

**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 – FEBRUARY 2024**

**PREPARED FOR**

**CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b>	<b>Certified By</b>
14 March 2024	TCS01267/22/600/R0145v2	 Nicola Hon (Environmental Consultant)	 Tam Tak Wing (Environmental Team Leader)

<b>Version</b>	<b>Date</b>	<b>Remarks</b>
1	12 March 2024	First Submission
2	14 March 2024	Amended according to the IEC's comments

Our Ref: TCS01267/22/300/L0148

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

Attn: Mr. Alex Chan

**15 March 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 – February 2024**

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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  
Telexmax (IEC)

Mr. Ng Kam Leung, Julian  
Mr. Nelson TAM

By email  
By email



Our Ref. : TEEM/816/24/L/066/JYT  
Job No. : TM0816-22  
Date : 15 March 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 (February 2024)**

With reference to the Monthly Environmental Monitoring and Audit (EM&A) Report – February 2024 (Issue 2) as submitted by the Environmental Team in March 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 1<sup>st</sup> to 29<sup>th</sup> February 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	24 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	11 days
Site Inspection	Site Audit for implementation of mitigation measures	Contract 1	4 events
		Contract 2	4 events
		Contract 3	4 events

### ACTION AND LIMIT (A/L) LEVELS EXCEEDANCE

ES.03 In the Reporting Period, no exceedances of air quality monitoring, construction noise (including Action Level for noise complaint). However, 2 Limit Level exceedance of water quality monitoring 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	Leq(30min) Daytime	0	0	0	--	--
Water Quality	DO	0	0	0	Not project related	Not required
	Turbidity	0	1	1		
	SS	0	1	1		

ES.04 Once the exceedances detected by ET, notification were issued to ER, Contractor and IEC with preliminary investigation and on-site observation. The Contractor subsequently carried out detailed investigation and identified the source of impact. The investigation results of exceedances revealed the exceedances on 19 Feb 2024 were unlikely due to project, as there are no piling works or pre-drilling works to be conducted along concerns section (Shan Ha Road nullah), and there was no discharge made from the construction site. The investigation results have been agreed by the RE via email communication. Nevertheless, the Contractor was reminded to fully implement the water quality mitigation measure as far as practicable during the forthcoming construction work in the Nullah.

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 transplanted trees in

the nursery site were in fair health condition, however, general refuse was found stored in the nursery site on 29 February 2024. The Contractor had promptly removed the general refuse in the following day.

- 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.

**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 dry season, 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.12 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.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 13<sup>th</sup> 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 **1<sup>st</sup> to 29<sup>th</sup> February 2024** (hereinafter called ‘the Reporting Period’).

## **1.5 REPORT STRUCTURE**

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

<b>Section 1</b>	<i>Introduction</i>
<b>Section 2</b>	<i>Project Organization and Construction Progress</i>
<b>Section 3</b>	<i>Summary of Impact Monitoring Requirements under the Contract</i>
<b>Section 4</b>	<i>Air Quality Monitoring</i>
<b>Section 5</b>	<i>Construction Noise Monitoring</i>
<b>Section 6</b>	<i>Water Quality Monitoring</i>
<b>Section 7</b>	<i>Ecology Monitoring</i>
<b>Section 8</b>	<i>Waste Management</i>
<b>Section 9</b>	<i>Site Inspections</i>
<b>Section 10</b>	<i>Environmental Complaints and Non-Compliances</i>
<b>Section 11</b>	<i>Implementation Status of Mitigation Measures</i>
<b>Section 12</b>	<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 4<sup>th</sup> 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 4<sup>th</sup> 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"> <li>Demolition works</li> <li>Ground Investigation</li> <li>Site Hoarding</li> <li>Site Clearance</li> <li>Site Formation</li> <li>Construction of drainage system</li> <li>Piling work</li> </ul>	N/A
YL/2021/04 (Contract 2)	Portion 6B: <ul style="list-style-type: none"> <li>Site clearance</li> </ul> Portion 11: <ul style="list-style-type: none"> <li>Trail TAM Grout</li> </ul> Portion 11A: <ul style="list-style-type: none"> <li>Demolition of existing diversion wall</li> <li>Excavation works of ELS</li> <li>Backfilling works of ELS</li> </ul> For 1A: <ul style="list-style-type: none"> <li>Soil excavation</li> <li>ELS and Construction for CUT</li> </ul>	Along Nullah: (EP: EP-553/2018/A) <ul style="list-style-type: none"> <li>Pre-drill</li> <li>Road Set back works (including site clearance)</li> <li>Temporary decking installation</li> <li>Prebored Socket H-pile Installation</li> </ul> Portion 5B: (EP: EP-549/2018) <ul style="list-style-type: none"> <li>Site clearance</li> </ul>
YL/2022/01 (Contract 3)	<ul style="list-style-type: none"> <li>Site Clearance</li> <li>GI Works</li> <li>Tree Felling</li> <li>Demolition</li> <li>Decontamination</li> <li>Construction of RW12, RW30 and RW35</li> <li>Sheet Pile Installation for Box Culvert BC01</li> <li>Pre-bored H pile at Fui Sha Wai South Road and MSB Site</li> </ul>	EP-548/2018/A <ul style="list-style-type: none"> <li>Nil</li> </ul> EP-549/2018 <ul style="list-style-type: none"> <li>Nil</li> </ul> EP-550/2018/A <ul style="list-style-type: none"> <li>Nil</li> </ul> EP-551/2018/A <ul style="list-style-type: none"> <li>Nil</li> </ul>

## 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	23/09/2022	

Item	Description	License/Permit Status		
		Ref. no.	Effective Date	Expiry Date
		(Portion 1A, 1B and 2A)		
		WPN 5213-518-T1246-01 (portion3A, 3B and 3C)	23/09/2022	
4	Water Pollution Control Ordinance - Discharge License	WTP00043472-2023 (Portion 1A, 1B and 2A)	12/06/2023	30/06/2028
		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
		Case ID 494642	Application in progress	
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
5	Noise Control Ordinance – Construction Noise Permit	GW-RN1173-23 (Portion 9A)	27/10/2023	29/3/2024
		GW-RN1249-23 (Portion 11)	19/11/2023	18/02/2024
		GW-RN1281-23 (Portion 1A)	03/12/2023	31/05/2024
		GW-RW1310-23 (Portion 11A)	03/12/2023	02/03/2024
		GW-RN1379-23 (Portion 10)	27/12/2023	26/02/2024
		GW-RN0197-24 (BC01)	16/02/2024	22/04/2024

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

Item	Description	License/Permit Status		
		Ref. no.	Effective Date	Expiry Date

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-C4801-01	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
5	Noise Control Ordinance – Construction Noise Permit	GW-RN1162-23	03/11/2023	31/12/2023

### 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	3Y6502
		456658

#### 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 wing 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 <sup>3</sup> )	Limit Level (µg /m <sup>3</sup> )
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 13<sup>th</sup> 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 <sup>3</sup> )					
Station ID	Monitoring Location	Average (Range)	No. of Event	Action Level	Limit Level
DM-1	Shan Ha Tsuen House No. 613F	82 (37 – 153)	12	260	500
DM-2	Village House along Kung Um Road	39 (77 – 118)	12	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
<b>Existing Noise Sensitive Receivers</b>			
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
<b>Planned Noise Sensitive Receivers</b>			
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 NC-31	00410221
	Rion NL-52A	00620665
	Rion NL-52A	00620666
Calibrator	Rion NC-73	10655561
	Rion NC-75	34680623

#### 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 <sup>(1)</sup>	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) <sup>(2)</sup>

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 13<sup>th</sup> 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	51 – 57	4	When one documented complaint is received at anytime during the construction period	75
CM2a (*)	Village house No. 126E in Tin Lung Yuen	62 – 67	4		75
CM3	Village house at 66 Kiu Hing Road	61 – 70	4		75
CM4	Village house in Tin Liu Tsuen - Kam Fong Yuen	68 – 75	4		75
CM8a (*)	Village House in Sha Tseng Tsuen (lot no. DD1211462A)	57 – 62	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	[17B102764/17B100758]/ [EQW019]
pH meter		
Turbidimeter		
Salinometer		
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	Gradient / Impact Monitoring	Parameter			Upstream / Control Station as
		DO (mg/L)	Turbidity (NTU)	Suspended Solids (mg/L)	

(WSR)	Location	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	related WSR
S01	@M1a	1.3	1.2	106.9	131.6	242.5	273.5	U1b & U2a
	@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
<b>Remarks</b> @ 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	
<b>Remarks</b> @ Gradient Monitoring Location * Impact Monitoring Location								

## 5.6 WATER QUALITY MONITORING RESULTS

5.6.1 In the Reporting Period, a total of **eleven (11)** 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	3.8 (2.0 – 7.5)	1.3	1.2
M2a	6.7 (6.4 – 7.6)	6.4	6.3
M3	4.5 (3.1 – 7.9)	3.0	2.9
M4	6.5 (6.1 – 8.3)	6.1	6.0
U1b	4.6 (2.2 – 7.9)	No applicable for upstream and control station	
U2a	7.5 (6.4 – 8.3)	No applicable for upstream and control station	
U3	3.8 (2.7 – 7.0)	No applicable for upstream and control station	
U4a	3.8 (2.1 – 7.9)	No applicable for upstream and control station	
EIS-1a	7.6 (6.0 – 8.3)	5.4	5.4
M5a	6.0 (5.2 – 8.4)	No applicable for upstream and control station	
M6a	8.3 (7.9 – 8.8)	No applicable for upstream and control station	
D2a	7.8 (7.2 – 8.3)	6.7	6.7
M7a	7.2 (6.6 – 8.5)	6.1	6.1
D5a	5.8 (5.2 – 7.2)	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	14.6 (5.6 – 25.2)	106.9	131.6
M2a	6.4 (3.7 – 8.7)	8.4	8.5
M3	9.9 (3.2 – 20.0)	20.5	22.6
M4	5.8 (3.3 – 8.0)	30.9	35.9
U1b	33.1 (9.2 – 97.7)	No applicable for upstream and control station	
U2a	3.3 (1.2 – 6.1)	No applicable for upstream and control station	
U3	4.6 (2.4 – 12.9)	No applicable for upstream and control station	
U4a	7.6 (2.3 – 14.1)	No applicable for upstream and control station	
EIS-1a	4.7 (1.6 – 12.2)	18.9	19.2
M5a	73.6 (18.2 – 129.6)	No applicable for upstream and control station	
M6a	2.7 (0.1 – 6.9)	No applicable for upstream and control station	
D2a	53.8 (2.7 – 478.4)	21.7	22.0
M7a	4.2 (1.3 – 11.1)	12.6	12.7
D5a	6.3 (2.9 – 15.0)	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	23.8 (9.5 – 51.9)	242.5	273.5
M2a	7.8 (5.9 – 9.6)	8.7	8.8
M3	18.2 (11.6 – 25.9)	30.2	30.3
M4	9.7 (5.4 – 14.0)	18.6	20.1
U1b	48.3 (16.0 – 120.5)	No applicable for upstream and control station	
U2a	4.1 (2.6 – 6.9)	No applicable for upstream and control station	
U3	12.5 (6.1 – 29.3)	No applicable for upstream and control station	
U4a	20.4 (8.8 – 39.3)	No applicable for upstream and control station	
EIS-1a	9.6 (4.1 – 25.7)	25.8	31.9
M5a	239.9 (64.7 – 537.5)	No applicable for upstream and control station	
M6a	5.6 (0.5 – 14.6)	No applicable for upstream and control station	
D2a	70.4 (7.6 – 611.0)	96.1	152.9
M7a	8.0 (4.6 – 11.7)	12.0	13.1
D5a	7.5 (4.4 – 11.3)	57.1	67.5

5.6.2 In this Reporting Period, 4 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	0	0	0	0	0	0	0
M3	0	0	0	1	0	1	0	2	0	0
M4	0	0	0	0	0	0	0	0	0	0
D2a	0	0	0	0	0	0	0	0	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
No of Exceedance	0	0	0	2	0	2	0	4	0	0

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

Date	Station	Parameter	Exceedance	Investigation	Action
19 Feb 2024	M1a	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.

## 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 24<sup>th</sup> 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 transplanted trees in the nursery site were in fair health condition, however, general refuse was found stored in the nursery site on 29 February 2024. The Contractor had promptly removed the general refuse in the following day.

## 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 (tonnes)	Disposal Location	Quantity (tonnes)	Disposal Location	Quantity (in '000m <sup>3</sup> )	Disposal Location
Total generated C&D Materials (Inert)	0	--	0	--	0	--
Reused in this Contract (Inert)	3000.00	--	0	--	0	--
Reused in other Projects (Inert)	0	--	0	--	0	--
Disposal as Public Fill (Inert)	1526.98	Tuen Mun Area 38	6250.55	Tuen Mun Area 38	0.408	Tuen Mun Area 38

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

Type of Waste	Contract 1		Contract 2		Contract 3	
	Quantity (tonnes)	Disposal Location	Quantity (tonnes)	Disposal Location	Quantity (in '000kg / '000m <sup>3</sup> )	Disposal Location
Recycled Metal	0	--	27.61	Licensed collector	0	--
Recycled Paper / Cardboard Packing	0	--	0.29	Licensed collector	0.030	Licensed collector
Recycled Plastic	0	--	3.1	Licensed collector	0.004	Licensed collector
Chemical Wastes	0	--	0	--	0	--
General Refuses	0	--	52.99	WENT	0.358	WENT

## 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 **6<sup>th</sup>, 15<sup>th</sup>, 22<sup>nd</sup> and 28<sup>th</sup> February 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
6 <sup>th</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor should remove or cover sandy stockpile properly to reduce dust impact. (Portion 1A).</li> <li>The Contractor should provide noise acoustic mat for breaker to reduce noise impact. (Portion 1A).</li> <li>The Contractor was reminded to pay special attention on dust generation.</li> </ul>	<ul style="list-style-type: none"> <li>The sandy stockpile was covered to reduce dust impact.</li> <li>The noise acoustic mat was provided for breaker to reduce noise impact.</li> </ul>
15 <sup>th</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor was reminded to spray water at haul road to reduce dust impact.</li> </ul>	<ul style="list-style-type: none"> <li>Reminder only.</li> </ul>
22 <sup>nd</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor should remove or place chemical containers inside drip tray. (Portion 1A).</li> </ul>	<ul style="list-style-type: none"> <li>The chemical containers were removed and relocated in designated area.</li> </ul>
28 <sup>th</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor was reminded to remove or cover sandy stockpile properly to reduce dust impact.</li> <li>The Contractor was reminded to enhance house-keeping.</li> </ul>	<ul style="list-style-type: none"> <li>Reminder only.</li> <li>Reminder only.</li> </ul>

#### Contract 2

9.2.3 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 **7<sup>th</sup>, 14<sup>th</sup>, 23<sup>rd</sup> and 28<sup>th</sup> February 2024**. No non-compliance was noted.

9.2.4 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
7 <sup>th</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor should provide mitigation measure to prevent muddy water leak into drainage system.</li> </ul>	<ul style="list-style-type: none"> <li>Sand bag and geotextile has been applied to prevent muddy water leak into drainage system.</li> </ul>
14 <sup>th</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor was reminded to remove stagnant water regularly.</li> </ul>	<ul style="list-style-type: none"> <li>Reminder only.</li> </ul>
23 <sup>rd</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor should provide sandy bags to surround the drainage system to</li> </ul>	<ul style="list-style-type: none"> <li>The nullah has been blocked by sheet pile installation.</li> </ul>

Date	Findings / Deficiencies	Follow-Up Status
	prevent rock and soil runoff. (Portion 10)	(Portion 11)
28 <sup>th</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor was reminded to clean construction waste regularly to enhance house-keeping.</li> </ul>	<ul style="list-style-type: none"> <li>Reminder only.</li> </ul>

9.2.5 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**

9.2.6 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 **5<sup>th</sup>, 15<sup>th</sup>, 22<sup>nd</sup> and 29<sup>th</sup> February 2024**. No non-compliance was noted.

9.2.7 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
5 <sup>th</sup> Feb 2024	<ul style="list-style-type: none"> <li>No environmental issue was observed during site inspection.</li> </ul>	N/A
15 <sup>th</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor was reminded to spray water at haul road to reduce dust impact.</li> </ul>	<ul style="list-style-type: none"> <li>Reminder only.</li> </ul>
22 <sup>nd</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor should provide new NRMM label for excavator. (Portion 6A)</li> </ul>	<ul style="list-style-type: none"> <li>New NRMM label was displayed on the excavator.</li> </ul>
29 <sup>th</sup> Feb 2024	<ul style="list-style-type: none"> <li>The Contractor was reminded to remove or cover sandy stockpile properly to reduce dust impact.</li> <li>The Contractor was reminded to enhance house-keeping.</li> </ul>	<ul style="list-style-type: none"> <li>Reminder only.</li> <li>Reminder only.</li> </ul>

9.2.8 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 <sup>th</sup> July 2023 – 31 <sup>st</sup> January 2024	Contract 1	0	0	NA
February 2024	Contract 1	0		NA
1 <sup>st</sup> – 31 <sup>st</sup> January 2024	Contract 2	0	0	NA
February 2024	Contract 2	0		NA
1 <sup>st</sup> – 31 <sup>st</sup> January 2024	Contract 3	0	0	NA
February 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 <sup>th</sup> July 2023 – 31 <sup>st</sup> January 2024	Contract 1	0	0	NA
February 2024	Contract 1	0		NA
1 <sup>st</sup> – 31 <sup>st</sup> January 2024	Contract 2	0	0	NA
February 2024	Contract 2	0		NA
1 <sup>st</sup> – 31 <sup>st</sup> January 2024	Contract 3	0	0	NA
February 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 <sup>th</sup> July 2023 – 31 <sup>st</sup> January 2024	Contract 1	0	0	NA
February 2024	Contract 1	0		NA
1 <sup>st</sup> – 31 <sup>st</sup> January 2024	Contract 2	0	0	NA
February 2024	Contract 2	0		NA
1 <sup>st</sup> – 31 <sup>st</sup> January 2024	Contract 3	0	0	NA
February 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"> <li>• Demolition works</li> <li>• Ground Investigation</li> <li>• Site Hoarding</li> <li>• Site Clearance</li> <li>• Site Formation</li> <li>• Construction of drainage system</li> <li>• Piling works</li> </ul>	N/A
YL/2021/04 (Contract 2)	<p>For Portion 14</p> <ul style="list-style-type: none"> <li>• Soil Excavation</li> <li>• Temporary access and haul road formation</li> </ul> <p>For portion 11:</p> <ul style="list-style-type: none"> <li>• Prebored Socket H-pile installation</li> <li>• Construction of Detour Road</li> </ul> <p>For 1A:</p> <ul style="list-style-type: none"> <li>• Soil excavation</li> <li>• ELS and Construction for CUT</li> </ul> <p>For 11A:</p> <ul style="list-style-type: none"> <li>• Backfilling works of ELS</li> <li>• ELS and Construction for CUT</li> </ul>	<p>Nullah</p> <ul style="list-style-type: none"> <li>• Road Set back works</li> <li>• Site clearance (under nullah)</li> <li>• Temporary decking installation</li> <li>• Prebored Socket H-pile installation</li> <li>• Nullah Reinstatement Works</li> </ul>
YL/2022/01 (Contract 3)	<ul style="list-style-type: none"> <li>• Site Clearance</li> <li>• GI Works</li> <li>• Tree Felling</li> <li>• Demolition</li> <li>• Decontamination</li> <li>• Construction of RW12, RW30 and RW35</li> <li>• Sheet Pile Installation for Box Culvert BC01</li> <li>• Pre-bored H pile at Fui Sha Wai South Road and MSB Site</li> <li>• ELS Construction for Subway M</li> </ul>	<p>EP-548/2018/A</p> <ul style="list-style-type: none"> <li>• Nil</li> </ul> <p>EP-549/2018</p> <ul style="list-style-type: none"> <li>• Nil</li> </ul> <p>EP-550/2018/A</p> <ul style="list-style-type: none"> <li>• Bored pile construction for Bridge F</li> </ul> <p>EP-551/2018/A</p> <ul style="list-style-type: none"> <li>• Nil</li> </ul>

### 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 **1<sup>st</sup> to 29<sup>th</sup> February 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, 2 Limit Level exceedances recorded for water quality monitoring. Once the exceedances detected by ET, notification were issued to ER, Contractor and IEC with preliminary investigation and on-site observation. The Contractor subsequently carried out detailed investigation and identified the source of impact. The investigation results of exceedances revealed the exceedances on 19 Feb 2024 were unlikely due to project, as there are no piling works or pre-drilling works to be conducted along concerns section (Shan Ha Road nullah), and there was no discharge made from the construction site. The investigation results have been agreed by the RE via email communication. Nevertheless, the Contractor was reminded to fully implement the water quality mitigation measure as far as practicable during the forthcoming construction work in the Nullah.
- 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 transplanted trees in the nursery site were in fair health condition, however, general refuse was found stored in the nursery site on 29 February 2024. The Contractor had promptly removed the general refuse in the following day.
- 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.

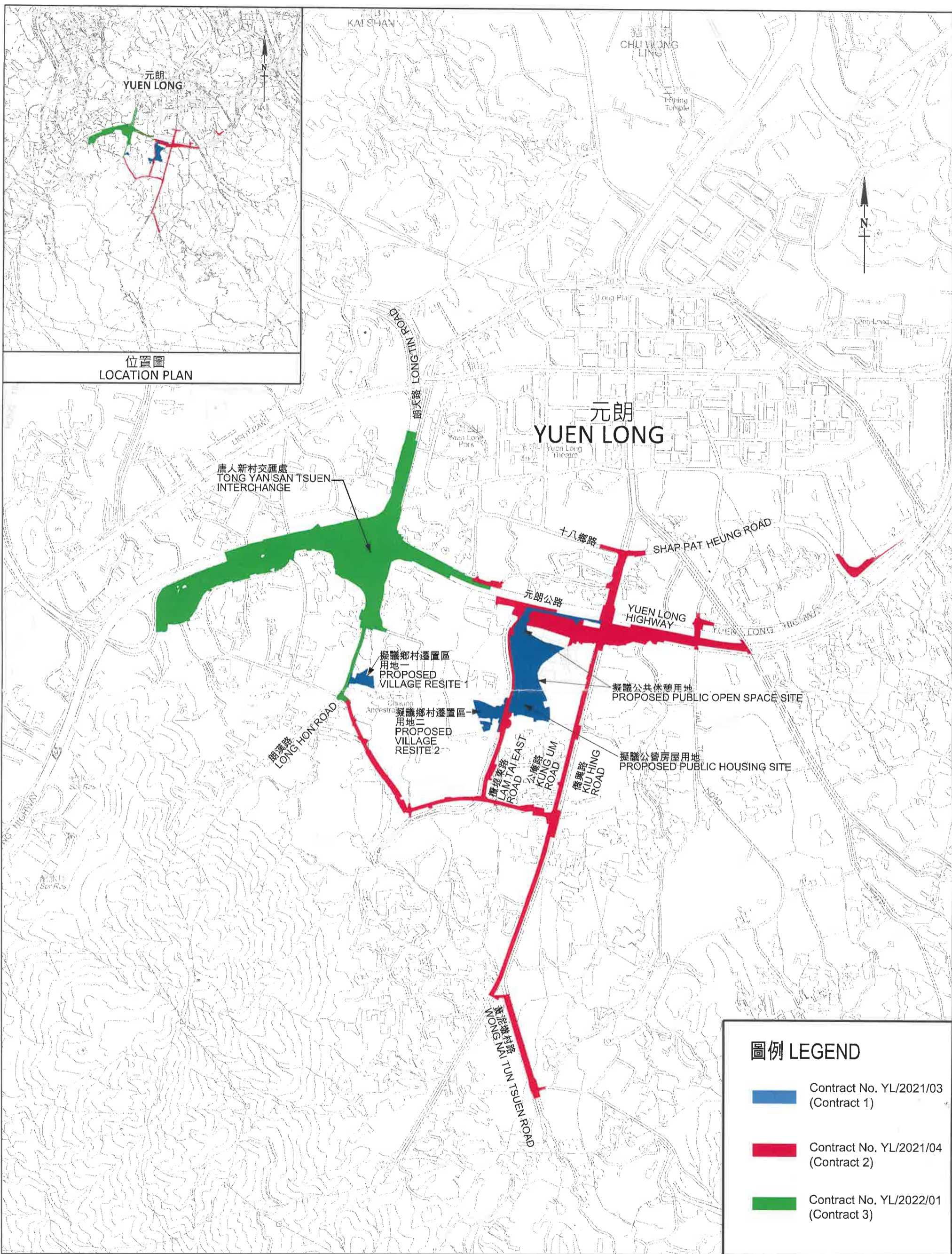
### **12.2 RECOMMENDATIONS**

- 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**

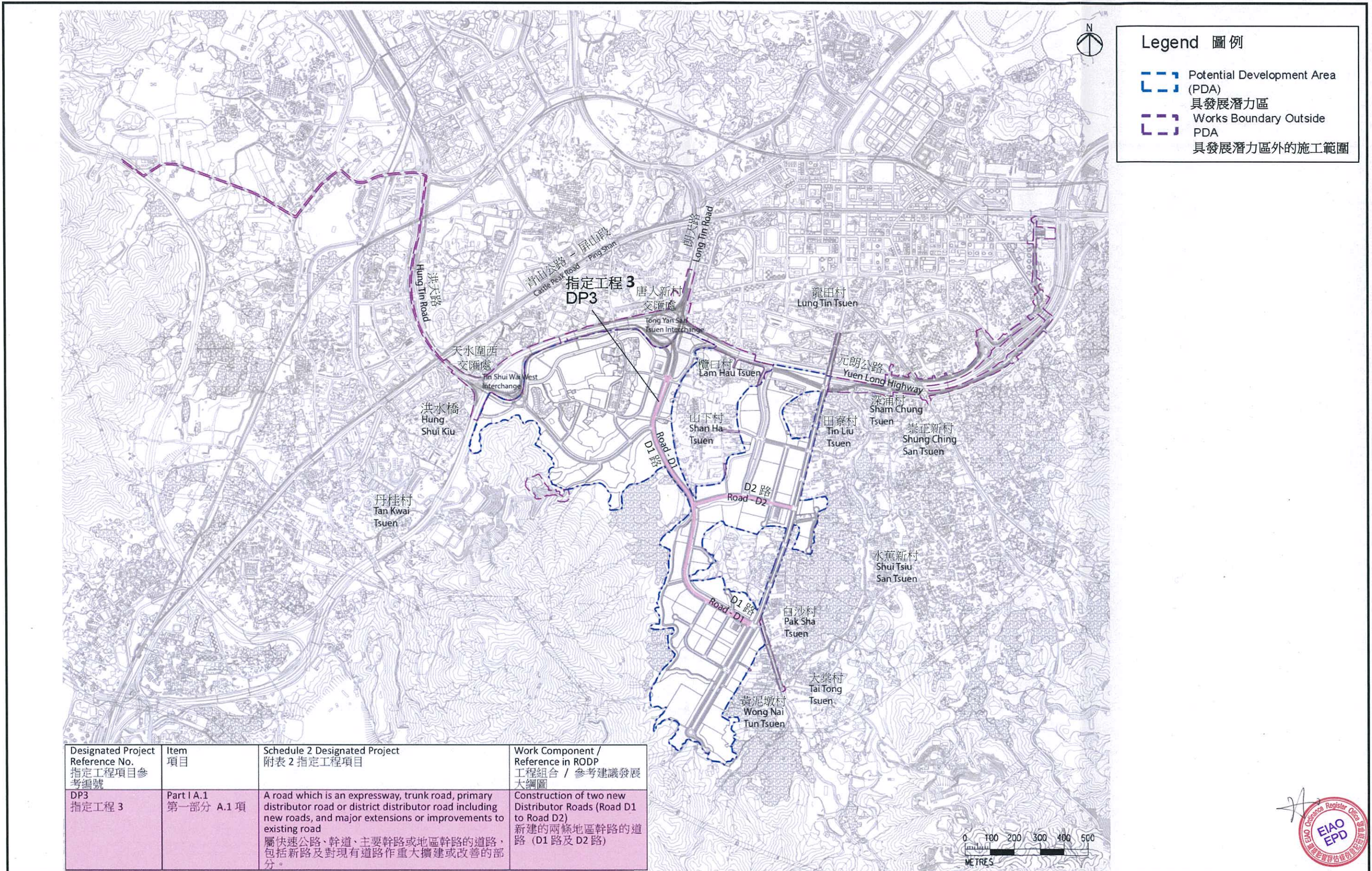


# CONSTRUCTION CONTRACTS UNDER YUEN LONG SOUTH FIRST PHASE DEVELOPMENT

**Appendix B**

**Schedule 2 Designated Projects**

**under YLS First Phase Development**

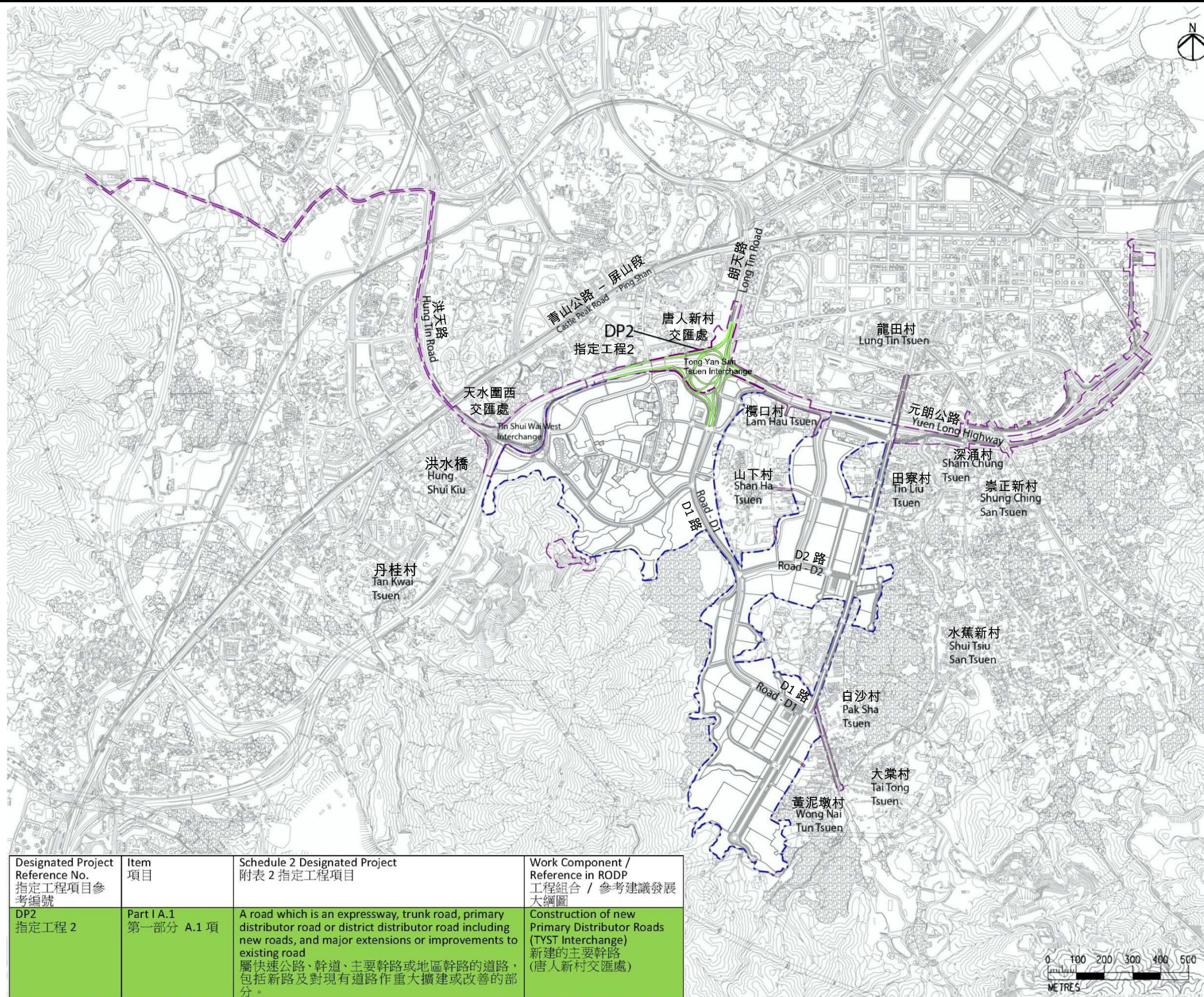


Project Title: Construction of Two New District Distributor Roads (Road D1 to Road D2) for Housing Sites in Yuen Long South  
 工程項目名稱：元朗南房屋用地新建的兩條地區幹路 (D1 路 - D2 路)

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

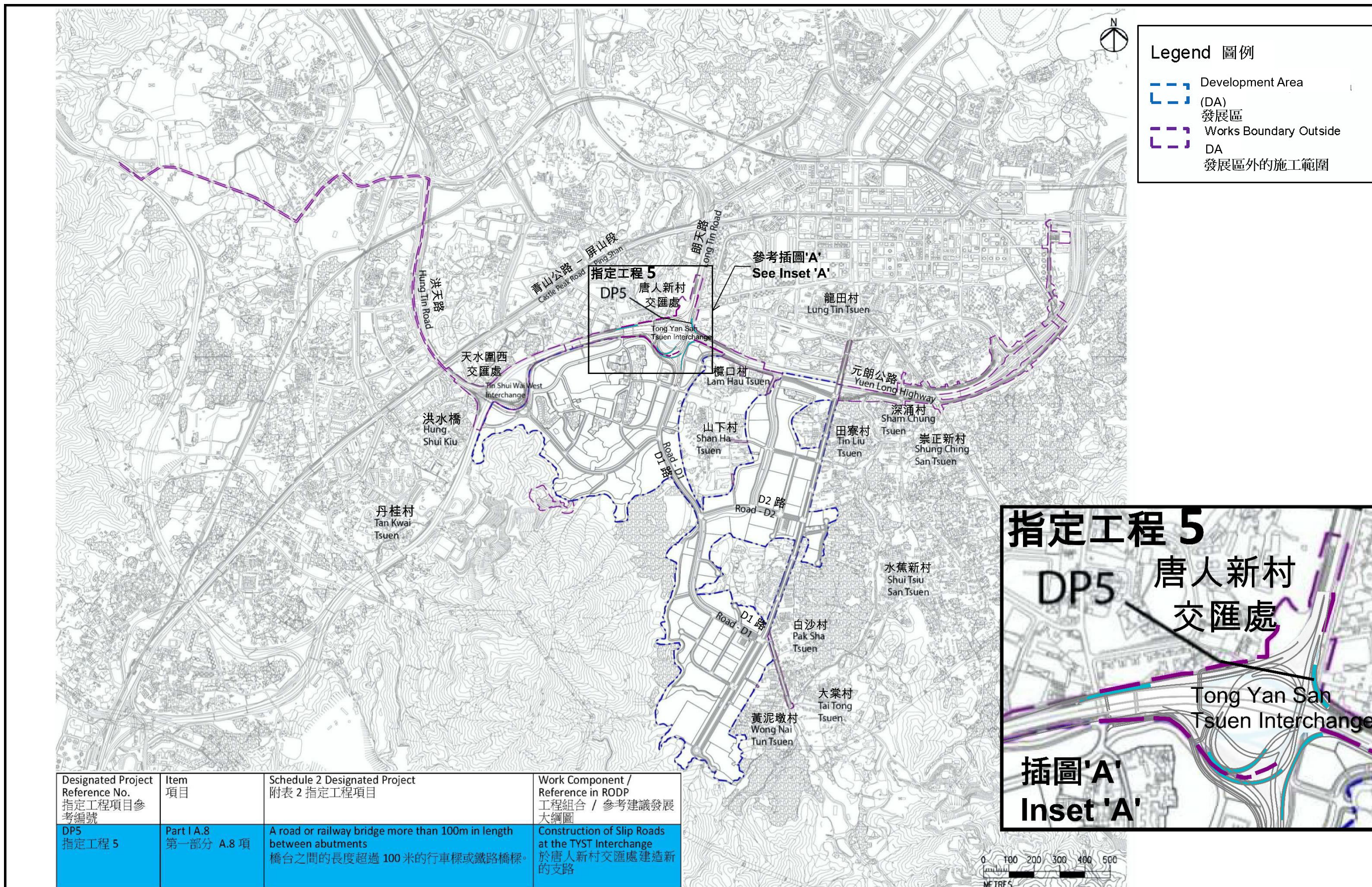
Designated Project Reference No. 指定工程項目參考編號	Item 項目	Schedule 2 Designated Project 附表 2 指定工程項目	Work Component / Reference in RODP 工程組合 / 參考建議發展大綱圖
DP2 指定工程 2	Part I A.1 第一部分 A.1 項	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and 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





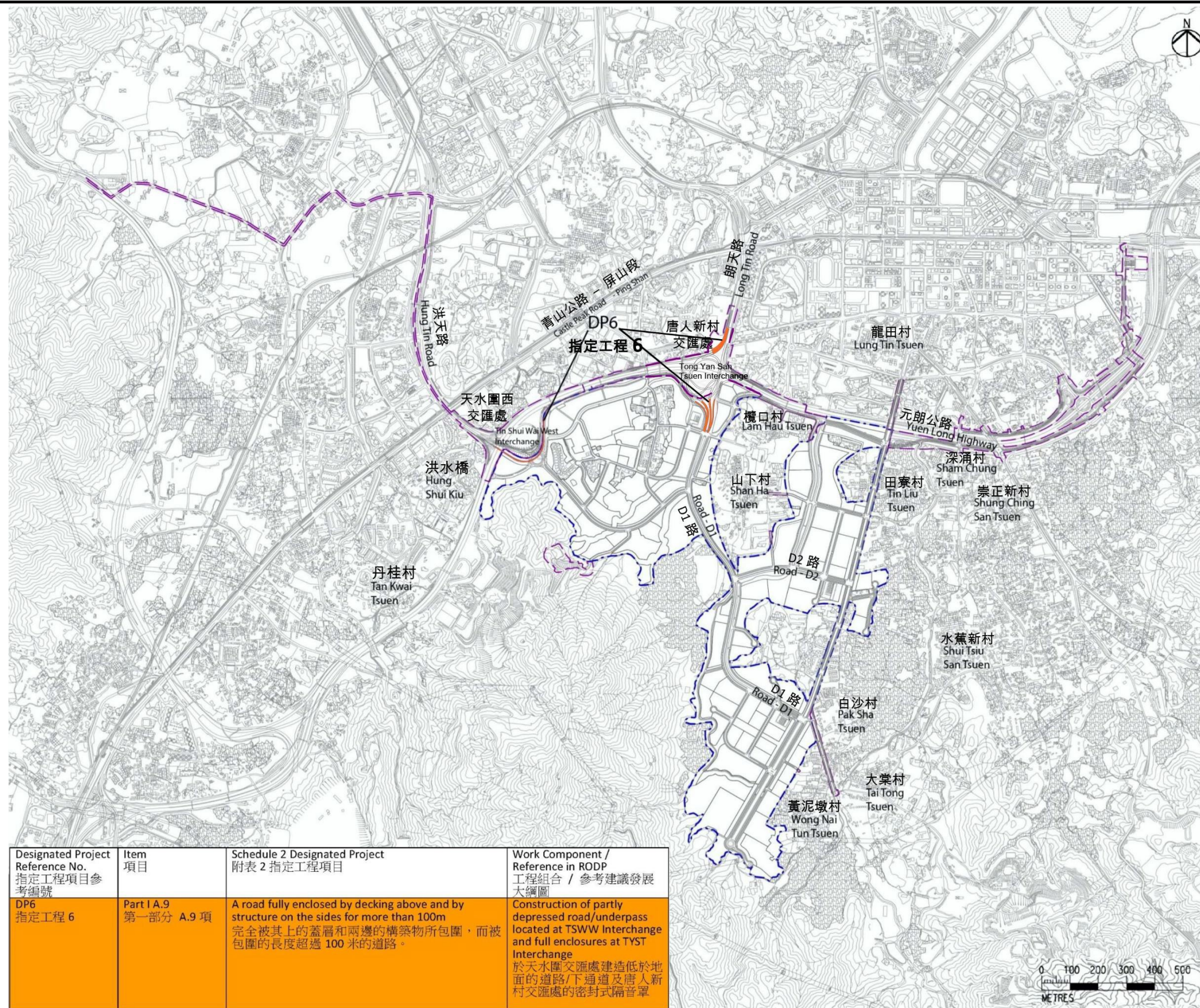
Designated Project Reference No. 指定工程項目參考編號	Item 項目	Schedule 2 Designated Project 附表 2 指定工程項目	Work Component / Reference in RODP 工程組合 / 參考建議發展大綱圖
DP5 指定工程 5	Part I A.8 第一部分 A.8 項	A road or railway bridge more than 100m in length between abutments 橋台之間的長度超過 100 米的行車樑或鐵路橋樑	Construction of Slip Roads at the TYST Interchange 於唐人新村交匯處建造新的支路

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





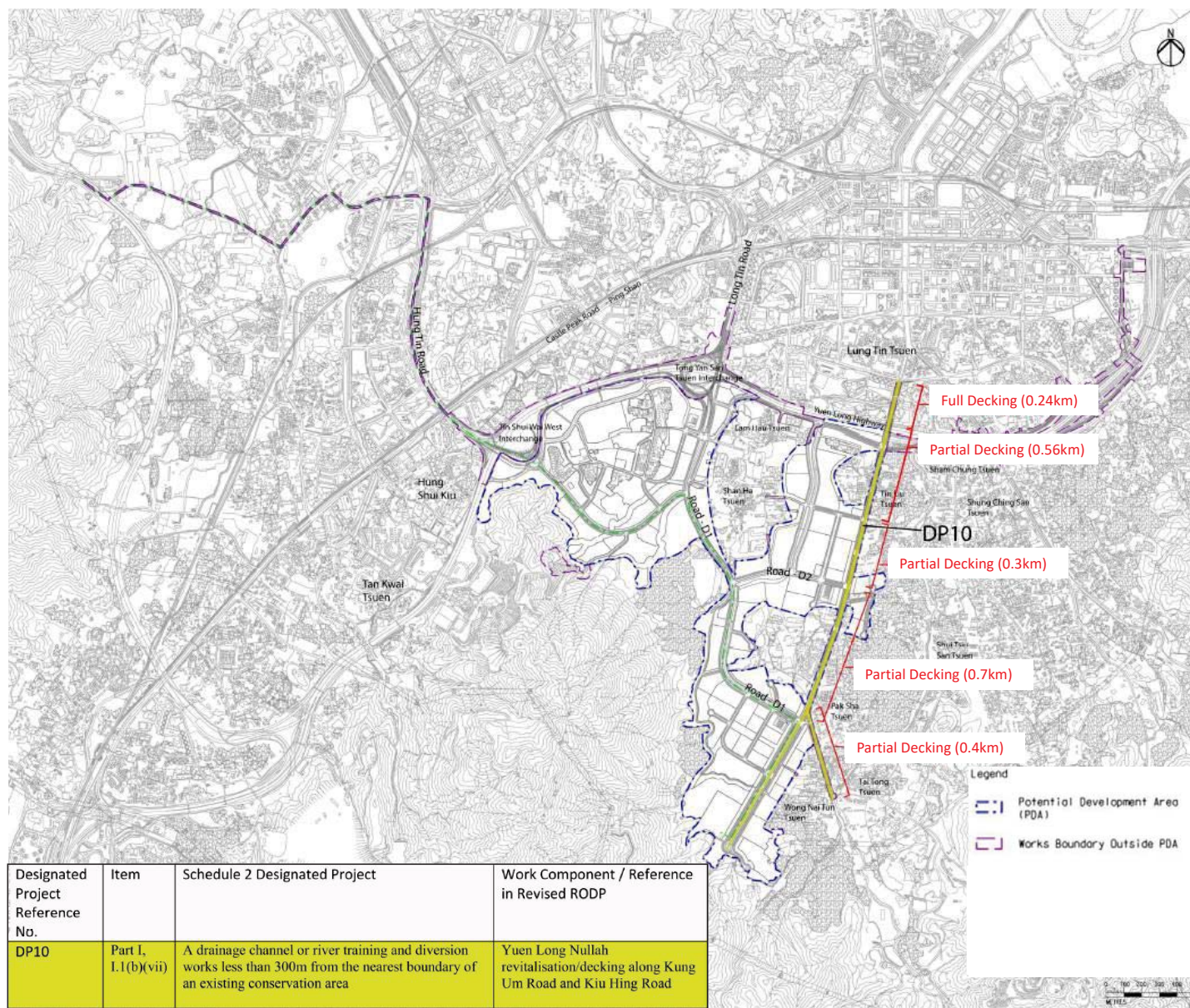
Designated Project Reference No. 指定工程項目參考編號	Item 項目	Schedule 2 Designated Project 附表 2 指定工程項目	Work Component / Reference in RODP 工程組合 / 參考建議發展大綱圖
DP6 指定工程 6	Part I A.9 第一部分 A.9 項	A road fully enclosed by decking above and by structure on the sides for more than 100m 完全被其上的蓋層和兩邊的構築物所包圍，而被包圍的長度超過 100 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)**

<b>Organization</b>	<b>Project Role</b>	<b>Name of Key Staff</b>	<b>Tel No.</b>	<b>Fax No.</b>
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
Telexmax	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*

*Telexmax (IEC) – Telexmax 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)**

<b>Organization</b>	<b>Project Role</b>	<b>Name of Key Staff</b>	<b>Tel No.</b>	<b>Fax No.</b>
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)**

<b>Organization</b>	<b>Project Role</b>	<b>Name of Key Staff</b>	<b>Tel No.</b>	<b>Fax No.</b>
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**

