen Long South First Phase Development - Contract 1

- 2.1.2 The contract was scheduled to commence in September 2022 and will take about 32 months to complete. The scope of works covered in this contract is listing in the following:
- Site clearance and formation (including land decontamination works) for about five hectares of land, together with the provision of associated engineering infrastructure;
 - Construction of a single two-lane carriageway of about 130 metres long connecting to Lam Tai West Road;
 - Construction of a single two-lane carriageway of about 130 metres long connecting to Long Hon Road;
 - Construction of associated works including footpaths, slopes, retaining wall, landscaping works, water supply system, sewerage system and drainage system; and
 - Implementation of environmental mitigation measures for the works mentioned above.

CEDD Contract No. YL/2021/04 - Site Formation and Infrastructure Works for Yuen Long South First Phase Development - Contract 2

- 2.1.3 The contract was scheduled to commence in the 4th Quarter of 2022 and will take about 64 months to complete. The scope of works covered in this contract is listing in the following:
- Site clearance and formation (including land decontamination works);
 - Nullah deckings at various locations;
 - Construction of proposed Road D1, Road D2, Road L1A, Road L1B and slip road at the existing Shap Pat Heung Interchange;
 - Improvement to sections of existing Kung Um Road, Kiu Hing Road, Wong Nai Tun Tsuen Road, Lam Tai East Road, Tai Kei Leng Road, Tai Tong Road, Lam Hi Road, Lam Yu Road, Shap Pat Heung Road and Sham Chung Road;
 - Construction of associated works including water mains, drainage works and sewerage systems, cycle tracks, footpaths, common utility tunnel, box culverts, junction improvement works, slope works, retaining walls, landscaping works, electrical and mechanical works and other ancillary works; and
 - Implementation of environmental mitigation measures (including noise semi-enclosures, noise barriers and low-noise road surfacing) and environmental monitoring works for the works mentioned above.

CEDD Contract No. YL/2022/01 - Site Formation and Infrastructure Works for Yuen Long South First Phase Development - Contract 3

- 2.1.4 The contract was scheduled to commence in 4th Quarter of 2022 and will take about 64 months to complete. The scope of works covered in this contract is listing in the following:
- Site clearance and formation (including land decontamination works);
 - Reconstruction of Tong Yan San Tsuen Interchange;
 - Improvement to sections of existing Shan Ha Road, Long Hon Road and Tong Tai Road, and other road works;

- Construction of associated works including water mains, drainage and sewerage works, subways, cycle tracks, footpaths, box culverts, nullah deckings, junction improvement works, slope works, retaining walls, landscaping works, electrical and mechanical works and other ancillary works; and
- Implementation of environmental mitigation measures (including noise enclosures, noise barriers and low-noise road surfacing) and environmental monitoring works for the works mentioned above.

2.2 PROJECT ORGANISATION

2.2.1 The project organization and the key personal contact is shown in *Appendix C*. The responsibilities of respective parties are:

Civil Engineering and Development Department

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

Environmental Protection Department (EPD)

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

Project Manager

2.2.4 AECOM is the Engineer's Representative (ER) responsible for overseeing the construction works and for ensuring that the works undertaken by the Contractor are in accordance with the specification and contractual requirements. The duties and responsibilities of the Consultants with respect to the EM&A may include:

- Supervise the Contractor's activities and ensure that the requirements in the EM&A Manual are fully complied with;
- Inform the Contractor when action is required to reduce impacts in accordance with the Event and Action Plans;
- Assist the Project Proponent in employing an IEC to audit the results of the EM&A works carried out by the ET;
- Participate in joint site inspection undertaken by the ET and/or IEC;
- Oversee the implementation of the agreed Event / Action Plan in the event of any exceedance; and
- Adhere to the procedures for carrying out complaint investigations.

The Contractor

2.2.5 Tung Lee Engineering Company is Contractor of the Contract 1; CREC Joint Venture is Contractor of the Contract 2; and China Road and Bridge Corporation Company is Contractor of the Contract 3. The duties and responsibilities of the Contractor is:

- Report to the Consultants;
- Implement the EIA recommendations and requirements;
- 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)

2.2.6 **Ford Business International Limited** was appointed by CEDD as the ET to undertake the EM&A programme with the associated duties in May 2019. The ET is managed by the ET Leader who has at least 7 years' experience in EM&A and has relevant professional qualifications. Suitably qualified staff should be included in the ET, and resources for the implementation of the EM&A programme should be allocated in time under the Contract, to enable fulfillment of the Project's EM&A requirements as specified in the EM&A Manual during construction of the Project. The duties of

ET shall include:

- Set up all the required environmental monitoring stations;
- Monitor various environmental parameters as required in the EM&A Manual;
- Analyse the environmental monitoring and audit data and review the success of EM&A programme to 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 preempt problems;
- Liaison with IEC on all environmental performance matters, and timely submission of all relevant EM&A proforma for IEC's approval;
- Prepare reports on the environmental monitoring data and site environmental conditions;
- Report on the environmental monitoring and audit results to the IEC, Contractor, the Consultants, Project Proponent and EPD;
- 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;
- Give advice to the Contractor on environmental improvement, awareness, enhancement matters, etc. on site;
- Undertake regular on-site audits / inspections and report to the Contractor, the Consultants and IEC of any potential non-compliance;
- Follow up and close out non-compliance actions; and
- Adhere to the procedures for carrying out environmental complaint investigation.

Independent Environmental Checker (IEC)

2.2.7 **Telex Environmental and Energy Management Limited** is employed by the Permit Holder (i.e. CEDD). The IEC has over 7 years' experience in EM&A and environmental management. The duty of IEC should be:

- Review in an independent, objective and professional manner 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);
- Validate and confirm the accuracy of monitoring results, monitoring equipment, monitoring locations, monitoring procedures and location of sensitive receivers;
- Report the audit results to the Consultants, the Project Proponent and EPD in parallel;
- Review the EM&A reports submitted by the ET;
- Check and review the proposed mitigation measures submitted by the Contractor in accordance with the Event and Action Plans;
- Check and review the effectiveness of the mitigation measures that have been recommended in the EIA and the EM&A 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 Project Manager, Project Proponent 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;
- Coordinate the assessment and response to complaints / enquires from locals, green groups, district councils or the public at large;
- On as-needed basis, verify and certify the environmental acceptability of the Contractor's construction methodology (both temporary and permanent works), relevant design plans and submissions under the EP; and
- Verify investigation results of environmental complaint cases and the effectiveness of corrective measures.

2.3 CONSTRUCTION PROGRESS

2.3.1 According to the Project's programme, the various infrastructure items under Contract 2 and Contract 3, which are classified as DPs under Schedule 2 of the EIA Ordinance, are scheduled to commence in December 2023. The construction activities carried out in the Reporting Period are summarized **Table 2-1** and the 3-month rolling construction programme for Contract 1, Contract 2 and Contract 3 are shown in **Appendix D**.

Table 2-1 Summary of Construction Activities in the Reporting Period

Contract No.	Construction Activities undertaken in the Reporting Period	
	Non-designated work	Designated work
YL/2021/03 (Contract 1)	<ul style="list-style-type: none"> Demolition works Ground Investigation Site Hoarding Site Clearance Site Formation Construction of drainage system Piling work 	N/A
YL/2021/04 (Contract 2)	<ul style="list-style-type: none"> Soil Excavation Temporary access and haul road formation Road Set back works Construction of Detour Road ELS and Construction for CUT Backfilling Works TAM Grout Site Clearance 	EP-549/2018 <ul style="list-style-type: none"> Site clearance EP-553/2018/A <ul style="list-style-type: none"> Temporary decking installation
YL/2022/01 (Contract 3)	<ul style="list-style-type: none"> Site Clearance GI Works Tree Felling Demolition Decontamination Construction of Retaining Wall Sheet Pile Installation for Box Culvert BC01 Pre-bored H Pile Works ELS construction for Subway M 	EP-548/2018/A <ul style="list-style-type: none"> Bored Pile Construction for Bridge F & G EP-549/2018 <ul style="list-style-type: none"> Nil EP-550/2018/A <ul style="list-style-type: none"> Nil EP-551/2018/A <ul style="list-style-type: none"> Nil

2.4 SUMMARY OF ENVIRONMENTAL LICENSES AND PERMITS

2.4.1 To implement the project works, summary of the relevant permits, licenses, and/or notifications on environmental protection for Contract 1 and Contract 2 are presented in **Table 2-2 to Table 2-4**.

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

Item	Description	License/Permit Status		
		Ref. no.	Effective Date	Expiry Date
1	Air pollution Control (Construction Dust) Regulation	Notified EPD on 31/08/2022	N/A	N/A
2	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	Account No. 7045085	01/09/2022	Valid and till the Contract Works ends
3	Chemical Waste Producer Registration	WPN 5213-518-T1247-01 (Portion 4, 4A and 4B)	23/09/2022	Valid and till the Contract Works ends
		WPN 5213-518-T4069-01 (Portion 1A, 1B and 2A)	23/09/2022	
		WPN 5213-518-T1246-01 (portion3A, 3B and 3C)	23/09/2022	
4	Water Pollution Control	WTP00043472-2023	12/06/2023	30/06/2028

Item	Description	License/Permit Status		
		Ref. no.	Effective Date	Expiry Date
	Ordinance - Discharge License	(Portion 1A, 1B and 2A)		
		WTP00043980-2023 (Portion 4, 4A and 4B)	01/06/2023	30/06/2028
		WT10001331-2023 (Portion 3A, 3B, 3C)	30/10/2023	31/10/2028
5	Noise Control Ordinance – Construction Noise Permit	GW-RN1276-23	03/12/2023	02/06/2024
		GW-RN1278-23	03/12/2023	02/06/2024

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

Item	Description	License/Permit Status		
		Ref. no.	Effective Date	Expiry Date
1	Air pollution Control (Construction Dust) Regulation	Notified EPD on 04/01/2023	N/A	N/A
2	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	Account No. 7046574	13/02/2023	Valid and till the Contract Works ends
3	Chemical Waste Producer Registration	Waste Producers Number: No. WPN 5213-518-C4771-01	27/01/2023	Valid and till the Contract Works ends
4	Water Pollution Control Ordinance - Discharge License	WT00044244-2023 (Portion 9A)	16/8/2023	31/8/2028
		WT00044253-2023 (Portion 11)	21/8/2023	31/8/2028
		WT10001774-2023 (Lam Tai East Road: Portion 3,10,11,18,19)	30/11/2023	30/11/2028
		WT10001773-2023 (Yuen Long Nullah (Portion 1A, 4, 6C, 6, 6B, 6A)	08/01/2024	31/01/2029
		WT10001736-2023 (Portion 14)	08/01/2024	31/01/2029
		WT10002584-2023 (Portion 5B)	8/3/2024	31/3/2029
5	Noise Control Ordinance – Construction Noise Permit	GW-RN0330-24 (Portion 9A)	30/03/2024	29/05/2024
		GW-RN0575-25 (Portion 9A)	30/05/2024	29/08/2024
		GW-RN0170-24 (Portion 11)	19/02/2024	18/05/2024
		GW-RN0590-24 (Portion 11)	25/05/2024	24/08/2024
		GW-RN1281-23 (Portion 1A)	03/12/2023	31/05/2024
		GW-RN0363-24 (Portion 14)	02/04/2024	07/07/2024
		GW-RN0287-24 (YL Nullah TD Welding Works)	22/03/2024	21/06/2024
		GW-RN0256-24 (Portion 11A)	12/3/2024	02/06/2024
		GW-RN0442-24 (for Junction of Shap Pat Heung Road and Kung Um Road)	19/04/24	30/05/24

Table 2-4 Status of Environmental Licenses and Permits of Contract 3

Item	Description	License/Permit Status		
		Ref. no.	Effective Date	Expiry Date
1	Air pollution Control (Construction Dust) Regulation	Ref. no. 488406	13 Jan 2023	N/A
2	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	Account No. 7046323	18/01/2023	Valid and till the Contract Works ends
3	Chemical Waste Producer Registration	Waste Producers Number: No. WPN 5213-529-C4802-01	22/03/2023	Valid and till the Contract Works ends
		Waste Producers Number: No. WPN 5213-519-C4932-01	26/02/2024	Valid and till the Contract Works ends
4	Water Pollution Control Ordinance - Discharge License	WT10001097-2023	20/10/2023	20/10/2028
		WT10001099-2023	13/11/2023	30/11/2028
		WT10001098-2023	23/02/2024	28/02/2029
		WT10002735-2024	30/05/2024	31/05/2029
5	Noise Control Ordinance – Construction Noise Permit	GW-RN0424-24	22/04/2024	21/06/2024

3 AIR QUALITY MONITORING

3.1 MONITORING REQUIREMENTS

- 3.1.1 In accordance with the updated EM&A Manual, the ET shall carry out impact monitoring during the construction period. For regular impact monitoring of 1-hour TSP, the sampling frequency of at least 3 times in every 6 days should be undertaken. Before commencing impact monitoring, the ET shall inform the IEC of the impact monitoring programme such that the IEC can conduct on-site audit to ensure accuracy of the monitoring results.
- 3.1.2 In case of non-compliance with the air quality criteria, more frequent monitoring, as specified in the Action Plan in the following section, shall be conducted within the specified timeframe after the result is obtained. This additional monitoring shall be continued until the excessive dust emission or the deterioration in air quality is rectified, and agreed with the ER and the IEC.

3.2 MONITORING LOCATIONS

- 3.2.1 The phasing of the Project has been addressed in the approved EIA report, according to the updated EM&A Manual, DM-1 and DM2 are the monitoring stations for First Phase of YLS Development. The locations of construction dust monitoring stations under YLS First Phase Development are summarized in *Table 3-1* and illustrated in *Appendix E*.

Table 3-1 Construction Dust Monitoring Locations

ID	Monitoring Locations	Description of Location
<i>Existing Air Sensitive Receivers</i>		
DM-1	Shan Ha Tsuen House No. 613F	Shan Ha Tsuen House No. 613F
DM-2	Village House along Kung Um Road	No. 118G Kung Um Road - Golden Villa

3.3 MONITORING EQUIPMENT

- 3.3.1 Portable direct reading dust meters brand named “Sibata LD-3B Laser Dust monitor Particle Mass Profiler & Counter” were used to 1-hour TSP measurement. The portable direct reading dust meters provided a real time 1-hour TSP measurement based on 90° light scattering.
- 3.3.2 The portable direct reading dust meters were used within the valid period following manufacturer’s Operation and Service Manual. It was calibrated annually and determined periodically by the calibrated High-Volume Sampler to check the validity and accuracy of the results measured by direct reading method. The proposed use of portable direct reading dust meters was submitted to the IEC and obtained agreement and stated in Section 4.3 of the Updated EM&A Manual.
- 3.3.3 The equipment used for impact air quality monitoring is listed in *Table 3-2*. The copies of calibration certificates for air quality monitoring equipment are shown in *Appendix F1*.

Table 3-2 Air Quality Monitoring Equipment

Equipment	Model	Serial No.
<i>1-hour TSP</i>		
Portable Dust Meter	Sibata LD-3 Laser Dust monitor Particle Mass Profiler & Counter	366407
		366418
		366410
		2X6145

Wind Data Monitoring Equipment

- 3.3.4 In consideration of the safety concerns of setting up wind sensor at 10m above ground, the ETL had proposed alternative method to obtain representative wind data in the updated EM&A Manual. Meteorological information at Wetland Park Station collected from the Hong Kong Observatory were used for the Project. It is located nearby the Project site and the meteorological data is considered representative of the Project area. This station can also provide other meteorological information include air temperature, relative humidity, wind direction, wind speed and mean sea level pressure. In additional, adoption of meteorological information from Hong Kong Observatory

is a common alternative method for a lot of EM&A projects in Hong Kong. The weather data including wind speed and wind direction in the Reporting Month are summarized in *Appendix G*.

3.4 MONITORING PROCEDURES

- 3.4.1 The portable direct reading dust meters brand named “Sibata LD-3 Laser Dust monitor Particle Mass Profiler & Counter” was used for impact monitoring. It is a portable, battery-operated laser photometer and provides a real time 1-hour TSP measurement based on 90° light scattering.
- 3.4.2 The 1-hour TSP meter used is within the valid period, calibrated by the manufacturer prior to purchasing. Zero response of the instrument was checked before and after each monitoring event. Operation of the 1-hour TSP meter was follow manufacturer’s Operation and Service Manual.

3.5 ACTION/LIMIT LEVELS FOR AIR QUALITY

- 3.5.1 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. Following the guidelines for establishing the Action and Limit Levels for air quality monitoring, the Action and Limit Levels are presented in *Table 3-3*. Should project-related non-compliance of the environmental quality criteria occur, remedial actions will be triggered according to the Event and Action Plan which is presented in *Appendix H*.

Table 3-3 Action and Limit Levels for Air Quality Monitoring

Monitoring Station	Action Level (µg /m ³)	Limit Level (µg /m ³)
DM-1	268	500
DM-2	268	500

3.6 AIR QUALITY MONITORING RESULTS

- 3.6.1 In light of the commencement of non-designated works and preparation of designated work of the Project, the EM&A Programme in relevant sections was initiated on 13th July 2023 to fulfill the contractual and EM&A Manual requirements. The monitoring schedule is presented in *Appendix I* and the monitoring results are summarized in the following sub-sections.
- 3.6.2 In the Reporting Period, 1-hour TSP monitoring were carried out at DM-1 and DM-2 and the monitoring results are summarised in *Tables 3-4*. The detailed 1-hour TSP monitoring results are provided in *Appendix J* and graphical plots of monitoring results are shown in *Appendix K*.

Table 3-4 Summary of 1-hour TSP Monitoring Results

1-hour TSP (µg/m ³)					
Station ID	Monitoring Location	Average (Range)	No. of Event	Action Level	Limit Level
DM-1	Shan Ha Tsuen House No. 613F	56 (25 – 92)	15	260	500
DM-2	Village House along Kung Um Road	53 (19 – 72)	15	260	500

- 3.6.3 In the Reporting Period, all the 1-hour TSP monitoring results were below the Action/Limit Levels and no corrective action was therefore required.

4 CONSTRUCTION NOISE MONITORING

4.1 MONITORING REQUIREMENTS

- 4.1.1 Construction noise monitoring should be carried out at the designated monitoring station when there are Project-related construction activities being undertaken within a 300m from the monitoring stations. The monitoring frequency should depend on the scale of the construction activities. An initial guide on the monitoring is to obtain one set of 30-minutes measurement at each station between 0700 and 1900 hours on normal weekdays at a frequency of once a week when construction activities are underway.
- 4.1.2 During normal construction working hour (0700-1900 Monday to Saturday), monitoring of Leq, (30min) noise levels (as six consecutive Leq, (5min) readings) shall be carried out at the agreed monitoring locations once every week. If construction works are extended to include works during the hours of 1900 - 0700, applicable permits under NCO shall be obtained by the Contractor and strictly followed. A schedule on the compliance monitoring shall be submitted to the ER and IEC for approval before the monitoring starts.
- 4.1.3 In case of non-compliance with the construction noise criteria, more frequent monitoring, as specified in the Event and Action Plan in the following section, shall be carried out. This additional monitoring shall be continued until the recorded noise levels are rectified or proved to be irrelevant to the construction activities.

4.2 MONITORING LOCATIONS

- 4.2.1 The most representative and affected Noise Sensitive Receivers (NSRs) were selected as monitoring stations. Phasing of the Project has been addressed in the approved EIA report, according to the updated EM&A Manual, CM1a, CM2a, CM3, CM4, CM8a and CM9a are monitoring stations for the First Phase of YLS Development. For planned NSRs CM11, CM12, CM13, CM14 and CM15, they are future developments and not yet constructed and construction noise monitoring shall perform after these NSRs being occupied. The locations of construction noise monitoring stations under YLS First Phase Development are summarized in **Table 4-1** and illustrated in **Appendix E**.

Table 4-1 Construction Noise Monitoring Stations

Monitoring Station ID	Monitoring Location	Description of location	Measurement Point
Existing Noise Sensitive Receivers			
CM1a	Village house in Shan Ha Tsuen	Squatter house near Shan Ha Tsuen Village house no. 354	Façade
CM2a	Village house in Tin Lung Yuen	Village house No. 126E in Tin Lung Yuen	Free field
CM3	Village house in Lung Tin Tsuen	Village house at 66 Kiu Hing Road	Façade
CM4	Village house in Tin Liu Tsuen	Village house in Tin Liu Tsuen - Kam Fong Yuen	Façade
CM8a	Village House in Eldorado	Village House in Sha Tseng Tsuen (lot no. DD1211462A)	Free field
CM9a	Village house in Pak Sha Tsuen	Village house No. 12 of Pak Sha Tsuen	Free field
Planned Noise Sensitive Receivers			
CM11	Public housing	No measurement before occupation of planned receivers (by other contract)	No measurement was conducted
CM12	Public housing		
CM13	Village rehousing		
CM14	Public housing		
CM15	Planned primary school (opposite to Pak Sha Tsuen)		

4.3 MONITORING EQUIPMENT

- 4.3.1 As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and

804: 1985 (Type 1) specifications were used for carrying out the noise monitoring. Sound level meter shall be checked by an acoustic calibrator. Wind speed shall be checked with a portable wind speed meter which is capable of measuring the wind speeds in m/s.

- 4.3.2 Noise monitoring equipment used for impact monitoring is listed in **Table 4-2**. The copies of calibration certificates of noise monitoring equipment were shown in **Appendix F2**.

Table 4-2 Noise Monitoring Equipment

Equipment	Model	Serial No.
Integrating Sound Level Meter	Rion NL-52	00142581
	Rion NL-52	00464681
Calibrator	Rion NC-74	34657230
	Rion NC-74	34657231

4.4 MONITORING PROCEDURES

- 4.4.1 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.

- 4.4.2 During the monitoring, the microphone of the sound level meter was normally set at a height of about 1.2m subject to site condition and oriented pointed to the site, with the microphone facing perpendicular to the line of sight. Where there a building façade, monitoring was conducted 1 m from the exterior of the building façade. For free field measurement, the microphone was positioned away from any reflective surface, and a correction of +3 dB(A) has been made for the free field measurements.

- 4.4.3 Noise measurements were taken in terms of the A-weighted equivalent sound pressure level (L_{eq}) measured in decibels dB(A). All noise measurements were performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (L_{eq}). $L_{eq(30min)}$ in six consecutive $L_{eq(5min)}$ measurements were used as the monitoring parameter for the time period between 0700-1900 hours on normal weekdays. As supplementary information for data auditing, statistical results such as A-weighted levels L_{10} and L_{90} shall also be obtained for reference.

- 4.4.4 After the monitoring, all the monitoring data stored in the sound level meter system were downloaded through the computer software, and all these data were checked and reviewed on computer.

4.5 ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE

- 4.5.1 Following the guidelines for establishing the Action and Limit Levels for construction noise monitoring, the Action and Limit Levels are presented in **Table 4-3**. Should project-related non-compliance of the environmental quality criteria occur, remedial actions will be triggered according to the Event and Action Plan which is presented in **Appendix H**.

Table 4-3 Action and Limit Levels for Construction Noise

Monitoring Station ID	Time Period ⁽¹⁾	Action Level	Limit Level
CM1a, CM2a, CM3, CM4, CM8a and CM9a, CM11, CM12, CM13, CM14 & CM15	0700 – 1900 hours on normal weekdays	When one documented complaint is received at anytime during the construction period	75 dB(A) ⁽²⁾

Notes:

- (1) If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.
- (2) 70 dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.

4.6 NOISE MONITORING RESULTS

- 4.6.1 In light of the commencement of non-designated works under the Project, the EM&A Programme in relevant sections was initiated on 13th July 2023 to fulfill the contractual and EM&A Manual requirements. Construction noise monitoring was carried out at the designated monitoring station when there are project-related construction activities being undertaken within a 300m from the monitoring stations.
- 4.6.2 In the Reporting Period, 4 sessions of noise measurements were carried out at designated monitoring stations CM1a, CM2a, CM3, CM4 and CM8a, which are within a 300m of the project-related construction activities. The noise monitoring results are summarised in **Table 4-4**. The detailed noise monitoring data are presented in **Appendix J** and the relevant graphical plots are shown in **Appendix K**.

Table 4-4 Summary of Construction Noise Monitoring Results

Construction Noise Level ($L_{eq30min}$), dB(A)					
Station ID	Description of location	Range	No. of Event	Action Level	Limit Level
CM1a	Squatter house near Shan Ha Tsuen Village house no. 354	53 - 59	4	When one documented complaint is received at anytime during the construction period	75
CM2a (*)	Village house No. 126E in Tin Lung Yuen	64 - 73	4		75
CM3	Village house at 66 Kiu Hing Road	67 - 71	4		75
CM4	Village house in Tin Liu Tsuen - Kam Fong Yuen	60 - 70	4		75
CM8a (*)	Village House in Sha Tseng Tsuen (lot no. DD1211462A)	61 - 64	4		75

Remarks

(*) Noise measurements was conducted at free field condition and façade correction (+3 dB(A) was added according to acoustical principles and EPD guidelines

- 4.6.3 As shown in **Table 4-4**, no construction noise measurement results triggered the Limit Level (75 dB(A)) in the Reporting Month. Moreover, no valid noise complaint (which triggered Action Level exceedance) was recorded in the Reporting Period.

5 WATER QUALITY MONITORING

5.1 MONITORING REQUIREMENTS

- 5.1.1 The impact monitoring shall be conducted during construction period at the monitoring stations for YLS First Phase Development. The purpose of impact monitoring is to ensure the implementation of the recommended mitigation measures, provide effective control of any malpractices, and provide continuous improvements to the environmental conditions. The interval between two sets of monitoring shall not be less than 36 hours. EPD shall also be notified immediately for any changes in schedule.
- 5.1.2 In general, where the difference in value between the first and second in-situ measurement of DO or turbidity parameters is more than 25% of the value of the first reading, the reading shall be discarded and further readings should be taken.
- 5.1.3 In case of project-related exceedances of Action and/or Limit Levels, the impact monitoring frequency shall be increased according to the requirement of Event and Action Plan in the following section.
- 5.1.4 The monitoring frequency and water quality parameters for impact monitoring is summarized in **Table 5-1**.

Table 5-1 Water Quality Monitoring Programme for Impact Monitoring

Item	Impact Monitoring
Monitoring Period	During construction period
Monitoring Frequency	3 Days in a Week
Monitoring Locations	All stations under YLS First Phase Development
Monitoring Parameters	Dissolved oxygen (DO), dissolved oxygen saturation (DO%), temperature, turbidity, salinity, pH and suspended solids (SS)
Intervals between 2 Sets of Monitoring	Not less than 36 hours

5.2 MONITORING LOCATIONS

- 5.2.1 According to the geographic locations of Contract 1, Contract 2 and Contract 3 under the First Phase YLS Development, the water quality monitoring locations with the purpose of monitoring are proposed in the updated EM&A Manual. The selection criterion for monitoring locations is based on the separation distance between work boundary of YLS First Phase Development and the river / stream. The water monitoring stations in respective with Contract 1, Contract 2 and Contract 3 are summarized in **Table 5-2**, **Table 5-3** and **Table 5-4**. Monitoring stations with work boundary of Contracts 1, 2 and 3 are illustrated in **Appendix E**.

Table 5-2 Locations of Water Quality Monitoring Stations for Impact Monitoring for Contract 1

WSR	Monitoring Station ID	Description	Co-ordinates	
			Easting	Northing
S01 (Yuen Long Nullah)	M2a	Upstream station of Contract 1	820133	832282
	M3	Impact monitoring of Contract 1	820688	833127

Table 5-3 Locations of Water Quality Monitoring Stations for Impact Monitoring for Contract 2

WSR	Monitoring Station ID	Description	Co-ordinates	
			Easting	Northing
S01 (Yuen Long Nullah)	U2a	Upstream of Contract 2	820303	830757
	U1(b)	Upstream of Contract 2	820120	831191
	U3	Upstream of Contract 2	820872	832455
	U4a	Upstream of Contract 2	821366	832458
	M1a	Gradient monitoring of Contract 2	820476	832295
	M2a	Gradient monitoring of Contract 2	820133	832282

WSR	Monitoring Station ID	Description	Co-ordinates	
			Easting	Northing
	M3	Impact monitoring of Contract 2	820688	833127
	M4	Impact monitoring of Contract 2	820910	833138
S05 (EIS)	EIS-1a	Impact monitoring of Contract 2	820341	830555

Table 5-4 Locations of Water Quality Monitoring Stations for Impact Monitoring for Contract 3

WSR	Monitoring Station ID	Description	Co-ordinates	
			Easting	Northing
S02 (near TYST)	M5a	Upstream monitoring of Contract 3	819327	832535
S03 (near Windsor Garden)	M6a	Upstream monitoring of Contract 3	819335	832170
S02/S03 (near TYST & Windsor Garden)	D2a	Impact monitoring of Contract 3	819867	833939
S17 (Along Kiu Hung Road)	M7a	Upstream monitoring of Contract 3	818761	832798
	D5a	Impact monitoring of Contract 3	818484	833362

5.2.2 If the water level of a monitoring station is too shallow when sampling, sediment would be disturbed which affecting the accuracy of water quality monitoring. In order to avoid disturbing sediment, depth limits should be set up for the water sampling for the ease of reference. When the measured water depth of the monitoring station (both control and impact stations) is lower than 150mm, water monitoring would not be to perform at that monitoring location. Instead, the monitoring location will be moved to a temporary alternative location monitoring location based on the criteria below:-

- (a) the alternative location should be either upstream or downstream of the original location and at the same the river/drain channel
- (b) the alternative location should be within 15m far from the original location
- (c) if no suitable alternative location could be found within 15m far from the original location, the sampling at that location will be cancelled since sampling at too far from the designated location could not make a representative sample.

5.3 MONITORING EQUIPMENT

Positioning of Monitoring Locations

5.3.1 A digital Global Positioning System (GPS) was used during water monitoring to ensure the monitoring vessel is at the correct location when taking measurement and samples.

Dissolved Oxygen, Dissolved Oxygen Saturation, Temperature, Turbidity, Salinity and pH value

5.3.2 The YSI Professional DSS Multiparameter Sampling Instrument was used for water in-situ measures, which automates the measurements and data logging of temperature, dissolved oxygen, dissolved oxygen saturation, turbidity, pH and salinity simultaneously.

Water Depth Detector

5.3.3 Measures tape was used for water depths determination at each designated monitoring station throughout the monitoring programme.

Water Sampling Equipment

5.3.4 Water sample collection was directly from water surface use sampling plastic bottle or sampling bucket to avoid inclusion of bottom sediment or humus. Teflon/stainless steel bailer maybe used for water sampling. The use of water sampling equipment depends on the depths of sampling locations.

Sample Containers and Storage

5.3.5 Water samples for SS should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen) and shipment to the testing laboratory. The samples shall be delivered to the laboratory within 24 hours of collection and be analysed as soon as possible after collection.

Calibration

5.3.6 The YSI Professional DSS Multiparameter Sampling Instrument was certified by a laboratory accredited under HOKLAS or any other international accreditation scheme, and subsequently re-calibrated at quarterly basis throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring station.

Back-up Equipment

5.3.7 Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, malfunction, etc.

5.3.8 Water quality monitoring equipment used for the impact monitoring are listed in **Table 5-5**. All in-situ measurement equipment were calibrated by HOKLAS accredited laboratory of three-month interval. Copies of calibration certificates for water quality monitoring equipment are shown in **Appendix F3**.

Table 5-5 Water Quality Monitoring Equipment

Equipment	Model	Serial No.
Water Depth Detector	Measure tape	N/A
Thermometer & DO meter	YSI Professional DSS Multiparameter Sampling Instrument	[20J101862/ 15H103928]/ [EQW018]
pH meter		&
Turbidimeter		[17B102764/17B100758]/
Salinometer		[EQW019]
Sample Container	High density polythene bottles (provided by laboratory)	N/A
Storage Container	‘Willow’ 33-litter plastic cool box with Ice pad	N/A

5.4 MONITORING PROCEDURES

5.4.1 Water quality monitoring was conducted at all designated monitoring locations. In-situ of replicate measurements was undertaken during baseline monitoring; where the difference in value between the first and second in-situ measurement of DO or turbidity parameters is more than 25% of the value of the first reading, the reading was discarded then further readings to be take. Moreover, duplicate sample collection was also conducted from each monitoring location. The sampling and in-situ measurement process are below:

Sampling Procedure

5.4.2 A Digital Global Positioning System (GPS) was used to identify the designated monitoring stations. Prior to water sampling, measure tape was used for the determination of water depth at each station.

5.4.3 Where water depth is allowed, sampling should be conducted at three water depths which are 1m below water surface, mid-depth, and 1m above the river bed. If the sampling water depth is less than 6m, the mid-depth may be omitted. If the water depth is less than 3m, only the mid-depth may be omitted.

5.4.4 During the baseline water quality monitoring, the water depths of all stations were less than 3m, therefore, water samples were collected from 0.1m below water surface or water surface to prevent the river bed sediment for stirring.

5.4.5 The sample container was rinsed with a portion of the water sample. The water sample then was

transferred to the high-density polythene bottles as provided by the laboratory, labeled with a unique sample number and sealed with a screw cap.

- 5.4.6 Before commencement of the sampling, general information such as the date and time of sampling and weather condition as well as the personnel responsible for the monitoring were recorded on the monitoring field data sheet.
- 5.4.7 A ‘Willow’ 33-liter plastic cool box packed with ice was used to preserve the collected water samples prior to arrival at the laboratory for chemical determination. The water temperature of the cool box was maintained at a temperature as close to 4°C as possible without being frozen. Samples collected were delivered to the laboratory upon collection.

In-situ Measurement

- 5.4.8 YSI Professional DSS Multiparameter Sampling Instrument was used for water in-situ measures, which automates the measurements and data logging of water temperature, dissolved oxygen & dissolved oxygen saturation, pH unit and salinity. Before each round of monitoring, the instrument was checked in accordance with the manufactory manual instruction to sure it is valid.

5.5 LABORATORY MEASUREMENT / ANALYSIS

- 5.5.1 Two replicate samples from each independent sampling event are required for the SS analysis. Sufficient water samples shall be collected at the monitoring stations for carrying out the laboratory measurement and analysis. The SS analysis were carried out by a local HOKLAS-accredited laboratory - *ALS Technichem (HK) Pty Ltd* and the HOKLAS-accreditation certificate of the testing laboratory is shown in *Appendix E4*. The laboratory determination work shall start within 24 hours after collection of the water samples. The analysis for suspended solids is presented in *Table 5-6*.

Table 5-6 Laboratory Analysis

Parameters	Analytical Method	Reporting Limit
Suspended Solid (SS)	APHA 2540-D	0.5mg/L

Action/Limit Levels for Water Quality for YLS First Phase Development

- 5.5.2 Following the guidelines for establishing the Action and Limit Levels for water quality monitoring, the Action and Limit Levels for of Contract 1, Contract 2 and Contract 3 under YLS First Phase Development are presented in *Table 5-7* to *Table 5-9*. Should project-related non-compliance of the environmental quality criteria occur, remedial actions will be triggered according to the Event and Action Plan which is presented in *Appendix H*.

Table 5-7 Action and Limit Levels for Water Quality Monitoring for Contract 1

Water Sensitive Receiver (WSR)	Impact Monitoring Location	Parameter						Upstream / Control Station
		DO (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		
		Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	
S01	@M2a	6.4	6.3	8.4	8.5	8.7	8.8	N/A
	*M3	3.0	2.9	20.5	22.6	30.2	30.3	N/A
Remarks @ Gradient Monitoring Location * Impact Monitoring Location								

Table 5-8 Action and Limit Levels for Water Quality Monitoring for Contract 2

Water Sensitive Receiver (WSR)	Gradient / Impact Monitoring Location	Parameter						Upstream / Control Station as related WSR
		DO (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		
		Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	
S01	@M1a	1.3	1.2	106.9	131.6	242.5	273.5	U1b & U2a

Water Sensitive Receiver (WSR)	Gradient / Impact Monitoring Location	Parameter						Upstream / Control Station as related WSR
		DO (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		
		Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	
	@M2a	6.4	6.3	8.4	8.5	8.7	8.8	N/A
	*M3	3.0	2.9	20.5	22.6	30.2	30.3	U1b & U2a
	*M4	6.1	6.0	30.9	35.9	18.6	20.1	U3 & U4a
S05	*EIS-1a	5.4	5.4	18.9	19.2	25.8	31.9	N/A
Remarks @ Gradient Monitoring Location * Impact Monitoring Location								

Table 5-9 Action and Limit Levels for Water Quality Monitoring for Contract 3

Water Sensitive Receiver (WSR)	Gradient / Impact Monitoring Location	Parameter						Upstream / Control Station as related WSR
		DO (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		
		Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	
S02/S03	*D2a	6.7	6.7	21.7	22.0	96.1	152.9	M5a & M6a
S17	@M7a	6.1	6.1	12.6	12.7	12.0	13.1	None
	*D5a	5.1	4.9	19.1	19.6	57.1	67.5	
Remarks @ Gradient Monitoring Location * Impact Monitoring Location								

5.6 WATER QUALITY MONITORING RESULTS

5.6.1 In the Reporting Period, a total of **fourteen (14)** days water quality monitoring were conducted at various stations, including M1a, M2a, M3, M4, U3, U4a, M5a, M6a, D2a, M7a, D5a, U1b, U2a and EIS-1a. The key monitoring parameters including DO, Turbidity and SS are summarised in **Tables 5-10 to 5-12**. Summary of non-project related exceedances are shown in **Table 5-13**. Detailed water quality monitoring result are shown in **Appendix J** and the relevant graphical plot are shown in **K I**.

Table 5-10 Water Quality Monitoring Results for Dissolved Oxygen

Monitoring Station	DO (mg/L) Average (range)	Action Level (mg/L)	Limited Level (mg/L)
M1a	5.9 (3.7 – 7.4)	1.3	1.2
M2a	7.1 (6.5 – 8.8)	6.4	6.3
M3	6.5 (5.3 – 7.2)	3.0	2.9
M4	8.3 (6.2 – 11.3)	6.1	6.0
U1b	6.8 (6.0 – 7.5)	No applicable for upstream and control station	
U2a	6.4 (5.4 – 7.2)	No applicable for upstream and control station	
U3	7.7 (4.7 – 10.5)	No applicable for upstream and control station	
U4a	6.4 (5.8 – 6.9)	No applicable for upstream and control station	
EIS-1a	6.7 (5.9 – 7.4)	5.4	5.4
M5a	5.8 (4.8 – 7.3)	No applicable for upstream and control station	
M6a	7.1 (6.6 – 7.5)	No applicable for upstream and control station	
D2a	7.1 (6.9 – 7.7)	6.7	6.7
M7a	7.7 (6.8 – 8.5)	6.1	6.1
D5a	7.0 (6.1 – 7.7)	4.9	5.1

Table 5-11 Water Quality Monitoring Results for Turbidity

Monitoring Station	Turbidity (NTU) Average (range)	Action Level (NTU)	Limit Level (NTU)
M1a	24.2 (3.9 – 184.7)	106.9	131.6
M2a	10.0 (2.1 – 39.8)	8.4	8.5
M3	15.6 (5.0 – 74.5)	20.5	22.6
M4	9.9 (2.9 – 24.1)	30.9	35.9
U1b	22.9 (4.9 – 182.7)	No applicable for upstream and control station	
U2a	24.8 (3.4 – 205.9)	No applicable for upstream and control station	
U3	12.8 (1.5 – 73.9)	No applicable for upstream and control station	
U4a	9.5 (3.4 – 44.0)	No applicable for upstream and control station	
EIS-1a	24.9 (2.2 – 223.3)	18.9	19.2
M5a	9.2 (1.4 – 54.0)	No applicable for upstream and control station	
M6a	19.7 (3.7 – 106.1)	No applicable for upstream and control station	
D2a	26.3 (8.8 – 90.2)	21.7	22.0
M7a	6.9 (0.6 – 53.2)	12.6	12.7
D5a	17.9 (5.2 – 80.2)	19.1	19.6

Table 5-12 Water Quality Monitoring Results for Suspended Solids

Monitoring Station	SS (mg/L) Average (range)	Action Level (mg/L)	Limited Level (mg/L)
M1a	38.3 (6.0 – 304.5)	242.5	273.5
M2a	12.8 (3.5 – 64.3)	8.7	8.8
M3	27.3 (8.1 – 142.5)	30.2	30.3
M4	12.8 (2.8 – 18.4)	18.6	20.1
U1b	19.7 (7.1 – 65.5)	No applicable for upstream and control station	
U2a	53.7 (2.5 – 585.0)	No applicable for upstream and control station	
U3	18.6 (2.4 – 98.8)	No applicable for upstream and control station	
U4a	20.0 (5.8 – 92.2)	No applicable for upstream and control station	
EIS-1a	32.9 (2.4 – 343.0)	25.8	31.9
M5a	14.1 (1.6 – 80.5)	No applicable for upstream and control station	
M6a	18.8 (2.5 – 105.5)	No applicable for upstream and control station	
D2a	36.7 (13.7 – 127.0)	96.1	152.9
M7a	10.5 (0.7 – 92.8)	12.0	13.1
D5a	22.2 (1.6 – 135.5)	57.1	67.5

5.6.2 In this Reporting Period, 2 Action Level and 20 Limit Level exceedance of water quality monitoring were recorded. The summary of water quality monitoring exceedance recorded in the Reporting Period are shown in **Table 5-13**. Investigation results of the exceedance are shown in **Table 5-14**.

Table 5-13 Summary of Water Quality Monitoring Exceedance Recorded in the Reporting Period

Location	Dissolved Oxygen		Turbidity		Suspended Solids		Non-project related Exceedance		Project Related Exceedance	
	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
M1a	0	0	0	1	0	1	0	2	0	0
M2a	0	0	0	2	0	2	0	4	0	0
M3	0	0	0	2	0	2	0	4	0	0
M4	0	0	0	0	0	0	0	0	0	0
EIS-1a	0	0	0	2	1	1	1	3	0	0
D2a	0	0	0	2	1	0	1	2	0	0

Location	Dissolved Oxygen		Turbidity		Suspended Solids		Non-project related Exceedance		Project Related Exceedance	
	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
M7a	0	0	0	1	0	1	0	2	0	0
D5a	0	0	0	2	0	1	0	3	0	0
No of Exceedance	0	0	0	12	2	8	2	20	0	0

Table 5-14 Summary of Investigation Result for Water Quality Monitoring Exceedance

Date	Station	Parameter	Exceedance	Investigation	Action
4 May 2024	M2a M3 EIS-1a M7a D5a D2a	DO, Turbidity and Suspended Solids	Limit Level	<p>During water quality monitoring conducted on 4 May 2024, it was observed that the water in the throughout the channel affected by rainfall, including control station, gradient station and impact station.</p> <p>There were no major construction works conducted near M2a, M3, EIS-1a, M7a & D5a and pre-drilling works, concrete breaking and earth works conducted at Shan Ha Road Nullah which located at upstream of D2a. Weekly site inspection was carried out by ET and it was observed that water streams within works area were well maintained, with wastewater collected and treated by wastewater treatment facilities before discharge.</p> <p>According to the weather information from the Hong Kong Observatory, there were heavy rainstorm on 4 May 2024 with rainfall at 75.1mm. This rainfall likely led to runoff from the surrounding environment, resulting in a deterioration of water quality in the channel or river course.</p>	Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required, and corrective action is not required.
21 May 2024	M1a M2a M3 EIS-1a M7a D5a D2a	DO, Turbidity and Suspended Solids	Limit Level	<p>During water quality monitoring conducted on 21 May 2024, it was observed that the water in the throughout the channel affected by rainfall, including control station, gradient station and impact station.</p> <p>There were no major construction works conducted near M1a, M2a, M3, EIS-1a, M7a & D5a, and pre-drilling works, concrete breaking and earth works conducted at Shan Ha Road Nullah which located at upstream of D2a. Weekly site inspection was carried out by ET and it was observed that water streams within works area were well maintained, with wastewater collected and treated by wastewater treatment facilities before discharge.</p> <p>According to the weather information from the Hong Kong Observatory, there</p>	Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required, and corrective action is not required.



				were rainy day on 21 May 2024 with rainfall at 45.3mm. This rainfall likely led to runoff from the surrounding environment, resulting in a deterioration of water quality in the channel or river course.	
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6 ECOLOGY MONITORING

6.1 REQUIREMENTS

- 6.1.1 As required under Section 8.3 of the updated EM&A Manual, wherever applicable, the implementation of the mitigation measures applicable to the three Contracts of the First Phase Development of the Project shall be audited regularly during the construction phase, the establishment phase of the mitigation measures and/or the early (the first 12 months of) operation phase of the Project.

Monitoring of Transplantation of Flora Species of Conservation Importance

- 6.1.2 Prior to commencement of construction works, an updated baseline survey was conducted by a qualified botanist/ plant ecologist within the proposed works area(s) to identify and update the conditions of any flora species of conservation importance. A Baseline Vegetation Survey and Transplantation Proposal would be prepared to confirm the locations, quantities and conditions of any identified flora species of conservation importance within the works area(s), and proposed methodology and receptor site(s) to transplant any of these specimens that are to be affected by the construction works.
- 6.1.3 Based on the result of the Vegetation Survey, flora species of conservation importance was not recorded within the works area(s). There would be no transplantation of flora species of conservation importance, and relevant monitoring is not required for the Project.

Monitoring of Mitigation Measures on Affected Aquatic Fauna of Conservation Importance

- 6.1.4 A baseline survey shall be conducted in all affected watercourses by a qualified ecologist of relevant experience to confirm the presence, relative abundance, and distribution of any aquatic species of conservation importance prior to any commencement of works which would lead to watercourse loss. A translocation programme shall be designed and developed with relevant authorities to translocate any affected aquatic fauna species of conservation importance. Capture and translocation of species to suitable permanent receptor site(s) (e.g. the retained natural watercourses in PDA or the recreated watercourse) or a holding area shall be conducted by a suitably qualified ecologist before the commencement of any construction works.
- 6.1.5 In view of commencement of preparation work at Yuen Long Nullah, baseline survey for the presence of aquatic species of conservation importance was conducted at the affected sections of the Nullah by the qualified ecologist of ET on 24th November 2023. There were no aquatic species of conservation importance found and recorded. The relevant baseline report will be submitted separately. In the Reporting Period, only preparation work was conducted at Yuen Long Nullah and no works would lead to watercourse.
- 6.1.6 Another baseline survey would be conducted for commencement of works which would lead to watercourse loss for other section of works.

Monitoring of Mitigation Measures to Minimize Disturbance Impacts to Tai Tong (Pak Sha Tsuen) Egretty

- 6.1.7 Prior to commencement of construction activities, a baseline egretty survey was conducted during the breeding season to confirm the location of egretty, evidence of egretty occupation and number of breeding pairs. Based on the survey result, no egretty was found within 250m of the project boundary. Therefore, the relevant monitoring and flight-line surveys was not required in the Reporting Period.

7 LANDSCAPE AND VISUAL MONITORING

7.1 MONITORING REQUIREMENTS

7.1.1 The EIA has recommended EM&A for landscape and visual mitigation measures to be undertaken during the design, construction and operational stages of the project. The design, implementation and maintenance of landscape mitigation measures is a key aspect and should be checked to ensure that they are fully realised and that potential conflicts between the proposed landscape measures and any other project works and operational requirements are resolved at the earliest possible date and without compromise to the intention of the mitigation measures. In addition, implementation of the mitigation measures recommended by the EIA will be monitored through the site audit programme.

7.2 MITIGATION MEASURES

7.2.1 The Landscape and Visual Assessment of the EIA proposes a number of mitigation measures to ameliorate the landscape and visual impacts of the Project. These measures are listed in table below and implementation is summarised in the EMIS.

Table 7-1 Proposed Mitigation Measures for Landscape and Visual Impacts

Mitigation Measure Code	Summary Description	Mitigate Landscape Impacts	Mitigate Visual Impacts	Related to Contract
<i>Construction Phase</i>				
CM1	Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction	√	√	C1, C2, C3
CM2	Minimise Topographical Changes	√	√	C1, C2, C3
CM3	Tree Protection and Preservation	√		C1, C2, C3
CM4	Transplanting of Existing Trees	√		C1, C2, C3
CM5	Screen Hording		√	C1, C2, C3
CM6	Watercourses of higher ecological value / Channels Protection	√		C2, C3
CM7	Construction Light Control		√	C1, C2, C3
CM8	Woodland Conservation	√		Not related to YLS First Phase

7.2.2 Mitigation measures to be implemented during construction should be adopted from the start of construction and be in place throughout the entire construction period. Tree transplantation, preservation of Potentially Registerable Old and Valuable Trees (POVTs), Rare and Protective Vegetation, and compensatory planting should be carried out as early as possible in the Project with transplantation carried out prior to construction starting in any particular area.

7.3 AUDIT REQUIREMENT

7.3.1 Site audits should be undertaken during the construction phase of the Project to check that the proposed landscape and visual mitigation measures are properly implemented and maintained as per their intended objectives. Site inspections should be undertaken by the ET at least once every two weeks during the construction period. In addition, as the Project contains various Schedule 2 DPs, site inspection program for these DPs shall make reference to the project details and works progress to schedule the inspection works. Particularly audits should be carried out during site clearance when proposed tree retain, tree felling, and transplantation may occur.

7.4 AUDIT RESULT

7.4.1 Bi-weekly inspection of landscape and visual impact and mitigation measures were conducted by ET during the weekly site inspection. It was observed that six individual trees under Contract 2 transplanted to the nursery site were in fair condition. For Contract 3, the nursery site for transplanted tree were properly maintained by the Contractor, and the transplanted trees were in fair health condition.

8 WASTE MANAGEMENT

8.1 GENERAL WASTE MANAGEMENT

8.1.1 Waste management was carried out in accordance with the Waste Management Plan for the Contract.

8.2 RECORDS OF WASTE QUANTITIES

8.2.1 All types of waste arising from the construction work are broadly classified into the following:

- Insert construction & demolition (C&D) Material; and
- C&D waste

8.2.2 The Contractors are advised to minimise the wastes generated through recycling or reusing. All mitigation measures stipulated in the Updated EM&A Manual and waste management plans shall be fully implemented.

8.2.3 The quantities of waste for disposal under Contract 1 and Contract 2 in this Reporting Period are summarized in *Tables 8-1* and *8-2* and they are made reference to the Waste Flow Table provide by the Contractors which shown in *Appendix L*.

Table 8-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Contract 1		Contract 2		Contract 3	
	Quantity (tones)	Disposal Location	Quantity (tones)	Disposal Location	Quantity (in '000m ³)	Disposal Location
Total generated C&D Materials (Inert)	3400.38	--	3898.11	--	20.482	--
Reused in this Contract (Inert)	0	--	0	--	0	--
Reused in other Projects (Inert)	1137.76	--	0	--	0	--
Disposal as Public Fill (Inert)	2247.56	Tuen Mun Area 38	2898.11	Tuen Mun Area 38	4.093	Tuen Mun Area 38

Table 8-2 Summary of Quantities of C&D Wastes

Type of Waste	Contract 1		Contract 2		Contract 3	
	Quantity (tones)	Disposal Location	Quantity (tones)	Disposal Location	Quantity (in '000kg / '000m ³)	Disposal Location
Recycled Metal	0	--	0	--	0.007	--
Recycled Paper / Cardboard Packing	0	--	310	--	0.007	--
Recycled Plastic	0	--	0	--	0.005	--
Chemical Wastes	0	--	0	--	15.000	--
General Refuses	15.06	--	73.89	WENT	1.370	WENT

Remark: (*) the unit is in kg

9 SITE INSPECTION

9.1 REQUIREMENTS

9.1.1 According to the updated EM&A Manual, the programme of environmental site inspection shall be formulated by ET Leader. Weekly environmental site inspections were carried out to confirm the environmental performance.

9.2 FINDINGS / DEFICIENCIES DURING THE REPORTING PERIOD

Contract 1

9.2.1 In the Reporting Period, joint site inspections to evaluate the site environmental performance for Contract 1 were carried out by the representatives of the RE, ET and the Contractor on 2nd, 9th, 16th, 23rd and 30th May 2024. No non-compliance was noted.

9.2.2 The findings / deficiencies observed for *Contract 1* during the weekly site inspection are listed in *Table 9-1*.

Table 9-1 Site Inspection and Observations for Contract 1

Date	Findings / Deficiencies	Follow-Up Status
2 nd May 2024	<ul style="list-style-type: none"> The Contractor should provide NRMM label for excavator. (Portion 1A) The Contractor should remove construction waste regularly to enhance house-keeping. (Portion 1A) 	<ul style="list-style-type: none"> The NRMM label was shown on the excavator. The construction waste was removed to enhance the house-keeping.
9 th May 2024	<ul style="list-style-type: none"> The Contractor should cover cement bags properly to reduce dust impact. (Portion 1A) The Contractor should spray water at haul road regularly to reduce dust impact. (Portion 1A) 	<ul style="list-style-type: none"> The cement bags were covered properly and relocated in covered area to reduce dust impact. The haul road was sprayed with water regularly to reduce dust impact.
16 th May 2024	<ul style="list-style-type: none"> The Contractor should dispose construction waste properly to enhance house-keeping. (Portion 1A) The Contractor should cover the sandy stockpile properly to reduce dust impact. (Portion 1A) 	<ul style="list-style-type: none"> The construction waste was properly removed. The sandy stockpile was properly covered.
23 rd May 2024	<ul style="list-style-type: none"> The Construction should remove stagnant water regularly. (Portion 1A) The Contractor should dispose waste properly. (Portion 1A) 	<ul style="list-style-type: none"> The stagnant water was removed regularly. The general waste was removed properly.
30 th May 2024	<ul style="list-style-type: none"> No adverse environmental impact was observed. 	N/A

9.2.3 There were several reminders given to the Contractor to enhance the environmental site performance. They are summarized below:-

- To remove stagnant water regularly to prevent mosquito breeding after rainy day.
- To maintain the acoustic mat properly.
- To ensure all wastewater generated on site is properly treated prior discharge.
- To enhance house-keeping.
- To cover sandy stockpile properly to prevent muddy water runoff during rainy day.

Contract 2

9.2.4 In the Reporting Period, joint site inspections to evaluate the site environmental performance for Contract 1 were carried out by the representatives of the RE, ET and the Contractor on 8th, 14th, 22nd and 28th May 2024. No non-compliance was noted.

9.2.5 The findings / deficiencies observed for *Contract 2* during the weekly site inspection are listed in

Table 9-2.

Table 9-2 Site Inspection and Observations for Contract 2

Date	Findings / Deficiencies	Follow-Up Status
8 th May 2024	<ul style="list-style-type: none"> The Contractor should remove stagnant water inside regularly to prevent mosquito breeding. (Portion 14) 	<ul style="list-style-type: none"> Stagnant water has been removed from drip tray.
14 th May 2024	<ul style="list-style-type: none"> No environmental issue was observed during site inspection. 	N/A
22 nd May 2024	<ul style="list-style-type: none"> The Contractor should dispose waste properly to enhance house-keeping. (Portion 11) The Contractor should cover sandy stockpile properly to prevent muddy water runoff. (Portion 11) The Contractor should remove construction waste inside drainage system to prevent blockage. (Portion 1A) 	<ul style="list-style-type: none"> Waste has been disposed to maintain proper house keeping. Stockpile has been properly covered. The drainage system has been cleaned up and covered to prevent more waste into the drainage.
28 th May 2024	<ul style="list-style-type: none"> The Contractor should provide mitigation measures to remove stagnant water and prevent mosquito breeding. (Portion 1A) 	<ul style="list-style-type: none"> Stagnant water has been removed.

9.2.6 There were several reminders given to the Contractor to enhance the environmental site performance. They are summarized below:-

- To ensure all wet-set can be used and all wastewater generated on site is properly treated prior discharge.
- To maintain the drainage system to prevent blockage.
- To remove or cover sandy stockpile to reduce dust impact and prevent muddy water runoff.
- To provide mitigation measures to remove stagnant water and prevent muddy water runoff during rainy.
- To dispose waste regularly to enhance house-keeping.

9.2.7 General housekeeping such as site tidiness and cleanliness should be maintained for all works areas. Furthermore, the Contractor was reminded to implement the Waste Management Plan of the Contracts.

Contract 3

9.2.8 In the Reporting Period, joint site inspections to evaluate the site environmental performance for Contract 1 were carried out by the representatives of the RE, ET and the Contractor on 2nd, 9th, 16th, 23rd and 27th May 2024. No non-compliance was noted.

9.2.9 The findings / deficiencies observed for **Contract 3** during the weekly site inspection are listed in **Table 9-3**.

Table 9-3 Site Inspection and Observations for Contract 3

Date	Findings / Deficiencies	Follow-Up Status
2 nd May 2024	<ul style="list-style-type: none"> No adverse environmental impact was observed. 	N/A
9 th May 2024	<ul style="list-style-type: none"> The Contractor should provide NRMM label for generator. (Portion 6A) 	<ul style="list-style-type: none"> NRMM label was attached for the generator.
16 th May 2024	<ul style="list-style-type: none"> The Contractor should spray water regularly at haul road to reduce dust impact. 	<ul style="list-style-type: none"> Water spraying was used to suppress construction dust.
23 rd May 2024	<ul style="list-style-type: none"> The Contractor should dispose waste properly to enhance house-keeping. 	<ul style="list-style-type: none"> The general refuse was removed.

Date	Findings / Deficiencies	Follow-Up Status
	<ul style="list-style-type: none"> The Contractor should spray water at haul road to reduce dust impact. 	<ul style="list-style-type: none"> Water Trucks were used to regularly suppress the construction dust from dump trucks.
27 th May 2024	<ul style="list-style-type: none"> The Contractor should provide mitigation measures to prevent muddy water runoff. (NSB) The Contractor should remove stagnant water regularly to prevent stagnant water runoff and mosquito breeding. (NSB) 	<ul style="list-style-type: none"> Stagnant water was pumped to wetsep to prevent muddy water runoff. Stagnant water was removed.

9.2.10 There were several reminders given to the Contractor to enhance the environmental site performance. They are summarized below:-

- To remove stagnant water regularly to prevent mosquito breeding after rainy day.
- To provide mitigation measures for GI work to avoid muddy water runoff of site.
- To spray water regularly at haul road to reduce dust impact.
- To dispose waste properly to enhance house-keeping.
- To remove stagnant water regularly to prevent mosquito breeding during rainy day.
- To ensure all wastewater generated on site is properly treated prior discharge.

9.2.11 General housekeeping such as site tidiness and cleanliness should be maintained for all works areas. Furthermore, the Contractor was reminded to implement the Waste Management Plan of the Contracts.

10 ENVIRONMENTAL COMPLAINTS AND NON-COMPLIANCES

10.1 ENVIRONMENTAL COMPLAINTS, SUMMONS AND PROSECUTIONS

10.1.1 There was no environmental complaint, prosecution or notification of summons received in the Reporting Period.

10.1.2 The statistical summary table of the environmental complaints, summons and prosecutions are presented in *Tables 10-1, 10-2* and *10-3*. Detailed complaint log for the Contract is presented in *Appendix M*.

