



**Civil Engineering and  
Development Department**

*Agreement No. CE 60/2017 (EP)*

## **Environmental Team for Tung Chung New Town Extension (East) - Design and Construction**

**Monthly Environmental Monitoring & Audit Report  
for November 2022**

### **ERM**

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# Agreement No. CE60/2017 (EP) Environmental Team for Tung Chung New Town Extension (East) – Design and Construction




## Monthly Environmental Monitoring & Audit Report for November 2022

### Environmental Resources Management

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### Revision 1

Document Code: 0445700\_Monthly EM&A November 2022\_v1.docx

|   |   |   |         |  |          |
|---|---|---|---------|--|----------|
| Client:<br>Civil Engineering and Development Department   |   | Project No:<br>0445700  |         |  |          |
| Summary:<br><br>This document presents the Monthly EM&A Report for November 2022 for <i>Environmental Team for Tung Chung New Town Extension (East) – Design and Construction (Agreement No. CE 60/2017 [EP])</i> .   |   | Date:<br>13 December 2022   |         |  |          |
|   |   | Approved by:<br><br><br>Craig A. Reid<br>Partner                       |         |  |          |
|   |   |   |         |  |          |
|   |   |   |         |  |          |
| 1   | Monthly EM&A Report (for November 2022) | KS  | RC      | CAR  | 13/12/22 |
| Revision  | Description                             | By  | Checked | Approved   | Date     |
| <p>This report has been prepared by Environmental Resources Management the trading name of 'ERM Hong-Kong, Limited', with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.</p> <p>We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.</p> <p>This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.</p> |   | <p>Distribution</p> <p><input type="checkbox"/> Internal</p> <p><input checked="" type="checkbox"/> Public</p> <p><input type="checkbox"/> Confidential</p> |         | <br> |          |



## Tung Chung New Town Extension

### Environmental Certification Sheet for Environmental Permit No. EP-519/2016


#### Reference Document/Plan

|                                |  |
|--------------------------------|--|
| Document/Plan to be Certified: | Monthly Environmental Monitoring & Audit Report for November 2022 (Revision 1) |
| Date of Report:                | 13 December 2022   |

#### Reference EP Condition

|  |               |
|--|---------------|
| Environmental Permit Condition:  | Condition 3.5 |
| <p>The Permit Holder shall submit 4 hard copies and 1 electronic copy of Monthly EM&amp;A Reports for the construction stage of the Project to the Director, within 2 weeks after the end of the reporting month. The monthly EM&amp;A Reports shall include an executive summary of all environmental audit results, together with actions taken in the event of non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels), complaints received and emergency events relating to violation of environmental legislation (such as illegal dumping and landfilling). The submissions shall be certified by the ET Leader and verified by the IEC as having complied with the requirements as set out in the updated EM&amp;A Manual before submission to the Director. Additional copies of the Monthly EM&amp;A Reports shall be provided upon request by the Director.</p> |               |

#### ET Certification

|  |  |
|--|--|
| I hereby certify that the above referenced document/plan complies with the above referenced condition of EP-519/2016 |  |
| Kelvin So<br>Environmental Team Leader   |  Date: 13 December 2022 |

Your Ref.

By Post

Our Ref. 198377-0614

Date 13 December 2022

Sustainable Lantau Office  
Civil Engineering and Development Department  
13/F, North Point Government Offices  
333 Java Road, North Point  
Hong Kong

Attention: Mr. Vincent CHOW / Mr. K.T. WO

Dear Sir,

**Agreement No. CE 59/2017 (EP)**  
**Independent Environmental Checker for Tung Chung New Town Extension – Investigation**  
**Monthly Environmental Monitoring & Audit Report for November 2022 for TCE**

We refer to the Monthly Environmental Monitoring & Audit Report for November 2022 for Tung Chung New Town Extension (East) (TCE) dated December 2022 and certified by the Environmental Team (ET) Leader of TCE on 13 December 2022. Please note the submission is hereby verified, in accordance with the requirement stipulated in Condition 3.5 of EP-519/2016.

Should you have any query, please feel free to contact the undersigned at 2608 7314 ([chuawo@binnies.com](mailto:chuawo@binnies.com)) or our Edward Lau at 6848 5737 ([iec.tcnte@gmail.com](mailto:iec.tcnte@gmail.com) or [lauky@binnies.com](mailto:lauky@binnies.com)).

Yours faithfully,  
for and on behalf of  
BINNIES HONG KONG LIMITED



MANUEL CHUA  
INDEPENDENT ENVIRONMENTAL CHECKER

cc: ET Leader / TCE – ERM (Attn: Mr. Kelvin So) [by Email: [kelvin.so@erm.com](mailto:kelvin.so@erm.com)]  
PM / TCE – AECOM (Attn: Mr. Chris Cheung) [by Email: [crec1@tce-aecom.com](mailto:crec1@tce-aecom.com)]



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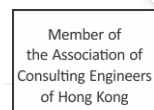
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## CONTENTS

|             |   |           |
|-------------|---|-----------|
|             | <i>ABBREVIATIONS</i>  | <i>1</i>  |
|             | <i>EXECUTIVE SUMMARY</i>  | <i>1</i>  |
| <i>1</i>    | <i>INTRODUCTION</i>   | <i>1</i>  |
| <i>1.1</i>  | <i>BACKGROUND</i>   | <i>1</i>  |
| <i>1.2</i>  | <i>SCOPE OF THE EM&amp;A REPORT</i>   | <i>2</i>  |
| <i>1.3</i>  | <i>ORGANIZATION STRUCTURE</i>   | <i>2</i>  |
| <i>1.4</i>  | <i>SUMMARY OF CONSTRUCTION WORKS</i>  | <i>4</i>  |
| <i>1.5</i>  | <i>SUMMARY OF EM&amp;A PROGRAMME REQUIREMENTS</i>                                 | <i>8</i>  |
| <i>1.6</i>  | <i>STATUS OF STATUTORY ENVIRONMENTAL COMPLIANCE WITH THE ENVIRONMENTAL PERMIT</i> | <i>11</i> |
| <i>1.7</i>  | <i>STATUS OF OTHER STATUTORY ENVIRONMENTAL REQUIREMENTS</i>                       | <i>12</i> |
| <i>2</i>    | <i>EM&amp;A RESULTS FOR TUNG CHUNG EAST</i>                                       | <i>13</i> |
| <i>2.1</i>  | <i>AIR QUALITY</i>  | <i>13</i> |
| <i>2.2</i>  | <i>NOISE MONITORING</i>   | <i>14</i> |
| <i>2.3</i>  | <i>WATER QUALITY MONITORING</i>   | <i>17</i> |
| <i>2.4</i>  | <i>COMPENSATION WOODLAND MONITORING</i>   | <i>20</i> |
| <i>2.5</i>  | <i>PRESERVED/TRANSPLANTED PLANT SPECIES OF CONSERVATION IMPORTANCE MONITORING</i> | <i>20</i> |
| <i>2.6</i>  | <i>ECO-SHORELINE MONITORING</i>   | <i>21</i> |
| <i>2.7</i>  | <i>SOFT SHORE ECOLOGICAL MONITORING</i>   | <i>21</i> |
| <i>2.8</i>  | <i>EM&amp;A SITE INSPECTION</i>   | <i>21</i> |
| <i>2.9</i>  | <i>WASTE MANAGEMENT STATUS</i>  | <i>23</i> |
| <i>2.10</i> | <i>LANDSCAPE AND VISUAL MONITORING</i>  | <i>24</i> |
| <i>2.11</i> | <i>IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES</i>                 | <i>26</i> |
| <i>2.12</i> | <i>SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT</i>      | <i>27</i> |
| <i>2.13</i> | <i>SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS</i> | <i>27</i> |
| <i>3</i>    | <i>FUTURE KEY ISSUES</i>  | <i>28</i> |
| <i>3.1</i>  | <i>CONSTRUCTION PROGRAMME FOR THE COMING MONTH</i>                                | <i>28</i> |
| <i>3.2</i>  | <i>MONITORING SCHEDULE FOR THE COMING MONTH</i>                                   | <i>31</i> |
| <i>4</i>    | <i>CONCLUSION AND RECOMMENDATION</i>  | <i>32</i> |



## *ANNEXES*

*ANNEX A PROJECT ORGANISATION*

*ANNEX B ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE*

*ANNEX C STATUS OF SUBMISSIONS AND IMPLEMENTATION STATUS OF  
MITIGATION MEASURES UNDER EP*

*ANNEX D STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS*

*ANNEX E AIR QUALITY*

*ANNEX E1 CALIBRATION CERTIFICATES*

*ANNEX E2 MONITORING SCHEDULE*

*ANNEX E3 MONITORING RESULTS*

*ANNEX E4 EVENT AND ACTION PLAN*

*ANNEX F NOISE*

*ANNEX F1 CALIBRATION CERTIFICATES*

*ANNEX F2 MONITORING SCHEDULE*

*ANNEX F3 MONITORING RESULTS*

*ANNEX F4 EVENT AND ACTION PLAN*

*ANNEX G WATER QUALITY*

*ANNEX G1 CALIBRATION CERTIFICATES*

*ANNEX G2 MONITORING SCHEDULE*

*ANNEX G3 MONITORING RESULTS*

*ANNEX G4 EVENT AND ACTION PLAN*

*ANNEX H COMPENSATION WOODLAND MONITORING*

*ANNEX I PRESERVED/TRANSPLANTED PLANT SPECIES OF CONSERVATION  
IMPORTANCE MONITORING*

*ANNEX J ECO-SHORELINE MONITORING*

*ANNEX K LANDSCAPE AND VISUAL MONITORING*

*ANNEX K1 EXAMPLES OF LANDSCAPE AND VISUAL MITIGATION MEASURES*

*ANNEX K2 EVENT AND ACTION PLAN*

*ANNEX L CUMULATIVE STATISTICS ON EXCEEDANCES, ENVIRONMENTAL  
COMPLAINTS, NOTIFICATION OF SUMMONS AND STATUS OF  
PROSECUTIONS*

*ANNEX M MONITORING SCHEDULE FOR THE NEXT REPORTING PERIOD*

## ABBREVIATIONS

|                     |   |
|---------------------|---|
| C&D                 | Construction and Demolition   |
| CAP                 | Contamination Assessment Plan   |
| CEDD                | Civil Engineering and Development Department  |
| CWD                 | Chinese White Dolphin   |
| DCM                 | Deep Cement Mixing  |
| DO                  | Dissolved Oxygen  |
| EIA                 | Environmental Impact Assessment   |
| EIAO                | Environmental Impact Assessment Ordinance   |
| EIS                 | Ecologically Important Stream   |
| EM&A                | Environmental Monitoring and Audit  |
| EP                  | Environmental Permit  |
| EPD                 | Environmental Protection Department   |
| ER                  | Engineer's Representative   |
| ERM                 | ERM-Hong Kong, Limited  |
| ET                  | Environmental Team  |
| HVS                 | High Volume Sampler   |
| IEC                 | Independent Environmental Checker   |
| PDA                 | Planned Development Area  |
| PME                 | Powered Mechanical Equipment  |
| QPME                | Quality Powered Mechanical Equipment  |
| RAP                 | Remediation Action Plan   |
| RR                  | Remediation Report  |
| RTTM                | Real Time Tracking and Monitoring   |
| SS                  | Suspended Solid   |
| TCB                 | Tung Chung Bay  |
| TCE                 | Tung Chung East   |
| TCNTE               | Tung Chung New Town Extension   |
| TCW                 | Tung Chung West   |
| The Project         | Tung Chung New Town Extension (East)  |
| THW                 | Tai Ho Wan  |
| TSP                 | Total Suspended Particulate   |
| Updated EM&A Manual | Updated Environmental Monitoring and Audit Manual for Tung Chung New Town Extension prepared by ERM under Agreement No. CE 60/2017 (EP) and deposited to EPD under Environmental Permit No. EP-519/2016 |

## **EXECUTIVE SUMMARY**

Tung Chung New Town Extension (TCNTE) is one of the major initiatives under the Government's multi-pronged approach to increase land supply to meet Hong Kong's medium- to long-term needs for housing, economic and social developments. The Environmental Impact Assessment (EIA) Report for TCNTE (Register No. AEIAR-196/2016) was approved on 8 April 2016 and the Environmental Permit (EP) No. EP-519/2016, covering the construction and operation of TCNTE, was granted on 9 August 2016. The EIA Report and EP cover both Tung Chung East (TCE) and Tung Chung West (TCW). ERM-Hong Kong, Limited (ERM) is commissioned to undertake the role of Environmental Team (ET) for the construction and operation of TCE Project ("the Project") in accordance with the requirements specified in the EP, Updated Environmental Monitoring and Audit (EM&A) Manual, EIA Report of the TCNTE project and other relevant statutory requirements.

The construction of the Contract No. NL/2017/03 - Tung Chung New Town Extension – Reclamation and Advance Works ("Contract 1") at TCE commenced on 9 July 2018.

The construction of the Contract No. NL/2020/02 - Tung Chung New Town Extension – Salt Water Supply System ("Contract 2") at TCE commenced on 4 September 2021.

The construction of the Contract No. NL/2020/03 - Tung Chung New Town Extension – Major Infrastructure Works in Tung Chung East ("Contract 3") at TCE commenced on 5 November 2021.

The construction of the Contract No. NL/2020/07 - Tung Chung New Town Extension – Tai Ho Interchange ("Contract 7") at TCE commenced on 15 March 2022.

This is the Monthly EM&A report presenting the EM&A works carried out during the period from 1 to 30 November 2022 for the TCE Project in accordance with the Updated EM&A Manual.

A summary of monitoring and audit activities conducted in the reporting period is listed below:

|                                    |                            |
|------------------------------------|----------------------------|
| Air Quality Monitoring             | 6 sessions                 |
| Noise Monitoring                   | 6 sessions                 |
| Water Quality Monitoring           | 12 sessions <sup>(1)</sup> |
| Preserved Plant Species Monitoring | 1 session                  |

<sup>(1)</sup> Water quality monitoring on 2 November 2022 was cancelled due to issue of Strong Wind Signal No.3 and No.8 by the Hong Kong Observatory.



## Environmental Site Inspection

- Contract 1 4 sessions
- Contract 2 5 sessions
- Contract 3 4 sessions
- Contract 7 5 sessions

## Environmental Management Meeting

- Contract 1 1 session
- Contract 2 1 session
- Contract 3 1 session
- Contract 7 1 session

Environmental auditing works, including weekly site inspections of construction works conducted by the ET, audit of works vessels, audit of implementation of Complaint Management Plan, Dolphin Watching Plan, Works Vessel Travel Route Plan, Silt Curtain Deployment Plan, Spill Response Plan, Detailed Preservation and/or Translocation of Plant Species of Conservation Importance, Detailed Compensatory Woodland Planting Plan and Waste Management Plan were conducted in the reporting period. Based on the audit results and the observation for the reporting period, environmental pollution control and mitigation measures for the Project were properly implemented.

### **Breaches of Action and Limit Levels for Air Quality**

No exceedance of Action and Limit Levels was recorded for construction air quality monitoring in the reporting period.

### **Breaches of Action and Limit Levels for Noise**

No exceedance of Action and Limit Levels was recorded for construction noise monitoring in the reporting period.

### **Breaches of Action and Limit Levels for Water Quality**

Suspended Solids (SS) exceedances were recorded during the reporting period. Relevant investigations and follow-up actions were conducted according to the EM&A programme. The exceedances were considered not related to this Project after investigations.

### **Eco-shoreline Monitoring**

Mangrove eco-shoreline and rocky eco-shoreline are under construction while the construction of vertical eco-shoreline has been substantially completed.

## **Soft Shore Ecological Monitoring**

No impact soft shore ecological monitoring at Tung Chung Bay and Tai Ho Wan was scheduled during the reporting period.

## **Environmental Complaints, Non-compliance & Summons**

There was no notification of summons or prosecution recorded in the reporting period.

One (1) environmental complaint related to Contract 3 was received in the reporting period. Investigation was conducted for the environmental complaint in accordance with the complaint handling process as stated in the Complaint Management Plan.

## **Reporting Change**

There was no reporting change in the reporting period.

## **Key Issues For The Coming Month**

Potential environmental impacts arising from the upcoming construction activities in the next reporting period of December 2022 are mainly associated with dust emission, noise from barge and plant operation during normal working hours and restricted hours, elevation in SS due to marine filling works, disturbance to Chinese White Dolphin (CWD) during marine works, handling and storage of C&D materials generated from construction activities, efficiency of wastewater and drainage management and tree protection. The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures. The ET will also recommend to the Contractor about the environmental toolbox topics on the abovementioned key issues for the coming month.

# 1 INTRODUCTION

## 1.1 BACKGROUND

Tung Chung New Town Extension (TCNTE) is one of the major initiatives under the Government's multi-pronged approach to increase land supply to meet Hong Kong's medium- to long-term needs for housing, economic and social developments. The Environmental Impact Assessment (EIA) Report for TCNTE (Register No. AEIAR-196/2016) was approved on 8 April 2016 and the Environmental Permit (EP) No. EP-519/2016, covering the construction and operation of TCNTE, was granted on 9 August 2016. The EIA Report and EP cover both Tung Chung East (TCE) and Tung Chung West (TCW).

ERM-Hong Kong, Limited (ERM) is commissioned to undertake the role of Environmental Team (ET) for the construction and operation of TCE Project ("the Project") in accordance with the requirements specified in the EP, Updated Environmental Monitoring and Audit (EM&A) Manual <sup>(1)</sup>, EIA Report of the TCNTE project <sup>(2)</sup> and other relevant statutory requirements.

The TCNTE comprises the following elements:

### (a) TCE Project

1. Reclamation of the seabed by a non-dredged method at TCE to form a total of about 130 hectares of land;
2. Construction of about 4.9 kilometers of seawalls, with an eco-shoreline, three drainage box culvert outfalls, three circulation drains and a seawater intake at TCE;
3. Provision of infrastructure for Tung Chung Area 58, including construction of a single two-lane road with a footpath and the associated utility works;
4. Construction of proposed open space;
5. Construction of roads, footpaths, cycle tracks and the associated junction / road improvement works;
6. Engineering infrastructure works covering drainage, sewerage, waterworks (including a fresh water service reservoir, a salt water service reservoir and a salt water pumping station), common utility tunnels and landscaping works; and

(1) ERM (2018a). Updated Environmental Monitoring and Audit Manual for Tung Chung New Town Extension. Deposited to EPD under EP-519/2016

(2) Arup (2015). Environmental Impact Assessment Report for Tung Chung New Town Extension. Deposited to EPD under Register No. AEIAR-196/2016



7. Implementation of environmental mitigation measures and environmental monitoring and audit programme for the works.

(b) TCW Project

1. Site formation works at TCW;
2. Construction of proposed open space;
3. Construction of the River Park including a visitor centre at TCW; and
4. Construction of sustainable urban drainage systems at TCW.

The locations of Contracts 1, 2, 3 and 7 are shown in *Figure 1.1 to 1.4*. The construction and the reclamation related marine works of Contract 1 commenced on 9 and 13 July 2018, respectively. The construction of Contracts 2, 3 and 7 commenced on 4 September 2021, 5 November 2021 and 15 March 2022, respectively.

## 1.2 SCOPE OF THE EM&A REPORT

This is the Monthly EM&A Report for the TCE Project which summarises the key findings of the EM&A programme during the reporting period from 1 to 30 November 2022 for the construction works.

## 1.3 ORGANIZATION STRUCTURE

The organization structure of the Project is shown in *Annex A*. The key personnel contact names and contact details are summarized in *Table 1.1* below.

**Table 1.1 Contact Information of Key Personnel**

| Party   | Position                     | Name         | Telephone |
|---|------------------------------|--------------|-----------|
| Environmental Team (ET)<br>(ERM-Hong Kong, Limited)   | ET Leader                    | Kelvin So    | 3894 9504 |
|   | Deputy ET Leader             | Raymond Chow | 3894 9509 |
|   | Deputy ET Leader             | Candy Wong   | 3894 9508 |
| Independent Environmental Checker (IEC)<br>(Binnies Hong Kong Limited)                                      | IEC                          | Manuel Chua  | 3894 9501 |
|   | Deputy IEC                   | Edward Lau   | 3894 9502 |
| <b>Contract No. NI/2017/03 - Tung Chung New Town Extension - Reclamation and Advance Works (Contract 1)</b> |                              |              |           |
| Civil Engineering and Development Department  | Senior Geotechnical Engineer | C H Yan      | 3894 9702 |

|   |   |              |            |
|---|---|--------------|------------|
|   | Marine Conservation Officer                 | Wo King Tai  | 3894 9707  |
| Engineer's Representative (ER) (AECOM Asia Company Limited) | Principal Resident Engineer                 | Frankie Fan  | 3894 9603  |
|   | Chief Resident Engineer                     | Chris Cheung | 3894 9604  |
|   | Senior Resident Engineer                    | Chris Chow   | 3894 9651  |
|   | Senior Resident Engineer                    | Edwin Fu     | 3894 9644  |
|   | Resident Engineer                           | Nelson Ling  | 3894 9647  |
|   | Senior Inspector of Works                   | C K Liu      | 3894 9733  |
|   | Contractor (Build King - SCT Joint Venture) | Site Agent   | David Wong |
| Civil Division Head   |   | Marco Chan   | 9257 7033  |
| Environmental Officer                                       |   | Issac Wong   | 9873 8968  |
| 24-hour Complaint Hotline                                   |   | -            | 9862 2910  |

---

**Contract No. NL/2020/02 - Tung Chung New Town Extension - Salt Water Supply System (Contract 2)**

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|   |  |                   |           |
|---|--|-------------------|-----------|
| Civil Engineering and Development Department                | Senior Engineer                          | Patrick C Y Yeung | 2231 4435 |
|   | Electrical & Mechanical Engineer         | Samson K L Yip    | 2231 4460 |
| Engineer's Representative (ER) (AECOM Asia Company Limited) | Principal Resident Engineer              | Frankie Fan       | 3894 9603 |
|   | Senior Resident Engineer                 | Sunny Ng          | 3894 9605 |
|   | Senior Resident Engineer                 | Vincent Leung     | 3894 9645 |
|   | Resident Engineer                        | Terence Chan      | 3894 9683 |
|   | Senior Inspector of Works                | Wong Ting Yu      | 3894 9706 |
| Contractor (China Geo-Engineering Corporation)              | Construction Manager                     | Ambrose Kwong     | 6198 7787 |
|   | Site Agent                               | Timothy Lo        | 9661 2662 |
|   | Construction Team Leader                 | Edward Mok        | 6498 4306 |
|   | Environmental Officer                    | Dixon Lee         | 6100 1005 |
|   | 24-hour Complaint Hotline <sup>(a)</sup> | -                 | 5484 9233 |

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**Contract No. NL/2020/03 - Tung Chung New Town Extension - Major Infrastructure Works in Tung Chung East (Contract 3)**

---

|   |                             |                  |           |
|---|-----------------------------|------------------|-----------|
| Civil Engineering and Development Department                | Senior Engineer             | Eddie W C Lam    | 2231 4445 |
|   | Senior Engineer             | Phoebe Tang      | 2231 4423 |
|   | Engineer                    | Timothy H M Chan | 2231 4473 |
|   | Engineer                    | Colin K C Wong   | 2231 4417 |
|   | Engineer                    | Wing Chen        | 3894 9704 |
| Engineer's Representative (ER) (AECOM Asia Company Limited) | Principal Resident Engineer | Frankie Fan      | 3894 9603 |
|   | Senior Resident Engineer    | Boris Lo         | 3894 9650 |
|   | Resident Engineer           | David Li         | 3894 9684 |

|  |  |                |           |
|--|--|----------------|-----------|
|  | Resident Engineer                        | Carl Yu        | 3894 9671 |
|  | Senior Inspector of Works                | Douglas Ng     | 3894 9737 |
| Contractor<br>(Build King Civil Engineering Limited) | Construction Manager                     | Cheung Siu Lun | 2272 3680 |
|  | Site Agent                               | Paul Lui       | 9095 7922 |
|  | Deputy Site Agent                        | Aldous Lo      | 9225 0368 |
|  | Construction Team Leader                 | Ken Yau        | 9197 2219 |
|  | Environmental Officer                    | Allen Wong     | 6012 2643 |
|  | 24-hour Complaint Hotline <sup>(a)</sup> | -              | 9806 0726 |

---

**Contract No. NL/2020/07 - Tung Chung New Town Extension - Tai Ho Interchange (Contract 7)**

---

|  |  |              |           |
|--|--|--------------|-----------|
| Civil Engineering and Development Department                   | Senior Engineer                          | Phoebe Tang  | 2231 4423 |
|  | Engineer                                 | Matthew Ng   | 2231 4449 |
| Engineer's Representative (ER)<br>(AECOM Asia Company Limited) | Principal Resident Engineer              | Frankie Fan  | 3894 9603 |
|  | Senior Resident Engineer                 | Kelvin Kwan  | 3894 9641 |
|  | Senior Resident Engineer                 | Brian Li     | 3894 9556 |
|  | Resident Engineer                        | Kingsley Ho  | 3894 9552 |
|  | Resident Engineer                        | Carl Yu      | 3894 9671 |
|  | Senior Inspector of Works                | Douglas Ng   | 3894 9554 |
| Contractor<br>(Build King Civil Engineering Limited)           | Site Agent                               | Hon Yee      | 9090 3109 |
|  | Deputy Site Agent                        | Vincent Kwan | 9833 1313 |
|  | Construction Team Leader                 | Vincent Lo   | 9883 9229 |
|  | Environmental Officer                    | Nash Wong    | 9810 1946 |
|  | 24-hour Complaint Hotline <sup>(a)</sup> | -            | 5976 1853 |

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Note:

(a) The 24-hour complaint hotline is subjected for approval.

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## 1.4

### *SUMMARY OF CONSTRUCTION WORKS*

As informed by the Contractor, details of the major works carried out in this reporting period are listed below:



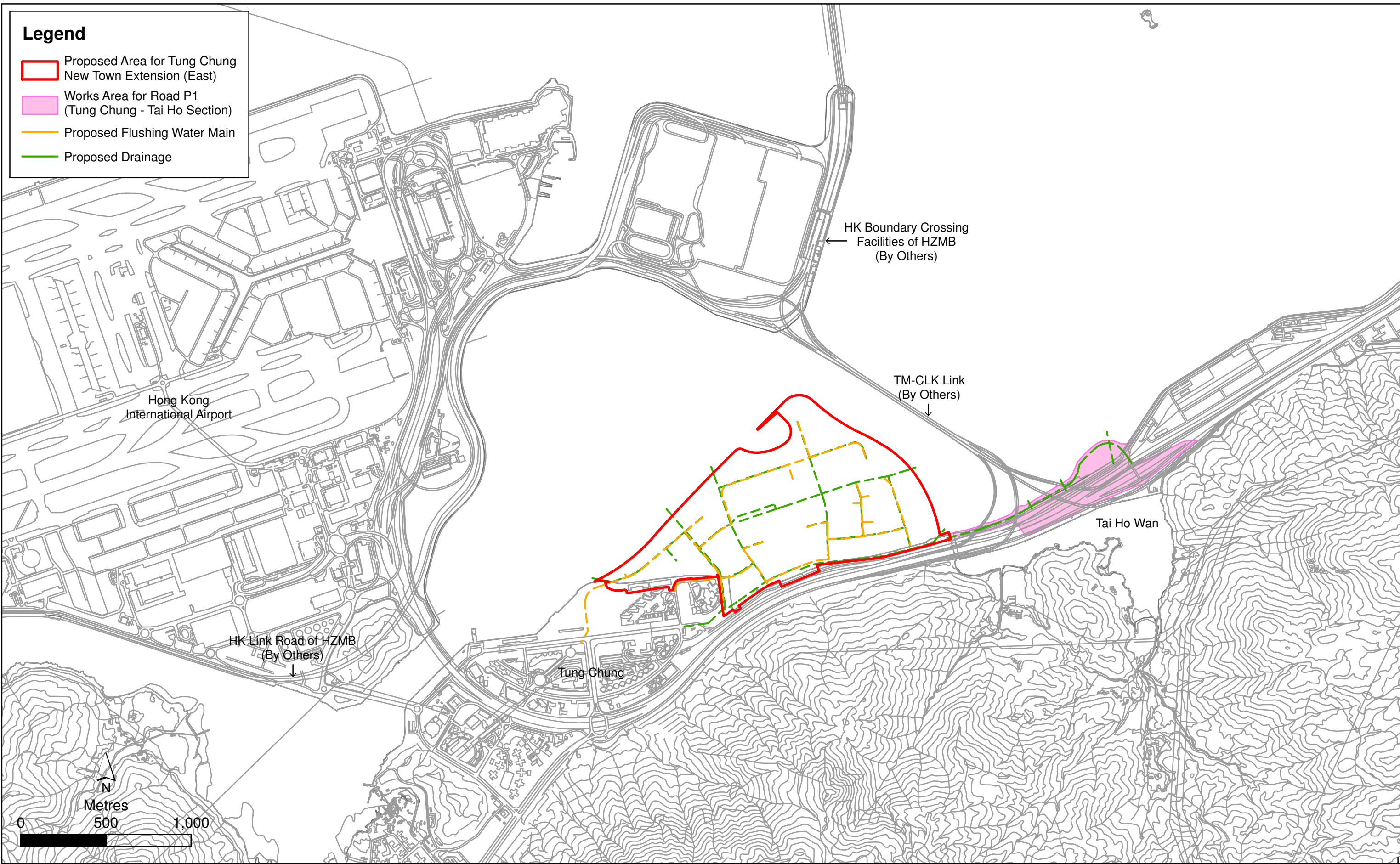


Figure 1.1

Location of Contract No. NL/2017/03 - Tung Chung New Town Extension - Reclamation and Advance Works (Contract 1)



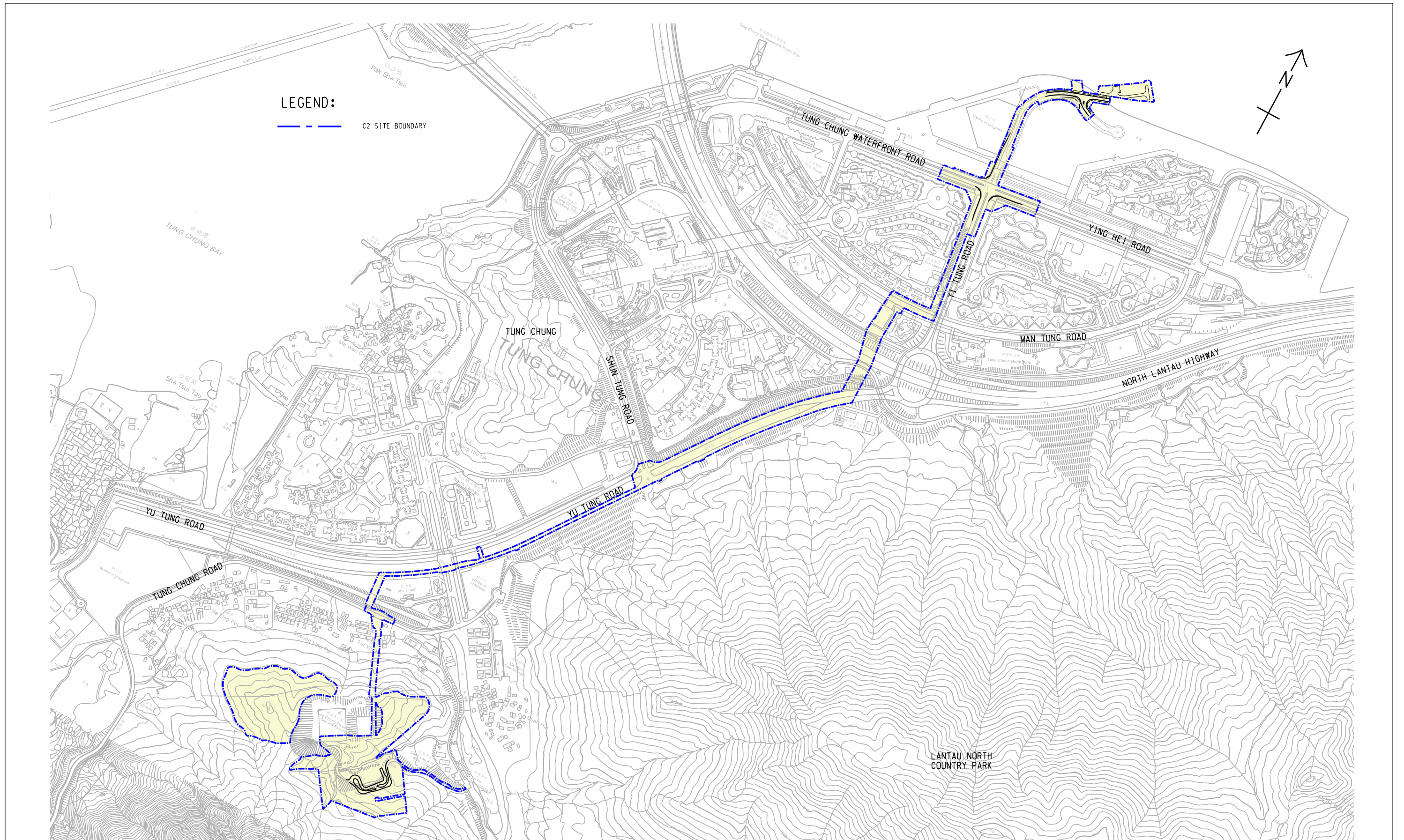


Figure 1.2 Location of Contract No. NL/2020/02 - Tung Chung New Town Extension – Salt Water Supply System (Contract 2)



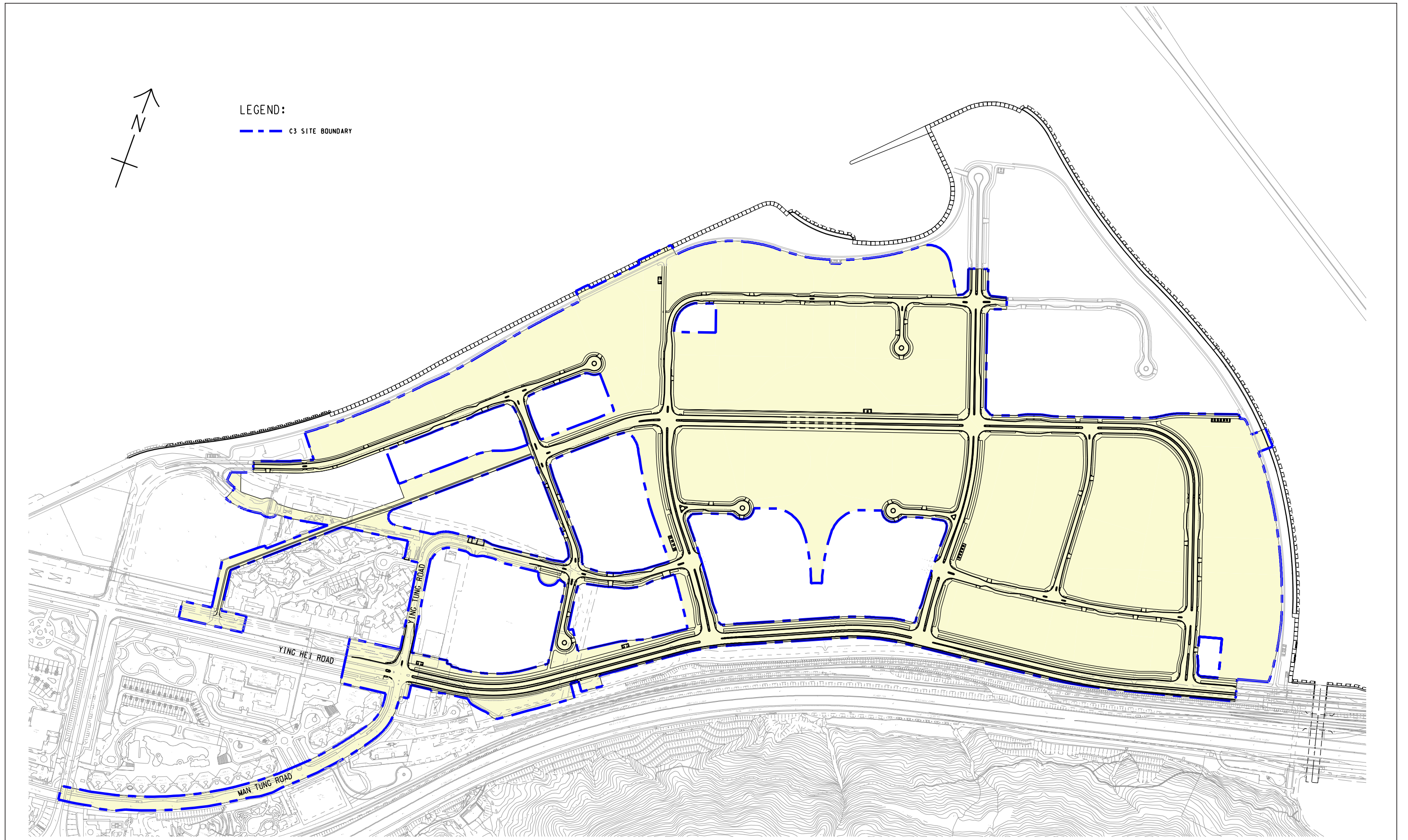


Figure 1.3

Location of Contract No. NL/2020/03 - Tung Chung New Town Extension – Major Infrastructure Works in Tung Chung East (Contract 3)

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DATE: 09/08/2021

Environmental  
Resources  
Management





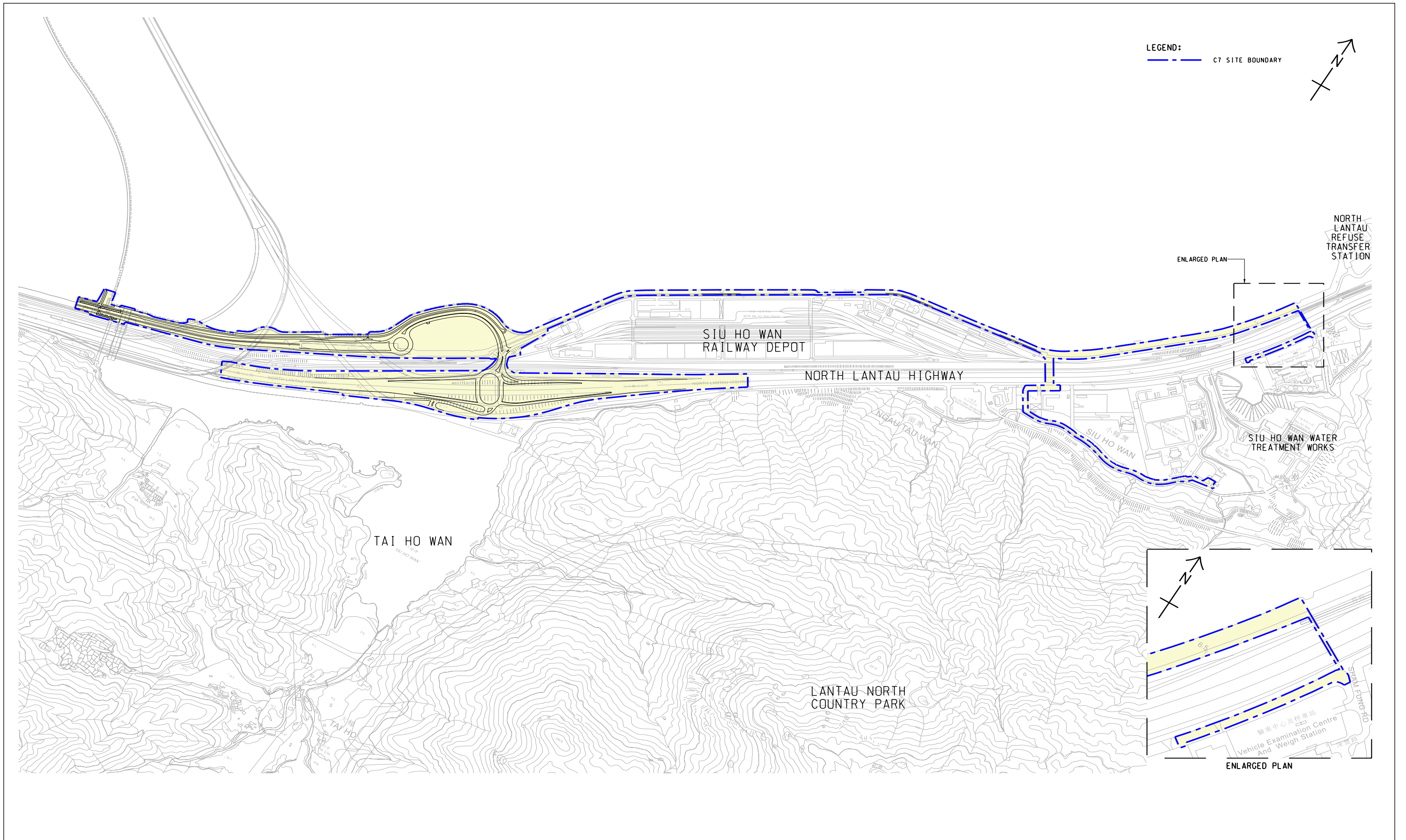


Figure 1.4 Location of Contract No. NL/2020/07 – Tung Chung New Town Extension – Tai Ho Interchange (Contract 7)

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DATE: 8/11/2021

Environmental  
Resources  
Management



**Table 1.2 Major Activities in the Reporting Period**

| <b>Activities</b>  | <b>Key Issues</b>   | <b>Key Mitigation Measures</b>  |
|--|---|---|
| <b>Contract No. NL/2017/03 - Tung Chung New Town Extension - Reclamation and Advance Works (Contract 1)</b>  |   |   |
| <b>Land-based Works</b>  |   |   |
| <ul style="list-style-type: none"> <li>• Ground investigation works</li> <li>• Placing of sorted public fill</li> <li>• Box culvert construction</li> <li>• Mangrove planting</li> </ul>             | <ul style="list-style-type: none"> <li>• Dust emission</li> <li>• Handling and storage of C&amp;D materials generated from construction activities</li> <li>• Noise from plant operation</li> <li>• Emission of dark smoke from PMEs</li> <li>• Efficiency of wastewater and drainage management</li> </ul>   | <ul style="list-style-type: none"> <li>• Good site practices</li> <li>• Regular water spraying on stockpiles, unpaved haul road and land filling area</li> <li>• Provide tarpaulin sheets coverage on stockpiles</li> <li>• Sorting and reuse of C&amp;D materials as far as practicable</li> <li>• Use of QPME and noise barrier/acoustic mat</li> <li>• Regular maintenance of PMEs</li> <li>• Implementation of wastewater and drainage management</li> </ul>  |
| <b>Marine-based Works</b>  |   |   |
| <ul style="list-style-type: none"> <li>• Laying of geotextile for seawall construction</li> <li>• Seawall construction (including vertical seawall, slopping seawall &amp; eco-shoreline)</li> </ul> | <ul style="list-style-type: none"> <li>• Elevation in impact on Water Quality due to sediment loss from sand blanket laying and marine filling works</li> <li>• Potential surface runoff</li> <li>• Potential filling material drop from barges</li> <li>• Disturbance to Chinese White Dolphin</li> <li>• Noise from marine vessels and plant operation during normal working hours or restricted hours</li> <li>• Dust emission during storage and transfer of sand/ sorted public fill</li> <li>• Emission of dark smoke from marine vessel</li> </ul> | <ul style="list-style-type: none"> <li>• Provision of perimeter silt curtain</li> <li>• Provision of a leading seawall of at least 200m before marine filling works</li> <li>• Regular cleaning of accumulated sand/fill materials at the edge of the barges</li> <li>• Implementation of Dolphin Watching for the marine-based works</li> <li>• Strictly follow requirement under CNP for the use of PMEs and works within restricted period</li> <li>• Use of acoustic mat and other noise mitigation measures when necessary</li> <li>• Regular maintenance of engines and mechanical equipment</li> </ul> |



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**Contract No. NL/2020/02 - Tung Chung New Town Extension - Salt Water Supply System  
(Contract 2)**

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**Land-based Works**

- Initial survey (land survey prior to the commencement of construction works)
  - Pile Head Treatment and Pile Cap Construction at Portion 6
  - Construction for valve chamber, service reservoir and soil nailing works at Portion 3
  - Construction of mud pit, plant setup and drilling works for HDD works at Portion 3
  - Watermain laying works at Portion 3 along Yu Tung Road
  - Sheet piling works for ELS for pipe jacking at Portion 3
  - Trench excavation for watermain laying works at Yi Tung Road at Portion 5
  - Trench excavation, manhole construction and pipe laying for drainage works at Portion 5A
  - Fabrication of precast unit for box culvert at Portion 5B
  - Establishment works for the compensatory planting at Portion 1 and 2
  - Dust emission
  - Handling and storage of C&D materials generated from construction activities
  - Noise from plant operation
  - Emission of dark smoke from PMEs
  - Efficiency of wastewater and drainage management
  - Tree protection
  - Good site practices
  - Regular water spraying on stockpiles, unpaved haul road and land filling area
  - Provide tarpaulin sheets coverage on stockpiles
  - Sorting and reuse of C&D materials as far as practicable
  - Use of QPME and noise barrier/acoustic mat
  - Regular maintenance of PMEs
  - Implementation of wastewater and drainage management
  - Retain and protect all existing trees and vegetation within the study area which are not directly affected by the works
-

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**Contract No. NL/2020/03 - Tung Chung New Town Extension - Major Infrastructure Works in Tung Chung East (Contract 3)**

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**Land-based Works**

- Excavation and ELS works at Portion 104
  - Excavation and ELS works at CUT no.1,2 & 3 and supporting building
  - Construction works for CUT no. 1 structure
  - Construction works and furniture installation of PM office at WA9
  - Construction works of Contractor office at WA6
  - Drainage, Sewerage and watermain works at Road L4, L3 and L5
  - Pipe laying works for twin rising mains/ watermain laying at Man Tung Road
  - Preparation works for pipe jacking works at Ying Tung Road
  - Preparation works for pipe jacking at Yi Tung Road
  - Foundation works for noise barrier at Portion 11
  - Road widening works at Ying Hei Road
  - Dust emission
  - Handling and storage of C&D materials generated from construction activities
  - Noise from plant operation
  - Emission of dark smoke from PMEs
  - Efficiency of wastewater and drainage management
  - Good site practices
  - Regular water spraying on stockpiles, unpaved haul road and land filling area
  - Provide tarpaulin sheets coverage on stockpiles
  - Sorting and reuse of C&D materials as far as practicable
  - Use of QPME and noise barrier/acoustic mat
  - Regular maintenance of PMEs
  - Implementation of wastewater and drainage management
-

**Contract No. NL/2020/07 - Tung Chung New Town Extension - Tai Ho Interchange  
(Contract 7)**

**Land-based Works**

- Open cut excavation and pipe laying for rising main and watermain at Portion 146-5
- Trench excavation and pipe laying works at Portions 32 (Sham Shui Kok Drive), Portion 34 Phase 1 and Portions 36-38
- Sheetpilings for construction of retaining walls RW-R7 and RW-FR1
- Demolition and sheetpilings for Pak Mong Subway Extension Phase 1
- Pipe pile installation and ELS works at Portion 32 (Access Road adjacent to MTRC Siu Ho Wan Depot)
- Pre-drilling for Pak Mong Channel Bridge
- Site clearance and tidiness
- Dust emission
- Handling and storage of C&D materials generated from construction activities
- Noise from plant operation
- Emission of dark smoke from PMEs
- Efficiency of wastewater and drainage management
- Tree protection
- Good site practices
- Regular water spraying on stockpiles, unpaved haul road and land filling area
- Provide tarpaulin sheets coverage on stockpiles
- Sorting and reuse of C&D materials as far as practicable
- Use of QPME and noise barrier/acoustic mat
- Regular maintenance of PMEs
- Implementation of wastewater and drainage management
- Retain and protect all existing trees and vegetation within the study area which are not directly affected by the works

The environmental mitigation implementation schedule is presented in *Annex B*.

**1.5 SUMMARY OF EM&A PROGRAMME REQUIREMENTS**

The status for all environmental aspects are presented in *Table 1.3*. The EM&A requirements remained unchanged during the reporting period.

**Table 1.3** *Summary of Status for the Environmental Aspects under the Updated EM&A Manual*

| <b>Parameters</b>   | <b>Status</b>  |
|---------------------|--|
| <b>Air Quality</b>  |  |
| Baseline Monitoring | The results of baseline air quality monitoring for TCE were reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4 |
| Impact Monitoring   | On-going for TCE, monitoring conducted three times every six days  |

| <b>Parameters</b>  | <b>Status</b>  |
|--|--|
| <b>Noise</b>   |  |
| Baseline Monitoring  | The results of baseline noise monitoring for TCE were reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4   |
| Impact Monitoring  | On-going for TCE, monitoring conducted once per week   |
| Impact Monitoring for Road Traffic Noise during Operational Phase                              | To be conducted during operational phase   |
| Fixed Noise Commissioning Test   | To be implemented by the Contractor before operation of TCNTE  |
| <b>Water Quality</b>   |  |
| Baseline Monitoring  | The results of baseline water quality monitoring for TCE were reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4   |
| Impact Monitoring  | On-going for TCE, monitoring conducted three times per week  |
| <b>Waste Management</b>  |  |
| Waste Monitoring   | On-going   |
| <b>Land Contamination</b>  |  |
| Contamination Assessment Plan (CAP), Remediation Action Plan (RAP) and Remediation Report (RR) | To be conducted under TCW. Refer to the EM&A Reports of TCW.   |
| <b>Ecology</b>   |  |
| Monitoring for Compensation Woodland   | To be conducted when compensation woodland is planted. Compensatory woodland planting was commenced on 26 August 2022 and completed on 30 September 2022.  |
| Monitoring for Emergent Plant inside the future River Park                                     | To be conducted under TCW. Refer to the EM&A Reports of TCW.   |
| Monitoring for Translocated Amphibians of Conservation Importance                              | To be conducted under TCW. Refer to the EM&A Reports of TCW.   |
| Monitoring for Preserved/Transplanted Plant Species of Conservation Importance                 | On-going, for transplanted plant species, transplantation works was carried out on 21 January 2022 and monitoring conducted once per week for the first three months; for preserved plant species, monitoring conducted once per month |
| Monitoring for Tung Chung Stream EIS and Wong Lung Hang EIS                                    | To be conducted under TCW. Refer to the EM&A Reports of TCW. Monitoring for Wong Lung Hang was not required and the proposal was accepted by EPD on 2 September 2021   |
| Eco-shoreline Monitoring   | To be conducted when eco-shoreline at TCE PDA and Road P1 is built   |

| <b>Parameters</b>   | <b>Status</b>   |
|---|---|
| Tung Chung Bay and Tai Ho Wan<br>Baseline Monitoring  | The results of baseline soft shore ecological monitoring at Tung Chung Bay and Tai Ho Wan were reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4 |
| Tung Chung Bay and Tai Ho Wan<br>Impact Monitoring  | On-going for TCE, monitoring conducted quarterly  |
| <b>Landscape and Visual</b>   |   |
| Baseline Monitoring   | The results of baseline landscape and visual monitoring were reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4                                   |
| Impact Monitoring   | On-going  |
| <b>Site Environmental Audit</b>   |   |
| Regular Site Inspection   | On-going  |
| Dolphin Watching Plan<br>implementation measures  | Under implementation by the Contractor of Contract 1  |
| Works Vessel Travel Route Plan<br>implementation measures   | Under implementation by the Contractor of Contract 1  |
| Silt Curtain Deployment Plan<br>implementation measures   | Under implementation by the Contractor of Contract 1  |
| Spill Response Plan implementation<br>measures  | Under implementation by the Contractor of Contract 1  |
| Detailed Preservation and/or<br>Translocation Plan for Plant Species<br>of Conservation Importance<br>implementation measures | Under implementation by the Contractor of Contract 2  |
| Detailed Compensatory Woodland<br>Planting Plan implementation<br>measures  | Under implementation by the Contractor of Contract 2  |
| Waste Management Plan<br>implementation measures  | Under implementation by the Contractor of Contract 1  |
| Complaint Hotline and Email<br>Channel  | Under implementation by the Contractor of Contract 1.<br>The 24-hour complaint hotline/email channel under<br>Contracts 2, 3, and 7 are subjected for approval                    |
| Environmental Log Book  | On-going  |

Taking into account the construction works, impact monitoring of air quality, noise, water quality and waste management were carried out in the reporting period. The monitoring schedule of air quality, noise and water quality monitoring are provided in *Annex E2*, *Annex F2* and *Annex G2*, respectively.

The EM&A programme also involved environmental site inspections and related auditing conducted by the ET for checking the implementation of the required environmental mitigation measures recommended in the approved

EIA Report and relevant EP submissions, including Complaint Management Plan, Dolphin Watching Plan, Works Vessel Travel Route Plan, Silt Curtain Deployment Plan, Spill Response Plan, Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance, Detailed Compensatory Woodland Planting Plan and Waste Management Plan.

To promote the environmental awareness and enhance the environmental performance of the contractors, environmental trainings and regular environmental management meetings were conducted during the reporting period, which are summarized as below:

- Four (4) environmental management committee meetings were held with the Contractors of Contract 1 and 7 and ER, ET, IEC and CEDD on 15 and 8 November 2022, respectively, and Contractors of Contract 2 and 3 on 16 November 2022;
- Environmental toolbox trainings on wastewater handling, discharge and treatment facilities, mosquito control, operation and maintenance, waste management and disposal, dark smoke, dust suppression/waste management, nuisance to residence (light pollution/sudden noise/dusty work), site hygiene (rubbish/mosquito/rodent control) and suspension of work (silt curtain/dolphin/pollution) on 2, 4, 9, 11, 16, 18, 23, 25 and 30 November 2022 were conducted for Contract 1;
- Environmental toolbox trainings on construction dust and suppression and site plant and machinery on 3, 10, 17 and 24 November 2022 were conducted for Contract 2;
- Environmental toolbox trainings on milling, plastering and painting, environmental abatement facilities, acoustic decoupling measures, plant and machinery environmental precaution, energy saving, site tidiness for anti-mosquitos, tree protection and handling and storage of chemicals on 1, 3, 8, 10, 15, 27, 22, 24 and 29 November 2022 were conducted for Contract 3;
- Environmental toolbox trainings on mini piling, steel works, concreting, grouting and cement debagging and mixing on 2, 9, 16, 23 and 30 November 2022 were conducted for Contract 7.

## 1.6

### ***STATUS OF STATUTORY ENVIRONMENTAL COMPLIANCE WITH THE ENVIRONMENTAL PERMIT***

The status of statutory environmental compliance with the EP conditions under the EIAO, submission status under the EP and implementation status of mitigation measures are presented in *Annex C*.

## 1.7

### *STATUS OF OTHER STATUTORY ENVIRONMENTAL REQUIREMENTS*

The environmental licenses and permits, including environmental permit, discharge license under Water Pollution Control Ordinance, registration as chemical waste producer, construction noise permit and specified processes license, which were valid in the reporting period are presented in *Annex D*. No non-compliance with environmental statutory requirements was recorded.

The EM&A programme for the Project required environmental monitoring for air quality, noise, water quality and marine ecology as well as environmental site inspections for air quality, noise, water quality, waste management, marine ecology and landscape and visual impacts. The EM&A requirements and related findings for each component are summarized in the following sections.

## 2.1 AIR QUALITY

### 2.1.1 Monitoring Requirements and Equipment

According to the Updated EM&A Manual of the Project, impact air quality monitoring in terms of 1-hour Total Suspended Particulate (TSP) was conducted three (3) times every six (6) days when the highest dust impact was expected. The Action and Limit Levels of the air quality monitoring is provided in *Table 2.1* below.

**Table 2.1** *Action and Limit Levels for 1-hour TSP*




| Location                               | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|--|--|---------------------------------------|
| Monitoring station for Tung Chung East | 279                                    | 500                                   |

Portable direct reading dust meters were used to measure 1-hour TSP levels in undertaking the air quality monitoring for the Project. The proposed use of portable direct reading dust meters was submitted to IEC and obtained agreement from the IEC as stated in Section 5.5 of the Updated EM&A Manual. With the use of direct reading dust meter, it can allow prompt and direct results for the EM&A reporting and the implementation of the event and action plan. The portable direct reading dust meter would be calibrated every year against High Volume Sampler (HVS) to check the validity and accuracy of the results measured by direct reading method.

The monitoring location and equipment used in the impact air quality monitoring programme are summarized in *Table 2.2* and illustrated in *Figure 2.1*. Copies of the calibration certificates for the equipment are presented in *Annex E1*, which showed that the portable direct reading dust meter is capable of providing comparable results with that provided by a HVS.



