CONTRACT NO: HY/2019/14

NEW WANG TONG RIVER BRIDGE

BASELINE MONITORING REPORT

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Table of Contents

Executive Summary **4**

1 Introduction **7**
1.1 Background 7
1.2 Purpose of Baseline Monitoring Report 7

2 Air Quality Monitoring **8**
2.1 Monitoring Requirements 8
2.2 Monitoring Equipment 8
2.3 Monitoring Locations 8
2.4 Monitoring Parameters, Frequency and Duration 9
2.5 Monitoring Methodology 9
2.6 Results and Observations 10
2.7 Action and Limit Levels 11

3 NOISE MONITORING **12**
3.1 Monitoring Requirements 12
3.2 Monitoring Equipment 12
3.3 Monitoring Locations 12
3.4 Monitoring Parameters, Frequency and Duration 13
3.5 Monitoring Methodology 13
3.6 Results and Observations 13
3.7 Action and Limit Levels 14

4 WATER QUALITY MONITORING **15**
4.1 Monitoring Requirements 15
4.2 Monitoring Equipment 15
4.3 Monitoring Locations 16
4.4 Monitoring Parameters, Frequency and Duration 16
4.5 Monitoring Methodology 16
4.6 QA/QC Requirements 17
4.7 Results and Observations 18
4.8 Action and Limit Levels 19

5 LANDSCAPE AND VISUAL MONITORING **21**
5.1 Objectives 21
5.2 Review of the Approved EIA Report 21
5.3 Review of the Tree Preservation and Removal Proposal 22
5.4 Baseline Monitoring 22

6 Revision for inclusion into EM&A Manual **27**

7 Comments, Recommendations and Conclusions **28**

LIST OF FIGURES

Figure 1.1 Location of Project Site
Figure 2.1 Location of Air Quality Monitoring Stations
Figure 2.2 Photo Records of Air Quality Monitoring Stations
Figure 3.1 Location of Noise Monitoring Stations
Figure 3.2 Photo Records of Noise Monitoring Stations
Figure 4.1 Location of Water Quality Monitoring Stations
Figure 4.2 Photo Records of Water Quality Monitoring Stations

LIST OF APPENDIXES

Appendix A Baseline Monitoring Schedule for Air Quality, Noise and Water Quality Monitoring
Appendix B Calibration Certificates of Monitoring Equipment
Appendix C Wind Data
Appendix D Baseline Air Quality Monitoring Data
Appendix E Baseline Noise Monitoring Data
Appendix F Baseline Water Quality Monitoring Data
Appendix G Tree Survey Results and Recommendations
Appendix H Key Plan of Project Area
Appendix I Key Plan of Landscape Resources and Landscape Character Areas

Executive Summary

i. This Baseline Monitoring Report is to report baseline findings for the Project of New Wang Tong River Bridge.

ii. Baseline monitoring for existing landscape and visual condition was conducted on 5 November 2020 to reconfirm the status of Landscape Resources and Landscape Character Areas within works area.

iii. Baseline air quality and noise monitoring were conducted at two (2) designated air quality monitoring stations and one (1) designated noise monitoring stations for consecutive 14 days in accordance with the EM&A Manual. The baseline water monitoring was be carried out at seven (7) designated monitoring stations, three days per week, for at least 4 weeks prior to the commencement of construction works. Cancellation of water quality monitoring at Station W3 was verified by the Independent Environmental Checker (IEC) on 23 November 2020 and approved by the Environmental Protection Department (EPD) on 7 December 2020.

iv. This report presents the baseline air quality and noise monitoring findings and information record during the period from 21 December 2020 to 3 January 2021, while that for the baseline water quality monitoring were recorded during the period from 14 December 2020 to 8 January 2021. No construction activities under the Project were undertaken during the baseline monitoring period.

Landscape and Visual Condition

v. Compared to the findings in the approved EIA report and the approved TPRP, the general status of the LRs and LCAs covered in the works area of Contract HY/2019/14 remains unchanged. According to the latest available information, 17 nos. of trees will be retained and 7 nos. of trees will be felled with compensatory planting.

Air Quality Monitoring

vi. Air quality monitoring was conducted and recorded in terms of 1-hour and 24-hour Total Suspended Particulates (TSP). Average 1-hour and 24-hour TSP levels established at the two (2) air quality monitoring stations are summarized as shown in **Table I**. Action & Limit levels derived from the 1-hour and 24-hour TSP levels are summarized as shown in **Table II**.

Table I Summary of Averaged 1-hour and 24-hour TSP Levels

Monitoring Station ID	Monitoring Station	1-hour TSP Level		24-hour TSP Level	
		Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)
AMS1	Silvermine Beach Resort	40.7	20.0 – 75.0	70.7	37.0 – 175.7
AMS2	1 Tung Wan Tau Road	51.9	29.0 – 98.0	70.8	37.9 – 136.5

Table II Summary of Action & Limit Levels of Baseline 1-hour and 24-hour TSP Levels

Monitoring Station ID	1-hour TSP Level		24-hour TSP Level	
	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AMS1	276.5	500.0	176.0	260.0
AMS2	283.7	500.0	176.0	260.0

Noise Monitoring

vii. The baseline noise levels established at one (1) monitoring stations are summarized as shown in **Table III.** Action & Limit levels of baseline noise levels are summarized as shown in **Table IV.**

Table III Summary of Averaged Baseline Noise Levels

Monitoring Station ID	Monitoring Station	0700-1900 hrs on normal weekdays	
		$L_{eq\ (30min)}$, dB(A)	
		Average	Range
NMS1	1 Tung Wan Tau Road	60.1	52.7 – 64.4

Remark:
Each of daily 30-minute sampling period includes six consecutive $L_{eq\ (5min)}$ readings.
Due to free-field measurement, a correction factor of +3 dB(A) is adopted.

Table IV Summary of Action & Limit Levels of Baseline Noise Levels

Monitoring Station ID	Time Period	Parameter	Action Level	Limit Level dB(A)
NMS1	0700-1900 hrs on normal weekdays	$L_{eq,\ 30min}$	When one documented complaint is received	75

Water Quality Monitoring

viii. Average results and Action & Limit levels of baseline water quality level at seven (7) stations are summarized as shown in **Table V**, **Table VI** and **Table VII**.

Table V Summary of Baseline Water Quality Monitoring Results during Mid-ebb Tide

Monitoring Station & Depth	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
	Average	Range	Average	Range	Average	Range
W1 (Middle)	9.48	7.18 - 11.82	5.87	3.65 - 13.30	5.32	2.10 - 12.10
W2 (Middle)	7.89	3.73 - 9.88	4.41	3.45 - 5.81	3.27	2.50 - 4.25
W4 (Middle)	8.01	6.68 - 9.67	4.79	3.62 - 6.98	4.26	2.40 - 6.75
W5 (Middle)	8.23	6.05 - 9.68	5.07	3.29 - 6.66	4.76	2.80 - 7.52
W6 (Middle)	7.60	6.35 - 11.78	6.88	4.36 - 9.35	9.58	3.65 - 33.90
W7 (Middle)	7.31	5.93 - 8.10	6.43	4.16 - 9.48	6.60	3.40 - 9.35
W8 (Surface / Middle)	6.92	5.71 - 8.20	5.83	2.88 - 8.08	6.28	2.10 - 9.65
W8 (Bottom)	6.82	5.93 - 8.33	5.89	3.59 - 8.49	6.78	3.40 - 9.65

Table VI Summary of Baseline Water Quality Monitoring Results during Mid-flood Tide

Monitoring Station & Depth	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
	Average	Range	Average	Range	Average	Range
W1 (Middle)	10.13	8.12 - 13.22	6.88	3.21 - 20.94	4.18	2.35 - 8.50
W2 (Middle)	8.17	5.92 – 11.00	4.59	2.80 - 7.44	3.48	2.10 - 6.25
W4 (Middle)	8.06	6.60 - 10.33	4.87	2.87 - 12.06	4.53	2.00 - 10.95
W5 (Middle)	9.19	7.31 - 14.25	4.83	2.57 - 8.28	6.73	2.10 - 21.85
W6 (Middle)	7.66	5.87 - 10.29	7.72	4.41 - 10.48	9.36	4.70 – 15.00
W7 (Middle)	6.86	5.44 - 7.87	7.82	5.14 - 10.58	9.55	3.55 - 14.80
W8 (Surface / Middle)	6.75	5.52 - 8.02	6.97	5.01 - 9.73	7.88	4.55 - 14.45
W8 (Bottom)	6.72	5.88 - 8.03	7.14	4.92 – 10.00	8.09	5.05 - 12.05

Table VII Summary of Action & Limit Level of Baseline Water Quality

<table>
<tr><th rowspan="2">Monitoring Station</th><th rowspan="2">Depth</th><th colspan="2">DO (mg/L) +</th><th colspan="2">Turbidity (NTU) ~</th><th colspan="2">SS (mg/L) ~</th></tr>
<tr><th>Action Level</th><th>Limit Level</th><th>Action Level</th><th>Limit Level</th><th>Action Level</th><th>Limit Level</th></tr>
<tr><td>W1</td><td rowspan="3">Middle</td><td rowspan="3">6.5</td><td rowspan="3">5.3</td><td rowspan="3">7.7 NTU or 120% of upstream control station's turbidity at the same tide of the same day, whichever is higher $</td><td rowspan="3">12.4 NTU or 130% of upstream control station's turbidity at the same tide of the same day, whichever is higher $</td><td rowspan="3">8.9 mg/L or 120% of upstream control station's SS at the same tide of the same day, whichever is higher</td><td rowspan="3">11.3 mg/L or 130% of upstream control station's SS at the same tide of the same day, whichever is higher</td></tr>
<tr><td>W2</td></tr>
<tr><td>W4</td></tr>
<tr><td>W5</td><td rowspan="3">Middle</td><td rowspan="5">5.9</td><td rowspan="5">5.5</td><td rowspan="5">9.8 NTU or 120% of upstream control station's turbidity at the same tide of the same day, whichever is higher</td><td rowspan="5">10.5 NTU or 130% of upstream control station's turbidity at the same tide of the same day, whichever is higher</td><td rowspan="5">12.6 mg/L or 120% of upstream control station's SS at the same tide of the same day, whichever is higher $</td><td rowspan="5">15.0 mg/L or 130% of upstream control station's SS at the same tide of the same day, whichever is higher $</td></tr>
<tr><td>W6</td></tr>
<tr><td>W7</td></tr>
<tr><td rowspan="2">W8</td><td>Surface & Middle</td></tr>
<tr><td>Bottom</td><td>5.9</td><td>5.5 #</td></tr>
</table>

Remarks #: The calculated limit level for Station W8 at bottom level is 5.9 mg/L, which is same as the proposed action level for Station W8 at bottom level. It is likely contributed to the small sample size of water quality data collected at Station W8 at bottom level. In normal circumstances, dissolved oxygen decreases when sea depth increases. In order to reflect a representable limit level for general bottom level in Silvermine Bay, the limit level of 5.5 mg/L is alternatively adopted with reference to the limit level for Station W5 to W7.
Remarks +: For DO, non-compliance occurs when monitoring results is lower than the limits.
Remarks ~: For SS and Turbidity, non-compliance occurs when monitoring results is larger than the limits.
Remarks $: Outlier data were excluded from determination of action and limit levels.

1 Introduction

1.1 Background

1.1.1. In order to relieve the overcrowding problem and the road safety concern of Wang Tong Bridge (hereafter called “Old Bridge”), two bridges (pedestrian bridge and cycle bridge) are proposed to replace the Old Bridge. The new pedestrian bridge and the new cycle bridge are also designed to align with the future amenity development on the northern side of the Old Bridge. Layout of project site is presented in **Figure 1.1**.

1.1.2. The Project mainly comprises the following works:

(i) Construction of a new cycle bridge next to the existing bridge

(ii) Demolition of the existing bridge

(iii) Construction of a new pedestrian bridge on the same site of the existing bridge

1.1.3. In accordance with Clause 3.3 stated in the Environmental Permit (no.: EP-555/2018/A), four hard copies and one electronic copy of the Baseline Monitoring Report shall be submitted to the Director at least 2 weeks before the commencement of construction of the project.

1.1.4. In accordance with Section 10.2.1 of the Project Environmental Monitoring and Audit (EM&A) Manual, the Baseline Environmental Monitoring Report should be prepared and submitted within 10 working days after completion of the baseline monitoring works.

1.2 Purpose of Baseline Monitoring Report

1.2.1. Baseline monitoring is to review baseline conditions of air quality, noise level and water quality along the Project boundary, and to establish baseline levels for air quality, noise and water quality in accordance with the EM&A Manual. These levels would be used as the basis for assessing environmental impact and compliance during construction stage of the Project. Baseline conditions of landscape resources and landscape character areas are also reviewed under this report to reconfirm the findings in the approved EIA report (AEIAR-199/2016).

1.2.2. This baseline monitoring report presents baseline monitoring requirements, methodologies, monitoring results and determination of action and limit levels for each monitoring parameter at two (2) designated air quality monitoring stations, one (1) designated noise monitoring stations and seven (7) designated water quality monitoring stations as described in the EM&A Manual.

2 Air Quality Monitoring

2.1 Monitoring Requirements

2.1.1 In accordance with the Project EM&A Manual, baseline 1-hour and 24-hour TSP levels at two (2) air quality monitoring stations should be established by conducting baseline 1-hour and 24-hour TSP monitoring for at least consecutive 14 days prior to the commencement of the construction work. At least 3 sets of 1-hour TSP data shall be collected every day.

2.1.2 The baseline air quality monitoring at two (2) monitoring stations were conducted during the baseline monitoring period from 21 December 2020 to 3 January 2021 and the relevant findings are summarized in this report. The baseline monitoring schedule is shown in **Appendix A**.

2.2 Monitoring Equipment

2.2.1 High Volume Sampler (HVS – Model TE-5170) completed with the appropriate sampling inlets were installed for the 24-hour TSP sampling. 1-hour TSP air quality monitoring was performed by using portable direct reading dust meters at each designated monitoring station, which was verified by IEC and approved by the Engineer's Representative (ER) on 4 December 2020 according to Section 3.4.5 and 3.3.2 of the Project EM&A Manual. The brand and model of the equipment are given in **Table 2.1**.

Table 2.1 Air Quality Monitoring Equipment

Equipment	Brand and model	Series Number
Portable direct reading dust meter	Met One BT- 645	X19295 X19297
High Volume Sampler	TE-5170	HVS019 HVS020

2.2.2 Calibration certificate of high-volume sampler and certificate of comparison check with High Volume Sampler of the air quality monitoring equipment listed in **Table 2.1** can refer to **Appendix B**.

2.3 Monitoring Locations

2.3.1 Given the originally proposed air quality monitoring locations were not favourable for monitoring works, fine adjusted monitoring location was therefore proposed based on liaison with lot owners. The detail and information of the monitoring stations for baseline air quality monitoring conducted are presented in **Table 2.2** and shown in **Figures 2.1** and **Figure 2.2.**

Table 2.2 Baseline Air Quality Monitoring Stations Location

Monitoring Station	Location	Level (in terms of no. of floor)
AMS1 [A]	Silvermine Beach Resort	G/F
AMS2 [B]	1 Tung Wan Tau Road	G/F

Remarks A: AMS1 recommended under EM&A manual is at the north of boundary wall of Silvermine Beach Resort. Positioning of HVS on a narrow road at the northern boundary wall would obstruct access of passengers. After liaison

with the resort owner, HVS is located near the eastern boundary wall, which is representative and suitable for air quality monitoring. Thus, fine adjustment of location at the boundary of Silvermine Beach Resort was therefore proposed.

Remarks B: As discussed with the lot owner, a fine adjustment of location at the boundary of 1 Tung Wan Tau Road was proposed, in order to prevent access obstruction and to minimize noise nuisance induced from HVS operation.

2.4 Monitoring Parameters, Frequency and Duration

2.4.1 The monitoring parameters, frequency and duration of air quality monitoring are summarized in **Table 2.3**.

Table 2.3 Air Quality Monitoring Parameters, Frequency and Duration

Monitoring Period	Duration	Sampling Parameter	Frequency
Baseline Monitoring	At least 14 consecutive days prior to the commissioning of the construction works	1-hour & 24-hour TSP	3 times per day

2.5 Monitoring Methodology

2.5.1 24-hour TSP Measuring Installation (HVS)

(a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.
(b) No furnace or incinerator flues were nearby.
(c) Airflow around the sampler was unrestricted
(d) 0.6 - 1.7 m^3 per minute adjustable flow range
(e) Equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
(f) Installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
(g) Equipped with a shelter to protect the filter and sampler;
(h) Capable of operating continuously for a 24-hour period.

2.5.2 24-hour Measuring Procedures

(a) The power supply was checked to ensure the HVS works properly.
(b) The filter holder and the area surrounding the filter were cleaned.
(c) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
(d) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
(e) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges.
(f) Then the shelter lid was closed and was secured with the aluminum strip.
(g) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
(h) A new flowrate record sheet was set into the flow recorder.
(i) The flow rate of the HVS was checked and adjusted at around 1.2 m^3 /min. The range specified in the EM&A Manual was between 0.6-1.7 m^3 /min.
(j) The programmable timer was set for a sampling period of 24 hrs + 1 hr, and the starting time, weather condition and the filter number were recorded.
(k) The initial elapsed time was recorded.

(l) At the end of sampling, the sampled filter was removed carefully and folded in half-length so that only surfaces with collected particulate matter were in contact.
(m) It was then placed in a clean plastic envelope and sealed.
(n) All monitoring information was recorded on a standard data sheet.
(o) Filters were sent to laboratory for further testing.

2.5.3 1-hour Measuring Procedures

(a) Check the calibration period of portable direct reading dust meter prior to monitoring (The direct reading dust meter was calibrated at 2-years interval and checked with High Volume Sampler (HVS) yearly, details refer to Section 2.5.4)
(b) Record the site condition near / around the monitoring stations.
(c) Install the portable direct reading dust meter to the monitoring location.
(d) Slide the power switch to turn the power on.
(e) Check of portable direct reading dust meter to ensure the equipment operation in normal condition.
(f) Select the period of measurement to 60mins.
(g) Check and set the correct time.
(h) Select the appropriate unit display for the equipment.
(i) Slide the power switch to turn the power off when the monitoring period ended (3 times 1 hour TSP monitoring per day).
(j) Uninstall the portable direct reading dust meter
(k) Collected the sampled data for analysis.

Remark: Procedures (c) to (h) may be different subject to the brands and models of portable direct reading dust.

2.5.4 Maintenance and Calibration

(a) The direct reading dust meter was calibrated at 2-years interval and checked with High Volume Sampler (HVS) yearly to determine the accuracy and validity of the results measured.
(b) Checking of direct reading dust meter will be carried out in order to determine the conversion factor between the direct reading dust meter and the standard equipment, HVS. The comparison check is to be considered valid based on correlation coefficient checked by HOKLAS laboratory

2.5.5 Wind data

Hong Kong Observatory (HKO) meteorological information is widely accepted to be used in various environmental monitoring practices within HKSAR due to its professional quality and precision. Therefore, the daily wind data including Prevailing Wind Direction (degrees) and Mean Wind Speed (km/h) were obtained from Peng Chau Automatic Weather Station to serve as the representative data for meteorological condition during monitoring. The method was agreed by the IEC and approved by the ER on 4 December 2020. The representative wind data from Peng Chau Station were obtained covering the 1-hour and 24-hour TSP monitoring periods. The wind data were extracted and shown in **Appendix C**.

2.6 Results and Observations

2.6.1 Baseline 1-hour and 24-hour TSP monitoring were carried out from 21 December 2020 to 3 January 2021 for consecutive 14 days and the weather were mostly fine. Major dust source

was from wind erosion.

2.6.2 The results for 1-hour and 24-hour TSP are summarized in **Table 2.4** respectively. Detailed air quality monitoring results are presented in **Appendix D**.

Table 2.4 Summary of 1-hour TSP Baseline Monitoring Results

Parameter	Monitoring Station	Average (μg/m^3)	Range (μg/m^3)
24-hour TSP Level	AMS1	70.7	37.0 – 175.7
	AMS2	70.8	37.9 – 136.5
1-hour TSP Level	AMS1	40.7	20.0 – 75.0
	AMS2	51.9	29.0 – 98.0

2.7 Action and Limit Levels

2.7.1 Action and Limit Levels for air quality impact monitoring were based on the criteria adopted from the EM&A Manual as presented in **Table 2.5**.

Table 2.5 Derivation of Action and Limit Levels for Air Quality

Parameters	Action Level	Limit Level
24-hour TSP Level in μg/m^3	For baseline level ≤ 200 μg/m^3, Action level = (baseline level * 1.3 + Limit level)/2; For baseline level > 200μg/m^3, Action level = Limit level	260 μg/m^3
1-hour TSP Level in μg/m^3	For baseline level ≤ 384 μg/m^3, Action level = (baseline level * 1.3 + Limit level)/2; For baseline level > 384μg/m^3, Action level = Limit level	500 μg/m^3

2.7.2 The derived Action and Limit levels are presented in **Table 2.6.**

Table 2.6 Derived Action and Limit Levels for Air Quality

Parameter	Monitoring Station	Action Level (μg/m^3)	Limit Level (μg/m^3)
24-hour TSP Level	AMS1	176.0	260.0
	AMS2	176.0	260.0
1-hour TSP Level	AMS1	276.5	500.0
	AMS2	283.7	500.0

3 NOISE MONITORING

3.1 Monitoring Requirements

3.1.1 In accordance with the EM&A Manual, baseline noise monitoring at one (1) monitoring stations shall be carried out daily for a period of at least two weeks.

3.1.2 The baseline noise monitoring at one (1) monitoring stations were conducted during the monitoring period from 21 December 2020 to 3 January 2021 and the relevant findings are summarized in this report. The baseline monitoring schedule is shown in **Appendix A**.

3.2 Monitoring Equipment

3.2.1 Noise monitoring was performed using sound level meter at the designated monitoring location. Sound level meters shall comply with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator shall be deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 3.1**.

Table 3.1 Noise Monitoring Equipment

Equipment	Brand and Model	Series Number
Integrated Sound Level Meter	Larson Davis LxT	3737
Acoustic Calibrator	Larson Davis Cal 200	13437

3.2.2 Calibration certificates of the noise monitoring equipment are attached in **Appendix B**.

3.3 Monitoring Locations

3.3.1 Given the originally proposed air quality monitoring location was not favourable for monitoring works, fine adjusted monitoring location was therefore proposed based on liaison with lot owners. The noise monitoring station for baseline noise monitoring is presented in **Table 3.2** and shown in **Figures 3.1** and **Figure 3.2**.

Table 3.2 Baseline Noise Monitoring Stations

Monitoring Station ID	Monitoring Location	Measurement Type	Level (in terms of no. of floor)
NMS1 [A]	1 Tung Wan Tau Road	Free-Field	G/F

Remarks A: As discussed with the lot owner, a fine adjustment of location at the boundary of 1 Tung Wan Tau Road was proposed, in order to prevent access obstruction.

3.4 Monitoring Parameters, Frequency and Duration

3.4.1 Monitoring parameters, frequency and duration of noise monitoring are summarized in **Table 3.3.**

Table 3.3 Baseline Noise Monitoring Parameters, Frequency and Duration

Monitoring Period	Duration	Measurement Parameter	Measurement Period	Frequency
Baseline Monitoring	Consecutive days of at least 2 weeks before commencement of major construction works	A-weighted levels L_{eq}, L_{10} and L_{90} Including 30 minutes (six consecutive Leq(5min) readings)	Between 0700 and 1900 hours	Daily

3.5 Monitoring Methodology

3.5.1 Monitoring Procedure

(a) The monitoring station shall normally be at a point 1m from the exterior of the sensitive receiver's building façade and be at a position 1.2m above the ground.

(b) Façade measurements were made at the monitoring locations. For free-field measurement, a correction factor of +3 dB (A) would be applied.

(c) The battery condition was checked to ensure the correct functioning of the meter.

(d) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

(i) Frequency weighting: A time weighting: Fast

(ii) Time measurement: Daily measurement of A-weighted levels L_{eq}, L_{10} and L_{90} shall be conducted for at least two weeks. Daily measurement periods should be between 0700 and 1900 hours (six consecutive $L_{eq(5min)}$ readings).

(e) Prior and after to the noise measurement, the meter was checked using the acoustic calibrator for 94dB (A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than ±1 dB (A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

3.5.2 Maintenance and Calibration

(a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.

(b) The sound level meter and calibrator were calibrated at yearly intervals.

3.6 Results and Observations

3.6.1 Baseline noise monitoring was carried out from 21 December 2020 to 3 January 2021 for recording over two weeks monitoring data and the weather were mostly fine. During the baseline monitoring period, no construction activities were observed. The major noise source was traffic noise and community noise near the monitoring station.

3.6.2 The baseline noise monitoring results are summarized in **Table 3.4** respectively. Detailed noise monitoring results are presented in **Appendix E**.

Table 3.4 Summary of Baseline Noise Monitoring Results

Monitoring Station	0700-1900 hrs on normal weekdays	
	$L_{eq\ (30min)}$, dB(A)	
	Average	Range
NMS1	60.1	52.7 – 64.4

Remark:
Each of daily 30-minute sampling period includes six consecutive L_{eq} (5min) readings.
Due to free-field measurement, a correction factor of +3 dB(A) is adopted.

3.7 Action and Limit Levels

3.7.1 Action and Limit Levels of noise monitoring have been set in accordance with the criteria specified in the EM&A Manual as shown in **Table 3.5** below.

Table 3.5 Action and Limit Levels for Construction Noise

Monitoring Station	Action Level	Limit Level
NMS1	When one documented complaint is received	75 dB(A)

4 WATER QUALITY MONITORING

4.1 Monitoring Requirements

4.1.1 In accordance with the Project EM&A Manual, baseline water monitoring shall be carried out at eight (8) designated monitoring stations, three days per week, at mid-flood and mid-ebb tides (within ± 1.75 hour of the predicted time), for at least 4 weeks prior to the commencement of construction works. The interval between 2 sets of monitoring should not be less than 36 hours. The monitoring period should avoid concurrent marine project in the vicinity. Replicate in-situ measures should be carried out in each sampling event. The levels of dissolved oxygen (DO), turbidity, salinity and pH shall be measured in situ while suspended solids (SS) is determined by laboratory analysis at all the designated monitoring stations. Water samples shall be extracted at 1m below surface, 1m above seabed and at the mid-depth level at where the water depth is at least 6m. If the water depth is less than 3m, water samples shall only be collected at the mid-depth level. For stations with depth less than 6m, the mid-depth sample can be omitted.

4.1.2 Due to accessibility and safety issues, cancellation of water quality monitoring at Station W3 was proposed; while Station W4 is still representable for water quality of Wang Tong River minor tributary. The proposal was verified by IEC on 23 November 2020 and approved by EPD on 7 December 2020. Hence, baseline water monitoring was conducted at seven (7) monitoring stations.

4.1.3 The baseline water quality monitoring was conducted during the baseline monitoring period from 14 December 2020 to 8 January 2021 and the relevant findings are summarized in this report. The baseline monitoring schedule is shown in **Appendix A**.

4.2 Monitoring Equipment

4.2.1 The baseline water quality monitoring was performed using Multifunctional Meter and Turbid Meter at each designated monitoring station. They are capable of measuring:

(a) a dissolved oxygen level in the range of 0-20mg/L and 0-200% saturation (Detection Limit: 0.01mg/L and 0.1%)
(b) a temperature of 0-45 degree Celsius (Detection Limit: 0.1 degree Celsius)
(c) turbidity level between 0-1000NTU (Detection Limit: 0.01NTU)
(d) salinity in the range of 0-70ppt and within the range of 0-40% (Detection Limit: 0.01ppt)
(e) pH value in range of 0.0 – 14.0 (Detection Limit: 0.01units)

4.2.2 Brand and model of the equipment are given in **Table 4.1**.

Table 4.1 Water Quality Monitoring Equipment

Equipment	Brand and model	Series Number
Multifunctional Meter	Sonde YSI Professional Plus	19H100656
Turbid meter	Xin Rui WGZ-3B	1807063

4.2.3 Calibration certificates of the water quality monitoring equipment are attached in **Appendix B**.

4.3 Monitoring Locations

4.3.1 The water quality monitoring stations for baseline water quality monitoring is presented in **Table 4.2** and shown in **Figures 4.1** and **Figure 4.2**.

Table 4.2 Details of Baseline Water Quality Monitoring Stations

Station	Description	Monitoring Period	Monitoring Station	Easting	Northing
W1	Wang Tong River (Major tributary)	Mid-Flood	Impact	817747	814519
		Mid-Ebb	Control		
W2	Wang Tong River (Major tributary)	Mid-Flood	Impact	817775	814471
		Mid-Ebb	Control		
W3 *	Wang Tong River (Minor tributary to Tai Wai Yuen)	Mid-Flood	Impact	817803	814537
		Mid-Ebb	Control		
W4	Wang Tong River (Minor tributary to Tai Wai Yuen)	Mid-Flood	Impact	817825	814481
		Mid-Ebb	Control		
W5	Silvermine Bay (Near Silvermine Bay Beach)	Mid-Flood	Control	817909	814452
		Mid-Ebb	Impact		
W6	Silvermine Bay (Near Silvermine Bay Beach)	Mid-Flood	Control	818024	814447
		Mid-Ebb	Impact		
W7	Silvermine Bay (Open Water)	Mid-Flood	Control	818061	814277
		Mid-Ebb	Impact		
W8	Silvermine Bay (Open Water)	Mid-Flood	Control	818224	814444
		Mid-Ebb	Impact		

Remark *: Water quality monitoring at Station W3 was cancelled with verification from the IEC and approval from the EPD.

4.4 Monitoring Parameters, Frequency and Duration

4.4.1 Monitoring parameters, frequency and duration of water quality monitoring are summarized in **Table 4.3**.

4.4.2 The levels of DO, turbidity, salinity and pH shall be measured in situ while SS is determined by laboratory analysis at all the designated monitoring stations.

4.4.3 In association with the water quality parameters, other relevant data shall also be recorded, such as monitoring location / position, time, water temperature, DO saturation, weather conditions, and any special phenomena underway near the monitoring station.

Table 4.3 Water Quality Monitoring Parameters and Frequency

Monitoring Period	Duration	Sampling Parameter	Frequency	Remarks
Baseline Monitoring	at least 4 weeks prior to the commencement of construction works	DO, turbidity, SS, salinity and pH	three days per week	Replicate in-situ measures

4.5 Monitoring Methodology

4.5.1 Monitoring Procedure

(a) The condition near the monitoring stations shall be observed and recorded on the data log sheet.
(b) Check of sensors and electrodes with certified standard solutions before each use.
(c) Wet bulb calibration for a DO meter should be carried out before measurement.
(d) Water depth should be recorded by detector before sampling.
(e) Sample would be taken using water sampler at surface, middle and bottom level.
(f) Transfer the sampled water carefully into cleaned water bottles (2x 500ml) provided by the laboratory at the spot after the collection of the water sample for the subsequent laboratory Suspended Solid testing.
(g) Transfer the sampled water from the bucket sampler to the rinsed water container for in-situ measurement (In case of the in-situ measurement cannot be carried at spot due to safety and adverse weather condition, sampled water will be transfer to cleaned water bottles provided by laboratory. Then, In-situ measurement will be conducted at a safe location which sampled water inside cleaned water bottle will be transfer to the rinsed water container for in-situ measurement) In-situ measurement shall be measured in duplicate.
(h) Parameters including Water Temperature (℃), pH (units), Salinity (ppt), DO (mg/L), DO saturation (%) will be measured by the Multifunctional Meter and Turbidity (NTU) will be measured by turbid meter.
(i) Record the result on the data log sheet and record any special finding during / after in-situ measurement.
(j) The water sample bottles will store in a cool box, which shall be delivered to HOKLAS laboratory for further testing to determine the level of SS.

4.6 QA/QC Requirements

4.6.1 Maintenance and Calibration

(a) The responses of sensors and electrodes of the water quality monitoring equipment were cleaned and checked at regular intervals.
(b) DO meter (Multifunctional Meter) and turbid meter was certified by a laboratory accredited under HOKLAS or any other international accreditation scheme, and subsequently re-calibrated at three monthly intervals.

4.6.2 Decontamination Procedures

Water sampling equipment used during the course of the monitoring programme was decontaminated by manual washing and rinsed clean seawater/distilled water after each sampling event. All disposable equipment was discarded after sampling.

4.6.3 Laboratory measurement

Analysis of suspended solid will be conducted by a HOKLAS accredited laboratory, which is ALS Technichem (HK) Pty. Ltd.

4.6.4 Quality Control Measures for Sample Testing

Analysis of suspended solid will be conducted by a HOKLAS accredited laboratory, which is ALS Technichem (HK) Pty. Ltd. Reporting limit of suspended solid is 0.5 mg/L.

4.7 Results and Observations

4.7.1 The baseline water quality monitoring was carried out from 14 December 2020 to 8 January 2021 and the weather was mostly fine. During the baseline monitoring period, no construction activities were observed.

4.7.2 The baseline water quality monitoring results are summarized in **Table 4.4** and **Table 4.5**. Detailed water quality monitoring results are presented in **Appendix F**.

Table 4.4 Summary of Baseline Water Quality Monitoring Results during Mid-ebb Tide

Monitoring Station & Depth	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
	Average	Range	Average	Range	Average	Range
W1 (Middle)	9.48	7.18 - 11.82	5.87	3.65 - 13.30	5.32	2.10 - 12.10
W2 (Middle)	7.89	3.73 - 9.88	4.41	3.45 - 5.81	3.27	2.50 - 4.25
W4 (Middle)	8.01	6.68 - 9.67	4.79	3.62 - 6.98	4.26	2.40 - 6.75
W5 (Middle)	8.23	6.05 - 9.68	5.07	3.29 - 6.66	4.76	2.80 - 7.52
W6 (Middle)	7.60	6.35 - 11.78	6.88	4.36 - 9.35	9.58	3.65 - 33.90
W7 (Middle)	7.31	5.93 - 8.10	6.43	4.16 - 9.48	6.60	3.40 - 9.35
W8 (Surface / Middle)	6.92	5.71 - 8.20	5.83	2.88 - 8.08	6.28	2.10 - 9.65
W8 (Bottom)	6.82	5.93 - 8.33	5.89	3.59 - 8.49	6.78	3.40 - 9.65

Table 4.5 Summary of Baseline Water Quality Monitoring Results during Mid-flood Tide

Monitoring Station & Depth	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
	Average	Range	Average	Range	Average	Range
W1 (Middle)	10.13	8.12 - 13.22	6.88	3.21 - 20.94	4.18	2.35 - 8.50
W2 (Middle)	8.17	5.92 – 11.00	4.59	2.80 - 7.44	3.48	2.10 - 6.25
W4 (Middle)	8.06	6.60 - 10.33	4.87	2.87 - 12.06	4.53	2.00 - 10.95
W5 (Middle)	9.19	7.31 - 14.25	4.83	2.57 - 8.28	6.73	2.10 - 21.85
W6 (Middle)	7.66	5.87 - 10.29	7.72	4.41 - 10.48	9.36	4.70 – 15.00
W7 (Middle)	6.86	5.44 - 7.87	7.82	5.14 - 10.58	9.55	3.55 - 14.80
W8 (Surface / Middle)	6.75	5.52 - 8.02	6.97	5.01 - 9.73	7.88	4.55 - 14.45
W8 (Bottom)	6.72	5.88 - 8.03	7.14	4.92 – 10.00	8.09	5.05 - 12.05

4.8 Action and Limit Levels

4.8.1 Action and Limit Levels of water quality monitoring have been set in accordance with the derivation criteria specified in the EM&A Manual as shown in **Table 4.6** below.