Table 10-1 Statistical Summary of Environmental Complaints

Reporting Period	Contract No	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
13 th July 2023 – 30 th April 2024	Contract 1	0	0	NA
May 2024	Contract 1	0		NA
1 st – 30 th April 2024	Contract 2	0	0	NA
May 2024	Contract 2	0		NA
1 st – 30 th April 2024	Contract 3	0	0	NA
May 2024	Contract 3	0		NA

Table 10-2 Statistical Summary of Environmental Summons

Reporting Period	Contract No	Environmental Summons Statistics		
		Frequency	Cumulative	Complaint Nature
13 th July 2023 – 30 th April 2024	Contract 1	0	0	NA
May 2024	Contract 1	0		NA
1 st – 30 th April 2024	Contract 2	0	0	NA
May 2024	Contract 2	0		NA
1 st – 30 th April 2024	Contract 3	0	0	NA
May 2024	Contract 3	0		NA

Table 10-3 Statistical Summary of Environmental Prosecution

Reporting Period	Contract No	Environmental Prosecution Statistics		
		Frequency	Cumulative	Complaint Nature
13 th July 2023 – 30 th April 2024	Contract 1	0	0	NA
May 2024	Contract 1	0		NA
1 st – 30 th April 2024	Contract 2	0	0	NA
May 2024	Contract 2	0		NA
1 st – 30 th April 2024	Contract 3	0	0	NA
May 2024	Contract 3	0		NA

10.2 OTHER ENVIRONMENTAL NON-COMPLIANCES

10.2.1 In addition, no emergency events related to violation of environmental legislation for illegal dumping and landfilling were received in the Reporting Period.

11 IMPLEMENTATION STATUS OF MITIGATION MEASURES

11.1 GENERAL REQUIREMENTS

11.1.1 The environmental mitigation measures that recommended in the ISEMM in the EM&A Manual covered the issues of dust, noise, water and waste and they are summarised presented in *Appendix N*.

11.1.2 The Contract Works under the Project shall be implementing the required environmental mitigation measures according to the EM&A Manual as subject to the site condition. Environmental mitigation measures generally implemented by the Contractor and the implementation status are shown in *Appendix N*.

11.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

11.2.1 According to information provided by the Contractor, the construction works under the Contract in the coming month are listed below:

Table 11-1 Summary of Construction Activities in the next Reporting Period

Contract No.	Construction Activities undertaken in next Reporting Period	
	Non-designated work	Designated work
YL/2021/03 (Contract 1)	<ul style="list-style-type: none"> • Demolition works • Ground Investigation • Site Hoarding • Site Clearance • Site Formation • Construction of drainage system • Piling works 	N/A
YL/2021/04 (Contract 2)	<ul style="list-style-type: none"> • Soil Excavation • Temporary access and haul road formation • Road Set back works • Construction of Detour Road • ELS and Construction for CUT • Backfilling works • TAM Grout • Construction of Decking • Site clearance 	EP-553/2018/A <ul style="list-style-type: none"> • Construction of retaining wall EP-549/2018 <ul style="list-style-type: none"> • Site clearance
YL/2022/01 (Contract 3)	<ul style="list-style-type: none"> • Site Clearance • GI Works • Tree Felling • Demolition • Decontamination • Construction of Retaining Wall • Sheet Pile Installation for Box Culvert BC01 • Pre-bored H Pile • ELS construction for Subway M 	EP-548/2018/A <ul style="list-style-type: none"> • Bored Pile Construction for Bridge F & G EP-549/2018 <ul style="list-style-type: none"> • Nil EP-550/2018/A <ul style="list-style-type: none"> • Nil EP-551/2018/A <ul style="list-style-type: none"> • Nil

11.3 KEY ISSUES FOR THE COMING MONTH

11.3.1 Key issues for the coming month include the following:

- Implementation of control measures for rainstorm;
- Regular clearance of stagnant water;
- Implementation of dust suppression measures at all times;
- Potential wastewater quality impact due to surface runoff;

- Potential fugitive dust quality impact due from the dry/loose/exposure soil surface/dusty material;
- Disposal of empty engine oil containers within site area;
- Ensure dust suppression measures are implemented properly;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Discharge of site effluent to the nearby wetland, stockpiling or disposal of materials, and any dredging or construction area at this area are prohibited;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures.

12 CONCLUSIONS AND RECOMMENDATIONS

12.1 CONCLUSIONS

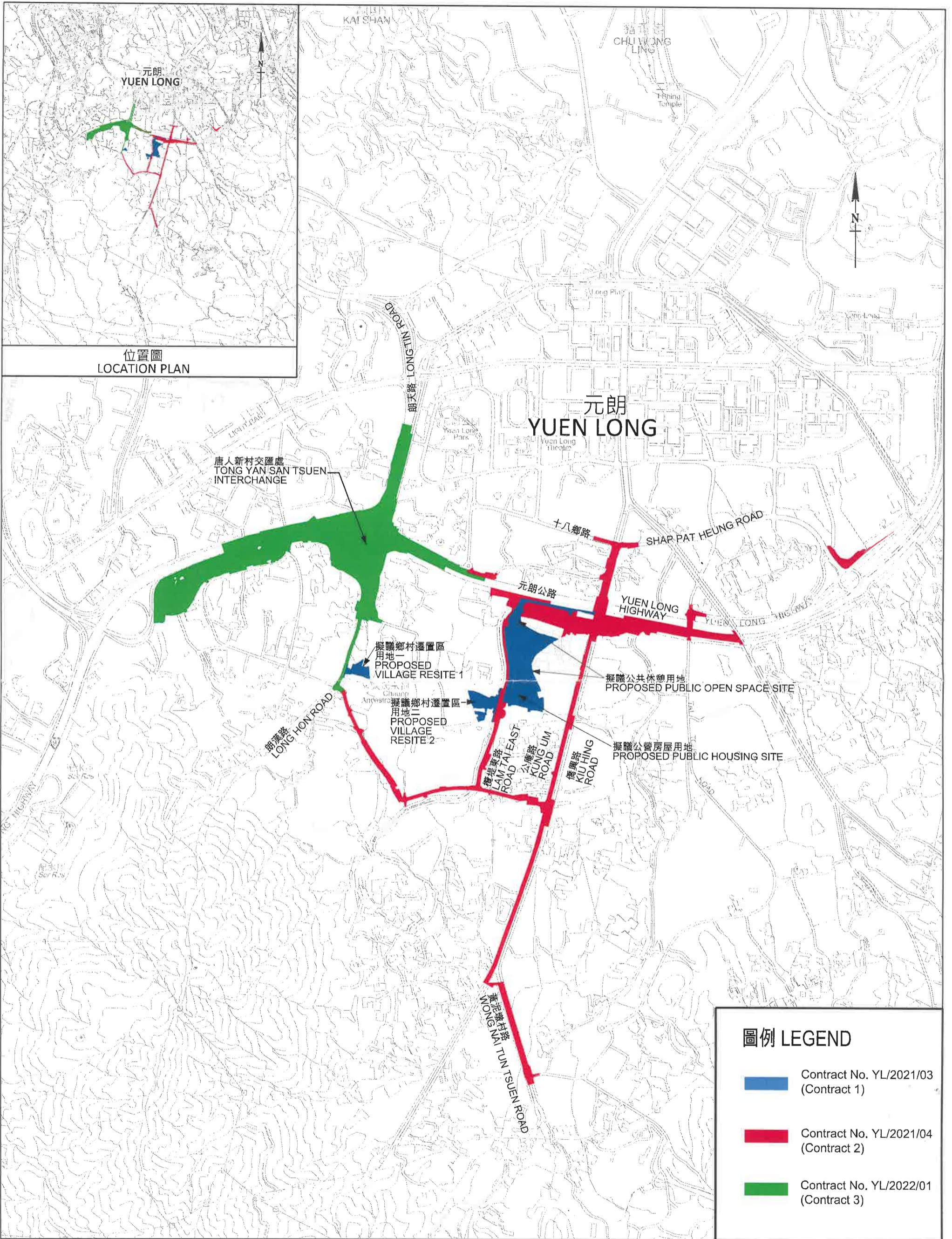
- 12.1.1 This is the Monthly EM&A Report presenting the monitoring results and inspection findings for the Project, for the Reporting Period from **1st to 31st May 2024**.
- 12.1.2 No 1-hour TSP of air quality monitoring result that triggered the Action or Limit Levels was recorded. No corrective action was required.
- 12.1.3 In this Reporting Period, no noise complaint (which is an Action Level exceedance) was received and no construction noise measurement result triggered the Limit Level was recorded in this Reporting Month. No corrective action was issued.
- 12.1.4 In this Reporting Period, exceedances of A/L levels were recorded on 4th and 21st May 2024. Notification of Exceedance (NOE) with preliminary investigation and on-site observation were issued to all concerned parties, i.e. ER, Contractor and IEC. In both the exceedance days, no major construction activities were conducted near the monitoring stations. Investigation reviewed that heavy rainstorms were record by Hong Kong Observatory on both exceedance days. Water quality at all the monitoring stations, including the control station, gradient station and impact station, were poor. It is suspected that runoff carried pollutants upstream to the monitoring stations leading to deterioration of water quality along the channel and river course. Investigation suggested that the exceedances in the Reporting Period were unlikely caused by the construction project, which was agreed by ER.
- 12.1.5 Bi-weekly inspection of landscape and visual impact and mitigation measures were conducted by ET during the weekly site inspection. It was observed that six individual trees under Contract 2 transplanted to the nursery site were in fair condition. For Contract 3, the nursery site for transplanted tree were properly maintained by the Contractor, and the transplanted trees were in fair health condition.
- 12.1.6 In the Reporting Month, no environmental complaint, summons and prosecution was received. In addition, no emergency events related to violation of environmental legislation for illegal dumping and landfilling were received.
- 12.1.7 In the Reporting Period, weekly joint site inspection to evaluate the site environmental performance had been carried out by the representatives of the Consultants, ET and the respective Contractor of Contract 1, Contract 2 and Contract 3. No non-compliance was noted during the site inspection. In addition, IEC carried out the joint site inspections for Contract 2 and Contractor 3 on 28th and 27th May 2024 respectively.

12.2 RECOMMENDATIONS

- 12.2.1 The Contractor should pay special attention on the water quality mitigation measures and fully implement according to the ISEMM of the EM&A Manual, in particular to prevent surface runoff with high SS content and other pollutants from flowing to stream. All effluent discharge shall be ensure to fulfill Technical Memorandum of Effluent Discharged into Drainage and Sewerage Systems, inland and Coastal Waters criteria or discharge permits stipulation.
- 12.2.2 Construction noise would be a key environmental issue during construction work of the Project. Noise mitigation measures such as using quiet plants and/ or using movable temporary noise barriers should be implemented as stipulated under EM&A Manual to ensure construction noise impacts at the NSRs comply with the noise criteria.
- 12.2.3 Since the Works Contract located adjacent to villages, potential construction dust impact should be minimised. The Contractor should fully implement the air quality mitigation measures to reduce construction dust emission as far as practicable.
- 12.2.4 All other mitigation measures recommended in the ISEMM of the EM&A Manual should be properly implemented and maintained as far as practicable.

Appendix A

General layout of YLS First Phase Development



CONSTRUCTION CONTRACTS UNDER YUEN LONG SOUTH FIRST PHASE DEVELOPMENT

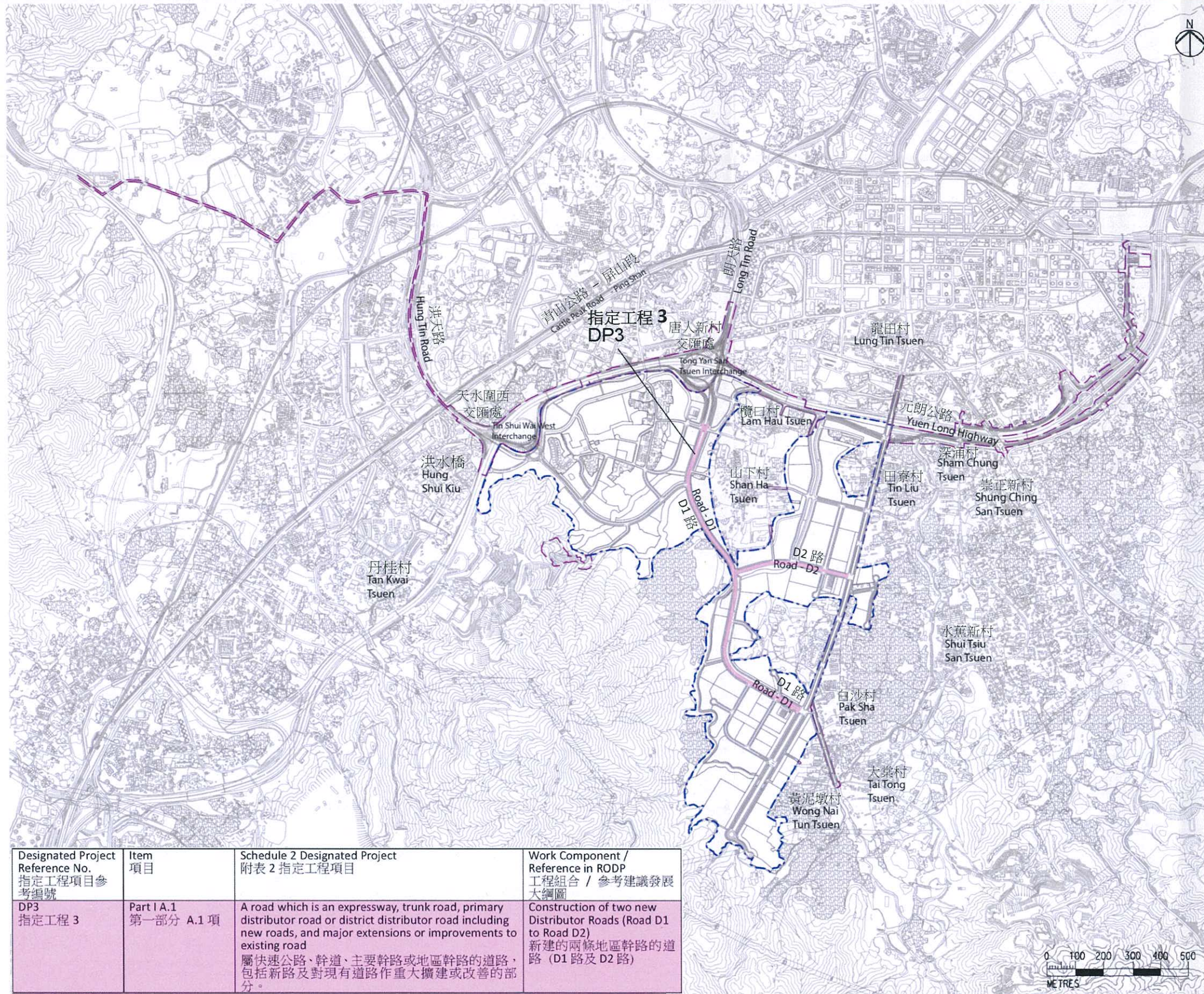
圖例 LEGEND

- Contract No. YL/2021/03 (Contract 1)
- Contract No. YL/2021/04 (Contract 2)
- Contract No. YL/2022/01 (Contract 3)

Appendix B

Schedule 2 Designated Projects

under YLS First Phase Development



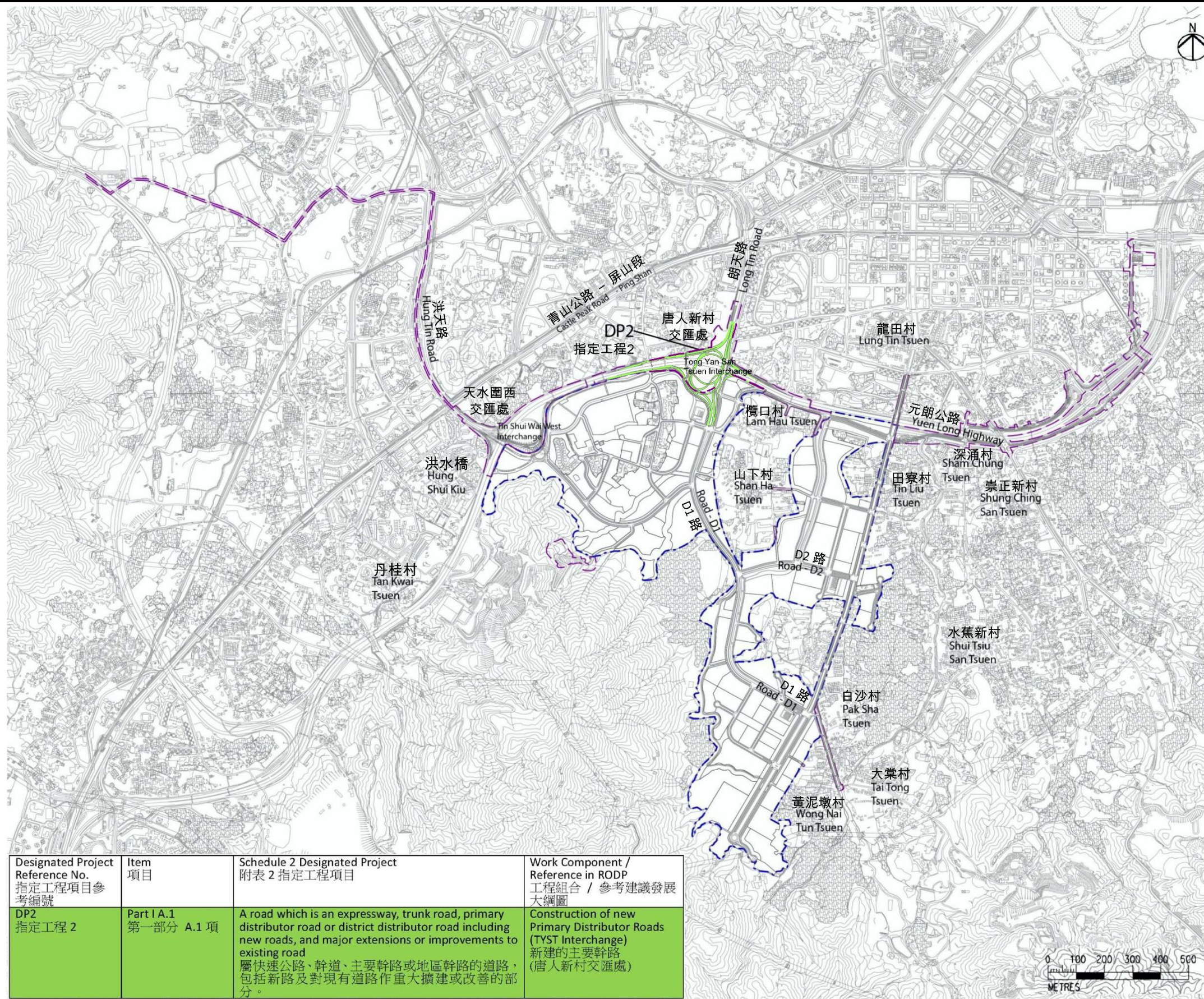
Designated Project Reference No. 指定工程項目參考編號	Item 項目	Schedule 2 Designated Project 附表 2 指定工程項目	Work Component / Reference in RODP 工程組合 / 參考建議發展大綱圖
DP3 指定工程 3	Part I A.1 第一部分 A.1 項	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road 屬快速公路、幹道、主要幹路或地區幹路的道路，包括新路及對現有道路作重大擴建或改善的部分。	Construction of two new Distributor Roads (Road D1 to Road D2) 新建的兩條地區幹路的道路 (D1 路及 D2 路)

Project Title: Construction of Two New District Distributor Roads (Road D1 to Road D2) for Housing Sites in Yuen Long South
 工程項目名稱：元朗南房屋用地新建的兩條地區幹路 (D1 路 - D2 路)

Figure 1: Project Location Plan
 圖 1: 工程項目位置圖

Environmental Permit No. : EP-549/2018
 環境許可證編號 : EP-549/2018





Legend 圖例

- [---] Development Area (DA) 發展區
- [---] Works Boundary Outside DA 發展區外的施工範圍

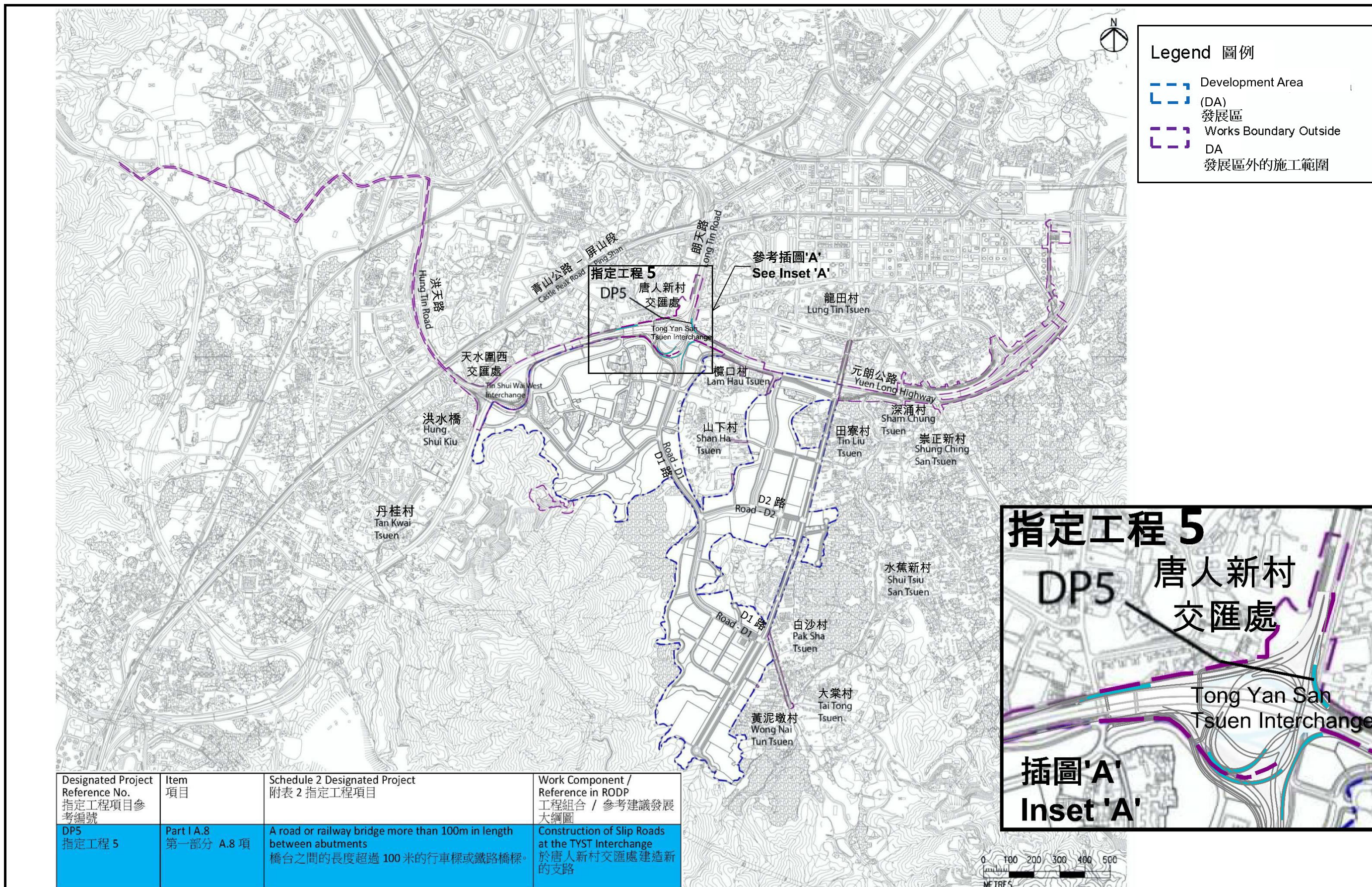
Designated Project Reference No. 指定工程項目參考編號	Item 項目	Schedule 2 Designated Project 附表 2 指定工程項目	Work Component / Reference in RODP 工程組合 / 參考建議發展大綱圖
DP2 指定工程 2	Part I A.1 第一部分 A.1 項	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road 屬快速公路、幹道、主要幹路或地區幹路的道路，包括新路及對現有道路作重大擴建或改善的部分。	Construction of new Primary Distributor Roads (TYST Interchange) 新建的主要幹路 (唐人新村交匯處)

Project Title: Construction of New Primary Distributor Roads (Tong Yan San Tsuen Interchange) for Housing Sites in Yuen Long South
 工程項目名稱：元朗南房屋用地新建的主要幹路（唐人新村交匯處）

Figure 1: Project Location Plan
 圖 1：工程項目位置圖

Environmental Permit No. : EP-548/2018/A
 環境許可證編號 : EP-548/2018/A



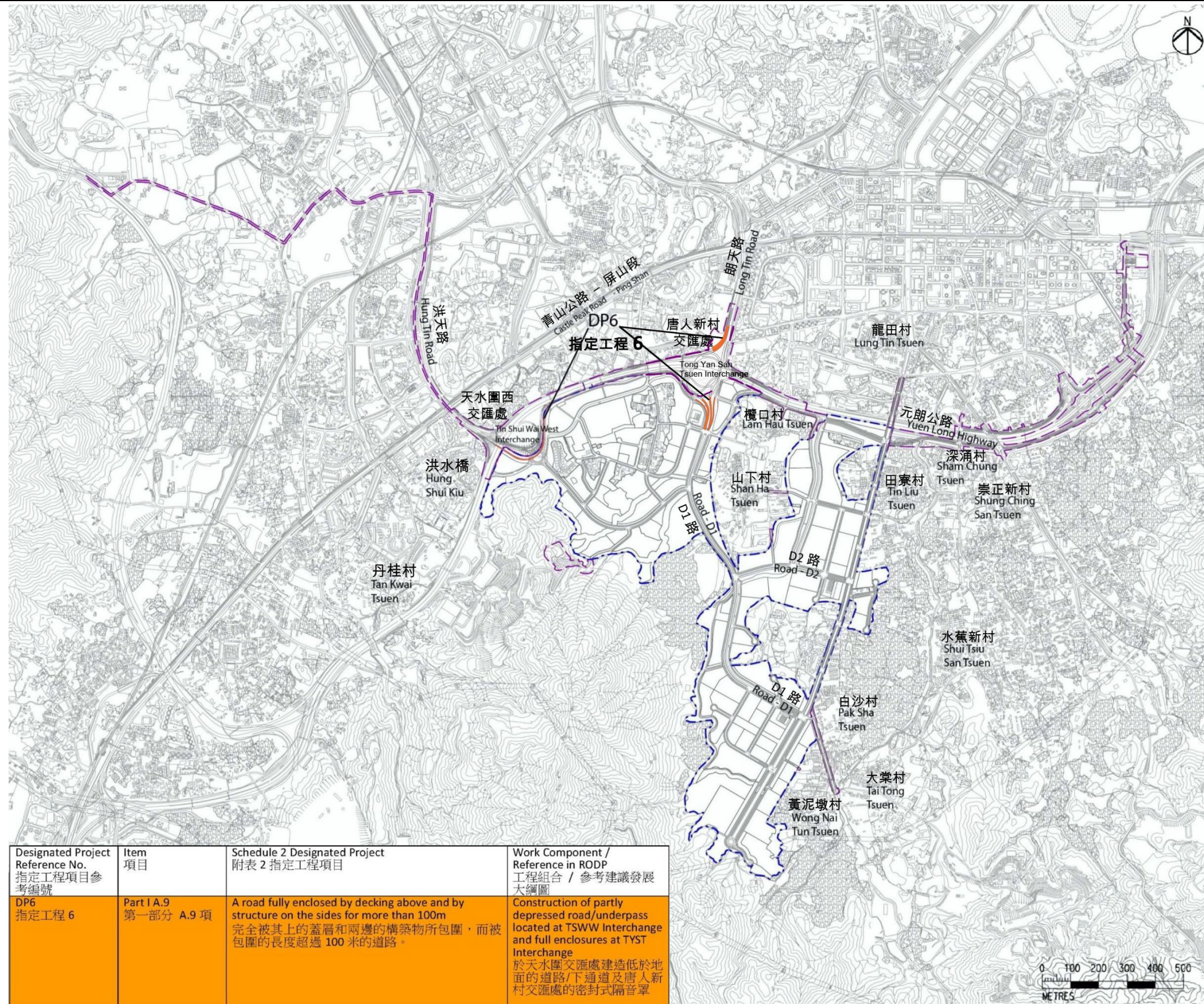


Project Title : Construction of Slip Roads at Tong Yan San Tsuen Interchange for Housing Sites in Yuen Long South
 工程項目名稱 : 元朗南房屋用地新建在唐人新村交匯處的支路

Figure 1: Project Location Plan
 圖 1: 工程項目位置圖

Environmental Permit No. : EP-550/2018A
 環境許可證編號 : EP-550/2018A





Legend 圖例

- Development Area (DA) 發展區
- Works Boundary Outside DA 發展區外的施工範圍

Designated Project Reference No. 指定工程項目參考編號	Item 項目	Schedule 2 Designated Project 附表 2 指定工程項目	Work Component / Reference in RODP 工程組合 / 參考建議發展大綱圖
DP6 指定工程 6	Part I A.9 第一部分 A.9 項	A road fully enclosed by decking above and by structure on the sides for more than 100m 完全被其上的蓋層和兩邊的構築物所包圍，而被包圍的長度超過 100 米的道路。	Construction of partly depressed road/underpass located at TSWW Interchange and full enclosures at TYST Interchange 於天水圍交匯處建造低於地面的道路/下通道及唐人新村交匯處的密封式隔音罩

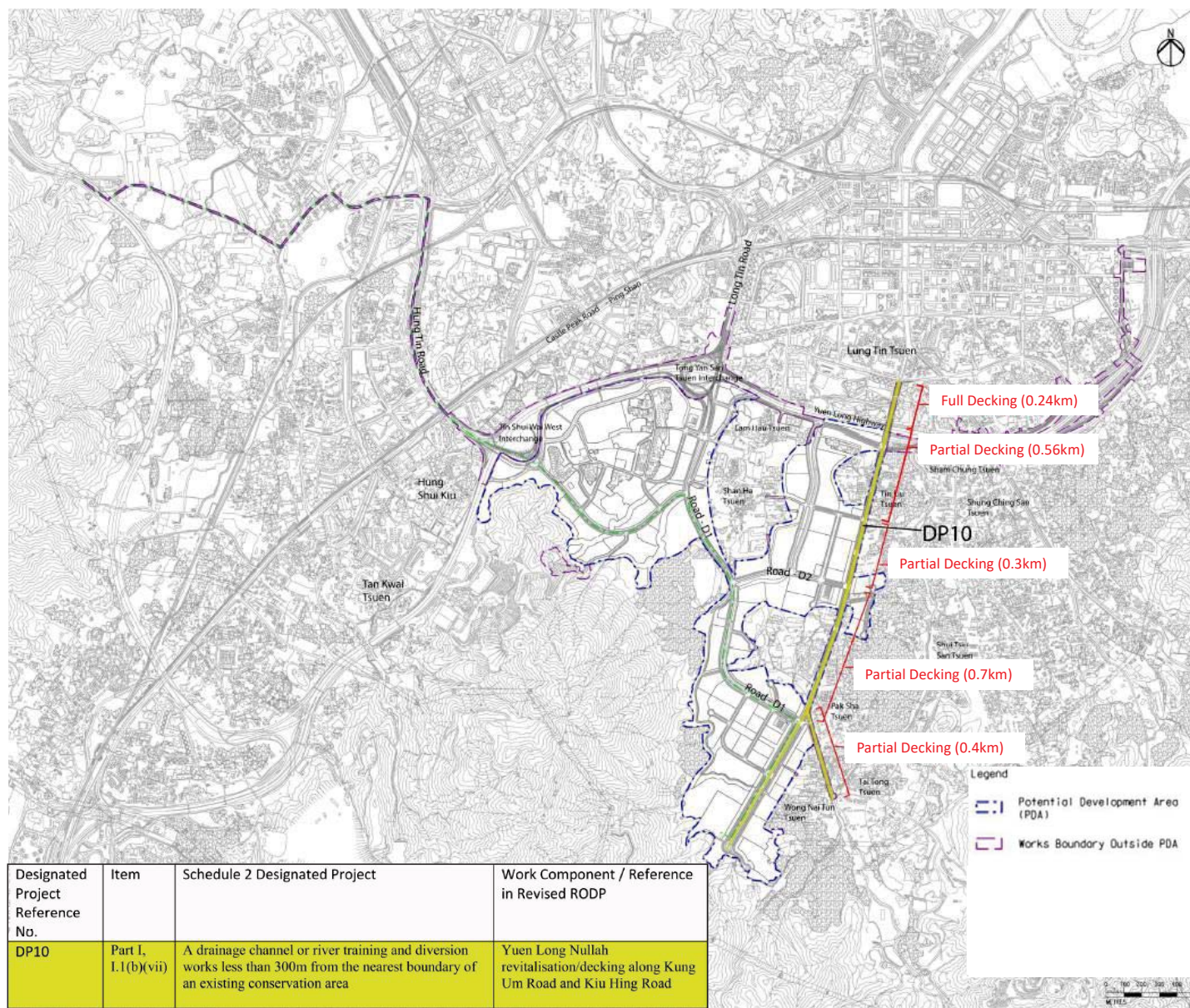


Project Title : Construction of Partly Depressed Road / Underpass Located at Tin Shui Wai West Interchange and Full Enclosures at Tong Yan San Tsuen Interchange for Housing Sites in Yuen Long South
 工程項目名稱: 元朗南房屋用地建造於天水圍西交匯處的部分沉降道路/隧道及於唐人新村交匯處的密封式隔音罩

Figure 1: Project Location Plan
 圖 1: 工程項目位置圖

Environmental Permit No. : EP-551/2018A
 環境許可證編號 : EP-551/2018A





Designated Project Reference No.	Item	Schedule 2 Designated Project	Work Component / Reference in Revised RODP
DP10	Part I, I.1(b)(vii)	A drainage channel or river training and diversion works less than 300m from the nearest boundary of an existing conservation area	Yuen Long Nullah revitalisation/decking along Kung Um Road and Kiu Hing Road

Project Title: Yuen Long Nullah Revitalisation/Decking along Kung Um Road and Kiu Hing Road for Housing Sites in Yuen Long South
 工程項目名稱：元朗南房屋用地沿公庵路及僑興路的元朗明渠活化/加建上蓋工程

Figure 1a: Project Location Plan
 圖 1a：工程項目位置圖

Environmental Permit No. : EP-553/2018A
 環境許可證編號 : EP-553/2018A



Appendix C

Project Organization and the key personal contact

Contact Details of Key Personnel for Contract YL/2021/03 (Contract 1)

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Project Proponent	Mr. NG Kam Leung, Julian	2158 5612	2693 2918
AECOM	Chief Resident Engineer	Mr. Alex Chan	5208 5837	3549 5678
Tung Lee	Construction Manager	Mr. Lam Wai Hong, Eric	6097 5644	2352 6740
Tung Lee	Site Agent	Mr. Chan Tan Kit	9681 8144	2352 6740
Tung Lee	Environmental Officer	Mr. Liu Ho Kan, Frank	6900 3526	2352 6740
Tung Lee	Environmental Supervisor	Mr. Kam Yun Sang, Johnny	6178 4786	2352 6740
Tung Lee	Environmental Supervisor	Mr. Wong Tsz Wing, Matt	6677 6383	2352 6740
Telex	Independent Environmental Checker	Ir. Neslon Tam	9626 1239	3563 7018
Ford	Environmental Team Leader	Mr. Tam Tak Wing	2959 6059	2959 6079
Ford	Deputy Environmental Team Leader	Mr. Ben Tam	2959 6059	2959 6079
Ford	Environmental Consultant	Ms. Nicola Hon	2959 6059	2959 6079

Legend:

CEDD - (Project Proponent) – Civil Engineering and Development Department

AECOM - (Consultant) – AECOM Asia Company Limited

Telex (IEC) – Telex Environmental and Energy Management Ltd

Ford (ET) – Ford Business International Limited

Tung Lee - (the Contractor of the Contract YL/2021/04) – Tung Lee Engineering Co.

Contact Details of Key Personnel for Contract YL/2021/04 (Contract 2)

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Project Proponent	Mr. NG Kam Leung, Julian	2158 5612	2693 2918
AECOM	Chief Resident Engineer	Alex Chan	5208 5837	3549 5678
CREC - JV	Project Manager	Albert Yau	6468 7702	3549 5679
CREC - JV	Construction Manager	Stephen Lee	9641 5345	3549 5679
CREC - JV	Site Agent	Jim Ko	9632 9163	3549 5679
CREC - JV	Environmental Officer	Kelvin Cheung	9060 1020	3549 5679
CREC - JV	Environmental Supervisor	Karen Leung	5239 3606	3549 5679
Telexmax	Independent Environmental Checker	Ir. Neslon Tam	9626 1239	3563 7018
Ford	Environmental Team Leader	Tam Tak Wing	2959 6059	2959 6079
Ford	Deputy Environmental Team Leader	Ben Tam	2959 6059	2959 6079
Ford	Environmental Consultant	Nicola Hon	2959 6059	2959 6079

Legend:

CEDD - (Project Proponent) – Civil Engineering and Development Department

AECOM - (Consultant) – AECOM Asia Company Limited

Telexmax (IEC) – Telexmax Environmental and Energy Management Ltd

Ford (ET) – Ford Business International Limited

Contact Details of Key Personnel for Contract YL/2022/01 (Contract 3)

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Project Proponent	Mr. NG Kam Leung, Julian	2158 5612	2693 2918
AECOM	Chief Resident Engineer	Mr. Barry Lee	2349 5665	3549 5678
CRBC	Project Manager	Rayment Suen	9779 8871	3905 8562
CRBC	Deputy Construction Manager	Zheng Lei	5335 0451	3905 8562
CRBC	Site Agent	Danil Wong	53359572	3905 8562
CRBC	Environmental Officer	Calvin So	9724 6254	3905 8562
CRBC	Environmental Supervisor	Elvis Leung	6995 9685	3905 8562
Telexmax	Independent Environmental Checker	Ir. Neslon Tam	9626 1239	3563 7018
Ford	Environmental Team Leader	Tam Tak Wing	2959 6059	2959 6079
Ford	Deputy Environmental Team Leader	Ben Tam	2959 6059	2959 6079
Ford	Environmental Consultant	Nicola Hon	2959 6059	2959 6079

Legend:

CEDD - (Project Proponent) – Civil Engineering and Development Department

AECOM - (Consultant) – AECOM Asia Company Limited

Telexmax (IEC) – Telexmax Environmental and Energy Management Ltd

Ford (ET) – Ford Business International Limited

CRBC - JV (the Contractor of the Contract YL/2022/01) – China Road and Bridge Corporation

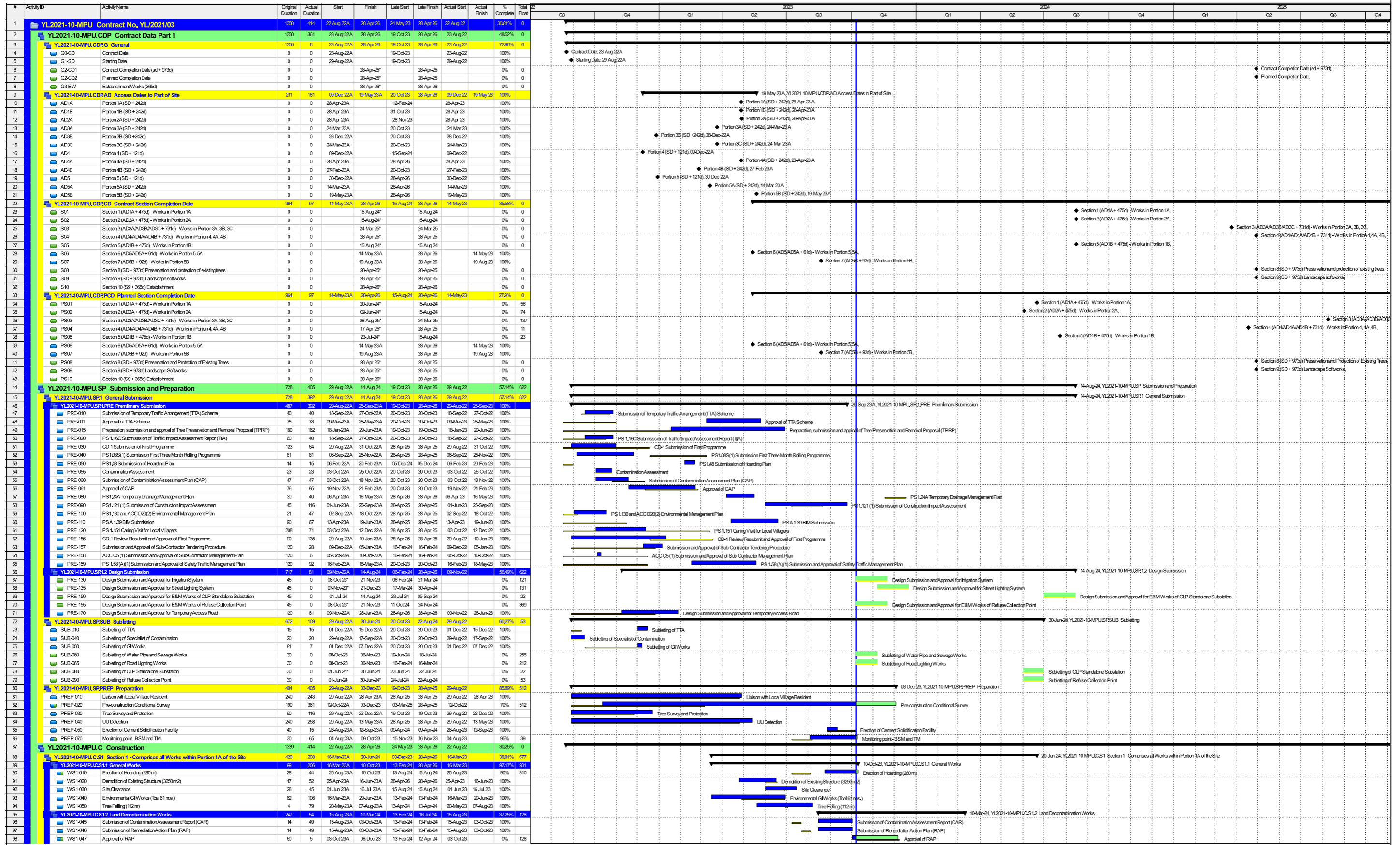
Appendix D

3-month Rolling Construction Programme

- (I) Contract 1**
- (II) Contract 2**
- (III) Contract 3**

3-month Rolling Construction Programme of Contract 1

**Contract No. YL2021/03 - Site Formation and Infrastructure Works for Yuen Long South First Phase Development - Contract 1
REVISED PROGRAMME (REV. 8) (OCT 2023)**

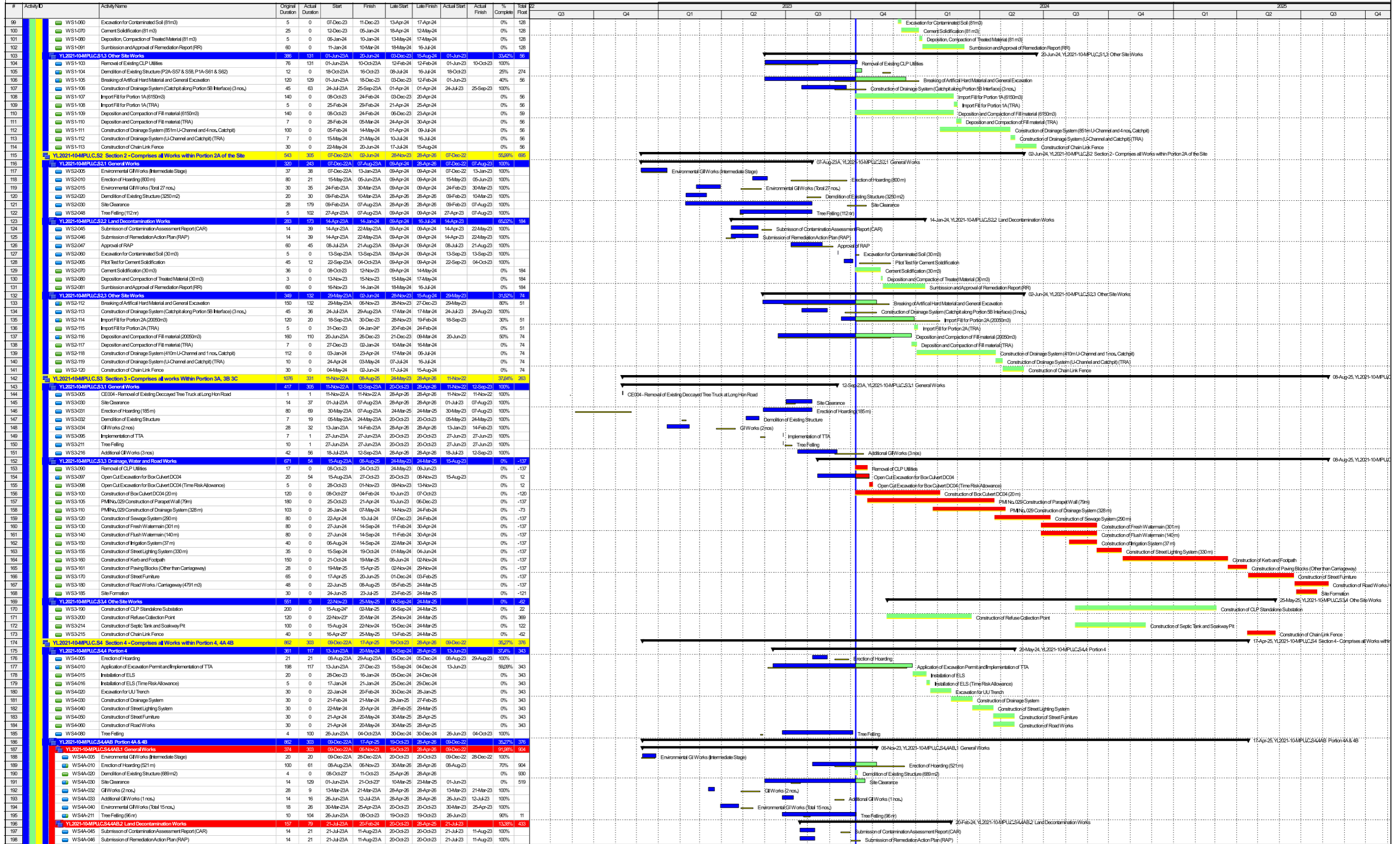


■ Remaining Level of Effort ■ Actual Work ◆ Milestone
■ Actual Level of Effort ■ Remaining Work ◆◆ summary
 Primary Baseline ■ Critical Remaining Work

**Contract No. YL2021/03 - Site Formation and Infrastructure Works for
Yuen Long South First Phase Development - Contract 1
REVISED PROGRAMME (REV. 8) (OCT 2023)**

Date	Revision	Checked	Ap..
15-Aug-23	Rev.6	WCF	YKC
09-Sep-23	Rev.7	WCF	YKC
08-Oct-23	Rev.8	WCF	YKC

**Contract No. YL/2021/03 - Site Formation and Infrastructure Works for Yuen Long South First Phase Development - Contract 1
REVISED PROGRAMME (REV. 8) (OCT 2023)**



█ Remaining Level of Effort	█ Actual Work	◆ Milestone
█ Actual Level of Effort	█ Remaining Work	↔ summary
█ Primary Baseline	█ Critical Remaining Work	

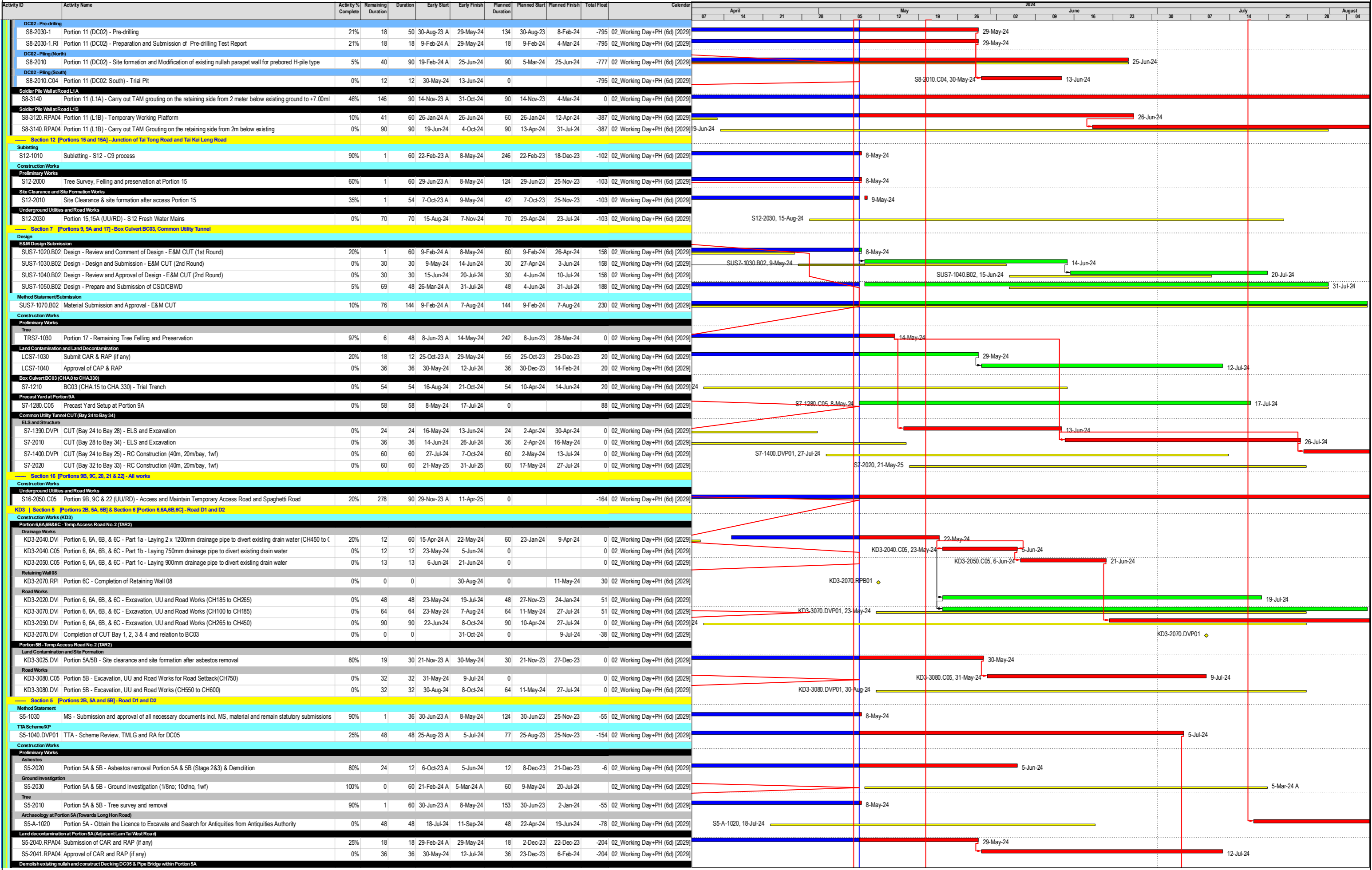
**Contract No. YL/2021/03 - Site Formation and Infrastructure Works for
Yuen Long South First Phase Development - Contract 1
REVISED PROGRAMME (REV. 8) (OCT 2023)**

Page 2 of 3

Date	Revision	Checked	Ap..
15-Aug-23	Rev.6	WCF	YKC
09-Sep-23	Rev.7	WCF	YKC
08-Oct-23	Rev.8	WCF	YKC

3-month Rolling Construction Programme of Contract 2

Site Formation and Infrastructure Works for Yuen Long South First Phase Development – Contract 2



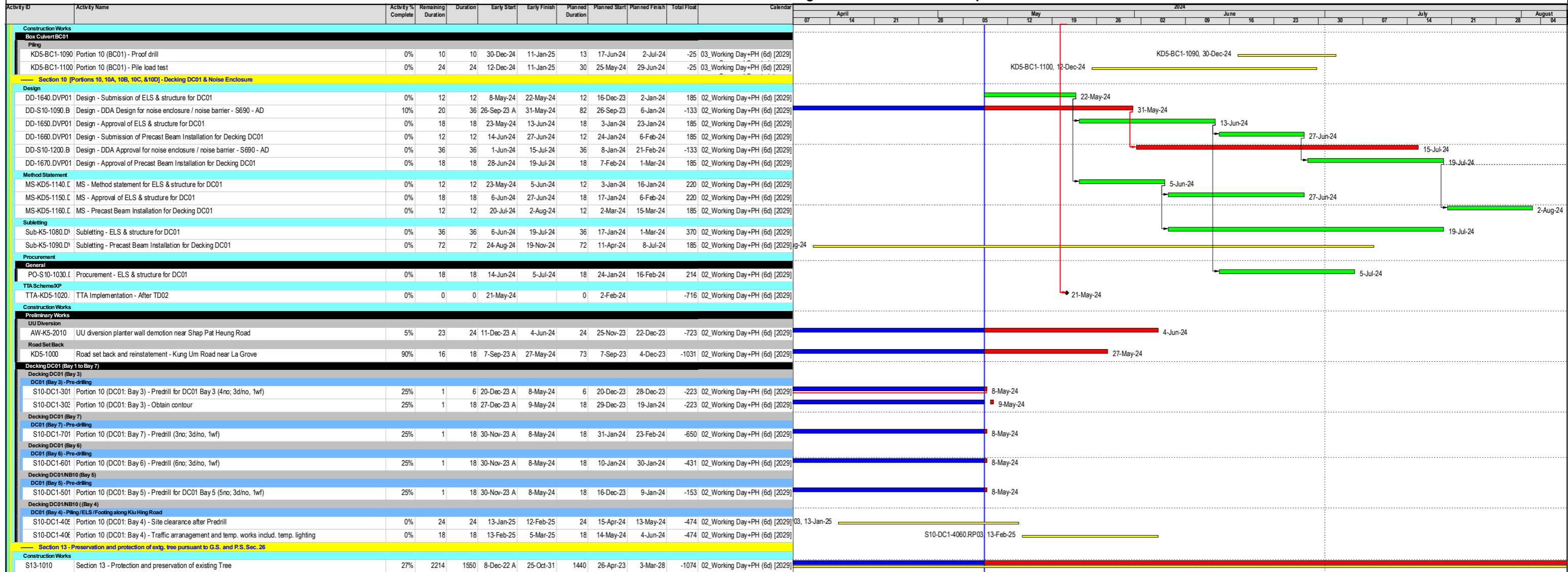
	Actual Work		Planned Bar
	Critical Remaining Work		Milestone
			Planned Mil...

Data Date: 8-May-24
 Project Start: 8 Dec 2022
 Project End: 24-Oct-32
 Page 2 of 6

YL/2021/04
 Monthly Programme Update
 Three Months Rolling Programme

Date	Revision	Checked	Approved
30-Nov-23	RP.B02 - Accepted (3-Jan-24)		
15-Apr-24	202403 MPU		
15-May-24	202404 MPU		

Site Formation and Infrastructure Works for Yuen Long South First Phase Development – Contract 2



█ Actual Work	█ Planned Bar
█ Remaining Work	◆ Milestone
█ Critical Remaining Work	◆ Planned Mil...