**Legend**

-  Proposed Area for Tung Chung New Town Extension (East)
-  Tuen Mun – Chek Lap Kok Link (TM-CLKL)
-  Construction Dust Monitoring Station

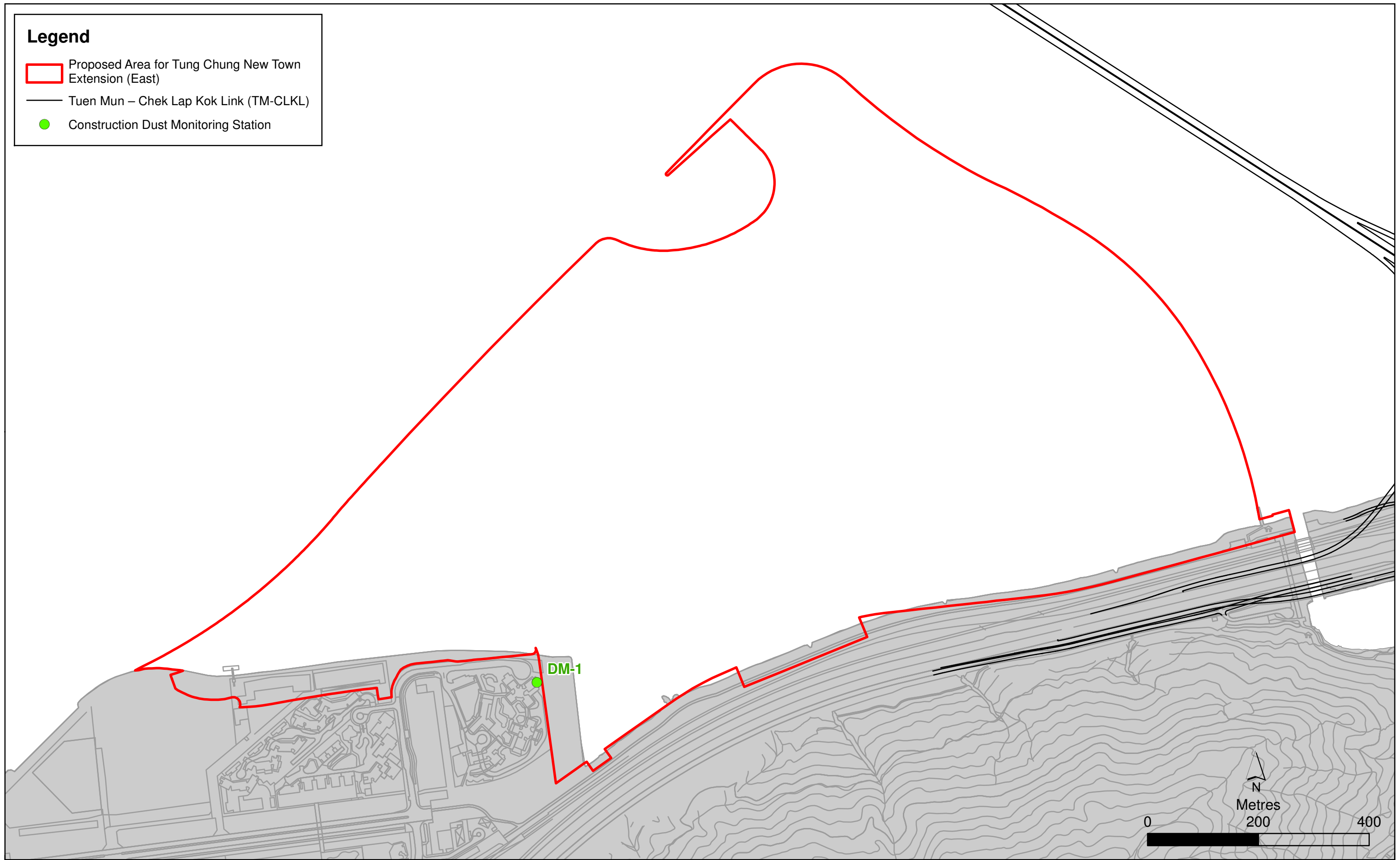


Figure 2.1

Construction Dust Monitoring Station Location

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Date: 11/10/2018

**Environmental  
Resources  
Management**



**Table 2.2 Air Quality Monitoring Details**

| Monitoring Station  | Location                              | Parameter  | Frequency and Duration   | Monitoring Dates                      | Equipment  |
|---|---------------------------------------|------------|--|---------------------------------------|--|
| DM-1  | Tung Chung Area 56 - Ying Tung Estate | 1-hour TSP | Three times per six days during the construction period of the Project | 1, 7, 12, 18, 24 and 30 November 2022 | 1-hour TSP Dust Meter SIBATA LD-3B (S/N: 336338) |
| <p>Remark:<br/>It should be noted that impact monitoring at other construction dust monitoring locations at TCE as stated in the Updated EM&amp;A Manual will commence after the flat intake (for Monitoring Stations DM-2, DM-3 and DM-4).</p> |                                       |            |  |                                       |  |

**2.1.2 Monitoring Schedule for the Reporting Month**

The schedule for air quality monitoring during the reporting period is provided in *Annex E2*.

**2.1.3 Results and Observations**

The monitoring results for 1-hour TSP are summarized in *Table 2.3*. The monitoring data and the graphical presentation are provided in *Annex E3*.

**Table 2.3 Summary of 1-hour TSP Monitoring Results in the Reporting Period**

| Monitoring Station | Average ( $\mu\text{g}/\text{m}^3$ ) | Range ( $\mu\text{g}/\text{m}^3$ ) | Action Level ( $\mu\text{g}/\text{m}^3$ ) | Limit Level ( $\mu\text{g}/\text{m}^3$ ) |
|--------------------|--------------------------------------|------------------------------------|---|--|
| DM-1               | 27                                   | 16-49                              | 279                                       | 500                                      |

Major dust sources in the reporting period included haul road traffic, excavation, loading and unloading of sand/fill material and filling works under the Project.

No exceedance of Action and Limit Levels was recorded for construction air quality monitoring in the reporting period. No action was thus required to be undertaken in accordance with the Event and Action Plan presented in *Annex E4*.

**2.2 NOISE MONITORING**

**2.2.1 Monitoring Requirements and Equipment**

According to the Updated EM&A Manual of the Project, impact noise monitoring was conducted once per week during the construction phase of the Project. The Action and Limit Level for construction noise of the Project is provided in *Table 2.4* below.

**Table 2.4** *Action and Limit Levels for Construction Noise*

| <b>Time Period</b>                   | <b>Action Level</b>                       | <b>Limit Level</b> |
|--------------------------------------|---|--------------------|
| 0700 - 1900 hours on normal weekdays | When one documented complaint is received | 75 dB(A) *         |

Notes:

Limit level is exceeded when  $L_{eq} \geq 75$  dB(A). If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

\* Reduce to 70 dB (A) for schools and 65 dB (A) during school examination periods.

Noise monitoring was performed using sound level meter at the designated monitoring stations NMS-CA-1A <sup>(1)</sup> <sup>(2)</sup> and NMS-CA-4 (Figure 2.2; Table 2.5) in accordance with the requirements stipulated in the Updated EM&A Manual. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Details of the deployed equipment are provided in Table 2.5. Copies of the calibration certificates for the equipment are presented in Annex F1.

(1) Impact monitoring at monitoring station NMS-CA-1A commenced on 19 September 2018 in view of the close vicinity of the construction works near the residential area at Century Link.

(2) Due to land handover issue, NMS-CA-1A was relocated to Ying Hong Road which is located 60m away from the original location. Proposal on the relocation of NMS-CA-1A was approved by IEC on 23 November 2018. Noise monitoring at the relocated location commenced since 24 November 2018.

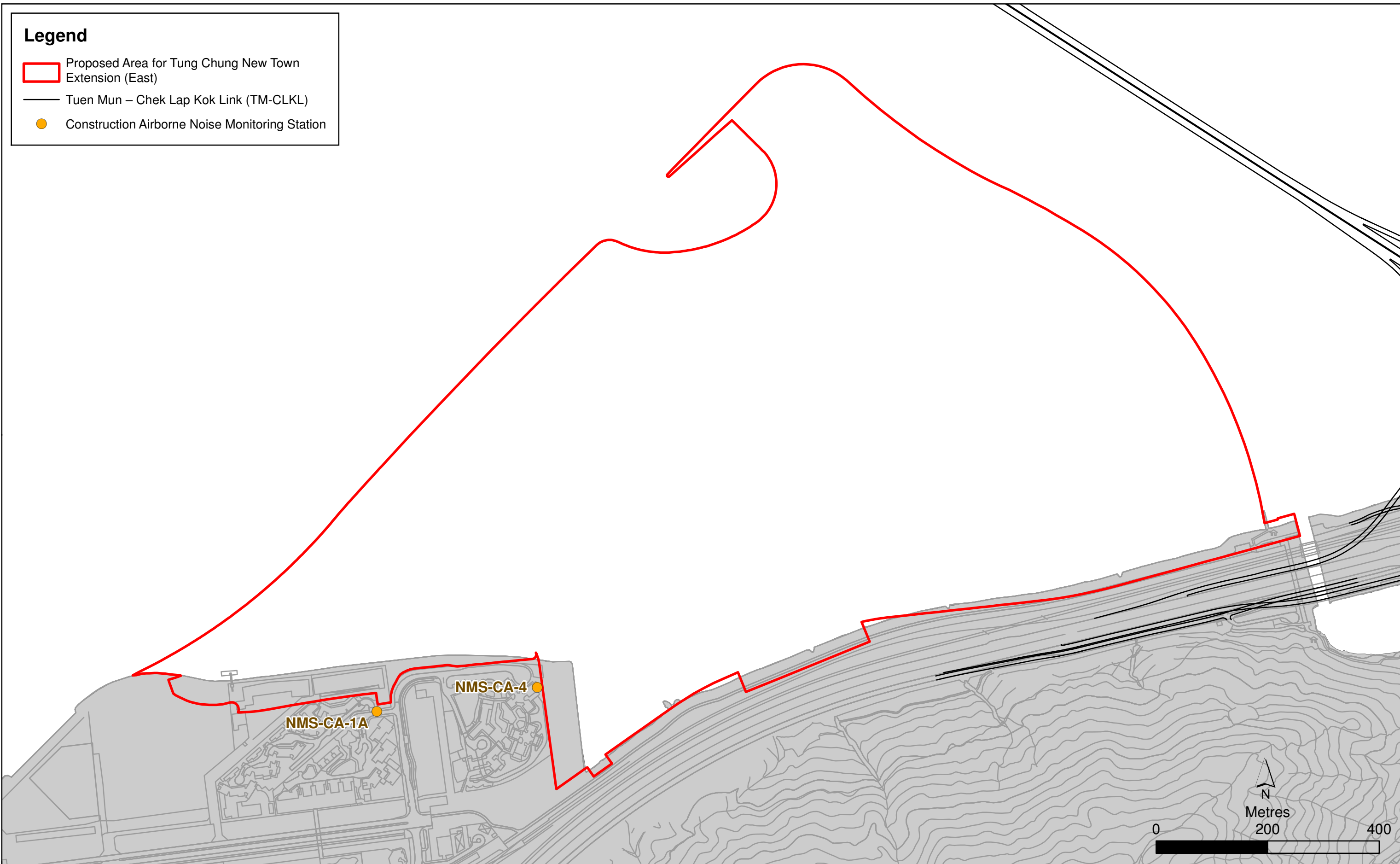


Figure 2.2

Construction Airborne Noise Monitoring Station Location

*(Note : Due to land handover issue, NMS-CA-1A was relocated to Ying Hong Road which is located 60m away from the original location. Noise monitoring at the relocated location commenced since 24 November 2018.)*

**Table 2.5 Noise Monitoring Details**

| Monitoring Station (a) | Location   | Parameter  | Frequency and Duration  | Monitoring Dates                      | Equipment  |
|------------------------|--|--|---|---------------------------------------|--|
| NMS-CA-1A<br>(b)       | Residential premise in Tung Chung East - Century Link/Ying Hong Road                   | 30-minute in measurement between 0700 and 1900 on normal weekdays (Monday to Saturday). $L_{eq}$ , $L_{10}$ and $L_{90}$ | Once per week for 30 mins during the construction period of the Project | 1, 7, 12, 18, 24 and 30 November 2022 | Sound Level Meter: Rion NL-52 (S/N: 00542913)<br><br>Acoustic Calibrator: LARSON DAVIS CAL200 (S/N: 11334) |
| NMS-CA-4               | Residential premise in the reclamation area next to Tung Chung East - Ying Tung Estate | would be recorded.   |   |                                       |  |

Remarks:

- (a) It should be noted that impact monitoring at other construction noise monitoring locations at TCE as stated in the Updated EM&A Manual will commence after the flat intake of residential premise in TCE (for Monitoring Station NMS-CA-1) and operation of schools (for Monitoring Stations NMS-CA-2 and NMS-CA-3).
- (b) Impact monitoring at monitoring station NMS-CA-1A commenced on 19 September 2018 in view of the close vicinity of the construction works near the residential area at Century Link.
- (c) Due to land handover issue, NMS-CA-1A was relocated to Ying Hong Road which is located 60m away from the original location. Proposal on the relocation of NMS-CA-1A was approved by IEC on 23 November 2018. Noise monitoring at the relocated location commenced since 24 November 2018.

**2.2.2 Monitoring Schedule for the Reporting Month**

The schedule for noise monitoring during the reporting period is provided in Annex F2.

**2.2.3 Results and Observations**

Results for noise monitoring are summarized in Table 2.6. The monitoring data and the graphical presentation are provided in Annex F3.

**Table 2.6 Summary of Construction Noise Monitoring Results in the Reporting Period**

| Monitoring Station | Average, dB(A),<br>$L_{eq}$ (30mins) | Range, dB(A),<br>$L_{eq}$ (30mins) | Limit Level, dB(A),<br>$L_{eq}$ (30mins) |
|--------------------|--------------------------------------|------------------------------------|--|
| NMS-CA-1A          | 68.1                                 | 67.1-68.9                          | 75                                       |
| NMS-CA-4           | 67.1                                 | 64.8-70.0                          | 75                                       |

Major noise sources during the noise monitoring included noise from plant operation, craning, piling, haul road traffic, nearby traffic and aircraft as well as nearby construction sites.

No Action/ Limit Level exceedance was recorded for construction noise monitoring in the reporting period.

## 2.3 WATER QUALITY MONITORING

### 2.3.1 Monitoring Requirements and Equipment

Impact water quality monitoring was carried out to ensure that any deterioration of water quality was detected, and that timely action was taken to rectify the situation. Impact water quality monitoring was undertaken three days per week since the commencement of marine works during the reporting period in accordance with the Updated EM&A Manual. Each impact water quality monitoring was scheduled such that the interval between two impact water quality monitoring was more than 36 hours to record representative water quality data throughout the week during the marine works.

Two (2) replicate *in-situ* measurements and samples were collected at each monitored water depth of each designated monitoring stations. Dissolved Oxygen (DO), pH value, salinity, temperature and turbidity were measured *in-situ* whereas the level of suspended solids (SS) were determined by ALS Technichem (HK) Pty Ltd which is a HOKLAS accredited laboratory.

The Action and Limit Levels of the water quality monitoring are provided in Table 2.7.

**Table 2.7 Action and Limit Levels for Water Quality**

| Parameters                               | Action Level  | Limit Level   |
|--|---|---|
| DO in mg/L<br>(Surface, Middle & Bottom) | <u>Surface and Middle</u><br>5.9 mg/L <sup>[1]</sup>  | <u>Surface and Middle</u><br>4 mg/L <sup>[1]</sup>  |
|  | <u>Bottom</u><br>5.6 mg/L   | <u>Bottom</u><br>2 mg/L   |
| SS in mg/L (Depth-averaged)              | 13.5 mg/L<br>or<br>120% of upstream control station at the same tide of the same day, whichever is higher.<br>[2] | 23.5 mg/L<br>or<br>130% of upstream control station at the same tide of the same day, whichever is higher.<br>[2] |
|  | Turbidity in NTU (Depth-averaged)   | 17.1 NTU<br>or<br>120% of upstream control station at the same tide of the same day, whichever is higher.<br>[2]  |

Notes:

(1) For DO, non-compliance occurs when monitoring results is lower than the limits.

(2) For SS and Turbidity, non-compliance occurs when monitoring results is larger than the limits

The locations of the monitoring stations under the Project are shown in *Figure 2.3* and *Table 2.8*.

**Table 2.8** *Locations of Impact Water Quality Monitoring Stations and the Corresponding Monitoring Requirements*

| Monitoring Station | Description                               | Coordinates |          | Parameters <sup>(a)</sup>                       | Frequency  | Monitoring Dates <sup>(b)</sup>                           | Depth   |
|--------------------|---|-------------|----------|---|--|---|---|
|                    |   | Easting     | Northing |   |  |   |   |
| TCE-WQM1           | Near Airport Channel                      | 811838      | 817341   | • Dissolved Oxygen (DO) (mg/L and % saturation) | Impact monitoring: 3 days per week, at mid-flood and mid-ebb tides during the construction period of the Project | 4, 7, 9, 11, 14, 16, 18, 21, 23, 25, 28, 30 November 2022 | 3 water depths: 1m below sea surface, mid-depth and 1m above seabed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted |
| TCE-WQM2a          | Marine Park 1                             | 814439      | 819879   | • Temperature (°C)                              |  |   |   |
| TCE-WQM2b          | Marine Park 2                             | 814439      | 821905   | • Turbidity (NTU)                               |  |   |   |
| TCE-WQM3A          | Outlet of Tai Ho Wan                      | 814705      | 817859   | • Salinity (ppt)                                |  |   |   |
| TCE-WQM4           | HKBCF                                     | 813344      | 818849   | • pH  |  |   |   |
| TCE-C1             | Control Station - Outside Airport Channel | 804247      | 815620   | • Water depth (m)                               |  |   |   |
| TCE-C2             | Control Station - Sunny Bay               | 819460      | 821473   | • Suspended Solid (SS) (mg/L)                   |  |   |   |

Notes:

(a) In addition to the abovementioned parameters, other relevant data shall also be recorded, including monitoring location / position, time, water depth, tidal stages, weather conditions and any special phenomena or work underway at the construction site.

(b) Water Quality Monitoring on 2 November was cancelled due to issue of Strong Wind Signal No.3 and No.8 by the Hong Kong Observatory.

*Table 2.9* summarizes the equipment used in the impact water quality monitoring works. Copies of the calibration certificates are attached in *Annex G1*.



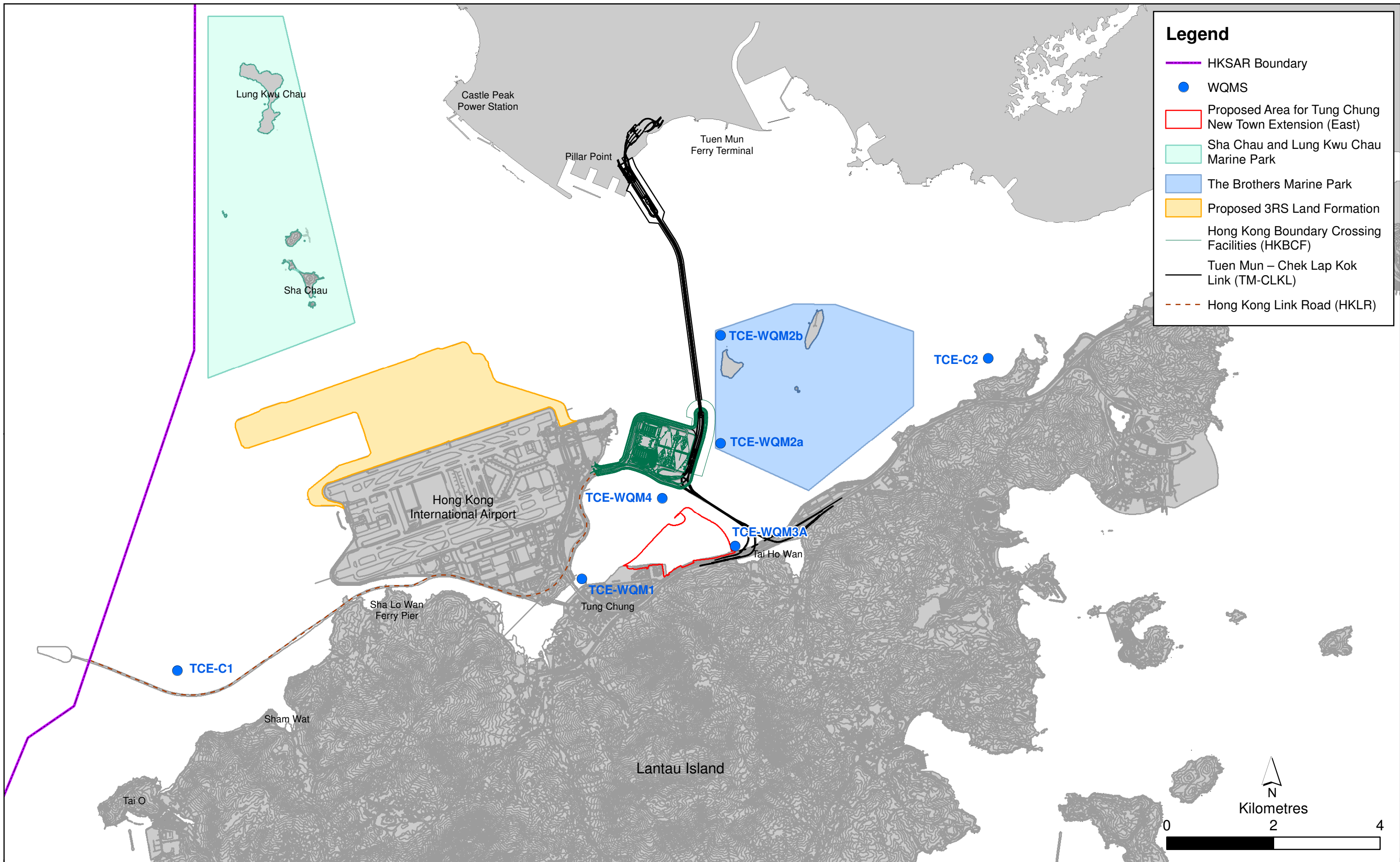


Figure 2.3

Water Quality Monitoring Locations



**Table 2.9 Water Quality Monitoring Equipment**

| Equipment   | Model  |
|---|--|
| Water Sampler   | Kahlsico Water Samplers                              |
| Multi-parameter Water Quality System (measurement of DO, Temperature, Turbidity, Salinity and pH) | YSI ProDSS (S/N: 16H104233, 16H104234 and 17E100747) |

**2.3.2 Monitoring Schedule for the Reporting Month**

The schedule for water quality monitoring during the reporting period was provided in *Annex G2*.

**2.3.3 Results and Observations**

A total of 12 monitoring events for impact water quality monitoring were conducted at all designated monitoring stations during the reporting period. Monitoring event on 2 November 2022 was cancelled due to issue of Strong Wind Signal No.3 and No.8 by the Hong Kong Observatory. Impact water quality monitoring results and graphical presentations were provided in *Annex G3*.

Action level exceedances were recorded for water quality impact monitoring in the reporting period and the event and action plan (*Annex G4*) was undertaken. Investigations on the action level exceedances were conducted and summarized in *Table 2.10* below.

**Table 2.10 Details of Exceedances Recorded for Water Quality Monitoring**

| Date             | Tide | Parameter | Station  | Type   | Justification |
|------------------|------|-----------|----------|--------|---------------|
| 4 November 2022  | MF   | SS        | TCE-WQM1 | Action | (a) (b)       |
|                  | MF   | SS        | TCE-WQM4 | Action | (a) (b)       |
| 25 November 2022 | ME   | SS        | TCE-WQM1 | Action | (a) (b)       |

Remarks:

- (a) The exceedance was not considered as caused by the construction of the Project due to areas of reclamation related marine works undertaken under the Project were surrounded by silt curtain which were inspected daily by the Contractor and inspected periodically by ER. The silt curtain nearby the water quality monitoring stations was observed to be in good condition/well-functioning.
- (b) The exceedance was not considered as caused by the construction of the Project due to no illegal discharge/sediment plume was observed nearby the water quality monitoring station during the sampling in mid-ebb/mid-flood tide.

Based on the investigations conducted for each of the monitoring day with exceedances, the exceedances of SS were not likely caused by the work activities related to the Project.

Nevertheless, the Contractors were reminded to implement all relevant mitigation measures for the marine works, including regular checking of silt curtain integrity, provide periodic maintenance and maintain good site

practice. The ET will keep on checking monitoring data, plant, equipment and Contractor's working methods.

## 2.4 **COMPENSATION WOODLAND MONITORING**

Compensation woodland planting under Contract 2 was completed on 30 September 2022. Monitoring for compensation woodland will be carried out after the confirmation of the monitoring proposal. Photographic record of the compensation woodland planting is provided in *Annex H*.

## 2.5 **PRESERVED/TRANSPLANTED PLANT SPECIES OF CONSERVATION IMPORTANCE MONITORING**

Plant species of conservation importance, including three individuals of *Aquilaria sinensis* and 33 individuals of *Gmelina chinensis*, were identified within works areas for Contract 2. All individuals of *Aquilaria sinensis* and 31 individuals of *Gmelina chinensis* were recommended being preserved *in-situ* while two individuals of *Gmelina chinensis* (RT-07 and RT-08) were recommended being transplanted to the receptor site in accordance with the Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance approved under Condition 2.21 of EP-519/2016. Initial tree survey was conducted in September 2021 under Contract No. NL/2020/02 before the commencement of construction works. According to the initial tree survey conducted, the *in-situ* preserved plant species of conservation importance of which one individual of *Aquilaria sinensis* and six individuals of *Gmelina chinensis* were found missing.

### 2.5.1 **Preserved Plant Species of Conservation Importance**

Monthly monitoring of the *in-situ* preserved plant species of conservation importance by the Qualified Personnel (QP) appointed under Contract 2 was implemented in the reporting period. Health condition was considered fair for the majority of the *in-situ* preserved plant species of conservation importance, of which two individuals of *Gmelina chinensis* could not be monitored as a result of unsafe access to the locations, as recorded during the monitoring carried out on 23 November 2022.

Tree protection zones for the *in-situ* preserved plant species of conservation importance were demarcated. No injuries and/or damages to the individuals of the *in-situ* preserved plant species of conservation importance were reported by the QP since the previous monitoring events. Photographic record and tree schedule of the preserved plant species of conservation importance monitoring are provided in *Annex I*.

The ET will continue to monitor the implementation of monitoring of *in-situ* preserved plant species of conservation importance.

## 2.5.2 *Transplanted Plant Species of Conservation Importance*

Site visit to the receptor site for the transplanted plant species of conservation importance under Contract 2 was carried out on 20 January 2022 prior to the commencement of transplantation works for the transplanted plant species of conservation importance on 21 January 2022.

The transplanted plant species of conservation importance were both certified as dead trees by the QP on 15 June 2022 as no living signs were observed. Replacement planting of new trees of the same species, or other species to the satisfaction of the Project Manager, at the Contractors' expense would be deemed necessary in accordance with the conditions under the approved Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance. Replacement planting proposal prepared by the QP was submitted to EPD and under further revision on replacement plant species selection according to the suggestion by EPD and Agriculture, Fisheries and Conservation Department.

## 2.6 *ECO-SHORELINE MONITORING*

Mangrove eco-shoreline and rocky eco-shoreline are under construction while the construction of vertical eco-shoreline has been substantially completed. Photographic record is provided in *Annex J*.

No eco-shoreline monitoring was scheduled during the reporting period. Monitoring shall be conducted for at least 3 years after the completion of reclamation works, twice in wet season and twice in dry season, in order to determine the effectiveness of the eco-shoreline in accordance with the Updated EM&A Manual.

## 2.7 *SOFT SHORE ECOLOGICAL MONITORING*

No impact soft shore ecological monitoring at Tung Chung Bay and Tai Ho Wan was scheduled during the reporting period. The impact soft shore ecological monitoring at Tung Chung Bay and Tai Ho Wan was scheduled to be conducted in December 2022 in accordance with the Updated EM&A Manual.

## 2.8 *EM&A SITE INSPECTION*

Site inspections were carried out on a weekly basis with the Contractor and ER to monitor the implementation of proper environmental pollution control and mitigation measures for air quality, noise, water quality, waste management, marine ecology, landscape and visual impacts and preservation and/or transplantation of plant species of conservation importance under the Project. In the reporting period, four (4) site inspections were carried out on 3, 10, 15 and 24 November 2022 for Contract 1, five (5) site inspections were carried out on 2, 9, 16, 23, 30 November 2022 for Contract 2, four (4) site

inspections were carried out on 4, 11, 16 and 25 November 2022 for Contract 3 and five (5) site inspections were carried out on 1, 8, 15, 22 and 29 November 2022 for Contract 7.

Key observations during the site inspections are summarized in *Table 2.11*.

**Table 2.11 Key Observations Identified during the Site Inspection in this Reporting Month**

| Contract No.     | Inspection Date        | Environmental Observations  | Recommendations/ Remarks   |  |
|------------------|------------------------|---|--|--|
| Contract 1       | 3 and 10 November 2022 | Area E<br>• No deficiency was observed.   | • Nil  |  |
|                  | 15 November 2022       | IORC<br>• No drip tray was provided for the generator.<br>BC6<br>• Chemical stains were observed on ground.   | IORC<br>• The Contractor was reminded to provide drip tray for generator.<br>BC6<br>• The Contractor was urged to remove the chemical stains.  |  |
|                  | 24 November 2022       | Area E<br>• No deficiency was observed.   | • Nil  |  |
|                  | Contract 2             | 2 November 2022   | TTA, HDD, Portion 3, 6<br>• No deficiency was observed.  | • Nil  |
| 9 November 2022  |                        | Portion 3<br>• Accumulated general refuse and construction waste was observed.  | Portion 3<br>• The Contractor was reminded to carry out material sorting for general refuse and construction waste and clear accumulated refuse regularly.   |  |
| 16 November 2022 |                        | Portion 5A<br>• Stockpile of dusty material was observed not covered.<br><br>Portion 6<br>• Appropriate Non-road Mobile Machinery (NRMM) label was not observed on excavator. | Portion 5A<br>• The Contractor was urged to provide mitigation measures for dust emission, such as covering the stockpile of dusty materials with impervious sheeting..<br><br>Portion 6<br>• The Contractor was reminded to affix appropriate NRMM labels in accordance with the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation. |  |
| 23 November 2022 |                        | TTA, HDD, Portion 3, 6<br>• No deficiency was observed.   | • Nil  |  |
| 30 November 2022 |                        | Portion 3<br>• Chemical waste was observed placing on ground.<br><br>• Mud trail was observed on public road.   | Portion 3<br>• The Contractor was reminded to remove the chemical waste or put chemical waste in proper storage area.<br><br>• The Contractor was reminded to provide mitigation measures and keep the public road clean.  |  |
| Contract 3       |                        | 4 November 2022   | Portion 16B, 104, TTA<br>• No deficiency was observed.   | • Nil  |
|                  |                        | 11 November 2022  | CUT Area<br>• Chemicals were observed not placing on drip tray.  | CUT Area<br>• The Contractor was reminded to place chemicals on drip tray. |

| Contract No. | Inspection Date  | Environmental Observations   | Recommendations/ Remarks   |
|--------------|------------------|--|--|
|              | 16 November 2022 | CUT Area <ul style="list-style-type: none"> <li>Dust was observed generated from dry haul road.</li> <li>Oil leakage from machinery was observed.</li> </ul> | CUT Area <ul style="list-style-type: none"> <li>The Contractor was urged to carry out dust mitigation measures, such as watering.</li> <li>The Contractor was urged to provide measures to avoid oil leakage and clear the oil spills in accordance with the Spill Response Plan.</li> </ul> |
|              | 25 November 2022 | CUT Area, Road L3 <ul style="list-style-type: none"> <li>No deficiency was observed.</li> </ul>  | <ul style="list-style-type: none"> <li>Nil</li> </ul>  |
| Contract 7   | 1 November 2022  | Portion 32, 146-5 <ul style="list-style-type: none"> <li>No deficiency was observed.</li> </ul>  | <ul style="list-style-type: none"> <li>Nil</li> </ul>  |
|              | 8 November 2022  | Portion 31 <ul style="list-style-type: none"> <li>Retained muddy water was observed.</li> </ul>  | Portion 31<br>The Contractor was reminded to clear the retained water regularly to prevent any runoff/ discharge into drainage.  |
|              | 15 November 2022 | Portion 32 <ul style="list-style-type: none"> <li>Dust was observed from main haul road.</li> </ul>  | Portion 32<br>The Contractor was reminded to provide dust mitigation measures.   |
|              | 22 November 2022 | Portion 30, 31, 32, 37, 146-5 <ul style="list-style-type: none"> <li>No deficiency was observed.</li> </ul>  | <ul style="list-style-type: none"> <li>Nil</li> </ul>  |
|              | 29 November 2022 | Area E near Pak Mong, Portion 30 to 31, 31, 32, 146-5 <ul style="list-style-type: none"> <li>No deficiency was observed.</li> </ul>                          | <ul style="list-style-type: none"> <li>Nil</li> </ul>  |

The Contractors have rectified all of the observations identified during environmental site inspections in the reporting period. The Contractors were reminded to implement all relevant mitigation measures related to construction dust, construction noise, water quality and waste management outlined in the EIA Report and Updated EM&A Manual.

## 2.9 WASTE MANAGEMENT STATUS

The Contractors of Contract 1, 2, 3 and 7 have registered as chemical waste producer. Sufficient numbers of receptacles were available for general refuse collection and sorting.

All dump trucks engaged on site was equipped with RTTM system during the reporting period. The Surveillance Team of the ET conducted regular site inspection on the dump trucks and their track records. No illegal dumping and landfilling of C&D materials was found during the reporting period.

Wastes generated during this reporting period include mainly non-inert construction wastes. Reference has been made to the waste flow tables prepared by the Contractors. The quantities of different types of wastes and imported fill materials are summarised in *Table 2.12*.

**Table 2.12 Quantities of Different Waste Generated and Imported Fill Materials**

| Contract No. | Month/ Year    | Inert C&D Materials <sup>(a)</sup> (m <sup>3</sup> ) | Imported Fill <sup>(b)</sup> (sand) (m <sup>3</sup> ) | Imported Fill <sup>(c)</sup> (public fill) (m <sup>3</sup> ) | Inert Construction Waste Re-used <sup>(d)</sup> (m <sup>3</sup> ) | Non-inert Construction Waste <sup>(e)</sup> (m <sup>3</sup> ) | Recyclable Materials <sup>(f)</sup> (kg) | Chemical Wastes (kg) |
|--------------|----------------|--|---|--|---|---|--|----------------------|
| TCNTE (East) | 1 to 30 Sep 22 | 0.0  | 0.0   | 3,584.0  | 62,276.0  | 247.9   | 0.0                                      | 4,000.0              |
|              | 1 to 31 Oct 22 | 0.0  | 0.0   | 150.0  | 54,849.0  | 123.8   | 255.0                                    | 0.0                  |
|              | 1 to 30 Nov 22 | 0.0  | 0.0   | 8.3  | 23,850.0  | 114.6   | 477.0                                    | 0.0                  |
|              |                |  |   |  |   |   |  |                      |

Notes:

(a) Inert construction wastes include hard rock and large broken concrete, and materials disposed as public fill.

(b) Imported materials include of sand fill from any source outside of TCNTE.

(c) Imported sorted public fill include all G200, G400 and glass gullet (local recycling materials) from any source outside of TCNTE.

(d) Reuse of inert construction waste generated under the TCNTE contracts.

(e) Non-inert construction wastes include general refuse disposed at landfill.

(f) Recyclable materials include metals, paper, cardboard, plastics and others.

## 2.10 LANDSCAPE AND VISUAL MONITORING

Implementation of applicable landscape and visual mitigation measures was monitored in accordance with the Updated EM&A Manual. All measures undertaken by the Contractor during the construction phase and establishment work phase shall be audited by ET to ensure compliance with the intended aims of the measures.

The implementation status of the environmental protection measures is summarized below in *Table 2.13*. Examples of landscape and visual mitigation measures are presented in *Annex K1*. The monitoring programme for detailed design, construction and establishment stages is presented in *Table 2.14*. Event and Action Plan for Landscape and Visual impacts is stated in *Annex K2*.

**Table 2.13 Implementation Status of Landscape and Visual Mitigation Measures**

| <b>Landscape and Visual Mitigation Measures during Construction</b>                               | <b>Implementation Status</b>   | <b>Relevant Contract(s) in the Reporting Period</b> |
|---|--|---|
| MM1- Optimization of Construction Areas & Providing Temporary Landscape on Temporary Construction | The implementation of mitigation measures was checked by ET during weekly site inspection. Implementation of the measures by Contractors was observed.   | All works contracts                                 |
| MM3 - Preservation of Potentially Registerable OVTs, Rare and Protective Vegetation               | <p>Tree Protection Specifications were provided in the relevant Contract Specifications respectively for implementation by the Contractors under the Project.</p> <p>The Contractors submitted Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance under EP condition 2.21.</p> <p>The Contractors' performance on the implementation of the tree maintenance and protection measures were observed and checked by the ET weekly during construction period.</p>  | All works contracts                                 |
| MM4 - Transplanting of Existing Trees   | <p>Tree Transplanting Specifications were provided in the relevant Contract Specifications respectively for implementation by the Contractors under the Project where trees would unavoidably be affected by the construction works.</p> <p>The Contractors submitted Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance under EP condition 2.21.</p> <p>The transplanted plant species of conservation importance were both certified as dead trees by the QP on 15 June 2022 as no living signs were observed.</p> | Contract 2  |
| MM5 - Screen Hoarding   | The implementation of mitigation measures was checked by ET during weekly site inspection. Implementation of the measures by Contractors was observed.   | All works contracts                                 |

| <b>Landscape and Visual Mitigation Measures during Construction</b>    | <b>Implementation Status</b>  | <b>Relevant Contract(s) in the Reporting Period</b> |
|--|---|---|
| MM6 - Adopting Non-dredge Method for the Reclamation                   | The implementation of mitigation measures was checked by ET during weekly site inspection. Implementation of the measures by Contractors was observed.  | Contract 1  |
| MM9 - Providing Natural Rock Material/ Planting for Artificial Seawall | Rock armour reused and construction of eco-shoreline (mangrove eco-shoreline, rocky eco-shoreline and vertical eco-shoreline) in progress. The implementation of mitigation measures was checked by ET during weekly site inspection. Implementation of the measures by Contractors was observed. | Contract 1  |
| MM18 - Landscaping on Slopes   | Not applicable during the reporting period  | NA  |
| MM20 - Lighting Control  | The implementation of mitigation measures was checked by ET during weekly site inspection. Implementation of the measures by Contractors was observed.  | All works contracts                                 |

**Table 2.14** *Monitoring Programme for Landscape and Visual*

| <b>Stage</b>        | <b>Monitoring Task</b>  | <b>Monitoring Report</b>   | <b>Form of Approval</b>            | <b>Frequency</b>              |
|---------------------|---|--|------------------------------------|-------------------------------|
| Design              | Monitoring of design works against the recommendations of the landscape and visual impact assessments within the EIA should be undertaken by the Engineer and Landscape Architect, to ensure that they fulfil the intentions of the mitigation measures. Any changes to the design, including design changes on site should also be checked | Report by CEDD / ER confirming that the design conforms to requirements of EP. | Approval by Project Proponent      | At completion of design stage |
| Construction        | Monitoring of the contractor's operations during the construction period.   | Report on Contractor's compliance by ET  | Counter-signature of report by IEC | Monthly                       |
| Establishment Works | Monitoring of the planting works during the 24-months Establishment Period after completion of the construction works.  | Report on Contractor's compliance by ET  | Counter-signature of report by IEC | Bi-monthly                    |

## 2.11

### **IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES**

A summary of the Environmental Mitigation Implementation Schedule is presented in *Annex B*. The necessary mitigation measures were implemented properly for the Project.



**2.12** *SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT*

The monitoring results for air quality monitoring (1-hour TSP) and construction noise monitoring complied with the Action/Limit levels in the reporting period.

Action level exceedances were recorded for water quality impact monitoring in the reporting period. The investigations on the action level exceedances were conducted and the results were summarized in Section 2.3.3. Cumulative statistics on exceedances is provided in *Annex L*.

**2.13** *SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS*

There was no notification of summons or prosecution recorded in the reporting period.

One (1) environmental complaint related to Contract 3 were received in the reporting period. Investigation was conducted for the environmental complaint in accordance with the complaint handling process as stated in the Complaint Management Plan. Environmental complaint in the reporting period is summarized below.

| <b>Complaint(s)</b>   | <b>Investigation/Follow up action(s)</b>   |
|---|--|
| 1 Environmental complaint related to Contract 3 regarding dust at Ying Hei Road and Yi Tung Road was referred by EPD on 29 November 2022. | Based on the information provided by the Contractor with confirmation by RSS, no dusty road condition was found at the junction of Ying Hei Road, Ying Tung Road and Man Tung Road. In addition, Yi Tung Road is located approximately 570m away from the site exit. Therefore, the complaint was unlikely related to the Project. |

Statistics on complaints, notifications of summons, successful prosecutions are summarised in *Annex L*.

## 3.1 CONSTRUCTION PROGRAMME FOR THE COMING MONTH

Works to be undertaken in the next monitoring period of December 2022 are summarized in *Table 3.1* below, together with the key issues and the key mitigation measures:

**Table 3.1 Major Activities for the Next Reporting Period**

| Activities   | Key Issues   | Key Mitigation Measures   |
|--|--|---|
| <b>Contract No. NL/2017/03 - Tung Chung New Town Extension - Reclamation and Advance Works (Contract 1)</b>  |  |   |
| <b>Land-based Works</b>  |  |   |
| <ul style="list-style-type: none"> <li>• Ground investigation works</li> <li>• Placing of sorted public fill</li> <li>• Box culvert construction</li> <li>• Mangrove planting</li> </ul>             | <ul style="list-style-type: none"> <li>• Dust emission</li> <li>• Handling and storage of C&amp;D materials generated from construction activities</li> <li>• Noise from plant operation</li> <li>• Emission of dark smoke from PMEs</li> <li>• Efficiency of wastewater and drainage management</li> </ul>  | <ul style="list-style-type: none"> <li>• Good site practices</li> <li>• Regular water spraying on stockpiles, unpaved haul road and land filling area</li> <li>• Provide tarpaulin sheets coverage on stockpiles</li> <li>• Sorting and reuse of C&amp;D materials as far as practicable</li> <li>• Use of QPME and noise barrier/acoustic mat</li> <li>• Regular maintenance of PMEs</li> <li>• Implementation of wastewater and drainage management</li> </ul>  |
| <b>Marine-based Works</b>  |  |   |
| <ul style="list-style-type: none"> <li>• Laying of geotextile for seawall construction</li> <li>• Seawall construction (including vertical seawall, slopping seawall &amp; eco-shoreline)</li> </ul> | <ul style="list-style-type: none"> <li>• Elevation in impact on Water Quality due to marine filling works</li> <li>• Potential surface runoff</li> <li>• Potential filling material drop from barges</li> <li>• Disturbance to Chinese White Dolphin</li> <li>• Noise from marine vessels and plant operation during normal working hours or restricted hours</li> <li>• Dust emission during storage and transfer of sand/ sorted public fill</li> <li>• Emission of dark smoke from marine vessel</li> </ul> | <ul style="list-style-type: none"> <li>• Provision of perimeter silt curtain</li> <li>• Provision of a leading seawall of at least 200m before marine filling works</li> <li>• Regular cleaning of accumulated sand/fill materials at the edge of the barges</li> <li>• Implementation of Dolphin Watching for the marine-based works</li> <li>• Strictly follow requirement under CNP for the use of PMEs and works within restricted period</li> <li>• Use of acoustic mat and other noise mitigation measures when necessary</li> <li>• Regular maintenance of engines and mechanical equipment</li> </ul> |

**Land-based Works**

- Initial survey (land survey prior to the commencement of construction works)
  - Pile Cap Construction at Portion 6
  - Construction of service reservoir, soil nailing works and ground investigation works for deflector wall and rigid barrier at Portion 3
  - Drilling works for HDD works at Portion 3
  - Watermain laying works at Portion 3 along Yu Tung Road
  - Sheet piling and excavation works for ELS for pipe jacking at Portion 3
  - Watermain laying works at Yi Tung Road at Portion 5
  - Trench excavation, manhole construction and pipe laying for drainage works at Portion 5A
  - Fabrication of precast unit for box culvert at Portion 5B
  - Establishment works for the compensatory planting at Portion 1 and 2
  - Dust emission
  - Handling and storage of C&D materials generated from construction activities
  - Noise from plant operation
  - Emission of dark smoke from PMEs
  - Efficiency of wastewater and drainage management
  - Tree protection
  - Good site practices
  - Regular water spraying on stockpiles, unpaved haul road and land filling area
  - Provide tarpaulin sheets coverage on stockpiles
  - Sorting and reuse of C&D materials as far as practicable
  - Use of QPME and noise barrier/acoustic mat
  - Regular maintenance of PMEs
  - Implementation of wastewater and drainage management
  - Retain and protect all existing trees and vegetation within the study area which are not directly affected by the works
-

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**Contract No. NL/2020/03 - Tung Chung New Town Extension - Major Infrastructure Works in Tung Chung East (Contract 3)**

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**Land-based Works**

- Excavation and ELS works at Portion 104
- Excavation and ELS works at CUT no.1,2 & 3 and supporting building
- Construction works for CUT no. 1 structure
- Construction works and furniture installation of PM office at WA9
- Construction works of Contractor office at WA6
- Drainage, Sewerage and watermain works at Road L4, L3 and L5
- Pipe laying works for twin rising mains/ watermain laying at Man Tung Road
- Preparation works for pipe jacking works at Ying Tung Road
- Preparation works for pipe jacking at Yi Tung Road
- Foundation works for noise barrier at Portion 11
- Road widening works at Ying Hei Road
- Dust emission
- Handling and storage of C&D materials generated from construction activities
- Noise from plant operation
- Emission of dark smoke from PMEs
- Efficiency of wastewater and drainage management
- Tree protection
- Good site practices
- Regular water spraying on stockpiles, unpaved haul road and land filling area
- Provide tarpaulin sheets coverage on stockpiles
- Sorting and reuse of C&D materials as far as practicable
- Use of QPME and noise barrier/acoustic mat
- Regular maintenance of PMEs
- Implementation of wastewater and drainage management
- Retain and protect all existing trees and vegetation within the study area which are not directly affected by the works

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**Contract No. NL/2020/07 - Tung Chung New Town Extension - Tai Ho Interchange  
(Contract 7)**

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**Land-based Works**

- Open cut excavation and pipe laying for rising main and watermain at Portion 146-5
  - Trench excavation and pipe laying works at Portions 32 (Sham Shui Kok Drive), Portion 34 Phase 1 and Portions 36-38
  - Pipe pile installation, trench excavation and pipe laying works at Portion 32 (Access Road adjacent to MTRC Siu Ho Wan Depot)
  - Sheetpilings for construction of retaining walls RW-R7 and RW-FR1
  - Demolition and ELS works for Pak Mong Subway Extension Phase 1
  - Site clearance and tidiness
  - Dust emission
  - Handling and storage of C&D materials generated from construction activities
  - Noise from plant operation
  - Emission of dark smoke from PMEs
  - Efficiency of wastewater and drainage management
  - Tree protection
  - Good site practices
  - Regular water spraying on stockpiles, unpaved haul road and land filling area
  - Provide tarpaulin sheets coverage on stockpiles
  - Sorting and reuse of C&D materials as far as practicable
  - Use of QPME and noise barrier/acoustic mat
  - Regular maintenance of PMEs
  - Implementation of wastewater and drainage management
  - Retain and protect all existing trees and vegetation within the study area which are not directly affected by the works
- 

The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures. The ET will also recommend to the Contractors about the environmental toolbox topics on the abovementioned key issues for the next reporting period.

### 3.2

#### ***MONITORING SCHEDULE FOR THE COMING MONTH***

The tentative schedules for environmental monitoring in December 2022 are provided in *Annex M*.

#### 4 CONCLUSION AND RECOMMENDATION

This EM&A Report presents the findings of the EM&A activities undertaken for the TCE Project during the period from 1 to 30 November 2022 in accordance with the Updated EM&A Manual and the requirements of the Environmental Permit (EP-519/2016).

Air quality (1-hour TSP), noise, water quality (DO, turbidity and SS) and *in-situ* preserved plant species of conservation importance monitoring were carried out in the reporting period.

The monitoring results for air quality monitoring (1-hour TSP) and construction noise monitoring complied with the Action/ Limit levels in the reporting period.

No Project-related Action/ Limit level exceedances were recorded for water quality after investigation.

Mangrove eco-shoreline and rocky eco-shoreline are under construction while the construction of vertical eco-shoreline has been substantially completed.

No impact soft shore ecological monitoring at Tung Chung Bay and Tai Ho Wan was scheduled during the reporting period.

Monitoring of the *in-situ* preserved plant species of conservation importance was carried out in the reporting period. Replacement planting proposal prepared by the QP was submitted to EPD and under further revision on replacement plant species selection according to the suggestion by EPD and Agriculture, Fisheries and Conservation Department.

Environmental site inspections were carried out during the reporting period. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.

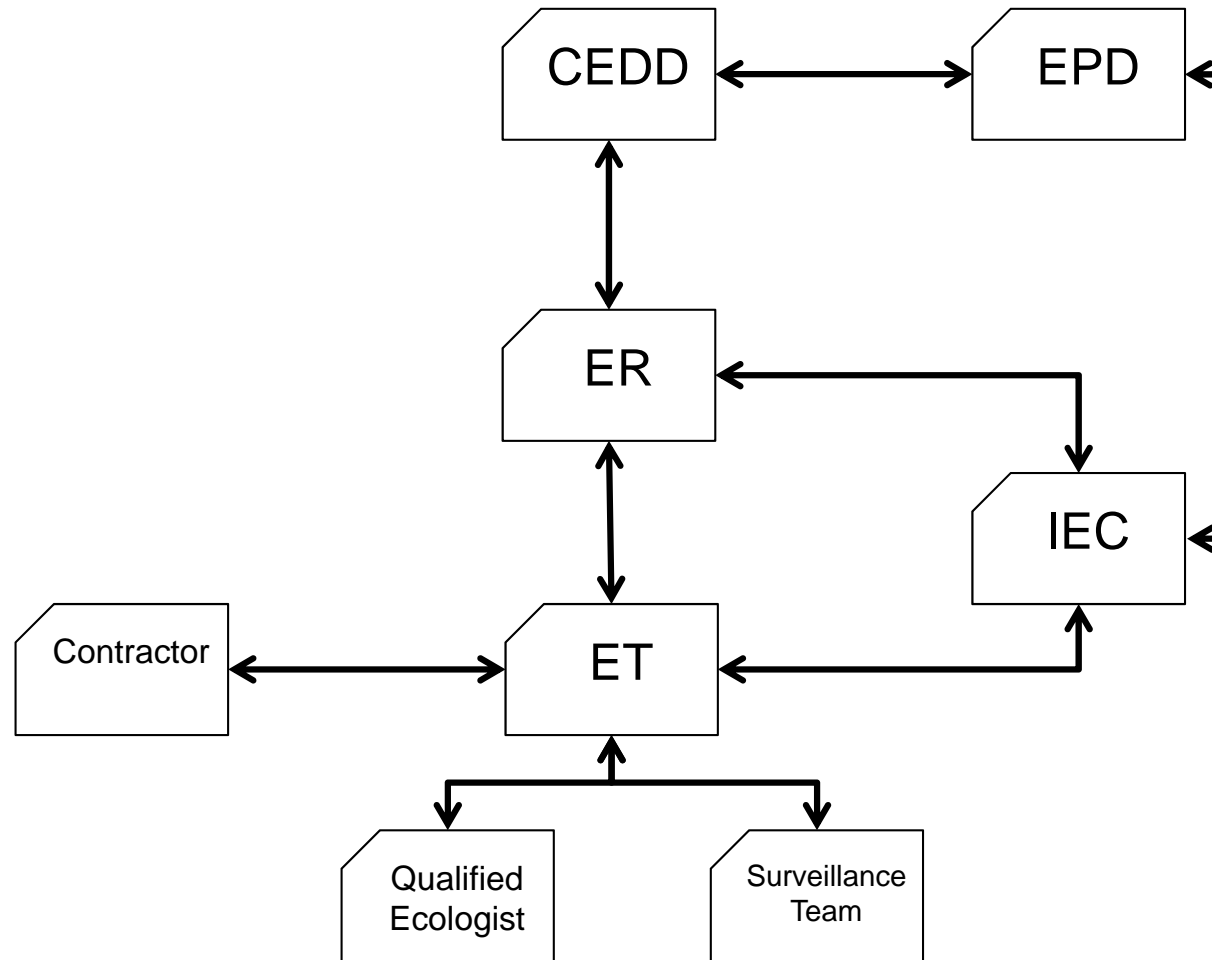
There were no notification of summons or prosecution recorded in the reporting period. One (1) environmental complaint related to Contract 3 was received in the reporting period. Investigation was conducted for the environmental complaint in accordance with the complaint handling process as stated in the Complaint Management Plan.