Table 4.6 Action and Limit Levels for Water Quality Monitoring

Parameters	Action Level	Limit Level
DO in mg/L (Surface, Middle & Bottom)	Surface & Middle: 5 percentile of baseline data for surface and middle layers Bottom: 5 percentile of baseline data for bottom layer.	Surface & Middle: 4 mg/L or 1 percentile of baseline data for surface and middle layers. Bottom: 2 mg/L or 1 percentile of baseline data for bottom layer.
SS in mg/L (Surface, Middle & Bottom)	95 percentile of baseline data or 120% of upstream control station's SS at the same tide of the same day.	99 percentile of baseline data or 130% of upstream control station's SS at the same tide of the same day.
Turbidity in NTU (Surface, Middle & Bottom)	95 percentile of baseline data or 120% of upstream control station's turbidity at the same tide of the same day.	99 percentile of baseline or 130% of upstream control station's turbidity at the same tide of the same day

4.8.2 Further review the baseline water quality monitoring data, the action and limit level will be derived with the following justification:

- Salinity affects water clarity due to the effect of salt on the aggregation and settling velocity of suspended particles. And dissolved oxygen also decreases exponentially as salt levels increase. In order to reflect different situations associated with the salinity variation, 2 sets of action and limit levels are proposed and adopted.
- Stations W1, W2 and W4 are at the tributaries of Wang Tong River, where share similar environs of mangrove area. The stations are considered under the same water body. Hence, the same set of action and limit level is proposed and applied for Stations W1, W2 and W4.
- Stations W5, W6, W7 and W8 are at Silvermine Bay. Water to be collected at these stations is mostly interacted with the same system of marine environment. The stations are deemed under the same water body. Thus, the same set of action and limit level is proposed and applied for Stations W5, W6, W7 and W8.
- Three data were found relatively outstanding compared to overall data, i.e. 21.9 mg/L of suspended solid at Station W5 during flood tide on 14 December 2020, 33.9 mg/L of suspended solid at Station W6 during ebb tide on 14 December 2020, and 20.9 NTU of turbidity at Station W1 during flood tide on 14 December 2020. The outlier data were discarded for determination of action and limit levels.
- Some of the SS data have relatively large deviation between duplicate samples, for instance, Station W2 at 28 December 2020 during ebb tide, Station W4 at 6 January 2021 during flood tide, Station W5 at 28 December 2020 during ebb tide, Station W5 at 14 December 2020 during flood tide, and Station W6 at 14 and 16 December 2020 during ebb tide. Since the mentioned stations have shallow water depths (i.e. < 3 meters), water turbulence may easily flush the sediment deposited on the riverbed or the sea bed to affect the SS concentration within a short period of time. Thus, the SS data difference would be caused by the environmental condition itself, and the duplicate data are considered reasonable to be included.

- After review, except the outstanding data, the vast majority of data collected during both ebb tide and flood tide are considered valid for inclusion of baseline data and subsequent determination of action and limit levels.

4.8.3 The action and limit level were derived and presented in **Table 4.7**.

Table 4.7 Derived Action and Limit levels

Monitoring Station	Depth	DO (mg/L) +		Turbidity (NTU) ~		SS (mg/L) ~	
		Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
W1	Surface, Middle & Bottom	6.5	5.3	7.7 NTU or 120% of upstream control station's turbidity at the same tide of the same day, whichever is higher $	12.4 NTU or 130% of upstream control station's turbidity at the same tide of the same day, whichever is higher $	8.9 mg/L or 120% of upstream control station's SS at the same tide of the same day, whichever is higher	11.3 mg/L or 130% of upstream control station's SS at the same tide of the same day, whichever is higher
W2							
W4							
W5	Surface, Middle & Bottom	5.9	5.5	9.8 NTU or 120% of upstream control station's turbidity at the same tide of the same day, whichever is higher	10.5 NTU or 130% of upstream control station's turbidity at the same tide of the same day, whichever is higher	12.6 mg/L or 120% of upstream control station's SS at the same tide of the same day, whichever is higher $	15.0 mg/L or 130% of upstream control station's SS at the same tide of the same day, whichever is higher $
W6							
W7							
W8	Surface & Middle						
	Bottom	5.9	5.5 #				

Remarks #: The calculated limit level for Station W8 at bottom level is 5.9 mg/L, which is same as the proposed action level for Station W8 at bottom level. It is likely contributed to the small sample size of water quality data collected at Station W8 at bottom level. In normal circumstances, dissolved oxygen decreases when sea depth increases. In order to reflect a representable limit level for general bottom level in Silvermine Bay, the limit level of 5.5 mg/L is alternatively adopted with reference to the limit level for Station W5 to W7.

Remarks +: For DO, non-compliance occurs when monitoring results is lower than the limits.

Remarks ~: For SS and Turbidity, non-compliance occurs when monitoring results is larger than the limits.

Remarks $: Outlier data were excluded from determination of action and limit levels.

5 LANDSCAPE AND VISUAL MONITORING

5.1 Objectives

5.1.1 In accordance with Clause 8.2.2 of EM&A Manual under the approved EIA report (register no. AEIAR-199/2016) requirement, a baseline monitoring report shall be prepared to check, record and re-confirm the status of the Landscape Resources (LR) and Landscape Character Areas (LCA) within the works area. The report shall review the proposed mitigation measures and assess their feasibility with reference to the operational requirements of the detailed project works. Any potential conflicts between proposed mitigation measures and the proposed works shall be resolved at an early stage (prior to construction) and any necessary changes to the mitigation measures shall be incorporated into the detailed design.

5.2 Review of the Approved EIA Report

5.2.1 The approval of EIA Report AEIAR-199/2016 – New Wang Tong River Bridge has been reviewed to extract relevant information about the baseline conditions of the landscape resources and landscape character of the area within and immediately adjacent to, the construction and works areas during the EIA stage.

5.2.2 At the EIA stage, two landscape resources were identified within the Project site which was identified as Wang Tong River (LR2a) and Existing Trees in Vicinity of Wang Tong River Bridge (LR10). Two landscape character of area were identified as Bay Landscape (LCA2) and Rural Township Landscape (LCA3). Description of the baseline conditions of the above two LRs and LCAs in approved EIA report are as follows:

- LR2a – Wang Tong River: The Wang Tong River flows though the Study Area from the north west to south east, passing under the existing Wang Tong Bridge and continuing across Silver Mine Bay Beach to the sea. The River is shallow and non-navigable, and the lower reaches are tidal. Although it flows through the agricultural Wang Tong Valley, the river channel is largely natural and provides a habitat and breeding ground for avifauna and fish (refer to Ecological Assessment chapter). The approximate length within the study area is 700 m. The northern bank is lined with small trees and shrubs, primarily *Hibiscus tiliaceus* with smaller numbers of *Ficus subpisocarpa*, *Litsea glutinosa*, *Macaranga tanarius var. tomentosa*, *Melia azardarach*, *Pandanus tectorius*, *Syzygium samaragense* and *Wedelia trilobata*. Mangrove species (*Aegiceras corniculatum* and *Acanthus ilicifolius*) were also found in the River. Whilst the value of the ecological habitats within this resource have been rated as low, given that natural rivers are under threat and a disappearing resource in Hong Kong and that this resource is difficult to recreate the sensitivity is assessed as High.
- LR10 - Existing Trees in Vicinity of Wang Tong River Bridge: There are a number of existing trees in the immediate vicinity of the Wang Tong River Bridge growing either in the waterfront paved areas or Silver Mine Bay Beach. As they may be potentially impacted, a detailed tree survey has been undertaken in accordance with DEVB TC(W) 7/2015 at the approved EIA report. Surveyed trees total 19 no. and comprise the following species *Casuarina equisetifolia*, *Celtis sinensis*, *Ficus microcarpa*, *Hibiscus tiliaceus*, *Macaranga tanarius*, *Terminalia catappa*. Whilst the trees are

neither registered Old and Valuable Trees nor rare or precious species, the trees are mature and do contribute to the immediate setting of the bridge and provide a positive visual backdrop to the back of the beach. Their health and amenity value is generally Fair to Good and their overall sensitivity is assessed as Medium.

- LCA2 – Bay Landscape: This LCA comprises part of the open water of Silver Mine Bay and the bay edge including Silver Mine Bay Beach. Its approximate area is 29.7 ha. Bay landscape is common on the south side of Lantau but is under increasing pressure from development. Its value is recognised by recent government initiatives to promote leisure and tourism on South Lantau. The waters and beach forming this LCA are relatively natural and undisturbed and of high environmental and scenic quality. The bay waters are highly frequented by leisure and fishing craft and swimmers and the beach is a popular public facility. As its landscape value lies in its intrinsic natural beauty, this LCA has a low ability to accommodate change. Given all the factors above, the sensitivity of LCA2 is assessed as High.
- LCA3 – Rural Township Landscape: This LCA comprises the collection of villages and the urban areas that make up Mui Wo and is approximately 25.4 ha in area. It occupies the flat land between the wooded knoll in the south of the Study Area and Butterfly Hill in the west. The LCA also stretches along the back of Silver Mine Bay Beach and includes a strip of hotels, small shops, public beach facilities and private residences. The settlement of Mui Wo has developed relatively slowly and remained at a rural township scale due to the lack of easy access by road. The scale of the residential buildings is generally small and restricted to 3 storeys or less and there are a number of larger municipal and commercial buildings and hotels. The style and type of development is unremarkable and commonly found throughout the urban fringes of Hong Kong. Whilst the overall scene has a certain attractiveness (due largely to the natural setting), the visual and historic quality of the individual structures is generally low. This LCA has a reasonable tolerance to change as it is in a constant cycle of renewal as evidenced by recent Government improvement works. Given the above, the sensitivity of this LCA is assessed as Medium.

5.3 Review of the Tree Preservation and Removal Proposal

5.3.1 Tree Preservation and Removal Proposal (TPRP) for the project of New Wang Tong River Bridge was accepted by the Leisure and Cultural Services Department on 17 July 2020 and 7 September 2020 via email, and was approved by the District Land Officer in 12 October 2020 via memo. The approval TPRP has been reviewed to extract relevant information about the baseline conditions of relevant landscape resources of the area within and immediately adjacent to, the construction and works areas. Details of the trees, their locations and photographs are provided in the Tree Assessment Schedule and Tree Survey Plan in **Appendix G**.

- Section 4.7 - Of the 27 no. of the trees assessed, 17 nos. of trees would be retained and 7 nos. of trees would be felled with compensatory planting. 3 trees were found to have already removed on the date of tree assessment and during subsequent site inspection in March 2019.

5.4 Baseline Monitoring

5.4.1 Baseline monitoring for the existing landscape condition was conducted on 5th November 2020. During the baseline monitoring, LR and LCA covered in contract HY/2019/14 within works area have been conducted. Location of the Project Site is shown in **Appendix H**.

5.4.2 LR2a – Wang Tong River: As verified in the site visit, the northern bank was observed with small trees and shrubs, primarily *Hibiscus tiliaceus* with smaller numbers of *Macaranga tanarius var. tomentosa* etc. Mangrove species (*Aegiceras corniculatum* and *Acanthus ilicifolius*) was also found in the river bank. The existing condition of LR2a is consistent with the baseline conditions described in Section 8 of the approved EIA report. Photographic view of the existing conditions of LR2a as shown in **Table 4.1**.

5.4.3 LR10 - Existing Trees in Vicinity of Wang Tong River Bridge: Exotic tree species *Casuarina equisetifolia* and *Terminalia catappa* were observed in the immediate vicinity of the Wang Tong River Bridge. Also, native tree species like *Celtis sinensis*, *Ficus microcarpa* and *Hibiscus tiliaceus* were found in the waterfront paved areas or Silver Mine Bay Beach. The condition of LR10 is generally similar with the baseline conditions described in Section 8 of the approved EIA report, and the circumstances are equivalent to the findings in the approved TPRP. Photographic view of the existing conditions of LR10 as shown in **Table 4.1**.

5.4.4 LCA2 – Bay Landscape: The bay of high environmental and scenic quality was remained natural and undisturbed during site visit, which is consistent with the baseline conditions stated in the approved EIA report. Photographic view of the existing conditions of LCA2 as shown in **Table 4.1**.

5.4.5 LCA3 – Rural Township Landscape: As observed, the settlement remained small at a rural township scale, and natural setting also provided certain attractiveness to the overall scene. The existing condition of LCA3 is consistent with the baseline conditions described in Section 8 of the approved EIA report. Photographic view of the existing conditions of LCA3 as shown in **Table 4.1**.

5.4.6 The photographic record and monitoring results are shown in **Table 4.1**. Key plan showing the location and extent of existing landscape and visual resource is shown in **Appendix I**. Compared to the findings in the approved EIA report, the status of the LRs and LCAs covered in the Contract HY/2019/14 remains unchanged. Since there is no major change in the landscape and visual baseline conditions comparing to those of the EIA stage, additional landscape and visual mitigation measures other than those recommended in the approved EIA Report are thus not required.

5.4.7 Photographic record for existing Landscape was conducted on 5 November 2020 for HY/2019/14 works area prior to commencement of the Project. The approved photographic record shall be submitted to the project proponent, IEC and EPD for record.

Table 5.1 Baseline Result for Landscape Resources (LR) and Landscape Character Areas (LCA)

Existing Landscape Resources within Works Area	Photographic Record
Wang Tong River (LR2a)	
Existing Trees in Vicinity of Wang Tong River Bridge (LR10)	
Bay Landscape (LCA2)	

Existing Landscape Resources within Works Area	Photographic Record
Rural Township Landscape (LCA3)	

5.5 Tree Preservation and Removal

5.5.1 As the tree survey result in the approved TPRP was slightly different from the result assessed in the EIA report, the following table demonstrated the updated status for corresponding trees.

Table 5.2 Comparison for Tree Recommendation between 2 Submissions

Tree No.	Scientific Name	Chinese Name	Recommendation stated in EIA Report	Recommendation stated in TPRP
T1	*Terminalia catappa*	欖仁樹	Transplant	Fell
T2	*Terminalia catappa*	欖仁樹	Transplant	Fell
T3	*Terminalia catappa*	欖仁樹	Retain	Retain
T4	*Casuarina equisetifolia*	木麻黃	Retain	Retain
T6	*Casuarina equisetifolia*	木麻黃	Fell	Fell
T7	*Terminalia catappa*	欖仁樹	Retain	Retain
T8	*Terminalia catappa*	欖仁樹	Retain	Already removed
T9	*Ficus microcarpa*	榕樹/細葉榕	Retain	Retain
T22	*Casuarina equisetifolia*	木麻黃	-	Retain
T27	*Macaranga tanarius var. tomentosa*	血桐	Fell	Fell
T29	*Macaranga tanarius var. tomentosa*	血桐	Fell	Expected removed *
T30	*Macaranga tanarius var. tomentosa*	血桐	Fell	Fell
T31	*Casuarina equisetifolia*	木麻黃	Retain	Fell
T32	*Hibiscus tiliaceus*	黃槿	Retain	Expected removed *
T33	*Hibiscus tiliaceus*	黃槿	Retain	Expected removed *
T34	*Casuarina equisetifolia*	木麻黃	Retain	Already removed
T35	*Casuarina equisetifolia*	木麻黃	Fell	Already removed

Tree No.	Scientific Name	Chinese Name	Recommendation stated in EIA Report	Recommendation stated in TPRP
T37	*Celtis sinensis*	朴樹	Retain	Retain
T38	*Ficus microcarpa*	榕樹	Retain	Retain
T39	*Terminalia catappa*	欖仁樹	Retain	Fell
T40	*Casuarina equisetifolia*	木麻黃	-	Retain
T46	*Hibiscus tiliaceus*	黃槿	-	Retain
T47	*Hibiscus tiliaceus*	黃槿	-	Retain
T48	*Hibiscus tiliaceus*	黃槿	-	Retain
T49	*Hibiscus tiliaceus*	黃槿	-	Retain
T50	*Hibiscus tiliaceus*	黃槿	-	Retain
T51	*Hibiscus tiliaceus*	黃槿	-	Retain
T52	*Hibiscus tiliaceus*	黃槿	-	Retain
T53	*Hibiscus tiliaceus*	黃槿	-	Retain
T54	*Hibiscus tiliaceus*	黃槿	-	Retain
	To be Transplanted	Tree Numbers	2	0
	To be Retained	Tree Numbers	12	17
	To be Fell	Tree Numbers	5	7
	Removed	Tree Numbers	0	6

Remark:

"-" stands for the tree that was not identified at EIA stage.

"*" indicates that no tree was found during site survey when TPRP was preparing, and the tree also could not be found when the project site was received by HyD in November 2020. It is believed that the tree was destroyed and removed after typhoon or other natural incidents.

6 Revision for inclusion into EM&A Manual

6.1.1 Water quality monitoring at Station W3 was cancelled with approval granted. Station W3 presented in Table 5.1 under the EM&A Manual was updated to be excluded.

6.1.2 With respect to fine adjustment of air quality and noise monitoring locations were adopted in the baseline monitoring, fine adjusted air and noise monitoring locations are suggested in the EM&A manual. It is also recommended that the air and noise monitoring station condition should be regularly reviewed and fine adjustment or relocation may be needed in order to obtain respective impact monitoring results.

7 Comments, Recommendations and Conclusions

Comments and Recommendations

Water Quality of Seasonal Changes

7.1.1 Baseline water quality monitoring was conducted at the dry season due to tight schedule of tentative commencement of the Project in Q1 2021. To account for more representative baseline water quality to cover the wet season and seasonal variations, it is recommended that baseline conditions should be reviewed quarterly when appropriate, through review the monitoring effectiveness and improve the EM&A programme as per Section 10.6.1(i) under the EM&A Manual for IEC verification.

7.1.2 For impact water quality monitoring during dry season, water quality monitoring at certain monitoring stations might not be feasible due to shallowness of Wang Tong River. In case the situation was not feasible for monitoring due to insufficient water flow, it is recommended that inspection around the monitoring station to be conducted by ET to record the stream condition.

7.1.3 Monitoring condition during adverse weather shall also be recorded to avoid false alarm.

Air Quality of Seasonal Changes

7.1.4 Baseline air quality monitoring was conducted at the dry season. The baseline data collected therefore represent baseline air quality of the dry season immediately prior to commencement of the Project. It is therefore recommended that interpretation of the air quality monitoring data should take into account the influence of seasonal changes, and the baseline conditions should be regularly reviewed when appropriate.

Other noise sources

7.1.5 Baseline noise monitoring was conducted prior to commencement of construction works. During baseline monitoring period, no construction activities were observed. The major noise source was traffic noise and community noise around the monitoring station. It is possible that same noise sources would be identified during impact monitoring period. It is recommended that noise monitoring station condition should be regularly reviewed when appropriate, and fine adjustment or relocation may be needed in order to obtain respective impact monitoring results.

Landscape and Visual Mitigation

7.1.6 According to the latest available information in the TPRP, 17 nos. of trees will be retained and 7 nos. of trees will be felled with compensatory planting.

7.1.7 There is no major change in the landscape baseline conditions (including LR and LCA) comparing to those presented in the EIA report, it is recommended to review landscape and visual mitigation measures regularly to ensure sufficient protection against project implementation.

Conclusion

7.1.8 In accordance with the Project EM&A Manual and EP, baseline monitoring has been undertaken prior to commencement of the construction works of the Contract for the following

baseline monitoring components: Air Quality; Noise; Water Quality and Landscape.

7.1.9 As highlighted under Tables 2.2 and 3.2, several fine adjustments of locations were proposed for baseline monitoring. Nevertheless, given the fine adjusted location with similar pollution sources and similar meteorological condition to the original locations recommended in the EM&A manual, it is considered to be representative for the air and noise sensitive receiver identified in EIA manual.

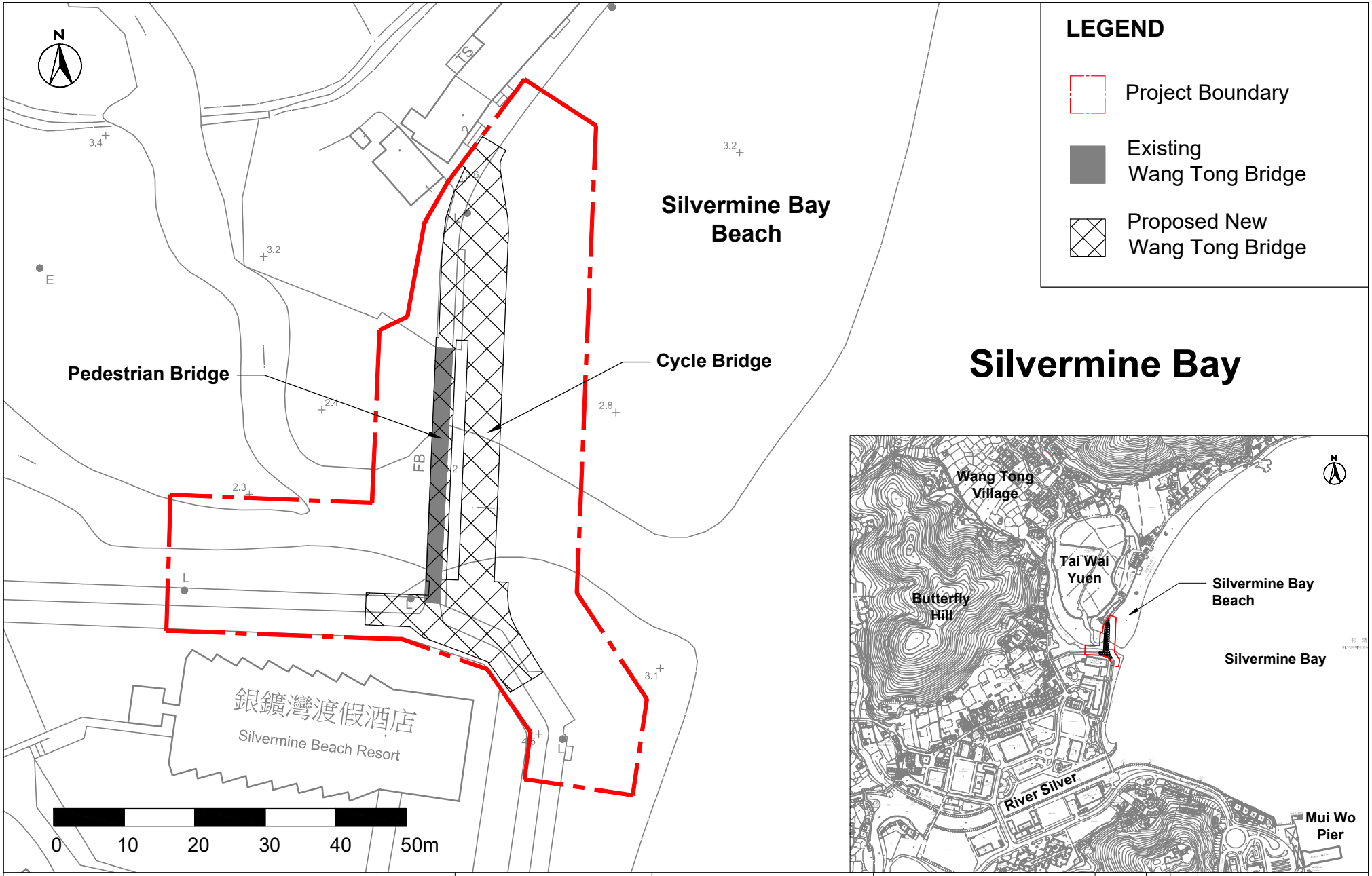
7.1.10 Baseline air quality monitoring was conducted at two (2) monitoring locations from 21 December 2020 to 3 January 2021. Overall, the baseline air quality monitoring results are considered representative to the ambient air quality conditions of the respective sensitive receivers. Action and Limit Levels for air quality of 1-hour and 24-hour TSP levels were established based on the baseline monitoring results.

7.1.11 Baseline noise monitoring was conducted at one (1) designated monitoring stations from 21 December 2020 to 3 January 2021. The major noise sources identified at the monitoring station are traffic noise and community noise. The baseline monitoring results are considered representative of the ambient noise level.

7.1.12 Baseline water quality monitoring was conducted at seven (7) monitoring stations from 14 December 2020 to 8 January 2021. No observable pollution source was recorded at the monitoring stations and the baseline monitoring results are thus considered representative of the ambient water quality levels. Action and Limit Levels were established for DO, SS and turbidity based on the baseline monitoring results.

7.1.13 Baseline monitoring for existing landscape and visual condition was conducted on 5 November 2020. The general status of the LRs and LCAs covered in the works area of Contract HY/2019/14 remains unchanged.

Figure



The joint venture of
Maurice Lee & Associates Ltd. and
Cinotech Consultants Ltd.

Works Division
Highways Department

PROJECT:
AGREEMENT NO. CE 14/2014(HY) NEW WANG TONG RIVER BRIDGE, MUI MO - ENVIRONMENTAL IMPACT ASSESSMENT & DRAINAGE IMPACT ASSESSMENT STUDIES - INVESTIGATION

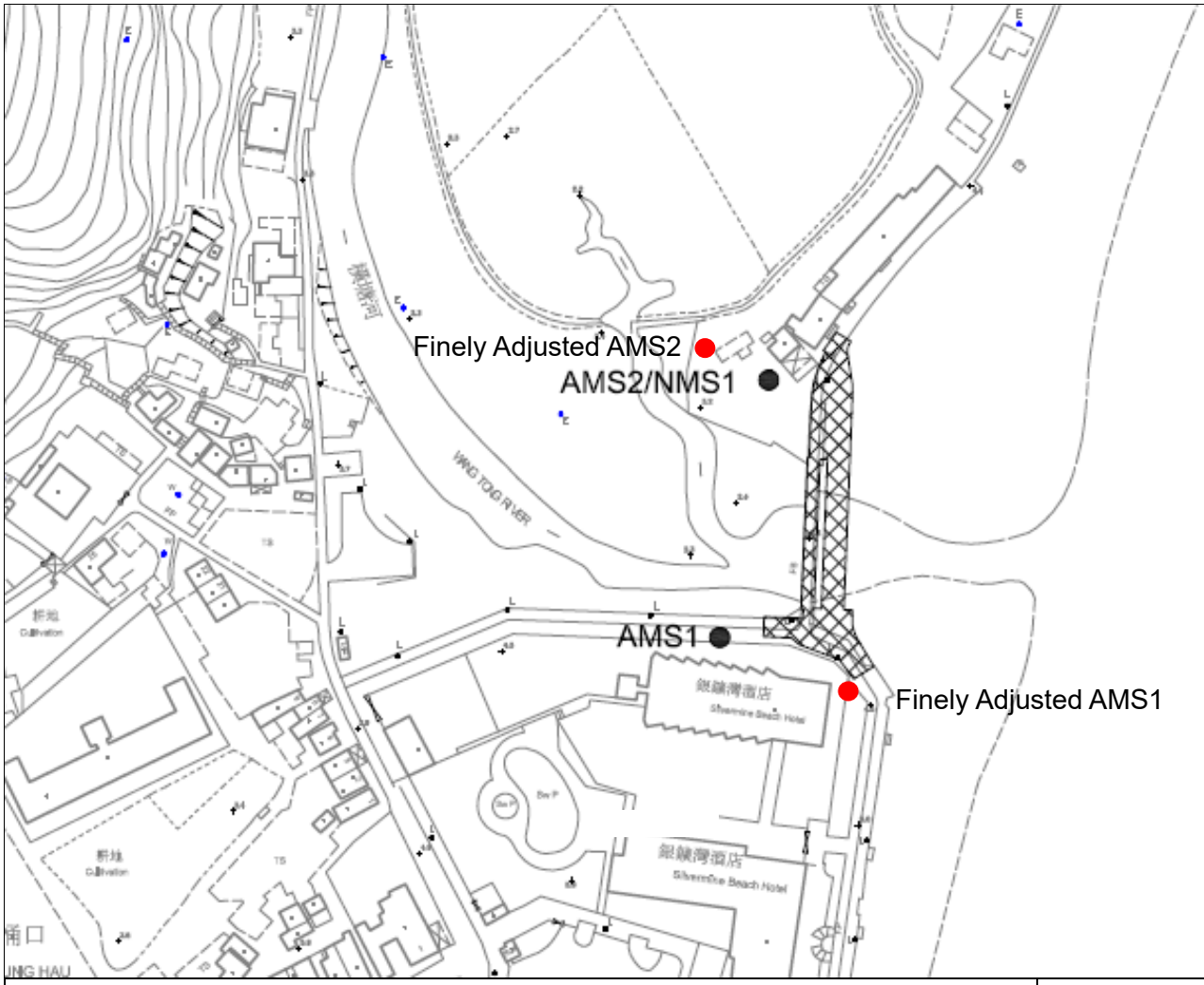
DRAWING TITLE:
Location of Project Site

Drafting by	KL	08/15
Designed by	–	08/15
Checked by	HT	08/15
Approved by	BC	08/15

SCALE: AS SHOWN

DRAWING NO: FIG 1.1

REV: –



Station	Description
AMS1	Silver Beach Resort
AMS2/NMS1	1 Tung Wan Tau Road

Legend:

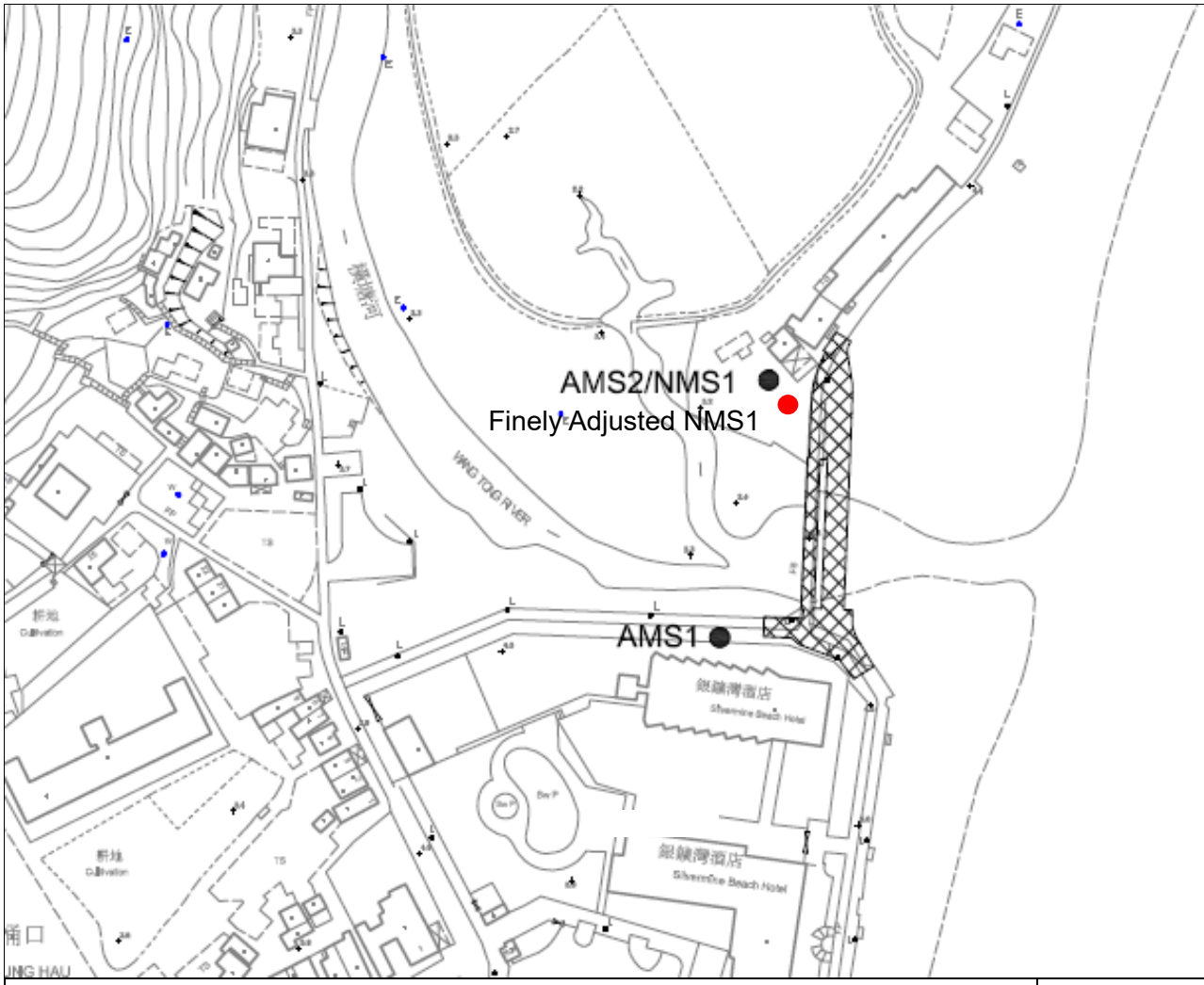
- Finely Adjusted Location of Air Quality Monitoring Station
- Original Air Quality Monitoring Station stated in EM&A Manual

Figure 2.1

Location of Air Quality Monitoring Stations

Figure 2.2 Photo Records of Air Quality Monitoring Stations

Monitoring Station	Photo Record
AMS1	
AMS2	



Station	Description
AMS2/NMS1	1 Tung Wan Tau Road

Legend:

- Finely Adjusted Location of Noise Monitoring Station
- Original Noise Monitoring Station stated in EM&A Manual

Figure 3.1

Location of Noise Monitoring Stations

Figure 3.2 Photo Records of Noise Monitoring Stations

Monitoring Station	Photo Record
NMS1	

Station	Description	Easting	Northing
W1	Wang Tong River (Major tributary)	817747	814519
W2	Wang Tong River (Major tributary)	817775	814471
W4	Wang Tong River (Minor tributary to Tai Wai Yuen)	817825	814481
W5	Silvermine Bay (Near Silvermine Bay Beach)	817909	814452
W6	Silvermine Bay (Near Silvermine Bay Beach)	818024	814447
W7	Silvermine Bay (Open Water)	818061	814277
W8	Silvermine Bay (Open Water)	818224	814444

Legend:

- Cancelled Water Quality Monitoring Station
- Original Water Quality Monitoring Station stated in EM&A Manual

Figure 4.1

Location of Water Quality Monitoring Stations

Figure 4.2 Photo Records of Water Quality Monitoring Stations

Monitoring Station	Description	Monitoring Location
W1	Wang Tong River (Major tributary)	

Monitoring Station	Description	Monitoring Location
W2	Wang Tong River (Major tributary)	

Monitoring Station	Description	Monitoring Location
W4	Wang Tong River (Major tributary)	

Monitoring Station	Description	Monitoring Location
W5	Silvermine Bay (Near Silvermine Bay Beach)	

Monitoring Station	Description	Monitoring Location
W6	Silvermine Bay (Near Silvermine Bay Beach)	

Monitoring Station	Description	Monitoring Location
W7	Silvermine Bay (Open Water)	

Monitoring Station	Description	Monitoring Location
W8	Silvermine Bay (Open Water)	

Appendix A

Baseline Monitoring Schedule for Air Quality, Noise and Water Quality Monitoring

Contract no. HY/2019/14

New Wang Tong River Bridge

Baseline Environmental Monitoring Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
12/13/2020	12/14/2020 WQM Mid-Ebb 12:04 Mid-Flood 17:25	12/15/2020	12/16/2020 WQM Mid-Flood 8:16 Mid-Ebb 13:38	12/17/2020	12/18/2020 WQM Mid-Flood 9:59 Mid-Ebb 15:05	12/19/2020
12/20/2020	12/21/2020 AQM NM WQM Mid-Flood 12:41 Mid-Ebb 18:02	12/22/2020 AQM NM	12/23/2020 AQM NM WQM Mid-Flood 13:27 Mid-Ebb 19:20	12/24/2020 AQM NM	12/25/2020 AQM NM WQM Mid-Ebb 8:47 Mid-Flood 15:08	12/26/2020 AQM NM
12/27/2020 AQM NM	12/28/2020 AQM NM WQM Mid-Ebb 11:04 Mid-Flood 16:24	12/29/2020 AQM NM	12/30/2020 AQM NM WQM Mid-Ebb 12:14 Mid-Flood 17:21	12/31/2020 AQM NM	1/1/2021 AQM NM	1/2/2021 AQM NM WQM Mid-Flood 9:23 Mid-Ebb 14:16
1/3/2021 AQM NM	1/4/2021 WQM Mid-Flood 10:56 Mid-Ebb 16:20	1/5/2021	1/6/2021 WQM Mid-Flood 12:32 Mid-Ebb 18:24	1/7/2021	1/8/2021 WQM Mid-Flood 14:04 Mid-Ebb 20:49	1/9/2021

Appendix B

Calibration Certificates of Monitoring Equipment

Lam Environmental Services Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	AMS1	**Calbration Date**	:	21-Dec-20
Equipment no.	:	HVS020	**Calbration Due Date**	:	20-Feb-21

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	289.4	Kelvin	**Pressure, P_a**	1022	mmHg

Orifice Transfer Standard Information					
Equipment No.	**0005**	**Slope, m_c**	2.00927	**Intercept, bc**	-0.03767
Last Calibration Date	18-Feb-20	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	17-Feb-21	$= m_c \times Q_{std} + b_c$			

Calibration of TSP

Calibration Point	**Manometer Reading H (inches of water)** (up)	(down)	(difference)	**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** ($(W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31)$) **Y-axis**
1	1.0	1.0	2.0	0.7360	35	35.6684
2	2.3	2.3	4.6	1.1066	45	45.8593
3	3.7	3.7	7.4	1.3985	53	54.0121
4	4.7	4.7	9.4	1.5738	58	59.1076
5	5.7	5.7	11.4	1.7312	64	65.2222

By Linear Regression of Y on X

Slope, m	=	29.1614	Intercept, b	=	13.7953
Correlation Coefficient*	=	0.9984			
Calibration Accepted	=	Yes/~~No~~**			

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	Henry Lau	**Checked by**	:	James Chu
Date	:	21-Dec-20	**Date**	:	21-Dec-20

Lam Environmental Services Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	AMS2	**Calbration Date**	:	21-Dec-20
Equipment no.	:	HVS019	**Calbration Due Date**	:	20-Feb-21

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	289.4	Kelvin	**Pressure, P_a**	1022	mmHg

Orifice Transfer Standard Information					
Equipment No.	**0005**	**Slope, m_c**	2.00927	**Intercept, bc**	-0.03767
Last Calibration Date	18-Feb-20	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	17-Feb-21	$= m_c \times Q_{std} + b_c$			

Calibration of TSP

Calibration Point	**Manometer Reading H (inches of water)** (up)	(down)	(difference)	**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** ($(W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31)$) **Y-axis**
1	1.3	1.3	2.6	0.8366	33	33.6302
2	2.3	2.3	4.6	1.1066	41	41.7830
3	3.5	3.5	7.0	1.3607	50	50.9548
4	4.5	4.5	9.0	1.5403	56	57.0694
5	5.8	5.8	11.6	1.7462	60	61.1458

By Linear Regression of Y on X

Slope, m = 31.3134 Intercept, b = 7.6434

Correlation Coefficient* = 0.9964

Calibration Accepted = Yes/~~No~~**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	Henry Lau	**Checked by**	:	James Chu
Date	:	21-Dec-20	**Date**	:	21-Dec-20

TISCH Environmental

RECALIBRATION DUE DATE:
February 18, 2021

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	February 18, 2020	**Rootsmeter S/N:** 438320	**Ta:** 294	°K
Operator:	Jim Tisch		**Pa:** 753.1	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **0005**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3790	3.2	2.00
2	3	4	1	0.9840	6.4	4.00
3	5	6	1	0.8740	7.9	5.00
4	7	8	1	0.8350	8.8	5.50
5	9	10	1	0.6910	12.6	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)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0001	0.7253	1.4173	0.9958	0.7221	0.8836
0.9959	1.0121	2.0044	0.9915	1.0076	1.2496
0.9939	1.1372	2.2410	0.9895	1.1322	1.3971
0.9927	1.1888	2.3504	0.9883	1.1836	1.4653
0.9876	1.4293	2.8347	0.9833	1.4230	1.7672
QSTD	**m=**	**2.00927**	**QA**	**m=**	**1.25817**
	b=	**-0.03767**		**b=**	**-0.02348**
	r=	**0.99995**		**r=**	**0.99995**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

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

:h Environmental, Inc.
; South Miami Avenue
age of Cleves, OH 45002

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

Met One Instruments, Inc.
1600 NW Washington Blvd, Grants Pass, OR
TEL (541) 471-7111 Fax (541) 471-7116

Certificate of Calibration

BT-645

Particulate Monitor

Recommended calibration interval is 24 months from first day of use.

