Civil Engineering and Development Department

Service Contract No. WD/04/2020
Development of Lok Ma Chau Loop: Main Works Package 1 – Environmental Team

Environmental Permit No.: EP-477/2013/A – Development of Lok Ma Chau Loop

Quarterly Environmental Monitoring and Audit Report for April to June 2022
(Version 1.0)

Certified By	Dr. Priscilla Choy (Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

WELLAB accepts no responsibility for changes made to this report by third parties.

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Our ref.: LES/J2021-04/CS/L079
Date : 6 September 2022

By Post & Email

Civil Engineering and Development Department
West Development Office
West Division (5)
26/F, Tsuen Wan Government Office,
38 Sai Lau Kok Road, Tsuen Wan,
New Territories

Attn: Ms. TAM Im Fei

Dear Ms. TAM,

Agreement No. WD/01/2020
Development of Lok Ma Chau Loop: Main Works Package 1 – Independent Environmental Checker

Verification of Quarterly EM&A Report (April to June 2022)

Reference is made to the Quarterly Environmental Monitoring and Audit (EM&A) Report of certified by the Environmental Team Leader in September 2022. We hereby verify the captioned submission in accordance with Clause 14.4 of the EM&A Manual for the project of Development of Lok Ma Chau Loop.

Should you have any query, please feel free to contact the undersigned.

Yours faithfully,
For and On Behalf Of
Lam Environmental Services Limited

Raymond Dai
Independent Environmental Checker

c.c.	AECOM	Mr. Eric Wong	By Email
	Wellab Limited	Dr. Priscilla Choy	By Email

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EXECUTIVE SUMMARY

Introduction

1. This is the 14th Quarterly Environmental Monitoring and Audit (EM&A) Report prepared for the project with Environmental Permit No.: EP-477/2013/A - Development of Lok Ma Chau Loop (hereinafter called "the Project"). This report documents the findings of Environmental Monitoring and Audit (EM&A) work conducted in the period from 1st April to 30th June 2022.

Summary of Construction Works undertaken during the Reporting Quarter

2. During the reporting quarter, the following Works Contracts were undertaken for the Project:

- Contract No. YL/2020/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 1 Site Formation and Infrastructure Works inside Lok Ma Chau Loop and Western Connection Road Phase 1 (hereinafter called the "Contract 1")
- Contract No.: YL/2020/02 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 2 Western Connection Road Phase 2, Connection Roads to Fanling / San Tin Highway and Direct Road Link Phase 1 (hereinafter called the "Contract 2")
- Contract No.: YL/2021/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 3 Direct Road Link Phase 2

Environmental Monitoring and Audit Works

3. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

4. Summary of the environmental exceedances of the reporting quarter for the Project is tabulated in **Table I**.

Table I Summary Table for Events Recorded in the Reporting Quarter

Environmental Monitoring	Parameter	No. of Non-Project related Exceedances		No. of Exceedance related to the Construction Works of the Project		Action Taken
		Action Level	Limit Level	Action Level	Limit Level	
Air Quality	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
Construction Noise	Daytime $L_{eq(30min)}$	0	0	0	0	Refer to Section 6
Water Quality	DO	0	0	0	0	N/A
	Turbidity	0	0	0	0	N/A

	SS	0	0	0	0	N/A

Air Quality

5. All construction air quality monitoring including 1-hour TSP and 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Construction Noise

6. All construction noise monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Water Quality

7. All water quality monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Ecological Monitoring

LMC Loop

Avifauna (Flight Line Survey)

8. Avifauna monitoring was conducted as scheduled in the reporting quarter. Flight lines recorded were in general concentrated mainly on LMC Meander and adjacent areas including Ecological Area Zone (EA Zone) and along Shenzhen River.

9. In April to June 2022, it was observed that most birds avoided using the flight line over the centre of LMC Loop. This is considered due to the construction activities from other project's land occupier.

Mammals

10. The mammals monitoring in the Loop has been temporary suspended since in March 2022 and will be resumed subject to the site conditions based on the followings:

- According the Clause 11.4.1.2 of EM&A Manual, the objective of mammals monitoring is to monitor the connectivity between the existing reed marsh and the EA. In view of current site condition of the Loop, the connectivity between the existing reed marsh and the EA Zone has been fenced off due to other project's land occupier.
- 12-month establishment period of EA zone has been completed.

Western Connection Road

Avifauna (Flight Line Survey)

11. Avifauna monitoring was conducted as scheduled in the reporting quarter. Flight lines recorded were in general concentrated mainly on LMC Meander and adjacent areas including Ecological Area Zone (EA Zone) and along Shenzhen River. Most birds avoided using the flight line over the centre of LMC Loop which is considered due to the construction activities from other project's land occupier.

Avifauna (Pond 12)

12. Avifauna survey at Pond 12 was conducted as scheduled in the reporting quarter. Weekly count of birds using the Pond was recorded. No significant impact of construction activities on bird use of the pond was observed.

Herptofauna

13. Herptofauna survey was conducted as scheduled in the reporting quarter. No significant impact of construction activities on the numbers of this species was observed.

Aquatic fauna

14. Aquatic fauna survey was conducted as scheduled in the reporting quarter. No significant impact of construction activities on the stream was observed.

Contaminated Soil Remediation

15. Decontamination for five arsenic-contaminated zones (LD01 - LD05) identified in LMC Loop was completed and the final Remediation Report was submitted and approved by EPD in accordance with Condition 2.16 of the EP-477/2013/A under Contract No. YL/2017/03.

16. No work related to land contamination was conducted in the reporting quarter.

Environmental Non-Compliance

17. No environmental non-compliance was recorded in the site inspections during the reporting quarter.

Environmental Complaint

18. One (1) environmental complaint related to water quality was received in the reporting quarter. The Complaint Log is presented in **Appendix M**.

Notification of Summons and Successful Prosecutions

19. No notification of summons or successful environmental prosecutions was received in the reporting quarter.

Future Key Issues

20. The major site activities for the coming three months include:

<u>Contract No. YL/2020/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 1 – Site Formation and Infrastructure Works inside Lok Ma Chau Loop and Western Connection Road Phase 1</u>

(a) Western Connection Road (WCR) Stage 1 Construction: Demolition of Existing Structures, Excavation, DCM and Retaining Wall.
(b) Wetland Compensation Establishment Works and Ecological Monitoring.
(c) Pre-drilling for Boc Culvert C and A1.
(d) Meander Bridge Pre-drilling and Site Formation for Piling Platform.
(e) Advance Work for Alternative Road along EV Zone (PMI).

(f) PM Office (MIC) and Contractor Office (subject to release date of Closed-loop Area at Portion 7)

(Note that as the Emergency Hospital and Mobile Cabin Facility has been occupying the site, potential remaining works under Contract 1 is still under discussion. The activities above are tentative.)

Contract No.: YL/2020/02 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 2 Western Connection Road Phase 2, Connection Roads to Fanling / San Tin Highway and Direct Road Link Phase 1

(a) Tree Felling / Tree Transplant.
(b) Pre-construction Condition Survey inside MTRC tunnel.
(c) Erection of Contractor's Site Office.
(d) Pre-drilling and Trial Pits for Bridge ST01, CTFB and DRL.
(e) Site clearance and GI works for Cut Slopes CS1, CS2 and Retaining wall BPW1, and associated temporary working platform.
(f) Construction of concrete block piling platform for piling works of Retaining Wall BPW1.
(g) Erection of Temporary Noise Barrier along the Lok Ma Chau Road.
(h) Box Culvert Modification at Lok Ma Chau Road (Stage 1).
(i) Demolition of Existing Structures along Lok Ma Chau Road. Structure Ref. R41, R42 & R50.
(j) Existing Cycle Track Subway Modification.
(k) Construction of Pai Lau.
(l) Bored pile and socketed H-Pile for Bridge CTFB, ST01 & DRL.

Contract No.: YL/2021/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 3 Direct Road Link Phase 2

(a) Elevated PTI Hoarding erection.
(b) Elevated PTI UU Diversion.
(c) Demolition of Existing Structure.
(d) Paving Works for Stage 2.
(e) Pre-drilling.

21. Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, noise, water quality, waste management and ecology.

1 INTRODUCTION

1.1 Wellab Limited (WELLAB) was appointed by the Civil Engineering and Development Department (CEDD) under Service Contract No. WD/04/2020 as the Environmental Team to undertake the Environmental Monitoring and Audit (EM&A) programme for the Works Contracts under Main Works Package 1 and the remaining works under Contract No. YL/2017/03 – Development of Lok Ma Chau Loop: Land Decontamination and Advance Engineering Works to ensure that the environmental performance of the Works Contracts comply with the requirements specified in the Environmental Permit (EP), Environmental Monitoring & Audit (EM&A) Manual, Environmental Impact Assessment (EIA) Report of the Project and other relevant statutory requirements.

Purpose of the report

1.2 This is the 14th Quarterly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from April to June 2022.

Structure of the report

1.3 The structure of the report is as follows:

Section 1: **Introduction -** purpose and structure of the report.

Section 2: **Project Information –** summarises background and scope of the Project, site description, project organisation and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licences during the reporting period.

Section 3: **Environmental Monitoring and Audit Requirement –** summarises monitoring location and parameters, monitoring programmes, monitoring frequencies, Action and Limit Levels, Event / Action Plans, and Site Audit inspection.

Section 4: **Monitoring Results –** summarises the monitoring results in the reporting quarter.

Section 5: **Environmental Site Inspection –** summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 6: **Non-Compliance of the Environmental Quality Performance Limits (Action and Limit) –** summarises any monitoring exceedance, environmental complaints, environmental summons and successful prosecutions within the reporting period.

Section 7: **Future Key Issues –** summarises the impact forecast and monitoring schedule for the next three months.

Section 8: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

2.1 The development at Lok Man Chau (LMC) Loop is one of the ten major infrastructure projects for economic growth of the Hong Kong Special Administrative Region (HKSAR). The HKSAR Government would work with the Shenzhen authorities to tap the land resources of the LMC Loop to meet future development needs and consolidate the strategic position of both cities in the Pan-Pearl River Delta region. The Project is to develop LMC Loop with higher education as the leading land use, complemented by high-tech research and development facilities and cultural and creative industries.

2.2 The planning and engineering study for the Loop development is a designated project (DP) classified under Item 1 Schedule 3 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499). In October 2013, the EIA Report (AEIAR-176/2013) of the Project was approved by the Director of Environmental Protection pursuant to the EIA Ordinance in accordance with the EIA Study Brief (No. ESB-201/2008 and ESB-238/2011) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM). The Environmental Permit (EP) (EP no.: EP-477/2013) was also granted in November 2013.

2.3 Pursuant to Section 13 of the EIAO, the Director of Environmental Protection amends the Environmental Permit (No. EP-477/2013) based on the Application No. VEP- 595/2021 and the environmental Permit (Permit No. E EP-477/2013/A) was issued on 12th August 2021 for Development of Lok Ma Chau Loop.

2.4 The Loop development is implemented by three works packages in stages, namely: Advance Works, Main Works Package 1 (MWP1) and Main Works Package 2 (MWP2).

2.5 Contract No. YL/2017/03 – Development of Lok Ma Chau Loop: Land Decontamination and Advance Engineering Works (hereinafter called the "Contract") was awarded to Sang Hing – Kuly Joint Venture (hereinafter called the "Contractor 1") in June 2018 for the Advance Works.

2.6 For MWP1, there is a total of 5 Works Contracts and the contract packaging is shown below:

1) Contract 1 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 1 – Site Formation and Infrastructure Works inside Lok Ma Chau Loop and Western Connection Road Phase 1
2) Contract 2 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 2 Western Connection Road Phase 2, Connection Roads to Fanling / San Tin Highway and Direct Road Link Phase 1
3) Contract 3 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 3 – Direct Road Link Phase 2
4) Contract 4 - Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 4 –Fresh Water Service Reservoir and Associated Waterworks
5) Contract 5 - Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 5 – Landscaping Works within Lok Ma Chau Loop

2.7 Contract No. YL/2020/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 1 – Site Formation and Infrastructure Works inside Lok Ma Chau Loop and Western Connection Road Phase 1 (hereinafter called the "Contract 1") was awarded to CRCC-Kwan Lee-Paul Y. JV (hereinafter called the "Contractor 2") in July 2021.