The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Annex A

## Project Organisation

Line of Communication





Annex B

# Environmental Mitigation Implementation Schedule

## Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension

**Note:** Chapters 1 to 2 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 3 to 12 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 13 to 15 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

| EIA Ref.  | EM&A Log Ref | Recommended Mitigation Measures   | Objectives of the Recommended Measures & Main Concerns to address | Implementation Agent | Location / Timing      | Implementation Stage | Requirements and / or standards to be achieved  |
|---|--------------|---|---|----------------------|------------------------|----------------------|---|
| <i>Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)</i> |              |   |   |                      |                        |                      |   |
| <i>Construction Dust Impact</i>   |              |   |   |                      |                        |                      |   |
| S3.4.6  | D1           | Water spraying every hour on exposed worksites and haul road.   | Minimize dust impact at the nearby sensitive receivers            | Contractor           | All construction sites | Construction stage   | <ul style="list-style-type: none"> <li>• APCO</li> <li>• To control the dust impact to meet HKAQO and TM-EIAO criteria</li> </ul> |
| S3.4.6  | D2           | The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation   | Minimize dust impact at the nearby sensitive receivers            | Contractor           | All construction sites | Construction stage   | <ul style="list-style-type: none"> <li>• APCO</li> <li>• To control the dust impact to meet HKAQO and TM-EIAO criteria</li> </ul> |
| S3.4.6  | 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> </ul> | Minimize dust impact at the nearby sensitive receivers            | Contractor           | All construction sites | Construction stage   | <ul style="list-style-type: none"> <li>• APCO</li> <li>• To control the dust impact to meet HKAQO and TM-EIAO criteria</li> </ul> |

### Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension

| EIA Ref. | EM&A Log Ref | Recommended Mitigation Measures  | Objectives of the Recommended Measures & Main Concerns to address | Implementation Agent | Location / Timing | Implementation Stage | Requirements and / or standards to be achieved |
|----------|--------------|--|---|----------------------|-------------------|----------------------|--|
|          |              | <ul style="list-style-type: none"> <li>• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones;</li> <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 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;</li> <li>• Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,</li> </ul> |   |                      |                   |                      |  |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b> | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b>   | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b> | <b>Implementation Agent</b> | <b>Location / Timing</b>          | <b>Implementation Stage</b> | <b>Requirements and / or standards to be achieved</b>       |
|-----------------|-------------------------|--|--|-----------------------------|-----------------------------------|-----------------------------|---|
|                 |                         | <p>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;</p> <ul style="list-style-type: none"> <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, 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.</li> </ul> |  |                             |                                   |                             |   |
| S3.4.6          | D4                      | Implement regular dust monitoring under EM&A programme during the construction stage.  | Monitoring of dust impact  | Contractor                  | Selected dust monitoring stations | Construction stage          | <ul style="list-style-type: none"> <li>• TM-EIAO</li> </ul> |

### Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension

| EIA Ref.                  | EM&A Log Ref | Recommended Mitigation Measures  | Objectives of the Recommended Measures & Main Concerns to address | Implementation Agent | Location / Timing                        | Implementation Stage | Requirements and / or standards to be achieved |
|---------------------------|--------------|--|---|----------------------|--|----------------------|--|
| <b>Construction Noise</b> |              |  |   |                      |  |                      |  |
| S4.3.4                    | N1           | Implement the following good site management practices: <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;</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> | Control construction airborne noise                               | Contractor           | All construction sites where practicable | Construction stage   | • Annex 5, TM-EIAO                             |
| S4.3.4                    | N2           | Use of quiet plant which should be made reference to the Powered Mechanical Equipment (PME) listed in the Technical Memorandum or the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department (EPD) web pages as far as possible which includes the Sound Power Level (SWLs) for specific quiet PME.   | Reduce the noise levels of plant items                            | Contractor           | All construction sites where practicable | Construction stage   | • Annex 5, TM-EIAO                             |
| S4.3.4                    | N3           | 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   | Screen the noisy plant items to be used at all                    | Contractor           | All construction sites where             | Construction stage   | • Annex 5, TM-EIAO                             |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b>                                      | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b>  | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b>   | <b>Implementation Agent</b>                          | <b>Location / Timing</b>   | <b>Implementation Stage</b>  | <b>Requirements and / or standards to be achieved</b> |
|--|-------------------------|---|--|--|--|--|---|
|  |                         | footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc.   | construction sites   |  | practicable  |  |   |
| S4.3.4   | N4                      | Implement a noise monitoring under EM&A programme.  | Monitor the construction noise levels at the selected representative locations | Contractor   | Selected noise monitoring stations   | Construction stage   | • TM-EIAO   |
| <b><i>Operational Noise (Road Traffic Noise)</i></b> |                         |   |  |  |  |  |   |
| S4.5.4   | N5                      | <p>Provide a series of noise mitigation measures including low noise surfacing material, noise barriers, facades with no openable window, school boundary walls and architectural fins before occupation of the protected NSRs. Locations of noise mitigation measures are stated as following:</p> <p>Year 2023:</p> <ul style="list-style-type: none"> <li>• Facade with no openable window at B1-1 and B1-2 for TCE; TCV-6 for TCW</li> <li>• 1.5m long architectural fin at B1-1 and B1-2 for TCE</li> <li>• Approx. 50m long, 4m high school boundary wall at possible school development near Tung Chung Area 39</li> <li>• Approx. 120m long, 5m high vertical barrier with 3m cantilevered arm at 45° at the corner at junction between Chung Mun Road and Road L24</li> <li>• Approx. 210m long LNRS along Chung Mun Road</li> <li>• Approx. 160m long LNRS along Road L24</li> <li>• Approx. 160m long LNRS along Road L30</li> </ul> <p>Year 2025:</p> <ul style="list-style-type: none"> <li>• Facade with no openable window at B1-1, B1-2, D1-1,</li> </ul> | Reduce operation noise from road traffic                                       | Relevant government departments / Private developers | Refer to Figure 6.1, Figure 6.1a-b, Figure 6.2, Figures 6.2a-b, Figure 6.3, Figures 6.3a-d, Figure 6.4, and Figures 6.4a-e | Prior to operation of the Project for existing NSRs. While for mitigation measures to protect planned NSRs, it should be constructed before population intake of planned NSRs. | • TM-EIAO   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|----------|--------------|---|---|----------------------|-------------------|----------------------|--|
|          |              | <p>D1-2, D2-3 and D2-4 for TCE; TCV-6 for TCW</p> <ul style="list-style-type: none"> <li>• 1.5m long architectural fin at B1-1, B1-2 and D2-4 for TCE; TCV-1 for TCW</li> <li>• Approx. 60m long, 5m high school boundary wall along Road L3</li> <li>• Approx. 70m long, 5m high school boundary wall with 3m cantilevered arm at 45° along Road L3</li> <li>• Approx. 50m long, 4m high school boundary wall at possible school development near Tung Chung Area 39</li> <li>• Approx. 120m long, 5m high vertical barrier with 3m cantilevered arm at 45° at the corner at junction between Chung Mun Road and Road L24</li> <li>• Approx. 210m long LNRS along Chung Mun Road</li> <li>• Approx. 160m long LNRS along Road L24</li> <li>• Approx. 160m long LNRS along Road L30</li> </ul> <p>Year 2027:</p> <ul style="list-style-type: none"> <li>• Facade with no openable window at A1-1, A1-2, A2-1, A2-2, A2-3, A2-4, B1-1, B1-2, D1-1, D1-2, D2-3 and D2-4 for TCE; TCV-6 for TCW</li> <li>• 1.5m long architectural fin at A2-1, A2-4, B1-1, B1-2 and D2-4 for TCE;</li> <li>• 1.8m long architectural fin at A1-1, A1-2, A2-1 and A2-4</li> <li>• Approx. 60m long, 5m high school boundary wall along Road L3</li> <li>• Approx. 70m long, 5m high school boundary wall with 3m cantilevered arm at 45° along Road L3</li> <li>• Approx. 50m long, 4m high school boundary wall at</li> </ul> |   |                      |                   |                      |  |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| EIA Ref. | EM&A Log Ref | Recommended Mitigation Measures  | Objectives of the Recommended Measures & Main Concerns to address | Implementation Agent | Location / Timing | Implementation Stage | Requirements and / or standards to be achieved |
|----------|--------------|--|---|----------------------|-------------------|----------------------|--|
|          |              | <p>possible school development near Tung Chung Area 39</p> <ul style="list-style-type: none"> <li>• Approx. 120m long, 5m high vertical barrier with 3m cantilevered arm at 45° at the corner at junction between Chung Mun Road and Road L24</li> <li>• Approx. 210m long LNRS along Chung Mun Road</li> <li>• Approx. 160m long LNRS along Road L24</li> <li>• Approx. 160m long LNRS along Road L30</li> </ul> <p>Year 2045:</p> <ul style="list-style-type: none"> <li>• Facade with no openable window at A1-1, A1-2, A2-1, A2-2, A2-3, A2-4, B1-1, B1-2, C1-1, C2-1, C2-2, D1-1, D1-2, D2-3, D2-4, E1-4 and E1-5 for TCE; TCV-1 and TCV-6 for TCW</li> <li>• 1.5m long architectural fin at A2-1, A2-4, B1-1, B1-2, C1-1 and D2-4 for TCE; TCV-1 for TCW</li> <li>• 1.8m long architectural fin at A1-1, A1-2, A2-1, A2-4 and C1-1</li> <li>• Approx. 100m long, 5m high absorptive vertical barrier along Road D3</li> <li>• Approx. 50m long, 5m high absorptive vertical barrier with 3m cantilevered arm at 45° along Road L7</li> <li>• Approx. 60m long, 5m high school boundary wall along Road L3</li> <li>• Approx. 70m long, 5m high school boundary wall with 3m cantilevered arm at 45° along Road L3</li> <li>• Approx. 80m long, 4m high school boundary wall along Road L2</li> <li>• Approx. 40m long, 3m high school boundary wall along Road L2</li> </ul> |   |                      |                   |                      |  |



**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|---|--------------|---|---|---|-----------------------------------|-----------------------------------|---|
|   |              | <ul style="list-style-type: none"> <li>• Approx. 50m long, 4m high school boundary wall at possible school development near Tung Chung Area 39</li> <li>• Approx. 120m long, 5m high vertical barrier with 3m cantilevered arm at 45° at the corner at junction between Chung Mun Road and Road L24</li> <li>• Approx. 210m long LNRS along Chung Mun Road</li> <li>• Approx. 160m long LNRS along Road L24</li> <li>• Approx. 160m long LNRS along Road L30</li> </ul>   |   |   |                                   |                                   |   |
| <b><i>Operational Noise (Fixed Noise)</i></b> |              |   |   |   |                                   |                                   |   |
| S4.6.4  | N6           | <p>For existing and planned NSRs which are located near to the proposed noise sources, the following tentative noise mitigation measures are considered:</p> <ul style="list-style-type: none"> <li>• All the pumps should be enclosed inside building structures;</li> <li>• Proper selection of quiet plant to reduce the tonality at NSRs;</li> <li>• Installation of silencer / acoustic enclosure / acoustic louvers for the exhaust of ventilation system.</li> <li>• For underground train stations, sound attenuators with sufficient attenuations can be installed to the ventilation shafts.</li> <li>• Openings of ventilation system should be located away from NSRs.</li> </ul> | Reduce operation fixed noise                                      | Relevant government departments / Future Operator | All plant rooms where practicable | Prior to operation of the Project | <ul style="list-style-type: none"> <li>• Noise Control Ordinance and its TM, TM-EIAO</li> </ul> |
| <b><i>Operational Noise (Rail Noise)</i></b>  |              |   |   |   |                                   |                                   |   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b> | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b>  | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b> | <b>Implementation Agent</b>                       | <b>Location / Timing</b>   | <b>Implementation Stage</b>      | <b>Requirements and / or standards to be achieved</b>   |
|-----------------|-------------------------|---|--|---|--|----------------------------------|---|
| S4.8.4          | N7                      | <p>Before Phase 1 is occupied:</p> <ul style="list-style-type: none"> <li>• Facade with no openable windows for residential block at B1-2</li> <li>• 1.5m long architectural fin at B1-2</li> </ul> <p>Before Phase 3 is occupied:</p> <p>It should be noted that Railway Stations at TCE and TCW and its associated railway system is a Designated Project under Item A.2 of Schedule 2 of TM-EIAO. Hence, the proposed mitigation measures are tentative for cumulative assessment purpose in this EIA and all the mitigation measures will be revised by the railway operator during their Schedule 2 EIA.</p> <ul style="list-style-type: none"> <li>• Approx. 325m long, semi enclosure along the tracks of Tung Chung Line facing B0-2 and COM-1</li> <li>• Approx. 210m long, semi enclosure along the tracks of Tung Chung Line facing A1-2 and C1-1</li> <li>• Approx. 390m long, semi enclosure along the track of Tung Chung Line to Tung Chung direction facing C1-1 to C2-1</li> <li>• Approx. 630m long, semi enclosure along the track of Tung Chung Line to Hong Kong direction facing C1-1 and C2-1</li> </ul> | Reduce operation rail noise  | Relevant government departments / Future Operator | Refer to Figure 6.1, Figure 6.1a-b, Figure 6.2, Figures 6.2a-b, Figure 6.3, Figures 6.3a-d, Figure 6.4, and Figures 6.4a-e | Prior to final population intake | <ul style="list-style-type: none"> <li>• Noise Control Ordinance and its TM, TM-EIAO</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|---|--------------|---|--|----------------------|---|----------------------|--|
| <i>Water Quality (Construction Phase)</i> |              |   |  |                      |   |                      |  |
| S5.4.3                                    | 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, 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 minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped;</li> <li>• The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates;</li> <li>• The design of efficient silt removal facilities should be</li> </ul> | To minimize water quality impact from construction site runoff and general construction activities | Contractor           | All construction sites where applicable | Construction stage   | <ul style="list-style-type: none"> <li>• Water Pollution Control Ordinance</li> <li>• ProPECC PN1/94</li> <li>• TM-EIAO</li> <li>• TM-DSS</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|----------|--------------|---|---|----------------------|-------------------|----------------------|--|
|          |              | <p>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;</p> <ul style="list-style-type: none"> <li>• Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means;</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 facilities;</li> <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</li> </ul> |   |                      |                   |                      |  |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|----------|--------------|---|---|----------------------|-------------------|----------------------|--|
|          |              | <p>directed into foul sewers;</p> <ul style="list-style-type: none"> <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 the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains;</li> <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</li> </ul> |   |                      |                   |                      |  |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|---|-----------------------------|--|-----------------------------|---|
|                 |                         | <p>receivers nearby;and</p> <ul style="list-style-type: none"> <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>  |   |                             |  |                             |   |
| S5.4.3          | W2                      | <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 minimize water quality from sewage effluent in construction phase                                      | Contractor                  | All construction sites where practicable | Construction stage          | <ul style="list-style-type: none"> <li>Water Pollution Control Ordinance</li> <li>TM-DSS</li> </ul> |
| S5.4.3          | W3                      | <p><u>Construction Works and Bridge Works near Tung Chung Stream</u></p> <ul style="list-style-type: none"> <li>Use precast structures or other similar approaches</li> </ul>  | To prevent any construction works in river and avoid any direct water quality impact to Tung Chung Stream | Contractor                  | All construction sites where practicable | Construction stage          | <ul style="list-style-type: none"> <li>ProPECC PN1/94</li> </ul>                                    |
| S5.4.3          | W4                      | <p><u>Construction Works of Sewage Pumping Stations</u></p> <ul style="list-style-type: none"> <li>A buffer zone of about 20m or about 30m will be zoned to</li> </ul>   | To avoid any direct water quality impact to Tung Chung Stream   | Contractor                  | All construction sites where             | Construction stage          | <ul style="list-style-type: none"> <li>ProPECC PN1/94</li> </ul>                                    |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|---|--|-----------------------------|--|-----------------------------|---|
|                 |                         | prevent any construction works near river.  |  |                             | practicable                              |                             |   |
| S5.4.3          | W5                      | <p><u>Construction Work of Fresh Water and Salt Water Reservoirs</u></p> <ul style="list-style-type: none"> <li>• 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 or drainage.</li> </ul>  | To avoid water quality impact  | Contractor                  | All construction sites where practicable | Construction stage          | • ProPECC PN1/94                                      |
| S5.4.3          | W6                      | <p><u>Construction of Storm Water Management Facilities and Polder Scheme</u></p> <ul style="list-style-type: none"> <li>• 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 or drainage.</li> </ul>   | To avoid any direct water quality impact to Tung Chung Stream                | Contractor                  | All construction sites where practicable | Construction stage          | • ProPECC PN1/94                                      |
| S5.4.3          | W7                      | <p><u>Groundwater and Runoff for Tunnel Works</u></p> <ul style="list-style-type: none"> <li>• Cut-and-Cover method for the underpass at Road D1 in Tung Chung East to minimise the intrusion of groundwater. 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 or drainage.</li> </ul>  | To avoid water quality impact  | Contractor                  | All construction sites where practicable | Construction stage          | • ProPECC PN1/94                                      |
| S5.5.8          | W8                      | <p><u>Good Management Practice in Construction Phase</u></p> <p>The following good site management practices shall be adopted for the filling works:</p> <ul style="list-style-type: none"> <li>• Water quality monitoring shall be implemented to ensure effective control of water pollution and recommend additional mitigation measures required;</li> <li>• The decent speed of grabs shall be controlled to minimize the seabed impact and to reduce the volume of over-dredging;</li> <li>• A perimeter silt curtain shall be installed during the entire</li> </ul> | To avoid water quality impact  | Contractor                  | All construction sites where practicable | Construction stage          | • ProPECC PN1/94                                      |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|----------|--------------|--|---|----------------------|--|----------------------|--|
|          |              | reclamation periods;<br><ul style="list-style-type: none"> <li>• Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation;</li> <li>• Excess materials shall be cleaned from the decks and exposed fittings of barges before the vessels are moved;</li> <li>• Plants should not be operated with leaking pipes and any pipe leakages shall be repaired quickly;</li> <li>• Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;</li> <li>• All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and</li> <li>• The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.</li> </ul> |   |                      |  |                      |  |
| S5.5.8   | W9           | <ul style="list-style-type: none"> <li>• The recovered C&amp;D materials for filling would be ensured no floating or non-inert material by visual inspection, quality assurance, etc.</li> </ul>   | To avoid water quality impact                                     | Contractor           | All construction sites where practicable | Construction stage   | <ul style="list-style-type: none"> <li>• Waste Disposal Ordinance</li> </ul> |



**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|--|-------------------------|--|--|-----------------------------|--|-----------------------------|---|
| <i>Water Quality (Operational Phase)</i> |                         |  |  |                             |  |                             |   |
| S5.6.10                                  | W10                     | <p>The following mitigation measures will be implemented to TCV East, North and West SPS, upgraded CMRSPS, proposed TCE West SPS and TCE East SPS</p> <ul style="list-style-type: none"> <li>• 100% standby pump capacity with spare pump of 50% pump capacity</li> <li>• Dual-feed power supply</li> <li>• Wet well storage providing up to 6-hours ADWF capacity (equivalent to about 4 hours of response time during peak flow condition); and</li> <li>• Emergency communication mechanism amongst relevant government departments.</li> </ul> | To prevent the impact due to the emergency discharge at TCW and TCE                                | DSD                         | Proposed Sewage Pumping Station at TCW and TCE | Operational Stage           | • DSD's Sewerage Manual                               |
| S5.6.10                                  | W11                     | <p>The following mitigation measures will be implemented to gravity sewers and rising mains</p> <ul style="list-style-type: none"> <li>• Adopt high density polyethylene (HDPE) pipe for proposed gravity sewers and rising mains.</li> <li>• Further protection on proposed rising mains with concrete surround will be provided to mitigate the risk of bursting.</li> </ul>   | To minimize the risk of bursting and hence bursting discharge from gravity sewers and rising mains | DSD                         | Proposed rising mains within TCE and TCW       | Operational Stage           | -   |
| S5.6.10                                  | W12                     | <p><u>Maintenance Dredging for the Proposed Marina</u></p> <p>Silt curtain should be deployed to reduce the sediment dispersion from the dredging inside the marina.</p>   | To reduce the sediment dispersion  | Future operator             | Proposed marina at TCE                         | Operational Stage           | -   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|---|--------------|---|---|----------------------|--|----------------------|--|
| <i>Sewage and Sewerage Treatment Implications</i> |              |   |   |                      |  |                      |  |
| S6.5.4  | SS1          | <p><u>Emergency Discharge of Proposed TCV West SPS, TCV East SPS, TCV North SPS and Upgraded CMRSPS</u></p> <p>The following mitigation measures will be implemented to TCV East, North and West SPS, and upgraded CMRSPS:</p> <ul style="list-style-type: none"> <li>• 100% standby pumping capacity within each SPS, with spare pump up to 50% pumping capacity stockpiled in each SPS for any emergency use</li> <li>• Twin rising mains</li> <li>• Dual-feed power supply</li> <li>• Emergency storage facilities up to 6-hours ADWF capacity; and</li> <li>• Emergency communication mechanism amongst relevant government departments.</li> </ul> | To prevent the impact due to the emergency discharge at TCW       | DSD                  | Proposed Sewage Pumping Station at TCW | Operational stage    | N/A  |
| S6.5.4  | SS2          | <p><u>Emergency Discharge of Proposed TCE West SPS and TCE East SPS</u></p> <p>In order to minimize the impact due to the emergency discharge, the following precautionary measures shall be included in the design of sewage pumping station:</p> <ul style="list-style-type: none"> <li>• 100% standby pumping capacity within each SPS, with spare pump up to 50% pumping capacity stockpiled in each SPS for any emergency use</li> <li>• Twin rising mains</li> <li>• Dual-feed power supply</li> <li>• Emergency storage facilities up to 6-hours ADWF capacity; and</li> <li>• Emergency communication mechanism amongst relevant</li> </ul>     | To minimize the impact due to the emergency discharge at TCE      | DSD                  | Proposed Sewage Pumping Station at TCE | Operational stage    | N/A  |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|--|-----------------------------|--|-----------------------------|---|
|                 |                         | government departments.  |  |                             |  |                             |   |
| S6.5.4          | SS3                     | <p>The following mitigation measures will be implemented to prevent pipe bursting on Rising Mains within TCE and TCW:</p> <ul style="list-style-type: none"> <li>• Strong pipe – use HDPE pipe with welded joints</li> <li>• Concrete encasement – concrete surround all rising mains</li> </ul> | To minimize the risk of bursting and hence bursting discharge from gravity sewers and rising mains | DSD                         | Proposed rising mains within TCE and TCW | Operational stage           | N/A   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|--|--------------|---|---|----------------------|------------------------|----------------------|--|
| <b>Waste Management (Construction Waste)</b> |              |   |   |                      |                        |                      |  |
| S7.4.1                                       | WM1          | <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>• imposition of penalty system on Contractors' improper behaviours when illegal dumping and landfilling outside their respective construction sites, i.e. on nearby farmlands and riverbanks, are reported;</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; and</li> <li>• the contractor should prepare a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the ETWB TC(W) No. 19/2005 for construction phase. The EMP should be submitted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&amp;A Manual should be adopted.</li> </ul> | Minimize waste generation during construction                     | Contractor           | All construction sites | Construction stage   | <ul style="list-style-type: none"> <li>• Waste Disposal Ordinance</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|---|-----------------------------|--------------------------|-----------------------------|---|
| S7.4.1          | WM2                     | <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 minimize the potential for damage and contamination of construction materials;</li> <li>• plan and stock construction materials carefully to minimize 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.);</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   | Construction stage          | <ul style="list-style-type: none"> <li>• Waste Disposal Ordinance</li> </ul>  |
| S7.4.1          | WM3                     | <p><u>Storage of Waste</u></p> <p>The following recommendation should be implemented to minimize the impacts:</p> <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>  | Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal | Contractor                  | All construction sites   | Construction stage          | <ul style="list-style-type: none"> <li>• Land (Miscellaneous Provisions) Ordinance</li> <li>• Waste Disposal Ordinance</li> <li>• ETWB TCW No. 19/2005</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|---|--|-----------------------------|--------------------------|-----------------------------|--|
| S7.4.1          | WM4                     | <p><u>Collection and Transportation of Waste</u></p> <p>The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> <li>• remove waste in timely manner;</li> <li>• employ the trucks with cover or enclosed containers for waste transportation;</li> <li>• obtain relevant waste disposal permits from the appropriate authorities; and</li> <li>• disposal of waste should be done at licensed waste disposal facilities.</li> </ul>  | Minimize waste impacts from storage  | Contractor                  | All construction sites   | Construction stage          | <ul style="list-style-type: none"> <li>• Waste Disposal Ordinance</li> </ul>   |
| S7.4.1          | WM5                     | <p><u>Excavated and C&amp;D Materials</u></p> <p>Wherever practicable, C&amp;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 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> <li>• implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified, so as to avoid the illegal dumping and landfilling of C&amp;D materials on farmlands/ riverbanks at TCW;</li> </ul> <p>The recommended C&amp;D materials handling should include:</p> | Minimize waste impacts from excavated and C&D materials                      | Contractor                  | All construction sites   | Construction Stage          | <ul style="list-style-type: none"> <li>• Land (Miscellaneous Provisions) Ordinance</li> <li>• Waste Disposal Ordinance</li> <li>• ETWB TCW No. 19/2005</li> <li>• Project Administrative Handbook for Civil Engineering Works, 2012 Edition</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|--|-----------------------------|---|-----------------------------|---|
|                 |                         | <ul style="list-style-type: none"> <li>On-site sorting of C&amp;D materials</li> <li>Reuse of C&amp;D materials</li> <li>Use of Standard Formwork and Planning of Construction Materials purchasing</li> </ul>   |  |                             |   |                             |   |
| S7.4.1          | WM6                     | <p><u>Provision of Wheel Wash Facilities</u></p> <p>Wheel wash facilities have to be provided at the site entrance before the trucks leaving the works area. Dust disturbance due to the trucks transportation to the public road network could be minimized by such arrangement.</p>  | Minimize waste impacts from trucks transportation                            | Contractor                  | All construction sites                  | Construction Stage          | N/A   |
| S7.4.1          | WM7                     | <p><u>Excavated Contaminated Soil</u></p> <p>As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater.</p>  | Remediate contaminated soil  | Contractor                  | All construction sites where applicable | Construction stage          | <ul style="list-style-type: none"> <li>Practice Guide for Investigation and Remediation of Contaminated Land</li> </ul> |
| S7.4.1          | WM8                     | <p><u>Excavated Marine Sediments</u></p> <p>Reference has been made to the sediment testing results. Possible mitigation measures to handle the contaminated/uncontaminated sediment are summarized as follows.</p> <ul style="list-style-type: none"> <li>All construction plant and equipment shall be designed and maintained to minimise the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited in the locations other than designated location.</li> <li>All vessels shall be sized such that adequate draft is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.</li> <li>Adequate freeboard shall be maintained on barges to</li> </ul> | Handle excavated sediment  | Contractor                  | All construction sites where applicable | Construction stage          | <ul style="list-style-type: none"> <li>ETWB-TCW 34/2002</li> </ul>  |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|--|-----------------------------|---|-----------------------------|---|
|                 |                         | ensure that decks are not washed by wave action.   |  |                             |   |                             |   |
| S7.4.1          | WM9                     | <p><u>Dumping of excavated sediment</u></p> <ul style="list-style-type: none"> <li>Keep and produce logs and other records to demonstrate compliance and ensure journeys are consistent with designated locations</li> <li>Comply with the conditions in the dumping permit.</li> <li>All bottom dumping vessels (hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of material.</li> <li>The excavated sediment shall be placed into the disposal pit by bottom dumping.</li> <li>Contaminated marine mud shall be transported by split barge of not less than 750m<sup>3</sup> capacity and capable of rapid opening and discharge at the disposal site.</li> <li>Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Sediment adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site.</li> <li>For Type 3 special disposal treatment, sealing of contaminant with geosynthetic containment before dropping into designated mud pit. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping at the disposal site, thereby fulfilling the requirements for fully confined mud disposal.</li> </ul> | Handle excavated sediment  | Contractor                  | All construction sites where applicable | Construction stage          | • ETWB-TCW 34/2002                                    |
| S7.4.1          | WM10                    | <u>Chemical Waste</u>  | Control the chemical waste and ensure proper                                 | Contractor                  | All construction                        | Construction stage          | • Waste Disposal                                      |



**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|---|-------------------------|---|--|-----------------------------|----------------------------------|-----------------------------|---|
|   |                         | 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. | storage, handling and disposal.  |                             | sites                            |                             | (Chemical Waste) General Regulation<br><ul style="list-style-type: none"> <li>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</li> </ul> |
| S7.4.1                                      | WM11                    | <u>General Refuse</u> <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 recycling.</li> <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>   | Minimize production of the general refuse and avoid odour, pest and litter impacts | Contractor                  | All construction sites           | Construction stage          | <ul style="list-style-type: none"> <li>Waste Disposal Ordinance</li> </ul>  |
| S7.4.1                                      | WM12                    | <u>Floating Refuse accumulated along the seawall</u><br>The floating refuse along seawall should be collected to avoid accumulation. In addition, proper seawall design should be employed, and regular checking and cleaning of floating refuse should be implemented.   | Control floating refuse and ensure proper disposal                                 | Contractor                  | Construction sites along seawall | Construction stage          | <ul style="list-style-type: none"> <li>Waste Disposal Ordinance</li> </ul>  |
| <b>Waste Management (Operational Waste)</b> |                         |   |  |                             |                                  |                             |   |
| S7.4.2                                      | WM13                    | <u>Illegal dumping and landfilling</u>  | Prevent waste from   | Relevant                    | All                              | Operational stage           |   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|--|---------------------------------|--------------------------|-----------------------------|---|
|                 |                         | As a Development Permission Area (DPA) plan will be issued by the Town Planning Board as a temporary measure before the formal Outline Zoning Plan (OZP) for Tung Chung New Town Extension is adopted, statutory right to guide and control the development and use of land would be authorised. Should there be illegal dumping and landfilling observed/ reported on nearby farmlands and riverbanks, the government authority should take all necessary actions including but not limited to prosecution to remediate the circumstances.  | illegal dumping and landfilling  | government departments          | construction sites       |                             |   |
| S7.4.2          | WM14                    | <u>Municipal Solid Waste</u> <ul style="list-style-type: none"> <li>• A reputable waste collector should be employed to remove general refuse on a daily basis.</li> <li>• A 4-bin recycling system for paper, metals, plastics and glass should be adopted together with a general refuse bin. They should be placed in prominent places to promote waste separation at source. All recyclable materials should be collected by recyclers.</li> </ul>   | Remove general refuse generated from the proposed development                | FEHD/ Relevant Operators        | All construction sites   | Operational stage           | • Waste Disposal Ordinance                            |
| S7.4.2          | WM15                    | <u>Chemical Waste</u> <ul style="list-style-type: none"> <li>• Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas.</li> <li>• A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi.</li> <li>• Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.</li> </ul> | Reduce chemical waste due to waste handling                                  | Contractors/ Relevant Operators | All construction sites   | Operational stage           |   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|--|-----------------------------|--------------------------|-----------------------------|--|
| S7.4.2          | WM16                    | <u>Floating Refuse accumulated along seawall</u> <ul style="list-style-type: none"> <li>The floating refuse along seawall should be collected to avoid accumulation.</li> </ul>                      | Control floating refuse and ensure proper disposal                           | MD                          | Along seawall            | Operational stage           | <ul style="list-style-type: none"> <li>Waste Disposal Ordinance</li> </ul> |
| S7.4.2          | WM17                    | <u>Floating Refuse inside Marina</u> <ul style="list-style-type: none"> <li>Floating refuse at the marina will be collected and disposed by the licensed waste collector and as required.</li> </ul> | Reduce floating refuse washing up onto marina by currents and wind           | Future operator             | Marina                   | Operational stage           | <ul style="list-style-type: none"> <li>Waste Disposal Ordinance</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|---------------------------|--------------|---|---|--|---|---------------------------------|--|
| <i>Land Contamination</i> |              |   |   |  |   |                                 |  |
| S8.4.1                    | LC1          | Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP). | Verify the land contamination potential before the commencement of construction | Project Proponent / Detailed Design Consultant / Private developer | All potentially contaminated sites as listed in the CAP | Prior to the construction stage | <ul style="list-style-type: none"> <li>• Annex 19 of the TM-EIAO, 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 Remediation of Contaminated Land</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|---|--|---|---------------------------------|---|
|                 |                         |  |   |  |   |                                 | <ul style="list-style-type: none"> <li>Recommendations in Health Risk Assessment</li> </ul> |
| S8.4.2          | LC2                     | <p>Re-appraisal would be required for the surveyed sites, other remaining areas of the PDAs and the works areas for the associated infrastructures because 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.</p> <p>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.</p> | 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 | Prior to the construction stage | Ditto   |
| S8.5            | LC3                     | After approval of the supplementary CAP and upon completion of the SI works, the PP should prepare and submit a 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 | Prior to the construction stage | Ditto   |
| S.8.5           | 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       | Project Proponent / Detailed Design Consultant / Private developer | All the surveyed sites as listed in the CAP, other remaining  | Prior to the construction stage | Ditto   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|----------|--------------|---|--|--|---|---------------------------------|--|
|          |              |   | assessment if remediation is required  |  | areas of the PDAs and works areas for the associated infrastructures  |                                 |  |
| S.8.5    | 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 | Prior to the construction stage | Ditto  |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|--------------------------------|-------------------------|---|--|-----------------------------|--|-----------------------------|---|
| <i>Ecology ( Design Phase)</i> |                         |   |  |                             |  |                             |   |
| S9.8.1                         | EC1                     | Development under the Project have avoided all the recognised sites of conservation importance, including Country Parks,  | To protect the recognised sites of conservation importance and habitats inside     | PlanD                       | TCW  | RODP                        | • Not available                                       |
| S9.8.1                         | EC2                     | About 30m buffer zone at the two main branches and the joined outlet section of Tung Chung Stream; and about 20m buffer for the major tributary at Ngau Au of Tung Chung Stream   | To protect the Tung Chung Stream   | PlanD                       | Tung Chung Stream  | RODP                        | • Not available                                       |
| S9.8.2                         | EC3                     | Detailed designs should avoid the encroachment of important habitats (e.g. Fung Shui Wood) within the Project Site  | To protect the important habitats within Project Site                              | PlanD                       | TCW  | Design Phase                | • Not available                                       |
| S9.8.2                         | EC4                     | Detailed designs of noise barriers to prevent bird collision  | To prevent bird collision  | HyD                         | Noise barriers   | Design Phase                | • Guidelines on Design of Noise Barriers              |
| S9.8.2                         | EC5                     | Measures and suitable designs of sewage pumping stations to prevent emergency discharge accidents in TCE and TCW <ul style="list-style-type: none"> <li>• 100% standby pumping capacity within each SPS, with spare pump up to 50% pumping capacity stockpiled in each SPS for any emergency use</li> <li>• Twin rising mains</li> <li>• Dual-feed power supply</li> <li>• Emergency storage facilities up to 6-hours ADWF capacity; and</li> <li>• Emergency communication mechanism amongst relevant government departments.</li> </ul> | To protect the water bodies from impacts due to emergency discharge in TCE and TCW | DSD                         | Proposed and Upgraded Sewage pumping stations at TCE and TCW | Design Phase                | • DSD standards                                       |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|--------------------------------------|-------------------------|--|--|--|---|--|--|
| <i>Ecology ( Construction Phase)</i> |                         |  |  |  |   |  |  |
| S9.8.2                               | EC6                     | Adoption of non-dredged reclamation method | To maintain the marine water quality   | Contractor   | Reclamation area of TCE and Road P1   | Construction phase   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul>  |
| S9.8.3                               | EC7                     | Compensation woodland planting             | To compensate loss of woodland, fung shui wood and orchard   | Contractor   | Uphill of Sheung Lei Pai FSW and Tung Chung Road  | Construction phase   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul>  |
| S9.8.3                               | EC8                     | Planting of emergent plant                 | To provide habitats for this Jhora Scrub Hopper, and to compensate the loss of their habitats (wet abandoned agricultural land) in northern section of Fong Yuen | DSD / Contractor   | Inside the future River Park  | Construction phase   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul>  |
| S9.8.3                               | EC9                     | Capture-and-translocation exercise         | Minimize the potential impact to amphibian species of conservation importance including Romer's Tree Frog and Chinese Bullfrog due to site formation             | For public works, provided by the government departments responsible for the construction of those public works or the site formation works .<br>For TCV-1 and | Public works near the eastern branch of Tung Chung Stream, in particular 1) the River Park, 2) the Distributor Road along | Capture-and-translocation exercise before commencement of site formation | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> <li>• Explanatory statement of the OZP (for private lots)</li> </ul> |



**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|----------|--------------|--|---|---|---|---|--|
|          |              |  |   | TCV-5, where the lands within mostly belong to private lots, the future project proponents of those private lots, via the established mechanism for land transaction application. | the eastern branch of Tung Chung Stream, 3) the road upgrade along the existing Shek Mun Kap Road, and 4) the attenuation and treatment ponds in TCV-k, TCV-e, TCV-l, TCV-c, and TCV-n.<br><br>Also be required in private lands in TCV-1 and TCV-5 |   |  |
| S9.8.3   | EC10         | Preservation and/or Transplantation of plant species of conservation importance and the following monitoring of preserved/transplanted plant individuals | Protection of plant species of conservation importance            | For public works, provided by the government departments responsible for the construction of those public works or the site formation works.                                      | Within construction sites<br><br>All areas for public works<br><br>Also be required in private lands  | For preservation and/or transplantation, before commencement of site formation. | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> <li>• Explanatory statement of the OZP (for private lots)</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|--|---|---|---------------------------------------|---|
|                 |                         |  |  | For TCV-1, where the lands within mostly belong to private lots, the future project proponents of those private lots, via the established mechanism for land transaction application. | in TCV-1.   |                                       |   |
| S9.8.3          | EC11                    | Defining and maintaining construction site boundaries (including erection of site hoarding, fences etc.) | Screen construction disturbance to the nearby habitats                       | Contractor  | Along the boundary of construction sites and buffer zones of Tung Chung Streams, along the boundary of mature woodland and Fung Shui Wood, and along the boundary between TCV-6 and the middle section of Fong Yuen | Before commencement of site formation | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S9.8.3          | EC12                    | Protection of Tung Chung Stream  | Minimize the potential water pollution due to                                | Contractor  | Within construction   | Construction                          | <ul style="list-style-type: none"> <li>• EIA</li> </ul>                                     |

### Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension

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|----------|--------------|---|---|----------------------|---|--------------------------------------|---|
|          |              |   | construction of road crossings or other works near Tung Chung Stream                  |                      | sites   | phase                                | <ul style="list-style-type: none"> <li>Contractual requirements</li> </ul>              |
| S9.8.3   | EC13         | Implementation of standard site practices   | Minimize the potential impact due to dust, noise and runoff during construction phase | Contractor           | Within construction sites   | Construction phase                   | <ul style="list-style-type: none"> <li>EIA</li> <li>Contractual requirements</li> </ul> |
| S9.8.4   | EC14         | Adopting Eco-shoreline design   | To mitigate the impact of the marine loss   | CEDD                 | Along future seawall  | Construction stage                   | <ul style="list-style-type: none"> <li>EIA</li> <li>Contractual requirements</li> </ul> |
| S9.8.4   | EC15         | Strict enforcement on no-dumping  | Minimise the potential impact to marine habitats                                      | Contractor           | In reclamation area as well as all works area and travel route of works vessels | Before and during construction phase | <ul style="list-style-type: none"> <li>EIA</li> <li>Contractual requirements</li> </ul> |
| S9.8.4   | EC16         | Spill response plan   | Minimise the potential impact to marine habitats                                      | Contractor           | In reclamation area as well as all works area and travel route of works vessels | Before and during construction phase | <ul style="list-style-type: none"> <li>EIA</li> <li>Contractual requirements</li> </ul> |
| S.9.8.4  | EC17         | Control and minimization of marine traffic by including using larger-sized barges, land transportation of materials, reuse of excavation and C&D materials and speed limits & | Reduce marine traffic   | Contractor           | In reclamation area as well   | Construction phase                   | <ul style="list-style-type: none"> <li>EIA</li> <li>Contractual</li> </ul>              |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|--|---|---|---|--|
|                 |                         | regular routes of works vessels  |  |   | as all works area and travel route of works vessels |   | requirements   |
| S9.8.4          | EC18                    | Dolphin exclusion zone and dolphin watching plan   | Protection of CWD  | Contractor  | In reclamation area as well as all works area       | Construction phase  | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul>  |
| S9.8.4          | EC19                    | Speed limits and regular routes of works vessels;<br>Prepare and submit a “Works Vessel Travel Route Plan” | Protection of CWD  | Contractor  | In reclamation area as well as all works area       | Construction phase  | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul>  |
| S9.11.1         | EC20                    | Monitoring of compensatory planting woodland   | Monitor the survival of trees and establishment of the woodland              | CEDD/<br>Contractor   | Areas of compensatory woodland planting             | Quarterly for 3 years after completion of planting works  | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul>  |
| S9.11.1         | EC21                    | Monitoring of translocated amphibians  | Monitor the effectiveness of the translocation programme                     | Public works:<br>Responsible government departments / Contractor<br><br>Private lots:<br>Private developers | Release sites for translocated amphibians           | After translocation exercise.<br><br>At least three surveys in each release site during the breeding season, preferably monthly between April and June, | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> <li>• Explanatory statement of the OZP (for private lots)</li> </ul> |
| S9.11.1         | EC22                    | Monitoring of preserved / transplanted plant species   | Monitor and evaluate   | Public works:   | Construction  | After   | <ul style="list-style-type: none"> <li>• EIA</li> </ul>  |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|------------------------------------|-------------------------|--|--|---|---|---|---|
|                                    |                         |  | the effectiveness of the preservation and transplantation programme.         | Responsible government departments / Contractor<br><br>Private lots: Private developers | sites for preserved plants; recipient sites for transplanted plants | transplantation or preservation.<br><br>For transplanted individuals, for two years, monthly for the first year, and then quarterly for the second year.<br><br>For the preserved individuals, monthly throughout the construction. | <ul style="list-style-type: none"> <li>• Contractual requirements</li> <li>• Explanatory statement of the OZP (for private lots)</li> </ul> |
| S9.11.1                            | EC23                    | Monitoring of Tung Chung Stream and Wong Lung Hang Stream EISs | Protect the EISs   | Contractor  | Tung Chung Stream and Wong Lung Hang Stream                         | Construction phase and post-construction phase  | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul>   |
| 9.11.2                             | EC24                    | Monitoring of Tung Chung Bay and Tai Ho Wan                    | Protect Tung Chung Bay and Tai Ho Wan  | Contractor  | Tung Chung Bay and Tai Ho Wan                                       | Construction phase and post-construction phase  | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul>   |
| <b>Ecology (Operational Phase)</b> |                         |  |  |   |   |   |   |
| S9.11.1                            | EC25                    | Monitoring of emergent plant inside River Park                 | Monitor the survival of emergent plant                                       | DSD/ Contractor   | Three months after completion of planting in future River Park      | Quarterly for 2 years after completion of planting works  | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul>   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|--|-----------------------------|--------------------------------------|---|---|
| 9.11.2          | EC26                    | Eco-shoreline monitoring               | Monitor the colonisation and establishment of fauna and/or flora, water quality, and recruitments of fisheries species | CEDD/<br>Contractor         | Eco-shoreline at TCE PDA reclamation | Post-construction phase, twice in wet and dry seasons respectively, at least 3 years, subject to review | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|------------------|-------------------------|---|--|-----------------------------|---------------------------|--|---|
| <i>Fisheries</i> |                         |   |  |                             |                           |  |   |
| S10.8            | F1                      | Good Site Practices   | To protect the fisheries resources   | Contractor                  | In reclamation area       | Construction phase                     | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S10.8            | F2                      | No dumping  | To protect the fisheries resources   | Contractor                  | In reclamation area       | Construction phase                     | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S10.8            | F3                      | Spill response plan   | To protect the fisheries resources   | Contractor                  | In reclamation area       | Construction phase                     | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S10.9            | F4                      | Follow the mitigation measures proposed in the water quality assessment for the construction and operation phases of the project. | To protect the fisheries resources   | Contractor                  | Waters in Northern Lantau | Construction phase and operation phase | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S10.9            | F5                      | Follow the mitigation measure of eco-shoreline in ecology chapter for the construction and operation phases of the project.       | To enhance the fisheries resources   | Contractor                  | Eco-shorelines            | Construction phase and operation phase | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|--|-------------------------|--|--|--|---|--|---|
| <i>Landscape and Visual (Construction Phase)</i> |                         |  |  |  |   |  |   |
| S11.7<br>MM1                                     | LV1                     | <p>Optimisation of Construction Areas &amp; Providing Temporary Landscape on Temporary Construction – Construction areas’ control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised.</p> <p>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.</p> | Minimise the landscape and visual impacts arising from the construction activities | Relevant Government Departments / Private Sector | Through-out Tung Chung West (TCW) area and Tung Chung East (TCE) area | Construction Phase                         |   |
| S11.7<br>MM2                                     | LV2                     | <p>Minimize Topographical Change – The footprint of construction elements and temporary works areas should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. Where there is a need to significantly cut into the existing landform, retaining walls and cut slopes should be considered as appropriate.</p> <p>To minimize landform changes and land resumption, earthworks and engineered slopes should be designed to be a visually interesting, compatible with the surrounding landscape and to mimic the natural contouring and terrain as appropriate.</p>  | Reduce topographical changes and minimize land resumption                          | Relevant Government Departments / Private Sector | Through-out TCW area  | Prior to Construction & Construction Phase | <ul style="list-style-type: none"> <li>• GEO Publication No/1/2011, Technical Guidelines on Landscape Treatment for Slopes</li> </ul> |
| S11.7<br>MM3                                     | LV3                     | Preservation of Potentially Registerable OVTs, Rare and Protective Vegetation – Existing trees to be retained within the Project Site should be carefully protected during construction. In particular Potentially Registerable OVTs are considered to be preserved according to ETWB  | Protect and Preserve Trees   | Relevant Government Departments / Private Sector | Onsite, particularly for TCW area                                     | Prior to Construction & Construction Phase | <ul style="list-style-type: none"> <li>• ETWB TC(W) No.29/2004 and DEVB TC(W)</li> </ul>  |



**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|--------------|--------------|---|---|--|---|--|---|
|              |              | <p>Technical Circular (Works) No. 29/2004. Rare and Protective Vegetation shall be protected following Forestry Regulations (Cap.96) and Protection of Endangered Species of Animals and Plants Ordinance (Cap.586). Detailed Tree Protection Specification shall be provided in the Contract Specification according to DEVB TCW No. 10/2013 Tree Preservation. Following DEVB (GLTM) Guidelines for Tree Preservation during Development, 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> |   |  |   |  | <p>No.10/2013.</p> <ul style="list-style-type: none"> <li>• Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau, Guidelines on Tree Preservation during Development (April, 2015)</li> </ul> |
| S11.7<br>MM4 | LV4          | <p>Transplanting of Existing Trees – Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor locations within the site and not held in a temporary nursery as far as possible.</p> <p>A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW 10/2013 and LAO PN 7/2007 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</p>  | Transplant Trees where suitable for transplantation               | Relevant Government Departments / Private Sector | Onsite where possible, otherwise consider offsite locations | Prior to Construction & Construction Phase | <ul style="list-style-type: none"> <li>• DEVB TC(W) No.10/2013 and LAO PN7/2007</li> <li>• HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance</li> </ul>     |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|---|---|--|-------------------------------|--|---|
|                 |                         | along highways, that are unavoidably affected and should be transplanted. HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.  |   |  |                               |  | <ul style="list-style-type: none"> <li>Ambit</li> <li>GLTM of the Development Bureau, Guidelines on Tree Preservation during Development (April, 2015)</li> </ul> |
| S11.7 MM5       | LV5                     | <p>Screen hoarding – To reduce negative visual impact, construction site hoarding should be erected around the site to screen pedestrian level views into the construction area from visual sensitive receivers.</p> <p>Hoarding design should consider greening measures such as colour and form should be adopted to improve its visual appearance.</p>   | To screen undesirable views of the work site.   | Relevant Government Departments / Private Sector | Through-out TCW and TCE areas | Construction Phase                         |   |
| S11.7 MM6       | LV6                     | Adopting Non-dredge Method for the Reclamation – In order to minimize the potential adverse impacts caused by the reclamation, a number of alternative construction methodologies has been critically examined. After considering all the options such as fully dredged, partially dredged and non-dredged methods for seawall construction and reclamation, non-dredged method for both the seawall construction and reclamation are recommended so as to minimize the generation of dredged sediment. | Minimize the potential adverse impacts caused by the reclamation  | Relevant Government Departments / Private Sector | Through-out TCE area          | Construction Phase                         | <ul style="list-style-type: none"> <li>Foreshore and Sea-bed (Reclamations) Ordinance (Cap.127)</li> </ul>  |
| S11.7 MM7       | LV7                     | Protection of Natural Rivers and Streams – For all the natural rivers and streams inside the development area, in accordance with ETWB TCW 5/2005, consideration of protection measures should be made to minimize any impacts from the construction works, especially those  | <p>Protection of Natural Rivers and Streams</p> <p>Minimize the impacts from the construction works</p> | Relevant Government Departments / Private Sector | Through-out TCW area          | Prior to Construction & Construction Phase | <ul style="list-style-type: none"> <li>EPD ProPECC PN1/94 Construction Site Drainage.</li> <li>DSD Technical</li> </ul>   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b> | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b>   | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b> | <b>Implementation Agent</b>     | <b>Location</b>       | <b>Implementation Stage</b>                | <b>Requirements and / or standards to be achieved</b>   |
|-----------------|-------------------------|--|--|---------------------------------|-----------------------|--|---|
|                 |                         | <p>development near Tung Chung Stream.</p> <p>According to the latest RODP, a 30m buffer zone will be zoned as “CA”. Precast structures or other similar approaches will be used to prevent / minimise 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.</p>  |  |                                 |                       |  | <p>Circular No. 2/2004.</p> <ul style="list-style-type: none"> <li>• ETWB TC(W) No.5/2005 Protection of natural streams/ rivers from adverse impacts arising from construction works</li> </ul> |
| S11.7 MM8       | LV8                     | <p>Preservation of Natural Coastline – The natural coastline along the proposed “RO” of the RODP in TCW should be preserved. The remaining natural shorelines in Tung Chung Bay including sandy shores close to the Tung Chung old pier will be conserved as a Waterfront Park according to the latest RODP.</p>   | Preservation of Natural Coastline  | Relevant Government Departments | Onsite where possible | Prior to Construction & Construction Phase |   |
| S11.7 MM9       | LV9                     | <p>Providing Natural Rock Material/ Planting for Artificial Seawall – There would be inevitable permanent losses of marine waters (seabed and water column), and direct impacts on existing artificial seawalls due to the reclamation. To minimize the impacts, the design of the future seawall like ‘eco-shoreline’ could be improved to provide high ecological functions and mitigate the impact of the loss.</p> <p>An ‘eco-shoreline’ is any shoreline which provides beneficial functions to the local ecosystem through a range of active or passive solutions, whilst providing coastal protection. By means of using natural rock materials for artificial seawall and considering to introduce a native vegetation buffer directly behind the top of seawalls as appropriate to create habitat, shelter and a source of food</p> | Mitigate the impacts on existing artificial seawalls                         | Relevant Government Departments | Onsite where possible | Prior to Construction & Construction Phase |   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|--|-------------------------|---|--|--|---|--|--|
|  |                         | for benefiting both terrestrial and aquatic species along the foreshore, these measures can help to enhance the ecological functions and ‘natural-look’ of the shoreline, and the potential impacts will be mitigated.  |  |  |   |  |  |
| <b><i>Landscape and Visual (Operational Phase)</i></b> |                         |   |  |  |   |  |  |
| S11.7<br>MM10  | LV10                    | <p>Compensatory Planting – Compensatory planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under DEVB TCW No. 10/2013 and LAO PN 7/2007.</p> <p>The location of compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes including roadside planting, as well as the open areas within development lots.</p> <p>The species to be planted should be all native species, taken “Characteristics of Major Local Tree Species Propagated by AFCD” as a reference. A search of species to be planted will be conducted in a further detailed stage.</p> | Compensate for trees and shrubs lost due to the Project                            | Relevant Government Departments / Private Sector | Onsite where possible, particular-ly for TCW area | Prior to Construction, Construction Phase & Maintenance in Operation Phase | <ul style="list-style-type: none"> <li>• DEVB TC(W) No.10/2013 and LAO PN 7/2007.</li> <li>• GLTM of the Development Bureau, Guidelines on Tree Preservation during Development (April, 2015)</li> </ul> |
| S11.7<br>MM11  | LV11                    | Woodland Restoration – A search of area to mitigate the loss of woodland has been conducted. Priority has been given to the practicability of compensation of woodland within the boundary of RODP. Given the nature of the project is to provide development opportunities to satisfy the needs for the society in general and the aspirations of local communities, compensation of woodland is only possible for the areas beyond the RODP. It is considered that the areas adjoining the woodlands near the existing services reservoirs, and hillsides to the east of Tung Chung Road, would be suitable locations. The advantage of these locations is that there are existing woodlands immediately  | Reprovide areas of woodland to compensate for those areas of quality woodland lost | CEDD /AFCD                                       | In areas identified and as agreed with AFCD       | Prior to Construction, Construction Phase & Maintenance in Operation Phase | <ul style="list-style-type: none"> <li>• DEVB Technical Circular Works 10/2013- Tree Preservation</li> <li>• GLTM of the Development Bureau, Guidelines on Tree Preservation</li> </ul>                  |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|-----------------|-------------------------|--|--|---------------------------------|--|--|--|
|                 |                         | <p>downhill to the location and the Sheung Ling Pei Fung Shui Wood is further downhill behind Sheung Ling Pei Village, planting new woodland areas adjoining existing woodlands would form an ecological linkage and increase the overall habitat size, and hence would help to enhance the ecological and landscape values in the long run.</p> <p>It is noted that the compensation trees for landscape impacts will also be planted near the future service reservoirs. The tree species to be planted should be all native species for woodland compensation, and the two areas uphill to Sheung Ling Pei should also make reference to the existing tree species reported in Fung Shui Woods habitat.</p> |  |                                 |  |  | during Development (April, 2015)   |
| S11.7<br>MM12   | LV12                    | Screen Planting – Tall screen/buffer trees and shrubs should be planted to screen proposed structures such as roads and buildings. This measure will form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.  | <p>To screen proposed structures</p> <p>Improve compatibility with the surrounding environment</p>             | Relevant Government Departments | Through-out the working sites of the TCW and TCE areas | Prior to Construction, Construction Phase & Maintenance in Operation Phase | <ul style="list-style-type: none"> <li>HyD HQ/GN/15– Guidelines for Greening Works along Highways.</li> </ul>  |
| S11.7<br>MM13   | LV13                    | Roadside Planting – Roadside greening is proposed alongside all roads within the possible developments. It will enhance local identity, if theme planting is used, and reduce visual impact through screening. At-grade road planting should be considered along central dividers and on road islands e.g. in the middle of roundabouts.   | <p>Soften the hard, straight edges and provide greening along the roads;</p> <p>Improve the visual amenity</p> | Relevant Government Departments | Along new roads, and On appropriate viaducts           | Prior to Construction, Construction Phase & Maintenance in Operation Phase | <ul style="list-style-type: none"> <li>HyD HQ/GN/15– Guidelines for Greening Works along Highways.</li> <li>Development Bureau Technical Circular Works No.2/2012 – Allocation of Space for Quality</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| EIA Ref. | EM&A Log Ref | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concerns to address | Implementation Agent | Location | Implementation Stage | Requirements and / or standards to be achieved |
|----------|--------------|---------------------------------|---|----------------------|----------|----------------------|--|
|          |              |                                 |   |                      |          |                      | Greening on Roads                              |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b> | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b>  | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b>  | <b>Implementation Agent</b>     | <b>Location</b>                         | <b>Implementation Stage</b>  | <b>Requirements and / or standards to be achieved</b>   |
|-----------------|-------------------------|---|---|---------------------------------|---|--|---|
| S11.7<br>MM14   | LV14                    | Aesthetic Design of Built Development – The planning of the revised RODP has considered reducing potential visual impacts, enhancing visual amenity and keeping visual corridors. The proposed development will ensure the building massing is compatible with its surroundings. To improve visual amenity, natural building materials could be used on building facades. For example, stone and timber should be considered for architectural features; light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should be considered for the façade treatment to reduce the visibility of the development components. The form, textures, finishes and colours of the proposed development components should aim to be compatible with the existing surroundings. It would only be implemented for public developments/projects.  | Improve visual amenity of the new buildings, keep visual corridors and integrate as possible into the surrounding landscape                       | Relevant Government Departments | Through-out the TCW and TCE areas       | Prior to Construction, Maintenance in Operation Phase                      | <ul style="list-style-type: none"> <li>• Hong Kong Planning Standards and Guidelines (HKPSG) issued by the Planning Department (As at Aug 2011);</li> <li>• PNAP APP-152, Sustainable Building Design Guidelines</li> </ul>             |
| S11.7<br>MM15   | LV15                    | Maximise Greening on Structures – The Government has been actively promoting greening in buildings and structures such as bridges to improve the environment. This includes actively implementing rooftop greening or vertical greening, as where practicable to enhance the cityscape and mitigate the heat island effect in urban areas. For the new built forms in TCW and TCE, it is considered the implementation of the following greening measures could alleviate the landscape and visual impacts of new development and help the development blend in with its surrounding landscape: <ul style="list-style-type: none"> <li>• Sky Garden: Refuge floors or voids in building mass formed by partial removal of floor plates on certain building storeys or provision of freed up areas on certain building storeys provide opportunities for sky gardens for the proposed built development. It can allow views through the development to the background formed by the natural hillsides and</li> </ul> | <p>Maximise Greening coverage</p> <p>Enhance visual amenity, create visual corridors and integrate as possible into the surrounding landscape</p> | Relevant Government Departments | On appropriate buildings and structures | Prior to Construction, Construction Phase & Maintenance in Operation Phase | <ul style="list-style-type: none"> <li>• Development Bureau Technical Circular (Works) No. 3/2012 Site Coverage of Greenery for Government Building Projects</li> <li>• PNAP APP-152, Sustainable Building Design Guidelines</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| EIA Ref. | EM&A Log Ref | Recommended Mitigation Measures  | Objectives of the Recommended Measures & Main Concerns to address | Implementati on Agent | Location | Implementation Stage | Requirements and / or standards to be achieved |
|----------|--------------|--|---|-----------------------|----------|----------------------|--|
|          |              | <p>enhance the visual amenity effectively. For public developments, relevant technical document Technical Circular (Works) No. 3/2012 Site Coverage of Greenery for Government Building Projects by Development Bureau in 2011 shall be referred to. For private developments, it is only applicable to sites with inadequate greening coverage and should be implemented in accordance with Sustainable Building Design Guidelines PNAP APP-152.</p> <ul style="list-style-type: none"> <li>Green Roof: The Architectural Services Department completed the Study on Green Roof Application in Hong Kong in 2007 which reviewed the latest concepts and design technology of green roof and recommended technical guidelines suitable for application in Hong Kong. The study will be taken into account to the new buildings to be built in TCW and TCE. Landscape and visual impact can be alleviated and the landscape and visual value can be enhanced. For private development, it is only applicable to sites with inadequate greening coverage and should be implemented in accordance with Sustainable Building Design Guidelines PNAP APP-152. Relevant technical document Technical Circular (Works) No. 3/2012 Site Coverage of Greenery for Government Building Projects by Development Bureau in 2011 shall be reference. For public developments, relevant technical document Technical Circular (Works) No. 3/2012 Site Coverage of Greenery for Government Building Projects by Development Bureau in 2011 shall be referred to. For private developments, it is only applicable to sites with inadequate greening coverage and should be implemented in accordance with Sustainable Building Design Guidelines PNAP APP-152.</li> <li>Vertical Green: Planting of climbers to grow up</li> </ul> |   |                       |          |                      |  |