Data Date: 8-May-24
 Project Start: 8 Dec 2022
 Project End: 24-Oct-32
 Page 6 of 6

YL/2021/04
 Monthly Programme Update
 Three Months Rolling Programme

Date	Revision	Checked	Approved
30-Nov-23	RP.B02 - Accepted (3-Jan-24)		
15-Apr-24	202403 MPU		
15-May-24	202404 MPU		

3-month Rolling Construction Programme of Contract 3

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						May 17	Jun 18	Jul 19	Aug 20
Site Formation and Infrastructure Works for Yuen Long South First Phase Development									
Access Date									
ACD10640.80	Portion 11A (remaining)	0	0	07-May-24 A	07-May-24 A				
ACD10720.60	Portion 15A (remaining)	0	0	07-May-24 A					
Planned Completion of Key Dates and Section of the Works									
Planned Completion of Key Dates (Summary)									
LOE11140	KD3-Complete laying,testing, cleaning and sterilization of DN200 fresh water pipe laying from chainage CHM0.00 to 804.363	272	272	24-Jul-24	21-Apr-25				
LOE11160	KD4-Complete all necessary works to facilitate laying of CLP cables from TYST to LH Road via footpath and cycle track	585	427	22-Sep-23 A	08-Jul-25				
LOE11180	KD5-Complete all necessary works for opening of road connecting existing YL Highway westbound to existing LH and SH Road	768	743	23-Sep-23 A	20-May-26				
LOE11200	KD6-Complete all necessary works for opening of road connecting existing LH and SH Road to existing YL Highway westbound	800	749	22-Aug-23 A	26-May-26				
LOE11220	KD7-Complete all necessary works for opening of road connecting YL Highway eastbound to existing LT Road northbound	1242	1271	06-Sep-23 A	30-Oct-27				
LOE11240	KD8-Complete all necessary works for opening of road connecting LT Road southbound to YL highway eastbound	1008	868	28-Mar-23 A	22-Sep-26				
LOE11280	KD10-Complete all necessary works for opening of road connecting existing YL Highway eastbound to LH Road	1545	1416	06-Sep-23 A	23-Mar-28				
Planned Completion of Section of the Works (Summary)									
LOE11340	Section 1-Completion of all works,including piling works within Portions 1.1A,1B,1C,1D,1E,2.3,4A,5A,5B,6A and 6B	1618	1618	08-May-24	11-Oct-28				
LOE11360	Section 2-Completion of all works within Portions 10 and 10A of the Site	492	336	04-Aug-23 A	08-Apr-25				
LOE11380	Section 3-Completion of all works within Portions 8A, 9A, 14 and 14A of the Site	920	795	01-Sep-23 A	11-Jul-26				
LOE11400	Section 4-Completion of all works within Portions 8E, 15 and 15A of the Site	916	786	07-Jul-23 A	02-Jul-26				
LOE11420	Section 5-Completion of all works within Portions 16, 16A, 16B,16C and 16D of the Site	914	626	13-Feb-23 A	23-Jan-26				
LOE11440	Section 6-Completion of all works within Portions 8C,8D,11,11A of the Site and the works at TYST Road within Portion 1	1142	1091	14-Aug-23 A	03-May-27				
LOE11460	Section 7-Completion of all works within Portions 8B, 9B, 13 and 13A of the Site	662	431	05-Oct-23 A	12-Jul-25				
LOE11480	Section 8-Completion of all works within Portions 12 and 12A of the Site	422	118	04-Sep-23 A	02-Sep-24				
LOE11500	Section 9-Completion of all works within Portions 5C, 7, 7A, 7B, 7C and 7D of the Site	916	738	28-Apr-23 A	15-May-26				
LOE11540	Section 11-Completion of all works for water trunk mains (Subject to excision)	1513	1513	25-Jun-24	15-Aug-28				
LOE11560	Section 12-Comprises all preservation and protection of existing trees	1799	1618	26-Feb-23 A	11-Oct-28				
LOE11580	Section 13-Comprises all of the landscape softworks	1799	1618	26-Feb-23 A	11-Oct-28				
Preliminaries, Contractor's Design, Method Statement Submission and Approval									
General Submission									
GSS10240	Submission of BIM Model (PS 1.116A)	60	13	28-Dec-22 A	20-May-24				
GSS10320	Submission of details of proposed off-site precast yard (PS 1.118)	30	30	08-May-24	11-Jun-24				
Contractor's Design Submission and Approval									
Contractor's Permanent Works Design									
Alternative design for noise barrier and noise enclosures									
PRE11460	Resubmit alternative design for noise enclosures(DDA)	42	42	13-Jun-24	31-Jul-24				
PRE11480	Review and accept alternative design for noise enclosures(DDA)	21	21	01-Aug-24	24-Aug-24				
Design for the Road Lighting System									
PRE10040	Prepare and submit design for the road lighting system	42	42	08-May-24	18-Jun-24				
PRE10050	Review and accept design for the road lighting system	14	14	19-Jun-24	02-Jul-24				
Design for the Irrigation System									
PRE10060	Prepare and submit design for the irrigation system	42	42	19-Jun-24	06-Aug-24				
PRE10070	Review and accept design for the irrigation system	14	14	07-Aug-24	22-Aug-24				
Cost Savings Design (CSD)									
CSD-001 - Nullah Decking									
PRE10420.98	Review and Acceptance for Geotechnical Assessment Report	14	0	16-Jan-24 A	08-May-24				

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						May 17	Jun 18	Jul 19	Aug 20
CSD-002 - Cantilever Footpath		247	28	06-Sep-23 A	04-Jun-24	CSD-002 - Cantilever Footpath			
PRE10400.50	Incorporate and resubmit CSD DD	30	7	06-Sep-23 A	14-May-24	Incorporate and resubmit CSD DD			
PRE10400.70	Review and Acceptance	21	21	15-May-24	04-Jun-24	Review and Acceptance			
PRE10400.95	Review and Acceptance for Geotechnical Assessment Report	14	1	07-Nov-23 A	08-May-24	Review and Acceptance for Geotechnical Assessment Report			
CSD-003 - Bridge Decking		104	57	08-Apr-24 A	03-Jul-24	CSD-003 - Bridge Decking			
Bridge C & F		104	57	08-Apr-24 A	03-Jul-24	Bridge C & F			
PRE10200.20	Review and Comments	21	6	08-Apr-24 A	13-May-24	Review and Comments			
PRE10200.30	Incorporate and resubmit CSD DD	30	30	14-May-24	12-Jun-24	Incorporate and resubmit CSD DD			
PRE10200.40	Review and Acceptance	21	21	13-Jun-24	03-Jul-24	Review and Acceptance			
Major Temporary Design		371	98	09-Aug-23 A	13-Aug-24				
Drainage Impact Assessment (DIA)		205	53	10-Apr-24 A	13-Aug-24				
PRE12080	Review CDIA of Box Culvert BC02, Bridge B and Bridge D by DSD	21	0	10-Apr-24 A	03-May-24 A	Review CDIA of Box Culvert BC02, Bridge B and Bridge D by DSD			
PRE12100	Meeting with DSD for the CDIA new requirement (Stormwater Drainage Manual Corrigendum No. 1/2024)	1	0	03-May-24 A	03-May-24 A	Meeting with DSD for the CDIA new requirement (Stormwater Drainage Manual Corrigendum No. 1/2024)			
PRE12120	Prepare and resubmit CDIA of Box Culvert BC02, Bridge B and Bridge D to DSD for approval	45	45	22-Jun-24	13-Aug-24	Prepare and resubmit CDIA of Box Culvert BC02, Bridge B and Bridge D to DSD for approval			
ELS Design for Box Culvert BC02		162	27	02-Dec-23 A	07-Jun-24	ELS Design for Box Culvert BC02			
PRE11720	Prepare and submit ELS Design for construction of Box Culvert BC02	21	6	02-Dec-23 A	14-May-24	Prepare and submit ELS Design for construction of Box Culvert BC02			
PRE11780	Review and accept ELS Design of Box Culvert BC02	21	21	15-May-24	07-Jun-24	Review and accept ELS Design of Box Culvert BC02			
ELS Design for Construction of Bridge Foundation		42	42	08-May-24	25-Jun-24	ELS Design for Construction of Bridge Foundation			
PRE10100	Prepare and submit ELS Design for construction of bridge foundation	21	21	08-May-24	31-May-24	Prepare and submit ELS Design for construction of bridge foundation			
PRE10110	Review and accept ELS Design for construction of bridge foundation	21	21	01-Jun-24	25-Jun-24	Review and accept ELS Design for construction of bridge foundation			
ELS Design for Construction of Noise Barrier Foundation		305	71	09-Aug-23 A	29-Jul-24	ELS Design for Construction of Noise Barrier Foundation			
PRE10120	Prepare and submit ELS Design for construction of noise barrier foundation	42	15	09-Aug-23 A	24-May-24	Prepare and submit ELS Design for construction of noise barrier foundation			
PRE10122	Review and discuss ELS Design for construction of noise barrier foundation	21	21	25-May-24	18-Jun-24	Review and discuss ELS Design for construction of noise barrier foundation			
PRE10125	Resubmit ELS Design for construction of noise barrier foundation	21	21	19-Jun-24	12-Jul-24	Resubmit ELS Design for construction of noise barrier foundation			
PRE10130	Review and accept ELS Design for construction of noise barrier foundation	14	14	13-Jul-24	29-Jul-24	Review and accept ELS Design for construction of noise barrier foundation			
ELS Design for Construction of Nullah Decking Pile Cap		215	33	11-Nov-23 A	14-Jun-24	ELS Design for Construction of Nullah Decking Pile Cap			
PRE11570	Prepare and resubmit ELS Design for Construction of Nullah Decking Pile Cap	12	12	11-Nov-23 A	21-May-24	Prepare and resubmit ELS Design for Construction of Nullah Decking Pile Cap			
PRE11600	Review and accept ELS Design for Construction of Nullah Decking Pile Cap	21	21	22-May-24	14-Jun-24	Review and accept ELS Design for Construction of Nullah Decking Pile Cap			
Design of Temporary Piling Platform for Nullah Decking ND2 South End		157	15	03-Oct-23 A	24-May-24	Design of Temporary Piling Platform for Nullah Decking ND2 South End			
PRE11650	Resubmit Design of Temporary Piling Platform for Nullah Decking ND2 South End	14	1	03-Oct-23 A	08-May-24	Resubmit Design of Temporary Piling Platform for Nullah Decking ND2 South End			
PRE11660	Review and accept ELS Design of Temporary Piling Platform for Nullah Decking ND2 South End	14	14	09-May-24	24-May-24	Review and accept ELS Design of Temporary Piling Platform for Nullah Decking ND2 South End			
Falsework Design for Bridge Deck		42	42	26-Jun-24	13-Aug-24	Falsework Design for Bridge Deck			
PRE10140	Prepare and submit false work design for bridge deck	42	42	26-Jun-24	13-Aug-24	Prepare and submit false work design for bridge deck			
Temporary Piling Platform for Bored Pile Works at Bridges B & D within Nullah Slope		39	39	04-May-24 A	21-Jun-24	Temporary Piling Platform for Bored Pile Works at Bridges B & D within Nullah Slope			
PRE12200	Prepare and resubmit Temporary Piling Platform for Bored Pile Works at Bridges B & D by new requirement of DSD	21	18	04-May-24 A	28-May-24	Prepare and resubmit Temporary Piling Platform for Bored Pile Works at Bridges B & D by new requirement of DSD			
PRE12220	Review and accept Temporary Piling Platform for Bored Pile Works at Bridges B & D	21	21	29-May-24	21-Jun-24	Review and accept Temporary Piling Platform for Bored Pile Works at Bridges B & D			
Method Statement Submission and Approval for Major Construction Works		551	92	23-Feb-23 A	22-Aug-24				
Method statement for Temp. Piling Platform for Bored Pile Works within Yuen Long West		188	20	29-Mar-24 A	30-May-24	Method statement for Temp. Piling Platform for Bored Pile Works within Yuen Long West Nullah Slope			
MSS11190	Resubmit Method statement for Temp. Piling Platform for Bored Pile Works within Yuen Long West Nullah Slope	21	6	29-Mar-24 A	14-May-24	Resubmit Method statement for Temp. Piling Platform for Bored Pile Works within Yuen Long West Nullah Slope			
MSS11200	Review and accept Method statement for Temp. Piling Platform for Bored Pile Works within Yuen Long West Nullah Slope	14	14	15-May-24	30-May-24	Review and accept Method statement for Temp. Piling Platform for Bored Pile Works within Yuen Long West Nullah Slope			
Method Statement for Construction of Box Culvert BC02		202	20	13-Dec-23 A	30-May-24	Method Statement for Construction of Box Culvert BC02			
MSS10920	Resubmit method statement of Box Culvert BC02	14	6	13-Dec-23 A	14-May-24	Resubmit method statement of Box Culvert BC02			
MSS10940	Accept method statement of Box Culvert BC02	14	14	15-May-24	30-May-24	Accept method statement of Box Culvert BC02			
Method Statement Submission and Approval for Construction of Retaining Wall RW37		380	23	07-Aug-23 A	03-Jun-24	Method Statement Submission and Approval for Construction of Retaining Wall RW37			
MSS10620	Prepare and submit method statement for construction of retaining wall RW37	21	2	07-Aug-23 A	09-May-24	Prepare and submit method statement for construction of retaining wall RW37			

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						May 17	Jun 18	Jul 19	Aug 20
MSS10630	Review, discuss and approval for method statement for construction of retaining wall RW37	21	21	10-May-24	03-Jun-24	Review, discuss and approval for method statement for construction of retaining wall RW37			
Method Statement Submission and Approval for Construction of Retaining Wall RW35		354	14	21-Feb-24 A	23-May-24	Method Statement Submission and Approval for Construction of Retaining Wall RW35			
MSS10960	Prepare and submit method statement for construction of retaining wall RW35	21	0	21-Feb-24 A	03-May-24 A	Prepare and submit method statement for construction of retaining wall RW35			
MSS10980	Review, discuss and approval for method statement for construction of retaining wall RW35	21	14	03-May-24 A	23-May-24	Review, discuss and approval for method statement for construction of retaining wall RW35			
Method Statement Submission and Approval for bridge A and Slip Road		262	80	11-Sep-23 A	08-Aug-24	Method Statement Submission and Approval for bridge A and Slip Road			
MSS10020	Prepare and submit method statement for bridge A and slip road	48	24	11-Sep-23 A	04-Jun-24	Prepare and submit method statement for bridge A and slip road			
MSS10022	Review and discuss method statement for bridge A and slip road	21	21	05-Jun-24	28-Jun-24	Review and discuss method statement for bridge A and slip road			
MSS10025	Resubmit method statement for bridge A and slip road	21	21	29-Jun-24	23-Jul-24	Resubmit method statement for bridge A and slip road			
MSS10030	Accept method statement for bridge A and slip road	14	14	24-Jul-24	08-Aug-24	Accept method statement for bridge A and slip road			
Method Statement Submission and Approval for Construction of Nullah Decking		42	42	08-May-24	25-Jun-24	Method Statement Submission and Approval for Construction of Nullah Decking			
MSS10040	Prepare and submit method statement for construction of Nullah Decking	21	21	08-May-24	31-May-24	Prepare and submit method statement for construction of Nullah Decking			
MSS10050	Accept method statement for construction of Nullah Decking	21	21	01-Jun-24	25-Jun-24	Accept method statement for construction of Nullah Decking			
Method statement submission and approval for bridge B		84	84	08-May-24	13-Aug-24	Method statement submission and approval for bridge B			
MSS10100	Prepare and submit method statement for bridge B	42	42	08-May-24	25-Jun-24	Prepare and submit method statement for bridge B			
MSS10102	Review and discuss submission for bridge B	21	21	26-Jun-24	19-Jul-24	Review and discuss submission for bridge B			
MSS10105	Resubmit submission for bridge B	21	21	20-Jul-24	13-Aug-24	Resubmit submission for bridge B			
Method statement submission and approval for construction of U-trough		35	35	08-May-24	17-Jun-24	Method statement submission and approval for construction of U-trough			
MSS10120	Prepare and submit method statement for construction of U-trough	14	14	08-May-24	23-May-24	Prepare and submit method statement for construction of U-trough			
MSS10470	Accept method statement for construction of U-trough	21	21	24-May-24	17-Jun-24	Accept method statement for construction of U-trough			
Method statement submission and approval for RTBM construction		197	41	23-Feb-23 A	24-Jun-24	Method statement submission and approval for RTBM construction			
MSS10160	Prepare and resubmit method statement for RTBM construction	42	20	23-Feb-23 A	30-May-24	Prepare and resubmit method statement for RTBM construction			
MSS10170	Accept method statement for RTBM construction	21	21	31-May-24	24-Jun-24	Accept method statement for RTBM construction			
Method statement submission and approval for Launching Shaft of Subway M		21	21	16-Mar-24 A	31-May-24	Method statement submission and approval for Launching Shaft of Subway M			
MSS11020	Accept method statement for Launching Shaft of Subway M	21	21	16-Mar-24 A	31-May-24	Accept method statement for Launching Shaft of Subway M			
Method statement submission and approval for waterworks		33	33	08-May-24	14-Jun-24	Method statement submission and approval for waterworks			
MSS10180	Prepare and submit method statement for waterworks	12	12	08-May-24	21-May-24	Prepare and submit method statement for waterworks			
MSS10188	Accept method statement for waterworks	21	21	22-May-24	14-Jun-24	Accept method statement for waterworks			
Method statement submission and approval for construction of subway		21	6	16-Apr-24 A	14-May-24	Method statement submission and approval for construction of subway			
MSS10198	Accept Method Statement for Construction of Launching Shaft of Subway M	21	6	16-Apr-24 A	14-May-24	Accept Method Statement for Construction of Launching Shaft of Subway M			
Method statement submission and approval for construction of noise barrier		59	59	08-May-24	15-Jul-24	Method statement submission and approval for construction of noise barrier			
MSS10200	Prepare and submit method statement for construction of noise barrier	12	12	08-May-24	21-May-24	Prepare and submit method statement for construction of noise barrier			
MSS10202	Review and discuss method statement for construction of noise barrier	21	21	22-May-24	14-Jun-24	Review and discuss method statement for construction of noise barrier			
MSS10205	Resubmit method statement for construction of noise barrier	12	12	15-Jun-24	28-Jun-24	Resubmit method statement for construction of noise barrier			
MSS10210	Accept method statement for construction of noise barrier	14	14	29-Jun-24	15-Jul-24	Accept method statement for construction of noise barrier			
Method statement submission and approval for bridge D		77	77	08-May-24	05-Aug-24	Method statement submission and approval for bridge D			
MSS10220	Prepare and submit method statement for bridge D	21	21	08-May-24	31-May-24	Prepare and submit method statement for bridge D			
MSS10222	Review and discuss method statement for bridge D	21	21	01-Jun-24	25-Jun-24	Review and discuss method statement for bridge D			
MSS10225	Resubmit method statement for bridge D	21	21	26-Jun-24	19-Jul-24	Resubmit method statement for bridge D			
MSS10230	Accept method statement for bridge D	14	14	20-Jul-24	05-Aug-24	Accept method statement for bridge D			
Method statement submission and approval for bridge F		35	35	08-May-24	17-Jun-24	Method statement submission and approval for bridge F			
MSS10240	Prepare and submit method statement for bridge F	14	14	08-May-24	23-May-24	Prepare and submit method statement for bridge F			
MSS10250	Accept method statement for bridge F	21	21	24-May-24	17-Jun-24	Accept method statement for bridge F			
Method statement submission and approval for bridge G		77	77	25-May-24	22-Aug-24	Method statement submission and approval for bridge G			
MSS10260	Prepare and submit method statement for bridge G	21	21	25-May-24	18-Jun-24	Prepare and submit method statement for bridge G			
MSS10262	Review and discuss method statement for bridge G	21	21	19-Jun-24	12-Jul-24	Review and discuss method statement for bridge G			

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						May 17	Jun 18	Jul 19	Aug 20
MSS10265	Resubmit method statement for bridge G	21	21	13-Jul-24	06-Aug-24				Resubmit
MSS10270	Accept method statement for bridge G	14	14	07-Aug-24	22-Aug-24				
Method statement submission and approval for bridge E		63	63	06-Jun-24	17-Aug-24				
MSS10280	Prepare and submit method statement for bridge E	21	21	06-Jun-24	29-Jun-24				Prepare and submit method statement for bridge E
MSS10282	Review and discuss method statement for bridge E	21	21	01-Jul-24	24-Jul-24				Review and discuss method statement for bridge E
MSS10285	Resubmit method statement for bridge E	21	21	25-Jul-24	17-Aug-24				Resubmit method statement for bridge E
Method statement submission and approval for construction of Cantilever Footpath		77	77	08-May-24	05-Aug-24				Method s
MSS10300	Prepare and submit method statement for construction of cantilever footpath	21	21	08-May-24	31-May-24				Prepare and submit method statement for construction of cantilever footpath
MSS10302	Review and discuss method statement for construction of cantilever footpath	21	21	01-Jun-24	25-Jun-24				Review and discuss method statement for construction of cantilever footpath
MSS10305	Resubmit method statement for construction of cantilever footpath	21	21	26-Jun-24	19-Jul-24				Resubmit method statement for construction of cantilever footpath
MSS10310	Accept method statement for construction of cantilever footpath	14	14	20-Jul-24	05-Aug-24				Accept m
Method statement submission and approval for road pavement works		77	77	14-May-24	10-Aug-24				
MSS10320	Prepare and submit method statement for road pavement works	21	21	14-May-24	06-Jun-24				Prepare and submit method statement for road pavement works
MSS10322	Review and discuss method statement for road pavement works	21	21	07-Jun-24	01-Jul-24				Review and discuss method statement for road pavement works
MSS10325	Resubmit method statement for road pavement works	21	21	02-Jul-24	25-Jul-24				Resubmit method statement for r
MSS10330	Accept method statement for road pavement works	14	14	26-Jul-24	10-Aug-24				Accept m
Method statement submission and approval for slope works		77	77	08-May-24	05-Aug-24				Method s
MSS10360	Prepare and submit method statement for slope works	21	21	08-May-24	31-May-24				Prepare and submit method statement for slope works
MSS10362	Review and discuss method statement for slope works	21	21	01-Jun-24	25-Jun-24				Review and discuss method statement for slope works
MSS10365	Resubmit method statement for slope works	21	21	26-Jun-24	19-Jul-24				Resubmit method statement for slope works
MSS10370	Accept method statement for slope works	14	14	20-Jul-24	05-Aug-24				Accept m
Method statement submission and approval for construction of underpass		239	31	29-Sep-23 A	12-Jun-24				Method statement submission and approval for construction of underpass
MSS10340	Prepare and submit method statement for construction of underpass	21	10	29-Sep-23 A	18-May-24				Prepare and submit method statement for construction of underpass
MSS10350	Accept method statement for construction of underpass	21	21	20-May-24	12-Jun-24				Accept method statement for construction of underpass
Preliminaries		303	60	08-Aug-23 A	06-Jul-24				Preliminaries
PRE10230	Set up of the contract webpage	60	60	08-May-24	06-Jul-24				Set up of the contract webpage
PRE10270	Submission of Contamination Assessment Plan and Remediation Action Plan (PS 1.108B(v))	30	2	08-Aug-23 A	09-May-24				Submission of Contamination Assessment Plan and Remediation Action Plan (PS 1.108B(y))
Traffic Management		175	114	28-Feb-24 A	29-Aug-24				
PRE11900	Preparation,submission and approval of TTA scheme (TMLG No.5)	90	24	28-Feb-24 A	31-May-24				Preparation,submission and approval of TTA scheme (TMLG No.5)
PRE11920	Preparation,submission and approval of TTA scheme (TMLG No.6)	90	90	01-Jun-24	29-Aug-24				
Precasting Works		60	60	04-Jul-24	11-Sep-24				
PRE10340	Setup of off-site precast yard	60	60	04-Jul-24	11-Sep-24				
Subletting Works		60	60	08-May-24	16-Jul-24				Subletting Works
PRE11220	Bridge structure for bridges A~G	60	60	08-May-24	16-Jul-24				Bridge structure for bridges A~G
PRE11320	Slope works	40	40	08-May-24	22-Jun-24				Slope works
PRE11345	Steel structure and panels for noise barriers and noise closures	40	40	08-May-24	22-Jun-24				Steel structure and panels for noise barriers and noise closures
PRE11360	Road works	40	40	08-May-24	22-Jun-24				Road works
Section 1 of the Works-Completion of All works Including Piling works		1334	349	06-Feb-23 A	22-Apr-25				
Preparation Works		468	90	06-Feb-23 A	23-Aug-24				
SEC011040	UU detection and trial pit	28	0	06-Feb-23 A	08-May-24				UU detection and trial pit
SEC101740	Laying of new gas main and abandoning of existing gas main at Long Tin Road	90	90	11-Mar-24 A	23-Aug-24				
Trial Pile for Prebored H-Pile		110	47	02-Mar-24 A	16-Jul-24				Trial Pile for Prebored H-Pile
SECA1016	Design Review for Trial Pile (TP610-02,03)	12	0	02-Mar-24 A	06-May-24 A				Design Review for Trial Pile (TP610-02,03)
SECA1020	Trial Pile for pre-bored H-pile and Loading Test (TP610-01)	35	35	21-May-24	02-Jul-24				Trial Pile for pre-bored H-pile and Loading Test (TP610-01)
SECA1025	Design Review for Trial pre-bored H-pile(TP610-01)	12	12	03-Jul-24	16-Jul-24				Design Review for Trial pre-bored H-pile(TP610-01)

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						May 17	Jun 18	Jul 19	Aug 20
Bridge A									
Preparation Works									
		73	10	12-Sep-23 A	20-May-24	Preparation Works			
		73	10	12-Sep-23 A	20-May-24	Preparation Works			
SECA10020	Tree felling works and transplanting of existing trees	30	10	12-Sep-23 A	20-May-24	Tree felling works and transplanting of existing trees			
SECA10025	Additional UU detection and trial pit (PMI No. 017 and 026)	73	5	16-Oct-23 A	13-May-24	Additional UU detection and trial pit (PMI No. 017 and 026)			
Utility Diversion									
		348	184	15-Jan-24 A	14-Dec-24	Bridge A - Trial Pit Excavation (Total 18nos)			
SECA10030	Bridge A - Trial Pit Excavation (Total 18nos)	73	20	07-Mar-24 A	31-May-24	Bridge A - Trial Pit Excavation (Total 18nos)			
SECA10080	Diversion of gas main (Jasper Court Section) incl. ELS &Excavation	70	59	15-Jan-24 A	18-Jul-24	Diversion of gas main (Jasper Court Section) incl			
SECA10080.10	Diversion of gas main (Long Bin Section) incl. ELS &Excavation	97	97	08-May-24	31-Aug-24				
SECA10080.20	Diversion of gas main (Hop Hing Section) incl. ELS &Excavation	114	114	01-Aug-24	14-Dec-24				
SECA10240	CLP diversion/cable laying incl. Excavation, ELS, Backfilling and T&C (Late Start)	77	70	01-Feb-24 A	31-Jul-24	CLP diversion/cable			
Bridge B									
Preparation Works									
		27	10	28-Mar-23 A	20-May-24	Preparation Works			
SECB10000	Site clearance, TTA &tree felling works along Lam Yu Rd (affected by updated site boundary with a letter dated 5 Feb 24)	27	10	28-Mar-23 A	20-May-24	Site clearance, TTA &tree felling works along Lam Yu Rd (affected by updated site boundary with a letter dated 5 Feb 24)			
Utility Diversion									
		400	168	05-Sep-23 A	22-Oct-24	UU detection and trial pit (affected by updated site boundary with a letter dated 5 Feb 24)			
SECB10020	UU detection and trial pit (affected by updated site boundary with a letter dated 5 Feb 24)	15	10	05-Sep-23 A	29-May-24	UU detection and trial pit (affected by updated site boundary with a letter dated 5 Feb 24)			
SECB10065	CLP preparation works incl. budget approval and material procurement by others	218	20	27-Oct-23 A	31-May-24	CLP preparation works incl. budget approval and material procurement by others			
SECB10080	Diversion of CLP and HKT cables (affected by the updated site boundary NCE No. 016))	120	120	30-May-24	22-Oct-24				
SECB10100	CLP diversion/cable laying incl. T&C for NPI-TTR RMU#1	106	106	07-Jun-24	20-Sep-24				
Demolition Works									
		30	30	03-May-24 A	13-Jun-24	Demolition Works			
SECB10120	Demolition of existing structure near Lam Yu Road	30	30	03-May-24 A	13-Jun-24	Demolition of existing structure near Lam Yu Road			
Pre-drilling Works									
		8	8	08-May-24	17-May-24	Pre-drilling Works			
SECB11020	Pre-drilling works for pier B2 (2nos, 1rig, 4day/rig/hole)	8	8	08-May-24	17-May-24	Pre-drilling works for pier B2 (2nos, 1rig, 4day/rig/hole)			
Piling Works									
		24	24	14-Jun-24	12-Jul-24	Piling Works			
SECB11120	Piling plant mobilization and setup	24	24	14-Jun-24	12-Jul-24	Piling plant mobilization and setup			
Bridge D									
Demolition Works									
		32	6	14-Oct-23 A	14-May-24	Demolition Works			
SECD10000	Demolition of existing buildings (1655m2) and noise barrier	32	6	14-Oct-23 A	14-May-24	Demolition of existing buildings (1655m2) and noise barrier			
Land Contamination Works									
		168	23	23-Sep-23 A	30-May-24	Land Contamination Works			
SECD10040	Environmental ground investigation	15	2	23-Sep-23 A	09-May-24	Environmental ground investigation			
SECD10055	Land decontamination assessment approval by EPD	14	14	10-May-24	23-May-24	Land decontamination assessment approval by EPD			
SECD10060	Land decontamination works (10150m3)	6	6	24-May-24	30-May-24	Land decontamination works (10150m3)			
Utility Protection / Diversion									
		75	11	28-Nov-23 A	21-May-24	Utility Protection / Diversion			
SECD10180	Trial Pit to locate UU	15	2	28-Nov-23 A	09-May-24	Trial Pit to locate UU			
SECD10200	Utility Protection, Shifting and/or diversion (affected by existing drainage diversion)	60	10	30-Jan-24 A	21-May-24	Utility Protection, Shifting and/or diversion (affected by existing drainage diversion)			
Construction of New Shan Ha Road									
		96	45	04-Dec-23 A	02-Jul-24	Construction of New Shan Ha Road			
SECD10120	Excavation and installation of fresh and flushing water main	60	30	17-Apr-24 A	13-Jun-24	Excavation and installation of fresh and flushing water main			
SECD10130	Excavation and installation of drainage	60	10	04-Dec-23 A	20-May-24	Excavation and installation of drainage			
SECD10140	Construction of New Shan Ha Road	45	45	08-May-24	02-Jul-24	Construction of New Shan Ha Road			
SECD10160	Installation of street furniture, road lighting and road marking	45	45	08-May-24	02-Jul-24	Installation of street furniture, road lighting and road marking			
Pre-drilling Works and Piling Work									
		51	80	03-Apr-24 A	12-Aug-24				
Construction of Bored Piles for Pier D5, Abutment D2, Piers D2 & D3									
		51	80	03-Apr-24 A	12-Aug-24				
SECD11000	Implement the TTA scheme at Shan Ha Road & Tong Yan San Tsuen Stage 1	5	5	03-Jul-24	08-Jul-24	Implement the TTA scheme at Shan Ha Road & Tong Yan San Tsuen			
SECD11020	Pre-drilling works (6 nos) for Pier D5 and Abutment D2 (2 rigs)	15	15	03-Apr-24 A	25-May-24	Pre-drilling works (6 nos) for Pier D5 and Abutment D2 (2 rigs)			
SECD11040	Plant mobilization and setup	7	7	29-Jun-24	08-Jul-24	Plant mobilization and setup			

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						May 17	Jun 18	Jul 19	Aug 20
SECD11060	Installation of bored piles (6 nos) for Pier D5 and Abutment D2 (10m/day, friction pile)	30	30	09-Jul-24	12-Aug-24				
SECD11080	Installation of silt curtain	5	5	03-Jul-24	08-Jul-24				
SECD11100	Place and install piling platforms over the nullah for Piers D2 & D3	14	14	09-Jul-24	24-Jul-24				
SECD11125	Pre-drilling works (PH07&09) for Piers D2 & D3	10	10	25-Jul-24	05-Aug-24				
Bridge E		16	16	10-Apr-26 A	27-May-24				
Pre-drilling Works		16	16	10-Apr-26 A	27-May-24				
SECE10050	Pre-drilling works for Abutment E2(4 nos)	16	16	10-Apr-26 A	27-May-24				
Modification of Bridge N710A(New Wall NW1)		735	100	01-Jun-24 A	04-Sep-24				
SECN71020	Pre-drilling works (13 nos) (revised to 5 nos)	20	20	21-Feb-26 A	31-May-24				
SECN71040	Installation of pre-bored H-piles(44 nos)- 2 rigs	80	80	01-Jun-24	04-Sep-24				
Bridge F&G		267	112	08-Jun-23 A	19-Sep-24				
Land Contamination Works		0	0	08-May-24	08-May-24				
SECFG1060	Environmental ground investigation (N.A)	0	0	08-May-24	08-May-24				
SECFG1080	Land decontamination works (4836 m3)(N.A)	0	0	08-May-24	08-May-24				
Cycle Track CT02 and Footpath		218	20	27-Oct-23 A	31-May-24				
Utilities Works Along Cycle Track CT02 and Footpath		218	20	27-Oct-23 A	31-May-24				
SEC9505	CLP preparation works incl. budget approval, material procurement & existing concrete breaking by others	218	20	27-Oct-23 A	31-May-24				
Bridge F		175	112	08-Jun-23 A	19-Sep-24				
Pre-drilling Works		32	24	08-Jun-23 A	05-Jun-24				
SECF10020	Pre-drilling works for abutment FG1(8 nos) (revised to 12 nos) / 2 rigs	32	24	08-Jun-23 A	05-Jun-24				
Piling Works		175	112	16-Feb-24 A	19-Sep-24				
SECF10060	Installation of bored piles for abutment F2(4 nos)	28	28	27-Mar-24 A	11-Jun-24				
SECF10080	Installation of bored piles for pier F1 and F2(4 nos)	28	20	16-Feb-24 A	31-May-24				
SECF10100	Installation of bored piles for abutment FG1 (12 nos)	84	84	12-Jun-24	19-Sep-24				
Pilecap		50	50	12-Jun-24	09-Aug-24				
SECF10120	Installation of sheetpile, excavation, pilehead treatment and construction of pile cap for Abutment F2	26	26	12-Jun-24	12-Jul-24				
SECF10140	Installation of sheetpile, excavation, pilehead treatment and construction of pile cap for pier F1 and F2	24	24	13-Jul-24	09-Aug-24				
Pier and Abutment		25	25	10-Aug-24	07-Sep-24				
SECF10180	Construction of Abutment F2	25	25	10-Aug-24	07-Sep-24				
Bridge G		32	32	04-Jan-24 A	15-Jun-24				
Construction of Abutment G1 - Pier G3		32	32	04-Jan-24 A	15-Jun-24				
Pre-drilling Works		32	32	04-Jan-24 A	15-Jun-24				
SECG10100	Pre-drilling works for Pier G1 to Pier G3 (6 nos)	32	32	04-Jan-24 A	15-Jun-24				
U Trough K2, Under Pass K, U-Trough K1, Underpass J and U-Trough J1		68	68	03-Jul-24	20-Sep-24				
U-Trough J1		68	68	03-Jul-24	20-Sep-24				
SECJ10000	Implementation of TTA	5	5	03-Jul-24	08-Jul-24				
SECJ10020	installation of sheetpile (105m*2)	21	21	09-Jul-24	01-Aug-24				
SECJ10040	Excavation and installation of struts (Bay 4 to Bay 11)	42	42	02-Aug-24	20-Sep-24				
Nullah Decking ND1		282	168	16-Nov-23 A	26-Nov-24				
Pre-drilling and Piling Works		282	168	16-Nov-23 A	26-Nov-24				
SECND1000	Pre-drilling works (28nos)-4 rigs (per one/4 days) (revised to 18 nos / 4 rigs)	32	18	16-Nov-23 A	29-May-24				
SECND1020	Installation of pre-bored H-piles (132 nos)-4rigs	150	150	30-May-24	26-Nov-24				
Underpass H, U-trough H2,Sump Pit Plant Room and Support Building		111	82	05-Apr-24 A	14-Aug-24				
Underpass H, U-trough H2,Sump Pit Plant Room		111	82	05-Apr-24 A	14-Aug-24				
Underpass H (Bay 3-6) including Sump Pit Plant room		111	82	05-Apr-24 A	14-Aug-24				

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						May 17	Jun 18	Jul 19	Aug 20
SECH10420	Trial pit and Installation of pre-bored H-piles for Bay 3 (16 nos)	73	44	05-Apr-24 A	29-Jun-24	Trial pit and Installation of pre-bored H-piles for Bay 3 (16 nos)			
SECH10440	Installation of sheetpile (154m)	16	16	02-Jul-24	19-Jul-24	Installation of sheetpile (154m)			
SECH10460	Excavation and installation of struts	22	22	20-Jul-24	14-Aug-24	Excavation and installation of struts			
Cantilever Footpath		150	120	15-Nov-23 A	28-Sep-24				
Bay 8 to Bay 31		150	120	15-Nov-23 A	28-Sep-24				
SECFP1140	Pre-drilling works (144 nos) (4 days/per one) (Revised to 25 nos)-4 rigs	150	120	15-Nov-23 A	28-Sep-24	Pre-drilling works (144 nos) (4 days/per one) (Revised to 25 nos)-4 rigs			
Subway M and Subway N		702	260	25-Aug-23 A	22-Jan-25				
Design Acceptance, Procurement, Manufacturing and Delivery		620	260	25-Aug-23 A	22-Jan-25				
Subway M - RTBM Design and Statutory Approval		102	28	12-Jan-24 A	04-Jun-24	Subway M - RTBM Design and Statutory Approval			
SECNM0170	Design Vetting and Statutory Approval (2nd Round)	14	14	12-Jan-24 A	21-May-24	Design Vetting and Statutory Approval (2nd Round)			
SECNM0190	Review and Acceptance	14	14	22-May-24	04-Jun-24	Review and Acceptance			
Procurement, Manufacturing and Delivery		501	260	25-Aug-23 A	22-Jan-25				
SECNM0210	Procurement of RTBM	75	61	25-Aug-23 A	07-Jul-24	Procurement of RTBM			
SECNM0230	Manufacturing and Delivery RTBM and Associated Equipment	180	180	08-Jul-24	03-Jan-25	Manufacturing and Delivery RTBM and Associated Equipment			
SECNM0270	Manufacturing and Delivery of Subway Precast Segments	260	260	08-May-24	22-Jan-25	Manufacturing and Delivery of Subway Precast Segments			
Design and Approval Launching Shaft ELS		380	20	22-Mar-24 A	27-May-24	Design and Approval Launching Shaft ELS			
SECNM1240	Resubmit ELS Design of Launching and Retrieval Shafts	30	6	22-Mar-24 A	13-May-24	Resubmit ELS Design of Launching and Retrieval Shafts			
SECNM1260	Review and Approval	14	14	14-May-24	27-May-24	Review and Approval			
Subway M		196	154	02-Apr-24 A	08-Oct-24				
Construction of Launching Shaft		122	91	02-Apr-24 A	24-Aug-24				
SECNM1002	Installation of pipe piles and sheet pile wall	28	28	02-Apr-24 A	11-Jun-24	Installation of pipe piles and sheet pile wall			
SECNM1003	Installation of dewatering well, recharge well and observation well	12	12	05-Jun-24	19-Jun-24	Installation of dewatering well, recharge well and observation well			
SECNM1004	Pumping test	7	7	20-Jun-24	27-Jun-24	Pumping test			
SECNM1005	Excavation works (approx.+17mPD ~+1.4mPD)	49	49	28-Jun-24	24-Aug-24	Excavation works (approx.+17mPD ~+1.4mPD)			
Construction of Retrieval Shaft at Subway N		184	154	08-Apr-24 A	08-Oct-24				
SECNM1012	Excavation to locate existing Utilities	30	30	08-Apr-24 A	06-Jun-24	Excavation to locate existing Utilities			
SECNM1014	Liaison, coordination and Diversion of existing Utilities (DN1400 Water Main, DN750 Gas, Sewer Lines and CLP 11kv Cable)	90	90	08-May-24	05-Aug-24	Liaison, coordination and Diversion of existing Utilities (DN1400 Water Main, DN750 Gas, Sewer Lines and CLP 11kv Cable)			
SECNM1020	Installation of pipe piles and sheet pile wall	90	90	22-Jun-24	08-Oct-24	Installation of pipe piles and sheet pile wall			
Subway N		14	14	03-Oct-23 A	24-May-24				
SECNM1120	Pre-drilling works (revised 5nos.)	14	14	03-Oct-23 A	24-May-24	Pre-drilling works (revised 5nos.)			
Noise Barrier and Noise Enclosure		161	150	06-May-24 A	05-Nov-24				
Noise Barrier VB21 and VB22		96	96	09-May-24 A	30-Aug-24				
Foundation Works		96	96	09-May-24 A	30-Aug-24				
SENB1535	Installation of pre-bored H-piles at VB21 (15 nos) - 1rigs	96	96	09-May-24 A	30-Aug-24	Installation of pre-bored H-piles at VB21 (15 nos) - 1rigs			
Full-Enclosure Noise Barrier FE01		150	150	06-May-24 A	05-Nov-24				
SENB2475	Excavation and Temp Haul Road Construction	6	4	06-May-24 A	11-May-24	Excavation and Temp Haul Road Construction			
SENB2480	Installation of sheetpile (118m*2)	24	24	13-May-24	11-Jun-24	Installation of sheetpile (118m*2)			
SENB2482	Excavation and installation of struts	52	52	30-May-24	31-Jul-24	Excavation and installation of struts			
SENB2500	Construction of base slab (15 bays)	80	80	01-Aug-24	05-Nov-24	Construction of base slab (15 bays)			
Full-Enclosure Noise Barrier FE02		16	16	01-Aug-24	19-Aug-24				
SENB2600	Installation of sheetpile (79m*2)	16	16	01-Aug-24	19-Aug-24	Installation of sheetpile (79m*2)			
Retaining Wall		100	100	30-May-24	26-Sep-24				
Retaining Wall RW37		100	100	30-May-24	26-Sep-24				
Construction of Bay 7 - Bay 12		100	100	30-May-24	26-Sep-24				
SECRW1780	Install sheetpile along original site boundary (affected by the updated site boundary NCE No. 016 and full closure Rd)	21	21	30-May-24	24-Jun-24	Install sheetpile along original site boundary (affected by the updated site boundary NCE No. 016 and full closure Rd)			

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						May 17	Jun 18	Jul 19	Aug 20
SECRW1800	Excavation works	15	15	25-Jun-24	12-Jul-24				Excavation works
SECRW1820	Temporary protection of gas main	14	14	13-Jul-24	29-Jul-24				Temporary protection of gas main
SECRW1840	Construction of base slab for L-shaped retaining wall (5 bays) (CH78.9-CH126.2: 47.3m)	50	50	30-Jul-24	26-Sep-24				
Box Culvert BC01(CH730 to CH1202)		140	115	18-Jan-24 A	23-Sep-24				
CH750 to CH810		23	23	18-Jul-24	13-Aug-24				
SECBC0010	Site clearance & existing UU diversion/protection @BC01	23	23	18-Jul-24	13-Aug-24				
CH810 to CH855		140	115	18-Jan-24 A	23-Sep-24				
SECBC0015	Site clearance & existing UU diversion/protection @BC01	18	18	18-Jan-24 A	29-May-24				Site clearance & existing UU diversion/protection @BC01
SECBC0020	Haul Road (concrete block), site formation	60	45	07-May-24 A	02-Jul-24				Haul Road (concrete block), site formation
SECBC1076	Installation of sheetpile	40	40	30-May-24	17-Jul-24				Installation of sheetpile
SECBC1078	Excavation and installation of struts	18	18	11-Jul-24	31-Jul-24				Excavation and installation of struts
SECBC1086	Construction of box culvert (3 bays CH810-CH855) @BC01	45	45	01-Aug-24	23-Sep-24				
Water Main from CHM 364 to CHM 804.363		220	220	24-Jul-24	22-Apr-25				
SECWM1000	Excavation, installation of water main from CHM 364 to CHM 804.363 and testing (KD3)	220	220	24-Jul-24	22-Apr-25				
Section 2 of the Works-Completion of all works within Portions 10 and 10A		446	234	27-Sep-23 A	27-Dec-24				
Preparation Works		14	8	27-Sep-23 A	17-May-24				Preparation Works
SEC021000	Site clearance (affected by the uncharted UU)	14	8	27-Sep-23 A	17-May-24				Site clearance (affected by the uncharted UU)
Land Decontamination Works		118	57	22-Dec-23 A	03-Jul-24				Land Decontamination Works
SEC021205	Land decontamination assessment approval by EPD	21	1	22-Dec-23 A	08-May-24				Land decontamination assessment approval by EPD
SEC021220	Land decontamination works (40533 m3)	45	45	09-May-24	03-Jul-24				Land decontamination works (40533 m3)
Box Culvert BC01(CH0 to CH88.7095)		210	193	04-May-24 A	27-Dec-24				
SEC021250	Installation of sheetpile(90m*2) @BC01 (affected by the revised design NCE0049)	25	25	04-May-24 A	06-Jun-24				Installation of sheetpile(90m*2) @BC01 (affected by the revised design NCE0049)
SEC021270	Excavation and installation of lateral support @BC01	68	68	07-Jun-24	27-Aug-24				
SEC021290	Construction of box culvert (6 bays) @BC01	120	120	05-Aug-24	27-Dec-24				
Fresh Water and Flushing Water Works		14	14	04-Jul-24	19-Jul-24				Fresh Water and Flushing Water Works
SEC021350	Abandonment of the fresh water and flushing water in Portion 10 and Portion 10A	14	14	04-Jul-24	19-Jul-24				Abandonment of the fresh water and flushing water
Section 3 of the Works-Completion of All works within Portions 8A, 9A, and 10A		267	125	11-Aug-23 A	05-Oct-24				
Preparation Works		42	42	08-May-24	27-Jun-24				Preparation Works
SEC031007	Site clearance at Portion 14 and Portion 14A (remaining)	14	14	08-May-24	24-May-24				Site clearance at Portion 14 and Portion 14A (remaining)
SEC031008	Tree felling works at Portion 14 and Portion 14A (remaining)	21	21	25-May-24	19-Jun-24				Tree felling works at Portion 14 and Portion 14A (remaining)
SEC031010	Disconnect power supply at Portion 14 and Portion 14A	21	21	25-May-24	19-Jun-24				Disconnect power supply at Portion 14 and Portion 14A
SEC101030	Site clearance at Portion 8A	7	7	08-May-24	16-May-24				Site clearance at Portion 8A
SEC101035	Tree felling works at at Portion 8A	14	14	17-May-24	01-Jun-24				Tree felling works at at Portion 8A
SEC101037	Disconnect power supply at at Portion 8A	21	21	03-Jun-24	27-Jun-24				Disconnect power supply at at Portion 8A
Demolition Works		223	108	18-Oct-23 A	20-Sep-24				Demolition Works
SEC031082	Demolition of existing structure in Portion 14 and Portion 14A (remaining) (affected by late site handover)	125	50	18-Oct-23 A	13-Jul-24				Demolition of existing structure in Portion 14 and Portion 14A (remaining) (affected by late site handover)
SEC91660	Demolition of existing structure in Portion 8A (3535 m2)	71	71	28-Jun-24	20-Sep-24				
Land Decontamination Works		30	30	11-Aug-23 A	05-Oct-24				Land Decontamination Works
SEC031100	Environmental ground investigation & Report Submission	30	30	11-Aug-23 A	05-Oct-24				
Box Culvert BC01(CH164 to CH254)		20	67	30-Jan-24 A	27-Jul-24				Box Culvert BC01(CH164 to CH254)
SEC031160	Installation of sheetpile @BC01	20	67	30-Jan-24 A	27-Jul-24				Installation of sheetpile @BC01
Fresh Water and Flushing Water Works		20	20	15-Jul-24	06-Aug-24				Fresh Water and Flushing Water Works
SEC031300	Abandonment of the fresh water and flushing water	20	20	15-Jul-24	06-Aug-24				Abandonment of the fresh water and flushing water
Utilities		91	91	25-May-24	10-Sep-24				Utilities
SEC031320	Utilities detection and trial pit	7	7	25-May-24	01-Jun-24				Utilities detection and trial pit

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						May 17	Jun 18	Jul 19	Aug 20
SEC031340	Abandonment of existing utilities(LV)	30	30	07-Aug-24	10-Sep-24				
Section 4 of the Works-Completion of All works within Portions 8E, 15		271	85	07-Jul-23 A	17-Aug-24				
Preparation Works		270	40	07-Jul-23 A	25-Jun-24				
SEC041000	Site clearance (EW No.005)	14	5	07-Jul-23 A	13-May-24				
SEC041020	Tree felling works	14	14	14-May-24	30-May-24				
SEC041040	Disconnect power supply	21	21	31-May-24	25-Jun-24				
Demolition Works		150	65	18-Oct-23 A	25-Jul-24				
SEC041080	Demolition of existing structure (7513m2) (affected by late site handover)	150	65	18-Oct-23 A	25-Jul-24				
Land Decontamination Works		30	30	03-Oct-23 A	17-Aug-24				
SEC041100	Environmental ground investigation & Report Submission	30	30	03-Oct-23 A	17-Aug-24				
Utilities		7	7	31-May-24	07-Jun-24				
SEC041220	Utilities detection and trial pit	7	7	31-May-24	07-Jun-24				
Section 5 of the Works-Completion of All Works within Portions 16, 16A, 16B, 16C & 16D		487	111	07-Jul-23 A	26-Aug-24				
Preparation Works		307	21	07-Jul-23 A	01-Jun-24				
Preparation Works for Portion 16		3	3	08-May-24	10-May-24				
SEC051080	Implementation of TTA	3	3	08-May-24	10-May-24				
Preparation Works for Portion 16A, 16B, 16C & 16D		187	21	07-Jul-23 A	01-Jun-24				
SEC051100	Site Clearance for Portions (Affected by wooden poles and overhead cable,EW012)	18	8	07-Jul-23 A	17-May-24				
SEC051120	Tree felling works for Portions (Affected by wooden poles and overhead cable, EW012)	21	21	18-Oct-23 A	01-Jun-24				
SEC051140	Erection of hoardings for Portions (Affected by wooden poles and overhead cable, EW012)	15	14	26-Jul-23 A	24-May-24				
SEC051160	Utilities detection and trial pit for Portions (Affected by wooden poles and overhead cable,EW012)	14	7	23-Oct-23 A	16-May-24				
Demolition Works		43	43	17-May-24	08-Jul-24				
SEC053000	Demolition of existing footbridge(KD3)	30	30	17-May-24	21-Jun-24				
SEC053020	Demolition of existing structure in Portion 16&16D(47 m2) (Affected by wooden poles and overhead cable)	21	21	13-Jun-24	08-Jul-24				
Land Decontamination Works		25	25	17-Jun-24	11-Jul-24				
SEC053040	Environmental ground investigation	3	3	17-Jun-24	19-Jun-24				
SEC053045	Land decontamination assessment approval by EPD	14	14	20-Jun-24	03-Jul-24				
SEC053060	Land decontamination works (1208 m3)	7	7	04-Jul-24	11-Jul-24				
Box Culvert BC02		39	39	12-Jul-24	26-Aug-24				
SEC054000	Temporary diversion of Power and existing drainage(KD3) @BC02 (Affected by wooden poles and overhead cable)	14	14	12-Jul-24	27-Jul-24				
SEC054020	Demolition of existing channel(KD3) @BC02	25	25	29-Jul-24	26-Aug-24				
Section 6 of the Works-Completion of All works within Portions 8C,8D, 8E, 8F, 8G & 8H		435	182	14-Aug-23 A	05-Nov-24				
Preparation Works		268	74	14-Aug-23 A	05-Aug-24				
SEC061000	Site clearance	14	14	14-Aug-23 A	24-May-24				
SEC061020	Tree felling works	60	60	25-May-24	05-Aug-24				
SEC061040	Erection of hoarding	45	45	25-May-24	18-Jul-24				
Demolition Works		124	60	25-Sep-23 A	19-Jul-24				
SEC061060	Demolition of existing structure (6229m2) (affected by late site handover)	124	60	25-Sep-23 A	19-Jul-24				
Land Decontamination Works		204	57	22-Sep-23 A	16-Aug-24				
SEC061100	Environmental ground investigation & Report Submission	30	30	22-Sep-23 A	26-Jul-24				
SEC061102	Land decontamination assessment (part I for handovered site) approval by EPD	21	21	27-Jul-24	16-Aug-24				
SEC101800	Land decontamination assessment (part II for remaining site) approval by EPD	21	21	27-Jul-24	16-Aug-24				
Box Culvert BC01 from CH88.7 to CH164		160	150	22-Sep-23 A	05-Nov-24				
SEC061160	Installation of sheetpile @BC01	48	0	22-Sep-23 A	03-May-24 A				
SEC061180	Excavation and installation of lateral support @BC01	98	60	13-Apr-24 A	19-Jul-24				

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						May 17	Jun 18	Jul 19	Aug 20
SEC061200	Construction of box culvert @BC01	120	120	14-Jun-24	05-Nov-24				
Box Culvert BC01 from CH254 to CH450		21	21	20-Jul-24	13-Aug-24				
SEC061290	Implementation of TTA (temporary road at Section 3) @BC01	21	21	20-Jul-24	13-Aug-24				
Box Culvert BC01 from CH450 to CH730		70	70	20-Jul-24	12-Oct-24				
SEC061370	Implementation of TTA (temporary road at Section 4) @BC01	14	14	20-Jul-24	05-Aug-24				
SEC061375	Installation of sheetpile @BC01	56	56	06-Aug-24	12-Oct-24				
Retaining Wall RW35		124	126	14-Mar-24 A	07-Oct-24				
Bay 1 - Bay 8		124	126	14-Mar-24 A	07-Oct-24				
SEC101142	Installation of sheetpile (130m) (only apply Bay 6- Bay 8)	6	6	27-May-24	01-Jun-24				
SEC101160	Excavation and installation of waling and strut	15	15	14-Mar-24 A	25-May-24				
SEC101180	Rock fill and compaction	12	12	09-Apr-24 A	13-Jun-24				
SEC101200	Construction of base slab (8 bays)	48	48	14-Jun-24	09-Aug-24				
SEC101202	Construction of wal stem (8 bays)	48	48	10-Aug-24	07-Oct-24				
Bay 9 - Bay 18		53	53	03-Jun-24	05-Aug-24				
SEC101240	Installation of sheetpile (172m)	17	17	03-Jun-24	22-Jun-24				
SEC101260	Excavation and installation of waling and strut	21	21	24-Jun-24	18-Jul-24				
SEC101280	Rock fill and compaction	14	14	20-Jul-24	05-Aug-24				
Bay 19 - Bay 29		39	39	24-Jun-24	08-Aug-24				
SEC101360	Installation of sheetpile (83m*2)	12	12	24-Jun-24	08-Jul-24				
SEC101380	Excavation works	12	12	09-Jul-24	22-Jul-24				
SEC101400	Rock fill and compaction	16	16	22-Jul-24	08-Aug-24				
Bay 30 - Bay 48		45	45	09-Jul-24	29-Aug-24				
SEC101480	Installation of sheetpile (150m*2)	15	15	09-Jul-24	25-Jul-24				
SEC101500	Excavation works	15	15	26-Jul-24	12-Aug-24				
SEC101520	Rock fill and compaction	28	28	29-Jul-24	29-Aug-24				
Bay 49 - Bay 57		20	20	26-Jul-24	17-Aug-24				
SEC101600	Installation of sheetpile (71m*2)	8	8	26-Jul-24	03-Aug-24				
SEC101620	Excavation works	12	12	05-Aug-24	17-Aug-24				
Subway L and U Trough Structure RW36		65	65	19-Jul-24	04-Oct-24				
SEC061500	Installation of sheetpile (78m)	20	20	19-Jul-24	10-Aug-24				
SEC061520	Excavation and installation of waling and strut	60	60	25-Jul-24	04-Oct-24				
Sewage Works		60	60	20-Jul-24	28-Sep-24				
SEC101780	Sewage works (DN600 for diversion of existing sewage in Section 2)	60	60	20-Jul-24	28-Sep-24				
Section 7 of the Works-Completion of All Works within Portions 8B, 9B		269	99	05-Oct-23 A	14-Aug-24				
Land Decontamination Works		269	99	05-Oct-23 A	14-Aug-24				
SEC071140	Environmental ground investigation	30	20	05-Oct-23 A	31-May-24				
SEC071145	Land decontamination assessment approval by EPD	21	21	01-Jun-24	21-Jun-24				
SEC071160	Land decontamination works in Portions 13A and Portion 13 (8100m3)	45	45	22-Jun-24	14-Aug-24				
Section 8 of the Works-Completion of All Works within Portions 12 and		292	98	04-Sep-23 A	02-Sep-24				
Preparation Works		232	38	04-Sep-23 A	22-Jun-24				
SEC081000	Site clearance and Site Formation	14	14	04-Sep-23 A	24-May-24				
SEC081020	Tree felling works	28	7	16-Oct-23 A	05-Jun-24				
SEC081040	Erection of hoarding	14	14	06-Jun-24	22-Jun-24				
Water Works		60	60	24-Jun-24	02-Sep-24				
SEC081060	Construction of water works and backfilling works	60	60	24-Jun-24	02-Sep-24				

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						May 17	Jun 18	Jul 19	Aug 20
Section 9 of the Works-Completion of All Works within Portions 5C, 7,									
Preparation Works									
SEC091000	Site clearance (EW No.005)	14	10	28-Apr-23 A	20-May-24				
SEC091020	Tree felling works	14	10	05-Jun-23 A	20-May-24				
SEC101840	Temporary Bridge between Shan Ha Road and Long Hong Road	48	48	03-Jul-24	27-Aug-24				
Demolition Works									
SEC091060	Demolition of existing structure in Portion 7&7A (142m2)	5	5	08-Nov-23 A	13-May-24				
SEC091080	Demolition of existing structure in Portion 5C&7C (285m2)	7	5	08-Nov-23 A	13-May-24				
Land Decontamination Works									
SEC091005	Land decontamination assessment approval by EPD	14	14	08-May-24	21-May-24				
SEC091100	Land decontamination works in Portion 7	7	7	22-May-24	29-May-24				
Construction of New Shan Ha Road in Portions 5C and 7C									
Drainage Works									
SEC091120	Excavation works (affecteded by existing drainage)	10	10	02-Jan-24 A	20-May-24				
SEC091125	Laying of drainage (affected by existing drainage)	21	5	05-Jan-24 A	13-May-24				
Sewage Works									
SEC091140	Removal of existing sewage	15	15	14-May-24	31-May-24				
Water Works									
SEC091160	Excavation and laying of water works	21	21	21-May-24	14-Jun-24				
Road Pavement and Road Marking									
SEC091175	Cycle track	10	10	08-Jun-24	20-Jun-24				
SEC091180	Road pavement and road marking in Portion 5C	15	15	08-Jun-24	26-Jun-24				
Road Lighting and Street Furniture									
SEC091200	Road lighting and street furniture in Portion 5C	14	14	15-Jun-24	02-Jul-24				
Nullah Decking ND2									
Preparation Works									
SEC091210	Construction of temporary carriageway to divert Long Hon Road/Shan Ha Road (Affected by the site handover)	25	15	03-Apr-24 A	25-May-24				
Demolition Works									
SEC091230	Demolition of existing bridge NF138	14	14	09-May-24	25-May-24				
Trial Pile for Prebored H-Pile									
SEC091285	Design Review for Trial Pile	12	1	25-Mar-24 A	08-May-24				
Pre-drilling and Piling Works									
SEC091250	Pre-drilling works (19 nos / 4 rigs) (Affected by the updated site boudary, NCE No. 014)	30	30	02-Jun-23 A	13-Jun-24				
SEC091260	Road modification and site formation	24	24	02-Jan-24 A	05-Jun-24				
SEC091290	Installation of pre-bored H-Piles (108 nos)-2rigs	167	167	24-Apr-24 A	25-Nov-24				
Construction of Pilecap and Wall Stem									
SEC091300	Installation of sheetpile(60+59+18m,2 workfront) & ELS (Affected by the updated site boudary, NCE No. 014)	110	110	11-Jun-24	21-Oct-24				
Nullah Wall NW1									
Pre-drilling and Piling Works									
SEC091500	Pre-drilling works (2 nos)	12	12	14-Jun-24	27-Jun-24				
Refuse Collection Point									
SEC091700	Installation of sheetpile	7	7	03-Jul-24	10-Jul-24				
SEC091720	Excavation and construction of base slab	14	14	11-Jul-24	26-Jul-24				
SEC091740	Construction of ground floor and roof floor	35	35	27-Jul-24	05-Sep-24				
Section 11 of the Works-Completion of All Works for Water Trunk Main									

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024				
						May 17	Jun 18	Jul 19	Aug 20	
PMI to Excise the Works		0	0	25-Jun-24	25-Jun-24					▼ PMI to Excise the Works
SEC11000	PMI to excise the works for Section 11	0	0	25-Jun-24						◆ PMI to excise the works for Section 11
Water Trunk Mains in Section 6 (B1+343 to B0+578)		81	81	25-Jun-24	28-Sep-24					
Water Trunk Mains from B1+343 to B1+130 (213m)(Nearby Section 2)		81	81	25-Jun-24	28-Sep-24					
SEC11670	Installation of sheetpiles,excavation and installation of lateral support	81	81	25-Jun-24	28-Sep-24					
Section 12 of the Works-Comprises All Preservation and Protection of		1858	1618	26-Feb-23 A	11-Oct-28					
SEC12100	Preservation and protection of existing trees	1858	1618	26-Feb-23 A	11-Oct-28					
Section 13 of the Works-Comprises All of the Landscape Softworks		1858	1618	26-Feb-23 A	11-Oct-28					
SEC13100	Landscape softworks	1858	1618	26-Feb-23 A	11-Oct-28					