2.8 Contract No.: YL/2020/02 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 2 Western Connection Road Phase 2, Connection Roads to Fanling / San Tin Highway and Direct Road Link Phase 1 (hereinafter called the "Contract 2") was awarded to China Road and Bridge Corporation (hereinafter called the "Contractor 3") in September 2021.

2.9 During the reporting quarter, the following Works Contracts were undertaken for the Project:

- Contract No. YL/2020/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 1 Site Formation and Infrastructure Works inside Lok Ma Chau Loop and Western Connection Road Phase 1 (hereinafter called the "Contract 1")
- Contract No.: YL/2020/02 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 2 Western Connection Road Phase 2, Connection Roads to Fanling / San Tin Highway and Direct Road Link Phase 1 (hereinafter called the "Contract 2")
- Contract No.: YL/2021/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 3 Direct Road Link Phase 2 (Contract 3)

2.10 The layout of the construction works and the scope of works under the Contracts are summarised in **Table 2.1**.

Table 2.1 Site Layout and Scope of Works under the Contracts

Contract(s)	Scope of Works	Site Layout Plan
Contract No. YL/2017/03 – Development of Lok Ma Chau Loop: Land Decontamination and Advance Engineering Works	a) Land decontamination treatment within the Loop; b) Establishment of an Ecological Area (EA) within the Loop; c) Construction of a temporary access to the Loop; d) Minor improvement works to Ha Wan Tsuen East Road and other ancillary works; e) Construction of temporary noise barriers and miscellaneous road works along Lok Ma Chau Road; f) Ground treatment works to the first batch of land parcels within the Loop for development of buildings and associated facilities for Phase 1 of the Hong Kong – Shenzhen Innovation and Technology Park and development of the western electricity substation; and g) Implementation of environmental mitigation measures for the works mentioned in the items (a) to (f) above.	Figure 1a
Contract No. YL/2020/01 - Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 1 Site	(a) Site formation of 70ha for the Loop; (b) Ground treatment by either surcharge and installation of vertical band drains or deep cement mixing method, and associated slopeworks, retaining wall, landscaping works; (c) Construction of internal roads (Road D1 and	Figure 1b

Contract(s)	Scope of Works	Site Layout Plan
Formation and Infrastructure Works inside Lok Ma Chau Loop and Western Connection Road Phase 1	Road L1), Public Transport Interchange (PTI) and associated drainage and sewerage works, waterworks, street lighting, utilities (including interim water main), street furniture and traffic aids, etc. within the Loop; (d) Construction of bridge structure across old Shenzhen River meander; (e) Temporary haul road linking Sai Kwo Road to the Loop; (f) Ecological and environmental mitigation measures within the Loop including retention of reedbeds; (g) Ecological and environmental mitigation measures outside the Loop including fishpond, off-site wetland and woodland compensation; and (h) Construction of Western Connection Road (WCR) Phase 1 (section along existing Ha Wan Tsuen East Road) - Widening of Ha Wan Tsuen East Road; - Provision of cycle track and footpath; - Associated site formation and ground treatment works; - Utilities; and - Associated noise mitigation measures.	
Contract No.: YL/2020/02 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 2 Western Connection Road Phase 2, Connection Roads to Fanling / San Tin Highway and Direct Road Link Phase 1	a) Remainder of Western Connection Road (WCR) comprising the following (excluding the first section WCR which is included in Contract 1) - Improvement of Lok Ma Chau (LMC) Road; - Provision of cycle track and footpath; - Construction of elevated cycle track cum footpath connecting Lok Ma Chau Road and Castle Peak Road – Chau Tau; - Associated noise mitigation measures; - Associated slope works, retaining wall and natural terrain mitigation works; and - Associated box culverts, drainage works and water works, street furniture and traffic aids, utilities and landscape works. b) LMC Road and San Tin Highway Connection - Construction of bridge structure connecting LMC Road and San Tin Highway; and - Junction Improvement works at Castle Peak Road and LMC Road. (i) Construction of Direct Road Link (DRL) Phase 1 comprising a vehicular bridge structure with provision of covered pedestrian walkway linking LMC Station PT1 and Ha Wan Tsuen East Road.	Figure 1b

Contracts Organization

2.11 There are different parties with different levels of involvement in the Contracts organization. The key personnel contact names and numbers are summarised in **Table 2.2**.

Table 2.2 Key Contacts of the Project

Organization	Project Role	Contact Person	Tel No.	Fax No.
CEDD	Project Proponent	Mr. Davy KS CHAN	24176370	2412 0358
WELLAB	ET	Dr. Priscilla Choy – ET Leader	2898 7388	2898 7076
Lam Environmental Services Limited (LAM)	IEC	Mr. Raymond Dai	2839 5666	2882 3331
Contract No. YL/2020/01				
AECOM	Consultants	Mr. Eric Wong	9861 8664	TBA
CRCC-Kwan Lee-Paul Y. JV	Contractor	Site Agent – Mr. Jeremy Luk	90137913	27740197
		JV Representative – Mr. Alvin Chan	91056863	27740197
		Team Leader – Mr. Jack Chu	97753008	27740197
		Team Leader – Mr. Desmond Tang	51880815	27740197
		Section Agent – Mr. S M Ma	66286221	27740197
		Superintendent – Mr. Y K Poon	91778196	27740197
		Superintendent – Mr. Ray Wong	91710919	27740197
		Environmental Officer – Ms. Lila Lui	52610378	27740197
		Environmental Supervisor- Mr. Ray Wong	91710919	27740197
Contract No. YL/2020/02				
AECOM	Consultants	Mr. Eric Wong	9861 8664	TBA
China Road and Bridge	Contractor	Site Agent – Mr. Raymond Suen	9779 8871	3996 9202

Organization	Project Role	Contact Person	Tel No.	Fax No.
Corporation		Team Leader – Mr. Jackson Chan	9254 1635	3996 9202
		Team Leader – Mr. Billy Leung	9777 0799	3996 9202
		Deputy Team Leader – Mr. Roger Poon	9503 2488	3996 9202
		Senior Foreman – Mr. Po Hang Lam	9345 6134	3996 9202
		Senior Foreman – Mr. Ka Kit Chan	6088 7741	3996 9202
		Foreman – Mr. Philip Tse	5128 1232	3996 9202
		Environmental Officer – Mr. Calvin So	9724 6254	3996 9202
		Environmental Supervisor- Mr. Leo Choi	9664 7880	3996 9202
Contract No. YL/2021/01				
AECOM	Consultants	Mr. Eric Wong	9861 8664	TBA
Paul Y.-Chun Wo-CRCC JV		Site Agent – Mr. Desmond Tang	5188 0815	3015 7861
		Section Agent – Mr. Charles Choi	6350 0142	3015 7861
		General Foreman – Mr. Yau Shueng Kee	9710 1663	3015 7861
		Environmental Officer – Ms. Lila Lui	5261 0378	3015 7861
		Environmental Supervisor – Mr. Terence Lai	9829 9605	3015 7861

Summary of Construction Works Undertaken during Reporting Quarter

2.12 The major site activities undertaken in the reporting quarter included:

Contract No. YL/2020/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 1 – Site Formation and Infrastructure Works inside Lok Ma Chau Loop and Western Connection Road Phase 1

Month(s)	Major Site Activities
April 2022	(a) All works at LMC Loop suspended on 21 Feb 2022. (b) Wetland Compensation Establishment Works and Ecological Monitoring. (c) Portion 6 - WCR Site Clearance, Demolition of Existing Structures.

Month(s)	Major Site Activities
May 2022	(a) All works at LMC Loop were suspended on 21st February 2022. (b) Areas 2, 7 and 9 - Planting works. (c) Portion 6 - WCR Site Clearance, Demolition of Existing Structures.
June 2022	(a) Area 9 and Area 7 Area 2 Planting works. (b) Portion 6 - WCR Site Clearance, Demolition of Existing Structures. (c) Pre-drilling for Boc Culvert C and A1.

Contract No.: YL/2020/02 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 2 Western Connection Road Phase 2, Connection Roads to Fanling / San Tin Highway and Direct Road Link Phase 1

Month(s)	Major Site Activities
April 2022	(a) Tree felling and transplantation works. (b) Box culvert modification and trial pits works. (c) Pre-drilling works at ST01, CTFB and DRL. (d) Temporary Noise Barrier. (e) Reedbed Cell no. 3A pilot test commenced on 9 March 2022 and completed on 4 April 2022. (f) Retaining Wall BPW1 / CS1 / CS2 haul road and diverted footpath for villagers completed, GI and site clearance in progress. (g) CTFB Site clearance and forming haul road completed, predrilling in progress. (h) Demolition of Existing Structures.
May 2022	(a) Tree felling and transplantation works. (b) Box culvert modification, trial pits excavation and identification of existing utilities. (c) Pre-drilling works at ST01, CTFB and DRL. (d) Temporary Noise Barrier. (e) Monthly monitoring of the polishing function of Reedbed Cell no. 3A. (f) Retaining Wall BPW1 / CS1 / CS2. GI works completed. (g) CTFB, socketed H-pile for the staircase. (h) Demolition of Existing Structures. (i) Modified the existing boundary fencing at DRL-P09 for pre-drilling works.
June 2022	(a) Tree felling and transplantation works. (b) Box culvert modification, trial pits excavation and identification of existing utilities. (c) Pre-drilling works at ST01, CTFB and DRL. (d) Temporary Noise Barrier. (e) Monthly monitoring of the polishing function of Reedbed Cell no. 3A. (f) Retaining Wall BPW1 / CS1 / CS2. GI works completed. (g) CTFB, socketed H-pile for the staircase. (h) Demolition of Existing Structures. (i) Modified the existing boundary fencing at DRL-P09 for pre-drilling works.

Contract No.: YL/2021/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 3 Direct Road Link Phase 2

Month(s)	Major Site Activities
April 2022	**---**
May 2022	(a) Fencing Off EEAA Zone. (b) Initial Survey. (c) UU detection. (d) Tree Survey. (e) Trial Pit Excavation. (f) Tree Felling.
June 2022	(a) Dismantle of MTR EEAA fencing. (b) Predrill. (c) UU detection. (d) Trial Pit Excavation.

Status of Environmental Licences, Notifications and Permits

2.13 A summary of the relevant permits, licences and/or notifications on environmental protection for the Contracts is presented in **Table 2.3**.

Table 2.3 Status of Environmental Licences, Notifications and Permits

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
Environmental Permit (EP)				
Contract No. YL/2020/01 Contract No. YL/2020/02	EP-477/2013	22/11/2013	N/A	Valid
Contract No. YL/2021/01	EP-477/2013/A	12/08/2021	N/A	Valid
Construction Noise Permit (CNP)				
Contract No. YL/2020/01	GW-RN0246-22	26/3/2022	25/6/2022	Valid
Contract No. YL/2020/02	GW-RN0510-22	27/6/2022	19/12/2022	Valid
	GW-RN0534-22	30/6/2022	29/9/2022	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation				
Contract No. YL/2020/01	469726	21/07/2021	Till the Contract ends	Receipt acknowledged by EPD
Contract No. YL/2020/02	471916	20/09/2021	Till the Contract ends	Receipt acknowledged by EPD
Contract No. YL/2021/01	479880	17/5/2022	Till the Contract ends	Receipt acknowledged by EPD
Billing Account for Disposal of Construction Waste				
Contract No. YL/2020/01	7041333	27/07/2021	Till the Contract ends	Valid
Contract No. YL/2020/02	7041861	15/10/2021	Till the Contract ends	Valid

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
Contract No. YL/2021/01	7043434	22/05/2022	Till the Contract ends	Valid
Registration of Chemical Waste Producer				
Contract No. YL/2020/01	WPN 5213-620-C4632-01	20/08/2021	Till the Contract ends	Valid
Contract No. YL/2020/02	WPN 5213-542-C1232-24	29/11/2021	Till the Contract ends	Valid
Contract No. YL/2021/01	WPN 5213-542-P3483-01	21/04/2022	Till the Contract ends	Valid
Effluent Discharge License under Water Pollution Control Ordinance				
Contract No. YL/2020/01	WT00039466-2021	22/12/2021	31/12/2026	Valid
Contract No. YL/2020/02	--	--	--	Pending approval (Ref. no. 473875)
Contract No. YL/2021/01				Pending approval (Ref. no. 477720)

Summary of EM&A Requirements

2.14 The EM&A programme requires construction noise monitoring, air quality monitoring, water quality monitoring, ecological monitoring and environmental site audits. The EM&A requirements are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event / Action Plans;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

3 ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENT

Monitoring Parameters and Monitoring Locations

Air Quality Monitoring

3.1 In accordance with the EM&A Manual, impact 1-hour and 24-hour TSP monitoring was conducted to monitor the air quality for the Project. The locations of monitoring stations are shown in **Figure 2**. **Table 3.1** describes the locations of the air quality monitoring stations.