Unit Info

Model:	**BT-645**	**81865 Firmware Rev:**	**R1.1.0**
Serial Number:	**X19297**	**81113**	**R0.2.4**
Calibrated By:	Alice M.	**Cal. Date:**	**Jan 9, 2020**
Quality Inspector:	AT8	**Date:**	FEB 1 1 2020
Calibration Hz/µg/m³:	**6.60**		

Final Test

Flow (2.0 L/min):	**Pass**	**Ambient Temp (C):**	**23.5**
Serial Communication:	**Pass**	**RH (%):**	**31.3%**
Concentration:	**401**	**Standard:**	**403**

Calibration Standards

Standards	Manufacturer	Model	SN	Cal Due
RMS Multimeter	Fluke	289 Multimeter	23740018	5/17/2020
RH &TEMPERATURE	Met One Instruments	083E-1-6	R20313	9/19/2020
Primary Flow Meter	BIOS	Defender-530+	170092	1/30/2020
Digital Dust Indicator	SIBATA	LD-3B	6X7759	12/14/2019

The standards used for this calibration have accuracy equal to or greater than the instrument tested. These standards are on record and traceable to NIST to the extent allowed by the institute's calibration facility. Unless otherwise stated, all instruments are calibrated to meet the manufacturer's published specifications. The Calibration system complies with MIL-STD-45662A.

Met One Instruments, Inc.
1600 NW Washington Blvd, Grants Pass, OR
TEL (541) 471-7111 Fax (541) 471-7116

Certificate of Calibration

BT-645

Particulate Monitor

Recommended calibration interval is 24 months from first day of use.

Unit Info

Model:	**BT-645**	**81865 Firmware Rev:**	**R1.1.0**
Serial Number:	**X19295**	**81113**	**R0.2.4**
Calibrated By:	**Alice M.**	**Cal. Date:**	**Jan 9, 2020**
Quality Inspector:	AT8	**Date:**	FEB 1 1 2020
Calibration Hz/µg/m³:	**5.295**		

Final Test

Flow (2.0 L/min):	**Pass**	**Ambient Temp (C):**	**23.5**
Serial Communication:	**Pass**	**RH (%):**	**31.3%**
Concentration:	**398**	**Standard:**	**398**

Calibration Standards

Standards	Manufacturer	Model	SN	Cal Due
RMS Multimeter	Fluke	289 Multimeter	23740018	5/17/2020
RH &TEMPERATURE	Met One Instruments	083E-1-6	R20313	9/19/2020
Primary Flow Meter	BIOS	Defender-530+	170092	1/30/2020
Digital Dust Indicator	SIBATA	LD-3B	6X7759	12/14/2019

The standards used for this calibration have accuracy equal to or greater than the instrument tested. These standards are on record and traceable to NIST to the extent allowed by the institute's calibration facility. Unless otherwise stated, all instruments are calibrated to meet the manufacturer's published specifications. The Calibration system complies with MIL-STD-45662A.

Lam Environmental Services Limited

Portable Dust Meter Performance Check Record

Portable Dust Meter

Type	:	Particulare Monitor
Manufacturer	:	MET ONE INSTRUMENTS
Model Number	:	BT645
Serial Number	:	X19295
Performance Check Date	:	17-Mar-20

Standard Equipment

Type	:	High Volume Sampler
Manufacturer	:	TISCH
Model Number	:	TE-5170
Equipment Number	:	HVS006
Last Calibration Date	:	07-Mar-20

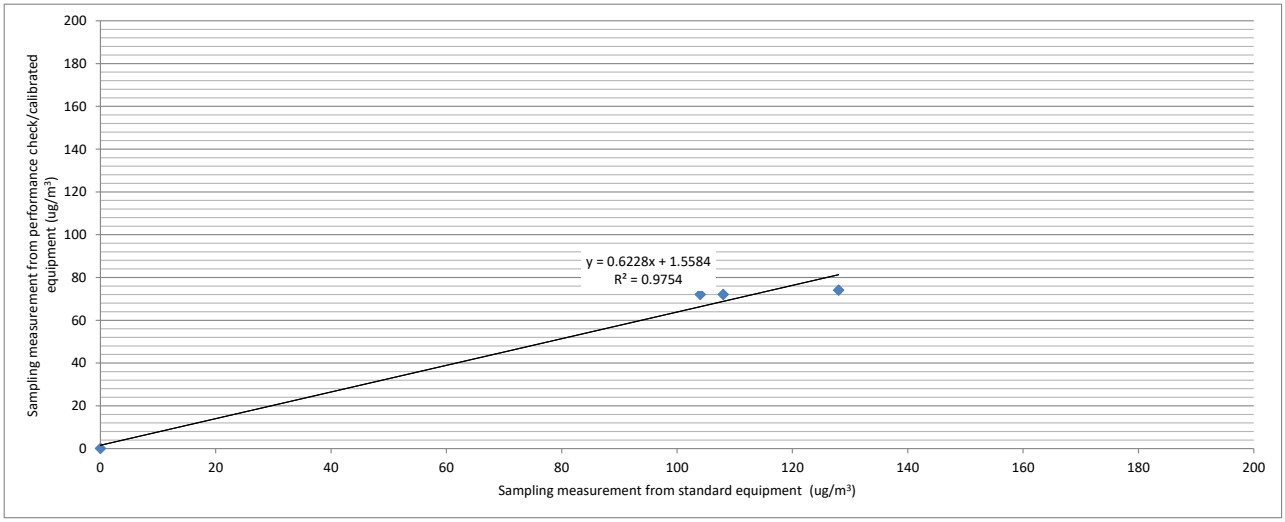
Portable Dust Meter Performance Check Results

Trial no. in 1-hr period	Time	Mean Pressure (hPa)	Mean Temp (˚C)	Concentration in ug/m^3 (Standard equipment) (X - Axis)	Concentration in ug/m^3 (Performance Check / Calibrated equipment) (Y - Axis)
Zero Check	16/3/2020 00:00	1020	20	0	0
1	17/3/2020 08:16	1019	20	108	72
2	17/3/2020 09:17	1019	20	128	74
3	17/3/2020 10:18	1019	20	104	72

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor)	:	1.6000
Correlation Coefficient	:	0.9876
Validity of Performance Check / Calibration Record	:	17/3/2021



Operator: Henry Lau Date: 17-Mar-20

Checked by: James Chu Date: 18-Mar-20

Lam Environmental Services Limited

Portable Dust Meter Performance Check Record

Portable Dust Meter

Type	:	Particulare Monitor
Manufacturer	:	MET ONE INSTRUMENTS
Model Number	:	BT645
Serial Number	:	X19297
Performance Check Date	:	17-Mar-20

Standard Equipment

Type	:	High Volume Sampler
Manufacturer	:	TISCH
Model Number	:	TE-5170
Equipment Number	:	HVS006
Last Calibration Date	:	07-Mar-20

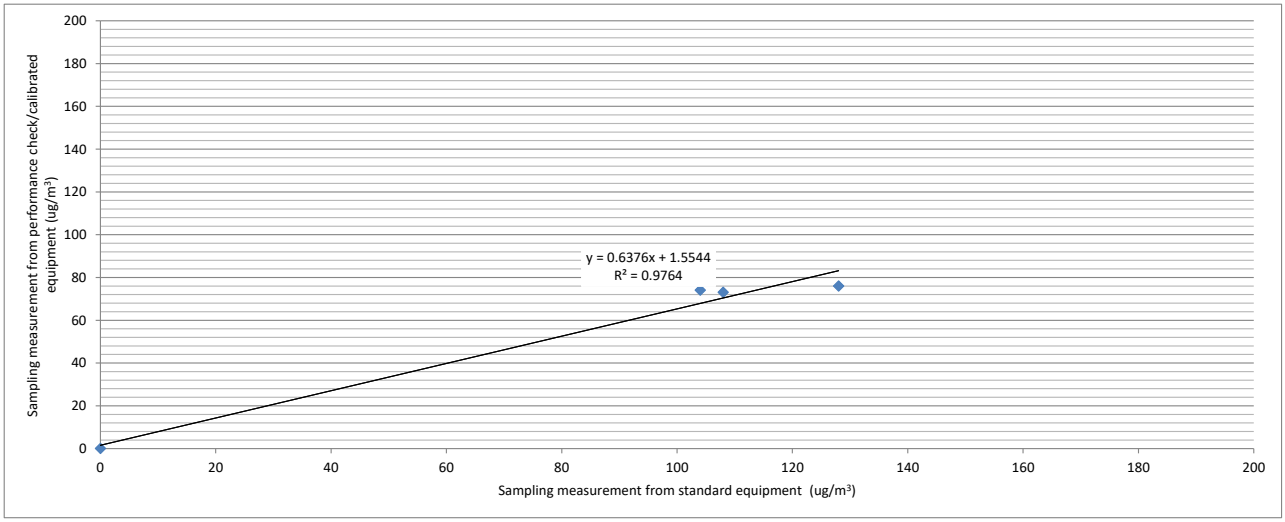
Portable Dust Meter Performance Check Results

Trial no. in 1-hr period	Time	Mean Pressure (hPa)	Mean Temp (˚C)	Concentration in ug/m^3 (Standard equipment) (X - Axis)	Concentration in ug/m^3 (Performance Check / Calibrated equipment) (Y - Axis)
Zero Check	16/3/2020 00:00	1020	20	0	0
1	17/3/2020 08:16	1019	20	108	73
2	17/3/2020 09:17	1019	20	128	76
3	17/3/2020 10:18	1019	20	104	74

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor)	:	1.6000
Correlation Coefficient	:	0.9881
Validity of Performance Check / Calibration Record	:	17/3/2021



Operator:	Henry Lau	Date:	17-Mar-20
Checked by:	James Chu	Date:	18-Mar-20

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
香港黃竹坑道37號利達中心12樓
12/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel: (852) 2873 6860
Fax: (852) 2555 7533

HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 20CA0309 01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	Larson Davis	,	PCB
Type/Model No.:	LxT1	,	377B02
Serial/Equipment No.:	0003737	,	171529
Adaptors used:	-	,	-

Item submitted by

Customer Name:	Lam Geotechnics Ltd.
Address of Customer:	-
Request No.:	-
Date of receipt:	09-Mar-2020

Date of test: 10-Mar-2020

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	23-Aug-2020	CIGISMEC
Signal generator	DS 360	33873	10-May-2020	CEPREI

Ambient conditions

Temperature:	21 ± 1 °C
Relative humidity:	55 ± 10 %
Air pressure:	1005 ± 5 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Feng Junqi **Date:** 10-Mar-2020 **Company Chop:**

SOILS & MATERIALS ENGINEERING CO., LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 20CA0309 01 **Page** 2 **of** 2

1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	0.8	2.1
	Lin	Pass	1.6	2.2
Linearity range for Leq	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100μs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor $1/10^3$ at 4kHz	Pass	0.3	
	1 ms burst duty factor $1/10^4$ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 10-Mar-2020

Checked by: Shek Kwong Tat **Date:** 10-Mar-2020

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
香港新界葵涌永基路22-24號好爸爸創科大廈
Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong
Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com

HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 20CA1119 02-01 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Larson Davis
Type/Model No.:	CAL200
Serial/Equipment No.:	13437
Adaptors used:	-

Item submitted by

Curstomer:	Lam Environmental Services Limited.
Address of Customer:	-
Request No.:	-
Date of receipt:	19-Nov-2020

Date of test: 20-Nov-2020

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	11-May-2021	SCL
Preamplifier	B&K 2673	2743150	03-Jun-2021	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Jun-2021	CEPREI
Signal generator	DS 360	33873	19-May-2021	CEPREI
Digital multi-meter	34401A	US36087050	19-May-2021	CEPREI
Audio analyzer	8903B	GB41300350	18-May-2021	CEPREI
Universal counter	53132A	MY40003662	18-May-2021	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	55 ± 10 %
Air pressure:	1005 ± 5 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

Details of the performed measurements are presented on **page 2** of this certificate.

SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Approved Signatory: Feng Junqi **Date:** 21-Nov-2020 **Company Chop:**

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
香港新界葵涌永基路22-24號好爸爸創科大廈
Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong
Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com

HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 20CA1119 02-01 **Page:** 2 **of** 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μPa)

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Expanded Uncertainty dB
1000	94.00	93.66	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.013 dB**

Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz **Actual Frequency = 1000.1 Hz**

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 0.5%**

Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 20-Nov-2020

Checked by: Feng Junqi **Date:** 21-Nov-2020

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

ALS Technichem (HK) Pty Ltd
11/F, Chung Shun Knitting Centre
1-3 Wing Yip Street, Kwai Chung
N.T., Hong Kong
T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	HENRY LAU	WORK ORDER:	HK2044014
CLIENT:	LAM ENVIRONMENTAL SERVICES LTD		
ADDRESS:	19/F, REMEX CENTRE, 42 WONG CHUK HANG ROAD, HONG KONG	SUB-BATCH: LABORATORY: DATE RECEIVED: DATE OF ISSUE:	0 HONG KONG 16-Nov-2020 25-Nov-2020

SPECIFIC COMMENTS

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.
The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.
The "Next Calibration Date" is recommended according to best practice principle as practised by the laboratory or quoted from relevant international standards.
The validity of equipment/ meter performance only applies to the result(s) stated in the report.

Equipment Type:	Multifunctional Meter
Service Nature:	Performance Check
Scope:	Dissolved Oxygen, pH Value, Salinity and Temperature
Brand Name/ Model No.:	YSI Professional Plus
Serial No./ Equipment No.:	19H100656
Date of Calibration:	24-November-2020

GENERAL COMMENTS

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

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK2044014

SUB-BATCH: 0
DATE OF ISSUE: 25-Nov-2020
CLIENT: LAM ENVIRONMENTAL SERVICES LTD

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: YSI Professional Plus
Serial No./ Equipment No.: 19H100656
Date of Calibration: 24-November-2020 Date of Next Calibration: 24-February-2021

PARAMETERS:

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.52	2.60	+0.08
4.01	3.99	-0.02
8.21	8.18	-0.03
	Tolerance Limit (mg/L)	±0.20

pH Value

Method Ref: APHA (21st edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.08	+0.08
7.0	7.09	+0.09
10.0	9.94	-0.06
	Tolerance Limit (pH unit)	±0.20

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.01	--
10	9.96	-0.4
20	19.93	-0.4
30	28.31	-5.6
	Tolerance Limit (%)	±10.0

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

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK2044014

SUB-BATCH: 0
DATE OF ISSUE: 25-Nov-2020
CLIENT: LAM ENVIRONMENTAL SERVICES LTD

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: YSI Professional Plus
Serial No./ Equipment No.: 19H100656
Date of Calibration: 24-November-2020 Date of Next Calibration: 24-February-2021

PARAMETERS:

Temperature

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

Expected Reading (^{o}C)	Displayed Reading (^{o}C)	Tolerance (^{o}C)
10.0	10.6	+0.6
21.0	20.7	-0.3
39.5	39.9	+0.4
	Tolerance Limit (^{o}C)	±2.0

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

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganic

FT Laboratories Ltd
科達測檢試驗所有限公司

REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

Information supplied by customer:

CONTACT: MR. JAMES CHU **JOB REFERENCE NO.:** 22777053-K29A5302
CLIENT: LAM ENVIRONMENTAL SERVICES
DATE RECEIVED: 29/10/2020
DATE OF ISSUE: 04/11/2020
ADDRESS: 11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD, WANCHAI, HONG KONG
PROJECT: ---

METHOD OF PERFORMANCE CHECK/ CALIBRATION:
Ref: APHA22nd ed 2130B

COMMENTS
It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory.
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of FT Laboratories Ltd will be followed.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1807063
Equipment No.:	---
Date of Calibration:	04/11/2020

Remarks:
This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Certified By: Ho Lai Sze
Senior Chemist

Issue Date: 04/11/2020

Address: Lot No. DD77 Section 1552 S.A. ss 1RP, Ng Chow South Road, Ping Che, N.T., H.K.
Tel: 27584861, Fax: 27588962

REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

WORK ORDER: 22777053-K29A5302
DATE OF ISSUE: 04/11/2020
CLIENT: LAM ENVIRONMENTAL SERVICES

Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1807063
Equipment No.:	---
Date of Calibration:	04/11/2020
Date of next Calibation:	04/02/2021
Lab I.D.:	H200253-02

Parameters:
Turbidity

Method Ref: APHA 22nd ed. 2130B

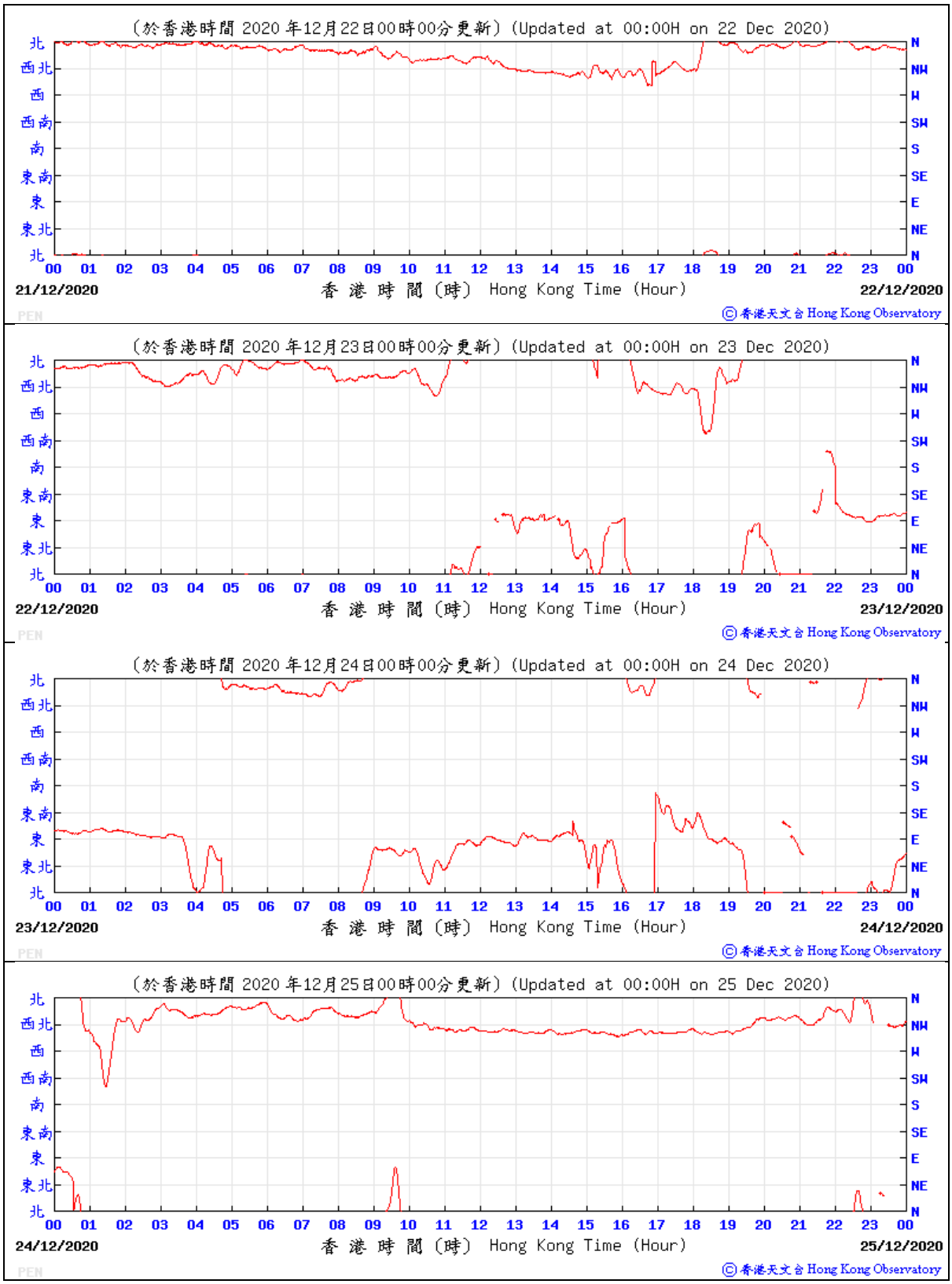
Expected Reading (NTU)	Display Reading (NTU)	Tolerance
0	0.00	---
4	3.99	-0.2%
10	9.99	-0.1%
40	39.96	-0.1%
100	99.99	0.0%
400	400	-0.1%
1000	978	-2.2%
	Tolerance Limit (±)	10%

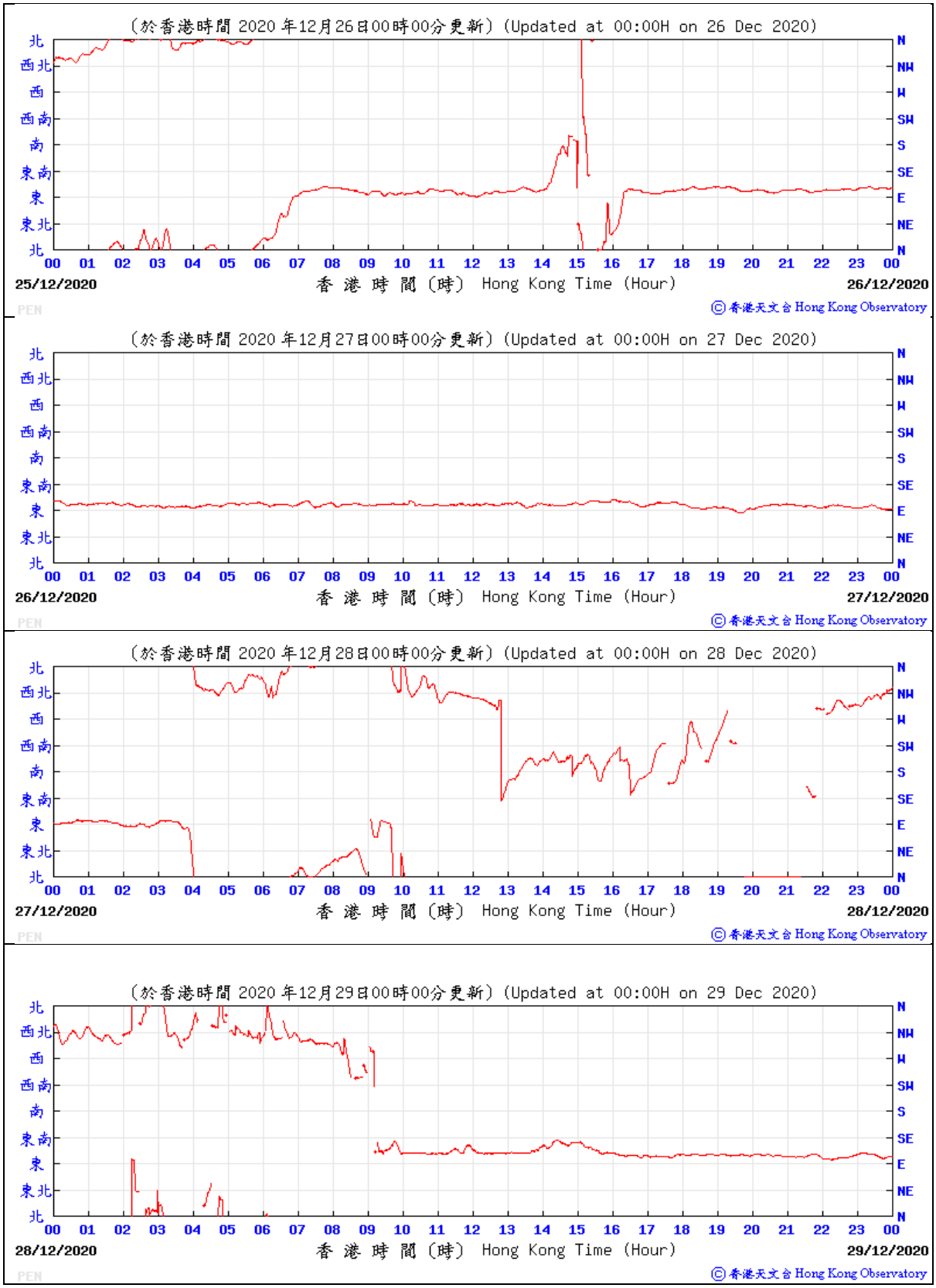
Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

Address: Lot No. DD77 Section 1552 S.A. ss 1RP, Ng Chow South Road, Ping Che, N.T., H.K.
Tel: 27584861, Fax: 27588962

Appendix C
Wind Data

A. Wind Direction extracted from Peng Chau Automatic Weather Station

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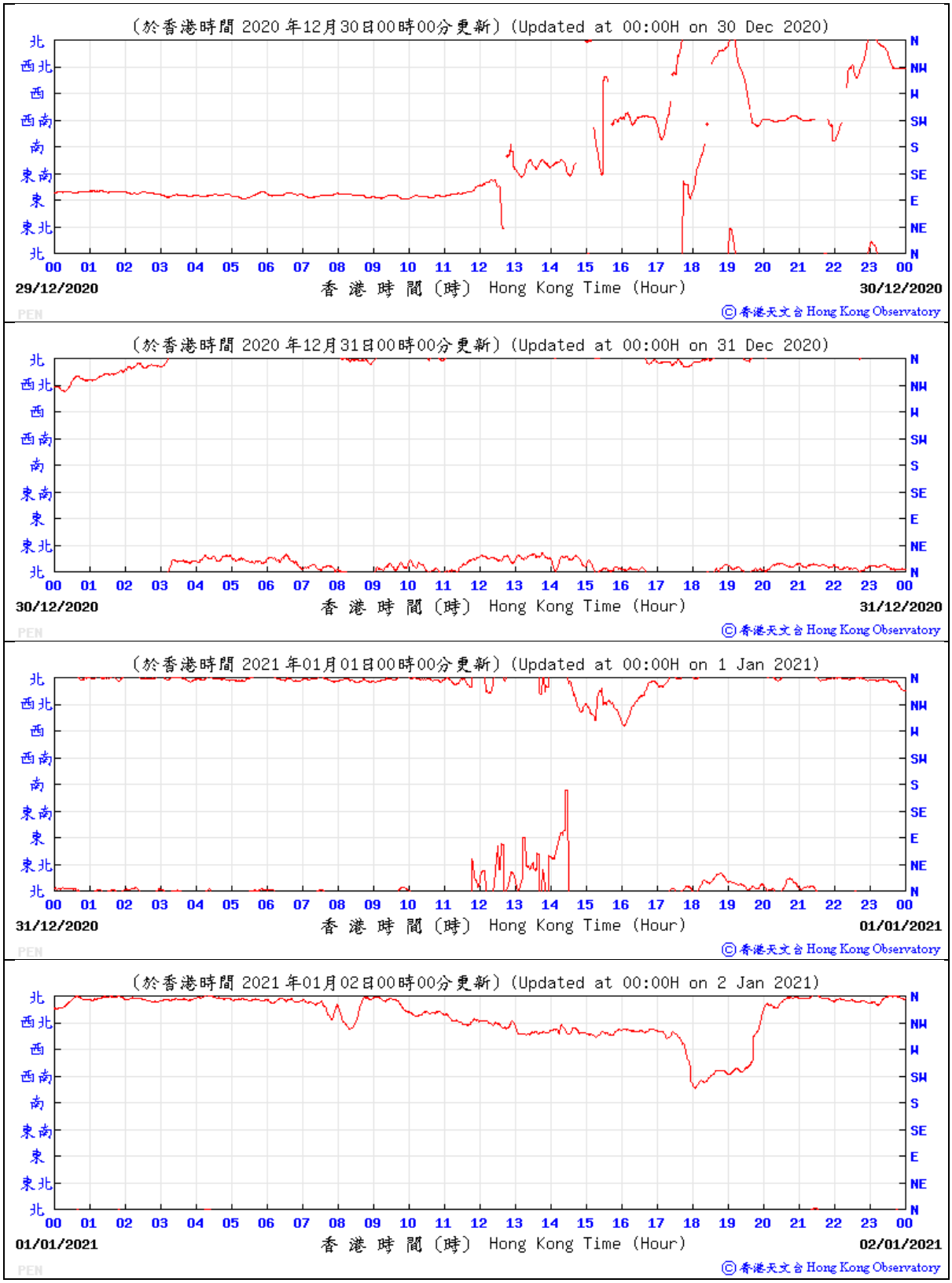
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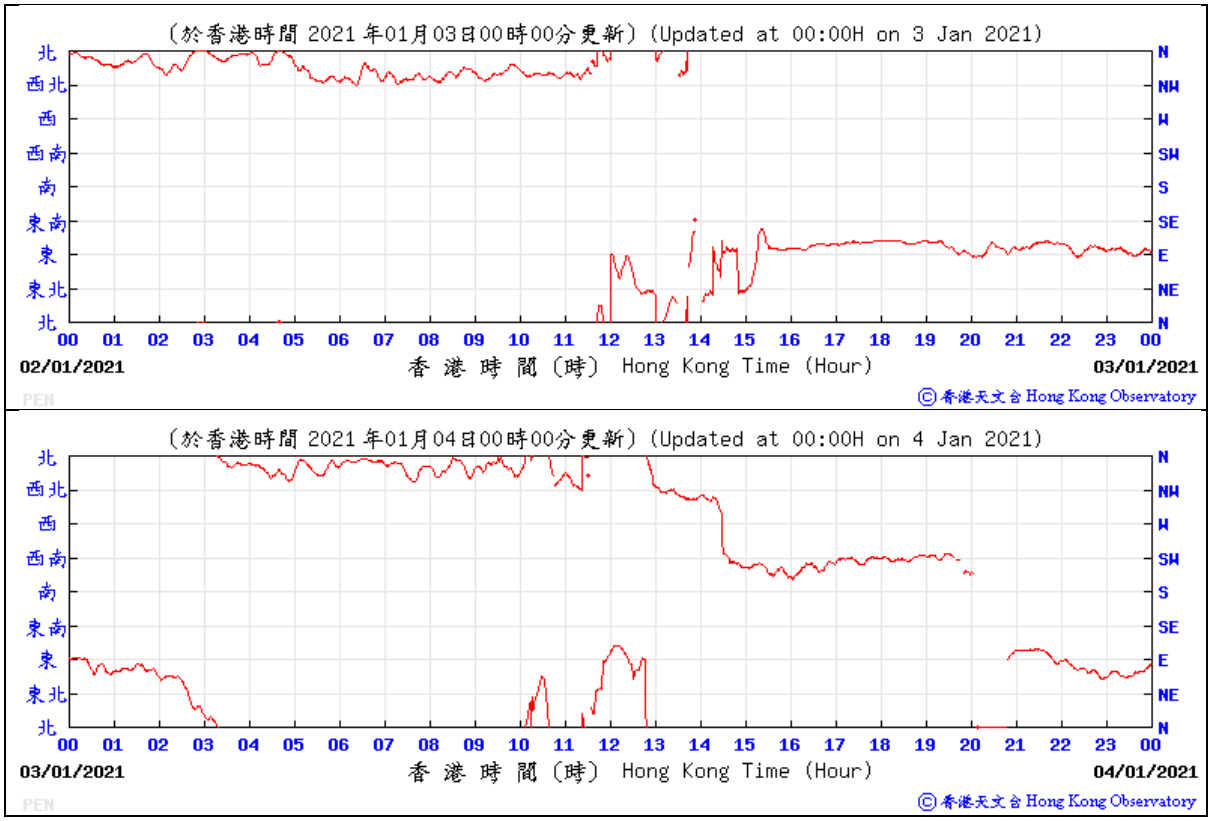
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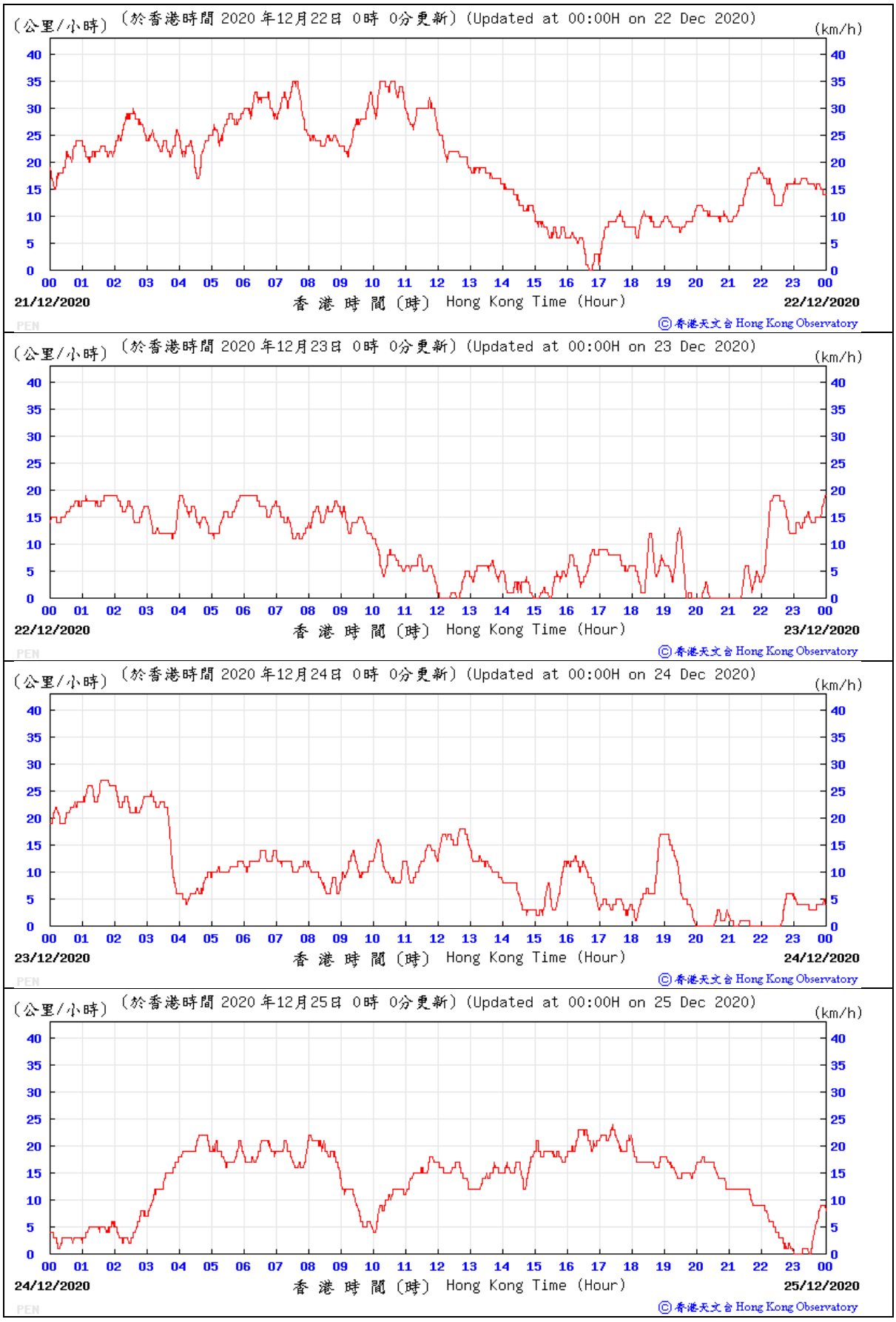
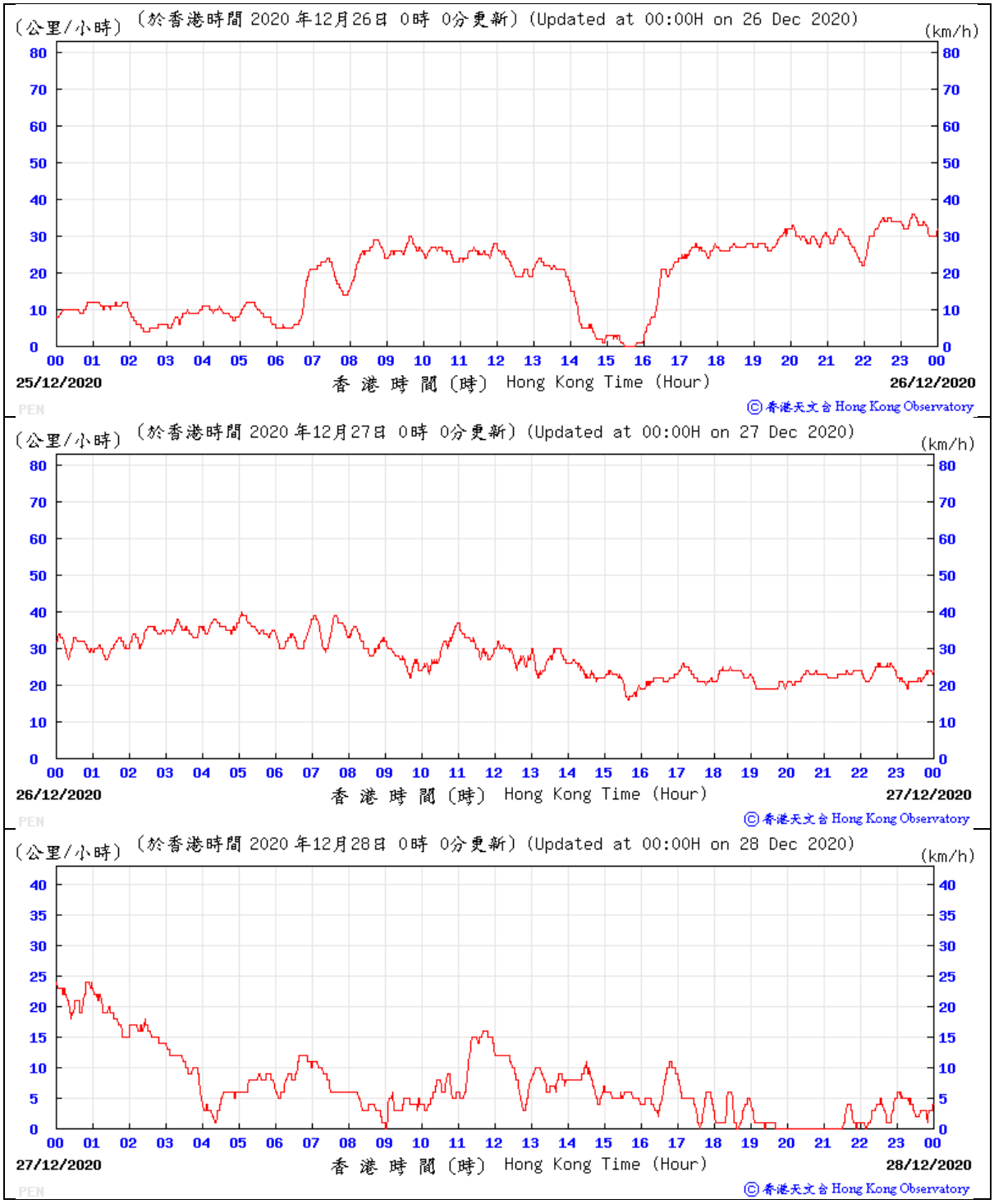
B. Wind Speed extracted from Peng Chau Automatic Weather Station