Appendix E

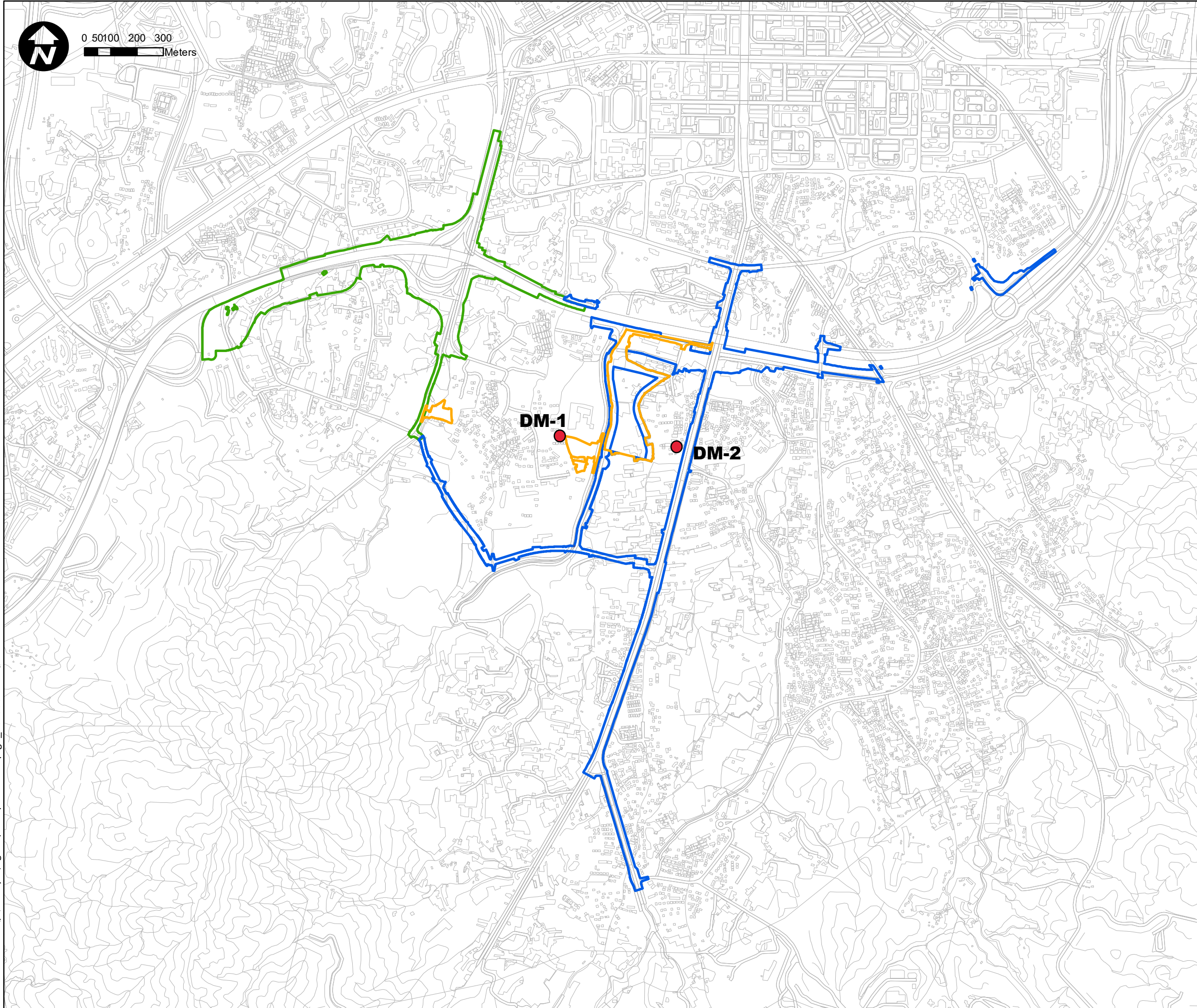
Monitoring Locations



0 50 100 200 300
Meters

LEGEND

- Boundary of YL/2021/03 (Contract 1)
- Boundary of YL/2021/04 (Contract 2)
- Boundary of YL/2022/01 (Contract 3)
- Construction Dust Monitoring Stations



Document Path: D:\p\aves-yls\Figure\MXD\20230615\Fig1_20230627.mxd

Project Title:
 CEDD Service Contract No. WD/07/2022
 Yuen Long South First Phase Development -
 Environmental Team

Figure Title:
**Location of Construction Dust
 Monitoring Stations for YLS First Phase
 Development**

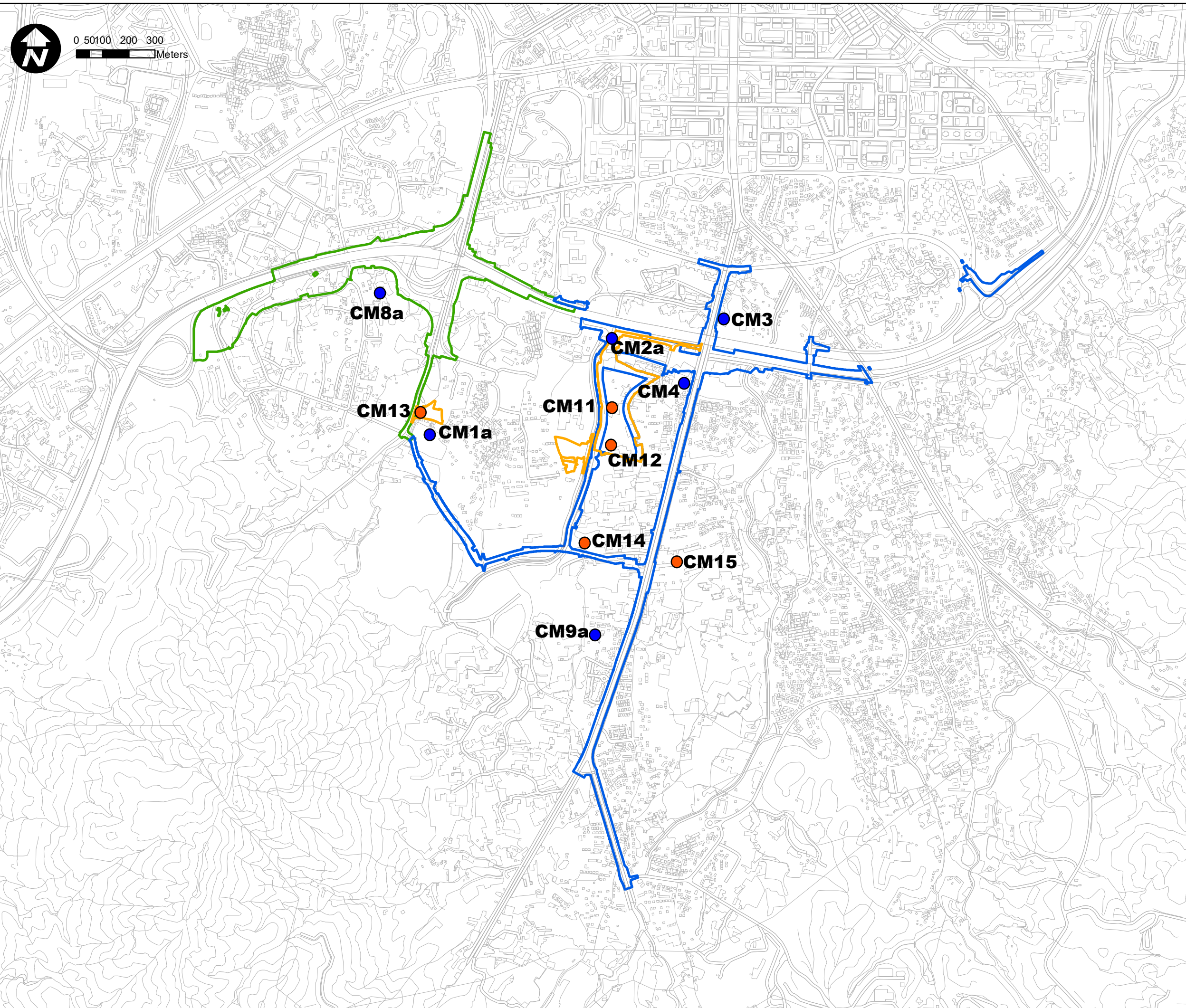
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Checked By:	
Approved by:	
Figure Number:	Revision: 0



0 50 100 200 300
Meters

LEGEND

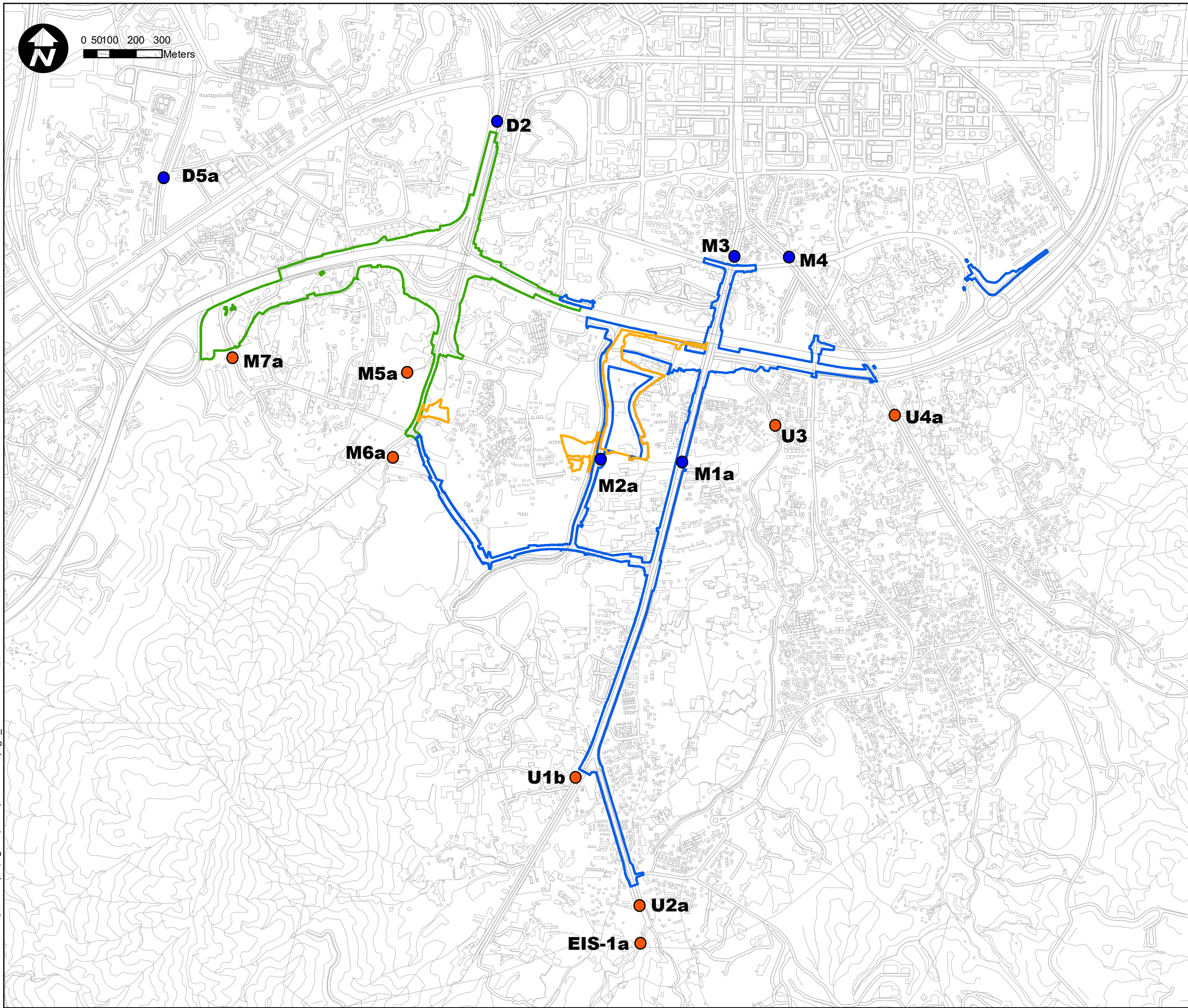
- Boundary of YL/2021/03 (Contract 1)
- Boundary of YL/2021/04 (Contract 2)
- Boundary of YL/2022/01 (Contract 3)
- Construction Noise Monitoring Stations
- Construction Noise Monitoring Stations (Planned NSRs)








Project Title:
 CEDD Service Contract No. WD/07/2022
 Yuen Long South First Phase Development -
 Environmental Team

Figure Title:
**Location of Construction Noise
 Monitoring Stations for YLS First Phase
 Development**

Drawn by:	Scale: 1:13,745 on A3
Checked By:	
Approved by:	
Figure Number:	Revision: 0



LEGEND

-  Boundary of YL/2021/03 (Contract 1)
-  Boundary of YL/2021/04 (Contract 2)
-  Boundary of YL/2022/01 (Contract 3)
-  Water Quality Monitoring Impact / Gradient Stations
-  Water Quality Monitoring Control Stations

Project Title:
CEDD Service Contract No. WD/07/2022
Yuen Long South First Phase Development -
Environmental Team

Figure Title:
**Location of Water Quality Monitoring
Stations for YLS First Phase
Development**

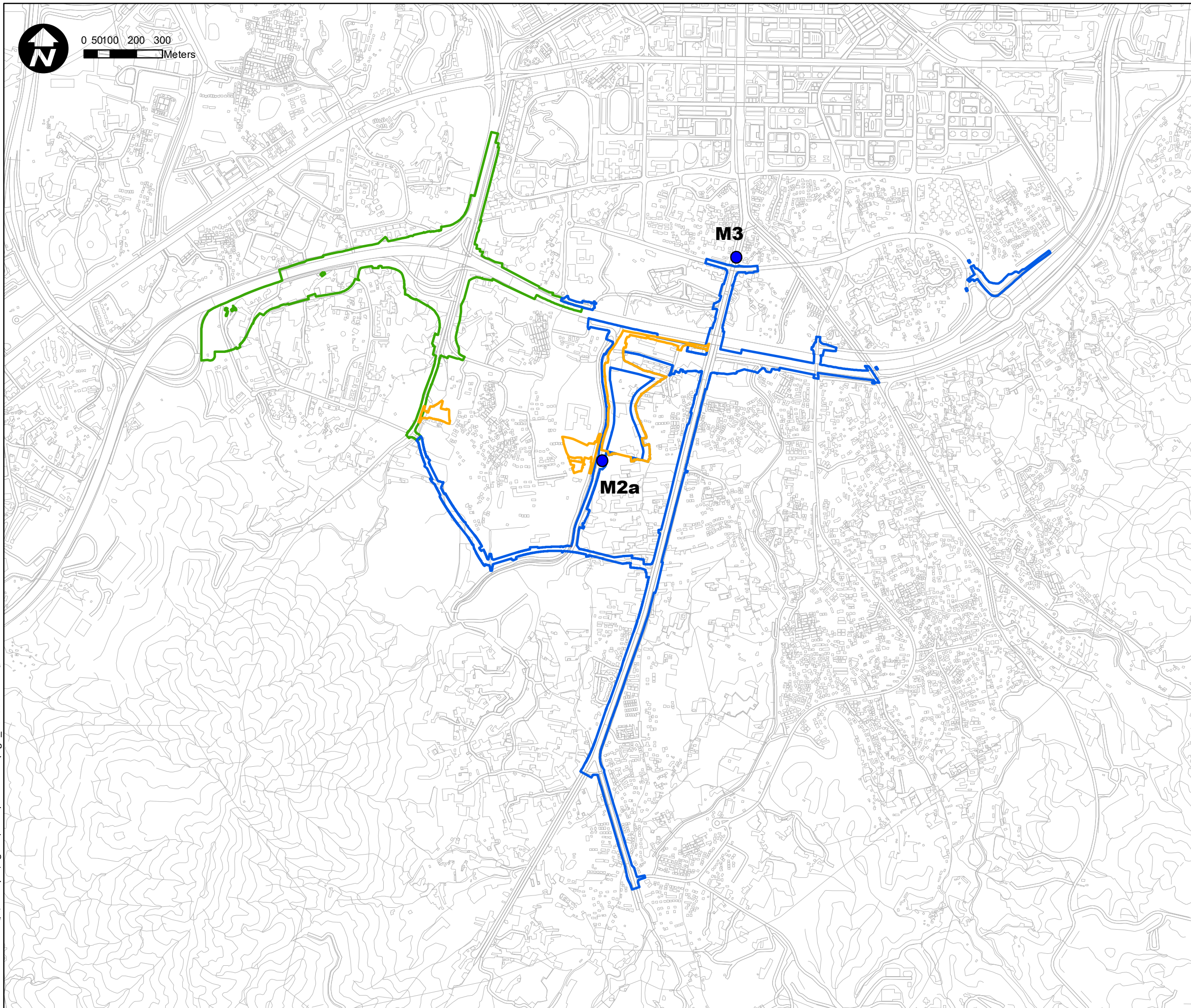
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Approved by:	
Figure Number:	Revision: 0



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Meters

LEGEND

- Boundary of YL/2021/03 (Contract 1)
- Boundary of YL/2021/04 (Contract 2)
- Boundary of YL/2022/01 (Contract 3)
- Water Quality Monitoring Impact / Gradient Stations



Project Title:
 CEDD Service Contract No. WD/07/2022
 Yuen Long South First Phase Development -
 Environmental Team

Figure Title:
**Location of Water Quality Monitoring
 Stations for Contract 1**

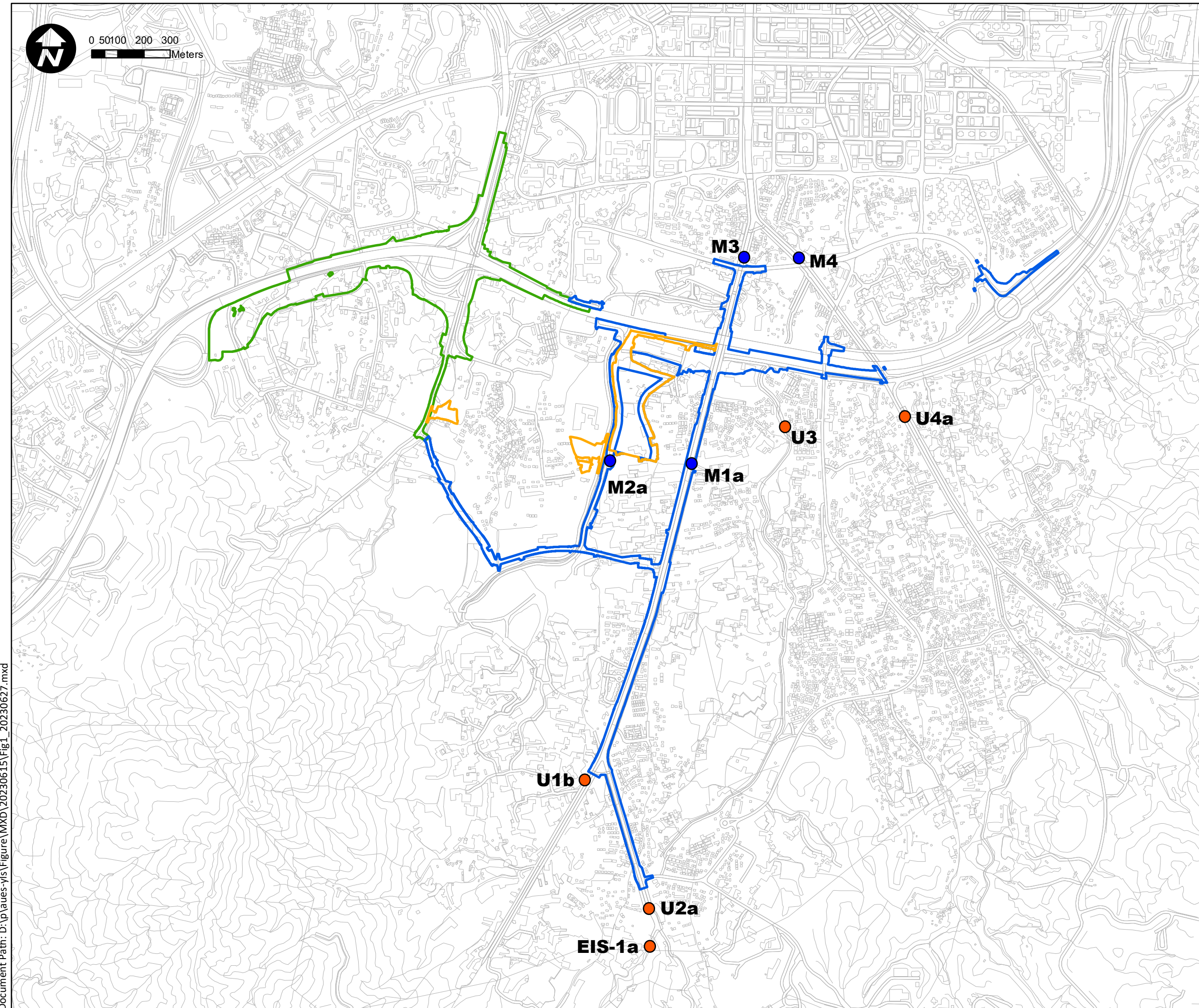
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Checked By:	
Approved by:	
Figure Number:	Revision: 0



0 50 100 200 300
Meters

LEGEND

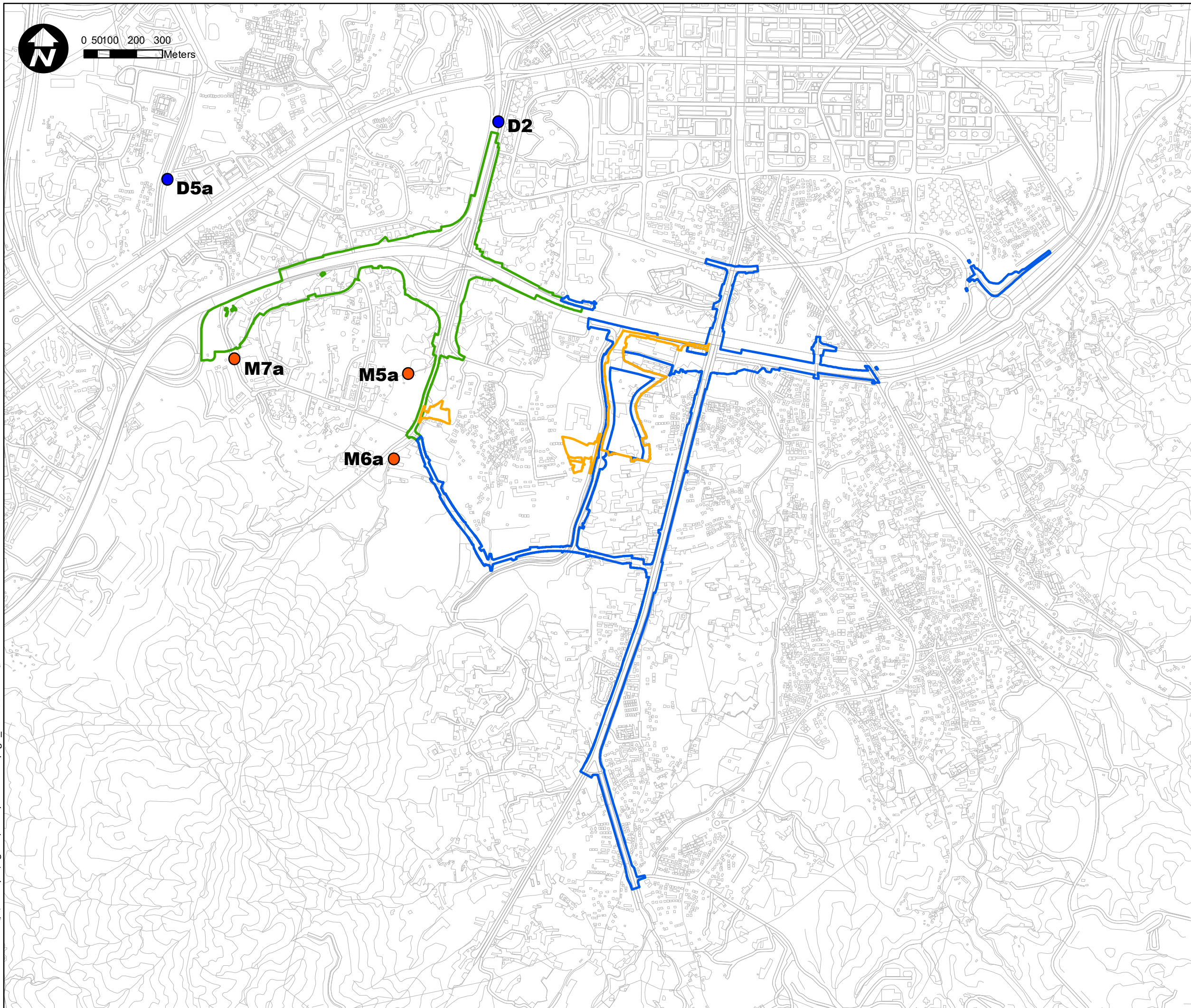
- Boundary of YL/2021/03 (Contract 1)
- Boundary of YL/2021/04 (Contract 2)
- Boundary of YL/2022/01 (Contract 3)
- Water Quality Monitoring Impact / Gradient Stations
- Water Quality Monitoring Control Stations



Project Title:
 CEDD Service Contract No. WD/07/2022
 Yuen Long South First Phase Development -
 Environmental Team

Figure Title:
**Location of Water Quality Monitoring
 Stations for Contract 2**

Drawn by:	Scale: 1:13,745 on A3
Checked By:	
Approved by:	
Figure Number:	Revision: 0



LEGEND

- Boundary of YL/2021/03 (Contract 1)
- Boundary of YL/2021/04 (Contract 2)
- Boundary of YL/2022/01 (Contract 3)
- Water Quality Monitoring Impact / Gradient Stations
- Water Quality Monitoring Control Stations

Project Title:
 CEDD Service Contract No. WD/07/2022
 Yuen Long South First Phase Development -
 Environmental Team

Figure Title:
**Location of Water Quality Monitoring
 Stations for Contract 3**

Drawn by:	Scale: 1:13,745 on A3
Checked By:	
Approved by:	
Figure Number:	Revision: 0

Appendix F

Calibration Certificates

Appendix F1

Calibration Certificates for

Air Quality Monitoring Equipment



ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: HK2404343
CLIENT	: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T.	SUB-BATCH	: 1
		DATE RECEIVED	: 25-JAN-2024
		DATE OF ISSUE	: 5-FEB-2024
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.
 - Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.
 - Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.
 - Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition.
-

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Signatories

Position

Richard Fung

Managing Director

This report supersedes any previous report(s) with the same work order number.

All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

WORK ORDER : HK2404343
SUB-BATCH : 1
CLIENT : ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING
PROJECT : ----



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2404343-001	S/N: 366407 (EQ107)	AIR	25-Jan-2024	S/N: 366407

Equipment Verification Report (TSP)

Equipment Calibrated:

Type: Laser Dust monitor
Manufacturer: Sibata LD-3B
Serial No. 366407
Equipment Ref: EQ107

Standard Equipment:

Standard Equipment: Higher Volume Sampler (TSP)
Location & Location ID: Site boundary of Middle Tsang Tsui Ash Lagoon
Equipment Ref: HVS 022
Last Calibration Date: 16 January 2024

Equipment Verification Results:

Verification Date: 16 January 2024

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
16-Jan-24	1hr 14min	12:07 ~ 13:21	18.7	1022.1	2004.6	108817	1474.5
16-Jan-24	1hr 07min	13:40 ~ 14:47	18.7	1022.1	1604.7	67356	1002.3
16-Jan-24	1hr 07min	14:49 ~ 15:56	18.7	1022.1	464.8	27544	409.9

Sensitivity Adjustment Scale Setting (Before Calibration) 565 (CPM)

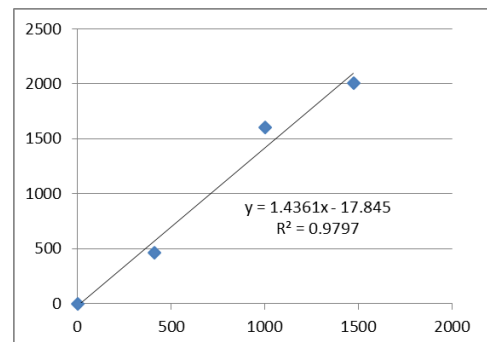
Sensitivity Adjustment Scale Setting (After Calibration) 565 (CPM)

Linear Regression of Y or X

Slope (K-factor): 1.4361 (µg/m³)/CPM

Correlation Coefficient (R) 0.9898

Date of Issue 25 January 2024



Remarks:

- Strong** Correlation (R>0.8)
- Factor 1.4361 (µg/m³)/CPM should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Gary Ng Signature : [Signature] Date : 25 January 2024

QC Reviewer : Ben Tam Signature : [Signature] Date : 25 January 2024

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Site boundary of Middle Tsang Tsui Ash Lagoon
 Location ID : AM(D)7a

Date of Calibration: 16 Jan 24
 Next Calibration Date: 16 Mar 24

CONDITIONS

Sea Level Pressure (hPa)	1022.1	Corrected Pressure (mm Hg)	766.575
Temperature (°C)	18.7	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.13163
Model->	5025A	Qstd Intercept ->	-0.03523
Calibration Date->	15-Dec-23	Expiry Date->	15-Dec-24

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	3.8	-8	11.8	1.652	58	58.88	Slope = 37.0901 Intercept = -1.8561 Corr. coeff. = 0.9977
13	2.6	-6.8	9.4	1.477	52	52.79	
10	1.4	-5.7	7.1	1.285	46	46.69	
8	0.4	-4.5	4.9	1.071	38	38.57	
5	-0.4	-3.6	3.2	0.868	29	29.44	

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H20(Pa/Pstd)(Tstd/Ta))-b]$$

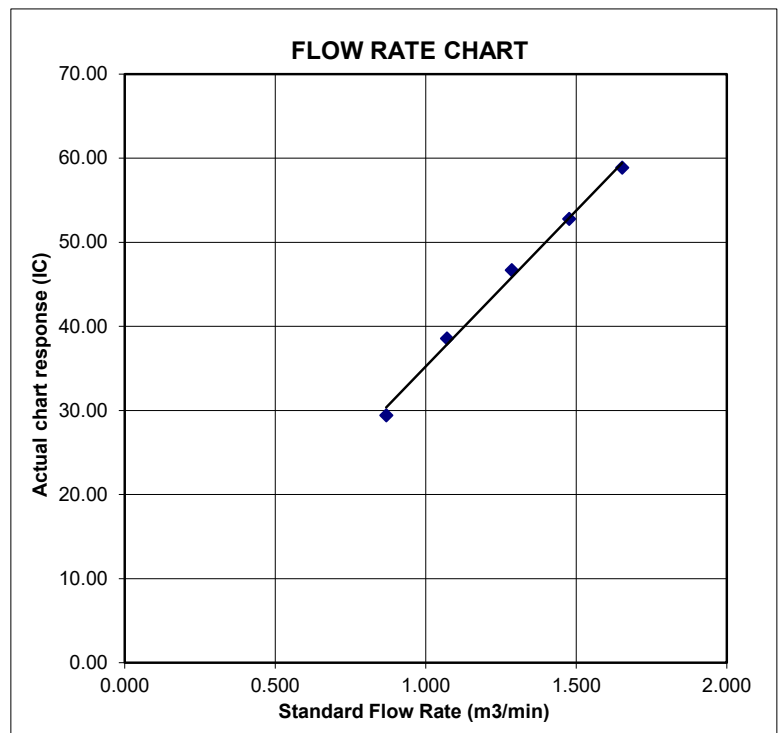
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate
 IC = corrected chart responses
 I = actual chart response
 m = calibrator Qstd slope
 b = calibrator Qstd intercept
 Ta = actual temperature during calibration (deg K)
 Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

m = sampler slope
 b = sampler intercept
 I = chart response
 Tav = daily average temperature
 Pav = daily average pressure



Certificate of Calibration

Calibration Certification Information

Cal. Date: December 15, 2023	Rootsmeter S/N: 438320	Ta: 295 °K
Operator: Jim Tisch		Pa: 748.5 mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 1941	

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4590	3.2	2.00
2	3	4	1	1.0360	6.4	4.00
3	5	6	1	0.9260	8.0	5.00
4	7	8	1	0.8840	8.9	5.50
5	9	10	1	0.7290	12.9	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H (Ta/Pa)}$ (y-axis)
0.9907	0.6790	1.4106	0.9957	0.6825	0.8878
0.9864	0.9522	1.9949	0.9914	0.9570	1.2556
0.9843	1.0630	2.2304	0.9893	1.0684	1.4037
0.9831	1.1121	2.3393	0.9881	1.1178	1.4723
0.9778	1.3413	2.8213	0.9828	1.3481	1.7756
QSTD	m=	2.13163	QA	m=	1.33479
	b=	-0.03523		b=	-0.02217
	r=	0.99999		r=	0.99999

Calculations

Vstd= $\Delta Vol((Pa-\Delta P)/Pstd)(Tstd/Ta)$	Va= $\Delta Vol((Pa-\Delta P)/Pa)$
Qstd= $Vstd/\Delta Time$	Qa= $Va/\Delta Time$
For subsequent flow rate calculations:	
Qstd= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa= $1/m \left(\left(\sqrt{\Delta H (Ta/Pa)} \right) - b \right)$

Standard Conditions

Tstd:	298.15 °K
Pstd:	760 mm Hg

Key

ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (°K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30



ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: HK2404344
CLIENT	: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T.	SUB-BATCH	: 1
		DATE RECEIVED	: 25-JAN-2024
		DATE OF ISSUE	: 5-FEB-2024
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.
 - Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.
 - Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.
 - Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition.
-

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Signatories

Position

Richard Fung

Managing Director

This report supersedes any previous report(s) with the same work order number.

All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong
Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER : HK2404344
SUB-BATCH : 1
CLIENT : ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING
PROJECT : ----



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2404344-001	S/N: 366418 (EQ108)	AIR	25-Jan-2024	S/N: 366418

Equipment Verification Report (TSP)

Equipment Calibrated:

Type: Laser Dust monitor
 Manufacturer: Sibata LD-3B
 Serial No. 366418
 Equipment Ref: EQ108

Standard Equipment:

Standard Equipment: Higher Volume Sampler (TSP)
 Location & Location ID: Site boundary of Middle Tsang Tsui Ash Lagoon
 Equipment Ref: HVS 022
 Last Calibration Date: 16 January 2024

Equipment Verification Results:

Verification Date: 16 January 2024

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
16-Jan-24	1hr 14min	12:07 ~ 13:21	18.7	1022.1	2004.6	101333	1373.1
16-Jan-24	1hr 07min	13:40 ~ 14:47	18.7	1022.1	1604.7	78101	1162.2
16-Jan-24	1hr 07min	14:49 ~ 15:56	18.7	1022.1	464.8	21842	325.0

Sensitivity Adjustment Scale Setting (Before Calibration) 685 (CPM)

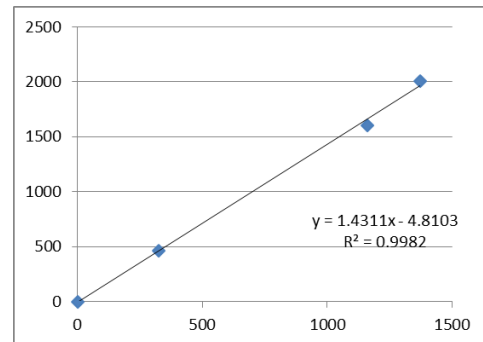
Sensitivity Adjustment Scale Setting (After Calibration) 685 (CPM)

Linear Regression of Y or X

Slope (K-factor): 1.4311 (µg/m³)/CPM

Correlation Coefficient (R) 0.9990

Date of Issue 25 January 2024



Remarks:

- Strong** Correlation ($R > 0.8$)
- Factor 1.4311 (µg/m³)/CPM should be apply for TSP monitoring

*If $R < 0.5$, repair or re-verification is required for the equipment

Operator : Gary Ng Signature : [Signature] Date : 25 January 2024

QC Reviewer : Ben Tam Signature : [Signature] Date : 25 January 2024

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Site boundary of Middle Tsang Tsui Ash Lagoon
 Location ID : AM(D)7a

Date of Calibration: 16 Jan 24
 Next Calibration Date: 16 Mar 24

CONDITIONS

Sea Level Pressure (hPa)	1022.1	Corrected Pressure (mm Hg)	766.575
Temperature (°C)	18.7	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.13163
Model->	5025A	Qstd Intercept ->	-0.03523
Calibration Date->	15-Dec-23	Expiry Date->	15-Dec-24

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION		
							Slope =	Intercept =	Corr. coeff. =
18	3.8	-8	11.8	1.652	58	58.88	Slope = 37.0901 Intercept = -1.8561 Corr. coeff. = 0.9977		
13	2.6	-6.8	9.4	1.477	52	52.79			
10	1.4	-5.7	7.1	1.285	46	46.69			
8	0.4	-4.5	4.9	1.071	38	38.57			
5	-0.4	-3.6	3.2	0.868	29	29.44			

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

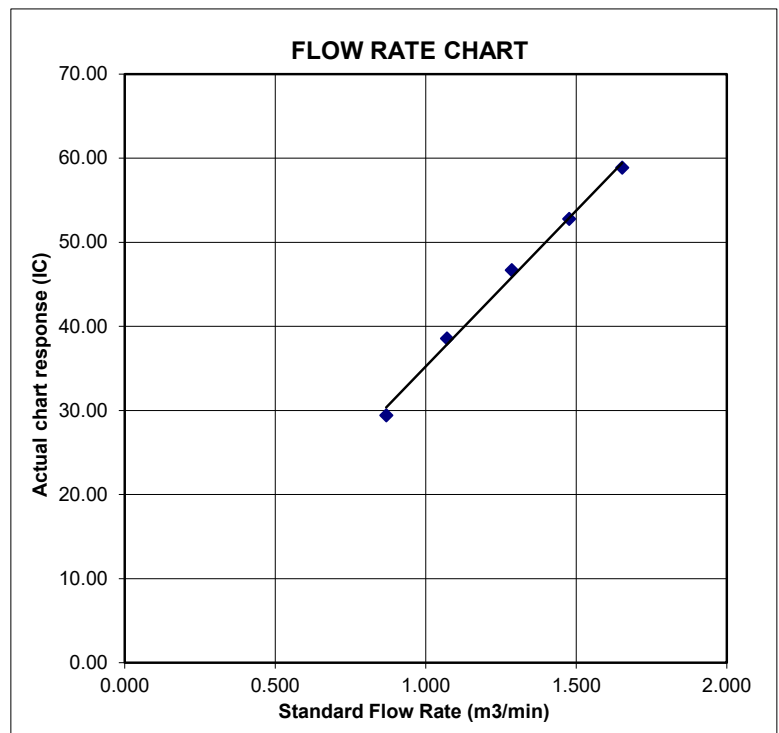
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate
 IC = corrected chart responses
 I = actual chart response
 m = calibrator Qstd slope
 b = calibrator Qstd intercept
 Ta = actual temperature during calibration (deg K)
 Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

m = sampler slope
 b = sampler intercept
 I = chart response
 Tav = daily average temperature
 Pav = daily average pressure



Certificate of Calibration

Calibration Certification Information			
Cal. Date: December 15, 2023	Rootsmeter S/N: 438320	Ta: 295	°K
Operator: Jim Tisch		Pa: 748.5	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 1941		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4590	3.2	2.00
2	3	4	1	1.0360	6.4	4.00
3	5	6	1	0.9260	8.0	5.00
4	7	8	1	0.8840	8.9	5.50
5	9	10	1	0.7290	12.9	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)}$ (y-axis)
0.9907	0.6790	1.4106	0.9957	0.6825	0.8878
0.9864	0.9522	1.9949	0.9914	0.9570	1.2556
0.9843	1.0630	2.2304	0.9893	1.0684	1.4037
0.9831	1.1121	2.3393	0.9881	1.1178	1.4723
0.9778	1.3413	2.8213	0.9828	1.3481	1.7756
QSTD	m=	2.13163	QA	m=	1.33479
	b=	-0.03523		b=	-0.02217
	r=	0.99999		r=	0.99999

Calculations	
Vstd= $\Delta Vol \left(\frac{Pa - \Delta P}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)$	Va= $\Delta Vol \left(\frac{Pa - \Delta P}{Pa} \right)$
Qstd= $Vstd / \Delta Time$	Qa= $Va / \Delta Time$
For subsequent flow rate calculations:	
Qstd= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmeter manometer reading (mm Hg)
Ta:	actual absolute temperature (°K)
Pa:	actual barometric pressure (mm Hg)
b:	intercept
m:	slope

RECALIBRATION
US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30



ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: HK2404345
CLIENT	: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T.	SUB-BATCH	: 1
		DATE RECEIVED	: 25-JAN-2024
		DATE OF ISSUE	: 5-FEB-2024
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.
 - Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.
 - Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.
 - Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition.
-

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Signatories

Position

Richard Fung

Managing Director

This report supersedes any previous report(s) with the same work order number.

All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong
Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER : HK2404345
SUB-BATCH : 1
CLIENT : ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING
PROJECT : ----



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2404345-001	S/N: 366410 (EQ110)	AIR	25-Jan-2024	S/N: 366410

Equipment Verification Report (TSP)

Equipment Calibrated:

Type: Laser Dust monitor
 Manufacturer: Sibata LD-3B
 Serial No. 366410
 Equipment Ref: EQ110

Standard Equipment:

Standard Equipment: Higher Volume Sampler (TSP)
 Location & Location ID: Site boundary of Middle Tsang Tsui Ash Lagoon
 Equipment Ref: HVS 022
 Last Calibration Date: 16 January 2024

Equipment Verification Results:

Verification Date: 16 January 2024

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
16-Jan-24	1hr 14min	12:07 ~ 13:21	18.7	1022.1	2004.6	106884	1448.3
16-Jan-24	1hr 07min	13:40 ~ 14:47	18.7	1022.1	1604.7	65450	974.0
16-Jan-24	1hr 07min	14:49 ~ 15:56	18.7	1022.1	464.8	24665	367.0

Sensitivity Adjustment Scale Setting (Before Calibration) 674 (CPM)

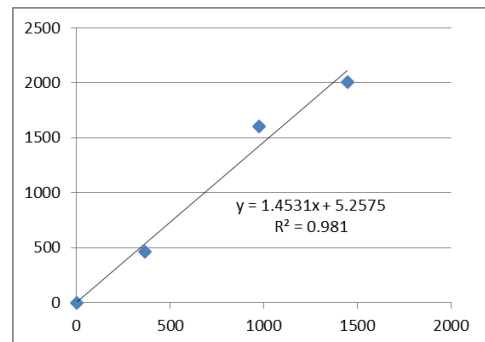
Sensitivity Adjustment Scale Setting (After Calibration) 674 (CPM)

Linear Regression of Y or X

Slope (K-factor): 1.4531 (µg/m³)/CPM

Correlation Coefficient (R) 0.9904

Date of Issue 25 January 2024



Remarks:

- Strong** Correlation ($R > 0.8$)
- Factor 1.4531 (µg/m³)/CPM should be apply for TSP monitoring

*If $R < 0.5$, repair or re-verification is required for the equipment

Operator : Gary Ng Signature : [Signature] Date : 25 January 2024

QC Reviewer : Ben Tam Signature : [Signature] Date : 25 January 2024

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Site boundary of Middle Tsang Tsui Ash Lagoon Date of Calibration: 16 Jan 24
 Location ID : AM(D)7a Next Calibration Date: 16 Mar 24

CONDITIONS

Sea Level Pressure (hPa)	1022.1	Corrected Pressure (mm Hg)	766.575
Temperature (°C)	18.7	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.13163
Model->	5025A	Qstd Intercept ->	-0.03523
Calibration Date->	15-Dec-23	Expiry Date->	15-Dec-24

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION		
							Slope =	Intercept =	Corr. coeff. =
18	3.8	-8	11.8	1.652	58	58.88	37.0901	-1.8561	0.9977
13	2.6	-6.8	9.4	1.477	52	52.79			
10	1.4	-5.7	7.1	1.285	46	46.69			
8	0.4	-4.5	4.9	1.071	38	38.57			
5	-0.4	-3.6	3.2	0.868	29	29.44			

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

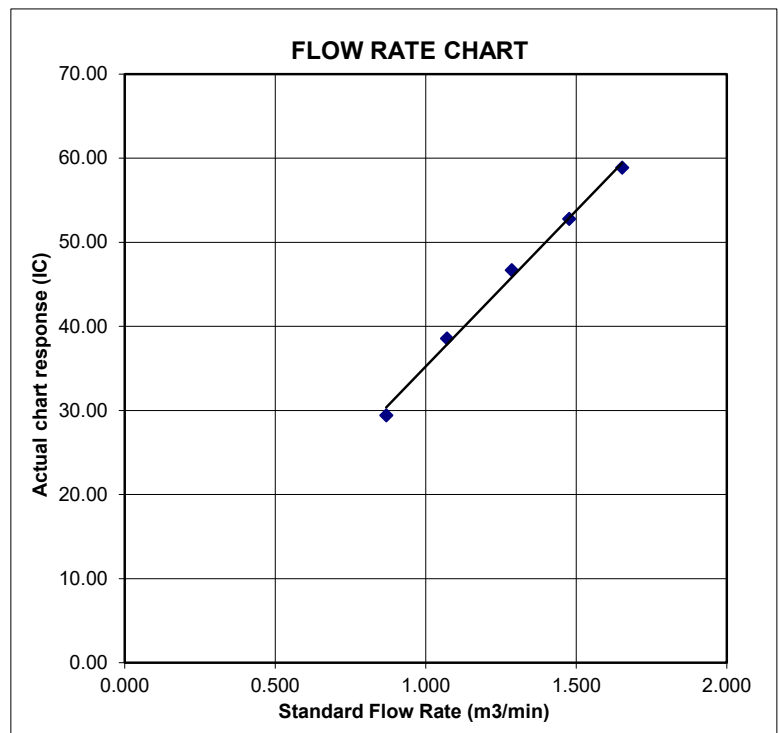
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate
 IC = corrected chart responses
 I = actual chart response
 m = calibrator Qstd slope
 b = calibrator Qstd intercept
 Ta = actual temperature during calibration (deg K)
 Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

m = sampler slope
 b = sampler intercept
 I = chart response
 Tav = daily average temperature
 Pav = daily average pressure



Certificate of Calibration

Calibration Certification Information			
Cal. Date: December 15, 2023	Rootsmeter S/N: 438320	Ta: 295	°K
Operator: Jim Tisch		Pa: 748.5	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 1941		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4590	3.2	2.00
2	3	4	1	1.0360	6.4	4.00
3	5	6	1	0.9260	8.0	5.00
4	7	8	1	0.8840	8.9	5.50
5	9	10	1	0.7290	12.9	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)}$ (y-axis)
0.9907	0.6790	1.4106	0.9957	0.6825	0.8878
0.9864	0.9522	1.9949	0.9914	0.9570	1.2556
0.9843	1.0630	2.2304	0.9893	1.0684	1.4037
0.9831	1.1121	2.3393	0.9881	1.1178	1.4723
0.9778	1.3413	2.8213	0.9828	1.3481	1.7756
QSTD	m=	2.13163	QA	m=	1.33479
	b=	-0.03523		b=	-0.02217
	r=	0.99999		r=	0.99999

Calculations	
Vstd= $\Delta Vol \left(\frac{Pa - \Delta P}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)$	Va= $\Delta Vol \left(\frac{Pa - \Delta P}{Pa} \right)$
Qstd= $Vstd / \Delta Time$	Qa= $Va / \Delta Time$
For subsequent flow rate calculations:	
Qstd= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmeter manometer reading (mm Hg)
Ta:	actual absolute temperature (°K)
Pa:	actual barometric pressure (mm Hg)
b:	intercept
m:	slope

RECALIBRATION
US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30



ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: HK2404342
CLIENT	: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T.	SUB-BATCH	: 1
		DATE RECEIVED	: 25-JAN-2024
		DATE OF ISSUE	: 5-FEB-2024
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.
 - Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.
 - Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.
 - Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition.
-

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Signatories

Position

Richard Fung

Managing Director

This report supersedes any previous report(s) with the same work order number.

All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong
Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER : HK2404342
SUB-BATCH : 1
CLIENT : ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING
PROJECT : ----



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2404342-001	S/N: 2X6145 (EQ105)	AIR	25-Jan-2024	S/N: 2X6145

Equipment Verification Report (TSP)

Equipment Calibrated:

Type: Laser Dust monitor
Manufacturer: Sibata LD-3B
Serial No. 2X6145
Equipment Ref: EQ105

Standard Equipment:

Standard Equipment: Higher Volume Sampler (TSP)
Location & Location ID: Site boundary of Middle Tsang Tsui Ash Lagoon
Equipment Ref: HVS 022
Last Calibration Date: 16 January 2024

Equipment Verification Results:

Verification Date: 16 January 2024

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
16-Jan-24	1hr 14min	12:07 ~ 13:21	18.7	1022.1	2004.6	107246	1453.2
16-Jan-24	1hr 07min	13:40 ~ 14:47	18.7	1022.1	1604.7	66880	995.2
16-Jan-24	1hr 07min	14:49 ~ 15:56	18.7	1022.1	464.8	31140	463.4

Sensitivity Adjustment Scale Setting (Before Calibration) 586 (CPM)

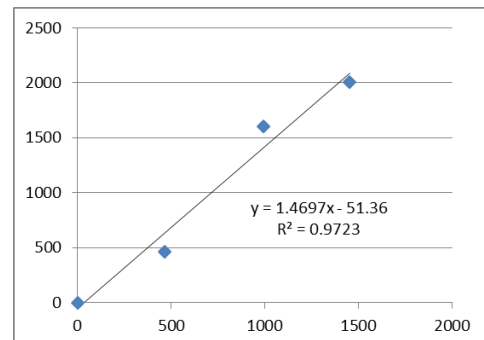
Sensitivity Adjustment Scale Setting (After Calibration) 586 (CPM)

Linear Regression of Y or X

Slope (K-factor): 1.4697 (µg/m³)/CPM

Correlation Coefficient (R) 0.9861

Date of Issue 25 January 2024



Remarks:

- Strong** Correlation ($R > 0.8$)
- Factor 1.4697 (µg/m³)/CPM should be apply for TSP monitoring

*If $R < 0.5$, repair or re-verification is required for the equipment

Operator : Gary Ng Signature : [Signature] Date : 25 January 2024

QC Reviewer : Ben Tam Signature : [Signature] Date : 25 January 2024

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Site boundary of Middle Tsang Tsui Ash Lagoon
 Location ID : AM(D)7a

Date of Calibration: 16 Jan 24
 Next Calibration Date: 16 Mar 24

CONDITIONS

Sea Level Pressure (hPa)	1022.1	Corrected Pressure (mm Hg)	766.575
Temperature (°C)	18.7	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.13163
Model->	5025A	Qstd Intercept ->	-0.03523
Calibration Date->	15-Dec-23	Expiry Date->	15-Dec-24

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	3.8	-8	11.8	1.652	58	58.88	Slope = 37.0901 Intercept = -1.8561 Corr. coeff. = 0.9977
13	2.6	-6.8	9.4	1.477	52	52.79	
10	1.4	-5.7	7.1	1.285	46	46.69	
8	0.4	-4.5	4.9	1.071	38	38.57	
5	-0.4	-3.6	3.2	0.868	29	29.44	

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

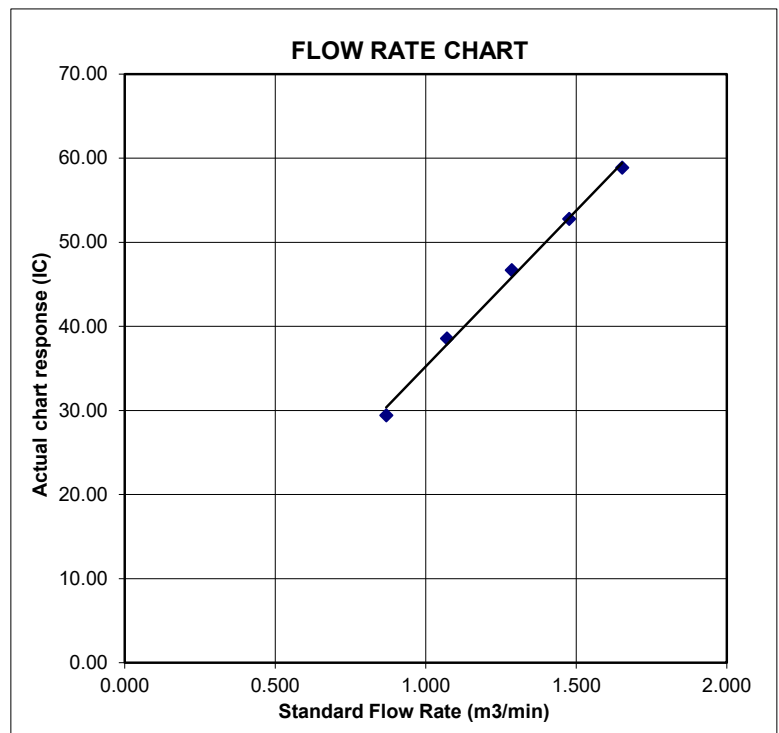
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate
 IC = corrected chart responses
 I = actual chart response
 m = calibrator Qstd slope
 b = calibrator Qstd intercept
 Ta = actual temperature during calibration (deg K)
 Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

m = sampler slope
 b = sampler intercept
 I = chart response
 Tav = daily average temperature
 Pav = daily average pressure



Certificate of Calibration

Calibration Certification Information			
Cal. Date: December 15, 2023	Rootsmeter S/N: 438320	Ta: 295	°K
Operator: Jim Tisch		Pa: 748.5	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 1941		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4590	3.2	2.00
2	3	4	1	1.0360	6.4	4.00
3	5	6	1	0.9260	8.0	5.00
4	7	8	1	0.8840	8.9	5.50
5	9	10	1	0.7290	12.9	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H (Ta/Pa)}$ (y-axis)
0.9907	0.6790	1.4106	0.9957	0.6825	0.8878
0.9864	0.9522	1.9949	0.9914	0.9570	1.2556
0.9843	1.0630	2.2304	0.9893	1.0684	1.4037
0.9831	1.1121	2.3393	0.9881	1.1178	1.4723
0.9778	1.3413	2.8213	0.9828	1.3481	1.7756
QSTD	m=	2.13163	QA	m=	1.33479
	b=	-0.03523		b=	-0.02217
	r=	0.99999		r=	0.99999

Calculations	
Vstd= $\Delta Vol((Pa-\Delta P)/Pstd)(Tstd/Ta)$	Va= $\Delta Vol((Pa-\Delta P)/Pa)$
Qstd= $Vstd/\Delta Time$	Qa= $Va/\Delta Time$
For subsequent flow rate calculations:	
Qstd= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa= $1/m \left(\left(\sqrt{\Delta H (Ta/Pa)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmeter manometer reading (mm Hg)
Ta:	actual absolute temperature (°K)
Pa:	actual barometric pressure (mm Hg)
b:	intercept
m:	slope

RECALIBRATION
US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

Appendix F2

Calibration Certificates for

Noise Monitoring Equipment

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 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(50 \pm 25)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 3 December 2023

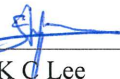
TEST RESULTS / 測試結果

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 : 4 December 2023
簽發日期

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

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

Certificate of Calibration

校正證書

Certificate No. : C236947

證書編號

- 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.
- Self-calibration was performed before the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C230306
CL281	Multifunction Acoustic Calibrator	CDK2302738

- Test procedure : MA101N.

- 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

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

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Certificate of Calibration

校正證書

Certificate No. : C236947

證書編號

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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Certificate of Calibration

校正證書

Certificate No. : C236947

證書編號

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.

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

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. : C236949

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 (EQ016)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-52
Serial No. / 編號 : 00464681
Supplied By / 委託者 : Action-United Environmental Services 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 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(50 \pm 25)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 3 December 2023

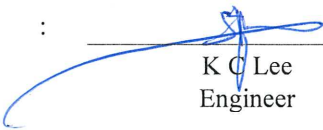
TEST RESULTS / 測試結果

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 : 4 December 2023
簽發日期

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

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

Certificate of Calibration

校正證書

Certificate No. : C236949

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	93.4	± 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	93.4 (Ref.)
				104.00		103.4
				114.00		113.4

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	93.4	Ref.
			Slow				

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

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Certificate of Calibration

校正證書

Certificate No. : C236949
證書編號

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	67.2	-26.2 ± 1.5
					125 Hz	77.2	-16.1 ± 1.5
					250 Hz	84.8	-8.6 ± 1.4
					500 Hz	90.2	-3.2 ± 1.4
					1 kHz	93.4	Ref.
					2 kHz	94.6	+1.2 ± 1.6
					4 kHz	94.4	+1.0 ± 1.6
					8 kHz	92.4	-1.1 (+2.1 ; -3.1)
					16 kHz	85.5	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L _C	C	Fast	94.00	63 Hz	92.5	-0.8 ± 1.5
					125 Hz	93.2	-0.2 ± 1.5
					250 Hz	93.4	0.0 ± 1.4
					500 Hz	93.5	0.0 ± 1.4
					1 kHz	93.4	Ref.
					2 kHz	93.3	-0.2 ± 1.6
					4 kHz	92.6	-0.8 ± 1.6
					8 kHz	90.5	-3.0 (+2.1 ; -3.1)
					16 kHz	83.5	-8.5 (+3.5 ; -17.0)

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

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



Certificate of Calibration 校正證書

Certificate No. : C236949
證書編號

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



Certificate of Calibration 校正證書

Certificate No. : C236946
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 (EQ086)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-74
Serial No. / 編號 : 34657230
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 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(50 \pm 25)\%$
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 : 4 December 2023
簽發日期

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

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

Certificate of Calibration

校正證書

Certificate No. : C236946
證書編號

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

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C233799
CL281	Multifunction Acoustic Calibrator	CDK2302738
TST150A	Measuring Amplifier	C221750

- Test procedure : MA100N.

- 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	94.10	± 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.



Certificate of Calibration 校正證書

Certificate No. : C236948
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 (EQ087)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-74
Serial No. / 編號 : 34657231
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 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(50 \pm 25)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

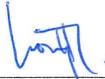
Calibration check

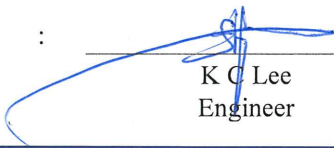
DATE OF TEST / 測試日期 : 3 December 2023

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 : 4 December 2023
簽發日期

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

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

Certificate of Calibration

校正證書

Certificate No. : C236948

證書編號

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

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C233799
CL281	Multifunction Acoustic Calibrator	CDK2302738
TST150A	Measuring Amplifier	C221750

- Test procedure : MA100N.