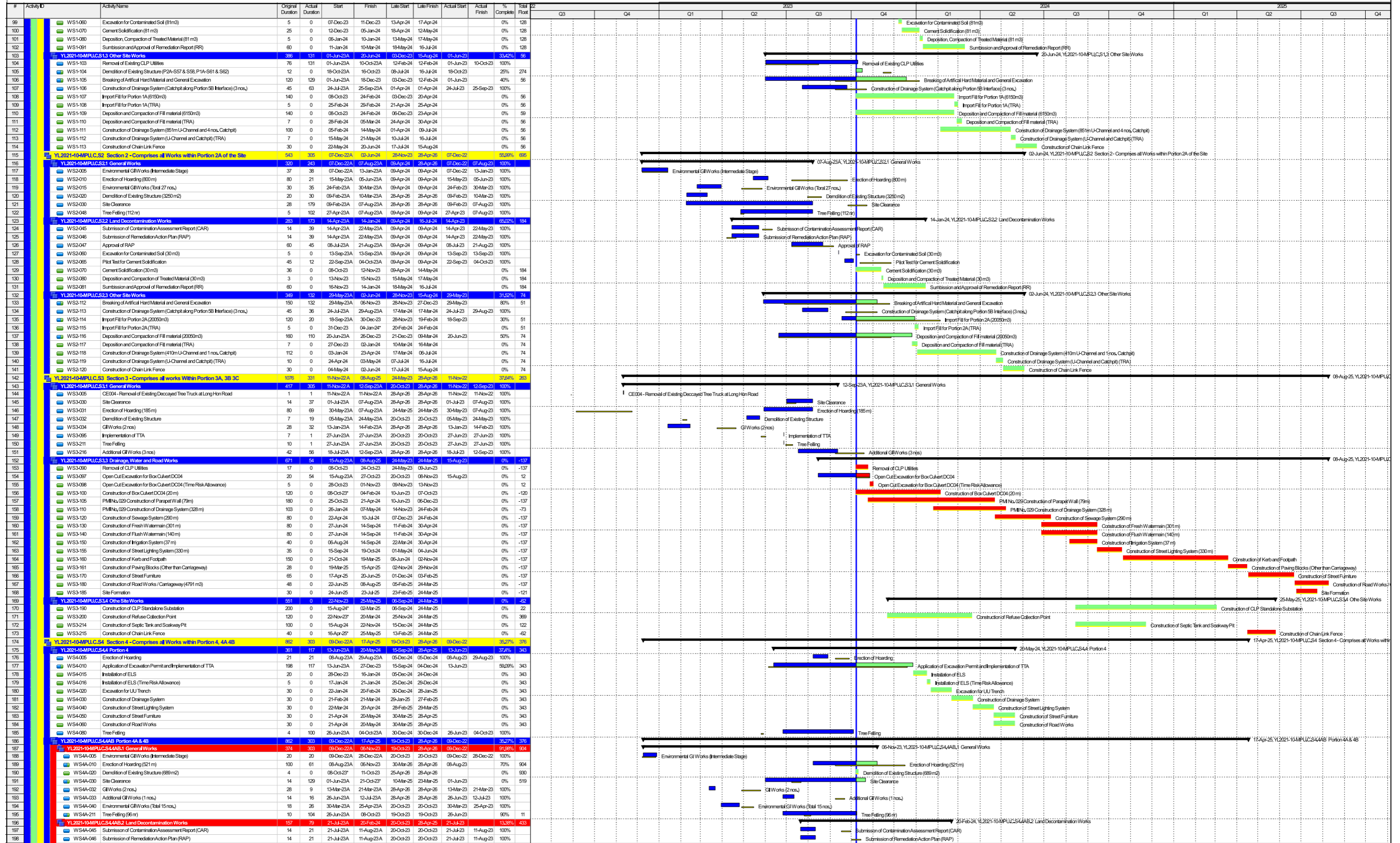
### **3-month Rolling Construction Programme**

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

## **3-month Rolling Construction Programme of Contract 1**



**Contract No. 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
- █ Critical Remaining Work
- Primary Baseline
- █ Actual Level of Effort
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- ◆ summary

**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)**

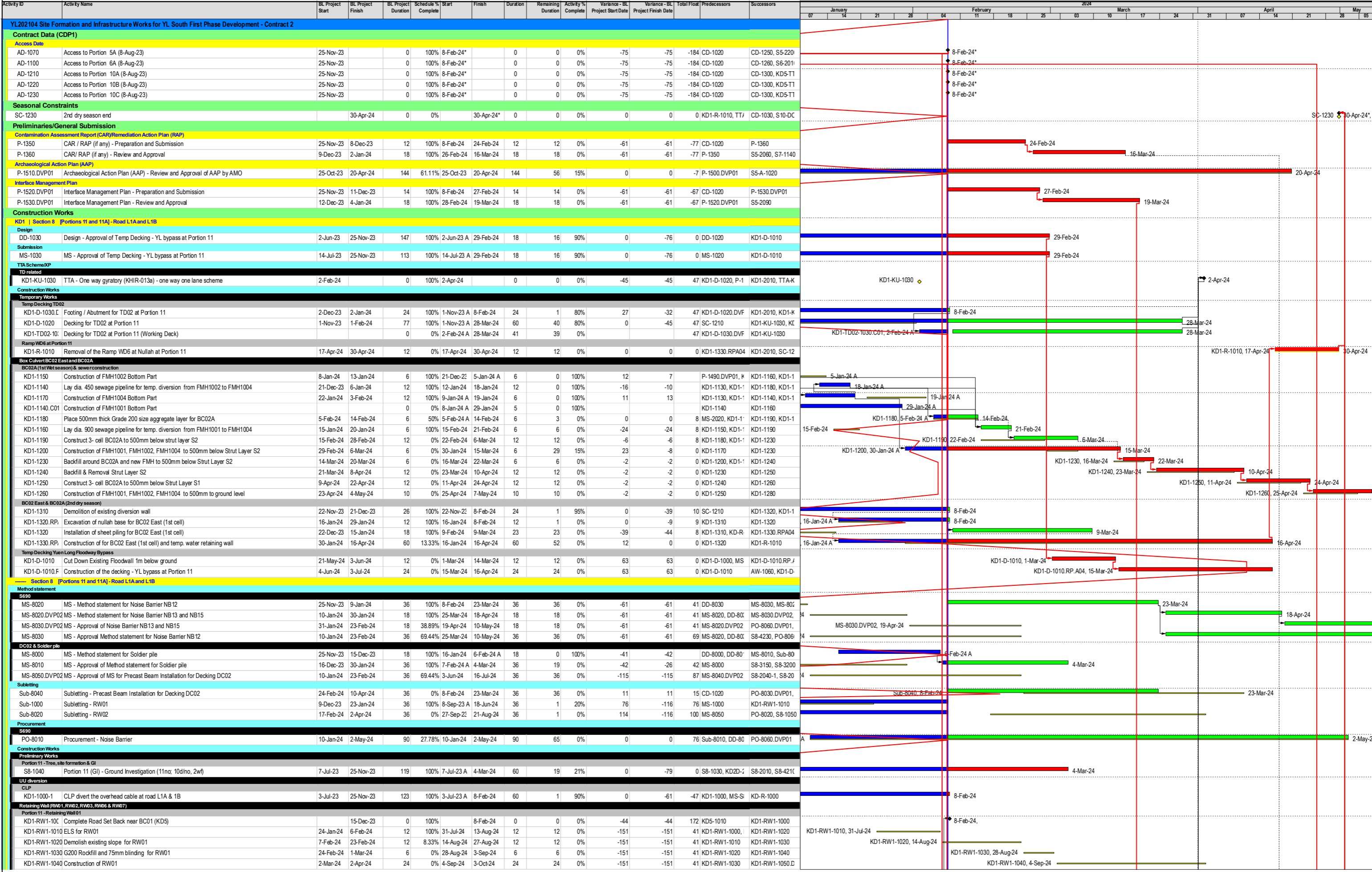
Date	Revision	Checked	Ap..
15-Aug-23	Rev.6	WCF	YKC
09-Sep-23	Rev.7	WCF	YKC
08-Oct-23	Rev.8	WCF	YKC





## **3-month Rolling Construction Programme of Contract 2**

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



<span style="color: blue;">█</span> Actual Work	<span style="color: green;">█</span> Remaining Work	<span style="color: red;">█</span> Critical Remaining Work	<span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> Project Base...	<span style="color: black;">◆</span> Milestone	<span style="color: yellow;">◆</span> Project Base...
---	---	--	--	--	---

Data Date: 8-Feb-24  
 Project Start: 8 Dec 2022  
 Project End: 26-Apr-29  
 Page 1 of 6

**YL/2021/04**  
 Three Months Rolling Programme

Date	Revision	Checked	Approved
30-Nov-23	RP.B02 - Accepted (3-Jan-24)		
15-Jan-24	202312 MPU		
15-Feb-24	202401 MPU		





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

Activity ID	Activity Name	BL Project Start	BL Project Finish	BL Project Duration	Schedule % Complete	Start	Finish	Duration	Remaining Duration	Activity % Complete	Variance - BL Project Start Date	Variance - BL Project Finish Date	Total Float	Predecessors	Successors	2024																																																																	
																07	14	21	28	04	11	18	25	03	10	17	24	31	07	14	21	28	05																																																
KD4-1070.DV	Portion 3 (TD5) - Decking for Traffic Deck	4-Jan-24	2-Mar-24	48	62.5%	12-Mar-24	29-Apr-24	38	38	0%	-55	-45	0	KD4-1060.DVP01	KD4-6620	29-Apr-24																																																																	
<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 150px;">Portion 3 (KD4) - Traffic Deck (TD5)</td> <td style="width: 150px;">Portion 3 (TD6) - Road Setback at KU Rd. and KH Rd.</td> <td style="width: 150px;">Portion 3 (TD6) - Footing / Abutment for Traffic Deck</td> <td style="width: 150px;">Portion 3 (TD6) - Decking for Traffic Deck</td> <td style="width: 150px;">Portion 3 (KD4) - Traffic Deck (TD9)</td> <td style="width: 150px;">Portion 3 (TD9) - Footing / Abutment for Traffic Deck</td> <td style="width: 150px;">Portion 3 (TD9) - Decking for Traffic Deck</td> <td style="width: 150px;">Portion 12 (KD4) - Traffic Deck (TD10)</td> <td style="width: 150px;">Portion 12 (TD10) - Footing / Abutment for Traffic Deck</td> <td style="width: 150px;">Portion 12 (TD10) - Decking for Traffic Deck</td> <td style="width: 150px;">Portion 19 - Concrete Block Platform</td> <td style="width: 150px;">Portion 18 (KD4) - BC04 and DC06</td> <td style="width: 150px;">Portion 18 (KD4) - Kiu Hing Road</td> <td style="width: 150px;">Portion 18 (KD4) - Piling</td> <td style="width: 150px;">Portion 19 (KD4) - BC04 and DC07</td> <td style="width: 150px;">Portion 19 (KD4) - Kiu Hing Road</td> <td style="width: 150px;">Portion 19 (KD4) - Piling</td> </tr> <tr> <td>KD4-1080.DV</td> <td>KD4-1090.DV</td> <td>KD4-1100.DV</td> <td>KD4-1120.DV</td> <td>KD4-1130.DV</td> <td>KD4-1150.DV</td> <td>KD4-1160.DV</td> <td>CB-0190.B02</td> <td>KD4-6020</td> <td>KD4-1210</td> <td>DD-S9-1090.AI</td> <td>DD-S9-1030</td> <td>DD-S9-1040</td> <td>DD-S9-1050</td> <td>DD-S9-1060</td> <td>DD-S9-1070</td> <td>MS-S9-1020</td> <td>MS-S9-1000</td> <td>MS-S9-1030</td> <td>MS-S9-1010</td> <td>MS-S9-1040</td> <td>MS-S9-1050</td> <td>Sub-S9-1020</td> <td>S9-1100</td> <td>S9-3060.DVPI</td> <td>S9-1060</td> <td>S9-1040</td> <td>S9-1070</td> <td>S9-1100.DVF</td> <td>S9-1110.DVF</td> <td>S9-1120.DVF</td> <td>S9-1130.DVF</td> <td>S9-1150.DVF</td> <td>S9-1160.DVF</td> <td>S9-1170.DVF</td> <td>S9-1210.DVF</td> <td>S9-1220.DVF</td> <td>S9-1230.DVF</td> <td>S9-1005.DVF</td> <td>S9-1210</td> <td>S9-1320</td> <td>S9-1000.DVF</td> <td>S9-1510</td> <td>S9-5780.B02</td> <td>S9-4210</td> <td>S9-4510</td> <td>S9-4540</td> <td>S9-5210</td> </tr> </table>																	Portion 3 (KD4) - Traffic Deck (TD5)	Portion 3 (TD6) - Road Setback at KU Rd. and KH Rd.	Portion 3 (TD6) - Footing / Abutment for Traffic Deck	Portion 3 (TD6) - Decking for Traffic Deck	Portion 3 (KD4) - Traffic Deck (TD9)	Portion 3 (TD9) - Footing / Abutment for Traffic Deck	Portion 3 (TD9) - Decking for Traffic Deck	Portion 12 (KD4) - Traffic Deck (TD10)	Portion 12 (TD10) - Footing / Abutment for Traffic Deck	Portion 12 (TD10) - Decking for Traffic Deck	Portion 19 - Concrete Block Platform	Portion 18 (KD4) - BC04 and DC06	Portion 18 (KD4) - Kiu Hing Road	Portion 18 (KD4) - Piling	Portion 19 (KD4) - BC04 and DC07	Portion 19 (KD4) - Kiu Hing Road	Portion 19 (KD4) - Piling	KD4-1080.DV	KD4-1090.DV	KD4-1100.DV	KD4-1120.DV	KD4-1130.DV	KD4-1150.DV	KD4-1160.DV	CB-0190.B02	KD4-6020	KD4-1210	DD-S9-1090.AI	DD-S9-1030	DD-S9-1040	DD-S9-1050	DD-S9-1060	DD-S9-1070	MS-S9-1020	MS-S9-1000	MS-S9-1030	MS-S9-1010	MS-S9-1040	MS-S9-1050	Sub-S9-1020	S9-1100	S9-3060.DVPI	S9-1060	S9-1040	S9-1070	S9-1100.DVF	S9-1110.DVF	S9-1120.DVF	S9-1130.DVF	S9-1150.DVF	S9-1160.DVF	S9-1170.DVF	S9-1210.DVF	S9-1220.DVF	S9-1230.DVF	S9-1005.DVF	S9-1210	S9-1320	S9-1000.DVF	S9-1510	S9-5780.B02	S9-4210	S9-4510	S9-4540	S9-5210
Portion 3 (KD4) - Traffic Deck (TD5)	Portion 3 (TD6) - Road Setback at KU Rd. and KH Rd.	Portion 3 (TD6) - Footing / Abutment for Traffic Deck	Portion 3 (TD6) - Decking for Traffic Deck	Portion 3 (KD4) - Traffic Deck (TD9)	Portion 3 (TD9) - Footing / Abutment for Traffic Deck	Portion 3 (TD9) - Decking for Traffic Deck	Portion 12 (KD4) - Traffic Deck (TD10)	Portion 12 (TD10) - Footing / Abutment for Traffic Deck	Portion 12 (TD10) - Decking for Traffic Deck	Portion 19 - Concrete Block Platform	Portion 18 (KD4) - BC04 and DC06	Portion 18 (KD4) - Kiu Hing Road	Portion 18 (KD4) - Piling	Portion 19 (KD4) - BC04 and DC07	Portion 19 (KD4) - Kiu Hing Road	Portion 19 (KD4) - Piling																																																																	
KD4-1080.DV	KD4-1090.DV	KD4-1100.DV	KD4-1120.DV	KD4-1130.DV	KD4-1150.DV	KD4-1160.DV	CB-0190.B02	KD4-6020	KD4-1210	DD-S9-1090.AI	DD-S9-1030	DD-S9-1040	DD-S9-1050	DD-S9-1060	DD-S9-1070	MS-S9-1020	MS-S9-1000	MS-S9-1030	MS-S9-1010	MS-S9-1040	MS-S9-1050	Sub-S9-1020	S9-1100	S9-3060.DVPI	S9-1060	S9-1040	S9-1070	S9-1100.DVF	S9-1110.DVF	S9-1120.DVF	S9-1130.DVF	S9-1150.DVF	S9-1160.DVF	S9-1170.DVF	S9-1210.DVF	S9-1220.DVF	S9-1230.DVF	S9-1005.DVF	S9-1210	S9-1320	S9-1000.DVF	S9-1510	S9-5780.B02	S9-4210	S9-4510	S9-4540	S9-5210																																		
Section 9 [Portions 3, 12, 12A, 12B, 12C, 13, 18 & 19] - KU Rd. and KH Rd.																																																																																	
Design																																																																																	
Temp. Working Footbridge FB01, FB02, FB03 and FB04																																																																																	
Design - Review and Approval for FB01, FB02, FB03, FB04 Temp. Footbridge																																																																																	
ELS BC04																																																																																	
Design - Review and Approval of BC04 ELS																																																																																	
ELS UU																																																																																	
Design - Preparation and Submission of UU ELS (Portion 3, 12, 18 & 19)																																																																																	
Design - Review and Approval of UU ELS (Portion 3, 12, 18 & 19)																																																																																	
Road Lighting System																																																																																	
Design - Preparation and Submission of Road Lighting System																																																																																	
Design - Review and Approval of Road Lighting System																																																																																	
Method Statement																																																																																	
Temp. Working Platform/ELS BC04																																																																																	
MS - Preparation and Submission for BC04 ELS																																																																																	
MS - Preparation and Submission for BC04 Box Structure																																																																																	
MS - Review and Approval of BC04 ELS																																																																																	
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MS - Preparation and Submission for UU (Portion 3, 12, 18 & 19) ELS																																																																																	
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Subletting																																																																																	
Subletting - UU ELS (Portion 3, 12, 18 & 19)																																																																																	
Construction Works																																																																																	
Preliminary Works																																																																																	
Tree																																																																																	
Tree Survey, Felling and preservation for Portion 3, 12 & 13																																																																																	
Portion 12B - Demolition																																																																																	
Building demolition, removal and Site clearance																																																																																	
Portion 3, 12 & 13 - Ground Investigation (GI)																																																																																	
Portion 3 & 12 - Ground Investigation (GI)																																																																																	
Ground Investigation along BC04 [After KD2B] (12no; 10d/no, 3wf)																																																																																	
Ground Investigation along BC04 [After KD2B] (9no; 10d/no, 2wf)																																																																																	
Portion 13 - Ground Investigation (GI)																																																																																	
Ground Investigation along BC06 & BC07 [After KD2C] (10no; 10d/no, 2wf)																																																																																	
Portion 3, 12 & 13 - Working Deck (WD) and Pre-drill Works																																																																																	
Portion 3 & 12 - Working Deck (WD) and Pre-drill Works																																																																																	
Plant Mobilization for Pre-drill																																																																																	
Pre-drill (10no; 6d/no, 2wf)																																																																																	
Pre-drill (11no; 6d/no, 2wf)																																																																																	
Pre-drill (10no; 6d/no, 2wf)																																																																																	
Prepare and Submit Report																																																																																	
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Prepare and Submit Report																																																																																	
Portion 3 & 13 - Traffic Deck																																																																																	
Portion 13 (TD11) - Road Setback at WNTT Rd. and KH Rd.																																																																																	
Portion 13 (TD11) - Footing / Abutment for Traffic Deck																																																																																	
Portion 13 (TD11) - Decking for Traffic Deck																																																																																	
Box Culvert BC04 and Decking																																																																																	
Portion 3 - BC04, DC02A & Temp. FB01 (CHB 65 - CHB 95)																																																																																	
Portion 3 - Piling Works DC02A																																																																																	
Construction of BC04 and the temp. footbridge 01																																																																																	
TTA 15m BC04 and footbridge DC02A																																																																																	
Portion 3 - BC04 and DC02B (CHB 255 - CHB 303)																																																																																	
Portion 3 - Piling Works DC02B																																																																																	
TTA DC02B																																																																																	
Portion 3 - BC04 and DC06B (CHB 625 - CHB 667)																																																																																	
Portion 3 - Piling Works DC06B																																																																																	
TTA DC02B and DC06B																																																																																	
Portion 3 - BC04 (CHB 150 - CHB 255)																																																																																	
Construct BC04, stage 1																																																																																	
Removal of Formworks and Backfilling																																																																																	
Portion 12 - BC04, DC07A & 7C & Temp. Footbridge 03 (CHB 1070 - CHB 1125)																																																																																	
Portion 12 - Temp. Footbridge FB03																																																																																	
TTA Decking DC07A & DC07C																																																																																	
Portion 12 - BC04 (CHB 1005 - CHB 1070, 1 wf)																																																																																	
ELS BC04, stage 1 (CHB 1005-1070, 1 wf)																																																																																	
Construct BC04, stage 1 (CHB 1005-1070, 1 wf)																																																																																	
Portion 13 - BC06, BC07 and DC09 (CHC 373 - CHC 385)																																																																																	
TTA BC06, BC07 & DC09 (pre. beam x 7 nos.)																																																																																	
Section 11 [Portions 15 and 16A] - KH Rd. and Wong Ngai Tun Tsuen Road																																																																																	

<span style="display: inline-block; width: 20px; height: 10px; background-color: blue; border: 1px solid black;"></span>	Actual Work	<span style="display: inline-block; width: 20px; border-bottom: 2px solid black;"></span>	Project Base...
<span style="display: inline-block; width: 20px; height: 10px; background-color: green; border: 1px solid black;"></span>	Remaining Work	◆	Milestone
<span style="display: inline-block; width: 20px; height: 10px; background-color: red; border: 1px solid black;"></span>	Critical Remaining Work	◇	Project Base...

Data Date: 8-Feb-24  
 Project Start: 8 Dec 2022  
 Project End: 26-Apr-29  
 Page 4 of 6

**YL/2021/04**  
**Three Months Rolling Programme**

Date	Revision	Checked	Approved
30-Nov-23	RP.B02 - Accepted (3-Jan-24)		
15-Jan-24	202312 MPU		
15-Feb-24	202401 MPU		







## **3-month Rolling Construction Programme of Contract 3**

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						Feb 14	Mar 15	Apr 16	May 17
<b>Site Formation and Infrastructure Works for Yuen Long South</b>		2975.0	1643.0	28-Dec-22 A	07-Aug-28				
<b>Access Date</b>		0.0	0.0	08-Feb-24	08-Feb-24				
ACD10040.10	Portion 1 (remaining)	0.0	0.0	08-Feb-24*					
ACD10260.10	Portion 1C (remaining)	0.0	0.0	08-Feb-24*					
ACD10640.60	Portion 11A (remaining)	0.0	0.0	08-Feb-24*					
ACD10680.30	Portion 13A (remaining)	0.0	0.0	08-Feb-24*					
ACD10700.20	Portion 14A (remaining)	0.0	0.0	08-Feb-24*					
ACD10720.40	Portion 15A (remaining)	0.0	0.0	08-Feb-24*					
ACD10740	Portion 8A	0.0	0.0	08-Feb-24*					
ACD10760	Portion 8B	0.0	0.0	08-Feb-24*					
ACD10780	Portion 8C	0.0	0.0	08-Feb-24*					
ACD10800	Portion 8D	0.0	0.0	08-Feb-24*					
ACD10820	Portion 8E	0.0	0.0	08-Feb-24*					
<b>Contractual Completion of Key Date and Section of the Works</b>		0.0	0.0	08-Feb-24	08-Feb-24				
<b>Contractual Completion of Key Date</b>		0.0	0.0	08-Feb-24	08-Feb-24				
KEY10020	KD1B-Complete GI works for drillhole YLS3-BH68~123(total 24 nos) for slip road from Yuen Long Highway westbound to LH R.	0.0	0.0		08-Feb-24*				
<b>Planned Completion of Key Dates and Section of the Works</b>		1799.0	1643.0	13-Feb-23 A	07-Aug-28				
<b>Planned Completion of Key Dates</b>		0.0	0.0	08-Feb-24	08-Feb-24				
KEY10550	KD1B-Complete GI works for drillhole YLS3-BH68~123(total 24 nos) for slip road from Yuen Long Highway westbound to LH R.	0.0	0.0		08-Feb-24				
<b>Planned Completion of Key Dates (Summary)</b>		1575.0	1464.0	28-Mar-23 A	10-Feb-28				
LOE11160	KD4-Complete all necessary works to facilitate laying of CLP cables from TYST to LH Road via footpath and cycle track	585.0	469.0	22-Sep-23 A	21-May-25				
LOE11180	KD5-Complete all necessary works for opening of road connecting existing YL Highway westbound to existing LH and SH Road	768.0	813.0	23-Sep-23 A	30-Apr-26				
LOE11200	KD6-Complete all necessary works for opening of road connecting existing LH and SH Road to existing YL Highway westbound	800.0	820.0	22-Aug-23 A	07-May-26				
LOE11220	KD7-Complete all necessary works for opening of road connecting YL Highway eastbound to existing LT Road northbound	1242.0	1170.0	06-Sep-23 A	22-Apr-27				
LOE11240	KD8-Complete all necessary works for opening of road connecting LT Road southbound to YL highway eastbound	1008.0	895.0	28-Mar-23 A	21-Jul-26				
LOE11280	KD10-Complete all necessary works for opening of road connecting existing YL Highway eastbound to LH Road	1545.0	1464.0	06-Sep-23 A	10-Feb-28				
<b>Planned Completion of Section of the Works (Summary)</b>		1799.0	1643.0	13-Feb-23 A	07-Aug-28				
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	1643.0	1643.0	08-Feb-24	07-Aug-28				
LOE11360	Section 2-Completion of all works within Portions 10 and 10A of the Site	492.0	397.0	04-Aug-23 A	10-Mar-25				
LOE11380	Section 3-Completion of all works within Portions 8A, 9A, 14 and 14A of the Site	920.0	797.0	01-Sep-23 A	14-Apr-26				
LOE11400	Section 4-Completion of all works within Portions 8E, 15 and 15A of the Site	916.0	755.0	07-Jul-23 A	03-Mar-26				
LOE11420	Section 5-Completion of all works within Portions 16, 16A, 16B,16C and 16D of the Site	914.0	636.0	13-Feb-23 A	04-Nov-25				
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	1142.0	1087.0	14-Aug-23 A	29-Jan-27				
LOE11460	Section 7-Completion of all works within Portions 8B, 9B, 13 and 13A of the Site	662.0	521.0	05-Oct-23 A	12-Jul-25				
LOE11480	Section 8-Completion of all works within Portions 12 and 12A of the Site	422.0	181.0	04-Sep-23 A	06-Aug-24				
LOE11500	Section 9-Completion of all works within Portions 5C, 7, 7A, 7B, 7C and 7D of the Site	916.0	748.0	28-Apr-23 A	24-Feb-26				
LOE11560	Section 12-Comprises all preservation and protection of existing trees	1799.0	1643.0	26-Feb-23 A	07-Aug-28				
LOE11580	Section 13-Comprises all of the landscape softworks	1799.0	1643.0	26-Feb-23 A	07-Aug-28				
<b>Preliminaries, Contractor's Design, Method Statement Subm.</b>		925.0	156.0	28-Dec-22 A	12-Jul-24				
<b>General Submission</b>		347.0	35.0	28-Dec-22 A	13-Mar-24				
GSS10240	Submission of BIM Model (PS 1.116A)	60.0	13.0	28-Dec-22 A	20-Feb-24				
GSS10320	Submission of details of proposed off-site precast yard (PS 1.118)	30.0	30.0	08-Feb-24	13-Mar-24				
<b>Contractor's Design Submission and Approval</b>		299.0	112.0	16-Jul-23 A	29-May-24				
<b>Contractor's Permanent Works Design</b>		299.0	112.0	16-Jul-23 A	29-May-24				

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						Feb 14	Mar 15	Apr 16	May 17
<b>Design for the Road Lighting System</b>		42.0	42.0	18-Apr-24	29-May-24				
PRE10040	Prepare and submit design for the road lighting system	42.0	42.0	18-Apr-24	29-May-24				
<b>Cost Savings Design (CSD)</b>		277.0	86.0	16-Jul-23 A	03-May-24				
<b>CSD-001 - Nullah Decking</b>		14.0	0.0	16-Jan-24 A	08-Feb-24				
PRE10420.98	Review and Acceptance for Geotechnical Assessment Report	14.0	0.0	16-Jan-24 A	08-Feb-24				
<b>CSD-002 - Cantilever Footpath</b>		157.0	28.0	06-Sep-23 A	06-Mar-24				
PRE10400.50	Incorporate and resubmit CSD DD	30.0	7.0	06-Sep-23 A	14-Feb-24				
PRE10400.70	Review and Acceptance	21.0	21.0	15-Feb-24	06-Mar-24				
PRE10400.95	Review and Acceptance for Geotechnical Assessment Report	14.0	1.0	07-Nov-23 A	08-Feb-24				
<b>CSD-003 - Bridge Decking</b>		277.0	86.0	16-Jul-23 A	03-May-24				
<b>Bridge C &amp; F</b>		273.0	86.0	16-Jul-23 A	03-May-24				
PRE10200.10	Prepare & Submit CSD DDA Report for Deck of Bridge C & F	84.0	14.0	16-Jul-23 A	21-Feb-24				
PRE10200.20	Review and Comments	21.0	21.0	22-Feb-24	13-Mar-24				
PRE10200.30	Incorporate and resubmit CSD DD	30.0	30.0	14-Mar-24	12-Apr-24				
PRE10200.40	Review and Acceptance	21.0	21.0	13-Apr-24	03-May-24				
<b>Bridge B, D, E &amp; G</b>		60.0	30.0	29-Jan-24 A	08-Mar-24				
PRE10380.70	Review and Acceptance	60.0	30.0	29-Jan-24 A	08-Mar-24				
<b>Major Temporary Design</b>		228.0	71.0	09-Aug-23 A	30-Apr-24				
<b>Drainage Impact Assessment (DIA)</b>		21.0	6.0	01-Feb-24 A	14-Feb-24				
PRE11860	Review and accept DIA of Box Culvert BC02, Bridge B and Bridge D	21.0	6.0	01-Feb-24 A	14-Feb-24				
<b>ELS Design for Box Culvert BC02</b>		85.0	27.0	02-Dec-23 A	09-Mar-24				
PRE11720	Prepare and submit ELS Design for construction of Box Culvert BC02	21.0	6.0	02-Dec-23 A	14-Feb-24				
PRE11780	Review and accept ELS Design of Box Culvert BC02	21.0	21.0	15-Feb-24	09-Mar-24				
<b>ELS Design for Construction of Bridge Foundation</b>		42.0	42.0	08-Feb-24	27-Mar-24				
PRE10100	Prepare and submit ELS Design for construction of bridge foundation	21.0	21.0	08-Feb-24	02-Mar-24				
PRE10110	Review and accept ELS Design for construction of bridge foundation	21.0	21.0	04-Mar-24	27-Mar-24				
<b>ELS Design for Construction of Noise Barrier Foundation</b>		228.0	71.0	09-Aug-23 A	30-Apr-24				
PRE10120	Prepare and submit ELS Design for construction of noise barrier foundation	42.0	15.0	09-Aug-23 A	24-Feb-24				
PRE10122	Review and discuss ELS Design for construction of noise barrier foundation	21.0	21.0	26-Feb-24	20-Mar-24				
PRE10125	Resubmit ELS Design for construction of noise barrier foundation	21.0	21.0	21-Mar-24	13-Apr-24				
PRE10130	Review and accept ELS Design for construction of noise barrier foundation	14.0	14.0	15-Apr-24	30-Apr-24				
<b>ELS Design for for Construction of Nullah Decking Pile Cap</b>		138.0	33.0	11-Nov-23 A	16-Mar-24				
PRE11570	Prepare and resubmit ELS Design for for Construction of Nullah Decking Pile Cap	12.0	12.0	11-Nov-23 A	21-Feb-24				
PRE11600	Review and accept ELS Design for Construction of Nullah Decking Pile Cap	21.0	21.0	22-Feb-24	16-Mar-24				
<b>Design of Temporary Piling Platform for Nullah Decking ND2 South End</b>		80.0	15.0	03-Oct-23 A	24-Feb-24				
PRE11650	Resubmit Design of Temporary Piling Platform for Nullah Decking ND2 South End	14.0	1.0	03-Oct-23 A	08-Feb-24				
PRE11660	Review and accept ELS Design of Temporary Piling Platform for Nullah Decking ND2 South End	14.0	14.0	09-Feb-24	24-Feb-24				
<b>Method Statement Submission and Approval for Major Construction</b>		372.0	92.0	07-Aug-23 A	24-May-24				
<b>Method Statement for Construction of Box Culvert BC02</b>		125.0	20.0	13-Dec-23 A	01-Mar-24				
MSS10920	Resubmit method statement of Box Culvert BC02	14.0	6.0	13-Dec-23 A	14-Feb-24				
MSS10940	Accept method statement of Box Culvert BC02	14.0	14.0	15-Feb-24	01-Mar-24				
<b>Method Statement Submission and Approval for Construction of Retaining Wall RW37</b>		303.0	23.0	07-Aug-23 A	05-Mar-24				
MSS10620	Prepare and submit method statement for construction of retaining wall RW37	21.0	2.0	07-Aug-23 A	09-Feb-24				
MSS10630	Review, discuss and approval for method statement for construction of retaining wall RW37	21.0	21.0	10-Feb-24	05-Mar-24				
<b>Method Statement Submission and Approval for bridge A and Slip Road</b>		185.0	80.0	11-Sep-23 A	10-May-24				

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						Feb 14	Mar 15	Apr 16	May 17
MSS10020	Prepare and submit method statement for bridge A and slip road	48.0	24.0	11-Sep-23 A	06-Mar-24	Prepare and submit method statement for bridge A and slip road			
MSS10022	Review and discuss method statement for bridge A and slip road	21.0	21.0	07-Mar-24	30-Mar-24	Review and discuss method statement for bridge A and slip road			
MSS10025	Resubmit method statement for bridge A and slip road	21.0	21.0	01-Apr-24	24-Apr-24	Resubmit method statement for bridge A			
MSS10030	Accept method statement for bridge A and slip road	14.0	14.0	25-Apr-24	10-May-24	Accept method statement for bridge A and slip road			
<b>Method Statement for ELS Installation for Construction of Box Culvert BC01</b>		14.0	0.0	05-Feb-24 A	05-Feb-24 A	▼ Method Statement for ELS Installation for Construction of Box Culvert BC01			
MSS10570	Accept method statement for ELS of Box Culvert BC01	14.0	0.0	05-Feb-24 A	05-Feb-24 A	↓ Accept method statement for ELS of Box Culvert BC01			
<b>Method Statement Submission and Approval for Construction of Nullah Decking</b>		42.0	42.0	08-Feb-24	27-Mar-24	Method Statement Submission and Approval for Construction of Nullah Decking			
MSS10040	Prepare and submit method statement for construction of Nullah Decking	21.0	21.0	08-Feb-24	02-Mar-24	Prepare and submit method statement for construction of Nullah Decking			
MSS10050	Accept method statement for construction of Nullah Decking	21.0	21.0	04-Mar-24	27-Mar-24	Accept method statement for construction of Nullah Decking			
<b>Method statement submission and approval for bridge B</b>		84.0	84.0	08-Feb-24	15-May-24	Method statement submission and approval for bridge B			
MSS10100	Prepare and submit method statement for bridge B	42.0	42.0	08-Feb-24	27-Mar-24	Prepare and submit method statement for bridge B			
MSS10102	Review and discuss submission for bridge B	21.0	21.0	28-Mar-24	20-Apr-24	Review and discuss submission for bridge B			
MSS10105	Resubmit submission for bridge B	21.0	21.0	22-Apr-24	15-May-24	Resubmit submission for bridge B			
<b>Method statement submission and approval for construction of U-trough</b>		35.0	35.0	08-Feb-24	19-Mar-24	Method statement submission and approval for construction of U-trough			
MSS10120	Prepare and submit method statement for construction of U-trough	14.0	14.0	08-Feb-24	23-Feb-24	Prepare and submit method statement for construction of U-trough			
MSS10470	Accept method statement for construction of U-trough	21.0	21.0	24-Feb-24	19-Mar-24	Accept method statement for construction of U-trough			
<b>Method statement submission and approval for drainage works</b>		77.0	77.0	08-Feb-24	07-May-24	Method statement submission and approval for drainage works			
MSS10140	Prepare and submit method statement for drainage works	21.0	21.0	08-Feb-24	02-Mar-24	Prepare and submit method statement for drainage works			
MSS10142	Review and discuss submission for drainage works	21.0	21.0	04-Mar-24	27-Mar-24	Review and discuss submission for drainage works			
MSS10145	Resubmit method statement for drainage works	21.0	21.0	28-Mar-24	20-Apr-24	Resubmit method statement for drainage works			
MSS10150	Accept method statement for drainage works	14.0	14.0	22-Apr-24	07-May-24	Accept method statement for drainage works			
<b>Method statement submission and approval for RTBM construction</b>		21.0	14.0	04-Jan-24 A	23-Feb-24	Method statement submission and approval for RTBM construction			
MSS10170	Accept method statement for RTBM construction	21.0	14.0	04-Jan-24 A	23-Feb-24	Accept method statement for RTBM construction			
<b>Method statement submission and approval for waterworks</b>		33.0	33.0	08-Feb-24	16-Mar-24	Method statement submission and approval for waterworks			
MSS10180	Prepare and submit method statement for waterworks	12.0	12.0	08-Feb-24	21-Feb-24	Prepare and submit method statement for waterworks			
MSS10188	Accept method statement for waterworks	21.0	21.0	22-Feb-24	16-Mar-24	Accept method statement for waterworks			
<b>Method statement submission and approval for construction of subway</b>		30.0	30.0	08-Feb-24	13-Mar-24	Method statement submission and approval for construction of subway			
MSS10190	Prepare and submit method statement for construction of subway	12.0	12.0	08-Feb-24	21-Feb-24	Prepare and submit method statement for construction of subway			
MSS10198	Accept method statement for construction of subway	21.0	21.0	19-Feb-24	13-Mar-24	Accept method statement for construction of subway			
<b>Method statement submission and approval for construction of noise barrier</b>		45.0	45.0	22-Mar-24	13-May-24	Method statement submission and approval for construction of noise barrier			
MSS10200	Prepare and submit method statement for construction of noise barrier	12.0	12.0	22-Mar-24	04-Apr-24	Prepare and submit method statement for construction of noise barrier			
MSS10202	Review and discuss method statement for construction of noise barrier	21.0	21.0	05-Apr-24	29-Apr-24	Review and discuss method statement for construction of noise barrier			
MSS10205	Resubmit method statement for construction of noise barrier	12.0	12.0	30-Apr-24	13-May-24	Resubmit method statement for construction of noise barrier			
<b>Method statement submission and approval for bridge D</b>		77.0	77.0	08-Feb-24	07-May-24	Method statement submission and approval for bridge D			
MSS10220	Prepare and submit method statement for bridge D	21.0	21.0	08-Feb-24	02-Mar-24	Prepare and submit method statement for bridge D			
MSS10222	Review and discuss method statement for bridge D	21.0	21.0	04-Mar-24	27-Mar-24	Review and discuss method statement for bridge D			
MSS10225	Resubmit method statement for bridge D	21.0	21.0	28-Mar-24	20-Apr-24	Resubmit method statement for bridge D			
MSS10230	Accept method statement for bridge D	14.0	14.0	22-Apr-24	07-May-24	Accept method statement for bridge D			
<b>Method statement submission and approval for bridge F</b>		35.0	35.0	08-Feb-24	19-Mar-24	Method statement submission and approval for bridge F			
MSS10240	Prepare and submit method statement for bridge F	14.0	14.0	08-Feb-24	23-Feb-24	Prepare and submit method statement for bridge F			
MSS10250	Accept method statement for bridge F	21.0	21.0	24-Feb-24	19-Mar-24	Accept method statement for bridge F			
<b>Method statement submission and approval for bridge G</b>		77.0	77.0	26-Feb-24	24-May-24	Method statement submission and approval for bridge G			
MSS10260	Prepare and submit method statement for bridge G	21.0	21.0	26-Feb-24	20-Mar-24	Prepare and submit method statement for bridge G			
MSS10262	Review and discuss method statement for bridge G	21.0	21.0	21-Mar-24	13-Apr-24	Review and discuss method statement for bridge G			
MSS10265	Resubmit method statement for bridge G	21.0	21.0	15-Apr-24	08-May-24	Resubmit method statement for bridge G			

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						Feb 14	Mar 15	Apr 16	May 17
MSS10270	Accept method statement for bridge G	14.0	14.0	09-May-24	24-May-24				
<b>Method statement submission and approval for bridge E</b>		63.0	63.0	08-Mar-24	20-May-24				
MSS10280	Prepare and submit method statement for bridge E	21.0	21.0	08-Mar-24	01-Apr-24				
MSS10282	Review and discuss method statement for bridge E	21.0	21.0	02-Apr-24	25-Apr-24				
MSS10285	Resubmit method statement for bridge E	21.0	21.0	26-Apr-24	20-May-24				
<b>Method statement submission and approval for construction of Cantilever Footpath</b>		63.0	63.0	07-Mar-24	18-May-24				
MSS10300	Prepare and submit method statement for construction of cantilever footpath	21.0	21.0	07-Mar-24	30-Mar-24				
MSS10302	Review and discuss method statement for construction of cantilever footpath	21.0	21.0	01-Apr-24	24-Apr-24				
MSS10305	Resubmit method statement for construction of cantilever footpath	21.0	21.0	25-Apr-24	18-May-24				
<b>Method statement submission and approval for road pavement works</b>		63.0	63.0	13-Mar-24	24-May-24				
MSS10320	Prepare and submit method statement for road pavement works	21.0	21.0	13-Mar-24	05-Apr-24				
MSS10322	Review and discuss method statement for road pavement works	21.0	21.0	06-Apr-24	30-Apr-24				
MSS10325	Resubmit method statement for road pavement works	21.0	21.0	01-May-24	24-May-24				
<b>Method statement submission and approval for slope works</b>		77.0	77.0	08-Feb-24	07-May-24				
MSS10360	Prepare and submit method statement for slope works	21.0	21.0	08-Feb-24	02-Mar-24				
MSS10362	Review and discuss method statement for slope works	21.0	21.0	04-Mar-24	27-Mar-24				
MSS10365	Resubmit method statement for slope works	21.0	21.0	28-Mar-24	20-Apr-24				
MSS10370	Accept method statement for slope works	14.0	14.0	22-Apr-24	07-May-24				
<b>Method statement submission and approval for construction of underpass</b>		162.0	31.0	29-Sep-23 A	14-Mar-24				
MSS10340	Prepare and submit method statement for construction of underpass	21.0	10.0	29-Sep-23 A	19-Feb-24				
MSS10350	Accept method statement for construction of underpass	21.0	21.0	20-Feb-24	14-Mar-24				
<b>Preliminaries</b>		213.0	60.0	08-Aug-23 A	07-Apr-24				
PRE10230	Set up of the contract webpage	60.0	60.0	08-Feb-24	07-Apr-24				
PRE10270	Submission of Contamination Assessment Plan and Remediation Action Plan (PS 1.108B(v))	30.0	2.0	08-Aug-23 A	09-Feb-24				
<b>Traffic Management</b>		295.0	110.0	18-Nov-23 A	27-May-24				
PRE11880	Preparation, submission and approval of TTA scheme (TMLG No.4)	60.0	20.0	18-Nov-23 A	27-Feb-24				
PRE11900	Preparation, submission and approval of TTA scheme (TMLG No.5)	90.0	90.0	28-Feb-24	27-May-24				
<b>Precasting Works</b>		60.0	60.0	04-May-24	12-Jul-24				
PRE10340	Setup of off-site precast yard	60.0	60.0	04-May-24	12-Jul-24				
<b>Subletting Works</b>		742.0	60.0	25-May-23 A	17-Apr-24				
PRE11220	Bridge structure for bridges A~G	60.0	60.0	08-Feb-24	17-Apr-24				
PRE11225	R.C structure other than bridges	60.0	33.0	25-May-23 A	16-Mar-24				
PRE11240	Waterwork	40.0	8.0	24-Jul-23 A	16-Feb-24				
PRE11320	Slope works	40.0	40.0	08-Feb-24	25-Mar-24				
PRE11345	Steel structure and panels for noise barriers and noise closures	40.0	40.0	08-Feb-24	25-Mar-24				
PRE11360	Road works	40.0	40.0	08-Feb-24	25-Mar-24				
PRE11400	E&M works	60.0	60.0	08-Nov-23 A	17-Apr-24				
<b>Section 1 of the Works-Completion of All works Including Pili</b>		932.0	260.0	06-Feb-23 A	24-Oct-24				
<b>Preparation Works</b>		90.0	6.0	06-Feb-23 A	17-Feb-24				
SEC011020	Erection of hoarding	90.0	6.0	23-Mar-23 A	17-Feb-24				
SEC011040	UU detection and trial pit	28.0	0.0	06-Feb-23 A	08-Feb-24				
<b>Trial Pile for Prebored H-Pile</b>		72.0	28.0	15-Dec-23 A	14-Mar-24				
SECA1014	Trial Pile for pre-bored H-piles and Loading Test (TP610-02,03)	48.0	16.0	15-Dec-23 A	29-Feb-24				
SECA1016	Design Review for Trial Pile	12.0	12.0	01-Mar-24	14-Mar-24				
<b>Bridge A</b>		227.0	112.0	06-Sep-23 A	28-Jun-24				