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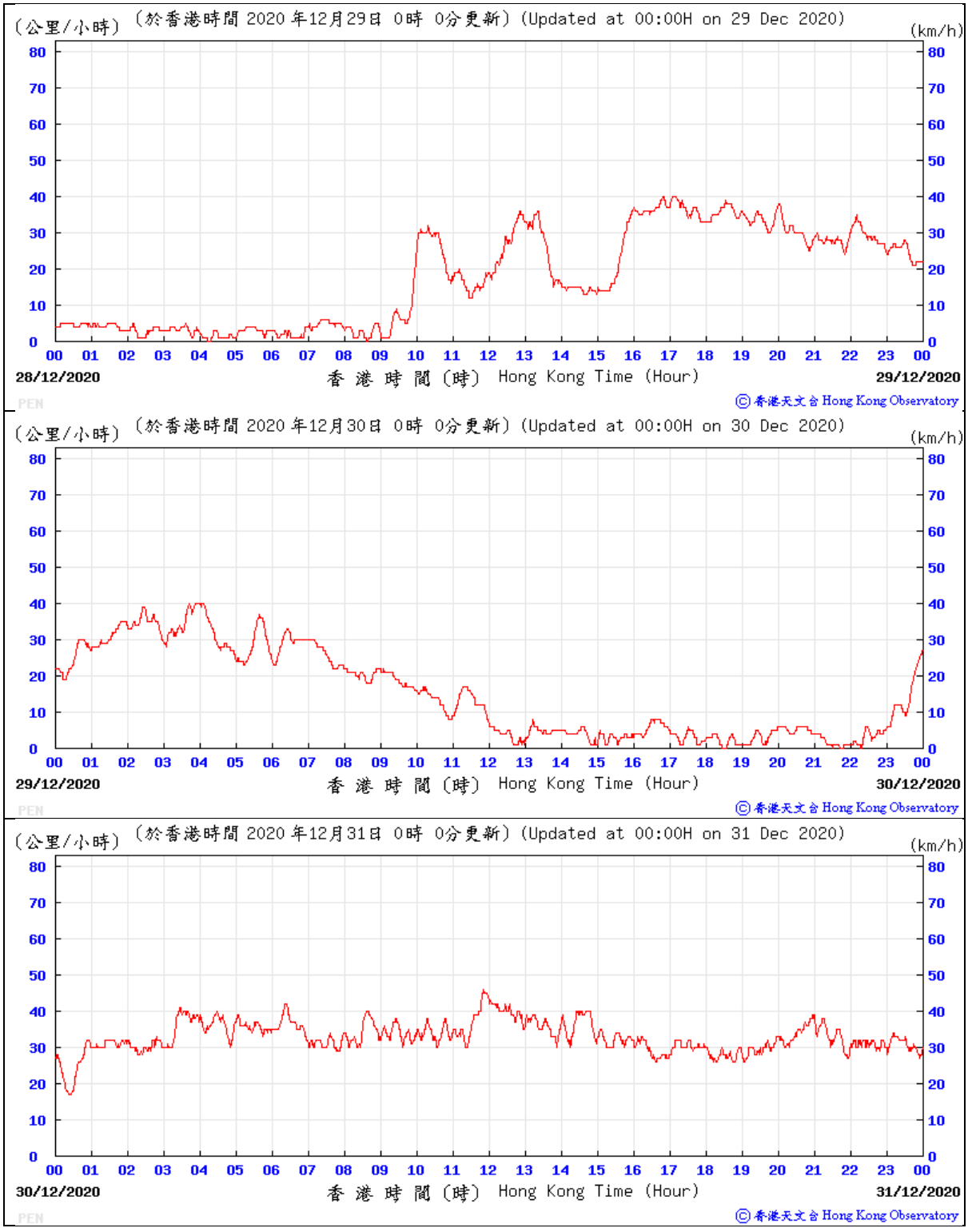
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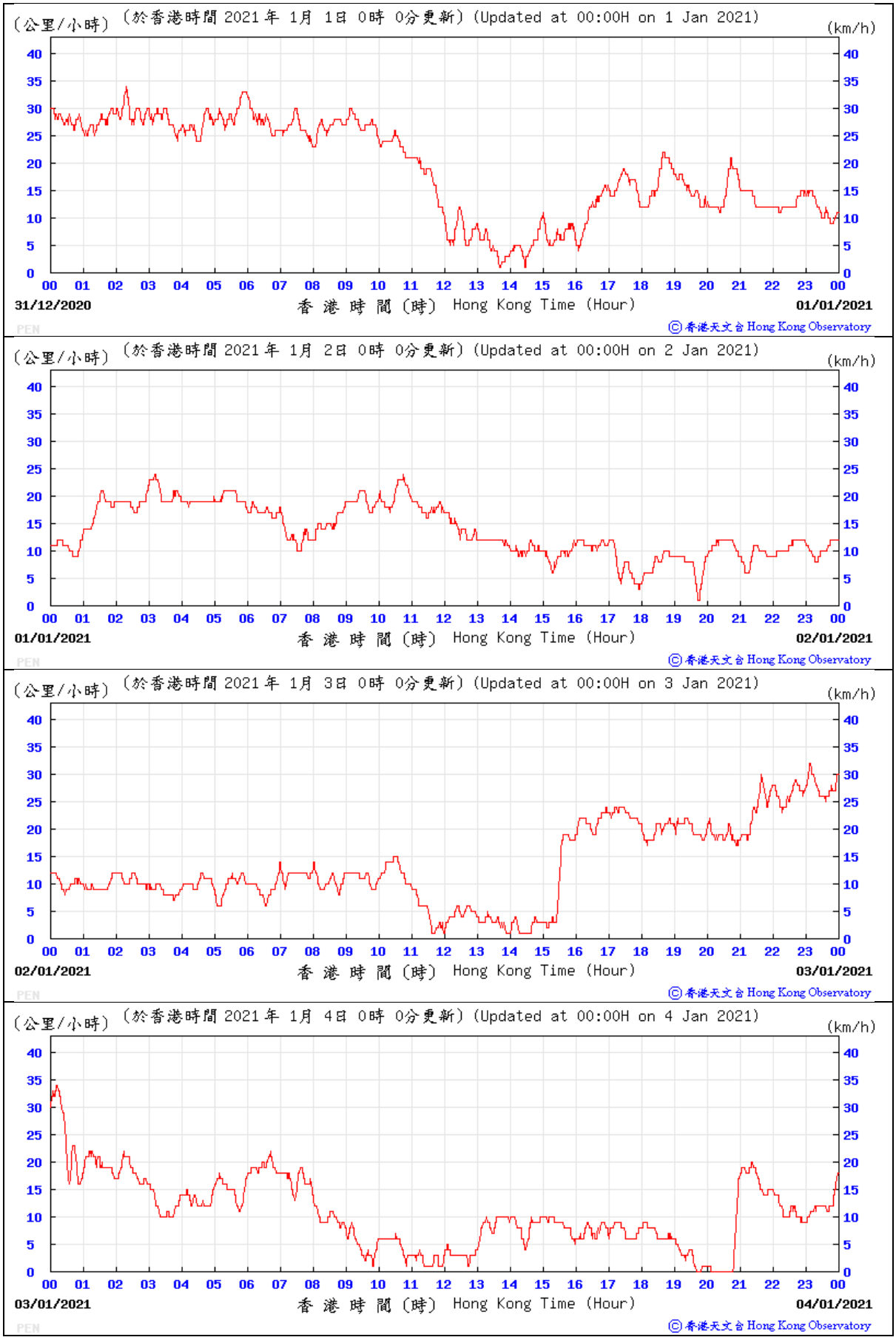
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Appendix D

Baseline Air Quality Monitoring Data

1hr TSP Monitoring Results at AMS1 - Silvermine Beach Resort

Day	Date	Weather	Time	Mass Conc. (ug/m^3)
1	21-Dec-20	Fine	14:00	75.0
			15:00	62.0
			16:00	65.0
2	22-Dec-20	Fine	12:00	40.0
			13:00	41.0
			14:00	32.0
3	23-Dec-20	Cloudy	09:00	48.0
			10:00	41.0
			11:00	31.0
4	24-Dec-20	Fine	10:00	43.0
			11:00	53.0
			12:00	50.0
5	25-Dec-20	Cloudy	10:00	48.0
			11:00	48.0
			12:00	46.0
6	26-Dec-20	Fine	10:00	31.0
			11:00	32.0
			12:00	36.0
7	27-Dec-20	Fine	09:00	28.0
			10:00	20.0
			11:00	53.0
8	28-Dec-20	Fine	10:00	24.0
			11:00	24.0
			12:00	26.0
9	29-Dec-20	Fine	10:00	50.0
			11:00	46.0
			12:00	49.0
10	30-Dec-20	Fine	10:00	48.0
			11:00	45.0
			12:00	50.0
11	31-Dec-20	Fine	11:00	62.0
			12:00	60.0
			13:00	57.0
12	1-Jan-21	Fine	09:00	20.0
			10:00	28.0
			11:00	20.0
13	2-Jan-21	Fine	12:00	32.0
			13:00	36.0
			14:00	31.0
14	3-Jan-21	Fine	10:00	26.0
			11:00	26.0
			12:00	27.0
			Average	40.7
			Max	75.0
			Min	20.0
			Action Level	276.5
			Limit Level	500.0

1hr TSP Monitoring Results at AMS2 - 1 Tung Wan Tau Road

Day	Date	Weather	Time	Mass Conc. (ug/m^3)
1	21-Dec-20	Fine	14:00	75.0
			15:00	62.0
			16:00	65.0
2	22-Dec-20	Fine	12:00	40.0
			13:00	41.0
			14:00	32.0
3	23-Dec-20	Cloudy	09:00	48.0
			10:00	41.0
			11:00	31.0
4	24-Dec-20	Fine	10:00	74.0
			11:00	82.0
			12:00	88.0
5	25-Dec-20	Cloudy	10:00	98.0
			11:00	79.0
			12:00	82.0
6	26-Dec-20	Fine	10:00	50.0
			11:00	53.0
			12:00	58.0
7	27-Dec-20	Fine	09:00	60.0
			10:00	46.0
			11:00	66.0
8	28-Dec-20	Fine	10:00	43.0
			11:00	41.0
			12:00	48.0
9	29-Dec-20	Fine	11:00	76.0
			12:00	69.0
			13:00	74.0
10	30-Dec-20	Fine	10:00	32.0
			11:00	36.0
			12:00	38.0
11	31-Dec-20	Fine	11:00	45.0
			12:00	46.0
			13:00	48.0
12	1-Jan-21	Fine	09:00	31.0
			10:00	29.0
			11:00	29.0
13	2-Jan-21	Fine	12:00	30.0
			13:00	29.0
			14:00	33.0
14	3-Jan-21	Fine	10:00	47.0
			11:00	43.0
			12:00	42.0
			Average	51.9
			Max	98.0
			Min	29.0
			Action Level	283.7
			Limit Level	500.0

Lam Environmental Service Limited **Contract No. HY/2019/04**

Baseline Air Monitoring Results **New Wang Tong River Bridge**

24hr TSP Monitoring Results at AMS1 - Silvermine Beach Resort

Equipment No. HVS020

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling	Flow Rate, m^3/min			Total	TSP Level,
				Initial	Final	Initial	Final	Time, hr	Initial, Qsi	Final, Qsf	Average	Volume, m^3	µg/m^3
21-Dec-20	12:00	Fine	6873	2.7403	2.8197	845.88	869.88	24.00	1.00	0.93	0.97	1392	57.0
22-Dec-20	12:02	Fine	6860	2.6873	2.7910	869.88	893.88	24.00	1.03	0.93	0.98	1410	73.5
23-Dec-20	12:04	Cloudy	6874	2.7480	2.8176	893.88	917.88	24.00	1.03	0.92	0.98	1404	49.6
24-Dec-20	12:06	Fine	6855	2.6738	2.7928	917.88	941.88	24.00	1.06	0.93	0.99	1428	83.3
25-Dec-20	12:08	Cloudy	6876	2.7646	2.8758	941.88	965.88	24.00	1.03	0.79	0.91	1311	84.8
26-Dec-20	12:10	Fine	6878	2.6977	2.7600	965.88	989.88	24.00	1.03	0.79	0.91	1308	47.6
27-Dec-20	12:12	Fine	6813	2.6871	2.7585	989.88	1013.88	24.00	1.02	0.79	0.90	1303	54.8
28-Dec-20	12:14	Fine	6862	2.6770	2.7658	1013.88	1037.88	24.00	1.02	0.79	0.90	1302	68.2
29-Dec-20	12:16	Fine	6870	2.7301	2.8799	1037.88	1061.88	24.00	1.02	0.80	0.91	1313	114.1
30-Dec-20	12:18	Fine	6880	2.7026	2.9373	1061.88	1085.88	24.00	1.04	0.82	0.93	1336	175.7
31-Dec-20	12:20	Fine	6822	2.7287	2.7911	1085.88	1109.88	24.00	1.05	0.81	0.93	1343	46.5
1-Jan-21	12:22	Fine	6823	2.7344	2.8036	1109.88	1133.88	24.00	1.05	0.81	0.93	1336	51.8
2-Jan-21	12:24	Fine	6825	2.7597	2.8123	1133.88	1157.88	24.00	1.04	0.93	0.99	1423	37.0
3-Jan-21	12:26	Fine	6829	2.6540	2.7193	1157.88	1181.88	24.00	1.03	0.93	0.98	1415	46.2

Average	70.7
Max	175.7
Min	37.0
Action Level	176.0
Limit Level	260.0

24hr TSP Monitoring Results at AMS2 - 1 Tung Wan Tau Road

Equipment No. HVS019

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling	Flow Rate, m^3/min			Total	TSP Level,
				Initial	Final	Initial	Final	Time, hr	Initial, Qsi	Final, Qsf	Average	Volume, m^3	µg/m^3
21-Dec-20	12:10	Fine	6882	2.7121	2.8064	819.88	843.88	24.00	1.07	1.06	1.07	1534	61.5
22-Dec-20	12:12	Fine	6859	2.6742	2.7804	843.88	867.88	24.00	1.03	1.03	1.03	1484	71.6
23-Dec-20	12:14	Cloudy	6875	2.7553	2.8153	867.88	891.88	24.00	1.00	0.99	1.00	1434	41.8
24-Dec-20	12:16	Fine	6803	2.6811	2.7970	891.88	915.88	24.00	1.12	1.12	1.12	1613	71.9
25-Dec-20	12:18	Cloudy	6877	2.6815	2.7847	915.88	939.88	24.00	1.12	1.12	1.12	1616	63.9
26-Dec-20	12:20	Fine	6879	2.6967	2.7934	939.88	963.88	24.00	1.12	1.12	1.12	1612	60.0
27-Dec-20	12:22	Fine	6812	2.6865	2.8069	963.88	987.88	24.00	1.12	1.12	1.12	1608	74.9
28-Dec-20	12:24	Fine	6868	2.7318	2.9296	987.88	1011.88	24.00	1.02	1.02	1.02	1473	134.3
29-Dec-20	12:26	Fine	6869	2.7283	2.9309	1011.88	1035.88	24.00	1.02	1.04	1.03	1484	136.5
30-Dec-20	12:28	Fine	6881	2.7004	2.8703	1035.88	1059.88	24.00	1.10	1.11	1.11	1595	106.5
31-Dec-20	12:30	Fine	6814	2.7015	2.7706	1059.88	1083.88	24.00	1.15	1.14	1.14	1647	41.9
1-Jan-21	12:32	Fine	6824	2.7412	2.8016	1083.88	1107.88	24.00	1.11	1.10	1.11	1595	37.9
2-Jan-21	12:34	Fine	6828	2.7745	2.8388	1107.88	1131.88	24.00	1.10	1.10	1.10	1586	40.6
3-Jan-21	12:36	Fine	6830	2.6727	2.7495	1131.88	1155.88	24.00	1.10	1.09	1.10	1578	48.7

Average	70.8
Max	136.5
Min	37.9
Action Level	176.0
Limit Level	260.0

Appendix E

Baseline Noise Monitoring Data

Monitoring Station	Time Period	Parameter	Average	Max	Min
NMS1	From 0700 to 1900 hrs	$L_{eq, 30min}$	57.1	61.4	49.7
		Leq, 30min with façade correction *	60.1	64.4	52.7

Remark: * Due to free-field measurement, a correction factor of +3 dB (A) is applied.

Location: NMS1 - 1 Tung Wan Tau Road

Time Period: From 07:00hr to 19:00hr

Model no.	Larson Davis LxT
Ser. No.	3737
Model no.	Cal 200
Ser. No.	13437

Day	Date	Weather	Time	$L_{eq\ (5min)}$	$L_{10\ (5min)}$	$L_{90\ (5min)}$	$L_{eq\ (30min)}$
1	21-Dec-20	Fine	14:30	60.7	64.9	44.6	54.3
			14:35	44.3	45.8	42.3	
			14:40	53.4	56.2	42.0	
			14:45	46.3	48.3	41.5	
			14:50	46.0	48.1	41.2	
			14:55	50.3	52.8	42.0	
2	22-Dec-20	Fine	13:55	54.0	56.0	47.0	56.9
			14:00	49.6	51.8	46.4	
			14:05	52.9	4.7	47.2	
			14:10	52.5	53.8	46.3	
			14:15	59.2	59.7	46.3	
			14:20	61.5	62.3	47.1	
3	23-Dec-20	Cloudy	09:25	56.9	58.6	48.6	53.8
			09:30	57.3	61.2	48.6	
			09:35	51.1	52.6	48.4	
			09:40	50.3	52.9	46.4	
			09:45	47.7	49.0	46.4	
			09:50	50.3	52.4	42.7	
4	24-Dec-20	Fine	09:35	54.0	56.1	47.2	52.0
			09:40	53.6	56.0	47.0	
			09:45	50.0	53.1	46.2	
			09:50	50.2	52.8	46.8	
			09:55	51.1	53.0	47.0	
			10:00	51.4	53.2	47.2	
5	25-Dec-20	Cloudy	10:00	60.5	65.0	47.4	57.3
			10:05	57.8	61.2	48.2	
			10:10	57.1	60.6	50.1	
			10:15	56.9	60.5	49.5	
			10:20	54.0	58.2	46.1	
			10:25	54.2	57.8	46.4	
6	26-Dec-20	Fine	09:45	57.2	61.1	50.6	58.4
			09:50	52.7	54.3	49.4	
			09:55	58.2	58.3	48.8	
			10:00	55.6	56.9	49.1	
			10:05	61.8	61.0	51.8	
			10:10	59.4	61.5	49.8	
7	27-Dec-20	Fine	09:30	47.2	48.8	43.4	52.0
			09:35	48.3	50.4	42.8	
			09:40	54.2	57.8	44.8	
			09:45	49.9	52.1	44.9	
			09:50	56.1	60.0	45.1	
			09:55	47.6	49.7	43.5	
8	28-Dec-20	Fine	09:40	53.2	55.6	47.4	60.1
			09:45	50.1	53.0	45.9	
			09:50	55.6	58.0	46.3	
			09:55	59.1	59.6	48.4	
			10:00	64.5	65.0	52.8	
			10:05	62.5	63.5	54.0	
9	29-Dec-20	Fine	10:15	64.7	65.6	51.4	61.4
			10:20	58.6	61.4	48.5	
			10:25	63.2	66.5	48.8	
			10:30	58.5	61.5	47.8	
			10:35	59.0	62.0	46.4	
			10:40	60.1	63.1	48.0	
10	30-Dec-20	Fine	09:40	58.9	60.6	45.7	57.6
			09:45	55.2	58.0	43.7	
			09:50	57.1	60.5	45.4	
			09:55	53.6	54.2	43.2	
			10:00	53.4	56.5	41.8	
			10:05	61.5	62.8	45.1	
11	31-Dec-20	Fine	11:10	55.4	56.6	45.7	58.2
			11:15	50.2	52.6	44.6	
			11:20	47.9	50.1	44.5	
			11:25	59.8	60.1	46.3	
			11:30	61.4	61.4	43.6	
			11:35	60.4	61.5	46.7	
12	01-Jan-21	Fine	09:05	65.6	67.3	47.8	58.5
			09:10	44.0	45.1	41.1	
			09:15	48.8	50.4	43.3	
			09:20	52.0	54.8	45.0	
			09:25	51.3	53.5	41.5	
			09:30	53.4	56.3	42.7	
13	02-Jan-21	Fine	11:55	49.6	52.7	41.5	49.7
			12:00	48.1	50.1	39.7	
			12:05	49.0	51.8	39.3	
			12:10	49.6	51.4	45.1	
			12:15	50.5	51.8	45.3	
			12:20	50.9	53.3	47.2	
14	03-Jan-21	Fine	09:10	50.3	52.4	42.6	51.5
			09:15	51.0	53.0	42.0	
			09:20	51.6	53.2	42.5	
			09:25	53.6	56.8	43.4	
			09:30	50.8	52.3	41.9	
			09:35	50.7	53.0	42.2	
Average L_{eq}							57.1

Appendix F

Baseline Water Quality Monitoring Data

Baseline Water Quality Monitoring at Station W1 (Middle) - Ebb Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W1 Wang Tong River (Major tributary)	12/14/2020	Cloudy	11:31	0.60	Middle	0.30	21.00	21.00	21.0	8.69	8.69	8.6	2.86	2.86	2.9	121.10	113.50	115.1	10.56	9.96	10.1	3.68	3.68	3.7	3.90	3.9
			11:35	0.60		0.30	21.00	21.00		8.52	8.52		2.85	2.85		112.90	112.70		9.86	9.84		3.67	3.67		3.80	
	12/16/2020	Fine	13:50	0.70		0.35	17.10	17.10	17.1	8.95	8.95	8.9	3.91	3.91	3.9	127.80	126.30	125.6	12.04	11.88	11.8	7.96	7.97	8.0	11.60	12.1
			13:52	0.70		0.35	17.10	17.10		8.89	8.89		3.83	3.83		125.10	123.00		11.74	11.60		7.98	7.99		12.60	
	12/18/2020	Fine	15:15	0.80		0.40	19.70	19.70	19.7	8.75	8.75	8.7	8.18	8.18	8.1	133.40	133.30	132.2	11.17	11.16	11.1	13.37	13.33	13.3	9.50	9.3
			15:17	0.80		0.40	19.60	19.60		8.73	8.73		8.08	8.08		131.50	130.70		10.97	10.98		13.25	13.25		9.10	
	12/21/2020	Fine	17:45	0.60		0.30	17.10	17.10	17.1	9.04	9.04	9.0	3.60	3.60	3.5	93.30	95.50	98.9	8.81	9.04	9.3	4.21	4.19	4.2	9.50	9.3
			17:47	0.60		0.30	17.00	17.00		8.96	8.96		3.48	3.48		104.00	102.90		9.85	9.67		4.15	4.10		9.10	
	12/23/2020	Cloudy	18:50	0.80		0.40	19.40	19.40	19.4	8.13	8.13	8.1	2.38	2.38	2.4	86.20	84.70	84.6	7.80	7.69	7.7	4.54	4.54	4.5	2.70	2.6
			18:52	0.80		0.40	19.30	19.30		8.14	8.14		2.38	2.38		84.10	83.50		7.64	7.58		4.54	4.54		2.50	
	12/25/2020	Cloudy	9:15	0.80		0.40	18.20	18.20	18.2	8.23	8.23	8.2	1.24	1.24	1.2	126.30	125.90	122.4	11.83	11.80	11.7	3.62	3.63	3.6	2.40	2.1
			9:17	0.80		0.40	18.10	18.10		8.22	8.22		1.24	1.24		124.50	112.70		11.66	11.60		3.66	3.67		1.80	
	12/28/2020	Fine	11:05	0.80		0.40	19.90	19.90	19.9	8.52	8.52	8.5	6.38	6.38	6.4	82.30	82.00	81.8	7.22	7.19	7.2	6.93	6.93	6.9	4.90	5.1
			11:07	0.80		0.40	19.90	19.90		8.49	8.49		6.33	6.33		81.60	81.40		7.16	7.15		6.94	6.93		5.20	
	12/30/2020	Fine	11:25	0.80		0.40	16.60	16.60	16.6	8.41	8.41	8.4	5.04	5.04	4.9	96.70	95.90	96.0	9.11	9.08	9.1	5.09	5.07	5.1	4.60	4.4
			11:27	0.80		0.40	16.60	16.60		8.42	8.42		4.79	4.79		95.70	95.50		9.06	9.04		5.08	5.07		4.20	
	1/2/2021	Fine	13:15	0.60		0.30	18.00	18.00	18.1	8.21	8.21	8.2	9.30	9.30	9.3	93.60	94.20	94.3	8.42	8.47	8.5	4.41	4.40	4.4	3.60	3.5
			13:17	0.60		0.30	18.10	18.10		8.17	8.17		9.30	9.30		94.50	95.00		8.49	8.53		4.39	4.38		3.40	
	1/4/2021	Fine	16:00	0.70		0.35	18.20	18.20	18.3	7.98	7.98	8.0	0.14	0.14	0.1	105.90	105.80	105.7	9.99	9.98	10.0	4.86	4.85	4.8	3.40	3.6
			16:02	0.70		0.35	18.40	18.40		7.96	7.96		0.14	0.14		105.70	105.50		9.96	9.94		4.66	4.65		3.70	
	1/6/2021	Fine	12:10	0.70		0.35	18.70	18.70	18.7	8.69	8.69	8.7	7.32	7.32	7.3	98.70	97.40	97.1	8.82	8.69	8.7	6.44	6.43	6.9	3.10	3.8
			12:12	0.70		0.35	18.70	18.70		8.62	8.62		7.35	7.35		96.40	96.00		8.64	8.57		6.42	8.41		4.40	
	1/8/2021	Fine	20:40	0.70		0.35	12.10	12.10	12.1	8.97	8.97	8.8	8.84	8.84	8.8	86.50	85.90	85.8	8.79	8.73	8.7	5.10	5.11	5.1	3.90	4.4
			20:42	0.70		0.35	12.10	12.10		8.67	8.67		8.84	8.84		85.50	85.20		8.70	8.66		5.12	5.11		4.80	

Baseline Water Quality Monitoring at Station W1 (Middle) - Flood Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Depth	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W1 Wang Tong River (Major tributary)	12/14/2020	Cloudy	16:30	1.00	Middle	0.50	19.60	19.60	19.6	8.76	8.76	8.7	3.22	3.22	3.2	116.90	114.10	113.1	10.44	10.40	10.2	20.94	20.94	20.9 *	2.80	3.3
			16:32	1.00		0.50	19.50	19.50		8.62	8.62		3.21	3.21		111.20	110.00		10.00	9.97		20.94	20.94		3.80	
	12/16/2020	Fine	8:55	0.60		0.30	15.00	15.00	14.9	8.90	8.90	8.9	3.30	3.30	3.3	121.20	120.10	119.8	12.05	11.92	11.9	3.21	3.21	3.2	2.60	2.4
			8:57	0.60		0.30	14.80	14.80		8.90	8.90		3.27	3.27		119.40	118.30		11.87	11.76		3.21	3.21		2.20	
	12/18/2020	Fine	10:45	0.70		0.35	18.00	18.00	17.9	8.20	8.20	8.2	0.11	0.11	0.1	141.50	140.80	139.6	13.30	13.21	10.0	3.68	3.69	3.6	5.30	5.5
			10:47	0.70		0.35	17.80	17.80		8.24	8.24		0.11	0.11		139.00	137.20		13.13	0.55		3.68	3.50		5.70	
	12/21/2020	Fine	11:25	0.60		0.30	15.60	16.00	15.8	8.53	8.53	8.5	1.86	1.86	1.9	115.30	115.40	115.3	11.29	11.30	11.3	9.99	9.98	10.0	5.90	5.7
			11:27	0.60		0.30	15.80	15.80		8.45	8.45		1.85	1.85		115.70	114.70		11.33	11.24		9.98	9.94		5.40	
	12/23/2020	Cloudy	12:30	0.70		0.35	19.40	19.40	19.5	8.49	8.49	8.4	2.64	2.64	2.6	153.00	155.60	146.6	13.58	14.24	13.2	5.31	5.32	5.3	2.10	2.4
			12:32	0.70		0.35	19.50	19.50		8.38	8.38		2.63	2.63		138.00	139.60		12.48	12.57		5.37	5.38		2.60	
	12/25/2020	Cloudy	15:10	0.70		0.35	21.90	21.90	21.9	8.14	8.14	8.1	1.23	1.23	1.2	118.50	118.20	118.1	10.31	10.29	10.3	6.13	6.12	6.1	4.20	3.9
			15:12	0.70		0.35	21.90	21.90		8.12	8.12		1.23	1.23		118.10	117.60		10.28	10.23		6.11	6.10		3.50	
	12/28/2020	Fine	16:05	1.00		0.50	21.70	21.70	21.6	8.60	8.60	8.6	6.03	6.03	6.0	103.00	102.60	102.1	8.76	8.65	8.7	7.02	7.03	7.0	4.20	4.7
			16:07	1.00		0.50	21.50	21.50		8.55	8.55		6.00	6.00		101.60	101.10		8.65	8.58		7.03	7.01		5.20	
	12/30/2020	Fine	17:10	0.70		0.35	15.40	15.40	15.4	8.21	8.21	8.2	3.08	3.08	3.1	88.50	89.00	89.1	8.68	8.73	8.7	6.35	6.34	6.3	8.40	8.5
			17:12	0.70		0.35	15.40	15.40		8.15	8.15		3.08	3.08		89.20	89.60		8.76	8.79		6.33	6.31		8.60	
	1/2/2021	Fine	9:40	0.80		0.40	13.40	13.40	13.4	8.64	8.64	8.6	12.45	12.45	12.5	90.60	80.30	87.6	8.76	8.73	8.7	3.89	3.90	3.9	4.30	4.4
			9:42	0.80		0.40	13.30	13.30		8.61	8.61		12.51	12.51		89.90	89.70		8.70	8.68		3.91	3.93		4.40	
	1/4/2021	Fine	11:05	0.70		0.35	17.80	17.80	17.8	8.55	8.55	8.5	12.97	12.97	13.0	93.90	92.40	92.1	8.30	8.15	8.1	4.34	4.34	4.3	3.20	3.4
			11:07	0.70		0.35	17.70	17.70		8.49	8.49		13.00	13.00		91.30	90.70		8.05	7.99		4.34	4.34		3.60	
	1/6/2021	Fine	12:10	0.70		0.35	18.70	18.70	18.7	8.69	8.69	8.7	7.32	7.32	7.3	98.70	97.40	97.1	8.82	8.69	8.7	6.44	6.43	6.4	2.90	3.3
			12:12	0.70		0.35	18.70	18.70		8.62	8.62		7.35	7.35		96.40	96.00		8.64	8.57		6.42	6.41		3.70	
	1/8/2021	Fine	13:15	0.60		0.30	11.90	11.90	11.9	8.80	8.80	8.8	1.03	1.03	1.0	109.60	109.40	109.3	11.77	11.75	11.7	5.32	5.32	5.3	2.40	2.8
			13:17	0.60		0.30	11.90	11.90		8.79	8.79		1.03	1.03		109.20	108.90		11.73	11.69		5.32	5.31		3.20	

Remark: * The data is excluded from determination of action and limit levels.