- 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	94.10	± 0.3	± 0.20

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Limit	Uncertainty of Measured Value (Hz)
1	1.001	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.

Appendix F3

Calibration Certificates for

Water Quality Monitoring Equipment



REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: BEN TAM
CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES &
ADDRESS: RM A 20/F., GOLD KING IND BLDG,
NO. 35-41 TAI LIN PAI ROAD,
KWAI CHUNG, N.T.

WORK ORDER: HK2406683
SUB-BATCH: 0
LABORATORY: HONG KONG
DATE RECEIVED: 19-Feb-2024
DATE OF ISSUE: 27-Feb-2024

GENERAL COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the laboratory or quoted from relevant international standards.

The validity of equipment/ meter performance only applies to the result(s) stated in the report.

This report superseded any previous report(s) with same work order number.

EQUIPMENT INFORMATION

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.

Equipment Type: Multifunctional Meter

Service Nature: Performance Check

Scope: Conductivity, Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature

Brand Name/ Model No.: [YSI]/ [Professional DSS]

Serial No./ Equipment No.: [17B102764/17B100758]/ [EQW019]

Date of Calibration: 23-February-2024

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganics

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2406683
SUB-BATCH: 0
DATE OF ISSUE: 27-Feb-2024
CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: [YSI]/ [Professional DSS]
Serial No./ Equipment No.: [17B102764/17B100758]/ [EQW019]
Date of Calibration: 23-February-2024 Date of Next Calibration: 23-May-2024

PARAMETERS:

Conductivity

Method Ref: APHA (23rd edition), 2510B

Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)
146.9	157.9	+7.5
6667	6927	+3.9
12890	13904	+7.9
58670	57705	-1.6
	Tolerance Limit (%)	± 10.0

Dissolved Oxygen

Method Ref: APHA (23rd edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.93	2.94	+0.01
5.63	5.53	-0.10
7.14	7.08	-0.06
	Tolerance Limit (mg/L)	± 0.20

pH Value

Method Ref: APHA (23rd edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	3.88	-0.12
7.0	7.01	+0.01
10.0	9.87	-0.13
	Tolerance Limit (pH unit)	± 0.20

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganics

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2406683
SUB-BATCH: 0
DATE OF ISSUE: 27-Feb-2024
CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: [YSI]/ [Professional DSS]
Serial No./ Equipment No.: [17B102764/17B100758]/ [EQW019]
Date of Calibration: 23-February-2024 Date of Next Calibration: 23-May-2024

PARAMETERS:

Turbidity

Method Ref: APHA (23rd edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	-0.34	--
4	4.02	+0.5
40	36.07	-9.8
80	72.58	-9.3
400	365.97	-8.5
800	731.87	-8.5
	Tolerance Limit (%)	±10.0

Salinity

Method Ref: APHA (23rd edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.01	--
10	10.90	+9.0
20	21.95	+9.8
30	32.89	+9.6
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganics

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2406683
SUB-BATCH: 0
DATE OF ISSUE: 27-Feb-2024
CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: [YSI]/ [Professional DSS]
Serial No./ Equipment No.: [17B102764/17B100758]/ [EQW019]
Date of Calibration: 23-February-2024 Date of Next Calibration: 23-May-2024

PARAMETERS:

Temperature

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

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
6.5	6.4	-0.1
22.5	22.4	-0.1
43.5	42.5	-1.0
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganics



REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: BEN TAM
CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES &
CONSULTING
ADDRESS: RM A 20/F., GOLD KING IND BLDG,
NO. 35-41 TAI LIN PAI ROAD,
KWAI CHUNG, N.T.

WORK ORDER: HK2418475
SUB-BATCH: 0
LABORATORY: HONG KONG
DATE RECEIVED: 10-May-2024
DATE OF ISSUE: 22-May-2024

GENERAL COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the laboratory or quoted from relevant international standards.

The validity of equipment/ meter performance only applies to the result(s) stated in the report.

This report superseded any previous report(s) with same work order number.

EQUIPMENT INFORMATION

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.

Equipment Type: Multifunctional Meter

Service Nature: Performance Check

Scope: Conductivity, Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature

Brand Name/ Model No.: [YSI]/ [Professional DSS]

Serial No./ Equipment No.: [20J101862/ 15H103928]/ [EQW018]

Date of Calibration: 17-May-2024

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganics

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REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2418475
SUB-BATCH: 0
DATE OF ISSUE: 22-May-2024
CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: [YSI]/ [Professional DSS]
Serial No./ Equipment No.: [20J101862/ 15H103928]/ [EQW018]
Date of Calibration: 17-May-2024 Date of Next Calibration: 17-August-2024

PARAMETERS:

Conductivity

Method Ref: APHA (23rd edition), 2510B

Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)
146.9	160.3	+9.1
6667	6491	-2.6
12890	12458	-3.4
58670	55686	-5.1
	Tolerance Limit (%)	± 10.0

Dissolved Oxygen

Method Ref: APHA (23rd edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.88	3.05	+0.17
4.62	4.49	-0.13
6.80	6.71	-0.09
	Tolerance Limit (mg/L)	± 0.20

pH Value

Method Ref: APHA (23rd edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.03	+0.03
7.0	7.02	+0.02
10.0	9.92	-0.08
	Tolerance Limit (pH unit)	± 0.20

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganics

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2418475
SUB-BATCH: 0
DATE OF ISSUE: 22-May-2024
CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: [YSI]/ [Professional DSS]
Serial No./ Equipment No.: [20J101862/ 15H103928]/ [EQW018]
Date of Calibration: 17-May-2024 Date of Next Calibration: 17-August-2024

PARAMETERS:

Turbidity

Method Ref: APHA (23rd edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.85	--
4	4.38	+9.5
40	36.41	-9.0
80	81.64	+2.1
400	383.76	-4.1
800	799.20	-0.1
	Tolerance Limit (%)	±10.0

Salinity

Method Ref: APHA (23rd edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	10.95	+9.5
20	20.93	+4.7
30	31.94	+6.5
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganics

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2418475
SUB-BATCH: 0
DATE OF ISSUE: 22-May-2024
CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: [YSI]/ [Professional DSS]
Serial No./ Equipment No.: [20J101862/ 15H103928]/ [EQW018]
Date of Calibration: 17-May-2024 Date of Next Calibration: 17-August-2024

PARAMETERS:

Temperature

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

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
10.0	10.6	+0.6
24.0	23.4	-0.6
45.0	43.2	-1.8
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganics



Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong
香港新界葵涌永業街1-3號忠信針織中心11樓

*is accredited by the Hong Kong Accreditation Service (HKAS) to ISO/IEC 17025:2017
for performing specific laboratory activities as listed in the scope of accreditation within the test category of*
獲香港認可處根據ISO/IEC 17025:2017認可
進行載於認可範圍內下述測試類別中的指定實驗所活動

Environmental Testing
環境測試

*This accreditation to ISO/IEC 17025:2017 demonstrates technical competence for a defined scope and
the implementation of a management system relevant to laboratory operation
(see joint IAF-ILAC-ISO Communiqué).*
此項 ISO/IEC 17025:2017 的認可資格證明此實驗所具備指定範疇內所須的技術能力並
實施一套與實驗所運作相關的管理體系
(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

The common seal of HKAS is affixed hereto by the authority of the HKAS Executive
現經香港認可處執行機關授權在此蓋上香港認可處的印章

SHUM Wai-leung, Executive Administrator
執行幹事 沈偉良
Issue Date : 28 February 2020
簽發日期：二零二零年二月二十八日

Registration Number : **HOKLAS 066**
註冊號碼：



Date of First Registration : 15 September 1995
首次註冊日期：一九九五年九月十五日

Appendix G

Meteorological Data

Date		Weather	Total Rainfall (mm)	Wetland Park Station			
				Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
1-May-24	Wed	Mainly cloudy with a few showers.	52.9	22.1	2.5	94	S/SE
2-May-24	Thu	Isolated thunderstorms later.	1.1	22.5	4	91.7	E/NE
3-May-24	Fri	Moderate easterly winds,	Trace	23.5	7.2	84.7	E
4-May-24	Sat	Mainly cloudy with one or two showers.	75.1	21.8	8.7	95	E
5-May-24	Sun	Moderate easterly winds,	5.3	25.3	2.5	86.5	N
6-May-24	Mon	Isolated thunderstorms later.	0	26.9	5	75.5	W/NW
7-May-24	Tue	occasionally strong offshore and on high ground.	0	26.5	3.5	75.5	NW
8-May-24	Wed	Moderate to fresh easterly winds	Trace	25.9	3.5	77	NE
9-May-24	Thu	Sunny intervals.	0	25.3	7.5	68	E
10-May-24	Fri	Mainly cloudy. Moderate to fresh easterly winds	Trace	24.4	6.7	72.0	E/NE
11-May-24	Sat	Mainly cloudy with one or two showers.	Trace	26.2	6.2	78.7	S/SE
12-May-24	Sun	Moderate to fresh easterly winds	3.1	27.4	3.7	81	N/NW
13-May-24	Mon	Mainly cloudy with one or two showers.	0.7	26.1	5	81	N/NE
14-May-24	Tue	Mainly fine. Dry and hot during the day	0	25	7.5	71	E
15-May-24	Wed	Moderate easterly winds, fresh offshore at first.	0	25.7	5	66.2	W/NW
16-May-24	Thu	Hot and very dry during the day.	0	24.4	6.2	65	E/NE
17-May-24	Fri	Moderate to fresh easterly winds	Trace	24.2	5	75.5	W/NW
18-May-24	Sat	Showers will be heavier at times later.	Trace	24	6.2	79	E/NE
19-May-24	Sun	Cloudy with occasional showers and a few squally thunderstorms.	17.5	23.5	7	85.2	E/NE
20-May-24	Mon	Becoming moderate southeasterlies later.	30.7	23.9	3.5	97.5	E/NE
21-May-24	Tue	Cloudy with occasional showers and a few thunderstorms.	45.3	24	3.5	97.5	E/NE
22-May-24	Wed	Mainly cloudy with a few showers.	Trace	26.0	2.5	86.2	NE
23-May-24	Thu	Moderate easterly winds, fresh offshore at first.	2.5	26.0	Maintenance	87.5	Maintenance
24-May-24	Fri	Hot and very dry during the day.	17.6	24.1	2	94	E/NE
25-May-24	Sat	Moderate to fresh easterly winds	7.8	25.2	3.7	91.2	E/NE
26-May-24	Sun	Mainly cloudy with occasional showers and squally thunderstorms.	0.3	27.0	4	87.2	S/SE
27-May-24	Mon	Moderate south to southwesterly winds	6.7	27.8	6	86.2	S/SW
28-May-24	Tue	Mainly cloudy with occasional showers.	8.9	27.7	3.7	83.7	E/NE
29-May-24	Wed	Mainly cloudy with showers.	0	25.2	10.5	73.5	E/NE
30-May-24	Thu	Showers will be heavy with a few thunderstorms at first.	3.7	Maintenance	7.5	Maintenance	E/NE
31-May-24	Fri	Moderate to fresh easterly winds	13.4	27.9	6.2	89	E/SE

Appendix H

Event and Action Plan

Event / Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
Action level exceedance for one sample	<ol style="list-style-type: none"> Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and ER; Repeat measurement to confirm finding; Increase monitoring frequency to daily 	<ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method 	<ol style="list-style-type: none"> Notify Contractor. 	<ol style="list-style-type: none"> Rectify any unacceptable practice; Amend working methods if appropriate.
Action level exceedance for two or more consecutive samples	<ol style="list-style-type: none"> Identify source; Inform IEC and ER; Advise the ER on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and ER; If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> Submit proposals for remedial to ER within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Limit level exceedance for one sample	<ol style="list-style-type: none"> Identify source, investigate the causes of exceedance and propose remedial measures; Inform ER, Contractor and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 	<ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ER on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Limit level exceedance for two or more consecutive samples	<ol style="list-style-type: none"> Notify IEC, ER, Contractor and EPD; Identify source; Repeat measurement to confirm findings; Increase monitoring frequency to daily; Carry out analysis of Contractor's working procedures to determine 	<ol style="list-style-type: none"> Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing; Notify Contractor; In consultation with the IEC, agree with the 	<ol style="list-style-type: none"> Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals;

Event	Action			
	ET	IEC	ER	Contractor
	possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor’s remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	advise the ER accordingly; 3. Supervise the implementation of remedial measures.	Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	5 Resubmit proposals if problem still not under control; 6 Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Notes:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer’s Representative

Event / Action Plan for Construction Noise

Event	Action			
	ET	IEC	ER	Contractor
Action Level Exceedance	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to the ER and IEC and copy to the ET; 2. Implement noise mitigation proposals.
Limit Level Exceedance	<ol style="list-style-type: none"> 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 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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, consider what portion of work is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated. 	<ol style="list-style-type: none"> 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 proposals if problems still not under control; stop the relevant portion of works as determined by the ER until the exceedance is abated.

Notes:

ET – Environmental Team
IEC – Independent Environmental Checker
ER – Engineer's Representative

Event / Action Plan for Water Quality

Event	Action			
	ET	IEC	ER	Contractor
Action level exceedance for one sampling day	<ol style="list-style-type: none"> Repeat in-situ measurement on next day of exceedance to confirm findings; Inform IEC, Contractor and ER; Check monitoring data, all plant, equipment and Contractor's working methods; and Discuss remedial measures with IEC and Contractor and ER. 	<ol style="list-style-type: none"> Discuss with ET, ER and Contractor on the implemented mitigation measures; Review proposals on remedial measures submitted by Contractor and advise the ER accordingly; and Review and advise the ET and ER on the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> Discuss with IEC, ET and Contractor on the implemented mitigation measures; Make agreement on the remedial measures to be implemented; and Supervise the implementation of agreed remedial measures. 	<ol style="list-style-type: none"> Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ER, ET and IEC and purpose remedial measures to IEC and ER; and Implement the agreed mitigation measures.
Action level exceedance for more than one consecutive sampling days	<ol style="list-style-type: none"> Repeat in-situ measurement on next day of exceedance to confirm findings; Inform IEC, contractor and ER; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss remedial measures with IEC, contractor and ER; and Ensure remedial measures are implemented. 	<ol style="list-style-type: none"> Discuss with ET, Contractor and ER on the implemented mitigation measures; Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and Review and advise the ET and ER on the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> Discuss with ET, IEC and Contractor on the proposed mitigation measures; Make agreement on the remedial measures to be implemented; and Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures. 	<ol style="list-style-type: none"> Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Discuss with ET, IEC and ER and submit proposal of remedial measures to ER and IEC within 3 working days of notification; and Implement the agreed mitigation measures
Limit level exceedance for one sampling day	<ol style="list-style-type: none"> Repeat measurement on next day of exceedance to confirm findings; Inform IEC, contractor and ER; Rectify unacceptable practice; Check monitoring data, all plant, equipment and Contractor's working methods; Consider changes 	<ol style="list-style-type: none"> Discuss with ET, Contractor and ER on the implemented mitigation measures; Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and Review and 	<ol style="list-style-type: none"> Discuss with ET, IEC and Contractor on the implemented remedial measures; Request Contractor to critically review the working methods; Make agreement on the remedial measures to be implemented; and 	<ol style="list-style-type: none"> Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to

Event	Action			
	ET	IEC	ER	Contractor
	<p>of working methods;</p> <p>6. Discuss mitigation measures with IEC, ER and Contractor; and</p> <p>7. Ensure the agreed remedial measures are implemented</p>	<p>advise the ET and ER on the effectiveness of the implemented mitigation measures.</p>	<p>4. Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.</p>	<p>ER and IEC within 3 working days of notification; and</p> <p>6. Implement the agreed remedial measures.</p>
<p>Limit level exceedance for more than one consecutive sampling days</p>	<p>1. Inform IEC, contractor and ER;</p> <p>2. Check monitoring data, all plant, equipment and Contractor's working methods;</p> <p>3. Discuss mitigation measures with IEC, ER and Contractor;</p> <p>4. Ensure mitigation measures are implemented; and</p> <p>5. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.</p>	<p>1. Discuss with ET, Contractor and ER on the implemented mitigation measures;</p> <p>2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and</p> <p>3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.</p>	<p>1. Discuss with ET, IEC and Contractor on the implemented remedial measures;</p> <p>2. Request Contractor to critically review the working methods;</p> <p>3. Make agreement on the remedial measures to be implemented;</p> <p>4. Discuss with ET and IEC on the effectiveness of the implemented mitigation measures; and</p> <p>5. Consider and instruct, if necessary, the Contractor to slow down or stop all or part of the dredging activities until no exceedance of Limit level.</p>	<p>1. Identify source(s) of impact;</p> <p>2. Inform the ER and confirm notification of the non-compliance in writing;</p> <p>3. Rectify unacceptable practice;</p> <p>4. Check all plant and equipment and consider changes of working methods;</p> <p>5. Discuss with ET, IEC and ER and submit proposal of additional mitigation</p> <p>7. measures to ER and IEC within 3 working days of notification; and</p> <p>6. Implement the agreed remedial measures.</p> <p>7. As directed by the ER, to slow down or stop all or part of the dredging activities until no exceedance of Limit level.</p>

Notes:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer's Representative

Appendix I

Monitoring Schedule

Impact Monitoring Schedule for Reporting Month – May 2024

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2 Water quality	3	4 Water quality 1-hr TSP X3
5	6	7 Water quality	8	9 Water quality	10 1-hr TSP X3 Noise	11 Water quality
12	13	14 Water quality	15	16 Water quality Noise	17	18 Water quality 1-hr TSP X3
19	20	21 Water quality	22 1-hr TSP X3	23 Water quality Noise	24	25 Water quality
26	27 Water quality	28 Noise	29 Water quality 1-hr TSP X3	30	31 Water quality	

Impact Monitoring Schedule for next Reporting Month – June 2024

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3 1-hr TSP X3 Noise	4 Water quality	5	6 Water quality	7	8 Water quality 1-hr TSP X3
9	10	11 Water quality	12	13 Water quality 1-hr TSP X3 Noise	14	15 Water quality
16	17	18 Water quality	19 1-hr TSP X3 Noise	20 Water quality	21	22 Water quality
23	24	25 Water quality 1-hr TSP X3 Noise	26	27 Water quality	28	29 Water quality
30						

Appendix J1

Detailed Monitoring Results

Construction Dust Monitoring Results

Location: DM-1

Date	Start Time	1-hour TSP ($\mu\text{g}/\text{m}^3$)			Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level($\mu\text{g}/\text{m}^3$)
		1 st reading	2 nd reading	3 rd reading		
4-May-24	9:35	68	88	92	268	500
10-May-24	13:00	60	54	49	268	500
16-May-24	9:05	70	65	66	268	500
22-May-24	9:00	41	35	41	268	500
28-May-24	9:37	45	41	25	268	500

Location: DM-2

Date	Start Time	1-hour TSP ($\mu\text{g}/\text{m}^3$)			Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level($\mu\text{g}/\text{m}^3$)
		1 st reading	2 nd reading	3 rd reading		
4-May-24	9:56	55	72	63	268	500
10-May-24	9:00	54	52	60	268	500
16-May-24	13:20	60	58	65	268	500
22-May-24	12:00	53	50	64	268	500
28-May-24	9:59	46	28	19	268	500

Construction Noise Monitoring Results

Location: CM1a

Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 rd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq30min	Limit Level
10-May-24	11:30	66.7	52.2	48.6	44.2	46.8	40.0	45.7	47.2	40.7	54.2	53.5	45.8	48.3	52.1	42.0	44.6	47.5	40.6	59	75
16-May-24	13:00	53.4	4/8.8	43.7	55.3	52.6	42	54.9	48.2	42.3	50.5	53.3	43.5	52.3	55.7	42.8	48.6	52.6	43.7	53	75
22-May-24	13:00	52.5	55.6	47.3	50.7	52.8	46.2	50.2	52.3	46.8	52.3	53.2	48.12	55.6	56.3	47.3	56.4	58.4	48.8	54	75
28-May-24	14:04	53.7	54.7	51.4	53.6	55.4	51.4	53.8	54.6	50.6	51.7	52.9	50.3	52.1	52.9	49.6	52.4	53.6	50.8	53	75

Location: CM2a

Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 rd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq30min	Façade Correction	Limit Level
10-May-24	10:30	59.7	58.2	55.6	60.0	63.8	54.8	59.3	62.6	55.0	63.5	59.0	54.4	60.2	64.5	54.2	62.6	65.6	55.4	61	64	75
16-May-24	10:30	75	79.6	58.4	71.9	76.8	54.8	68.8	72.5	60.1	60.9	60.6	43.6	52.3	56.7	43.8	60.2	58.1	45.1	70	73	75
22-May-24	10:15	58.6	60.2	55.2	59.5	61.7	57.3	60.2	60.8	56.9	60.7	63.2	56	62.5	64.6	57.3	62.6	65.4	56.6	61	64	75
28-May-24	9:55	61	62.6	59.5	60.9	62	59.2	65.1	63.4	60.1	61.1	62.4	59.4	61.3	62.5	59	61.2	62	59.9	62	65	75

Remark: façade correction (+3 dB(A)) was added according to acoustical principles and EPD guidelines

Location: CM3

Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 rd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq30min	Limit Level
10-May-24	9:00	69.6	72.8	59.8	70.4	72.4	59.6	68.4	71.8	59.4	70.7	73.7	58.8	73.7	75.4	58.3	72.9	74.1	60.2	71	75
16-May-24	9:00	69.9	70.7	63.0	66.7	69.1	62.0	68.1	70.0	59.7	67.6	70.3	59.7	65.9	68.8	60.3	70.8	71.8	62.0	69	75
22-May-24	9:00	68.2	64.5	58.2	67.4	63.5	58.4	65.3	67.8	57.3	66.4	64.8	56.0	65.6	67.1	56.4	66.9	68.6	57.3	67	75
28-May-24	11:05	69.6	71.3	59.1	73.6	71.9	59	69.6	69.4	58.7	68.8	68.6	59.3	69.2	73.4	59.3	70.4	74.2	59	71	75

Location: CM4

Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 rd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq30min	Limit Level
10-May-24	9:45	72.0	74.9	58.0	66.9	69.9	58.0	69.4	70.6	58.6	69.3	71.5	59.0	67.5	70.8	59.2	70.9	72.3	59	70	75
16-May-24	9:45	59.9	60.6	57	60.2	62.7	56.6	59.7	60.7	56	59.2	60.3	57.4	59.6	61.3	57.2	59.9	60.6	57	60	75
22-May-24	9:30	70.2	74.8	59.3	65.2	66.9	57.5	65.5	68.8	58	68.6	70.5	58.6	69.8	69.8	59.4	68.7	70.2	60.6	68	75
28-May-24	10:28	68.2	70.7	63	67.9	70.9	63.4	71.1	73.4	63.8	67.9	69.9	62.3	69.3	72.1	63.2	68.4	70.4	64.1	69	75

Location: CM8a

Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 rd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq _{30min}	Façade Correction	Limit Level
10-May-24	12:30	64.4	59.5	52.4	59.5	63.0	52.1	56.0	58.9	52.3	60.8	60.4	52.7	60.0	62.4	52.5	59.1	64.3	51.9	61	64	75
16-May-24	9:00	65.3	62.6	53.5	54.4	52.5	51.3	55.8	57.6	52.4	54.5	56.8	51.6	56	58.4	52.5	56.8	59.2	51.6	59	62	75
22-May-24	13::45	58.6	58.9	56.4	57.7	58.4	55.2	56.2	57.6	52.3	58.5	60.3	52.4	60.4	59.3	53.7	56.2	58.2	52.6	58	61	75
28-May-24	13:22	60.8	62.8	57.3	62.2	63	56.5	58.6	59.3	56.1	60.5	62.3	57.1	60.9	62.2	58.2	58.4	59.1	57.7	60	63	75

Remark: façade correction (+3 dB(A)) was added according to acoustical principles and EPD guidelines

Water Quality Monitoring Results

Location: M1a

Date		2 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:46	0.50	24.5	24.55	5.7	5.7	68.7	68.6	4.7	4.7	7.42	7.4	0.16	0.16	6	6.6
			24.6		5.68		68.4		4.7		7.42		0.16		7.1	

Date		4 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:48	0.50	24.3	24.3	5.79	5.8	68.5	68.5	37.9	37.9	7.23	7.2	0.10	0.10	44.2	44.3
			24.3		5.8		68.4		37.9		7.23		0.10		44.4	

Date		7 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:31	0.60	26.9	26.9	6.51	6.5	82.4	82.5	7.5	7.5	7.79	7.8	0.15	0.15	12.9	15.3
			26.9		6.49		82.5		7.5		7.79		0.15		17.7	

Date		9 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	14:30	0.30	28	28	5.93	5.9	74.2	74.3	4.7	4.7	7.16	7.2	0.16	0.16	7.5	7.4
			28		5.94		74.3		4.7		7.16		0.16		7.2	

Date		11 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	11:15	0.30	26.6	26.6	5.7	5.7	70.0	69.9	3.9	3.9	7.32	7.3	0.14	0.14	9.5	6.0
			26.6		5.7		69.8		3.9		7.32		0.14		2.4	

Date		14 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	11:48	0.50	27.9	27.9	3.81	3.8	48.0	48.1	10.8	10.8	7.60	7.6	0.16	0.16	19	21.6
			27.9		3.82		48.1		10.8		7.61		0.16		24.2	

Date		16 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:17	0.50	28	28	3.65	3.7	46.7	46.7	12.2	12.2	7.88	7.9	0.25	0.25	17	16.5
			28		3.65		46.7		12.3		7.88		0.25		16	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:39	0.50	28.2	28.2	7.44	7.4	92.3	92.4	23.7	23.7	7.82	7.8	0.16	0.16	50.2	49.2
			28.2		7.4		92.5		23.7		7.80		0.16		48.2	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	11:47	0.80	25	25	7.34	7.4	88.8	88.8	186.6	184.7	7.42	7.4	0.40	0.40	270	304.5
			25		7.37		88.8		182.7		7.42		0.40		339	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:45	0.50	25.7	25.7	5.99	6.0	73.3	73.2	5.3	5.3	7.02	7.0	0.11	0.11	6.5	6.3
			25.7		5.98		73.1		5.3		7.02		0.11		6.1	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	12:10	0.40	25	24.85	6.24	6.2	75.6	74.6	6.5	6.5	7.88	7.9	0.16	0.16	8.3	9.1
			24.7		6.08		73.5		6.6		7.83		0.16		9.9	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:55	0.20	28.2	28.2	6.77	6.7	86.8	85.7	15.9	16.0	7.88	7.9	0.09	0.09	15.4	15.2
			28.2		6.58		84.5		16.2		7.88		0.09		14.9	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:44	0.50	25.7	25.7	6.73	6.7	82.2	82.1	6.1	6.1	7.51	7.5	0.11	0.11	7.4	7.2
			25.7		6.74		82.0		6.1		7.51		0.11		7	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	11:46	0.60	28.1	28.05	5.81	5.8	72.8	72.7	14.1	14.2	7.54	7.5	0.10	0.10	22.6	26.7
			28		5.78		72.6		14.2		7.53		0.10		30.8	

Water Quality Monitoring Results

Location: M2a

Date	2 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	10:55	0.30	24.4	24.35	6.45	6.5	66.1	66.5	5.1	5.1	7.36	7.4	0.21	0.21	7.2	7.1
			24.3		6.49		66.8		5.1		7.36		0.21		7	

Date	4 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:10	0.90	24.4	24.4	7.22	7.2	86.9	86.8	39.8	39.8	7.42	7.4	0.06	0.06	64.8	64.3
			24.4		7.2		86.7		39.8		7.42		0.06		63.8	

Date	7 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	10:45	0.50	27.6	27.6	8.83	8.8	112.5	112.6	4.5	4.5	7.92	7.9	0.20	0.20	7.6	7.3
			27.6		8.85		112.6		4.5		7.92		0.20		7	

Date	9 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	14:45	0.30	27.7	27.7	6.48	6.5	80.0	80.3	6.6	6.6	7.56	7.6	0.21	0.21	7.2	7.3
			27.7		6.48		80.5		6.6		7.56		0.21		7.3	

Date	11 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:30	0.10	26.2	26.2	6.66	6.7	77.0	76.8	8..	8.3	7.59	7.6	0.20	0.21	7.4	8.0
			26.2		6.67		76.5		8.3		7.59		0.21		8.6	

Date	14 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	12:10	0.50	28	28	7.55	7.4	82.2	81.9	5.5	5.4	7.59	7.6	0.27	0.27	7.1	6.9
			28		7.32		81.6		5.4		7.59		0.27		6.6	

Date	16 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	7:12	0.30	28.2	28.2	7.77	7.8	80.2	80.2	5.6	5.6	7.59	7.6	0.25	0.25	5.3	5.1
			28.2		7.77		80.1		5.6		7.59		0.25		4.9	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:00	0.40	28.3	28.3	7.3	7.3	92.6	92.7	2.1	2.1	7.72	7.7	0.13	0.13	3.2	3.5
			28.3		7.3		92.7		2.1		7.72		0.13		3.7	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:55	0.90	26	26	7.05	7.0	87.5	84.4	28.0	29.8	7.44	7.4	0.09	0.09	35	35.8
			26		7.02		81.4		31.5		7.44		0.09		36.5	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:00	0.40	26.2	26.2	6.72	6.7	83.5	83.7	5.3	5.3	7.02	7.0	0.18	0.18	6.2	6.4
			26.2		6.71		83.8		5.2		7.00		0.18		6.6	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	12:35	0.30	25	25	6.74	6.7	81.7	81.7	7.7	7.8	7.18	7.2	0.16	0.16	8.2	8.2
			25		6.75		81.7		7.8		7.18		0.16		8.1	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:15	0.30	28.6	28.5	6.78	6.8	87.5	87.2	6.4	7.4	7.69	7.7	0.16	0.16	6	6.1
			28.4		6.75		86.9		8.4		7.78		0.16		6.2	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:00	0.50	25.6	25.6	7.19	7.2	87.3	87.4	5.6	5.6	7.65	7.6	0.17	0.17	5.7	5.8
			25.6		7.18		87.4		5.6		7.64		0.17		5.9	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:58	0.50	27.7	27.7	6.67	6.7	78.8	78.7	6.6	6.6	7.64	7.6	0.18	0.18	6.8	7.2
			27.7		6.68		78.6		6.6		7.64		0.18		7.6	

Water Quality Monitoring Results

Location: M3

Date: 2 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	9:45	0.50	25.1	25.1	6.08	6.1	73.1	73.0	8.5	8.5	7.86	7.9	0.24	0.24	10.4	11.3
			25.1		6.09		72.9		8.5		7.86		0.24		12.1	

Date: 4 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	9:44	0.60	24.4	24.4	6.8	6.8	81.3	81.4	43.7	43.7	7.53	7.5	0.05	0.05	73.1	74.5
			24.4		6.81		81.4		43.7		7.53		0.05		75.8	

Date: 7 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	9:46	0.50	26.4	26.45	7	7.0	86.9	86.7	5.0	5.0	8.01	8.0	0.27	0.27	8.3	8.1
			26.5		7.01		86.5		5.1		8.00		0.27		7.8	

Date: 9 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	13:45	0.50	28.3	28.3	6.73	6.7	85.1	85.1	5.5	5.4	7.80	7.8	0.16	0.16	8	8.4
			28.3		6.72		85.0		5.4		7.88		0.16		8.7	

Date: 11 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	10:14	0.50	27.1	27.1	6.55	6.5	82.6	82.6	10.3	10.3	7.98	8.0	0.16	0.16	15	15.7
			27.1		6.54		82.6		10.3		7.98		0.16		16.4	

Date: 14 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	10:47	0.30	26.9	26.9	5.32	5.3	65.9	65.9	5.4	5.4	7.65	7.7	0.24	0.24	9.7	15.0
			26.9		5.33		65.8		5.4		7.65		0.24		20.3	

Date: 16 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	9:30	0.30	29.9	28.4	5.28	5.3	66.4	66.4	5.6	5.6	7.66	7.7	0.24	0.24	9.9	10.4
			26.9		5.27		66.4		5.6		7.66		0.24		10.8	

Date: 18 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	

M3	9:40	0.40	28.6	28.35	7.1	7.1	92.3	92.7	10.3	10.3	7.63	7.6	0.07	0.07	27.3	28.9
			28.1		7.09		93.1		10.3		7.63		0.07		30.4	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	10:51	0.90	25.5	25.5	7.18	7.2	88.4	88.4	74.5	74.5	7.79	7.8	0.04	0.04	157	142.5
			25.5		7.19		88.4		74.5		7.79		0.04		128	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	9:46	0.30	26	26	6.38	6.4	78.3	78.2	6.0	6.0	7.51	7.3	0.22	0.22	9.8	9.5
			26		6.37		78.0		6.0		7.15		0.22		9.2	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	11:10	0.30	25.3	25.5	6.43	6.5	78.3	79.0	6.8	6.7	7.25	7.3	0.22	0.22	10.2	9.5
			25.7		6.5		79.6		6.7		7.28		0.22		8.7	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	9:50	0.20	27.7	27.7	6.58	6.6	83.6	83.9	15.2	15.2	7.89	7.9	0.12	0.12	15.6	15.1
			27.7		6.62		84.1		15.2		7.84		0.11		14.5	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	9:41	0.40	26.7	26.7	6.97	7.0	86.6	86.6	8.8	8.8	7.56	7.6	0.22	0.22	12	11.6
			26.7		6.98		86.5		8.8		7.56		0.22		11.2	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	10:41	0.60	27.4	27.3	6.21	6.2	77.6	77.6	12.4	12.4	7.75	7.8	0.20	0.20	23.2	22.2
			27.2		6.2		77.5		12.4		7.75		0.20		21.2	
			25.6		6.98		84.9		8.2		7.88		0.13		9.1	

Water Quality Monitoring Results

Location: M4

Date		2 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:30	0.10	25.3	25.3	6.48	6.5	78.7	78.7	2.9	2.9	7.71	7.7	0.28	0.28	12	11.5
			25.3		6.47		78.7		2.9		7.70		0.28		11	

Date		4 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:30	0.60	24.7	24.7	6.77	6.8	80.7	80.7	24.1	24.1	7.39	7.4	0.09	0.09	18.6	18.4
			24.7		6.78		80.6		24.1		7.39		0.09		18.2	

Date		7 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:31	0.30	28.1	28.1	9.10	9.1	115.8	115.9	10.3	10.3	7.87	7.9	0.29	0.29	15.4	15.5
			28.1		9.11		115.9		10.3		7.87		0.29		15.6	

Date		9 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	13:30	0.10	30.4	30.4	11.30	11.3	154.0	154.0	13.0	13.0	7.68	7.7	0.28	0.28	13.1	13.7
			30.4		11.33		154.0		13.0		7.68		0.28		14.2	

Date		11 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	10:00	0.10	28.6	28.6	9.82	9.8	128.3	128.3	4.4	4.4	7.88	7.9	0.41	0.41	2.6	2.8
			28.6		9.83		128.2		4.4		7.88		0.41		3	

Date		14 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	10:31	0.10	28.9	28.9	9.57	9.6	125.0	125.1	6.5	6.5	7.98	8.0	0.12	0.12	17.6	17.7
			28.9		9.62		125.2		6.5		7.98		0.12		17.8	

Date		16 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:19	0.10	29	29	9.92	9.9	129.8	129.9	8.9	8.8	7.94	7.9	0.25	0.25	14.6	12.7
			29		9.93		129.9		8.8		7.94		0.25		10.8	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:26	0.10	29.2	29.2	7.33	7.3	90.9	91.1	13.4	13.4	7.90	7.9	0.05	0.05	17.1	16.2
			29.2		7.34		91.2		13.5		7.90		0.05		15.2	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	10:39	0.50	25.9	25.9	7.49	7.5	90.1	90.2	18.3	18.5	7.84	7.8	0.06	0.06	14.3	15.1
			25.9		7.52		90.2		18.8		7.85		0.06		15.9	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:31	0.20	27	27	7.75	7.7	97.5	97.5	3.9	3.8	7.46	7.5	0.32	0.32	12.1	11.1
			27		7.74		97.4		3.8		7.46		0.32		10	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	10:45	0.30	26.2	26.1	6.76	6.8	83.7	81.9	7.9	7.7	7.28	7.3	0.30	0.30	11.5	12.3
			26		6.88		80.0		7.6		7.28		0.30		13.1	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:35	0.20	28.8	28.8	7.54	7.5	97.7	97.7	6.7	7.1	7.84	7.7	0.21	0.21	14	13.7
			28.8		7.54		97.7		7.6		7.55		0.21		13.3	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:30	0.20	29.2	29.2	9.80	9.8	128.7	128.6	3.5	3.5	7.68	7.7	0.26	0.26	4.6	4.5
			29.2		9.81		128.5		3.6		7.68		0.26		4.3	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	10:30	0.60	27.3	27.35	6.15	6.2	69.1	69.3	14.9	15.0	7.71	7.7	0.38	0.39	14	14.8
			27.4		6.16		69.5		15.0		7.71		0.39		15.5	

Water Quality Monitoring Results

Location: U1b

Date		2 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	10:31	0.30	24.8	24.7	6.89	6.9	81.9	81.8	9.3	9.3	7.51	7.5	0.15	0.2	9	9.9
			24.6		6.87		81.7		9.3		7.51		0.15		10.8	

Date		4 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	10:37	0.40	24.3	24.3	7.08	7.1	83.6	83.6	29.1	29.1	7.36	7.4	0.06	0.1	34.1	32.3
			24.3		7.05		83.5		29.1		7.36		0.06		30.5	

Date		7 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	10:15	0.20	27.1	27.1	6.99	7.0	87.7	87.7	10.2	10.2	7.84	7.8	0.16	0.2	18.4	15.4
			27.1		6.98		87.7		10.2		7.84		0.16		12.3	

Date		9 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	14:15	0.20	28.1	28.1	6.55	6.5	82.4	82.2	10.4	10.3	7.64	7.6	0.12	0.1	25	25.9
			28.1		6.54		82.0		10.3		7.62		0.12		26.7	

Date		11 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	11:01	0.20	26.5	26.5	6.23	6.2	77.4	77.5	5.8	5.8	7.19	7.2	0.11	0.1	7.4	7.1
			26.5		6.21		77.5		5.8		7.19		0.11		6.8	

Date		14 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	11:35	0.40	27.7	27.7	6.01	6.0	77.5	77.5	5.0	5.0	7.49	7.5	0.13	0.1	10.7	19.4
			27.7		6.01		77.5		5.0		7.49		0.13		28	

Date		16 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	10:01	0.40	27.6	27.6	6.23	6.2	79.2	79.2	4.9	4.9	7.33	7.3	0.13	0.1	10.2	12.1
			27.6		6.23		79.2		4.9		7.33		0.13		14	

Date		18 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	10:25	0.40	28	28	7.44	7.5	91.5	91.6	13.4	13.4	7.88	7.9	0.06	0.1	16.1	16.3
			28		7.46		91.6		13.5		7.88		0.06		16.4	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	11:47	0.80	25	25	7.34	7.4	88.8	88.8	182.6	182.7	7.42	7.4	0.04	0.0	66.3	65.5
			25		7.37		88.8		182.7		7.45		0.04		64.6	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	10:29	0.40	25.5	25.5	7.13	7.1	86.8	86.8	5.7	5.7	7.13	7.1	0.10	0.1	12.1	11.8
			25.5		7.12		86.7		5.7		7.13		0.10		11.4	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	11:55	0.30	24.7	24.6	7.39	7.3	86.3	87.3	9.6	9.9	6.92	7.2	0.15	0.2	12.7	16.6
			24.5		7.16		88.2		10.1		7.55		0.15		20.4	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	10:40	0.20	27.9	27.9	7.16	7.2	71.3	81.2	17.9	17.6	7.70	7.6	0.07	0.1	16.4	16.0
			27.9		7.15		91.1		17.2		7.58		0.07		15.5	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	10:30	0.40	25.5	25.5	7.03	7.0	85.6	85.7	7.1	7.2	7.71	7.7	0.11	0.1	12.7	12.2
			25.5		7.02		85.7		7.2		7.71		0.11		11.6	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	11:30	0.60	27.4	27.3	6.5	6.5	81.3	81.2	10.0	10.1	7.42	7.4	0.10	0.1	15.8	16.0
			27.2		6.49		81.0		10.1		7.41		0.10		16.1	

Water Quality Monitoring Results

Location: U2a

Date	2 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:16	0.50	24	24	5.48	5.5	64.9	65.0	3.7	3.7	7.55	7.6	0.10	0.1	2.3	2.5
			24		5.48		65.0		3.7		7.55		0.10		2.7	

Date	4 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:16	0.60	24.3	24.3	5.42	5.4	63.0	63.1	37.4	37.4	7.38	7.4	0.09	0.1	29.8	29.6
			24.3		5.4		63.1		37.4		7.38		0.09		29.3	

Date	7 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:02	0.50	25.7	25.7	5.91	5.9	72.6	72.8	4.6	4.6	7.69	7.7	0.10	0.1	5.4	5.6
			25.7		5.9		72.9		4.6		7.70		0.10		5.8	

Date	9 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	14:00	0.50	27.4	27.4	6.57	6.6	82.1	82.1	4.4	4.4	7.54	7.5	0.10	0.1	4.2	4.3
			27.4		6.58		82.0		4.4		7.54		0.10		4.4	

Date	11 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:47	0.30	25.5	25.5	6.15	6.1	74.4	74.4	4.2	4.2	7.19	7.2	0.11	0.1	5	5.1
			25.5		6.14		74.3		4.2		7.19		0.11		5.2	

Date	14 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	11:17	0.50	26.4	26.4	6.35	6.3	79.8	79.9	3.9	3.9	7.74	7.7	0.11	0.1	6	6.2
			26.4		6.34		79.9		4.0		7.74		0.11		6.4	

Date	16 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	9:50	0.50	26.5	26.5	6.26	6.3	77.4	77.5	3.4	3.4	7.45	7.5	0.11	0.1	4.3	4.5
			26.5		6.26		77.6		3.4		7.45		0.11		4.6	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:10	0.60	27.2	27.2	7.11	7.1	86.1	86.2	32.1	32.1	7.54	7.5	0.07	0.1	64.4	63.0

			27.2		7.12		86.2		32.1		7.54		0.07		61.6	
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Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	11:15	0.60	24.7	24.7	7.09	7.1	85.4	85.4	205.9	205.9	7.44	7.4	0.03	0.0	784	585.0
			24.7		7.08		85.4		205.8		7.44		0.03		386	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:14	0.40	24.9	24.9	6.31	6.3	77.2	77.1	5.0	5.0	7.00	7.0	0.08	0.1	4.7	4.5
			24.9		6.32		77.0		5.0		7.00		0.08		4.3	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	11:45	0.40	24.5	24.3	7.08	7.2	84.9	83.6	8.2	8.3	7.55	7.6	0.08	0.1	8.5	8.5
			24.1		7.22		82.3		8.5		7.55		0.08		8.4	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:25	0.30	27.4	27.4	6.22	6.2	78.6	78.7	18.0	17.6	7.66	7.6	0.06	0.1	14.6	14.5
			27.4		6.23		78.8		17.3		7.47		0.06		14.4	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:15	0.50	25.4	25.35	6.58	6.6	79.4	79.2	5.1	5.1	7.52	7.5	0.07	0.1	5.8	5.2
			25.3		6.55		79.0		5.1		7.52		0.07		4.6	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	11:15	0.70	26.5	26.5	6.55	6.5	80.9	80.7	12.2	12.3	7.51	7.5	0.08	0.1	13.3	12.8
			26.5		6.53		80.5		12.4		7.50		0.08		12.3	

Water Quality Monitoring Results

Location: U3

Date																
2 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:15	0.50	25	25	6.42	6.4	72.2	72.2	1.7	1.7	7.40	7.4	0.20	0.20	3.4	3.4
			25		6.45		72.1		1.7		7.40		0.20		3.4	

Date																
4 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:15	0.50	24.3	24.3	5.91	5.9	70.3	70.2	61.2	61.1	7.33	7.3	0.08	0.08	85.4	87.5
			24.3		5.92		70.1		61.1		7.33		0.08		89.5	

Date																
7 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:15	0.30	26.8	26.8	8.5	8.5	107.3	107.5	3.5	3.5	7.58	7.6	0.18	0.18	5.1	5.8
			26.8		8.53		107.7		3.5		7.58		0.18		6.4	

Date																
9 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	13:15	0.20	28.4	28.4	10.46	10.5	136.7	136.6	2.7	2.7	7.47	7.5	0.16	0.16	2.4	2.4
			28.4		10.47		136.5		2.7		7.47		0.16		2.3	

Date																
11 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:46	0.30	27.3	27.3	9.2	9.2	116.7	116.9	3.5	3.5	7.89	7.9	0.17	0.17	3.4	3.3
			27.3		9.21		117.0		3.5		7.89		0.17		3.1	

Date																
14 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	10:15	0.20	27.6	27.6	9.99	10.0	127.9	128.1	3.9	3.9	7.89	7.9	0.17	0.17	4	3.9
			27.6		10.02		128.2		3.9		7.89		0.17		3.8	

Date																
16 May 24																
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:15	0.20	27.5	27.5	9.65	9.7	122.1	122.1	4.2	4.2	7.68	7.7	0.17	0.17	3.7	5.1
			27.5		9.65		122.0		4.2		7.69		0.17		6.4	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:15	0.20	27.9	27.9	7.19	7.2	91.3	91.4	10.0	10.1	7.68	7.7	0.07	0.07	27.9	34.0
			27.9		7.25		91.5		10.2		7.69		0.07		40.1	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	10:25	0.90	25.5	25.5	6.55	6.6	81.1	81.0	73.9	73.9	7.69	7.7	0.06	0.06	112	98.8
			25.5		6.55		80.9		73.9		7.69		0.06		85.5	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:00	0.50	26.1	26.1	5.36	5.4	66.0	65.9	1.6	1.5	7.22	7.2	0.18	0.18	2.8	3.0
			26.1		5.35		65.8		1.5		7.22		0.18		3.2	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	10:20	0.30	25.6	25.4	4.71	4.7	57.8	56.6	3.1	3.1	7.21	7.2	0.17	0.17	3.5	3.6
			25.2		4.6		55.4		3.1		7.20		0.17		3.7	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:20	0.40	28.2	28.2	6.67	6.7	85.6	85.5	4.4	4.5	7.94	7.9	0.16	0.16	4.2	4.0
			28.2		6.66		85.4		4.5		7.95		0.16		3.8	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:15	0.50	27.4	27.4	10.35	10.4	133.7	133.9	2.6	2.6	7.89	7.9	0.17	0.17	2.4	2.5
			27.4		10.37		134.0		2.6		7.89		0.17		2.5	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	10:16	0.50	26.9	26.85	6.34	6.3	76.7	76.7	3.0	3.0	7.55	7.6	0.16	0.16	3.1	3.0
			26.8		6.35		76.6		3.0		7.55		0.16		2.8	

Water Quality Monitoring Results

Location: U4a

Date		2 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:00	0.50	24.3	24.3	5.78	5.8	68.6	68.5	3.5	3.5	7.47	7.5	0.12	0.12	9.7	8.7
			24.3		5.76		68.4		3.5		7.46		0.12		7.6	

Date		4 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:00	0.60	24.3	24.3	6.4	6.4	76.1	76.1	17.1	17.1	7.42	7.4	0.07	0.07	60	52.7
			24.3		6.42		76.0		17.2		7.42		0.07		45.3	

Date		7 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:00	0.50	25.7	25.7	6.62	6.6	80.8	80.7	7.5	7.5	7.65	7.6	0.12	0.12	16.3	17.0
			25.7		6.61		80.6		7.5		7.64		0.12		17.7	

Date		9 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	13:00	0.30	27.3	27.3	6.6	6.6	83.0	83.1	3.5	3.5	7.88	7.9	0.12	0.12	6.8	6.7
			27.3		6.62		83.2		3.5		7.88		0.12		6.5	

Date		11 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:30	0.30	26.4	26.4	6.49	6.5	80.0	80.0	3.5	3.5	7.66	7.7	0.13	0.13	5.8	5.8
			26.4		6.48		80.0		3.5		7.66		0.13		5.7	

Date		14 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	10:00	0.20	25.4	25.4	6.39	6.4	76.2	76.1	4.2	4.2	7.75	7.8	0.16	0.16	8.4	8.6
			25.4		6.41		76.0		4.2		7.75		0.16		8.8	

Date		16 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:00	0.20	25.5	25.5	6.28	6.3	77.0	77.1	4.2	4.2	7.39	7.4	0.15	0.15	8.4	8.2
			25.5		6.28		77.1		4.3		7.38		0.15		7.9	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:00	0.30	27.7	27.7	6.52	6.5	81.8	81.8	7.6	7.6	7.88	7.8	0.08	0.08	8.2	7.9
			27.7		6.52		81.8		7.7		7.80		0.08		7.5	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	10:10	0.90	25.4	25.4	6.91	6.9	84.2	84.3	43.9	44.0	7.90	7.9	0.06	0.06	92.2	92.2
			25.4		6.92		84.3		44.0		7.90		0.06		92.1	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:00	0.50	25.2	25.2	6.17	6.2	74.9	74.9	4.7	4.7	7.26	7.3	0.11	0.11	15.2	15.6
			25.2		6.18		74.8		4.7		7.26		0.11		16	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	10:00	0.40	25	25.25	6.23	6.3	75.3	74.1	6.9	6.7	7.07	7.07	0.12	0.12	22.3	23.0
			25.5		6.3		74.1		6.5		7.07		0.12		23.6	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:00	0.40	27.5	27.5	6.32	6.4	80.1	81.1	10.5	10.5	7.55	7.55	0.09	0.09	12.4	13.0
			27.5		6.47		82.0		10.5		7.55		0.09		13.5	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:00	0.50	25.9	25.9	6.91	6.9	84.9	84.95	13.0	13.005	7.78	7.78	0.11	0.11	11.9	12.2
			25.9		6.9		85.0		13.0		7.78		0.11		12.4	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	10:00	0.70	26.6	26.6	6.17	6.1	72.2	72.3	3.4	3.395	7.82	7.815	0.11	0.11	7.9	8.2
			26.6		6.12		72.4		3.4		7.81		0.11		8.5	

Water Quality Monitoring Results
 Location: EIS-1a

Date		2 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	10:00	0.20	23.9	23.95	5.87	5.9	69.3	69.4	3.9	3.9	7.95	8.0	0.09	0.09	2.5	2.4
			24		5.86		69.4		3.9		7.95		0.09		2.3	

Date		4 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	10:02	0.30	24.3	24.3	6.13	6.1	70.4	70.3	44.0	44.0	7.52	7.5	0.09	0.09	26	26.5
			24.3		6.14		70.1		44.0		7.52		0.09		26.9	

Date		7 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	9:55	0.10	26.3	26.3	6.51	6.5	79.5	79.4	4.7	4.7	7.89	7.9	0.10	0.10	5.6	6.0
			26.3		6.53		79.2		4.7		7.89		0.10		6.4	

Date		9 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	13:55	0.20	27.5	27.5	6.87	6.9	87.7	87.6	6.2	6.2	8.03	8.0	0.11	0.11	7.4	7.4
			27.5		6.85		87.5		6.1		8.03		0.11		7.3	

Date		11 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	10:31	0.10	25.6	25.6	6.5	6.5	79.1	79.1	4.1	4.1	7.38	7.4	0.11	0.11	5	5.3
			25.6		6.49		79.0		4.0		7.38		0.11		5.6	

Date		14 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	11:02	0.20	26	26	6.58	6.6	81.6	81.5	2.2	2.2	7.43	7.6	0.06	0.06	3	3.2
			26		6.59		81.3		2.2		7.74		0.06		3.3	

Date		16 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	9:36	0.20	25.8	25.8	6.55	6.6	80.2	80.2	4.8	4.7	7.79	7.8	0.08	0.08	2.5	2.5
			25.8		6.55		80.2		4.7		7.76		0.08		2.4	

Date		18 May 24													
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Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	9:55	0.30	26.9	26.9	7.3	7.3	87.7	87.8	11.9	11.9	7.93	7.9	0.06	0.06	15.1	16.6
			26.9		7.3		87.8		11.9		7.94		0.06		18	

Date		21 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	11:05	0.50	24.8	24.8	7.21	7.2	87.0	87.0	223.6	223.3	7.65	7.7	0.03	0.03	338	343.0
			24.8		7.22		87.0		223.0		7.65		0.03		348	

Date		23 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	10:00	0.30	25	25	6.53	6.5	78.7	78.7	5.1	5.1	7.33	7.3	0.08	0.08	4.2	4.4
			25		6.52		78.6		5.1		7.33		0.08		4.6	

Date		25 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	11:30	0.20	24.3	24.95	7.31	7.4	87.3	87.9	8.1	8.2	7.06	7.1	0.09	0.09	7.3	7.4
			25.6		7.52		88.5		8.3		7.16		0.09		7.4	

Date		27 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	10:10	0.30	26.7	26.7	6.58	6.6	82.1	82.2	13.8	13.4	7.89	7.9	0.07	0.07	17.1	16.9
			26.7		6.58		82.2		12.9		7.89		0.06		16.6	

Date		29 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	10:00	0.20	25.8	25.8	6.85	6.8	84.0	84.0	6.4	6.4	7.98	8.0	0.07	0.07	5.9	6.5
			25.8		6.84		83.9		6.4		7.98		0.07		7	

Date		31 May 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	11:00	0.30	26.3	26.3	6.7	6.7	83.0	83.2	11.4	11.4	7.94	7.9	0.08	0.08	12.8	13.3
			26.3		6.7		83.3		11.4		7.94		0.08		13.7	

Water Quality Monitoring Results

Location: M5a

Date	4 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	13:43	0.50	24	24	6.5	6.5	76.8	76.9	54.0	54.0	7.07	7.1	0.07	0.07	65.2	80.5
			24		6.51		76.9		54.0		7.07		0.07		95.7	

Date	7 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	11:15	0.20	26.7	26.7	6.06	6.1	75.4	75.3	3.4	3.4	7.74	7.7	0.20	0.20	5.5	6.0
			26.7		6.07		75.2		3.4		7.75		0.20		6.4	

Date	9 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	15:02	0.10	26.6	26.6	5.61	5.6	68.0	68.1	1.4	1.4	7.81	7.8	0.12	0.12	1.7	1.6
			26.6		5.62		68.1		1.4		7.81		0.12		1.5	

Date	11 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	12:06	0.10	26.3	26.3	5.43	5.4	66.8	66.8	1.6	1.6	7.99	8.0	0.22	0.22	2.8	3.0
			26.3		5.42		66.8		1.6		7.99		0.22		3.2	

Date	14 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	14:00	0.10	26.6	26.6	5.56	5.5	70.0	70.1	3.5	3.5	7.94	7.9	0.18	0.18	2.8	3.0
			26.6		5.51		70.1		3.5		7.94		0.18		3.2	

Date	16 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	11:10	0.10	26.9	26.9	5.5	5.5	69.4	69.4	2.6	2.6	7.86	7.9	0.18	0.18	14.5	11.8
			26.9		5.48		69.3		2.6		7.86		0.18		9.1	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	11:30	0.20	28	28	7.31	7.3	91.8	91.9	6.2	6.2	7.84	7.8	0.10	0.10	3.9	5.7
			28		7.32		92.0		6.2		7.84		0.10		7.4	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	12:30	0.60	25.7	25.7	6.04	6.0	71.2	71.1	27.3	27.3	7.19	7.2	0.15	0.15	13	12.7
			25.7		6.01		70.9		27.4		7.19		0.15		12.4	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	11:27	0.20	25.9	25.9	5.71	5.7	70.1	70.1	3.0	3.0	7.01	7.0	0.18	0.18	3.1	3.2
			25.9		5.7		70.0		3.0		7.01		0.18		3.2	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	13:20	0.20	24.4	24.4	5.11	5.2	61.1	62.3	5.4	6.8	7.22	7.2	0.17	0.17	42.1	36.4
			24.4		5.29		63.4		8.2		7.22		0.17		30.6	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	11:45	0.50	27.7	27.5	4.85	4.8	61.7	60.3	4.8	4.9	7.54	7.6	0.18	0.18	4	5.1
			27.3		4.66		58.8		5.1		7.66		0.18		6.1	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	11:31	0.30	26.6	26.65	5.93	5.9	73.3	73.2	4.2	4.2	7.66	7.7	0.18	0.18	3.4	3.6
			26.7		5.92		73.1		4.2		7.66		0.18		3.8	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	12:28	0.20	26.7	26.55	5.34	5.3	66.9	66.9	3.4	3.4	7.45	7.5	0.17	0.17	5.9	7.1
			26.4		5.33		66.8		3.4		7.45		0.17		8.2	

Water Quality Monitoring Results

Location: M6a

Date	2 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:01	0.10	23.7	23.7	6.63	6.6	78.4	78.4	20.7	20.7	7.86	7.9	0.04	0.04	42.6	35.2
			23.7		6.63		78.4		20.7		7.86		0.04		27.7	

Date	4 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:24	0.30	24.2	24.2	7.27	7.3	86.4	86.4	15.1	15.1	7.33	7.3	0.04	0.04	32.1	32.2
			24.2		7.26		86.3		15.1		7.33		0.04		32.3	

Date	7 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:00	0.10	27	27	6.84	6.8	9.5	9.6	8.4	8.4	7.51	7.5	0.40	0.22	4.4	4.9
			27		6.85		9.6		8.4		7.51		0.04		5.3	

Date	9 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	14:55	0.10	26.9	26.9	6.92	6.9	86.1	86.1	6.8	6.8	7.64	7.6	0.04	0.04	2.6	2.5
			26.9		6.93		86.0		7.64		0.04		2.4			

Date	11 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:47	0.10	29.1	29.1	7.08	7.1	92.0	92.0	9.0	9.0	7.83	7.8	0.04	0.04	4	4.3
			29.1		7.07		91.9		9.0		7.83		0.04		4.5	

Date	14 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	12:28	0.10	27.9	27.9	7.3	7.3	93.1	93.1	5.3	5.4	7.51	7.5	0.04	0.04	9.4	8.0
			27.9		7.31		93.0		5.4		7.51		0.04		6.5	