Table 3.1 Location of Air Quality Monitoring Stations

Monitoring Station	Location
DMS-1a (see Note 1)	Village House along Ha Wan Tsuen East Road
DMS-2A (see Note 2)	Village House along Lok Ma Chau Road
DMS-3	Village House along Old Border Road
DMS-4A (see Note 3)	Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Notes:

1. In view of the disturbance concerned by the villagers near the original air quality monitoring location DMS-1, an alternative location (DMS-1a) was proposed which was verified by IEC and agreed by EPD.
2. Monitoring at DMS-2 (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (DMS-2A) was proposed, verified by IEC and agreed by EPD.
3. Proposed replacement monitoring location for Air Sensitive Receiver (ASR) MTL-20 – Village house in Ma Tso Lung (DMS-4A) as no work would be conducted near ASR MTL-20 due to exclusion of the original Eastern Connection Road (ECR) which was verified by IEC and agreed by EPD.

3.2 **Table 3.2** summarises the monitoring parameters and frequencies of impact air quality monitoring during the Works Contracts activities.

Table 3.2 Impact Air Quality Monitoring Parameters, Frequency and Duration

Parameters	Frequency
1-hr TSP	Three times/ 6 days
24-hr TSP	Once per 6 days

Noise Monitoring

3.3 In accordance with the EM&A Manual, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities. The locations of the monitoring stations are shown in **Figure 3**. **Table 3.3** describes the locations of the noise monitoring stations.

Table 3.3 Location of Noise Monitoring Stations

Monitoring Station	Location	Measurement
NMS-1	Village house in Ha Wan Tsuen	Façade Measurement
NMS-2	Village house along existing Ha Wan	Free Field
NMS-3	Village house along Old Border Road	Free Field
NMS-4A(see Note 1)	Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill	Free Field measurement

Note:

(a) Proposed replacement monitoring location for Noise Sensitive Receiver (NSR) MTL-20 – Village house in Ma Tso Lung (DMS-4A) as no work would be conducted near NSR MTL-20 due to exclusion of the original ECR.

3.4 **Table 3.4** summarises the monitoring parameters and frequencies of construction noise monitoring during the Works Contracts activities.

Table 3.4 Noise Monitoring Parameters, Duration and Frequency

Monitoring Station	Parameter	Duration	Frequency
NMS-1 NMS-2 NMS-3 NMS-4A	L_{10}(30 min.) dB(A) L_{90}(30 min.) dB(A) Leq(30 min.) dB(A) (as six consecutive Leq, 5min readings)	0700-1900 hrs on normal weekdays	Once per week

Remarks:
A-weighted equivalent continuous sound pressure level (L_{eq}). It is the constant noise level which, under a given situation and time period, contains the same acoustic energy as the actual time-varying noise level.
L_{10} is the level exceeded for 10% of the time. For 10% of the time, the sound or noise has a sound pressure level above L_{10}.
L_{90} is the level exceeded for 90% of the time. For 90% of the time, the noise level is above this level.

Water Quality Monitoring

3.5 In accordance with the EM&A Manual, impact water quality monitoring was conducted to monitor the water quality for the Project. The locations of the monitoring stations are shown in **Figure 4**. **Table 3.5** describes the locations of the water quality monitoring stations.

3.6 Based on the updated construction programme under Contract No. YL/2017/03, the water-based construction works for temporary vehicular bridge was completed on 7th April 2021 and the completion was confirmed by Engineer Representative under Contract No. YL/2017/03 via email dated 15th June 2021. The additional monitoring station, BS1, was therefore proposed to be deleted from the water quality monitoring proramme starting from 28th June 2021. Other water quality monitoring stations remain unchanged. This Proposal for Update of Water Quality Monitoring Stations was verified by IEC and agreed by EPD via email dated 22nd June 2021.

Table 3.5 Location of Water Quality Monitoring Stations

Monitoring Station	Location	Nature of the Location
CS1	Control Station at Old Shenzhen	Control Station at Meander
IS1	Impact Station at Old Shenzhen	Impact Station at Meander
IS2	Impact Station at Old Shenzhen	Impact Station at Meander
IS4	Impact Station at Ping Hang	Reference Station
CS5	Control Station at south of Lung	Control Station for IS6
IS6	Impact Station near Lung Hau	Impact Station
(1) BS1	Impact Station at Old Shenzhen River Meander	Additional impact station for temporary vehicular bridge

Note:

1. Terminated starting from 28th June 2021 according to Proposal for Update of Water Quality Monitoring Stations (approved by EPD on 22nd June 2021).

3.7 **Table 3.6** summarises the monitoring parameters, monitoring depths and frequency of the water quality monitoring during the Works Contracts activities.

Table 3.6 Water Quality Monitoring Parameters, Depths and Frequency

Monitoring Station	Parameter (unit)	Depth	Frequency
CS1, IS1, IS2, IS4, CS5, IS6, BS1	• Temperature(°C) • pH (pH unit) • turbidity (NTU) • water depth (m) • salinity (ppt) • DO (mg/L and % of saturation) • SS (mg/L)	• 3 water depths: 1m below water surface, mid-depth and 1m above river bed. • If the water depth was less than 3m, mid-depth sampling only. • If water depth was less than 6m, mid-depth might be omitted.	• 3 days per week during the construction period of the Contract

Monitoring Methodology and Calibration Details

3.8 Monitoring works/equipment were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates could be referred to the relevant Monthly EM&A Reports.

Environmental Quality Performance Limits (Action and Limit Levels)

3.9 The environmental quality performance limits i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix A**.

Landscape and Visual

3.10 Inspection of the implementation of landscape and visual mitigation measures was conducted during weekly site audit. Most of the necessary mitigation measures have been implemented and recommended follow-up actions have been discharged by the Contractors. Details of the audit findings and implementation status are summarised in **Appendix K** and **Appendix J**.

Ecology Monitoring

LMC Loop

Avifauna (Flight Line Survey)

3.11 Avifauna monitoring was carried out on a monthly basis to identify the number and species composition of birds using the flight line and monitor if there was any impact from construction works. The flight line corridor survey work was carried out at the Lok Ma Chau Lookout, according to Section 11.4.1.1 of the EM&A Manual.

Mammals

3.12 Monitoring of mammals was also required for Eurasian Otter, other mammals and dogs during the site formation and establishment period of Ecological Area, to observe the connectivity between the existing reed marsh and the Ecological Area, and if there was any sign of otter and mammals around the Ecological Area.

3.13 The mammals monitoring in the Loop has been temporary suspended since March 2022 and

will be resumed subject to the site condition based on the followings:

- In view of current site condition of Loop, the connectivity between the existing reed marsh and the EA Zone has been fenced off due to other project's land occupier.
- 12-month establishment period of EA zone has also been completed.

Western Connection Road

Avifauna (Flight Line Survey)

3.14 Refer to Section 3.11.

Avifauna (Pond 12)

3.15 Pond 12 avifauna survey was required to be carried out on a weekly basis to identify the number and species composition of birds using Pond 12, according to Section 11.4.2.1 of the EM&A Manual. Location of Pond 12 is shown in **Figure 5a.**

Herpetofauna

3.16 Herpetofauna monitoring of the only herpetofauna species of conservation interest in the area around Pond 12, the Chinese Bullfrog, was required to be conducted once monthly during wet season (March to October), including both day-time and night-time survey. The purpose of the survey is to ensure the abundance of the Chinese Bullfrog in the area of Pond 12, LMC Tsuen, and nearby wetlands is not affected by the construction works. The monitoring was conducted according to Section 11.4.2.2 of the EM&A Manual. Location of the Herpetofauna survey transect is shown in **Figure 5b** for reference.

Aquatic Fauna

3.17 Monthly surveys of the population of Rose Bitterling at streams and associated ponds south of Lung Hau Road, weekly *in-situ* monitoring of water quality and whole site audit were required to ensure the population of Rose Bitterling at the stream and associated ponds south of Lung Hau Road as well as the water quality at the area where Rose Bitterling is present are not affected by construction works. Weekly *in-situ* monitoring of water quality in LMC Meander was also required during the construction phase and the first 12 months of operation. The monitoring was conducted according to Section 11.4.2.3 of the EM&A Manual.

3.18 Monitoring of Rose Bitterling and *in-situ* monitoring of water quality were conducted at the stream and associated ponds south of Lok Ma Chau Road where Rose Bitterling is present. There were 4 sampling points along the stream, and 4 sampling points at the ponds. The sampling locations are shown in **Figure 5c**.

3.19 *In-situ* monitoring of water quality in LMC Meander was conducted at 3 monitoring stations, including CS1, IS1 and IS2, as stated in Section 6.3 of the EM&A Manual. The monitoring stations are shown in **Figure 4**.

3.20 Measurements for *in-situ* monitoring of water quality included temperature, pH, salinity, turbidity and dissolved oxygen. Monitoring works/equipment were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates could be referred to the relevant Monthly EM&A Reports.

Land Contamination

3.21 According to Section 8.2 of EM&A Manual and the details of the remediation and associated testing referred to in Chapter 8 of the EIA Report (AEIAR-176/2013), five (5) arsenic-contaminated zones were identified within the Loop. Based on the Contract requirements, "Solidification / Stabilisation" was the recommended treatment method to remediate all contaminated soils and Portland cement was proposed to be used for the contaminated soil treatment.

3.22 Trial of CS/S was undertaken between April and June 2019 and the second trial was conducted in August 2019. According to trial performance results, cement / soil ratios of 10% and 7.5% could achieve the remediation target and these ratios had been adopted for the subsequent remediation work. The proposed cement/soil ratios were accepted by relevant parties before the remediation work started. The contaminated soil excavation and remediation commenced on site in mid-July 2019.

3.23 As advised by the Contractor, Decontamination for all hot spots (LD01 – LD05) was completed and backfilling of treated soil was completed on 31st May 2021. After completion of remediation works at each hot spots, Interim Remediation Reports (IRR) was prepared by the Land Contamination Specialist and submitted to EPD in accordance with Condition 2.16 of the EP-477/2013/A. The status of IRRs is summarised below:

(a) IRR for hot spot LD-001 endorsed by EPD on 6th January 2020
(b) IRR for hot spot LD-003 endorsed by EPD on 18th March 2020
(c) IRR for hot spot LD-002 commented by EPD on 3rd September 2020 and resubmitted by Contractor on 16th September 2020
(d) IRR for hot spot LD-005 endorsed by EPD on 23rd October 2020
(e) Final Remediation Report including the result of hotpsot LD-004 was submitted to EPD on 28th June 2021. The final Remediation Report was approved by EPD with minor comments in August 2021.

3.24 No work related to land contamination was conducted in the reporting quarter.

Site Audit Summary

3.25 Site audit was carried out on a weekly basis to monitor and audit the timely implementation of proper environmental management practices and mitigation measure of the Project. The observations and recommendations made during the reporting period are summarised in **Appendix K**.

Environmental Mitigation Measures

3.26 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the Project EM&A Manual for the Contractors to implement. A summary of the Environmental Mitigation Implementation Schedule (EMIS) is given in **Appendix J**.

Status of Waste Management

3.27 The amount of wastes generated by the major site activities of this Project during the reporting quarter is shown in **Appendix L**.

4 MONITORING RESULTS

Monitoring Schedule

4.1 The environmental monitoring schedules in the reporting quarter are presented in **Appendix O**.

Weather Conditions

4.2 The details of weather conditions for each individual monitoring session were presented in relevant monthly EM&A reports.