**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

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|---------------|--------------|---|---|----------------------|---|--|--|
|               |              | <p>vertical surfaces where appropriate (e.g. building edges), to soften hard structures and facilities. Relevant technical document Technical Circular (Works) No. 3/2012 Site Coverage of Greenery for Government Building Projects by Development Bureau in 2011 shall be observed. For public developments, relevant technical document Technical Circular (Works) No. 3/2012 Site Coverage of Greenery for Government Building Projects by Development Bureau in 2011 shall be reference. For private development, it is only applicable to sites with inadequate greening coverage and should be implemented in accordance with Sustainable Building Design Guidelines PNAP APP-152.</p> <ul style="list-style-type: none"> <li>Greening on infrastructure: Planting could be provided on infrastructure such as bridges where appropriate to enhance greenery to soften its built edges. Screen planting could be provided near infrastructure to reduce any undesirable visual impacts.</li> </ul> |   |                      |   |  |  |
| S11.7<br>MM16 | LV16         | <p>Noise barrier design – The visual impact of noise mitigation measures will be mitigated by appropriate detailed design, including suitable combination of transparent and sound absorbent materials, appropriate colour selection of panels and supporting structures, or provision of at-grade planting of trees, shrubs and/or climbers camouflage to the barriers, as well as design of supporting structures to incorporate a high level of quality and aesthetics. A combination of transparent panels at top and solid panels at bottom would lighten the visual impact, and at the same time maintain the attractiveness by using colourful panels. The noise barriers would be implemented for District Distributor Roads and Local Distributor Roads at both TCE and TCW area.</p>  | Minimize the visual impact from the structures of noise barriers  | HyD                  | Noise barriers within the TCW and TCE areas | Prior to Construction, Construction Phase & Maintenance in Operation Phase | <ul style="list-style-type: none"> <li>GLTM of the Development Bureau’s Guidelines on Greening of Noise Barriers (April 2012).</li> <li>Guidelines on Design of Noise Barriers by HyD and EPD in 2003</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b>   | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b>  | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b>     | <b>Implementati on Agent</b> | <b>Location</b>                                      | <b>Implementation Stage</b>  | <b>Requirements and / or standards to be achieved</b>  |
|---|-------------------------|---|--|------------------------------|--|--|--|
| S11.7<br>MM17   | LV17                    | <p>Landscape Treatment for Polders &amp; Attenuation Ponds – There would be polders and attenuation ponds in TCW. While they are primarily used for receiving and treating surface runoff and alleviating the flood risk during heavy rainfall, the design of those has provided an opportunity to have a synergy to enhance both the ecological and landscape values together.</p> <p>Depending on detailed design, part of these attenuation ponds (mainly the biofiltration zone) could be refined in an appropriate manner, without compromising its primary functions of treating surface runoff and flood protection, to incorporate ecological and landscape design such as planting of aquatic plants and butterfly foodplant for providing the landscape and ecological enhancement.</p> | Enhance the landscape and visual value   | DSD                          | Polders & Attenuation Ponds where possible           | Prior to Construction, Construction Phase & Maintenance in Operation Phase |  |
| <b><i>Landscape and Visual (Construction &amp; Operational Phase)</i></b> |                         |   |  |                              |  |  |  |
| S11.7<br>MM18   | LV18                    | <p>Landscaping on Slopes – Hydro seeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character. Woodland tree seedlings and/ or shrubs should be planted where gradient and site conditions allow.</p> <p>In addition, landscape planting should be provided for the retaining structures associated with modified slopes where condition allow.</p>   | Enhance landscape value, plant diversity and their visual appearance             | CEDD                         | Onsite, particularly in TCW area                     | Prior to Construction, Construction Phase & Maintenance in Operation Phase | <ul style="list-style-type: none"> <li>• GEO Publication No.1/2011 Technical Guidelines on Landscape Treatment for Slopes by CEDD in 2011</li> </ul> |
| S11.7<br>MM19   | LV19                    | Landscape Treatment on Channelized Watercourses – For the channelized watercourses in Tung Chung Stream that will be dechannelized, the Drainage Services Department Practice Note No.1/2005 – Guidelines on Environmental Considerations for River Channel Design, should be considered and appropriate measures included ensuring the new watercourses match the existing as far as possible.   | <p>Avoid direct impacts on the watercourse</p> <p>Improve the visual amenity</p> | CEDD                         | The channelized watercourses throughout the TCW area | Prior to Construction, Construction Phase & Maintenance in Operation Phase | <ul style="list-style-type: none"> <li>• Drainage Services Department Practice Note No.1/2005 – Guidelines on Environmental</li> </ul>               |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b> | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b>   | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b> | <b>Implementati on Agent</b>                     | <b>Location</b>                   | <b>Implementation Stage</b>          | <b>Requirements and / or standards to be achieved</b> |
|-----------------|-------------------------|--|--|--|-----------------------------------|--------------------------------------|---|
|                 |                         | Measures can include enhancement planting to upgrade the channels as appropriate, including consideration of wetland planting along embankments where appropriate; as well as consideration of the best materials for the channel lining (e.g. gabion).                              |  |  |                                   |                                      | Considerations for River Channel Design               |
| S11.7<br>MM20   | LV20                    | Light Control – Construction day and night time lighting should be controlled to minimize glare impact to adjacent VSRs during the construction stage. Street and night time lighting shall also be controlled to minimize glare impact to adjacent VSRs during the operation phase. | Minimize negative glare impact to adjacent VSRs                              | Relevant Government Departments / Private Sector | Through-out the TCW and TCE areas | Construction Phase & Operation Phase |   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b>  | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b>  | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b>  | <b>Implementation Agent</b>           | <b>Location / Timing</b>                                  | <b>Implementation Stage</b>                               | <b>Requirements and / or standards to be achieved</b>  |
|--|-------------------------|---|---|---------------------------------------|---|---|--|
| <i>Cultural Heritage Impact (Construction and Operational Phase)</i> |                         |   |   |                                       |   |   |  |
| S.12.5   | CH1                     | <u>Terrestrial Archaeology</u> <ul style="list-style-type: none"> <li>Implement rescue excavations/ survey-cum-rescue excavations/ further surveys after land resumption and prior to any construction works (see <b>Figure 14.1</b> for the locations of rescue excavations/survey-cum-rescue excavations/further survey)</li> </ul> | 1) Rescue excavations to salvage archaeological data and cultural materials<br>2) Survey-cum-rescue excavations to better locate and design the follow up rescue excavations<br>3) Further surveys to obtain sufficient data for formulation of appropriate mitigation measures | Contractor / Future Private Developer | After land resumption and prior to any construction works | After land resumption and prior to any construction works | <ul style="list-style-type: none"> <li>Guidelines for Cultural Heritage Impact Assessment</li> <li>TM-EIAO Annex 10 and Annex 19</li> <li>Antiquities and Monuments Ordinance</li> </ul> |
| S.12.5   | CH2                     | <u>Terrestrial Archaeology</u> <ul style="list-style-type: none"> <li>Implement watching brief during construction phase (see <b>Figure 14.1</b> for the locations of watching brief)</li> </ul>  | To identify and record any archaeological material or features revealed during construction phase   | Contractor / Future Private Developer | During construction phase                                 | During construction phase                                 |  |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b>         | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b>   | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b> | <b>Implementation Agent</b> | <b>Location / Timing</b> | <b>Implementation Stage</b> | <b>Requirements and / or standards to be achieved</b>   |
|-------------------------|-------------------------|--|--|-----------------------------|--------------------------|-----------------------------|---|
| <i>EM&amp;A Project</i> |                         |  |  |                             |                          |                             |   |
| S13.2                   | EM1                     | An Independent Environmental Checker needs to be employed as per the EM&A Manual.  | Control EM&A Performance   | Project Proponent           | All construction sites   | Construction stage          | <ul style="list-style-type: none"> <li>• EIAO Guidance Note No.4/2010</li> <li>• TM-EIAO</li> </ul> |
| S13.2 – 13.4            | EM2                     | 1) An Environmental Team needs to be employed as per the EM&A Manual.<br>2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.<br>3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with. | Perform environmental monitoring & auditing                                  | Project Proponent           | All construction sites   | Construction stage          | <ul style="list-style-type: none"> <li>• EIAO Guidance Note No.4/2010</li> <li>• TM-EIAO</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| Docum ent Ref.   | EM&A Log Ref | Recommended Mitigation Measures   | Objectives of the Recommended Measures & Main Concerns to address | Implementation Agent | Location / Timing              | Implementation Stage | Requirements and / or standards to be achieved  |
|--|--------------|---|---|----------------------|--------------------------------|----------------------|---|
| <i>Works Vessel Travel Routes (Extracted from Works Vessel Travel Route Plan submitted under Condition 2.13 of the EP)</i> |              |   |   |                      |                                |                      |   |
| S3.2   | WVTR1        | All works vessels shall be equipped with Global Positional System (GPS) or equivalent automatic identification system (AIS) for real time tracking and monitoring of their travel routing, speed and anchorage points. The system shall be capable to record and analyse the travel routing, speed and anchorage points.  | Control EM&A Performance  | Contractor           | All marine constructi on sites | Construction stage   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S3.3.1   | WVTR2        | <p>1) Once approaching or leaving the entrance of the silt curtain, all vessels will travel at a speed no greater than 8 knots between the site and boundary of The Brothers Marine Park. The vessels can then navigate at normal speed (8-12 knots) after that distance unless other restrictions are imposed.</p> <p>2) If any dolphins are sighted within 250m of a vessel then the vessel will slow down to a speed no greater than 5 knots for at least 3 minutes after the last sighting.</p> | Protection of CWD   | Contractor           | All marine constructi on sites | Construction stage   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S3.3.2   | WVTR3        | All captains and the supervising staff should undergo training to learn about local dolphins and porpoises. They should be trained to be aware of the protocol for dolphin friendly“ vessel operation (refer to the Code of Conduct for Dolphin Watching Activities from AFCD).   | Protection of CWD   | Contractor           | All marine constructi on sites | Construction stage   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S3.3.2   | WVTR4        | Training on the requirements of the WVTRP would be provided for construction vessels’ personnel to follow, which should include the details of the normal operational routings of the construction works vessels and reporting of deviations from the normal operational routings of the construction works vessels. The training course will be given to the licensed vessel captains by the trainers before commencement of work and refreshment course will be provided every quarter.           | Protection of CWD   | Contractor           | All marine constructi on sites | Construction stage   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| Docum ent Ref.  | EM&A Log Ref | Recommended Mitigation Measures   | Objectives of the Recommended Measures & Main Concerns to address | Implementation Agent | Location / Timing              | Implementation Stage | Requirements and / or standards to be achieved  |
|---|--------------|---|---|----------------------|--------------------------------|----------------------|---|
| <i>Deployment of Silt Curtain(s) (Extracted from Silt Curtain Deployment Plan submitted under Condition 2.16 of the EP)</i> |              |   |   |                      |                                |                      |   |
| S4  | SCD1         | Before the start of the installation work, Qualified Ecologists with dolphin monitoring experience shall scan the exclusion zone for at least 30 minutes. If dolphins are observed in the exclusion zone, the installation work shall be delayed until the dolphins left the area.                | Protection of CWD   | Contractor           | All marine constructi on sites | Construction stage   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S4  | SCD2         | If dolphins are observed within the exclusion zone during the installation work, the relevant part of the work shall cease until the dolphins left the area.  | Protection of CWD   | Contractor           | All marine constructi on sites | Construction stage   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S5  | SCD3         | On-board supervisors will be assigned to check the condition of the silt curtain before commencement of works every day. An inspection checklist will be kept on site for record purpose.   | Silt Curtain Integrity  | Contractor           | All marine constructi on sites | Construction stage   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S5  | SCD4         | For the tentative arrangement of silt curtain under adverse weather, the silt curtain will not be temporary removed during adverse weather. However, related works will be suspended immediately if silt curtain is found any damaged.  | Silt Curtain Integrity  | Contractor           | All marine constructi on sites | Construction stage   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S5  | SCD5         | Diver inspection shall be carried out if necessary to inspect the installation and decommission of silt curtain to ensure proper installation and functioning of the silt curtain according to the design drawings. Nearby marine works will resume after repairing of the damaged silt curtains. | Silt Curtain Integrity  | Contractor           | All marine constructi on sites | Construction stage   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |
| S5  | SCD6         | Refuse around the silt curtain will be collected at regular intervals on a daily basis so that water behind the silt curtains will be kept free from floating debris.   | Waste Management  | Contractor           | All marine constructi on sites | Construction stage   | <ul style="list-style-type: none"> <li>• EIA</li> <li>• Contractual requirements</li> </ul> |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b>   | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b> | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b> | <b>Implementation Agent</b> | <b>Location / Timing</b> | <b>Implementation Stage</b> | <b>Requirements and / or standards to be achieved</b> |
|---|-------------------------|--|--|-----------------------------|--------------------------|-----------------------------|---|
| <i>Post-planting Monitoring and Maintenance (Details to be provided after the submission of Detailed Compensatory Woodland Planting Plan as required under EP Condition 2.22)</i> |                         |  |  |                             |                          |                             |   |



**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b>   | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b> | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b> | <b>Implementation Agent</b> | <b>Location / Timing</b> | <b>Implementation Stage</b> | <b>Requirements and / or standards to be achieved</b> |
|---|-------------------------|--|--|-----------------------------|--------------------------|-----------------------------|---|
| <p><i>Use of New Low Noise Road Surfacing Material(s) (Details to be provided after the submission of Plan for Review of Use of New Low Noise Road Surfacing Material(s) as required under EP Condition 2.23)</i></p> |                         |  |  |                             |                          |                             |   |

**Environmental Mitigation Implementation Schedule – Tung Chung New Town Extension**

| <b>EIA Ref.</b>   | <b>EM&amp;A Log Ref</b> | <b>Recommended Mitigation Measures</b>  | <b>Objectives of the Recommended Measures &amp; Main Concerns to address</b> | <b>Implementation Agent</b> | <b>Location / Timing</b> | <b>Implementation Stage</b> | <b>Requirements and / or standards to be achieved</b>                                      |
|---|-------------------------|---|--|-----------------------------|--------------------------|-----------------------------|--|
| <i>Follow-up actions to be taken by the Contractor and Dump Truck Drivers in case of Illegal Dumping and Landfilling of C&amp;D Materials (Extracted from Waste Management Plan submitted under Condition 2.24 of the EP)</i> |                         |   |  |                             |                          |                             |  |
| S5.4  | WM1                     | Investigation report will be prepared by the Contractor and submit to ER within 2 working days.                         | Control Performance EM&A   | Contractor                  | All construction sites   | Construction stage          | <ul style="list-style-type: none"> <li>• EP</li> <li>• Contractual requirements</li> </ul> |
| S5.4  | WM2                     | The Contractor will discuss with ER for the follow up actions (e.g. warning letter, cease operation, etc.) if required. | Control Performance EM&A   | Contractor                  | All construction sites   | Construction stage          | <ul style="list-style-type: none"> <li>• EP</li> <li>• Contractual requirements</li> </ul> |

Annex C

Status of Submissions and  
Implementation Status of  
Mitigation Measures under  
EP

**Status of Submissions and Implementation Status of Mitigation Measures under EP**

| <b>EP Condition</b> | <b>Submission / Implementation Status</b>  | <b>Status</b>   |
|---------------------|--|---|
| 2.1                 | Set up of Community and Professional Liaison Groups  | Community and Professional Liaison Groups were set up.  |
| 2.1                 | Complaint Management Plan (for Contracts 1, 2, 3 and 7)                                      | Updated Plan was submitted to EPD on 3 October 2022   |
| 2.5                 | Employment of Qualified Ecologist(s)   | Qualified Ecologists have been employed to carry out work relating to ecological aspects.   |
| 2.6                 | Employment of Surveillance Team  | Surveillance Team has been employed to conduct regular site inspection.   |
| 2.11                | Management Organizations (for Contracts 1, 2, 3 and 7)                                       | Updated Submission was submitted to EPD on 1 June 2022 and accepted by EPD on 7 June 2022   |
| 2.12                | Construction Works Schedule and Location Plans (for Contracts 1, 2, 3 and 7)                 | Updated Plan was submitted on 11 July 2022  |
| 2.13                | Works Vessel Travel Route Plan (for Contract 1)  | Accepted by EPD   |
| 2.14                | Eco-shoreline Implementation Plan (for Contract 1)   | Updated Plan was submitted on 16 September 2022   |
| 2.15                | Dolphin Watching Plan (for Contract 1)   | Updated Plan was submitted on 21 September 2018 and accepted by EPD on 12 October 2018  |
| 2.16                | Silt Curtain Deployment Plan (for Contract 1)  | Updated Plan was submitted to EPD on 15 September 2020 and accepted by EPD on 14 October 2020   |
| 2.17                | Spill Response Plan (for Contract 1)   | Accepted by EPD   |
| 2.18                | Plan on Provision of Buffer Zones  | To be prepared no later than 3 months before the commencement of construction works at Tung Chung Valley. Refer to the EM&A Reports of TCW. |
| 2.19                | River Park Plan  | To be prepared no later than 3 months before the commencement of construction works at Tung Chung Valley. Refer to the EM&A Reports of TCW. |
| 2.20                | Habitat Enhancement and Translocation Plan for Amphibian Species of Conservation Importance  | To be prepared no later than 3 months before the commencement of construction works at Tung Chung Valley. Refer to the EM&A Reports of TCW. |
| 2.21                | Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance | Accepted by EPD on 9 December 2021  |
| 2.22                | Detailed Compensatory Woodland Planting Plan   | The Plan was submitted to EPD on 10 June 2022 and accepted with conditions by EPD on 23 June 2022   |
| 2.23                | Plan for Review of Use of New Low Noise Road Surfacing Material(s)                           | The Plan was submitted to EPD on 7 November 2022  |
| 2.24                | Waste Management Plan (for Contracts 1, 2, 3 and 7)  | The Plan was submitted to EPD on 29 March 2022  |

| EP Condition | Submission / Implementation Status   | Status   |
|--------------|--|--|
| 2.25         | (i) no dredging of marine sediment shall be carried out for the Project  | Under implementation   |
|              | (ii) all reclamation filling works shall be carried out within a leading seawall of at least 200m; and   | Under implementation   |
|              | (iii) silt curtains surrounding the reclamation area shall be deployed in accordance with the Silt Curtain Deployment Plan   | Under implementation   |
| 2.26         | Implement Silt Curtain Deployment Plan and Spill Response Plan   | Under implementation   |
| 2.27         | Implement dolphin exclusion zone of 250m around the reclamation site at Tung Chung East during the installation of the perimeter silt curtains and any re-deployment of the perimeter silt curtains by Qualified Ecologist(s)  | Under implementation   |
| 2.28         | Once the perimeter silt curtains are installed or re-deployed, the Dolphin Watching Plan shall be implemented as part of the EM&A programme  | Under implementation   |
| 2.29         | (i) no underwater blasting and percussive piling shall be carried out for the Project; and   | Under implementation   |
|              | (ii) air compressors and other noisy equipment mounted on works vessels shall be acoustically-decoupled  | Under implementation   |
| 2.30         | Implement Works Vessel Travel Route Plan   | Under implementation   |
|              | Implement Eco-shoreline Implementation Plan  | Under implementation   |
|              | Implement Dolphin Watching Plan  | Under implementation   |
| 2.31         | Implement Plan on Provision of Buffer Zones, River Park Plan, Habitat Enhancement and Translocation Plan for Amphibian Species of Conservation Importance, Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance and Detailed Compensatory Woodland Planting Plan | Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance and Detailed Compensatory Woodland Planting Plan are under implementation |
| 2.32         | Implement Plan for review of the use of new road surfacing material(s)   | To be implemented  |
|              | Implement Waste Management Plan  | Under implementation   |
| 2.33         | Install noise barriers and low noise road surfacing at the extended Chung Mun Road and Road D3   | To be implemented  |
|              | All noise mitigation measures implemented shall be properly maintained during the operation of the above roads   |  |

| EP        | Submission / Implementation Status   | Status   |
|-----------|--|--|
| Condition |  |  |
| 2.34      | Implement a deodouriser with an odour removal efficiency of at least 95% shall be installed, operated and maintained within each sewage pumping station. The exhaust of the deodouriser shall be oriented away from sensitive receivers; and all odourous facilities of each sewage pumping station shall be enclosed and negative pressure shall be maintained within the facilities. | To be implemented  |
| 2.35      | Enclose all the pumps inside a building structure  | To be implemented  |
| 2.36      | (i) a 100% standby pumping capacity shall be installed and maintained<br>(ii) a 50% spare pumping capacity shall be installed and maintained<br>(iii) dual-feed power supply shall be installed and maintained; and<br>(iv) an emergency facility with a 6-hour storage capacity of average dry weather flow shall be installed and maintained.  | To be implemented<br>To be implemented<br>To be implemented<br>To be implemented |

Annex D

# Status of Statutory Environmental Requirements

## Annex D

## Status of Statutory Environmental Requirements

| Contract No.  | Description   | Location   | Ref No.                 | Status                                   |
|---|---|--|-------------------------|--|
| General   | Environmental Permit                                      | TCNTE Works Area                                   | EP-519/2016             | Granted on 9 Aug 2016                    |
| Contract No. NL/2017/03 (Contract 1)                      | Discharge License under Water Pollution Control Ordinance | Area WA1, near Ying Tung Road, Tung Chung          | WT00031099-2018         | Validity from 19 Jun 2018 to 30 Jun 2023 |
|   |   | Area WA1, near Ying Tung Road, Tung Chung          | WT00034715-2019         | Validity from 21 Jan 2020 to 31 Jan 2025 |
|   | Billing Account for Disposal of Construction Waste        | -  | Application No. 7029877 | Approved on 22 January 2018              |
|   | Registration as Chemical Waste Producer                   | Site Office for TCE                                | WPN-5213-950-B2528-01   | Issued on 28 Feb 2018                    |
|   |   | TCE Site Area                                      | WPN-5213-950-B2528-02   | Issued on 20 Apr 2018                    |
|   |   | Area WA3, near To Kau Wan, Tung Chung              | WPN-5213-974-B2528-03   | Issued on 9 April 2019                   |
|   | Construction Noise Permit                                 | Reclamation area                                   | GW-RS0663-22            | Validity from 15 Aug 2022 to 16 Dec 2022 |
|   |   | TCE Works Area near Lantau Toll Plaza              | GW-RW0401-22            | Validity from 15 Jul 2022 to 14 Jan 2023 |
|   |   | Main Haul Road                                     | GW-RS0949-22            | Validity from 14 Nov 2022 to 13 May 2023 |
|   | Contract No. NL/2020/02 (Contract 2)                      | Billing Account for Disposal of Construction Waste | -                       | Application No. 7040975                  |
| Registration as Chemical Waste Producer                   |   | Working site of Contract No. NL/2020/02            | WPN-5213-950-C4323-04   | Issued on 17 Aug 2021                    |
| Construction Noise Permit                                 |   | Portion 6  | GW-RS0411-22            | Validity from 1 Jun 2022 to 30 Nov 2022  |
| Discharge License under Water Pollution Control Ordinance |   | Portion 3  | WT00040695-2022         | Validity from 14 Jun 2022 to 30 Jun 2027 |



| Contract No.                         | Description   | Location  | Ref No.                     | Status                                   |
|--------------------------------------|---|---|-----------------------------|--|
|                                      |   | Portion 5A and 6  | WT00040696-2022             | Validity from 14 Jun 2022 to 30 Jun 2027 |
| Contract No. NL/2020/03 (Contract 3) | Billing Account for Disposal of Construction Waste          | -   | Application No. 7041004     | Approved on 13 Jul 2021                  |
|                                      | Registration as Chemical Waste Producer                     | Working site of Contract No. NL/2020/03   | WPN-5213-950-B2500-07       | Issued on 25 Aug 2021                    |
|                                      | Construction Noise Permit                                   | Construction Site of Contract No. NL/2020/03 (WA9, WA6 & Portion 8, 8A, 11, 12, 13, 104, 111, 114, 115, 116, 117, 18) | GW-RS0753-22                | Validity from 7 Sep 2022 to 6 Mar 2023   |
|                                      |   | Construction Site of Contract No. NL/2020/03 (Main Haul Road)   | GW-RS0904-22                | Validity from 3 Nov 2022 to 2 May 2023   |
|                                      |   | Percussive Piling at Construction Site of Contract No. NL/2020/03 (CUT Area)  | PP-RS0021-22 <sup>(1)</sup> | Validity from 8 Nov 2022 to 7 May 2023   |
|                                      | Discharge License under Water Pollution Control Ordinance   | Construction Site of Contract No. NL/2020/03  | WT00039577-2021             | Validity from 1 Dec 2021 to 31 Dec 2026  |
|                                      | Licence for the conduct of a Specified Process (SP Licence) | TCNTE Works Area  | L-3-264 (1)                 | Validity from 12 Aug 2020 to 11 Aug 2024 |
| Contract No. NL/2020/07 (Contract 7) | Billing Account for Disposal of Construction Waste          | -   | Application No. 7041997     | Approved on 26 Oct 2021                  |
|                                      | Registration as Chemical Waste Producer                     | Working site of Contract No. NL/2020/07   | WPN-5213-961-B2500-08       | Issued on 30 Nov 2021                    |
|                                      | Construction Noise Permit                                   | Working site of Contract No. NL/2020/07 (Pak Mong Subway)   | GW-RS0307-22                | Validity from 11 May 2022 to 11 Nov 2022 |

| <b>Contract No.</b> | <b>Description</b>   | <b>Location</b>  | <b>Ref No.</b>  | <b>Status</b>                                  |
|---------------------|--|--|-----------------|--|
|                     | Discharge License<br>under Water<br>Pollution Control<br>Ordinance | Working site of<br>Contract No.<br>NL/2020/07<br>(Portion 32)            | WT00041756-2022 | Validity from 27<br>Oct 2022 to 31 Oct<br>2027 |
|                     |  | Working site of<br>Contract No.<br>NL/2020/07<br>(Portion 33, 36-<br>38) | WT00040693-2022 | Validity from 31<br>May 2022 to 31<br>May 2027 |

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Note

(1) PP-RS0012-22 was replaced by PP-RS0021-22 since 8 November 2022.

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Annex E

## Air Quality

Annex E1

## Calibration Certificates for Air Quality



## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

### SUB-CONTRACTING REPORT

|         |   |                |               |
|---------|---|----------------|---------------|
| CONTACT | : MR K.W. FAN   | WORK ORDER     | : HK2240047   |
| CLIENT  | : ENVIROTECH SERVICES CO.                                     |                |               |
| ADDRESS | : RM 712, 7/F, MY LOFT 9 HOI WING ROAD,<br>TUEN MUN, N.T., HK | SUB-BATCH      | : 1           |
|         |   | DATE RECEIVED  | : 11-OCT-2022 |
|         |   | DATE OF ISSUE  | : 20-OCT-2022 |
| 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

This is the Final Report and supersedes any preliminary report with this batch number.

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

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

11/F Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T Hong Kong  
Kwai Tsing Hong Kong

WORK ORDER : HK2240047  
SUB-BATCH : 1  
CLIENT : ENVIROTECH SERVICES CO.  
PROJECT : ---



| ALS Lab ID    | Client's Sample ID | Sample Type | Sample Date | External Lab Report No. |
|---------------|--------------------|-------------|-------------|-------------------------|
| HK2240047-001 | S/N: 336338        | Equipments  | 11-Oct-2022 | S/N: 336338             |

# Equipment Verification Report (TSP)

## Equipment Calibrated:

Type: Laser Dust monitor  
Manufacturer: Sibata LD – 3B  
Serial No. 336338  
Equipment Ref: NA  
Job Order HK2240047

## Standard Equipment:

Standard Equipment: Higher Volume Sampler (TSP)  
Location & Location ID: AUES office (calibration room)  
Equipment Ref: HVS 018  
Last Calibration Date: 13 September 2022

## Equipment Verification Results:

Verification Date: 14 October 2022

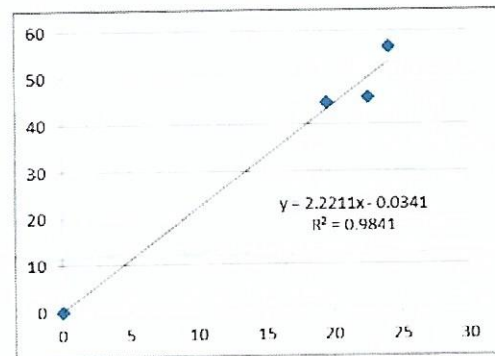
| Hour       | Time          | Mean Temp °C | Mean Pressure (hPa) | Concentration in $\mu\text{g}/\text{m}^3$ (Standard Equipment) | Total Count (Calibrated Equipment) | Count/Minute (Total Count/min) |
|------------|---------------|--------------|---------------------|--|------------------------------------|--------------------------------|
| 2hr15mins  | 09:33 ~ 11:48 | 26.9         | 1012.1              | 44.6   | 2621                               | 19.5                           |
| 2hr01 mins | 11:51 ~ 13:52 | 26.9         | 1012.1              | 45.7   | 2722                               | 22.6                           |
| 2hr01 mins | 13:55 ~ 15:56 | 26.9         | 1012.1              | 56.6   | 2922                               | 24.1                           |

## Linear Regression of Y or X

Slope (K-factor): 2.2211 ( $\mu\text{g}/\text{m}^3$ )/CPM

Correlation Coefficient (R) 0.9920

Date of Issue 17 October 2022



## Remarks:

1. **Strong Correlation ( $R > 0.8$ )**
2. Factor 2.2211 ( $\mu\text{g}/\text{m}^3$ )/CPM should be applied for TSP monitoring

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

Operator: Fai So Signature:  Date: 17 October 2022

QC Reviewer: Ben Tam Signature:  Date: 17 October 2022

## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Gold King Industrial Building, Kwai Chung  
 Location ID : Calibration Room

Date of Calibration: 13-Sep-22  
 Next Calibration Date: 13-Dec-22

### CONDITIONS

|                          |        |                            |         |
|--------------------------|--------|----------------------------|---------|
| Sea Level Pressure (hPa) | 1007.3 | Corrected Pressure (mm Hg) | 755.475 |
| Temperature (°C)         | 31.7   | Temperature (K)            | 305     |

### CALIBRATION ORIFICE

|                    |           |                   |           |
|--------------------|-----------|-------------------|-----------|
| Make->             | TISCH     | Qstd Slope ->     | 1.99838   |
| Model->            | 5025A     | Qstd Intercept -> | -0.00903  |
| Calibration Date-> | 27-Dec-21 | Expiry Date->     | 27-Dec-22 |

### CALIBRATION

| Plate No. | H2O (L) (in) | H2O (R) (in) | H2O (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |             |                |
|-----------|--------------|--------------|----------|---------------|-----------|--------------|-------------------|-------------|----------------|
|           |              |              |          |               |           |              | Slope =           | Intercept = | Corr. coeff. = |
| 18        | 6            | 6            | 12.0     | 1.714         | 54        | 53.24        | 30.1792           | 1.5486      | 0.9961         |
| 13        | 4.9          | 4.9          | 9.8      | 1.549         | 48        | 47.33        |                   |             |                |
| 10        | 3.7          | 3.7          | 7.4      | 1.347         | 44        | 43.38        |                   |             |                |
| 8         | 2.5          | 2.5          | 5.0      | 1.108         | 36        | 35.50        |                   |             |                |
| 5         | 1.6          | 1.6          | 3.2      | 0.887         | 28        | 27.61        |                   |             |                |

**Calculations :**

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

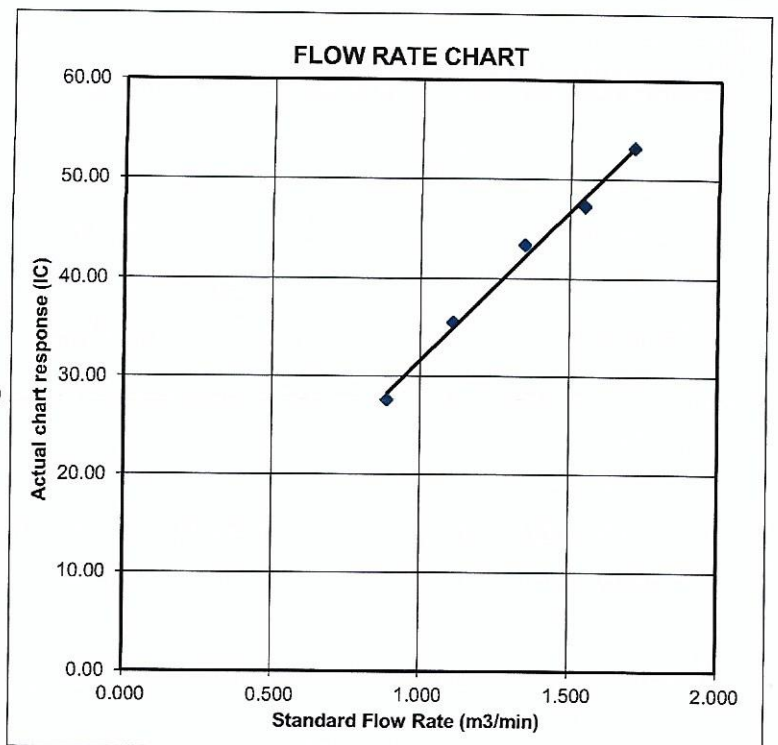
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

- 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 27, 2021          | Rootsmeter S/N: 438320      | Ta: 295   | °K    |
| Operator: Jim Tisch                   |                             | Pa: 740.4 | mm Hg |
| Calibration Model #: TE-5025A         | Calibrator S/N: <b>1612</b> |           |       |

| Run | Vol. Init (m3) | Vol. Final (m3) | ΔVol. (m3) | ΔTime (min) | ΔP (mm Hg) | ΔH (in H2O) |
|-----|----------------|-----------------|------------|-------------|------------|-------------|
| 1   | 1              | 2               | 1          | 1.3890      | 3.2        | 2.00        |
| 2   | 3              | 4               | 1          | 0.9760      | 6.4        | 4.00        |
| 3   | 5              | 6               | 1          | 0.8740      | 7.9        | 5.00        |
| 4   | 7              | 8               | 1          | 0.8320      | 8.8        | 5.50        |
| 5   | 9              | 10              | 1          | 0.6870      | 12.7       | 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) |
| 0.9799          | 0.7055        | 1.4029   | 0.9957    | 0.7168      | 0.8927  |
| 0.9756          | 0.9996        | 1.9841   | 0.9914    | 1.0157      | 1.2624  |
| 0.9736          | 1.1140        | 2.2183   | 0.9893    | 1.1320      | 1.4114  |
| 0.9724          | 1.1688        | 2.3265   | 0.9881    | 1.1876      | 1.4803  |
| 0.9673          | 1.4079        | 2.8059   | 0.9828    | 1.4306      | 1.7853  |
| <b>QSTD</b>     | m=            | <b>1.99838</b>   | <b>QA</b> | m=          | <b>1.25135</b>  |
|                 | b=            | <b>-0.00903</b>  |           | b=          | <b>-0.00574</b>   |
|                 | r=            | <b>0.99999</b>   |           | r=          | <b>0.99999</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= $Vstd / \Delta Time$  | Qa= $Va / \Delta Time$                                   |

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

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

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

Annex E2

## Monitoring Schedule for Air Quality

**Tung Chung New Town Extension (East)  
Air Quality Monitoring Schedule (November 2022)**

| Sunday | Monday                            | Tuesday                           | Wednesday                         | Thursday                          | Friday                            | Saturday                          |
|--------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
|        |                                   | 1-Nov                             | 2-Nov                             | 3-Nov                             | 4-Nov                             | 5-Nov                             |
|        |                                   | <b>Air Quality<br/>Monitoring</b> |                                   |                                   |                                   |                                   |
| 6-Nov  | 7-Nov                             | 8-Nov                             | 9-Nov                             | 10-Nov                            | 11-Nov                            | 12-Nov                            |
|        | <b>Air Quality<br/>Monitoring</b> |                                   |                                   |                                   |                                   | <b>Air Quality<br/>Monitoring</b> |
| 13-Nov | 14-Nov                            | 15-Nov                            | 16-Nov                            | 17-Nov                            | 18-Nov                            | 19-Nov                            |
|        |                                   |                                   |                                   |                                   | <b>Air Quality<br/>Monitoring</b> |                                   |
| 20-Nov | 21-Nov                            | 22-Nov                            | 23-Nov                            | 24-Nov                            | 25-Nov                            | 26-Nov                            |
|        |                                   |                                   |                                   | <b>Air Quality<br/>Monitoring</b> |                                   |                                   |
| 27-Nov | 28-Nov                            | 29-Nov                            | 30-Nov                            |                                   |                                   |                                   |
|        |                                   |                                   | <b>Air Quality<br/>Monitoring</b> |                                   |                                   |                                   |

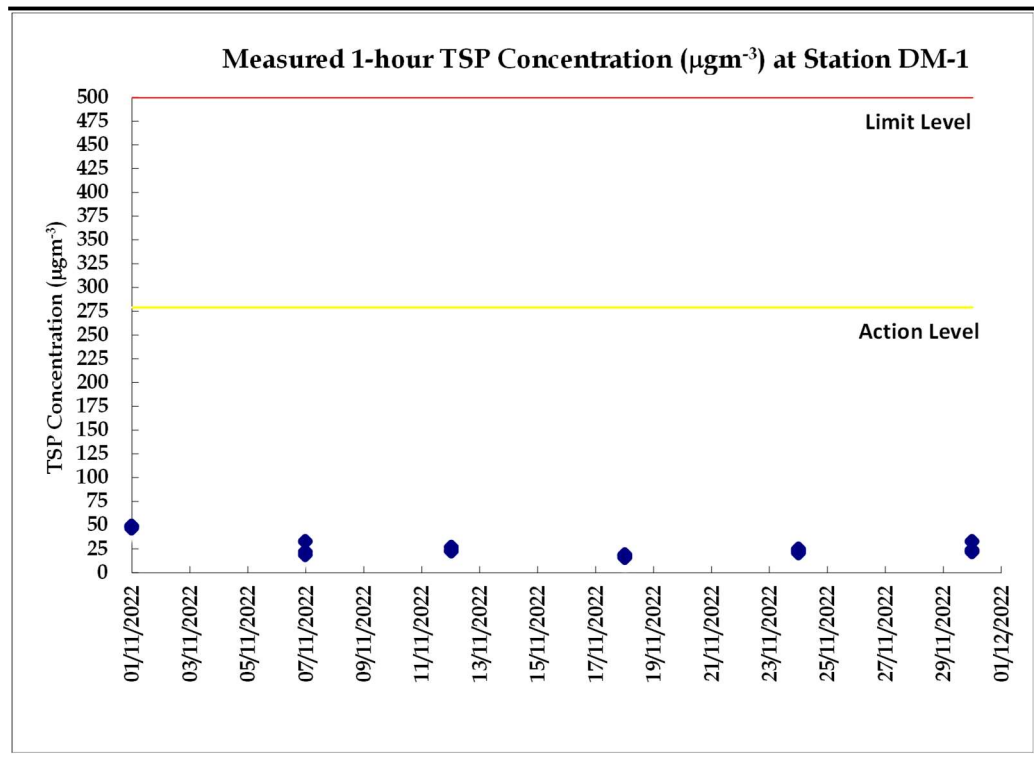
Annex E3

## Monitoring Results for Air Quality

**Table E3**      *Data for 1-hr TSP Monitoring at Station DM-1*

| <b>Date</b> | <b>Start Time</b> | <b>Finish Time</b> | <b>Weather</b> | <b>1-hour TSP<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> |
|-------------|-------------------|--------------------|----------------|---|
| 2022-11-01  | 9:00              | 10:00              | Cloudy         | 49  |
| 2022-11-01  | 10:00             | 11:00              | Cloudy         | 49  |
| 2022-11-01  | 11:00             | 12:00              | Cloudy         | 47  |
| 2022-11-07  | 9:07              | 10:07              | Cloudy         | 19  |
| 2022-11-07  | 10:07             | 11:07              | Cloudy         | 22  |
| 2022-11-07  | 11:07             | 12:07              | Cloudy         | 33  |
| 2022-11-12  | 9:04              | 10:04              | Cloudy         | 23  |
| 2022-11-12  | 10:04             | 11:04              | Cloudy         | 27  |
| 2022-11-12  | 11:04             | 12:04              | Cloudy         | 23  |
| 2022-11-18  | 13:06             | 14:06              | Sunny          | 18  |
| 2022-11-18  | 14:06             | 15:06              | Sunny          | 16  |
| 2022-11-18  | 15:06             | 16:06              | Sunny          | 19  |
| 2022-11-24  | 9:03              | 10:03              | Cloudy         | 23  |
| 2022-11-24  | 10:03             | 11:03              | Cloudy         | 25  |
| 2022-11-24  | 11:03             | 12:03              | Cloudy         | 21  |
| 2022-11-30  | 13:07             | 14:07              | Cloudy         | 33  |
| 2022-11-30  | 14:07             | 15:07              | Cloudy         | 24  |
| 2022-11-30  | 15:07             | 16:07              | Cloudy         | 22  |

Figure E3 Graphical Presentation for 1-hr TSP Monitoring at Station DM-1



Annex E4

## Event and Action Plan for Air Quality

*Annex E4 Event and 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> |



| Event  | Action   |   |  |   |
|--|--|---|--|---|
|  | ET   | IEC   | ER   | Contractor  |
| 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 possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER 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 ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions 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 failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>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.</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. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol> |

Annex F

## Noise

Annex F1

# Calibration Certificates for Noise



# Certificate of Calibration

## 校正證書

Certificate No. : C220969  
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC22-0235 )      Date of Receipt / 收件日期 : 9 February 2022

Description / 儀器名稱 : Precision Acoustic Calibrator  
Manufacturer / 製造商 : LARSON DAVIS  
Model No. / 型號 : CAL200  
Serial No. / 編號 : 11334  
Supplied By / 委託者 : Envirotech Services Co.  
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

### 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** : 19 February 2022

### TEST RESULTS / 測試結果

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

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

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

Tested By  
測試

  
\_\_\_\_\_  
H T Wong  
Assistant Engineer

Certified By  
核證

  
\_\_\_\_\_  
K C Lee  
Engineer

Date of Issue  
簽發日期

22 February 2022

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

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

# Certificate of Calibration

## 校正證書

Certificate No. : C220969

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                 | C213954                |
| CL281               | Multifunction Acoustic Calibrator | AV210017               |
| TST150A             | Measuring Amplifier               | C201309                |

- Test procedure : MA100N.

- Results :

### 5.1 Sound Level Accuracy

| UUT<br>Nominal Value | Measured Value<br>(dB) | User's Spec.<br>(dB) | Uncertainty of Measured Value<br>(dB) |
|----------------------|------------------------|----------------------|---------------------------------------|
| 94 dB, 1 kHz         | 93.6                   | ± 0.5                | ± 0.2                                 |
| 114 dB, 1 kHz        | 113.7                  |                      |                                       |

### 5.2 Frequency Accuracy

| UUT Nominal Value<br>(kHz) | Measured Value<br>(kHz) | Mfr's<br>Spec. | Uncertainty of Measured Value<br>(Hz) |
|----------------------------|-------------------------|----------------|---------------------------------------|
| 1                          | 1.000                   | 1 kHz ± 1 %    | ± 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.

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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. : C222710

證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC22-0821 )

Date of Receipt / 收件日期 : 3 May 2022

Description / 儀器名稱 : Sound Level Meter

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-52

Serial No. / 編號 : 00542913

Supplied By / 委託者 : Envirotech Services Co.

Room 712, 7/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

### TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (50 ± 25)%

Line Voltage / 電壓 : ---

### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 May 2022

### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

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

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

Tested By

測試

: 

C K Lo

Project Engineer

Certified By

核證

: 

K C Lee

Engineer

Date of Issue

簽發日期

: 24 May 2022

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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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. : C222710

證書編號

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

| Equipment ID | Description                         | Certificate No. |
|--------------|-------------------------------------|-----------------|
| CL280        | 40 MHz Arbitrary Waveform Generator | C220381         |
| CL281        | Multifunction Acoustic Calibrator   | AV210017        |

- Test procedure : MA101N.

- Results :

### 6.1 Sound Pressure Level

#### 6.1.1 Reference Sound Pressure Level

| UUT Setting |                |                     |                | Applied Value |             | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|-------------|----------------|---------------------|----------------|---------------|-------------|------------------|------------------------------|
| Range (dB)  | Function       | Frequency Weighting | Time Weighting | Level (dB)    | Freq. (kHz) |                  |                              |
| 30 - 130    | L <sub>A</sub> | A                   | Fast           | 94.00         | 1           | 93.3             | ± 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           | 93.3 (Ref.)      |
|             |                |                     |                | 104.00        |             | 103.3            |
|             |                |                     |                | 114.00        |             | 113.3            |

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

### 6.2 Time Weighting

| UUT Setting |                |                     |                | Applied Value |             | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|-------------|----------------|---------------------|----------------|---------------|-------------|------------------|------------------------------|
| Range (dB)  | Function       | Frequency Weighting | Time Weighting | Level (dB)    | Freq. (kHz) |                  |                              |
| 30 - 130    | L <sub>A</sub> | A                   | Fast           | 94.00         | 1           | 93.3             | Ref.                         |
|             |                |                     | Slow           |               |             | 93.3             | ± 0.3                        |

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# Certificate of Calibration

## 校正證書

Certificate No. : C222710

證書編號

### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

| UUT Setting |                |                     |                | Applied Value |        | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|-------------|----------------|---------------------|----------------|---------------|--------|------------------|------------------------------|
| Range (dB)  | Function       | Frequency Weighting | Time Weighting | Level (dB)    | Freq.  |                  |                              |
| 30 - 130    | L <sub>A</sub> | A                   | Fast           | 94.00         | 63 Hz  | 67.1             | -26.2 ± 1.5                  |
|             |                |                     |                |               | 125 Hz | 77.1             | -16.1 ± 1.5                  |
|             |                |                     |                |               | 250 Hz | 84.6             | -8.6 ± 1.4                   |
|             |                |                     |                |               | 500 Hz | 90.1             | -3.2 ± 1.4                   |
|             |                |                     |                |               | 1 kHz  | 93.3             | Ref.                         |
|             |                |                     |                |               | 2 kHz  | 94.5             | +1.2 ± 1.6                   |
|             |                |                     |                |               | 4 kHz  | 94.3             | +1.0 ± 1.6                   |
|             |                |                     |                |               | 8 kHz  | 92.3             | -1.1 (+2.1 ; -3.1)           |
|             |                |                     |                |               | 16 kHz | 85.4             | -6.6 (+3.5 ; -17.0)          |

#### 6.3.2 C-Weighting

| UUT Setting |                |                     |                | Applied Value |        | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|-------------|----------------|---------------------|----------------|---------------|--------|------------------|------------------------------|
| Range (dB)  | Function       | Frequency Weighting | Time Weighting | Level (dB)    | Freq.  |                  |                              |
| 30 - 130    | L <sub>C</sub> | C                   | Fast           | 94.00         | 63 Hz  | 92.5             | -0.8 ± 1.5                   |
|             |                |                     |                |               | 125 Hz | 93.1             | -0.2 ± 1.5                   |
|             |                |                     |                |               | 250 Hz | 93.3             | 0.0 ± 1.4                    |
|             |                |                     |                |               | 500 Hz | 93.3             | 0.0 ± 1.4                    |
|             |                |                     |                |               | 1 kHz  | 93.3             | Ref.                         |
|             |                |                     |                |               | 2 kHz  | 93.1             | -0.2 ± 1.6                   |
|             |                |                     |                |               | 4 kHz  | 92.5             | -0.8 ± 1.6                   |
|             |                |                     |                |               | 8 kHz  | 90.4             | -3.0 (+2.1 ; -3.1)           |
|             |                |                     |                |               | 16 kHz | 83.4             | -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. : C222710  
證書編號

- Remarks : - UUT Microphone Model No. : UC-59 & S/N : 06492
- Mfr's Spec. : IEC 61672 Class 1
- Uncertainties of Applied Value :
- |        |                  |                          |
|--------|------------------|--------------------------|
| 94 dB  | : 63 Hz - 125 Hz | : ± 0.35 dB              |
|        | 250 Hz - 500 Hz  | : ± 0.30 dB              |
|        | 1 kHz            | : ± 0.20 dB              |
|        | 2 kHz - 4 kHz    | : ± 0.35 dB              |
|        | 8 kHz            | : ± 0.45 dB              |
|        | 16 kHz           | : ± 0.70 dB              |
| 104 dB | : 1 kHz          | : ± 0.10 dB (Ref. 94 dB) |
| 114 dB | : 1 kHz          | : ± 0.10 dB (Ref. 94 dB) |

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

Note :

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

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

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Annex F2

## Monitoring Schedule for Noise

**Tung Chung New Town Extension (East)  
Noise Monitoring Schedule (November 2022)**

| Sunday | Monday                  | Tuesday                 | Wednesday               | Thursday                | Friday                  | Saturday                |
|--------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|        |                         | 1-Nov                   | 2-Nov                   | 3-Nov                   | 4-Nov                   | 5-Nov                   |
|        |                         | <b>Noise Monitoring</b> |                         |                         |                         |                         |
| 6-Nov  | 7-Nov                   | 8-Nov                   | 9-Nov                   | 10-Nov                  | 11-Nov                  | 12-Nov                  |
|        | <b>Noise Monitoring</b> |                         |                         |                         |                         | <b>Noise Monitoring</b> |
| 13-Nov | 14-Nov                  | 15-Nov                  | 16-Nov                  | 17-Nov                  | 18-Nov                  | 19-Nov                  |
|        |                         |                         |                         |                         | <b>Noise Monitoring</b> |                         |
| 20-Nov | 21-Nov                  | 22-Nov                  | 23-Nov                  | 24-Nov                  | 25-Nov                  | 26-Nov                  |
|        |                         |                         |                         | <b>Noise Monitoring</b> |                         |                         |
| 27-Nov | 28-Nov                  | 29-Nov                  | 30-Nov                  |                         |                         |                         |
|        |                         |                         | <b>Noise Monitoring</b> |                         |                         |                         |

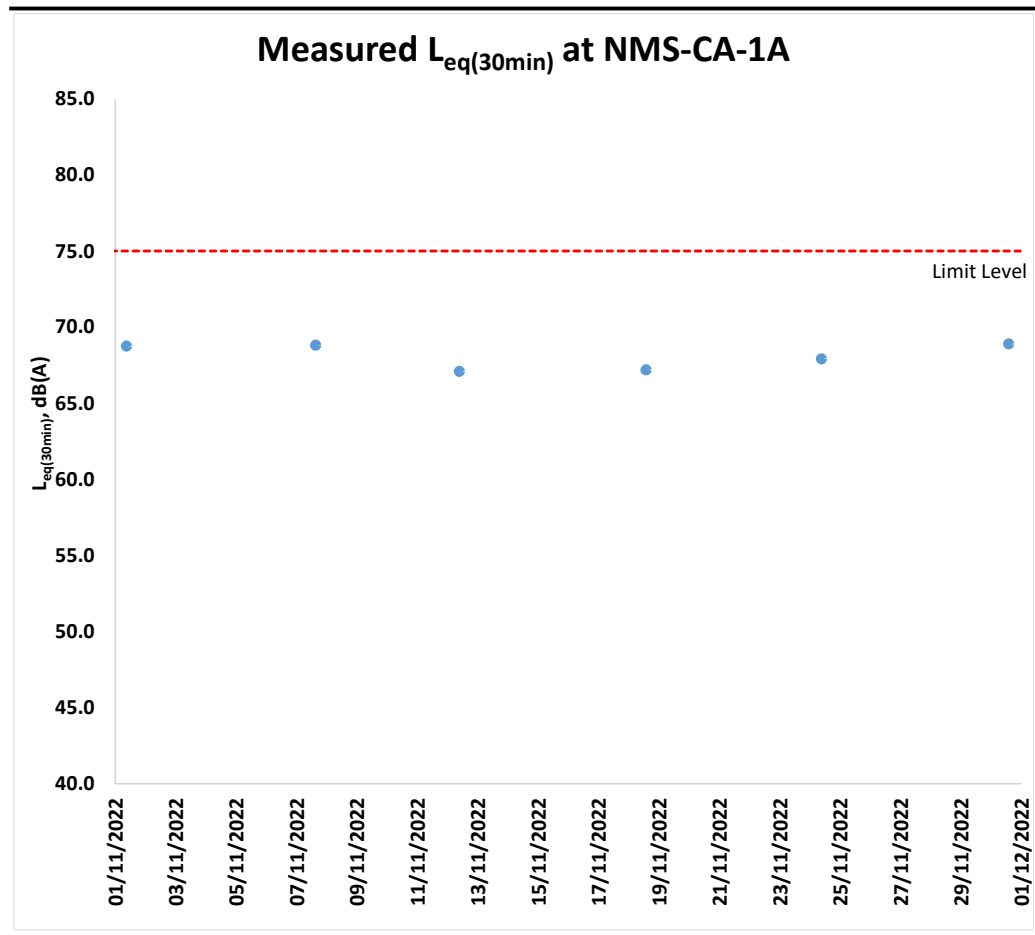
Annex F3

## Monitoring Results for Noise

**Table F3.1 Data for Noise Monitoring at Station NMS-CA-1A during Normal Working Hours (0700-1900 hours)**

| Date & Time      | L <sub>eq</sub> (5min) | L <sub>10</sub> | L <sub>90</sub> | L <sub>eq</sub> (30min) |
|------------------|------------------------|-----------------|-----------------|-------------------------|
| 2022-11-01 9:06  | 68.0                   | 70.4            | 65.2            | 68.8                    |
| 2022-11-01 9:11  | 68.9                   | 71.2            | 65.7            |                         |
| 2022-11-01 9:16  | 68.6                   | 71.9            | 63.5            |                         |
| 2022-11-01 9:21  | 69.4                   | 71.6            | 65.4            |                         |
| 2022-11-01 9:26  | 69.1                   | 71.3            | 65.1            |                         |
| 2022-11-01 9:31  | 68.4                   | 71.0            | 63.8            |                         |
| 2022-11-07 15:25 | 69.3                   | 71.1            | 65.0            | 68.8                    |
| 2022-11-07 15:30 | 69.4                   | 70.6            | 65.5            |                         |
| 2022-11-07 15:35 | 69.0                   | 70.9            | 65.0            |                         |
| 2022-11-07 15:40 | 68.4                   | 70.2            | 63.6            |                         |
| 2022-11-07 15:45 | 68.8                   | 71.3            | 65.0            |                         |
| 2022-11-07 15:50 | 67.8                   | 70.1            | 63.7            |                         |
| 2022-11-12 9:35  | 66.5                   | 68.4            | 63.7            | 67.1                    |
| 2022-11-12 9:40  | 66.6                   | 68.5            | 63.4            |                         |
| 2022-11-12 9:45  | 66.6                   | 69.4            | 63.1            |                         |
| 2022-11-12 9:50  | 65.7                   | 68.1            | 63.2            |                         |
| 2022-11-12 9:55  | 67.6                   | 70.6            | 63.2            |                         |
| 2022-11-12 10:00 | 68.9                   | 70.8            | 63.7            |                         |
| 2022-11-18 13:52 | 66.4                   | 68.5            | 63.5            | 67.2                    |
| 2022-11-18 13:57 | 66.4                   | 68.0            | 64.1            |                         |
| 2022-11-18 14:02 | 66.6                   | 68.1            | 64.1            |                         |
| 2022-11-18 14:07 | 68.5                   | 70.7            | 64.4            |                         |
| 2022-11-18 14:12 | 68.3                   | 69.8            | 63.9            |                         |
| 2022-11-18 14:17 | 66.3                   | 68.1            | 63.6            |                         |
| 2022-11-24 9:19  | 68.6                   | 71.3            | 64.7            | 67.9                    |
| 2022-11-24 9:24  | 67.1                   | 69.1            | 64.4            |                         |
| 2022-11-24 9:29  | 68.5                   | 71.7            | 64.6            |                         |
| 2022-11-24 9:34  | 67.9                   | 70.2            | 64.8            |                         |
| 2022-11-24 9:39  | 68.0                   | 69.1            | 65.2            |                         |
| 2022-11-24 9:44  | 67.2                   | 68.9            | 64.5            |                         |
| 2022-11-30 14:05 | 67.0                   | 69.2            | 63.9            | 68.9                    |
| 2022-11-30 14:10 | 71.0                   | 74.0            | 66.5            |                         |
| 2022-11-30 14:15 | 70.1                   | 72.6            | 66.0            |                         |
| 2022-11-30 14:20 | 69.0                   | 71.3            | 64.7            |                         |
| 2022-11-30 14:25 | 69.0                   | 71.7            | 63.0            |                         |
| 2022-11-30 14:30 | 64.5                   | 66.4            | 62.3            |                         |

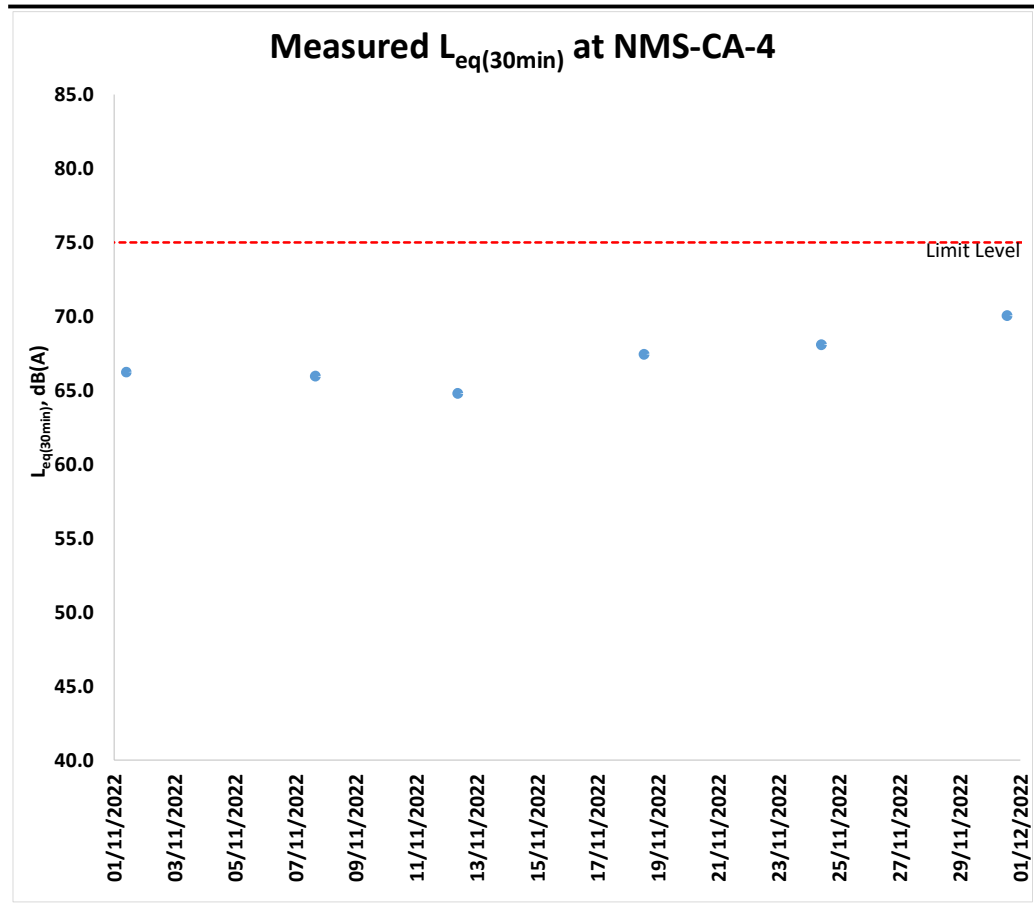
Figure F3.1 Graphical Presentation for Noise Monitoring at Station NMS-CA-1A



**Table F3.2 Data for Noise Monitoring at Station NMS-CA-4 during Normal Working Hours (0700-1900 hours)**

| Date & Time      | L <sub>eq</sub> (5min) | L <sub>10</sub> | L <sub>90</sub> | L <sub>eq</sub> (30min) |
|------------------|------------------------|-----------------|-----------------|-------------------------|
| 2022-11-01 9:42  | 67.2                   | 69.6            | 63.6            | 66.2                    |
| 2022-11-01 9:47  | 66.2                   | 68.5            | 63.5            |                         |
| 2022-11-01 9:52  | 65.8                   | 67.8            | 63.5            |                         |
| 2022-11-01 9:57  | 66.9                   | 69.4            | 63.6            |                         |
| 2022-11-01 10:02 | 66.3                   | 69.0            | 63.0            |                         |
| 2022-11-01 10:07 | 64.4                   | 66.2            | 62.2            |                         |
| 2022-11-07 16:00 | 63.7                   | 66.1            | 60.0            | 66.0                    |
| 2022-11-07 16:05 | 64.7                   | 67.0            | 61.3            |                         |
| 2022-11-07 16:10 | 67.5                   | 71.7            | 61.5            |                         |
| 2022-11-07 16:15 | 65.2                   | 68.5            | 61.2            |                         |
| 2022-11-07 16:20 | 64.2                   | 66.7            | 61.3            |                         |
| 2022-11-07 16:25 | 68.3                   | 70.8            | 64.9            |                         |
| 2022-11-12 9:00  | 64.6                   | 67.4            | 61.2            | 64.8                    |
| 2022-11-12 9:05  | 65.2                   | 67.8            | 62.0            |                         |
| 2022-11-12 9:10  | 64.9                   | 67.7            | 61.7            |                         |
| 2022-11-12 9:15  | 64.0                   | 66.6            | 60.7            |                         |
| 2022-11-12 9:20  | 65.5                   | 67.8            | 61.6            |                         |
| 2022-11-12 9:25  | 64.3                   | 66.1            | 62.1            |                         |
| 2022-11-18 13:08 | 64.1                   | 66.0            | 62.3            | 67.4                    |
| 2022-11-18 13:13 | 67.4                   | 69.0            | 63.2            |                         |
| 2022-11-18 13:18 | 70.3                   | 72.2            | 66.8            |                         |
| 2022-11-18 13:23 | 68.5                   | 71.8            | 63.3            |                         |
| 2022-11-18 13:28 | 66.0                   | 68.7            | 63.1            |                         |
| 2022-11-18 13:33 | 65.3                   | 66.8            | 64.0            |                         |
| 2022-11-24 10:01 | 67.4                   | 70.1            | 63.8            | 68.1                    |
| 2022-11-24 10:06 | 68.6                   | 71.2            | 64.6            |                         |
| 2022-11-24 10:11 | 67.0                   | 68.8            | 64.9            |                         |
| 2022-11-24 10:16 | 68.3                   | 72.2            | 64.7            |                         |
| 2022-11-24 10:21 | 69.2                   | 72.9            | 64.9            |                         |
| 2022-11-24 10:26 | 67.6                   | 69.3            | 65.2            |                         |
| 2022-11-30 13:28 | 69.7                   | 70.9            | 67.6            | 70.0                    |
| 2022-11-30 13:33 | 69.6                   | 70.2            | 67.8            |                         |
| 2022-11-30 13:38 | 70.9                   | 71.9            | 69.8            |                         |
| 2022-11-30 13:43 | 69.6                   | 70.7            | 68.5            |                         |
| 2022-11-30 13:48 | 69.8                   | 71.1            | 68.6            |                         |
| 2022-11-30 13:53 | 70.5                   | 71.7            | 69.1            |                         |