General Note: Additional data of temperature, pH, salinity, DO saturation, DO and turbidty were obtained in each duplicate set for better representativeness.

Baseline Water Quality Monitoring at Station W2 (Middle) - Ebb Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W2 Wang Tong River (Major tributary)	12/14/2020	Cloudy	11:45	0.60	Middle	0.30	21.20	21.20	21.3	7.80	7.80	7.8	12.98	12.98	13.0	95.20	92.60	90.4	7.85	7.62	7.4	4.33	4.33	4.3	4.00	3.9
			11:47	0.60		0.30	21.30	21.30		7.80	7.80		12.98	12.98		86.50	87.20		7.09	7.13		4.33	4.33		3.80	
	12/16/2020	Fine	14:00	0.80		0.40	17.10	17.10	17.1	8.46	8.46	8.4	9.39	9.39	9.5	88.40	87.40	87.4	8.04	7.93	7.9	4.00	4.10	4.1	2.90	3.4
			14:02	0.80		0.40	17.10	17.10		8.35	8.35		9.63	9.63		86.80	86.90		7.88	7.88		4.11	4.12		3.90	
	12/18/2020	Fine	15:20	0.50		0.25	19.00	19.00	19.1	8.38	8.38	8.3	13.70	13.70	13.7	91.60	90.90	92.5	7.76	7.79	7.9	5.65	5.63	5.6	2.80	3.2
			15:22	0.50		0.25	19.20	19.20		8.31	8.31		13.73	13.73		92.30	95.00		7.87	8.10		5.61	5.59		3.50	
	12/21/2020	Fine	17:55	0.80		0.40	17.20	17.20	17.2	8.65	8.65	8.6	6.55	6.55	6.6	85.80	85.00	84.9	7.96	7.88	7.9	3.88	3.88	3.8	2.80	3.2
			17:57	0.80		0.40	17.10	17.10		8.63	8.63		6.61	6.61		84.50	84.20		7.84	7.82		3.85	3.78		3.50	
	12/23/2020	Cloudy	19:00	0.90		0.45	19.00	19.00	19.0	8.69	8.69	8.7	3.28	3.28	3.3	90.70	89.20	88.5	8.29	8.15	8.0	5.59	5.87	5.8	4.30	3.9
			19:02	0.90		0.45	18.90	18.90		8.71	8.71		3.29	3.29		87.90	86.00		8.00	7.65		5.88	5.90		3.50	
	12/25/2020	Cloudy	9:25	0.90		0.45	17.90	17.90	17.9	8.17	8.17	8.2	0.94	0.94	0.9	80.00	79.40	79.1	7.55	7.47	7.5	4.12	4.10	4.1	2.60	2.5
			9:27	0.90		0.45	17.80	17.80		8.17	8.17		0.94	0.94		78.50	78.40		7.41	7.41		4.11	4.12		2.40	
	12/28/2020	Fine	11:25	0.90		0.45	19.00	19.00	19.1	8.40	8.40	8.4	5.46	5.46	5.5	73.20	72.70	72.3	6.53	6.48	6.5	3.76	3.77	3.8	2.20	2.6
			11:27	0.90		0.45	19.10	19.10		8.36	8.36		5.49	5.49		71.80	71.50		6.45	6.42		3.76	3.76		3.00	
	12/30/2020	Fine	11:35	0.80		0.40	16.60	16.60	16.6	8.19	8.19	8.2	9.05	9.05	9.1	72.30	73.50	74.3	6.68	6.78	6.9	4.59	4.60	4.6	3.00	2.9
			11:37	0.80		0.40	16.50	16.50		8.16	8.16		9.07	9.07		74.90	76.40		6.91	7.05		4.59	4.59		2.70	
	1/2/2021	Fine	13:25	1.00		0.50	15.30	15.30	15.4	8.23	8.23	8.2	5.80	5.80	5.8	103.30	102.20	102.2	9.98	9.88	9.9	4.77	4.78	4.8	3.90	3.7
			13:27	1.00		0.50	15.40	15.40		8.26	8.26		5.80	5.80		101.80	101.50		9.84	9.81		4.79	4.78		3.40	
	1/4/2021	Fine	11:15	0.70		0.35	17.50	17.50	17.6	8.57	8.57	8.5	10.26	10.26	10.3	93.90	91.20	89.9	8.65	8.31	3.7	3.72	4.85	4.0	3.10	2.9
			11:17	0.70		0.35	17.60	17.60		8.49	8.49		10.27	10.27		88.20	86.10		7.96	7.75		3.71	3.72		2.70	
	1/6/2021	Fine	12:25	0.70		0.35	18.20	18.20	18.3	8.36	8.36	8.3	6.06	6.06	6.0	87.30	86.60	86.2	7.94	7.88	7.8	3.44	3.45	3.5	2.80	3.0
			12:27	0.70		0.35	18.30	18.30		8.33	8.33		6.03	6.03		85.70	85.10		7.79	7.74		3.46	3.45		3.20	
	1/8/2021	Fine	20:50	0.80		0.40	11.80	11.80	11.8	8.66	8.66	8.7	8.62	8.62	8.7	87.50	86.70	86.3	8.97	8.89	8.9	4.48	4.48	4.5	4.70	4.3
			20:52	0.80		0.40	11.70	11.70		8.65	8.65		8.68	8.68		86.00	85.00		8.83	8.73		4.48	4.49		3.80	

Baseline Water Quality Monitoring at Station W2 (Middle) - Flood Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Depth	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W2 Wang Tong River (Major tributary)	12/14/2020	Cloudy	16:40	0.80	Middle	0.40	19.70	19.70	19.6	8.29	8.29	8.3	6.48	6.48	6.5	106.70	105.40	104.5	9.38	9.30	9.2	4.43	4.42	4.5	3.40	3.3
			16:42	0.80		0.40	19.50	19.50		8.30	8.30		6.48	6.48		103.70	102.20		9.16	9.08		4.54	4.51		3.20	
	12/16/2020	Fine	9:05	0.80		0.40	17.20	17.20	16.9	8.05	8.05	8.1	20.36	20.36	20.4	89.00	87.00	87.1	7.69	7.49	7.5	2.84	2.79	2.8	2.20	2.3
			9:07	0.80		0.40	16.60	16.60		8.05	8.05		20.44	20.44		86.90	85.40		7.52	7.40		2.79	2.79		2.40	
	12/18/2020	Fine	11:00	0.80		0.40	16.90	16.90	16.9	8.16	8.16	8.2	0.11	0.11	0.1	104.00	102.80	103.5	10.30	10.05	10.1	4.55	4.54	4.5	3.20	3.4
			11:02	0.80		0.40	16.90	16.90		8.17	8.17		0.11	0.11		103.70	103.50		10.08	10.04		4.52	4.50		3.60	
	12/21/2020	Fine	11:40	0.80		0.40	14.80	14.80	14.9	7.89	7.89	7.9	7.28	7.28	7.3	116.70	114.30	112.6	11.29	11.06	11.0	3.13	3.13	3.1	2.20	2.3
			11:42	0.80		0.40	14.90	14.90		7.90	7.90		7.34	7.34		112.00	107.50		10.80	10.86		3.13	3.11		2.40	
	12/23/2020	Cloudy	12:45	0.80		0.40	19.10	19.10	19.2	8.29	8.29	8.3	2.69	2.69	2.7	117.00	114.10	115.7	9.25	9.07	9.2	3.76	3.76	3.8	2.20	2.5
			12:47	0.80		0.40	19.20	19.20		8.24	8.24		2.69	2.69		117.20	114.30		9.27	9.08		3.76	3.83		2.70	
	12/25/2020	Cloudy	15:10	0.80		0.40	20.80	20.80	20.9	8.49	8.49	8.5	1.43	1.43	1.4	73.80	73.70	73.7	6.54	6.53	6.5	7.44	7.45	7.4	6.20	6.3
			15:12	0.80		0.40	20.90	20.90		8.45	8.45		1.43	1.43		73.80	73.30		6.54	6.50		7.43	7.42		6.30	
	12/28/2020	Fine	16:20	1.00		0.50	20.50	20.50	20.6	8.54	8.54	8.5	4.75	4.75	4.8	73.60	73.40	73.2	6.44	6.42	6.4	5.84	5.83	5.8	3.40	4.0
			16:22	1.00		0.50	20.60	20.60		8.49	8.49		4.75	4.75		72.80	72.80		6.37	6.37		5.83	5.83		4.50	
	12/30/2020	Fine	17:20	0.70		0.35	17.10	17.10	17.0	8.56	8.56	8.5	10.37	10.37	10.4	83.70	83.40	83.3	7.58	7.56	7.5	6.06	6.06	6.1	4.30	4.4
			17:22	0.70		0.35	16.80	16.80		8.52	8.52		10.43	10.43		83.10	83.00		7.53	7.51		6.04	6.05		4.50	
	1/2/2021	Fine	9:50	0.70		0.35	14.10	14.10	14.2	8.28	8.28	8.3	24.70	24.70	24.7	65.80	66.80	67.2	5.80	5.89	5.9	4.59	4.60	4.6	5.20	5.0
			9:52	0.70		0.35	14.20	14.20		8.30	8.30		24.67	24.67		67.60	68.50		5.96	6.03		4.62	4.61		4.70	
	1/4/2021	Fine	16:10	0.70		0.35	18.70	18.70	18.8	8.67	8.67	8.7	8.63	8.63	8.6	91.60	91.30	90.7	8.11	8.09	8.1	4.85	4.85	4.8	3.60	3.8
			16:12	0.70		0.35	18.80	18.80		8.65	8.65		8.57	8.57		90.30	89.70		8.09	7.95		4.66	4.65		3.90	
	1/6/2021	Fine	12:25	0.70		0.35	18.20	18.20	18.3	8.36	8.36	8.3	6.06	6.06	6.0	87.30	86.60	86.2	7.94	7.88	7.8	3.44	3.45	3.5	1.90	2.1
			12:27	0.70		0.35	18.30	18.30		8.33	8.33		6.03	6.03		85.70	85.10		7.79	7.74		3.46	3.45		2.30	
	1/8/2021	Fine	13:25	0.70		0.35	12.00	12.00	11.9	8.25	8.25	8.2	4.49	4.49	4.5	83.70	82.80	82.7	8.77	8.87	8.7	4.22	4.22	4.2	2.90	2.6
			13:27	0.70		0.35	11.80	11.80		8.24	8.24		4.53	4.53		82.30	81.80		8.63	8.57		4.21	4.20		2.30	

General Note: Additional data of temperature, pH, salinity, DO saturation, DO and turbidty were obtained in each duplicate set for better representativeness.

Baseline Water Quality Monitoring at Station W4 (Middle) - Ebb Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W4 Wang Tong River (Minor tributary to Tai Wai Yuen)	12/14/2020	Cloudy	11:50	0.70	Middle	0.35	20.50	20.50	20.6	7.86	7.86	7.8	7.58	7.58	7.6	89.80	90.90	87.9	7.78	7.84	7.6	4.54	4.54	4.5	3.50	3.7
			11:52	0.70		0.35	20.60	20.60		7.80	7.80		7.58	7.58		85.40	85.40		7.32	7.32		4.54	4.54		3.80	
	12/16/2020	Fine	14:10	0.60		0.30	16.40	16.40	16.4	8.37	8.37	8.3	8.94	8.94	9.0	80.60	85.20	82.2	7.47	7.71	7.6	4.14	4.12	4.1	5.10	4.8
			14:12	0.60		0.30	16.30	16.30		8.28	8.28		8.96	8.96		83.00	80.00		7.57	7.45		4.12	4.09		4.40	
	12/18/2020	Fine	15:30	2.00		1.00	17.90	17.90	17.9	8.56	8.56	8.5	6.41	6.41	6.4	96.20	98.10	98.3	8.80	9.05	9.0	4.61	4.62	4.7	6.40	6.8
			15:32	2.00		1.00	17.80	17.80		8.49	8.49		6.45	6.45		99.50	99.20		9.08	9.06		4.69	4.70		7.10	
	12/21/2020	Fine	18:05	0.70		0.35	16.80	16.80	16.8	8.64	8.64	8.6	6.10	6.10	6.1	84.10	83.80	83.9	7.88	7.86	7.9	4.83	4.97	5.0	6.40	6.8
			18:07	0.70		0.35	16.70	16.70		8.64	8.64		6.11	6.11		84.00	83.70		7.87	7.85		5.04	5.08		7.10	
	12/23/2020	Cloudy	19:15	0.80		0.40	19.30	19.30	19.3	8.33	8.33	8.3	5.64	5.64	5.6	75.40	75.10	74.9	6.72	6.70	6.7	7.00	6.99	7.0	6.80	6.4
			19:17	0.80		0.40	19.30	19.30		8.31	8.31		5.65	5.65		74.60	74.30		6.66	6.63		6.99	6.93		5.90	
	12/25/2020	Cloudy	9:40	0.80		0.40	18.00	18.00	18.0	8.54	8.54	8.5	1.97	1.97	1.8	79.80	79.30	78.9	7.47	7.42	7.4	4.85	4.85	4.9	3.50	4.0
			9:42	0.80		0.40	18.00	18.00		8.53	8.53		1.58	1.58		78.30	78.10		7.34	7.32		4.85	4.85		4.40	
	12/28/2020	Fine	11:30	0.80		0.40	21.00	21.00	21.3	7.93	7.93	7.9	18.66	18.66	18.7	88.30	88.00	87.8	6.99	6.97	7.0	6.60	6.59	6.6	3.90	3.5
			11:32	0.80		0.40	21.60	21.60		7.87	7.87		18.77	18.77		87.60	87.20		6.94	6.90		6.60	6.61		3.00	
	12/30/2020	Fine	11:50	0.70		0.35	17.00	17.00	17.2	8.11	8.11	8.1	10.50	10.50	10.5	84.00	83.60	83.6	7.59	7.55	7.6	4.20	4.19	4.2	3.70	3.6
			11:52	0.70		0.35	17.40	17.40		8.07	8.07		10.56	10.56		83.50	83.30		7.54	7.52		4.18	4.17		3.50	
	1/2/2021	Fine	13:40	0.80		0.40	15.90	15.90	15.9	7.89	7.89	7.9	14.61	14.61	14.6	107.30	107.00	106.9	9.71	9.68	9.7	4.34	4.34	4.3	3.00	2.9
			13:42	0.80		0.40	15.90	15.90		7.89	7.89		14.64	14.64		106.70	106.50		9.65	9.63		4.33	4.34		2.70	
	1/4/2021	Fine	16:20	0.70		0.35	18.00	18.00	18.2	8.42	8.42	8.4	12.34	12.34	12.3	97.90	96.50	95.1	9.09	8.92	8.6	4.63	4.64	4.6	3.70	3.6
			16:22	0.70		0.35	18.40	18.40		8.43	8.43		12.32	12.32		93.20	92.70		8.16	8.09		4.65	4.66		3.40	
	1/6/2021	Fine	12:35	0.60		0.30	17.90	17.90	18.1	8.37	8.37	8.4	5.27	5.27	5.3	87.90	87.50	87.4	8.02	7.98	8.0	3.62	3.62	3.6	3.10	3.1
			12:37	0.60		0.30	18.30	18.30		8.36	8.36		5.28	5.28		87.20	86.90		7.95	7.92		3.62	3.62		3.00	
	1/8/2021	Fine	21:00	0.80		0.40	9.50	9.50	9.5	8.17	8.17	8.2	3.52	3.52	3.5	86.80	86.70	86.5	9.68	9.65	9.4	3.99	3.99	4.0	2.20	2.4
			21:02	0.80		0.40	9.50	9.50		8.16	8.16		3.52	3.52		86.30	86.20		9.62	8.62		3.99	3.98		2.60	

Baseline Water Quality Monitoring at Station W4 (Middle) - Flood Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W4 Wang Tong River (Minor tributary to Tai Wai Yuen)	12/14/2020	Cloudy	16:45	0.70	Middle	0.35	19.70	19.70	19.7	8.04	8.04	8.0	8.88	8.88	8.9	100.80	99.50	98.3	8.71	8.55	8.5	4.97	4.97	5.0	4.60	4.8
			16:47	0.70		0.35	19.70	19.70		8.00	8.00		8.88	8.88		97.00	95.90		8.41	8.32		4.97	4.96		4.90	
	12/16/2020	Fine	9:15	0.60		0.30	15.50	15.50	15.3	7.89	7.89	7.9	22.96	22.96	23.0	76.30	78.20	75.5	6.66	6.82	6.6	2.89	2.87	2.9	3.50	3.8
			9:17	0.60		0.30	15.10	15.10		7.84	7.84		22.96	22.96		74.50	73.10		6.50	6.40		2.87	2.85		4.00	
	12/18/2020	Fine	11:10	0.60		0.30	17.20	17.20	17.2	8.19	8.19	8.2	0.10	0.10	0.1	104.30	104.30	104.4	10.05	10.05	10.1	3.30	3.29	3.3	4.00	3.8
			11:12	0.60		0.30	17.20	17.20		8.20	8.20		0.09	0.09		104.40	104.50		10.05	10.06		3.24	3.23		3.50	
	12/21/2020	Fine	11:50	0.70		0.35	15.30	15.30	15.3	7.95	7.95	8.0	7.28	7.28	7.5	116.70	114.30	101.3	11.29	11.06	9.7	3.13	3.13	2.9	2.60	2.7
			11:52	0.70		0.35	15.20	15.20		7.95	7.95		7.74	7.74		87.30	86.70		8.32	8.27		2.69	2.68		2.70	
	12/23/2020	Cloudy	12:55	1.00		0.50	19.10	19.10	19.2	8.13	8.13	8.1	3.73	3.73	3.7	83.60	85.60	83.8	7.56	7.71	7.6	4.60	4.70	4.5	3.10	3.5
			12:57	1.00		0.50	19.30	19.30		8.11	8.11		3.75	3.75		83.10	83.00		7.55	7.54		4.37	4.36		3.80	
	12/25/2020	Cloudy	15:35	0.70		0.35	21.10	21.10	21.1	8.22	8.22	8.2	2.81	2.81	2.8	85.20	84.90	84.8	7.46	7.44	7.4	12.06	12.05	12.1	10.50	11.0
			15:37	0.70		0.35	21.10	21.10		8.23	8.23		2.82	2.82		84.60	84.40		7.41	7.39		12.05	12.06		11.40	
	12/28/2020	Fine	16:30	0.80		0.40	20.80	20.80	20.8	8.22	8.22	8.2	12.07	12.07	12.1	81.20	80.90	80.6	6.78	6.75	6.7	7.09	7.10	7.1	4.10	4.3
			16:32	0.80		0.40	20.70	20.70		8.26	8.26		12.12	12.12		80.40	79.80		6.71	6.66		7.11	7.12		4.50	
	12/30/2020	Fine	17:30	0.60		0.30	15.30	15.30	15.3	8.58	8.58	8.6	8.65	8.65	8.7	76.60	76.30	76.2	7.27	7.26	7.3	6.06	6.05	5.8	5.30	5.2
			17:32	0.60		0.30	15.20	15.20		8.56	8.56		8.67	8.67		76.10	75.90		7.25	7.22		5.58	5.59		5.10	
	1/2/2021	Fine	10:00	0.70		0.35	12.30	12.30	12.4	8.40	8.40	8.4	13.67	13.67	13.7	76.90	76.80	77.1	7.57	7.50	7.6	3.49	3.49	3.5	4.80	4.8
			10:02	0.70		0.35	12.40	12.40		8.34	8.34		13.67	13.67		77.30	77.50		7.61	7.62		3.47	3.48		4.70	
	1/4/2021	Fine	11:25	0.70		0.35	17.70	17.70	17.7	8.30	8.30	8.3	12.52	12.52	12.5	79.50	79.40	79.2	7.03	7.02	7.0	3.72	3.71	3.7	3.30	3.2
			11:27	0.70		0.35	17.70	17.70		8.25	8.25		12.53	12.53		79.00	78.80		6.98	6.97		3.70	3.68		3.00	
	1/6/2021	Fine	12:35	0.60		0.30	17.90	17.90	18.1	8.37	8.37	8.4	5.27	5.27	5.3	87.90	87.50	87.4	8.02	7.98	8.0	3.62	3.62	3.6	2.40	2.0
			12:37	0.60		0.30	18.30	18.30		8.36	8.36		5.28	5.28		87.20	86.90		7.95	7.92		3.62	3.62		1.60	
	1/8/2021	Fine	13:35	0.70		0.35	10.20	10.20	10.2	8.59	8.59	8.6	1.84	1.84	1.8	93.70	93.10	93.0	10.40	10.34	10.3	4.12	4.12	4.1	5.20	5.6
			13:37	0.70		0.35	10.20	10.20		8.56	8.56		1.84	1.84		92.80	92.50		10.30	10.26		4.12	4.12		6.00	

General Note: Additional data of temperature, pH, salinity, DO saturation, DO and turbidty were obtained in each duplicate set for better representativeness.

Baseline Water Quality Monitoring at Station W5 (Middle) - Ebb Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W5 Silvermine Bay (Near Silvermine Bay Beach)	12/14/2020	Cloudy	12:10	0.50	Middle	0.25	20.20	20.20	20.2	7.84	7.84	7.8	6.44	6.44	6.4	93.20	93.40	93.2	8.14	8.16	8.1	3.33	3.33	3.3	6.20	6.7
			12:12	0.50		0.25	20.10	20.10		7.79	7.79		6.44	6.44		93.20	92.90		8.14	8.11		3.24	3.24		7.10	
	12/16/2020	Fine	14:20	0.50		0.25	16.20	16.20	16.2	8.12	8.12	8.1	11.47	11.47	11.5	93.30	92.00	91.4	8.52	8.42	8.4	4.48	4.53	4.5	5.00	5.0
			14:22	0.50		0.25	16.20	16.20		8.14	8.14		11.47	11.47		90.30	89.80		8.24	8.22		4.59	4.57		4.90	
	12/18/2020	Fine	15:35	0.50		0.25	17.40	17.40	17.5	8.33	8.33	8.3	8.98	8.98	9.0	96.50	97.20	97.0	8.73	8.80	8.8	4.61	4.60	4.6	4.60	4.7
			15:37	0.50		0.25	17.60	17.60		8.28	8.28		8.97	8.97		97.40	96.90		8.81	8.80		4.59	4.59		4.80	
	12/21/2020	Fine	18:20	0.50		0.25	16.80	16.80	16.8	8.42	8.42	8.4	5.43	5.43	5.4	83.50	8.00	64.2	7.85	7.80	7.8	6.52	6.53	6.5	4.60	4.7
			18:22	0.50		0.25	16.70	16.70		8.45	8.45		5.44	5.44		82.70	82.60		7.78	7.77		6.51	6.52		4.80	
	12/23/2020	Cloudy	19:25	0.50		0.25	18.80	18.80	18.8	8.29	8.29	8.3	6.45	6.45	6.5	75.90	75.40	75.2	6.80	6.75	6.7	6.60	6.65	6.7	5.50	5.5
			19:27	0.50		0.25	18.80	18.80		8.29	8.29		6.45	6.45		75.00	74.60		6.72	6.68		6.66	6.74		5.40	
	12/25/2020	Cloudy	9:50	0.50		0.25	19.30	19.30	19.3	8.21	8.21	8.2	7.15	7.15	7.2	68.90	68.80	68.6	6.08	6.07	6.1	5.79	5.80	5.8	4.70	4.7
			9:52	0.50		0.25	19.20	19.20		8.21	8.21		7.17	7.17		68.40	68.20		6.04	6.02		5.82	5.83		4.60	
	12/28/2020	Fine	11:45	0.50		0.25	21.30	21.30	21.3	7.93	7.93	8.0	27.74	27.74	27.8	106.10	105.60	105.2	8.00	7.96	7.9	5.84	5.84	5.8	11.04	7.5
			11:47	0.50		0.25	21.30	21.30		7.99	7.99		27.79	27.79		104.70	104.30		7.90	7.86		5.83	5.84		4.00	
	12/30/2020	Fine	12:05	0.50		0.25	16.70	16.70	16.7	8.07	8.07	8.1	11.11	11.11	11.1	107.00	106.50	106.4	9.73	9.69	9.7	3.99	3.99	4.0	3.40	3.6
			12:07	0.50		0.25	16.70	16.70		8.09	8.09		11.16	11.16		105.90	106.30		9.63	9.66		3.99	3.99		3.70	
	1/2/2021	Fine	13:50	0.50		0.25	16.10	16.10	16.1	7.75	7.75	7.8	24.33	24.33	24.4	95.40	94.90	94.6	8.10	8.05	8.0	4.60	4.61	4.6	3.60	3.6
			13:52	0.50		0.25	16.00	16.00		7.77	7.77		24.43	24.43		94.30	93.60		8.01	7.95		4.67	4.68		3.50	
	1/4/2021	Fine	16:30	0.50		0.25	18.50	18.50	18.5	8.25	8.25	8.2	12.14	12.14	12.2	101.10	107.80	104.6	8.87	8.97	9.0	5.47	5.49	5.5	3.00	2.9
			16:32	0.50		0.25	18.50	18.50		8.20	8.20		12.16	12.16		104.30	105.10		9.13	9.17		5.50	5.51		2.80	
	1/6/2021	Fine	12:50	0.50		0.25	19.30	19.30	19.3	7.82	7.82	7.8	20.76	20.76	20.8	117.20	117.00	116.6	9.56	9.53	9.5	5.32	5.32	5.3	5.10	5.8
			12:52	0.50		0.25	19.30	19.30		7.85	7.85		20.78	20.78		116.40	115.70		9.49	9.43		5.31	5.30		6.40	
	1/8/2021	Fine	21:10	0.50		0.25	10.80	10.80	10.8	8.77	8.77	8.8	7.91	7.91	7.9	83.70	83.30	82.6	8.81	8.77	8.7	4.12	4.12	4.1	2.60	2.8
			21:12	0.50		0.25	10.70	10.70		8.76	8.76		7.92	7.92		82.00	81.20		8.64	8.56		4.12	4.12		3.00	

Baseline Water Quality Monitoring at Station W5 (Middle) - Flood Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W5 Silvermine Bay (Near Silvermine Bay Beach)	12/14/2020	Cloudy	16:50	0.50	Middle	0.25	18.80	18.80	18.7	8.04	8.04	8.0	8.16	8.16	8.2	116.70	113.00	112.9	10.38	10.05	10.0	4.14	4.15	4.2	31.60	21.9 *
			16:52	0.50		0.25	18.60	18.60		8.05	8.05		8.16	8.16		111.50	110.20		9.91	9.81		4.16	4.15		12.10	
	12/16/2020	Fine	9:25	0.50		0.25	15.20	15.20	15.1	7.96	7.96	8.0	17.80	17.80	17.8	79.80	80.20	80.2	7.23	7.29	7.3	3.02	3.13	3.1	4.10	4.4
			9:27	0.50		0.25	14.90	14.90		7.94	7.94		17.80	17.80		80.40	80.40		7.35	7.35		3.13	3.03		4.70	
	12/18/2020	Fine	11:20	0.50		0.25	17.20	17.20	17.2	8.19	8.19	8.2	0.09	0.09	0.1	104.20	104.30	104.3	10.02	10.03	10.0	3.34	3.33	3.3	10.00	9.6
			11:22	0.50		0.25	17.20	17.20		8.20	8.20		0.09	0.09		104.30	104.40		10.04	10.04		3.33	3.32		9.10	
	12/21/2020	Fine	12:00	0.50		0.25	15.50	15.50	15.6	7.86	7.86	7.9	11.30	11.30	11.3	91.40	91.80	92.1	8.49	8.52	8.5	2.56	2.57	2.6	2.40	2.6
			12:02	0.50		0.25	15.60	15.60		7.87	7.87		11.33	11.33		92.40	92.60		8.58	8.60		2.57	2.57		2.70	
	12/23/2020	Cloudy	13:05	0.50		0.25	19.60	19.60	19.6	7.77	7.77	7.8	11.03	11.03	11.1	92.00	91.30	91.4	7.88	7.87	7.8	5.68	5.65	5.7	6.10	6.5
			13:07	0.50		0.25	19.60	19.60		7.83	7.83		11.19	11.19		92.00	90.40		7.80	7.74		5.64	5.63		6.90	
	12/25/2020	Cloudy	15:45	0.50		0.25	21.00	21.00	21.0	8.16	8.16	8.2	3.47	3.47	3.5	96.80	96.50	96.2	8.46	8.44	8.4	7.94	7.95	7.9	7.90	7.7
			15:47	0.50		0.25	21.00	21.00		8.19	8.19		3.50	3.50		95.80	95.60		8.37	8.37		7.94	7.93		7.40	
	12/28/2020	Fine	16:35	0.50		0.25	20.70	20.70	20.7	8.21	8.21	8.3	21.01	21.01	21.1	112.30	111.70	111.3	8.91	8.86	8.8	8.29	8.28	8.3	6.80	6.5
			10:37	0.50		0.25	20.70	20.70		8.30	8.30		21.10	21.10		110.90	110.10		8.80	8.75		8.27	8.26		6.20	
	12/30/2020	Fine	17:40	0.50		0.25	13.70	13.70	13.8	8.55	8.55	8.6	9.46	9.46	9.2	91.20	92.00	92.2	8.91	8.99	8.8	4.68	4.69	4.7	7.20	7.0
			17:42	0.50		0.25	13.80	13.80		8.55	8.55		9.46	8.46		92.40	93.00		8.09	9.08		4.70	4.69		6.80	
	1/2/2021	Fine	10:10	0.50		0.25	13.20	13.20	13.4	8.25	8.25	8.2	13.85	13.85	13.9	94.40	94.80	95.4	9.06	9.09	9.1	3.76	3.75	3.7	3.90	3.7
			10:12	0.50		0.25	13.50	13.50		8.21	8.21		13.87	13.87		95.40	96.90		9.15	9.29		3.74	3.73		3.50	
	1/4/2021	Fine	11:35	0.50		0.25	18.50	18.50	18.6	8.03	8.03	8.0	24.14	24.14	24.2	94.80	94.10	93.7	7.69	7.63	7.6	5.39	5.38	5.4	5.60	5.6
			11:37	0.50		0.25	18.60	18.60		8.05	8.05		24.18	24.18		93.20	92.80		7.56	7.53		5.37	5.36		5.50	
	1/6/2021	Fine	12:50	0.50		0.25	19.30	19.30	19.3	7.82	7.82	7.8	20.76	20.76	20.8	117.20	117.00	116.6	9.56	9.53	9.5	5.32	5.32	5.3	3.20	3.4
			12:52	0.50		0.25	19.30	19.30		7.85	7.85		20.78	20.78		116.40	115.70		9.49	9.43		5.31	5.30		3.60	
	1/8/2021	Fine	13:45	0.50		0.25	10.30	10.30	10.3	8.39	8.39	8.4	2.39	2.39	2.4	132.10	131.80	131.4	14.58	14.55	14.3	3.89	3.89	3.9	2.20	2.1
			13:47	0.50		0.25	10.30	10.30		8.40	8.40		2.38	2.38		131.20	130.30		14.48	13.39		3.89	3.89		2.00	

Remark: * The data is excluded from determination of action and limit levels.

General Note: Additional data of temperature, pH, salinity, DO saturation, DO and turbidty were obtained in each duplicate set for better representativeness.

Baseline Water Quality Monitoring at Station W6 (Middle) - Ebb Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W6 Silvermine Bay (Near Silvermine Bay Beach)	12/14/2020	Cloudy	10:40	1.60	Middle	0.80	21.10	21.10	21.1	7.50	7.50	7.6	32.54	32.54	32.5	91.00	91.40	91.9	6.70	6.73	6.8	8.01	8.01	8.0	18.40	33.9 *
			10:42	1.60		0.80	21.00	21.00		7.61	7.61		32.54	32.54		92.40	92.90		6.80	6.84		8.01	8.01		49.40	
	12/16/2020	Fine	13:05	1.40		0.70	18.80	18.80	18.7	7.82	7.82	7.9	32.46	32.46	32.6	88.70	91.60	89.7	6.86	7.03	6.9	9.38	9.39	9.3	10.10	15.2
			13:07	1.40		0.70	18.50	18.50		8.00	8.00		32.77	32.77		88.30	90.20		6.82	6.98		9.31	9.31		20.20	
	12/18/2020	Fine	14:35	1.40		0.70	18.50	18.50	18.5	8.11	8.11	8.2	32.78	32.78	32.8	156.00	158.10	154.5	12.02	12.24	11.8	7.54	7.55	7.6	8.20	8.1
			14:37	1.40		0.70	18.40	18.40		8.20	8.20		32.84	32.84		151.80	152.00		11.43	11.44		7.57	7.56		7.90	
	12/21/2020	Fine	16:50	1.40		0.70	17.50	17.50	17.5	8.09	8.09	8.2	32.55	32.55	32.7	95.00	98.80	96.5	7.48	7.70	7.5	7.00	6.93	7.0	8.20	8.1
			16:52	1.40		0.70	17.40	17.40		8.22	8.22		32.80	32.80		96.80	95.20		7.62	7.37		6.94	6.99		7.90	
	12/23/2020	Cloudy	18:05	1.60		0.80	18.50	18.50	18.5	8.18	8.18	8.2	32.05	32.05	32.1	83.40	82.40	82.0	6.45	6.38	6.3	4.37	4.36	4.4	3.70	3.7
			18:07	1.60		0.80	18.50	18.50		8.24	8.24		32.10	32.10		81.50	80.70		6.31	6.25		4.35	4.36		3.60	
	12/25/2020	Cloudy	8:25	1.40		0.70	18.50	18.50	18.4	7.71	7.71	7.8	32.04	32.04	32.1	82.00	81.90	81.7	6.37	6.36	6.3	5.64	5.62	5.6	4.80	5.1
			8:27	1.40		0.70	18.20	18.20		7.95	7.95		32.10	32.10		81.50	81.40		6.33	6.32		5.60	5.62		5.40	
	12/28/2020	Fine	10:20	1.20		0.60	20.00	20.00	20.2	7.54	7.54	7.7	31.99	31.99	32.0	102.20	101.50	101.2	7.66	7.61	7.6	6.18	6.17	6.2	5.80	5.6
			10:22	1.20		0.60	20.30	20.30		7.79	7.79		32.06	32.06		100.80	100.40		7.56	7.53		6.16	6.15		5.40	
	12/30/2020	Fine	12:30	1.00		0.50	19.40	19.40	19.3	8.01	8.01	8.0	32.10	32.10	32.2	91.60	90.20	90.0	6.67	6.85	6.8	6.79	6.80	6.8	8.30	8.2
			12:32	1.00		0.50	19.10	19.10		8.08	8.08		32.31	32.31		89.60	88.70		6.81	6.75		6.80	6.81		8.10	
	1/2/2021	Fine	14:20	1.00		0.50	17.80	17.80	17.8	7.98	7.98	8.0	31.95	31.95	32.0	95.60	94.90	94.5	7.51	7.45	7.4	9.23	9.23	9.2	8.70	8.3
			14:22	1.00		0.50	17.70	17.70		8.09	8.09		31.96	31.96		94.00	93.30		7.38	7.32		9.22	9.22		7.80	
	1/4/2021	Fine	15:15	1.40		0.70	18.60	18.60	18.6	8.20	8.20	8.2	31.92	31.92	31.9	102.90	102.50	102.1	7.95	7.91	7.9	6.00	6.01	6.0	6.80	6.6
			15:17	1.40		0.70	18.60	18.60		8.20	8.20		31.97	31.97		101.70	101.30		7.86	7.83		6.05	6.03		6.40	
	1/6/2021	Fine	11:25	1.40		0.70	18.40	18.40	18.4	7.96	7.96	8.0	31.76	31.76	31.8	96.70	96.20	96.0	7.52	7.48	7.5	6.01	6.02	6.0	6.30	6.0
			11:27	1.40		0.70	18.40	18.40		8.03	8.03		31.83	31.83		95.90	95.00		7.46	7.39		6.03	6.04		5.70	
	1/8/2021	Fine	19:30	1.60		0.80	14.60	14.60	14.5	8.40	8.40	8.4	31.67	31.67	31.8	99.50	99.20	99.2	8.32	8.31	8.3	6.41	6.42	6.4	5.90	6.4
			19:32	1.60		0.80	14.40	14.40		8.49	8.49		31.87	31.87		99.30	98.90		8.32	8.29		6.43	6.44		6.80	

Remark: * The data is excluded from determination of action and limit levels.