4.3 The weather conditions and wind data in the reporting quarter is summarised in **Appendix G**.

Air Quality

1-hr and 24-hr TSP Monitoring

4.4 All construction air quality monitoring was conducted as scheduled during the reporting quarter.

4.5 No Action/Limit Level exceedance was recorded in this reporting quarter. A summary of exceedance is attached in **Appendix I**.

4.6 **Table 4.1** and **Table 4.2** summarise the air quality monitoring results which are extracted from the monthly reports for this Project. The graphical presentations of the air quality monitoring results are shown in **Appendix B** and **Appendix C**.

Table 4.1 Summary of 1-hour TSP Monitoring Results in Reporting Quarter

Reporting Months	Air Quality Monitoring Station	Average µg/m³	Range µg/m³	Action Level µg/m³	Limit Level µg/m³
Apr 2022	DMS – 1a	95.7	22.8 – 260.1	353	500
	DMS – 2A	115.2	38.3 – 278.7	370	
	DMS – 3	88.3	41.3 – 199.0	351	
	DMS – 4A	86.6	26.5 – 194.4	350	
May 2022	DMS – 1a	52.4	19.8 –137.9	353	
	DMS – 2A	82.5	27.0 – 191.0	370	
	DMS – 3	68.7	22.3 – 137.6	351	
	DMS – 4A	59.6	19.7 – 122.3	350	
Jun 2022	DMS – 1a	58.8	18.4 – 101.6	353	
	DMS – 2A	57.9	35.0 – 86.1	370	
	DMS – 3	49.3	25.1 – 72.3	351	
	DMS – 4A	53.5	28.7 – 95.6	350	

Table 4.2 Summary of 24-hour TSP Monitoring Results in Reporting Quarter

Reporting Months	Monitoring Station	Average μg/m³	Range μg/m³	Action Level μg/m³	Limit Level μg/m³
Apr 2022	DMS – 1a	67.2	34.5 – 121.0	184	260
	DMS – 2A	84.3	48.5 – 119.5	166	
	DMS – 3	41.3	26.1 – 77.5	166	
	DMS – 4A	71.0	34.9 – 146.6	152	
May 2022	DMS – 1a	69.2	29.6 – 119.3	184	
	DMS – 2A	56.3	25.9 – 98.6	166	
	DMS – 3	35.9	23.3 – 63.1	166	
	DMS – 4A	51.9	28.8 – 91.0	152	
Jun 2022	DMS – 1a	44.5	25.3 – 61.3	184	
	DMS – 2A	43.8	29.1 – 60.2	166	
	DMS – 3	14.1	11.7 – 16.9	166	
	DMS – 4A	28.4	20.9 – 41.2	152	

Construction Noise

4.7 All construction noise monitoring was conducted as scheduled in the reporting quarter.

4.8 No Limit Level exceedance was recorded. A summary of exceedance is attached in **Appendix I**.

4.9 **Table 4.3** summarises the noise monitoring results which were extracted from the monthly reports for this Project. The graphical presentations of the construction noise monitoring results are shown in **Appendix D**.

Table 4.3 Summary of Noise Monitoring Results in Reporting Quarter

Reporting Months	Monitoring Station	Average $L_{eq\ (30\ min)}$, dB(A)	Range $L_{eq\ (30\ min)}$, dB(A)	Action Level	Limit Level, dB(A)
Apr 2022	NMS-1	60.6	53.7 – 62.2	When one documented complaint is received	75.0
	NMS-2	68.1	65.7 – 71.1		
	NMS-3	55.2	49.0 – 57.0		
	NMS-4A	51.4	46.1 – 52.7		
May 2022	NMS-1	60.4	51.2 – 64.8		
	NMS-2	68.4	66.2 – 70.0		
	NMS-3	57.7	51.8 – 61.3		
	NMS-4A	55.3	49.0 – 60.2		
Jun 2022	NMS-1	63.2	54.1 – 69.0		
	NMS-2	68.9	65.2 – 71.9		
	NMS-3	60.4	54.1 – 63.7		
	NMS-4A	57.3	54.2 – 60.7		

Remark: +3dB(A) façade correction included
If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

Water Quality

4.10 All water quality monitoring was conducted as scheduled in the reporting quarter except at monitoring station IS6 as the channel was dry on the scheduled dates in the reporting quarter.

4.11 No Action/Limit Level exceedance was recorded. A summary of exceedance is attached in **Appendix I**.

4.12 **Table 4.4** summarises the water quality monitoring results which were extracted from the monthly reports for this Project. The graphical presentations of the water quality monitoring results are shown in **Appendix E**.

Table 4.4 Summary of Water Quality Monitoring Results in Reporting Quarter

Reporting Months	Monitoring Station	Average (Depth average)	Range	Action Level	Limit Level
DO (mg/L)					
Apr 2022	IS1	8.1	7.2 - 12.3	7.0 / NA(4)	6.8 or 4(4)
	IS2	6.7	5.5 - 9.2	5.3 / NA(4)	5.2 or 4(4)
	IS4	4.4	4.2 - 4.8	4.1 / NA(4)	3.8 or 4(4)
May 2022	IS1	6.7	4.5 - 9.3	7.0 / NA(4)	6.8 or 4(4)
	IS2	6.5	4.5 - 7.9	5.3 / NA(4)	5.2 or 4(4)
	IS4	5.1	4.2 - 7.2	4.1 / NA(4)	3.8 or 4(4)
Jun 2022	IS1	5.9	4.7 - 7.3	7.0 / NA(4)	6.8 or 4(4)
	IS2	6.3	4.2 - 7.3	5.3 / NA(4)	5.2 or 4(4)
	IS4	5.0	4.1 - 5.9	4.1 / NA(4)	3.8 or 4(4)
Turbidity (NTU)					
Apr 2022	IS1	16.3	12.9 - 23.7	27.7	29.9
	IS2	26.1	10.0 - 32.9	35.5	38.1
	IS4	9.4	4.3 - 28.7	70.9	74.6
May 2022	IS1	12.6	2.8 - 25.7	27.7	29.9
	IS2	25.5	10.8 - 34.9	35.5	38.1
	IS4	8.4	5.1 - 14.3	70.9	74.6
Jun 2022	IS1	7.3	4.8 - 9.1	27.7	29.9
	IS2	23.7	13.6 - 33.7	35.5	38.1
	IS4	7.0	3.6 - 15.3	70.9	74.6
SS (mg/L)					
Apr 2022	IS1	20.9	13.0 - 27.0	28.0	28.8
	IS2	30.2	22.0 - 38.5	39.8	41.2
	IS4	16.4	5.5 - 54.5	155	175
May 2022	IS1	15.2	3.0 - 25.5	28.0	28.8
	IS2	27.5	20.5 - 36.0	39.8	41.2
	IS4	11.1	4.5 - 41.0	155	175
Jun 2022	IS1	12.3	5.5 - 22.0	28.0	28.8
	IS2	26.3	15.0 - 37.0	39.8	41.2
	IS4	7.5	3.5 - 19.0	155	175

Notes:
(1) Depth-averaged was calculated by taking the arithmetic means of reading of all three depths
(2) For DO, non-compliance of the water quality limit would occur when monitoring result at impact stations was lower that the limit.
(3) For SS & turbidity, non-compliance of the water quality limits would occur when monitoring result at impact stations was higher than the limits.
(4) The proposal of adopting 4 mg/L as the Limit Level of DO for the period from April to September due to seasonal change of DO was accepted by EPD via email on 10th Dec 2019.

Ecological Monitoring

LMC Loop

Avifauna (Flight Line Survey)

4.13 Monthly flight line survey was conducted by ET as scheduled in the reporting quarter. The flight line survey was carried out on 22nd April, 20th May and 17th June 2022.

4.14 **Table 4.5** shows the summary of flight line survey results including the number of birds observed and the number of bird-flights for the species in the reporting quarter.

4.15 In the reporting quarter, flight lines were in general concentrated mainly on LMC Meander and adjacent areas including Ecological Area (EA) Zone and along Shenzhen River. No significant impact on the flight line was observed in the reporting quarter. Nevertheless, it was observed in the reporting quarter that most birds avoided using the flight line over the centre of LMC Loop which is considered due to the construction activities from other project's land occupier.

4.16 The distribution of flight line usage in the reporting quarter is shown in **Appendix F.**

Table 4.5 Summary of Flight Line Survey Results in the Reporting Quarter

Species	Apr 2022		May 2022		Jun 2022	
	Birds Observed	Bird-flights	Birds Observed	Bird-flights	Birds Observed	Bird-flights
Little Egret 小白鷺	113	1195	250	2502	127	1095
Great Egret 大白鷺	35	377	60	675	25	262
Chinese Pond Heron 池鷺	4	32	6	51	2	16
Grey Heron 蒼鷺	1	10	3	31	3	30
Great Cormorant 普通鸕鷀	12	124	0	0	0	0
Black Kite 黑鳶	2	18	1	6	1	9
Collared Crow 白頸鴉	0	0	1	10	1	33
Total	167	1756	321	3275	159	1445

Mammals

4.17 The mammals monitoring in the Loop has been temporary suspended since March 2022 and will be resumed subject to the site condition based on the followings:

- In view of the site condition of the Loop, the connectivity between the existing reed marsh and the EA Zone has been fenced off due to other project's land occupier.
- 12-month establishment period of EA zone has also been completed.

Western Connection Road

Avifauna (Flight Line Survey)

4.18 Refer to Sections 4.13 to 4.16.

Avifauna (Pond 12)

4.19 Pond 12 avifauna surveys were carried out weekly as scheduled in the reporting quarter starting from March 2022. The date of avifauna survey was shown in Table 4.6.

Table 4.6 The Date of Avifauna Survey in the Reporting Quarter

Month	Dates of pond 12 avifauna survey
April	6th, 13th, 20th, 27th
May	4th, 11th, 18th and 25th
June	1st, 8th, 15th, 22nd and 29th

4.20 Table 4.7 shows the monitoring results during construction works as compared against the results before the commencement of works of the day. The monitoring results indicated Pond 12 was utilized by waterbird and wetland-dependent species in the reporting quarter during the monitoring. No significant impact of construction activities on bird use of the pond was observed.

Table 4.7 Summary of Avifauna Monitoring Results at Pond 12

Report Month	Number of Species		Abundance	
	Before Construction	During Construction	Before Construction	During Construction
April 2022	30	49	87	137
May 2022	27	46	71	130
June 2022	32	58	75	156

Herpetofauna

4.21 Herpetofauna survey was conducted as scheduled in the reporting quarter starting from March 2022. The herpetofauna survey was conducted on 25th April, 13th May and 9th June 2022.

4.22 No potential impact due to the construction activities of Western Connection Road was identified during the survey of Chinese Bullfrog in the reporting quarter.

Aquatic Fauna

4.23 Aquatic fauna survey was conducted as scheduled in the reporting. The monthly aquatic fauna survey was carried out on 21st April, 24th May and 15th June 2022 while *in-situ* water monitoring for aquatic fauna at the stream and associated ponds south of Lok Ma Chau Road was shown in Table 4.8.

Table 4.8 Date of Water Quality Monitoring for Aquatic Fauna in the Reporting Quarter

Month	Dates of Water Quality Monitoring at the Stream and associated ponds south of Lung Hau Road
April	8th, 13th, 21st and 25th
May	4th, 12th, 18th, 24th and 30th
June	10th, 15th, 22nd and 27th

4.24 No potential impact due to the runoff from the construction activities of the Western Connection Road was identified during the survey of Aquatic Fauna in the reporting quarter. In addition, no Action / Limit Level exceedance was recorded for the *in-situ* water quality monitoring in the report quarter.

4.25 Relevant Monthly EM&A Reports could be referred to for the ecological monitoring photo records and results.

5 ENVIRONMENTAL SITE INSPECTION

Site Audits

5.1 Site audits were carried out by ET on weekly basis in the reporting quarter to monitor the timely implementation of proper environmental management practices and mitigation measures on the project site. No non-conformance was identified and the observation and recommendations made in each individual site audit session in the reporting period are summarised in **Appendix K**.