Figure F3.2 Graphical Presentation for Noise Monitoring at Station NMS-CA-4





Annex F4

## Event and Action Plan for Noise

**Annex F4**      *Event and Action Plan for Construction Noise*

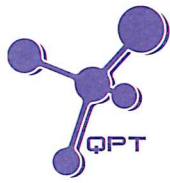
| Event                   | Action   |   |  |   |
|-------------------------|--|---|--|---|
|                         | ET   | IEC   | ER   | Contractor  |
| Action Level Exceedance | <ol style="list-style-type: none"> <li>1. Notify IEC, ER and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. 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 analysed results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor 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 failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed 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 IEC and ER;</li> <li>2. Implement noise mitigation proposals.</li> </ol>   |
| Limit Level Exceedance  | <ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC, ER, EPD and Contractor;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER 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 ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractors remedial actions 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 failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>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.</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. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol> |

Annex G

## Water Quality

Annex G1

## Calibration Certificates for Water Quality



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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB100113  
Date of Issue : 28 October 2022  
Page No. : 1 of 2

### PART A - CUSTOMER INFORMATION

Enovative Environmental Service Ltd.  
Flat 2207, Yu Fun House Yu Chui Court, Shatin  
New Territories (HK) Hong Kong

### PART B - SAMPLE INFORMATION

Name of Equipment : YSI ProDSS (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 16H104233  
Date of Received : 28 October 2022  
Date of Calibration : 28 October 2022  
Date of Next Calibration : 27 January 2023  
Request No. : D-BB100113

### PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

| Test Parameter   | Reference Method  |
|------------------|---|
| pH value         | APHA 21e 4500 H <sup>+</sup>  |
| Temperature      | Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure |
| Salinity         | APHA 21e 2520 B   |
| Dissolved oxygen | APHA 21e 4500 O   |
| Turbidity        | APHA 21e 2130 B   |
| Conductivity     | APHA 21e 2510 B   |

### PART D - CALIBRATION RESULT

#### (1) pH value

| Target (pH unit) | Display Reading (pH unit) | Tolerance | Result       |
|------------------|---------------------------|-----------|--------------|
| 4.00             | 4.04                      | 0.04      | Satisfactory |
| 7.42             | 7.50                      | 0.08      | Satisfactory |
| 10.01            | 10.18                     | 0.17      | Satisfactory |

Tolerance of pH value should be less than  $\pm 0.2$  (pH unit)

#### (2) Temperature

| Reading of Ref. thermometer (°C) | Display Reading (°C) | Tolerance | Result       |
|----------------------------------|----------------------|-----------|--------------|
| 10                               | 10.0                 | 0.0       | Satisfactory |
| 20                               | 19.9                 | -0.1      | Satisfactory |
| 40                               | 39.9                 | -0.1      | Satisfactory |

Tolerance of Temperature should be less than  $\pm 2.0$  (°C)


#### (3) Salinity

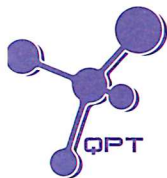
| Expected Reading (g/L) | Display Reading (g/L) | Tolerance (%) | Result       |
|------------------------|-----------------------|---------------|--------------|
| 10                     | 10.19                 | 1.90          | Satisfactory |
| 20                     | 20.33                 | 1.65          | Satisfactory |
| 30                     | 30.48                 | 1.60          | Satisfactory |

Tolerance of Salinity should be less than  $\pm 10.0$  (%)

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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB100113  
Date of Issue : 28 October 2022  
Page No. : 2 of 2

### (4) Dissolved oxygen

| Expected Reading ( mg/L ) | Display Reading ( mg/L ) | Tolerance | Result       |
|---------------------------|--------------------------|-----------|--------------|
| 7.65                      | 8.00                     | 0.35      | Satisfactory |
| 4.65                      | 4.33                     | -0.32     | Satisfactory |
| 2.18                      | 2.00                     | -0.18     | Satisfactory |
| 0.46                      | 0.50                     | 0.04      | Satisfactory |

Tolerance of Dissolved oxygen should be less than  $\pm 0.5$  ( mg/L )

### (5) Turbidity

| Expected Reading ( NTU ) | Display Reading ( NTU ) | Tolerance ( % ) | Result       |
|--------------------------|-------------------------|-----------------|--------------|
| 0                        | 0.10                    | --              | Satisfactory |
| 10                       | 9.86                    | -1.4            | Satisfactory |
| 20                       | 20.28                   | 1.4             | Satisfactory |
| 100                      | 100.59                  | 0.6             | Satisfactory |
| 800                      | 797.25                  | -0.3            | Satisfactory |

Tolerance of Turbidity should be less than  $\pm 10.0$  ( % )

### (6) Conductivity

| Expected Reading ( $\mu\text{S}/\text{cm}$ at 25°C ) | Display Reading | Tolerance ( % ) | Result       |
|--|-----------------|-----------------|--------------|
| 146.9  | 138.6           | -5.65           | Satisfactory |
| 1412   | 1370.9          | -2.91           | Satisfactory |
| 12890  | 12684           | -1.6            | Satisfactory |
| 58670  | 57921           | -1.28           | Satisfactory |
| 111900   | 111663          | -0.21           | Satisfactory |

Tolerance of Conductivity should be less than  $\pm 10.0$  ( % )

### Remark(s)

- The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.
- The results relate only to the calibrated equipment as received
- The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
- The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB090081  
 Date of Issue : 19 September 2022  
 Page No. : 1 of 2

### PART A - CUSTOMER INFORMATION

Enovative Environmental Service Ltd.  
 Flat 2207, Yu Fun House Yu Chui Court, Shatin  
 New Territories (HK) Hong Kong

### PART B - SAMPLE INFORMATION

Name of Equipment : YSI ProDSS (Multi-Parameters)  
 Manufacturer : YSI (a xylem brand)  
 Serial Number : 16H104234  
 Date of Received : 16 September 2022  
 Date of Calibration : 16 September 2022  
 Date of Next Calibration : 15 December 2022  
 Request No. : D-BB090081

### PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

| Test Parameter   | Reference Method  |
|------------------|---|
| pH value         | APHA 21e 4500 H+  |
| Temperature      | Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure |
| Salinity         | APHA 21e 2520B  |
| Dissolved oxygen | APHA 21e 4500 O   |
| Turbidity        | APHA 21e 2130B  |
| Conductivity     | APHA 21e 2510B  |

### PART D - CALIBRATION RESULT

#### (1) pH value

| Target (pH unit) | Display Reading (pH unit) | Tolerance | Result       |
|------------------|---------------------------|-----------|--------------|
| 4.00             | 3.97                      | -0.03     | Satisfactory |
| 7.42             | 7.38                      | -0.04     | Satisfactory |
| 10.01            | 9.92                      | -0.09     | Satisfactory |

Tolerance of pH value should be less than  $\pm 0.2$  (pH unit)

#### (2) Temperature

| Reading of Ref. thermometer (°C) | Display Reading (°C) | Tolerance | Result       |
|----------------------------------|----------------------|-----------|--------------|
| 40                               | 40.1                 | 0.1       | Satisfactory |
| 30                               | 30.1                 | 0.1       | Satisfactory |
| 10                               | 10.0                 | 0.0       | Satisfactory |

Tolerance of Temperature should be less than  $\pm 2.0$  (°C)


#### (3) Salinity

| Expected Reading (g/L) | Display Reading (g/L) | Tolerance (%) | Result       |
|------------------------|-----------------------|---------------|--------------|
| 10                     | 10.17                 | 1.70          | Satisfactory |
| 20                     | 20.50                 | 2.50          | Satisfactory |
| 30                     | 30.31                 | 1.03          | Satisfactory |

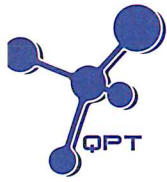
Tolerance of Salinity should be less than  $\pm 10.0$  (%)

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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB090081

Date of Issue : 19 September 2022

Page No. : 2 of 2

### (4) Dissolved oxygen

| Expected Reading ( mg/L ) | Display Reading ( mg/L ) | Tolerance | Result       |
|---------------------------|--------------------------|-----------|--------------|
| 7.38                      | 7.60                     | 0.22      | Satisfactory |
| 4.70                      | 4.85                     | 0.15      | Satisfactory |
| 1.48                      | 1.80                     | 0.32      | Satisfactory |
| 0.45                      | 0.40                     | -0.05     | Satisfactory |

Tolerance of Dissolved oxygen should be less than  $\pm 0.5$  ( mg/L )

### (5) Turbidity

| Expected Reading ( NTU ) | Display Reading ( NTU ) | Tolerance ( % ) | Result       |
|--------------------------|-------------------------|-----------------|--------------|
| 0                        | 0.10                    | --              | Satisfactory |
| 10                       | 9.84                    | -1.60           | Satisfactory |
| 20                       | 19.82                   | -0.90           | Satisfactory |
| 100                      | 97.79                   | -2.20           | Satisfactory |
| 800                      | 819.11                  | 2.40            | Satisfactory |

Tolerance of Turbidity should be less than  $\pm 10.0$  ( % )

### (6) Conductivity

| Expected Reading ( $\mu\text{S/cm at } 25^\circ\text{C}$ ) | Display Reading | Tolerance ( % ) | Result       |
|--|-----------------|-----------------|--------------|
| 146.9  | 137.9           | -6.13           | Satisfactory |
| 1412   | 1380.2          | -2.25           | Satisfactory |
| 12890  | 12637.4         | -1.96           | Satisfactory |
| 58670  | 57116           | -2.65           | Satisfactory |
| 111900   | 112537          | 0.57            | Satisfactory |

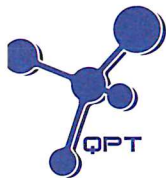
Tolerance of Conductivity should be less than  $\pm 10.0$  ( % )

### Remark(s)

- The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.
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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB090082  
Date of Issue : 19 September 2022  
Page No. : 1 of 2

### PART A - CUSTOMER INFORMATION

Enovative Environmental Service Ltd.  
Flat 2207, Yu Fun House Yu Chui Court, Shatin  
New Territories (HK) Hong Kong

### PART B - SAMPLE INFORMATION

Name of Equipment : YSI ProDSS (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 17E100747  
Date of Received : 16 September 2022  
Date of Calibration : 16 September 2022  
Date of Next Calibration : 15 December 2022  
Request No. : D-BB090082

### PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

| Test Parameter   | Reference Method  |
|------------------|---|
| pH value         | APHA 21e 4500 H+  |
| Temperature      | Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure |
| Salinity         | APHA 21e 2520B  |
| Dissolved oxygen | APHA 21e 4500 O   |
| Turbidity        | APHA 21e 2130B  |
| Conductivity     | APHA 21e 2510B  |

### PART D - CALIBRATION RESULT

#### (1) pH value

| Target (pH unit) | Display Reading (pH unit) | Tolerance | Result       |
|------------------|---------------------------|-----------|--------------|
| 4.00             | 3.95                      | -0.05     | Satisfactory |
| 7.42             | 7.37                      | -0.05     | Satisfactory |
| 10.01            | 9.94                      | -0.07     | Satisfactory |

Tolerance of pH value should be less than  $\pm 0.2$  (pH unit)

#### (2) Temperature

| Reading of Ref. thermometer ( $^{\circ}\text{C}$ ) | Display Reading ( $^{\circ}\text{C}$ ) | Tolerance | Result       |
|--|--|-----------|--------------|
| 40   | 40.1                                   | 0.1       | Satisfactory |
| 30   | 30.1                                   | 0.1       | Satisfactory |
| 10   | 10.0                                   | 0.0       | Satisfactory |

Tolerance of Temperature should be less than  $\pm 2.0$  ( $^{\circ}\text{C}$ )

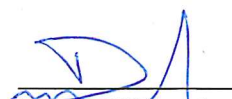
#### (3) Salinity

| Expected Reading (g/L) | Display Reading (g/L) | Tolerance (%) | Result       |
|------------------------|-----------------------|---------------|--------------|
| 10                     | 10.19                 | 1.90          | Satisfactory |
| 20                     | 20.43                 | 2.15          | Satisfactory |
| 30                     | 30.33                 | 1.10          | Satisfactory |

Tolerance of Salinity should be less than  $\pm 10.0$  (%)

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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB090082

Date of Issue : 19 September 2022

Page No. : 2 of 2

### (4) Dissolved oxygen

| Expected Reading ( mg/L ) | Display Reading ( mg/L ) | Tolerance | Result       |
|---------------------------|--------------------------|-----------|--------------|
| 7.38                      | 7.58                     | 0.20      | Satisfactory |
| 4.70                      | 4.86                     | 0.16      | Satisfactory |
| 1.48                      | 1.81                     | 0.33      | Satisfactory |
| 0.45                      | 0.39                     | -0.06     | Satisfactory |

Tolerance of Dissolved oxygen should be less than  $\pm 0.5$  ( mg/L )

### (5) Turbidity

| Expected Reading ( NTU ) | Display Reading ( NTU ) | Tolerance ( % ) | Result       |
|--------------------------|-------------------------|-----------------|--------------|
| 0                        | 0.10                    | --              | Satisfactory |
| 10                       | 9.86                    | -1.40           | Satisfactory |
| 20                       | 19.85                   | -0.70           | Satisfactory |
| 100                      | 98.96                   | -1.00           | Satisfactory |
| 800                      | 817.32                  | 2.20            | Satisfactory |

Tolerance of Turbidity should be less than  $\pm 10.0$  ( % )

### (6) Conductivity

| Expected Reading ( $\mu\text{S/cm at } 25^\circ\text{C}$ ) | Display Reading | Tolerance ( % ) | Result       |
|--|-----------------|-----------------|--------------|
| 146.9  | 136.8           | -6.88           | Satisfactory |
| 1412   | 1372.4          | -2.8            | Satisfactory |
| 12890  | 12522.6         | -2.85           | Satisfactory |
| 58670  | 56891           | -3.03           | Satisfactory |
| 111900   | 112764          | 0.77            | Satisfactory |

Tolerance of Conductivity should be less than  $\pm 10.0$  ( % )

### Remark(s)

- The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.
- The results relate only to the calibrated equipment as received
- The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
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--- END OF REPORT ---

Annex G2

## Monitoring Schedule for Water Quality

**Tung Chung New Town Extension (East)**  
**Impact Marine Water Quality Monitoring (WQM) Schedule (November 2022)**

| Sunday | Monday  | Tuesday | Wednesday   | Thursday | Friday  | Saturday |
|--------|---|---------|---|----------|---|----------|
|        |   | 1-Nov   | 2-Nov   | 3-Nov    | 4-Nov   | 5-Nov    |
|        |   |         | WQM was cancelled due to issue of Strong Wind No.3 and No.8 |          | ebb tide 8:03 - 11:33<br>flood tide 15:15 - 18:45 |          |
| 6-Nov  | 7-Nov   | 8-Nov   | 9-Nov   | 10-Nov   | 11-Nov  | 12-Nov   |
|        | ebb tide 10:24 - 13:54<br>flood tide 4:27 - 7:57  |         | ebb tide 11:40 - 15:10<br>flood tide 6:05 - 9:35            |          | ebb tide 12:48 - 16:18<br>flood tide 7:36 - 11:06 |          |
| 13-Nov | 14-Nov  | 15-Nov  | 16-Nov  | 17-Nov   | 18-Nov  | 19-Nov   |
|        | ebb tide 2:16 - 5:46<br>flood tide 14:31 - 16:50  |         | ebb tide 4:50 - 7:16<br>flood tide 16:14 - 18:43            |          | ebb tide 6:43 - 9:42<br>flood tide 14:10 - 17:40  |          |
| 20-Nov | 21-Nov  | 22-Nov  | 23-Nov  | 24-Nov   | 25-Nov  | 26-Nov   |
|        | ebb tide 9:13 - 12:43<br>flood tide 15:18 - 18:00 |         | ebb tide 10:45 - 14:15<br>flood tide 6:00 - 8:33            |          | ebb tide 12:17 - 15:47<br>flood tide 6:51 - 10:21 |          |
| 27-Nov | 28-Nov  | 29-Nov  | 30-Nov  |          |   |          |
|        | ebb tide 1:56 - 5:26<br>flood tide 9:46 - 13:16   |         | ebb tide 3:48 - 7:18<br>flood tide 12:19 - 15:49            |          |   |          |

Remark:

Pickup time and place of 1st tide: 15 min before tidal window at Sham Tseng pier

Pickup time and place of 2nd tide: 15 min before tidal window at Tung Chung pier

Annex G3

## Monitoring Results for Water Quality

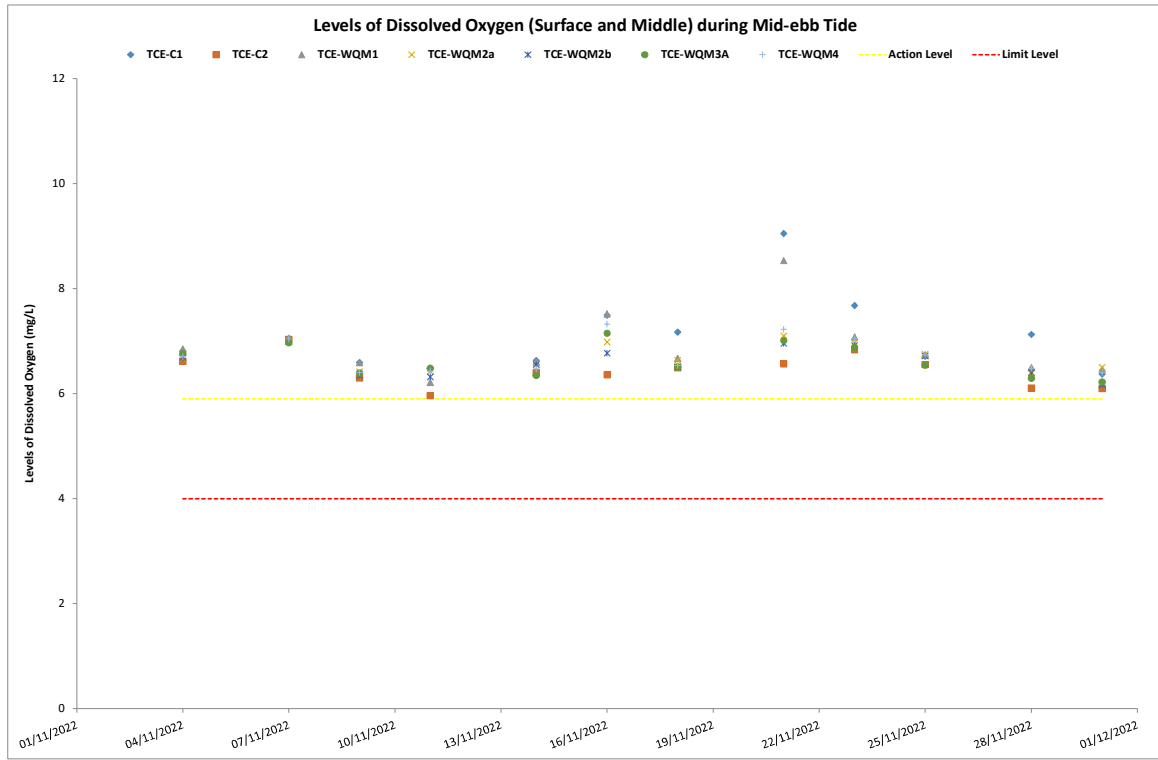


Figure 1: Levels of Dissolved Oxygen (Surface and Middle) (mg/L) recorded at Mid-ebb Tide during the Water Quality Monitoring between 1 to 30 November 2022

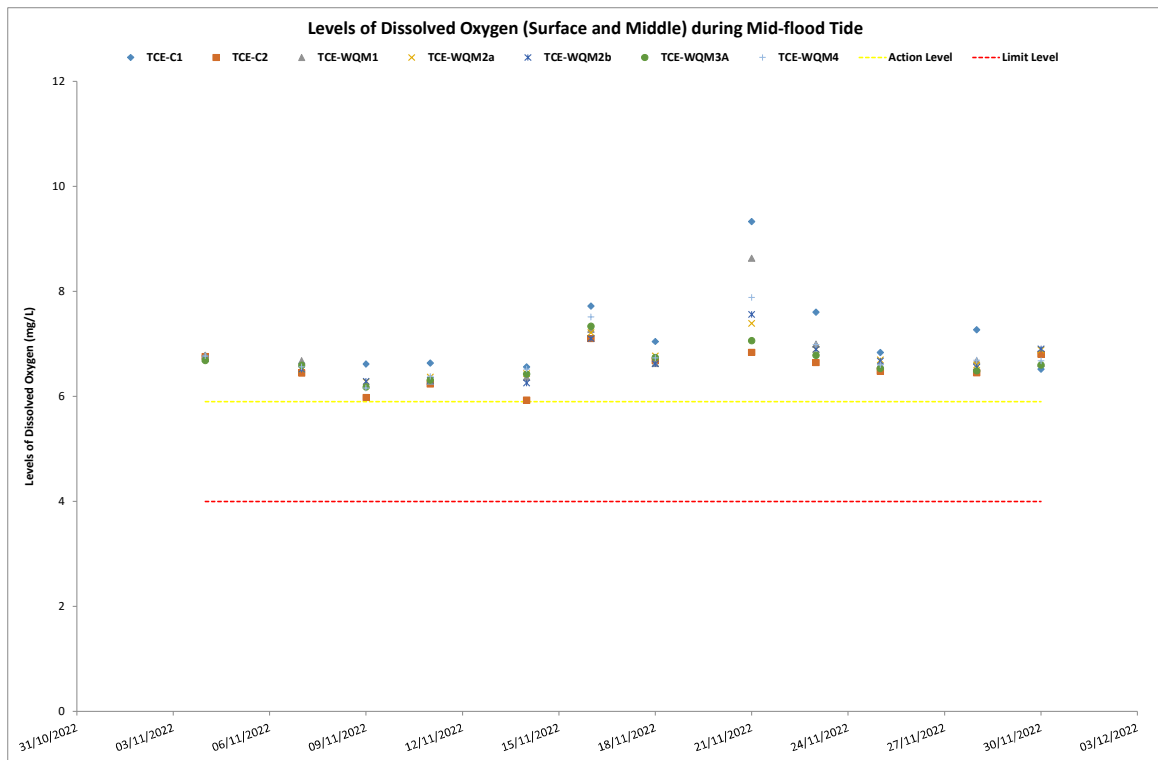


Figure 2: Levels of Dissolved Oxygen (Surface and Middle) (mg/L) recorded at Mid-flood Tide during the Water Quality Monitoring between 1 to 30 November 2022

Source: P:\Projects\0445700 CEDD ET for Tung Chung.JT\02\_Deliverable\10 Monthly EM&A Report\

Date: November 2022

**Environmental  
Resources  
Management**



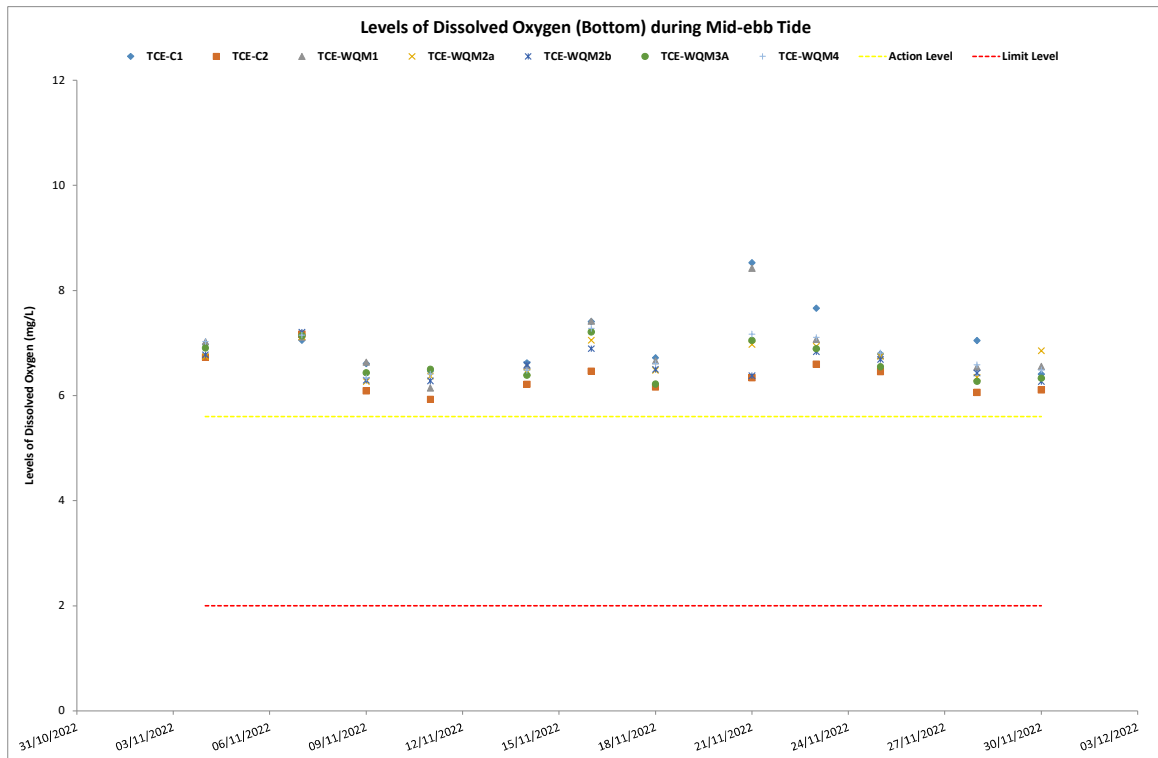


Figure 3: Levels of Dissolved Oxygen (Bottom) (mg/L) recorded at Mid-ebb Tide during the Water Quality Monitoring between 1 to 30 November 2022

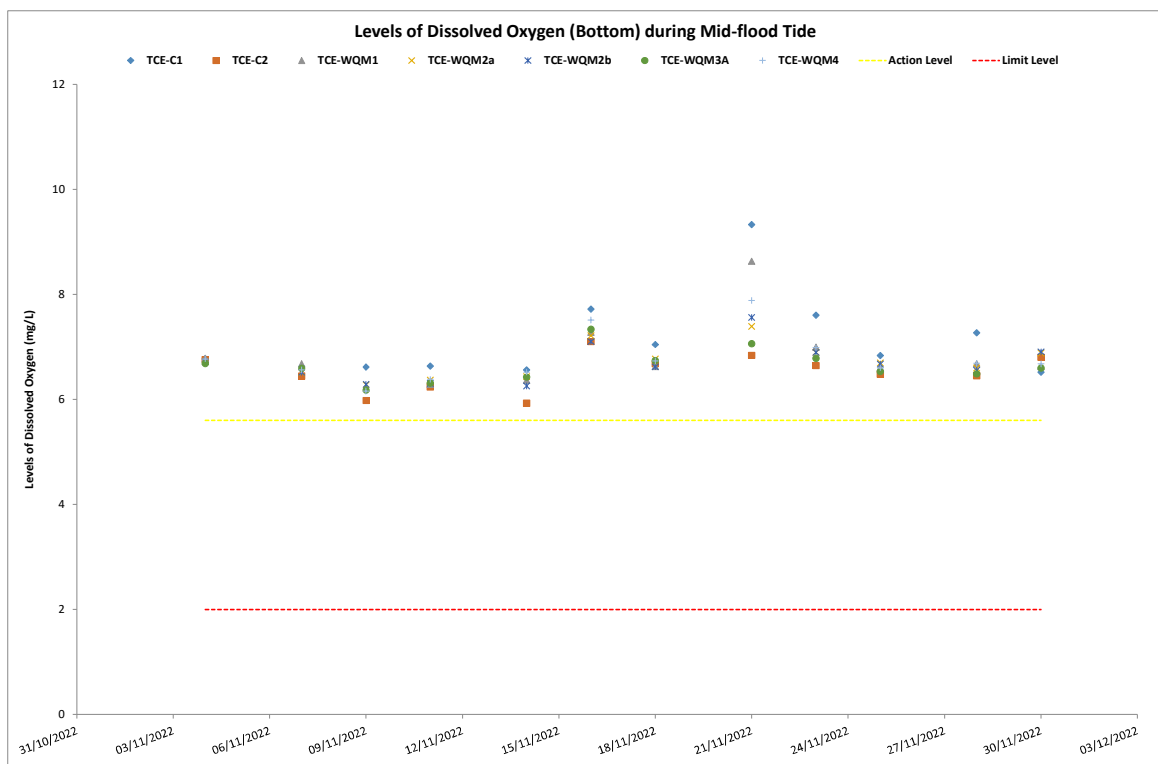


Figure 4: Levels of Dissolved Oxygen (Bottom) (mg/L) recorded at Mid-flood Tide during the Water Quality Monitoring between 1 to 30 November 2022

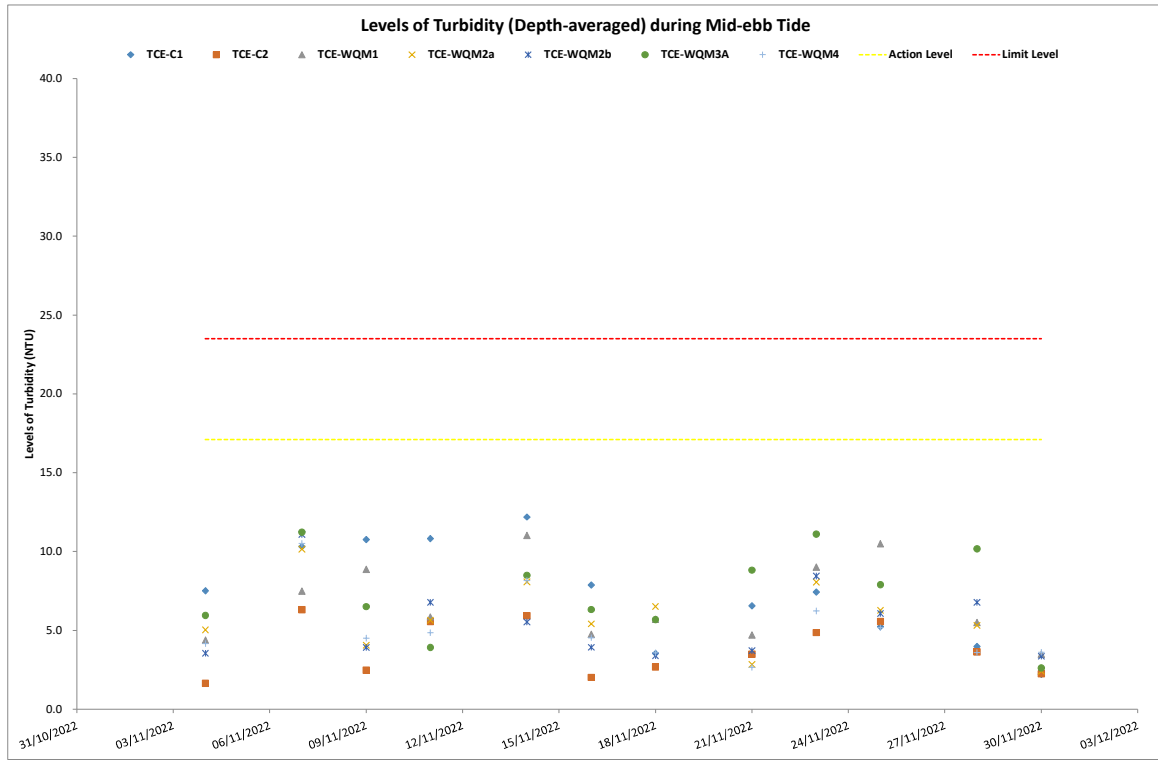


Figure 5: Levels of Turbidity (Depth-averaged) (NTU) recorded at Mid-ebb Tide during the Water Quality Monitoring between 1 to 30 November 2022

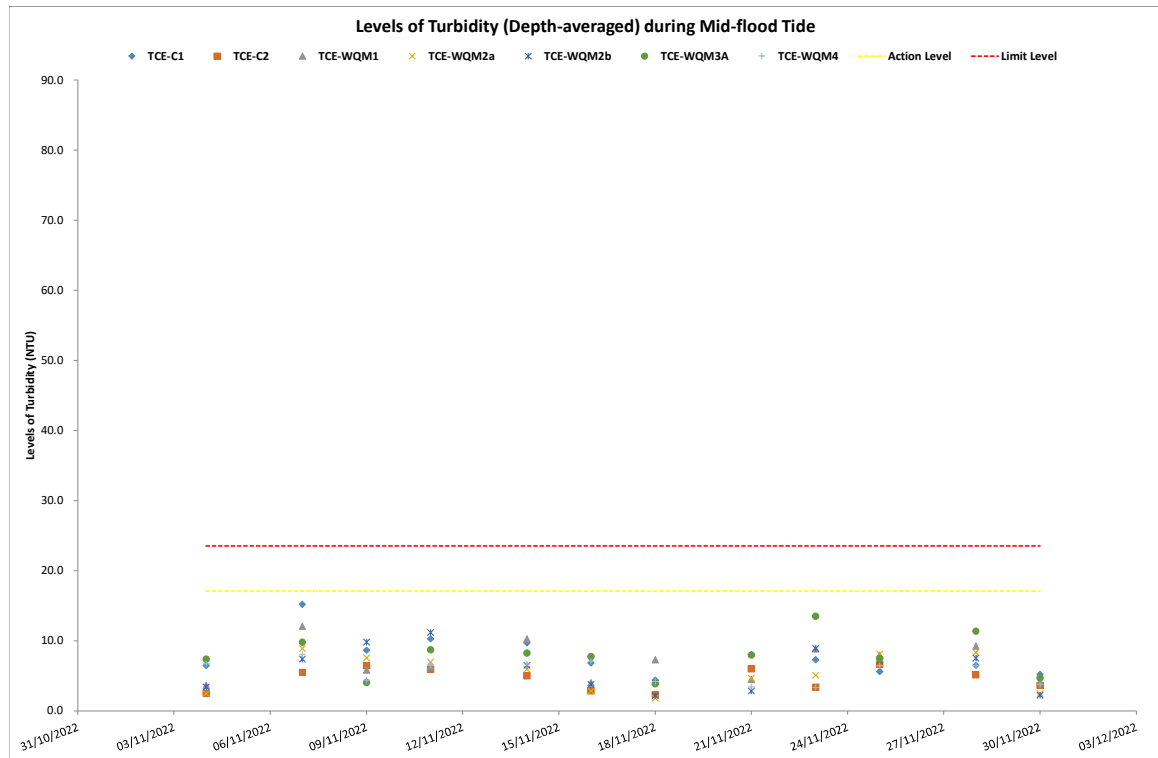


Figure 6: Levels of Turbidity (Depth-averaged) (NTU) recorded at Mid-flood Tide during the Water Quality Monitoring between 1 to 30 November 2022

Source: P:\Projects\0445700 CEDD ET for Tung Chung.JT\02\_Deliverable\10 Monthly EM&A Report\

Date: November 2022

**Environmental Resources Management**





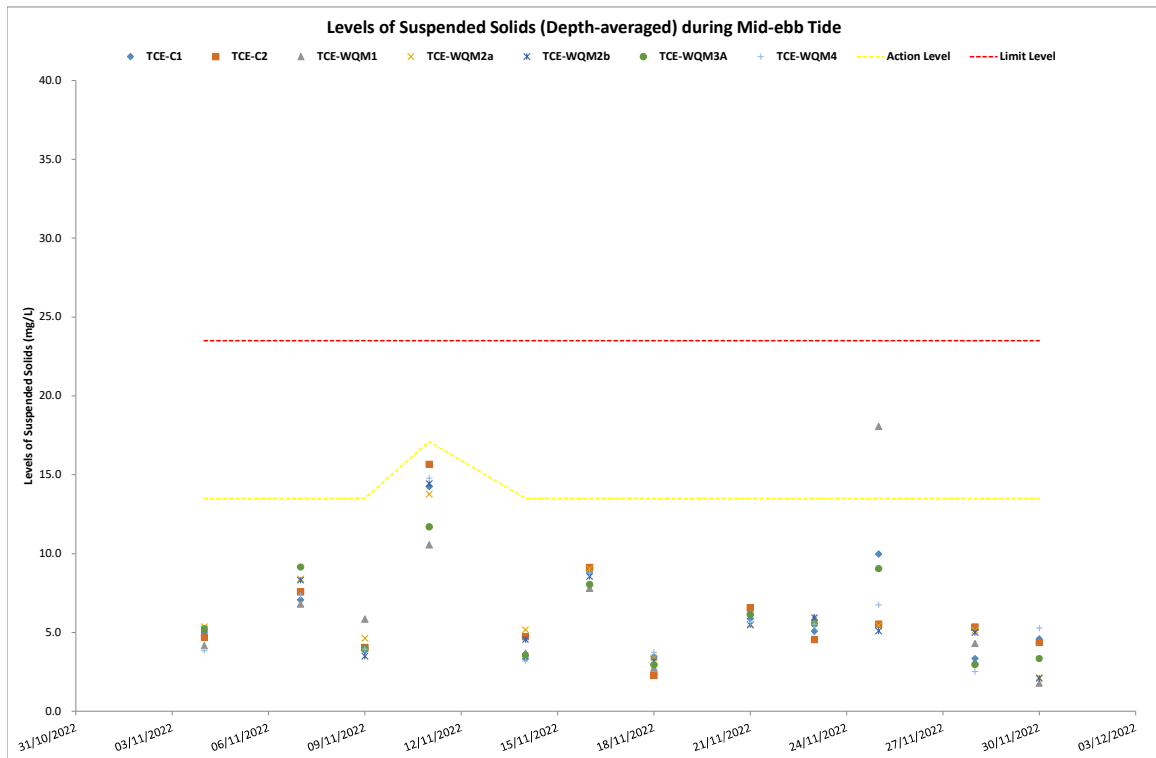


Figure 7: Levels of Suspended Solids (Depth-averaged) (mg/L) recorded at Mid-ebb Tide during the Water Quality Monitoring between 1 to 30 November 2022

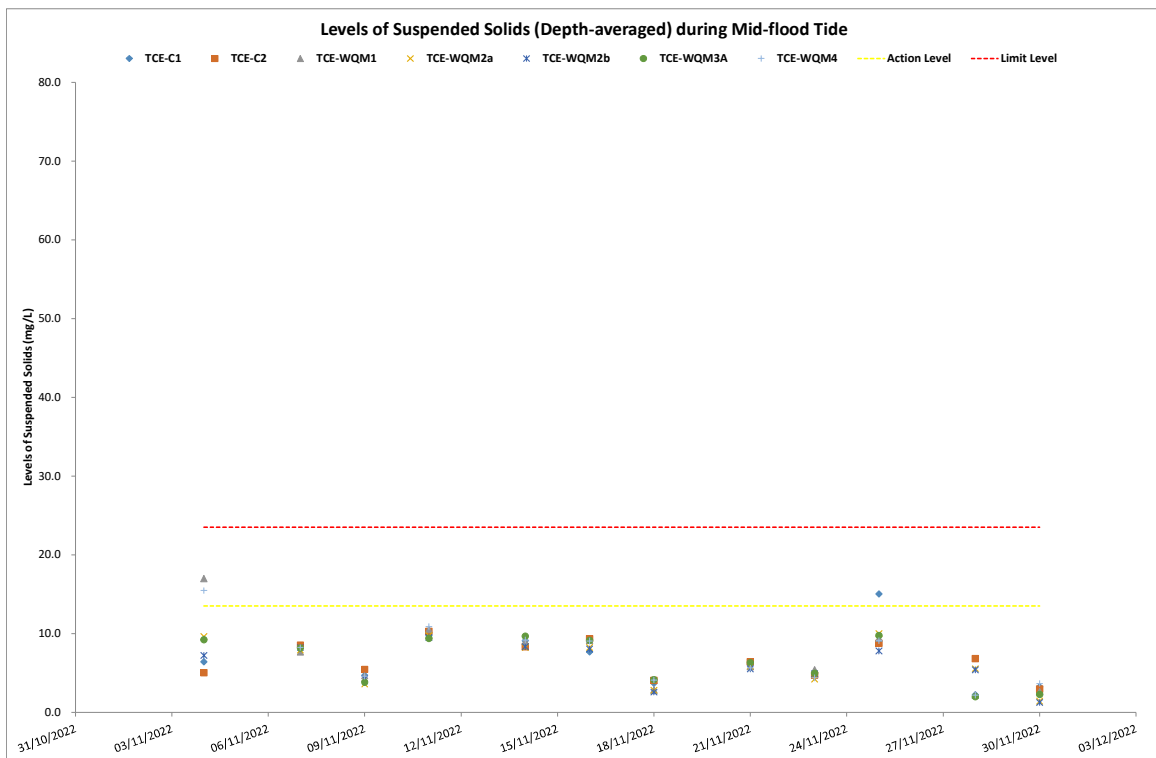


Figure 8: Levels of Suspended Solids (Depth-averaged) (mg/L) recorded at Mid-flood Tide during the Water Quality Monitoring between 1 to 30 November 2022

Source: P:\Projects\0445700 CEDD ET for Tung Chung.JT\02\_Deliverable\10 Monthly EM&A Report\  
 Date: November 2022

**Environmental  
 Resources  
 Management**



| Date       | Tide       | Station   | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH   | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |     |
|------------|------------|-----------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|-----|
|            |            |           |                   |               |               |                 |             |                    |           |                        |      |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |     |
| 2022-11-04 | Mid-Ebb    | TCE-C1    | Misty             | Moderate      | 11:30         | 8.2             | Surface     | 1.0                | 1         | 22.4                   | 8.3  | 32.9           | 6.8                          | 94.7              | 7.0             | 4.3                          | 6.8            | 7.5             | 5.0       |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.4                   | 8.3  | 32.9           | 6.8                          | 94.7              | 6.9             | 4.6                          |                |                 |           |     |
|            |            |           |                   |               |               |                 | Middle      | 4.1                | 1         | 22.3                   | 8.3  | 32.9           | 6.8                          | 94.8              | 7.6             | 5.0                          |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.2                   | 8.3  | 33.0           | 6.8                          | 94.9              | 7.5             | 4.8                          |                |                 |           |     |
|            |            |           |                   |               |               |                 | Bottom      | 7.2                | 1         | 22.2                   | 8.3  | 33.0           | 6.8                          | 95.0              | 8.0             | 5.7                          |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.2                   | 8.3  | 33.0           | 7.1                          | 98.7              | 8.1             | 5.4                          |                |                 |           |     |
|            |            | TCE-C2    | Misty             | Moderate      | 9:22          | 10.8            | Surface     | 1.0                | 1         | 22.8                   | 8.1  | 32.4           | 6.6                          | 92.3              | 1.1             | 4.0                          | 6.6            | 1.6             | 4.7       |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.8                   | 8.1  | 32.4           | 6.6                          | 92.4              | 1.1             | 4.1                          |                |                 |           |     |
|            |            |           |                   |               |               |                 | Middle      | 5.4                | 1         | 22.8                   | 8.2  | 32.4           | 6.6                          | 93.0              | 1.5             | 4.4                          |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.8                   | 8.2  | 32.4           | 6.7                          | 93.2              | 1.4             | 4.7                          |                |                 |           |     |
|            |            |           |                   |               |               |                 | Bottom      | 9.8                | 1         | 22.8                   | 8.2  | 32.3           | 6.7                          | 94.0              | 2.4             | 5.6                          |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.8                   | 8.2  | 32.3           | 6.8                          | 94.5              | 2.4             | 5.3                          |                |                 |           |     |
|            |            | TCE-WQM1  | Misty             | Moderate      | 10:33         | 6.8             | Surface     | 1.0                | 1         | 22.3                   | 8.2  | 32.2           | 6.8                          | 94.2              | 3.8             | 3.2                          | 6.9            | 4.4             | 4.2       |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.3                   | 8.2  | 32.2           | 6.8                          | 94.4              | 3.8             | 3.4                          |                |                 |           |     |
|            |            |           |                   |               |               |                 | Middle      | 3.4                | 1         | 22.1                   | 8.2  | 32.4           | 6.9                          | 95.1              | 4.1             | 4.2                          |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.0                   | 8.2  | 32.5           | 6.9                          | 95.5              | 4.2             | 4.4                          |                |                 |           |     |
|            |            |           |                   |               |               |                 | Bottom      | 5.8                | 1         | 21.8                   | 8.2  | 32.7           | 7.0                          | 96.4              | 5.2             | 5.0                          |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 21.7                   | 8.2  | 32.7           | 7.1                          | 97.0              | 5.3             | 4.8                          |                |                 |           |     |
|            |            | TCE-WQM2a | Misty             | Moderate      | 10:02         | 7.0             | Surface     | 1.0                | 1         | 22.8                   | 8.2  | 32.6           | 6.7                          | 93.3              | 4.0             | 4.3                          | 6.7            | 5.0             | 5.4       |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.8                   | 8.2  | 32.6           | 6.7                          | 93.3              | 4.0             | 4.7                          |                |                 |           |     |
|            |            |           |                   |               |               |                 | Middle      | 3.5                | 1         | 22.8                   | 8.2  | 32.6           | 6.7                          | 93.9              | 5.0             | 5.2                          |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.8                   | 8.2  | 32.7           | 6.7                          | 94.1              | 5.1             | 5.6                          |                |                 |           |     |
|            |            |           |                   |               |               |                 | Bottom      | 6.0                | 1         | 22.8                   | 8.2  | 32.7           | 6.7                          | 94.5              | 6.1             | 6.0                          |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.8                   | 8.2  | 32.7           | 6.8                          | 94.7              | 6.1             | 6.4                          |                |                 |           |     |
|            | TCE-WQM2b  | Misty     | Moderate          | 9:50          | 9.8           | Surface         | 1.0         | 1                  | 22.8      | 8.3                    | 32.7 | 6.7            | 93.5                         | 2.3               | 4.7             | 6.7                          | 3.6            | 5.2             |           |     |
|            |            |           |                   |               |               |                 |             | 2                  | 22.8      | 8.3                    | 32.7 | 6.7            | 93.5                         | 2.4               | 4.3             |                              |                |                 |           |     |
|            |            |           |                   |               |               | Middle          | 4.9         | 1                  | 22.8      | 8.3                    | 32.7 | 6.7            | 94.1                         | 3.7               | 5.1             |                              |                |                 |           |     |
|            |            |           |                   |               |               |                 |             | 2                  | 22.8      | 8.3                    | 32.7 | 6.7            | 94.2                         | 3.6               | 5.4             |                              |                |                 |           |     |
|            |            |           |                   |               |               | Bottom          | 8.8         | 1                  | 22.7      | 8.3                    | 32.8 | 6.8            | 94.7                         | 4.6               | 5.8             |                              |                |                 |           |     |
|            |            |           |                   |               |               |                 |             | 2                  | 22.7      | 8.3                    | 32.8 | 6.8            | 95.1                         | 4.7               | 6.1             |                              |                |                 |           |     |
|            | TCE-WQM3A  | Misty     | Moderate          | 10:12         | 5.0           | Surface         | 1.0         | 1                  | 22.8      | 8.2                    | 32.2 | 6.8            | 94.5                         | 5.8               | 4.6             | 6.8                          | 6.0            | 5.2             |           |     |
|            |            |           |                   |               |               |                 |             | 2                  | 22.8      | 8.2                    | 32.4 | 6.8            | 94.8                         | 5.8               | 4.3             |                              |                |                 |           |     |
|            |            |           |                   |               |               | Bottom          | 4.0         | 1                  | 22.8      | 8.2                    | 32.5 | 6.9            | 96.2                         | 6.1               | 6.2             |                              |                |                 |           |     |
|            | TCE-WQM4   | Misty     | Moderate          | 10:22         | 5.0           | Surface         | 1.0         | 1                  | 22.4      | 8.2                    | 32.1 | 6.7            | 93.0                         | 3.7               | 3.5             | 6.7                          | 4.2            | 3.9             |           |     |
|            |            |           |                   |               |               |                 |             | 2                  | 22.3      | 8.2                    | 32.2 | 6.7            | 93.0                         | 3.6               | 3.0             |                              |                |                 |           |     |
|            |            |           |                   |               |               | Bottom          | 4.0         | 1                  | 22.1      | 8.2                    | 32.7 | 6.9            | 95.2                         | 4.7               | 4.7             |                              |                |                 |           |     |
|            | 2022-11-04 | Mid-Flood | TCE-C1            | Misty         | Moderate      | 15:16           | 7.6         | Surface            | 1.0       | 1                      | 22.4 | 8.3            | 32.9                         | 6.8               | 94.3            | 5.4                          | 5.3            | 6.8             | 6.5       | 6.4 |
|            |            |           |                   |               |               |                 |             |                    |           | 2                      | 22.4 | 8.3            | 32.9                         | 6.8               | 94.3            | 5.5                          | 4.9            |                 |           |     |
|            |            |           |                   |               |               |                 |             | Middle             | 3.8       | 1                      | 22.4 | 8.3            | 32.9                         | 6.8               | 94.4            | 7.0                          | 6.1            |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    |           | 2                      | 22.4 | 8.3            | 32.9                         | 6.8               | 94.5            | 6.9                          | 5.7            |                 |           |     |
|            |            |           |                   |               |               |                 |             | Bottom             | 6.6       | 1                      | 22.4 | 8.3            | 32.9                         | 6.8               | 94.5            | 7.0                          | 8.0            |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    |           | 2                      | 22.4 | 8.3            | 32.9                         | 6.8               | 94.6            | 7.1                          | 8.6            |                 |           |     |
|            |            |           | TCE-C2            | Misty         | Moderate      | 17:15           | 9.2         | Surface            | 1.0       | 1                      | 22.9 | 8.3            | 32.8                         | 6.7               | 94.4            | 1.6                          | 5.7            | 6.8             | 2.5       | 5.0 |
|            |            |           |                   |               |               |                 |             |                    |           | 2                      | 22.9 | 8.3            | 32.8                         | 6.7               | 94.8            | 1.5                          | 6.0            |                 |           |     |
|            |            |           |                   |               |               |                 |             | Middle             | 4.6       | 1                      | 22.9 | 8.3            | 32.8                         | 6.8               | 95.3            | 2.5                          | 4.7            |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    |           | 2                      | 22.9 | 8.3            | 32.8                         | 6.8               | 95.5            | 2.6                          | 5.1            |                 |           |     |
|            |            |           |                   |               |               |                 |             | Bottom             | 8.2       | 1                      | 22.9 | 8.3            | 32.8                         | 6.9               | 96.8            | 3.3                          | 4.5            |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    |           | 2                      | 22.9 | 8.3            | 32.8                         | 6.9               | 97.5            | 3.4                          | 4.2            |                 |           |     |
| TCE-WQM1   |            |           | Misty             | Moderate      | 16:11         | 7.0             | Surface     | 1.0                | 1         | 22.5                   | 8.3  | 32.0           | 6.8                          | 94.0              | 3.0             | 15.6                         | 6.8            | 3.6             | 17.0      |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.5                   | 8.3  | 32.0           | 6.8                          | 94.0              | 2.9             | 16.0                         |                |                 |           |     |
|            |            |           |                   |               |               |                 | Middle      | 3.5                | 1         | 22.4                   | 8.3  | 32.0           | 6.8                          | 94.1              | 3.1             | 16.9                         |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.4                   | 8.3  | 32.1           | 6.8                          | 94.2              | 3.1             | 16.7                         |                |                 |           |     |
|            |            |           |                   |               |               |                 | Bottom      | 6.0                | 1         | 22.3                   | 8.3  | 32.2           | 6.8                          | 94.5              | 4.8             | 18.3                         |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.3                   | 8.3  | 32.2           | 6.9                          | 95.1              | 5.0             | 18.5                         |                |                 |           |     |
| TCE-WQM2a  |            |           | Misty             | Moderate      | 16:41         | 7.4             | Surface     | 1.0                | 1         | 22.8                   | 8.2  | 32.5           | 6.7                          | 93.6              | 1.6             | 7.0                          | 6.7            | 2.5             | 9.6       |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.8                   | 8.2  | 32.5           | 6.7                          | 93.6              | 1.6             | 6.7                          |                |                 |           |     |
|            |            |           |                   |               |               |                 | Middle      | 3.7                | 1         | 22.8                   | 8.2  | 32.8           | 6.7                          | 94.6              | 2.8             | 14.4                         |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.8                   | 8.2  | 32.8           | 6.8                          | 94.9              | 2.8             | 14.8                         |                |                 |           |     |
|            |            |           |                   |               |               |                 | Bottom      | 6.4                | 1         | 22.8                   | 8.2  | 32.8           | 6.8                          | 95.8              | 3.1             | 7.6                          |                |                 |           |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 22.8                   | 8.3  | 32.8           | 6.9                          | 96.2              | 3.1             | 7.3                          |                |                 |           |     |
| TCE-WQM2b  |            | Misty     | Moderate          | 16:52         | 8.0           | Surface         | 1.0         | 1                  | 22.8      | 8.2                    | 32.6 | 6.7            | 93.4                         | 2.5               | 9.0             | 6.7                          | 3.4            | 7.2             |           |     |
|            |            |           |                   |               |               |                 |             | 2                  | 22.7      | 8.2                    | 32.6 | 6.7            | 93.6                         | 2.4               | 8.6             |                              |                |                 |           |     |
|            |            |           |                   |               |               | Middle          | 4.0         | 1                  | 22.5      | 8.2                    | 32.8 | 6.7            | 94.1                         | 3.7               | 6.7             |                              |                |                 |           |     |
|            |            |           |                   |               |               |                 |             | 2                  | 22.4      | 8.2                    | 32.9 | 6.8            | 94.4                         | 3.7               | 7.1             |                              |                |                 |           |     |
|            |            |           |                   |               |               | Bottom          | 7.0         | 1                  | 22.1      | 8.2                    | 33.1 | 6.9            | 96.3                         | 4.1               | 6.1             |                              |                |                 |           |     |
|            |            |           |                   |               |               |                 |             | 2                  | 22.0      | 8.2                    | 33.2 | 7.2            | 99.6                         | 4.1               | 5.8             |                              |                |                 |           |     |
| TCE-WQM3A  |            | Misty     | Moderate          | 16:32         | 5.2           | Surface         | 1.0         | 1                  | 22.9      | 8.2                    | 32.3 | 6.7            | 93.7                         | 7.9               | 6.0             | 6.7                          | 7.4            | 9.2             |           |     |
|            |            |           |                   |               |               |                 |             | 2                  | 22.9      | 8.2                    | 32.4 | 6.7            | 93.9                         | 7.9               | 5.5             |                              |                |                 |           |     |
|            |            |           |                   |               |               | Bottom          | 4.2         | 1                  | 22.9      | 8.2                    | 32.5 | 6.8            | 95.5                         | 6.8               | 12.9            |                              |                |                 |           |     |
| TCE-WQM4   |            | Misty     | Moderate          | 16:22         | 3.8           | Surface         | 1.0         | 1                  | 22.7      | 8.2                    | 32.0 | 6.8            | 94.2                         | 6.3               | 17.0            | 6.8                          | 6.7            | 15.5            |           |     |
|            |            |           |                   |               |               |                 |             | 2                  | 22.7      | 8.2                    | 32.0 | 6.8            | 94.4                         | 6.4               | 16.8            |                              |                |                 |           |     |
|            |            |           |                   |               |               | Bottom          | 2.8         | 1                  | 22.7      | 8.2                    | 32.0 | 6.9            | 95.8                         | 7.0               | 14.2            |                              |                |                 |           |     |
|            |            |           | 2                 | 22.7          | 8.2           | 32.0            | 6.9         | 95.8               | 7.0       | 13.9                   |      |                |                              |                   |                 |                              |                |                 |           |     |