Baseline Water Quality Monitoring at Station W6 (Middle) - Flood Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Depth	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W6 Silvermine Bay (Near Silvermine Bay Beach)	12/14/2020	Cloudy	16:00	0.80	Middle	0.40	20.70	20.70	20.6	7.41	7.41	7.5	32.64	32.64	32.7	120.60	124.80	123.3	9.17	9.30	9.3	7.98	7.98	8.0	12.60	12.0
			16:02	0.80		0.40	20.40	20.40		7.64	7.64		32.68	32.68		124.80	123.10		9.30	9.28		7.97	7.93		11.40	
	12/16/2020	Fine	8:15	1.40		0.70	18.40	18.40	18.1	7.55	7.55	7.7	32.49	32.49	32.6	90.50	90.10	91.4	7.05	7.02	7.1	8.07	8.11	8.1	12.20	12.6
			8:17	1.40		0.70	17.80	17.80		7.76	7.76		32.66	32.66		92.70	92.40		7.26	7.23		8.12	8.13		13.00	
	12/18/2020	Fine	9:50	1.20		0.60	18.00	18.00	17.9	7.63	7.63	7.8	32.37	32.37	32.4	131.40	134.20	132.7	10.20	10.44	10.3	10.40	10.41	10.4	12.50	12.6
			9:52	1.20		0.60	17.70	17.70		7.89	7.89		32.39	32.39		133.80	131.20		10.30	10.20		10.35	10.33		12.70	
	12/21/2020	Fine	12:24	1.00		0.50	17.20	17.20	17.3	7.71	7.71	7.8	32.61	32.61	32.7	98.70	98.70	98.8	7.79	7.79	7.8	10.40	10.42	10.5	14.80	15.0
			12:27	1.00		0.50	17.30	17.30		7.85	7.85		32.69	32.69		98.60	99.30		7.78	7.82		10.53	10.55		15.20	
	12/23/2020	Cloudy	13:30	1.20		0.60	18.90	18.90	18.9	7.68	7.68	7.8	32.00	32.00	32.0	83.60	83.30	80.4	6.41	6.39	6.4	4.53	4.48	4.4	4.30	4.8
			13:32	1.20		0.60	18.90	18.90		7.82	7.82		32.04	32.04		82.60	72.00		6.35	6.30		4.41	4.22		5.20	
	12/25/2020	Cloudy	14:10	1.20		0.60	20.10	20.10	20.1	7.84	7.84	7.9	32.17	32.17	32.2	92.50	94.10	95.1	6.95	7.07	7.2	9.06	9.05	9.1	7.90	8.4
			14:12	1.20		0.60	20.10	20.10		7.89	7.89		32.20	32.20		96.50	97.30		7.27	7.32		9.11	9.12		8.90	
	12/28/2020	Fine	15:20	1.30		0.65	20.50	20.50	20.5	7.06	7.06	7.5	31.13	31.13	31.7	103.80	103.20	103.3	5.88	5.87	5.9	7.78	7.71	7.7	8.70	8.3
			15:22	1.30		0.65	20.50	20.50		7.97	7.97		32.18	32.18		103.00	103.10		5.86	5.87		7.68	7.69		7.80	
	12/30/2020	Fine	16:20	1.20		0.60	19.10	19.10	19.0	8.30	8.30	8.3	32.21	32.21	32.3	94.00	95.50	96.1	7.22	7.30	7.4	8.38	8.39	8.4	9.20	9.3
			16:22	1.20		0.60	18.90	18.90		8.37	8.37		32.30	32.30		97.10	97.70		7.43	7.47		8.38	8.37		9.40	
	1/2/2021	Fine	8:45	0.70		0.35	15.70	15.70	15.6	8.08	7.08	7.9	32.05	32.05	32.1	91.60	92.70	92.9	7.53	7.62	7.6	8.09	8.08	8.1	9.40	9.3
			8:47	0.70		0.35	15.40	15.40		8.15	8.15		32.18	32.18		92.90	94.30		7.62	7.82		8.07	8.06		9.10	
	1/4/2021	Fine	10:15	1.40		0.70	17.90	17.90	18.0	8.15	8.15	8.2	31.99	31.99	32.0	101.40	100.40	100.2	7.95	7.87	7.9	4.85	4.86	4.9	7.30	7.5
			10:17	1.40		0.70	18.00	18.00		8.24	8.24		32.03	32.03		99.90	99.20		7.83	7.78		4.86	4.87		7.60	
	1/6/2021	Fine	11:25	1.40		0.70	18.40	18.40	18.4	7.96	7.96	8.0	31.76	31.76	31.8	96.70	96.20	96.0	7.52	7.48	7.5	6.01	6.02	6.0	5.00	4.7
			11:27	1.40		0.70	18.40	18.40		8.03	8.03		31.83	31.83		95.90	95.00		7.46	7.39		6.03	6.04		4.40	
	1/8/2021	Fine	14:10	1.00		0.50	15.50	15.50	15.5	7.71	7.71	7.8	31.79	31.79	31.9	95.70	95.60	95.1	7.85	7.82	7.8	7.15	7.16	7.2	7.80	8.1
			14:12	1.00		0.50	15.50	15.50		7.87	7.87		31.92	31.92		94.80	94.30		7.74	7.70		7.22	7.23		8.30	

General Note: Additional data of temperature, pH, salinity, DO saturation, DO and turbidty were obtained in each duplicate set for better representativeness.

Baseline Water Quality Monitoring at Station W7 (Middle) - Ebb Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W7 Silvermine Bay (Open Water)	12/14/2020	Cloudy	11:10	1.40	Middle	0.70	21.20	21.20	21.2	7.98	7.98	8.0	32.81	32.81	32.8	112.40	111.10	110.5	8.24	8.15	8.1	9.50	9.47	9.5	7.40	7.7
			11:12	1.40		0.70	21.20	21.20		8.00	8.00		32.82	32.82		109.30	109.00		8.02	7.97		9.47	9.47		7.90	
	12/16/2020	Fine	13:30	1.20		0.60	18.70	18.70	18.5	8.26	8.26	8.3	32.79	32.79	32.8	86.60	86.80	86.9	6.64	6.71	7.7	9.21	9.23	9.2	9.30	9.4
			13:32	1.20		0.60	18.20	18.20		8.31	8.31		32.89	32.89		86.70	87.30		8.71	8.77		9.23	9.23		9.40	
	12/18/2020	Fine	15:00	1.20		0.60	18.50	18.50	18.6	8.24	8.24	8.3	32.45	32.45	32.5	78.30	77.80	77.8	6.03	5.99	6.0	8.50	8.49	8.4	9.60	9.4
			15:02	1.20		0.60	18.60	18.60		8.34	8.34		32.55	32.55		77.70	77.30		5.97	5.95		8.25	8.26		9.10	
	12/21/2020	Fine	17:15	1.40		0.70	17.20	17.20	17.1	8.38	8.38	8.4	32.12	32.12	32.2	97.00	98.30	94.5	7.71	7.67	7.4	6.21	6.19	6.2	9.60	9.4
			17:17	1.40		0.70	16.90	16.90		8.40	8.40		32.31	32.31		92.00	90.60		7.22	7.16		6.17	6.16		9.10	
	12/23/2020	Cloudy	18:30	1.40		0.70	18.80	18.80	18.8	8.39	8.39	8.4	31.66	31.66	31.7	76.90	76.70	76.7	5.94	5.93	5.9	4.33	4.31	4.3	3.20	3.5
			18:32	1.40		0.70	18.70	18.70		8.39	8.39		31.69	31.69		76.80	76.50		5.93	5.91		4.30	4.26		3.70	
	12/25/2020	Cloudy	8:55	1.20		0.60	18.40	18.40	18.4	8.23	8.23	8.2	32.15	32.15	32.2	101.50	100.90	100.6	7.80	7.82	7.8	4.16	4.16	4.2	3.90	3.4
			8:57	1.20		0.60	18.40	18.40		8.25	8.25		32.22	32.22		100.10	99.70		7.80	7.76		4.16	4.17		2.90	
	12/28/2020	Fine	10:50	1.00		0.50	20.10	20.10	20.2	8.09	8.09	8.1	32.10	32.10	32.1	103.80	103.20	102.9	7.79	7.75	7.7	5.95	5.95	6.0	6.50	6.1
			10:52	1.00		0.50	20.20	20.20		8.12	8.12		32.11	32.11		102.50	101.90		7.70	7.65		5.95	5.95		5.60	
	12/30/2020	Fine	12:55	0.90		0.45	19.30	19.30	19.2	8.27	8.27	8.3	32.20	32.20	32.2	99.70	98.60	98.0	7.68	7.56	7.5	6.50	6.49	6.5	7.10	6.9
			12:57	0.90		0.45	19.00	19.00		8.32	8.32		32.24	32.24		96.90	96.60		7.47	7.41		6.50	6.51		6.70	
	1/2/2021	Fine	14:45	0.90		0.45	17.80	17.80	17.8	8.34	8.34	8.4	32.04	32.04	32.1	88.40	88.10	88.0	6.94	6.91	6.9	6.01	6.02	6.0	5.60	5.7
			14:47	0.90		0.45	17.80	17.80		8.36	8.36		32.16	32.16		87.80	87.60		6.88	6.86		6.03	6.04		5.80	
	1/4/2021	Fine	15:40	1.20		0.60	18.60	18.60	18.6	8.24	8.24	8.2	31.95	31.95	32.0	100.50	100.10	99.8	7.78	7.74	7.7	6.67	6.73	6.7	7.10	7.3
			15:42	1.20		0.60	18.60	18.60		8.23	8.23		31.95	31.95		99.50	98.90		7.70	7.65		6.71	6.72		7.40	
	1/6/2021	Fine	11:50	0.80		0.40	18.30	18.30	18.3	8.29	8.29	8.3	31.71	31.71	31.7	97.60	97.40	97.0	7.64	7.61	7.6	5.14	5.13	5.1	6.80	5.9
			11:52	0.80		0.40	18.30	18.30		8.30	8.30		31.75	31.75		97.00	96.10		7.56	7.49		5.14	5.13		5.00	
	1/8/2021	Fine	20:10	1.40		0.70	14.90	14.90	14.9	8.60	8.60	8.6	31.35	31.35	31.4	88.40	87.70	87.1	7.38	7.31	7.3	5.14	5.13	5.1	4.40	4.8
			20:12	1.40		0.70	14.80	14.80		8.61	8.61		31.43	31.43		86.60	85.80		7.22	7.16		5.12	5.11		5.20	

Baseline Water Quality Monitoring at Station W7 (Middle) - Flood Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W7 Silvermine Bay (Open Water)	12/14/2020	Cloudy	16:15	1.40	Middle	0.70	20.70	20.70	20.6	8.01	8.01	8.0	32.76	32.76	32.8	86.70	87.10	86.5	6.43	6.47	6.9	9.74	9.74	9.7	11.40	11.2
			16:17	1.40		0.70	20.40	20.40		8.00	8.00		32.80	32.80		86.40	85.80		6.42	8.34		9.73	9.72		11.00	
	12/16/2020	Fine	8:40	0.80		0.40	17.90	17.90	17.9	8.14	8.14	8.1	32.79	32.79	32.8	86.50	86.60	88.6	6.70	6.71	6.9	10.10	10.16	10.2	13.40	13.6
			8:42	0.80		0.40	17.80	17.80		8.15	8.15		32.79	32.79		90.50	90.60		7.08	7.10		10.17	10.19		13.80	
	12/18/2020	Fine	10:20	0.60		0.30	17.90	17.90	17.8	8.16	8.16	8.2	32.65	32.65	32.5	99.00	99.60	99.4	7.38	7.44	7.4	9.99	10.05	10.0	15.10	14.8
			10:22	0.60		0.30	17.60	17.60		8.22	8.22		32.40	32.40		99.50	99.30		7.44	7.43		10.01	10.00		14.50	
	12/21/2020	Fine	12:50	1.00		0.50	17.10	17.10	17.2	8.15	8.15	8.2	32.71	32.71	32.7	80.60	80.10	79.9	6.37	6.33	6.3	10.63	10.61	10.6	12.80	12.6
			12:52	1.00		0.50	17.20	17.20		8.18	8.18		32.78	32.78		79.70	79.30		6.30	6.27		10.56	10.50		12.30	
	12/23/2020	Cloudy	13:55	1.00		0.50	18.80	18.80	18.8	8.22	8.22	8.2	32.25	32.25	32.3	77.50	76.40	76.1	5.95	5.86	5.8	6.52	6.53	6.6	6.50	6.7
			13:57	1.00		0.50	18.80	18.80		8.23	8.23		32.25	32.25		75.50	74.90		5.81	5.75		6.57	6.62		6.80	
	12/25/2020	Cloudy	14:40	1.00		0.50	19.70	19.70	19.9	8.13	8.13	8.2	32.34	32.34	32.3	72.40	72.30	72.2	5.48	5.47	5.4	7.04	7.03	7.0	7.70	7.2
			14;42	1.00		0.50	20.00	20.00		8.19	8.19		32.29	32.29		72.10	72.10		5.41	5.41		7.03	7.05		6.70	
	12/28/2020	Fine	15:45	1.40		0.70	20.40	20.40	20.3	8.25	8.25	8.3	32.14	32.14	32.1	96.50	96.00	95.9	7.20	7.15	7.2	8.42	8.43	8.4	10.00	10.5
			15:47	1.40		0.70	20.10	20.10		8.27	8.27		32.15	32.15		95.70	95.20		7.14	7.11		8.45	8.44		10.90	
	12/30/2020	Fine	16:40	1.20		0.60	18.70	18.70	18.7	8.45	8.45	8.5	32.20	32.20	32.2	103.70	102.50	102.3	7.99	7.89	7.9	6.97	6.98	7.0	10.20	10.1
			16:42	1.20		0.60	18.70	18.70		8.46	8.46		32.26	32.26		101.90	100.90		7.85	7.76		6.99	7.00		9.90	
	1/2/2021	Fine	9:15	0.60		0.30	16.30	16.30	16.3	8.36	8.36	8.4	32.05	32.05	32.1	81.50	83.60	84.2	6.58	6.75	6.8	6.10	6.11	6.1	6.90	6.8
			9:17	0.60		0.30	16.30	16.30		8.36	8.36		32.05	32.05		85.10	86.60		6.86	6.99		6.10	6.09		6.60	
	1/4/2021	Fine	10:40	1.20		0.60	17.90	17.90	17.9	8.38	8.38	8.4	31.95	31.95	83.9	83.90	83.70	83.5	6.58	6.56	6.5	6.27	6.28	6.3	8.20	8.1
			10:42	1.20		0.60	17.90	17.90		8.39	8.39		31.98	31.98		83.40	82.90		6.54	6.50		6.27	6.26		7.90	
	1/6/2021	Fine	11:50	0.80		0.40	18.30	18.30	18.3	8.29	8.29	8.3	31.75	31.75	31.8	97.60	97.40	97.0	7.64	7.61	7.6	5.14	5.13	5.1	3.70	3.6
			11:52	0.80		0.40	18.30	18.30		8.30	8.30		31.75	31.75		97.00	96.10		7.56	7.49		5.14	5.13		3.40	
	1/8/2021	Fine	14:35	1.00		0.50	15.40	15.40	15.3	8.37	8.37	8.4	32.00	32.00	32.0	92.30	91.50	91.3	7.59	7.52	7.5	6.80	6.81	6.8	9.60	9.7
			14:37	1.00		0.50	15.20	15.20		8.38	8.38		32.04	32.04		91.00	90.20		7.47	7.41		6.80	6.79		9.80	

General Note: Additional data of temperature, pH, salinity, DO saturation, DO and turbidty were obtained in each duplicate set for better representativeness.

Baseline Water Quality Monitoring at Station W8 (Surface) - Ebb Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W8 Silvermine Bay (Open Water)	12/14/2020	Cloudy	10:50	3.70	Surface	1.00	21.10	21.10	21.1	7.76	7.76	7.8	32.82	32.82	32.8	94.40	94.90	101.9	6.92	6.96	7.5	4.71	4.78	7.1	5.80	5.5
			10:52	3.70		1.00	21.10	21.10		7.83	7.83		32.85	32.85		109.30	109.00		8.02	7.97		9.47	9.44		5.20	
	12/16/2020	Fine	13:10	4.00		1.00	18.90	18.90	18.8	8.10	8.10	8.2	32.50	32.50	32.6	87.40	88.70	86.6	6.69	6.81	6.6	7.43	7.42	7.4	7.10	7.4
			13:32	4.00		1.00	18.60	18.60		8.15	8.50		32.79	32.79		84.90	85.50		6.51	6.58		7.43	7.44		7.60	
	12/18/2020	Fine	14:45	3.80		1.00	18.20	18.20	18.2	8.21	8.21	8.2	32.65	32.65	32.7	82.50	81.50	81.0	6.39	6.30	6.3	8.13	8.09	8.1	9.40	9.7
			14:47	3.80		1.00	18.20	18.20		8.28	8.28		32.83	32.83		80.40	79.70		6.23	6.18		8.04	8.05		9.90	
	12/21/2020	Fine	17:00	4.20		1.00	17.40	17.40	17.4	8.27	8.27	8.3	32.58	32.58	32.7	96.20	94.80	90.1	7.58	7.24	7.0	5.20	5.20	5.2	9.40	9.7
			17:02	4.20		1.00	17.30	17.30		8.32	8.32		32.77	32.77		85.70	83.70		6.75	6.53		5.27	5.29		9.90	
	12/23/2020	Cloudy	18:15	3.80		1.00	18.60	18.60	18.6	8.32	8.32	8.3	32.21	32.21	32.2	82.20	80.90	80.4	6.34	6.22	6.2	2.95	2.91	2.9	2.00	2.1
			18:17	3.80		1.00	18.60	18.60		8.33	8.33		32.22	32.22		79.60	78.90		6.15	6.09		2.83	2.82		2.20	
	12/25/2020	Cloudy	8:35	3.80		1.00	18.40	18.40	18.4	8.11	8.11	8.1	32.18	32.18	32.2	81.20	80.10	80.1	6.28	6.21	6.2	5.09	5.09	5.1	4.00	3.8
			8:37	3.80		1.00	18.40	18.40		8.14	8.14		32.24	32.24		79.90	79.10		6.19	6.15		5.09	5.09		3.60	
	12/28/2020	Fine	10:30	3.80		1.00	19.90	19.90	20.0	7.95	7.95	8.0	32.14	32.14	32.2	89.80	89.40	89.4	6.77	6.74	6.7	5.09	5.09	5.1	6.00	7.0
			10:32	3.80		1.00	20.00	20.00		7.99	7.99		32.18	32.18		89.30	89.10		6.73	6.71		5.09	5.09		7.90	
	12/30/2020	Fine	12:40	3.80		1.00	19.50	19.50	19.3	8.22	8.22	8.2	32.06	32.06	32.2	75.20	75.00	75.0	5.72	5.71	5.7	7.33	7.32	7.3	7.70	7.6
			12:42	3.80		1.00	19.10	19.10		8.23	8.23		32.33	32.33		75.10	74.80		5.72	5.70		7.31	7.29		7.50	
	1/2/2021	Fine	14:30	3.60		1.00	17.20	17.20	17.2	8.22	8.22	8.2	32.08	32.08	32.1	93.80	94.10	94.2	7.44	7.48	7.5	4.65	4.65	4.6	5.20	5.2
			14:32	3.60		1.00	17.20	17.20		8.26	8.26		32.13	32.13		94.40	94.50		7.48	7.50		4.63	4.64		5.20	
	1/4/2021	Fine	15:25	2.00		1.00	18.20	18.20	18.2	8.37	8.37	8.4	32.07	32.07	32.1	106.20	105.70	105.2	8.28	8.23	8.2	5.32	5.33	5.3	6.10	6.1
			15:27	2.00		1.00	18.20	18.20		8.40	8.40		32.04	32.04		104.70	104.10		8.16	8.11		5.36	5.37		6.10	
	1/6/2021	Fine	11:35	3.50		1.00	18.10	18.10	18.1	8.18	8.18	8.2	31.86	31.86	31.9	96.70	96.10	96.0	7.55	7.50	7.5	5.42	5.43	5.4	3.80	3.8
			11:37	3.50		1.00	18.10	18.10		8.23	8.23		31.95	31.95		95.70	95.40		7.47	7.45		5.44	5.45		3.80	
	1/8/2021	Fine	19:55	3.70		1.00	15.30	15.30	15.3	8.52	8.52	8.5	31.41	31.41	31.4	92.00	91.60	91.5	7.61	7.57	7.6	6.37	6.36	6.4	7.30	7.7
			19:57	3.70		1.00	15.20	15.20		8.53	8.53		31.43	31.43		91.30	90.90		7.56	7.52		6.35	6.34		8.00	

Baseline Water Quality Monitoring at Station W8 (Surface & Middle) - Flood Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Depth	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W8 Silvermine Bay (Open Water)	12/14/2020	Cloudy	16:05	4.00	Surface	1.00	20.70	20.70	20.6	7.81	7.81	7.8	32.73	32.73	32.7	95.50	95.50	95.1	7.07	7.08	7.0	5.03	5.03	5.0	5.40	5.2
			16:07	4.00		1.00	20.50	20.50		7.86	7.86		32.75	32.75		95.00	94.20		7.05	6.99		5.00	4.99		5.00	
	12/16/2020	Fine	8:25	0.60	Middle	0.30	18.60	18.60	18.4	7.94	7.94	8.0	32.65	32.65	32.7	86.60	87.20	87.7	6.74	6.77	6.8	5.59	5.71	5.6	14.00	14.5
			8:27	0.60		0.30	18.10	18.10		8.00	8.00		32.65	32.65		88.40	88.40		6.89	6.89		5.62	5.64		14.90	
	12/18/2020	Fine	10:00	3.40	Surface	1.00	18.20	18.20	18.3	8.07	8.07	8.1	32.63	32.63	32.7	89.60	93.40	90.6	6.93	7.16	6.9	8.27	8.26	8.3	9.80	10.0
			10:02	3.40		1.00	18.30	18.30		8.11	8.11		32.75	32.75		89.10	90.10		6.67	6.98		8.25	8.22		10.20	
	12/21/2020	Fine	12:30	3.60		1.00	17.10	17.10	17.2	8.01	8.01	8.0	32.72	32.72	32.8	78.10	78.00	78.1	6.16	6.15	6.2	9.72	9.71	9.7	11.30	11.0
			12:32	3.60		1.00	17.20	17.20		8.04	8.04		32.90	32.90		78.10	78.10		6.16	6.16		9.73	9.74		10.70	
	12/23/2020	Cloudy	13:40	3.60		1.00	18.60	18.60	18.6	7.97	7.97	8.0	32.39	32.39	32.4	80.80	80.40	79.9	6.22	6.20	6.2	6.19	9.20	6.9	5.70	5.4
			13:42	3.60		1.00	18.60	18.60		8.05	8.05		32.36	32.36		80.30	77.90		6.18	6.17		6.20	6.20		5.10	
	12/25/2020	Cloudy	14:20	3.80		1.00	19.50	19.50	19.6	8.04	8.04	8.1	32.33	32.33	32.3	77.70	77.40	75.8	5.62	5.62	5.6	7.19	7.19	7.2	4.50	4.6
			14:22	3.80		1.00	19.60	19.60		8.10	8.10		32.29	32.29		74.20	73.90		5.62	5.61		7.22	7.23		4.60	
	12/28/2020	Fine	15:30	4.00		1.00	20.20	20.20	20.3	8.19	8.19	8.2	32.13	32.13	32.2	73.40	73.50	73.8	5.49	5.50	5.5	6.67	6.68	6.7	9.10	8.7
			15:32	4.00		1.00	20.40	20.40		8.23	8.23		32.19	32.19		74.10	74.30		5.54	5.55		6.79	6.80		8.30	
	12/30/2020	Fine	16:30	4.00		1.00	18.80	18.80	18.8	8.42	8.42	8.4	32.10	32.10	32.2	84.40	84.10	83.7	6.49	6.47	6.4	8.13	8.13	8.1	8.10	8.3
			16:32	4.00		1.00	18.70	18.70		8.43	8.43		32.22	32.22		83.20	82.90		6.39	6.38		8.11	8.13		8.40	
	1/2/2021	Fine	8:55	3.40		1.00	16.30	16.30	16.3	8.26	8.26	8.3	32.11	32.11	32.2	88.00	87.50	87.2	7.10	7.06	7.0	7.54	7.54	7.5	7.50	7.7
			8:57	3.40		1.00	16.30	16.30		8.29	8.29		32.21	32.21		86.60	86.50		6.99	6.97		7.54	7.55		7.90	
	1/4/2021	Fine	10:25	3.50		1.00	18.00	18.00	18.0	8.28	8.28	8.3	31.89	31.89	31.9	99.80	99.40	98.7	7.85	7.80	7.7	6.44	6.42	6.5	6.20	6.3
			11:37	3.50		1.00	18.00	18.00		8.32	8.32		31.94	31.94		98.40	97.10		7.70	7.59		6.64	6.42		6.30	
	1/6/2021	Fine	11:35	3.50		1.00	18.10	18.10	18.1	8.18	8.18	8.2	31.86	31.83	31.9	96.70	96.10	96.0	7.55	7.50	7.5	5.42	5.43	5.4	4.60	4.6
			11:37	3.50		1.00	18.10	18.10		8.23	8.23		31.95	31.95		95.70	95.40		7.47	7.45		5.44	5.45		4.60	
	1/8/2021	Fine	19:55	4.00		1.00	15.40	15.40	15.2	8.12	8.12	8.1	31.57	31.57	31.6	95.20	95.00	94.7	8.21	8.20	8.0	6.49	6.50	6.5	8.40	8.4
			19:57	4.00		1.00	15.00	15.00		8.17	8.17		31.58	31.58		94.50	94.10		7.88	7.79		6.48	6.49		8.40	

General Note: Additional data of temperature, pH, salinity, DO saturation, DO and turbidty were obtained in each duplicate set for better representativeness.

Baseline Water Quality Monitoring at Station W8 (Bottom) - Ebb Tide

Station Reference	Sampling Date	Weather	Sampling Time	Water Depth	Sampling Level	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W8 Silvermine Bay (Open Water)	12/14/2020	Cloudy	11:00	3.70	Bottom	2.70	21.10	21.10	21.1	7.91	7.91	7.9	32.81	32.81	32.8	92.40	92.90	93.1	6.79	6.83	6.8	3.90	3.99	3.9	6.80	6.5
			11:02	3.70		2.70	21.10	21.10		7.93	7.93		32.83	32.83		93.20	93.70		6.85	6.92		3.92	3.94		6.20	
	12/16/2020	Fine	13:15	4.00		3.00	18.60	18.60	18.5	8.19	8.19	8.2	32.39	32.39	32.6	89.20	86.60	86.9	6.89	6.61	6.7	8.44	8.47	8.5	9.30	9.7
			13:17	4.00		3.00	18.30	18.30		8.26	8.26		32.84	32.84		85.10	86.80		6.64	6.53		8.49	8.54		10.00	
	12/18/2020	Fine	14:50	3.80		2.80	18.30	18.30	18.3	8.24	8.24	8.3	32.71	32.71	32.8	78.40	77.30	77.0	6.05	5.97	6.0	7.54	7.53	7.5	8.10	8.3
			14:52	3.80		2.80	18.30	18.30		8.32	8.32		32.83	32.83		76.30	76.00		5.91	5.88		7.54	7.55		8.50	
	12/21/2020	Fine	17:10	4.20		3.20	17.20	17.20	17.2	8.34	8.34	8.3	32.68	32.68	32.7	79.70	79.00	78.8	6.28	6.24	6.2	7.27	7.27	7.2	8.10	8.3
			17:12	4.20		3.20	17.20	17.20		8.35	8.35		32.73	32.73		78.40	77.90		6.20	6.15		7.15	7.15		8.50	
	12/23/2020	Cloudy	18:20	3.80		2.80	18.60	18.60	18.6	8.36	8.36	8.4	32.24	32.24	32.3	87.00	88.40	85.8	6.77	6.79	6.6	3.62	3.62	3.6	3.20	3.4
			18:22	3.80		2.80	18.50	18.50		8.37	8.37		32.27	32.27		84.50	83.20		6.54	6.38		3.53	3.57		3.60	
	12/25/2020	Cloudy	8:45	3.80		2.80	18.30	18.30	18.3	8.21	8.21	8.2	32.22	32.22	32.2	84.10	84.00	84.8	6.52	6.51	6.3	5.60	5.61	5.6	4.30	3.9
			8:47	3.80		2.80	18.30	18.30		8.21	8.21		32.19	32.19		85.10	86.00		6.59	5.69		5.62	5.64		3.50	
	12/28/2020	Fine	10:40	3.80		2.80	19.90	19.90	20.0	8.07	8.07	8.1	32.17	32.17	32.2	78.70	78.20	78.2	6.93	6.90	6.9	5.32	5.31	5.3	7.90	7.5
			10:42	3.80		2.80	20.00	20.00		8.09	8.09		32.18	32.18		78.00	77.90		6.88	6.87		5.33	5.32		7.00	
	12/30/2020	Fine	12:50	3.80		2.80	19.30	19.30	19.2	8.29	8.29	8.3	32.11	32.11	32.2	77.80	77.50	77.2	5.96	5.93	5.9	7.58	7.57	7.6	8.40	8.3
			12:52	3.80		2.80	19.00	19.00		8.30	8.30		32.20	32.20		77.00	76.50		5.96	5.85		7.56	7.55		8.20	
	1/2/2021	Fine	14:35	3.60		2.60	17.30	17.30	17.3	8.32	8.32	8.3	32.08	32.08	32.1	88.10	88.50	88.8	6.97	7.01	7.0	5.15	5.14	5.1	7.80	7.6
			14:37	3.60		2.60	17.30	17.30		8.34	8.34		32.17	32.17		89.00	89.50		7.05	7.09		5.13	5.12		7.40	
	1/4/2021	Fine	15:30	3.50		2.50	18.20	18.20	18.2	8.43	8.43	8.4	32.10	32.10	32.1	106.40	106.90	106.7	8.34	8.35	8.3	5.09	5.09	5.1	4.60	4.4
			15:32	3.50		2.50	18.20	18.20		8.45	8.45		32.06	32.06		106.80	106.50		8.33	8.30		5.02	5.01		4.20	
	1/6/2021	Fine	11:40	3.50		2.50	18.30	18.30	18.3	8.26	8.26	8.3	31.98	31.98	32.0	98.80	98.50	98.3	7.68	7.66	7.6	5.62	5.61	5.6	8.40	8.2
			11:42	3.50		2.50	18.30	18.30		8.27	8.27		31.98	31.98		98.00	97.70		7.62	7.50		5.60	5.59		8.00	
	1/8/2021	Fine	20:00	3.70		2.70	15.00	15.00	15.0	8.54	8.54	8.5	31.33	31.33	31.4	89.50	89.80	89.6	7.45	7.47	7.5	5.69	5.68	5.7	5.60	5.4
			20:02	3.70		2.70	14.90	14.90		8.55	8.55		31.48	31.48		89.70	89.30		7.47	7.44		5.66	5.65		5.10	

Baseline Water Quality Monitoring at Station W8 (Bottom) - Flood Tide

Station Reference	Sampling Date	Weather	Sampling Time	Sampling Depth	Sampling Depth	Sampling Depth	Temperature			pH			Salinity			DO Saturation			DO			Turbidity			SS	
							°C			-			ppt			%			mg/L			NTU			mg/L	
				m		m	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
W8 Silvermine Bay (Open Water)	12/14/2020	Cloudy	16:10	4.00	Bottom	3.00	20.30	20.30	20.6	7.93	7.93	8.0	32.76	32.76	32.8	93.80	94.50	94.0	6.95	7.00	7.0	4.86	4.87	4.9	5.80	5.8
			16:12	4.00		3.00	20.80	20.80		7.97	7.97		32.78	32.78		93.80	93.70		6.95	6.95		4.99	4.94		5.70	
	12/16/2020	Fine	Only water samples in middle layer were collected.																							
	12/18/2020	Fine	10:10	3.40		2.40	18.30	18.30	18.4	8.15	8.15	8.2	32.71	32.71	32.7	87.50	84.30	83.2	6.71	6.40	6.4	8.97	8.98	9.0	11.00	11.4
			10:12	3.40		2.40	18.40	18.40		8.17	8.17		32.74	32.74		81.30	79.60		6.28	6.15		9.00	8.98		11.70	
	12/21/2020	Fine	12:40	3.60		2.60	17.10	17.10	17.2	8.09	8.09	8.1	32.67	32.67	32.7	80.10	80.20	80.3	6.34	6.35	6.4	10.01	10.00	10.0	11.90	12.1
			12:42	3.60		2.60	17.20	17.20		8.13	8.13		32.80	32.80		80.50	80.50		6.37	6.37		10.00	10.00		12.20	
	12/23/2020	Cloudy	13:50	3.60		2.60	18.50	18.50	18.5	8.12	8.12	8.1	32.40	32.40	32.4	80.30	79.40	79.3	6.20	6.13	6.1	5.04	5.03	5.1	5.40	5.1
			13:52	3.60		2.60	18.50	18.50		8.15	8.15		32.38	32.38		79.10	78.50		6.11	6.06		5.07	5.09		4.70	
	12/25/2020	Cloudy	14:30	3.80		2.80	19.30	19.30	19.4	8.14	8.14	8.1	32.32	32.32	32.3	77.70	77.40	77.3	5.91	5.88	5.9	6.03	6.04	6.0	6.40	6.0
			14:32	3.80		2.80	19.40	19.40		8.15	8.15		32.28	32.28		77.00	76.90		5.86	5.86		5.95	5.83		5.50	
	12/28/2020	Fine	15:35	4.00		3.00	20.30	20.30	20.3	8.25	8.25	8.3	32.12	32.12	32.1	82.00	81.80	81.7	6.14	6.12	6.1	8.01	8.00	8.0	8.40	8.6
			15:37	4.00		3.00	20.30	20.30		8.25	8.25		32.12	32.12		81.60	81.40		6.10	6.09		7.98	7.96		8.80	
	12/30/2020	Fine	16:35	4.00		3.00	19.00	19.00	18.9	8.44	8.44	8.4	32.06	32.06	32.1	81.50	81.10	81.0	6.25	6.22	6.2	7.81	7.80	7.8	9.10	9.0
			16:37	4.00		3.00	18.80	18.80		8.44	8.44		32.20	32.20		80.90	80.40		6.20	6.16		7.79	7.77		8.80	
	1/2/2021	Fine	9:05	3.40		2.40	16.50	16.50	16.5	8.34	8.34	8.3	32.07	32.07	32.1	83.00	84.30	85.8	6.58	6.78	6.9	8.62	8.59	8.6	9.00	9.1
			9:07	3.40		2.40	16.50	16.50		8.35	8.35		32.17	32.17		86.10	89.60		6.93	7.21		8.58	8.59		9.20	
	1/4/2021	Fine	10:35	3.50		2.50	17.90	17.90	17.9	8.36	8.36	8.4	32.01	32.01	32.0	95.10	94.80	94.1	7.45	7.42	7.4	6.55	6.54	6.6	8.30	8.2
			10:37	3.50		2.50	17.90	17.90		8.37	8.37		32.00	32.00		93.50	93.10		7.32	7.29		6.55	6.56		8.10	
	1/6/2021	Fine	11:40	3.50		2.50	18.30	18.30	18.3	8.26	8.26	8.3	31.98	31.98	32.0	98.80	98.50	98.3	7.68	7.65	7.6	5.62	5.61	5.6	5.50	5.5
			11:42	3.50		2.50	18.30	18.30		8.27	8.27		31.98	31.98		98.00	97.70		7.62	7.50		5.60	5.69		5.50	
	1/8/2021	Fine	14:25	4.00		3.00	15.90	15.90	15.7	8.27	8.27	8.3	31.58	31.58	32.1	100.00	99.60	99.0	8.07	8.05	8.0	7.09	7.10	7.1	8.00	8.5
			14:27	4.00		3.00	15.50	15.50		8.30	8.30		32.65	32.65		98.60	97.90		8.03	7.98		7.11	7.12		8.90	

General Note: Additional data of temperature, pH, salinity, DO saturation, DO and turbidty were obtained in each duplicate set for better representativeness.