Implementation Status of Environmental Mitigation Measures

5.2 According to the EIA Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix J**.

Solid and Liquid Waste Management Status

5.3 In accordance with the EM&A Manual, waste management was audited during weekly site audit to determine if wastes are being managed in accordance with the Waste Management Plan (WMP) prepared for the Project and the relevant legislative and contractual requirements. Waste management practice including waste handling, storage, transportation and disposal were audited.

5.4 The Contractors are advised to minimize the wastes generated through the recycling or reusing. All mitigation measures stipulated in the EM&A Manual and waste management plans shall be fully implemented. The status of implementation of waste management and reduction measures are summarised in **Appendix J**.

5.5 Waste generated from this Project includes inert C&D materials and non-inert C&D materials. Non-inert C&D materials are made up of general refuse and waste that cannot be reused or recycled and has to be disposed of at the designated landfill sites. The amount of wastes generated by the construction works of the Project during the reporting quarter is shown in **Appendix L**.

6 NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

Summary of Exceedances

6.1 Environmental monitoring works were performed in the reporting quarter and all monitoring results were checked and reviewed. A summary of exceedance is attached in **Appendix I**.

6.2 No exceedance of Action/Limit Level of air quality and water quality was recorded in the reporting quarter.

6.3 No exceedance of Limit Level of construction noise was recorded in the reporting quarter.

Summary of Environmental Non-Compliance

6.4 No environmental non-compliance was recorded in the reporting quarter. The observations and recommendations made in each individual site audit session were presented in **Appendix K**.

Summary of Environmental Complaint

6.5 There was one (1) environmental complaint received by 1823 on 4th April 2022 concerning the muddy surface runoff arising from the construction works of "Development of Lok Ma Chau Loop" project at Lok Ma Chau Road near Ha Wan Tsuen Road. After investigation, there is no direct evidence to demonstrate the muddy discharge was inducted by the Project. The Cumulative Complaint Log since the commencement of the Project is attached in **Appendix M**.

Summary of Environmental Summon and Successful Prosecution

6.6 There was no successful environmental prosecution or notification of summons received in the reporting quarter. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix N**.

Event and Action Plan

6.7 Should any project related non-compliance of the criteria occur, action in accordance with the Action Plan in **Appendix H** shall be carried out.

7 FUTURE KEY ISSUES

Key Issues in the Coming Three Months

7.1 The major construction activities undertaken in the coming three months will include:

Contract No. YL/2020/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 1 – Site Formation and Infrastructure Works inside Lok Ma Chau Loop and Western Connection Road Phase 1

(a) Western Connection Road (WCR) Stage 1 Construction: Demolition of Existing Structures, Excavation, DCM and Retaining Wall.
(b) Wetland Compensation Establishment Works and Ecological Monitoring.
(c) Pre-drilling for Boc Culvert C and A1.
(d) Meander Bridge Pre-drilling and Site Formation for Piling Platform.
(e) Advance Work for Alternative Road along EV Zone (PMI).
(f) PM Office (MIC) and Contractor Office (subject to release date of Closed-loop Area at Portion 7)

(Note that as the Emergency Hospital and Mobile Cabin Facility has been occupying the site, potential remaining works under Contract 1 is still under discussion. The activities above are tentative.)

Contract No.: YL/2020/02 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 2 Western Connection Road Phase 2, Connection Roads to Fanling / San Tin Highway and Direct Road Link Phase 1

(a) Tree Felling / Tree Transplant.
(b) Pre-construction Condition Survey inside MTRC tunnel.
(c) Erection of Contractor's Site Office.
(d) Pre-drilling and Trial Pits for Bridge ST01, CTFB and DRL.
(e) Site clearance and GI works for Cut Slopes CS1, CS2 and Retaining wall BPW1, and associated temporary working platform.
(f) Construction of concrete block piling platform for piling works of Retaining Wall BPW1.
(g) Erection of Temporary Noise Barrier along the Lok Ma Chau Road.
(h) Box Culvert Modification at Lok Ma Chau Road (Stage 1).
(i) Demolition of Existing Structures along Lok Ma Chau Road. Structure Ref. R41, R42 & R50.
(j) Existing Cycle Track Subway Modification.
(k) Construction of Pai Lau.
(l) Bored pile and socketed H-Pile for Bridge CTFB, ST01 & DRL.
(m) Construction of Retaining walls RW 8 and RW 9.
(n) Operation of TAR1 and TAR2.

Contract No.: YL/2021/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 3 Direct Road Link Phase 2

(a) Elevated PTI Hoarding erection.
(b) Elevated PTI UU Diversion.
(c) Demolition of Existing Structure.
(d) Paving Works for Stage 2.
(e) Pre-drilling.

7.2 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, noise, water quality, waste management and ecology. Relevant Monthly EM&A Reports could be referred to for the proactive Environmental Protection Proforma summarising the major site activities, potential environmental impacts and recommended mitigation measures for the coming months.

Monitoring Schedule

7.3 The environmental monitoring schedules for the next reporting quarter are presented in **Appendix O.**

8 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

8.1 This Quarterly EM&A Report presents the EM&A work undertaken in April to June 2022 in accordance with EM&A Manual.

8.2 Environmental monitoring and audit works were performed in the reporting quarter and all monitoring results were checked and reviewed.

Air Quality Monitoring

8.3 All construction air quality monitoring including 1-hour TSP and 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

8.4 All construction noise monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Water Quality Monitoring

8.5 All water quality monitoring was conducted as scheduled in the reporting quarter except at station IS6 as the channel was dry on the scheduled dates in the reporting quarter. No Action/Limit Level exceedance was recorded.

Ecological Monitoring

LMC Loop

Avifauna (Flight Line Survey)

8.6 Avifauna monitoring was conducted as scheduled in the reporting quarter. Flight lines recorded were in general concentrated mainly on LMC Meander including Ecological Area Zone (EA Zone) and along Shenzhen River.

8.7 In the reporting quarter, it was observed that most birds avoided using the flight line over the centre of LMC Loop. This is considered due to the construction activities from other project's land occupier.

Mammals

8.8 The mammals monitoring in the Loop has been temporary suspended since March 2022 and will be resumed subject to the site conditions based on the followings:

- According the Clause 11.4.1.2 of EM&A Manual, the objective of mammals monitoring is to monitor the connectivity between the existing reed marsh and the EA. In view of current site condition of the Loop, the connectivity between the existing reed marsh and the EA Zone has been fenced off due to other project's land occupier.
- 12-month establishment period of EA zone has been completed.

Western Connection Road

Avifauna (Flight Line Survey)

8.9 Avifauna monitoring was conducted as scheduled in the reporting quarter. Flight lines recorded were in general concentrated mainly on LMC Meander and adjacent areas including Ecological Area Zone (EA Zone) and along Shenzhen River. Most birds avoided using the flight line over the centre of LMC Loop which is considered due to the construction activities from other project's land occupier.

Avifauna (Pond 12)

8.10 Avifauna survey at Pond 12 was conducted as scheduled in the reporting quarter. Weekly count of birds using the Pond was recorded. No significant impact of construction activities on bird use of the pond was observed.

Herptofauna

8.11 Herptofauna survey was conducted as scheduled in the reporting quarter starting. No significant impact of construction activities on the numbers of this species was observed.

Aquatic fauna

8.12 Aquatic fauna survey was conducted as scheduled in the reporting quarter. No significant impact of construction activities on the stream was observed.

Land Contamination

8.13 Decontamination for five arsenic-contaminated zones (LD01 - LD05) identified in LMC Loop was completed and the final Remediation Report was submitted and approved by EPD in accordance with Condition 2.16 of the EP-477/2013/A under Contract No. YL/2017/03.

8.14 No work related to land contamination was conducted in the reporting quarter.

Environmental Site inspections

8.15 Environmental site inspections were conducted as weekly basis in the reporting quarter. No environmental non-compliance was recorded.

Environmental Complaint and Successful Prosecution

8.16 One (1) environmental complaint related to water quality was received in the reporting quarter.

8.17 No notification of summons or successful prosecutions related to environmental was received in the reporting quarter.

Recommendations

8.18 The mitigation measures recommended in the EIA report and EM&A Manual are considered

effective and efficient in minimizing environmental impacts due to construction of the Project during the reporting quarter. The EM&A programme implemented by the ET has effectively monitored the environmental impacts arising from the construction activities and ensure the proper implementation of mitigation measures.

8.19 The effectiveness and efficiency of the EM&A programme will be continuously reviewed. The EM&A programme will be improved if deficiencies of the existing EM&A programme are identified.

8.20 According to the environmental audits performed in the reporting quarter, the following recommendations were provided to remediate any potential impacts due to the Project:

Air Quality Impact

- To enhance the dust suppression measures such as water spraying on all haul roads and exposed work site area;
- To maintain the impervious material to cover the stockpile of dusty materials;
- To provide wheel washing facilities at the site exits; and
- To inspect NRMM labels which should be displayed for all regulated machines.

Construction Noise Impact

- To inspect the noise sources inside the site;
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers; and
- To provide temporary noise barriers or other appropriate sound reduction measures for operations of noisy equipment near the noise sensitive receivers, if necessary.

Water Impact

- To prevent any surface runoff discharge into the old Shenzhen River meander or stream;
- To review and implement temporary drainage system;
- To identify any wastewater discharges from site;
- To remove the sand, floating rubbish or dusty material away from the EA zone, old Shenzhen River meander or stream;
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge;
- To review the capacity of de-silting facilities for discharge;
- To ensure the drainage facilities would not be clogged with sediment to avoid overflow during rainy season;
- To cover the exposed slope surfaces by tarpaulin or other means;
- To designate the area for wheel washing and set up the associated drainage for water from a wheel wash;
- To pave the exit points; and
- To implement the effective water quality mitigation measures according to the site drainage plan

Ecology Impact

- To maintain the 3m high olive green fence around the construction site; and

- To ensure the powered mechanical equipment for construction works only during the period 9am to 5pm at and near the old Shenzhen River meander and other identified important ecologically sensitive areas, if any; and
- To prevent any surface runoff discharge into the stream.