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						Feb 14	Mar 15	Apr 16	May 17
<b>Preparation Works</b>		73.0	16.0	06-Sep-23 A	29-Feb-24	Preparation Works			
<b>Preparation Works</b>		73.0	16.0	06-Sep-23 A	29-Feb-24	Preparation Works			
SECA10000	Construction of temporary cycle track and implementation of TTA	14.0	10.0	06-Sep-23 A	22-Feb-24	Construction of temporary cycle track and implementation of TTA			
SECA10020	Tree felling works and transplanting of existing trees	30.0	10.0	12-Sep-23 A	29-Feb-24	Tree felling works and transplanting of existing trees			
SECA10025	Additional UU detection and trial pit (PMI No. 017 and 026)	73.0	5.0	16-Oct-23 A	16-Feb-24	Additional UU detection and trial pit (PMI No. 017 and 026)			
<b>Utility Diversion</b>		218.0	112.0	27-Oct-23 A	28-Jun-24	Utility Diversion			
SECA10040	Installation of sheetpile	22.0	22.0	17-Feb-24	13-Mar-24	Installation of sheetpile			
SECA10060	Excavation for diversion of gas main	15.0	15.0	14-Mar-24	03-Apr-24	Excavation for diversion of gas main			
SECA10080	Diversion of gas main	70.0	70.0	05-Apr-24	28-Jun-24	Diversion of gas main			
SECA10085	CLP Trench Excavation by CRBC	77.0	77.0	14-Mar-24	19-Jun-24	CLP Trench Excavation by CRBC			
SECA10090	CLP preparation works incl. budget approval and material procurement by others	218.0	89.0	27-Oct-23 A	31-May-24	CLP preparation works incl. budget approval and material procurement by others			
<b>Pre-drilling Works</b>		24.0	10.0	11-Nov-23 A	22-Feb-24	Pre-drilling Works			
SECA10160	Pre-drilling works (11 nos, 1rig, 4day/rig/hole)	24.0	10.0	11-Nov-23 A	22-Feb-24	Pre-drilling works (11 nos, 1rig, 4day/rig/hole)			
<b>Bridge B</b>		494.0	149.0	28-Mar-23 A	12-Aug-24	Bridge B			
<b>Preparation Works</b>		27.0	21.0	28-Mar-23 A	06-Mar-24	Preparation Works			
SECB10000	Site clearance & tree felling works along Lam Yu Rd (affected by updated site boundary with a letter dated 5 Feb 24)	27.0	21.0	28-Mar-23 A	06-Mar-24	Site clearance & tree felling works along Lam Yu Rd (affected by updated site boundary with a letter dated 5 Feb 24)			
<b>Utility Diversion</b>		265.0	149.0	05-Sep-23 A	12-Aug-24	Utility Diversion			
SECB10020	UU detection and trial pit (affected by updated site boundary with a letter dated 5 Feb)	15.0	10.0	05-Sep-23 A	15-Mar-24	UU detection and trial pit (affected by updated site boundary with a letter dated 5 Feb)			
SECB10040	Diversion of existing gas main near Piers B1 (affected by the updated site boundary NCE No. 016)	60.0	60.0	20-Mar-24	04-Jun-24	Diversion of existing gas main near Piers B1 (affected by the updated site boundary NCE No. 016)			
SECB10065	CLP preparation works incl. budget approval and material procurement by others	218.0	89.0	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)	120.0	120.0	16-Mar-24	12-Aug-24	Diversion of CLP and HKT cables (affected by the updated site boundary NCE No. 016)			
<b>Demolition Works</b>		58.0	30.0	29-Jan-24 A	24-Apr-24	Demolition Works			
SECB10120	Demolition of existing structure near Lam Yu Road	30.0	30.0	16-Mar-24	24-Apr-24	Demolition of existing structure near Lam Yu Road			
SECB10140	Demolition of existing footbridge NF36	28.0	0.0	29-Jan-24 A	05-Feb-24 A	Demolition of existing footbridge NF36			
<b>Pre-drilling Works</b>		226.0	32.0	01-Nov-23 A	19-Mar-24	Pre-drilling Works			
SECB11020	Pre-drilling works for pier B2 (2nos, 1rig, 4day/rig/hole)	8.0	8.0	01-Mar-24	09-Mar-24	Pre-drilling works for pier B2 (2nos, 1rig, 4day/rig/hole)			
SECB11040	Pre-drilling works for pier B1 (2nos, 1rig, 4day/rig/hole)	8.0	8.0	11-Mar-24	19-Mar-24	Pre-drilling works for pier B1 (2nos, 1rig, 4day/rig/hole)			
SECB11080	Pre-drilling works for pier B3(4 nos) in the dry season (4 nos, 1rig, 4day/rig/hole) (revised to 3 nos)	16.0	16.0	22-Jan-24 A	29-Feb-24	Pre-drilling works for pier B3(4 nos) in the dry season (4 nos, 1rig, 4day/rig/hole) (revised to 3 nos)			
SECB11100	Pre-drilling works at portal B4(2 nos) (2nos, 1rig, 4day/rig/hole)	8.0	8.0	01-Nov-23 A	20-Feb-24	Pre-drilling works at portal B4(2 nos) (2nos, 1rig, 4day/rig/hole)			
<b>Bridge D</b>		520.0	121.0	23-Sep-23 A	07-Jun-24	Bridge D			
<b>Demolition Works</b>		32.0	20.0	14-Oct-23 A	05-Mar-24	Demolition Works			
SECD10000	Demolition of existing buildings (1655m2) and noise barrier	32.0	20.0	14-Oct-23 A	05-Mar-24	Demolition of existing buildings (1655m2) and noise barrier			
<b>Land Contamination Works</b>		86.0	31.0	23-Sep-23 A	09-Mar-24	Land Contamination Works			
SECD10040	Environmental ground investigation	15.0	6.0	23-Sep-23 A	17-Feb-24	Environmental ground investigation			
SECD10055	Land decontamination assessment approval by EPD	14.0	14.0	18-Feb-24	02-Mar-24	Land decontamination assessment approval by EPD			
SECD10060	Land decontamination works (10150m3)	6.0	6.0	04-Mar-24	09-Mar-24	Land decontamination works (10150m3)			
<b>Utility Protection / Diversion</b>		75.0	75.0	06-Mar-24	07-Jun-24	Utility Protection / Diversion			
SECD10180	Trial Pit to locate UU	15.0	15.0	06-Mar-24	22-Mar-24	Trial Pit to locate UU			
SECD10200	Utility Protection, Shifting and/or diversion	60.0	60.0	23-Mar-24	07-Jun-24	Utility Protection, Shifting and/or diversion			
<b>Pre-drilling Works and Piling Work</b>		93.0	10.0	23-Dec-23 A	22-Feb-24	Pre-drilling Works and Piling Work			
<b>Construction of Bored Piles for Pier D5, Abutment D2, Piers D2 &amp; D3</b>		20.0	10.0	15-Jan-24 A	22-Feb-24	Construction of Bored Piles for Pier D5, Abutment D2, Piers D2 & D3			
SECD11120	Pre-drilling works (4 nos) for Piers D2 & D3	20.0	10.0	15-Jan-24 A	22-Feb-24	Pre-drilling works (4 nos) for Piers D2 & D3			
<b>Construction of Bored Piles for Piers D1, D4 and Abutment D1</b>		10.0	10.0	23-Dec-23 A	22-Feb-24	Construction of Bored Piles for Piers D1, D4 and Abutment D1			
SECD11260	Pre-drilling works (4 nos) for Piers D1 & D4	10.0	10.0	23-Dec-23 A	22-Feb-24	Pre-drilling works (4 nos) for Piers D1 & D4			
<b>Bridge F&amp;G</b>		287.0	183.0	08-Jun-23 A	08-Aug-24	Bridge F&G			

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						Feb 14	Mar 15	Apr 16	May 17
<b>Land Contamination Works</b>						▼ Land Contamination Works			
SECFG1060	Environmental ground investigation (N.A)	0.0	0.0	08-Feb-24	08-Feb-24	Environmental ground investigation (N.A)			
SECFG1080	Land decontamination works (4836 m3)(N.A)	0.0	0.0	08-Feb-24	08-Feb-24	Land decontamination works (4836 m3)(N.A)			
<b>Cycle Track CT02 and Footpath</b>									
<b>Utilities Works Along Cycle Track CT02 and Footpath</b>									
SEC9505	CLP preparation works incl. budget approval, material procurement & existing concrete breaking by others	218.0	89.0	27-Oct-23 A	31-May-24	[Red bar]			
<b>Bridge F</b>									
<b>Pre-drilling Works</b>						▼ Pre-drilling Works			
SECF10020	Pre-drilling works for abutment FG1(8 nos) (revised to 12 nos) / 2 rigs	32.0	24.0	08-Jun-23 A	09-Mar-24	[Red bar] Pre-drilling works for abutment FG1(8 nos) (revised to 12 nos) / 2 rigs			
<b>Piling Works</b>									
SECF10058	Design Verification by AECOM	14.0	7.0	08-Jan-24 A	14-Feb-24	[Red bar] Design Verification by AECOM			
SECF10060	Installation of bored piles for abutment F2(4 nos)	28.0	28.0	22-Mar-24	27-Apr-24	[Red bar] Installation of bored piles for abutment F2(4 nos)			
SECF10080	Installation of bored piles for pier F1 and F2(4 nos)	28.0	28.0	19-Feb-24	21-Mar-24	[Red bar] Installation of bored piles for pier F1 and F2(4 nos)			
SECF10100	Installation of bored piles for abutment FG1 (12 nos)	84.0	84.0	29-Apr-24	08-Aug-24	[Red bar]			
<b>Pilecap</b>									
SECF10120	Installation of sheetpile, excavation, pilehead treatment and construction of pile cap for Abutment F2	26.0	26.0	29-Apr-24	30-May-24	[Green bar]			
<b>Bridge G</b>									
<b>Construction of Abutment G1 - Pier G3</b>						▼ Bridge G			
<b>Pre-drilling Works</b>						▼ Construction of Abutment G1 - Pier G3			
SECG10100	Pre-drilling works for Pier G1 to Pier G3 (6 nos)	32.0	32.0	04-Jan-24 A	19-Mar-24	[Green bar] Pre-drilling works for Pier G1 to Pier G3 (6 nos)			
<b>Piling Works</b>						▼ Piling Works			
SECG10115	Set-up + Load Testing	30.0	20.0	31-Jan-24 A	05-Mar-24	[Red bar] Set-up + Load Testing			
SECG10118	Design Verification by AECOM	14.0	14.0	06-Mar-24	19-Mar-24	[Red bar] Design Verification by AECOM			
<b>Nullah Decking ND1</b>									
<b>Pre-drilling and Piling Works</b>									
SECND1000	Pre-drilling works (28nos)-4 rigs (per one/4 days) (revised to 17 nos / 4 rigs)	32.0	30.0	16-Nov-23 A	16-Mar-24	[Red bar] Pre-drilling works (28nos)-4 rigs (per one/4 days) (revised to 17 nos / 4 rigs)			
SECND1020	Installation of pre-bored H-piles (132 nos)-4rigs	150.0	150.0	18-Mar-24	17-Sep-24	[Red bar]			
<b>Cantilever Footpath</b>									
<b>Bay 8 to Bay 31</b>									
SECFP1140	Pre-drilling works (144 nos) (4 days/per one)-4 rigs (revised to 15 nos)	150.0	140.0	15-Nov-23 A	01-Aug-24	[Green bar]			
<b>Subway M and Subway N</b>									
<b>Design Acceptance, Procurement, Manufacturing and Delivery</b>									
<b>Subway M - RTBM Design and Statutory Approval</b>						▼ Subway M - RTBM Design and Statutory Approval			
SECNM0170	Design Vetting and Statutory Approval (2nd Round)	14.0	14.0	12-Jan-24 A	21-Feb-24	[Green bar] Design Vetting and Statutory Approval (2nd Round)			
SECNM0190	Review and Acceptance	14.0	14.0	22-Feb-24	06-Mar-24	[Green bar] Review and Acceptance			
<b>Procurement, Manufacturing and Delivery</b>									
SECNM0210	Procurement of RTBM	75.0	61.0	25-Aug-23 A	08-Apr-24	[Green bar] Procurement of RTBM			
SECNM0230	Manufacturing and Delivery RTBM and Associated Equipment	180.0	180.0	09-Apr-24	05-Oct-24	[Green bar]			
SECNM0270	Manufacturing and Delivery of Subway Precast Segments	260.0	260.0	08-Feb-24	24-Oct-24	[Green bar]			
<b>Design and Approval Launching Shaft ELS</b>						▼ Design and Approval Launching Shaft ELS			
SECNM0310	Review and Approval	60.0	7.0	18-Jul-23 A	14-Feb-24	[Red bar] Review and Approval			
<b>Subway M</b>									
<b>Construction of Launching Shaft</b>									
SECNM1002	Installation of pipe piles and sheet pile wall	28.0	28.0	06-Mar-24	11-Apr-24	[Red bar] Installation of pipe piles and sheet pile wall			
SECNM1003	Installation of dewatering well, recharge well and observation well	12.0	12.0	06-Apr-24	19-Apr-24	[Red bar] Installation of dewatering well, recharge well and ob			

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024								
						Feb 14	Mar 15	Apr 16	May 17					
SECNM1004	Pumping test	7.0	7.0	20-Apr-24	27-Apr-24									
SECNM1005	Excavation works (approx.+17mPD ~+1.4mPD)	49.0	49.0	29-Apr-24	27-Jun-24									
<b>Construction of Retrieval Shaft at Subway N</b>		104.0	104.0	20-Apr-24	01-Aug-24									
SECNM1012	Trial Pit to locate existing Utilities	14.0	14.0	20-Apr-24	03-May-24									
SECNM1014	Liaison, coordination and Diversion of existing Utilities (DN1400 Water Main, DN750 Gas, Sewer Lines and CLP 11kv Cable)	90.0	90.0	04-May-24	01-Aug-24									
<b>Subway N</b>		14.0	14.0	03-Oct-23 A	27-Feb-24									
SECNM1120	Pre-drilling works (revised 5nos.)	14.0	14.0	03-Oct-23 A	27-Feb-24									
<b>Noise Barrier and Noise Enclosure</b>		491.0	83.0	12-Jul-23 A	24-May-24									
<b>Noise Barrier VB21 and VB22</b>		491.0	83.0	20-Oct-23 A	24-May-24									
<b>Foundation Works</b>		491.0	83.0	20-Oct-23 A	24-May-24									
SENB1510	Pre-drilling works(23 nos) 2 rigs (revised to 8 nos / 1 rig)	48.0	10.0	20-Oct-23 A	22-Feb-24									
SENB1535	Installation of pre-bored H-piles at VB21 (19 nos) - 1rigs	77.0	77.0	19-Feb-24	24-May-24									
<b>Semi-Enclosure Noise Barrier SE01</b>		60.0	45.0	12-Jul-23 A	08-Apr-24									
<b>Foundation of Semi-Enclosure Noise Barrier SE01</b>		60.0	45.0	12-Jul-23 A	08-Apr-24									
SENB2030	Pre-drilling works (24 nos-2rigs) (revised to 23 nos / 2 rigs)	60.0	45.0	12-Jul-23 A	08-Apr-24									
<b>Retaining Wall</b>		118.0	107.0	06-Dec-23 A	22-Jun-24									
<b>Retaining Wall RW12</b>		87.0	87.0	06-Mar-24	22-Jun-24									
SECRW1260	Installation of sheetpile (143m*2)	30.0	30.0	06-Mar-24	13-Apr-24									
SECRW1265	Excavation works	21.0	21.0	02-Apr-24	26-Apr-24									
SECRW1280	Construction of base slab (13 bays)	56.0	56.0	16-Apr-24	22-Jun-24									
<b>Retaining Wall RW22</b>		94.0	83.0	06-Dec-23 A	24-May-24									
SECRW1600	Installation of sheetpile for CH0.0-CH55.0 (122m)	13.0	8.0	06-Dec-23 A	20-Feb-24									
SECRW1620	Excavation works	25.0	25.0	21-Feb-24	20-Mar-24									
SECRW1622	Construction of base slab (5bays)	30.0	30.0	21-Mar-24	29-Apr-24									
SECRW1624	Construction of wall stem (5bays)	30.0	30.0	18-Apr-24	24-May-24									
SECRW1626	Installation of sheetpile for CH66.4-CH147.99 (176m)	18.0	12.0	06-Dec-23 A	24-Feb-24									
<b>Retaining Wall RW30</b>		32.0	6.0	11-Jan-24 A	17-Feb-24									
SECRW1760	Construction of wall stems and backfill	32.0	6.0	11-Jan-24 A	17-Feb-24									
<b>Retaining Wall RW37</b>		50.0	50.0	16-Mar-24	20-May-24									
<b>Construction of Bay 7 - Bay 12</b>		50.0	50.0	16-Mar-24	20-May-24									
SECRW1780	Install sheetpile along original site boundary (affected by the updated site boundary NCE No. 016 and full closure Rd)	21.0	21.0	16-Mar-24	13-Apr-24									
SECRW1800	Excavation works	15.0	15.0	15-Apr-24	02-May-24									
SECRW1820	Temporary protection of gas main	14.0	14.0	03-May-24	20-May-24									
<b>Box Culvert BC01(CH730 to CH1202)</b>		107.0	107.0	08-Feb-24	22-Jun-24									
<b>CH750 to CH850</b>		107.0	107.0	08-Feb-24	22-Jun-24									
SECBC0005	TTA Implementation for cycle track@BC01	3.0	3.0	08-Feb-24	14-Feb-24									
SECBC0010	Site clearance & existing UU diversion/protection @BC01	23.0	23.0	15-Feb-24	12-Mar-24									
SECBC1000	Installation of sheetpile @BC01	18.0	18.0	13-Mar-24	06-Apr-24									
SECBC1002	Excavation and installation of lateral support @BC01	18.0	18.0	22-Mar-24	16-Apr-24									
SECBC1015	Placing of 600m thick grade 200 fill material @BC01	10.0	10.0	17-Apr-24	27-Apr-24									
SECBC1018	Construction of box culvert (3 bays CH750-800) @BC01	45.0	45.0	29-Apr-24	22-Jun-24									
SECBC1076	Installation of sheetpile	13.0	13.0	17-Apr-24	02-May-24									
SECBC1078	Excavation and installation of struts	28.0	28.0	03-May-24	05-Jun-24									
<b>CH1113 to CH1202</b>		30.0	30.0	29-Apr-24	04-Jun-24									
SECBC1202	Site clearance @BC01	30.0	30.0	29-Apr-24	04-Jun-24									



Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						Feb 14	Mar 15	Apr 16	May 17
<b>Section 2 of the Works-Completion of all works within Portion</b>									
<b>Preparation Works</b>						Preparation Works			
SEC021000	Site clearance	14.0	7.0	27-Sep-23 A	19-Feb-24	Site clearance			
SEC021020	Erection of hoarding	14.0	14.0	08-Feb-24	27-Feb-24	Erection of hoarding			
SEC021040	Tree felling works	14.0	7.0	27-Sep-23 A	19-Feb-24	Tree felling works			
<b>Demolition Works</b>						Demolition Works			
SEC021060	Demolition of existing structure (4292m2)	85.0	30.0	03-Oct-23 A	25-Mar-24	Demolition of existing structure (4292m2)			
<b>Land Decontamination Works</b>						Land Decontamination Works			
SEC021205	Land decontamination assessment approval by EPD	21.0	21.0	08-Feb-24	28-Feb-24	Land decontamination assessment approval by EPD			
SEC021220	Land decontamination works (40533 m3)	45.0	45.0	08-Mar-24	04-May-24	Land decontamination works (40533 m3)			
<b>Box Culvert BC01(CH0 to CH88.7095)</b>						Box Culvert BC01(CH0 to CH88.7095)			
SEC021250	Installation of sheetpile(90m*2) @BC01	25.0	25.0	29-Feb-24	28-Mar-24	Installation of sheetpile(90m*2) @BC01			
SEC021270	Excavation and installation of lateral support @BC01	68.0	68.0	06-May-24	26-Jul-24	Excavation and installation of lateral support @BC01			
<b>Fresh Water and Flushing Water Works</b>						Fresh Water and Flushing Water Works			
SEC021350	Abandonment of the fresh water and flushing water in Portion 10 and Portion 10A	14.0	14.0	06-May-24	22-May-24	Abandonment of the fresh water and flushing water in Portion 10 and Portion 10A			
<b>Utilities</b>						Utilities			
SEC021360	Utilities detection and trial pit	7.0	7.0	06-May-24	13-May-24	Utilities detection and trial pit			
<b>Section 3 of the Works-Completion of All works within Portion</b>									
<b>Preparation Works</b>						Preparation Works			
SEC031007	Site clearance at Portion 14 and Portion 14A (remaining)	14.0	14.0	08-Feb-24	27-Feb-24	Site clearance at Portion 14 and Portion 14A (remaining)			
SEC031008	Tree felling works at Portion 14 and Portion 14A (remaining)	21.0	21.0	28-Feb-24	22-Mar-24	Tree felling works at Portion 14 and Portion 14A (remaining)			
SEC031010	Disconnect power supply at Portion 14 and Portion 14A	21.0	21.0	28-Feb-24	22-Mar-24	Disconnect power supply at Portion 14 and Portion 14A			
SEC101030	Site clearance at Portion 8A	7.0	7.0	08-Feb-24	19-Feb-24	Site clearance at Portion 8A			
SEC101035	Tree felling works at at Portion 8A	14.0	14.0	20-Feb-24	06-Mar-24	Tree felling works at at Portion 8A			
SEC101037	Disconnect power supply at at Portion 8A	21.0	21.0	20-Feb-24	14-Mar-24	Disconnect power supply at at Portion 8A			
<b>Demolition Works</b>						Demolition Works			
SEC031082	Demolition of existing structure in Portion 14 and Portion 14A (remaining) (affected by late site handover)	125.0	65.0	18-Oct-23 A	02-May-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)	71.0	71.0	03-May-24	27-Jul-24	Demolition of existing structure in Portion 8A (3535 m2)			
<b>Land Decontamination Works</b>						Land Decontamination Works			
SEC031100	Environmental ground investigation	30.0	30.0	11-Aug-23 A	16-Mar-24	Environmental ground investigation			
SEC031105	Land decontamination assessment approval by EPD in Portion 9A	21.0	21.0	17-Mar-24	06-Apr-24	Land decontamination assessment approval by EPD in Portion 9A			
SEC031108	Land decontamination assessment approval by EPD in Portion 8A	21.0	21.0	17-Mar-24	06-Apr-24	Land decontamination assessment approval by EPD in Portion 8A			
SEC031112	Land decontamination assessment approval by EPD in Portion 14 and Portion 14A	21.0	21.0	17-Mar-24	06-Apr-24	Land decontamination assessment approval by EPD in Portion 14 and Portion 14A			
SEC031120	Land decontamination works in Portion 14 and Portion 14A	50.0	50.0	03-May-24	03-Jul-24	Land decontamination works in Portion 14 and Portion 14A			
SEC031130	Land decontamination works in Portion 9A	7.0	7.0	08-Apr-24	15-Apr-24	Land decontamination works in Portion 9A			
<b>Box Culvert BC01(CH164 to CH254)</b>						Box Culvert BC01(CH164 to CH254)			
SEC031160	Installation of sheetpile @BC01	20.0	20.0	30-Jan-24 A	05-Mar-24	Installation of sheetpile @BC01			
<b>Fresh Water and Flushing Water Works</b>						Fresh Water and Flushing Water Works			
SEC031300	Abandonment of the fresh water and flushing water	20.0	20.0	03-May-24	27-May-24	Abandonment of the fresh water and flushing water			
<b>Utilities</b>						Utilities			
SEC031320	Utilities detection and trial pit	7.0	7.0	28-Feb-24	06-Mar-24	Utilities detection and trial pit			
<b>Section 4 of the Works-Completion of All works within Portion</b>									
<b>Preparation Works</b>						Preparation Works			
SEC041000	Site clearance (EW No.005)	14.0	5.0	07-Jul-23 A	16-Feb-24	Site clearance (EW No.005)			
SEC041020	Tree felling works	14.0	14.0	17-Feb-24	04-Mar-24	Tree felling works			

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024				
						Feb 14	Mar 15	Apr 16	May 17	
SEC041040	Disconnect power supply	21.0	21.0	05-Mar-24	28-Mar-24					
<b>Demolition Works</b>		150.0	65.0	18-Oct-23 A	21-May-24					
SEC041080	Demolition of existing structure (7513m2) (affected by late site handover)	150.0	65.0	18-Oct-23 A	21-May-24					
<b>Land Decontamination Works</b>		143.0	181.0	03-Oct-23 A	06-Aug-24					
SEC041100	Environmental ground investigation	30.0	30.0	03-Oct-23 A	16-Mar-24					
SEC041102	Land decontamination assessment approval by EPD	21.0	21.0	17-Mar-24	06-Apr-24					
SEC041120	Land decontamination works (28100 m3)	100.0	100.0	08-Apr-24	06-Aug-24					
<b>Utilities</b>		7.0	7.0	05-Mar-24	12-Mar-24					
SEC041220	Utilities detection and trial pit	7.0	7.0	05-Mar-24	12-Mar-24					
<b>Section 5 of the Works-Completion of All Works within Portion</b>		400.0	114.0	07-Jul-23 A	31-May-24					
<b>Preparation Works</b>		187.0	21.0	07-Jul-23 A	06-Mar-24					
<b>Preparation Works for Portion 16A, 16B, 16C &amp; 16D</b>		187.0	21.0	07-Jul-23 A	06-Mar-24					
SEC051100	Site Clearance for Portions (Affected by wooden poles and overhead cable)	18.0	8.0	07-Jul-23 A	20-Feb-24					
SEC051120	Tree felling works for Portions (Affected by wooden poles and overhead cable)	21.0	21.0	18-Oct-23 A	06-Mar-24					
SEC051140	Erection of hoardings for Portions (Affected by wooden poles and overhead cable)	15.0	14.0	26-Jul-23 A	27-Feb-24					
SEC051160	Utilities detection and trial pit for Portions (Affected by wooden poles and overhead cable)	14.0	7.0	23-Oct-23 A	19-Feb-24					
<b>Demolition Works</b>		43.0	43.0	20-Feb-24	13-Apr-24					
SEC053000	Demolition of existing footbridge(KD3)	30.0	30.0	20-Feb-24	25-Mar-24					
SEC053020	Demolition of existing structure in Portion 16&16D(47 m2) (Affected by wooden poles and overhead cable)	21.0	21.0	16-Mar-24	13-Apr-24					
<b>Land Decontamination Works</b>		25.0	25.0	20-Mar-24	13-Apr-24					
SEC053040	Environmental ground investigation	3.0	3.0	20-Mar-24	22-Mar-24					
SEC053045	Land decontamination assessment approval by EPD	14.0	14.0	23-Mar-24	05-Apr-24					
SEC053060	Land decontamination works (1208 m3)	7.0	7.0	06-Apr-24	13-Apr-24					
<b>Box Culvert BC02</b>		39.0	39.0	15-Apr-24	31-May-24					
SEC054000	Temporary diversion of Power and existing drainage(KD3) @BC02 (Affected by wooden poles and overhead cable)	14.0	14.0	15-Apr-24	30-Apr-24					
SEC054020	Demolition of existing channel(KD3) @BC02	25.0	25.0	02-May-24	31-May-24					
<b>Section 6 of the Works-Completion of All works within Portion</b>		435.0	159.0	14-Aug-23 A	15-Jul-24					
<b>Preparation Works</b>		199.0	74.0	14-Aug-23 A	13-May-24					
SEC061000	Site clearance	14.0	14.0	14-Aug-23 A	27-Feb-24					
SEC061020	Tree felling works	60.0	60.0	28-Feb-24	13-May-24					
SEC061040	Erection of hoarding	45.0	45.0	28-Feb-24	24-Apr-24					
<b>Demolition Works</b>		124.0	55.0	25-Sep-23 A	19-Apr-24					
SEC061060	Demolition of existing structure (6229m2) (affected by late site handover)	124.0	55.0	25-Sep-23 A	19-Apr-24					
<b>Land Decontamination Works</b>		113.0	100.0	22-Sep-23 A	17-May-24					
SEC061100	Environmental ground investigation	30.0	30.0	22-Sep-23 A	26-Apr-24					
SEC061102	Land decontamination assessment (part I for handovered site) approval by EPD	21.0	21.0	08-Feb-24	28-Feb-24					
SEC061120	Land decontamination works (part I for handovered site)	34.0	34.0	29-Feb-24	12-Apr-24					
SEC101800	Land decontamination assessment (part II for remaining site) approval by EPD	21.0	21.0	27-Apr-24	17-May-24					
<b>Ground Investigation</b>		10.0	0.0	25-Jan-24 A	07-Feb-24 A					
SEC061155	Pre-drilling TYST Lift (1 no.)	10.0	0.0	25-Jan-24 A	07-Feb-24 A					
<b>Box Culvert BC01 from CH88.7 to CH164</b>		204.0	122.0	22-Sep-23 A	11-Jul-24					
SEC061160	Installation of sheetpile @BC01	48.0	24.0	22-Sep-23 A	09-Mar-24					
SEC061180	Excavation and installation of lateral support @BC01	98.0	98.0	11-Mar-24	11-Jul-24					
<b>Box Culvert BC01 from CH254 to CH450</b>		21.0	21.0	03-May-24	28-May-24					
SEC061290	Implementation of TTA (temporary road at Section 3) @BC01	21.0	21.0	03-May-24	28-May-24					

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024				
						Feb 14	Mar 15	Apr 16	May 17	
<b>Box Culvert BC01 from CH450 to CH730</b>										
SEC061370	Implementation of TTA (temporary road at Setion 4) @BC01	14.0	14.0	20-Apr-24	07-May-24					Implement
SEC061375	Installation of sheetpile @BC01	56.0	56.0	08-May-24	15-Jul-24					
<b>Sewage Works</b>										
SEC101780	Sewage works (DN600 for diversion of existing sewage in Section 2)	60.0	60.0	20-Apr-24	03-Jul-24					
<b>Section 7 of the Works-Completion of All Works within Portioi</b>										
<b>Land Decontamination Works</b>										
SEC071140	Environmental ground investigation	30.0	20.0	05-Oct-23 A	05-Mar-24					
SEC071145	Land decontamination assessment approval by EPD	21.0	21.0	06-Mar-24	26-Mar-24					
SEC071160	Land decontamination works in Portions 13A and Portion 13 (8100m3)	45.0	45.0	27-Mar-24	24-May-24					
<b>Section 8 of the Works-Completion of All Works within Portioi</b>										
<b>Preparation Works</b>										
SEC081000	Site clearance	14.0	14.0	04-Sep-23 A	27-Feb-24					
SEC081020	Tree felling works	28.0	28.0	16-Oct-23 A	21-Mar-24					
SEC081040	Erection of hoarding	14.0	14.0	22-Mar-24	11-Apr-24					
<b>Section 9 of the Works-Completion of All Works within Portioi</b>										
<b>Preparation Works</b>										
SEC091000	Site clearance (EW No.005)	14.0	10.0	28-Apr-23 A	22-Feb-24					
SEC091020	Tree felling works	14.0	10.0	05-Jun-23 A	22-Feb-24					
<b>Demolition Works</b>										
SEC091060	Demolition of existing structure in Portion 7&7A (142m2)	5.0	5.0	08-Nov-23 A	16-Feb-24					
SEC091080	Demolition of existing structure in Portion 5C&7C (285m2)	7.0	5.0	08-Nov-23 A	16-Feb-24					
<b>Land Decontamination Works</b>										
SEC091005	Land decontamination assessment approval by EPD	14.0	14.0	08-Feb-24	21-Feb-24					
SEC091100	Land decontamination works in Portion 7	7.0	7.0	22-Feb-24	29-Feb-24					
<b>Construction of New Shan Ha Road in Portions 5C and 7C</b>										
<b>Drainage Works</b>										
SEC091120	Excavation works	10.0	10.0	17-Feb-24	28-Feb-24					
SEC091125	Laying of drainage	21.0	21.0	29-Feb-24	23-Mar-24					
<b>Sewage Works</b>										
SEC091140	Removal of existing sewage	15.0	15.0	25-Mar-24	15-Apr-24					
<b>Water Works</b>										
SEC091160	Excavation and laying of water works	21.0	21.0	16-Apr-24	10-May-24					
<b>Road Pavement and Road Marking</b>										
SEC091175	Cycle track	10.0	10.0	11-May-24	23-May-24					
<b>Nullah Decking ND2</b>										
<b>Preparation Works</b>										
SEC091210	Construction of temporary carriageway to divert Long Hon Road/Shan Ha Road (Affected by the site handover)	35.0	35.0	17-Feb-24	28-Mar-24					
<b>Demolition Works</b>										
SEC091230	Demolition of existing bridge NF138	14.0	14.0	02-Apr-24	18-Apr-24					
<b>Trial Pile for Prebored H-Pile</b>										
SEC091280	Trial Pile for pre-bored H-piles and Loading Test	30.0	14.0	16-Jan-24 A	27-Feb-24					
SEC091285	Design Review for Trial Pile	12.0	12.0	28-Feb-24	12-Mar-24					
<b>Pre-drilling and Piling Works</b>										
SEC091250	Pre-drilling works (15 nos / 4 rigs) (Affected by the updated site boudary, NCE No. 014)	30.0	30.0	02-Jun-23 A	16-Mar-24					

Activity ID	Activity Name	Original Dur	Remaining Dur	Early Start	Early Finish	2024			
						Feb 14	Mar 15	Apr 16	May 17
SEC091260	Road modification and site formation	24.0	24.0	19-Apr-24	18-May-24				
SEC091270	Plant mobilization and setup	30.0	30.0	18-Mar-24	25-Apr-24				
<b>Nullah Wall NW1</b>		12.0	12.0	18-Mar-24	03-Apr-24				
<b>Pre-drilling and Piling Works</b>		12.0	12.0	18-Mar-24	03-Apr-24				
SEC091500	Pre-drilling works (2 nos)	12.0	12.0	18-Mar-24	03-Apr-24				
<b>Section 12 of the Works-Comprises All Preservation and Prot</b>		1858.0	1643.0	26-Feb-23 A	07-Aug-28				
SEC12100	Preservation and protection of existing trees	1858.0	1643.0	26-Feb-23 A	07-Aug-28				
<b>Section 13 of the Works-Comprises All of the Landscape Soft</b>		1858.0	1643.0	26-Feb-23 A	07-Aug-28				
SEC13100	Landscape softworks	1858.0	1643.0	26-Feb-23 A	07-Aug-28				

## **Appendix E**

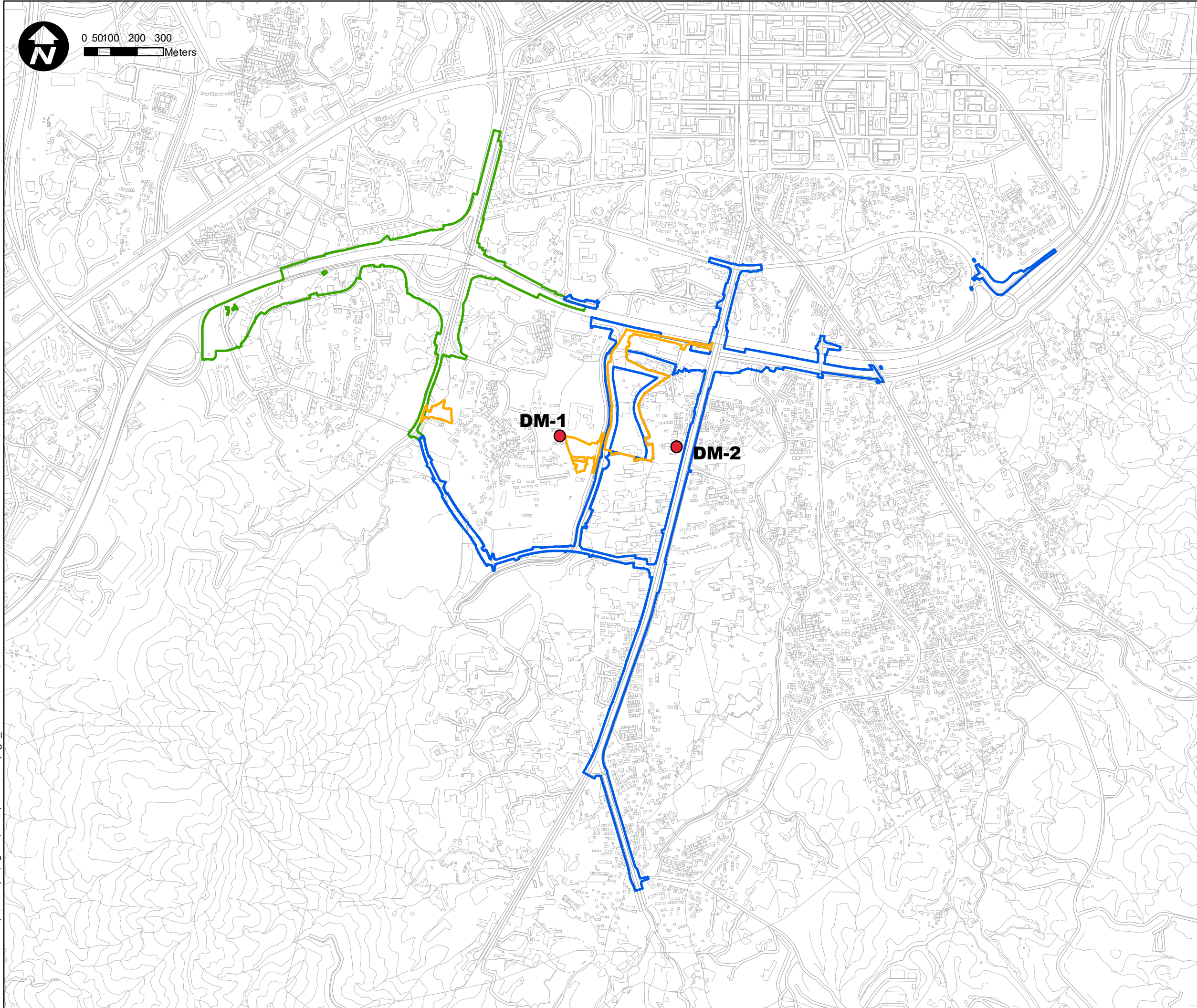
### **Monitoring Locations**



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



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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**

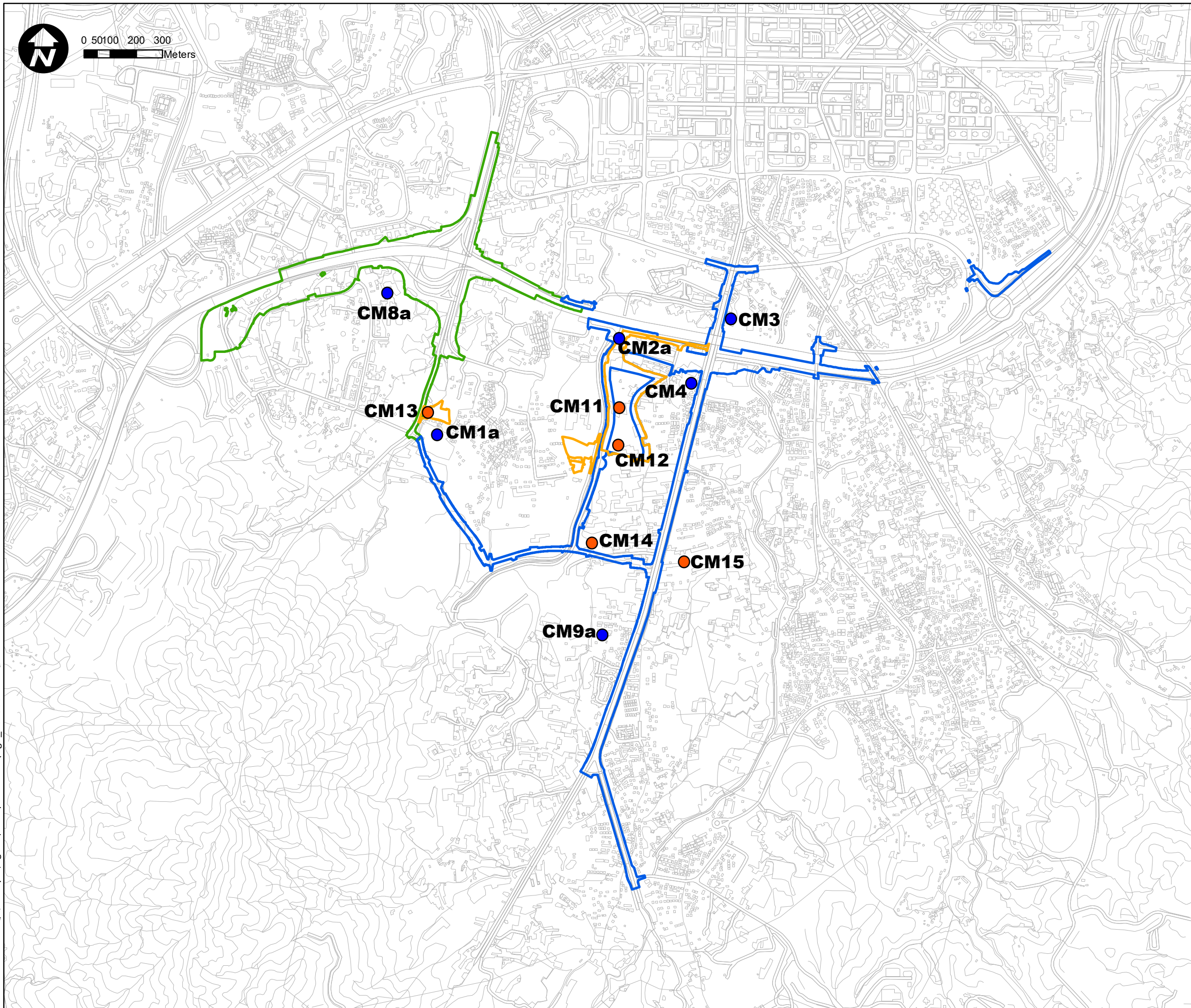
Drawn by:	Scale: 1:13,745 on A3
Checked By:	
Approved by:	
Figure Number:	Revision: 0



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)

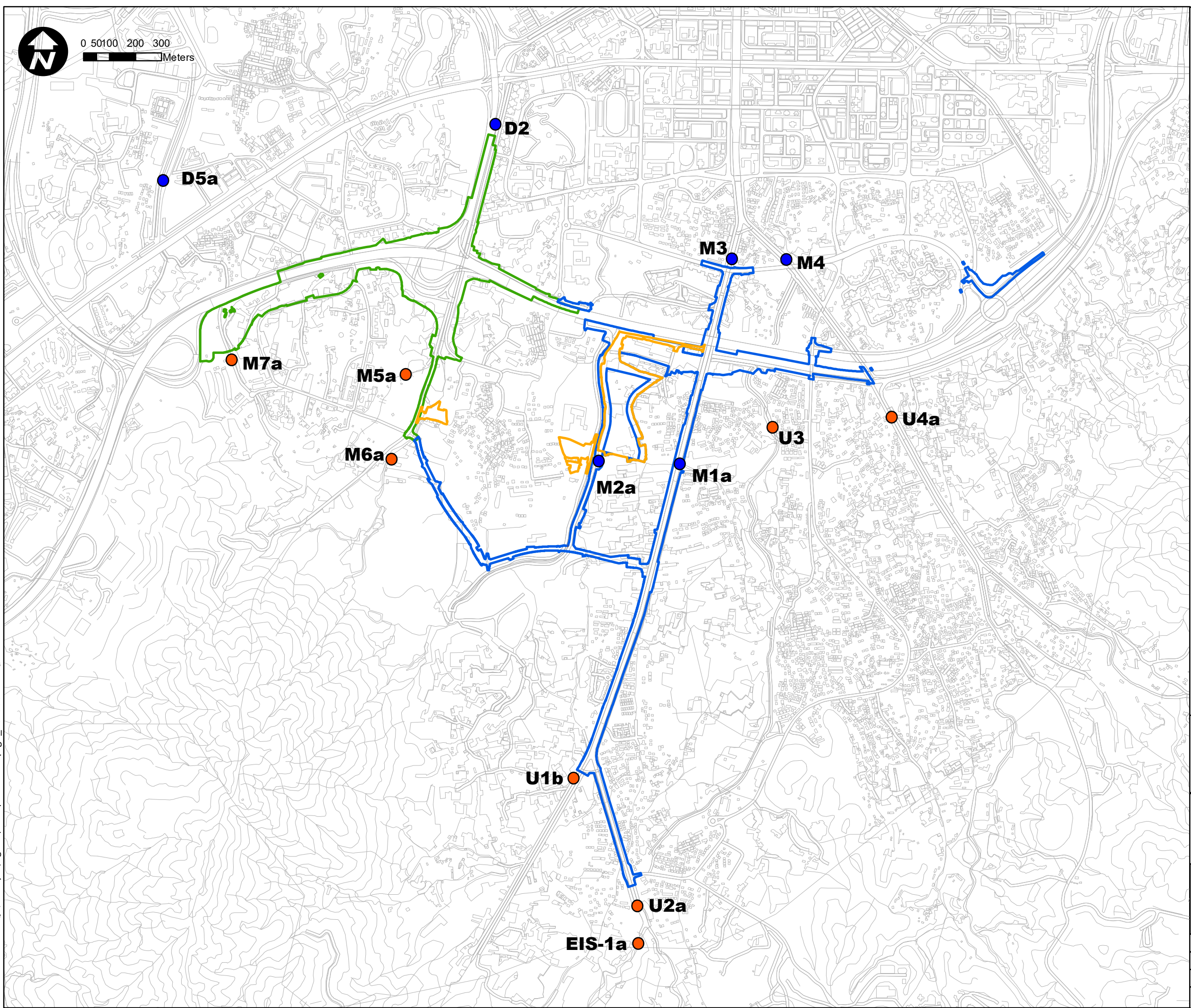


Project Title:  
 CEDD Service Contract No. WD/07/2022  
 Yuen Long South First Phase Development -  
 Environmental Team

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

Document Path: D:\p\aves-yls\Figure\MXD\20230615\Fig1\_20230627.mxd

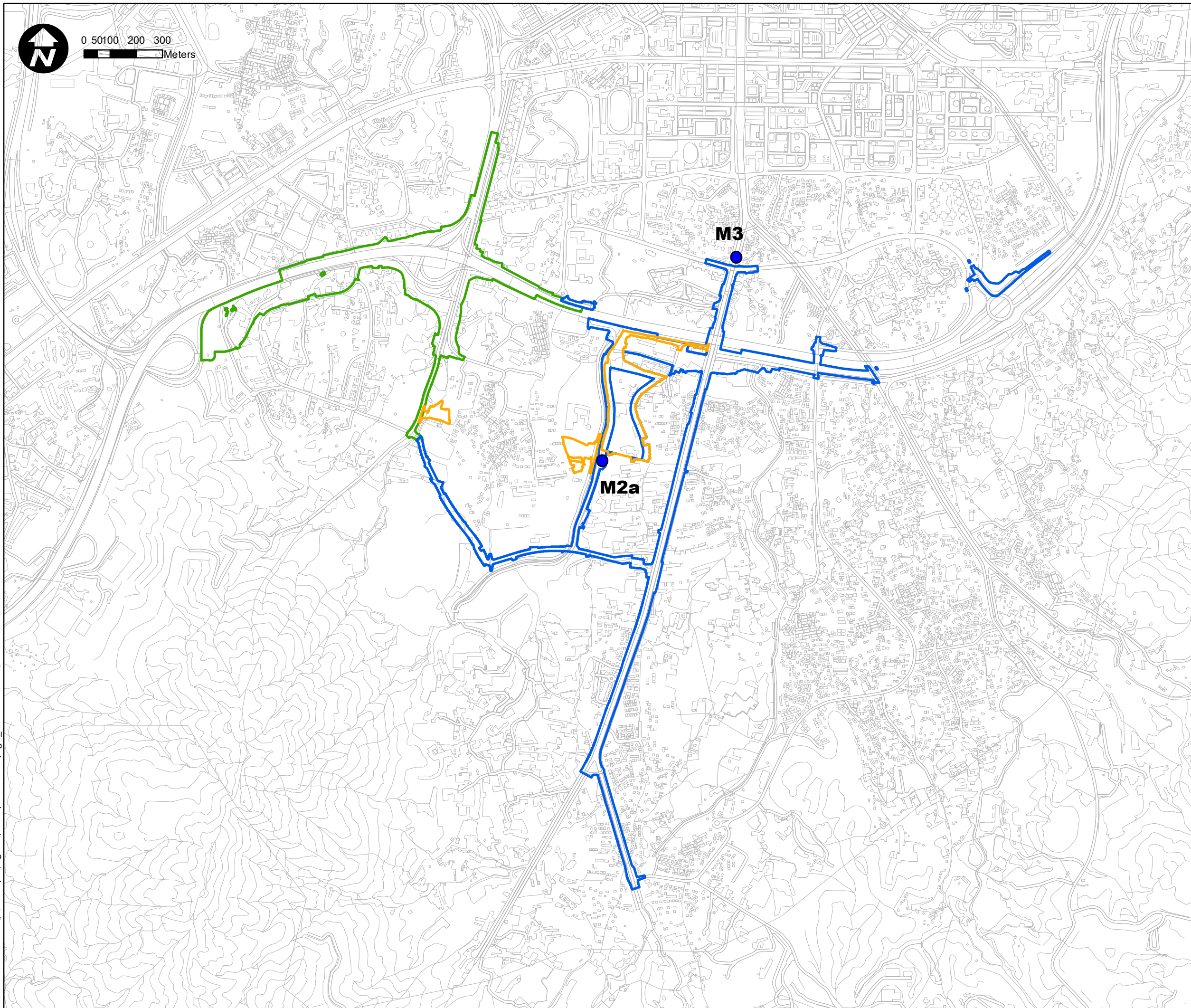


**LEGEND**

- 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: <b>Location of Water Quality Monitoring Stations for YLS First Phase Development</b>	
Drawn by:	Scale: 1:13,745 on A3
Checked By:	
Approved by:	
Figure Number:	Revision: 0