Date	16 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	10:45	0.10	27.8	27.8	7.26	7.3	92.6	92.6	6.4	6.4	7.76	7.8	0.04	0.04	6.4	6.8
			27.8		7.26		92.5		6.4		7.76		0.04		7.1	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:15	0.20	27.5	27.5	7.51	7.5	94.5	94.5	23.5	23.5	7.55	7.6	0.06	0.06	23.4	22.4
			27.5		7.51		94.4		23.6		7.55		0.06		21.3	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	12:10	0.40	25.4	25.4	7.44	7.4	90.3	90.4	106.3	106.1	7.73	7.7	0.02	0.02	107	105.5
			25.4		7.44		90.4		106.0		7.73		0.02		104	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:16	0.10	25.6	25.6	6.91	6.9	84.5	84.5	9.9	9.9	7.34	7.3	0.03	0.03	2.8	3.0
			25.6		6.9		84.4		9.9		7.34		0.03		3.2	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	13:00	0.30	24	24	7.45	7.5	88.5	88.5	24.8	24.8	7.46	7.5	0.03	0.03	15.7	14.9
			24		7.45		88.4		24.9		7.45		0.03		14	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:30	0.01	27.2	27.25	6.91	6.9	87.0	86.5	27.2	26.8	7.42	7.4	0.03	0.03	12.2	12.3
			27.3		6.82		86.0		26.3		7.42		0.03		12.3	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:16	0.10	29.7	29.7	7.18	7.2	94.7	94.75	3.7	3.7	7.99	8.0	0.05	0.05	6.7	6.4
			29.7		7.17		94.8		3.7		7.99		0.05		6.1	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	12:17	0.20	26.4	26.4	6.93	6.9	85.8	85.7	9.7	9.7	7.89	7.9	0.03	0.03	4.5	4.6
			26.4		6.94		85.6		9.8		7.87		0.03		4.6	

Water Quality Monitoring Results

Location: D2a

Date	2 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:02	0.50	24.2	24.2	6.91	6.9	82.7	82.7	20.3	20.9	7.88	7.9	0.50	0.50	30	33.0
			24.2		6.92		82.6		21.4		7.88		0.50		36	

Date	4 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	15:00	1.00	23.6	23.6	7.66	7.7	89.9	89.9	84.4	84.4	7.81	7.8	0.09	0.09	133	127.0
			23.6		7.65		89.8		84.4		7.81		0.09		121	

Date	7 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:02	0.50	27.5	27.5	6.91	6.9	88.1	88.2	15.6	15.7	7.48	7.5	0.83	0.83	18.9	19.2
			27.5		6.91		88.3		15.7		7.49		0.83		19.5	

Date	9 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	15:48	0.50	27.5	27.5	6.89	6.9	87.1	87.1	12.2	12.2	7.79	7.8	0.85	0.85	26.7	27.8
			27.5		6.87		87.0		12.2		7.79		0.85		28.9	

Date	11 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	13:00	0.50	28.7	28.7	7.22	7.2	93.6	93.6	8.8	8.8	7.35	7.4	1.22	1.22	14.1	13.7
			28.7		7.24		93.6		8.8		7.35		1.22		13.2	

Date	14 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	15:00	0.50	28	28	7.02	7.0	91.1	91.2	19.9	19.7	7.33	7.3	1.11	1.11	28.4	28.7
			28		7		91.2		19.5		7.33		1.11		28.9	

Date	16 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:00	0.50	28.1	28.1	6.92	6.9	89.0	89.0	18.4	18.5	7.27	7.3	1.06	1.06	26.7	29.0
			28.1		6.91		88.9		18.5		7.27		1.06		31.2	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:17	0.50	28.3	28.3	7.13	7.1	91.3	91.2	16.9	16.9	7.55	7.6	0.05	0.05	23.8	18.4
			28.3		7.12		91.1		16.8		7.55		0.05		12.9	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	13:12	0.60	25.8	25.8	7.07	7.1	86.6	86.5	90.3	90.2	7.65	7.7	0.20	0.20	76.8	73.8
			25.8		7.06		86.4		90.1		7.65		0.20		70.8	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:17	0.50	27.4	27.4	6.87	6.9	86.8	86.8	18.2	18.2	7.77	7.8	0.82	0.82	39.6	37.6
			27.4		6.85		86.7		18.2		7.77		0.82		35.6	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	14:20	0.40	25.4	25.4	7.41	7.4	90.5	89.9	17.6	17.4	7.46	7.5	0.36	0.36	25.4	24.1
			25.4		7.32		89.3		17.1		7.46		0.35		22.7	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:50	0.40	28.1	28.05	6.88	6.9	87.2	87.7	17.4	17.4	7.24	7.3	0.64	0.64	24.7	24.3
			28		6.89		88.1		17.3		7.26		0.64		23.9	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:17	0.60	28.2	28.2	7.03	7.0	90.9	90.8	12.5	12.4	7.69	7.7	1.03	1.02	25.7	24.8
			28.2		7.01		90.7		12.4		7.69		1.00		23.9	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	13:35	0.30	27.9	27.9	6.88	6.9	88.2	88.4	16.5	16.5	7.39	7.4	0.58	0.58	31.8	32.7
			27.9		6.88		88.6		16.4		7.39		0.58		33.6	

Water Quality Monitoring Results

Location: M7a

Date	2 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	11:32	0.10	24.3	24.3	6.79	6.8	81.0	80.9	4.8	4.8	7.60	7.6	0.07	0.07	5.2	4.4
			24.3		6.8		80.8		4.9		7.59		0.07		3.6	

Date	4 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	14:00	0.60	24	24	7.62	7.6	90.2	90.2	53.1	53.2	7.33	7.3	0.09	0.09	89.3	92.8
			24		7.63		90.1		53.2		7.33		0.09		96.2	

Date	7 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	11:30	0.20	26.6	26.6	8.11	8.1	102.8	102.8	1.8	1.8	7.56	7.5	0.14	0.14	2.5	2.7
			26.6		8.12		1.2.9		1.8		7.50		0.14		2.8	

Date	9 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	15:15	0.10	25.9	25.9	7.99	8.0	98.9	99.0	1.2	0.7	7.81	7.8	0.12	0.12	0.8	0.7
			25.9		8		99.0		0.1		7.81		0.6			

Date	11 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	12:17	0.10	28.3	28.3	8.49	8.5	110.1	110.1	2.7	2.7	8.03	8.0	0.12	0.12	4.1	4.4
			28.3		8.49		110.1		2.8		8.03		0.12		4.6	

Date	14 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	14:17	0.10	29.4	29.4	8.14	8.2	103.8	103.8	1.5	1.5	8.03	8.0	0.12	0.12	2	2.2
			29.4		8.16		103.7		1.5		8.02		0.12		2.4	

Date	16 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	11:25	0.10	29.3	29.3	8.12	8.1	106.1	106.1	1.5	1.5	7.92	7.9	0.12	0.12	1.3	1.4
			29.3		8.12		106.1		1.5		7.92		0.12		1.4	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	11:49	0.10	27.3	27.3	7.36	7.4	93.1	93.2	5.8	5.9	7.80	7.9	0.10	0.10	5.4	4.4
			27.3		7.37		93.3		5.9		7.90		0.10		3.3	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	12:45	0.30	25.8	25.8	7.31	7.3	90.0	90.0	5.1	5.1	7.55	7.6	0.12	0.12	6.9	6.6
			25.8		7.32		89.9		5.1		7.55		0.12		6.2	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	11:43	0.10	26	26	7.79	7.8	96.9	96.9	0.6	0.6	7.64	7.6	0.12	0.12	1.5	1.4
			26		7.8		96.8		0.6		7.46		0.12		1.2	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	13:45	0.20	25.1	25.1	7.62	7.6	92.5	92.3	3.0	3.4	7.34	7.3	0.08	0.08	3	3.5
			25.1		7.6		92.1		3.8		7.30		0.07		3.9	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	12:00	0.20	26.6	26.65	7.34	7.4	91.6	91.9	2.6	4.0	7.86	7.9	0.13	0.13	2.7	3.0
			26.7		7.38		92.1		5.4		7.94		0.13		3.3	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	11:47	0.10	27.9	27.9	8.11	8.1	103.6	103.6	9.4	9.4	7.88	7.9	0.07	0.07	11.7	11.1
			27.9		8.12		103.5		9.4		7.88		0.07		10.5	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	12:55	0.20	26.8	26.8	7.24	7.2	90.7	90.7	2.4	2.4	7.60	7.6	0.11	0.11	8.6	8.8
			26.8		7.24		90.6		2.4		7.60		0.11		9	

Water Quality Monitoring Results

Location: D5a

Date	2 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	11:45	0.50	23.7	23.7	6.61	6.6	79.3	79.3	5.3	5.2	7.57	7.6	0.49	0.49	4.2	4.9
			23.7		6.65		79.2		5.2		7.57		0.49		5.6	

Date	4 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	14:15	0.80	23.7	23.7	7.73	7.7	90.6	90.6	80.2	80.2	7.37	7.4	0.09	0.09	130	135.5
			23.7		7.7		90.5		80.2		7.37		0.09		141	

Date	7 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	11:46	0.60	27.8	27.8	6.93	6.9	88.2	88.2	18.8	18.9	7.93	7.9	0.62	0.62	22.8	23.4
			27.8		6.91		88.1		18.9		7.93		0.62		24	

Date	9 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	15:31	0.60	27.6	27.6	6.85	6.8	85.4	85.4	11.4	11.4	7.73	7.7	11.44	11.45	1.7	1.6
			27.6		6.83		85.4		11.4		7.73		11.45		1.5	

Date	11 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	12:37	0.50	27.2	27.2	6.86	6.9	86.1	86.1	8.6	8.6	7.77	7.8	0.72	0.50	4.9	5.2
			27.2		6.85		86.0		8.6		7.77		0.27		5.5	

Date	14 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	14:39	0.50	28.6	28.6	7.6	7.6	98.1	98.3	6.1	6.1	7.66	7.7	0.66	0.66	10.8	11.0
			28.6		7.6		98.4		6.1		7.66		0.66		11.2	

Date	16 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	11:47	0.50	28.5	28.5	7.7	7.7	99.3	99.4	8.6	8.6	7.88	7.9	0.66	0.66	9.9	9.7
			28.5		7.7		99.4		8.6		7.88		0.66		9.5	

Date	18 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	12:01	0.50	27.9	27.9	7.62	7.6	95.2	95.5	7.9	7.9	7.64	7.6	0.13	0.13	13.2	9.0
			27.9		7.63		95.7		7.9		7.64		0.13		4.8	

Date	21 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	13:00	0.80	26.3	26.3	7.2	7.2	89.3	89.4	39.3	39.3	7.93	7.9	0.21	0.21	28.2	27.5
			26.3		7.2		89.4		39.4		7.93		0.21		26.8	

Date	23 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	12:02	0.60	27.3	27.3	6.83	6.8	86.2	86.2	7.8	7.8	8.00	8.0	0.77	0.77	10.4	11.3
			27.3		6.82		86.1		7.8		8.00		0.77		12.1	

Date	25 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	14:00	0.30	25.5	25.45	7.29	7.3	89.1	89.8	18.5	18.6	7.56	7.6	0.49	0.49	25.3	24.0
			25.4		7.4		90.5		18.7		7.55		0.49		22.6	

Date	27 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	12:20	0.50	28.3	28.3	6.87	6.9	88.5	88.2	14.6	14.8	7.55	7.6	0.54	0.54	26.1	27.5
			28.3		6.83		87.9		15.0		7.55		0.54		28.8	

Date	29 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	12:00	0.06	27.8	27.8	6.1	6.1	77.6	77.5	7.4	7.4	7.89	7.9	0.71	0.71	9.9	9.5
			27.8		6.09		77.4		7.4		7.89		0.71		9.1	

Date	31 May 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	13:10	0.60	27.7	27.7	6.26	6.3	79.6	79.6	15.9	15.8	7.99	8.0	0.62	0.62	10.6	10.9
			27.7		6.25		79.5		15.7		7.99		0.62		11.1	

Appendix J2

Summary of Exceedance Records

Summary of Investigation results of Exceedance of A/L Level for Water Quality Monitoring

Date	Station	Parameter	Exceedance	Investigation	Action
10 Oct 2023	D2a	Turbidity and Suspended Solids	Limit Level	There was heavy rainstorm on 9 and 10 Oct after typhoon. The water quality in the channel was deteriorated by runoff from the surrounding environment. It was concluded that the exceedances were not project related.	Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required.
8 Jan 2024	M1a	Turbidity and Suspended Solids	Limit Level	Turbid water was observed flowing from upstream of work area and reaching M1a and there was no construction work carried out in the respective section of nullah, and no discharge made from construction sites associated with the Project. It is concluded that the exceedances were not related to the works under the Project.	Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required, and corrective action is not required.
19 Jan 2024	M3	Turbidity and Suspended Solids	Limit Level	Contractor of C2 advised that no pre-drill works were conducted between monitoring M1a and M3 on 19 Jan 2024, but preparation works for temporary deck was conducted. Mitigation measures such as the sandbag barrier, steel plate cover along the active work areas were in place and no muddy runoff into the Yuen Long Nullah is observed. It is concluded that the exceedances were not related to the works under the Project.	Repeat measurement of in-situ parameter turbidity was conducted on 20 January 2024 and no exceedance was recorded. As the exceedances were concluded as non-Project related, corrective action is not required.
19 Feb 2024	D2a (Note: instead of M1a as typo made in monthly EM&A report of Feb 24 and Mar 24)	Turbidity and Suspended Solids	Limit Level	The Contractor of C3 advised that no piling works or pre-drilling works had been conducted along Shan Ha Road nullah. Welding works of H-pile, TTA and housekeeping of nullah were being conducted on that day along the nullah. Based on ET's site inspection on 22 Feb 2024, it is observed that no piling works or pre-drilling works was observed to be conducted along Shan Ha Road nullah, and there was no discharge made from the site of C3. It is considered that the exceedances were unlikely due the Project.	Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required, and corrective action is not required.
18 Mar 2024	M2a	Turbidity and Suspended Solids	Limit Level	During the course of monitoring, it was observed that turbid water was flowing from the outfall of public drains and contaminated the water quality in the M2a. The Contractor subsequently carried out detailed investigation and identified the source of impact and confirmed that there were no construction works under YLS construction site at upstream of M2a. Therefore, it is concluded that the exceedances on 18 March 2024 were unlikely due to project.	Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required, and corrective action is not required.
22 Apr 2024	M2a D2a	DO, Turbidity and Suspended Solids	Limit Level	During water quality monitoring conducted on 22 April 2024, no major construction works was conducted near M2a, and pre-drilling & piling works were conducted at Shan Ha Road Nullah which located at upstream of D2a. Weekly site inspection was carried out by ET and it was observed that water streams within works area were well maintained, with wastewater collected and treated by wastewater	Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required, and corrective

				<p>treatment facilities before discharge. In addition, the work area at Shan Ha Road Nullah under Contract 3 was far from D2a and there was other active construction site located at upstream of D2a.</p> <p>According to the weather information from the Hong Kong Observatory, there were consecutive rainy days from 20 to 22 April 2024 with rainfall at 42.2mm, 81.6mm and 13.2mm respectively. This rainfall likely led to runoff from the surrounding environment, resulting in a deterioration of water quality in the channel or river course.</p>	<p>action is not required.</p>
24 Apr 2024	M2a M3 EIS-1a D5a D2a	DO, Turbidity and Suspended Solids	Limit Level	<p>During water quality monitoring conducted on 24 April 2024, it was observed that the water in the throughout the channel affected by rainfall, including control station, gradient station and impact station.</p> <p>There were no major construction works conducted near M2a, M3 & EIS-1a & D5a, and pre-drilling works, concrete breaking and earth works conducted at Shan Ha Road Nullah which located at upstream of D2a. Weekly site inspection was carried out by ET and it was observed that water streams within works area were well maintained, with wastewater collected and treated by wastewater treatment facilities before discharge. In addition, the work area at Shan Ha Road Nullah under Contract 3 was far from D2a and there was other active construction site located at upstream of D2a.</p> <p>According to the weather information from the Hong Kong Observatory, there were rainy day on 23 April 2024 with rainfall at 40.0mm. This rainfall likely led to runoff from the surrounding environment and affected the water quality on the next day (24 Apr), resulting in a deterioration of water quality in the channel or river course.</p>	<p>Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required, and corrective action is not required.</p>
26 Apr 2024	M2a M3 EIS-1a D5a D2a	DO, Turbidity and Suspended Solids	Limit Level	<p>During water quality monitoring conducted on 26 April 2024, it was observed that the water in the throughout the channel affected by rainfall, including control station, gradient station and impact station.</p> <p>There were no major construction works conducted near M2a, M3 & EIS-1a & D5a, and pre-drilling works and bored piling works were conducted at Shan Ha Road Nullah which located at upstream of D2a. Weekly site inspection was carried out by ET and it was observed that water streams within works area were well maintained, with wastewater collected and treated by wastewater treatment facilities before discharge. In addition, the work area at Shan Ha Road Nullah under Contract 3 was far from D2a and there was other active construction site located at upstream of D2a.</p>	<p>Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required, and corrective action is not required.</p>

				<p>According to the weather information from the Hong Kong Observatory, there were heavy rainfall on 26 April 2024 with rainfall at 25.0mm. This rainfall likely led to runoff from the surrounding environment, resulting in a deterioration of water quality in the channel or river course.</p>	
4 May 2024	M2a M3 EIS-1a M7a D5a D2a	DO, Turbidity and Suspended Solids	Limit Level	<p>During water quality monitoring conducted on 4 May 2024, it was observed that the water in the throughout the channel affected by rainfall, including control station, gradient station and impact station.</p> <p>There were no major construction works conducted near M2a, M3, EIS-1a, M7a & D5a and pre-drilling works, concrete breaking and earth works conducted at Shan Ha Road Nullah which located at upstream of D2a. Weekly site inspection was carried out by ET and it was observed that water streams within works area were well maintained, with wastewater collected and treated by wastewater treatment facilities before discharge.</p> <p>According to the weather information from the Hong Kong Observatory, there were heavy rainstorm on 4 May 2024 with rainfall at 75.1mm. This rainfall likely led to runoff from the surrounding environment, resulting in a deterioration of water quality in the channel or river course.</p>	<p>Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required, and corrective action is not required.</p>
21 May 2024	M1a M2a M3 EIS-1a M7a D5a D2a	DO, Turbidity and Suspended Solids	Limit Level	<p>During water quality monitoring conducted on 21 May 2024, it was observed that the water in the throughout the channel affected by rainfall, including control station, gradient station and impact station.</p> <p>There were no major construction works conducted near M1a, M2a, M3, EIS-1a, M7a & D5a, and pre-drilling works, concrete breaking and earth works conducted at Shan Ha Road Nullah which located at upstream of D2a. Weekly site inspection was carried out by ET and it was observed that water streams within works area were well maintained, with wastewater collected and treated by wastewater treatment facilities before discharge.</p> <p>According to the weather information from the Hong Kong Observatory, there were rainy day on 21 May 2024 with rainfall at 45.3mm. This rainfall likely led to runoff from the surrounding environment, resulting in a deterioration of water quality in the channel or river course.</p>	<p>Since the exceedances were non-project related, increase monitoring frequency according to the requirement of Event and Action Plan is not required, and corrective action is not required.</p>

Cumulative Action/ Limit Level Exceedance for Water Quality

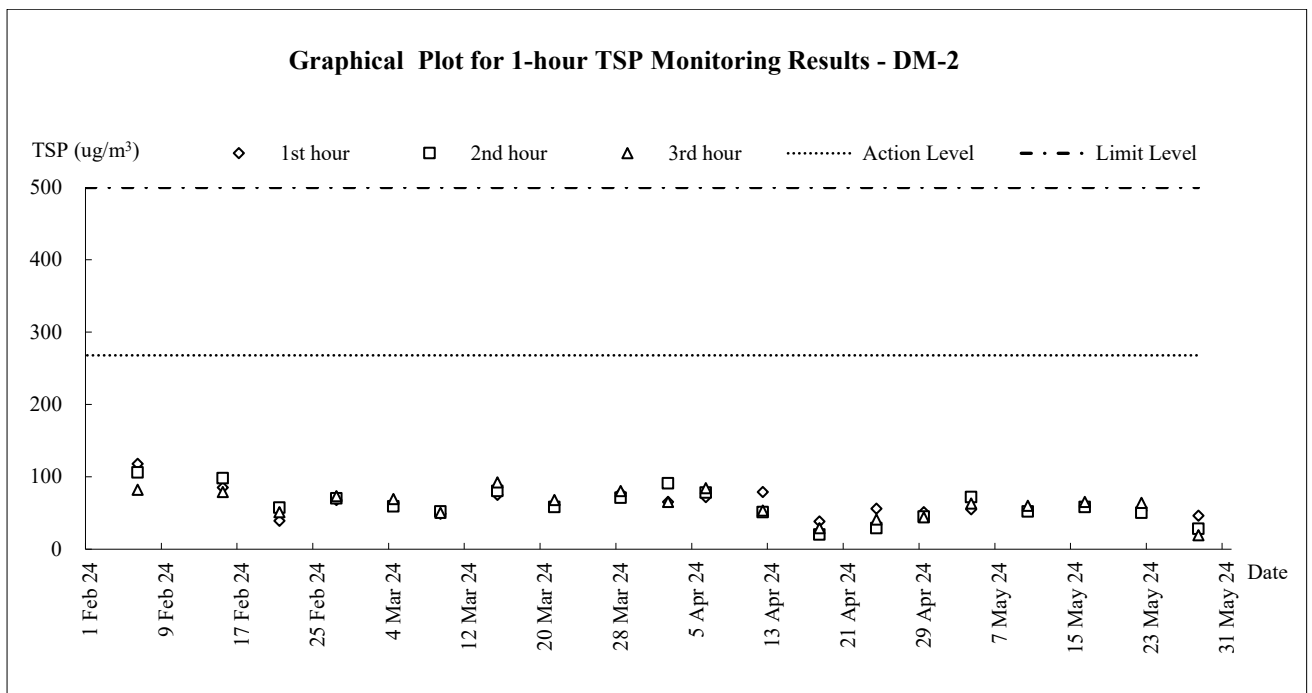
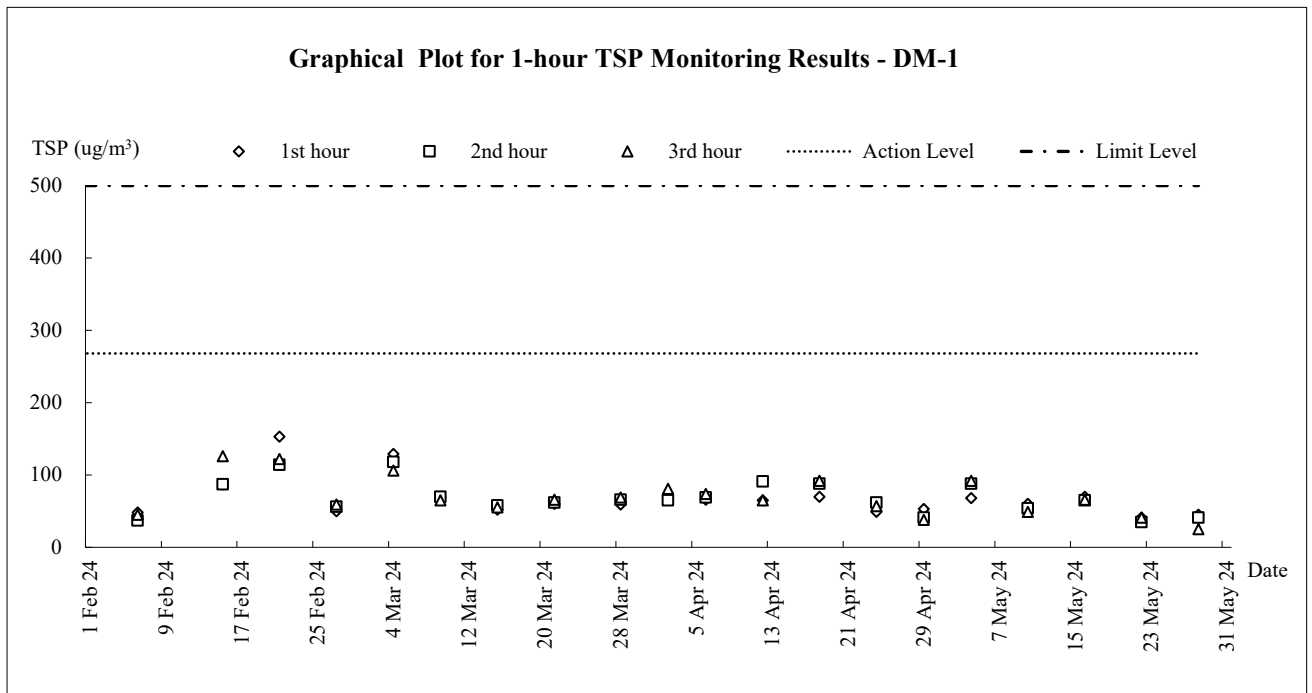
Location	Dissolved Oxygen		Turbidity		Suspended Solids		Non-project related Exceedance		Project Related Exceedance	
	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
M1a	0	0	0	2	0	2	0	4	0	0
M2a	0	3	1	5	0	6	1	14	0	0
M3	0	0	0	5	0	5	0	10	0	0
M4	0	0	0	0	0	0	0	0	0	0
EIS-1a	0	1	0	4	2	2	2	7	0	0
D2a	0	2	0	6	1	3	1	11	0	0
M7a	0	0	0	2	0	2	0	4	0	0
D5a	0	1	0	4	0	1	0	6	0	0
No of Exceedance	0	7	1	28	3	21	4	56	0	0

Remark: Cumulative Action/ Limit Level Exceedance for Water Quality from January 2024

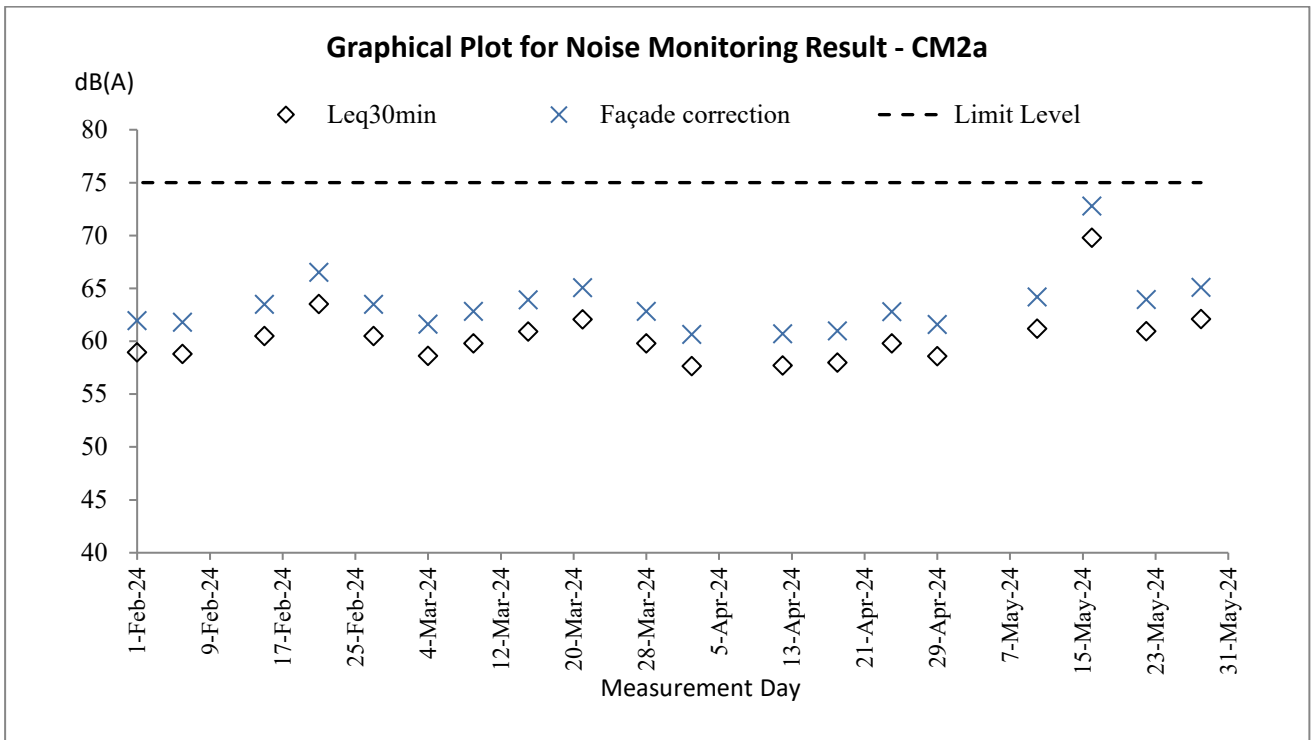
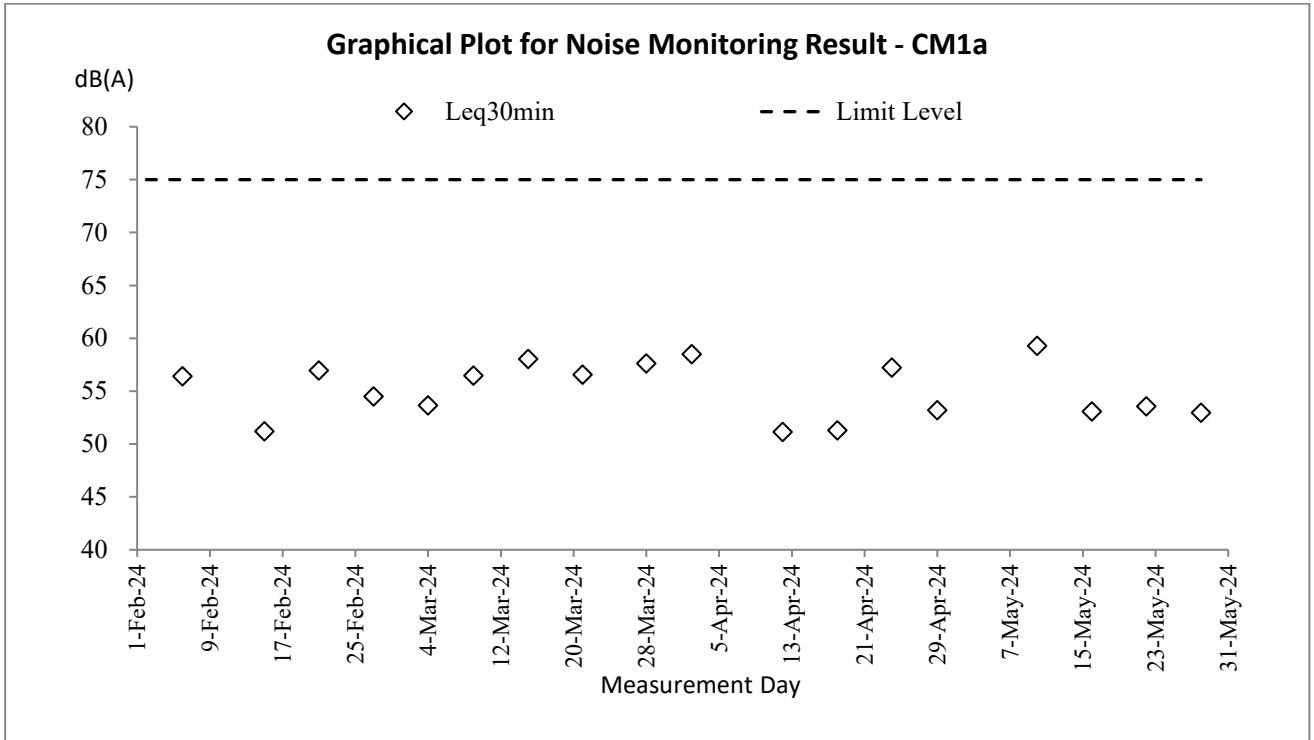
Appendix K

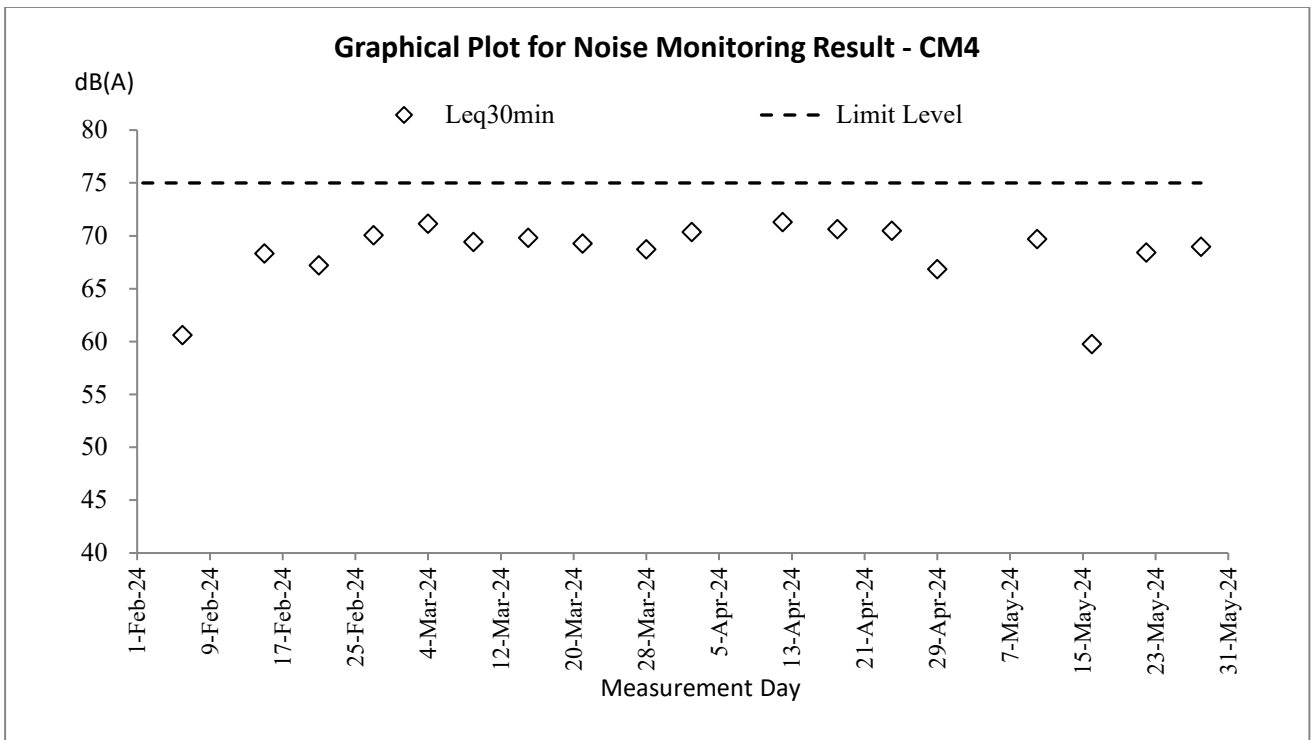
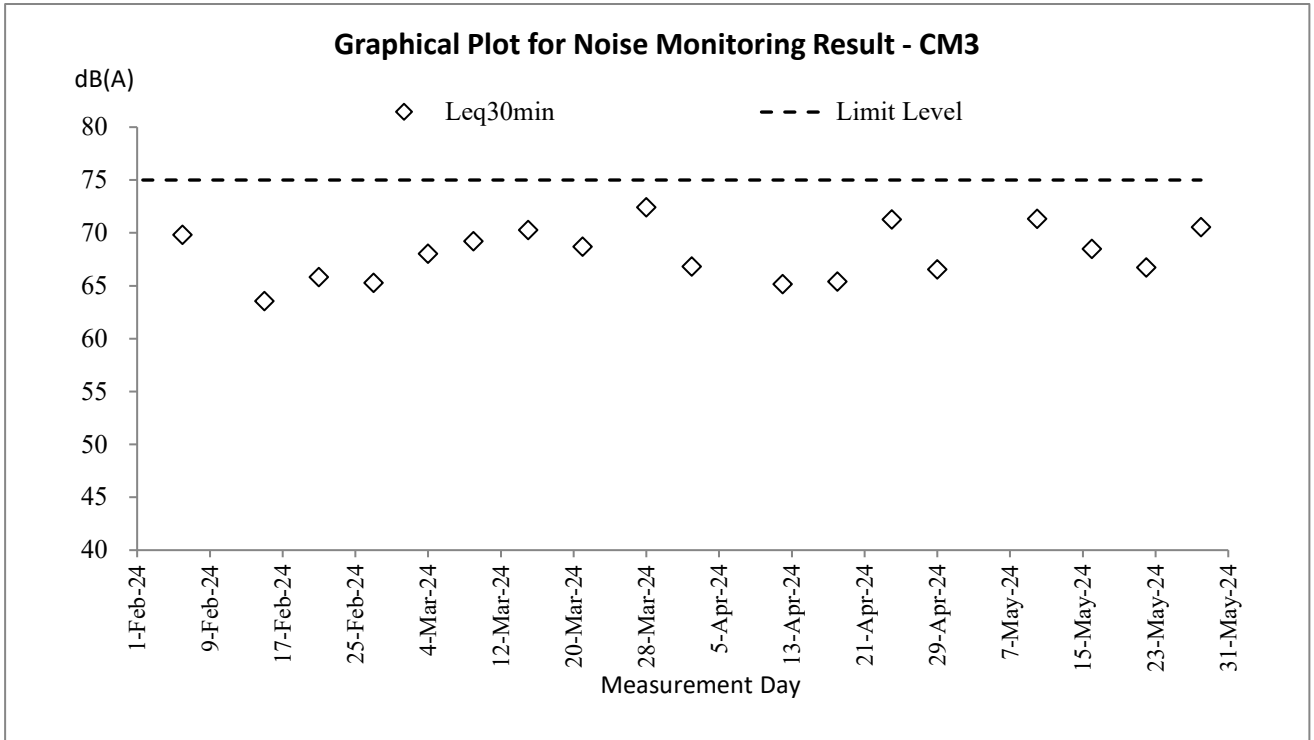
Graphical Plots for Monitoring Result

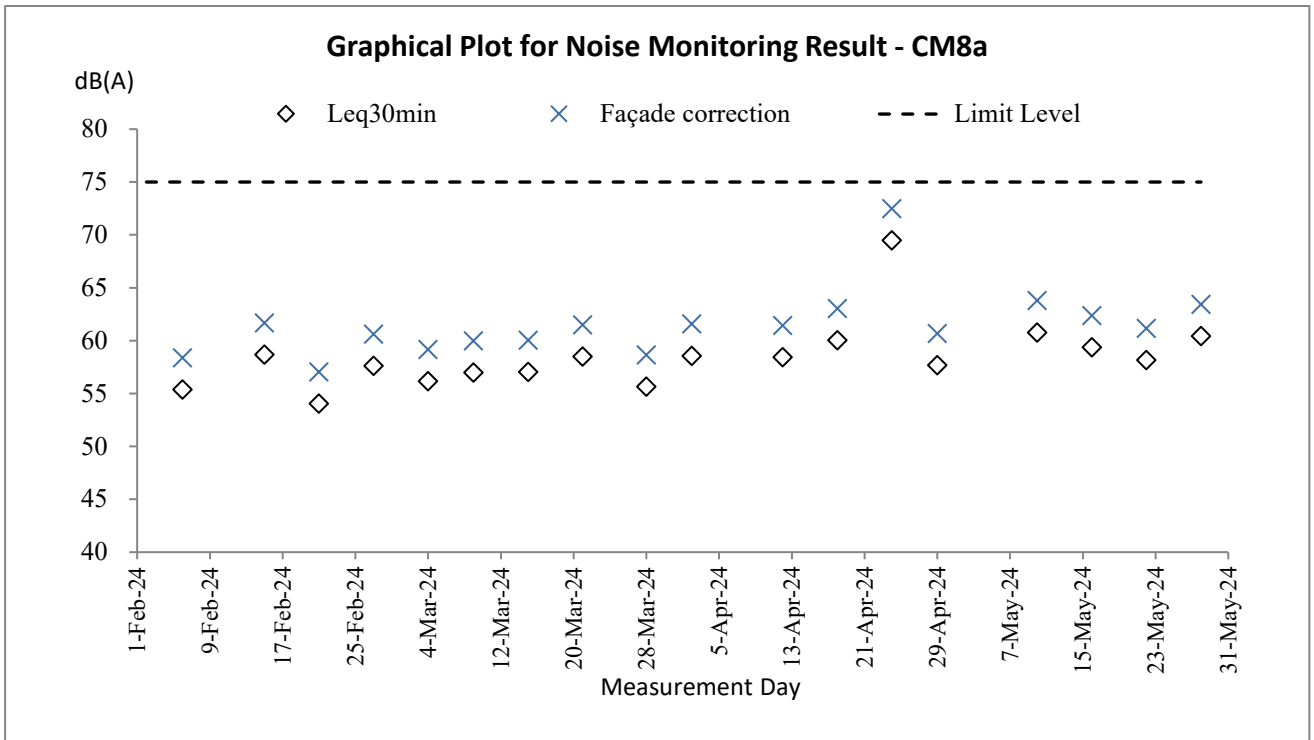
Air Quality – 1-hour TSP



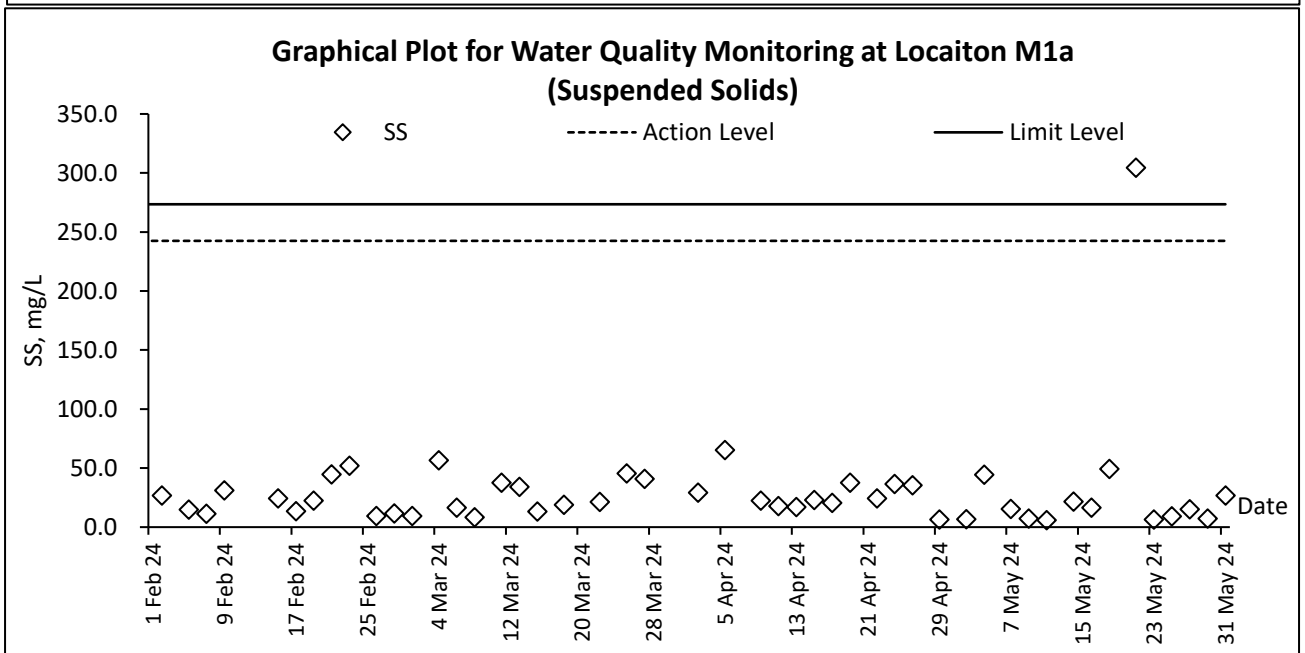
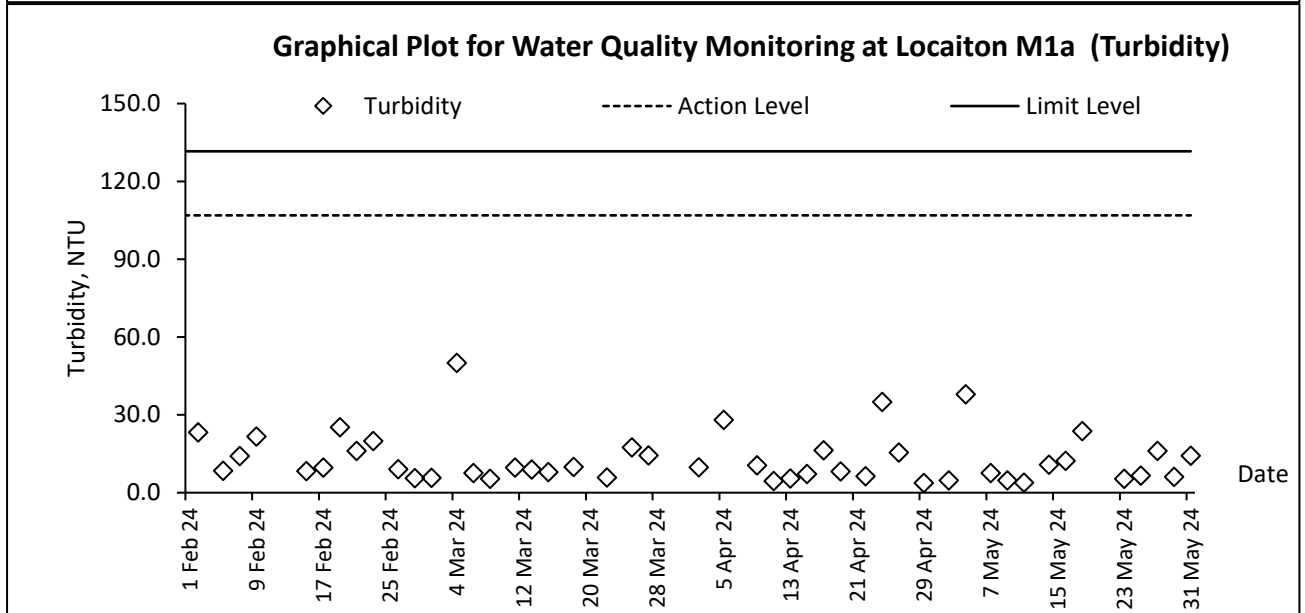
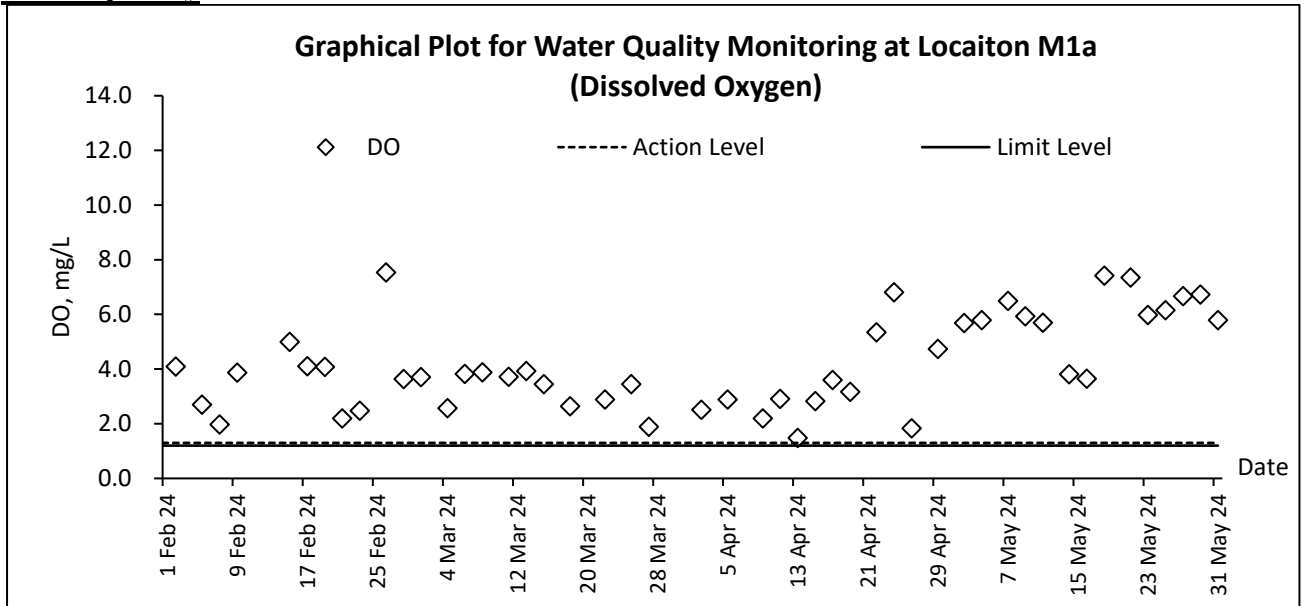
Construction Noise

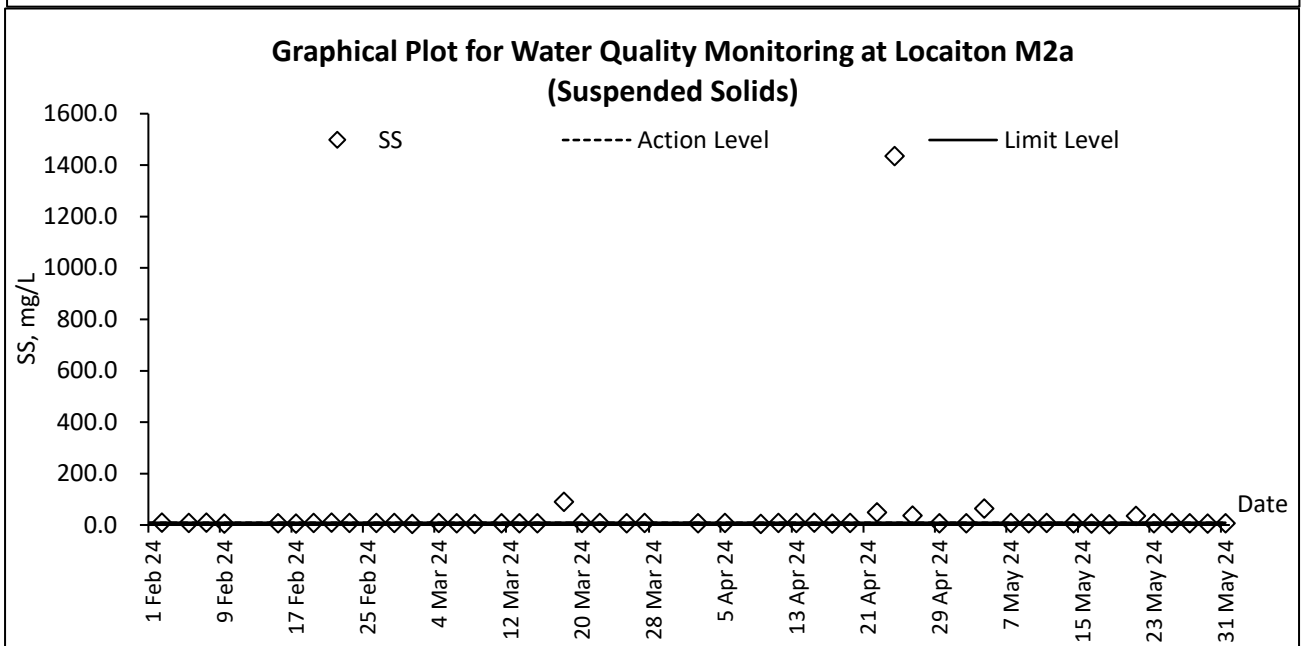
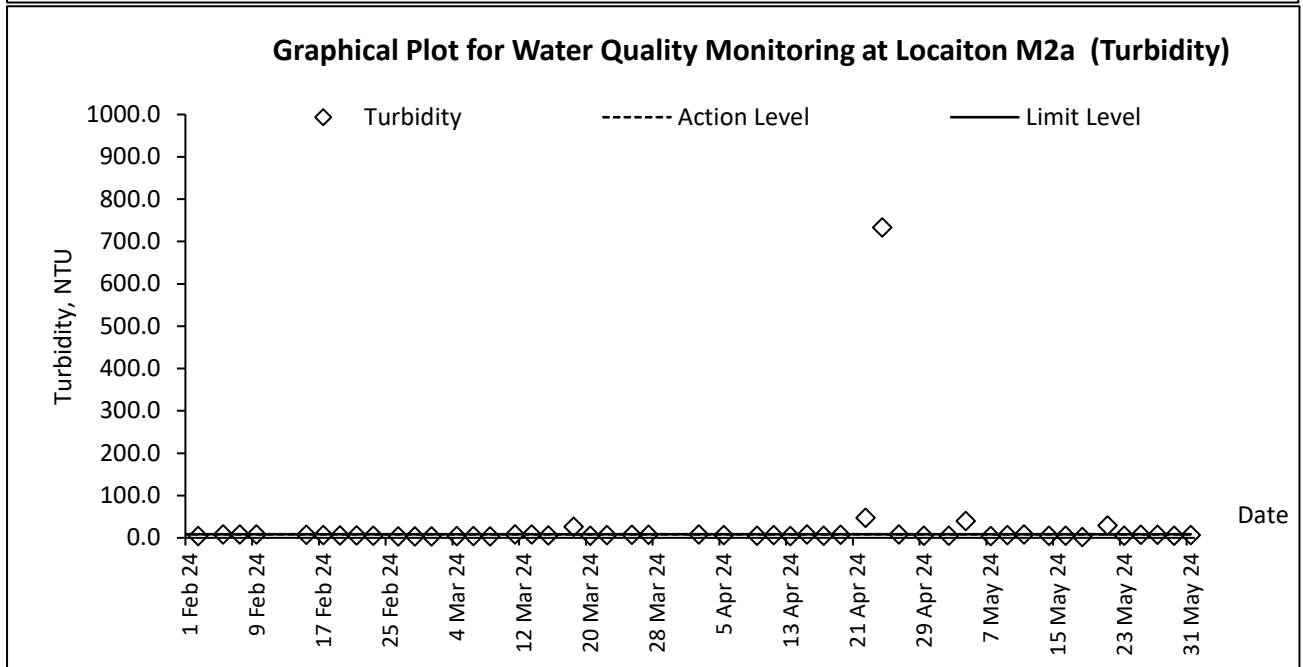
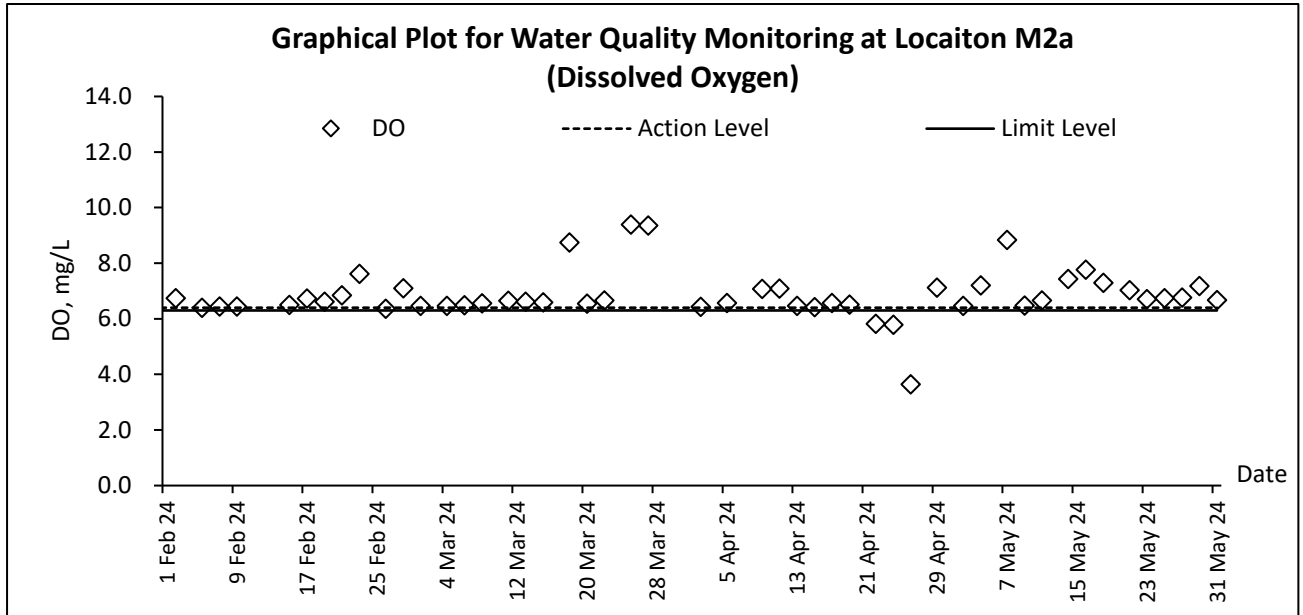