| Date       | Tide      | Station  | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH   | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |
|------------|-----------|----------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|
|            |           |          |                   |               |               |                 |             |                    |           |                        |      |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |
| 2022-11-07 | Mid-Ebb   | TCE-C1   | Fine              | Moderate      | 10:32         | 8.6             | Surface     | 1.0                | 1         | 22.0                   | 8.2  | 31.8           | 7.0                          | 96.7              | 9.3             | 6.5                          | 7.0            | 10.3            | 7.1       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 22.0                   | 8.2  | 31.8           | 7.0                          | 96.7              | 9.3             | 6.2                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 4.3                | 1         | 22.0                   | 8.2  | 31.8           | 7.1                          | 96.8              | 10.8            | 6.8                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 7.6                | 1         | 22.0                   | 8.2  | 31.8           | 7.1                          | 96.9              | 10.7            | 7.3                          |                |                 |           |
|            |           |          |                   | 2             | 22.0          | 8.2             | 31.8        | 7.1                | 96.9      | 10.9                   | 8.0  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 22.0          | 8.2             | 31.8        | 7.1                | 97.0      | 10.9                   | 7.6  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-C2   | Fine              | Moderate      | 12:40         | 13.2            | Surface     | 1.0                | 1         | 22.5                   | 8.2  | 31.6           | 7.0                          | 96.8              | 5.4             | 7.3                          | 7.0            | 6.3             | 7.6       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 22.5                   | 8.2  | 31.6           | 7.0                          | 97.2              | 5.4             | 7.0                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 6.6                | 1         | 22.5                   | 8.2  | 31.6           | 7.1                          | 97.7              | 6.4             | 7.5                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 12.2               | 1         | 22.5                   | 8.2  | 31.6           | 7.1                          | 97.9              | 6.4             | 7.7                          |                |                 |           |
|            |           |          |                   | 2             | 22.5          | 8.2             | 31.6        | 7.2                | 99.2      | 7.2                    | 8.1  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 22.5          | 8.2             | 31.6        | 7.2                | 99.9      | 7.2                    | 7.9  |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM1  | Cloudy   | Moderate          | 11:27         | 8.0           | Surface         | 1.0         | 1                  | 22.1      | 8.2                    | 30.9 | 7.0            | 96.4                         | 6.8               | 6.6             | 7.1                          | 7.5            | 6.8             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 22.1      | 8.2                    | 30.9 | 7.0            | 96.4                         | 6.8               | 6.5             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 4.0         | 1                  | 22.0      | 8.2                    | 31.0 | 7.1            | 96.5                         | 6.9               | 6.7             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 7.0         | 1                  | 21.9      | 8.2                    | 31.1 | 7.1            | 96.9                         | 8.7               | 7.1             |                              |                |                 |           |
|            |           |          | 2                 | 21.9          | 8.2           | 31.1            | 7.1         | 97.5               | 8.8       | 7.1                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2a | Cloudy   | Moderate          | 11:57         | 7.6           | Surface         | 1.0         | 1                  | 22.4      | 8.2                    | 31.3 | 7.0            | 96.0                         | 9.2               | 7.3             | 7.0                          | 10.1           | 8.4             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 22.4      | 8.2                    | 31.3 | 7.0            | 96.0                         | 9.2               | 7.0             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 3.8         | 1                  | 22.4      | 8.2                    | 31.5 | 7.0            | 97.0                         | 10.5              | 8.3             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 6.6         | 1                  | 22.4      | 8.2                    | 31.5 | 7.0            | 97.3                         | 10.5              | 7.9             |                              |                |                 |           |
|            |           |          | 2                 | 22.4          | 8.2           | 31.5            | 7.1         | 98.2               | 10.7      | 10.1                   |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 22.4          | 8.2           | 31.5            | 7.1         | 98.6               | 10.7      | 9.8                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2b | Fine     | Moderate          | 12:07         | 10.4          | Surface         | 1.0         | 1                  | 22.4      | 8.1                    | 31.4 | 6.9            | 95.8                         | 10.1              | 7.4             | 7.0                          | 11.1           | 8.3             |           |
|            |           |          |                   |               |               |                 | 2           | 22.3               | 8.1       | 31.4                   | 7.0  | 96.0           | 10.1                         | 7.8               |                 |                              |                |                 |           |
| Middle     |           |          |                   |               |               | 5.2             | 1           | 22.1               | 8.2       | 31.6                   | 7.0  | 96.5           | 11.3                         | 8.1               |                 |                              |                |                 |           |
| Bottom     |           |          |                   |               |               | 9.4             | 1           | 21.7               | 8.2       | 31.6                   | 7.1  | 96.8           | 11.3                         | 8.5               |                 |                              |                |                 |           |
|            |           | 2        | 22.0              | 8.2           | 31.6          | 7.1             | 96.8        | 11.3               | 8.5       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 21.6              | 8.2           | 31.9          | 7.2             | 98.7        | 11.8               | 8.9       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 21.6              | 8.2           | 31.9          | 7.2             | 98.4        | 11.8               | 9.2       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM3A  | Cloudy    | Moderate | 11:48             | 4.7           | Surface       | 1.0             | 1           | 22.5               | 8.1       | 31.1                   | 7.0  | 96.1           | 11.8                         | 9.9               | 7.0             | 11.2                         | 9.2            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 22.5               | 8.1       | 31.2                   | 7.0  | 96.3           | 11.7                         | 9.5               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.7             | 1           | 22.5               | 8.1       | 31.3                   | 7.1  | 97.9           | 10.7                         | 8.8               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 22.5               | 8.2       | 31.4                   | 7.2  | 99.0           | 10.7                         | 8.4               |                 |                              |                |                 |           |
| TCE-WQM4   | Cloudy    | Moderate | 11:38             | 3.7           | Surface       | 1.0             | 1           | 22.3               | 8.1       | 30.8                   | 7.0  | 96.6           | 10.1                         | 8.2               | 7.0             | 10.5                         | 7.4            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 22.3               | 8.1       | 30.8                   | 7.1  | 96.8           | 10.2                         | 8.4               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 2.7             | 1           | 22.3               | 8.2       | 30.8                   | 7.2  | 98.2           | 10.9                         | 6.6               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 22.3               | 8.2       | 30.8                   | 7.2  | 98.2           | 10.9                         | 6.2               |                 |                              |                |                 |           |
| 2022-11-07 | Mid-Flood | TCE-C1   | Cloudy            | Moderate      | 7:37          | 8.4             | Surface     | 1.0                | 1         | 21.8                   | 8.3  | 31.6           | 6.6                          | 90.5              | 14.7            | 7.5                          | 6.6            | 15.2            | 8.4       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 21.8                   | 8.3  | 31.6           | 6.6                          | 90.5              | 14.6            | 7.8                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 4.2                | 1         | 21.7                   | 8.3  | 31.7           | 6.6                          | 90.6              | 15.2            | 8.5                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 7.4                | 1         | 21.6                   | 8.3  | 31.7           | 6.7                          | 90.7              | 15.2            | 8.1                          |                |                 |           |
|            |           |          |                   | 2             | 21.6          | 8.3             | 31.8        | 6.9                | 94.8      | 15.7                   | 8.9  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 21.6          | 8.3             | 31.8        | 6.9                | 94.5      | 15.7                   | 9.3  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-C2   | Cloudy            | Moderate      | 5:30          | 13.8            | Surface     | 1.0                | 1         | 22.2                   | 8.1  | 31.2           | 6.4                          | 88.1              | 4.9             | 10.0                         | 6.4            | 5.5             | 8.6       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 22.2                   | 8.1  | 31.2           | 6.4                          | 88.2              | 4.9             | 9.7                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 6.9                | 1         | 22.2                   | 8.1  | 31.2           | 6.5                          | 88.8              | 5.3             | 8.8                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 12.8               | 1         | 22.2                   | 8.1  | 31.2           | 6.5                          | 89.0              | 5.3             | 8.4                          |                |                 |           |
|            |           |          |                   | 2             | 22.2          | 8.1             | 31.1        | 6.5                | 89.8      | 6.3                    | 7.4  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 22.2          | 8.1             | 31.1        | 6.6                | 90.3      | 6.3                    | 7.0  |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM1  | Cloudy   | Moderate          | 6:41          | 7.8           | Surface         | 1.0         | 1                  | 21.7      | 8.2                    | 30.9 | 6.6            | 90.0                         | 11.5              | 7.0             | 6.7                          | 12.1           | 7.7             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 21.7      | 8.2                    | 31.0 | 6.6            | 90.2                         | 11.4              | 7.3             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 3.9         | 1                  | 21.5      | 8.2                    | 31.2 | 6.7            | 90.9                         | 11.8              | 7.6             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 6.8         | 1                  | 21.4      | 8.2                    | 31.3 | 6.7            | 91.3                         | 11.8              | 7.8             |                              |                |                 |           |
|            |           |          | 2                 | 21.2          | 8.2           | 31.5            | 6.8         | 92.2               | 12.9      | 8.1                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 21.1          | 8.2           | 31.5            | 6.9         | 92.8               | 13.0      | 8.2                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2a | Cloudy   | Moderate          | 6:10          | 7.2           | Surface         | 1.0         | 1                  | 22.2      | 8.2                    | 31.4 | 6.5            | 89.1                         | 7.8               | 7.5             | 6.5                          | 8.9            | 7.9             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 22.2      | 8.2                    | 31.4 | 6.5            | 89.1                         | 7.8               | 7.3             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 3.6         | 1                  | 22.2      | 8.2                    | 31.4 | 6.5            | 89.7                         | 8.9               | 8.1             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 6.2         | 1                  | 22.2      | 8.2                    | 31.4 | 6.5            | 89.9                         | 8.9               | 7.8             |                              |                |                 |           |
|            |           |          | 2                 | 22.2          | 8.2           | 31.4            | 6.6         | 90.3               | 9.9       | 8.5                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 22.2          | 8.2           | 31.4            | 6.6         | 90.5               | 9.9       | 8.4                    |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM2b  | Cloudy    | Moderate | 5:58              | 11.2          | Surface       | 1.0             | 1           | 22.2               | 8.2       | 31.5                   | 6.5  | 89.3           | 6.2                          | 9.6               | 6.5             | 7.4                          | 8.2            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 22.2               | 8.2       | 31.5                   | 6.5  | 89.3           | 6.2                          | 9.9               |                 |                              |                |                 |           |
|            |           |          |                   |               | Middle        | 5.6             | 1           | 22.2               | 8.2       | 31.5                   | 6.5  | 89.9           | 7.5                          | 7.8               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 10.2            | 1           | 22.2               | 8.2       | 31.5                   | 6.5  | 90.0           | 7.5                          | 8.2               |                 |                              |                |                 |           |
|            |           | 2        | 22.1              | 8.2           | 31.6          | 6.6             | 90.5        | 8.5                | 6.8       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 22.1              | 8.2           | 31.6          | 6.6             | 90.9        | 8.6                | 7.1       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM3A  | Cloudy    | Moderate | 6:20              | 4.8           | Surface       | 1.0             | 1           | 22.2               | 8.2       | 31.0                   | 6.6  | 90.3           | 9.6                          | 9.0               | 6.6             | 9.8                          | 8.2            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 22.2               | 8.2       | 31.2                   | 6.6  | 90.6           | 9.6                          | 8.6               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.8             | 1           | 22.2               | 8.2       | 31.3                   | 6.7  | 92.0           | 10.0                         | 7.7               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 22.2               | 8.2       | 31.3                   | 6.8  | 93.1           | 10.0                         | 7.4               |                 |                              |                |                 |           |
| TCE-WQM4   | Cloudy    | Moderate | 6:29              | 4.2           | Surface       | 1.0             | 1           | 21.8               | 8.2       | 30.9                   | 6.6  | 88.8           | 7.5                          | 7.0               | 6.6             | 8.0                          | 8.2            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 21.7               | 8.2       | 31.0                   | 6.6  | 88.8           | 7.5                          | 7.3               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.2             | 1           | 21.5               | 8.2       | 31.4                   | 7.0  | 95.4           | 8.5                          | 9.4               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 21.4               | 8.2       | 31.5                   | 7.0  | 95.0           | 8.5                          | 9.2               |                 |                              |                |                 |           |

| Date       | Tide    | Station | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH   | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |
|------------|---------|---------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|
|            |         |         |                   |               |               |                 |             |                    |           |                        |      |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |
| 2022-11-09 | Mid-Ebb | TCE-C1  | Sunny             | Rough         | 11:43         | 8.3             | Surface     | 1.0                | 1         | 22.5                   | 8.3  | 35.1           | 6.6                          | 93.3              | 9.0             | 3.1                          | 6.6            | 10.8            | 3.9       |
|            |         |         |                   |               |               |                 |             |                    | 2         | 22.5                   | 8.3  | 35.1           | 6.6                          | 93.2              | 9.0             | 2.7                          |                |                 |           |
|            |         |         |                   |               |               |                 | Middle      | 4.2                | 1         | 22.5                   | 8.3  | 35.1           | 6.6                          | 93.2              | 10.7            | 3.8                          |                |                 |           |
|            |         |         |                   |               |               |                 | Bottom      | 7.3                | 1         | 22.5                   | 8.3  | 35.1           | 6.6                          | 93.2              | 10.8            | 3.5                          |                |                 |           |
|            |         |         |                   |               |               | 2               | 22.5        | 8.4                | 35.1      | 6.6                    | 93.4 | 12.6           | 4.8                          | 6.6               |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.5          | 8.4             | 35.1        | 6.6                | 93.5      | 12.6                   | 5.2  |                |                              |                   |                 |                              |                |                 |           |
|            |         | Surface | 1.0               | 1             | 23.3          | 8.2             | 35.2        | 6.3                | 88.1      | 1.9                    | 2.9  |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 23.4          | 8.2             | 35.2        | 6.3                | 88.1      | 1.8                    | 3.3  |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   |               |               | 1               | 22.9        | 8.3                | 35.2      | 6.3                    | 86.0 | 2.5            | 3.8                          | 6.3               | 2.5             | 4.1                          |                |                 |           |
|            |         | Middle  | 7.3               | 1             | 22.9          | 8.3             | 35.2        | 6.3                | 86.1      | 2.5                    | 4.1  |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.9          | 8.3             | 35.2        | 6.3                | 83.8      | 3.1                    | 5.3  |                |                              |                   |                 |                              |                |                 |           |
|            |         | Bottom  | 13.6              | 1             | 22.9          | 8.3             | 35.2        | 6.1                | 83.8      | 3.1                    | 4.9  |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   |               |               | 2               | 22.9        | 8.3                | 35.2      | 6.1                    | 83.8 | 3.1            | 4.9                          | 6.1               |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.9          | 8.3             | 35.2        | 6.6                | 91.2      | 7.9                    | 6.7  |                |                              |                   |                 |                              |                |                 |           |
|            |         | Surface | 1.0               | 1             | 22.7          | 8.3             | 35.2        | 6.6                | 91.3      | 7.9                    | 7.0  |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.7          | 8.3             | 35.2        | 6.6                | 91.8      | 9.0                    | 5.6  |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   |               |               | 1               | 22.6        | 8.4                | 35.2      | 6.6                    | 91.8 | 9.0            | 5.6                          | 6.6               | 8.9             | 5.9                          |                |                 |           |
|            |         | Middle  | 4.8               | 1             | 22.6          | 8.4             | 35.2        | 6.6                | 92.3      | 9.8                    | 4.8  |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.6          | 8.4             | 35.2        | 6.6                | 92.3      | 9.8                    | 5.0  |                |                              |                   |                 |                              |                |                 |           |
|            |         | Bottom  | 8.6               | 1             | 22.6          | 8.4             | 35.2        | 6.6                | 92.3      | 9.8                    | 5.0  |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   |               |               | 2               | 22.6        | 8.4                | 35.2      | 6.6                    | 92.3 | 9.8            | 5.0                          | 6.6               |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.6          | 8.4             | 35.2        | 6.6                | 91.7      | 3.2                    | 3.6  |                |                              |                   |                 |                              |                |                 |           |
|            |         | Surface | 1.0               | 1             | 23.4          | 8.2             | 35.1        | 6.4                | 91.7      | 3.2                    | 4.0  |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 23.4          | 8.2             | 35.1        | 6.4                | 90.9      | 3.4                    | 4.3  |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   |               | 1             | 23.2            | 8.2         | 35.1               | 6.4       | 90.9                   | 3.4  | 4.5            | 6.4                          | 4.0               | 4.6             |                              |                |                 |           |
|            | Middle  | 3.8     | 1                 | 23.2          | 8.2           | 35.1            | 6.4         | 90.9               | 3.4       | 4.5                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         | 2                 | 23.2          | 8.2           | 35.1            | 6.4         | 87.8               | 5.6       | 5.5                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Bottom  | 6.6     | 1                 | 22.7          | 8.2           | 35.1            | 6.3         | 87.8               | 5.6       | 5.9                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   |               | 2             | 22.7            | 8.2         | 35.1               | 6.3       | 87.8                   | 5.6  | 5.9            | 6.3                          |                   |                 |                              |                |                 |           |
|            |         |         | 2                 | 22.7          | 8.2           | 35.1            | 6.5         | 91.1               | 3.0       | 3.9                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Surface | 1.0     | 1                 | 23.4          | 8.2           | 35.1            | 6.5         | 91.1               | 3.0       | 4.2                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         | 2                 | 23.4          | 8.2           | 35.1            | 6.2         | 88.7               | 3.9       | 3.7                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   |               | 1             | 22.8            | 8.2         | 35.1               | 6.2       | 88.7                   | 3.9  | 3.4            | 6.3                          | 3.9               | 3.5             |                              |                |                 |           |
|            | Middle  | 5.4     | 1                 | 22.8          | 8.2           | 35.1            | 6.2         | 88.7               | 3.9       | 3.7                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         | 2                 | 22.8          | 8.2           | 35.1            | 6.2         | 88.7               | 3.9       | 3.4                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Bottom  | 9.8     | 1                 | 22.6          | 8.2           | 35.1            | 6.3         | 88.8               | 4.9       | 3.1                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   |               | 2             | 22.6            | 8.2         | 35.1               | 6.3       | 88.8                   | 4.9  | 2.7            | 6.3                          |                   |                 |                              |                |                 |           |
|            |         |         | 2                 | 22.6          | 8.2           | 35.1            | 6.3         | 89.2               | 4.8       | 4.7                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Surface | 1.0     | 1                 | 23.0          | 8.2           | 35.0            | 6.4         | 89.2               | 4.9       | 4.2                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         | 2                 | 23.0          | 8.2           | 35.0            | 6.4         | 90.5               | 8.1       | 3.4                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   |               | 1             | 23.0            | 8.3         | 35.0               | 6.4       | 90.6                   | 8.2  | 3.7            | 6.4                          | 6.5               | 4.0             |                              |                |                 |           |
|            | Bottom  | 4.1     | 1                 | 23.0          | 8.3           | 35.0            | 6.4         | 90.6               | 8.2       | 3.7                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         | 2                 | 23.0          | 8.3           | 35.0            | 6.4         | 89.1               | 3.9       | 4.3                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Surface | 1.0     | 1                 | 22.9          | 8.2           | 35.0            | 6.4         | 89.1               | 4.0       | 4.7                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   |               | 2             | 22.9            | 8.2         | 35.0               | 6.4       | 89.1                   | 4.0  | 4.7            | 6.4                          | 4.5               | 4.0             |                              |                |                 |           |
|            |         |         | 2                 | 22.9          | 8.2           | 35.0            | 6.3         | 88.5               | 5.0       | 3.6                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Surface | 1.0     | 1                 | 22.6          | 8.2           | 35.0            | 6.3         | 88.5               | 5.1       | 3.2                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         | 2                 | 22.6          | 8.2           | 35.0            | 6.3         | 88.5               | 5.1       | 3.2                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 1             | 22.5          | 8.2             | 35.2        | 6.6                | 94.1      | 9.2                    | 6.3  | 6.6            | 8.6                          | 4.7               |                 |                              |                |                 |           |
| Middle     | 3.9     | 1       | 22.5              | 8.2           | 35.2          | 6.6             | 93.2        | 7.7                | 4.6       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.5              | 8.2           | 35.2          | 6.6             | 93.2        | 7.7                | 4.4       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Bottom     | 6.8     | 1       | 22.4              | 8.2           | 35.2          | 6.6             | 92.9        | 9.0                | 3.3       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.4          | 8.2             | 35.2        | 6.6                | 92.9      | 9.0                    | 3.8  | 6.6            |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.4              | 8.2           | 35.2          | 6.6             | 85.2        | 6.0                | 6.4       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Surface    | 1.0     | 1       | 22.9              | 8.1           | 35.3          | 6.0             | 85.2        | 6.0                | 6.4       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.9              | 8.1           | 35.3          | 6.0             | 85.3        | 6.3                | 5.2       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 1             | 22.9          | 8.0             | 35.3        | 6.0                | 85.6      | 7.2                    | 4.1  | 6.0            | 6.4                          | 5.5               |                 |                              |                |                 |           |
| Middle     | 6.7     | 1       | 22.9              | 8.0           | 35.3          | 6.0             | 85.6        | 7.2                | 4.1       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.9              | 8.0           | 35.3          | 6.0             | 85.7        | 7.1                | 4.6       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Bottom     | 12.4    | 1       | 22.9              | 8.0           | 35.3          | 6.0             | 85.7        | 7.1                | 4.6       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.9          | 8.0             | 35.3        | 6.0                | 85.7      | 7.1                    | 4.6  | 6.0            |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.9              | 8.0           | 35.3          | 6.2             | 88.0        | 5.4                | 5.7       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Surface    | 1.0     | 1       | 22.6              | 8.2           | 35.0          | 6.2             | 88.0        | 5.5                | 5.4       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.6              | 8.2           | 35.0          | 6.2             | 87.7        | 5.7                | 4.6       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 1             | 22.5          | 8.2             | 35.0        | 6.2                | 87.8      | 5.8                    | 5.0  | 6.2            | 5.8                          | 4.7               |                 |                              |                |                 |           |
| Middle     | 4.3     | 1       | 22.5              | 8.2           | 35.0          | 6.2             | 87.7        | 5.7                | 4.6       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.5              | 8.2           | 35.0          | 6.2             | 87.7        | 5.7                | 4.6       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Bottom     | 7.6     | 1       | 22.5              | 8.2           | 35.0          | 6.2             | 87.7        | 6.3                | 3.7       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.5          | 8.2             | 35.0        | 6.2                | 87.8      | 6.4                    | 3.5  | 6.2            |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.5              | 8.2           | 35.0          | 6.2             | 89.6        | 5.3                | 4.5       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Surface    | 1.0     | 1       | 22.8              | 8.2           | 35.1          | 6.3             | 89.6        | 5.3                | 4.5       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.8              | 8.2           | 35.1          | 6.3             | 88.7        | 8.0                | 3.8       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 1             | 22.6          | 8.2             | 35.1        | 6.3                | 88.7      | 8.0                    | 3.5  | 6.3            | 7.6                          | 3.6               |                 |                              |                |                 |           |
| Middle     | 3.9     | 1       | 22.6              | 8.2           | 35.1          | 6.3             | 88.7        | 8.0                | 3.5       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.6              | 8.2           | 35.1          | 6.3             | 88.8        | 9.4                | 3.0       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Bottom     | 6.7     | 1       | 22.6              | 8.2           | 35.0          | 6.3             | 88.8        | 9.4                | 2.8       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.6          | 8.2             | 35.0        | 6.3                | 88.8      | 9.4                    | 2.8  | 6.3            |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.6              | 8.2           | 35.0          | 6.3             | 89.0        | 8.5                | 3.2       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Surface    | 1.0     | 1       | 22.6              | 8.2           | 35.0          | 6.3             | 89.2        | 9.4                | 4.0       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.6              | 8.2           | 35.0          | 6.3             | 89.2        | 9.5                | 4.5       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 1             | 22.6          | 8.2             | 35.0        | 6.3                | 89.1      | 11.5                   | 5.4  | 6.3            | 9.8                          | 4.3               |                 |                              |                |                 |           |
| Middle     | 4.6     | 1       | 22.6              | 8.2           | 35.0          | 6.3             | 89.1        | 11.6               | 5.0       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.6              | 8.2           | 35.0          | 6.3             | 89.1        | 11.6               | 5.0       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Bottom     | 8.1     | 1       | 22.6              | 8.2           | 35.0          | 6.3             | 89.1        | 11.6               | 5.0       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.6          | 8.2             | 35.0        | 6.3                | 89.1      | 11.6                   | 5.0  | 6.3            |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.6              | 8.2           | 35.0          | 6.2             | 87.7        | 3.5                | 3.7       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Surface    | 1.0     | 1       | 22.7              | 8.2           | 35.0          | 6.2             | 87.7        | 3.5                | 3.3       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.7              | 8.2           | 35.0          | 6.2             | 88.2        | 4.6                | 4.3       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 1             | 22.7          | 8.2             | 35.1        | 6.2                | 88.2      | 4.6                    | 4.3  | 6.2            | 4.0                          | 3.8               |                 |                              |                |                 |           |
| Bottom     | 3.1     | 1       | 22.7              | 8.2           | 35.1          | 6.2             | 88.2        | 4.6                | 4.3       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.7              | 8.2           | 35.1          | 6.2             | 88.2        | 4.6                | 4.3       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Surface    | 1.0     | 1       | 22.7              | 8.2           | 35.0          | 6.2             | 87.5        | 4.4                | 4.0       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         |         |                   | 2             | 22.7          | 8.2             | 35.0        | 6.2                | 87.5      | 4.4                    | 3.8  | 6.2            | 4.4                          | 4.6               |                 |                              |                |                 |           |
| Bottom     | 2.5     | 1       | 22.7              | 8.2           | 35.1          | 6.2             | 87.9        | 4.3                | 5.1       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |         | 2       | 22.7              | 8.2           | 35.1          | 6.2             | 87.9        | 4.3                | 5.4       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Surface    | 1.0     | 1       | 22.7              | 8.2           | 35.1          | 6.2             | 87.9        | 4.3                | 5.4       |                        |      |                |                              |                   |                 |                              |                |                 |           |

| Date       | Tide      | Station  | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH   | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |
|------------|-----------|----------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|
|            |           |          |                   |               |               |                 |             |                    |           |                        |      |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |
| 2022-11-11 | Mid-Ebb   | TCE-C1   | Sunny             | Moderate      | 12:49         | 8.3             | Surface     | 1.0                | 1         | 23.1                   | 8.2  | 33.4           | 6.5                          | 92.7              | 7.9             | 15.0                         | 6.5            | 10.8            | 14.3      |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.1                   | 8.2  | 33.4           | 6.5                          | 92.7              | 7.9             | 14.7                         |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 4.2                | 1         | 23.0                   | 8.2  | 34.0           | 6.5                          | 91.6              | 6.2             | 14.4                         |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 7.3                | 1         | 23.0                   | 8.2  | 34.0           | 6.5                          | 91.6              | 6.3             | 14.3                         |                |                 |           |
|            |           |          |                   | 2             | 23.0          | 8.2             | 33.8        | 6.5                | 91.5      | 18.3                   | 13.8 |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.0          | 8.2             | 33.8        | 6.5                | 91.6      | 18.4                   | 13.3 |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-C2   | Sunny             | Moderate      | 14:57         | 13.2            | Surface     | 1.0                | 1         | 23.2                   | 8.2  | 35.0           | 6.0                          | 85.9              | 3.8             | 14.4                         | 6.0            | 5.6             | 15.7      |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.2  | 35.0           | 6.0                          | 85.9              | 3.8             | 14.7                         |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 6.6                | 1         | 23.1                   | 8.2  | 35.0           | 5.9                          | 84.9              | 5.9             | 15.2                         |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 12.2               | 1         | 23.1                   | 8.2  | 35.0           | 5.9                          | 85.0              | 5.9             | 15.5                         |                |                 |           |
|            |           |          |                   | 2             | 23.1          | 8.2             | 35.0        | 5.9                | 84.7      | 7.0                    | 16.9 |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.1          | 8.2             | 35.0        | 5.9                | 84.7      | 6.9                    | 17.3 |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM1  | Sunny    | Moderate          | 13:34         | 9.2           | Surface         | 1.0         | 1                  | 23.3      | 8.2                    | 34.7 | 6.2            | 89.1                         | 4.9               | 8.6             | 6.2                          | 5.9            | 10.6            |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.3      | 8.2                    | 34.7 | 6.2            | 89.0                         | 5.0               | 9.0             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 4.6         | 1                  | 23.3      | 8.2                    | 34.8 | 6.2            | 88.3                         | 5.5               | 10.2            |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 8.2         | 1                  | 23.3      | 8.2                    | 34.8 | 6.2            | 88.3                         | 5.6               | 9.8             |                              |                |                 |           |
|            |           |          | 2                 | 23.3          | 8.2           | 34.8            | 6.1         | 87.9               | 7.0       | 12.7                   |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.3          | 8.2           | 34.8            | 6.2         | 87.9               | 7.1       | 13.1                   |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2a | Sunny    | Calm              | 14:13         | 7.7           | Surface         | 1.0         | 1                  | 23.3      | 8.2                    | 34.3 | 6.4            | 91.9                         | 4.3               | 13.3            | 6.4                          | 5.6            | 13.8            |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.3      | 8.2                    | 34.3 | 6.4            | 91.9                         | 4.3               | 13.0            |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 3.9         | 1                  | 23.2      | 8.2                    | 34.3 | 6.4            | 91.4                         | 5.0               | 13.4            |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 6.7         | 1                  | 23.2      | 8.2                    | 34.3 | 6.4            | 91.4                         | 4.9               | 13.8            |                              |                |                 |           |
|            |           |          | 2                 | 23.1          | 8.2           | 34.4            | 6.4         | 90.8               | 7.6       | 14.3                   |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.1          | 8.2           | 34.4            | 6.4         | 90.8               | 7.7       | 14.8                   |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM2b  | Sunny     | Moderate | 14:31             | 11.1          | Surface       | 1.0             | 1           | 23.2               | 8.2       | 34.3                   | 6.4  | 90.6           | 5.2                          | 13.4              | 6.3             | 6.8                          | 14.4           |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.2       | 34.3                   | 6.4  | 90.6           | 5.1                          | 13.9              |                 |                              |                |                 |           |
|            |           |          |                   |               | Middle        | 5.6             | 1           | 23.1               | 8.2       | 34.3                   | 6.3  | 89.4           | 7.6                          | 14.2              |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 10.1            | 1           | 23.1               | 8.2       | 34.3                   | 6.3  | 89.4           | 7.6                          | 14.6              |                 |                              |                |                 |           |
|            |           | 2        | 23.1              | 8.2           | 34.4          | 6.3             | 89.5        | 7.6                | 15.0      |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 23.1              | 8.2           | 34.4          | 6.3             | 89.5        | 7.6                | 15.5      |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM3A  | Sunny     | Calm     | 13:58             | 4.9           | Surface       | 1.0             | 1           | 23.3               | 8.2       | 34.3                   | 6.5  | 92.5           | 3.6                          | 9.9               | 6.5             | 3.9                          | 11.7           |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.3               | 8.2       | 34.3                   | 6.5  | 92.6           | 3.6                          | 9.2               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.9             | 1           | 23.2               | 8.2       | 34.3                   | 6.5  | 92.7           | 4.2                          | 13.6              |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.2       | 34.3                   | 6.5  | 92.7           | 4.2                          | 14.1              |                 |                              |                |                 |           |
| TCE-WQM4   | Sunny     | Calm     | 13:46             | 4.2           | Surface       | 1.0             | 1           | 23.3               | 8.2       | 34.5                   | 6.4  | 92.1           | 4.6                          | 14.6              | 6.4             | 4.8                          | 14.8           |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.3               | 8.2       | 34.5                   | 6.4  | 92.0           | 4.6                          | 14.3              |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.2             | 1           | 23.2               | 8.2       | 34.6                   | 6.4  | 91.6           | 5.0                          | 15.0              |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.2       | 34.6                   | 6.4  | 91.6           | 5.1                          | 15.2              |                 |                              |                |                 |           |
| 2022-11-11 | Mid-Flood | TCE-C1   | Sunny             | Rough         | 10:25         | 7.9             | Surface     | 1.0                | 1         | 23.1                   | 8.2  | 33.4           | 6.7                          | 94.8              | 8.1             | 9.3                          | 6.6            | 10.3            | 9.8       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.1                   | 8.2  | 33.4           | 6.7                          | 94.7              | 8.1             | 9.5                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 4.0                | 1         | 23.0                   | 8.2  | 33.9           | 6.6                          | 93.2              | 9.1             | 9.8                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 6.9                | 1         | 23.0                   | 8.2  | 33.9           | 6.6                          | 93.2              | 9.2             | 9.7                          |                |                 |           |
|            |           |          |                   | 2             | 23.0          | 8.2             | 34.0        | 6.6                | 93.2      | 13.6                   | 10.0 |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.0          | 8.2             | 34.0        | 6.6                | 93.2      | 13.6                   | 10.0 |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-C2   | Sunny             | Moderate      | 8:23          | 12.9            | Surface     | 1.0                | 1         | 23.0                   | 8.1  | 34.6           | 6.3                          | 89.3              | 5.2             | 9.8                          | 6.2            | 5.9             | 10.3      |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.0                   | 8.1  | 34.6           | 6.3                          | 89.3              | 5.3             | 9.3                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 6.5                | 1         | 23.0                   | 8.1  | 34.7           | 6.2                          | 88.5              | 5.9             | 10.0                         |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 11.9               | 1         | 23.0                   | 8.1  | 34.7           | 6.2                          | 88.5              | 6.0             | 10.3                         |                |                 |           |
|            |           |          |                   | 2             | 23.0          | 8.1             | 34.8        | 6.2                | 88.0      | 6.6                    | 11.4 |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.0          | 8.1             | 34.8        | 6.2                | 88.0      | 6.6                    | 11.0 |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM1  | Sunny    | Calm              | 9:33          | 8.9           | Surface         | 1.0         | 1                  | 23.3      | 8.2                    | 34.8 | 6.3            | 90.0                         | 5.8               | 9.9             | 6.3                          | 6.3            | 10.5            |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.3      | 8.2                    | 34.8 | 6.3            | 90.0                         | 5.8               | 9.6             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 4.5         | 1                  | 23.3      | 8.2                    | 34.8 | 6.3            | 89.9                         | 5.8               | 10.2            |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 7.9         | 1                  | 23.3      | 8.2                    | 34.8 | 6.3            | 89.9                         | 5.8               | 10.4            |                              |                |                 |           |
|            |           |          | 2                 | 23.2          | 8.2           | 34.8            | 6.3         | 89.3               | 7.2       | 11.8                   |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.2          | 8.2           | 34.8            | 6.3         | 89.4               | 7.3       | 11.3                   |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2a | Sunny    | Moderate          | 8:59          | 6.8           | Surface         | 1.0         | 1                  | 23.1      | 8.2                    | 34.2 | 6.4            | 90.8                         | 5.8               | 8.8             | 6.4                          | 7.0            | 9.8             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.1      | 8.2                    | 34.2 | 6.4            | 90.8                         | 5.8               | 9.0             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 3.4         | 1                  | 23.1      | 8.2                    | 34.4 | 6.3            | 90.2                         | 6.7               | 9.9             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 5.8         | 1                  | 23.1      | 8.2                    | 34.4 | 6.3            | 90.2                         | 6.8               | 10.1            |                              |                |                 |           |
|            |           |          | 2                 | 23.1          | 8.2           | 34.4            | 6.3         | 90.2               | 8.4       | 10.3                   |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.1          | 8.2           | 34.4            | 6.3         | 90.3               | 8.5       | 10.4                   |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM2b  | Sunny     | Moderate | 8:46              | 9.3           | Surface       | 1.0             | 1           | 23.1               | 8.2       | 34.2                   | 6.3  | 89.8           | 9.6                          | 9.0               | 6.3             | 11.2                         | 9.5            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.1               | 8.2       | 34.2                   | 6.3  | 89.8           | 9.6                          | 8.6               |                 |                              |                |                 |           |
|            |           |          |                   |               | Middle        | 4.7             | 1           | 23.1               | 8.2       | 34.3                   | 6.3  | 89.5           | 11.5                         | 9.4               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 8.3             | 1           | 23.1               | 8.2       | 34.3                   | 6.3  | 89.5           | 11.4                         | 9.8               |                 |                              |                |                 |           |
|            |           | 2        | 23.1              | 8.2           | 34.3          | 6.3             | 89.4        | 12.5               | 10.2      |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 23.1              | 8.2           | 34.3          | 6.3             | 89.4        | 12.5               | 10.0      |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM3A  | Sunny     | Calm     | 9:11              | 4.1           | Surface       | 1.0             | 1           | 23.1               | 8.2       | 34.6                   | 6.3  | 90.0           | 8.3                          | 9.0               | 6.3             | 8.7                          | 9.4            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.1               | 8.2       | 34.6                   | 6.3  | 90.0           | 8.3                          | 9.2               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.1             | 1           | 23.1               | 8.2       | 34.7                   | 6.3  | 90.1           | 9.1                          | 9.5               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.1               | 8.2       | 34.7                   | 6.3  | 90.1           | 9.1                          | 9.9               |                 |                              |                |                 |           |
| TCE-WQM4   | Sunny     | Calm     | 9:20              | 3.8           | Surface       | 1.0             | 1           | 23.1               | 8.2       | 34.6                   | 6.4  | 90.9           | 6.2                          | 12.0              | 6.4             | 6.5                          | 10.9           |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.1               | 8.2       | 34.6                   | 6.4  | 90.9           | 6.2                          | 11.5              |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 2.8             | 1           | 23.1               | 8.2       | 34.6                   | 6.3  | 89.2           | 6.8                          | 9.9               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.1               | 8.2       | 34.6                   | 6.3  | 89.4           | 6.9                          | 10.2              |                 |                              |                |                 |           |

| Date       | Tide      | Station  | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH   | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |
|------------|-----------|----------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|
|            |           |          |                   |               |               |                 |             |                    |           |                        |      |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |
| 2022-11-14 | Mid-Ebb   | TCE-C1   | Cloudy            | Moderate      | 5:36          | 7.3             | Surface     | 1.0                | 1         | 22.4                   | 8.2  | 30.4           | 6.6                          | 90.9              | 7.4             | 4.3                          | 6.6            | 12.2            | 3.3       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 22.4                   | 8.2  | 30.4           | 6.6                          | 90.9              | 7.4             | 4.0                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 3.7                | 1         | 22.3                   | 8.2  | 30.7           | 6.6                          | 90.5              | 13.3            | 3.6                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 6.3                | 1         | 22.3                   | 8.2  | 30.7           | 6.6                          | 90.5              | 16.1            | 2.6                          |                |                 |           |
|            |           |          |                   | 2             | 22.3          | 8.2             | 30.7        | 6.6                | 90.6      | 15.9                   | 2.3  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-C2   | Cloudy            | Moderate      | 3:48          | 14.4            | Surface     | 1.0                | 1         | 22.4                   | 8.1  | 30.3           | 6.5                          | 88.5              | 3.1             | 5.3                          | 6.4            | 5.9             | 4.7       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 22.4                   | 8.1  | 30.3           | 6.5                          | 88.4              | 3.1             | 5.4                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 7.2                | 1         | 22.4                   | 8.1  | 30.4           | 6.3                          | 86.5              | 3.6             | 4.5                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 13.4               | 1         | 22.4                   | 8.1  | 30.4           | 6.3                          | 86.4              | 3.6             | 4.8                          |                |                 |           |
|            |           |          |                   | 2             | 22.4          | 8.1             | 30.8        | 6.2                | 85.0      | 11.1                   | 4.3  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-WQM1 | Cloudy            | Calm          | 4:57          | 8.1             | Surface     | 1.0                | 1         | 22.4                   | 8.1  | 30.8           | 6.2                          | 85.3              | 10.9            | 4.1                          | 6.2            | 11.0            | 3.7       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 22.4                   | 8.1  | 30.8           | 6.2                          | 85.3              | 10.9            | 4.1                          |                |                 |           |
|            | Middle    |          |                   |               |               |                 | 4.1         | 1                  | 22.8      | 8.1                    | 31.0 | 6.6            | 91.7                         | 9.1               | 4.4             |                              |                |                 |           |
|            | Bottom    |          |                   |               |               |                 | 7.1         | 1                  | 22.7      | 8.1                    | 31.1 | 6.6            | 90.8                         | 10.0              | 3.6             |                              |                |                 |           |
|            |           |          | 2                 | 22.7          | 8.1           | 31.1            | 6.6         | 90.6               | 14.0      | 3.3                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2a | Cloudy   | Moderate          | 4:23          | 9.4           | Surface         | 1.0         | 1                  | 22.7      | 8.1                    | 31.1 | 6.6            | 90.7                         | 13.9              | 3.1             | 6.6                          | 8.1            | 5.2             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 22.5      | 8.1                    | 30.3 | 6.6            | 90.6                         | 3.3               | 4.6             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 4.7         | 1                  | 22.5      | 8.1                    | 30.6 | 6.5            | 89.4                         | 5.8               | 5.3             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 8.4         | 1                  | 22.5      | 8.1                    | 30.6 | 6.5            | 89.4                         | 5.7               | 5.0             |                              |                |                 |           |
|            |           |          | 2                 | 22.4          | 8.1           | 30.8            | 6.4         | 88.3               | 15.3      | 5.8                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2b | Cloudy   | Moderate          | 4:10          | 10.2          | Surface         | 1.0         | 1                  | 22.4      | 8.1                    | 30.8 | 6.4            | 88.3                         | 15.2              | 5.5             | 6.4                          | 5.5            | 4.6             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 22.4      | 8.1                    | 30.2 | 6.6            | 89.6                         | 4.1               | 5.1             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 5.1         | 1                  | 22.5      | 8.1                    | 30.2 | 6.6            | 89.6                         | 4.2               | 4.8             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 9.2         | 1                  | 22.5      | 8.1                    | 30.1 | 6.6            | 89.6                         | 4.6               | 4.5             |                              |                |                 |           |
|            |           | 2        | 22.5              | 8.1           | 30.1          | 6.6             | 89.7        | 4.7                | 4.6       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM3A  | Cloudy    | Calm     | 4:36              | 4.1           | Surface       | 1.0             | 1           | 22.5               | 8.1       | 30.2                   | 6.6  | 90.0           | 7.7                          | 4.3               | 6.6             | 8.5                          | 3.6            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 22.5               | 8.1       | 30.2                   | 6.6  | 90.1           | 7.8                          | 4.0               |                 |                              |                |                 |           |
|            |           |          |                   |               | Middle        | 1.0             | 1           | 22.8               | 8.1       | 30.9                   | 6.3  | 87.6           | 7.2                          | 4.2               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.1             | 1           | 22.8               | 8.1       | 30.9                   | 6.4  | 87.6           | 7.2                          | 3.9               |                 |                              |                |                 |           |
|            |           | 2        | 22.8              | 8.1           | 30.9          | 6.4             | 88.1        | 9.7                | 3.2       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM4   | Cloudy    | Calm     | 4:45              | 3.3           | Surface       | 1.0             | 1           | 22.8               | 8.1       | 30.9                   | 6.4  | 88.2           | 9.9                          | 3.0               | 6.4             | 8.2                          | 3.2            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 22.8               | 8.1       | 30.9                   | 6.4  | 88.2           | 9.9                          | 3.0               |                 |                              |                |                 |           |
|            |           |          |                   |               | Middle        | 1.0             | 1           | 22.4               | 8.1       | 30.8                   | 6.5  | 88.7           | 7.7                          | 3.6               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 2.3             | 1           | 22.4               | 8.1       | 30.8                   | 6.5  | 88.8           | 8.6                          | 3.1               |                 |                              |                |                 |           |
|            |           | 2        | 22.4              | 8.1           | 30.8          | 6.5             | 88.9        | 8.6                | 2.7       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| 2022-11-14 | Mid-Flood | TCE-C1   | Fine              | Moderate      | 14:34         | 7.6             | Surface     | 1.0                | 1         | 23.0                   | 8.2  | 30.4           | 6.6                          | 91.3              | 7.0             | 10.1                         | 6.6            | 9.7             | 9.1       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.0                   | 8.2  | 30.4           | 6.6                          | 91.3              | 7.0             | 9.7                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 3.8                | 1         | 22.9                   | 8.2  | 30.6           | 6.6                          | 90.8              | 8.2             | 9.0                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 6.6                | 1         | 22.9                   | 8.2  | 30.6           | 6.6                          | 90.9              | 8.1             | 9.4                          |                |                 |           |
|            |           |          |                   | 2             | 22.8          | 8.2             | 30.7        | 6.6                | 90.8      | 13.9                   | 8.0  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-C2   | Cloudy            | Moderate      | 16:22         | 15.4            | Surface     | 1.0                | 1         | 22.8                   | 8.2  | 30.7           | 6.6                          | 90.8              | 14.0            | 8.4                          | 5.9            | 5.0             | 8.4       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.1                   | 8.2  | 31.4           | 6.0                          | 83.3              | 4.0             | 7.5                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 7.7                | 1         | 23.0                   | 8.2  | 31.5           | 5.9                          | 82.5              | 5.4             | 8.1                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 14.4               | 1         | 23.0                   | 8.2  | 31.5           | 5.9                          | 82.5              | 5.3             | 8.5                          |                |                 |           |
|            |           |          |                   | 2             | 23.0          | 8.2             | 31.5        | 5.9                | 83.1      | 5.8                    | 8.9  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-WQM1 | Cloudy            | Calm          | 15:09         | 7.8             | Surface     | 1.0                | 1         | 23.0                   | 8.2  | 31.5           | 6.0                          | 83.4              | 5.6             | 9.3                          | 6.0            | 10.3            | 9.0       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.3                   | 8.2  | 31.0           | 6.4                          | 89.1              | 8.4             | 8.2                          |                |                 |           |
|            | Middle    |          |                   |               |               |                 | 3.9         | 1                  | 23.2      | 8.2                    | 31.1 | 6.4            | 89.2                         | 10.8              | 9.2             |                              |                |                 |           |
|            | Bottom    |          |                   |               |               |                 | 6.8         | 1                  | 23.2      | 8.2                    | 31.1 | 6.4            | 89.2                         | 10.9              | 9.0             |                              |                |                 |           |
|            |           |          | 2                 | 23.3          | 8.2           | 31.2            | 6.5         | 90.5               | 11.6      | 9.6                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2a | Cloudy   | Moderate          | 15:43         | 8.5           | Surface         | 1.0         | 1                  | 23.3      | 8.2                    | 31.2 | 6.5            | 90.5                         | 11.5              | 9.5             | 6.5                          | 5.9            | 8.3             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.2      | 8.1                    | 30.5 | 6.4            | 89.9                         | 5.5               | 7.5             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 4.3         | 1                  | 23.2      | 8.1                    | 30.5 | 6.4            | 89.8                         | 5.6               | 8.5             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 7.5         | 1                  | 23.2      | 8.1                    | 30.5 | 6.4            | 89.8                         | 5.7               | 8.0             |                              |                |                 |           |
|            |           |          | 2                 | 23.2          | 8.1           | 30.5            | 6.5         | 90.0               | 6.8       | 9.1                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2b | Cloudy   | Moderate          | 15:56         | 11.0          | Surface         | 1.0         | 1                  | 23.2      | 8.1                    | 30.5 | 6.5            | 90.1                         | 6.7               | 8.7             | 6.4                          | 6.5            | 8.3             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.2      | 8.1                    | 30.7 | 6.3            | 87.5                         | 5.4               | 7.6             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 5.5         | 1                  | 23.2      | 8.1                    | 30.7 | 6.3            | 87.5                         | 5.4               | 7.8             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 10.0        | 1                  | 23.1      | 8.1                    | 30.7 | 6.2            | 87.1                         | 6.0               | 8.2             |                              |                |                 |           |
|            |           | 2        | 23.1              | 8.1           | 30.7          | 6.2             | 87.1        | 6.1                | 8.4       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM3A  | Cloudy    | Calm     | 15:33             | 4.3           | Surface       | 1.0             | 1           | 23.1               | 8.1       | 30.7                   | 6.2  | 86.5           | 8.0                          | 9.1               | 6.3             | 8.2                          | 9.7            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.1               | 8.1       | 30.7                   | 6.2  | 86.5           | 8.0                          | 9.1               |                 |                              |                |                 |           |
|            |           |          |                   |               | Middle        | 1.0             | 1           | 23.2               | 8.2       | 30.7                   | 6.4  | 90.2           | 6.5                          | 9.4               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.3             | 1           | 23.4               | 8.2       | 30.7                   | 6.4  | 90.0           | 6.5                          | 9.0               |                 |                              |                |                 |           |
|            |           | 2        | 23.3              | 8.1           | 30.9          | 6.3             | 88.2        | 10.0               | 10.3      |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM4   | Cloudy    | Calm     | 15:21             | 3.3           | Surface       | 1.0             | 1           | 23.3               | 8.1       | 30.9                   | 6.3  | 88.2           | 10.0                         | 10.0              | 6.3             | 6.7                          | 9.2            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.3               | 8.1       | 30.9                   | 6.3  | 88.2           | 10.0                         | 10.0              |                 |                              |                |                 |           |
|            |           |          |                   |               | Middle        | 1.0             | 1           | 23.2               | 8.2       | 30.7                   | 6.5  | 91.0           | 5.8                          | 9.7               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 2.3             | 1           | 23.2               | 8.2       | 30.7                   | 6.5  | 91.0           | 5.8                          | 10.0              |                 |                              |                |                 |           |
|            |           | 2        | 23.1              | 8.2           | 30.7          | 6.6             | 91.5        | 7.6                | 8.7       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 23.1              | 8.2           | 30.7          | 6.6             | 91.7        | 7.6                | 8.3       |                        |      |                |                              |                   |                 |                              |                |                 |           |

| Date       | Tide      | Station  | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH    | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |     |     |     |
|------------|-----------|----------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|-------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|-----|-----|-----|
|            |           |          |                   |               |               |                 |             |                    |           |                        |       |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |     |     |     |
| 2022-11-16 | Mid-Ebb   | TCE-C1   | Misty             | Moderate      | 7:12          | 8.0             | Surface     | 1.0                | 1         | 23.4                   | 8.3   | 32.9           | 7.5                          | 106.9             | 7.4             | 8.2                          | 7.5            | 7.9             | 8.8       |     |     |     |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.4                   | 8.3   | 32.9           | 7.5                          | 106.6             | 7.3             | 8.4                          |                |                 |           |     |     |     |
|            |           |          |                   |               |               |                 | Middle      | 4.0                | 1         | 23.4                   | 8.3   | 32.9           | 7.5                          | 106.0             | 7.9             | 8.6                          |                |                 |           |     |     |     |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.4                   | 8.3   | 32.9           | 7.5                          | 105.8             | 7.9             | 8.8                          |                |                 |           |     |     |     |
|            |           |          |                   | Bottom        | 7.0           | 1               | 23.4        | 8.3                | 32.9      | 7.4                    | 105.2 | 8.4            | 9.2                          | 7.4               |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               |               | 2               | 23.4        | 8.3                | 32.9      | 7.4                    | 105.0 | 8.4            | 9.6                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           | TCE-C2   | Misty             | Moderate      | 5:04          | 12.8            | Surface     | 1.0                | 1         | 23.7                   | 8.1   | 32.3           | 6.4                          |                   |                 |                              | 90.3           | 1.5             | 8.2       | 6.4 | 2.0 | 9.1 |
|            |           |          |                   |               |               | 2               | 23.7        | 8.1                | 32.3      | 6.4                    | 90.3  | 1.4            | 8.6                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | Middle        | 6.4           | 1               | 23.7        | 8.1                | 32.3      | 6.4                    | 90.7  | 1.8            | 9.0                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               |               | 2               | 23.7        | 8.1                | 32.3      | 6.4                    | 90.8  | 1.8            | 8.9                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | Bottom        | 11.8          | 1               | 23.7        | 8.1                | 32.2      | 6.5                    | 91.9  | 2.8            | 9.8                          | 6.5               |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               |               | 2               | 23.7        | 8.1                | 32.2      | 6.5                    | 92.1  | 2.8            | 10.2                         |                   |                 |                              |                |                 |           |     |     |     |
|            | TCE-WQM1  | Misty    | Moderate          | 6:15          | 8.2           | Surface         | 1.0         | 1                  | 23.3      | 8.3                    | 32.3  | 7.6            | 106.6                        |                   |                 |                              | 4.1            | 7.1             | 7.5       | 4.8 | 7.8 |     |
|            |           |          |                   |               | 2             | 23.3            | 8.3         | 32.3               | 7.5       | 106.5                  | 4.1   | 7.5            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          | Middle            | 4.1           | 1             | 23.3            | 8.3         | 32.3               | 7.5       | 105.8                  | 4.5   | 7.7            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               | 2             | 23.3            | 8.3         | 32.3               | 7.5       | 105.5                  | 4.5   | 7.9            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          | Bottom            | 7.2           | 1             | 23.3            | 8.3         | 32.3               | 7.4       | 104.9                  | 5.6   | 8.2            | 7.4                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               | 2             | 23.3            | 8.3         | 32.3               | 7.4       | 104.5                  | 5.7   | 8.4            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            | TCE-WQM2a | Misty    | Moderate          | 5:44          | 9.0           | Surface         | 1.0         | 1                  | 23.2      | 8.2                    | 31.8  | 7.0            |                              |                   |                 | 97.9                         | 4.4            | 8.3             | 7.0       | 5.4 | 9.1 |     |
|            |           |          |                   |               | 2             | 23.2            | 8.2         | 31.8               | 7.0       | 97.9                   | 4.4   | 8.1            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          | Middle            | 4.5           | 1             | 23.2            | 8.2         | 31.8               | 7.0       | 98.4                   | 5.4   | 9.0            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               | 2             | 23.2            | 8.2         | 31.8               | 7.0       | 98.6                   | 5.5   | 9.3            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          | Bottom            | 8.0           | 1             | 23.2            | 8.2         | 31.8               | 7.0       | 99.0                   | 6.5   | 9.6            | 7.1                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               | 2             | 23.2            | 8.2         | 31.8               | 7.1       | 99.4                   | 6.4   | 10.0           |                              |                   |                 |                              |                |                 |           |     |     |     |
| TCE-WQM2b  | Misty     | Moderate | 5:32              | 10.4          | Surface       | 1.0             | 1           | 23.4               | 8.1       | 31.9                   | 6.7   | 94.9           |                              |                   |                 | 2.7                          | 9.4            | 6.8             | 3.9       | 8.6 |     |     |
|            |           |          |                   | 2             | 23.4          | 8.1             | 31.9        | 6.8                | 95.1      | 2.7                    | 9.2   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           | Middle   | 5.2               | 1             | 23.4          | 8.1             | 31.8        | 6.8                | 95.8      | 4.0                    | 8.6   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | 2             | 23.4          | 8.1             | 31.8        | 6.8                | 96.0      | 4.0                    | 8.4   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           | Bottom   | 9.4               | 1             | 23.4          | 8.0             | 31.7        | 6.9                | 96.7      | 5.0                    | 8.0   | 6.9            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | 2             | 23.4          | 8.0             | 31.7        | 6.9                | 97.3      | 5.1                    | 7.7   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
| TCE-WQM3A  | Misty     | Moderate | 5:54              | 4.0           | Surface       | 1.0             | 1           | 23.3               | 8.2       | 31.8                   | 7.2   |                |                              |                   | 100.7           | 6.1                          | 7.4            | 7.2             | 6.3       | 8.1 |     |     |
|            |           |          |                   | 2             | 23.3          | 8.2             | 31.8        | 7.2                | 100.7     | 6.1                    | 7.9   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           | Bottom   | 3.0               | 1             | 23.3          | 8.2             | 31.8        | 7.2                | 100.8     | 6.5                    | 8.3   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | 2             | 23.3          | 8.2             | 31.8        | 7.3                | 102.2     | 6.5                    | 8.6   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           | TCE-WQM4 | Misty             | Moderate      | 6:04          | 3.6             | Surface     | 1.0                | 1         | 23.3                   | 8.2   | 31.8           | 7.3                          | 103.2             | 4.1             | 8.6                          | 7.3            | 4.5             | 8.8       |     |     |     |
|            |           |          |                   | 2             | 23.3          | 8.2             | 31.8        | 7.3                | 103.1     | 4.0                    | 8.2   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           | Bottom   | 2.6               | 1             | 23.3          | 8.2             | 31.7        | 7.3                | 102.5     | 5.0                    | 9.0   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | 2             | 23.3          | 8.2             | 31.7        | 7.3                | 102.1     | 5.0                    | 9.3   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
| 2022-11-16 | Mid-Flood | TCE-C1   | Misty             | Moderate      | 16:16         | 8.0             | Surface     | 1.0                | 1         | 23.5                   | 8.3   | 32.9           | 7.7                          | 109.4             | 5.8             | 7.2                          | 7.7            | 6.8             | 7.7       |     |     |     |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.4                   | 8.3   | 32.9           | 7.7                          | 109.4             | 5.8             | 6.9                          |                |                 |           |     |     |     |
|            |           |          |                   |               |               |                 | Middle      | 4.0                | 1         | 23.5                   | 8.3   | 32.9           | 7.7                          | 109.9             | 7.4             | 7.8                          |                |                 |           |     |     |     |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.3   | 32.8           | 7.7                          | 110.0             | 7.3             | 7.4                          |                |                 |           |     |     |     |
|            |           |          |                   | Bottom        | 7.0           | 1               | 23.5        | 8.3                | 32.8      | 7.7                    | 109.9 | 7.4            | 8.2                          | 7.7               |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               |               | 2               | 23.5        | 8.3                | 32.8      | 7.7                    | 109.8 | 7.4            | 8.5                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           | TCE-C2   | Misty             | Moderate      | 18:15         | 12.2            | Surface     | 1.0                | 1         | 23.2                   | 8.2   | 31.8           | 7.1                          |                   |                 |                              | 99.9           | 1.9             | 10.0      | 7.1 | 2.9 | 9.4 |
|            |           |          |                   |               |               | 2               | 23.2        | 8.2                | 31.8      | 7.1                    | 99.9  | 1.9            | 10.3                         |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | Middle        | 6.1           | 1               | 23.2        | 8.2                | 31.8      | 7.1                    | 99.9  | 2.9            | 9.5                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               |               | 2               | 23.2        | 8.2                | 31.8      | 7.1                    | 99.9  | 2.9            | 9.2                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | Bottom        | 11.2          | 1               | 23.2        | 8.2                | 31.7      | 7.1                    | 99.9  | 3.7            | 8.7                          | 7.1               |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               |               | 2               | 23.2        | 8.2                | 31.7      | 7.1                    | 99.9  | 3.8            | 8.5                          |                   |                 |                              |                |                 |           |     |     |     |
|            | TCE-WQM1  | Misty    | Moderate          | 17:11         | 8.6           | Surface         | 1.0         | 1                  | 23.5      | 8.3                    | 31.9  | 7.3            | 103.3                        |                   |                 |                              | 3.4            | 9.8             | 7.3       | 4.0 | 9.1 |     |
|            |           |          |                   |               | 2             | 23.5            | 8.3         | 31.9               | 7.3       | 103.0                  | 3.3   | 9.6            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          | Middle            | 4.3           | 1             | 23.4            | 8.3         | 31.9               | 7.3       | 102.5                  | 3.4   | 9.4            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               | 2             | 23.4            | 8.3         | 31.9               | 7.3       | 102.4                  | 3.4   | 9.0            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          | Bottom            | 7.6           | 1             | 23.4            | 8.3         | 31.9               | 7.2       | 102.1                  | 5.2   | 8.6            | 7.2                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               | 2             | 23.4            | 8.3         | 31.9               | 7.2       | 102.1                  | 5.4   | 8.4            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            | TCE-WQM2a | Misty    | Moderate          | 17:41         | 8.2           | Surface         | 1.0         | 1                  | 23.3      | 8.2                    | 31.8  | 7.4            |                              |                   |                 | 103.4                        | 1.9            | 7.6             | 7.2       | 2.8 | 8.3 |     |
|            |           |          |                   |               | 2             | 23.3            | 8.2         | 31.8               | 7.4       | 103.4                  | 1.9   | 7.8            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          | Middle            | 4.1           | 1             | 23.3            | 8.2         | 31.8               | 7.1       | 99.6                   | 3.2   | 8.1            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               | 2             | 23.3            | 8.2         | 31.8               | 7.1       | 99.6                   | 3.2   | 8.4            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          | Bottom            | 7.2           | 1             | 23.3            | 8.2         | 31.8               | 7.1       | 100.3                  | 3.4   | 8.7            | 7.2                          |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   |               | 2             | 23.3            | 8.2         | 31.8               | 7.2       | 100.9                  | 3.4   | 8.9            |                              |                   |                 |                              |                |                 |           |     |     |     |
| TCE-WQM2b  | Misty     | Moderate | 17:51             | 10.2          | Surface       | 1.0             | 1           | 23.2               | 8.2       | 31.8                   | 7.1   | 99.8           |                              |                   |                 | 2.8                          | 7.8            | 7.1             | 3.8       | 8.0 |     |     |
|            |           |          |                   | 2             | 23.2          | 8.2             | 31.8        | 7.1                | 99.8      | 2.8                    | 7.4   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           | Middle   | 5.1               | 1             | 23.2          | 8.2             | 31.8        | 7.1                | 99.8      | 4.0                    | 8.1   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | 2             | 23.2          | 8.2             | 31.8        | 7.1                | 99.8      | 4.0                    | 7.9   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           | Bottom   | 9.2               | 1             | 23.2          | 8.2             | 31.7        | 7.1                | 99.9      | 4.5                    | 8.6   | 7.1            |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | 2             | 23.2          | 8.2             | 31.7        | 7.1                | 99.9      | 4.5                    | 8.4   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
| TCE-WQM3A  | Misty     | Moderate | 17:32             | 4.0           | Surface       | 1.0             | 1           | 23.3               | 8.2       | 31.7                   | 7.3   |                |                              |                   | 103.2           | 8.3                          | 8.6            | 7.3             | 7.7       | 9.2 |     |     |
|            |           |          |                   | 2             | 23.3          | 8.2             | 31.7        | 7.3                | 103.2     | 8.3                    | 8.9   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           | Bottom   | 3.0               | 1             | 23.1          | 8.2             | 31.9        | 7.3                | 102.5     | 7.2                    | 9.8   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | 2             | 23.1          | 8.2             | 31.9        | 7.3                | 102.0     | 7.3                    | 9.3   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           | TCE-WQM4 | Misty             | Moderate      | 17:22         | 4.2             | Surface     | 1.0                | 1         | 23.5                   | 8.3   | 31.8           | 7.5                          | 106.2             | 6.6             | 8.7                          | 7.5            | 7.0             | 9.1       |     |     |     |
|            |           |          |                   | 2             | 23.5          | 8.3             | 31.8        | 7.5                | 106.1     | 6.8                    | 8.4   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           | Bottom   | 3.2               | 1             | 23.5          | 8.3             | 31.8        | 7.5                | 105.7     | 7.4                    | 9.8   |                |                              |                   |                 |                              |                |                 |           |     |     |     |
|            |           |          |                   | 2             | 23.5          | 8.3             | 31.8        | 7.5                | 105.6     | 7.4                    | 9.3   |                |                              |                   |                 |                              |                |                 |           |     |     |     |