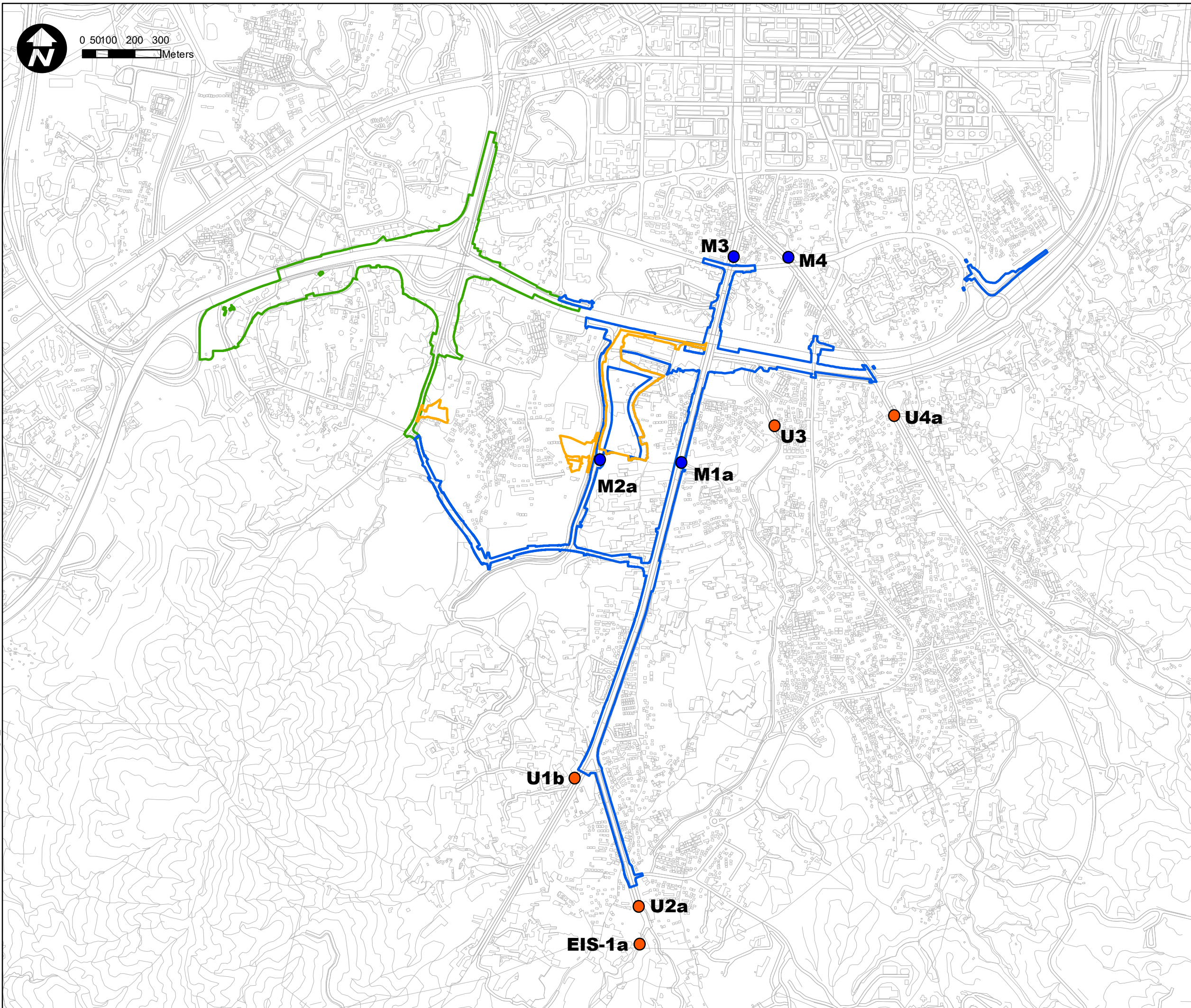
**LEGEND**

- 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

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**

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



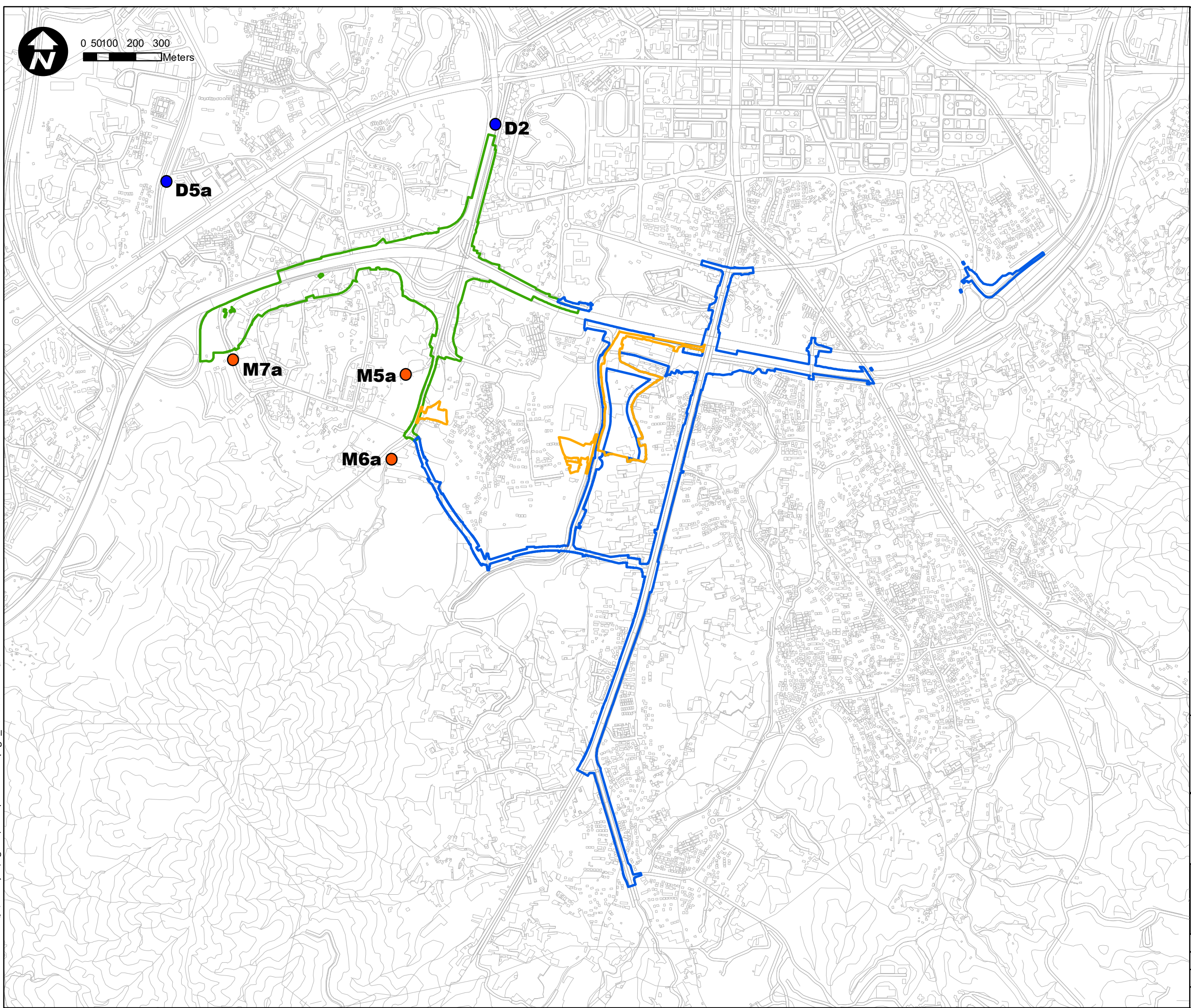
**LEGEND**

- 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 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**



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### SUB-CONTRACTING REPORT

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CONTACT	: MR BEN TAM	WORK ORDER	: <b>HK2311530</b>
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	: 23-MAR-2023
		DATE OF ISSUE	: 30-MAR-2023
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

---

#### *General Comments*

- Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.
  - 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.
  - Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.
- 

#### *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

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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 : HK2311530  
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.
HK2311530-001	S/N: 3Y6502	AIR	23-Mar-2023	S/N: 3Y6502

# Equipment Verification Report (TSP)

## Equipment Calibrated:

Type: Laser Dust monitor  
 Manufacturer: Sibata LD-3B  
 Serial No. 3Y6502  
 Equipment Ref: EQ113

## Standard Equipment:

Standard Equipment: Higher Volume Sampler (TSP)  
 Location & Location ID: AUES office (calibration room)  
 Equipment Ref: HVS 018 & HVS 019  
 Last Calibration Date: 27 February 2023 & 10 January 2023

## Equipment Verification Results:

Verification Date: 6 & 9 March 2023

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m <sup>3</sup> (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
6-Mar-23	2hr01mins	09:35 ~ 11:36	20	1022.4	82.5	4537	37.6
6-Mar-23	2hr01mins	11:43 ~ 13:44	20	1022.4	29.5	2117	17.5
6-Mar-23	2hr11mins	13:45 ~ 15:56	20	1022.4	30.4	2306	17.6
9-Mar-23*	61mins	11:03 ~ 12:04	22.5	1017.7	144	4408	72.7
9-Mar-23*	61mins	12:06 ~ 13:07	22.5	1017.7	116	3761	61.5

(\* Suspended particle was added into calibration room of HVS019 for high concentration test.

Sensitivity Adjustment Scale Setting (Before Calibration) 655 (CPM)

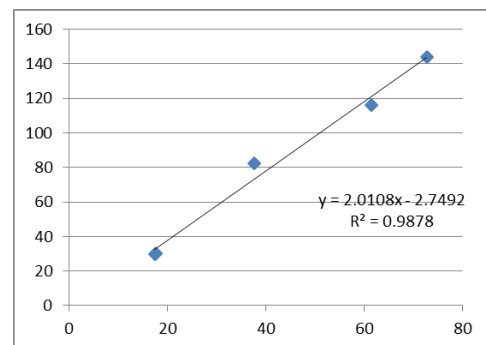
Sensitivity Adjustment Scale Setting (After Calibration) 660 (CPM)

## Linear Regression of Y or X

Slope (K-factor): 2.0108 (µg/m<sup>3</sup>)/CPM

Correlation Coefficient (R) 0.9939

Date of Issue 20 March 2023

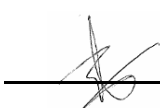


## Remarks:

- Strong** Correlation (R>0.8)
- Factor 2.0108 (µg/m<sup>3</sup>)/CPM should be apply for TSP monitoring

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

Operator : Fai So Signature :  Date : 20 March 2023

QC Reviewer : Ben Tam Signature :  Date : 20 March 2023



## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Gold King Industrial Building, Kwai Chung Date of Calibration: 27-Feb-23  
 Location ID : Calibration Room(HVS 018) Next Calibration Date: 27-May-23

### CONDITIONS

Sea Level Pressure (hPa)	1024	Corrected Pressure (mm Hg)	768
Temperature (°C)	17.8	Temperature (K)	291

### CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.10977
Model->	5025A	Qstd Intercept ->	-0.03782
Calibration Date->	15-Dec-22	Expiry Date->	15-Dec-23

### CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6	6	12.0	1.689	55	55.97	Slope = 32.9819 Intercept = 0.0741 Corr. coeff. = 0.9968
13	4.8	4.8	9.6	1.512	48	48.85	
10	3.7	3.7	7.4	1.330	44	44.78	
8	2.6	2.6	5.2	1.118	37	37.65	
5	1.6	1.6	3.2	0.881	28	28.49	

**Calculations :**

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

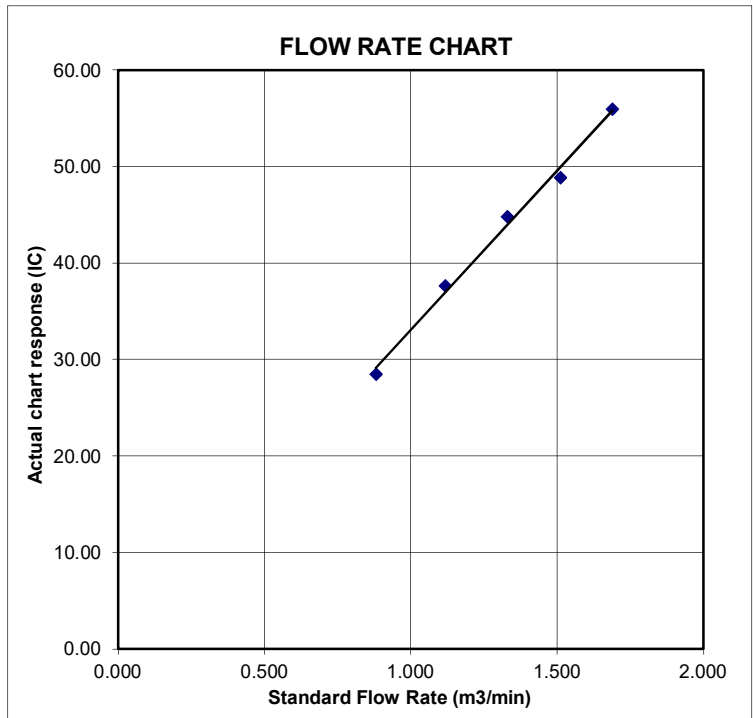
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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



## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration: 10-Jan-23
Location ID :	Calibration Room(HVS 019)	Next Calibration Date: 9-Apr-23

### CONDITIONS

Sea Level Pressure (hPa)	1018.8	Corrected Pressure (mm Hg)	764.1
Temperature (°C)	18.2	Temperature (K)	291

### CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.10977
Model->	5025A	Qstd Intercept ->	-0.03782
Calibration Date->	15-Dec-22	Expiry Date->	15-Dec-23

### CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6	6	12.0	1.683	55	55.79	Slope = 31.4802 Intercept = 1.9499 Corr. coeff. = 0.9967
13	4.9	4.9	9.8	1.523	48	48.69	
10	3.9	3.9	7.8	1.361	44	44.63	
8	2.4	2.4	4.8	1.071	36	36.52	
5	1.5	1.5	3.0	0.851	28	28.40	

**Calculations :**

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

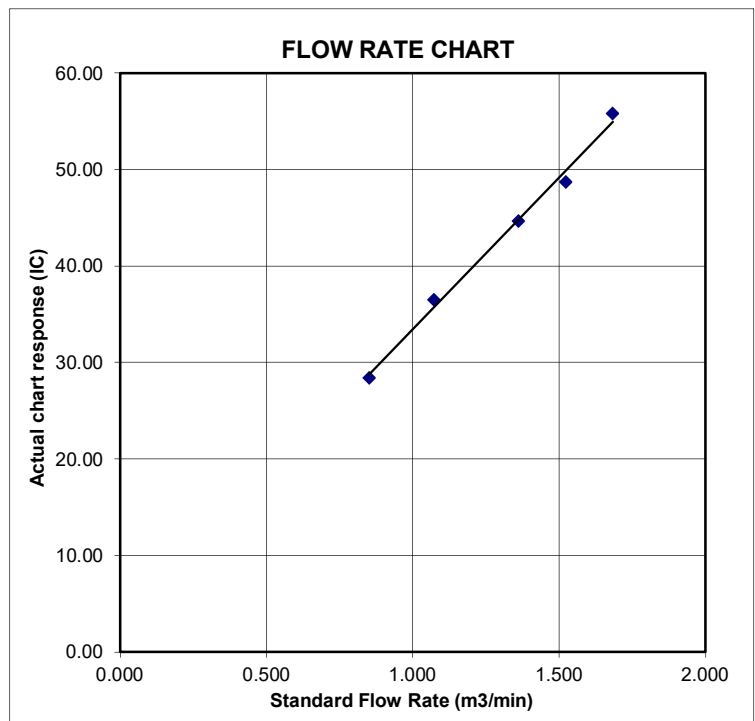
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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, 2022	Rootsmeter S/N: 438320	Ta: 295	°K
Operator: Jim Tisch		Pa: 748.0	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 4064		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4430	3.2	2.00
2	3	4	1	1.0210	6.4	4.00
3	5	6	1	0.9170	7.9	5.00
4	7	8	1	0.8730	8.8	5.50
5	9	10	1	0.7210	12.8	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)
0.9900	0.6861	1.4101	0.9957	0.6900	0.8881
0.9858	0.9655	1.9943	0.9914	0.9711	1.2560
0.9838	1.0728	2.2296	0.9894	1.0790	1.4042
0.9826	1.1255	2.3385	0.9882	1.1320	1.4728
0.9772	1.3554	2.8203	0.9829	1.3632	1.7762
<b>QSTD</b>	m=	<b>2.10977</b>	<b>QA</b>	m=	<b>1.32110</b>
	b=	<b>-0.03782</b>		b=	<b>-0.02382</b>
	r=	<b>0.99998</b>		r=	<b>0.99998</b>

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/ΔTime	Qa=	Va/ΔTime
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



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### SUB-CONTRACTING REPORT

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CONTACT	: MR BEN TAM	WORK ORDER	: <b>HK2311531</b>
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	: 23-MAR-2023
		DATE OF ISSUE	: 30-MAR-2023
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

---

#### *General Comments*

- Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.
  - 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.
  - Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.
- 

#### *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

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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 : HK2311531  
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.
HK2311531-001	S/N: 456658	AIR	23-Mar-2023	S/N: 456658

# Equipment Verification Report (TSP)

## Equipment Calibrated:

Type: Laser Dust monitor  
Manufacturer: Sibata LD-3B  
Serial No. 456658  
Equipment Ref: EQ115

## Standard Equipment:

Standard Equipment: Higher Volume Sampler (TSP)  
Location & Location ID: AUES office (calibration room)  
Equipment Ref: HVS 018 & HVS 019  
Last Calibration Date: 27 February 2023 & 10 January 2023

## Equipment Verification Results:

Verification Date: 6 & 9 March 2023

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m <sup>3</sup> (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
6-Mar-23	2hr01mins	09:35 ~ 11:36	20	1022.4	82.5	4485	37.2
6-Mar-23	2hr01mins	11:43 ~ 13:44	20	1022.4	29.5	2128	17.6
6-Mar-23	2hr11mins	13:45 ~ 15:56	20	1022.4	30.4	2267	17.3
9-Mar-23*	61mins	11:03 ~ 12:04	22.5	1017.7	144	4263	70.3
9-Mar-23*	61mins	12:06 ~ 13:07	22.5	1017.7	116	3667	59.9

(\* Suspended particle was added into calibration room of HVS019 for high concentration test.

Sensitivity Adjustment Scale Setting (Before Calibration) 702 (CPM)

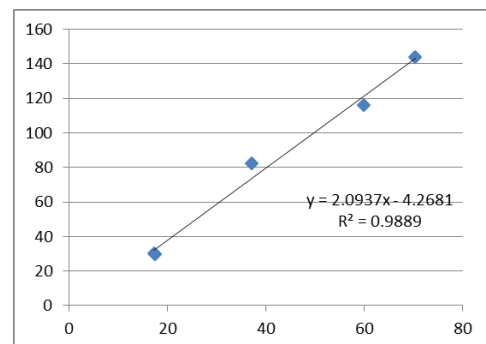
Sensitivity Adjustment Scale Setting (After Calibration) 708 (CPM)

## Linear Regression of Y or X

Slope (K-factor): 2.0937 (µg/m<sup>3</sup>)/CPM

Correlation Coefficient (R) 0.9944

Date of Issue 20 March 2023



## Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 2.0937 (µg/m<sup>3</sup>)/CPM should be apply for TSP monitoring

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

Operator : Fai So Signature : [Signature] Date : 20 March 2023

QC Reviewer : Ben Tam Signature : [Signature] Date : 20 March 2023

## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Gold King Industrial Building, Kwai Chung Date of Calibration: 27-Feb-23  
 Location ID : Calibration Room(HVS 018) Next Calibration Date: 27-May-23

### CONDITIONS

Sea Level Pressure (hPa)	1024	Corrected Pressure (mm Hg)	768
Temperature (°C)	17.8	Temperature (K)	291

### CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.10977
Model->	5025A	Qstd Intercept ->	-0.03782
Calibration Date->	15-Dec-22	Expiry Date->	15-Dec-23

### CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6	6	12.0	1.689	55	55.97	Slope = 32.9819 Intercept = 0.0741 Corr. coeff. = 0.9968
13	4.8	4.8	9.6	1.512	48	48.85	
10	3.7	3.7	7.4	1.330	44	44.78	
8	2.6	2.6	5.2	1.118	37	37.65	
5	1.6	1.6	3.2	0.881	28	28.49	

**Calculations :**

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

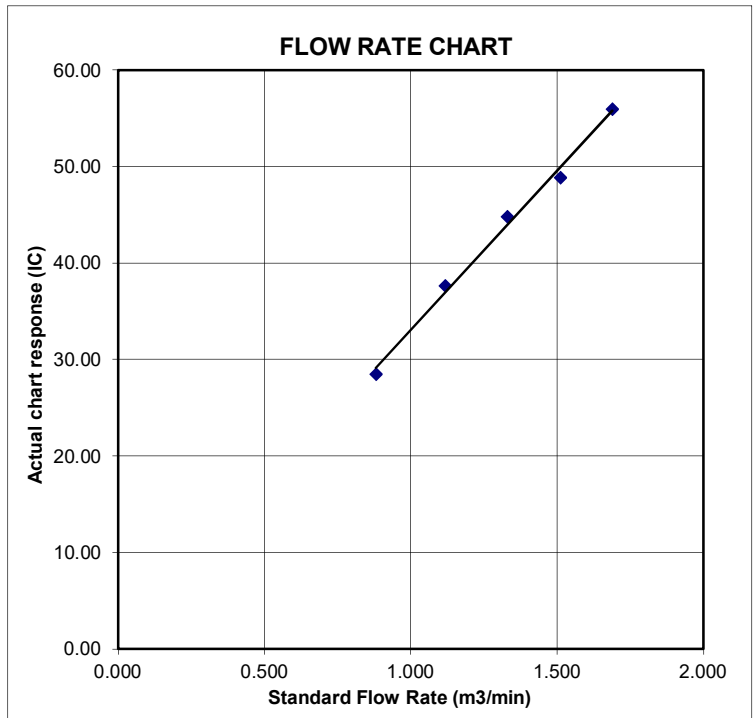
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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



## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration: 10-Jan-23
Location ID :	Calibration Room(HVS 019)	Next Calibration Date: 9-Apr-23

### CONDITIONS

Sea Level Pressure (hPa)	1018.8	Corrected Pressure (mm Hg)	764.1
Temperature (°C)	18.2	Temperature (K)	291

### CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.10977
Model->	5025A	Qstd Intercept ->	-0.03782
Calibration Date->	15-Dec-22	Expiry Date->	15-Dec-23

### CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6	6	12.0	1.683	55	55.79	Slope = 31.4802 Intercept = 1.9499 Corr. coeff. = 0.9967
13	4.9	4.9	9.8	1.523	48	48.69	
10	3.9	3.9	7.8	1.361	44	44.63	
8	2.4	2.4	4.8	1.071	36	36.52	
5	1.5	1.5	3.0	0.851	28	28.40	

**Calculations :**

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

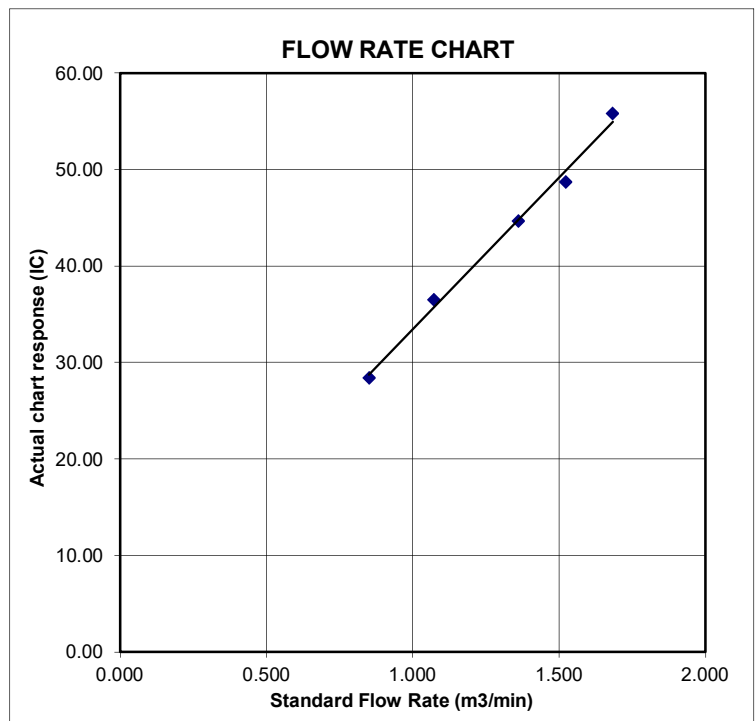
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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, 2022	Rootsmeter S/N: 438320	Ta: 295	°K
Operator: Jim Tisch		Pa: 748.0	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: <b>4064</b>		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4430	3.2	2.00
2	3	4	1	1.0210	6.4	4.00
3	5	6	1	0.9170	7.9	5.00
4	7	8	1	0.8730	8.8	5.50
5	9	10	1	0.7210	12.8	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)
0.9900	0.6861	1.4101	0.9957	0.6900	0.8881
0.9858	0.9655	1.9943	0.9914	0.9711	1.2560
0.9838	1.0728	2.2296	0.9894	1.0790	1.4042
0.9826	1.1255	2.3385	0.9882	1.1320	1.4728
0.9772	1.3554	2.8203	0.9829	1.3632	1.7762
<b>QSTD</b>	m=	<b>2.10977</b>	<b>QA</b>	m=	<b>1.32110</b>
	b=	<b>-0.03782</b>		b=	<b>-0.02382</b>
	r=	<b>0.99998</b>		r=	<b>0.99998</b>

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/ΔTime	Qa=	Va/ΔTime
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

**Appendix F2**

**Calibration Certificates for**

**Noise Monitoring Equipment**



# Certificate of Calibration 校正證書

Certificate No. : C231628  
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC23-0436 )      Date of Receipt / 收件日期 : 28 February 2023  
Description / 儀器名稱 : Sound Level Meter (EQ020)  
Manufacturer / 製造商 : Rion  
Model No. / 型號 : NL-52A  
Serial No. / 編號 : 00620665  
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** : 21 March 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
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By :   
測試 : K C Lee  
Engineer

Certified By :   
核證 : H C Chan  
Engineer

Date of Issue : 21 March 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. : C231628  
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.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C230306
CL281	Multifunction Acoustic Calibrator	AV210017

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.1	± 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 <sub>A</sub>	A	Fast	94.00	1	94.1 (Ref.)
				104.00		104.1
				114.00		114.1

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 <sub>A</sub>	A	Fast	94.00	1	94.1	Ref.
			Slow			94.1	± 0.3

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# Certificate of Calibration

## 校正證書

Certificate No. : C231628  
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 <sub>A</sub>	A	Fast	94.00	63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.9	-16.1 ± 1.5
					250 Hz	85.4	-8.6 ± 1.4
					500 Hz	90.9	-3.2 ± 1.4
					1 kHz	94.1	Ref.
					2 kHz	95.3	+1.2 ± 1.6
					4 kHz	95.1	+1.0 ± 1.6
					8 kHz	93.1	-1.1 (+2.1 ; -3.1)
					16 kHz	86.1	-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 <sub>C</sub>	C	Fast	94.00	63 Hz	93.3	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.5
					250 Hz	94.1	0.0 ± 1.4
					500 Hz	94.1	0.0 ± 1.4
					1 kHz	94.1	Ref.
					2 kHz	93.9	-0.2 ± 1.6
					4 kHz	93.3	-0.8 ± 1.6
					8 kHz	91.2	-3.0 (+2.1 ; -3.1)
					16 kHz	84.2	-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.

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C231628  
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 21625

- Mfr's Limit : IEC 61672 Class 1

- Uncertainties of Applied Value :

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

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

Note :

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

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

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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

Page 4 of 4



# Certificate of Calibration

## 校正證書

Certificate No. : C231629  
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC23-0436 )      Date of Receipt / 收件日期 : 28 February 2023  
Description / 儀器名稱 : Sound Level Meter (EQ021)  
Manufacturer / 製造商 : Rion  
Model No. / 型號 : NL-52A  
Serial No. / 編號 : 00620666  
Supplied By / 委託者 : Action-United Environmental Services and Consulting  
Unit A, 20/F., Gold King Industrial Building,  
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

### TEST CONDITIONS / 測試條件

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

### TEST SPECIFICATIONS / 測試規範

Calibration check

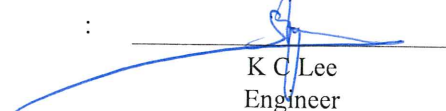
**DATE OF TEST / 測試日期** : 21 March 2023

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

Tested By :   
測試 : K C Lee  
Engineer

Certified By :   
核證 : H C Chan  
Engineer

Date of Issue : 21 March 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書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C231629

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 :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C230306
CL281	Multifunction Acoustic Calibrator	AV210017

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Limit (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L <sub>A</sub>	A	Fast	94.00	1	94.0	± 1.1

- 6.1.2 Linearity

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

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 <sub>A</sub>	A	Fast	94.00	1	94.0	Ref.
			Slow				± 0.3

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# Certificate of Calibration

## 校正證書

Certificate No. : C231629

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 <sub>A</sub>	A	Fast	94.00	63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.8	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.6
					4 kHz	95.0	+1.0 ± 1.6
					8 kHz	93.0	-1.1 (+2.1 ; -3.1)
					16 kHz	86.1	-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 <sub>C</sub>	C	Fast	94.00	63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	91.1	-3.0 (+2.1 ; -3.1)
					16 kHz	84.1	-8.5 (+3.5 ; -17.0)

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# Certificate of Calibration

## 校正證書

Certificate No. : C231629  
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 21627

- Mfr's Limit : IEC 61672 Class 1

- Uncertainties of Applied Value :

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

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

Note :

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

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

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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

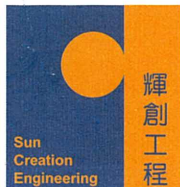
c/o 香港新界屯門興安里一號四樓

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. : C231631  
證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC23-0436 )      Date of Receipt / 收件日期 : 28 February 2023  
Description / 儀器名稱 : Sound Level Meter (EQ067)  
Manufacturer / 製造商 : Rion  
Model No. / 型號 : NL-31  
Serial No. / 編號 : 00410221  
Supplied By / 委託者 : Action-United Environmental Services and Consulting  
Unit A, 20/F., Gold King Industrial Building,  
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

## TEST CONDITIONS / 測試條件

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

## TEST SPECIFICATIONS / 測試規範

Calibration check

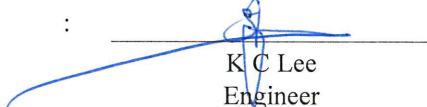
DATE OF TEST / 測試日期 : 21 March 2023

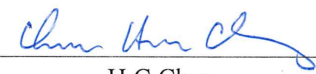
## TEST RESULTS / 測試結果

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

Tested By :   
測試 : K C Lee  
Engineer

Certified By :   
核證 : H C Chan  
Engineer

Date of Issue : 21 March 2023  
簽發日期

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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. : C231631

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	C230360
CL281	Multifunction Acoustic Calibrator	AV210017

5. Test procedure : MA101N.

6. Results :

### 6.1 Sound Pressure Level

#### 6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT	IEC 61672 Class 1
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Limit (dB)
30 - 120	L <sub>A</sub>	A	Fast	94.00	1	93.6	± 1.1

#### 6.1.2 Linearity

UUT Setting				Applied Value		UUT
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
30 - 120	L <sub>A</sub>	A	Fast	94.00	1	93.6 (Ref.)
				104.00		103.6
				114.00		113.6

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	IEC 61672 Class 1
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Limit (dB)
30 - 120	L <sub>A</sub>	A	Fast	94.00	1	93.6	Ref.
			Slow			93.6	± 0.3

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# Certificate of Calibration

## 校正證書

Certificate No. : C231631  
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)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L <sub>A</sub>	A	Fast	94.00	63 Hz	67.3	-26.2 ± 1.5
					125 Hz	77.4	-16.1 ± 1.5
					250 Hz	84.9	-8.6 ± 1.4
					500 Hz	90.3	-3.2 ± 1.4
					1 kHz	93.6	Ref.
					2 kHz	94.8	+1.2 ± 1.6
					4 kHz	94.7	+1.0 ± 1.6
					8 kHz	92.6	-1.1 (+2.1 ; -3.1)
					16 kHz	87.2	-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)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L <sub>C</sub>	C	Fast	94.00	63 Hz	92.6	-0.8 ± 1.5
					125 Hz	93.3	-0.2 ± 1.5
					250 Hz	93.5	0.0 ± 1.4
					500 Hz	93.6	0.0 ± 1.4
					1 kHz	93.6	Ref.
					2 kHz	93.5	-0.2 ± 1.6
					4 kHz	92.9	-0.8 ± 1.6
					8 kHz	90.7	-3.0 (+2.1 ; -3.1)
					16 kHz	85.3	-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.

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# Certificate of Calibration

## 校正證書

Certificate No. : C231631  
證書編號

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 322551

- Mfr's Limit : IEC 61672 Class 1

- Uncertainties of Applied Value : 94 dB : 63 Hz - 125 Hz :  $\pm 0.35$  dB  
250 Hz - 500 Hz :  $\pm 0.30$  dB  
1 kHz :  $\pm 0.20$  dB  
2 kHz - 4 kHz :  $\pm 0.35$  dB  
8 kHz :  $\pm 0.45$  dB  
16 kHz :  $\pm 0.70$  dB  
104 dB : 1 kHz :  $\pm 0.10$  dB (Ref. 94 dB)  
114 dB : 1 kHz :  $\pm 0.10$  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所書面批准。



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C235367  
證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC23-1813 )      Date of Receipt / 收件日期 : 31 August 2023

Description / 儀器名稱 : Sound Level Calibrator (EQ085)  
Manufacturer / 製造商 : Rion  
Model No. / 型號 : NC-73  
Serial No. / 編號 : 10655561  
Supplied By / 委託者 : Action-United Environmental Services and Consulting  
Unit A, 20/F., Gold King Industrial Building,  
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

## TEST CONDITIONS / 測試條件

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

## TEST SPECIFICATIONS / 測試規範

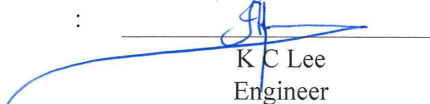
Calibration check

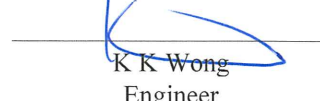
DATE OF TEST / 測試日期 : 13 September 2023

## 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 or user's specified 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 : K C Lee  
Engineer

Certified By :   
核證 : K K Wong  
Engineer

Date of Issue : 17 September 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。

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. : C235367  
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 Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.00	± 0.5	± 0.20

### 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	User's Spec.	Uncertainty of Measured Value (Hz)
1	0.951	1 kHz ± 6 %	± 1

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

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

Note :

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

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

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





輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C231627

證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC23-0436 )      Date of Receipt / 收件日期 : 28 February 2023

Description / 儀器名稱 : Sound Calibrator (EQ089)  
Manufacturer / 製造商 : Rion  
Model No. / 型號 : NC-75  
Serial No. / 編號 : 34680623  
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

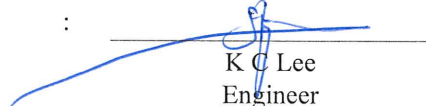
DATE OF TEST / 測試日期 : 21 March 2023


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

Tested By :   
測試 : K C Lee  
Engineer

Certified By :   
核證 : H C Chan  
Engineer

Date of Issue : 21 March 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。

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

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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. : C231627  
證書編號

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

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C223647
CL281	Multifunction Acoustic Calibrator	AV210017
TST150A	Measuring Amplifier	C221750

4. Test procedure : MA100N.

5. Results :

### 5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Limit (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.1	± 0.25	± 0.2

### 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Limit	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

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

#### Note :

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

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

**Appendix F3**

**Calibration Certificates for**

**Water Quality Monitoring Equipment**



## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** MR 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:** HK2400952  
**SUB-BATCH:** 0  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 05-Jan-2024  
**DATE OF ISSUE:** 16-Jan-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: 16-January-2024

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics

*This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.*

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2400952  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 16-Jan-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: 16-January-2024 Date of Next Calibration: 16-April-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	158.1	+7.6
6667	6822	+2.3
12890	13460	+4.4
58670	57182	-2.5
	Tolerance Limit (%)	$\pm 10.0$

### Dissolved Oxygen

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.76	2.90	+0.14
4.46	4.56	+0.10
7.61	7.66	+0.05
	Tolerance Limit (mg/L)	$\pm 0.20$

### pH Value

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

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	3.87	-0.13
7.0	6.99	-0.01
10.0	9.98	-0.02
	Tolerance Limit (pH unit)	$\pm 0.20$

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:** HK2400952  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 16-Jan-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: 16-January-2024 Date of Next Calibration: 16-April-2024

## PARAMETERS:

### Turbidity

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.28	--
4	4.25	+6.3
40	36.66	-8.4
80	80.26	+0.3
400	360.97	-9.8
800	743.73	-7.0
	Tolerance Limit (%)	±10.0

### Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.01	--
10	10.91	+9.1
20	21.62	+8.1
30	31.98	+6.6
	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:** HK2400952  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 16-Jan-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: 16-January-2024 Date of Next Calibration: 16-April-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	8.9	-1.1
23.0	22.5	-0.5
40.0	38.6	-1.4
	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

## **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-Feb-24	Thu	Warm in the afternoon. Light winds.	0.2	24.3	3.5	85.5	E/NE
2-Feb-24	Fri	Sunny periods. Coastal fog patches in the morning.	Trace	24.5	4	83.7	W/NW
3-Feb-24	Sat	occasionally fresh with one or two light rain patches later.	Trace	22.3	5	84	E/NE
4-Feb-24	Sun	Moderate northeasterly winds.	Trace	22.9	3.7	87.5	NE
5-Feb-24	Mon	Mainly cloudy with one or two rain patches and coastal fog.	Trace	22.1	3.5	85	E/NE
6-Feb-24	Tue	Mainly cloudy with one or two rain patches tonight	0.6	22.6	6.2	78.5	E/NE
7-Feb-24	Wed	Cloudy with a few rain patches.	Trace	17.6	4.5	92.5	NW
8-Feb-24	Thu	It will be cold. Cloudy with a few rain patches.	2.2	12.2	5.5	87	N/NE
9-Feb-24	Fri	Mainly cloudy with one or two light rain patches.	0.6	13.1	5	80	N/NE
10-Feb-24	Sat	It will be cold.Moderate north to northeasterly winds.	0.5	16.9	5	70	N/NE
11-Feb-24	Sun	It will be cold. Cloudy with a few rain patches.	0	19	4	59	N/NE
12-Feb-24	Mon	Rather warm during the day. Light winds.	0	19.8	5	69.5	E/NE
13-Feb-24	Tue	Light to moderate easterly winds.	0	20.7	5	77	E/NE
14-Feb-24	Wed	Mainly fine. Warm during the day.	0	22	4	77.5	W/NW
15-Feb-24	Thu	Light to moderate easterly winds.	0	23.4	5	75	W
16-Feb-24	Fri	Mainly fine. Warm during the day.	Trace	21.5	6	78	E/NE
17-Feb-24	Sat	Light to moderate southeasterly winds.	Trace	22.7	6.2	79	E/NE
18-Feb-24	Sun	Sunny intervals in the afternoon.	0	25.9	8.7	74	S/SE
19-Feb-24	Mon	Mainly cloudy. Foggy in the morning and at night.	0	24.5	7	86.2	S/SE
20-Feb-24	Tue	Sunny periods. Warm during the day.	0	27.6	10.7	77.5	S/SE
21-Feb-24	Wed	Coastal fog and one or two light rain patches at night.	0	26.4	8.5	80	S/SE
22-Feb-24	Thu	Foggy with one or two rain patches in the morning and at night.	0	26.5	6.2	78.5	S/SE
23-Feb-24	Fri	Slightly cooler and mainly cloudy with one or two light rain patches.	Trace	21.9	5	79.7	NE
24-Feb-24	Sat	Light to moderate east to southeasterly winds.	Trace	19.4	6	69.5	N
25-Feb-24	Sun	Mainly cloudy. Bright periods in the afternoon.	0	17.1	5	66	E/NE
26-Feb-24	Mon	Cool with one or two light rain patches tonight.	Trace	19.6	6	67.5	E/NE
27-Feb-24	Tue	Mainly cloudy. Sunny intervals in the afternoon.	Trace	18.4	4	63.5	N/NE
28-Feb-24	Wed	Mainly cloudy. Moderate to fresh easterly winds.	Trace	19.7	3.7	74.5	W/NW
29-Feb-24	Thu	Mainly cloudy. Bright periods in the afternoon.	Trace	19.1	6	88	W/NW

## **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"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>2. Inform IEC and ER;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
Action level exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>4. Repeat measurements to confirm findings;</li> <li>5. Increase monitoring frequency to daily;</li> <li>6. Discuss with IEC and Contractor on remedial actions required;</li> <li>7. If exceedance continues, arrange meeting with IEC and ER;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ET on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial to ER within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>
Limit level exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>2. Inform ER, Contractor and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>
Limit level exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with the IEC, agree with the</li> </ol>	<ol style="list-style-type: none"> <li>2 Take immediate action to avoid further exceedance;</li> <li>3 Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>4 Implement the agreed proposals;</li> </ol>

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
<b>Action Level Exceedance</b>	<ol style="list-style-type: none"> <li>1. Notify the IEC, ER and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, ER and Contractor;</li> <li>4. Discuss with the Contractor and formulate remedial measures;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the monitoring data submitted by the ET;</li> <li>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;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify the Contractor;</li> <li>3. Require the Contractor to propose remedial measures for the analyzed noise problem;</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to the ER and IEC and copy to the ET;</li> <li>2. Implement noise mitigation proposals.</li> </ol>
<b>Limit Level Exceedance</b>	<ol style="list-style-type: none"> <li>1. Identify sources.</li> <li>2. Inform IEC, ER, EPD and Contractor;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase the monitoring frequency;</li> <li>5. Carry out analysis of the Contractor's working procedures with the ER and Contractor to determine possible mitigations to be implemented;</li> <li>6. Inform IEC, ER, EPD and Contractor the causes and actions taken for the exceedances;</li> <li>7. Assess the effectiveness of the Contractor's remedial action with the ER and keep the IEC informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst the ER, ET and Contractor on the potential remedial actions;</li> <li>2. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify the Contractor.</li> <li>3. Require the Contractor to propose remedial measures for the analyzed noise problems;</li> <li>4. Ensure remedial measures are properly implemented;</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial action to the ER and IEC and copy to the ET within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>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.</li> </ol>

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

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

Notes:

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

# **Appendix I**

## **Monitoring Schedule**



**Impact Monitoring Schedule for Reporting Month – February 2024**

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

**Impact Monitoring Schedule for next Reporting Month – March 2024**

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

# **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 <sup>st</sup> reading	2 <sup>nd</sup> reading	3 <sup>rd</sup> reading		
6-Feb-24	10:15	48	37	45	260	500
15-Feb-24	11:30	87	87	126	260	500
21-Feb-24	9:00	153	114	122	260	500
27-Feb-24	13:00	50	56	59	260	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 <sup>st</sup> reading	2 <sup>nd</sup> reading	3 <sup>rd</sup> reading		
6-Feb-24	9:50	118	106	82	260	500
15-Feb-24	11:30	85	98	79	260	500
21-Feb-24	10:00	39	57	51	260	500
27-Feb-24	9:10	68	70	73	260	500

### Construction Noise Monitoring Results

#### Location: CM1a

Date	Start Time	1 <sup>st</sup> Leq <sub>5min</sub>	L10	L90	2 <sup>nd</sup> Leq <sub>5min</sub>	L10	L90	3 <sup>rd</sup> Leq <sub>5min</sub>	L10	L90	4 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	5 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	6 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	Leq30min	Limit Level
6 Feb 24	10:45	61.4	62.2	46.8	56.4	55.0	44.5	50.5	52.4	48.5	52.8	55.1	48.6	55.2	53.7	46.5	52.6	56.3	48.4	56	75
15 Feb 24	15:40	52.0	51.0	45.6	49.6	52.8	46.0	49.1	51.3	46.8	49.9	51.6	46.8	51.7	52.7	46.5	53.4	59.0	48.0	51	75
21 Feb 24	11:15	53.7	56.4	48.4	55.1	59.3	48.0	54.1	57.9	52.9	58.4	57.9	53.7	55.9	58.6	52.2	60.4	63.4	53.1	57	75
27-Feb-24	13:00	53.2	55.5	51.0	54.6	56.2	51.5	55.0	58.2	52.5	54.6	57.0	52.5	53.0	54.5	51.8	55.9	57.2	52.6	54	75

#### Location: CM2a

Date	Start Time	1 <sup>st</sup> Leq <sub>5min</sub>	L10	L90	2 <sup>nd</sup> Leq <sub>5min</sub>	L10	L90	3 <sup>rd</sup> Leq <sub>5min</sub>	L10	L90	4 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	5 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	6 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	Leq30min	Façade Correction	Limit Level
6-Feb-24	13:40	53.5	55.4	51.8	52.1	55.5	54.1	58.2	59.9	50.5	53.5	57.1	50.4	64.2	66.4	57.1	58.1	60.4	55.3	59	62	75
15-Feb-24	14:35	57.6	59.2	54.9	60.1	62.7	56.7	59.4	60.8	56.9	60.7	63.4	56.6	61.5	64.4	57	62.2	65.4	56.8	60	63	75
21-Feb-24	10:10	64.1	68.2	52.8	58.5	60.9	54.6	58.7	61.5	54.6	60.6	63.3	54.5	65.5	66.6	52.5	66.8	68	56.4	64	67	75
27-Feb-24	9:45	60.1	62.1	57.2	62.1	63.9	57.1	59.9	62.9	57.4	60	62.9	57.5	59.8	62.4	56.7	60.5	63.4	57.3	60	63	75

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

#### Location: CM3

Date	Start Time	1 <sup>st</sup> Leq <sub>5min</sub>	L10	L90	2 <sup>nd</sup> Leq <sub>5min</sub>	L10	L90	3 <sup>rd</sup> Leq <sub>5min</sub>	L10	L90	4 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	5 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	6 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	Leq30min	Limit Level
6-Feb-24	14:15	60.3	62.1	55.1	61.3	63.0	58.2	60.2	64.2	59.4	70.8	71.5	66.5	73.4	79.9	66.0	73.1	76.5	67.5	70	75
15-Feb-24	13:00	66.2	65.8	56.1	62.2	64.5	56.4	64.3	67.6	56.0	61.5	64.7	56.0	62.5	66.3	56.2	62.9	65.9	56.2	64	75
21-Feb-24	8:30	62.1	64.5	56.2	63.6	65.2	55.9	65	67.5	57.2	64.5	66.1	57.1	66.4	68.3	56.9	69.4	69.6	60.8	66	75
27-Feb-24	10:40	65.1	72.7	62.2	64.7	68.9	62.5	65.2	69.4	62	66.1	70.3	62.8	65.3	69.9	62.5	65.3	69.1	62.3	65	75