Appendix G

Tree Survey Results and Recommendations

814500N

814450N

817800E

817850E

817900E

T9 T8 T7 T6 T4 T3 T2 T1 T52 T53 T54 T51 T50 T47 T49 T46 T22 T48 T27 T37 T30 T31 T39 T35 T38 T34 T40

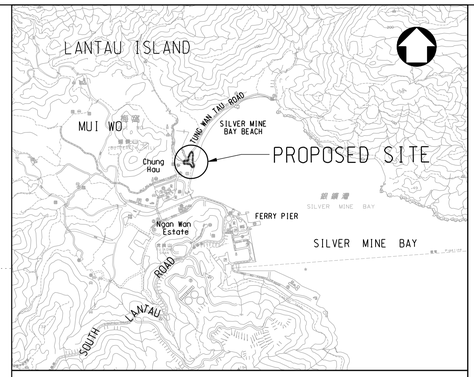
Temporary Structure

PILLAR BOX

Track

銀鑛灣渡假酒店

Silvermine Beach Resort



LOCATION PLAN

SCALE 1 : 20 000

NOTES :

1. ALL LEVELS ARE IN METRES ABOVE H.K.P.D.

LEGEND :

- LIMIT OF WORKS SITE
- PROPOSED TWIN BRIDGES AND APPROACH ROADS
- T7 TREE TO BE RETAINED
- T30 TREE TO BE FELLED
- T8 TREE NOT FOUND DURING ASSESSMENT

SCALE 1 : 1

0 10 20 30 40 50 60 70 80 90 100mm

SCALE 1 : 1

contract no.

file no. HCW/NF/56/L

project no.

contract

NEW WANG TONG RIVER BRIDGE

drawing title

TREE SURVEY PLAN

drawing no. HWDIS101A-SK0023-A

scale A1 1 : 200 OR AS SHOWN

office

WORKS DIVISION

HIGHWAYS DEPARTMENT HONG KONG

\STO_1\IS101A\HWDIS101A-SK0023-A.dgn

A1 841x594

Tree Assessment Schedule

Project Title : New Wang Tong River Bridge, Mui Wo

Date of Tree Assessment : 5.12.2018 & 6.12.2018

Note: To be read in conjunction with Tree Survey Plan (Drawing no. HWDIS101A-SK0023A) from the project office and Tree Inspection Report prepared by the SFdO team of LandscapeD, HyD.

Tree No.	Species		Measurements			Amenity value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status	Recommendation	Department to provide expert advice to LandsD	Additional Remarks
	Scientific name	Chinese name	Height (m)	DBH (mm)	Crown spread (m)	(Good/Fair/Poor)				(High/ Medium/ Low)	Remarks		(Retain/ Transplant/ Fell)		
T1	*Terminalia catappa*	欖仁樹	8.0	268	9.0	Fair	Fair	Fair	Fair	Low	Co-dominant leaders / wounds found at leader and branch	N/A	Fell	LCSD	Location of tree is in direct conflict with proposed works. Transplantation to nearby beach location is not feasible. If transplanting to recipient locations off-site, heavy pruning would be involved due to large size and limitation of vehicle size, which will lower the feasibility of successful transplantation.
T2	*Terminalia catappa*	欖仁樹	9.0	303	9.0	Fair	Fair	Fair	Fair	Low	co-dominant leaders / broken branches at the tree top	N/A	Fell	LCSD	Location of tree is in direct conflict with proposed works. Transplantation to nearby beach location is not feasible. If transplanting to recipient locations off-site, heavy pruning would be involved due to large size and limitation of vehicle size, which will lower the feasibility of successful transplantation.
T3	*Terminalia catappa*	欖仁樹	8.0	312	8.0	Fair	Fair	Fair	Fair	Medium	multiple leaders.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works.
T4	*Casuarina equisetifolia*	木麻黃	18.0	761	12.0	Fair	Fair	Fair	Fair	Low	Many branches facing the sea found broken or trimmed / a few branches at the tree top found broken or trimmed.	N/A	Retain	LCSD	Mature tree in overall fair condition.Crown cleaning to remove broken twigs required.
T6	*Casuarina equisetifolia*	木麻黃	10.0	411	6.0	Fair	Poor	Fair	Poor	Low	Poor taper and imbalanced tree crown / Main leader broken at tree top with few broken branches/ many bulges along the trunk.	N/A	Fell	LCSD	Location of tree is in direct conflict with proposed works. / Poor tree structure and form. Epicormic development from bulges. The species of low survival rate of transplantation.
T7	*Terminalia catappa*	欖仁樹	9.0	255	9.0	Fair	Poor	Fair	Fair	Low	Leaning form / some wounds found at branches.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works.
T8	*Terminalia catappa*	欖仁樹	--	--	--	--	--	--	--	--	T8 was found already removed.	N/A	Already removed	LCSD	--
T9	*Ficus microcarpa*	細葉榕	5.0	376	11.0	Fair	Poor	Fair	Poor	Low	leaning form / broken wound at the co-dominant leader / trunk cavity.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works.
T22	*Casuarina equisetifolia*	木麻黃	12.0	360	8.0	Fair	Fair	Fair	Fair	Low	the foliage relatively sparse.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works. / The species of low survival rate of transplantation.
T27	*Macaranga tanarius*	血桐	3.0	180	3.0	Fair	Poor	Fair	Poor	Low	leaning form / Root growing beneath granite revetment	N/A	Fell	LCSD	Location of tree is in conflict with proposed works. Poor tree form, impractical to transplant due to root environment beneath granite revetment
T30	*Macaranga tanarius*	血桐	3.5	235	3.5	Fair	Poor	Fair	Poor	Low	co-dominant stems / 2 spots of decay at the crotch / basal decay / one stem with cavity & mud tube.	N/A	Fell	LCSD	Location of tree is in direct conflict with proposed works.
T31	*Casuarina equisetifolia*	木麻黃	16.0	411	9.0	Fair	Poor	Fair	Poor	Low	Poor taper and imbalanced tree crown, branches with lions' tailing, '2 of the 3 main branches found broken / a wound on the trunk.	N/A	Fell	LCSD	Location of tree is in direct conflict with proposed works. / Poor tree form and structure. The species of low survival rate of transplantation.
T34	*Casuarina equisetifolia*	木麻黃	--	--	--	--	--	--	--	--	T34 was found already removed.	N/A	Already removed	LCSD	--
T35	*Casuarina equisetifolia*	木麻黃	--	--	--	--	--	--	--	--	T35 was found already removed.	N/A	Already removed	LCSD	--
T37	*Celtis sinensis*	朴樹	10.0	520	12.0	Fair	Fair	Fair	Fair	Low	Hanger resting at the crown / crossed branches / restricted root growth.	N/A	Retain	LCSD	Location of tree is-in direct conflict with proposed works./Mature tree with good amenity value. Probably unbalanced root plate due to restricted area. Crown cleaning, thinning, remedial stablizing measures required.
T38	*Ficus microcarpa*	細葉榕	4.0	232	3.0	Poor	Poor	Fair	Poor	Low	Unbalanced tree form / topped / set on the dwarf wall.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works.
T39	*Terminalia catappa*	欖仁樹	8.0	156	5.0	Fair	Poor	Fair	Fair	Medium	2 wounds found on lower trunk.	N/A	Fell	LCSD	Location of tree is in direct conflict with proposed works, inbalanced form and wound at lower trunk.
T40	*Casuarina equisetifolia*	木麻黃	15.0	550	13.0	Fair	Fair	Fair	Fair	Low	Co-dominant leaders / wounds along main branches / wounds at the root collar / a broken branch .	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works. / The species of low survival rate of transplantation. Crown cleaning, thinning, and remedial stablizing measures required.

Tree No.	Species		Measurements			Amenity value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status	Recommendation	Department to provide expert advice to LandsD	Additional Remarks
	Scientific name	Chinese name	Height (m)	DBH (mm)	Crown spread (m)	(Good/Fair/Poor)				(High/ Medium/ Low)	Remarks		(Retain/ Transplant/ Fell)		
T46	*Hibiscus tiliaceus*	黃槿	4.5	130	2.5	Poor	Poor	Fair	Fair	Low	the tree in leaning form / wound at the trunk.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works / The tree has a certain visual impact due to poor form.
T47	*Hibiscus tiliaceus*	黃槿	3.0	121	3.0	Poor	Poor	Fair	Poor	Low	the tree in poor form / the leader cracked / wound at the trunk.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works / The tree has a certain visual impact due to poor form.
T48	*Hibiscus tiliaceus*	黃槿	3.0	135	2.0	Poor	Poor	Fair	Poor	Low	Multiple attachements - one stem found broken and the other 2 in leaning form.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works / The tree has a certain visual impact due to poor form.
T49	*Hibiscus tiliaceus*	黃槿	4.0	105	3.0	Poor	Poor	Fair	Fair	Low	the tree in leaning form / wound at trunk	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works / The tree has a certain visual impact due to poor form.
T50	*Hibiscus tiliaceus*	黃槿	2.0	146	7.0	Poor	Poor	Fair	Poor	Low	co-dominant stems in leaning form / wound at one stem / sign of root plate tilting.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works / The tree has a certain visual impact due to poor form.
T51	*Hibiscus tiliaceus*	黃槿	4.0	102	3.0	Poor	Poor	Fair	Fair	Low	Tree in leaning form / a hanger.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works / The tree has a certain visual impact due to poor form.
T52	*Hibiscus tiliaceus*	黃槿	3.0	141	6.0	Poor	Poor	Fair	Poor	Low	co-dominant stems in leaning form / a stem was distorted with cracks.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works / The tree has a certain visual impact due to poor form.
T53	*Hibiscus tiliaceus*	黃槿	5.0	150	3.0	Poor	Poor	Fair	Poor	Low	tree in leaning form / crack at the trunk.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works / The tree has a certain visual impact due to poor form.
T54	*Hibiscus tiliaceus*	黃槿	2.0	111	2.0	Poor	Poor	Fair	Poor	Low	tree in leaning form / distorted trunk with cracks.	N/A	Retain	LCSD	Location of tree is NOT in direct conflict with proposed works / The tree has a certain visual impact due to poor form.

Assessed by: (C.S. CHEUNG) Date: 24/10/2019

FdO(3)

Checked by: (Michael LEE) Date: 24/10/2019

SFdO (Ag)

Revision: 5 (Date: 24.10.2019)

Memo ref.: (6GUB) in HyD LSC/14-4/30

Revision Notes:

Summary: 17 trees recommended for Retaining

0 tree recommended for Transplanting

7 trees recommended for Felling

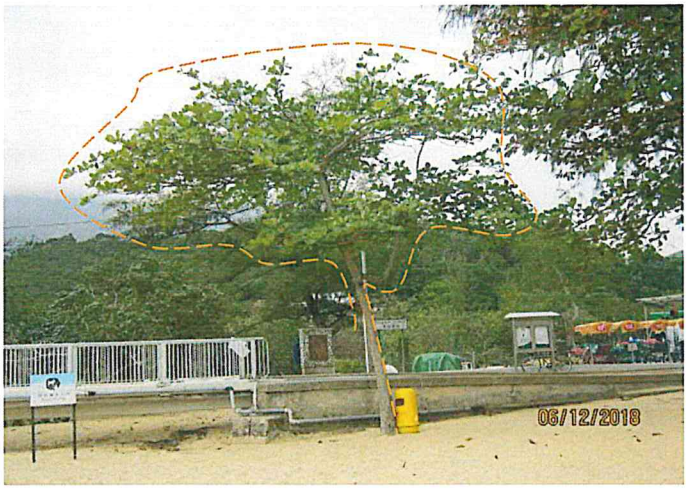
3 trees already removed

Total: 27 trees

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T1 - *Terminalia catappa* 欖仁樹

Observations & Remarks :
co-dominant leaders / wounds found at the branches and leader.



General View

General View

wound at a branch

wound at leader

General View of the basal part

co-dominant leaders

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T2 - *Terminalia catappa* 欖仁樹

Observations & Remarks :
co-dominant leaders / broken branches at the tree top.

General View

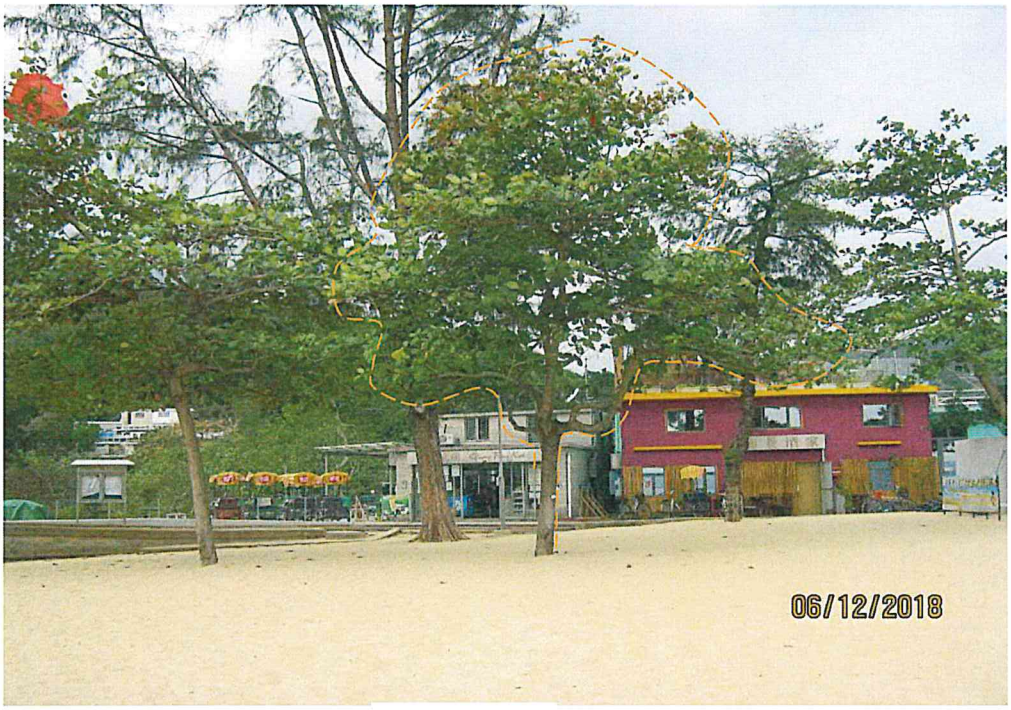
General View (Co-dominant leaders)

broken branches at tree top

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T3 - *Terminalia catappa* 欖仁樹

Observations & Remarks :
multiple leaders.



General View

multiple leaders

General View

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T4 - *Casuarina equisetifolia*木麻黃

Observations & Remarks :
Many branches facing the sea found broken or trimmed / a few branches at the tree top found broken or trimmed.

General View

the branches at the tree top found broken or trimmed

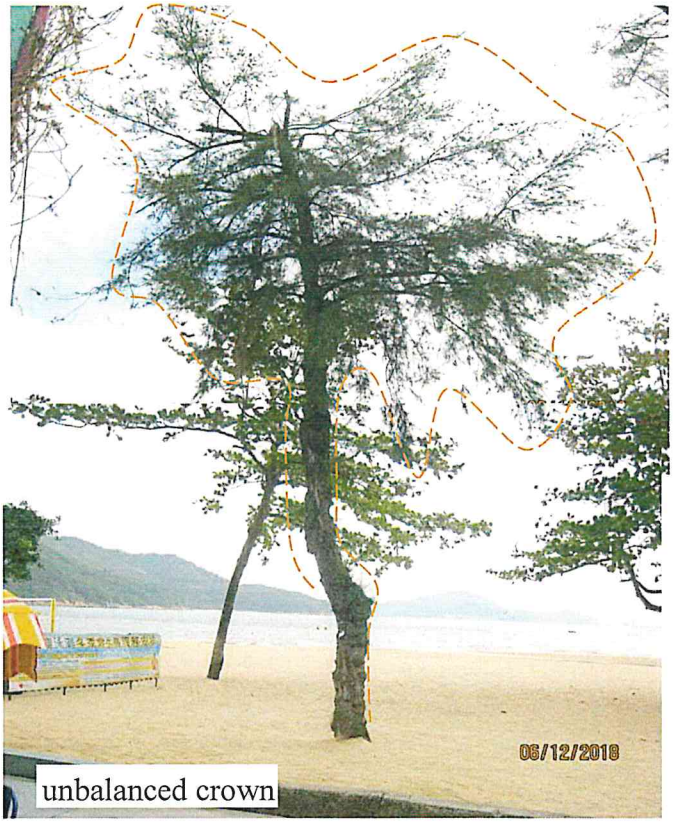
many branches facing the sea found broken or trimmed

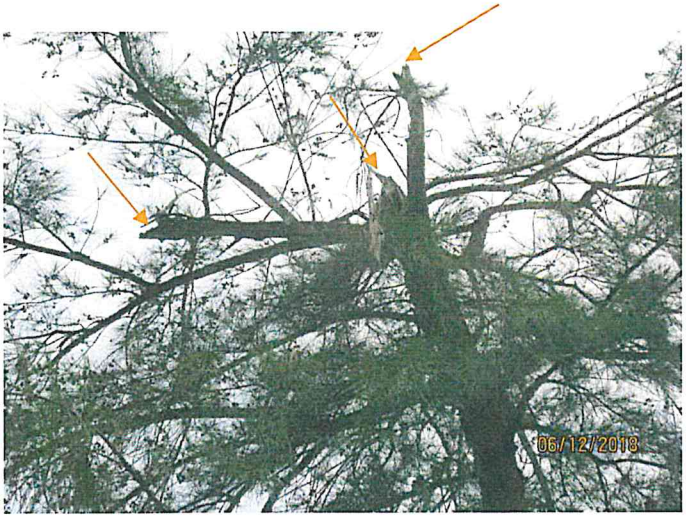
Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T6 - *Casuarina equisetifolia*木麻黃

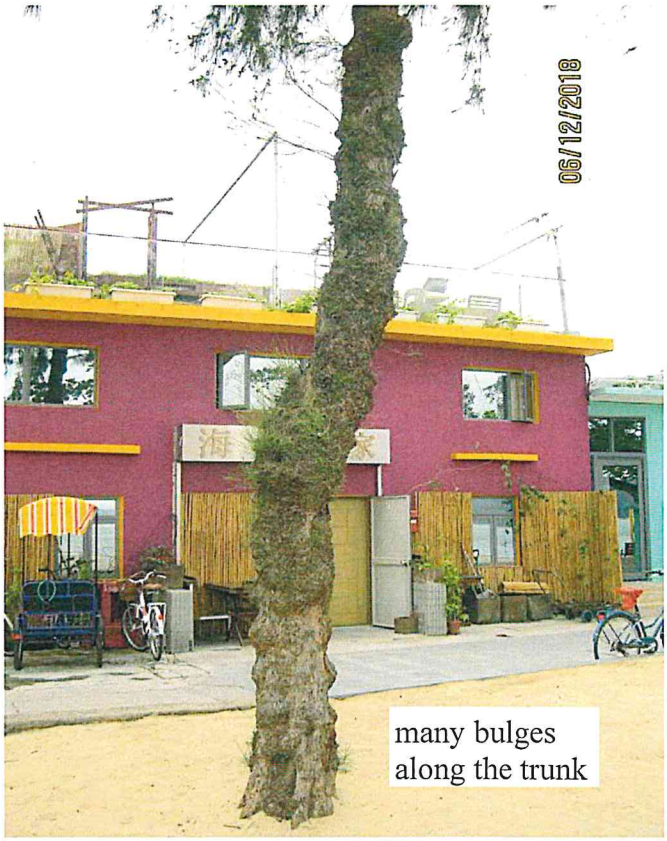
Observations & Remarks :
Unbalanced crown / a few broken branches at the tree top / many bulges along the trunk.

General View





broken branches at the tree top



Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T7 - *Terminalia catappa* 欖仁樹

Observations & Remarks :
Leaning form / some wounds found at branches.

General View (leaning form)

some wounds found at branches

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T8 - Unknowned species (Removed)

Observations & Remarks :
T8 was found already removed.

Project Title:	**New Wang Tong River Bridge**		
Project No.:	**6850TH**	**Survey Job No.:**	**WU/0035/18**
Surveyed by:	**K.P. NG**	**Date:**	**16/03/2018**
Checked by:	**K.L. CHAN**	**Date:**	**11/04/2018**
Title :	**Tree survey at Wang Tong River Bridge**		

T8

Original view of T8

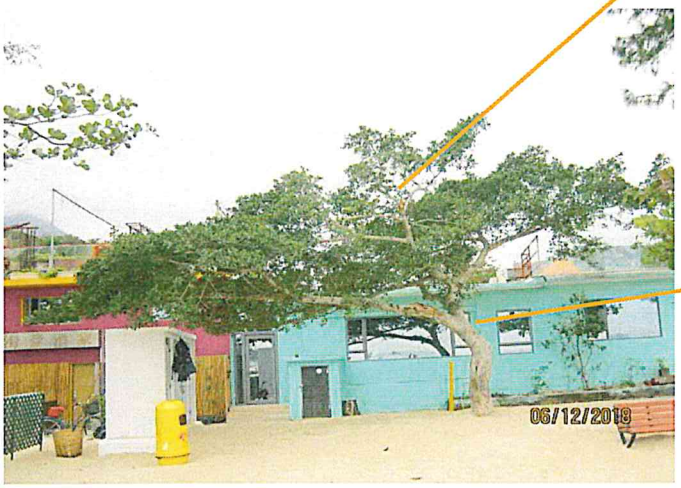
Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T9 - *Ficus microcarpa*細葉榕

Observations & Remarks :
Leaning form / broken wound at the co-dominant leader / trunk cavity.

General View

broken wound



leaning form

broken wound at the co-dominant leader

trunk cavity

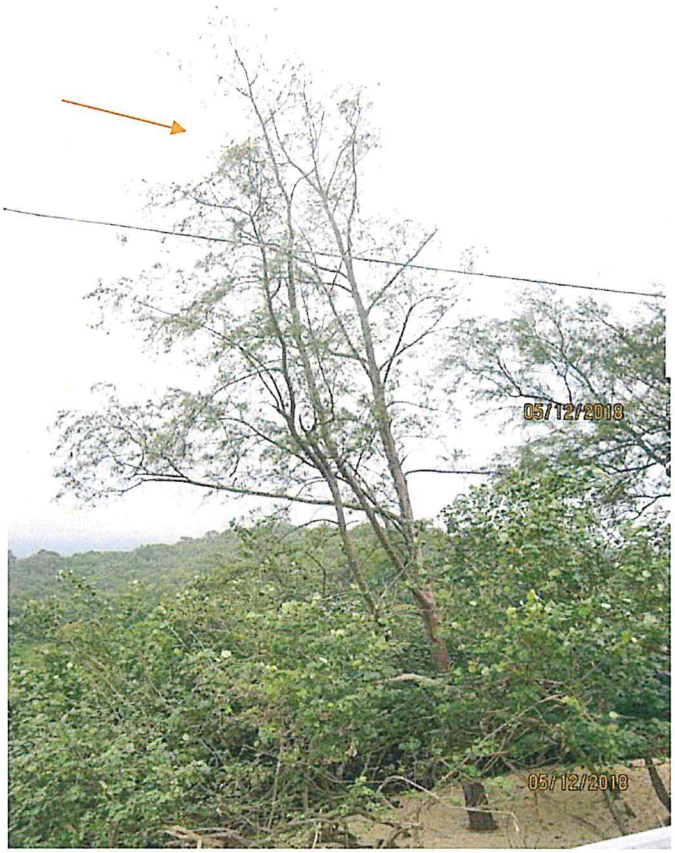
General view of basal part

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T22 - *Casuarina equisetifolia*木麻黃

Observations & Remarks :
the foliage relatively sparse.

General View



the foliage relatively sparse

General View of the trunk

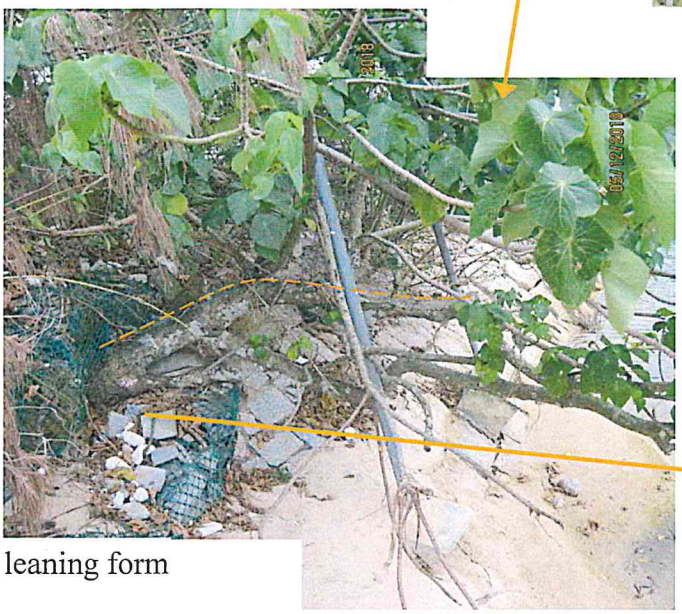
Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T27 - *Macaranga tanarius* 血桐

Observations & Remarks :
leaning form / footing at the gabion wall.

General View

General View



leaning form

footing at the gabion wall

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T30 - *Macaranga tanarius* 血桐

Observations & Remarks :
co-dominant stems / 2 spots of decay at the crotch / basal decay / one stem with cavity & mud tube.

General View (co-dominant stems)

a spot of decay at the crotch & basal part

another spot of decay at the crotch

trunk cavity

mud tube inside the cavity

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T31 - *Casuarina equisetifolia*木麻黃

Observations & Remarks :
2 of the 3 main branches found broken / a wound on the trunk.

General View

2 main branches broken
leaving one main branch intact

wound on trunk

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

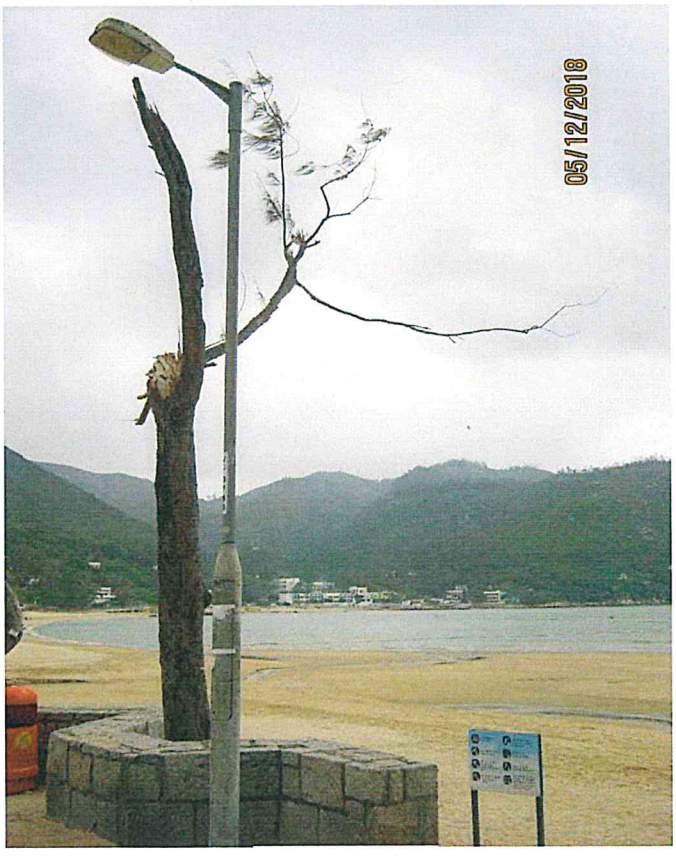
Based on site inspection dated 8.3.2019, the tree was found removed. Please refer to next page for site photos.

Tree No. T34 - *Casuarina equisetifolia*木麻黃

Observations & Remarks :
The main branches found broken and the remaining branch attaching to the broken wound.

General View

The main branches found broken and the remaining branch attaching to the broken wound



General View

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: Landscape Division/HyD
Date of Site Inspection: 08.03.2019

Tree No. T34 - *Casuarina equisetifolia*木麻黃

Observations & Remarks
The tree was found removed.

T34 already removed

General View

General View

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

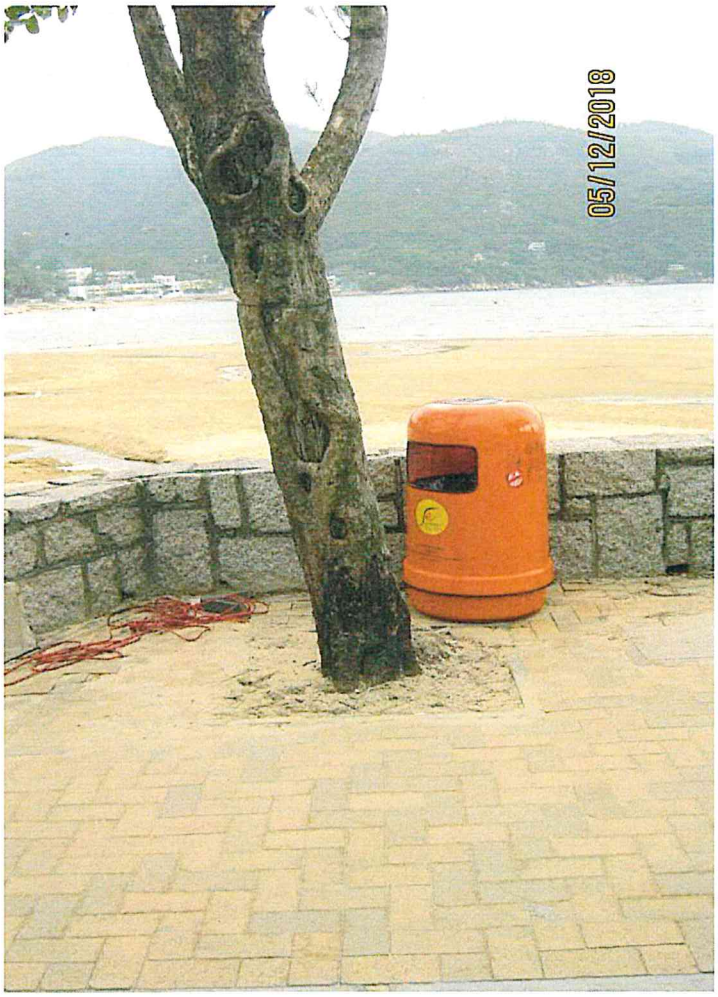
Tree No. T35 - *Casuarina equisetifolia*木麻黃

Based on site inspection dated 8.3.2019, the tree was found removed. Please refer to next page for site photos.

Observations & Remarks :
leader broken / one branch with crack on bark / a broken branch.

General View

General View



some wounds on trunk

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: Landscape Division/HyD
Date of Site Inspection: 08.03.2019

Tree No. T35 - *Casuarina equisetifolia*木麻黃

Observations & Remarks :
The tree was found removed.

T35 already removed

General View

General View

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T37 - *Celtis sinensis* 朴樹

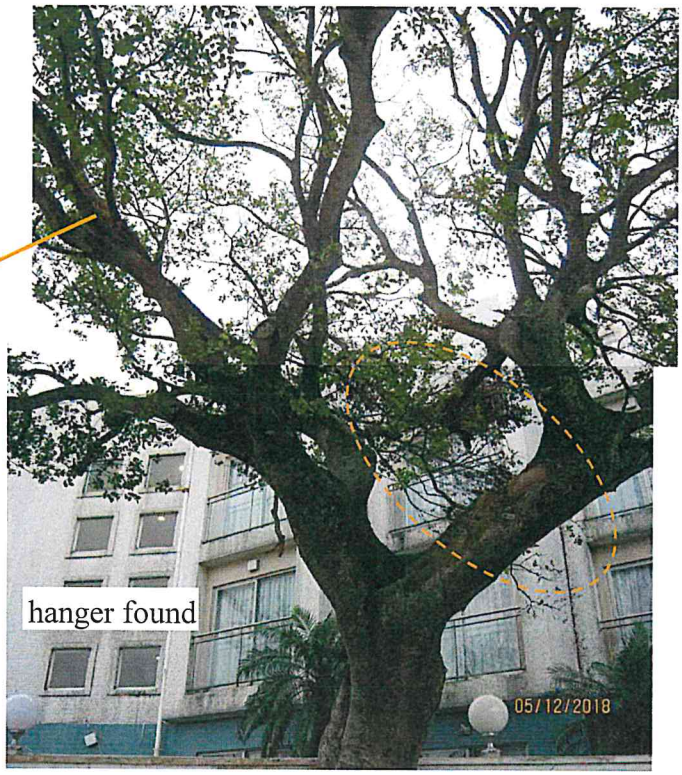
Observations & Remarks :
Hanger resting at the crown / crossed branches / restricted root growth.

General View

General View of the trunk

Restricted root growth

crossed branches



Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T38 - *Ficus microcarpa*細葉榕

Observations & Remarks :
Unbalanced tree form / topped / set on the dwarf wall.