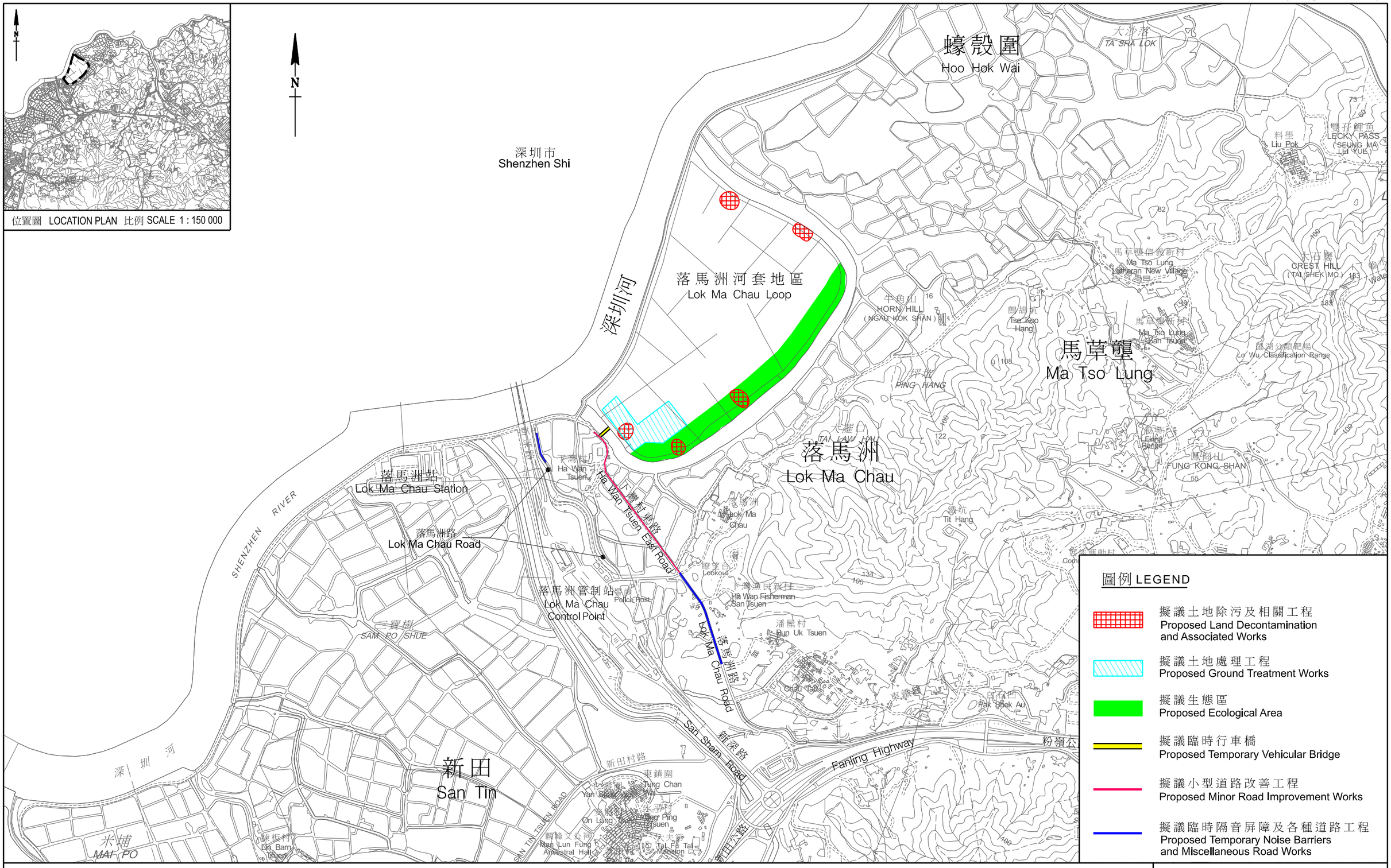
Waste/Chemical Management

- To check for any accumulation of waste materials or rubbish on site;
- To carry out inspection of dump trucks at site exit to ensure inert and non-inert C&D materials are properly segregated before delivering off site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site;
- To maintain the drip tray well to prevent oil and chemical leakage; and
- To avoid improper handling, storage and dispose of oil drums or chemical containers on site.

Landscape and Visual

- To erect and maintain the protection fencing and tree protection zone around the preserved trees; and
- To clear the construction materials within the tree protection zone.

FIGURE(S)



圖例 LEGEND

- 擬議土地除污及相關工程 Proposed Land Decontamination and Associated Works
- 擬議土地處理工程 Proposed Ground Treatment Works
- 擬議生態區 Proposed Ecological Area
- 擬議臨時行車橋 Proposed Temporary Vehicular Bridge
- 擬議小型道路改善工程 Proposed Minor Road Improvement Works
- 擬議臨時隔音屏障及各種道路工程 Proposed Temporary Noise Barriers and Miscellaneous Road Works

工務計劃項目第748CL號—落馬洲河套地區發展：土地除污及前期工程

PWP ITEM No. 748CL-DEVELOPMENT OF LOK MA CHAU LOOP : LAND DECONTAMINATION AND ADVANCE ENGINEERING WORKS

FIGURE 1 a

LAYOUT PLAN

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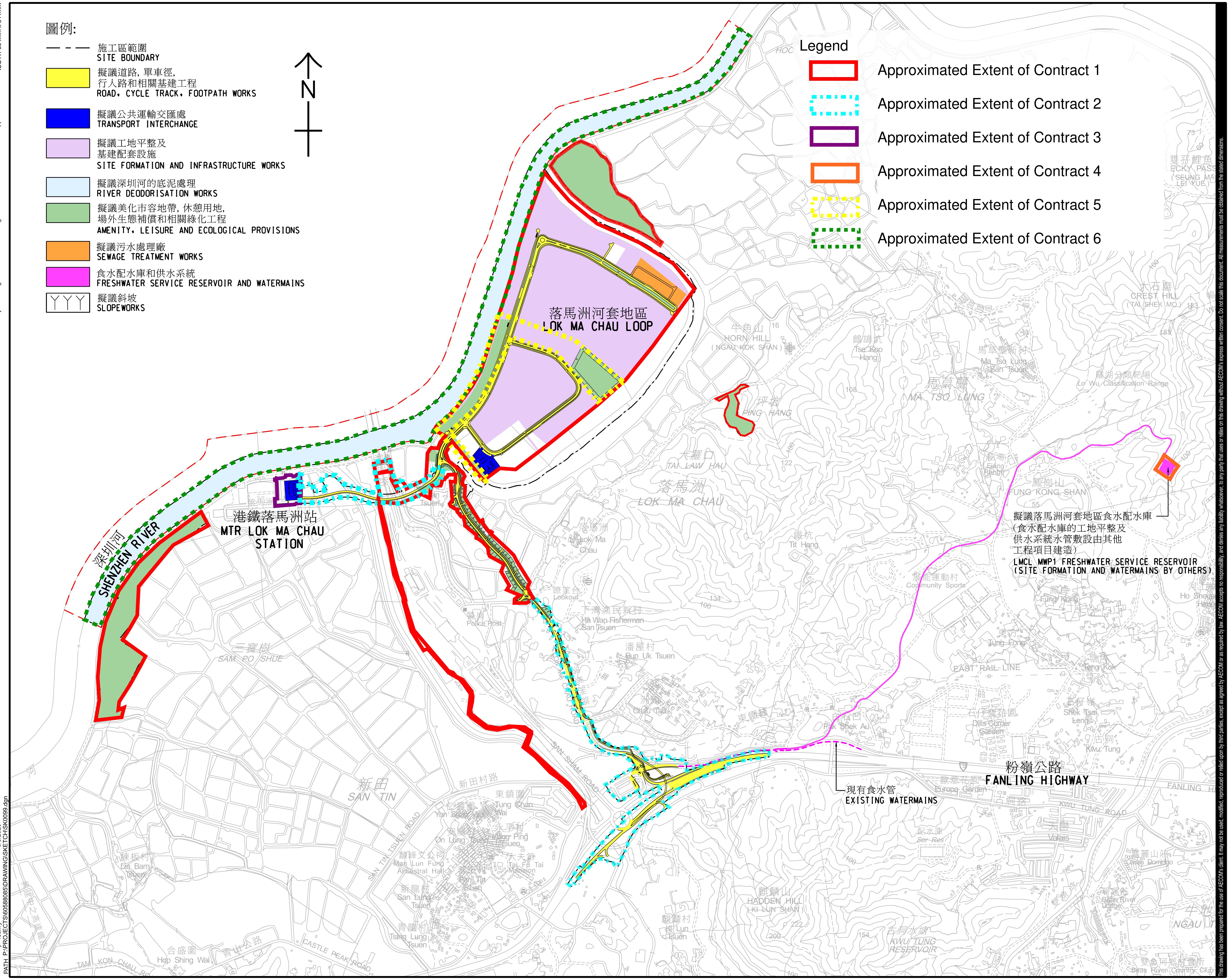
1/2/2018

A3 420MM X 297MM


圖例:
施工區範圍
SITE BOUNDARY
擬議道路, 單車徑,
行人路和相關基建工程
ROAD, CYCLE TRACK, FOOTPATH WORKS
擬議公共運輸交匯處
TRANSPORT INTERCHANGE
擬議工地平整及
基建配套設施
SITE FORMATION AND INFRASTRUCTURE WORKS
擬議深圳河的底泥處理
RIVER DEODORISATION WORKS
擬議美化市容地帶, 休憩用地,
場外生態補償和相關綠化工程
AMENITY, LEISURE AND ECOLOGICAL PROVISIONS
擬議污水處理廠
SEWAGE TREATMENT WORKS
食水配水庫和供水系統
FRESHWATER SERVICE RESERVOIR AND WATERMAINS
擬議斜坡
SLOPEWORKS
N
Legend
Approximated Extent of Contract 1
Approximated Extent of Contract 2
Approximated Extent of Contract 3
Approximated Extent of Contract 4
Approximated Extent of Contract 5
Approximated Extent of Contract 6
落馬洲河套地區
LOK MA CHAU LOOP
港鐵落馬洲站
MTR LOK MA CHAU
STATION
深圳河
SHENZHEN RIVER
擬議落馬洲河套地區食水配水庫
(食水配水庫的工地平整及
供水系統水管敷設由其他
工程項目建造)
LMCL MWP1 FRESHWATER SERVICE RESERVOIR
(SITE FORMATION AND WATERMAINS BY OTHERS)
現有食水管
EXISTING WATERMAINS
粉嶺公路
FANLING HIGHWAY
新田
SAN TIN
SAN SHAM ROAD
SAN TIN TSUEN ROAD
CASTLE PEAK ROAD
落馬洲
LOK MA CHAU
馬草壟
MA TSO LUNG
牛角山
HORN HILL
河上鄉
HO SHEUNG HEUNG
EAST RAIL LINE

ISO A1 594mm x 841mm

Approved: Checked: Designer: Project Management Initials:

Plot File by: Tsuiwy 5/5/2020
PATH: P:\PROJECTS\60588085\DRAWING\SKETCH\SK0099.dgn

AECOM

PROJECT

DEVELOPMENT OF LOK MA CHAU LOOP MAIN WORKS PACKAGE 1 DESIGN AND CONSTRUCTION

CLIENT

土木工程拓展署
CEDD Civil Engineering and Development Department

CONSULTANT

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.

STATUS

SCALE: A1 1 : 8000

DIMENSION UNIT: METRES

KEY PLAN

PROJECT NO.: 60588085

CONTRACT NO.: CE 5/2018(CE)

SHEET TITLE

落馬洲河套地區發展 -
第一期主體工程 -
工程平面圖 (圖一)
PROJECT LAYOUT (Figure 1b)

SHEET NUMBER

60588085/ SK0099

WELLAB 匯力
consulting . testing . research

Service Contract No. WD/04/2020
Development of Lok Man Chau Loop: Main Work Package 1 - Environmental Team
Location of Air Quality Monitoring Stations

SCALE	1:400 A4	DATE	May 2021
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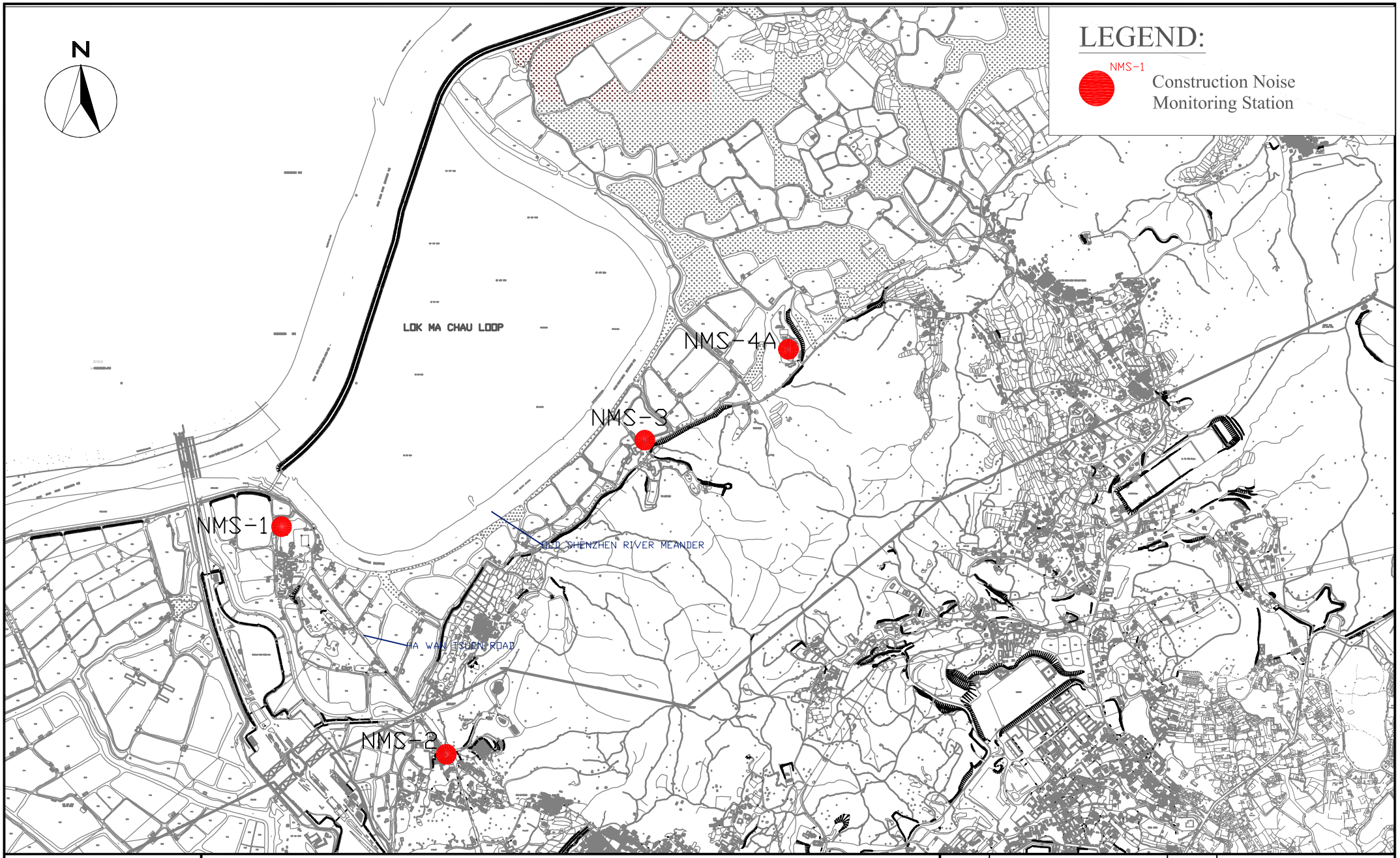
JOB No.	WMA21009	FIGURE NO. Fig 2	REV –