#### Location: CM4

Date	Start Time	1 <sup>st</sup> Leq <sub>5min</sub>	L10	L90	2 <sup>nd</sup> Leq <sub>5min</sub>	L10	L90	3 <sup>rd</sup> Leq <sub>5min</sub>	L10	L90	4 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	5 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	6 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	Leq30min	Limit Level
6-Feb-24	13:05	59.3	60.9	40.9	64.5	67.4	50.0	56.0	59.4	47.9	60.5	62.2	48.3	59.2	60.4	49.7	59.4	58.7	41.3	61	75
15-Feb-24	13:45	70.8	74.8	59.1	64.0	67.9	56.6	64.7	68.4	57.3	69.6	72.5	58.6	66.8	70.4	59.0	69.7	73.0	60.1	68	75
21-Feb-24	9:15	70.2	74.6	57.2	65.2	68.2	58.2	67.3	71.9	56.0	63.2	66.1	56.2	62.3	65.5	54.9	69.3	73.0	56.1	67	75
27-Feb-24	9:05	69.6	72.7	60.9	69.5	73.1	61.6	71.5	73.7	60.9	69.4	72.3	61.2	70.6	74.4	62.3	69.1	72.5	61.5	70	75

**Location: CM8a**

Date	Start Time	1 <sup>st</sup> Leq <sub>5min</sub>	L10	L90	2 <sup>nd</sup> Leq <sub>5min</sub>	L10	L90	3 <sup>rd</sup> Leq <sub>5min</sub>	L10	L90	4 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	5 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	6 <sup>th</sup> Leq <sub>5min</sub>	L10	L90	Leq30min	Façade Correction	Limit Level
6 Feb 24	11:35	55.9	58.4	50.8	52.7	54.6	50.1	53.5	55.4	50.2	52.1	53.1	49.4	52.7	54.3	50.1	59.7	62.6	51.2	55	58	75
15-Feb-24	16:40	58.2	59.9	56.1	57.3	58.4	55.8	56.1	57.4	51.0	59.5	62.5	50.7	61.4	61.3	51.5	57.4	60.3	51.0	59	62	75
21-Feb-24	13:00	53.5	57.3	52.3	55.7	58.3	50.2	53.6	56.1	50.6	53.9	55.8	50.0	53.9	54.9	50.2	53.3	54.9	50.8	54	57	75
27-Feb-24	13:50	55.8	58.4	51.3	56.2	59.7	51.5	60.3	62.4	55.1	58.6	60.2	54.9	57.4	59.8	53.1	55.1	57.9	52.8	58	61	75

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

**Water Quality Monitoring Results**

**Location: M1a**

Date		2 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	11:15	0.30	21.6	21.6	4.18	4.1	47.6	47.1	23.5	23.2	7.59	7.6	0.32	0.32	27.7	26.7
			21.6		4.02		46.5		22.8		7.59		0.32		25.6	

Date		5 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	11:15	0.30	20.7	20.7	2.72	2.7	30.4	30.0	8.5	8.4	7.88	7.9	0.16	0.16	15.1	14.8
			20.7		2.68		29.6		8.3		7.88		0.16		14.4	

Date		7 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:15	0.30	20.7	20.7	2.03	2.0	22.7	22.0	14.3	14.1	7.12	7.1	0.16	0.16	8.8	11.2
			20.7		1.92		21.2		13.9		7.12		0.16		13.6	

Date		9 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:25	0.30	19.2	19.2	3.92	3.9	42.5	41.9	22.1	21.6	7.22	7.2	0.26	0.26	35	31.0
			19.2		3.83		41.2		21.2		7.22		0.26		26.9	

**15 Feb 24**

Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	12:35	0.30	22.2	22.2	5.01	5.0	57.6	57.2	8.4	8.3	7.35	7.4	0.18	0.18	15.1	24.4
			22.2		4.98		56.8		8.2		7.35		0.18		33.6	

Date		17 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	13:55	0.30	22	22	4.19	4.1	47.9	47.1	10.0	9.6	7.55	7.6	0.18	0.18	13.8	13.6
			22		4.02		46.2		9.3		7.55		0.18		13.3	

Date		19 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	13:55	0.30	22.2	22.2	4.1	4.1	47.0	46.9	25.2	25.2	7.50	7.5	0.15	0.15	22.8	22.5
			22.2		4.07		46.7		25.2		7.50		0.15		22.2	

Date		21 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	12:40	0.30	22.9	22.9	2.17	2.2	25.0	25.9	15.8	16.0	7.42	7.4	0.18	0.18	29.3	44.7

			22.9		2.23		26.8		16.3		7.42		0.18		60	
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Date		23 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	10:45	0.30	22.2	22.2	2.44	2.5	28.2	29.0	19.5	19.9	7.37	7.4	0.17	0.17	53	51.9
			22.2		2.52		29.7		20.2		7.37		0.17		50.7	

Date		26 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	12:05	0.30	19.8	19.8	7.56	7.5	83.1	83.1	9.1	9.1	7.54	7.5	0.23	0.23	9.8	9.5
			19.8		7.53		83.0		9.0		7.54		0.23		9.2	

Date		28 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M1a	12:35	0.30	21.2	21.2	3.66	3.6	40.7	40.4	5.6	5.6	7.09	7.1	0.23	0.23	7.6	11.6
			21.2		3.61		40.1		5.6		7.09		0.23		15.6	



**Water Quality Monitoring Results**

**Location: M2a**

Date	2 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:35	0.15	21	21	6.9	6.8	77.8	74.3	5.0	4.9	7.72	7.7	0.20	0.20	9.8	9.6
			21		6.6		70.8		4.8		7.72		0.20		9.4	

Date	5 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:35	0.15	20.2	20.2	6.5	6.4	72.0	39.67	8.4	8.3	7.85	7.9	0.20	0.20	8.7	8.2
			20.2		6.3		7.3		8.2		7.86		0.20		7.6	

Date	7 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:35	0.15	20.2	20.2	6.44	6.4	67.1	68	8.7	8.7	7.55	7.6	0.20	0.20	10	9.3
			20.2		6.45		68.9		8.6		7.55		0.20		8.5	

Date	9 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:45	0.15	19.8	19.8	6.55	6.4	72.4	72.0	8.2	8.1	7.22	7.22	0.22	0.22	6.4	5.9
			19.8		6.34		71.6		7.9		7.22		0.22		5.4	

Date	15 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	12:55	0.25	21.9	21.9	6.5	6.5	74.5	74.4	7.6	7.5	7.20	7.2	0.18	0.18	6.4	6.5
			21.9		6.51		74.2		7.3		7.20		0.18		6.5	

Date	17 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	14:15	0.30	21.8	21.8	6.66	6.7	67.5	66.7	7.3	7.2	7.36	7.4	0.18	0.18	6.3	6.0
			21.8		6.8		65.8		7.1		7.36		0.18		5.6	

Date	19 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	14:15	0.30	21.8	21.8	6.72	6.6	76.6	75.9	6.2	6.2	7.47	7.5	0.18	0.18	8.5	8.3
			21.8		6.51		75.1		6.1		7.47		0.18		8.1	

Date	21 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	13:00	0.15	24.2	24.2	6.75	6.9	77.6	77.4	6.4	6.3	7.52	7.5	0.38	0.38	8.6	8.6
			24.2		6.96		77.1		6.3		7.52		0.38		8.5	

Date	23 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	11:50	0.15	22.1	22.1	7.7	7.6	88.9	88.3	5.2	5.2	7.75	7.8	0.30	0.30	8	7.7
			22.1		7.55		87.6		5.1		7.75		0.30		7.4	

Date	26 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	12:20	0.20	18.5	18.5	6.41	6.4	70.8	70.5	4.1	4.0	7.48	7.5	0.26	0.26	7.1	7.4
			18.5		6.33		70.2		4.0		7.48		0.26		7.6	

Date	28 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M2a	12:55	0.20	20.1	20.1	7.12	7.1	77.7	77.6	3.7	3.7	7.48	7.5	0.25	0.25	7.2	8.2
			20.1		7.09		77.4		3.6		7.48		0.25		9.1	

**Water Quality Monitoring Results**

**Location: M3**

Date	2 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	10:10	0.20	21.1	21.1	3.96	3.9	44.6	43.9	9.4	9.6	7.74	7.7	0.28	0.28	20.4	20.5
			21.1		3.82		43.2		9.8		7.74		0.28		20.5	

Date	5 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	10:10	0.30	19.8	19.8	4.19	4.1	46.0	45.6	6.5	6.4	7.67	7.7	0.21	0.21	19.4	25.2
			19.8		3.94		45.2		6.3		7.67		0.21		31	

Date	7 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	10:10	0.30	19.8	19.8	3.98	3.9	43.6	43.2	9.1	8.9	7.55	7.6	0.21	0.21	16.1	15.1
			19.8		3.88		42.7		8.7		7.55		0.21		14	

Date	9 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	10:20	0.30	19	19	4.87	4.8	52.6	51.9	20.1	20.0	7.15	7.2	0.21	0.21	21	23.7
			19		4.77		51.2		19.8		7.15		0.21		26.4	

Date	15 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	11:30	0.30	21	21	4.7	4.7	52.7	52.3	9.4	9.3	7.88	7.9	0.16	0.16	17.3	17.3
			21		4.62		51.8		9.2		7.88		0.16		17.3	

Date	17 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	12:55	0.25	21	21	5.33	5.3	59.9	58.6	7.1	7.2	7.16	7.2	0.16	0.16	13.4	12.8
			21		5.21		57.2		7.3		7.15		0.16		12.2	

Date	19 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	12:55	0.25	21.7	21.35	4.85	4.8	56.1	55.3	9.6	9.5	7.57	7.6	0.19	0.19	12.8	11.6
			21		4.81		54.5		9.4		7.57		0.19		10.4	

Date	21 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	11:30	0.25	23.8	23.8	3.08	3.1	35.2	35.8	4.1	4.2	7.12	7.1	0.28	0.28	20.2	18.2
			23.8		3.12		36.4		4.2		7.12		0.28		16.2	

Date	23 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	9:45	0.25	22.8	22.8	3.2	3.3	36.9	37.2	19.5	19.9	7.37	7.4	0.17	0.17	11.2	13.1
			22.8		3.3		37.4		20.2		7.37		0.17		15	

Date	26 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	10:55	0.20	19.2	19.2	7.88	7.9	85.3	85.2	10.6	10.5	7.61	7.6	0.23	0.23	16.2	16.6
			19.2		7.82		85.0		10.4		7.61		0.23		16.9	

Date	28 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M3	11:35	0.30	20.3	20.3	4.35	4.3	47.9	47.5	3.2	3.2	7.26	7.3	0.21	0.21	30	25.9
			20.3		4.28		47.0		3.2		7.26		0.21		21.8	

**Water Quality Monitoring Results**

**Location: M4**

Date		2 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:55	0.15	23.5	23.5	6.3	6.1	74.1	73.7	7.7	7.6	7.32	7.3	0.38	0.38	6.6	6.9
			23.5		5.92		73.2		7.5		7.32		0.38		7.2	

Date		5 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:50	0.15	20.6	20.6	6.3	6.3	70.2	70.4	6.9	6.8	7.42	7.42	0.20	0.20	8.1	7.8
			20.6		6.2		70.5		6.6		7.42		0.20		7.5	

Date		7 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:50	0.15	20.7	20.7	6.1	6.1	68.5	69.4	6.6	6.5	7.42	7.4	0.44	0.44	5.8	7.6
			20.7		6.1		70.3		6.4		7.42		0.44		9.4	

Date		9 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	10:00	0.15	19.5	19.5	6.12	6.1	66.9	67.6	5.3	5.3	7.70	7.7	0.27	0.27	10.7	10.4
			19.5		6.13		68.2		5.3		7.70		0.27		10	

Date		15 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	11:15	0.15	23.8	23.8	6.48	6.3	76.9	75.7	7.5	7.5	7.70	7.7	0.54	0.54	12.6	12.2
			23.8		6.2		74.4		7.5		7.70		0.54		11.8	

Date		17 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	12:40	0.15	23.8	23.8	6.42	6.4	76.1	75.8	8.0	8.0	7.70	7.7	0.54	0.54	6	6.9
			23.8		6.37		75.4		7.9		7.70		0.54		7.8	

Date		19 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	12:40	0.15	23.4	23.4	6.86	6.8	79.6	79.0	3.6	3.7	7.42	7.4	0.51	0.51	6.7	5.35
			23.4		6.71		78.4		3.8		7.42		0.51		4	

Date		21 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	

M4	11:15	0.15	23.2	23.2	6.3	6.3	73.6	72.4	3.9	3.9	7.23	7.2	0.56	0.56	10.3	12.7
			23.2		6.28		71.1		3.9		7.23		0.56		15	

Date		23 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	9:30	0.15	22.5	22.5	6.4	6.5	74.1	76.1	3.3	3.3	7.32	7.3	0.58	0.58	14.6	14.0
			22.5		6.5		78.1		3.3		7.32		0.58		13.3	

Date		26 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	10:40	0.15	18.8	18.8	8.39	8.3	90.7	90.0	6.9	6.8	7.52	7.5	0.51	0.51	13.8	11.7
			18.8		8.22		89.2		6.7		7.52		0.51		9.6	

Date		28 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M4	11:20	0.15	20.8	20.8	6.55	6.5	73.1	72.9	4.4	4.3	6.95	7.0	0.49	0.49	10.2	11.8
			20.8		6.5		72.7		4.3		6.95		0.49		13.4	

**Water Quality Monitoring Results**

**Location: U1b**

Date		2 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)		
U1b	10:30	0.15	20.8	20.8	4.3	4.3	48.4	48.1	9.3	9.2	7.56	7.6	0.72	0.7	16.8	16.0	
			20.8		4.24		47.8		9.0		7.56		0.72		15.1		

Date		5 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)		
U1b	10:30	0.15	20.6	20.6	3.71	3.7	41.2	40.2	14.4	14.2	10.98	11.0		0.3	19.6	20.9	
			20.6		3.6		39.2		14.1		10.98		0.28		22.2		

Date		7 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)		
U1b	10:30	0.15	20.5	20.5	3.19	3.2	35.5	35.4	14.5	14.2	10.88	10.9	0.29	0.3	25.6	21.2	
			20.5		3.12		35.2		13.9		10.88		0.29		16.7		

Date		9 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)		
U1b	10:40	0.15	19	19	6.42	6.4	69.5	68.7	45.3	45.1	11.01	11.0	0.61	0.6	79.2	79.8	
			19		6.38		67.8		44.9		11.01		0.61		80.4		

Date		15 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)		
U1b	11:50	0.25	21.7	21.7	4.74	4.6	54.0	53.1	17.2	17.0	10.97	11.0	0.48	0.5	38.9	36.8	
			21.7		4.51		52.1		16.8		10.97		0.48		34.6		

Date		17 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)		
U1b	13:15	0.15	21.56	21.58	4.76	4.8	54.2	55.5	17.0	17.3	10.97	11.0	0.48	0.5	32.8	29.8	
			21.6		4.89		56.8		17.6		10.97		0.48		26.7		

Date		19 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)		

U1b	13:15	0.15	23.1	23.1	5.94	5.9	68.9	68.7	14.3	14.5	10.95	11.0	0.20	0.2	37.2	41.2
			23.1		5.9		68.5		14.7		10.95		0.20		45.2	

Date		21 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	11:50	0.15	22.8	22.8	2.35	2.4	25.7	26.1	92.1	91.8	5.21	5.2	0.67	0.7	111	114.0
			22.8		2.41		26.4		91.5		5.21		0.67		117	

Date		23 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	10:00	0.15	21.8	21.8	2.15	2.2	24.8	25.5	97.1	97.7	4.09	4.1	0.52	0.5	123	120.5
			21.8		2.22		26.2		98.2		4.09		0.52		118	

Date		26 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	11:15	0.15	19.6	19.6	7.92	7.9	86.8	86.5	18.8	18.6	7.95	8.0	0.73	0.7	24	23.7
			19.6		7.85		86.2		18.5		7.95		0.73		23.4	

Date		28 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U1b	12:25	0.20	21.2	21.2	5.71	5.7	63.6	63.2	24.4	24.3	7.55	7.6	0.67	0.7	29.1	27.8
			21.2		5.66		62.8		24.1		7.55		0.67		26.4	



**Water Quality Monitoring Results**

Location: U2a

Date	2 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:45	0.25	21.6	21.6	7.43	7.4	84.5	83.1	5.3	5.2	7.24	7.2	0.08	0.1	4.4	4.7
			21.6		7.3		81.6		5.1		7.24		0.08		4.9	

Date	5 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:45	0.25	20.5	20.5	7.36	7.3	81.7	81.1	3.1	3.0	10.99	11.0	0.08	0.1	3.5	3.4
			20.5		7.21		80.5		3.0		10.99		0.08		3.2	

Date	7 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:45	0.25	20.5	20.5	7.27	7.3	80.8	80.5	2.4	2.3	10.99	11.0	0.08	0.1	2.4	2.6
			20.5		7.23		80.1		2.3		10.99		0.08		2.7	

Date	9 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	10:55	0.25	19.1	19.1	6.94	6.8	74.9	74.0	6.1	6.1	10.87	10.9	0.08	0.1	3.6	4.4
			19.1		6.75		73.1		6.0		10.87		0.08		5.1	

Date	15 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	12:20	0.30	21.7	21.7	8.2	8.2	93.2	93.0	3.0	3.0	10.97	11.0	0.08	0.1	2.9	3.5
			21.7		8.1		92.8		3.0		10.97		0.08		4	

Date	17 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U2a	13:40	0.30	21.6	21.6	8.34	8.3	94.7	93.5	4.3	4.3	10.97	11.0	0.08	0.1	3.5	3.4
			21.6		8.21		92.3		4.3		10.97		0.08		3.3	

Date	19 Feb 24															
Location	Time	Depth	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	

		(m)														
U2a	13:40	0.25	22.6	22.6	7.6	7.6	87.4	46.8	2.5	2.5	10.96	11.0	0.09	0.1	6.6	6.9
			22.6		7.52		6.2		2.5		10.96		0.09		7.1	

<b>Date</b>	<b>21 Feb 24</b>															
<b>Location</b>	<b>Time</b>	<b>Depth (m)</b>	<b>Temp (oC)</b>		<b>DO (mg/L)</b>		<b>DO (%)</b>		<b>Turbidity (NTU)</b>		<b>pH</b>		<b>Salinity</b>		<b>SS(mg/L)</b>	
U2a	12:20	0.25	23.5	23.5	7.58	7.5	85.9	85.1	2.1	2.1	7.51	7.5	0.15	0.2	3.6	4.9
			23.5		7.42		84.2		2.2		7.51		0.15		6.2	

<b>Date</b>	<b>23 Feb 24</b>															
<b>Location</b>	<b>Time</b>	<b>Depth (m)</b>	<b>Temp (oC)</b>		<b>DO (mg/L)</b>		<b>DO (%)</b>		<b>Turbidity (NTU)</b>		<b>pH</b>		<b>Salinity</b>		<b>SS(mg/L)</b>	
U2a	10:30	0.25	21.5	21.5	7.6	7.6	86.1	85.8	2.6	2.5	7.58	7.6	0.11	0.1	4.4	4.1
			21.5		7.54		85.4		2.5		7.58		0.11		3.8	

<b>Date</b>	<b>26 Feb 24</b>															
<b>Location</b>	<b>Time</b>	<b>Depth (m)</b>	<b>Temp (oC)</b>		<b>DO (mg/L)</b>		<b>DO (%)</b>		<b>Turbidity (NTU)</b>		<b>pH</b>		<b>Salinity</b>		<b>SS(mg/L)</b>	
U2a	11:50	0.25	19.7	19.7	6.41	6.4	70.8	71.0	4.1	4.1	7.48	7.5	0.26	0.3	2.6	4.4
			19.7		6.45		71.2		4.1		7.48		0.26		6.2	

<b>Date</b>	<b>28 Feb 24</b>															
<b>Location</b>	<b>Time</b>	<b>Depth (m)</b>	<b>Temp (oC)</b>		<b>DO (mg/L)</b>		<b>DO (%)</b>		<b>Turbidity (NTU)</b>		<b>pH</b>		<b>Salinity</b>		<b>SS(mg/L)</b>	
U2a	12:10	0.30	20.8	20.8	7.8	7.8	87.1	87.4	1.2	1.2	6.63	6.6	0.10	0.1	3	3.1
			20.8		7.83		87.6		1.2		6.63		0.10		3.1	

**Water Quality Monitoring Results**

**Location: U3**

Date		2 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:40	0.20	20.7	20.7	3.14	3.1	35.1	34.9	4.2	4.1	7.42	7.4	0.28	0.28	13.1	12.7
			20.7		3.02		34.6		4.0		7.42		0.28		12.3	

Date		5 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:35	0.25	20	20	3.17	3.1	34.9	34.1	3.8	3.7	7.52	7.5	0.20	0.20	8.6	9.1
			20		3.08		33.2		3.6		7.52		0.20		9.5	

Date		7 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:35	0.25	19.9	19.9	2.76	2.7	30.3	30.0	4.3	4.2	7.42	7.4	0.20	0.20	13.5	10.0
			19.9		2.62		29.7		4.2		7.42		0.20		6.4	

Date		9 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:45	0.25	19	19	3.54	3.5	38.2	38.0	4.8	4.5	7.42	7.4	0.19	0.19	6.8	7.0
			19		3.5		37.8		4.1		7.42		0.19		7.2	

Date		15 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	11:00	0.20	21.1	21.1	4.82	4.8	54.3	53.4	3.8	3.6	7.42	7.4	0.19	0.19	22.1	17.7
			21.1		4.73		52.5		3.4		7.42		0.19		13.2	

Date		17 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	12:30	0.20	21	21	4.35	4.3	48.8	47.3	3.6	3.5	7.42	7.4	0.19	0.19	7.1	6.3
			21		4.27		45.8		3.4		7.42		0.19		5.5	

Date		19 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	12:30	0.25	21.9	21.9	3.78	3.7	42.2	41.7	13.3	12.9	7.42	7.4	0.20	0.20	37.2	29.3
			21.9		3.66		41.1		12.5		7.42		0.20		21.4	

Date		21 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	

U3	11:00	0.20	22.4	22.4	3.46	3.5	39.7	40.25	3.9	3.97	7.42	7.42	0.23	0.23	11.1	12.4
			22.4		3.52		40.8		4.0		7.42		0.23		13.6	

Date		23 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	9:15	0.20	21.4	21.4	3.32	3.3	38.1	37.11	3.8	3.745	7.36	7.36	0.19	0.19	8.6	16.2
			21.4		3.22		36.1		3.7		7.36		0.19		23.8	

Date		26 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	10:25	0.25	19.1	19.1	7.04	7.0	76.9	76.3	3.9	3.865	7.61	7.61	0.18	0.18	11.1	11.0
			19.1		6.92		75.7		3.9		7.61		0.18		10.8	

Date		28 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U3	11:05	0.20	20.5	20.5	2.96	2.9	32.7	32.45	2.4	2.41	7.16	7.16	0.18	0.18	6.1	6.1
			20.5		2.92		32.2		2.4		7.16		0.18		6	

**Water Quality Monitoring Results**

**Location: U4a**

Date	2 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:25	0.30	21.5	21.5	3.83	3.7	42.8	41.5	8.9	8.8	7.33	7.3	0.29	0.29	21.1	20.3
			21.5		3.64		40.2		8.7		7.33		0.29		19.4	

Date	5 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:20	0.30	19.8	19.8	2.87	2.8	31.5	31.2	6.3	6.2	7.04	7.0	0.18	0.18	13.4	13.9
			19.8		2.69		30.8		6.2		7.04		0.18		14.4	

Date	7 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:20	0.30	19.8	19.8	3.7	3.6	40.6	39.7	6.4	6.3	7.06	7.1	0.17	0.17	10.1	18.3
			19.8		3.58		38.8		6.3		7.06		0.17		26.4	

Date	9 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:30	0.30	19.5	19.5	4.35	4.3	47.4	46.6	5.4	5.4	7.10	7.1	0.21	0.21	13	12.7
			19.5		4.21		45.8		5.4		7.10		0.21		12.3	

Date	15 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	10:45	0.30	20.1	20.1	3.57	3.5	39.3	21.2	8.8	8.7	7.80	7.8	0.17	0.17	13.4	14.5
			20.1		3.46		3.1		8.6		7.80		0.17		15.5	

Date	17 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	12:20	0.25	20.1	20.1	3.29	3.3	36.3	37.1	12.3	12.3	7.70	7.7	0.16	0.16	17.4	17.2
			20.1		3.35		37.8		12.4		7.70		0.16		16.9	

Date	19 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	12:20	0.25	21.4	21.4	4.78	4.4	48.2	45.2	14.0	14.1	7.70	7.7	0.35	0.35	25.2	27.2
			21.4		3.95		42.2		14.3		7.70		0.35		29.2	

Date	21 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	10:45	0.25	23.5	23.5	2.89	2.8	33.5	33.2	7.9	7.9	7.22	7.2	0.28	0.28	42.1	35.7
			23.5		2.72		32.8		7.9		7.22		0.28		29.3	

Date	23 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	9:00	0.25	21.2	21.2	3.02	3.0	35.0	34.6	6.5	6.4	7.36	7.4	0.19	0.19	31.9	39.3
			21.2		2.89		34.1		6.4		7.36		0.19		46.7	

Date	26 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	10:05	0.30	18.6	18.6	7.95	7.9	86.7	86.6	4.8	4.8	7.34	7.3	0.18	0.18	8.4	8.8
			18.6		7.91		86.5		4.8		7.34		0.18		9.2	

Date	28 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
U4a	10:45	0.30	20	20	2.1	2.1	22.8	22.7	2.2	2.3	7.02	7.0	0.22	0.22	17.4	17.0
			20		2.08		22.6		2.3		7.02		0.22		16.6	

**Water Quality Monitoring Results**

Location: EIS-1a

Date	2 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	11:00	0.25	20.8	20.8	7.53	7.5	84.2	84.0	8.0	7.9	7.07	7.1	0.04	0.0	15.7	15.3
			20.8		7.48		83.7		7.8		7.07		0.04		14.8	

Date	5 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	11:00	0.20	21.1	21.1	8.12	8.1	91.3	91.0	3.3	3.2	7.12	7.1	0.04	0.0	23.9	25.7
			21.1		8.04		90.6		3.2		7.12		0.04		27.5	

Date	7 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	11:00	0.20	21.3	21.3	8.16	8.1	92.0	91.6	12.6	12.2	7.80	7.8	0.04	0.0	14.5	13.3
			21.3		8.01		91.2		11.8		7.80		0.04		12	

Date	9 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	11:10	0.20	18.9	18.9	6.96	6.9	74.8	74.4	4.6	4.6	7.24	7.2	0.05	0.1	6.9	6.5
			18.9		6.9		74.0		4.6		7.24		0.05		6.1	

Date	15 Jan 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	12:05	0.50	20.3	20.3	8.3	8.3	91.8	91.5	4.1	4.1	7.89	7.9	0.05	0.1	6.2	5.4
			20.3		8.2		91.2		4.0		7.89		0.05		4.6	

Date	17 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	13:30	0.25	20	20	8.19	8.3	90.2	91.5	4.1	4.0	7.77	7.8	0.04	0.0	3.9	4.1
			20		8.32		92.8		3.9		7.77		0.04		4.2	

Date	19 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	13:30	0.25	21.2	21.2	8.18	8.2	90.0	91.2	3.8	3.8	7.56	7.6	0.04	0.0	4.1	4.2
			21.2		8.22		92.3		3.8		7.56		0.04		4.2	

Date	21 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	12:05	0.25	23.8	23.8	6.08	6.0	69.9	69.3	3.7	3.8	7.87	7.9	0.04	0.0	8.6	8.6
			23.8		6.01		68.7		3.8		7.87		0.04		8.6	

Date	23 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	10:15	0.25	21.8	21.79	6.38	6.5	73.3	74.1	3.3	3.4	7.68	7.7	0.05	0.1	6.5	6.8
			21.78		6.55		74.9		3.4		7.68		0.05		7	

Date	26 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	11:35	0.30	18.7	18.7	8.18	8.2	89.1	89.7	3.2	3.2	7.55	7.6	0.07	0.1	8.5	7.8
			18.7		8.22		90.3		3.2		7.55		0.07		7	

Date	28 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
EIS-1a	11:55	0.30	19.9	19.9	7.54	7.5	82.8	82.6	1.6	1.6	7.04	7.0	0.05	0.1	9.7	7.8
			19.9		7.51		82.3		1.6		7.04		0.05		5.9	



**Water Quality Monitoring Results**  
**Location: M5a**

Date		2 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	12:10	0.15	20.8	20.8	5.4	5.4	60.7	59.7	69.8	67.6	7.38	7.4	0.15	0.15	212	205.5
			20.8		5.31		58.7		65.4		7.38		0.15		199	

Date		5 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	12:10	0.15	19.8	19.8	5.8	5.8	63.9	63.4	119.8	118.3	7.48	7.5	0.15	0.15	258	272.5
			19.8		5.72		62.9		116.7		7.48		0.15		287	

Date		7 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	12:10	0.15	19.8	19.8	5.29	5.2	58.1	57.7	76.1	75.2	7.15	7.2	0.15	0.15	134	159.5
			19.8		5.03		57.3		74.4		7.15		0.15		185	

Date		9 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	12:20	0.15	18.5	18.5	6.07	6.0	64.9	64.1	80.9	79.9	7.22	7.2	0.16	0.16	264	215.0
			18.5		5.88		63.2		78.9		7.22		0.16		166	

Date		15 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	12:25	0.15	21.1	21.1	6.37	6.3	71.7	70.8	44.9	44.4	7.33	7.3	0.15	0.15	198	170.0
			21.1		6.24		69.8		43.8		7.35		0.15		142	

Date		17 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	14:50	0.15	20.9	20.9	5.5	5.6	61.7	62.3	64.5	65.1	7.46	7.5	0.15	0.15	88.9	75.9
			20.9		5.6		62.8		65.6		7.46		0.15		62.9	

Date		19 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	14:50	0.15	21.8	21.8	5.78	5.7	65.2	64.7	17.9	18.2	7.97	8.0	0.15	0.15	80.4	64.7
			21.8		5.7		64.1		18.5		7.97		0.15		49	

Date	21 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	13:45	0.10	22.9	22.9	6.13	6.2	70.8	71.6	92.3	92.9	7.45	7.5	0.17	0.17	307	310.0
			22.9		6.3		72.4		93.4		7.45		0.17		313	

Date	23 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	11:50	0.10	22.5	22.5	5.92	6.0	68.5	69.1	60.4	59.5	7.31	7.3	0.14	0.14	213	219.5
			22.5		6.12		69.7		58.7		7.31		0.14		226	

Date	26 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	13:00	0.10	19.1	19.1	8.45	8.4	92.1	91.7	130.7	129.6	7.50	7.5	0.15	0.15	399	408.5
			19.1		8.39		91.2		128.4		7.50		0.15		418	

Date	28 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M5a	13:35	0.10	19.2	19.2	5.81	5.8	62.6	62.1	59.2	59.0	7.16	7.2	0.15	0.15	747	537.5
			19.2		5.78		61.5		58.7		7.16		0.15		328	

## Water Quality Monitoring Results

Location: M6a

Date	2 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:50	0.15	21.9	21.9	8.81	8.8	100.7	100.95	1.3	1.3	7.90	7.9	0.06	0.06	8.4	6.4
			21.9		8.85		101.2		1.3		7.90		0.06		4.3	

Date	5 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:50	0.15	19.6	19.6	7.97	7.9	87.0	86.55	7.0	6.9	7.80	7.8	0.05	0.05	4.4	4.1
			19.6		7.81		86.1		6.8		7.88		0.05		3.8	

Date	7 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:50	0.15	19.6	19.6	8.24	8.2	89.9	89.15	6.0	6.0	7.80	7.8	0.04	0.04	15	14.6
			19.6		8.18		88.4		5.9		7.88		0.04		14.1	

Date	9 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	12:00	0.15	19.2	19.2	8.25	8.2	89.7	89.3	3.5	3.6	7.22	7.2	0.05	0.05	6.4	5.9
			19.2		8.14		88.9		3.6		7.20		0.05		5.4	

Date	15 Feb 24															
Location	Time	Depth (m)	20.9		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	13:05	0.20	20.9	20.9	8.18	8.1	91.5	90.8	1.6	1.6	7.33	7.3	0.05	0.05	4	5.8
			20.9		8.03		90.1		1.6		7.35		0.05		7.6	

Date	17 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	6:00	0.25	20.9	20.9	8.17	8.2	91.5	91.85	2.3	2.3	7.50	7.5	0.05	0.05	0.8	0.8
			20.9		8.32		92.2		2.2		7.50		0.05		0.8	

Date	19 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	6:00	0.25	20.8	20.8	8.28	8.1	92.6	91.35	2.4	2.3	7.47	7.5	0.05	0.05	1.9	1.8
			20.8		7.93		90.1		2.2		7.47		0.05		1.7	

Date	21 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	13:20	0.15	20.8	20.8	8.05	8.0	92.2	91.75	2.0	2.1	7.40	7.4	0.05	0.05	12.8	11.5
			20.8		7.92		91.3		2.1		7.40		0.05		10.2	

Date	23 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	11:25	0.15	18.2	18.2	7.97	7.9	91.4	90.8	2.1	2.2	7.59	7.6	0.06	0.06	4.6	7.7
			18.2		7.82		90.2		2.3		7.59		0.06		10.8	

Date	26 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	12:40	0.15	18.2	18.2	8.72	8.7	95.6	94.9	1.3	1.3	7.54	7.5	0.08	0.08	<0.5	0.5
			18.2		8.66		94.2		1.3		7.54		0.08		0.5	

Date	28 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M6a	13:15	0.20	19.4	19.4	8.81	8.8	95.7	95.6	0.1	0.1	7.65	7.7	0.05	0.05	4.5	2.9
			19.4		8.8		95.5		0.1		7.65		0.05		1.3	

**Water Quality Monitoring Results**  
 Location: D2a

Date		2 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:55	0.30	22.4	22.4	7.92	7.6	92.1	91.5	15.8	15.5	7.15	7.2	2.37	2.37	17.2	16.9
			22.4		7.24		90.8		15.2		7.15		2.37		16.6	

Date		5 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:55	0.30	20.3	20.3	7.61	7.6	85.5	85.2	12.4	12.3	7.31	7.3	2.62	2.62	17.6	17.7
			20.3		7.58		84.8		12.2		7.31		2.62		17.8	

Date		7 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:55	0.30	20.3	20.3	7.24	7.2	81.3	80.9	11.0	10.9	7.37	7.4	2.69	2.69	15.9	17.0
			20.3		7.11		80.4		10.8		7.37		2.69		18.1	

Date		9 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	13:00	0.30	19.8	19.8	7.51	7.4	84.4	83.8	13.0	12.7	7.15	7.2	2.66	2.66	18.8	18.9
			19.8		7.32		83.1		12.4		7.15		2.66		19	

Date		15 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	14:20	0.30	22.1	22.1	8.08	8.0	94.2	93.7	11.3	11.1	7.66	7.7	2.85	2.85	25	25.2
			22.1		7.96		93.1		11.0		7.66		2.85		25.3	

Date		17 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	15:35	0.35	22.1	22.1	8.05	8.0	93.7	10.2	10.5	10.4	7.50	7.5	2.88	2.88	20.5	20.8
			22.1		7.91		91.4		10.2		7.50		2.88		21.1	

Date		19 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	15:35	0.35	21.56	21.58	7.93	7.9	90.8	90.5	477.5	478.4	7.45	7.5	2.63	2.63	596	611.0
			21.6		7.86		90.2		479.2		7.45		2.63		626	

Date		21 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	14:35	0.30	23.9	23.9	7.92	7.9	86.7	82.6	15.1	15.8	7.54	7.5	2.87	2.87	15	12.5
			23.9		7.88		78.5		16.4		7.54		2.87		10	

Date		23 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	12:40	0.30	20.9	20.9	7.45	7.5	83.7	84.6	16.2	17.1	7.68	7.7	2.85	2.85	17.3	18.2
			20.9		7.61		85.5		18.0		7.68		2.85		19.1	

Date		26 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	13:45	0.30	20.1	20.1	8.34	8.3	94.1	94.0	5.6	5.5	7.44	7.4	4.57	4.57	7.3	7.6
			20.1		8.31		93.8		5.5		7.44		4.57		7.9	

Date		28 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D2a	14:20	0.30	20.3	20.3	8.08	8.1	90.5	90.4	2.6	2.7	7.46	7.5	2.26	2.26	7.8	8.3
			20.3		8.07		90.2		2.8		7.46		2.26		8.7	

**Water Quality Monitoring Results**

**Location: M7a**

Date		2 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	12:25	0.30	21.9	21.9	7.03	7.2	79.4	80.45	5.3	5.3	7.47	7.5	0.12	0.1	4.3	4.6
			21.9		7.28		81.5		5.2		7.47		0.12		4.8	

Date		5 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	12:25	0.30	20	20	7.04	7.0	77.4	76.6	3.4	3.4	7.55	7.6	0.12	0.1	5.8	5.6
			20		6.91		75.8		3.4		7.55		0.12		5.3	

Date		7 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	12:25	0.30	20	20	6.97	6.8	76.6	75.85	3.5	3.5	7.82	7.8	0.12	0.1	11.4	10.6
			20		6.54		75.1		3.5		7.82		0.12		9.7	

Date		9 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	12:35	0.30	19.1	19.1	6.67	6.6	72.1	71.45	5.2	5.1	7.96	7.9	0.12	0.1	11.4	10.6
			19.1		6.52		70.8		5.0		7.90		0.12		9.8	

Date		15 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	13:45	0.30	21.5	21.5	7.37	7.3	83.4	82.3	4.2	4.2	7.97	8.0	0.12	0.1	5	5.7
			21.5		7.28		81.2		4.2		7.98		0.12		6.4	

Date		17 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	15:05	0.30	21.5	21.5	7.18	7.2	81.5	82.4	2.8	2.9	7.80	7.8	0.11	0.1	6.3	6.0
			21.5		7.22		83.2		2.9		7.88		0.11		5.6	

Date		19 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	15:05	0.30	21.4	21.4	7.28	7.3	82.1	82.0	10.3	11.1	7.77	7.8	0.06	0.1	11.9	11.7
			21.4		7.25		81.8		11.8		7.78		0.06		11.5	

Date		21 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	

M7a	14:00	0.25	23.8	23.8	7.31	7.3	83.8	82.6	2.8	2.8	7.35	7.4	0.14	0.1	7.7	8.2
			23.8		7.28		81.4		2.8		7.35		0.14		8.6	

Date		23 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	12:05	0.25	21.7	21.7	7.14	7.2	81.9	82.15	2.2	2.2	7.22	7.2	0.12	0.1	6.5	5.4
			21.7		7.3		82.4		2.2		7.22		0.12		4.3	

Date		26 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	13:15	0.25	18.8	18.8	8.55	8.5	93.8	93.25	4.4	4.3	7.85	7.9	0.12	0.1	15	11.3
			18.8		8.42		92.7		4.3		7.85		0.12		7.5	

Date		28 Feb 24														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
M7a	13:50	0.30	20.1	20.1	6.65	6.7	72.8	72.85	1.3	1.3	7.27	7.3	0.12	0.1	8.8	8.7
			20.1		6.68		72.9		1.3		7.27		0.12		8.6	



**Water Quality Monitoring Results**  
**Location: D5a**

Date	2 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	12:40	0.20	21.6	21.6	7.26	7.2	86.5	86.1	6.8	6.7	7.85	7.9	8.13	8.1	7.5	7.0
			21.6		7.1		85.7		6.6		7.85		8.13		6.4	

Date	5 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	12:40	0.25	19.5	19.5	5.76	5.7	62.9	61.9	8.4	8.4	7.60	7.6	0.51	0.5	9.6	9.3
			19.5		5.56		60.8		8.3		7.60		0.51		9	

Date	7 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	12:40	0.25	19.5	19.5	5.8	5.6	63.4	64.4	8.8	8.7	7.70	7.7	0.51	0.5	12.2	11.3
			19.5		5.47		65.3		8.7		7.70		0.51		10.3	

Date	9 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	12:50	0.25	18	18.0	5.61	5.4	59.8	59.1	5.8	5.7	7.55	7.6	1.32	1.3	14.8	10.6
			18		5.23		58.3		5.6		7.55		1.32		6.4	

Date	15 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	14:00	0.30	22.3	22.3	5.26	5.2	60.6	59.6	4.5	4.5	7.15	7.2	0.68	0.7	4.7	4.5
			22.3		5.13		58.7		4.4		7.15		0.68		4.3	

Date	17 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	15:20	0.35	22.2	22.2	5.42	5.3	62.4	61.4	4.4	4.4	7.60	7.6	0.69	0.7	4.2	4.4
			22.2		5.25		60.3		4.3		7.60		0.69		4.5	

Date	19 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	15:20	0.35	21.9	21.9	5.23	5.3	57.8	59.4	15.0	15.0	7.50	7.5	0.56	0.6	4.5	4.8
			21.9		5.3		60.9		15.0		7.50		0.56		5	

Date	21 Feb 24															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		Salinity		SS(mg/L)	
D5a	14:15	0.30	22.5	22.5	5.21	5.2	59.8	59.0	2.9	3.0	7.11	7.1	3.75	3.8	9	9.5

			22.5		5.15		58.1		3.1		7.11		3.75		9.9	
<b>Date</b>	<b>23 Feb 24</b>															
<b>Location</b>	<b>Time</b>	<b>Depth (m)</b>	<b>Temp (oC)</b>		<b>DO (mg/L)</b>		<b>DO (%)</b>		<b>Turbidity (NTU)</b>		<b>pH</b>		<b>Salinity</b>		<b>SS(mg/L)</b>	
D5a	12:20	0.30	22.2	22.2	5.38	5.4	63.1	63.9	2.9	2.9	7.15	7.2	3.64	3.6	10.3	10.1
			22.2		5.5		64.7		2.9		7.15		3.64		9.9	

<b>Date</b>	<b>26 Feb 24</b>															
<b>Location</b>	<b>Time</b>	<b>Depth (m)</b>	<b>Temp (oC)</b>		<b>DO (mg/L)</b>		<b>DO (%)</b>		<b>Turbidity (NTU)</b>		<b>pH</b>		<b>Salinity</b>		<b>SS(mg/L)</b>	
D5a	13:30	0.30	19.7	19.7	6.43	6.4	70.6	70.4	6.2	6.2	7.95	8.0	0.83	0.8	5.7	5.5
			19.7		6.41		70.1		6.2		7.95		0.83		5.2	

<b>Date</b>	<b>28 Feb 24</b>															
<b>Location</b>	<b>Time</b>	<b>Depth (m)</b>	<b>Temp (oC)</b>		<b>DO (mg/L)</b>		<b>DO (%)</b>		<b>Turbidity (NTU)</b>		<b>pH</b>		<b>Salinity</b>		<b>SS(mg/L)</b>	
D5a	14:05	0.30	20	20.0	6.6	6.6	73.5	72.8	3.6	3.5	7.20	7.2	1.50	1.5	5.1	5.5
			20		6.52		72.1		3.4		7.20		1.50		5.8	

## **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	M1a	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.

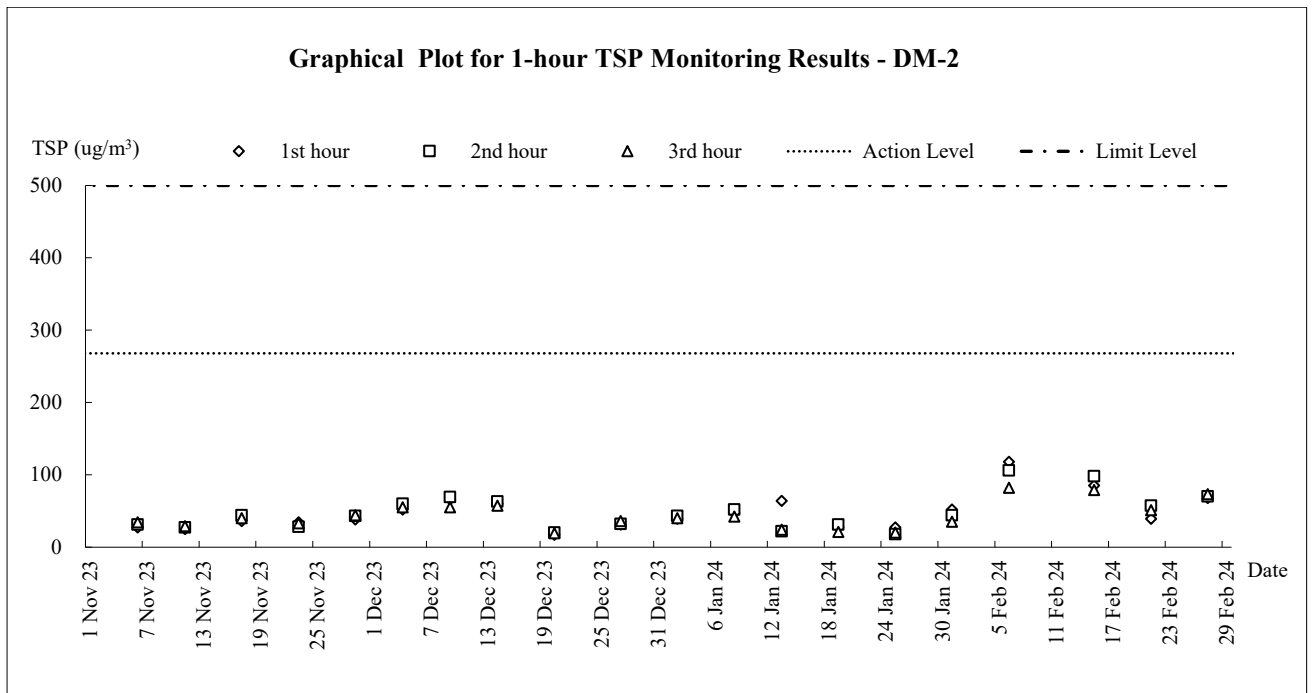
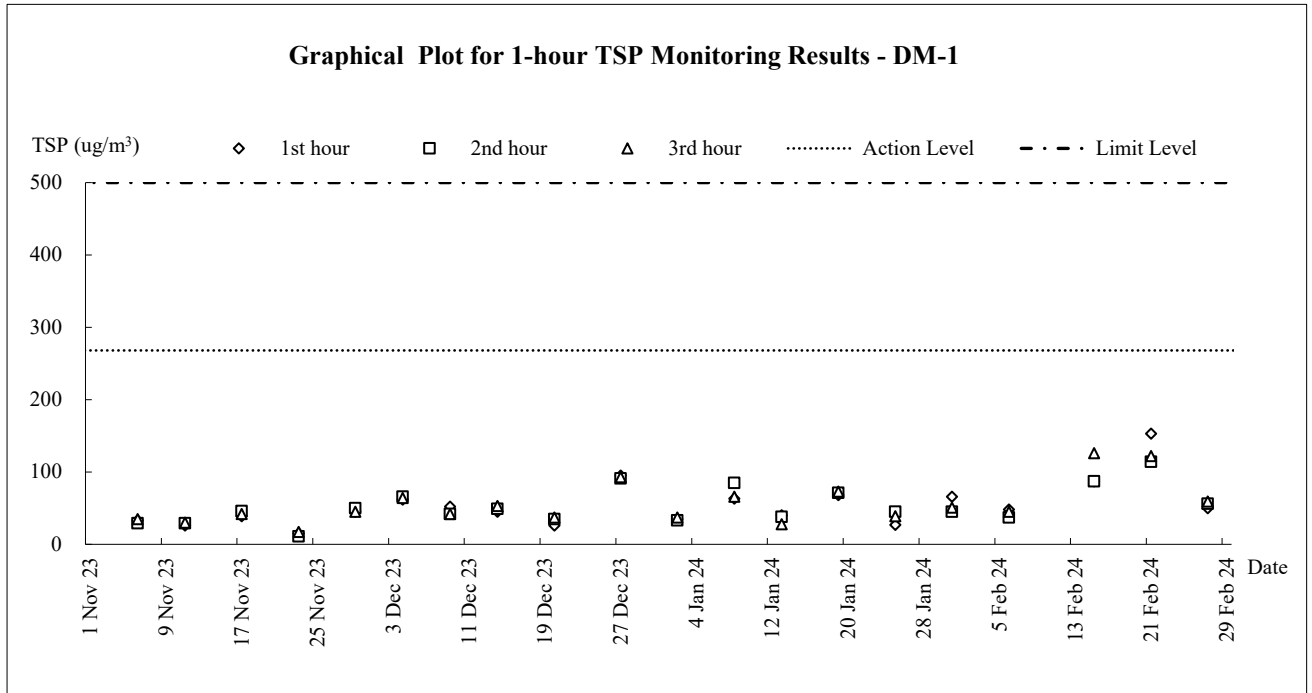
### Cumulative Action/ Limit Level Exceedance for Water Quality