General View

Unbalanced form

Topped

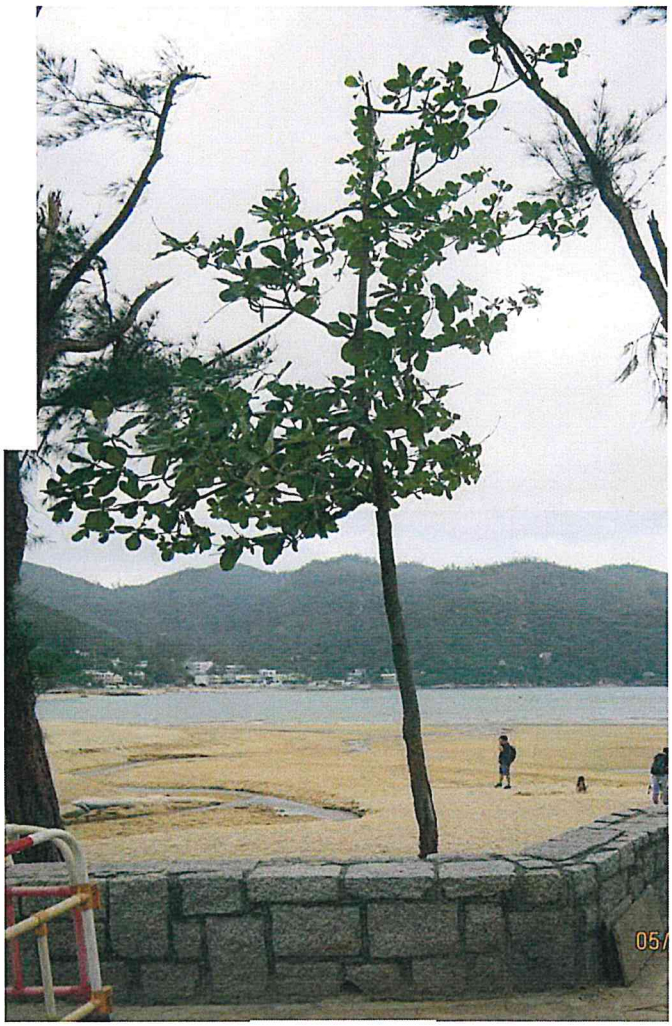
The tree set on the dwarf wall

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

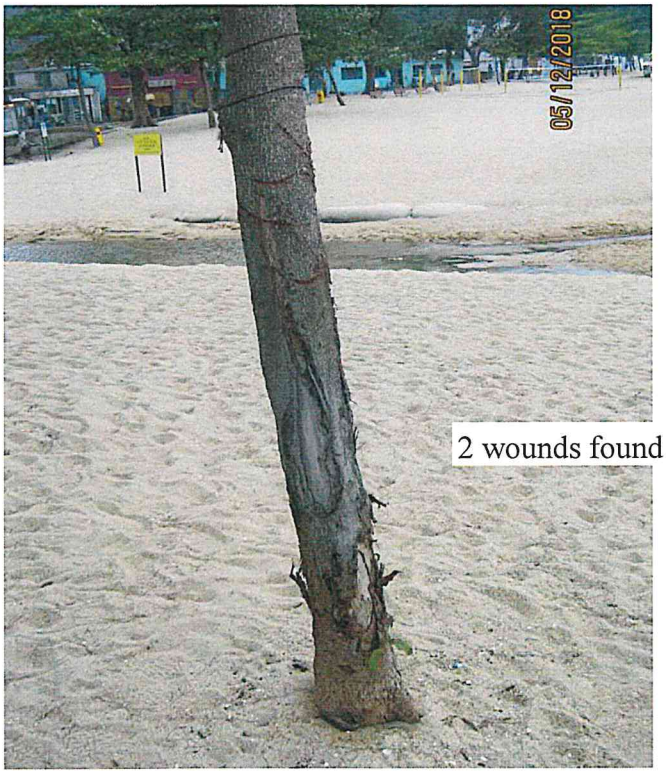
Tree No. T39 - *Terminalia catappa* 欖仁樹

Observations & Remarks :
2 wounds found on lower trunk.

General View



General View

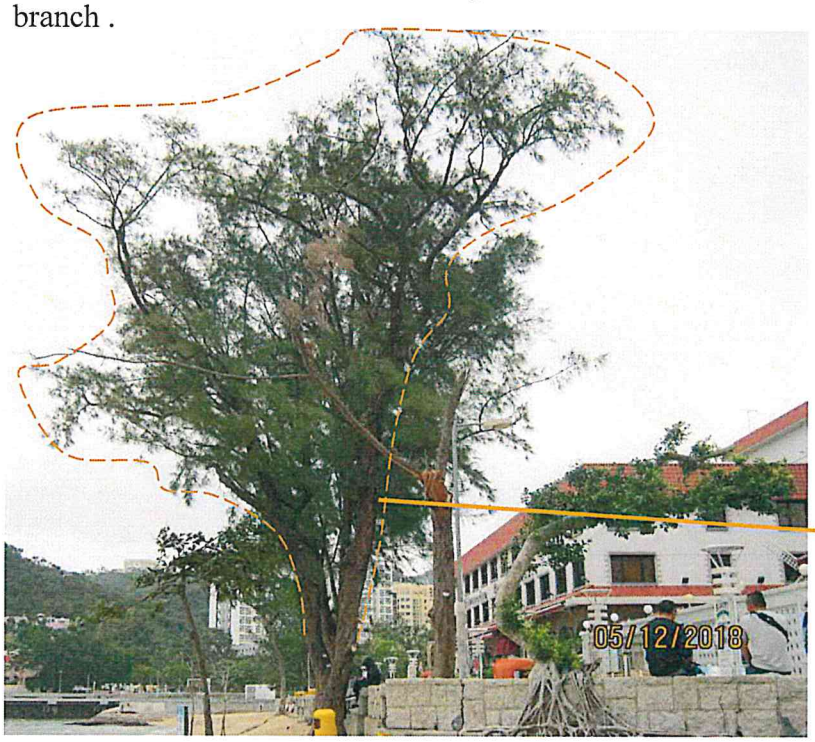


2 wounds found on lower trunk

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

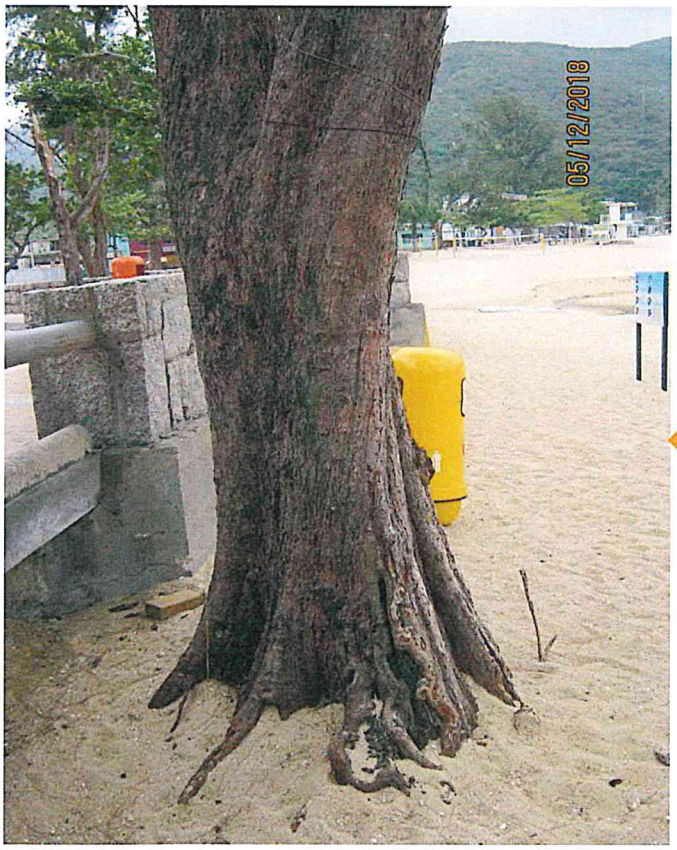
Tree No. T40 - *Casuarina equisetifolia*木麻黃

Observations & Remarks :
Co-dominant leaders / wounds along main branches / wounds at the root collar / a broken branch .



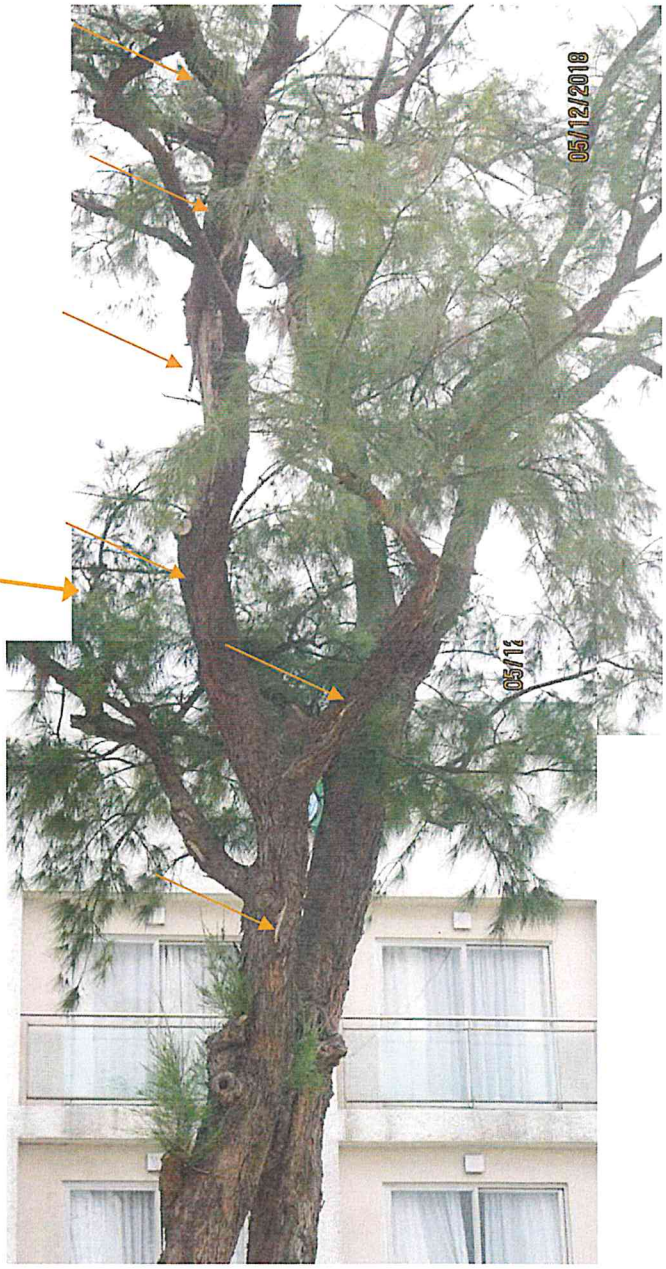
General View

wounds along the main branch

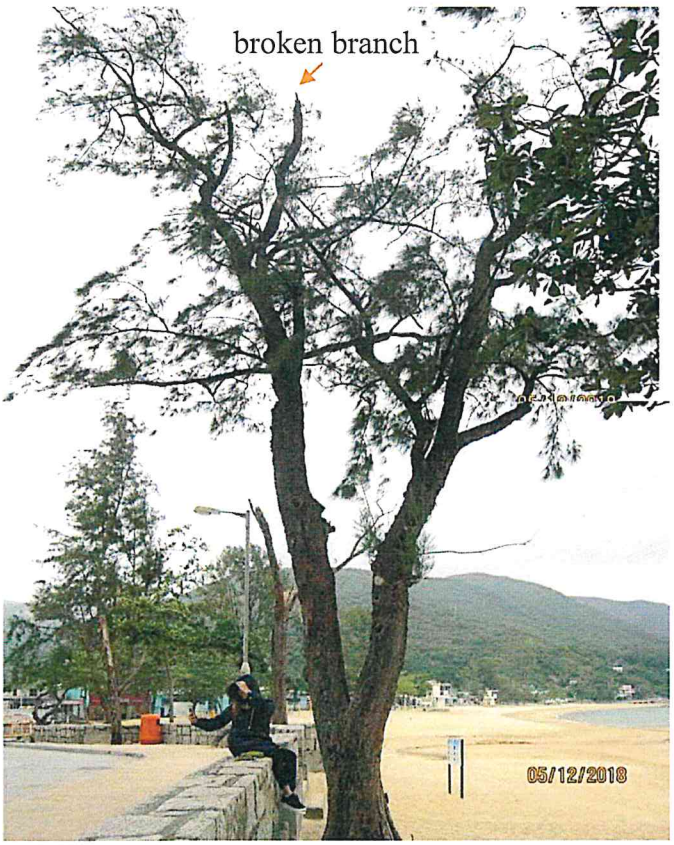


wounds at the root collar

General View



wounds along the main branches



co-dominant leaders

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T46 - *Hibiscus tiliaceus*黃槿

Observations & Remarks :
the tree in leaning form / wound at the trunk.

General View
(leaning form)

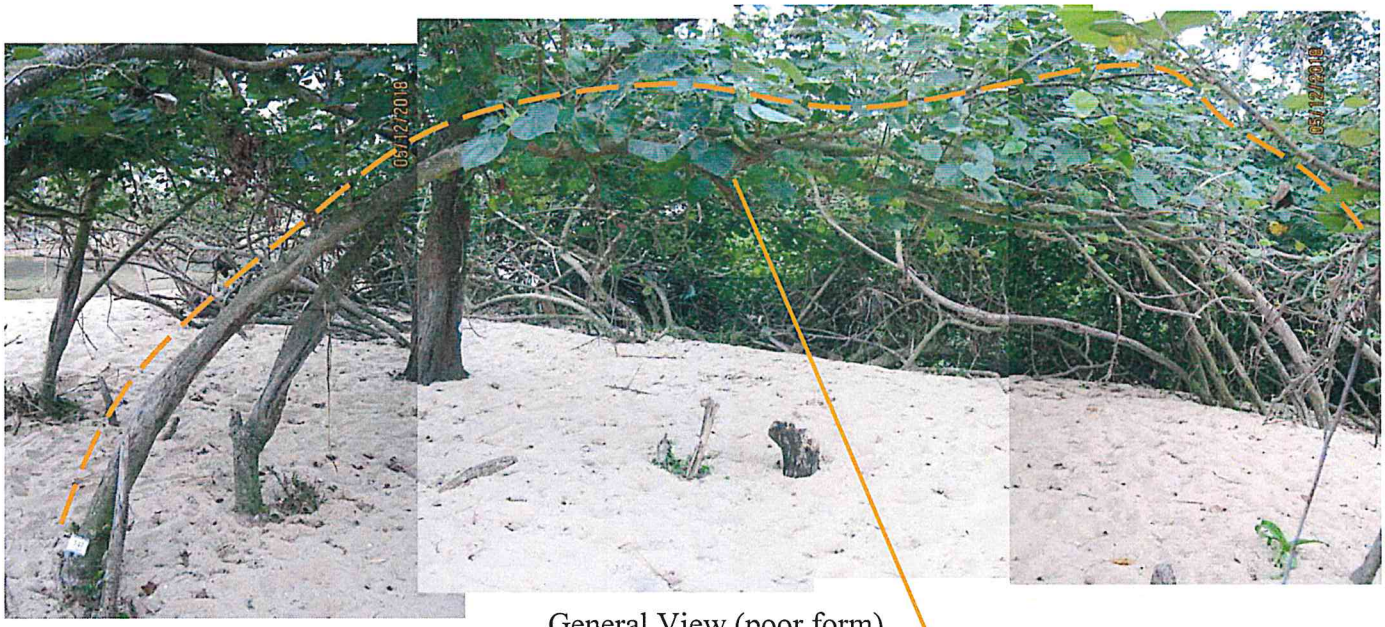
wound at the lower trunk

General view of the group of
*Hibiscus tiliaceus*黃槿 (T46-T54)

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T47 - *Hibiscus tiliaceus*黃槿

Observations & Remarks :
the tree in poor form / the leader cracked / wound at the trunk.



General View (poor form)

leader cracked

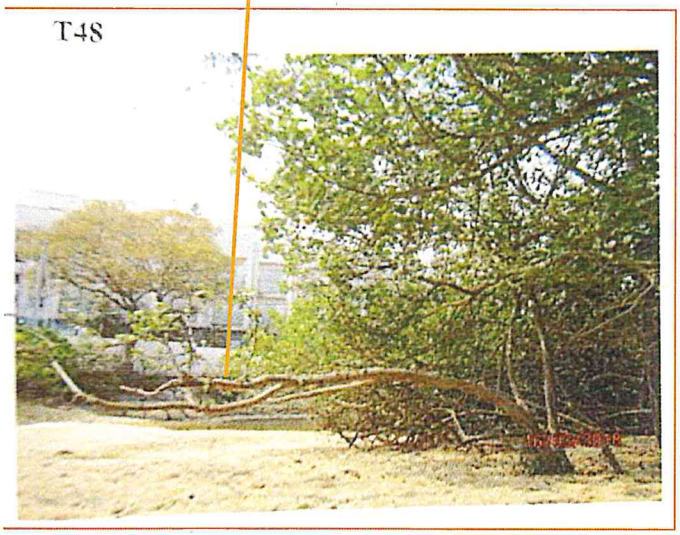
wound at the trunk

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T48 - *Hibiscus tiliaceus*黃槿

Observations & Remarks :
Multiple attachements - one stem found broken and the other 2 in leaning form.

General View (one of the multiple attachements was broken)



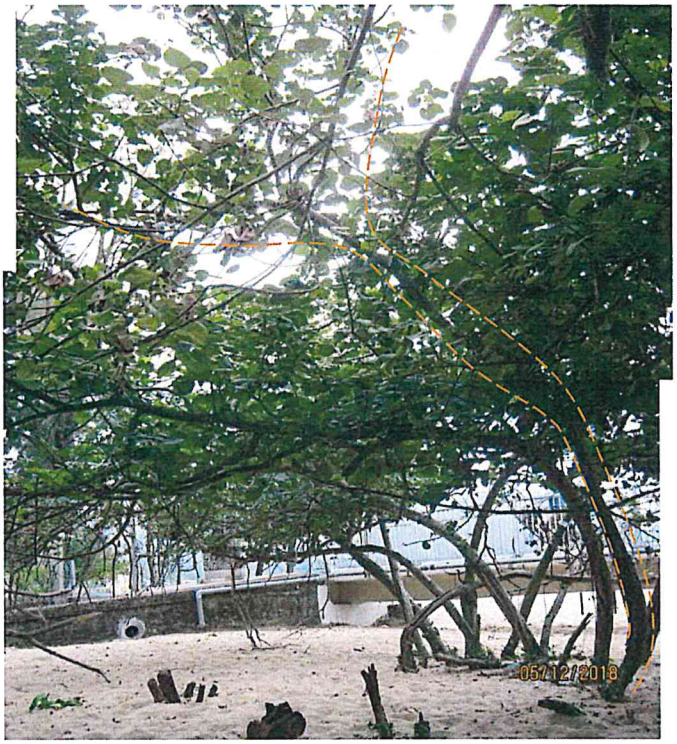
Original view of tree

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T49 - *Hibiscus tiliaceus*黃槿

Observations & Remarks :
the tree in leaning form / wound at trunk.

General View (leaning form)



General View (leaning form)

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T50 - *Hibiscus tiliaceus*黃槿

Observations & Remarks :
co-dominant stems in leaning form / wound at one stem / sign of root plate tilting.

General View (co-dominant stem in leaning form)

sign of root plate tilting

wound on one stem

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T51 - *Hibiscus tiliaceus*黃槿

Observations & Remarks :
Tree in leaning form / a hanger.

General View (leaning form)

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T52 - *Hibiscus tiliaceus*黃槿

Observations & Remarks :
co-dominant stems in leaning form / a stem was distorted with cracks.

General View (Co-dominant stems in leaning form)

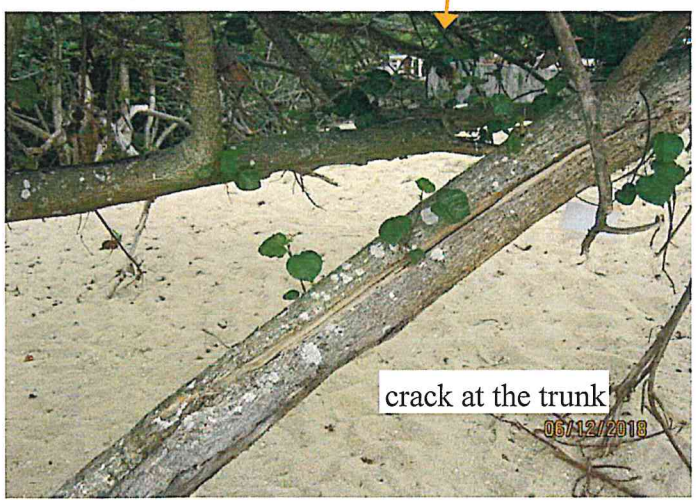
One of the stem distorted with cracks

Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T53 - *Hibiscus tiliaceus*黃槿

Observations & Remarks :
tree in leaning form / crack at the trunk.

General View (leaning form)



Tree Survey at Wang Tong River Bridge, Mui Wo
Project No.: 6850TH
Inspected by: FdO(3)
Date of Site Inspection: 05.12.2018 & 06.12.2018

Tree No. T54 - *Hibiscus tiliaceus*黃槿

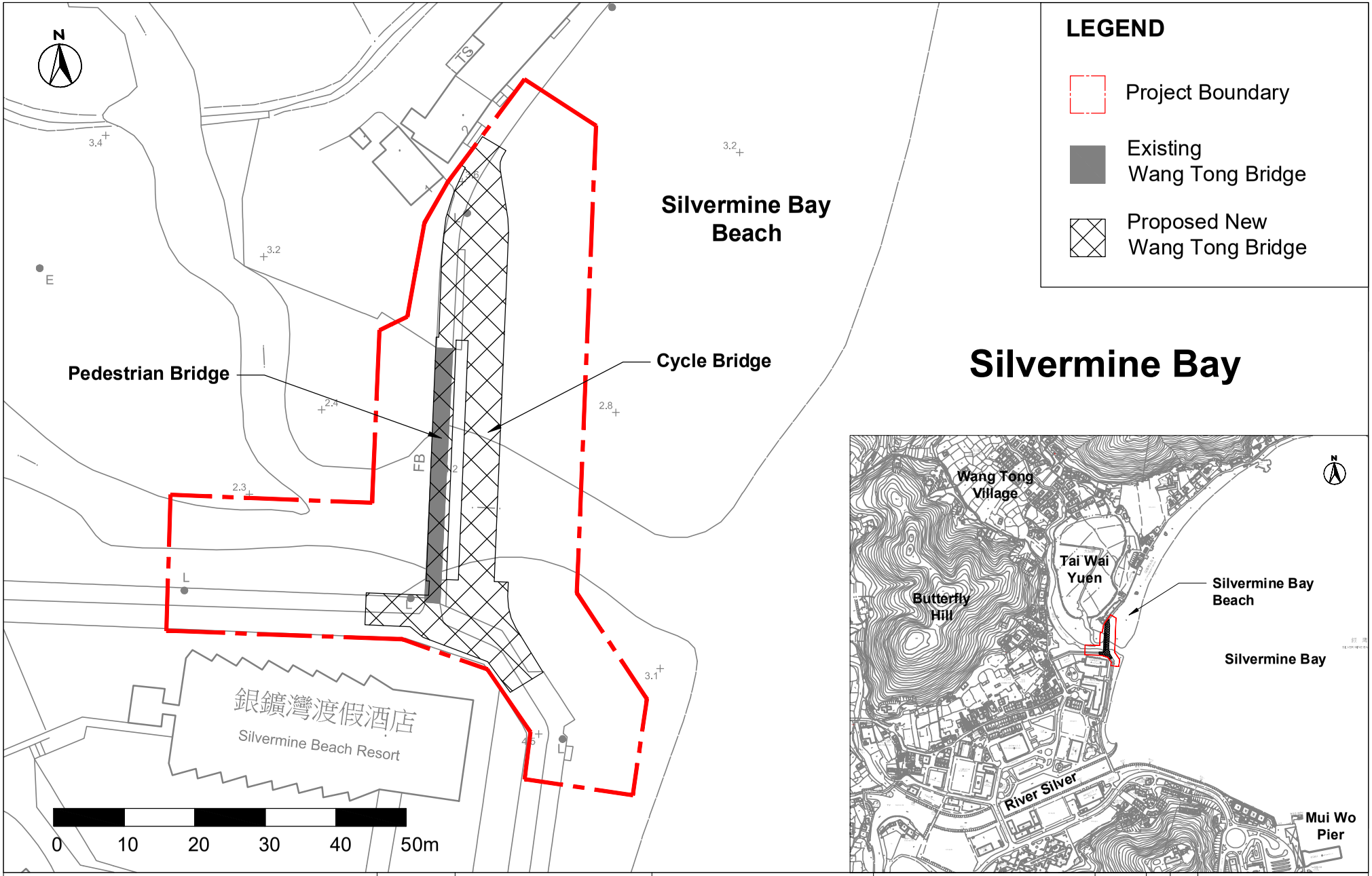
Observations & Remarks :
tree in leaning form / distorted trunk with cracks.

General View (leaning form)

distorted trunk with cracks

Appendix H

Key Plan of Project Area



The joint venture of
Maurice Lee & Associates Ltd. and
Cinotech Consultants Ltd.

Works Division
Highways Department

PROJECT:
AGREEMENT NO. CE 14/2014(HY) NEW WANG TONG RIVER BRIDGE, MUI MO - ENVIRONMENTAL IMPACT ASSESSMENT & DRAINAGE IMPACT ASSESSMENT STUDIES - INVESTIGATION

DRAWING TITLE:
Location of Project Site

Drafting by	KL	08/15
Designed by	–	08/15
Checked by	HT	08/15
Approved by	BC	08/15

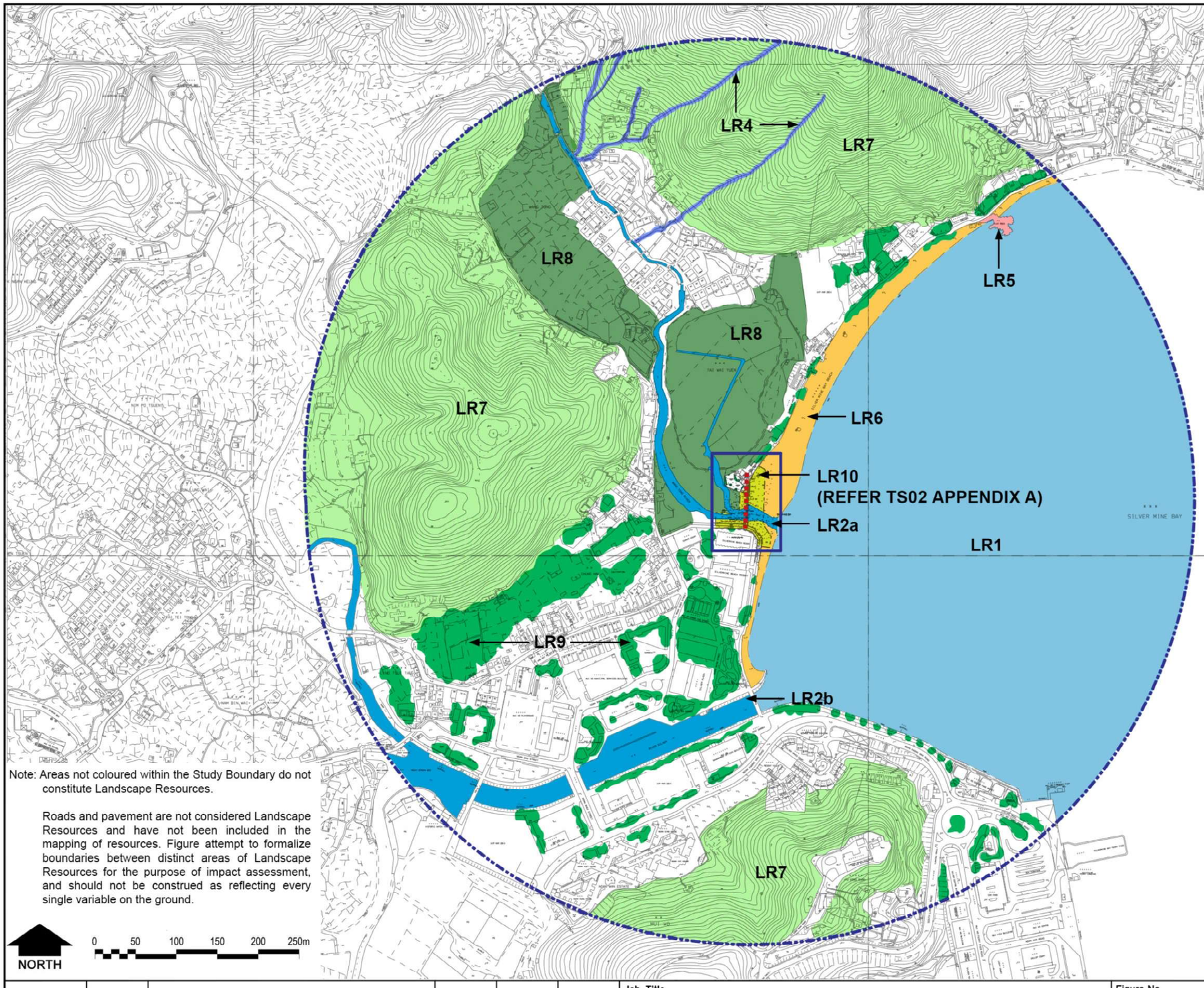
SCALE: AS SHOWN

DRAWING NO: FIG 1.1

REV: –

Appendix I

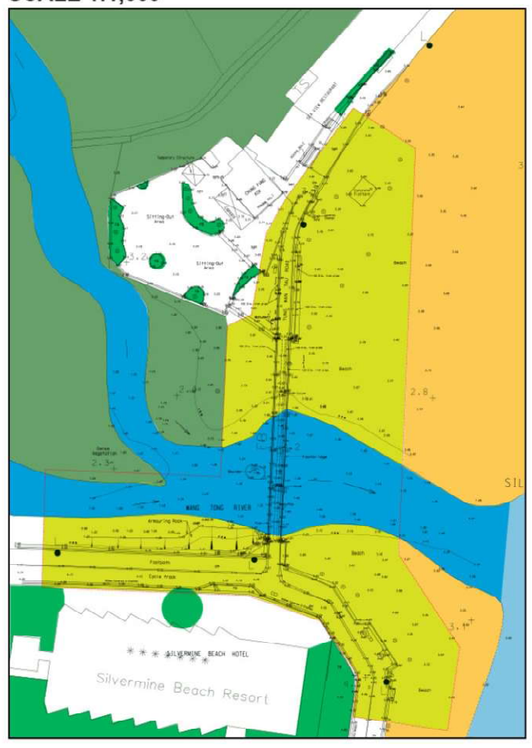
Key Plan of Landscape Resources and Landscape Character Areas



LEGEND

Site Boundary	
Landscape Study Boundary	
Coastal Waters	LR1
Rivers	LR2a, LR2b
Upland Streams	LR4
Natural Rocky Coastline	LR5
Silver Mine Bay Beach	LR6
Natural Upland Vegetation	LR7
Semi-natural Lowland Vegetation	LR8
Urban / Domestic Amenity Planting	LR9
Existing Trees in Vicinity of Wang Tong Bridge	LR10

BLOW-UP PLAN
SCALE 1:1,000



Note: Areas not coloured within the Study Boundary do not constitute Landscape Resources.

Roads and pavement are not considered Landscape Resources and have not been included in the mapping of resources. Figure attempt to formalize boundaries between distinct areas of Landscape Resources for the purpose of impact assessment, and should not be construed as reflecting every single variable on the ground.

NORTH

0 50 100 150 200 250m

Amendment No.	Date	Description	Drawn by	Checked by	Approved by
Rev. C	2016-07-05	Note Edited and Blow-up Plan added	PN	TO	TO
Rev. B	2016-06-21	Note Added	PN	TO	TO
Rev. A	2015-08-17	General Update	PN	TO	TO

Job Title
Agreement No. CE 14/2014 (HY)
New Wang Tong River Bridge, Mui Wo Environmental Impact Assessment and Drainage Impact Studies – Investigation

Drawing Title
LANDSCAPE RESOURCES

Drawn by MC | Checked by TO | Approved by TO | Date 2015-08

Figure No. 8.3

Scale 1:5,000

Job No. MLAL1

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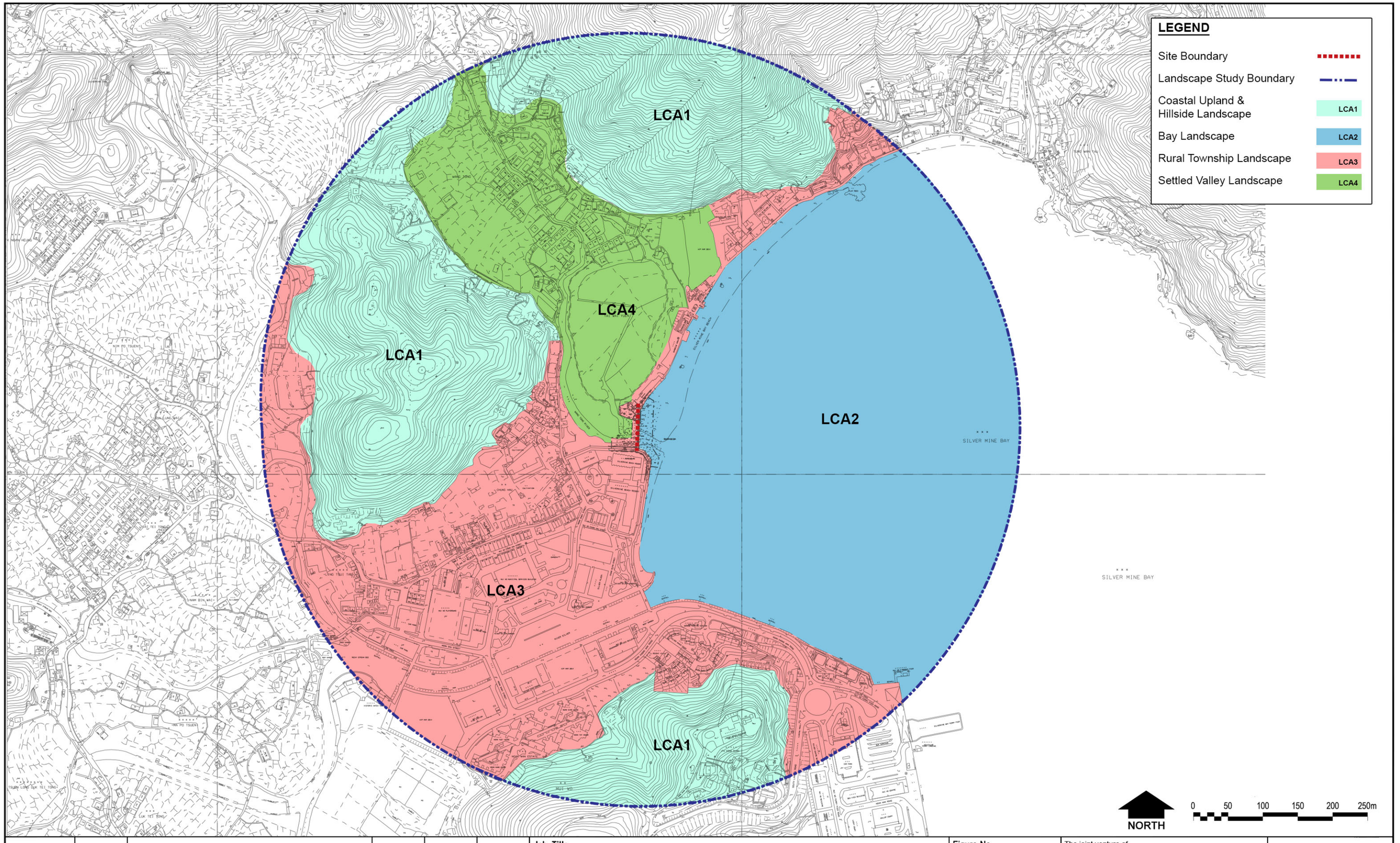
Maurice Lee & Associates Ltd.

CINOTECH consultants limited

Mubis Limited



						Job Title: Agreement No. CE 14/2014 (HY) New Wang Tong River Bridge, Mui Wo Environmental Impact Assessment and Drainage Impact Studies – Investigation	Figure No. 8.5
						Drawing Title: LANDSCAPE CHARACTER AREAS	Scale 1:5,000
Rev. A	2016-06-21	LCA4 Added	PN	TO	TO		
Amendment No.	Date	Description	Drawn by	Checked by	Approved by	Drawn by MC / Checked by / Approved by TO / Date 2015-04	Job No. MLAL1

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Maurice Lee & Associates Ltd.

CINOTECH consultants limited

Urbis Limited