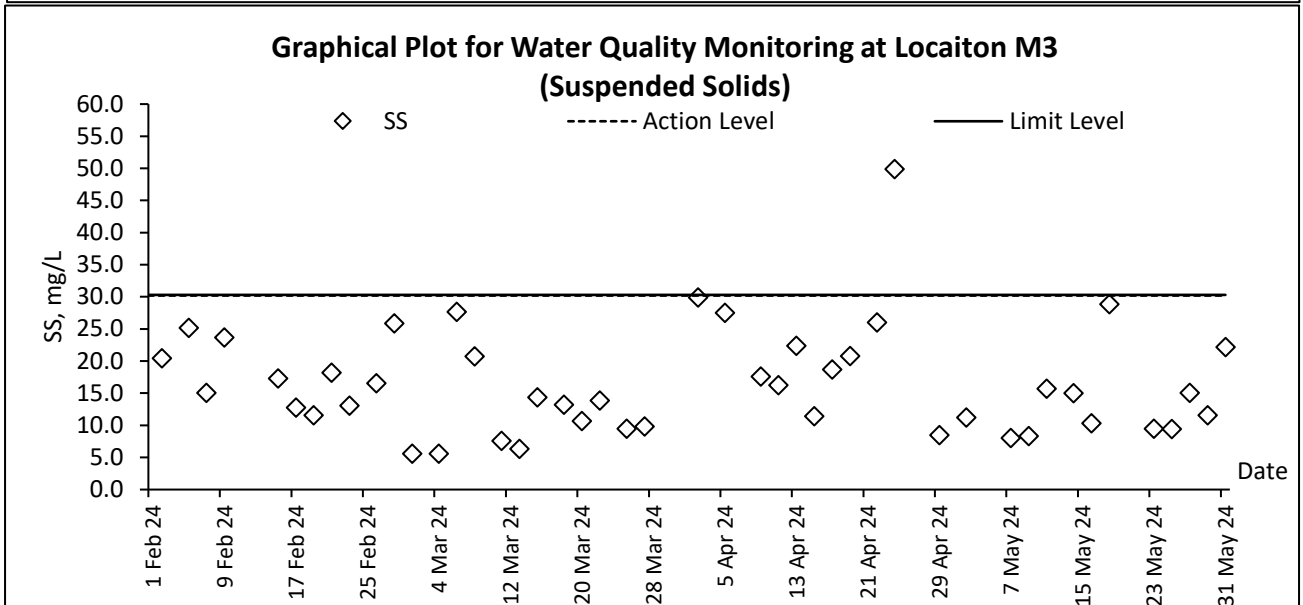
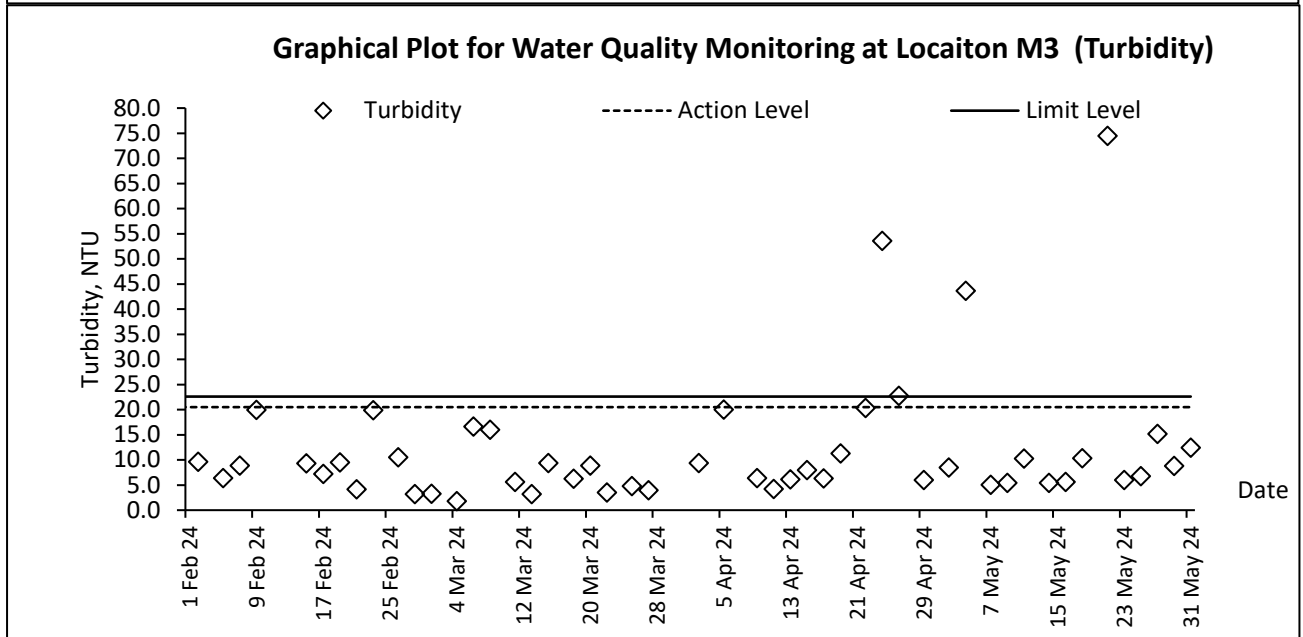
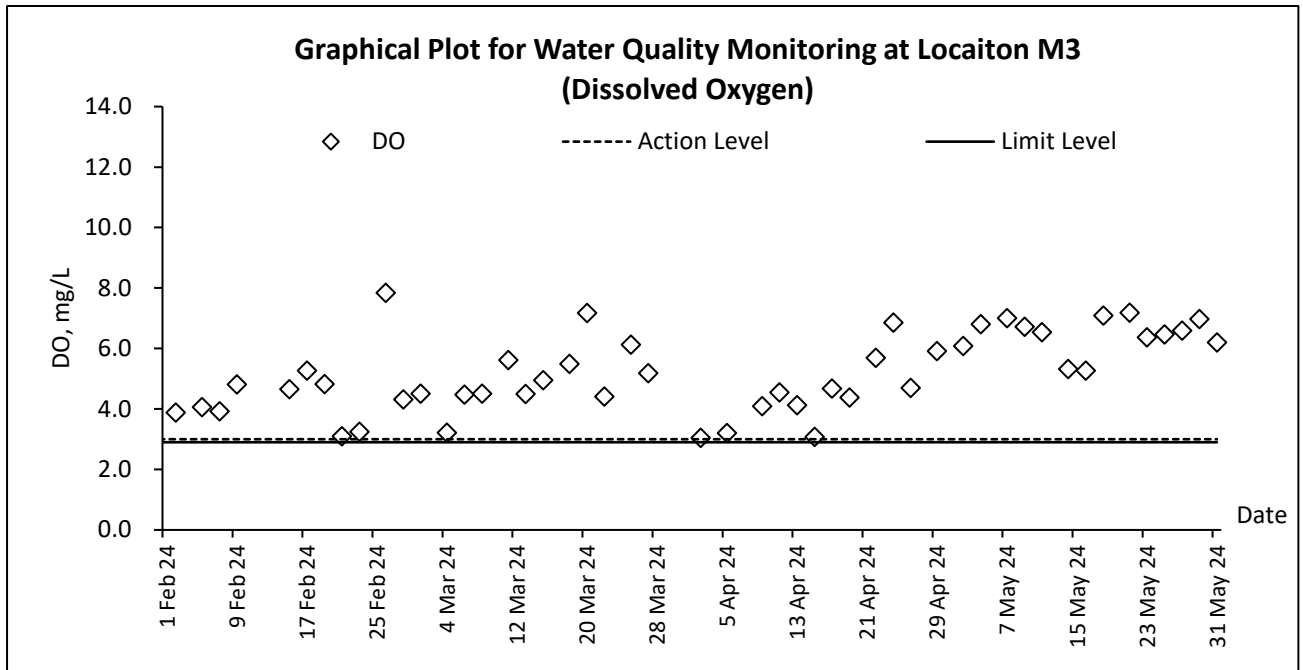


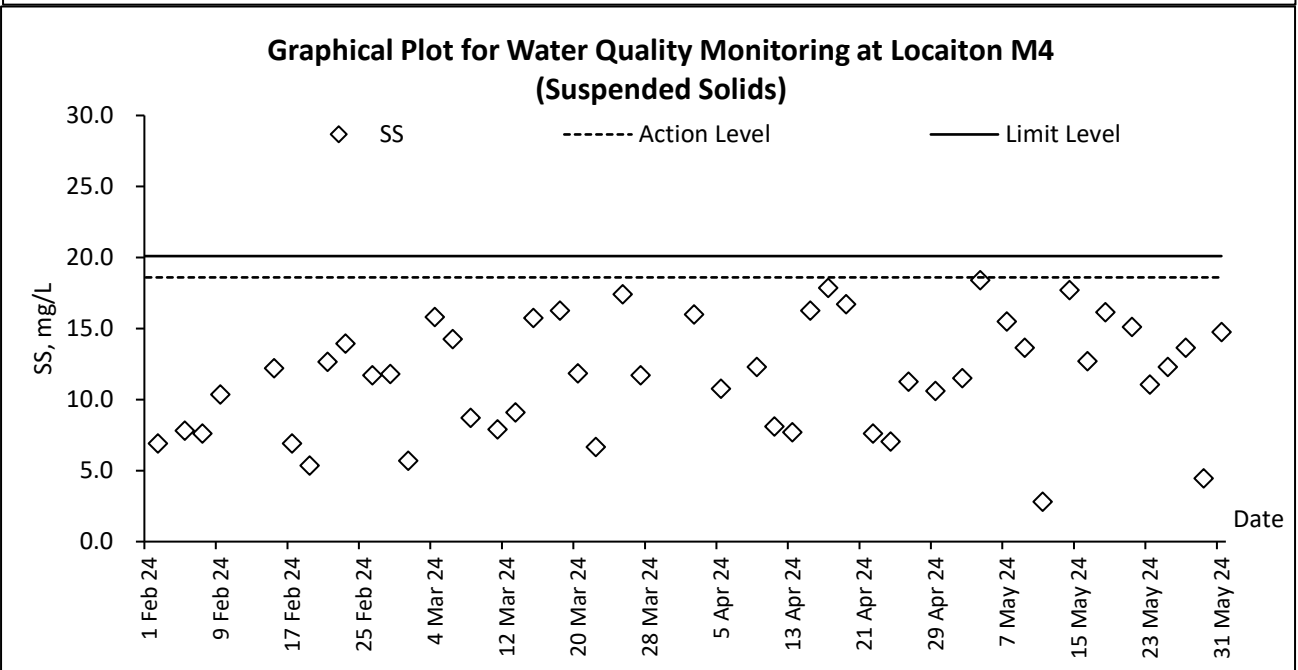
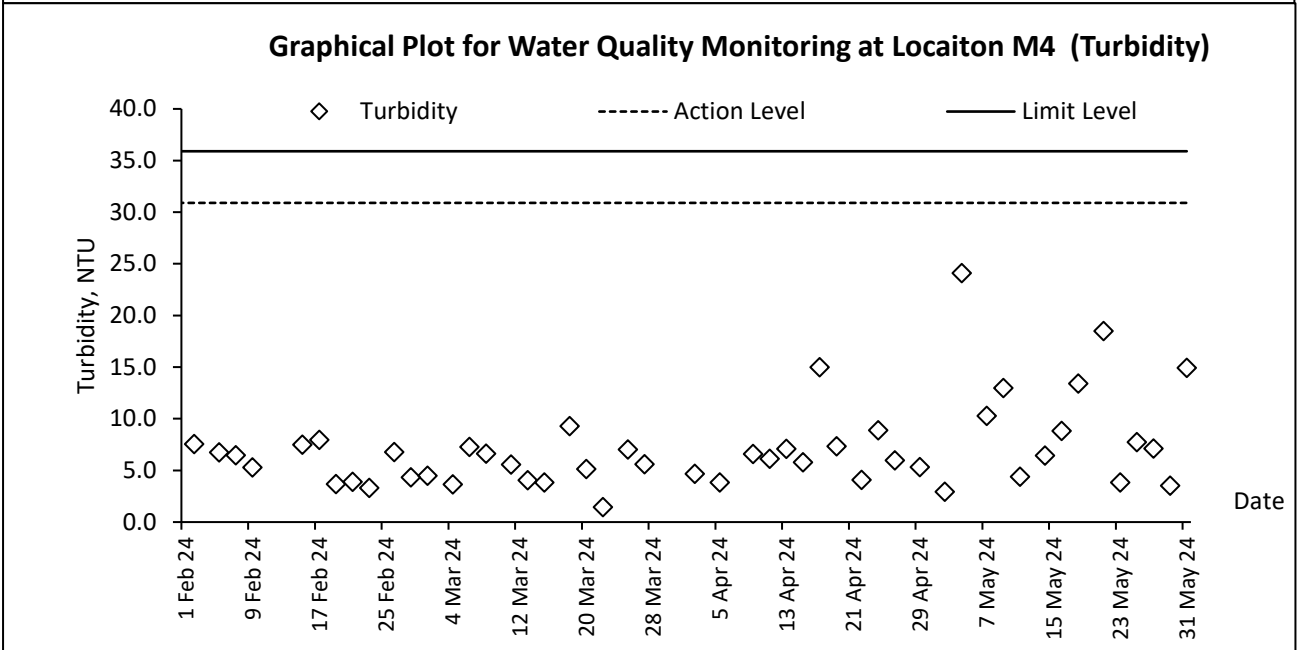
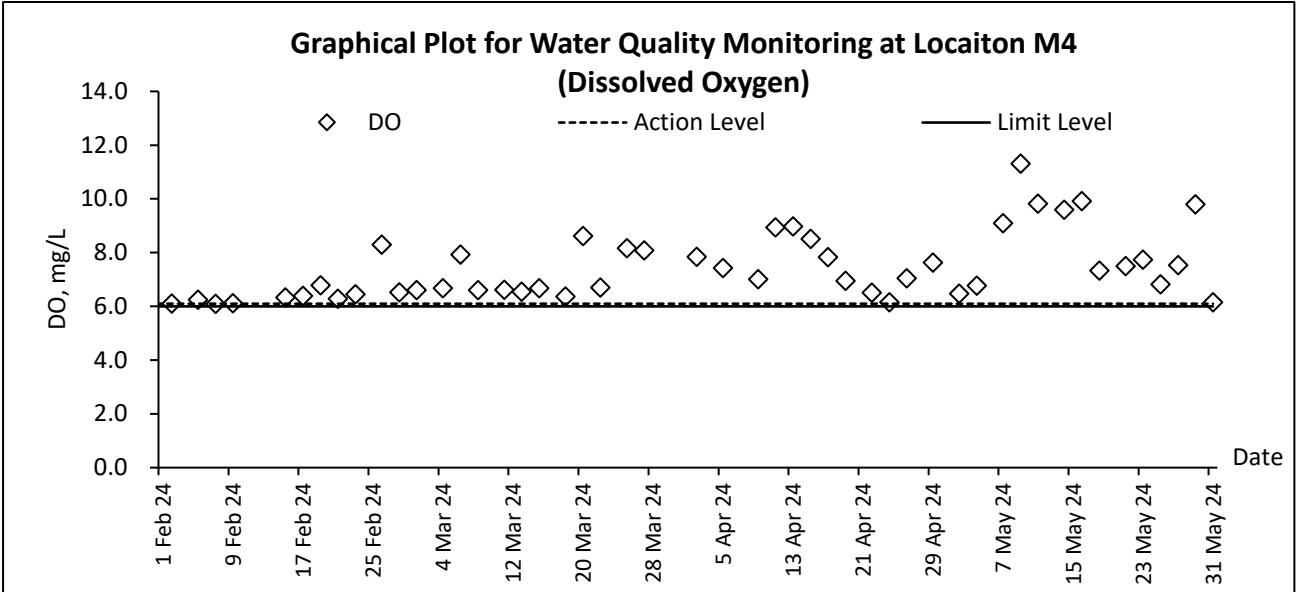


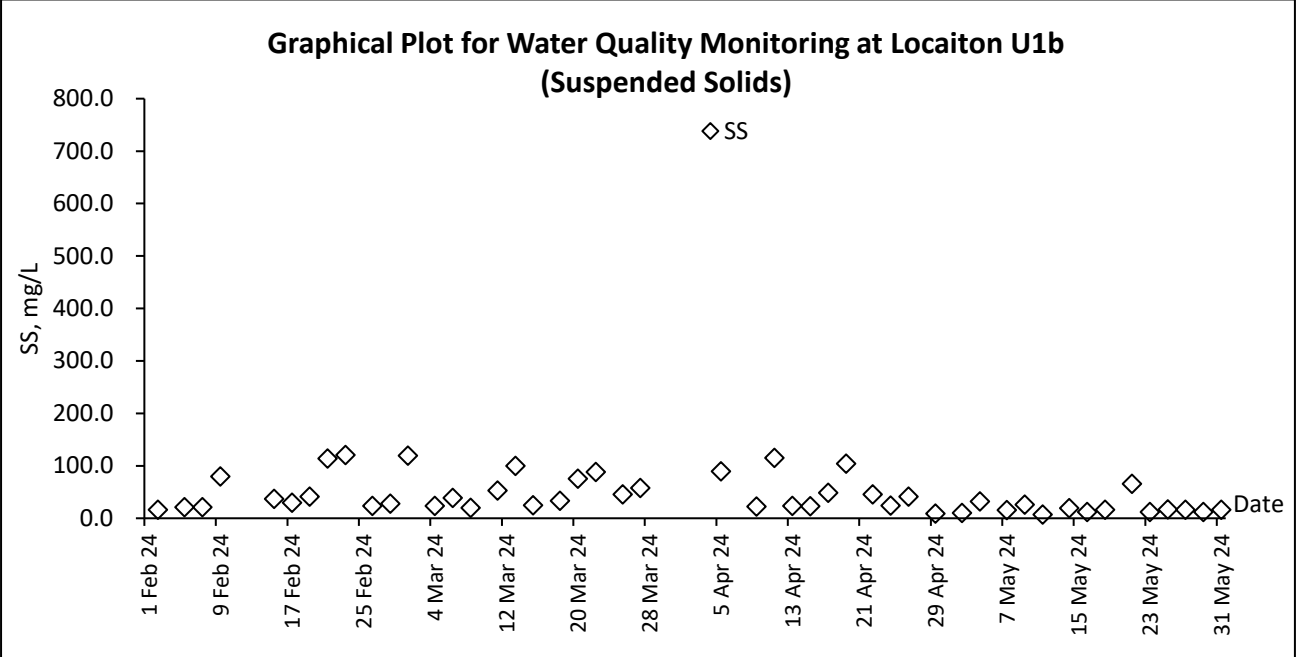
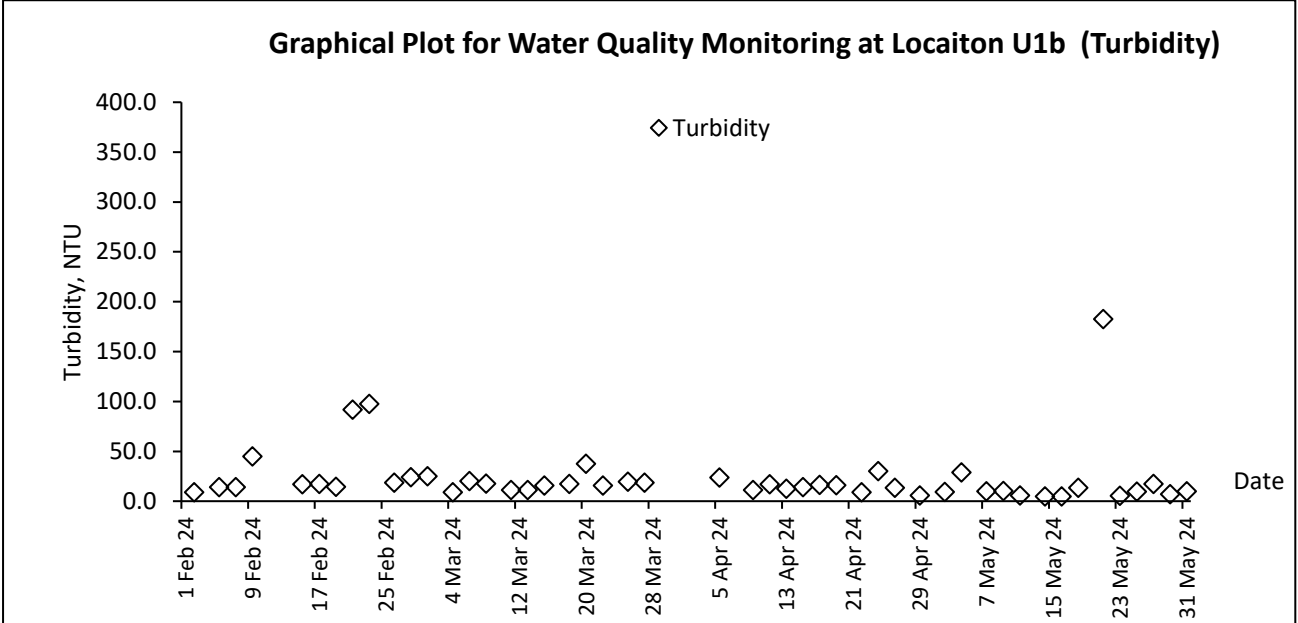
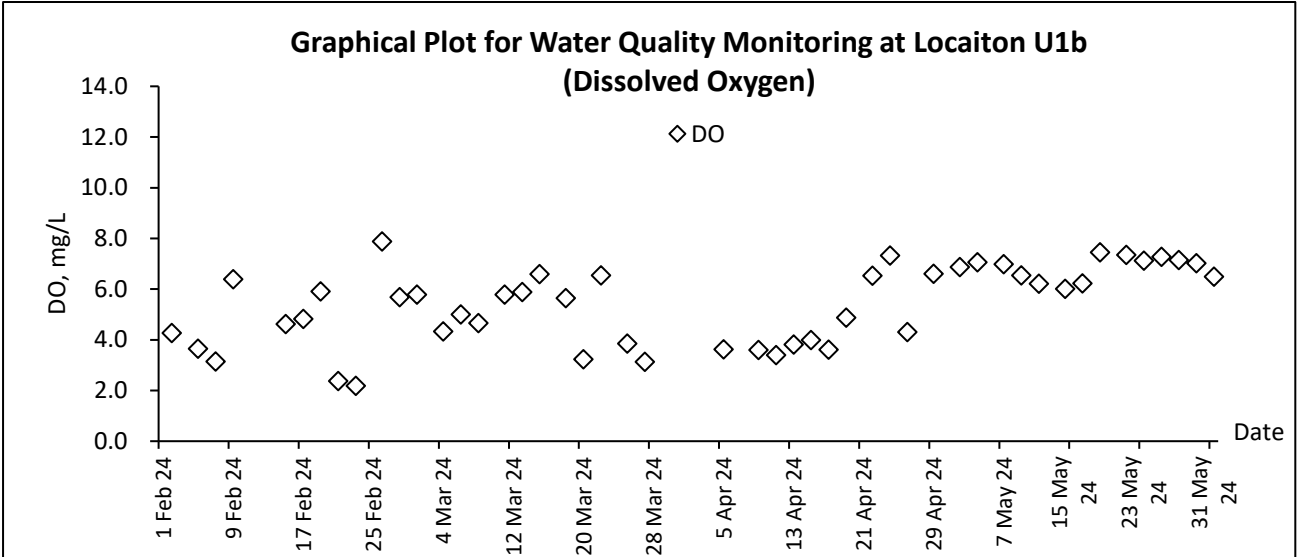
Water Quality

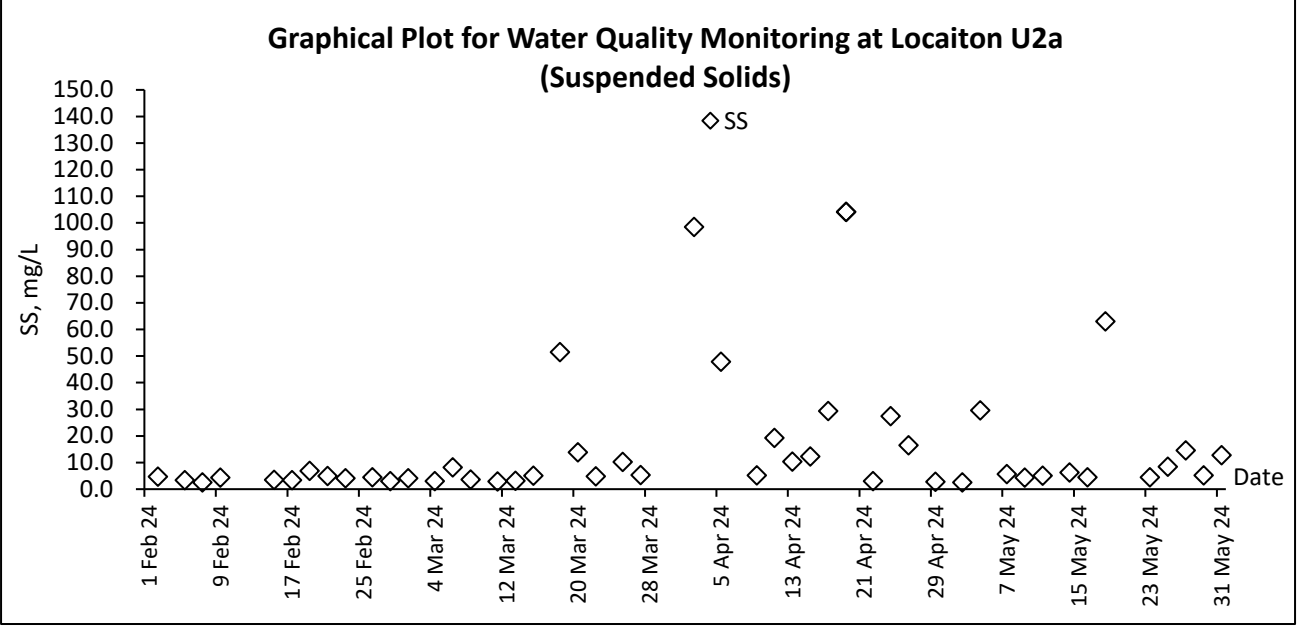
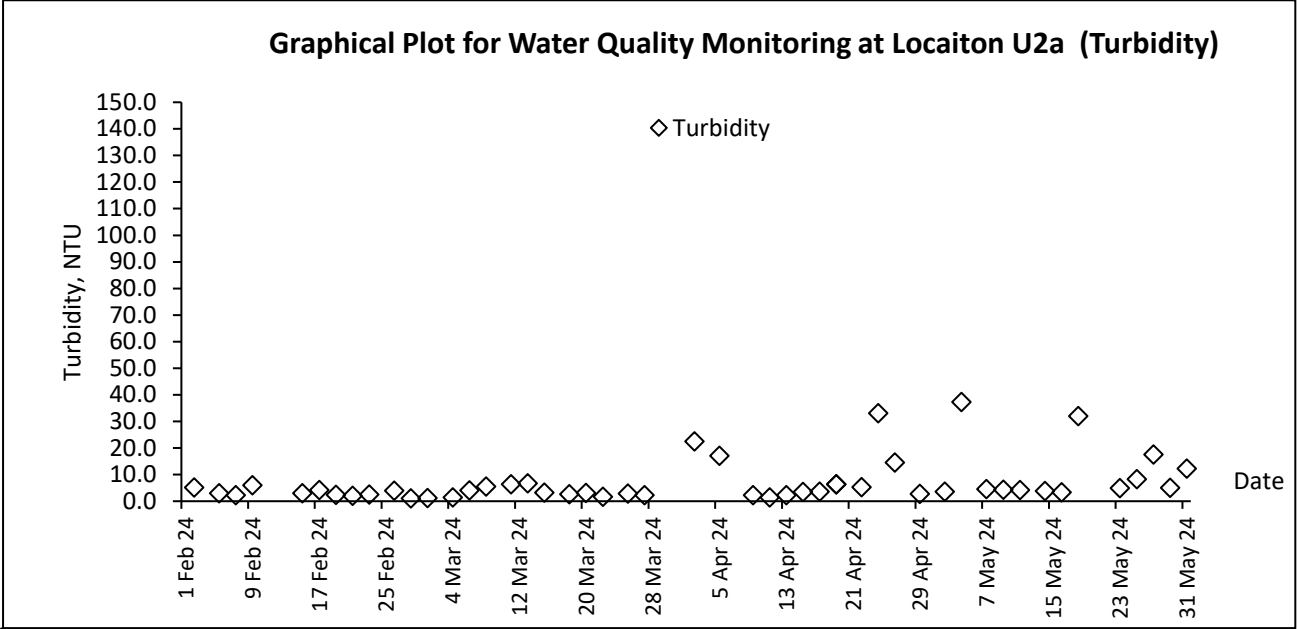
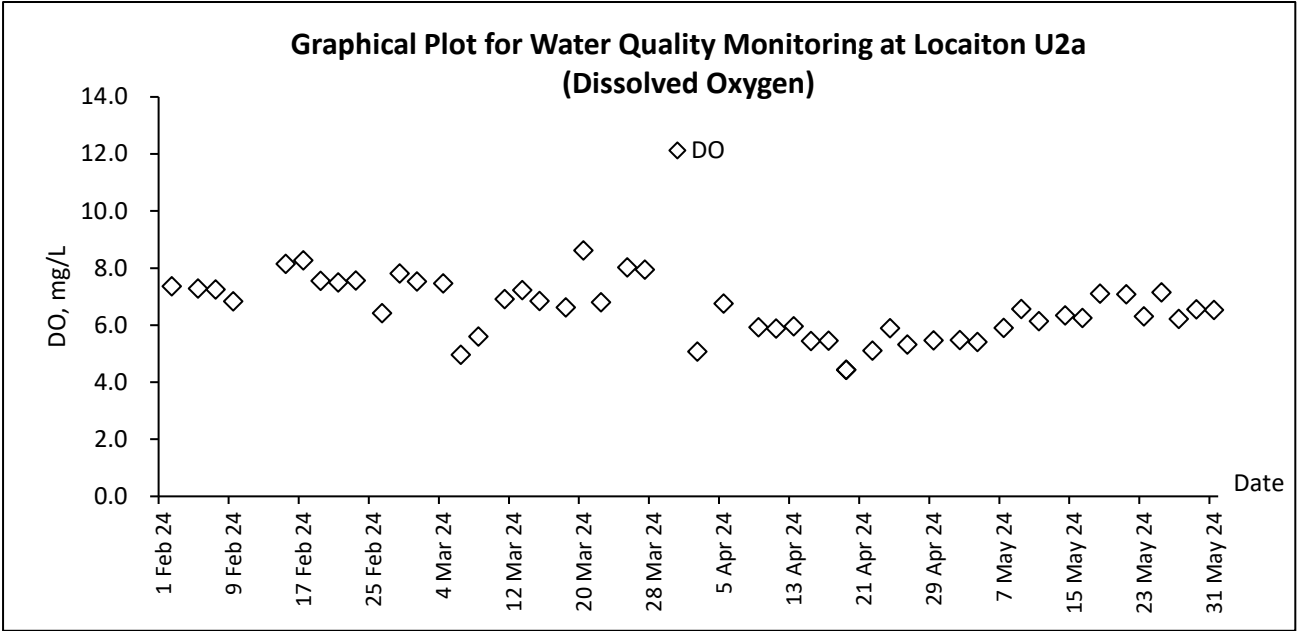


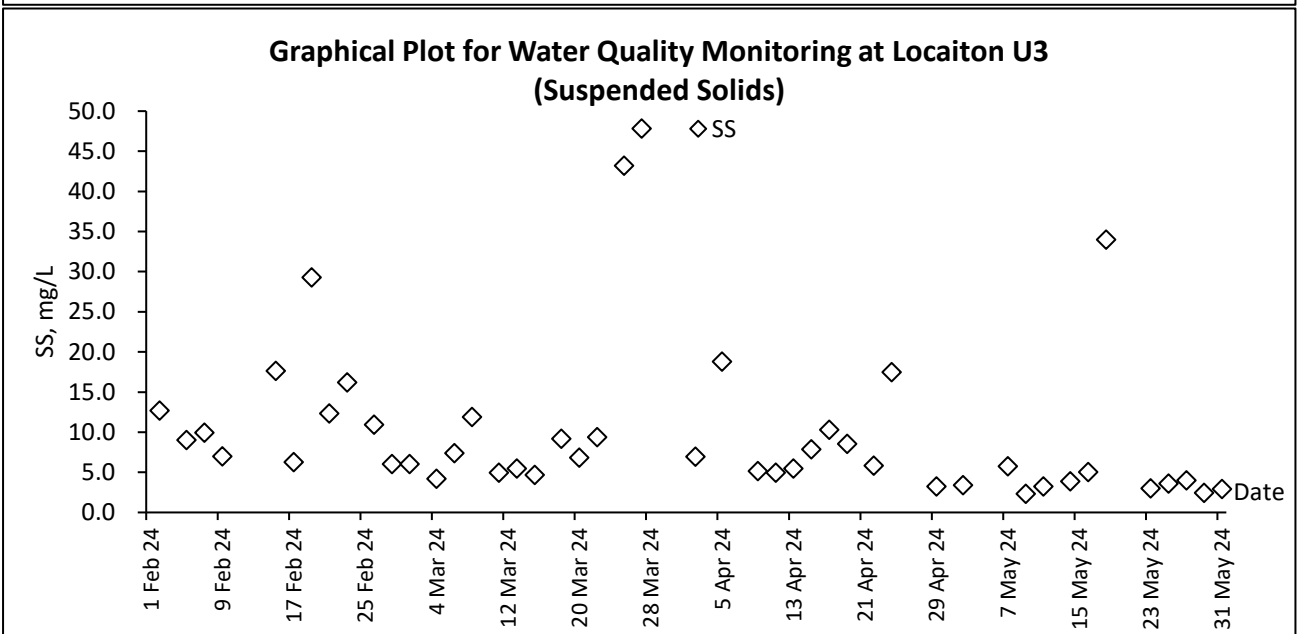
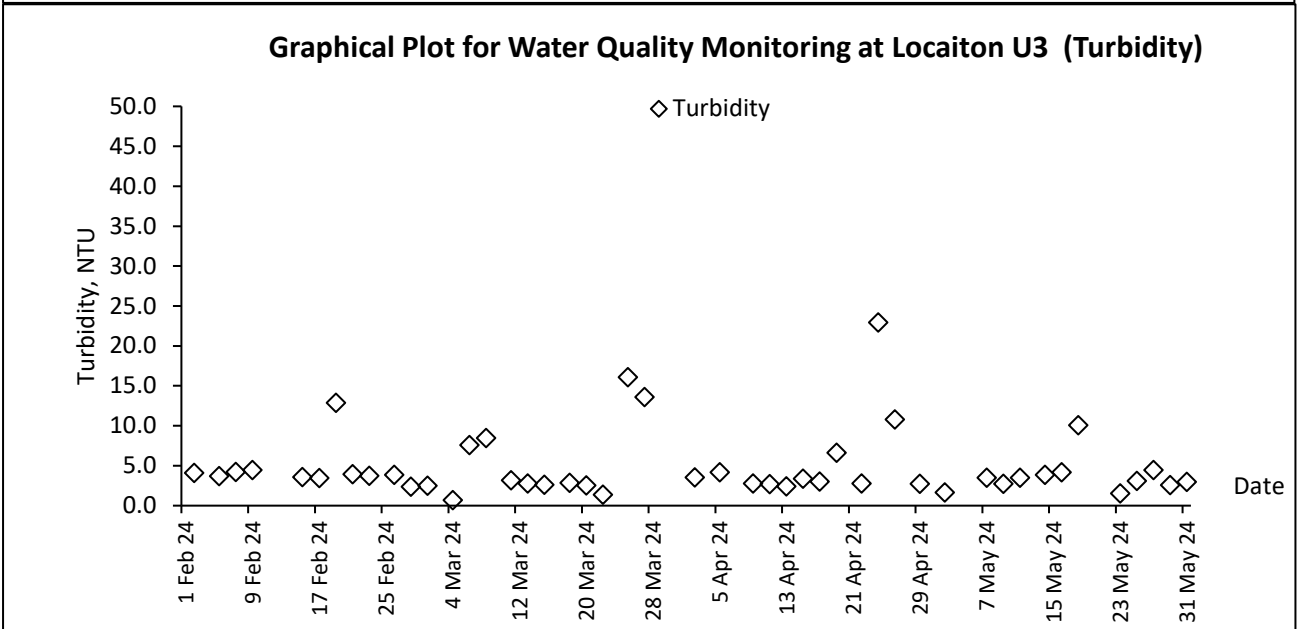
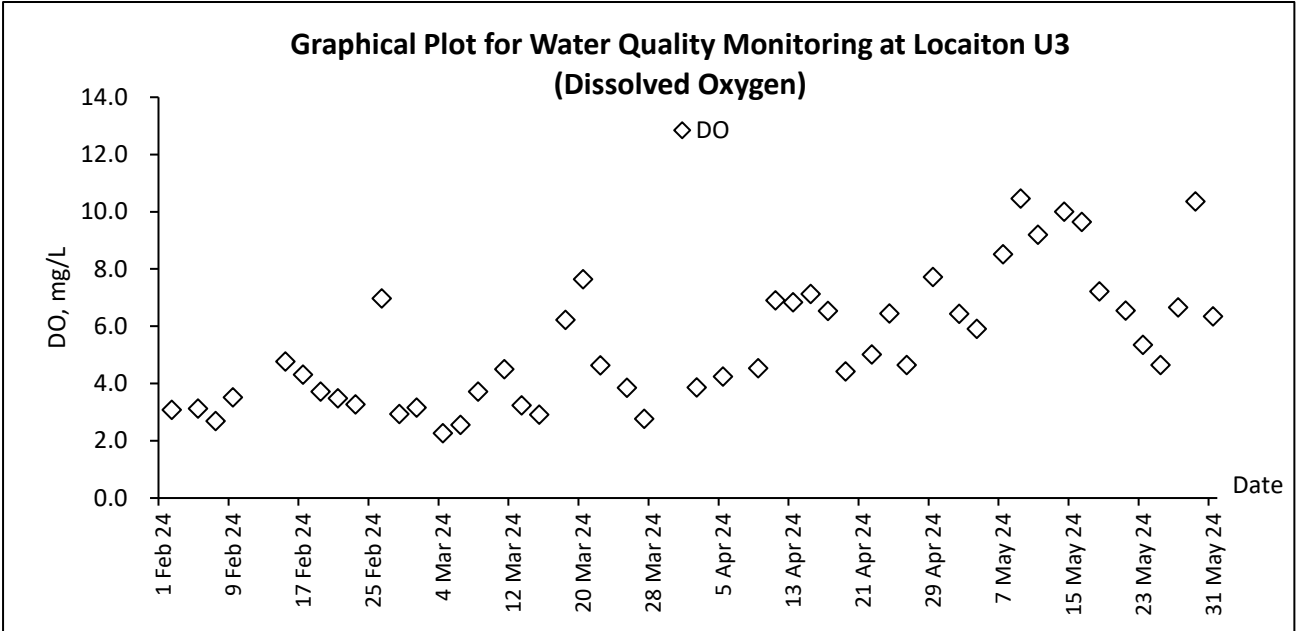


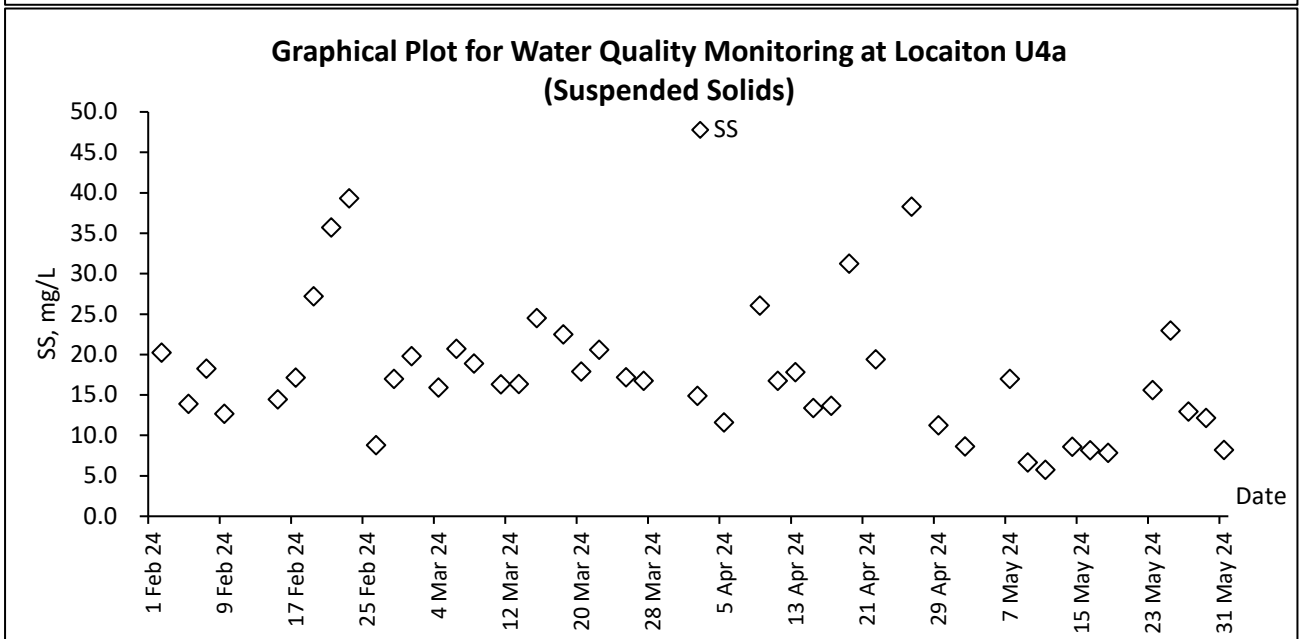
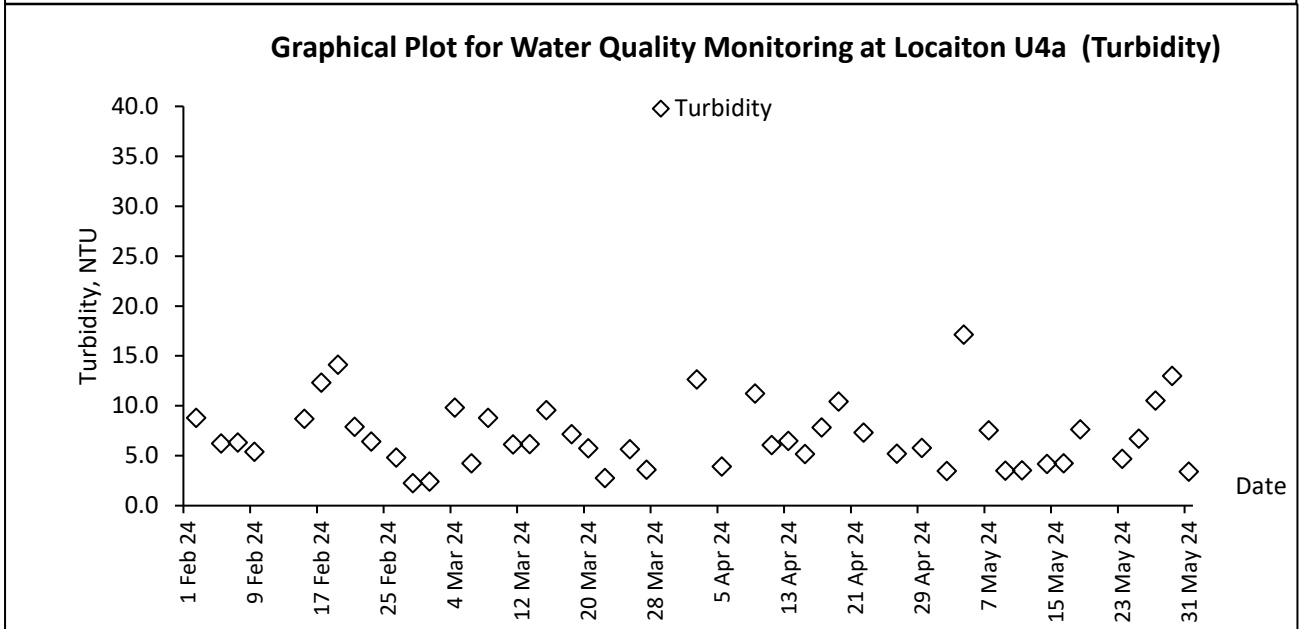
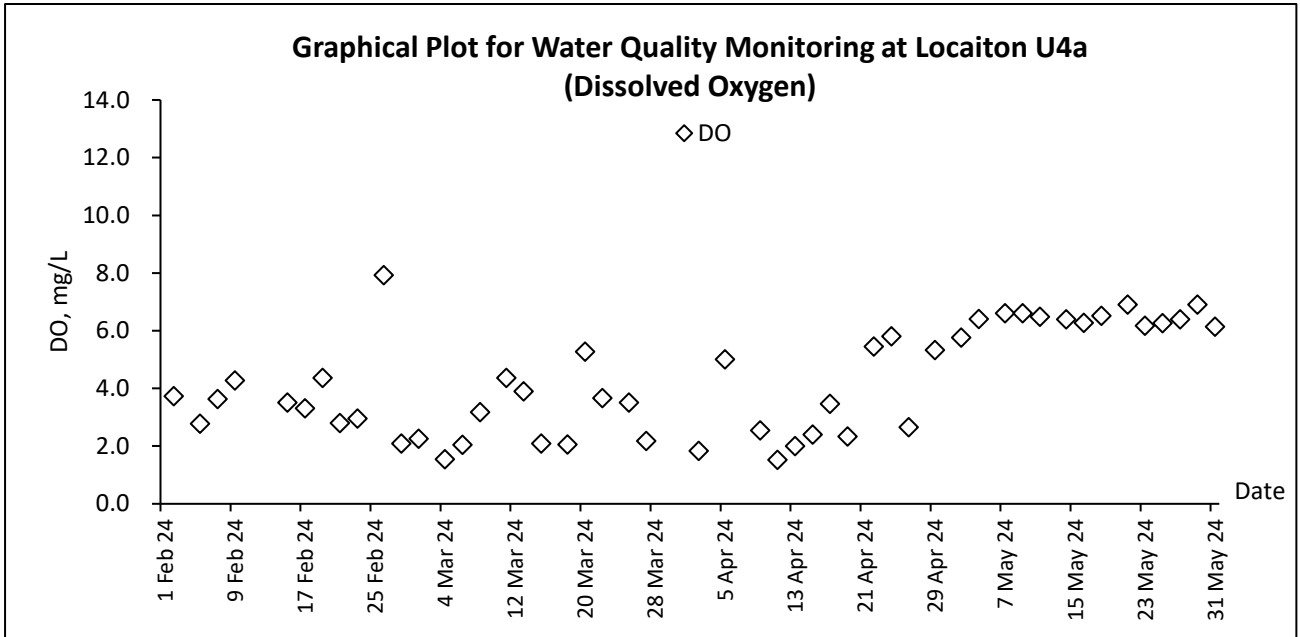


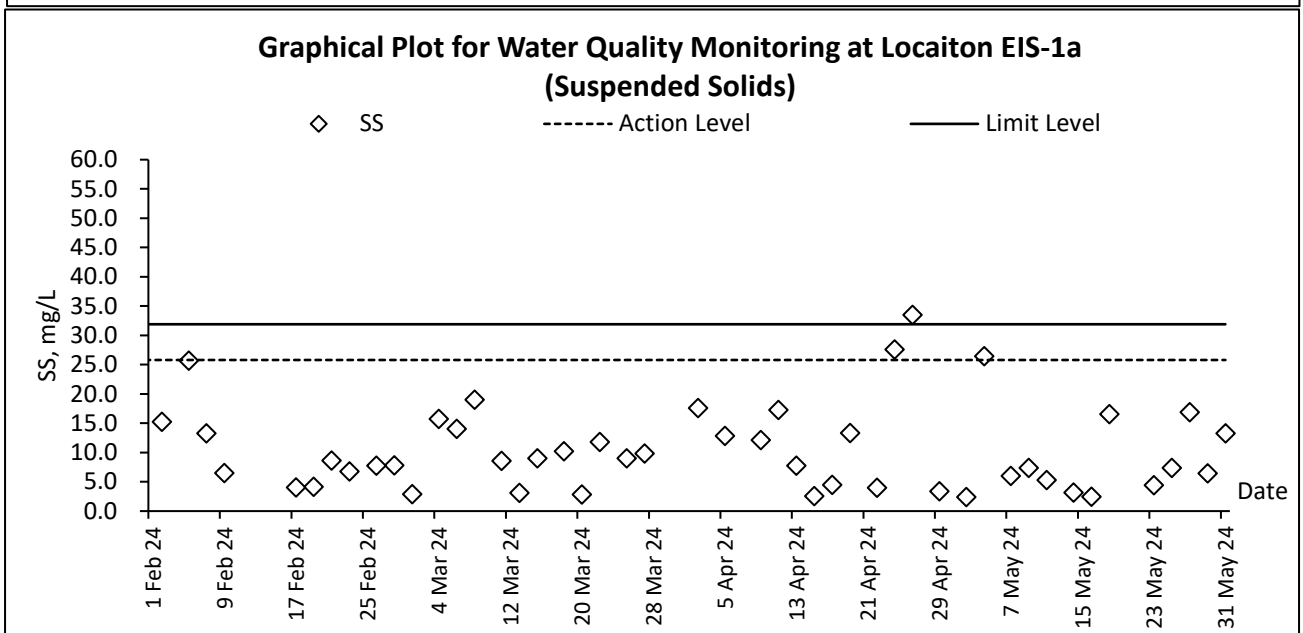
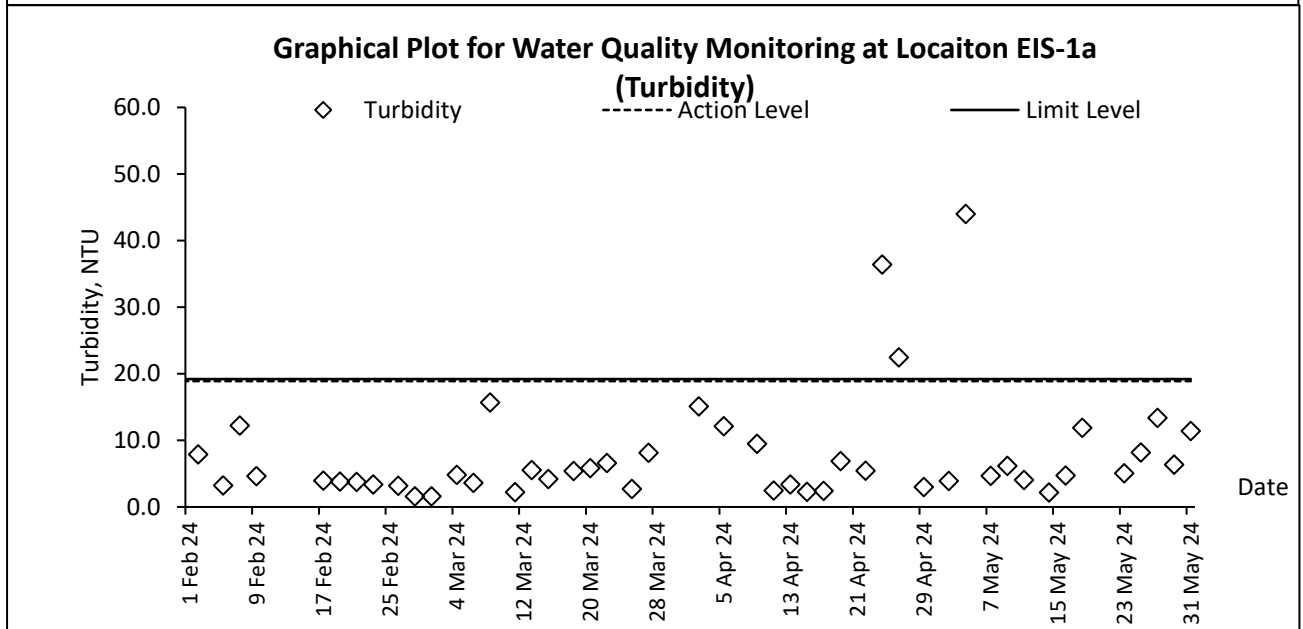
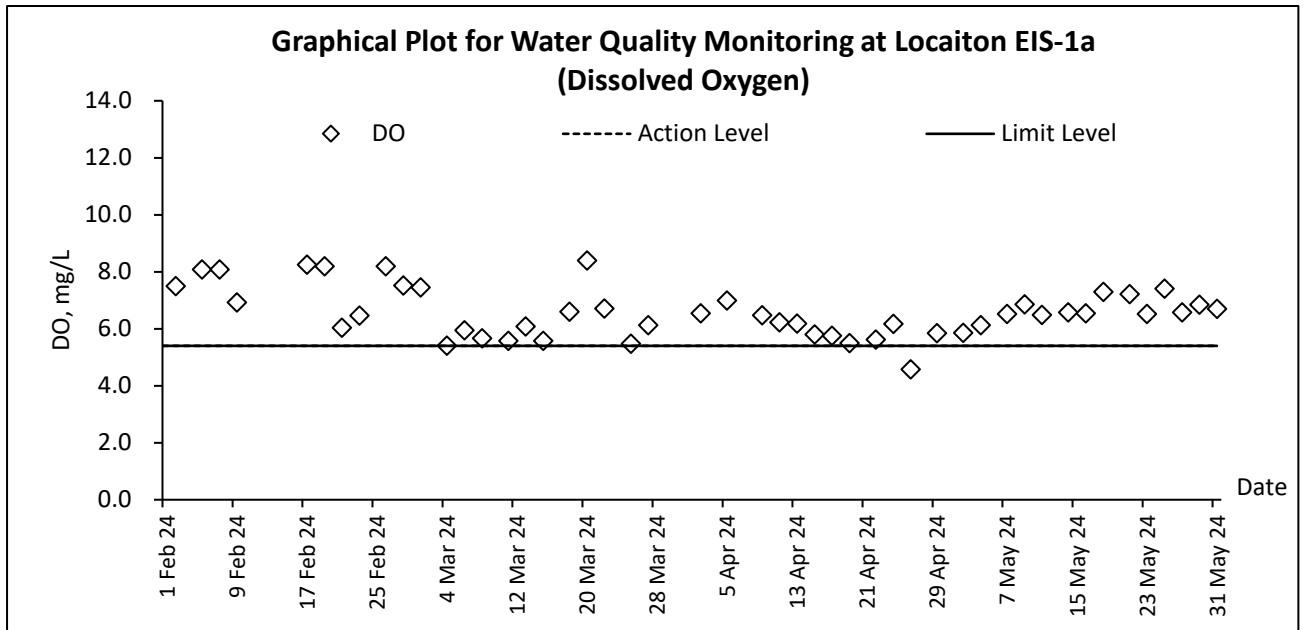


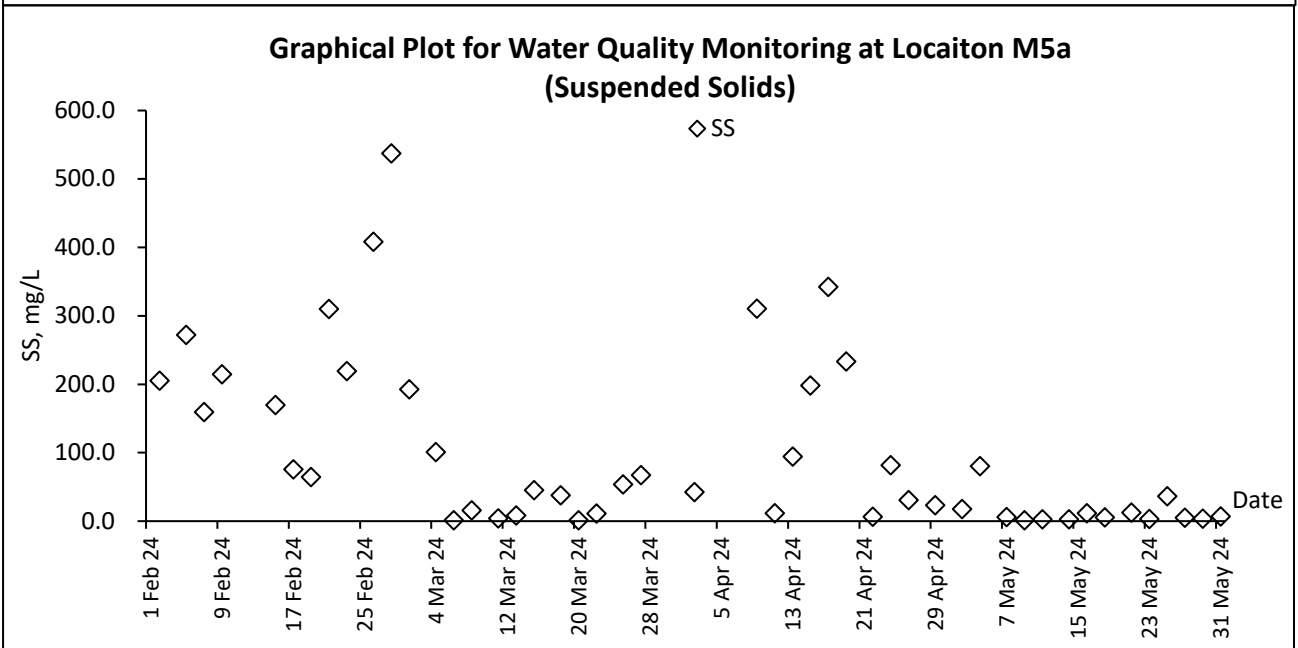
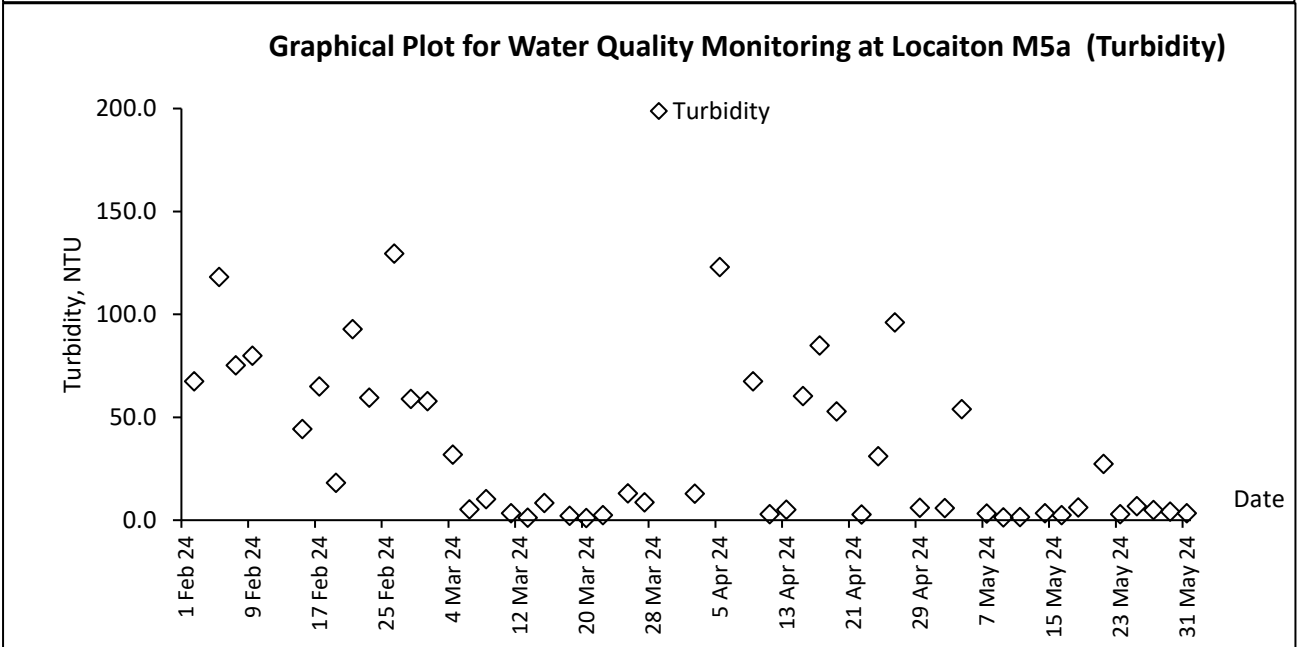
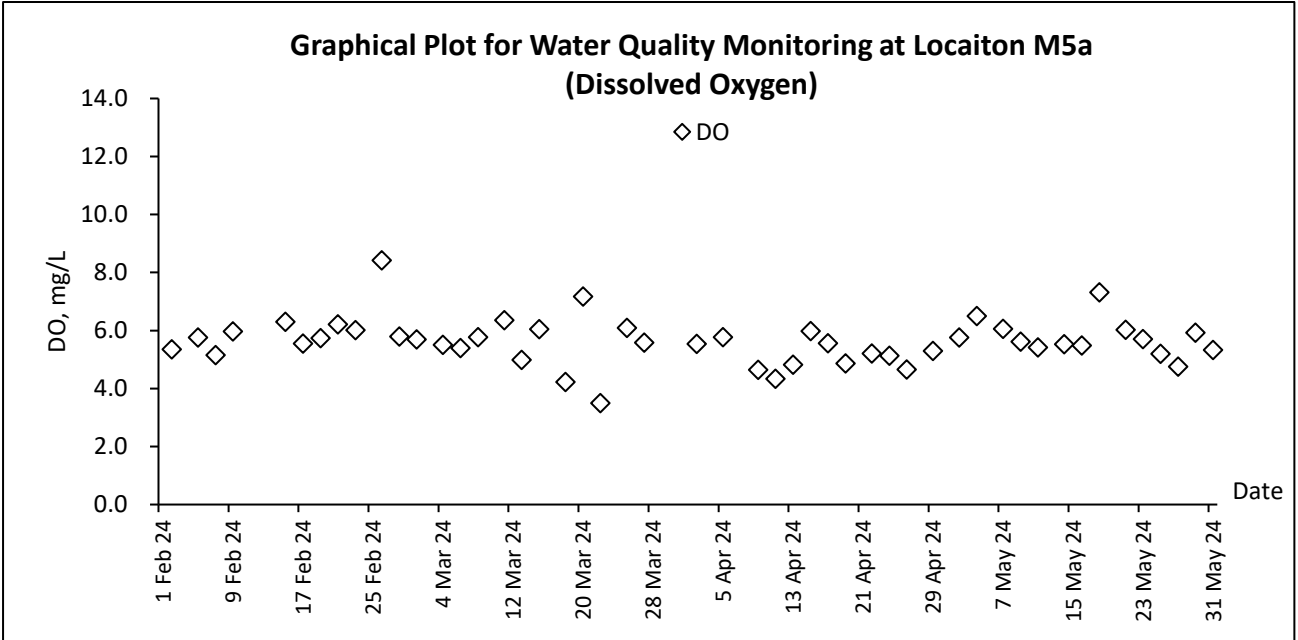