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	1	0	1	0	2	0	0
M2a	0	0	0	0	0	0	0	0	0	0
M3	0	0	0	1	0	1	0	2	0	0
M4	0	0	0	0	0	0	0	0	0	0
D2a	0	0	0	1	0	1	0	2	0	0
<b>No of Exceedance</b>	0	0	0	3	0	3	0	6	0	0

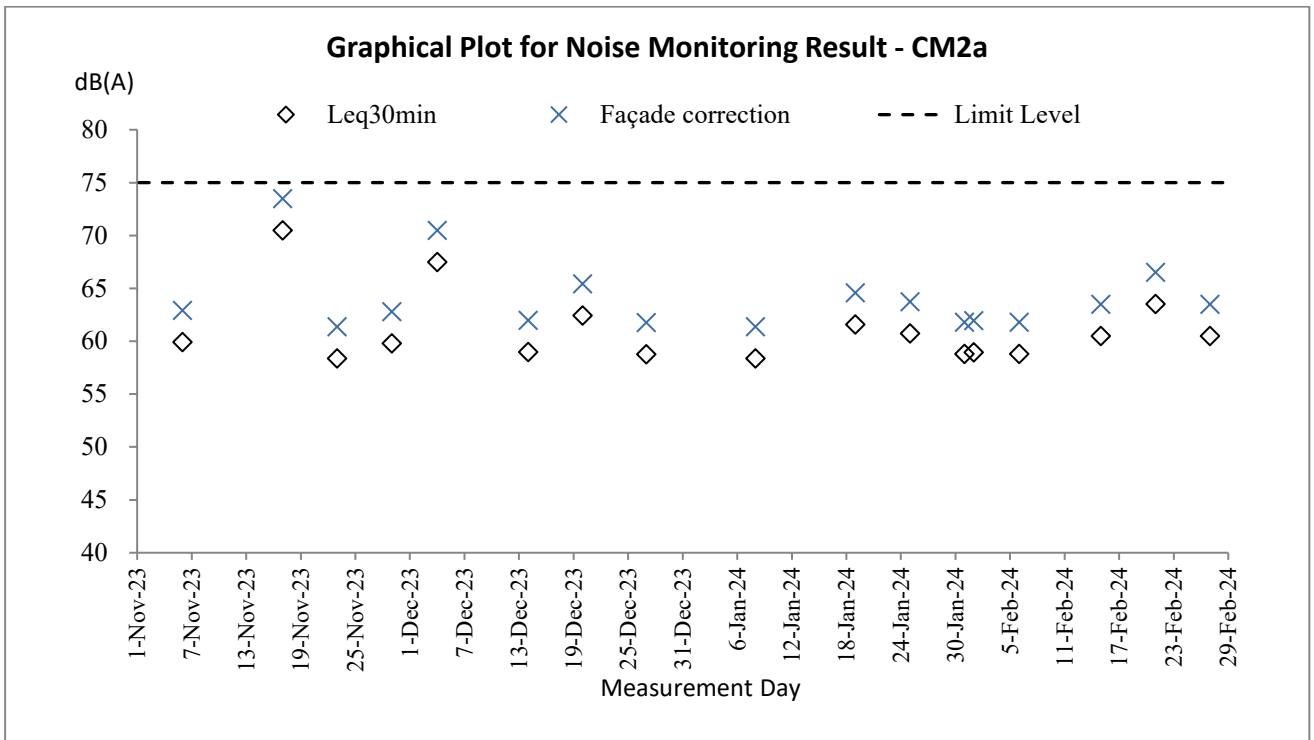
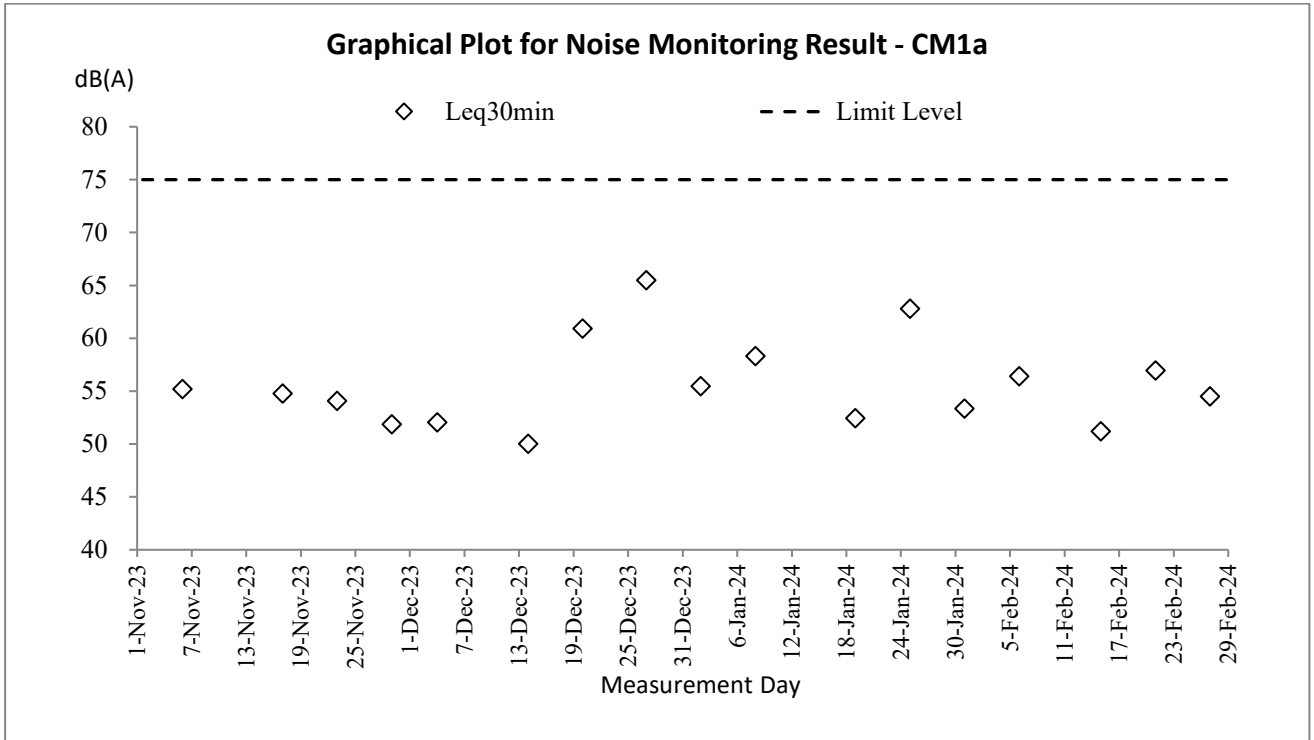
## **Appendix K**

### **Graphical Plots for Monitoring Result**

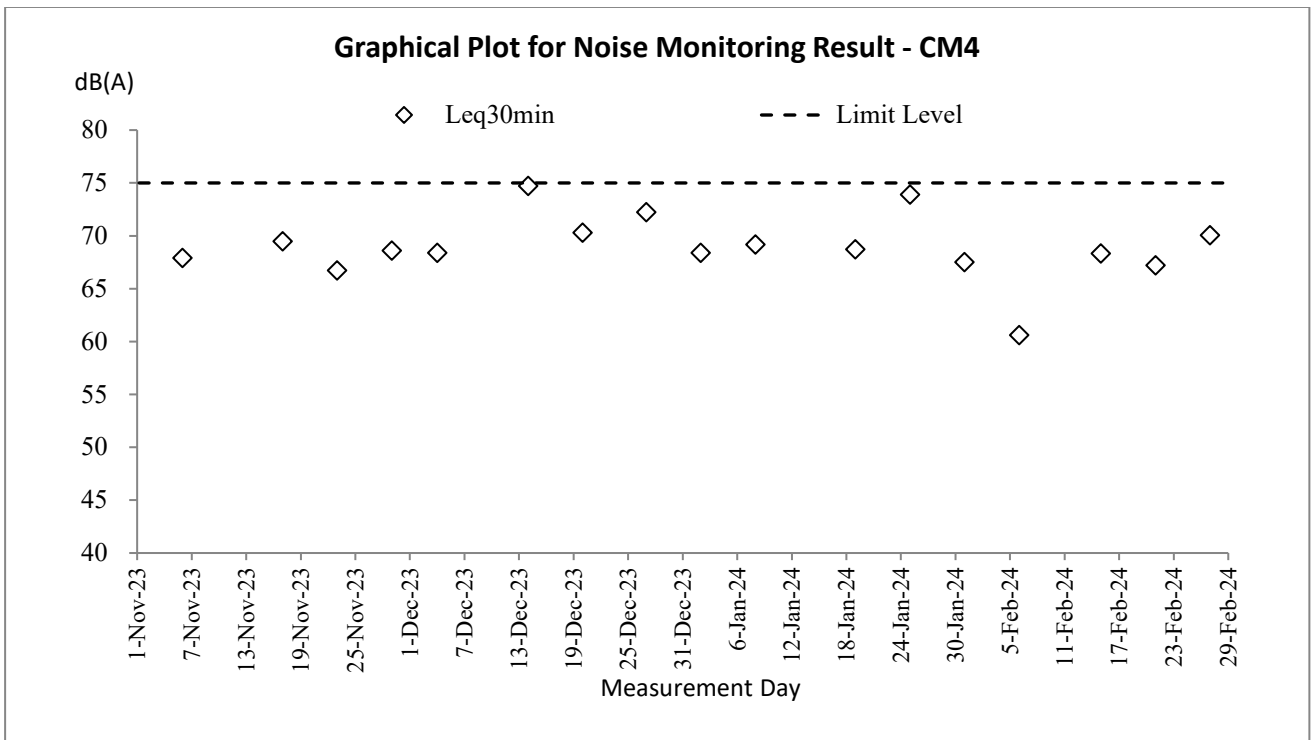
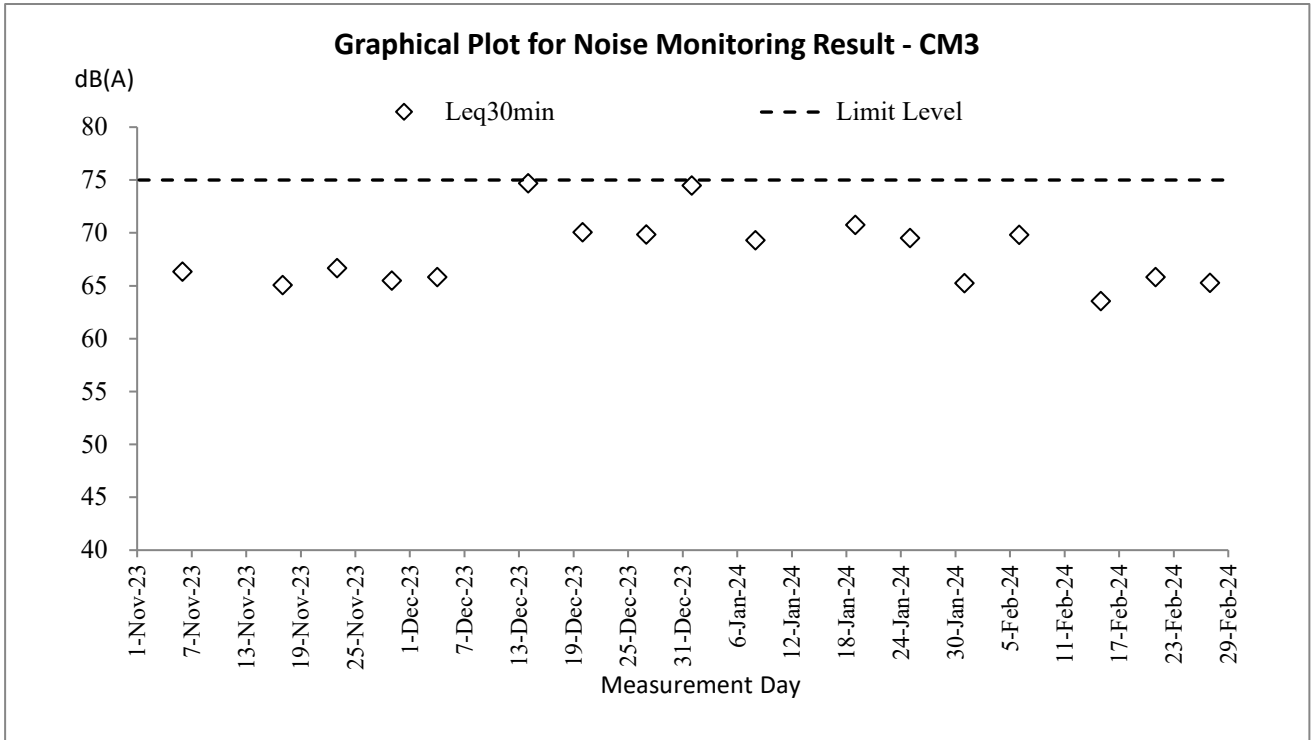
**Air Quality – 1-hour TSP**

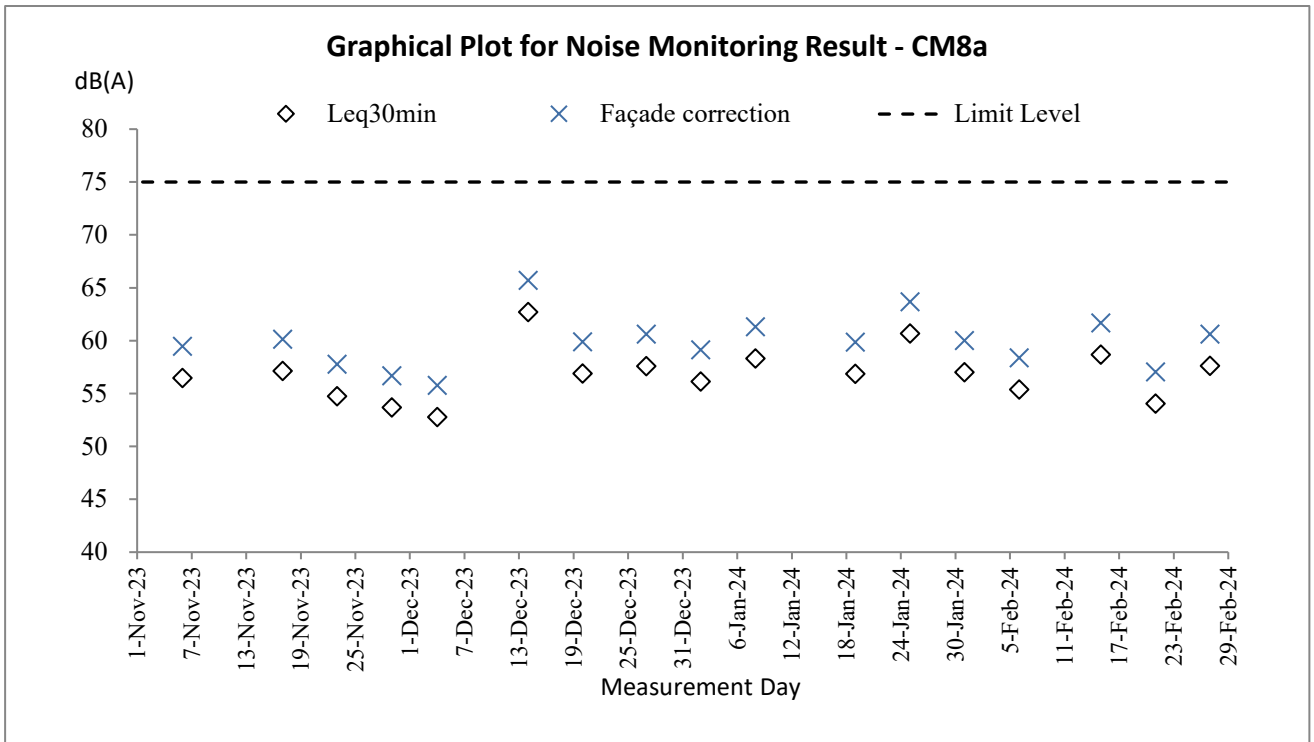


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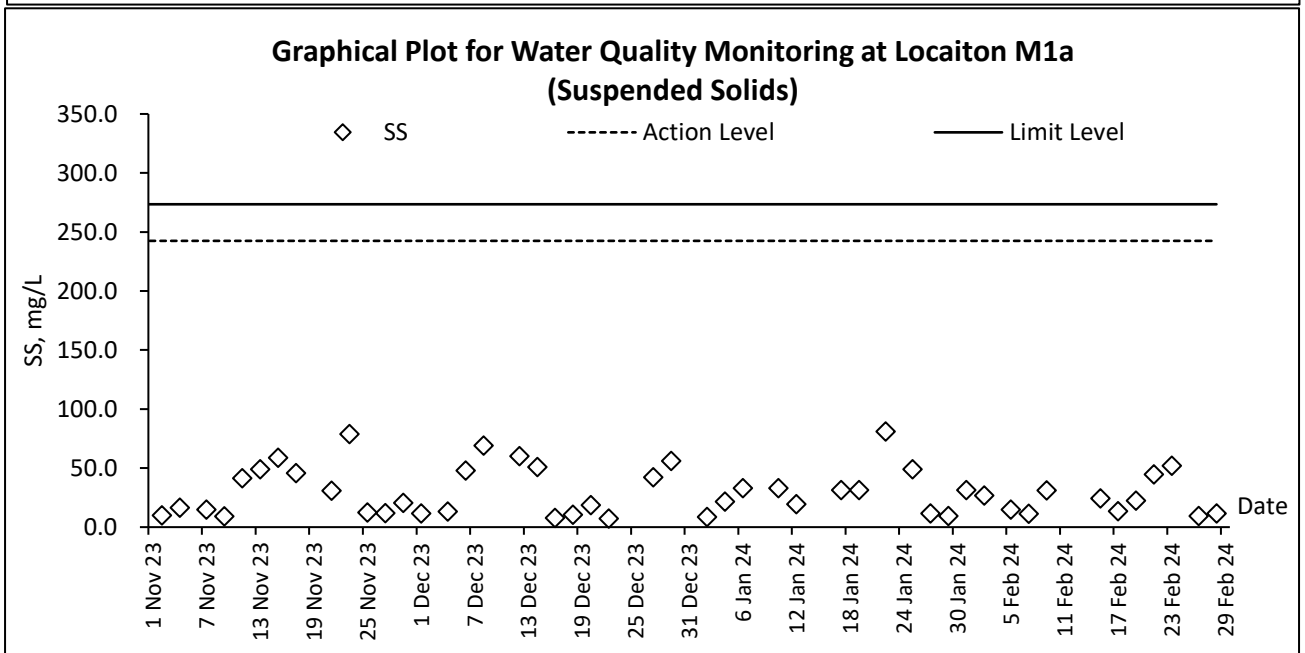
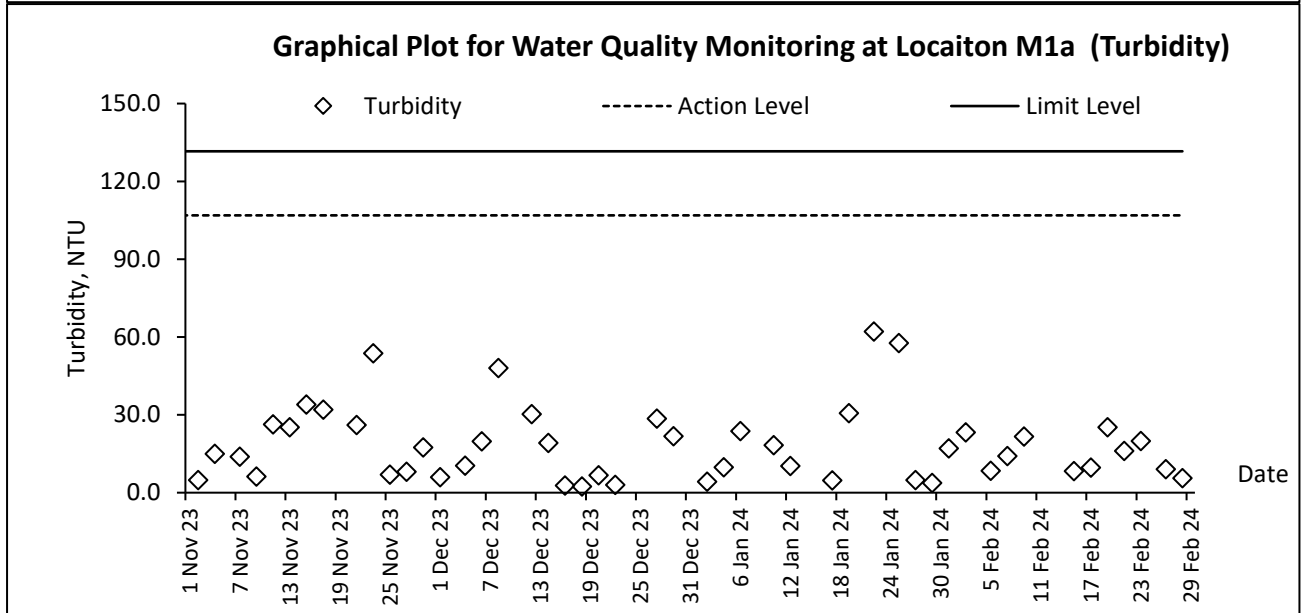
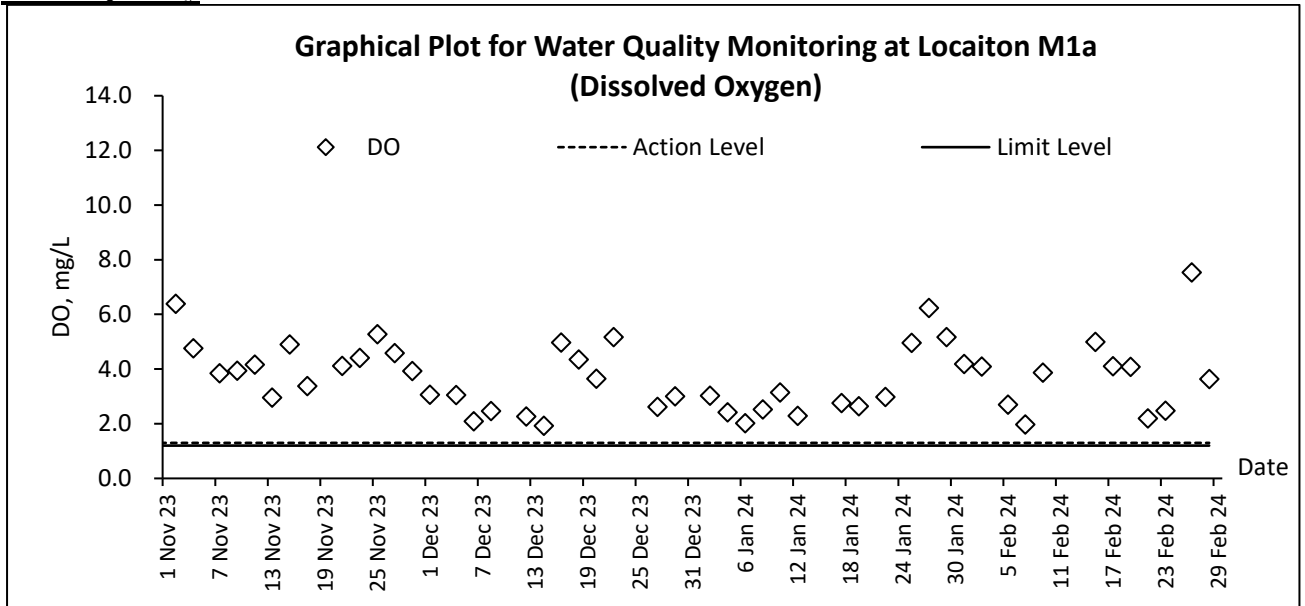


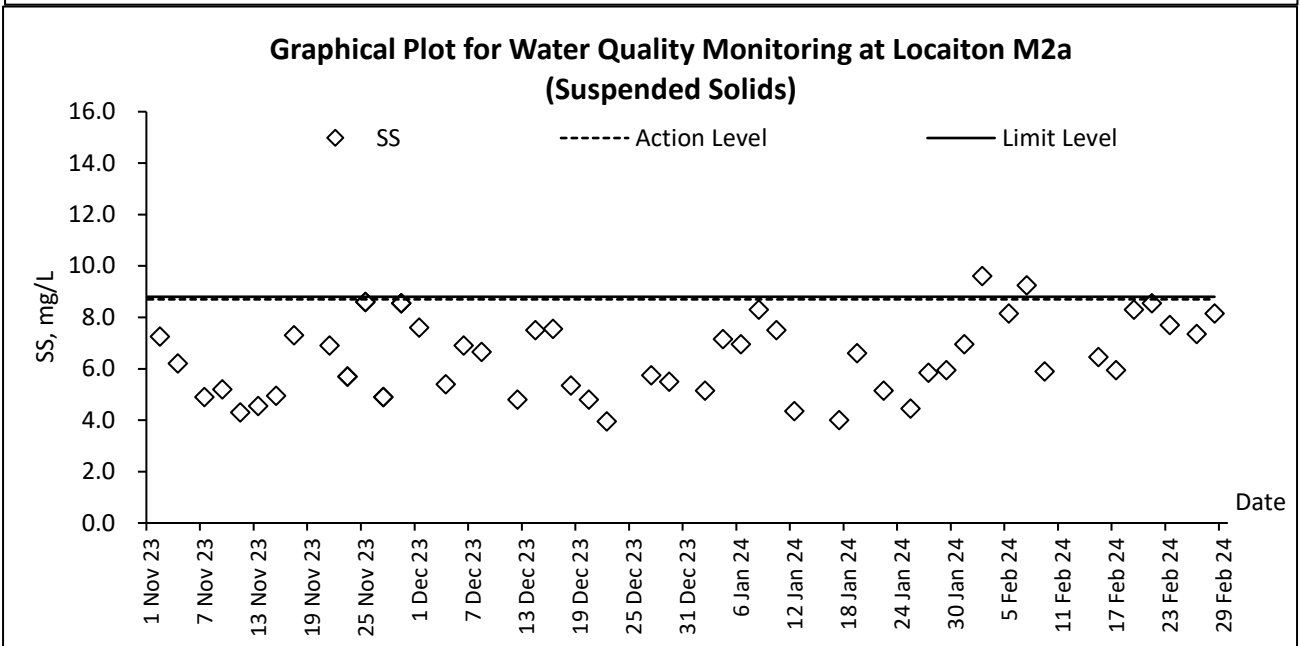
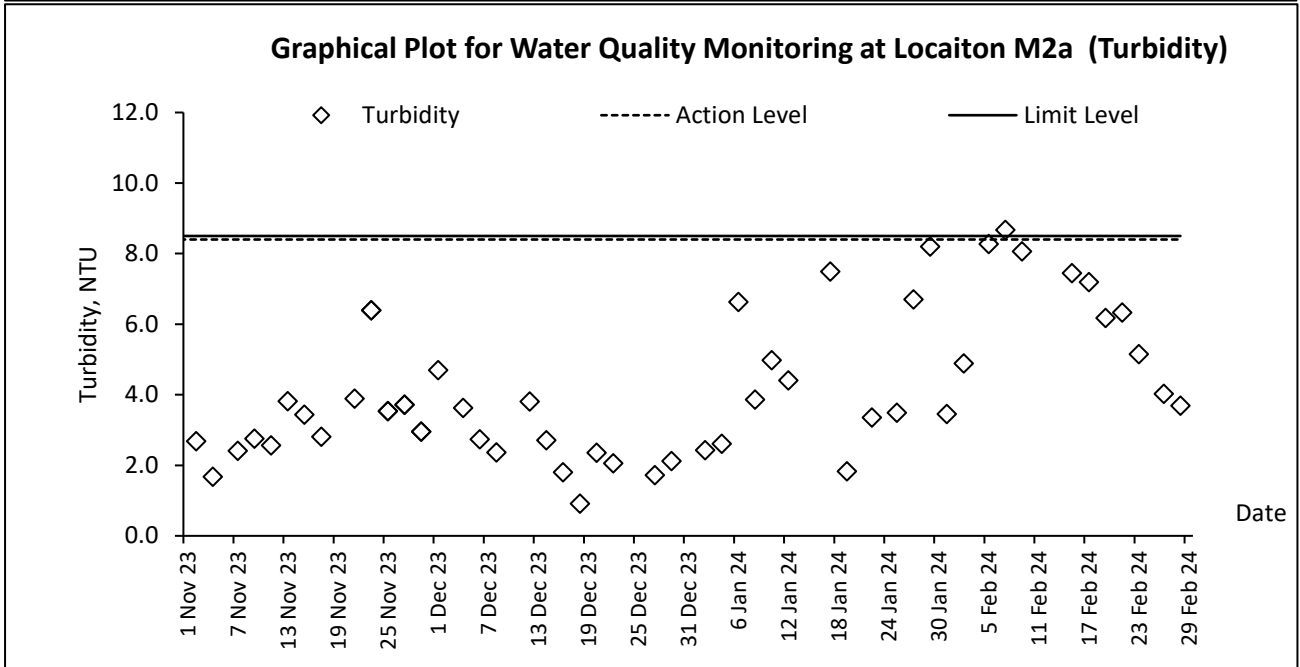
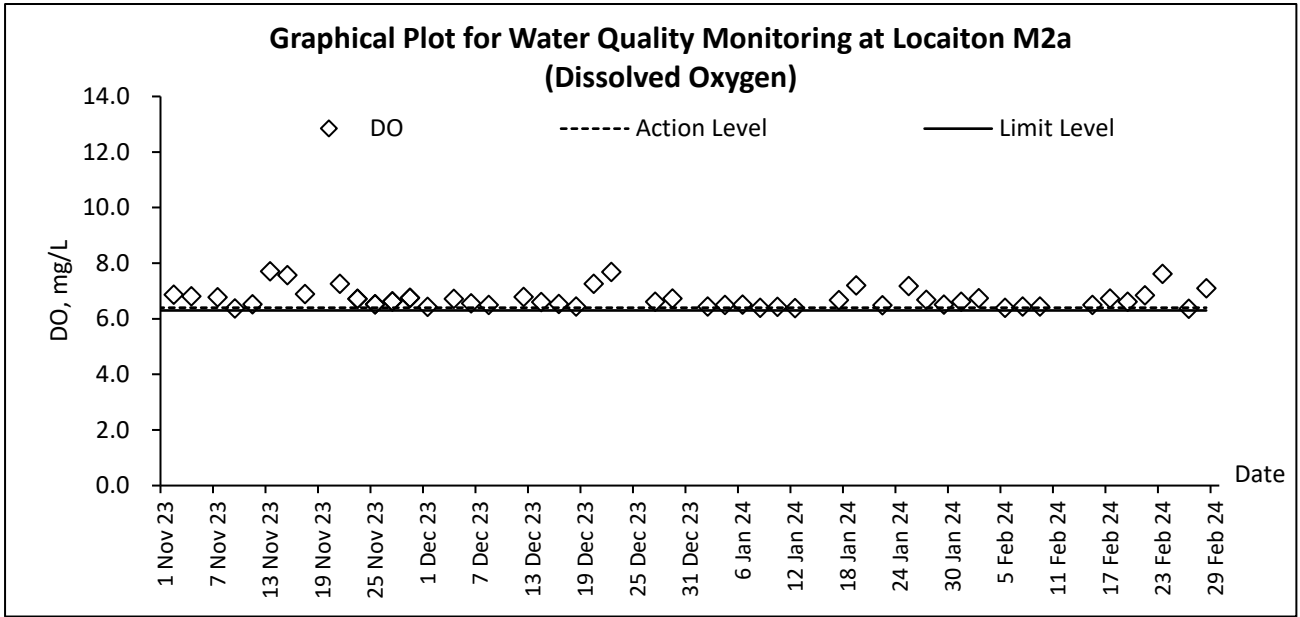


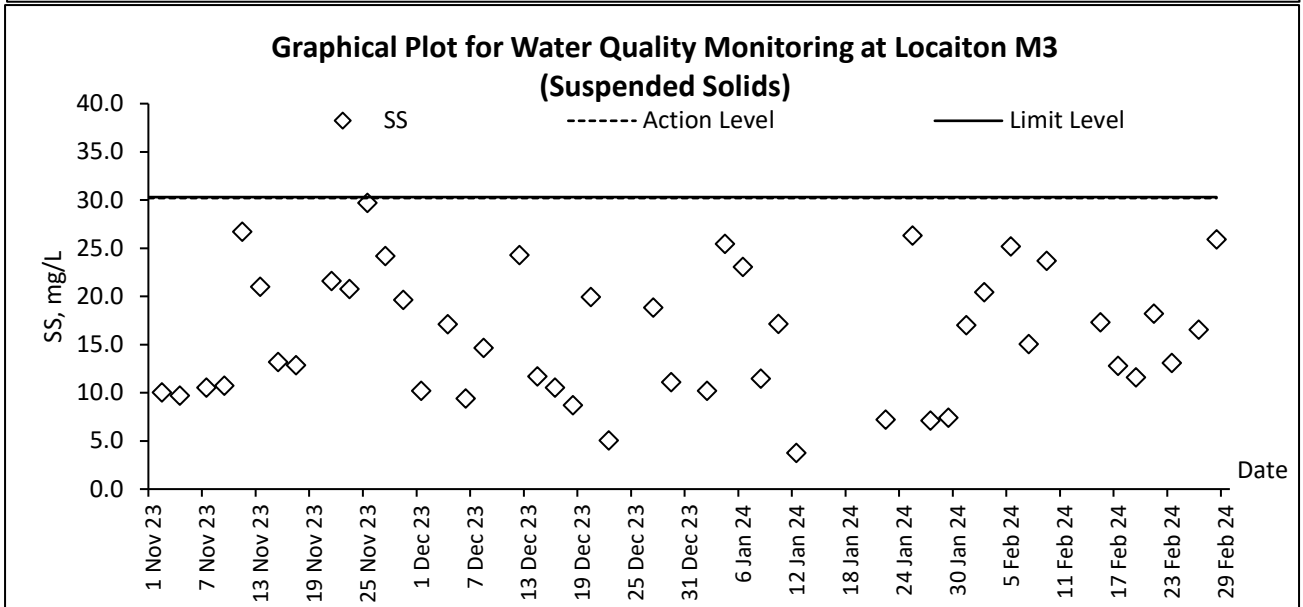
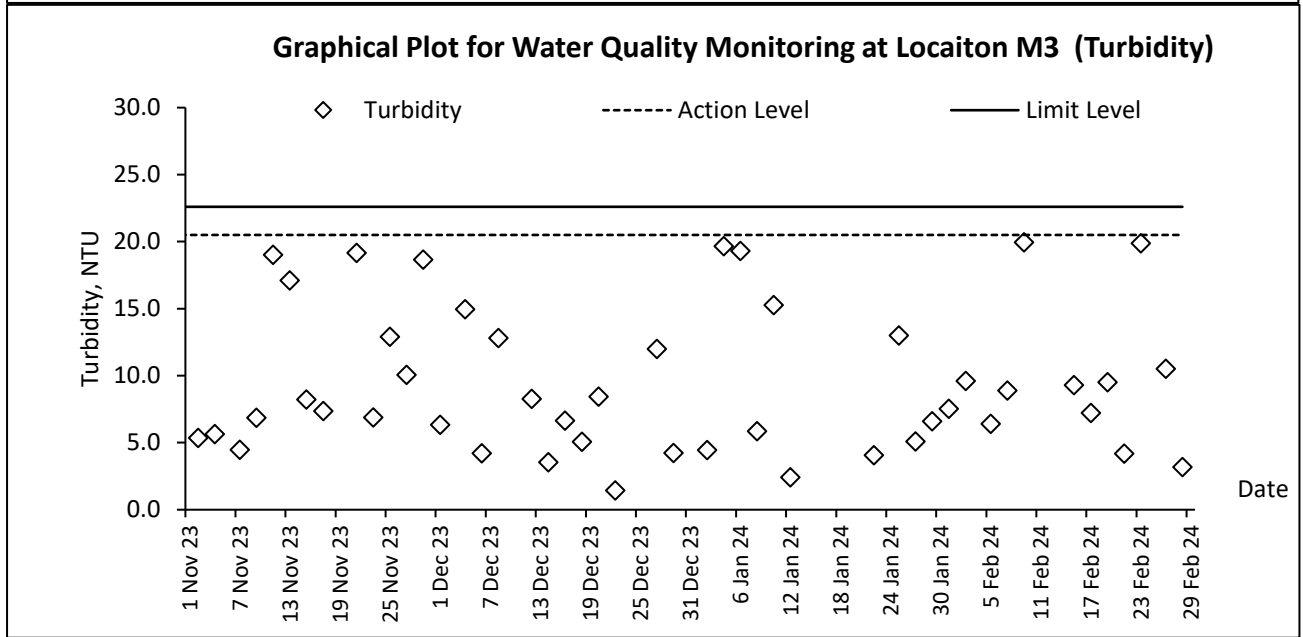
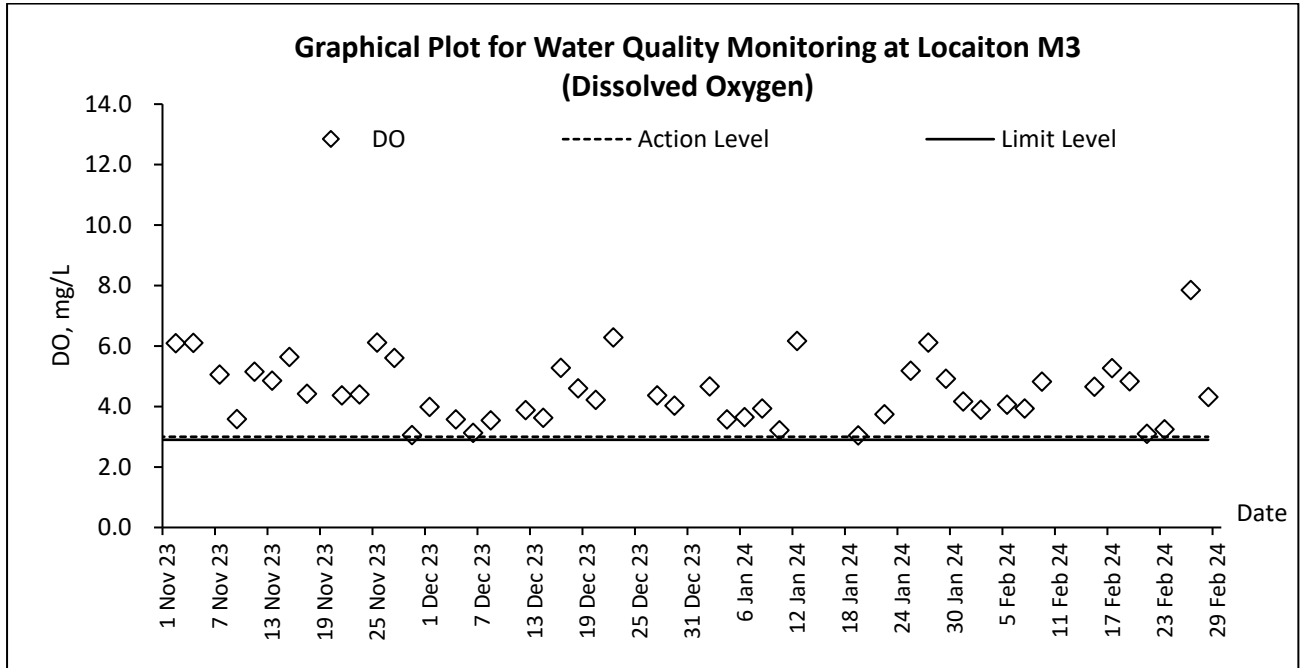


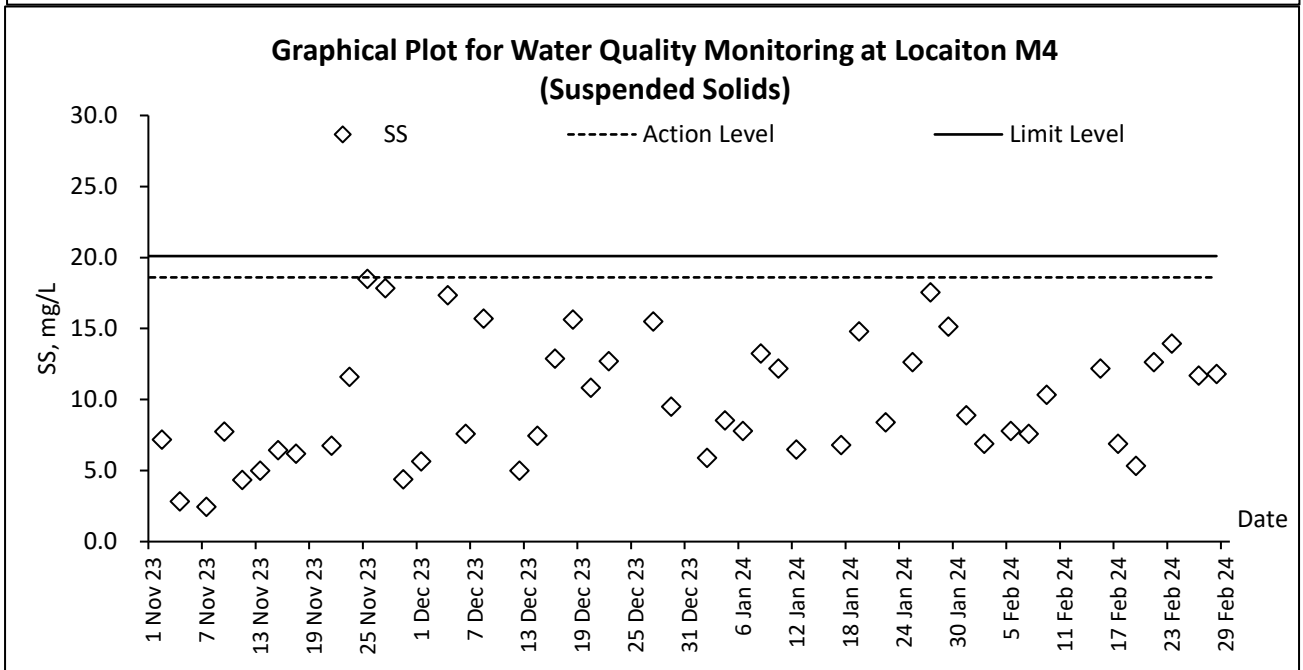
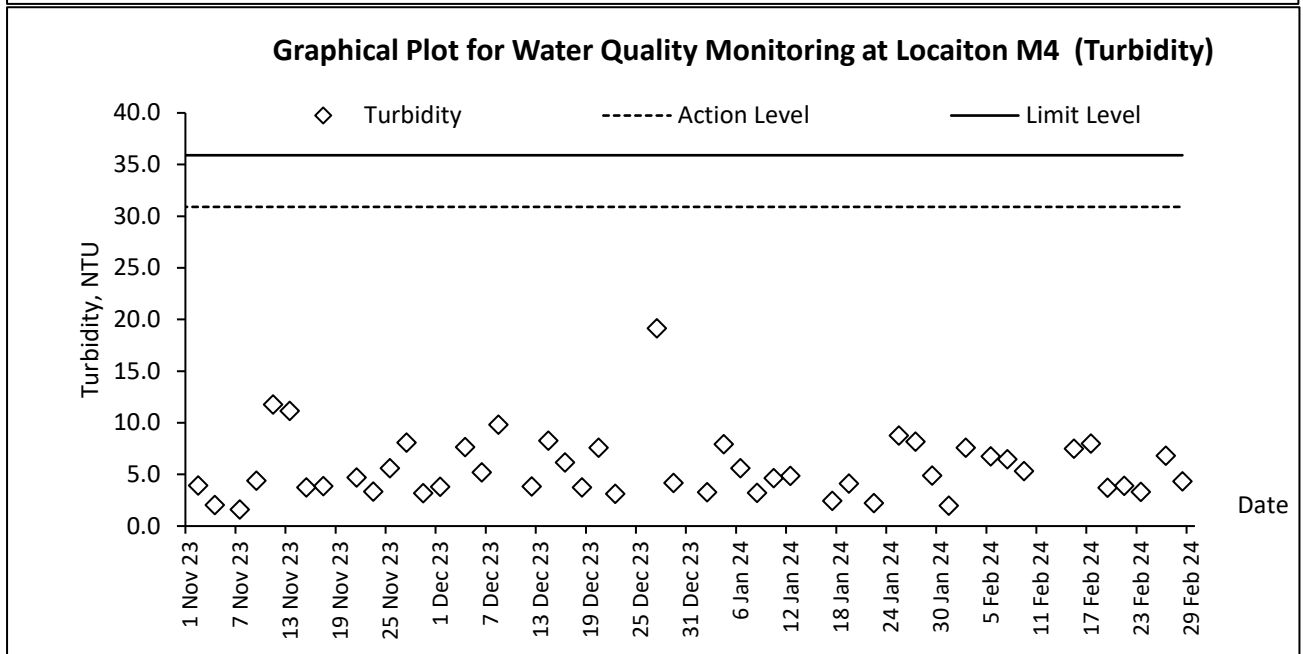
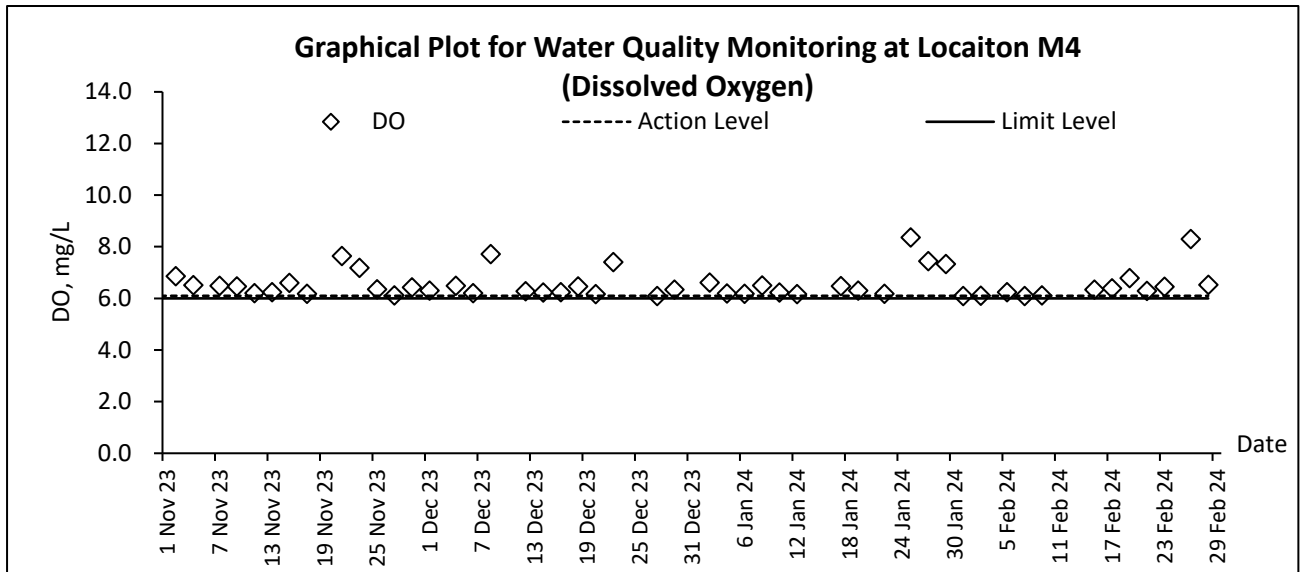