| Date       | Tide       | Station   | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH   | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |     |     |
|------------|------------|-----------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|-----|-----|
|            |            |           |                   |               |               |                 |             |                    |           |                        |      |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |     |     |
| 2022-11-18 | Mid-Ebb    | TCE-C1    | Sunny             | Rough         | 9:03          | 7.4             | Surface     | 1.0                | 1         | 23.3                   | 8.3  | 30.0           | 7.3                          | 101.2             | 1.6             | 2.6                          | 7.2            | 3.5             | 3.5       |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.3                   | 8.3  | 30.0           | 7.3                          | 101.2             | 1.6             | 2.9                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Middle      | 3.7                | 1         | 23.2                   | 8.3  | 30.3           | 7.1                          | 98.5              | 2.7             | 3.1                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.3  | 30.3           | 7.1                          | 98.4              | 2.7             | 3.4                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Bottom      | 6.4                | 1         | 23.1                   | 8.3  | 30.9           | 6.7                          | 93.7              | 6.3             | 4.6                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.1                   | 8.3  | 30.9           | 6.7                          | 93.7              | 6.4             | 4.2                          |                |                 |           |     |     |
|            |            | TCE-C2    | Sunny             | Moderate      | 7:04          | 12.2            | Surface     | 1.0                | 1         | 23.6                   | 8.2  | 29.3           | 8.2                          | 29.3              | 6.6             | 92.6                         | 2.0            | 1.6             | 6.5       | 2.7 | 2.3 |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.6                   | 8.2  | 29.3           | 6.6                          | 92.6              | 2.0             | 1.8                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Middle      | 6.1                | 1         | 23.7                   | 8.2  | 29.9           | 6.4                          | 89.1              | 2.6             | 2.2                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.7                   | 8.2  | 29.9           | 6.4                          | 89.1              | 2.7             | 2.4                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Bottom      | 11.2               | 1         | 23.5                   | 8.2  | 30.3           | 6.2                          | 86.4              | 3.4             | 3.0                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.2  | 30.3           | 6.2                          | 86.3              | 3.4             | 2.7                          |                |                 |           |     |     |
|            |            | TCE-WQM1  | Sunny             | Moderate      | 8:23          | 8.9             | Surface     | 1.0                | 1         | 23.7                   | 8.2  | 30.2           | 8.2                          | 30.2              | 6.7             | 94.0                         | 4.4            | 2.3             | 6.7       | 5.7 | 2.8 |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.7                   | 8.2  | 30.2           | 6.7                          | 94.0              | 4.4             | 2.0                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Middle      | 4.5                | 1         | 23.4                   | 8.2  | 30.3           | 6.7                          | 93.1              | 6.2             | 2.5                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.4                   | 8.2  | 30.3           | 6.7                          | 93.1              | 6.2             | 2.9                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Bottom      | 7.9                | 1         | 23.5                   | 8.3  | 30.3           | 6.7                          | 93.3              | 6.5             | 3.6                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.3  | 30.3           | 6.7                          | 93.3              | 6.6             | 3.2                          |                |                 |           |     |     |
|            |            | TCE-WQM2a | Sunny             | Moderate      | 7:47          | 6.7             | Surface     | 1.0                | 1         | 23.8                   | 8.3  | 29.8           | 8.3                          | 29.8              | 6.7             | 93.4                         | 8.8            | 4.5             | 6.6       | 6.5 | 3.4 |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.8                   | 8.3  | 29.8           | 6.7                          | 93.4              | 8.8             | 4.3                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Middle      | 3.4                | 1         | 23.6                   | 8.3  | 30.0           | 6.6                          | 92.7              | 3.9             | 3.2                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.6                   | 8.3  | 30.0           | 6.6                          | 92.7              | 3.9             | 3.5                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Bottom      | 5.7                | 1         | 23.6                   | 8.4  | 30.6           | 6.5                          | 91.2              | 6.8             | 2.5                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.6                   | 8.4  | 30.6           | 6.5                          | 91.2              | 6.8             | 2.4                          |                |                 |           |     |     |
|            | TCE-WQM2b  | Sunny     | Moderate          | 7:32          | 9.9           | Surface         | 1.0         | 1                  | 23.7      | 8.2                    | 29.5 | 8.2            | 29.5                         | 6.5               | 91.2            | 2.9                          | 4.0            | 6.5             | 3.4       | 3.2 |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.7      | 8.2                    | 29.5 | 6.5            | 91.3                         | 3.0               | 4.4             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               | Middle          | 5.0         | 1                  | 23.6      | 8.2                    | 29.6 | 6.5            | 90.7                         | 3.5               | 2.8             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.6      | 8.2                    | 29.6 | 6.5            | 90.7                         | 3.5               | 3.2             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               | Bottom          | 8.9         | 1                  | 23.6      | 8.3                    | 29.6 | 6.5            | 90.8                         | 3.7               | 2.5             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.6      | 8.3                    | 29.6 | 6.5            | 90.8                         | 3.7               | 2.2             |                              |                |                 |           |     |     |
|            | TCE-WQM3A  | Sunny     | Calm              | 8:01          | 4.1           | Surface         | 1.0         | 1                  | 23.7      | 8.2                    | 29.7 | 8.2            | 29.7                         | 6.5               | 91.0            | 3.4                          | 3.4            | 6.5             | 5.7       | 3.0 |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.7      | 8.2                    | 29.7 | 6.5            | 91.0                         | 3.4               | 3.6             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               | Bottom          | 3.1         | 1                  | 23.6      | 8.2                    | 30.2 | 6.2            | 87.4                         | 8.0               | 2.6             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.6      | 8.2                    | 30.2 | 6.2            | 87.3                         | 8.0               | 2.2             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 1                  | 23.9      | 8.2                    | 30.2 | 6.5            | 92.0                         | 2.4               | 3.3             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.8      | 8.2                    | 30.2 | 6.5            | 92.1                         | 2.4               | 3.0             |                              |                |                 |           |     |     |
|            | TCE-WQM4   | Sunny     | Calm              | 8:11          | 3.8           | Surface         | 1.0         | 1                  | 23.9      | 8.2                    | 30.2 | 8.2            | 30.2                         | 6.5               | 92.0            | 2.4                          | 3.3            | 6.5             | 3.6       | 3.8 |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.8      | 8.2                    | 30.2 | 6.5            | 92.1                         | 2.4               | 3.0             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               | Bottom          | 2.8         | 1                  | 23.7      | 8.2                    | 30.3 | 6.6            | 92.8                         | 4.8               | 4.6             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.6      | 8.2                    | 30.3 | 6.6            | 92.8                         | 4.7               | 4.1             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 1                  | 23.3      | 8.3                    | 30.1 | 7.3            | 101.1                        | 1.4               | 4.4             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.3      | 8.3                    | 30.1 | 7.3            | 101.1                        | 1.4               | 4.4             |                              |                |                 |           |     |     |
|            | 2022-11-18 | Mid-Flood | TCE-C1            | Sunny         | Moderate      | 14:14           | 8.2         | Surface            | 1.0       | 1                      | 23.3 | 8.3            | 30.1                         | 7.3               | 101.1           | 1.4                          | 4.0            | 7.0             | 4.4       | 3.7 |     |
|            |            |           |                   |               |               |                 |             |                    |           | 2                      | 23.3 | 8.3            | 30.1                         | 7.3               | 101.1           | 1.4                          | 4.4            |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | Middle             | 4.1       | 1                      | 23.1 | 8.3            | 30.9                         | 6.8               | 95.5            | 4.5                          | 3.5            |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    |           | 2                      | 23.1 | 8.3            | 30.9                         | 6.8               | 95.5            | 4.6                          | 3.9            |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | Bottom             | 7.2       | 1                      | 23.0 | 8.3            | 31.0                         | 6.8               | 94.6            | 7.2                          | 3.3            |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    |           | 2                      | 23.0 | 8.3            | 31.0                         | 6.8               | 94.6            | 7.2                          | 3.0            |                 |           |     |     |
| TCE-C2     |            |           | Sunny             | Moderate      | 16:05         | 13.5            | Surface     | 1.0                | 1         | 24.1                   | 8.2  | 29.8           | 8.2                          | 29.8              | 6.8             | 94.9                         | 1.5            | 4.9             | 6.7       | 2.3 | 4.1 |
|            |            |           |                   |               |               |                 |             |                    | 2         | 24.1                   | 8.2  | 29.8           | 6.8                          | 94.9              | 1.5             | 4.6                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Middle      | 6.8                | 1         | 23.5                   | 8.2  | 30.2           | 6.6                          | 93.1              | 2.7             | 4.3                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.2  | 30.2           | 6.6                          | 93.1              | 2.8             | 3.9                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Bottom      | 12.5               | 1         | 23.4                   | 8.2  | 30.8           | 6.3                          | 88.6              | 2.6             | 3.2                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.4                   | 8.2  | 30.8           | 6.3                          | 88.6              | 2.6             | 3.4                          |                |                 |           |     |     |
| TCE-WQM1   |            |           | Sunny             | Calm          | 14:54         | 9.6             | Surface     | 1.0                | 1         | 24.2                   | 8.2  | 30.0           | 8.2                          | 30.0              | 6.6             | 92.8                         | 5.8            | 2.2             | 6.6       | 7.3 | 2.9 |
|            |            |           |                   |               |               |                 |             |                    | 2         | 24.2                   | 8.2  | 30.0           | 6.6                          | 92.8              | 5.8             | 2.4                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Middle      | 4.8                | 1         | 23.8                   | 8.3  | 30.2           | 6.7                          | 94.1              | 4.8             | 3.0                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.8                   | 8.3  | 30.2           | 6.7                          | 94.1              | 4.7             | 2.8                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Bottom      | 8.6                | 1         | 23.5                   | 8.3  | 30.3           | 6.7                          | 93.4              | 11.4            | 3.3                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.3  | 30.3           | 6.7                          | 93.4              | 11.4            | 3.4                          |                |                 |           |     |     |
| TCE-WQM2a  |            |           | Sunny             | Moderate      | 15:28         | 7.9             | Surface     | 1.0                | 1         | 23.9                   | 8.2  | 29.5           | 8.2                          | 29.5              | 6.8             | 95.2                         | 1.7            | 2.1             | 6.8       | 1.8 | 2.8 |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.9                   | 8.2  | 29.5           | 6.8                          | 95.2              | 1.7             | 2.3                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Middle      | 4.0                | 1         | 23.8                   | 8.2  | 29.7           | 6.8                          | 94.9              | 1.8             | 3.0                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.8                   | 8.2  | 29.6           | 6.8                          | 94.9              | 1.8             | 2.5                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 | Bottom      | 6.9                | 1         | 23.9                   | 8.2  | 29.8           | 6.7                          | 94.5              | 1.9             | 3.5                          |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             |                    | 2         | 23.9                   | 8.2  | 29.8           | 6.7                          | 94.5              | 1.9             | 3.3                          |                |                 |           |     |     |
| TCE-WQM2b  |            | Sunny     | Moderate          | 15:43         | 10.3          | Surface         | 1.0         | 1                  | 24.1      | 8.2                    | 29.3 | 8.2            | 29.3                         | 6.7               | 93.7            | 1.7                          | 2.7            | 6.6             | 2.2       | 2.6 |     |
|            |            |           |                   |               |               |                 |             | 2                  | 24.1      | 8.2                    | 29.3 | 6.7            | 93.8                         | 1.7               | 3.0             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               | Middle          | 5.2         | 1                  | 23.9      | 8.2                    | 29.5 | 6.6            | 92.3                         | 2.4               | 2.4             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.9      | 8.2                    | 29.4 | 6.6            | 92.3                         | 2.3               | 2.7             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               | Bottom          | 9.3         | 1                  | 23.8      | 8.2                    | 29.5 | 6.6            | 92.5                         | 2.4               | 2.2             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.8      | 8.2                    | 29.5 | 6.6            | 92.5                         | 2.4               | 2.5             |                              |                |                 |           |     |     |
| TCE-WQM3A  |            | Sunny     | Calm              | 15:18         | 5.2           | Surface         | 1.0         | 1                  | 23.8      | 8.2                    | 30.0 | 8.2            | 30.0                         | 6.7               | 94.8            | 3.6                          | 3.8            | 6.7             | 3.9       | 4.2 |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.8      | 8.2                    | 30.0 | 6.7            | 94.8                         | 3.9               | 3.5             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               | Bottom          | 4.2         | 1                  | 23.7      | 8.2                    | 30.1 | 6.7            | 93.8                         | 4.0               | 4.5             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.7      | 8.2                    | 30.1 | 6.7            | 93.8                         | 4.0               | 4.8             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 1                  | 23.8      | 8.2                    | 30.0 | 6.7            | 94.6                         | 3.6               | 5.1             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.8      | 8.2                    | 30.0 | 6.7            | 94.6                         | 3.6               | 5.1             |                              |                |                 |           |     |     |
| TCE-WQM4   |            | Sunny     | Calm              | 15:06         | 4.4           | Surface         | 1.0         | 1                  | 23.8      | 8.2                    | 30.0 | 8.2            | 30.0                         | 6.7               | 94.6            | 3.5                          | 4.4            | 6.7             | 4.2       | 4.1 |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.8      | 8.2                    | 30.0 | 6.7            | 94.6                         | 3.6               | 5.1             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               | Bottom          | 3.4         | 1                  | 23.7      | 8.2                    | 30.2 | 6.6            | 93.2                         | 4.8               | 3.3             |                              |                |                 |           |     |     |
|            |            |           |                   |               |               |                 |             | 2                  | 23.7      | 8.2                    | 30.2 | 6.6            | 93.1                         | 4.8               | 3.7             |                              |                |                 |           |     |     |



| Date       | Tide      | Station  | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH   | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |
|------------|-----------|----------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|
|            |           |          |                   |               |               |                 |             |                    |           |                        |      |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |
| 2022-11-21 | Mid-Ebb   | TCE-C1   | Cloudy            | Moderate      | 11:13         | 7.6             | Surface     | 1.0                | 1         | 23.5                   | 8.5  | 31.0           | 9.4                          | 132.4             | 3.8             | 5.2                          | 9.1            | 6.6             | 5.9       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.5  | 31.0           | 9.4                          | 131.5             | 3.7             | 5.1                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 3.8                | 1         | 23.2                   | 8.5  | 31.9           | 8.7                          | 122.6             | 6.0             | 5.7                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 6.6                | 1         | 23.2                   | 8.5  | 31.9           | 8.7                          | 122.4             | 6.1             | 6.1                          |                |                 |           |
|            |           |          |                   | 2             | 23.2          | 8.5             | 31.9        | 8.6                | 120.2     | 9.9                    | 6.4  | 8.5            |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.2          | 8.5             | 31.9        | 8.5                | 119.4     | 9.9                    | 6.8  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-C2   | Cloudy            | Moderate      | 9:26          | 15.5            | Surface     | 1.0                | 1         | 23.6                   | 8.1  | 30.1           | 6.8                          | 94.8              | 1.9             | 6.2                          | 6.6            | 3.5             | 6.6       |
|            |           |          |                   | 2             | 23.6          | 8.1             | 30.1        | 6.8                | 94.7      | 1.9                    | 6.0  |                |                              |                   |                 |                              |                |                 |           |
|            |           | Middle   | 7.8               | 1             | 23.5          | 8.1             | 30.8        | 6.4                | 89.3      | 2.1                    | 6.7  |                |                              |                   |                 |                              |                |                 |           |
|            |           | Bottom   | 14.5              | 1             | 23.5          | 8.1             | 30.8        | 6.4                | 89.3      | 2.1                    | 6.4  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.5          | 8.1             | 30.8        | 6.3                | 89.0      | 6.5                    | 7.2  | 6.3            |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.5          | 8.1             | 30.8        | 6.3                | 89.1      | 6.4                    | 6.9  |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM1  | Cloudy   | Calm              | 10:37         | 8.5           | Surface         | 1.0         | 1                  | 24.1      | 8.4                    | 30.2 | 8.6            | 121.0                        | 4.3               | 5.8             | 8.5                          | 4.7            | 6.3             |           |
|            |           |          | 2                 | 24.1          | 8.4           | 30.2            | 8.6         | 120.9              | 4.4       | 5.5                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Middle    | 4.3      | 1                 | 24.1          | 8.3           | 30.2            | 8.5         | 120.3              | 4.5       | 6.2                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Bottom    | 7.5      | 1                 | 24.1          | 8.3           | 30.2            | 8.5         | 120.2              | 4.5       | 6.4                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 24.0          | 8.3           | 30.2            | 8.4         | 119.1              | 5.3       | 6.9                    | 8.4  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 24.0          | 8.3           | 30.2            | 8.4         | 119.0              | 5.3       | 6.7                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2a | Cloudy   | Moderate          | 10:05         | 7.7           | Surface         | 1.0         | 1                  | 23.8      | 8.2                    | 30.0 | 7.1            | 100.4                        | 2.9               | 4.8             | 7.1                          | 2.8            | 5.5             |           |
|            |           |          | 2                 | 23.8          | 8.2           | 30.0            | 7.1         | 100.4              | 2.9       | 4.4                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Middle    | 3.9      | 1                 | 23.8          | 8.2           | 30.0            | 7.1         | 99.3               | 2.7       | 5.4                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Bottom    | 6.7      | 1                 | 23.8          | 8.2           | 30.0            | 7.1         | 99.2               | 2.7       | 5.8                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.8          | 8.2           | 30.1            | 7.0         | 97.9               | 3.0       | 6.0                    | 7.0  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.8          | 8.2           | 30.1            | 7.0         | 97.9               | 3.0       | 6.4                    |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM2b  | Cloudy    | Moderate | 9:53              | 12.0          | Surface       | 1.0             | 1           | 23.8               | 8.2       | 29.9                   | 7.1  | 100.3          | 2.9                          | 6.2               | 7.0             | 3.7                          | 5.5            |                 |           |
|            |           | 2        | 23.8              | 8.2           | 29.9          | 7.1             | 100.1       | 3.1                | 5.9       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Middle     | 6.0       | 1        | 23.8              | 8.2           | 30.1          | 6.8             | 95.3        | 3.7                | 5.4       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Bottom     | 11.0      | 1        | 23.8              | 8.2           | 30.1          | 6.8             | 95.2        | 3.7                | 5.6       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 23.6              | 8.2           | 30.9          | 6.4             | 89.7        | 4.4                | 5.2       | 6.4                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 23.6              | 8.2           | 30.9          | 6.4             | 89.9        | 4.5                | 4.7       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM3A  | Cloudy    | Calm     | 10:15             | 4.5           | Surface       | 1.0             | 1           | 23.9               | 8.2       | 30.0                   | 7.0  | 98.7           | 9.0                          | 6.6               | 7.0             | 8.8                          | 6.2            |                 |           |
|            |           | 2        | 23.9              | 8.2           | 30.0          | 7.0             | 98.7        | 9.0                | 7.0       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Bottom     | 3.5       | 1        | 23.9              | 8.2           | 30.0          | 7.1             | 99.2        | 8.7                | 5.8       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 23.9              | 8.2           | 30.0          | 7.1             | 99.3        | 8.6                | 5.2       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 23.9              | 8.2           | 30.0          | 7.1             | 99.3        | 8.6                | 5.2       | 7.1                    |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM4   | Cloudy    | Calm     | 10:25             | 4.2           | Surface       | 1.0             | 1           | 23.9               | 8.2       | 29.9                   | 7.2  | 101.7          | 2.1                          | 5.1               | 7.2             | 2.6                          | 5.6            |                 |           |
|            |           | 2        | 23.9              | 8.2           | 29.9          | 7.2             | 101.6       | 2.2                | 4.8       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Bottom     | 3.2       | 1        | 23.9              | 8.2           | 30.0          | 7.2             | 100.9       | 3.2                | 6.1       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 23.9              | 8.2           | 30.0          | 7.2             | 100.9       | 3.1                | 6.5       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 23.9              | 8.2           | 30.0          | 7.2             | 100.9       | 3.1                | 6.5       | 7.2                    |      |                |                              |                   |                 |                              |                |                 |           |
| 2022-11-21 | Mid-Flood | TCE-C1   | Cloudy            | Moderate      | 15:23         | 7.0             | Surface     | 1.0                | 1         | 23.5                   | 8.5  | 31.0           | 9.7                          | 136.3             | 3.3             | 5.0                          | 9.3            | 8.1             | 6.1       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.5  | 31.0           | 9.7                          | 135.9             | 3.2             | 5.3                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 3.5                | 1         | 23.3                   | 8.5  | 31.5           | 9.0                          | 126.4             | 3.1             | 6.3                          |                |                 |           |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.3                   | 8.5  | 31.6           | 9.0                          | 126.0             | 3.2             | 5.9                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 6.0                | 1         | 23.2                   | 8.5  | 31.9           | 8.6                          | 120.7             | 17.8            | 7.1                          |                |                 |           |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.5  | 31.9           | 8.6                          | 120.2             | 17.8            | 6.7                          |                |                 |           |
|            |           |          |                   | 2             | 23.7          | 8.2             | 30.2        | 7.1                | 99.2      | 2.7                    | 6.0  | 6.8            | 6.0                          | 6.4               |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.7          | 8.2             | 30.2        | 7.1                | 99.1      | 2.7                    | 5.8  |                |                              |                   |                 |                              |                |                 |           |
|            |           | Middle   | 7.1               | 1             | 23.7          | 8.2             | 30.5        | 6.6                | 93.1      | 3.5                    | 6.2  |                |                              |                   |                 |                              |                |                 |           |
|            |           | Bottom   | 13.1              | 1             | 23.6          | 8.2             | 30.4        | 6.6                | 93.2      | 3.5                    | 6.6  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.6          | 8.2             | 30.9        | 6.4                | 89.9      | 11.8                   | 6.8  | 6.4            |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.6          | 8.2             | 30.9        | 6.4                | 90.1      | 11.9                   | 7.1  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-WQM1 | Cloudy            | Calm          | 16:01         | 8.0             | Surface     | 1.0                | 1         | 24.1                   | 8.4  | 30.3           | 8.6                          | 122.0             | 4.2             | 5.1                          | 8.6            | 4.5             | 5.8       |
|            |           |          |                   | 2             | 24.1          | 8.4             | 30.3        | 8.6                | 122.1     | 4.1                    | 5.4  |                |                              |                   |                 |                              |                |                 |           |
|            |           | Middle   | 4.0               | 1             | 24.0          | 8.4             | 30.3        | 8.6                | 122.0     | 4.4                    | 5.8  |                |                              |                   |                 |                              |                |                 |           |
|            |           | Bottom   | 7.0               | 1             | 24.0          | 8.4             | 30.3        | 8.6                | 122.1     | 4.5                    | 5.6  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.9          | 8.4             | 30.4        | 8.6                | 121.1     | 4.9                    | 6.6  | 8.6            |                              |                   |                 |                              |                |                 |           |
|            |           |          |                   | 2             | 23.9          | 8.4             | 30.4        | 8.6                | 120.8     | 5.0                    | 6.3  |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2a | Cloudy   | Moderate          | 16:32         | 6.5           | Surface         | 1.0         | 1                  | 23.9      | 8.2                    | 30.0 | 7.5            | 105.5                        | 3.1               | 6.4             | 7.4                          | 4.6            | 5.9             |           |
|            |           |          | 2                 | 23.9          | 8.2           | 30.0            | 7.5         | 105.5              | 3.1       | 6.8                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Middle    | 3.3      | 1                 | 24.0          | 8.2           | 30.1            | 7.3         | 102.9              | 4.7       | 6.1                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Bottom    | 5.5      | 1                 | 24.0          | 8.2           | 30.1            | 7.3         | 102.7              | 4.8       | 5.8                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.9          | 8.2           | 30.1            | 7.1         | 100.2              | 6.0       | 5.2                    | 7.1  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.9          | 8.2           | 30.1            | 7.1         | 100.4              | 6.1       | 4.9                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2b | Cloudy   | Moderate          | 16:44         | 10.6          | Surface         | 1.0         | 1                  | 23.9      | 8.2                    | 29.4 | 7.6            | 107.1                        | 2.1               | 6.2             | 7.6                          | 2.8            | 5.5             |           |
|            |           |          | 2                 | 23.9          | 8.2           | 29.4            | 7.6         | 107.0              | 2.1       | 6.6                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Middle    | 5.3      | 1                 | 23.9          | 8.2           | 29.6            | 7.5         | 105.3              | 2.7       | 5.3                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Bottom    | 9.6      | 1                 | 23.9          | 8.2           | 29.5            | 7.5         | 105.2              | 2.7       | 5.7                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.8          | 8.2           | 29.8            | 7.4         | 103.5              | 3.8       | 4.5                    | 7.4  |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.8          | 8.2           | 29.8            | 7.4         | 103.5              | 3.7       | 4.8                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM3A | Cloudy   | Calm              | 16:22         | 4.1           | Surface         | 1.0         | 1                  | 23.9      | 8.2                    | 29.8 | 7.1            | 99.3                         | 8.8               | 7.0             | 7.1                          | 8.0            | 6.3             |           |
|            |           |          | 2                 | 23.9          | 8.2           | 29.8            | 7.1         | 99.4               | 8.9       | 6.6                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | Bottom    | 3.1      | 1                 | 23.9          | 8.2           | 29.8            | 7.1         | 99.3               | 7.0       | 6.1                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.9          | 8.2           | 29.9            | 7.1         | 99.4               | 7.1       | 5.6                    |      |                |                              |                   |                 |                              |                |                 |           |
|            |           |          | 2                 | 23.9          | 8.2           | 29.9            | 7.1         | 99.4               | 7.1       | 5.6                    | 7.1  |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM4  | Cloudy   | Calm              | 16:12         | 3.7           | Surface         | 1.0         | 1                  | 24.0      | 8.3                    | 30.1 | 7.9            | 111.3                        | 3.2               | 6.3             | 7.9                          | 3.4            | 5.6             |           |
|            |           | 2        | 24.0              | 8.3           | 30.1          | 7.9             | 111.4       | 3.2                | 6.2       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| Bottom     | 2.7       | 1        | 24.0              | 8.3           | 30.1          | 7.8             | 110.1       | 3.6                | 5.2       |                        |      |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2        | 24.0              | 8.3           | 30.1          | 7.8             | 109.8       | 3.7                | 4.8       |                        |      |                |                              |                   |                 |                              |                |                 |           |

| Date       | Tide      | Station  | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH   | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |
|------------|-----------|----------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|
|            |           |          |                   |               |               |                 |             |                    |           |                        |      |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |
| 2022-11-23 | Mid-Ebb   | TCE-C1   | Cloudy            | Moderate      | 10:46         | 7.7             | Surface     | 1.0                | 1         | 23.2                   | 8.5  | 31.1           | 7.7                          | 107.4             | 5.0             | 4.5                          | 7.7            | 7.4             | 5.1       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.5  | 31.2           | 7.7                          | 107.5             | 5.1             | 4.4                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 3.9                | 1         | 23.1                   | 8.5  | 31.6           | 7.7                          | 107.7             | 5.5             | 6.2                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 6.7                | 1         | 23.1                   | 8.5  | 31.9           | 7.7                          | 107.7             | 11.9            | 5.3                          |                |                 |           |
|            |           |          |                   | 2             | 23.1          | 8.5             | 31.9        | 7.7                | 107.6     | 11.5                   | 4.5  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-C2   | Cloudy            | Moderate      | 12:51         | 13.7            | Surface     | 1.0                | 1         | 23.6                   | 8.2  | 30.6           | 7.0                          | 98.8              | 3.3             | 5.7                          | 6.8            | 4.9             | 4.6       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.2  | 30.6           | 7.0                          | 98.7              | 3.3             | 5.1                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 6.9                | 1         | 23.5                   | 8.2  | 30.8           | 6.6                          | 93.2              | 3.9             | 4.4                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 12.7               | 1         | 23.5                   | 8.2  | 30.8           | 6.6                          | 93.0              | 4.2             | 4.1                          |                |                 |           |
|            |           |          |                   | 2             | 23.4          | 8.2             | 31.1        | 6.6                | 92.6      | 7.2                    | 4.4  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-WQM1 | Cloudy            | Moderate      | 11:44         | 8.4             | Surface     | 1.0                | 1         | 23.3                   | 8.4  | 30.9           | 7.1                          | 99.2              | 6.9             | 7.3                          | 7.1            | 9.0             | 6.0       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.3                   | 8.4  | 30.9           | 7.1                          | 99.2              | 7.1             | 6.3                          |                |                 |           |
|            | Middle    |          |                   |               |               |                 | 4.2         | 1                  | 23.3      | 8.4                    | 31.0 | 7.1            | 99.2                         | 8.2               | 4.9             |                              |                |                 |           |
|            | Bottom    |          |                   |               |               |                 | 7.4         | 1                  | 23.3      | 8.4                    | 31.0 | 7.1            | 99.2                         | 9.2               | 4.7             |                              |                |                 |           |
|            |           |          | 2                 | 23.3          | 8.4           | 31.1            | 7.1         | 99.0               | 11.2      | 6.7                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2a | Cloudy   | Moderate          | 12:20         | 7.5           | Surface         | 1.0         | 1                  | 23.5      | 8.3                    | 30.4 | 7.0            | 98.4                         | 8.2               | 6.9             | 7.0                          | 8.1            | 5.6             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.5      | 8.3                    | 30.4 | 7.0            | 98.4                         | 8.2               | 5.7             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 3.8         | 1                  | 23.5      | 8.2                    | 30.4 | 6.9            | 96.7                         | 4.7               | 6.3             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 6.5         | 1                  | 23.5      | 8.2                    | 30.4 | 6.9            | 96.7                         | 4.8               | 6.7             |                              |                |                 |           |
|            |           |          | 2                 | 23.5          | 8.2           | 30.4            | 6.9         | 97.3               | 10.9      | 3.5                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2b | Cloudy   | Moderate          | 12:31         | 11.4          | Surface         | 1.0         | 1                  | 23.6      | 8.3                    | 30.4 | 7.0            | 98.3                         | 5.1               | 8.2             | 6.9                          | 8.4            | 5.9             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.6      | 8.3                    | 30.5 | 7.0            | 98.0                         | 5.5               | 6.8             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 5.7         | 1                  | 23.5      | 8.2                    | 30.5 | 6.8            | 95.9                         | 9.0               | 4.9             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 10.4        | 1                  | 23.5      | 8.2                    | 30.5 | 6.8            | 95.9                         | 9.2               | 6.2             |                              |                |                 |           |
|            |           | 2        | 23.5              | 8.2           | 30.5          | 6.8             | 95.8        | 11.0               | 4.7       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM3A  | Cloudy    | Moderate | 12:09             | 4.8           | Surface       | 1.0             | 1           | 23.5               | 8.2       | 30.3                   | 6.9  | 96.4           | 9.9                          | 4.0               | 6.9             | 11.1                         | 5.6            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.5               | 8.2       | 30.3                   | 6.9  | 96.4           | 10.0                         | 10.2              |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.8             | 1           | 23.5               | 8.3       | 30.3                   | 6.9  | 96.5           | 12.2                         | 3.6               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.5               | 8.3       | 30.3                   | 6.9  | 96.6           | 12.4                         | 4.4               |                 |                              |                |                 |           |
| TCE-WQM4   | Cloudy    | Moderate | 11:57             | 4.2           | Surface       | 1.0             | 1           | 23.5               | 8.3       | 30.3                   | 7.1  | 98.7           | 6.1                          | 4.5               | 7.1             | 6.2                          | 5.5            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.5               | 8.3       | 30.3                   | 7.1  | 98.7           | 6.2                          | 4.2               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.2             | 1           | 23.4               | 8.3       | 30.4                   | 7.1  | 99.2           | 6.3                          | 5.9               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.3               | 8.3       | 30.4                   | 7.1  | 99.3           | 6.3                          | 7.5               |                 |                              |                |                 |           |
| 2022-11-23 | Mid-Flood | TCE-C1   | Rainy             | Moderate      | 8:19          | 7.2             | Surface     | 1.0                | 1         | 23.2                   | 8.5  | 31.1           | 7.6                          | 106.6             | 5.7             | 3.8                          | 7.6            | 7.3             | 4.5       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.5  | 31.2           | 7.6                          | 106.7             | 5.9             | 3.8                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 3.6                | 1         | 23.2                   | 8.5  | 31.6           | 7.6                          | 106.5             | 6.4             | 4.7                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 6.2                | 1         | 23.2                   | 8.5  | 31.6           | 7.6                          | 106.4             | 6.5             | 6.7                          |                |                 |           |
|            |           |          |                   | 2             | 23.2          | 8.5             | 31.9        | 7.5                | 105.4     | 9.4                    | 4.1  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-C2   | Cloudy            | Moderate      | 6:35          | 13.3            | Surface     | 1.0                | 1         | 23.4                   | 8.1  | 30.6           | 6.7                          | 93.5              | 2.8             | 5.8                          | 6.6            | 3.4             | 4.7       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.4                   | 8.1  | 30.6           | 6.7                          | 93.4              | 2.7             | 4.0                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 6.7                | 1         | 23.4                   | 8.1  | 30.6           | 6.6                          | 92.7              | 3.5             | 5.3                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 12.3               | 1         | 23.4                   | 8.1  | 30.6           | 6.6                          | 92.7              | 3.6             | 4.1                          |                |                 |           |
|            |           |          |                   | 2             | 23.4          | 8.1             | 30.6        | 6.6                | 92.5      | 3.9                    | 4.5  |                |                              |                   |                 |                              |                |                 |           |
|            |           | TCE-WQM1 | Rainy             | Moderate      | 7:41          | 8.0             | Surface     | 1.0                | 1         | 23.4                   | 8.3  | 30.5           | 7.0                          | 97.8              | 7.3             | 6.5                          | 7.0            | 8.8             | 5.4       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.4                   | 8.3  | 30.5           | 7.0                          | 97.8              | 7.2             | 5.5                          |                |                 |           |
|            | Middle    |          |                   |               |               |                 | 4.0         | 1                  | 23.4      | 8.3                    | 30.5 | 7.0            | 97.9                         | 8.4               | 5.7             |                              |                |                 |           |
|            | Bottom    |          |                   |               |               |                 | 7.0         | 1                  | 23.4      | 8.3                    | 30.5 | 7.0            | 97.9                         | 8.9               | 6.7             |                              |                |                 |           |
|            |           |          | 2                 | 23.3          | 8.3           | 30.5            | 7.1         | 98.5               | 10.3      | 4.1                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2a | Cloudy   | Moderate          | 7:10          | 7.2           | Surface         | 1.0         | 1                  | 23.5      | 8.2                    | 30.4 | 6.9            | 96.7                         | 4.2               | 4.5             | 6.9                          | 5.1            | 4.2             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.5      | 8.2                    | 30.4 | 6.9            | 96.7                         | 4.2               | 4.4             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 3.6         | 1                  | 23.5      | 8.2                    | 30.4 | 6.9            | 96.5                         | 4.3               | 4.6             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 6.2         | 1                  | 23.5      | 8.2                    | 30.3 | 6.9            | 96.4                         | 4.3               | 3.8             |                              |                |                 |           |
|            |           |          | 2                 | 23.5          | 8.2           | 30.3            | 6.8         | 95.7               | 6.7       | 4.2                    |      |                |                              |                   |                 |                              |                |                 |           |
|            | TCE-WQM2b | Cloudy   | Moderate          | 6:59          | 11.4          | Surface         | 1.0         | 1                  | 23.5      | 8.2                    | 30.4 | 6.9            | 96.9                         | 6.5               | 4.3             | 6.9                          | 8.9            | 4.9             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.5      | 8.2                    | 30.4 | 6.9            | 96.8                         | 6.6               | 3.4             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 5.7         | 1                  | 23.5      | 8.2                    | 30.4 | 6.9            | 96.4                         | 7.9               | 5.0             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 10.4        | 1                  | 23.5      | 8.2                    | 30.4 | 6.9            | 96.4                         | 8.7               | 4.5             |                              |                |                 |           |
|            |           | 2        | 23.5              | 8.2           | 30.4          | 6.9             | 96.9        | 11.6               | 4.4       |                        |      |                |                              |                   |                 |                              |                |                 |           |
| TCE-WQM3A  | Cloudy    | Moderate | 7:20              | 4.7           | Surface       | 1.0             | 1           | 23.5               | 8.2       | 30.3                   | 6.8  | 95.0           | 13.6                         | 4.6               | 6.8             | 13.5                         | 5.0            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.5               | 8.2       | 30.3                   | 6.8  | 94.9           | 13.6                         | 5.5               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.7             | 1           | 23.5               | 8.2       | 30.3                   | 6.8  | 94.7           | 13.3                         | 5.9               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.5               | 8.2       | 30.3                   | 6.8  | 94.7           | 13.6                         | 3.9               |                 |                              |                |                 |           |
| TCE-WQM4   | Cloudy    | Moderate | 7:29              | 3.5           | Surface       | 1.0             | 1           | 23.4               | 8.2       | 30.3                   | 7.0  | 97.7           | 3.4                          | 4.0               | 7.0             | 3.3                          | 4.4            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.4               | 8.2       | 30.3                   | 7.0  | 97.8           | 3.4                          | 4.4               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 2.5             | 1           | 23.4               | 8.2       | 30.3                   | 7.1  | 99.2           | 3.3                          | 5.3               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.4               | 8.2       | 30.3                   | 7.1  | 99.3           | 3.3                          | 3.9               |                 |                              |                |                 |           |

| Date       | Tide      | Station  | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH   | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |      |      |     |     |     |     |
|------------|-----------|----------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|------|------|-----|-----|-----|-----|
|            |           |          |                   |               |               |                 |             |                    |           |                        |      |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |      |      |     |     |     |     |
| 2022-11-25 | Mid-Ebb   | TCE-C1   | Cloudy            | Rough         | 12:19         | 7.6             | Surface     | 1.0                | 1         | 23.2                   | 8.2  | 30.7           | 6.7                          | 93.6              | 4.2             | 10.8                         | 6.7            | 5.2             | 10.0      |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.2  | 30.8           | 6.7                          | 93.6              | 4.2             | 11.2                         |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | Middle      | 3.8                | 1         | 23.2                   | 8.2  | 30.8           | 6.7                          | 93.8              | 5.2             | 9.9                          |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.2  | 30.8           | 6.7                          | 93.9              | 5.2             | 9.5                          |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | Bottom      | 6.6                | 1         | 23.2                   | 8.2  | 30.9           | 6.8                          | 94.9              | 6.3             | 9.1                          |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.2  | 30.9           | 6.8                          | 94.9              | 6.3             | 9.3                          |                |                 |           |      |      |     |     |     |     |
|            |           | TCE-C2   | Cloudy            | Rough         | 14:17         | 15.6            | Surface     | 1.0                | 1         | 23.5                   | 8.2  | 30.7           | 6.7                          | 93.5              | 3.3             | 5.2                          | 6.6            | 5.6             | 5.5       |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.2  | 30.7           | 6.7                          | 93.5              | 3.3             | 5.3                          |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | Middle      | 7.8                | 1         | 23.2                   | 8.1  | 31.1           | 6.4                          | 90.1              | 4.7             | 5.4                          |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.1  | 31.1           | 6.4                          | 90.1              | 4.7             | 5.6                          |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | Bottom      | 14.6               | 1         | 23.2                   | 8.1  | 31.1           | 6.5                          | 90.3              | 8.8             | 5.7                          |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.1  | 31.1           | 6.5                          | 90.4              | 8.8             | 6.0                          |                |                 |           |      |      |     |     |     |     |
|            | TCE-WQM1  | Cloudy   | Moderate          | 13:04         | 8.8           | Surface         | 1.0         | 1                  | 23.1      | 8.2                    | 30.9 | 6.7            | 94.0                         | 11.5              | 16.1            | 6.7                          | 10.5           | 18.1            |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             | 2                  | 23.1      | 8.2                    | 30.9 | 6.7            | 94.0                         | 11.6              | 16.3            |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               | Middle          | 4.4         | 1                  | 23.1      | 8.2                    | 30.9 | 6.7            | 94.1                         | 10.0              | 17.7            |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             | 2                  | 23.1      | 8.2                    | 30.9 | 6.7            | 94.1                         | 10.1              | 18.1            |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               | Bottom          | 7.8         | 1                  | 23.1      | 8.2                    | 30.9 | 6.8            | 94.3                         | 9.9               | 20.3            |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             | 2                  | 23.1      | 8.2                    | 30.9 | 6.8            | 94.3                         | 9.9               | 19.9            |                              |                |                 |           |      |      |     |     |     |     |
|            | TCE-WQM2a | Cloudy   | Rough             | 13:40         | 7.2           | Surface         | 1.0         | 1                  | 23.4      | 8.2                    | 30.6 | 6.7            | 94.2                         | 4.6               | 5.8             | 6.8                          | 6.3            | 5.5             |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             | 2                  | 23.4      | 8.2                    | 30.6 | 6.7            | 94.2                         | 4.6               | 6.0             |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               | Middle          | 3.6         | 1                  | 23.3      | 8.2                    | 30.6 | 6.8            | 94.6                         | 5.1               | 5.5             |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             | 2                  | 23.3      | 8.2                    | 30.6 | 6.8            | 94.6                         | 5.1               | 5.4             |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               | Bottom          | 6.2         | 1                  | 23.2      | 8.2                    | 30.6 | 6.8            | 94.1                         | 9.1               | 4.8             |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 |             | 2                  | 23.2      | 8.2                    | 30.6 | 6.8            | 94.1                         | 9.2               | 5.2             |                              |                |                 |           |      |      |     |     |     |     |
| TCE-WQM2b  | Cloudy    | Rough    | 13:53             | 12.8          | Surface       | 1.0             | 1           | 23.5               | 8.2       | 30.6                   | 6.8  | 94.8           | 3.4                          | 4.1               | 6.7             | 6.1                          | 5.1            |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.5               | 8.2       | 30.6                   | 6.8  | 94.8           | 3.4                          | 3.8               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Middle        | 6.4             | 1           | 23.3               | 8.2       | 30.6                   | 6.7  | 93.2           | 6.2                          | 4.7               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.3               | 8.2       | 30.6                   | 6.7  | 93.2           | 6.2                          | 5.0               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Bottom        | 11.8            | 1           | 23.3               | 8.2       | 30.6                   | 6.7  | 93.5           | 8.6                          | 6.2               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.3               | 8.2       | 30.6                   | 6.7  | 93.5           | 8.7                          | 6.8               |                 |                              |                |                 |           |      |      |     |     |     |     |
| TCE-WQM3A  | Cloudy    | Moderate | 13:29             | 4.8           | Surface       | 1.0             | 1           | 23.3               | 8.1       | 30.6                   | 6.5  | 91.4           | 6.3                          | 7.3               | 6.5             | 7.9                          | 9.1            |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.3               | 8.1       | 30.6                   | 6.5  | 91.4           | 6.4                          | 8.0               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Bottom        | 3.8             | 1           | 23.2               | 8.1       | 30.6                   | 6.6  | 91.4           | 9.4                          | 10.2              |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.1       | 30.6                   | 6.6  | 91.4           | 9.5                          | 10.7              |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | TCE-WQM4      | Cloudy          | Moderate    | 13:17              | 4.3       | Surface                | 1.0  | 1              | 23.4                         | 8.1               |                 |                              |                | 30.6            | 6.7       | 94.3 | 5.3  | 7.4 | 6.7 | 5.2 | 6.8 |
|            |           |          |                   |               |               |                 |             |                    |           |                        | 2    | 23.4           | 8.1                          | 30.6              |                 |                              |                | 6.7             | 94.4      | 5.3  | 7.6  |     |     |     |     |
| Bottom     | 3.3       | 1        | 23.2              | 8.2           | 30.6          |                 |             |                    |           | 6.8                    | 95.0 | 5.0            | 6.2                          |                   |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           | 2        | 23.2              | 8.2           | 30.6          |                 |             |                    |           | 6.8                    | 95.3 | 5.1            | 5.8                          |                   |                 |                              |                |                 |           |      |      |     |     |     |     |
| TCE-C1     | Cloudy    | Moderate | 9:12              | 7.7           | Surface       |                 |             |                    |           | 1.0                    | 1    | 23.1           | 8.2                          | 30.8              | 6.8             | 95.3                         | 4.9            | 14.6            | 6.8       | 5.6  | 15.1 |     |     |     |     |
|            |           |          |                   |               |               |                 |             |                    |           | 2                      | 23.1 | 8.2            | 30.8                         | 6.8               | 95.3            | 5.0                          | 14.2           |                 |           |      |      |     |     |     |     |
| Middle     |           |          |                   |               | 3.9           | 1               | 23.0        | 8.2                | 30.8      | 6.8                    | 95.2 | 5.4            | 14.9                         |                   |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               | 2               | 23.0        | 8.2                | 30.8      | 6.8                    | 95.2 | 5.5            | 15.2                         |                   |                 |                              |                |                 |           |      |      |     |     |     |     |
| Bottom     |           |          |                   |               | 6.7           | 1               | 23.0        | 8.2                | 30.8      | 6.8                    | 95.3 | 6.4            | 15.9                         |                   |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               | 2               | 23.0        | 8.2                | 30.8      | 6.8                    | 95.3 | 6.4            | 15.5                         |                   |                 |                              |                |                 |           |      |      |     |     |     |     |
| TCE-C2     | Cloudy    | Rough    | 7:10              | 14.5          | Surface       | 1.0             | 1           | 23.3               | 8.2       | 30.6                   | 6.5  | 91.2           | 5.3                          | 8.0               | 6.5             | 6.6                          | 8.8            |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.3               | 8.2       | 30.6                   | 6.5  | 91.2           | 5.2                          | 8.5               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Middle        | 7.3             | 1           | 23.2               | 8.2       | 30.8                   | 6.4  | 90.0           | 4.8                          | 9.0               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.2       | 30.8                   | 6.4  | 90.0           | 4.8                          | 8.7               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Bottom        | 13.5            | 1           | 23.2               | 8.1       | 30.8                   | 6.4  | 89.7           | 9.9                          | 9.2               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.1       | 30.8                   | 6.4  | 89.7           | 9.9                          | 9.3               |                 |                              |                |                 |           |      |      |     |     |     |     |
| TCE-WQM1   | Cloudy    | Moderate | 8:20              | 8.2           | Surface       | 1.0             | 1           | 23.0               | 8.2       | 30.7                   | 6.6  | 91.9           | 7.6                          | 8.8               | 6.6             | 7.9                          | 9.4            |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.0               | 8.2       | 30.7                   | 6.6  | 91.9           | 7.6                          | 8.3               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Middle        | 4.1             | 1           | 23.0               | 8.2       | 30.7                   | 6.6  | 91.7           | 7.6                          | 9.7               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.0               | 8.2       | 30.7                   | 6.6  | 91.7           | 7.7                          | 9.4               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Bottom        | 7.2             | 1           | 23.0               | 8.2       | 30.7                   | 6.6  | 91.8           | 8.5                          | 10.3              |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.0               | 8.2       | 30.7                   | 6.6  | 91.9           | 8.5                          | 10.0              |                 |                              |                |                 |           |      |      |     |     |     |     |
| TCE-WQM2a  | Cloudy    | Moderate | 7:48              | 6.9           | Surface       | 1.0             | 1           | 23.1               | 8.2       | 30.6                   | 6.7  | 93.3           | 7.4                          | 10.8              | 6.7             | 8.1                          | 10.0           |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.1               | 8.2       | 30.6                   | 6.7  | 93.3           | 7.4                          | 10.4              |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Middle        | 3.5             | 1           | 23.1               | 8.2       | 30.6                   | 6.7  | 93.3           | 8.5                          | 10.0              |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.1               | 8.2       | 30.6                   | 6.7  | 93.3           | 8.4                          | 10.3              |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Bottom        | 5.9             | 1           | 23.1               | 8.2       | 30.6                   | 6.7  | 93.8           | 8.4                          | 9.5               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.1               | 8.2       | 30.6                   | 6.7  | 93.9           | 8.4                          | 9.1               |                 |                              |                |                 |           |      |      |     |     |     |     |
| TCE-WQM2b  | Cloudy    | Moderate | 7:35              | 8.9           | Surface       | 1.0             | 1           | 23.2               | 8.1       | 30.6                   | 6.7  | 93.2           | 6.2                          | 8.5               | 6.7             | 7.1                          | 7.8            |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.1       | 30.6                   | 6.7  | 93.2           | 6.2                          | 8.2               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Middle        | 4.5             | 1           | 23.2               | 8.1       | 30.6                   | 6.7  | 92.9           | 6.9                          | 8.0               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.1       | 30.6                   | 6.7  | 92.9           | 7.0                          | 7.7               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Bottom        | 7.9             | 1           | 23.2               | 8.1       | 30.6                   | 6.7  | 93.7           | 8.3                          | 7.5               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.1       | 30.6                   | 6.7  | 93.7           | 8.3                          | 7.0               |                 |                              |                |                 |           |      |      |     |     |     |     |
| TCE-WQM3A  | Cloudy    | Moderate | 7:58              | 4.3           | Surface       | 1.0             | 1           | 23.2               | 8.1       | 30.6                   | 6.5  | 91.1           | 7.4                          | 9.9               | 6.5             | 7.5                          | 9.8            |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.1       | 30.6                   | 6.5  | 91.1           | 7.5                          | 10.5              |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | Bottom        | 3.3             | 1           | 23.2               | 8.1       | 30.6                   | 6.6  | 91.5           | 7.5                          | 9.1               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               |               |                 | 2           | 23.2               | 8.1       | 30.6                   | 6.6  | 91.7           | 7.5                          | 9.6               |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           |          |                   |               | TCE-WQM4      | Cloudy          | Moderate    | 8:07               | 3.5       | Surface                | 1.0  | 1              | 23.1                         | 8.1               |                 |                              |                | 30.6            | 6.6       | 91.9 | 6.3  | 9.9 | 6.6 | 6.4 | 9.1 |
|            |           |          |                   |               |               |                 |             |                    |           |                        | 2    | 23.1           | 8.1                          | 30.6              |                 |                              |                | 6.6             | 91.9      | 6.4  | 9.5  |     |     |     |     |
| Bottom     | 2.5       | 1        | 23.1              | 8.1           | 30.6          |                 |             |                    |           | 6.6                    | 92.5 | 6.5            | 8.7                          |                   |                 |                              |                |                 |           |      |      |     |     |     |     |
|            |           | 2        | 23.1              | 8.1           | 30.6          |                 |             |                    |           | 6.6                    | 92.5 | 6.5            | 8.3                          |                   |                 |                              |                |                 |           |      |      |     |     |     |     |

| Date       | Tide      | Station | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH  | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |
|------------|-----------|---------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|-----|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|
|            |           |         |                   |               |               |                 |             |                    |           |                        |     |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |
| 2022-11-28 | Mid-Ebb   | TCE-C1  | Cloudy            | Moderate      | 5:17          | 8.2             | Surface     | 1.0                | 1         | 22.3                   | 8.2 | 30.9           | 7.1                          | 98.4              | 2.4             | 2.7                          | 7.1            | 4.0             | 3.4       |
|            |           |         |                   |               |               |                 |             |                    | 2         | 22.3                   | 8.2 | 30.9           | 7.2                          | 98.5              | 2.6             | 2.5                          |                |                 |           |
|            |           |         |                   |               |               |                 | Middle      | 4.1                | 1         | 22.3                   | 8.2 | 31.3           | 7.1                          | 98.3              | 3.0             | 3.6                          |                |                 |           |
|            |           |         |                   |               |               |                 |             |                    | 2         | 22.3                   | 8.2 | 31.4           | 7.1                          | 98.2              | 3.1             | 3.2                          |                |                 |           |
|            |           |         |                   |               |               |                 | Bottom      | 7.2                | 1         | 22.3                   | 8.2 | 31.6           | 7.1                          | 97.2              | 6.1             | 3.9                          |                |                 |           |
|            |           |         |                   |               |               |                 |             |                    | 2         | 22.3                   | 8.2 | 31.6           | 7.0                          | 97.0              | 6.6             | 4.2                          |                |                 |           |
|            |           |         |                   | 2             | 22.5          | 8.0             | 30.4        | 6.2                | 85.3      | 3.0                    | 4.7 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         |                   | 2             | 22.5          | 8.0             | 30.4        | 6.2                | 85.2      | 2.9                    | 4.9 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         |                   | 2             | 22.5          | 8.0             | 30.4        | 6.1                | 84.5      | 3.8                    | 5.3 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         |                   | 2             | 22.5          | 8.0             | 30.4        | 6.1                | 84.5      | 3.8                    | 5.5 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         |                   | 1             | 22.5          | 8.1             | 30.3        | 6.1                | 84.3      | 4.1                    | 5.7 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         |                   | 2             | 22.5          | 8.1             | 30.3        | 6.1                | 84.3      | 4.1                    | 6.0 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 22.5          | 8.1           | 30.3            | 6.5         | 89.6               | 4.0       | 3.2                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 22.5          | 8.1           | 30.3            | 6.5         | 89.6               | 3.9       | 3.5                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 22.5          | 8.1           | 30.3            | 6.5         | 89.7               | 5.1       | 4.7                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 22.5          | 8.1           | 30.3            | 6.5         | 89.7               | 5.6       | 4.3                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 22.5          | 8.1           | 30.2            | 6.5         | 90.3               | 7.0       | 4.9                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 22.4          | 8.1           | 30.3            | 6.6         | 90.6               | 7.4       | 5.2                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 22.6          | 8.1           | 30.1            | 6.4         | 88.5               | 4.5       | 4.6                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 22.6          | 8.1           | 30.1            | 6.4         | 88.5               | 4.5       | 4.9                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 22.6          | 8.1           | 30.1            | 6.4         | 88.3               | 4.6       | 5.0                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 22.6          | 8.1           | 30.1            | 6.4         | 88.2               | 4.6       | 5.3                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 22.6          | 8.1           | 30.1            | 6.3         | 87.5               | 7.0       | 5.7                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 22.6          | 8.1           | 30.1            | 6.4         | 87.5               | 6.9       | 5.4                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 22.6              | 8.1           | 30.1          | 6.4             | 88.7        | 6.8                | 6.0       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 22.6              | 8.1           | 30.1          | 6.4             | 88.6        | 6.9                | 5.7       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 22.6              | 8.1           | 30.2          | 6.4             | 88.2        | 4.6                | 4.6       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 22.6              | 8.1           | 30.2          | 6.4             | 88.2        | 5.4                | 5.0       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 22.6              | 8.1           | 30.2          | 6.4             | 88.7        | 8.3                | 4.5       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 22.6              | 8.1           | 30.2          | 6.4             | 88.9        | 8.9                | 4.2       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 22.6              | 8.1           | 30.0          | 6.3             | 86.8        | 10.2               | 3.4       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 22.6              | 8.1           | 30.0          | 6.3             | 86.7        | 10.2               | 3.1       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 22.6              | 8.1           | 30.0          | 6.3             | 86.5        | 10.0               | 2.8       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 22.6              | 8.1           | 30.0          | 6.3             | 86.5        | 10.3               | 2.6       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 22.5              | 8.2           | 30.0          | 6.5             | 89.5        | 3.6                | 2.4       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 22.5              | 8.2           | 30.0          | 6.5             | 89.6        | 3.7                | 2.1       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 22.5              | 8.2           | 30.0          | 6.6             | 91.0        | 3.6                | 2.7       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 22.5              | 8.2           | 30.1          | 6.6             | 91.1        | 3.5                | 2.9       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.2              | 8.2           | 30.9          | 7.3             | 101.6       | 5.2                | 1.9       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.2              | 8.3           | 31.0          | 7.3             | 101.7       | 5.3                | 1.9       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.1              | 8.3           | 31.3          | 7.3             | 101.9       | 5.8                | 2.1       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.1              | 8.3           | 31.3          | 7.3             | 101.9       | 5.9                | 2.3       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.1              | 8.3           | 31.6          | 7.2             | 101.9       | 8.6                | 2.5       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.1              | 8.3           | 31.6          | 7.3             | 101.8       | 8.2                | 2.7       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.6              | 8.0           | 30.3          | 6.7             | 93.0        | 3.5                | 7.9       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.3          | 6.7             | 92.9        | 3.5                | 7.4       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.5          | 6.3             | 87.4        | 4.1                | 6.9       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.6          | 6.2             | 87.2        | 4.4                | 6.6       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.4              | 8.0           | 30.8          | 6.2             | 86.8        | 7.5                | 5.9       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.4              | 8.0           | 30.8          | 6.2             | 86.9        | 7.7                | 6.3       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.3              | 8.2           | 30.6          | 6.7             | 93.4        | 7.2                | 2.0       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.3              | 8.2           | 30.6          | 6.7             | 93.4        | 7.3                | 1.7       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.3              | 8.2           | 30.7          | 6.7             | 93.4        | 8.5                | 2.3       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.3              | 8.2           | 30.7          | 6.7             | 93.4        | 9.5                | 2.2       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.3              | 8.2           | 30.8          | 6.6             | 93.2        | 11.5               | 2.6       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.3              | 8.2           | 30.8          | 6.7             | 93.2        | 11.7               | 2.4       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.1          | 6.7             | 92.6        | 8.5                | 6.0       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.1          | 6.7             | 92.6        | 8.5                | 5.8       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.1          | 6.5             | 90.9        | 5.0                | 5.4       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.1          | 6.5             | 90.9        | 5.0                | 5.7       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.1          | 6.6             | 91.5        | 11.2               | 5.1       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.1          | 6.6             | 91.5        | 11.8               | 5.3       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.6              | 8.0           | 30.2          | 6.6             | 92.5        | 5.4                | 5.2       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.6              | 8.0           | 30.2          | 6.6             | 92.2        | 5.7                | 4.9       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.3          | 6.5             | 90.1        | 9.3                | 5.5       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.3          | 6.5             | 90.1        | 9.5                | 5.3       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.3          | 6.5             | 90.0        | 7.6                | 5.8       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.3          | 6.5             | 90.1        | 7.5                | 5.7       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.0          | 6.5             | 90.6        | 10.1               | 1.6       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.0          | 6.5             | 90.6        | 10.3               | 1.7       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.0          | 6.5             | 90.7        | 12.4               | 2.2       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.0          | 6.5             | 90.8        | 12.6               | 2.5       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.1           | 30.1          | 6.7             | 92.9        | 6.4                | 2.8       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.1           | 30.1          | 6.7             | 92.9        | 6.5                | 2.4       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.4              | 8.1           | 30.1          | 6.7             | 93.4        | 6.6                | 1.6       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.3              | 8.1           | 30.2          | 6.8             | 93.5        | 6.5                | 1.9       |                        |     |                |                              |                   |                 |                              |                |                 |           |
| 2022-11-28 | Mid-Flood | TCE-C1  | Cloudy            | Moderate      | 9:59          | 8.1             | Surface     | 1.0                | 1         | 23.2                   | 8.2 | 30.9           | 7.3                          | 101.6             | 5.2             | 1.9                          | 7.3            | 6.5             | 2.2       |
|            |           |         |                   |               |               |                 |             |                    | 2         | 23.2                   | 8.3 | 31.0           | 7.3                          | 101.7             | 5.3             | 1.9                          |                |                 |           |
|            |           |         |                   |               |               |                 | Middle      | 4.1                | 1         | 23.1                   | 8.3 | 31.3           | 7.3                          | 101.9             | 5.8             | 2.1                          |                |                 |           |
|            |           |         |                   |               |               |                 |             |                    | 2         | 23.1                   | 8.3 | 31.3           | 7.3                          | 101.9             | 5.9             | 2.3                          |                |                 |           |
|            |           |         |                   |               |               |                 | Bottom      | 7.1                | 1         | 23.1                   | 8.3 | 31.6           | 7.2                          | 101.9             | 8.6             | 2.5                          |                |                 |           |
|            |           |         |                   |               |               |                 |             |                    | 2         | 23.1                   | 8.3 | 31.6           | 7.3                          | 101.8             | 8.2             | 2.7                          |                |                 |           |
|            |           |         |                   | 1             | 23.6          | 8.0             | 30.3        | 6.7                | 93.0      | 3.5                    | 7.9 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         |                   | 2             | 23.5          | 8.0             | 30.3        | 6.7                | 92.9      | 3.5                    | 7.4 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         |                   | 1             | 23.5          | 8.0             | 30.5        | 6.3                | 87.4      | 4.1                    | 6.9 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         |                   | 2             | 23.5          | 8.0             | 30.6        | 6.2                | 87.2      | 4.4                    | 6.6 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         |                   | 1             | 23.4          | 8.0             | 30.8        | 6.2                | 86.8      | 7.5                    | 5.9 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         |                   | 2             | 23.4          | 8.0             | 30.8        | 6.2                | 86.9      | 7.7                    | 6.3 |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 23.3          | 8.2           | 30.6            | 6.7         | 93.4               | 7.2       | 2.0                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 23.3          | 8.2           | 30.6            | 6.7         | 93.4               | 7.3       | 1.7                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 23.3          | 8.2           | 30.7            | 6.7         | 93.4               | 8.5       | 2.3                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 23.3          | 8.2           | 30.7            | 6.7         | 93.4               | 9.5       | 2.2                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 23.3          | 8.2           | 30.8            | 6.6         | 93.2               | 11.5      | 2.6                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 23.3          | 8.2           | 30.8            | 6.7         | 93.2               | 11.7      | 2.4                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 23.5          | 8.0           | 30.1            | 6.7         | 92.6               | 8.5       | 6.0                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 23.5          | 8.0           | 30.1            | 6.7         | 92.6               | 8.5       | 5.8                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 23.5          | 8.0           | 30.1            | 6.5         | 90.9               | 5.0       | 5.4                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 23.5          | 8.0           | 30.1            | 6.5         | 90.9               | 5.0       | 5.7                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 1                 | 23.5          | 8.0           | 30.1            | 6.6         | 91.5               | 11.2      | 5.1                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           |         | 2                 | 23.5          | 8.0           | 30.1            | 6.6         | 91.5               | 11.8      | 5.3                    |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.6              | 8.0           | 30.2          | 6.6             | 92.5        | 5.4                | 5.2       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.6              | 8.0           | 30.2          | 6.6             | 92.2        | 5.7                | 4.9       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.3          | 6.5             | 90.1        | 9.3                | 5.5       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.3          | 6.5             | 90.1        | 9.5                | 5.3       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.3          | 6.5             | 90.0        | 7.6                | 5.8       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.3          | 6.5             | 90.1        | 7.5                | 5.7       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.0          | 6.5             | 90.6        | 10.1               | 1.6       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.0          | 6.5             | 90.6        | 10.3               | 1.7       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.0           | 30.0          | 6.5             | 90.7        | 12.4               | 2.2       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.0           | 30.0          | 6.5             | 90.8        | 12.6               | 2.5       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.5              | 8.1           | 30.1          | 6.7             | 92.9        | 6.4                | 2.8       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.5              | 8.1           | 30.1          | 6.7             | 92.9        | 6.5                | 2.4       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 1       | 23.4              | 8.1           | 30.1          | 6.7             | 93.4        | 6.6                | 1.6       |                        |     |                |                              |                   |                 |                              |                |                 |           |
|            |           | 2       | 23.3              | 8.1           | 30.2          | 6.8             | 93.5        | 6.5                | 1.9       |                        |     |                |                              |                   |                 |                              |                |                 |           |