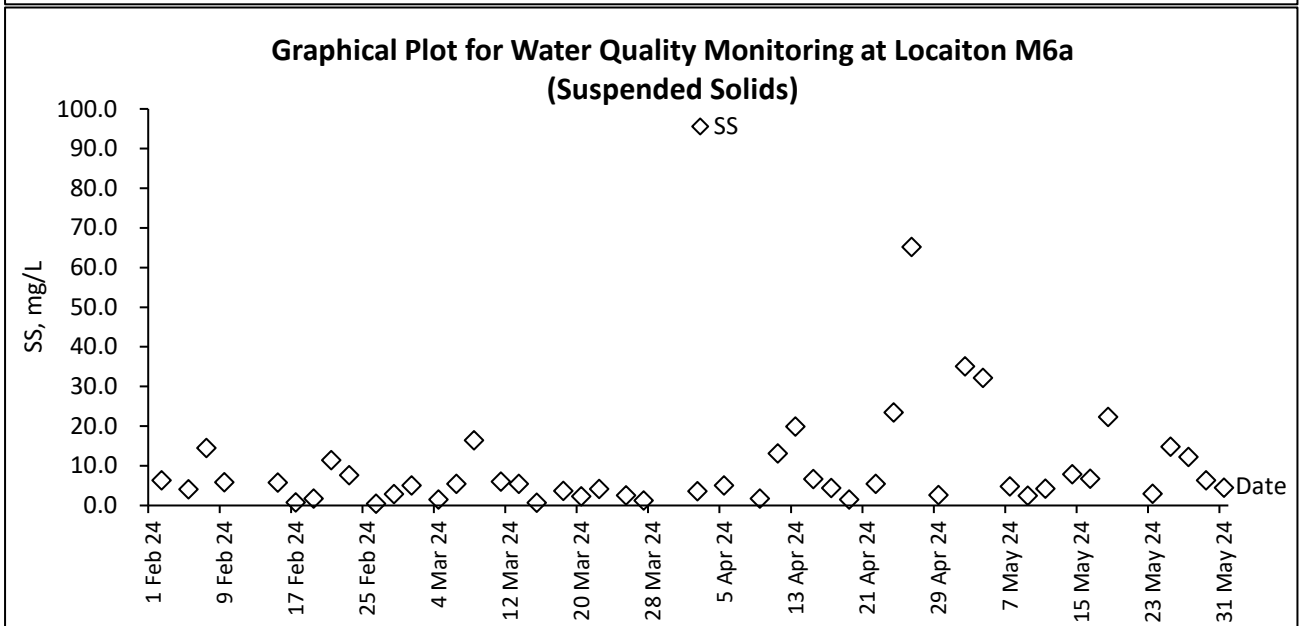
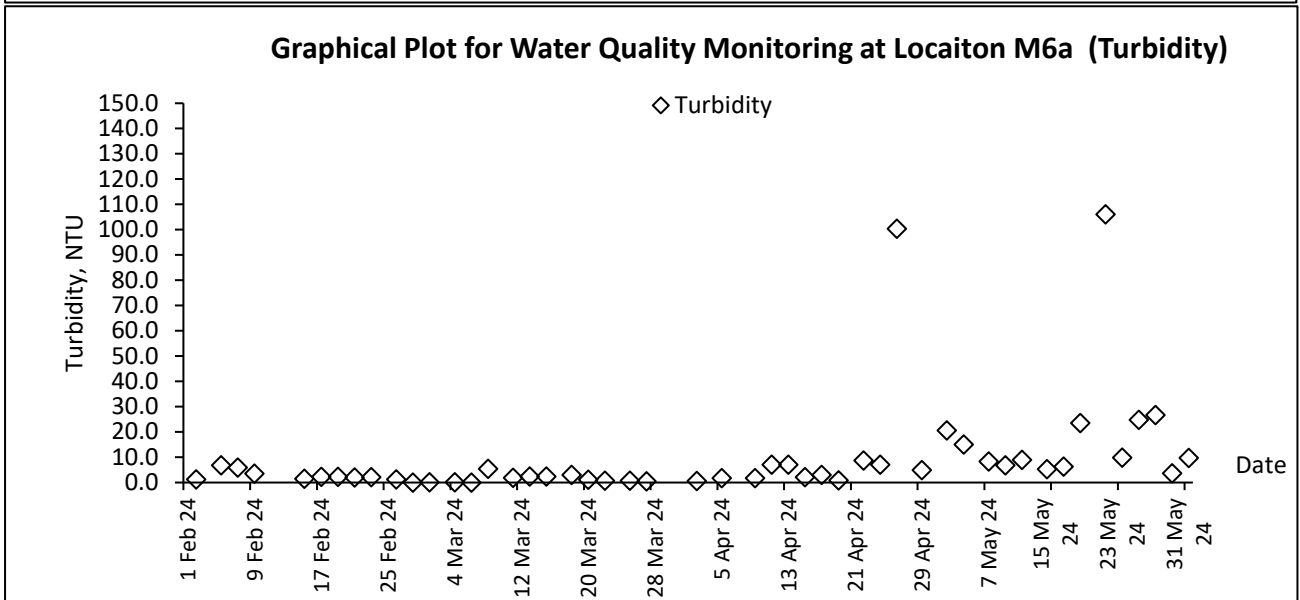
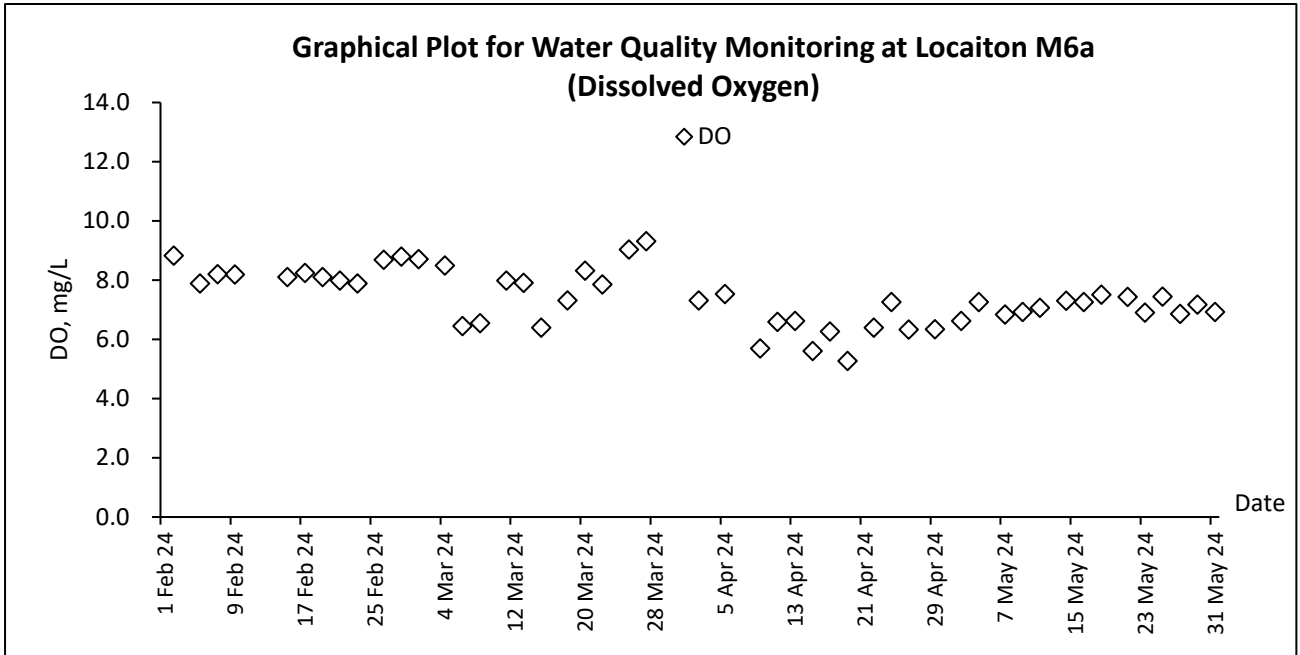


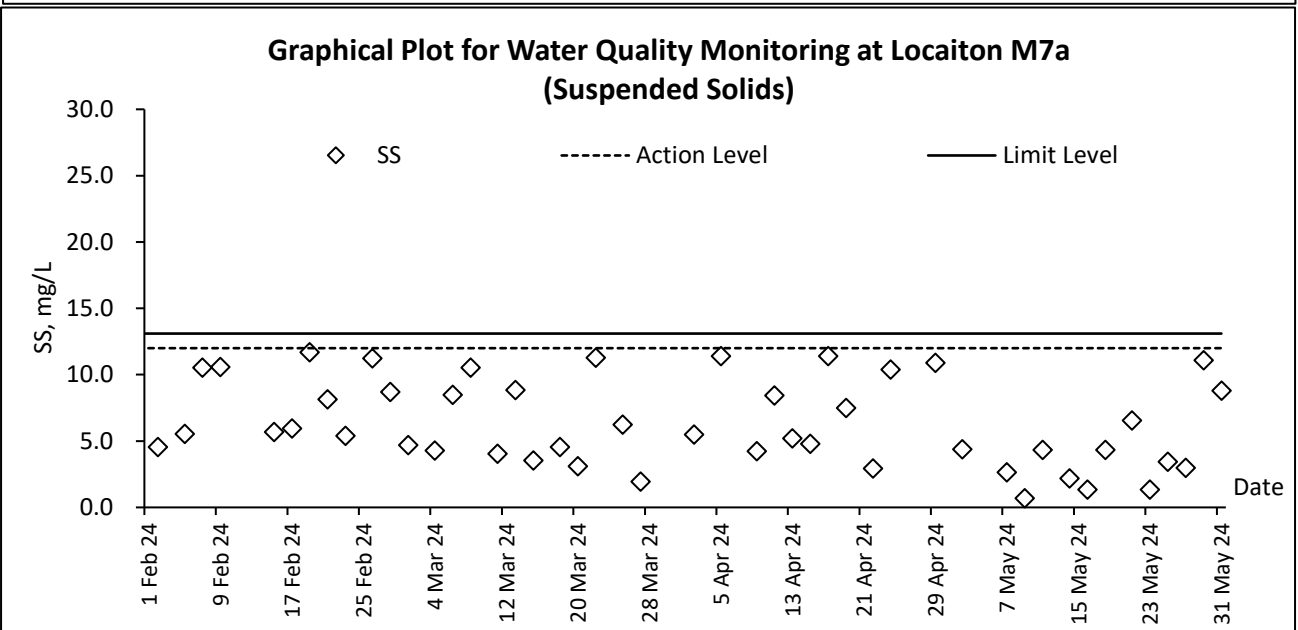
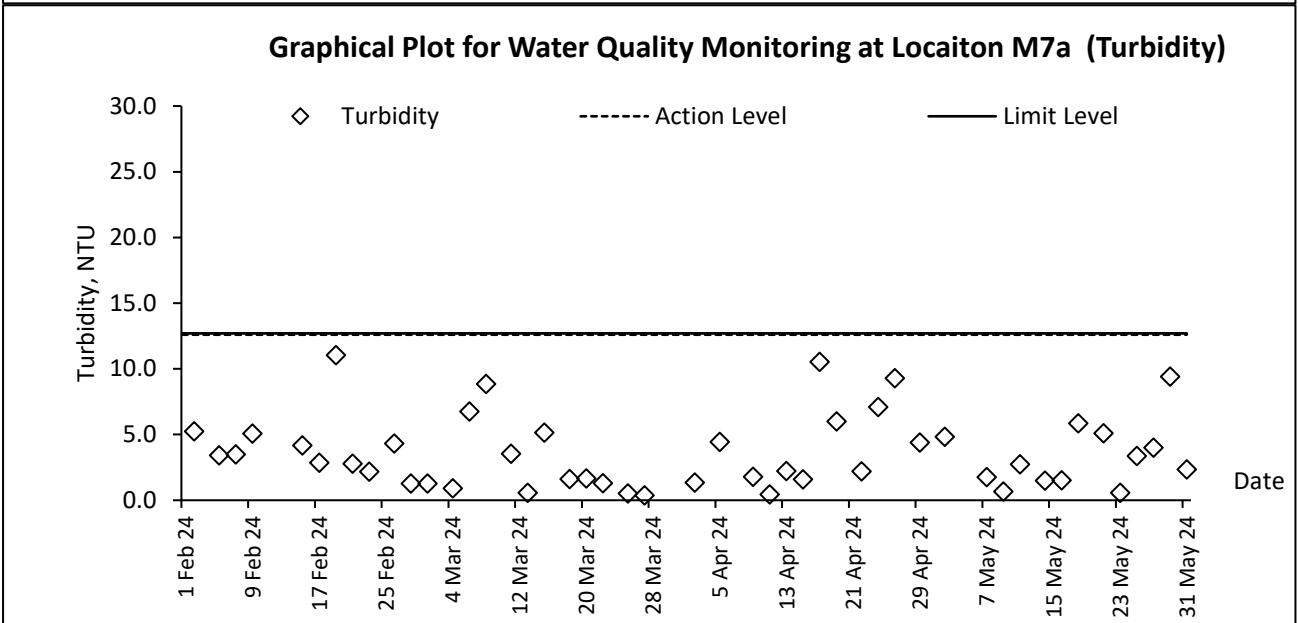
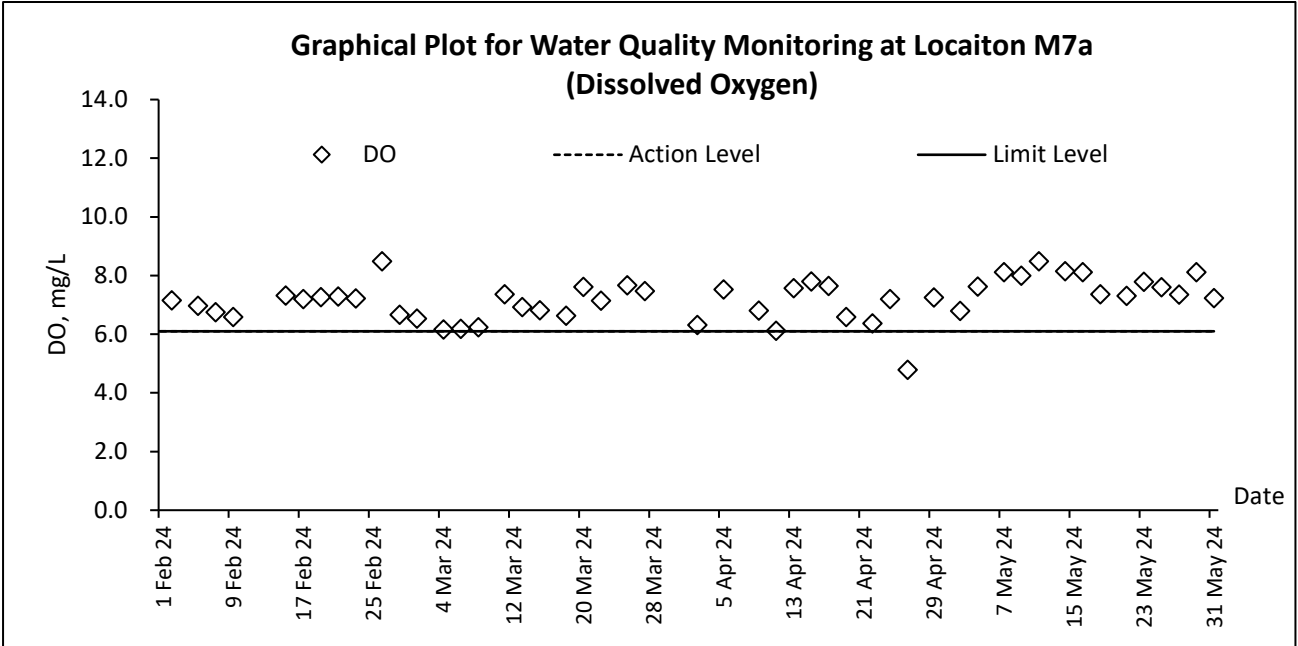


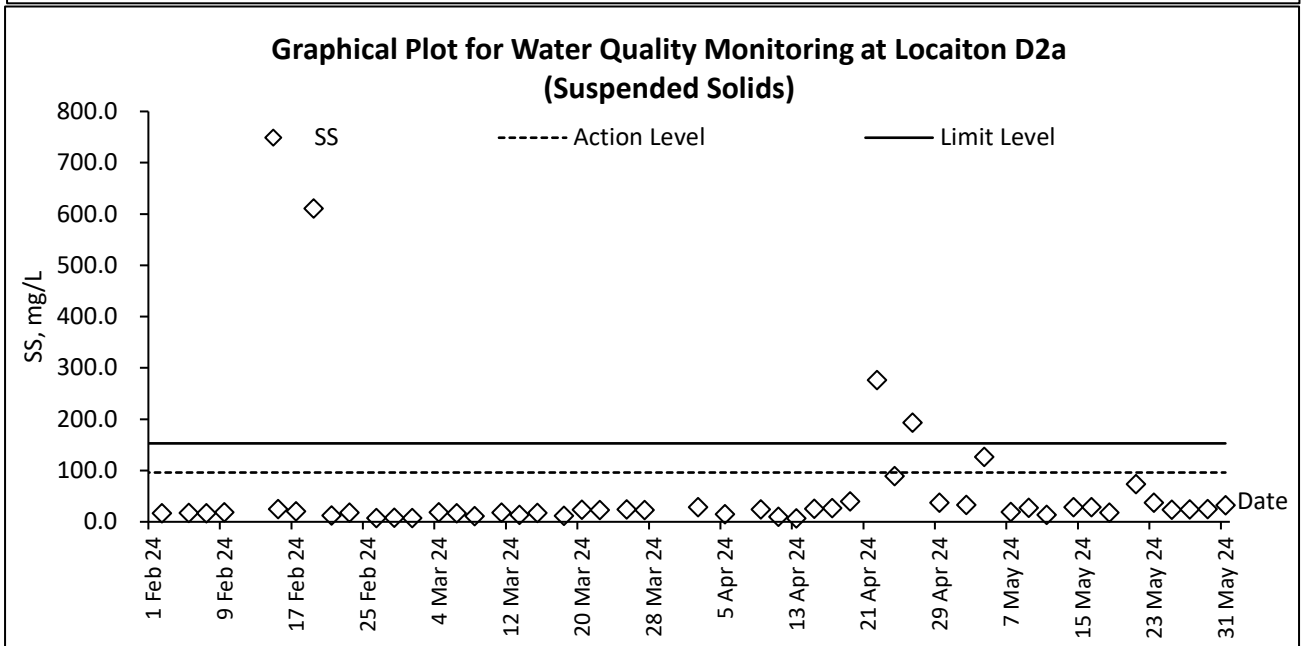
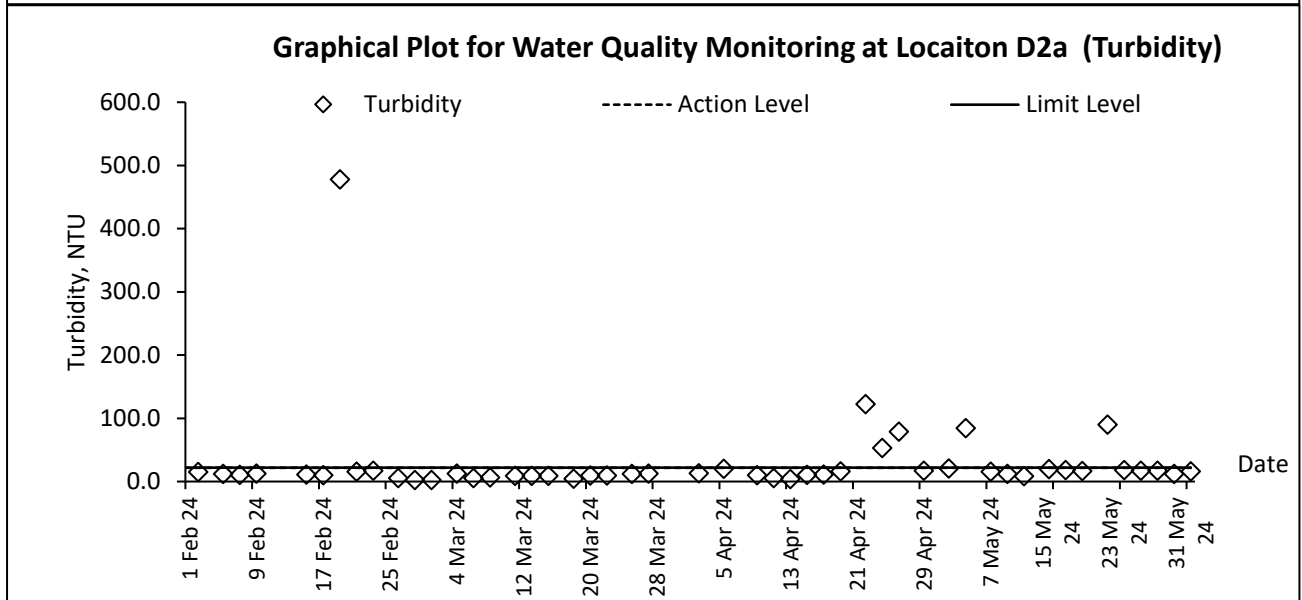
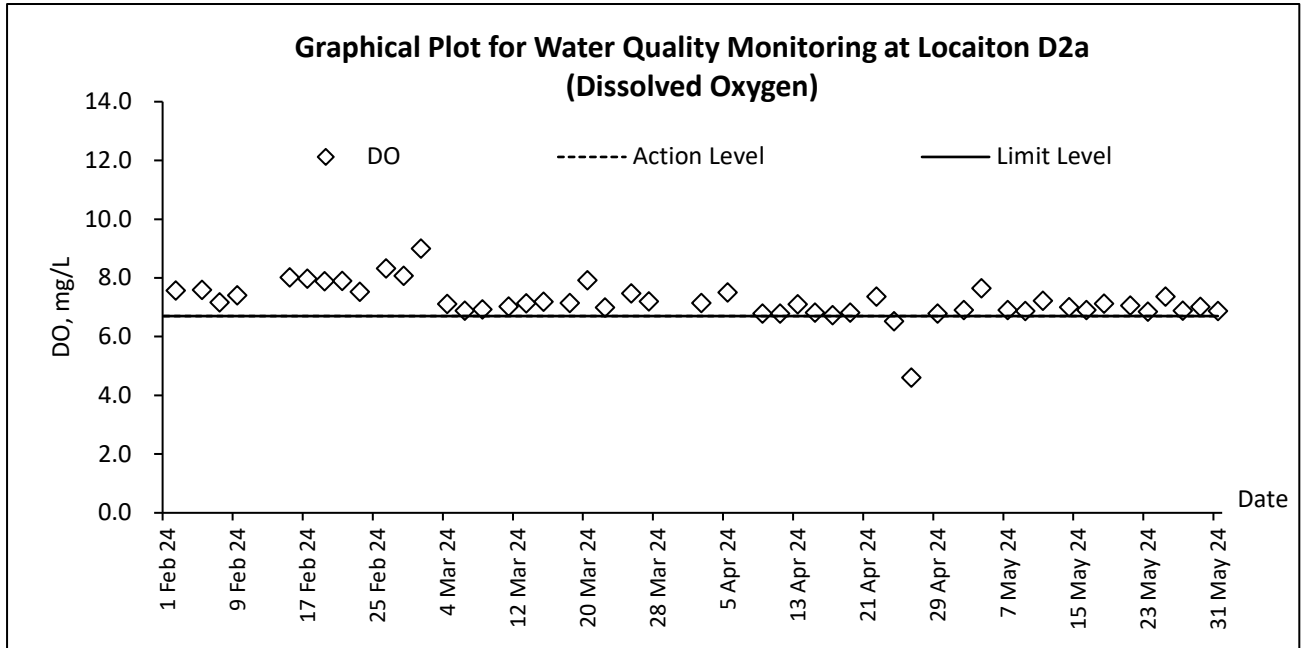


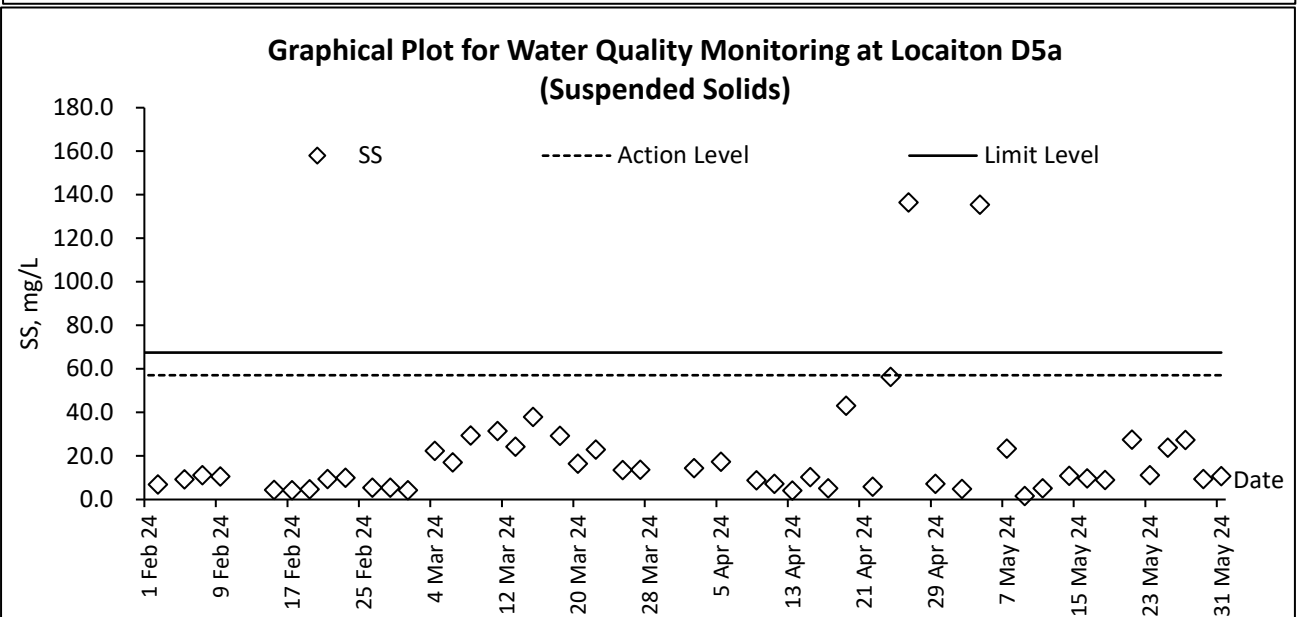
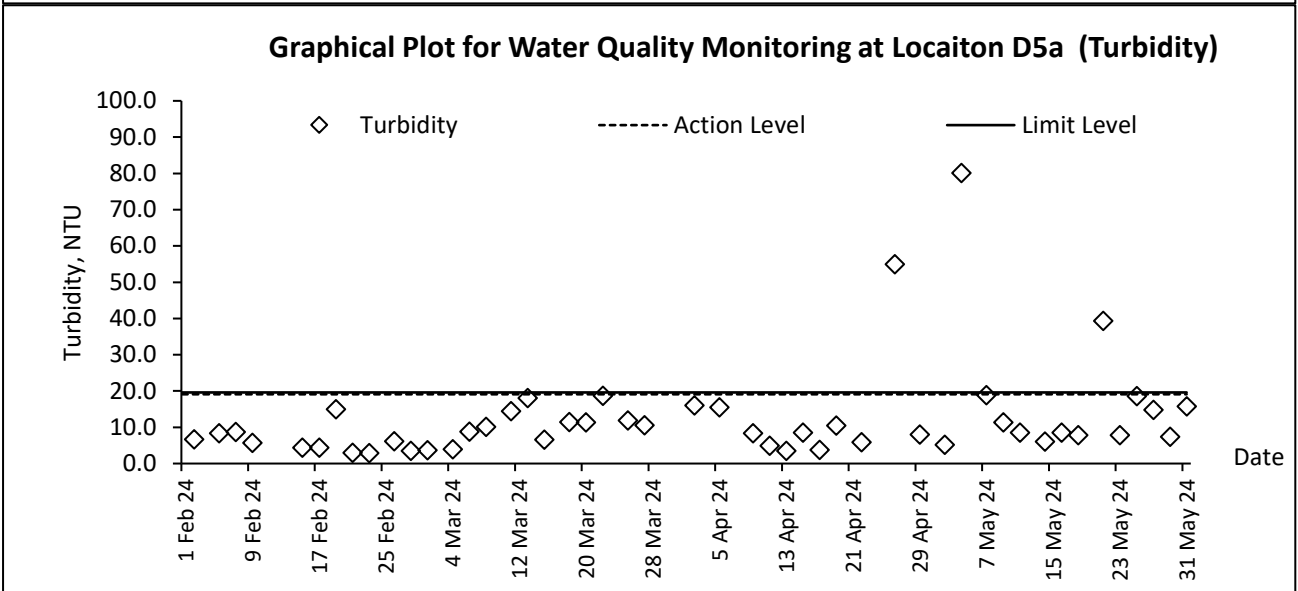
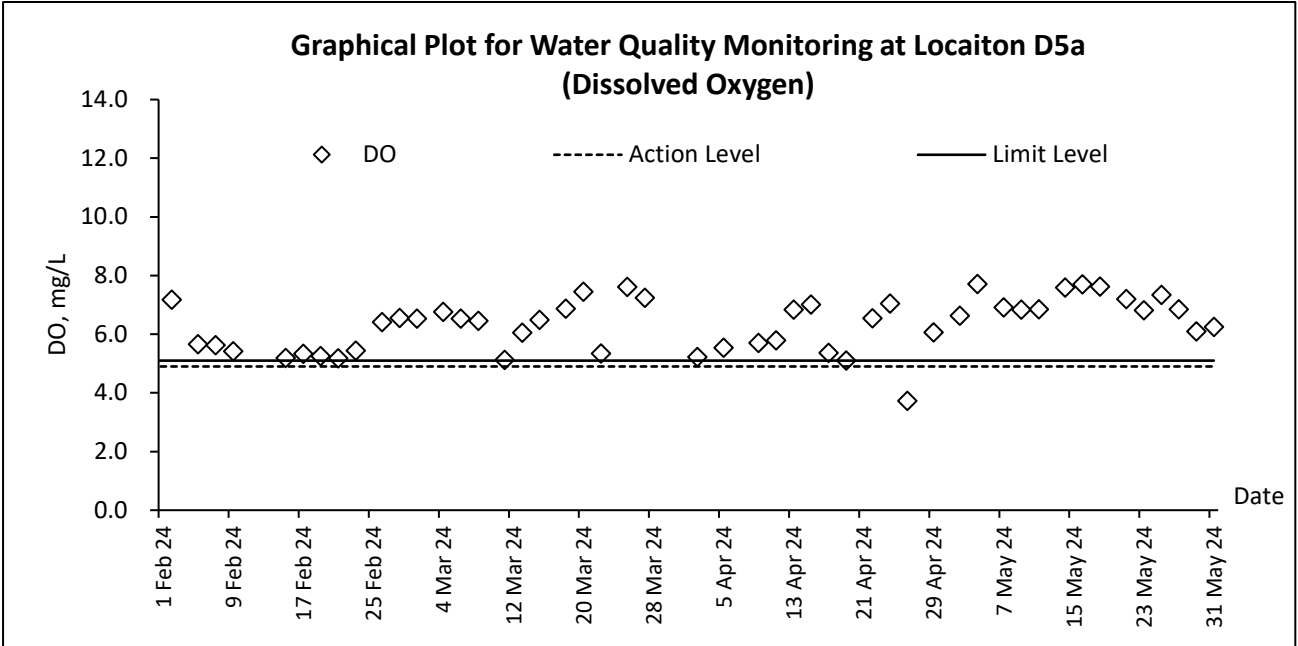












Appendix L

Waste Flow Table

Yuen Long South Development Site Formation and
Infrastructure Works for Yuen Long South First Phase Development - Contract 1

Monthly Summary Waste Flow Table for 2024 (Year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Materials Generated Monthly				
	Total Quantity Generated	Hard Rocks & Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper / cardboard packaging	Plastics	Chemical waste	Others (general refuse)
	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)
Jan	13154.42	0.00	0.00	0.00	13139.87	0.00	0.00	0.00	0.00	14.55
Feb	4702.06	0.00	3000.00	175.08	1526.98	0.00	0.00	0.00	0.00	0.00
Mar	5076.36	0.00	400.00	2146.39	2519.09	0.00	0.00	0.00	0.00	10.88
Apr	2543.18	0.00	0.00	425.83	2089.88	0.00	0.00	0.00	0.40	27.07
May	3400.38	0.00	0.00	1137.76	2247.56	0.00	0.00	0.00	0.00	15.06
Jun										
Sub-total	28876.40	0.00	3400.00	3885.06	21523.38	0.00	0.00	0.00	0.40	67.56
July										
August										
September										
October										
November										
December										
Year - 2022	100.17	0.00	0.00	28.25	0.00	0.00	0.00	0.00	0.00	71.92
Year - 2023	25177.25	0.00	0.00	0.00	24627.56	93.07	0.08	0.05	2.82	453.68
Grand Total	54153.82	0.00	3400.00	3913.31	46150.94	93.07	0.08	0.05	3.22	593.16

- 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) Broken concrete for recycling into aggregates.
 - (4) Non-inert portion including bamboo, timber, plywood and general refuse transferred to West East New Territories (WENT) .
 - (5) Inert portion including Soil, building, debris, broken rock and concrete transferred to Tuen Mun Area 38 Fill Bank.
 - (6) Slurry and bentonite transferred to Tsung Kwan O Area 137 Fill Bank.

Name of Department: CEDD

Contract No.: YL/2021/04

Waste Flow Table for 2024 (Year)

Month	Total Quantity Generated	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-Inert C&D Wastes Generated Monthly					
		Hard Rock and Large Broken Concrete (see Note 3)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse	Yard waste
		(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in kg)	(in tonnes)	(in tonnes)
Jan	5,762.08	0.00	0.00	0.00	4,298.97	1,463.11	0.00	0.14	2.5	0.00	219.47	10.83
Feb	8,151.41	0.00	0.00	0.00	6,250.55	1,900.86	27.61	0.29	3.1	0.00	52.99	0.00
Mar	10,460.16	0.00	0.00	0.00	8,503.54	1,956.62	0.00	0.00	0.0	0.00	229.35	0.00
Apr	6,997.25	0.00	0.00	0.00	6,997.25	0.00	0.70	330.00	10.6	0.00	174.87	10.02
May	2,898.11	0.00	0.00	0.00	2,898.11	0.00	0.00	310.00	0.0	0.00	73.89	0.00
June	0.00											
Sub-total	34,269.01	0.00	0.00	0.00	28,948.42	5,320.59	28.31	640.43	16.21	0.00	750.57	20.85
July	0.00											
Aug	0.00											
Sept	0.00											
Oct	0.00											
Nov	0.00											
Dec	0.00											
Sub-total	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.00	0.00
Total	34,269.01	0.00	0.00	0.00	28,948.42	5,320.59	28.310	640.43	16.210	0.00	750.57	20.85

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) Broken concrete for recycling into aggregates.
- (4) Assume 1 liter of lubricant oil is equivalent 0.88 kilogram

Monthly Summary Waste Flow Table for 2024 (year)

Name of Person completing the record: Calvin So (EO)

Project : Site Formation and Infrastructure Works for Yuen Long South First Phase Development – Contract 3

Contract No.: YL/2022/01

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 '000 m ³)
Jan	4.421	0.000	0.000	0.000	3.703	0.000	0.000	0.000	0.000	0.000	0.718
Feb	1.562	0.000	0.000	0.000	0.408	0.762	0.000	0.030	0.004	0.000	0.358
Mar	3.512	0.000	0.000	0.000	2.406	0.215	0.008	0.000	0.013	0.000	0.870
Apr	9.042	0.000	0.000	0.000	6.561	0.000	0.000	0.000	0.000	0.000	2.481
May	20.482	0.000	0.000	0.000	4.093	0.000	0.007	0.007	0.005	15.000	1.370
Jun											
Sub-total	39.019	0.000	0.000	0.000	17.171	0.977	0.015	0.037	0.022	15.000	5.798
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	39.019	0.000	0.000	0.000	17.171	0.977	0.015	0.037	0.022	15.000	5.798

Note:

1. For non-inert portion of C&D material, assume the density of 1 m³ general refuse is equal to 200 kg.
2. For inert portion of C&D material, assume 6 m³ per each full-filled dump truck.
3. All values are round off to the third decimal places.

Appendix M

Environmental Complaints Log

Environmental Complaint Log

Log ref.	Date of Complaint	Complaint Route	Complaint Nature	Investigation finding	Status

Appendix N

Implementation Schedule for Environmental Mitigation Measures

Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
<i>Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)</i>									
<i>Construction Dust Impact</i>							C1	C2	C3
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and EIAO-TM criteria 	√ The Contractor was reminded to spray water regularly at haul road.	√	√ The Contractor was reminded to spray water regularly at haul road.
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and EIAO-TM criteria 	√	√	√
S4.4.6	D3	<p>The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase:</p> <ul style="list-style-type: none"> • 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 	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and EIAO-TM criteria 	√ The Contractor should cover cement bags properly to reduce dust impact. The Contractor should provide NRMM label for excavator.	√	√ The Contractor should provide NRMM label for generator..

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)									
Construction Dust Impact							C1	C2	C3
		<p>stockpile is removed should be wetted with water and cleared from the surface of roads;</p> <ul style="list-style-type: none"> • A stockpile of dusty material should not be extended 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 hardcore; • 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; 					The Contractor should cover the sandy stockpile properly to reduce dust impact.		

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
<i>Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)</i>									
<i>Construction Dust Impact</i>							C1	C2	C3
		<ul style="list-style-type: none"> • 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; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be 							

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)									
Construction Dust Impact							C1	C2	C3
		<p>covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;</p> <ul style="list-style-type: none"> • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 							
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	EIAO-TM	√	√	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
Construction Noise									
S5.5.3	N1	<p>Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria.</p> <p>1. Good site management practices</p> <ul style="list-style-type: none"> • 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, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. <p>2. Use of quiet plant</p>	Control construction noise impacts	Contractor	All construction sites	EIAO-TM	√	√	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
Construction Noise									
		<p>Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department (EPD) web pages.</p> <p>3. Installation of movable temporary noise barrier</p> <ul style="list-style-type: none"> • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m² on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. <p>4. Setup of liaison group</p> <ul style="list-style-type: none"> • Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures. 							
S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	EIAO-TM	√	√	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
<i>Water Quality (Construction Phase)</i>							C1	C2	C3
S6.8.1.2	W1	<p><u>General Construction Activities</u></p> <p>In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below:</p> <ul style="list-style-type: none"> 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. 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; 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 minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ 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 where the 	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 EIAO-TM TM-DSS 	√	√ The Contractor should cover sandy stockpile properly to prevent muddy water runoff.	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
<i>Water Quality (Construction Phase)</i>							C1	C2	C3
		<p>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;</p> <ul style="list-style-type: none"> • 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 minimise 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 							

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
<i>Water Quality (Construction Phase)</i>							C1	C2	C3
		<p>and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas;</p> <ul style="list-style-type: none"> • 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) 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 to 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 summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the 							

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
<i>Water Quality (Construction Phase)</i>							C1	C2	C3
		<p>control of silty surface runoff during storm events;</p> <ul style="list-style-type: none"> 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; <p>Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts;</p>							

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
<i>Water Quality (Construction Phase)</i>							C1	C2	C3
		<ul style="list-style-type: none"> 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;and 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 water bodies, mangroves and open sea. 							
S6.8.1.4	W2	<p><u>Prevention of Accidental Spillage of Chemicals</u></p> <ul style="list-style-type: none"> The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste 	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	<ul style="list-style-type: none"> Water Pollution Control Ordinance Waste Disposal (Chemical Waste) (General) Regulation 	√	√	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
Water Quality (Construction Phase)							C1	C2	C3
		from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.							
S6.8.1.7	W3	<p><u>Sewage from workforce</u></p> <ul style="list-style-type: none"> • Portable chemical toilets and sewage holding tanks are recommended 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. 	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Water Pollution Control Ordinance TM-DSS	√	√	√
S6.8.1.9	W4	<p><u>Contaminated Groundwater and Site Runoff</u></p> <p>To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted.</p>	To minimise water quality impact from contaminated groundwater	Contractor	All construction sites where practicable	TM-DSS	√	√	√ The Contractor should provide mitigation measures

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							C1	C2	C3
Water Quality (Construction Phase)							C1	C2	C3
		<ul style="list-style-type: none"> Cover the contaminated soil and surface to prevent the generation of contaminated water. No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD. 	in construction phase						to prevent muddy water runoff.
S6.8.1.10	W5	<u>Construction Works of near/ within Watercourses</u> <ul style="list-style-type: none"> Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the flow of the nullah from the construction works area. The detailed design of the cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 “Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System” 	To avoid any direct water quality impact to existing watercourses	Contractor	All construction sites where practicable	<ul style="list-style-type: none"> ETWB TC (Works) No. 5/2005 	√	√	√

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<i>Water Quality (Construction Phase)</i>							C1	C2	C3
		<p>for DSD approval, in order to formulate feasible options of these temporary structure.</p> <ul style="list-style-type: none"> • Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin. • Construction debris and spoil should be covered with tarpaulin during storage. Timely removal of materials away from the site for disposal should be arranged to avoid being washed into the nearby watercourses. • Water pumps should be used to collect any wastewater and construction site surface runoff within the cofferdam/ temporary works platform. The collected wastewater shall be properly treated before discharge. • Toe-board and bunds shall be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. Any temporary works site inside the watercourses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water quality. • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies. 							

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							C1	C2	C3
Water Quality (Construction Phase)							C1	C2	C3
		<ul style="list-style-type: none"> Construction effluent, site run-off and sewage should be properly collected and/or treated. 							
S6.8.1.11	W6	<p><u>Removal/ Diversion of watercourses</u></p> <ul style="list-style-type: none"> Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area. Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low. Water drained from the watercourse shall be diverted to new/ temporary drainage for watercourse diversion. For watercourse removal, the water drained shall be collected and treated to meet the requirements of WPCO and TM- DSS before discharge. Any excavated land-based sediment from the removal/ diversion of watercourse shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site. 	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS ETWB TC (Works) No. 5/2005 ProPECC PN1/94 	√	√	√
S6.8.1.12	W7	<u>Removal/ Filing of ponds</u>	To avoid water quality impact on	Contractor	All construction	ProPECC PN1/94	NA	NA	√

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<i>Water Quality (Construction Phase)</i>							C1	C2	C3
		<ul style="list-style-type: none"> Dewatering shall be conducted prior to the construction works to prevent water overflow to the surrounding area. Water drained from the ponds shall be collected in appropriate temporary storage tank and reuse on-site as far as practicable. Surplus drained water shall be properly disposal at STW. No direct discharge to stormwater drainage system or marine water should be allow. Any excavated land-based sediment from the ponds shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site. 	existing watercourses to be retained		sites where practicable				

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
Ecology (Construction Phase)							C1	C2	C3
S8.6.6	EC7	Precautionary surveys to check for presence of any aquatic fauna species of conservation importance in the watercourses to be directly impacted before commencement of works; affected aquatic fauna of conservation importance shall be captured and translocated to suitable receptor site(s)	To minimise direct impacts on aquatic species of conservation importance	CEDD/ Contractor	All affected watercourses Before commencement of construction works	EIAO-TM	√	√	√
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas Before commencement of construction works	EIAO-TM	√	√	√
S8.6.2	EC9	To designate 15m wide buffer on both sides of the retained watercourses; the protected zones will be maintained and properly protected by solid barriers throughout the construction phase Aquatic faunal monitoring on monthly basis shall be conducted when there are construction activities within 100m of the three retained watercourses in Area 1 and Area 3 and the new watercourse along the hillside of the western boundary of Area 3.	To minimise direct construction phase impacts on retained watercourses	CEDD/ Contractor	Retained watercourses and their buffer zones, and the new hillside river Construction phase	EIAO-TM	NA	NA	NA
S8.8	EC10	Egretty location shall be checked for any evidence of occupation during the ardeid breeding season by a qualified ecologist of the ET prior to the commencement of any works activity within 250m of the egretty; to monitor regularly the conditions of the egretty and potential impacts to egretty flight-lines.	To minimise disturbance impacts to egretty	CEDD/ Contractor	Existing and all potential egretty location(s) within 250m from any works activity Before commencement of the construction	EIAO-TM	√	√	√

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							C1	C2	C3
<i>Ecology (Construction Phase)</i>							C1	C2	C3
					works and monitoring throughout the construction phase				
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualified ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas Before commencement of construction work	EIAO-TM	√	√	√
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualified ecologist with relevant experience	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas Before commencement of construction work	EIAO-TM	√	√	√
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on nearby water bodies	CEDD/ Contractor	All works areas Construction Phase	EIAO-TM	√	√	√
S8.6.6	EC14	To provide woodland mix planting of at least 1:1 compensation area ratio for the cumulative loss of approximately 2.42ha hillside woodland; the proposed woodland planting will be conducted in the proposed hillside site (~12ha) to the west of PDA. Details of woodland planting and monitoring programme will be specified in a Woodland Compensation Plan.	To adequately compensate for cumulative loss of hillside woodlands in PDA	CEDD/ Contractor	The proposed planting site (~12ha) within CA zone at the hillside site to the west of PDA	EIAO-TM	NA	NA	NA

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<i>Fisheries</i>							C1	C2	C3
S9.5.2	F1	<ul style="list-style-type: none"> To adopt the mitigation measures for the control of water quality impacts 	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	EIAO-TM	√	√	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
Landscape and Visual (Construction Phase)							√	√	√
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> <ul style="list-style-type: none"> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts. 	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas		√	√	√
S10.12 – Table 10.12.1, CM2	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support	Minimise landscape and visual impacts from topographical/ landform changes	CEDD (via Contractor)	All construction areas		√	√	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
Landscape and Visual (Construction Phase)							C1	C2	C3
		landscape and visual assimilation with the surrounding terrain.							
S10.12 – Table 10.12.1, CM3	LV3	<p>Existing trees to be retained within the Project Site should be carefully protected during construction. 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 undertaking any works adjacent to all retained trees, including trees in contractor's works areas.</p> <p>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</p>		Contractor)		<ul style="list-style-type: none"> • DEVB TCW No.7/2015; • ETWB TCW No.29/2004 	√	√	√
S10.12 – Table 10.12.1, CM4	LV4	<p><u>Transplanting of Existing Trees</u></p> <p>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.</p> <p>A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work.</p> <p>For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected</p>	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	<ul style="list-style-type: none"> • DEVB TCW No.6/2015; • DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13 	√	√	√

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							C1	C2	C3
Landscape and Visual (Construction Phase)							C1	C2	C3
		and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.							
S10.12 – Table 10.12.1, CM5	LV5	<u>Screen Hoarding</u> Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas		√	√	√
S10.12 – Table 10.12.1, CM6	LV6	<u>Watercourses of higher ecological value/ Channels Protection</u> For all the watercourses of higher ecological value inside the development area, in accordance with ETWB TCW 5/2005, consideration of protection measures should be made to minimise any impacts from the construction works. Precast structures or other similar approaches will be used to prevent any construction works in river and thus to avoid any direct water quality impact. Good site management as stipulated in ProPECC PN1/94 will be fully implemented to avoid polluted liquid or solid wastes from falling into the river waters.	Avoid direct impacts to watercourses	CEDD (via Contractor)	All watercourses of higher ecological value inside the development area	<ul style="list-style-type: none"> • ETWB TCW 5/2005; • ProPECC PN1/94 	√	√	√
S10.12 – Table 10.12.1,	LV7	<u>Construction Light Control</u> All security floodlights for construction sites should be carefully controlled to minimise light pollution and	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and		√	√	√

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Landscape and Visual (Construction Phase)							C1	C2	C3
CM7		night- time glare to nearby users.			temporary works areas				
S10.12 – Table 10.12.1, CM8	LV8	<u>Woodland Conservation</u> Woodland conservation is proposed to avoid large scale of potential loss of the existing secondary woodland within the PDA	Avoid the loss of natural woodland areas	CEDD (via Contractor)	On site	<ul style="list-style-type: none"> • DEVB TCW No.7/2015; • ETWB TCW No.29/2004 	NA	NA	NA

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							C1	C2	C3
Waste Management (Construction Waste)							C1	C2	C3
S11.2.7	WM1	<p><u>Comments on C&DMMP given by PFC</u></p> <ul style="list-style-type: none"> To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision 	Enhance the management of C&D materials and to minimize their generation at source	Contractor	All construction sites	Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)	√	√	√

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							C1	C2	C3
Waste Management (Construction Waste)							C1	C2	C3
		<p>of covers and water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles;</p> <ul style="list-style-type: none"> To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the development site; To set up effective control procedures to ensure the traceability of disposal and reuse of the C&D materials; and To adopt re-usable non-timber formwork and precast concrete construction as far as practicable. 							
S11.5.1	WM2	<p><u>Good Site Practices</u></p> <p>The following good site practices are recommended throughout the construction activities:</p> <ul style="list-style-type: none"> 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; 	Minimise waste Generation during construction	Contractor	All construction sites	Waste Disposal Ordinance	√ The Contractor should dispose construction waste properly to enhance house-keeping.	√ The Contractor should dispose waste properly to enhance house-keeping. The Contractor	√ The Contractor should dispose waste properly to enhance house-keeping.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
<i>Waste Management (Construction Waste)</i>							C1	C2	C3
		<ul style="list-style-type: none"> • 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 minimise 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; <p>a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.</p>						<p>should cover sandy stockpile properly to prevent muddy water runoff.</p> <p>The Contractor should remove construction waste inside drainage system to prevent blockage.</p>	
S11.5.1	WM3	<p><u>Waste Reduction Measures</u></p> <p>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:</p> <ul style="list-style-type: none"> • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or 	Reduce waste generation	Contractor	All construction sites	Waste Disposal Ordinance	√	√	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
Waste Management (Construction Waste)							C1	C2	C3
		<p>recycling of materials and their proper disposal;</p> <ul style="list-style-type: none"> proper storage and site practices to minimise the potential for damage and contamination of construction materials; plan and stock construction materials carefully to minimise 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. 							
S11.5.1	WM4	<p><u>Storage, Collection and Transportation of Waste</u></p> <p>The following recommendation should be implemented to minimise the impacts:</p> <ul style="list-style-type: none"> waste such as soil should be handled and stored well to ensure secure containment; and depends on actual site activities, certain locations within the site area would be used for storage of waste to 	<p>Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal</p>	Contractor	All construction sites	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWBTCW No. 19/2005 			

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							C1	C2	C3
Waste Management (Construction Waste)									
		enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.							
S11.5.1	WM5	<u>Excavated Sediment</u> The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	ETWB-TCW 34/2002	√	√	√
S11.5.1	WM6	<u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimise the impacts: <ul style="list-style-type: none"> 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; and different locations should be designated to stockpile each material to enhance reuse. 	Minimise waste impacts from storage	Contractor	All construction sites	Waste Disposal Ordinance	√	√	√
S11.5.1	WM7	<u>Site Formation and C&D Materials</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure	Minimise waste impacts from excavated and C&D materials	Contractor	All construction	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance 			

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							C1	C2	C3
Waste Management (Construction Waste)							C1	C2	C3
		<p>acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:</p> <ul style="list-style-type: none"> • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and <p>implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.</p>				<ul style="list-style-type: none"> • Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition 			
S11.5.1	WM8	<p><u>Chemical Waste</u></p> <p>If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in</p>	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	<ul style="list-style-type: none"> • Waste Disposal (Chemical Waste) General Regulation • Code of Practice on the Packaging, Labelling and Storage of 	√	√	√

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							C1	C2	C3
Waste Management (Construction Waste)							C1	C2	C3
		accordance with the Waste Disposal (Chemical Waste) (General) Regulation.				Chemical Waste			
S11.5.1	WM9	<p><u>Asbestos Containing Materials</u></p> <p>Some key precautionary measures related to the handling and disposal of asbestos are listed as below.</p> <ul style="list-style-type: none"> • Adoption of protection, such as full containment, mini containment, or segregation of work area; • Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area; • Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping 	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	<ul style="list-style-type: none"> • Handling of Asbestos Containing Materials in Buildings (ProPECC PN 2/97) 	√	√	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
<i>Waste Management (Construction Waste)</i>							C1	C2	C3
		<p>and vacuuming with HEPA filtered vacuum cleaner;</p> <ul style="list-style-type: none"> • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work. 							
S11.5.1	WM10	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> • 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 	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	<ul style="list-style-type: none"> • Waste Disposal Ordinance 	√	√	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
<i>Waste Management (Construction Waste)</i>							C1	C2	C3
		a daily basis.							

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
Land Contamination							√	√	√
S12.6	LC1	<ul style="list-style-type: none"> Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP). 	Verify the land contamination potential before the commencement of construction	Project Proponent / Detailed Design Consultant / Private developer	All potentially contaminated sites as listed in the CAP	<ul style="list-style-type: none"> Annex 19 of the EIAO-TM, Guidelines for Assessment of Impact On Sites of Cultural Heritage and Other Impacts (Section 3: Potential Contaminated Land Issues); Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management; Guidance Notes for Contaminated Land Assessment and Remediation; and Practice Guide for Investigation and 	√	√	√

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							C1	C2	C3
Land Contamination									
						Remediation of Contaminated Land • Recommendations in Health Risk Assessment			
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re- appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Ditto	√	√	√
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Ditto	√	√	√

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							C1	C2	C3
Land Contamination							NA	NA	NA
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil and groundwater identified in the assessment if remediation is required	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Ditto	NA	NA	NA
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures		NA	NA	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objective of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location / Timing	Requirements and / or standards to be achieved	Implementation Status		
							C1	C2	C3
Cultural Heritage Impact (Construction and Operational Phase)							C1	C2	C3
S.13.7	CH1	<ul style="list-style-type: none"> Further archaeological surveys will be conducted upon land resumption prior to the commencement of any construction works within areas of moderate archaeological potential at three locations: area near Tin Shui Wai West Interchange, area near Tong Yan San Tsuen and area near Shan Ha Tsuen. The scope and programme of the proposed archaeological work shall be agreed with AMO. Subject to the findings of the archaeological work, appropriate mitigation measures would be proposed by the project proponent in prior agreement with AMO. For the areas with low-moderate archaeological potential, AMO should be informed immediately in case of discovery of antiquities or supposed antiquities in the course of the construction works. Agreement from AMO would be sought on the follow-up actions if required 	To assess further archaeological potential and development impacts on private land for the purpose of protecting and managing cultural heritage. Control EM&A Performance.	Project Proponent	Area near Tin Shui Wai West Interchange, area near Tong Yan San Tsuen and area near Shan Ha Tsuen to be surveyed upon land resumption and prior to construction	AMO Ordinance (Cap 53) Guidance notes on assessment of impact on sites of CH in EIA studies. EIAO (Cap 499). EIAO-TM Annexes 10 and 19. HKPSG. Guidelines for Cultural Heritage Impact Assessment	NA	NA	NA
S.13.7	CH2	<ul style="list-style-type: none"> The Grade 3 historic building of Yeung Hau temple at Tong Yan San Tsuen should be preserved via a 5m non-construction buffer with screening to prevent visitor and worker access and minimise dust during the construction phase. A site audit should be conducted at 6 month intervals during the construction phase to monitor potential direct impacts as well as indirect impacts from noise, dust, visual and vibration effects from adjacent construction works. 	Protect and manage cultural heritage. To assess further heritage impacts for the purpose of protecting built heritage and mitigating development impacts.	Project Proponent	Yeung Hau Temple (Tong Yan San Tsuen), Tang Ancestral Hall (Ha Tsuen) and 33 graves located within 100m		NA	NA	NA

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<i>Cultural Heritage Impact (Construction and Operational Phase)</i>							C1	C2	C3
		<ul style="list-style-type: none"> • Built heritage in forms of temples, ancestral halls and buildings throughout the area also offers the opportunity for incorporation of historic buildings into heritage trails or visitor areas. • The planned sewer works to the north-west of the PDA near Ha Tsuen Shi are expected to impact a narrow disturbed footprint along Tin Ha Road south of the village. The impact of these works on the declared monument, i.e. Tang Ancestral Hall locates 90m away, are expected to be nil. Thus no mitigation measures are needed. • A total of 33 graves, which none of these graves yielded dates older than 100 years (no earlier than 1930), were recorded within the 100m assessment area. The potential management measures on these graves are either retain or relocate within the development. 	Control EM&A Performance.		<p>assessment (A 5m non-construction buffer and a 6-month- interval site audit to Yeung Hau Temple will be applied during construction.</p> <p>A further study to design heritage trails or visitor Areas incorporating heritage buildings in the area is recommended to be conducted during detailed design stage. Once the idea of heritage trails is pursued, the implementation and management</p>				

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<i>Cultural Heritage Impact (Construction and Operational Phase)</i>							C1	C2	C3
					agencies shall also be identified before operation. Some of the 33 graves within 100m buffer could potentially be negotiated to relocate before the construction stage)				

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							C1	C2	C3
EM&A Project							C1	C2	C3
S14.2	EM1	<ul style="list-style-type: none"> An Independent Environmental Checker needs to be employed as per the EM&A Manual. 	Control EM&A Performance	Project Proponent	All construction sites	<ul style="list-style-type: none"> EIA Ordinance Guidance Note No.4/2010 EIAO-TM 	√	√	√
S14.2 -14.4	EM2	<p>1) An Environmental Team needs to be employed as per the EM&A Manual.</p> <p>2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.</p> <p>An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.</p>	Perform environmental monitoring & auditing	Project Proponent	All construction sites	<ul style="list-style-type: none"> EIA Ordinance Guidance Note No.4/2010 EIAO-TM 	√	√	√