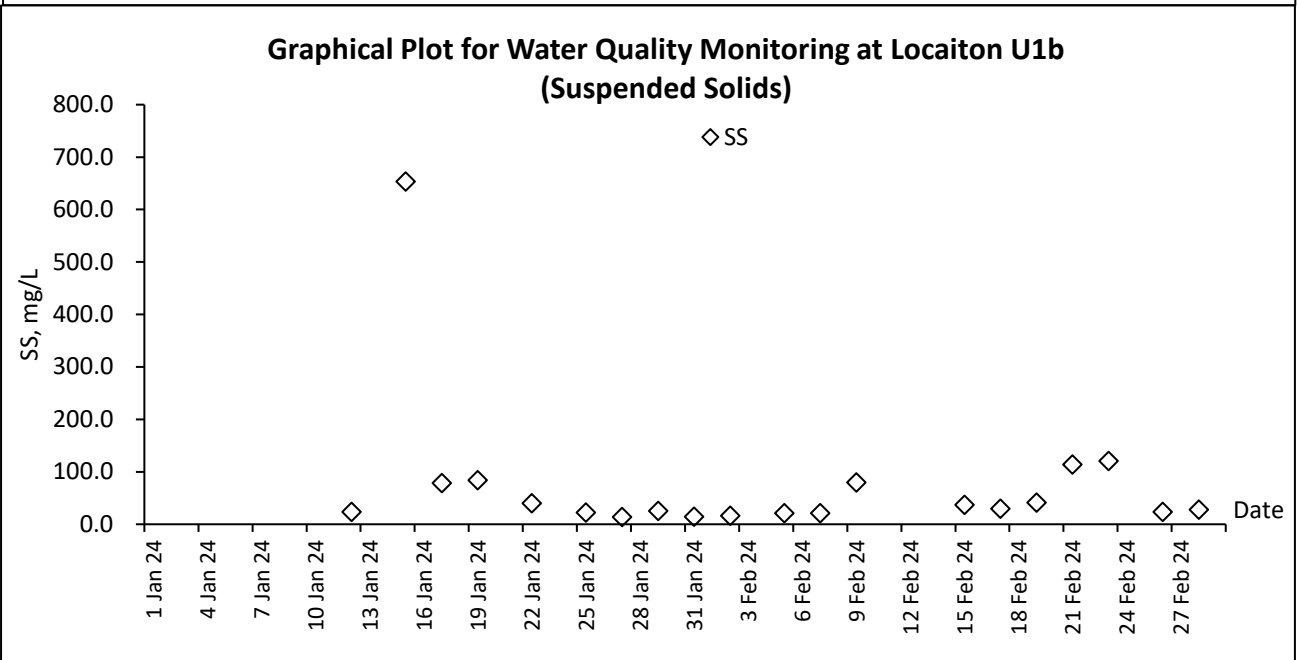
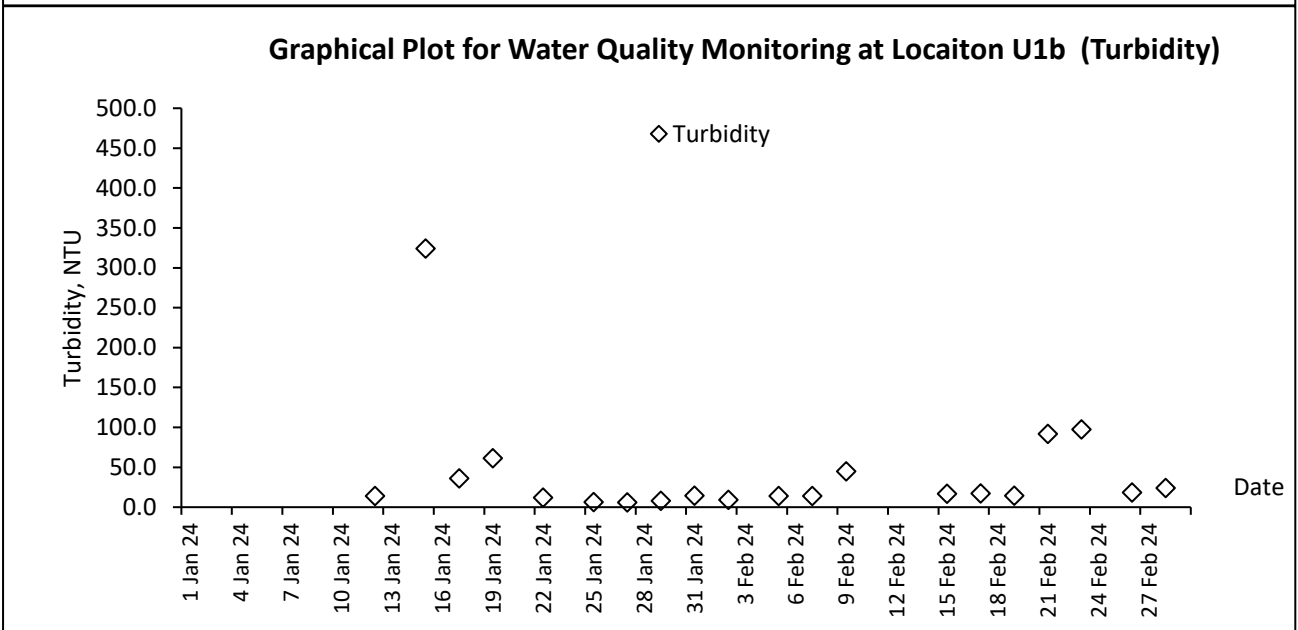
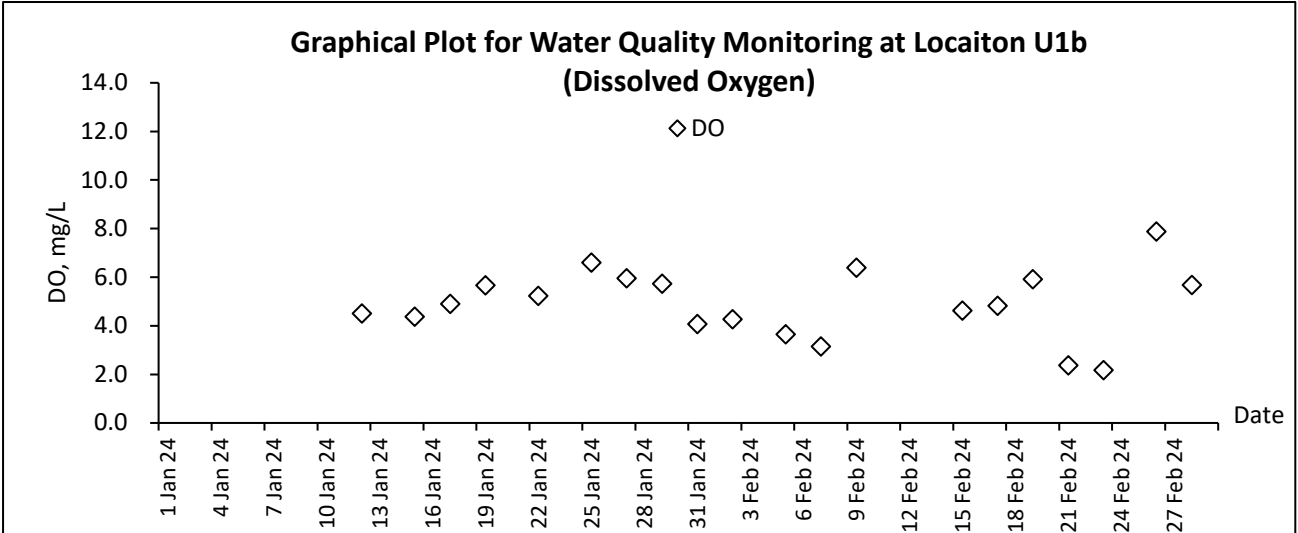
**Water Quality**

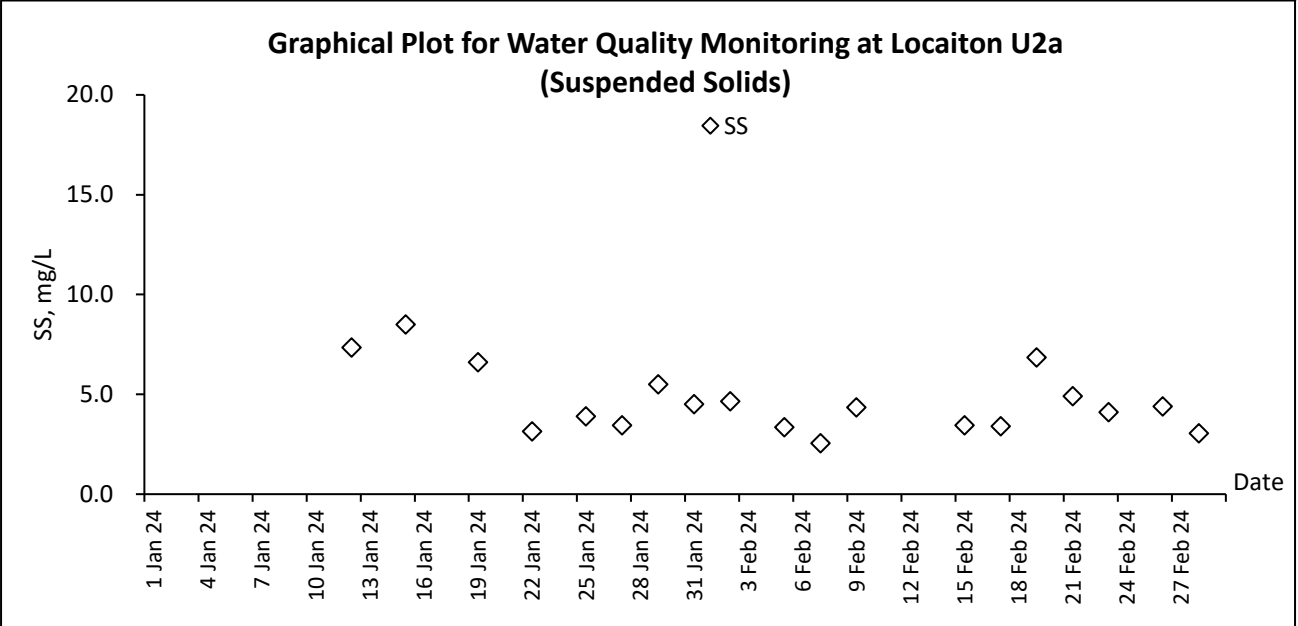
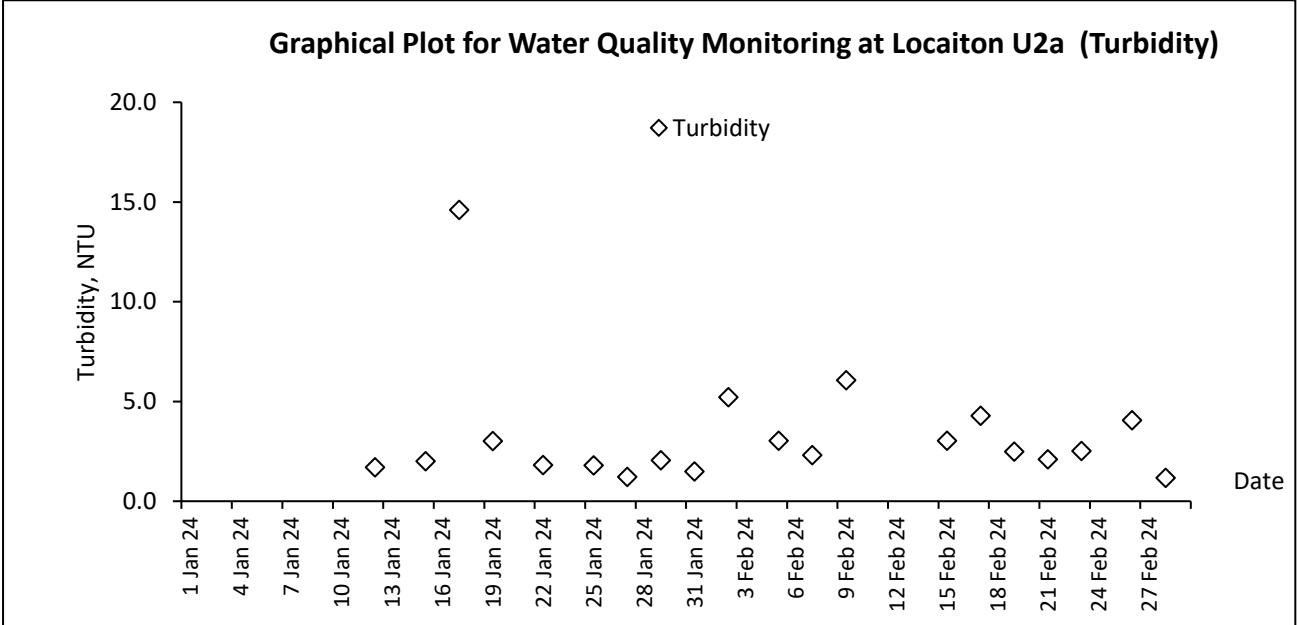
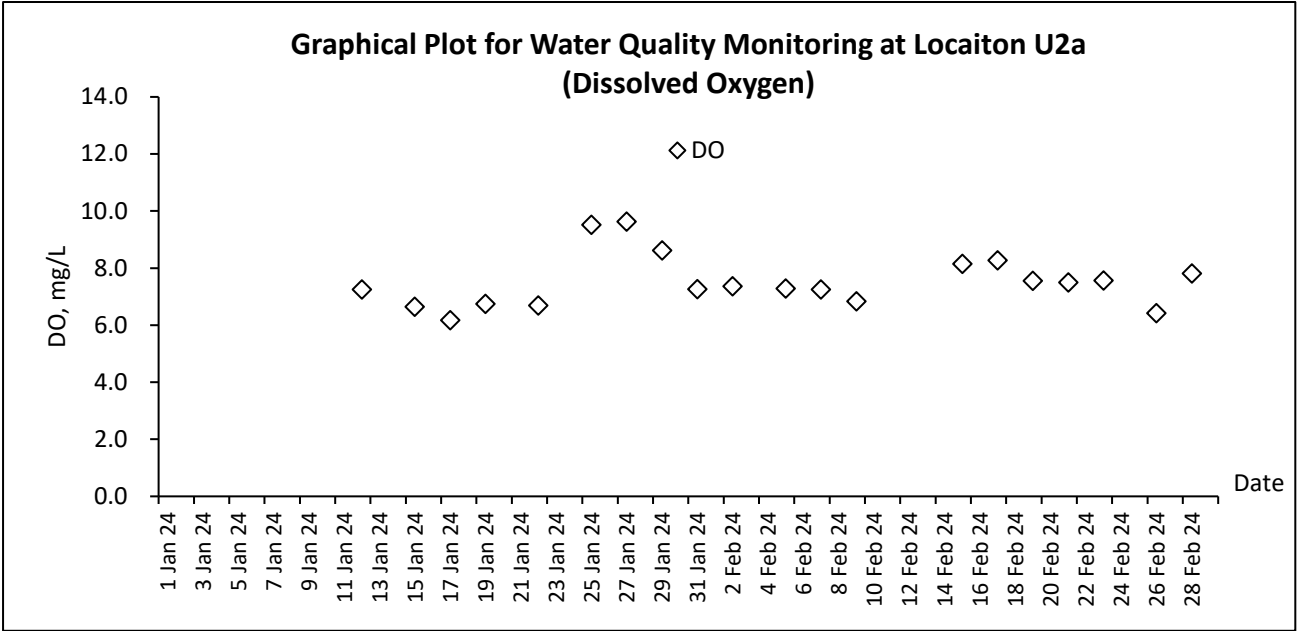




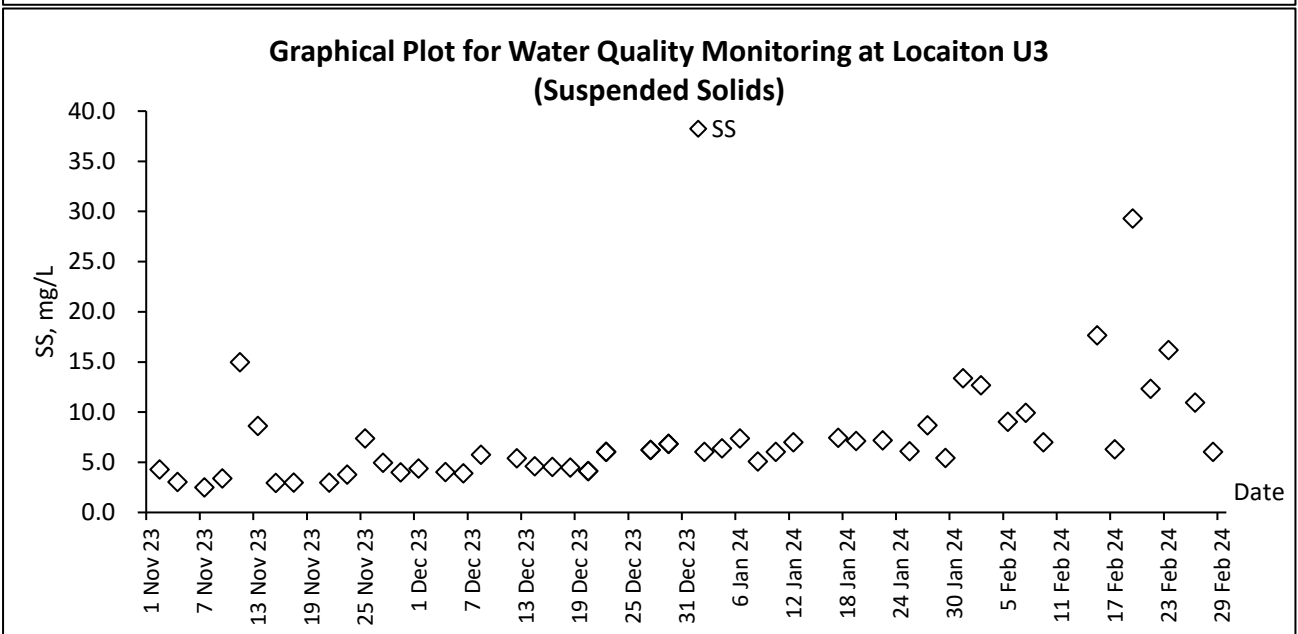
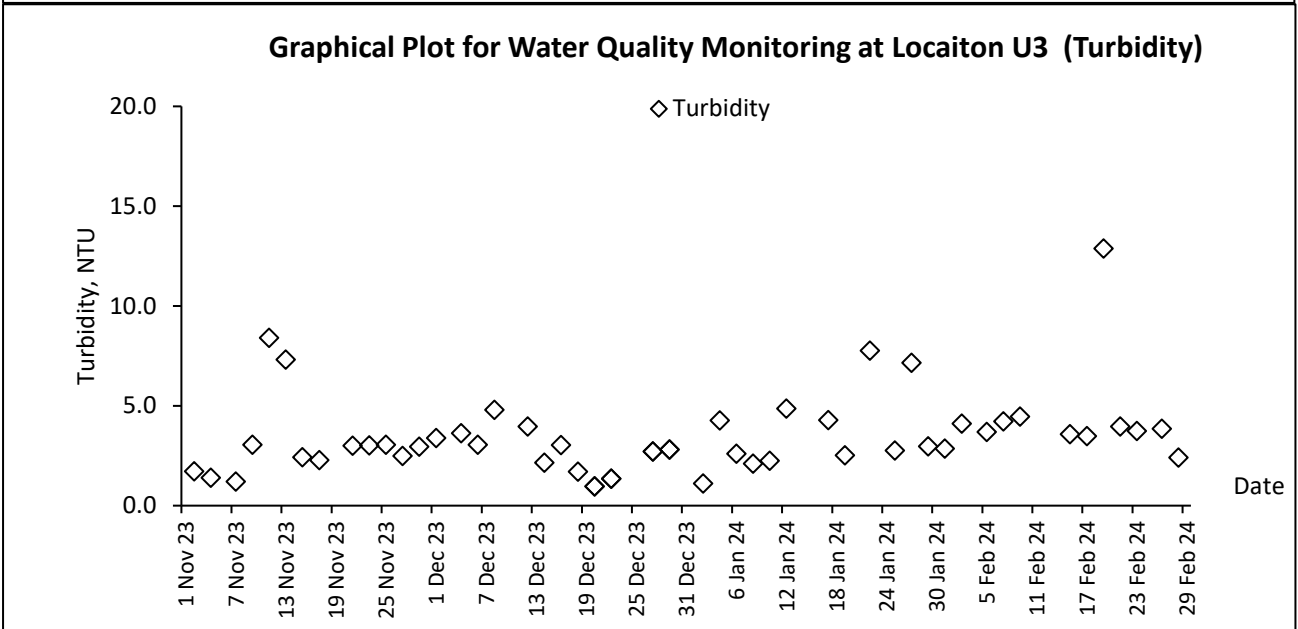
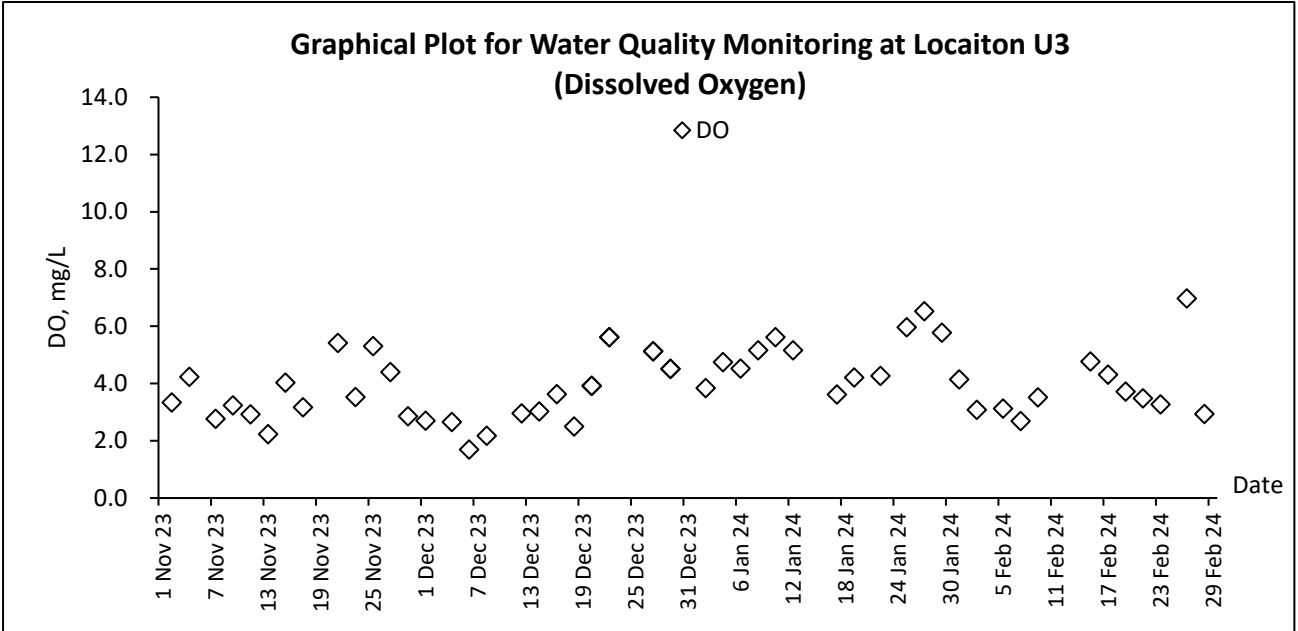


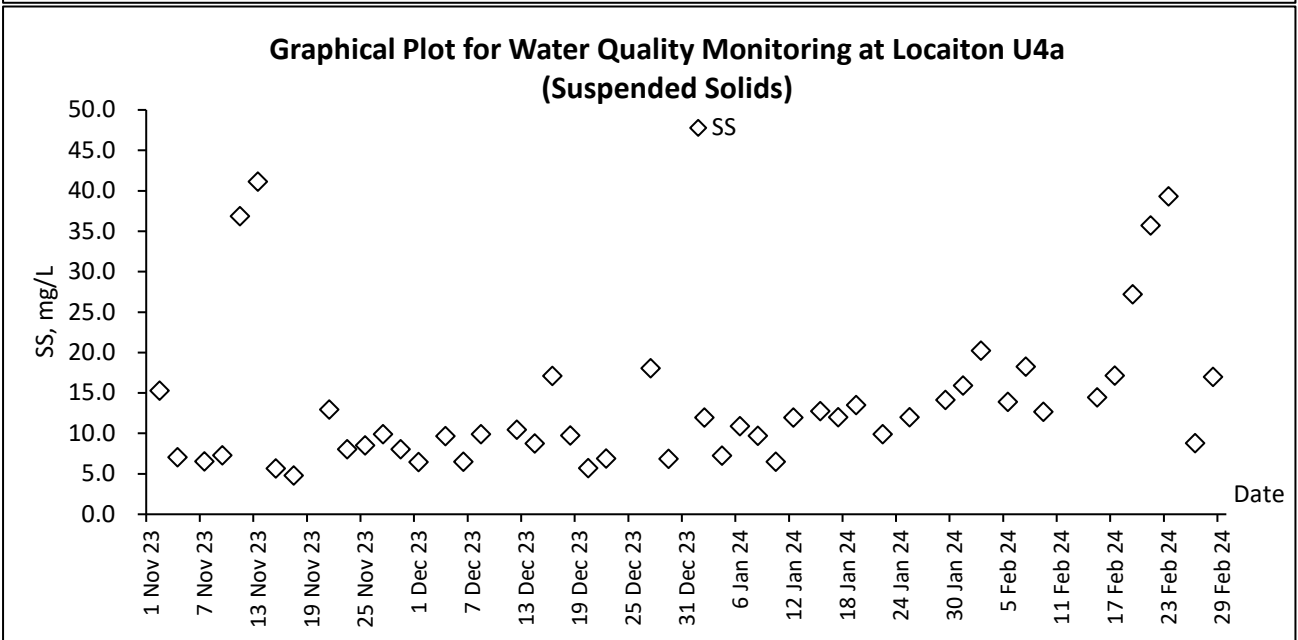
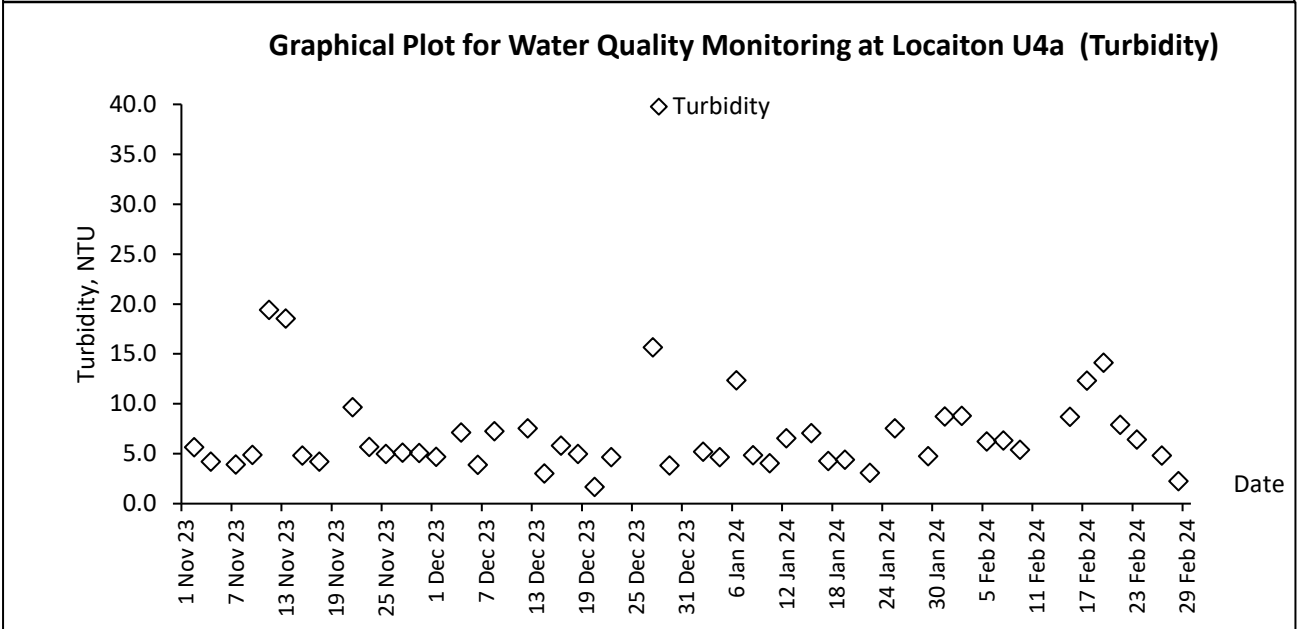
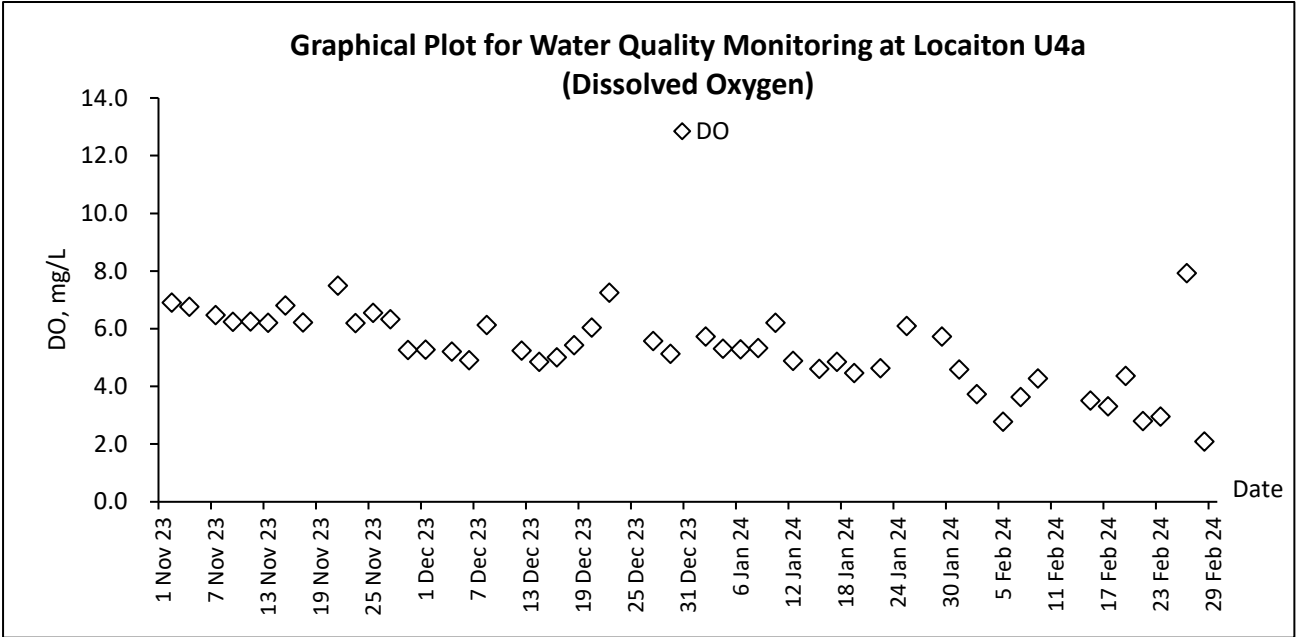


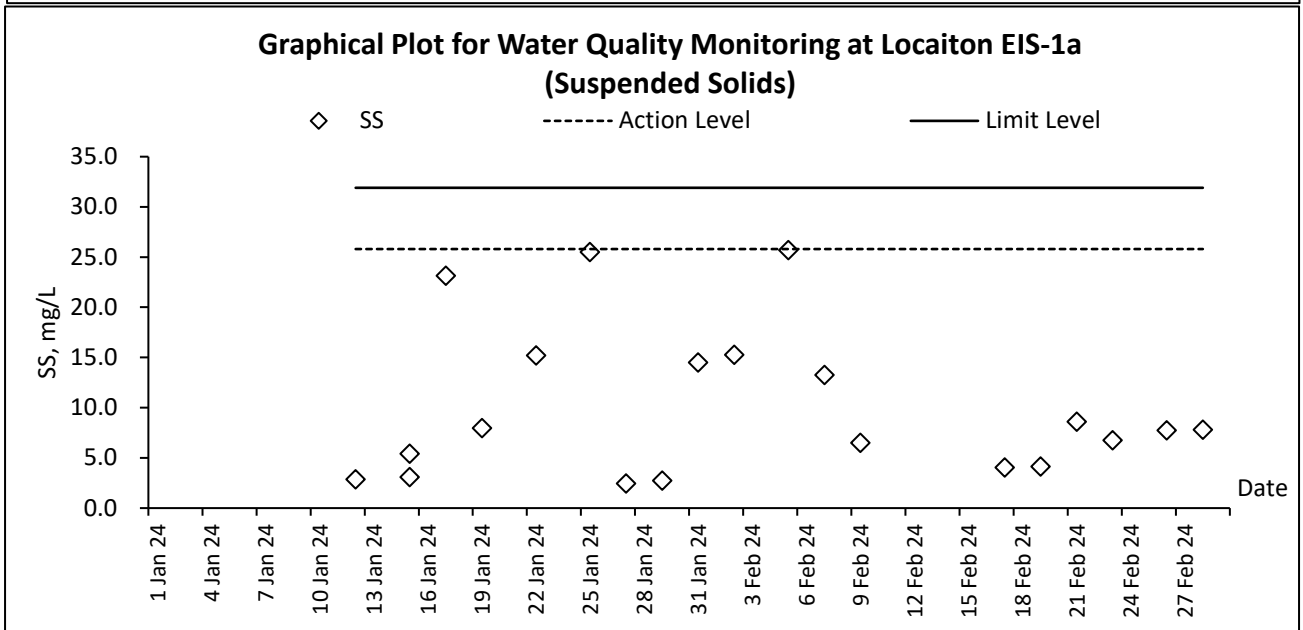
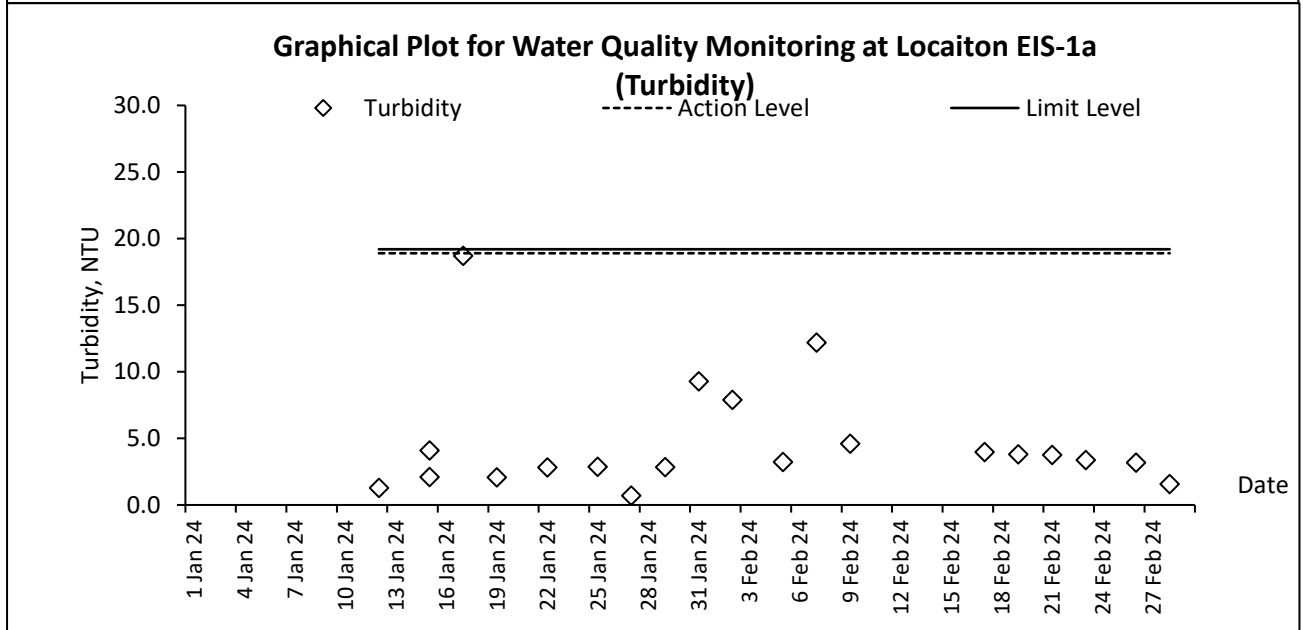
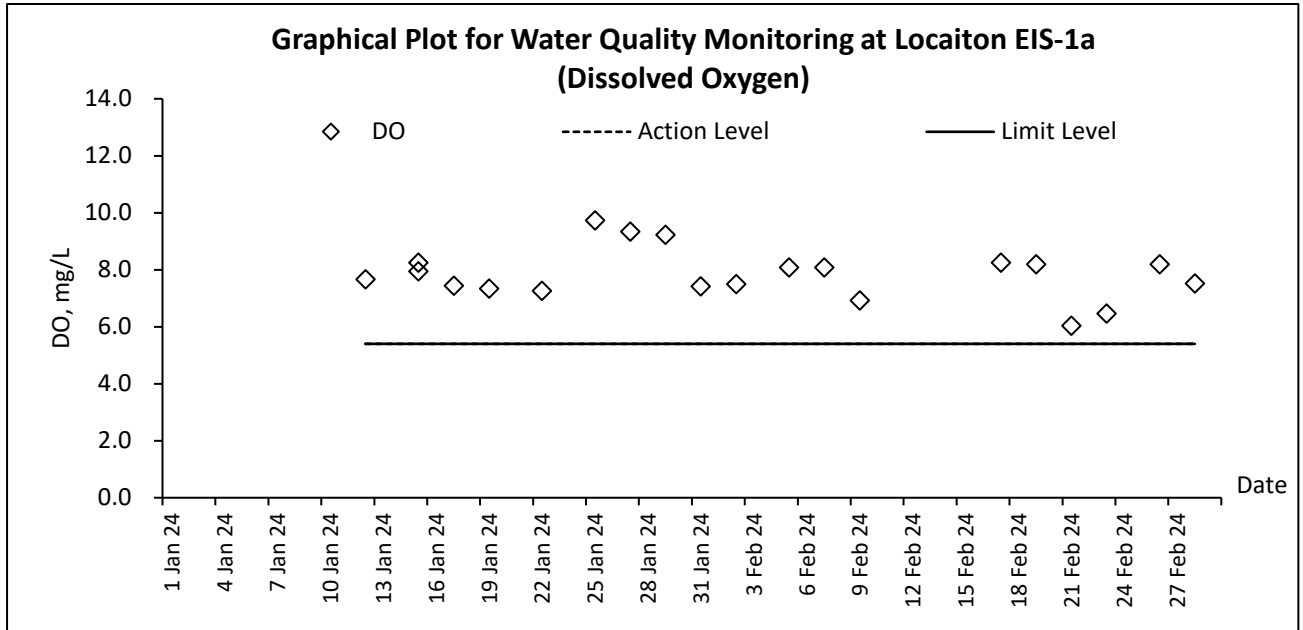


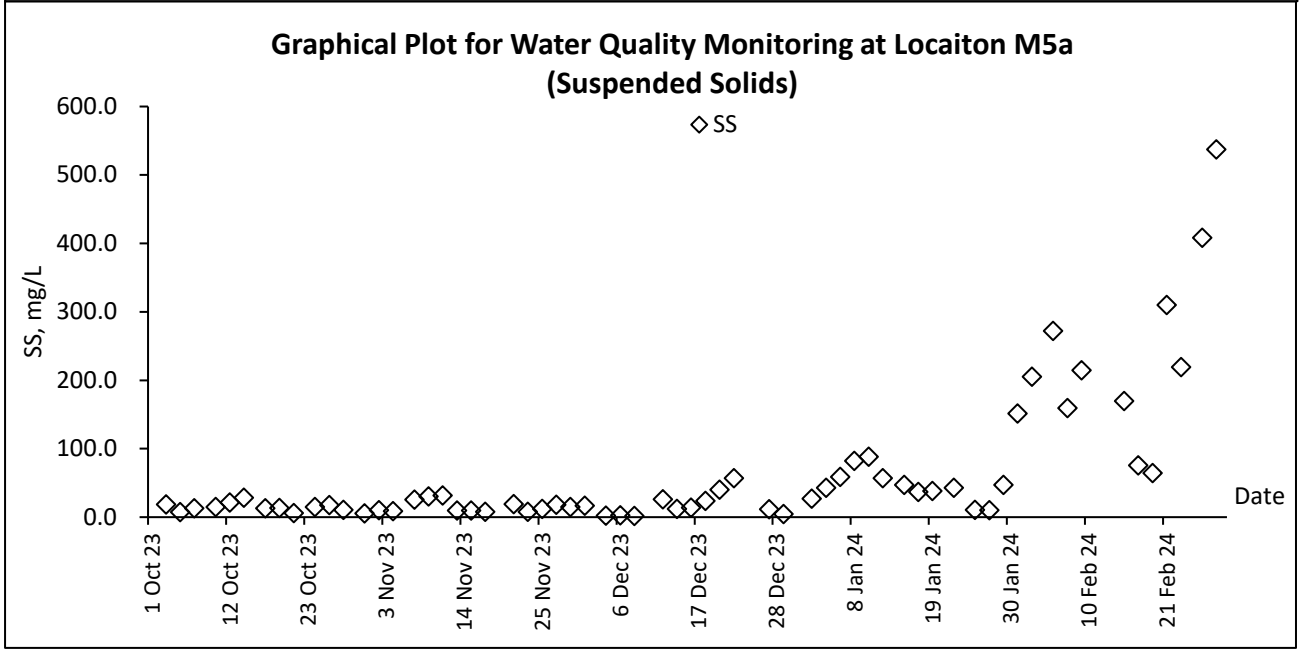
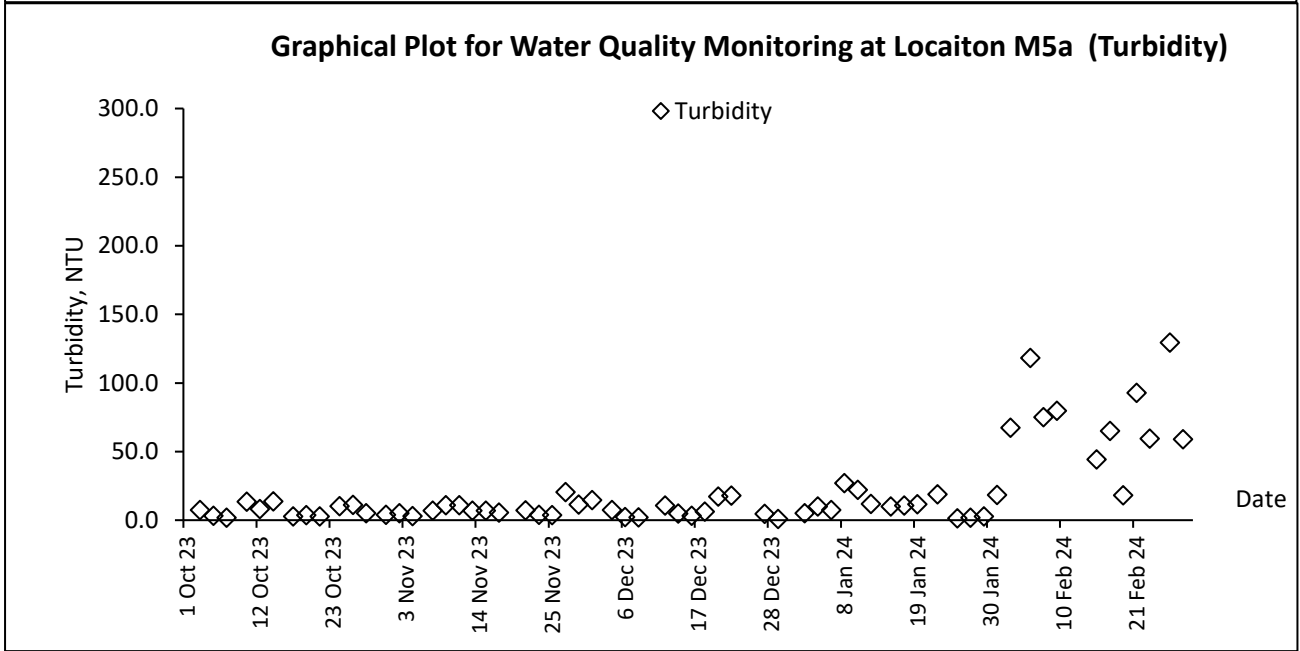
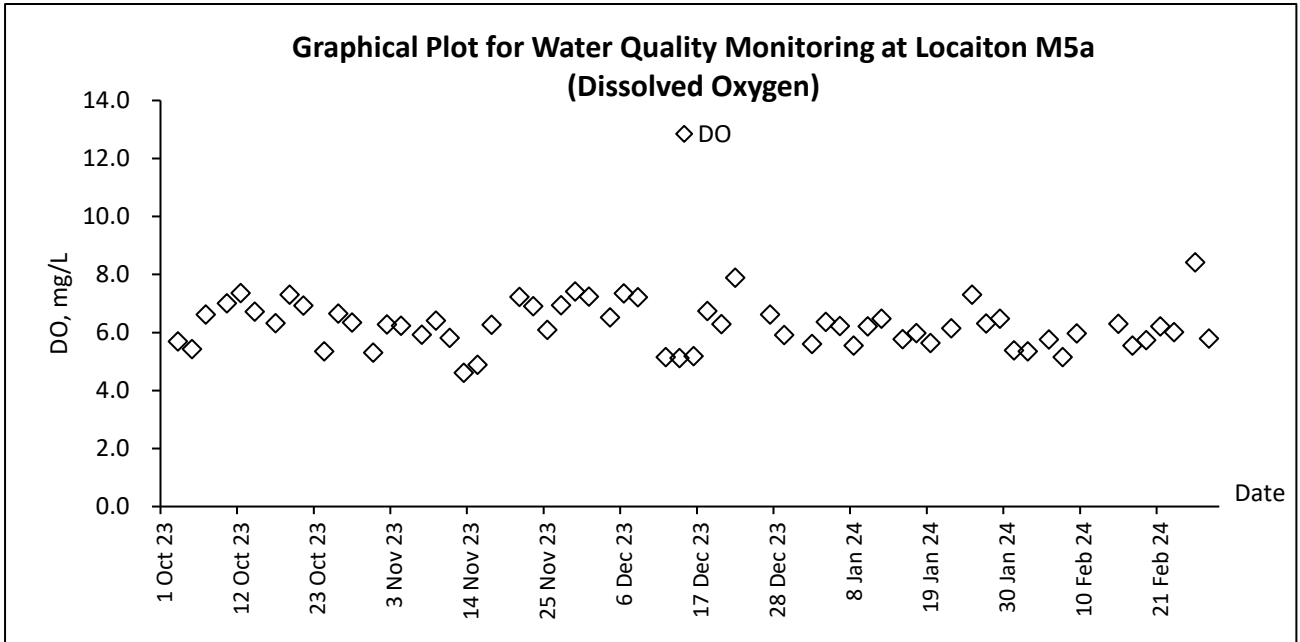