Water Quality Monitoring for Tung Chung New Town Extension (East)

| Date       | Tide      | Station  | Weather Condition | Sea Condition | Sampling Time | Water Depth (m) | Water Level | Sampling depth (m) | Replicate | Water Temperature (°C) | pH   | Salinity (ppt) | Dissolved Oxygen (DO) (mg/L) | DO Saturation (%) | Turbidity (NTU) | Suspended Solids (SS) (mg/L) | Depth-averaged |                 |           |
|------------|-----------|----------|-------------------|---------------|---------------|-----------------|-------------|--------------------|-----------|------------------------|------|----------------|------------------------------|-------------------|-----------------|------------------------------|----------------|-----------------|-----------|
|            |           |          |                   |               |               |                 |             |                    |           |                        |      |                |                              |                   |                 |                              | DO (mg/L)      | Turbidity (NTU) | SS (mg/L) |
| 2022-11-30 | Mid-Ebb   | TCE-C1   | Fine              | Moderate      | 7:14          | 8.2             | Surface     | 1.0                | 1         | 23.7                   | 8.2  | 34.3           | 6.4                          | 91.5              | 1.4             | 3.6                          | 6.4            | 2.2             | 4.6       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.7                   | 8.2  | 34.3           | 6.4                          | 91.6              | 1.5             | 3.9                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 4.1                | 1         | 23.8                   | 8.2  | 34.2           | 6.4                          | 91.9              | 2.2             | 4.5                          |                |                 |           |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.8                   | 8.2  | 34.2           | 6.4                          | 92.0              | 2.1             | 4.9                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 7.2                | 1         | 23.8                   | 8.2  | 34.1           | 6.4                          | 92.2              | 3.0             | 5.5                          |                |                 |           |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.9                   | 8.2  | 34.1           | 6.4                          | 92.4              | 3.1             | 5.2                          |                |                 |           |
|            |           | TCE-C2   | Fine              | Moderate      | 5:07          | 12.8            | Surface     | 1.0                | 1         | 23.7                   | 8.1  | 33.6           | 6.1                          | 87.5              | 1.6             | 4.0                          | 6.1            | 2.2             | 4.4       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.7                   | 8.1  | 33.6           | 6.1                          | 87.5              | 1.5             | 3.9                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 6.4                | 1         | 23.7                   | 8.1  | 33.6           | 6.1                          | 87.4              | 2.2             | 4.4                          |                |                 |           |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.7                   | 8.1  | 33.6           | 6.1                          | 87.4              | 2.2             | 4.3                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 11.8               | 1         | 23.7                   | 8.1  | 33.5           | 6.1                          | 87.5              | 3.0             | 5.0                          |                |                 |           |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.7                   | 8.1  | 33.5           | 6.1                          | 87.6              | 2.9             | 4.6                          |                |                 |           |
|            | TCE-WQM1  | Fine     | Moderate          | 6:18          | 8.5           | Surface         | 1.0         | 1                  | 23.9      | 8.2                    | 34.1 | 6.4            | 92.4                         | 2.5               | 1.2             | 6.5                          | 3.5            | 1.8             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.9      | 8.2                    | 34.1 | 6.4            | 92.6                         | 2.5               | 1.4             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 4.3         | 1                  | 23.7      | 8.2                    | 34.4 | 6.5            | 93.5                         | 3.5               | 1.9             |                              |                |                 |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.6      | 8.2                    | 34.5 | 6.5            | 93.9                         | 3.5               | 1.7             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 7.5         | 1                  | 23.5      | 8.2                    | 34.7 | 6.6            | 94.0                         | 4.4               | 2.2             |                              |                |                 |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.4      | 8.1                    | 34.7 | 6.6            | 94.1                         | 4.5               | 2.3             |                              |                |                 |           |
|            | TCE-WQM2a | Fine     | Moderate          | 5:47          | 7.2           | Surface         | 1.0         | 1                  | 23.5      | 8.1                    | 33.6 | 6.4            | 91.7                         | 1.3               | 1.8             | 6.5                          | 2.4            | 2.2             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.5      | 8.1                    | 33.6 | 6.4            | 91.7                         | 1.3               | 1.8             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 3.6         | 1                  | 23.3      | 8.0                    | 33.8 | 6.5            | 93.0                         | 2.5               | 2.2             |                              |                |                 |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.2      | 8.0                    | 33.8 | 6.6            | 93.8                         | 2.5               | 2.1             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 6.2         | 1                  | 23.0      | 8.0                    | 33.8 | 6.8            | 95.6                         | 3.4               | 2.4             |                              |                |                 |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.0      | 7.9                    | 33.5 | 7.0            | 98.2                         | 3.4               | 2.6             |                              |                |                 |           |
| TCE-WQM2b  | Fine      | Moderate | 5:35              | 10.4          | Surface       | 1.0             | 1           | 23.7               | 8.2       | 33.7                   | 6.2  | 88.3           | 3.0                          | 2.3               | 6.2             | 3.4                          | 2.1            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.7               | 8.2       | 33.7                   | 6.2  | 88.3           | 3.0                          | 2.6               |                 |                              |                |                 |           |
|            |           |          |                   |               | Middle        | 5.2             | 1           | 23.7               | 8.1       | 33.7                   | 6.2  | 88.6           | 3.1                          | 2.1               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.7               | 8.1       | 33.7                   | 6.2  | 88.8           | 3.0                          | 2.2               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 9.4             | 1           | 23.8               | 8.1       | 33.6                   | 6.3  | 89.6           | 4.0                          | 1.8               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.8               | 8.1       | 33.6                   | 6.3  | 90.1           | 4.1                          | 1.6               |                 |                              |                |                 |           |
| TCE-WQM3A  | Fine      | Moderate | 5:57              | 4.0           | Surface       | 1.0             | 1           | 23.8               | 8.2       | 33.5                   | 6.2  | 89.2           | 2.5                          | 2.5               | 6.2             | 2.6                          | 3.4            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.8               | 8.2       | 33.5                   | 6.2  | 89.3           | 2.6                          | 2.2               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.0             | 1           | 23.8               | 8.2       | 33.8                   | 6.3  | 90.9           | 2.7                          | 4.4               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.8               | 8.2       | 33.9                   | 6.3  | 91.1           | 2.7                          | 4.3               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.0             | 1           | 24.1               | 8.2       | 33.7                   | 6.4  | 92.0           | 3.2                          | 4.7               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 24.0               | 8.2       | 33.8                   | 6.4  | 92.5           | 3.2                          | 5.1               |                 |                              |                |                 |           |
| TCE-WQM4   | Fine      | Moderate | 6:06              | 3.8           | Surface       | 1.0             | 1           | 23.9               | 8.2       | 34.0                   | 6.5  | 93.3           | 4.1                          | 5.8               | 6.4             | 3.6                          | 5.3            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.9               | 8.2       | 34.1                   | 6.5  | 93.8           | 4.0                          | 5.5               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 2.8             | 1           | 23.6               | 8.2       | 34.5                   | 6.5  | 93.1           | 4.2                          | 2.9               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.6               | 8.2       | 34.5                   | 6.5  | 93.2           | 4.1                          | 2.7               |                 |                              |                |                 |           |
|            |           |          |                   |               | Middle        | 4.0             | 1           | 23.5               | 8.2       | 34.5                   | 6.5  | 93.7           | 5.3                          | 3.2               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.5               | 8.2       | 34.5                   | 6.6  | 94.1           | 5.3                          | 3.3               |                 |                              |                |                 |           |
| 2022-11-30 | Mid-Flood | TCE-C1   | Fine              | Moderate      | 12:21         | 8.0             | Surface     | 1.0                | 1         | 23.6                   | 8.2  | 34.5           | 6.5                          | 93.1              | 4.2             | 2.9                          | 6.5            | 5.2             | 3.2       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.6                   | 8.2  | 34.5           | 6.5                          | 93.2              | 4.1             | 2.7                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 4.0                | 1         | 23.5                   | 8.2  | 34.5           | 6.5                          | 93.7              | 5.3             | 3.2                          |                |                 |           |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.2  | 34.5           | 6.6                          | 94.1              | 5.3             | 3.3                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 7.0                | 1         | 23.5                   | 8.2  | 34.5           | 6.6                          | 95.1              | 6.1             | 3.5                          |                |                 |           |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.5                   | 8.2  | 34.5           | 6.6                          | 94.8              | 6.1             | 3.8                          |                |                 |           |
|            |           | TCE-C2   | Fine              | Moderate      | 14:20         | 9.8             | Surface     | 1.0                | 1         | 23.7                   | 8.3  | 34.5           | 6.8                          | 97.8              | 2.7             | 3.7                          | 6.8            | 3.6             | 3.0       |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.7                   | 8.3  | 34.5           | 6.8                          | 97.8              | 2.7             | 3.4                          |                |                 |           |
|            |           |          |                   |               |               |                 | Middle      | 4.9                | 1         | 23.7                   | 8.3  | 34.5           | 6.8                          | 97.8              | 3.5             | 3.2                          |                |                 |           |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.7                   | 8.3  | 34.5           | 6.8                          | 98.0              | 3.6             | 2.7                          |                |                 |           |
|            |           |          |                   |               |               |                 | Bottom      | 8.8                | 1         | 23.7                   | 8.3  | 34.5           | 6.8                          | 98.5              | 4.6             | 2.2                          |                |                 |           |
|            |           |          |                   |               |               |                 |             |                    | 2         | 23.7                   | 8.3  | 34.5           | 6.9                          | 98.7              | 4.6             | 2.6                          |                |                 |           |
|            | TCE-WQM1  | Fine     | Moderate          | 13:16         | 8.8           | Surface         | 1.0         | 1                  | 23.9      | 8.2                    | 34.3 | 6.6            | 95.2                         | 2.9               | 3.5             | 6.6                          | 4.2            | 2.6             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.8      | 8.2                    | 34.3 | 6.6            | 95.2                         | 3.0               | 3.8             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 4.4         | 1                  | 23.8      | 8.2                    | 34.3 | 6.6            | 95.3                         | 4.1               | 2.8             |                              |                |                 |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.8      | 8.1                    | 34.3 | 6.7            | 96.1                         | 4.2               | 2.3             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 7.8         | 1                  | 23.8      | 8.1                    | 34.3 | 6.9            | 99.8                         | 5.4               | 1.8             |                              |                |                 |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.8      | 8.1                    | 34.4 | 6.9            | 99.5                         | 5.5               | 1.6             |                              |                |                 |           |
|            | TCE-WQM2a | Fine     | Moderate          | 13:46         | 8.4           | Surface         | 1.0         | 1                  | 23.7      | 8.3                    | 34.5 | 6.9            | 98.7                         | 1.0               | 1.9             | 6.9                          | 2.5            | 1.4             |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.7      | 8.3                    | 34.5 | 6.9            | 98.7                         | 1.0               | 1.6             |                              |                |                 |           |
|            |           |          |                   |               |               | Middle          | 4.2         | 1                  | 23.7      | 8.2                    | 34.5 | 6.9            | 99.5                         | 2.9               | 1.4             |                              |                |                 |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.8      | 8.2                    | 34.4 | 6.9            | 99.7                         | 2.9               | 1.4             |                              |                |                 |           |
|            |           |          |                   |               |               | Bottom          | 7.4         | 1                  | 23.8      | 8.2                    | 34.4 | 6.9            | 100.1                        | 3.4               | 1.1             |                              |                |                 |           |
|            |           |          |                   |               |               |                 |             | 2                  | 23.8      | 8.2                    | 34.4 | 7.0            | 100.3                        | 3.5               | 1.2             |                              |                |                 |           |
| TCE-WQM2b  | Fine      | Moderate | 13:56             | 10.2          | Surface       | 1.0             | 1           | 23.7               | 8.3       | 34.4                   | 6.9  | 99.4           | 1.1                          | 1.7               | 6.9             | 2.2                          | 1.3            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.7               | 8.3       | 34.4                   | 6.9  | 99.4           | 1.2                          | 1.6               |                 |                              |                |                 |           |
|            |           |          |                   |               | Middle        | 5.1             | 1           | 23.7               | 8.3       | 34.4                   | 6.9  | 99.5           | 2.4                          | 1.4               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.8               | 8.3       | 34.4                   | 6.9  | 99.5           | 2.5                          | 1.2               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 9.2             | 1           | 23.8               | 8.3       | 34.4                   | 6.9  | 99.5           | 3.1                          | 0.9               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.8               | 8.3       | 34.4                   | 6.9  | 99.5           | 3.1                          | 0.8               |                 |                              |                |                 |           |
| TCE-WQM3A  | Fine      | Moderate | 13:37             | 4.0           | Surface       | 1.0             | 1           | 23.6               | 8.3       | 34.5                   | 6.6  | 94.8           | 4.3                          | 1.8               | 6.6             | 4.7                          | 2.3            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.6               | 8.3       | 34.5                   | 6.6  | 94.6           | 4.4                          | 1.6               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.0             | 1           | 23.7               | 8.3       | 34.4                   | 6.6  | 95.3           | 5.0                          | 3.0               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.7               | 8.3       | 34.4                   | 6.6  | 95.6           | 5.0                          | 2.7               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.0             | 1           | 23.7               | 8.2       | 34.4                   | 6.7  | 96.1           | 3.4                          | 4.1               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.7               | 8.2       | 34.4                   | 6.7  | 96.0           | 3.3                          | 3.8               |                 |                              |                |                 |           |
| TCE-WQM4   | Fine      | Moderate | 13:27             | 4.0           | Surface       | 1.0             | 1           | 23.7               | 8.2       | 34.4                   | 6.7  | 96.1           | 3.4                          | 4.1               | 6.7             | 3.8                          | 3.7            |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.7               | 8.2       | 34.4                   | 6.7  | 96.0           | 3.3                          | 3.8               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.0             | 1           | 23.8               | 8.2       | 34.3                   | 6.7  | 96.6           | 4.3                          | 3.5               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.8               | 8.2       | 34.3                   | 6.7  | 96.6           | 4.3                          | 3.5               |                 |                              |                |                 |           |
|            |           |          |                   |               | Bottom        | 3.0             | 1           | 23.7               | 8.2       | 34.4                   | 6.7  | 96.1           | 3.4                          | 4.1               |                 |                              |                |                 |           |
|            |           |          |                   |               |               |                 | 2           | 23.8               | 8.2       | 34.3                   | 6.9  | 100.1          | 4.2                          | 3.3               |                 |                              |                |                 |           |

Annex G4

## Event and Action Plan for Water Quality

**Annex G4**     *Event and Action Plan for Water Quality*

| <b>Event</b>  | <b>ET</b>  | <b>IEC</b>   | <b>Action ER</b>   | <b>Contractor</b>   |
|---|--|--|--|---|
| Action level exceedance for one sampling day                        | <ol style="list-style-type: none"> <li>1. Inform IEC, Contractor and ER;</li> <li>2. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>and</li> <li>3. Discuss remedial measures with IEC and Contractor and ER.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Discuss with ET, ER and Contractor on the implemented mitigation measures;</li> <li>2. Review proposals on remedial measures submitted by Contractor and advise the ER accordingly;</li> <li>and</li> <li>3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Discuss with IEC, ET and Contractor on the implemented mitigation measures;</li> <li>2. Make agreement on the remedial measures to be implemented;</li> <li>3. Supervise the implementation of agreed remedial measures.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Identify source(s) of impact;</li> <li>2. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>3. Rectify unacceptable practice;</li> <li>4. Check all plant and equipment;</li> <li>5. Consider changes of working methods;</li> <li>6. Discuss with ER, ET and IEC and purpose remedial measures to IEC and ER; and</li> <li>7. Implement the agreed mitigation measures.</li> </ol>   |
| Action level exceedance for more than one consecutive sampling days | <ol style="list-style-type: none"> <li>1. Repeat in-situ measurement on next day of exceedance to confirm findings;</li> <li>2. Inform IEC, contractor and ER;</li> <li>3. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>4. Discuss remedial measures with IEC, contractor and ER</li> <li>5. Ensure remedial measures are implemented</li> </ol> | <ol style="list-style-type: none"> <li>1. Discuss with ET, Contractor and ER on the implemented mitigation measures;</li> <li>2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly;</li> <li>and</li> <li>3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Discuss with ET, IEC and Contractor on the proposed mitigation measures;</li> <li>2. Make agreement on the remedial measures to be implemented ; and</li> <li>3. Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Identify source(s) of impact;</li> <li>2. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>3. Rectify unacceptable practice;</li> <li>4. Check all plant and equipment and consider changes of working methods;</li> <li>5. 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>6. Implement the agreed mitigation measures.</li> </ol> |

| Event  | Action   |   |  |   |
|--|--|---|--|---|
|  | ET   | IEC   | ER   | Contractor  |
| Limit level exceedance for one sampling day                        | <ol style="list-style-type: none"> <li>1. Repeat measurement on next day of exceedance to confirm findings;</li> <li>2. Inform IEC, contractor and ER;</li> <li>3. Rectify unacceptable practice;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Consider changes of working methods;</li> <li>6. Discuss mitigation measures with IEC, ER and Contractor; and</li> <li>7. Ensure the agreed remedial measures are implemented</li> </ol> | <ol style="list-style-type: none"> <li>1. Discuss with ET, Contractor and ER on the implemented mitigation measures;</li> <li>2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and</li> <li>3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Discuss with ET, IEC and Contractor on the implemented remedial measures;</li> <li>2. Request Contractor to critically review the working methods;</li> <li>3. Make agreement on the remedial measures to be implemented; and</li> <li>4. Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Identify source(s) of impact;</li> <li>2. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>3. Rectify unacceptable practice;</li> <li>4. Check all plant and equipment and consider changes of working methods;</li> <li>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</li> <li>6. Implement the agreed remedial measures.</li> </ol>  |
| Limit level exceedance for more than one consecutive sampling days | <ol style="list-style-type: none"> <li>1. Inform IEC, contractor and ER;</li> <li>2. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>3. Discuss mitigation measures with IEC, ER and Contractor; and</li> <li>4. Ensure mitigation measures are implemented; and</li> <li>5. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days</li> </ol>  | <ol style="list-style-type: none"> <li>1. Discuss with ET, Contractor and ER on the implemented mitigation measures;</li> <li>2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and</li> <li>3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Discuss with ET, IEC and Contractor on the implemented remedial measures;</li> <li>2. Request Contractor to critically review the working methods;</li> <li>3. Make agreement on the remedial measures to be implemented;</li> <li>4. Discuss with ET and IEC on the effectiveness of the implemented mitigation measures; and</li> <li>5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the dredging activities until no exceedance of Limit level.</li> </ol> | <ol style="list-style-type: none"> <li>1. Identify source(s) of impact;</li> <li>2. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>3. Rectify unacceptable practice;</li> <li>4. Check all plant and equipment and consider changes of working methods;</li> <li>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</li> <li>6. Implement the agreed remedial measures.</li> <li>7. As directed by the ER, to slow down or stop all or part of the dredging activities until no exceedance of Limit level.</li> </ol> |



Annex H

## Compensation Woodland Monitoring



Photo 1 – General view of compensation woodland in Portion 1



Photo 2 – General view of compensation woodland in Portion 2

Annex I

Preserved/Transplanted  
Plant Species of  
Conservation Importance  
Monitoring





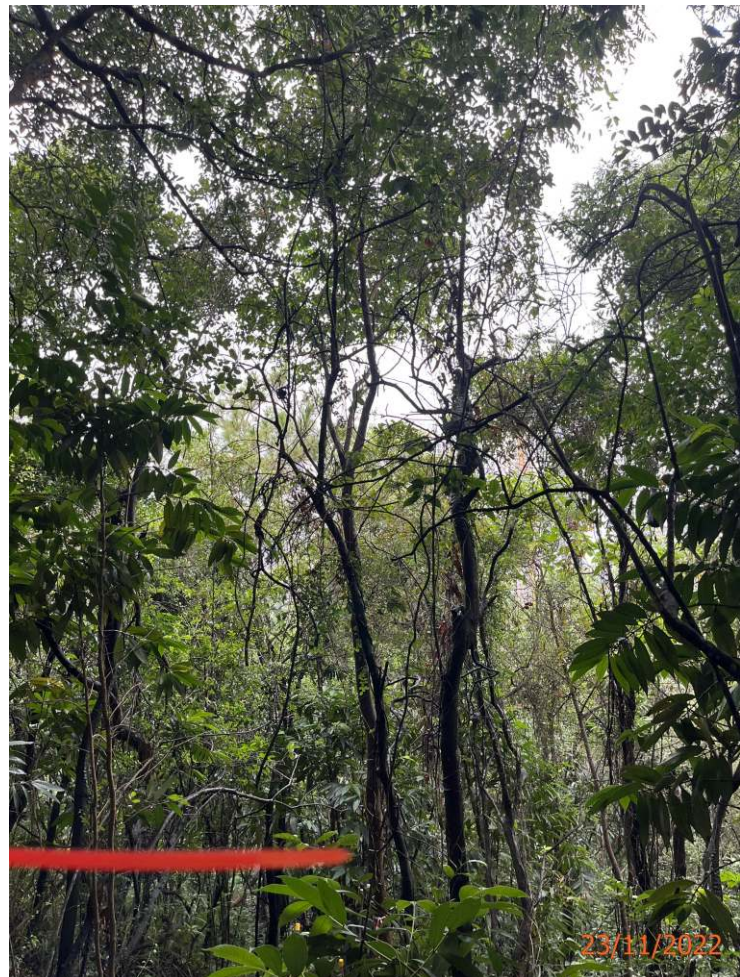
G01\_30-R001



G01\_30-R002



G01\_30-R003

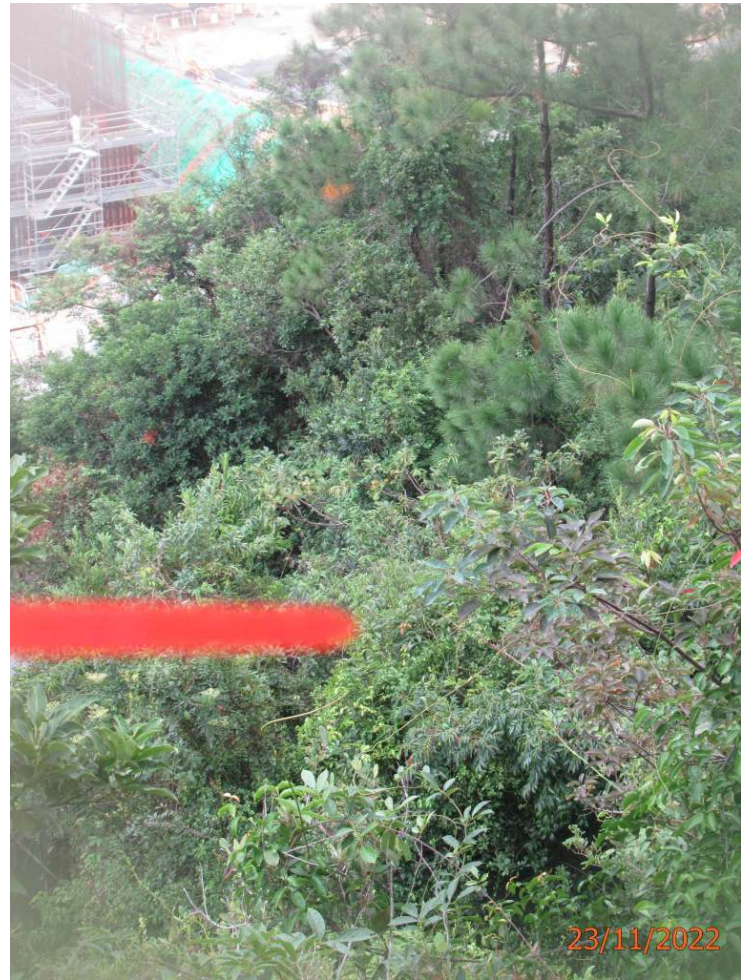


G01\_30-R004

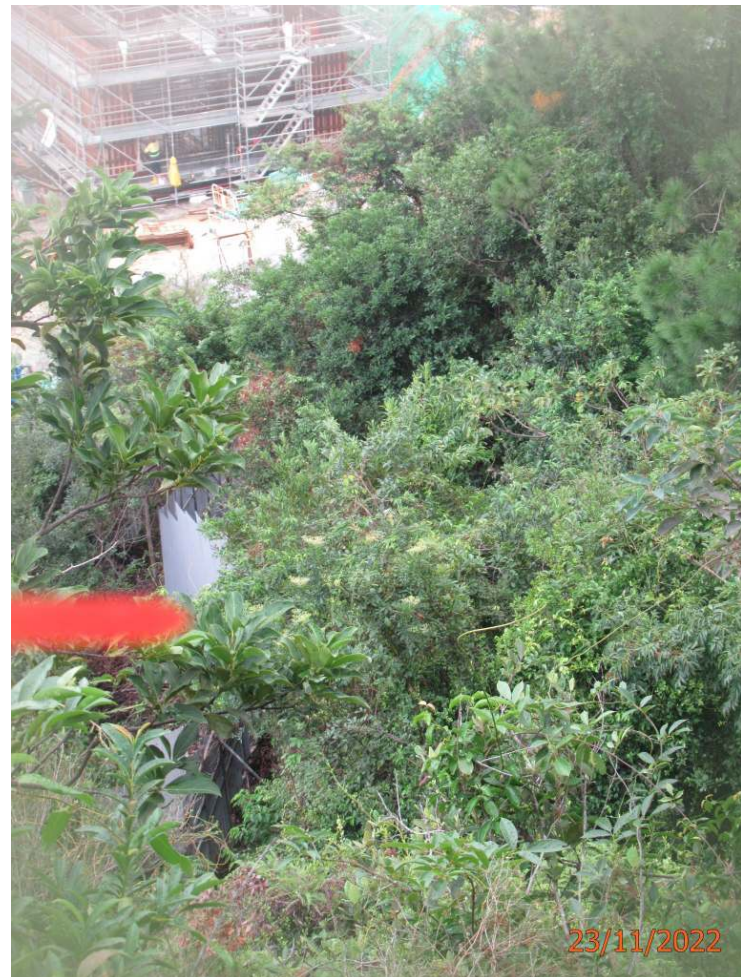




G01\_30-R005



G01\_39-R01\_Inaccessible



G01\_39-R02\_Inaccessible



G01\_81-RT-01





G01\_81-RT-02 (T1535)



G02\_29-R007

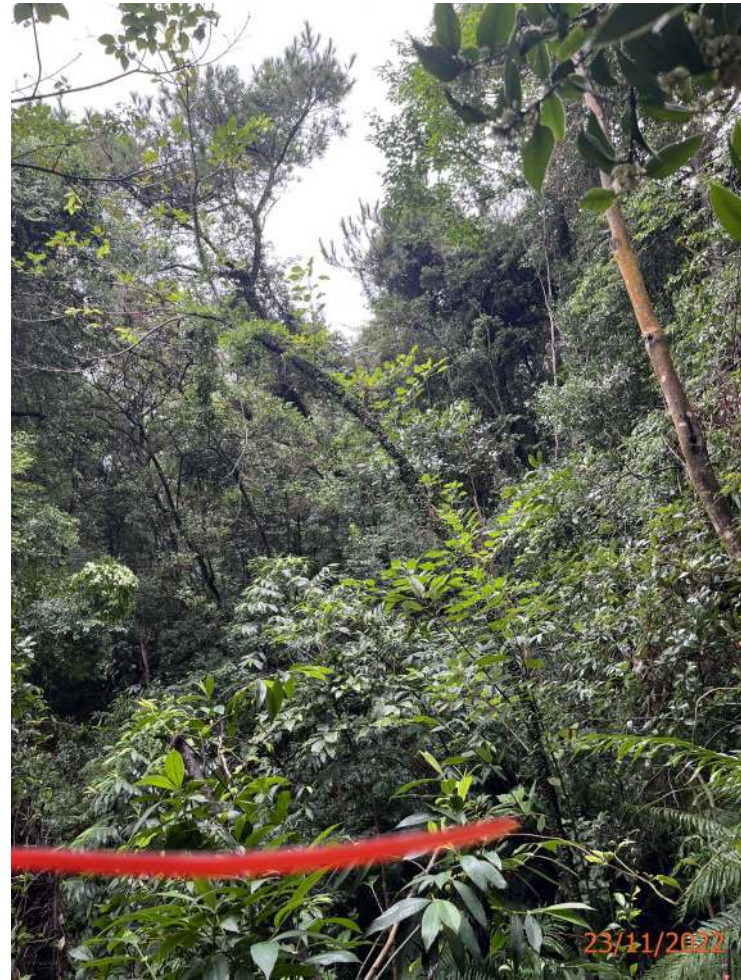


G02\_29-R013



G03\_44-R014





G03\_44-R015



G03\_44-R017



G04\_21-R03



G04\_45-R011





G04\_83\_84\_85-R04 (T1788)



G04\_83\_84\_85-R05 (T1572)

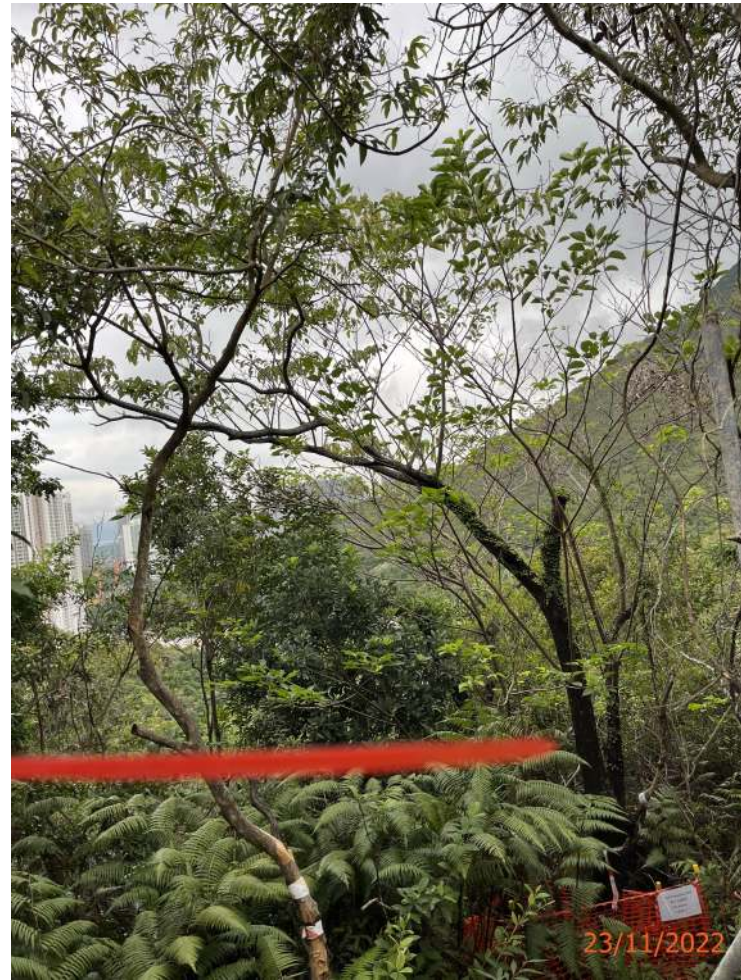


G04\_83\_84\_85-R06



G04\_83\_84\_85-R07





G04\_83\_84\_85-R08



G04\_83\_84\_85-R09



G04\_83\_84\_85-R010



G04\_83\_84\_85-R011





G05\_9-R04



G05\_67-R008



G06\_66-R009

| Drawing no.      | Tree group no. | Tree No.                 | Botanical Name            | Chinese Name | SIZE       |          |            | Amenity Value | Form | Health | Structural Condition | Conservation Status | Recommendation in Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance for Tung Chung East (Retain/ Transplant/ Fell) | Justification  | Remarks   |
|------------------|----------------|--------------------------|---------------------------|--------------|------------|----------|------------|---------------|------|--------|----------------------|---------------------|---|--|---|
|                  |                |                          |                           |              | Height (m) | DBH (mm) | Spread (m) |               |      |        |                      |                     |   |  |   |
| 60507694/C2/1721 | G01/39         | R01                      | <i>Gmelina chinensis</i>  | 石梓           | -          | -        | -          | -             | -    | -      | -                    | Yes                 | Retain  | -  | On Slope, Inaccessible  |
|                  |                | R02                      | <i>Gmelina chinensis</i>  | 石梓           | -          | -        | -          | -             | -    | -      | -                    | Yes                 | Retain  | -  | On Slope, Inaccessible  |
|                  | G06/59         | R018                     | <i>Gmelina chinensis</i>  | 石梓           | -          | -        | -          | -             | -    | -      | -                    | Yes                 | Retain  | -  | Missing   |
|                  | G03/61         | R019                     | <i>Gmelina chinensis</i>  | 石梓           | -          | -        | -          | -             | -    | -      | -                    | Yes                 | Retain  | -  | Missing   |
|                  | G05/62         | RT06                     | <i>Gmelina chinensis</i>  | 石梓           | -          | -        | -          | -             | -    | -      | -                    | Yes                 | Transplant  | Direct conflict with proposed works                          | Missing   |
|                  | G01/81         | RT-01                    | <i>Gmelina chinensis</i>  | 石梓           | 5          | 160      | 3          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Strangled by Epiphytes  |
|                  |                | RT-02 (T1535)            | <i>Gmelina chinensis</i>  | 石梓           | 8          | 110      | 3          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Co-dominant Branches, Strangled by Epiphytes.                           |
|                  | G02/82         | RT03                     | <i>Gmelina chinensis</i>  | 石梓           | -          | -        | -          | -             | -    | -      | -                    | Yes                 | Transplant  | Direct conflict with proposed works                          | Missing   |
|                  | G04/83/84/85   | R04 (T1788)              | <i>Gmelina chinensis</i>  | 石梓           | 9          | 260      | 8          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Multiple Trunks   |
|                  |                | R05 (T1572)              | <i>Gmelina chinensis</i>  | 石梓           | 8          | 120      | 5          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope  |
|                  |                | R05                      | <i>Gmelina chinensis</i>  | 石梓           | -          | -        | -          | -             | -    | -      | -                    | Yes                 | Retain  | -  | Missing   |
|                  |                | R06                      | <i>Gmelina chinensis</i>  | 石梓           | 5          | 100      | 3          | Good          | Fair | Fair   | Fair                 | Yes                 | Retain  | -  | On slope  |
|                  |                | R07                      | <i>Gmelina chinensis</i>  | 石梓           | 8          | 166      | 5          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Co-dominant Trunks  |
|                  |                | R08                      | <i>Gmelina chinensis</i>  | 石梓           | 7          | 160      | 5          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Broken Leader, Epicormics, Imbalanced Crown                             |
|                  |                | R09                      | <i>Gmelina chinensis</i>  | 石梓           | 5          | 140      | 4          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Broken Leader with Epiphyte, Broken Leader with Epicormics              |
| R010             |                | <i>Gmelina chinensis</i> | 石梓                        | 8            | 110        | 3        | Good       | Poor          | Fair | Fair   | Yes                  | Retain              | -   | On slope, Broken Leader with Epicormics                      |   |
| R011             |                | <i>Gmelina chinensis</i> | 石梓                        | 9            | 130        | 4        | Good       | Poor          | Fair | Poor   | Yes                  | Retain              | -   | On slope, Multiple Branches, Leaning without Self-correction |   |
| 60507694/C2/1722 | G04/21         | R03                      | <i>Gmelina chinensis</i>  | 石梓           | 5          | 120      | 2          | Good          | Fair | Fair   | Fair                 | Yes                 | Retain  | -  | Undersized, On Slope  |
|                  | G05/9          | R04                      | <i>Gmelina chinensis</i>  | 石梓           | 5          | 100      | 2          | Good          | Fair | Fair   | Fair                 | Yes                 | Retain  | -  | On Slope  |
| 60507694/C2/1732 | G01/30         | R001                     | <i>Gmelina chinensis</i>  | 石梓           | 7          | 110      | 2          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On Slope  |
|                  |                | R002                     | <i>Gmelina chinensis</i>  | 石梓           | 8          | 120      | 5          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Co-dominant Branches, Root Flare was Partially Buried, Dead Stub        |
|                  |                | R003                     | <i>Gmelina chinensis</i>  | 石梓           | 5          | 140      | 2          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Bulge at Trunk, Root Flare was Partially Buried, Clamber                |
|                  |                | R004                     | <i>Aquilaria sinensis</i> | 土沉香          | 10         | 150      | 3          | Good          | Fair | Fair   | Fair                 | Yes                 | Retain  | -  | On slope  |
|                  |                | R005                     | <i>Aquilaria sinensis</i> | 土沉香          | 8          | 130      | 3          | Good          | Fair | Fair   | Fair                 | Yes                 | Retain  | -  | On slope  |
|                  |                | R006                     | <i>Aquilaria sinensis</i> | 土沉香          | -          | -        | -          | -             | -    | -      | -                    | Yes                 | Retain  | -  | Missing   |
|                  | G02/29         | R007                     | <i>Gmelina chinensis</i>  | 石梓           | 10         | 170      | 5          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Co-dominant Branches with Included Bark, Crossed Branches               |
|                  |                | R013                     | <i>Gmelina chinensis</i>  | 石梓           | 8          | 150      | 7          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Co-dominant Branches, Epicormics at Branch, Broken Leader with Epiphyte |
|                  | G03/44         | R014                     | <i>Gmelina chinensis</i>  | 石梓           | 7          | 160      | 5          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Co-dominant Branches  |
|                  |                | R015                     | <i>Gmelina chinensis</i>  | 石梓           | 6          | 110      | 2          | Good          | Poor | Poor   | Fair                 | Yes                 | Retain  | -  | On slope, Broken Leader, Epiphytes  |
|                  |                | R016                     | <i>Gmelina chinensis</i>  | 石梓           | -          | -        | -          | -             | -    | -      | -                    | Yes                 | Retain  | -  | Missing   |
|                  |                | R017                     | <i>Gmelina chinensis</i>  | 石梓           | 8          | 130      | 4          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Broken Leader with Epicormics   |
|                  | G04/45         | R010                     | <i>Gmelina chinensis</i>  | 石梓           | -          | -        | -          | -             | -    | -      | -                    | Yes                 | Retain  | -  | Missing   |
|                  |                | R011                     | <i>Gmelina chinensis</i>  | 石梓           | 8          | 140      | 7          | Good          | Poor | Fair   | Fair                 | Yes                 | Retain  | -  | On slope, Co-dominant Branches  |
| R012             |                | <i>Gmelina chinensis</i> | 石梓                        | -            | -          | -        | -          | -             | -    | -      | Yes                  | Retain              | -   | Missing  |   |
| G05/67           | R008           | <i>Gmelina chinensis</i> | 石梓                        | 6            | 120        | 4        | Good       | Fair          | Fair | Fair   | Yes                  | Retain              | -   | On slope   |   |
| G06/66           | R009           | <i>Gmelina chinensis</i> | 石梓                        | 7            | 120        | 5        | Good       | Poor          | Fair | Fair   | Yes                  | Retain              | -   | On slope, Epicormic at Broken Stump                          |   |

Annex J

## Eco-shoreline Monitoring



## Photographic Records for Mangrove, Vertical and Rocky Eco-shoreline in November 2022



General View of Mangrove Eco-shoreline



General View of Vertical Eco-shoreline



General View of Rocky Eco-shoreline

Annex K

# Landscape and Visual Monitoring

Annex K1

## Examples of Landscape and Visual Mitigation Measures





Photo 1 – General view of tree protection zone for preserved plant species of conservation importance



Photo 2 – Erection of site hoardings in unobtrusive colours



Photo 3 - Natural Rock Material/ Planting for Artificial Seawall

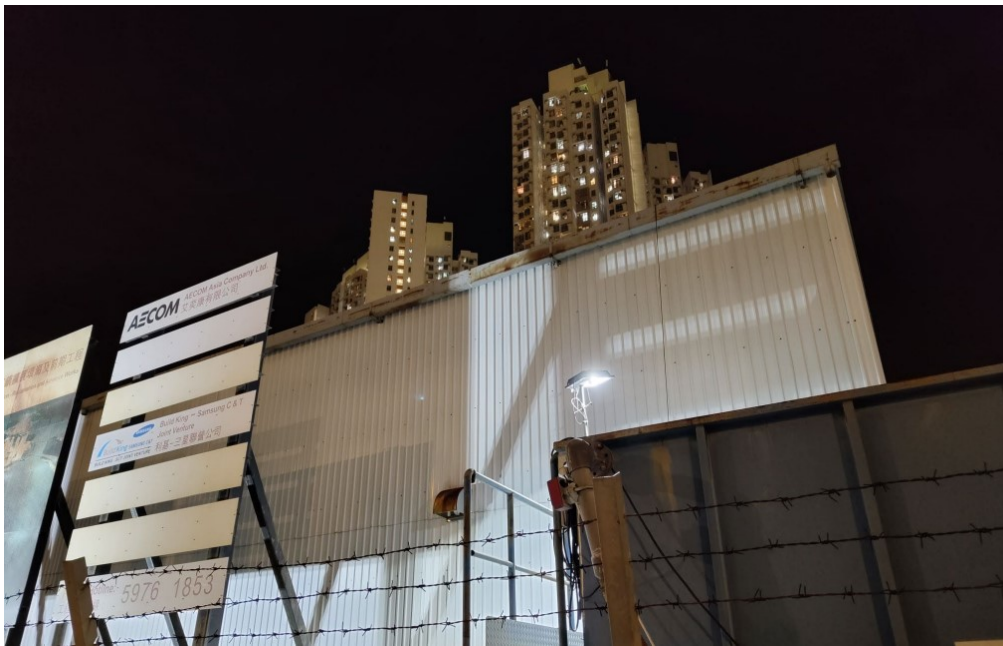


Photo 4 - Control of night-time lighting using light hooding

Annex K2

## Event and Action Plan for Landscape and Visual Monitoring

*Annex K2 Event and Action Plan for Landscape and Visual*

| Event                          | Action   |  |  |  |
|--------------------------------|--|--|--|--|
|                                | ET   | IEC  | ER   | Contractor   |
| Design Check                   | 1. Check final design conforms to the requirements of EP and prepare report.   | 1. Check report.<br>2. Recommend remedial design if necessary.   | 1. Undertake remedial design if necessary.   |  |
| Non-conformity on one occasion | 1. Inform the IEC, ER and the Contractor<br>2. Discuss remedial actions with IEC, ER and Contractor<br>3. Monitor remedial actions until rectification has been completed  | 1. Check report.<br>2. Check Contractor's working method<br>3. Discuss with ET, ER and Contractor on possible remedial measures.<br>4. Advise ER on effective of proposed remedial measures.<br>5. Check implementation of remedial measures | 1. Confirm receipt of notification of non-conformity in writing<br>2. Review and agree on the remedial measures proposed by the Contractor<br>3. Ensure remedial measures are properly implemented | 1. Identify source and investigate the non-conformity<br>2. Amend working methods agreed with ER as appropriate<br>3. Rectify damage and undertake any necessary replacement   |
| Repeated Non-conformity        | 1. Identify sources<br>2. Inform the Contractor, IEC and ER<br>3. Discuss inspection frequency<br>4. Discuss remedial actions with IEC, ER and Contractor<br>5. Monitor remedial actions until rectification has been completed<br>6. If non-conformity stops, cease additional monitoring | 1. Check inspection report<br>2. Check Contractor's working method<br>3. Discuss with ET, ER and Contractor on possible remedial measures<br>4. Advise ER on effectiveness of proposed remedial measures                                     | 1. Notify the Contractor<br>2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented<br>3. Supervise implementation of remedial measures       | 1. Identify source and investigate the non-conformity<br>2. Amend working methods agreed with ER as appropriate<br>3. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by ER until the non-conformity is abated. |

Annex L

Cumulative Statistics on  
Exceedances,  
Environmental Complaints,  
Notification of Summons  
and Status of Prosecutions

**Table L1** *Cumulative Statistics on Exceedances*

|                        |        | Total No. recorded in<br>this reporting period<br>(1) | Total No. recorded<br>since project<br>commencement |
|------------------------|--------|---|---|
| Air Quality (1-hr TSP) | Action | 0   | 0   |
|                        | Limit  | 0   | 0   |
| Noise                  | Action | 0   | 71  |
|                        | Limit  | 0   | 0   |
| Water Quality          | Action | 0   | 0   |
|                        | Limit  | 0   | 0   |
| Marine Ecology         | Action | 0   | 0   |
|                        | Limit  | 0   | 0   |

Remark:

(1) Exceedances, which are not project related, are not shown in this table.

**Table L2** *Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions*

| Contract No. | Reporting Period                                    | Cumulative Statistics |                             |              |
|--------------|---|-----------------------|-----------------------------|--------------|
|              |   | Complaints            | Notifications of<br>Summons | Prosecutions |
| Contract 1   | This Reporting<br>Period (1 - 30<br>November 2022)  | 0                     | 0                           | 0            |
|              | Total no. received<br>since project<br>commencement | 108                   | 0                           | 0            |
| Contract 2   | This Reporting<br>Period (1 - 30<br>November 2022)  | 0                     | 0                           | 0            |
|              | Total no. received<br>since project<br>commencement | 1                     | 0                           | 0            |
| Contract 3   | This Reporting<br>Period (1 - 30<br>November 2022)  | 1                     | 0                           | 0            |
|              | Total no. received<br>since project<br>commencement | 33                    | 0                           | 0            |
| Contract 7   | This Reporting<br>Period (1 - 30<br>November 2022)  | 0                     | 0                           | 0            |
|              | Total no. received<br>since project<br>commencement | 0                     | 0                           | 0            |

Annex M

## Monitoring Schedule for the Next Reporting Period



**Tung Chung New Town Extension (East)**  
**Air Quality and Noise Monitoring Schedule (December 2022)**

| Sunday | Monday                                  | Tuesday                                 | Wednesday | Thursday                                | Friday                                  | Saturday                                |
|--------|---|---|-----------|---|---|---|
|        |   |   |           | 1-Dec                                   | 2-Dec                                   | 3-Dec                                   |
|        |   |   |           |   |   |   |
| 4-Dec  | 5-Dec                                   | 6-Dec                                   | 7-Dec     | 8-Dec                                   | 9-Dec                                   | 10-Dec                                  |
|        |   | <b>Air Quality and Noise Monitoring</b> |           |   |   |   |
| 11-Dec | 12-Dec                                  | 13-Dec                                  | 14-Dec    | 15-Dec                                  | 16-Dec                                  | 17-Dec                                  |
|        | <b>Air Quality and Noise Monitoring</b> |   |           |   |   | <b>Air Quality and Noise Monitoring</b> |
| 18-Dec | 19-Dec                                  | 20-Dec                                  | 21-Dec    | 22-Dec                                  | 23-Dec                                  | 24-Dec                                  |
|        |   |   |           |   | <b>Air Quality and Noise Monitoring</b> |   |
| 25-Dec | 26-Dec                                  | 27-Dec                                  | 28-Dec    | 29-Dec                                  | 30-Dec                                  | 31-Dec                                  |
|        |   |   |           | <b>Air Quality and Noise Monitoring</b> |   |   |

**Tung Chung New Town Extension (East)  
Impact Marine Water Quality Monitoring (WQM) Schedule (December 2022)**

| Sunday | Monday  | Tuesday | Wednesday  | Thursday | Friday   | Saturday |
|--------|---|---------|--|----------|--|----------|
|        |   |         |  | 1-Dec    | 2-Dec  | 3-Dec    |
|        |   |         |  |          | ebb tide 6:21 - 9:51<br>flood tide 13:49 - 17:19   |          |
| 4-Dec  | 5-Dec   | 6-Dec   | 7-Dec  | 8-Dec    | 9-Dec  | 10-Dec   |
|        | ebb tide 9:19 - 12:49<br>flood tide 15:15 - 18:00 |         | ebb tide 10:47 - 14:17<br>flood tide 6:00 - 8:57   |          | ebb tide 11:55 - 15:25<br>flood tide 6:54 - 10:24  |          |
| 11-Dec | 12-Dec  | 13-Dec  | 14-Dec   | 15-Dec   | 16-Dec   | 17-Dec   |
|        | ebb tide 1:56 - 5:26<br>flood tide 8:55 - 12:25   |         | ebb tide 2:34 - 6:04<br>flood tide 14:53 - 18:23   |          | ebb tide 17:57 - 21:24<br>flood tide 12:16 - 15:46 |          |
| 18-Dec | 19-Dec  | 20-Dec  | 21-Dec   | 22-Dec   | 23-Dec   | 24-Dec   |
|        | ebb tide 7:29 - 10:59<br>flood tide 13:46 - 17:16 |         | ebb tide 9:38 - 13:08<br>flood tide 14:56 - 18:25  |          | ebb tide 11:20 - 14:50<br>flood tide 6:25 - 9:34   |          |
| 25-Dec | 26-Dec  | 27-Dec  | 28-Dec   | 29-Dec   | 30-Dec   | 31-Dec   |
|        | ebb tide 13:44 - 17:13<br>flood tide 8:34 - 12:04 |         | ebb tide 15:38 - 19:08<br>flood tide 10:15 - 13:45 |          | ebb tide 18:11 - 21:41<br>flood tide 11:59 - 15:29 |          |

Remark:

Pickup time and place of 1st tide: 15 min before tidal window at Sham Tseng pier  
Pickup time and place of 2nd tide: 15 min before tidal window at Tung Chung pier

**Tung Chung New Town Extension (East)  
Soft Shore Ecological Monitoring Schedule (December 2022)**

| Sunday | Monday   | Tuesday  | Wednesday | Thursday   | Friday | Saturday |
|--------|--|--|-----------|--|--------|----------|
|        |  |  |           | 1-Dec  | 2-Dec  | 3-Dec    |
|        |  |  |           | <b>Soft Shore Monitoring at<br/>Tung Chung Bay</b> |        |          |
| 4-Dec  | 5-Dec  | 6-Dec  | 7-Dec     | 8-Dec  | 9-Dec  | 10-Dec   |
|        |  |  |           |  |        |          |
| 11-Dec | 12-Dec   | 13-Dec   | 14-Dec    | 15-Dec   | 16-Dec | 17-Dec   |
|        | <b>Soft Shore Monitoring at<br/>Tai Ho Bay</b> | <b>Soft Shore Monitoring at<br/>Tung Chung Bay</b> |           |  |        |          |
| 18-Dec | 19-Dec   | 20-Dec   | 21-Dec    | 22-Dec   | 23-Dec | 24-Dec   |
|        |  |  |           |  |        |          |
| 25-Dec | 26-Dec   | 27-Dec   | 28-Dec    | 29-Dec   | 30-Dec | 31-Dec   |
|        |  |  |           |  |        |          |