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consulting . testing . research

Service Contract No. WD/04/2020
Development of Lok Man Chau Loop: Main Work Package 1 - Environmental Team

Location of Noise Monitoring Stations

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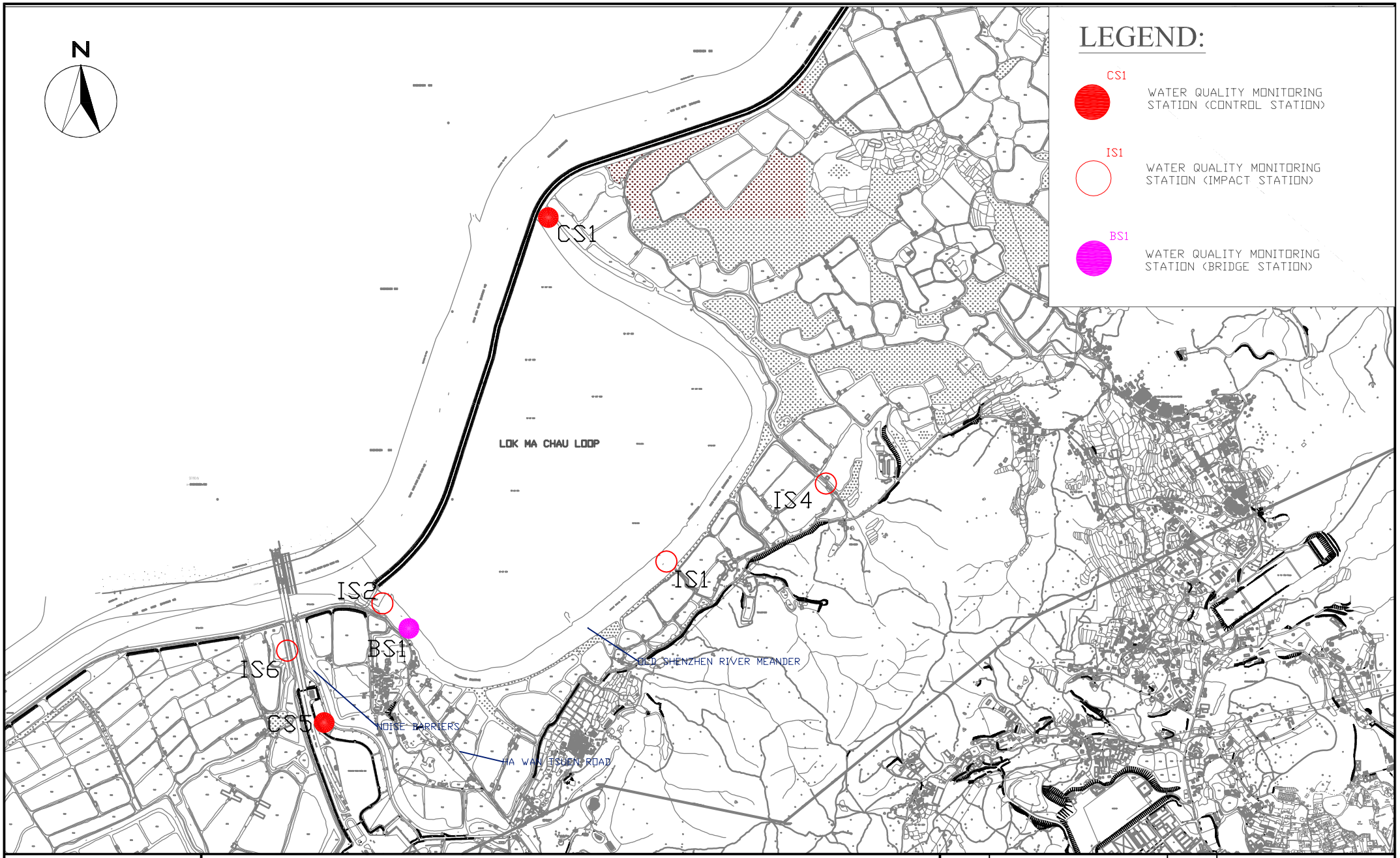
JOB No.	WMA 21009	FIGURE NO.	Fig 3
		REV	-



WELLAB 匯力
consulting . testing . research

Service Contract No. WD/04/2020
Development of Lok Man Chau Loop: Main Work Package 1 - Environmental Team

Location of Water Quality Monitoring Stations

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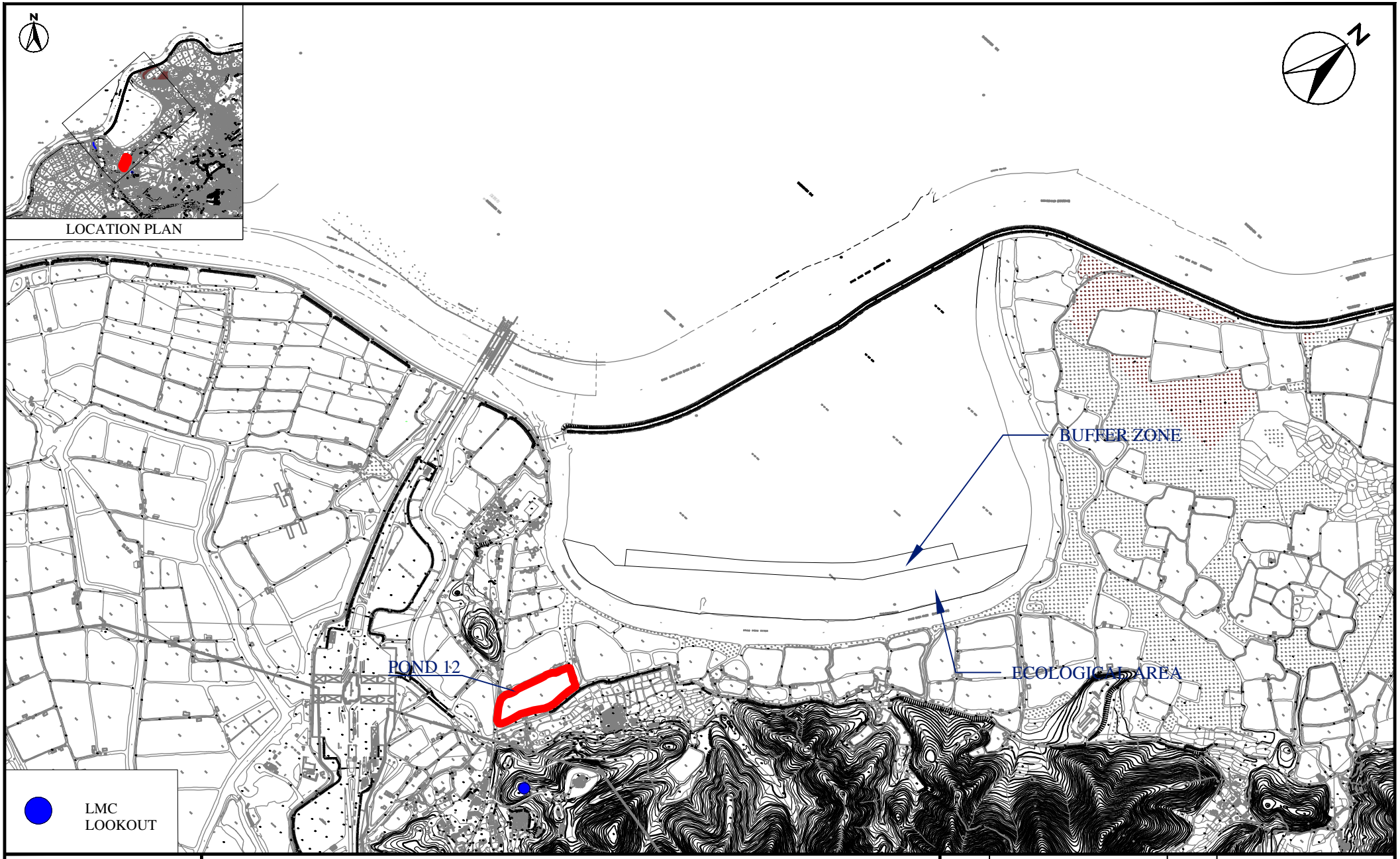
		REV	-



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Service Contract No. WD/04/2020
Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team
Locations of Pond 12 and Lok Ma Chau Lookout

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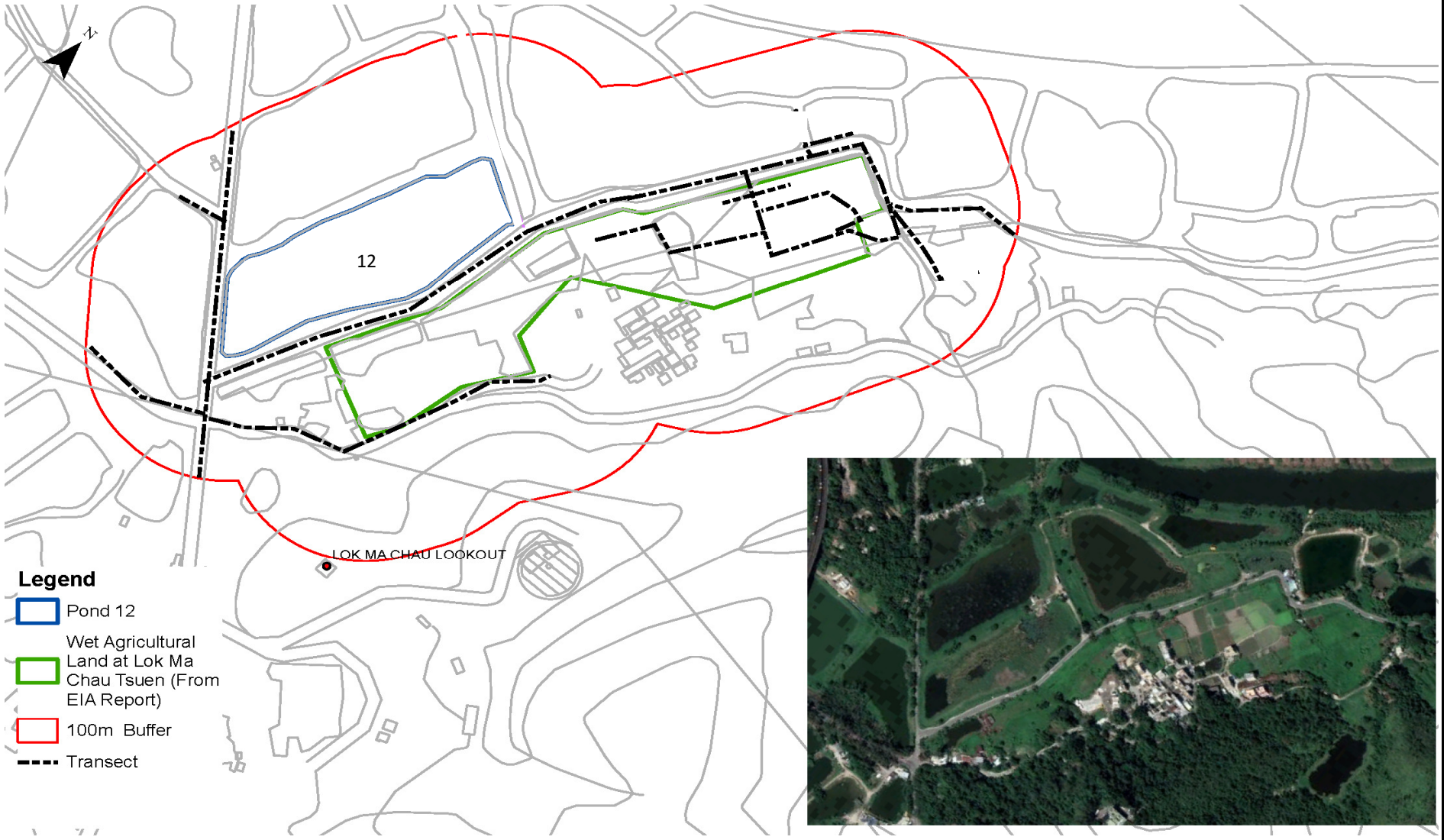
JOB No.	WMA 21009	FIGURE NO.	Fig 5a
		REV	-