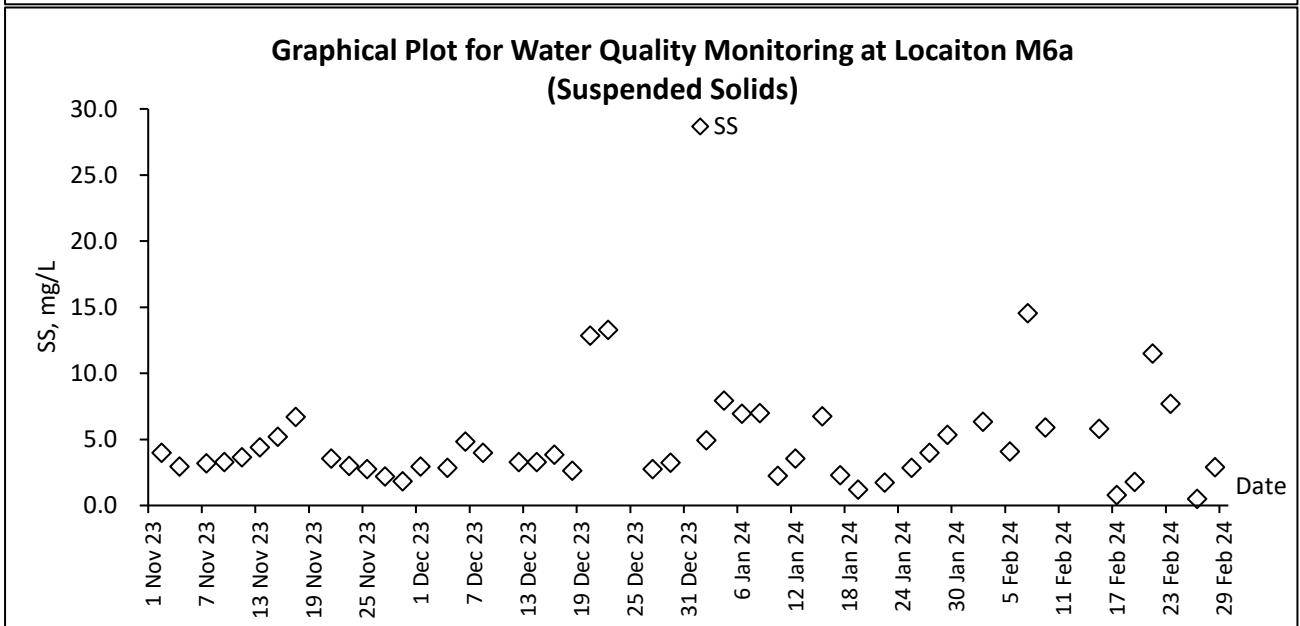
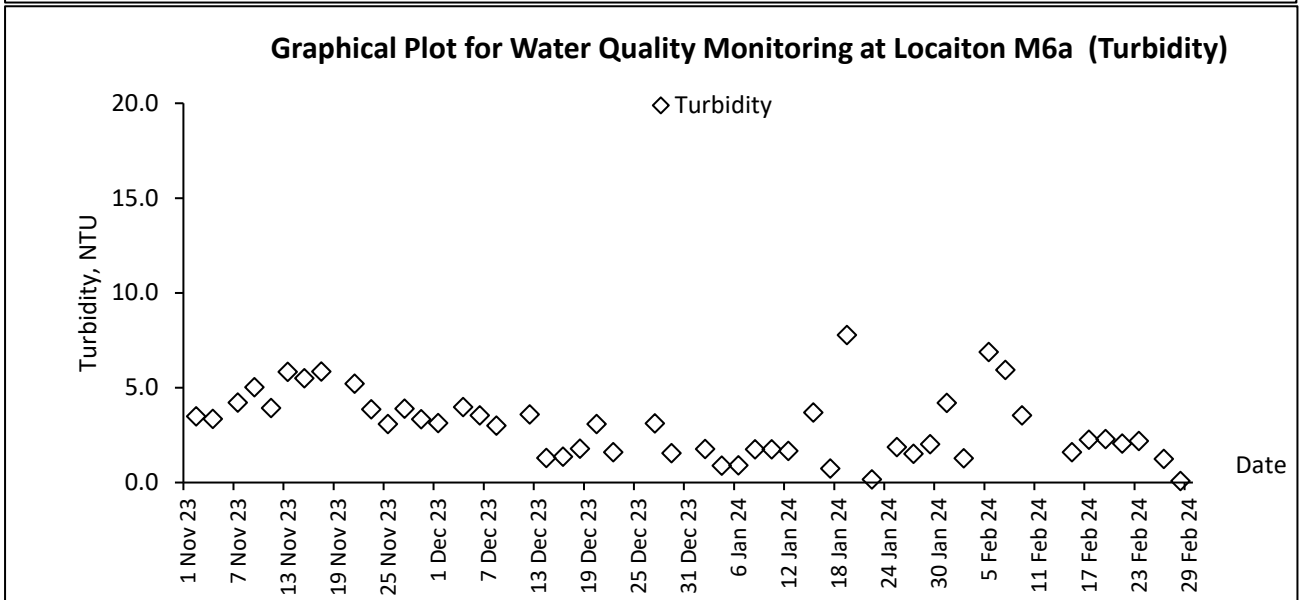
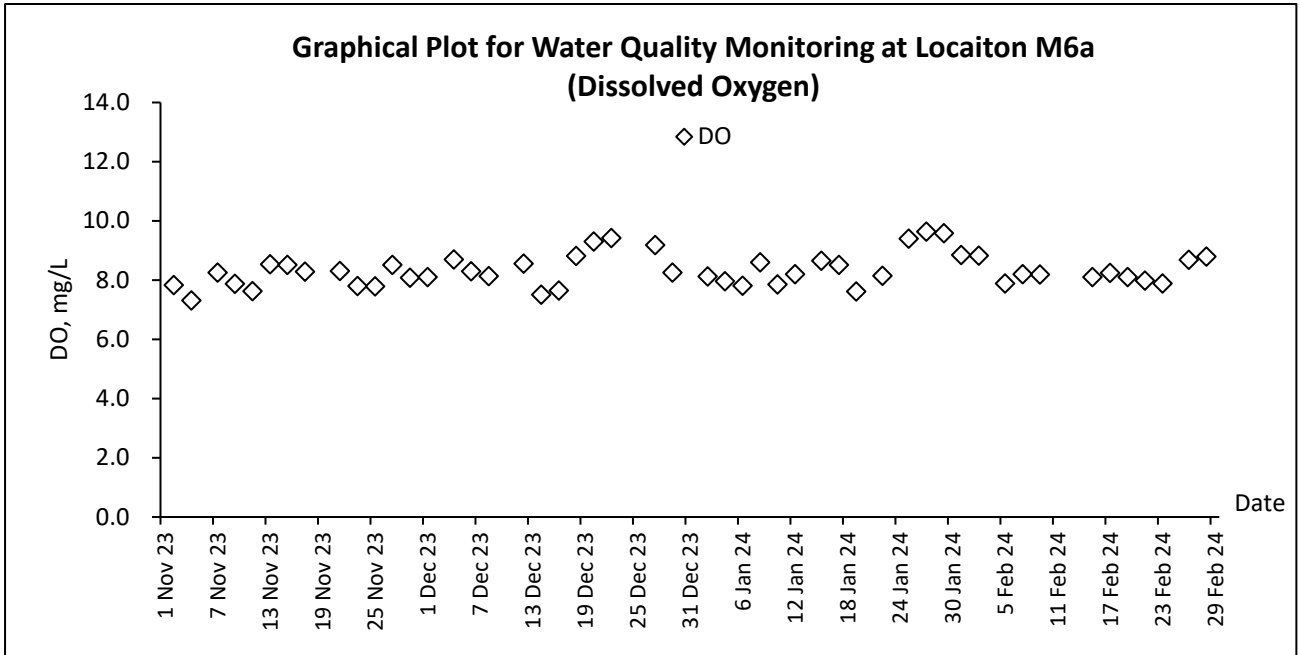


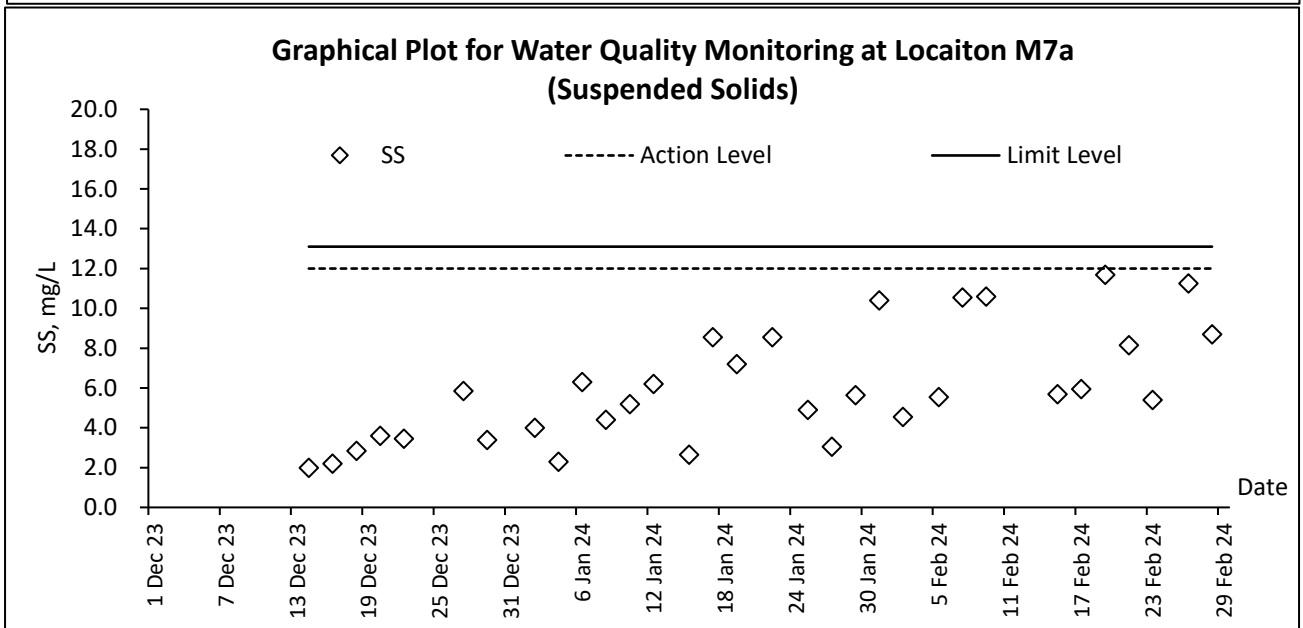
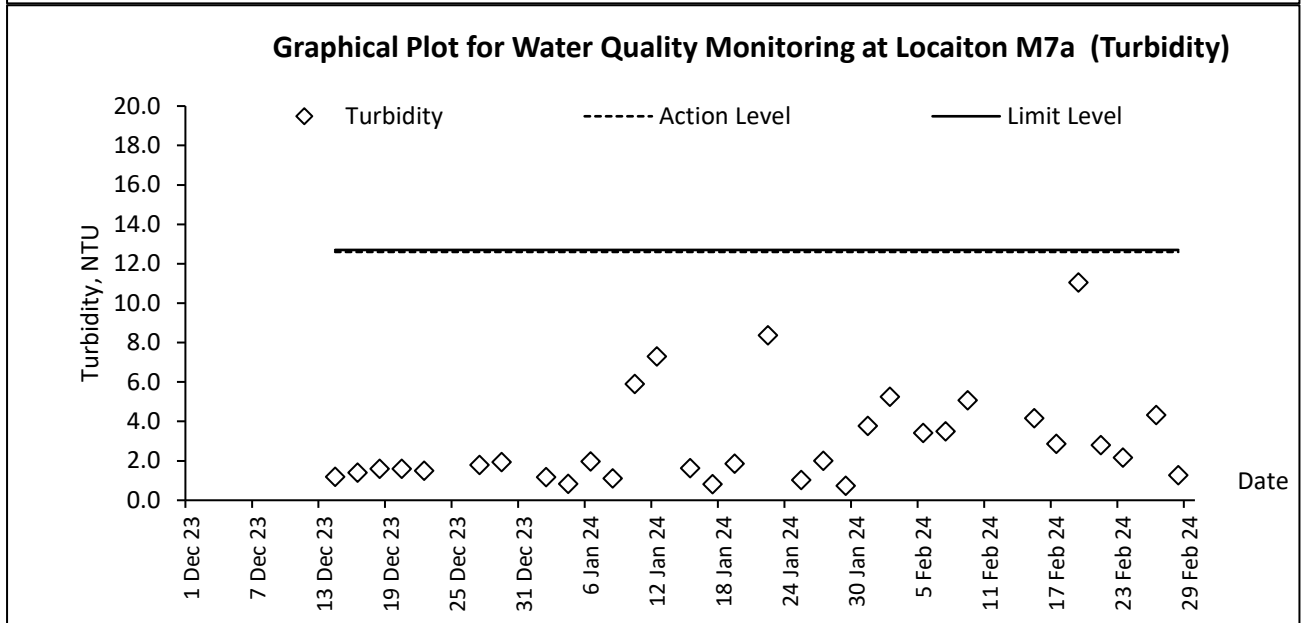
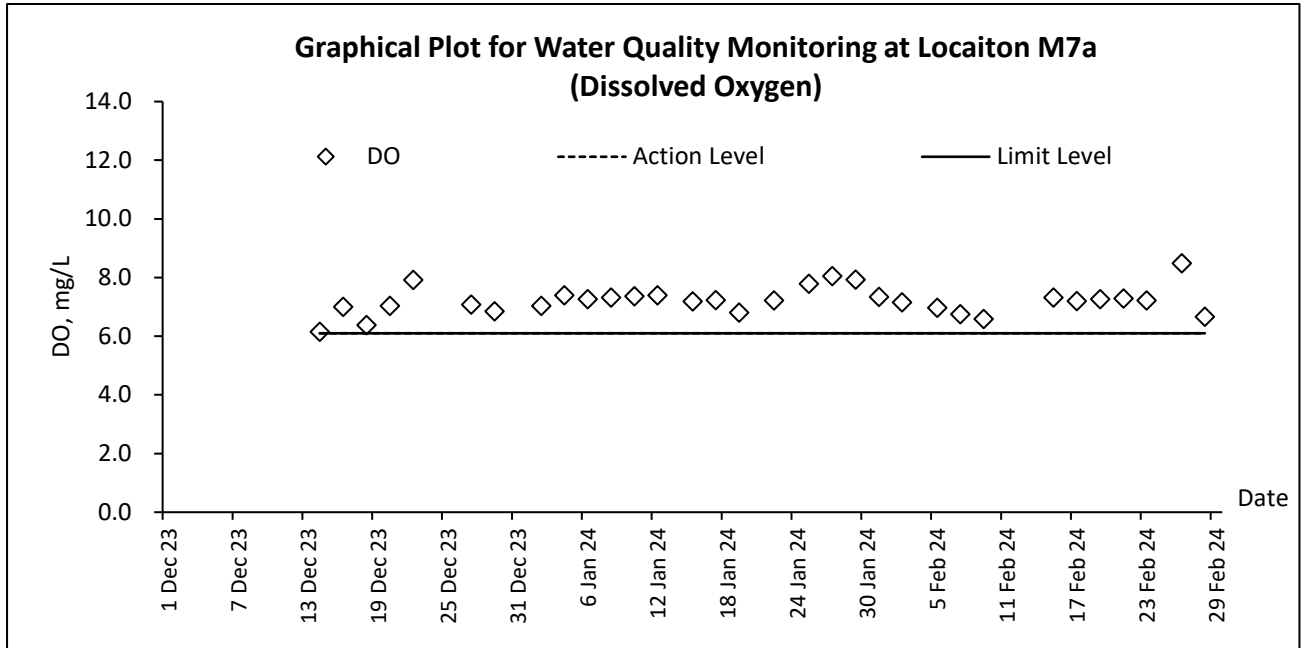


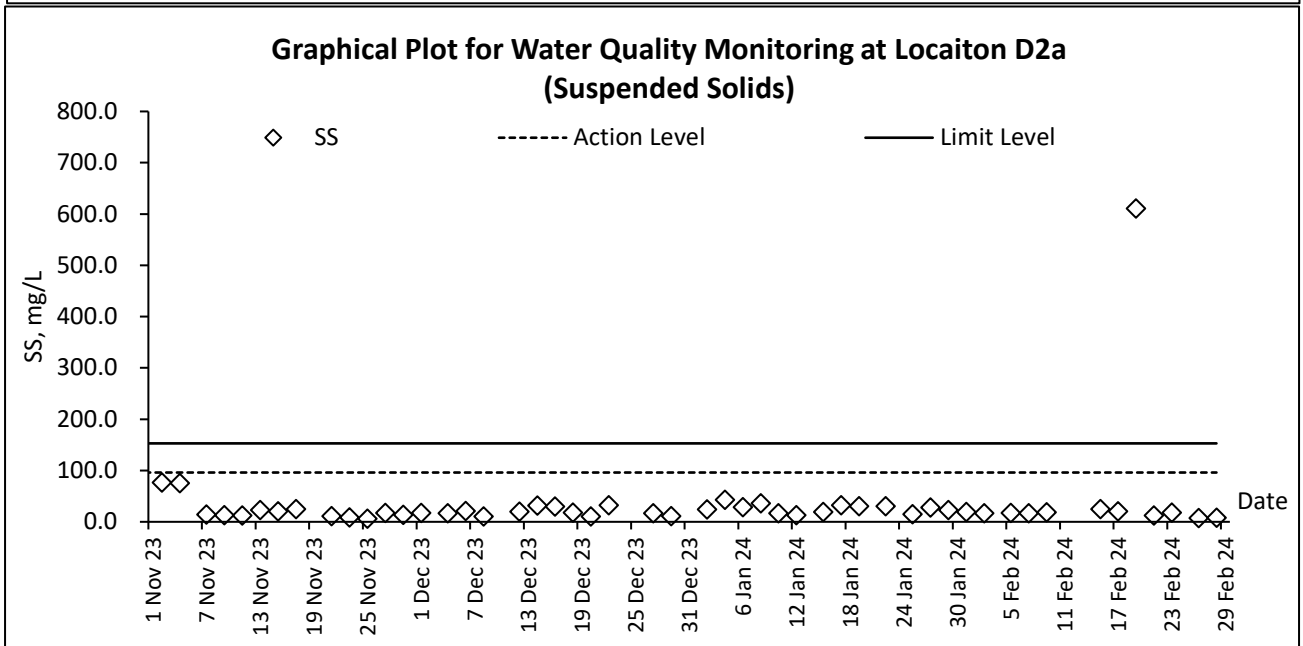
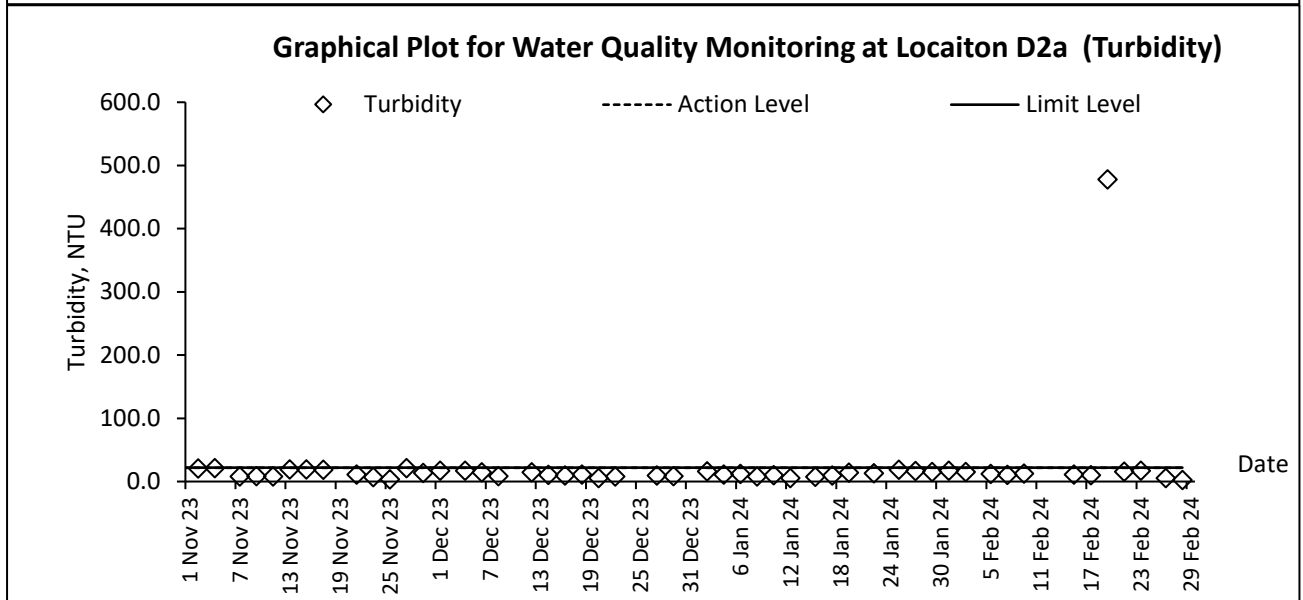
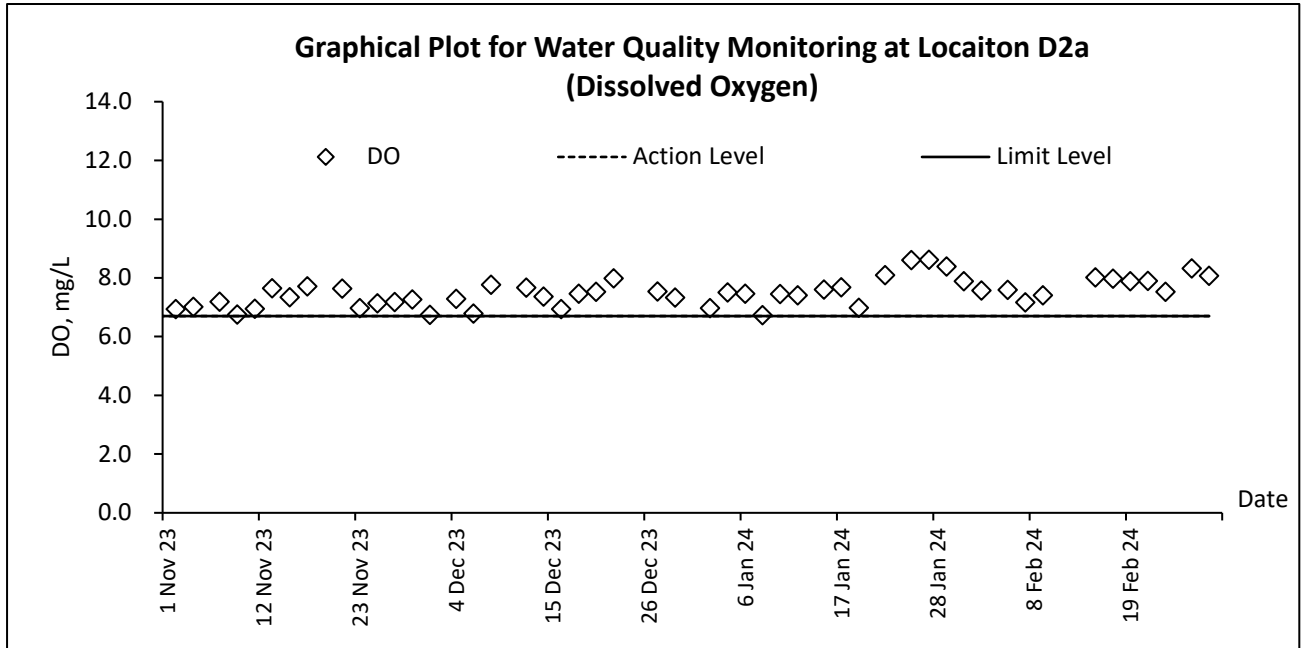


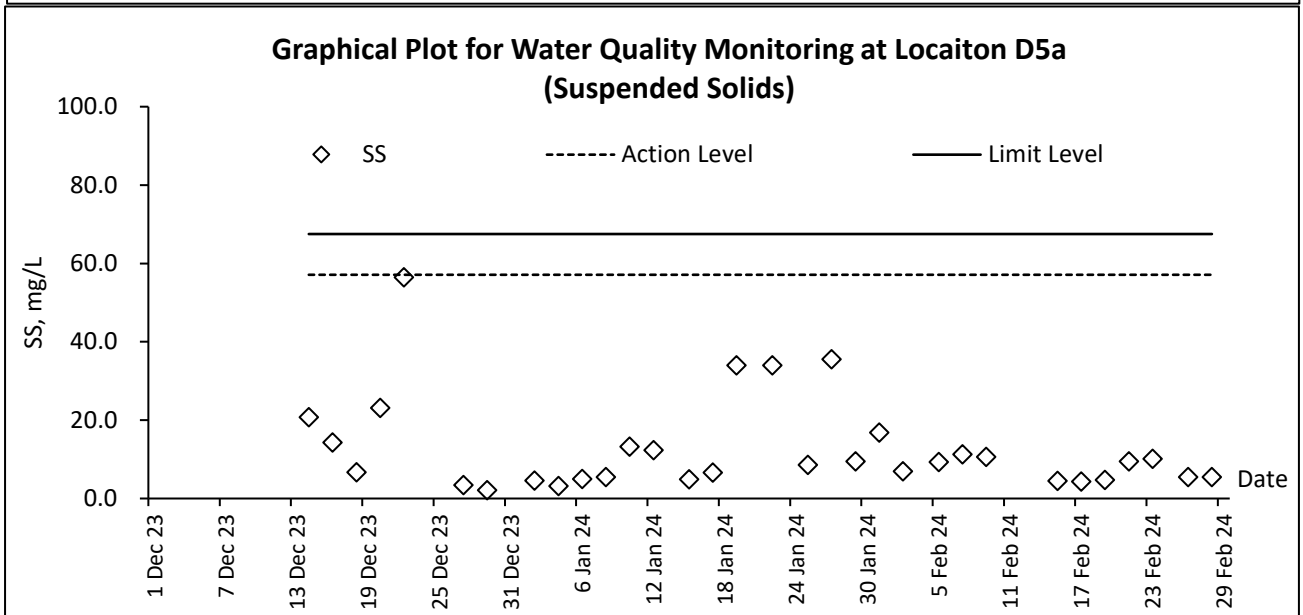
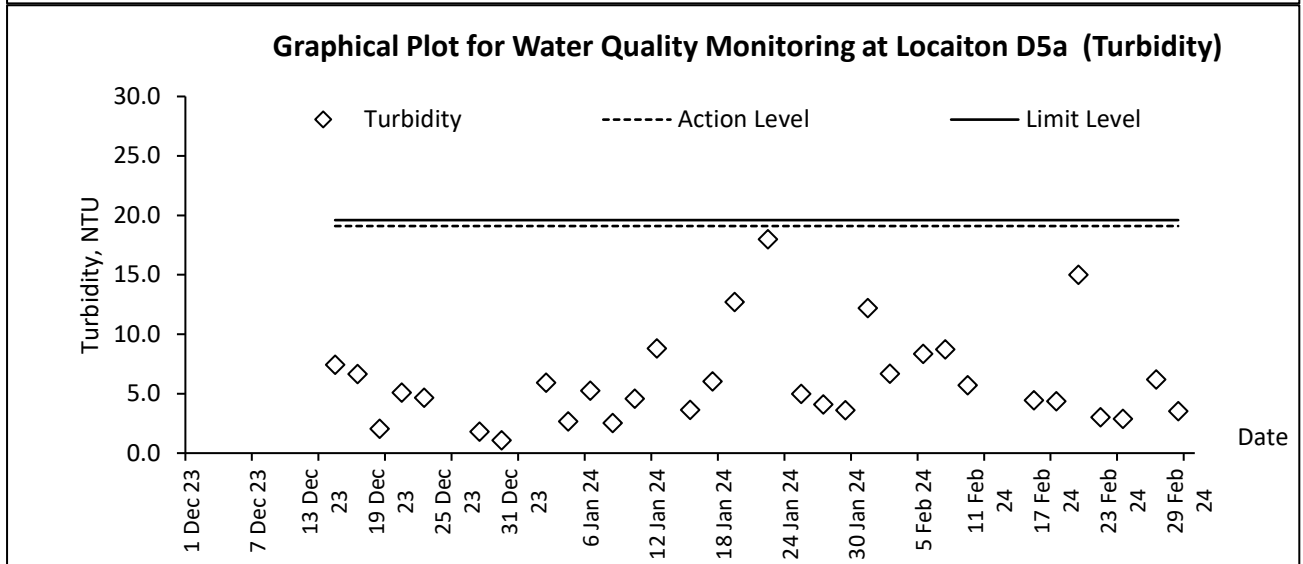
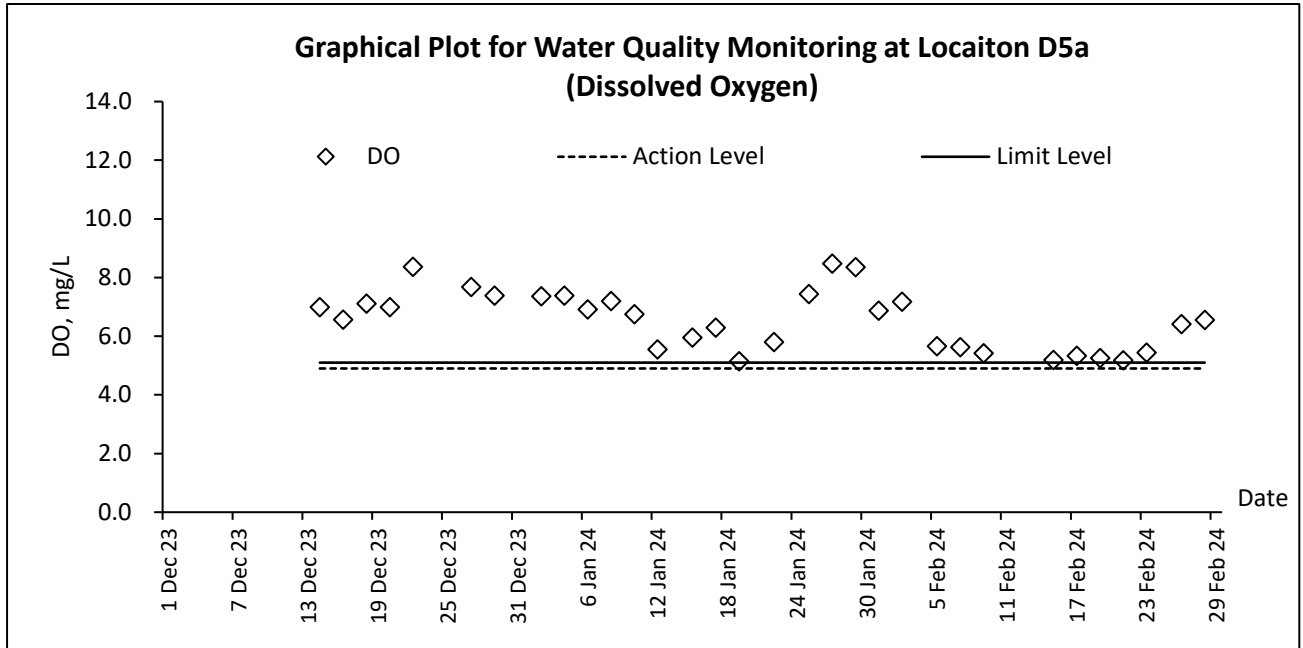














# **Appendix L**

## **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	<u>Actual Quantities of Inert C&amp;D Materials Generated Monthly</u>					<u>Actual Quantities of Non-inert C&amp;D Materials Generated Monthly</u>				
	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	4526.98	0.00	3000.00	0.00	1526.98	0.00	0.00	0.00	0.00	0.00
Mar										
Apr										
May										
Jun										
Sub-total	17681.40	0.00	3000.00	0.00	14666.85	0.00	0.00	0.00	0.00	14.55
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	42958.82	0.00	3000.00	28.25	39294.41	93.07	0.08	0.05	2.82	540.15

- 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 kg)	(in tonnes)	(in tonnes)	(in tonnes)
Jan	5,984.19	0.00	0.00	0.00	4,298.97	1,463.11	0.00	0.14	2.5	0.00	219.47	8.10
Feb	8,235.40	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	0.00											
Apr	0.00											
May	0.00											
June	0.00											
<b>Sub-total</b>	<b>14,219.59</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>10,549.52</b>	<b>3,363.97</b>	<b>27.61</b>	<b>0.43</b>	<b>5.60</b>	<b>0.00</b>	<b>272.46</b>	<b>8.10</b>
July	0.00											
Aug	0.00											
Sept	0.00											
Oct	0.00											
Nov	0.00											
Dec	0.00											
<b>Sub-total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.000</b>	<b>0.00</b>	<b>0.000</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total</b>	<b>14,219.59</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>10,549.52</b>	<b>3,363.97</b>	<b>27.610</b>	<b>0.43</b>	<b>5.600</b>	<b>0.00</b>	<b>272.46</b>	<b>8.10</b>

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 <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m <sup>3</sup> )
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											
Apr											
May											
Jun											
Sub-total	5.983	0.000	0.000	0.000	4.111	0.762	0.000	0.030	0.004	0.000	1.076
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	5.983	0.000	0.000	0.000	4.111	0.762	0.000	0.030	0.004	0.000	1.076

Note:

1. For non-inert portion of C&D material, assume the density of 1 m<sup>3</sup> general refuse is equal to 200 kg.
2. For inert portion of C&D material, assume 6 m<sup>3</sup> 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"> <li>• APCO To control the dust impact to meet HKAQO and EIAO-TM criteria</li> </ul>	√	√	√
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"> <li>• APCO To control the dust impact to meet HKAQO and EIAO-TM criteria</li> </ul>	√	√	√
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"> <li>• 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;</li> <li>• Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones;</li> </ul>	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	<ul style="list-style-type: none"> <li>• APCO To control the dust impact to meet HKAQO and EIAO-TM criteria</li> </ul>	√	√	√



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"> <li>• 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;</li> <li>• 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 hardcores;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• Any area that involves demolition activities should be</li> </ul>							

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<b>Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)</b>									
<b>Construction Dust Impact</b>							C1	C2	C3
		<p>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;</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;</li> <li>• 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;</li> <li>• 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</li> <li>• Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen,</li> </ul>							

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<b>Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)</b>									
<b>Construction Dust Impact</b>							C1	C2	C3
		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
<b>Construction Noise</b>									
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"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>• 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;</li> <li>• plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>• silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>• mobile plant should be sited as far away from NSRs as possible and practicable; and</li> <li>• material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul> <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
<b>Construction Noise</b>							C1	C2	C3
		<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"> <li>• Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m<sup>2</sup> on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc.</li> </ul> <p>4. Setup of liaison group</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>							
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	√	√	√

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							C1	C2	C3
<b>Water Quality (Construction Phase)</b>							√	√	√
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"> <li>• 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;</li> <li>• 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 m<sup>3</sup> 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 influent is pumped;</li> </ul> <p>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</p>	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"> <li>• Water Pollution Control Ordinance</li> <li>• ProPECC PN1/94</li> <li>• EIAO-TM</li> <li>• TM-DSS</li> </ul>	√	√	√

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>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"> <li>• 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;</li> <li>• 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;</li> <li>• All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas;</li> <li>• 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</li> </ul>							

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<b>Water Quality (Construction Phase)</b>							C1	C2	C3
		<p>facilities;</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• 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;</li> <li>• 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 control of silty surface runoff during storm events;</li> <li>• 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</li> </ul>							



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							C1	C2	C3
<b>Water Quality (Construction Phase)</b>									
		<p>the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains;</p> <ul style="list-style-type: none"> <li>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;</li> <li>Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts;</li> <li>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</li> <li>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.</li> </ul>							
S6.8.1.4	W2	<p><u>Prevention of Accidental Spillage of Chemicals</u></p> <ul style="list-style-type: none"> <li>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.</li> </ul>	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	<ul style="list-style-type: none"> <li>Water Pollution Control Ordinance</li> <li>Waste Disposal (Chemical Waste)</li> </ul>	√	√	√

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
<b>Water Quality (Construction Phase)</b>							C1	C2	C3
		<ul style="list-style-type: none"> <li>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.</li> <li>The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</li> </ul>				(General) Regulation			
S6.8.1.7	W3	<p><u>Sewage from workforce</u></p> <ul style="list-style-type: none"> <li>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;</li> <li>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;</li> <li>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.</li> </ul>	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	<u>Contaminated Groundwater and Site Runoff</u>	To minimise water quality impact	Contractor	All construction	TM-DSS	√	√	√

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
<b>Water Quality (Construction Phase)</b>									
		<p>To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted.</p> <ul style="list-style-type: none"> <li>• Cover the contaminated soil and surface to prevent the generation of contaminated water.</li> <li>• No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation.</li> <li>• 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.</li> <li>• 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.</li> </ul>	<p>from contaminated groundwater in construction phase</p>		<p>sites where practicable</p>				
S6.8.1.10	W5	<p><u>Construction Works of near/ within Watercourses</u></p> <ul style="list-style-type: none"> <li>• 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” for DSD approval, in order to formulate feasible options of these temporary structure.</li> </ul>	<p>To avoid any direct water quality impact to existing watercourses</p>	Contractor	<p>All construction sites where practicable</p>	<ul style="list-style-type: none"> <li>• ETWB TC (Works) No. 5/2005</li> </ul>	√	√	√

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
		<ul style="list-style-type: none"> <li>• Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies.</li> <li>• Construction effluent, site run-off and sewage should be properly collected and/or treated.</li> </ul>							

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							C1	C2	C3
<b>Water Quality (Construction Phase)</b>							C1	C2	C3
S6.8.1.11	W6	<p><u>Removal/ Diversion of watercourses</u></p> <ul style="list-style-type: none"> <li>Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area.</li> <li>Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area.</li> <li>Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low.</li> <li>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.</li> <li>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.</li> </ul>	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	<ul style="list-style-type: none"> <li>Water Pollution Control Ordinance</li> <li>TM-DSS</li> <li>ETWB TC</li> <li>(Works) No. 5/2005</li> <li>ProPECC PN1/94</li> </ul>	√	√	√
S6.8.1.12	W7	<p><u>Removal/ Filing of ponds</u></p> <ul style="list-style-type: none"> <li>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</li> </ul>	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	ProPECC PN1/94	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		
<i>Water Quality (Construction Phase)</i>							C1	C2	C3
		<p>discharge to stormwater drainage system or marine water should be allow.</p> <ul style="list-style-type: none"> <li>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.</li> </ul>							

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
<b>Ecology (Construction Phase)</b>							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	Egretry 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 egretry; to monitor regularly the conditions of the egretry and potential impacts to egretry flight-lines.	To minimise disturbance impacts to egretry	CEDD/ Contractor	Existing and all potential egretry location(s) within 250m from any works activity Before commencement of the construction	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
<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



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>Fisheries</i>							C1	C2	C3
S9.5.2	F1	<ul style="list-style-type: none"> <li>To adopt the mitigation measures for the control of water quality impacts</li> </ul>	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
<b><i>Landscape and Visual (Construction Phase)</i></b>							√	√	√
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"> <li>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.</li> </ul>	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
<b>Landscape and Visual (Construction Phase)</b>							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"> <li>• DEVB TCW No.7/2015;</li> <li>• ETWB TCW No.29/2004</li> </ul>	√	√	√
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"> <li>• DEVB TCW No.6/2015;</li> <li>• DEVB TCW 7/2015;</li> <li>• HyD Guidelines HQ/GN/13</li> </ul>	√	√	√

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
<b>Landscape and Visual (Construction Phase)</b>									
		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"> <li>• ETWB TCW 5/2005;</li> <li>• ProPECC PN1/94</li> </ul>	√	√	√
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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<b>Landscape and Visual (Construction Phase)</b>							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"> <li>• DEVB TCW No.7/2015;</li> <li>• ETWB TCW No.29/2004</li> </ul>	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		
<i>Waste Management (Construction Waste)</i>							C1	C2	C3
S11.2.7	WM1	<p><u>Comments on C&amp;DMMP given by PFC</u></p> <ul style="list-style-type: none"> <li>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;</li> <li>To on-site reuse all surplus inert C&amp;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;</li> <li>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 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;</li> <li>To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of</li> </ul>	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
<b>Waste Management (Construction Waste)</b>							C1	C2	C3
		<p>Contaminated Land. The remedial soil shall be completely reused within the development site;</p> <ul style="list-style-type: none"> <li>To set up effective control procedures to ensure the traceability of disposal and reuse of the C&amp;D materials; and</li> <li>To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.</li> </ul>							
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"> <li>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;</li> <li>training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;</li> <li>provision of sufficient waste disposal points and regular collection for disposal;</li> <li>appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;</li> <li>regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;</li> </ul>	Minimise waste Generation during construction	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
<b>Waste Management (Construction Waste)</b>							C1	C2	C3
		a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.							
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"> <li>• segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> <li>• proper storage and site practices to minimise the potential for damage and contamination of construction materials;</li> <li>• plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste;</li> <li>• sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and</li> <li>• provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.</li> </ul>	Reduce waste generation	Contractor	All construction sites	Waste Disposal Ordinance	√	√	√
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>	Good site practice to minimise the waste generation and recycle the	Contractor	All construction sites	<ul style="list-style-type: none"> <li>• Land (Miscellaneous Provisions)</li> </ul>			



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
<b>Waste Management (Construction Waste)</b>							C1	C2	C3
		<ul style="list-style-type: none"> <li>waste such as soil should be handled and stored well to ensure secure containment; and</li> <li>depends on actual site activities, certain locations within the site area would be used for storage of waste to 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.</li> </ul>	C&D materials as far as practicable so as to reduce the amount for final disposal			Ordinance <ul style="list-style-type: none"> <li>Waste Disposal Ordinance ETWBTCW No. 19/2005</li> </ul>			
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"> <li>waste such as soil should be handled and stored well to ensure secure containment;</li> <li>stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and</li> <li>different locations should be designated to stockpile each material to enhance reuse.</li> </ul>	Minimise waste impacts from storage	Contractor	All construction sites	Waste Disposal Ordinance	√	√	√
S11.5.1	WM7	<u>Site Formation and C&amp;D Materials</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and	Minimise waste impacts from excavated and C&D materials	Contractor	All construction	<ul style="list-style-type: none"> <li>Land (Miscellaneous Provisions) Ordinance</li> <li>Waste Disposal</li> </ul>			

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
<b>Waste Management (Construction Waste)</b>							C1	C2	C3
		<p>C&amp;D materials:</p> <ul style="list-style-type: none"> <li>maintain temporary stockpiles and reuse excavated fill material for backfilling;</li> <li>carry out on-site sorting;</li> <li>make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and</li> </ul> <p>implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified.</p>				<p>Ordinance</p> <ul style="list-style-type: none"> <li>ETWB TCW No. 19/2005</li> <li>Project Administrative Handbook for Civil Engineering Works, 2012 Edition</li> </ul>			
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 accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</p>	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	<ul style="list-style-type: none"> <li>Waste Disposal (Chemical Waste) General) Regulation</li> <li>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</li> </ul>	√	√	√
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"> <li>Adoption of protection, such as full containment, mini containment, or segregation of work area;</li> <li>Provision of decontamination facilities for cleaning of workings, equipment and bagged</li> </ul>	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	<ul style="list-style-type: none"> <li>Handling of Asbestos Containing Materials in Buildings (ProPECC PN 2/97)</li> </ul>	√	√	√

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
<b>Waste Management (Construction Waste)</b>							C1	C2	C3
		<p>waste before leaving the work area;</p> <ul style="list-style-type: none"> <li>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;</li> <li>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;</li> <li>Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner;</li> <li>Coating on any surfaces previously in contact with or contained by asbestos with a sealant;</li> <li>Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste;</li> <li>Pre-treatment of all effluent from the work area before discharged; and</li> <li>Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.</li> </ul>							
S11.5.1	WM10	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> <li>General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage</li> </ul>	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	<ul style="list-style-type: none"> <li>Waste Disposal Ordinance</li> </ul>	√	√	√

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
		recycling. <ul style="list-style-type: none"> <li>• 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.</li> <li>• A reputable waste collector should be employed to remove general refuse on a daily basis.</li> </ul>							

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
<b>Land Contamination</b>							√	√	√
S12.6	LC1	<ul style="list-style-type: none"> <li>Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP).</li> </ul>	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"> <li>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);</li> <li>Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management;</li> <li>Guidance Notes for Contaminated Land Assessment and Remediation; and</li> <li>Practice Guide for Investigation and</li> </ul>	√	√	√

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
<b>Land Contamination</b>									
						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	√	√	√

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
<b>Land Contamination</b>							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
<b><i>Cultural Heritage Impact (Construction and Operational Phase)</i></b>							C1	C2	C3
S.13.7	CH1	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>For the areas with low-moderate archaeological potential,</li> <li>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</li> </ul>	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"> <li>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.</li> </ul>	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"> <li>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.</li> <li>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 located 90m away, are expected to be nil. Thus no mitigation measures are needed.</li> <li>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.</li> </ul>	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 agencies shall</p>				

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<i>Cultural Heritage Impact (Construction and Operational Phase)</i>							C1	C2	C3
					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
<b>EM&amp;A Project</b>							C1	C2	C3
S14.2	EM1	<ul style="list-style-type: none"> <li>An Independent Environmental Checker needs to be employed as per the EM&amp;A Manual.</li> </ul>	Control EM&A Performance	Project Proponent	All construction sites	<ul style="list-style-type: none"> <li>EIA Ordinance Guidance Note No.4/2010 EIAO-TM</li> </ul>	√	√	√
S14.2 -14.4	EM2	<p>1) An Environmental Team needs to be employed as per the EM&amp;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&amp;A Manual are fully complied with.</p>	Perform environmental monitoring & auditing	Project Proponent	All construction sites	<ul style="list-style-type: none"> <li>EIA Ordinance Guidance Note No.4/2010 EIAO-TM</li> </ul>	√	√	√