Service Contract No. WD/04/2020
Development of Lok Ma Chau Loop Main Work Package 1 - Environmental Team

Locations of Transect for Monitoring of Chinese Bull Frog

Scale	Project No.
N.T.S	WMA21009
Date	Figure
Mar-22	5b

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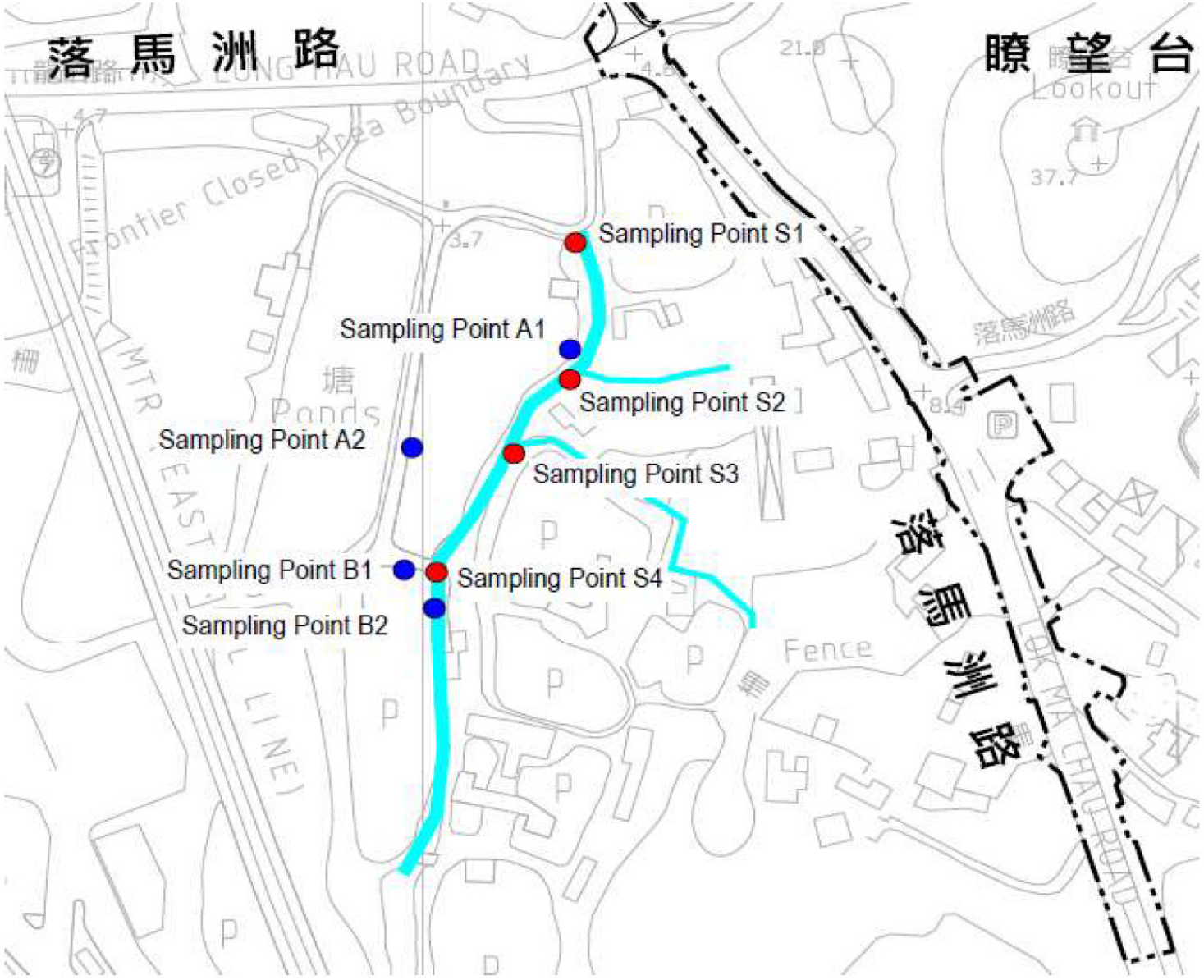


Service Contract No. WD/04/2020 Development of Lok Ma Chau Loop Main Work Package 1 - Environmental Team Locations of Rose Bitterling Sampling Points	Scale N.T.S	Project No. WMA21009	WELLAB 匯力 consulting . testing . research
	Date Mar-22	Figure 5c	

APPENDIX A
ACTION AND LIMIT LEVELS

Appendix A - Action and Limit Levels

Table A-1 Action and Limit Levels for 1-Hour TSP

Location	Action Level, µg/m^3	Limit Level, µg/m^3
DMS – 1a	353	500
DMS – 2A	370	
DMS – 3	351	
DMS – 4A	350	

Table A-2 Action and Limit Levels for 24-Hour TSP

Location	Action Level, µg/m^3	Limit Level, µg/m^3
DMS – 1	184	260
DMS – 2A	166	
DMS – 3	166	
DMS – 4A	152	

Table A-3 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) *

Noted: If works are to be carried during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.
(*) reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

Table A-4 Action and Limit Levels for Water Quality

Parameter (unit)	Water Depth	Action Level	Limit Level
DO (mg/L)	Depth average	IS1: 7.0 / NA(4) IS2: 5.3 / NA(4) IS4: 4.1 / NA(4) IS6: 5.9 BS1:3.9 / NA(4)	IS1: 6.8 or 4(4) IS2: 5.2 or 4(4) IS4: 3.8 or 4(4) IS6: 5.8 BS1: 3.7 or 4(4)
Turbidity (NTU)	Depth average	IS1: 27.7 IS2: 35.5 IS4: 70.9 BS1:29.9	IS1: 29.9 IS2: 38.1 IS4: 74.6 BS1:32.6
		IS6: 120% of upstream control station (CS5)	IS6: 130% of upstream control station (CS5)
SS (mg/L)	Depth average	IS1: 28.0 IS2: 39.8 IS4: 155 BS1:36.5	IS1: 28.8 IS2: 41.2 IS4: 175 BS1:36.9
		IS6: 120% of upstream control station (CS5)	IS6: 130% of upstream control station (CS5)

Note:

(1) Depth-averaged was calculated by taking the arithmetic means of reading of all three depths

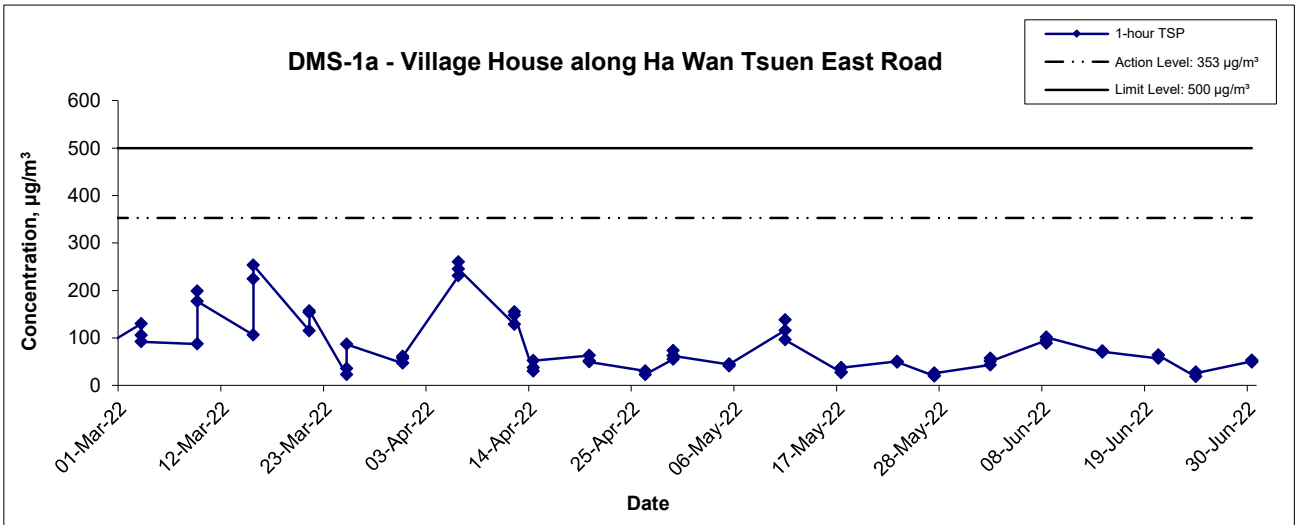
(2) For DO, non-compliance of the water quality limit would occur when monitoring result at impact stations was lower that the limit.

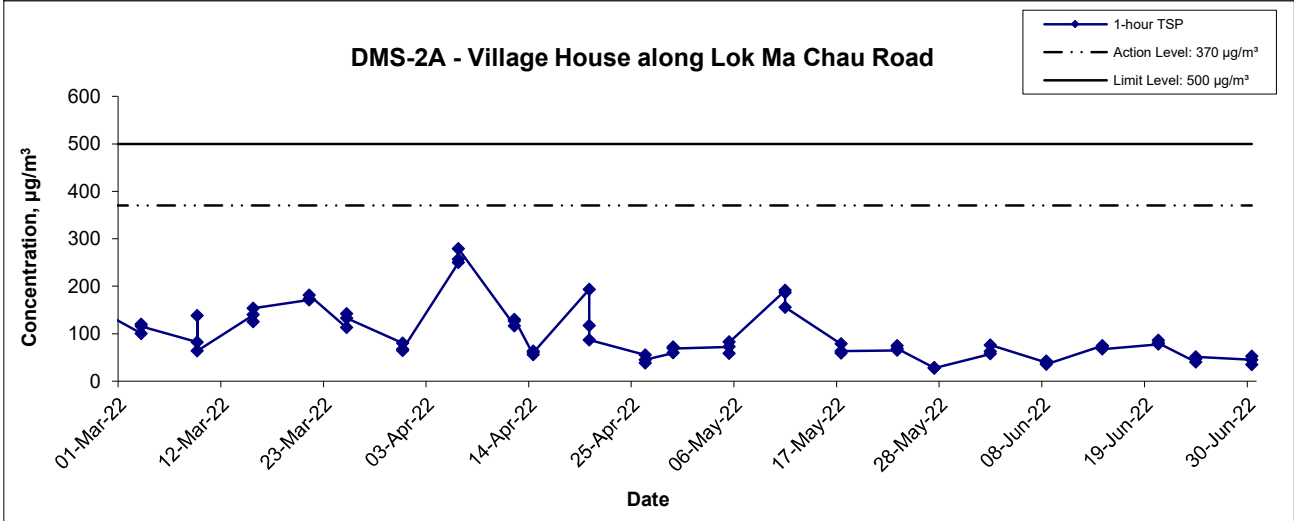
(3) For SS & turbidity, non-compliance of the water quality limits would occur when monitoring result at impact stations was higher than the limits.

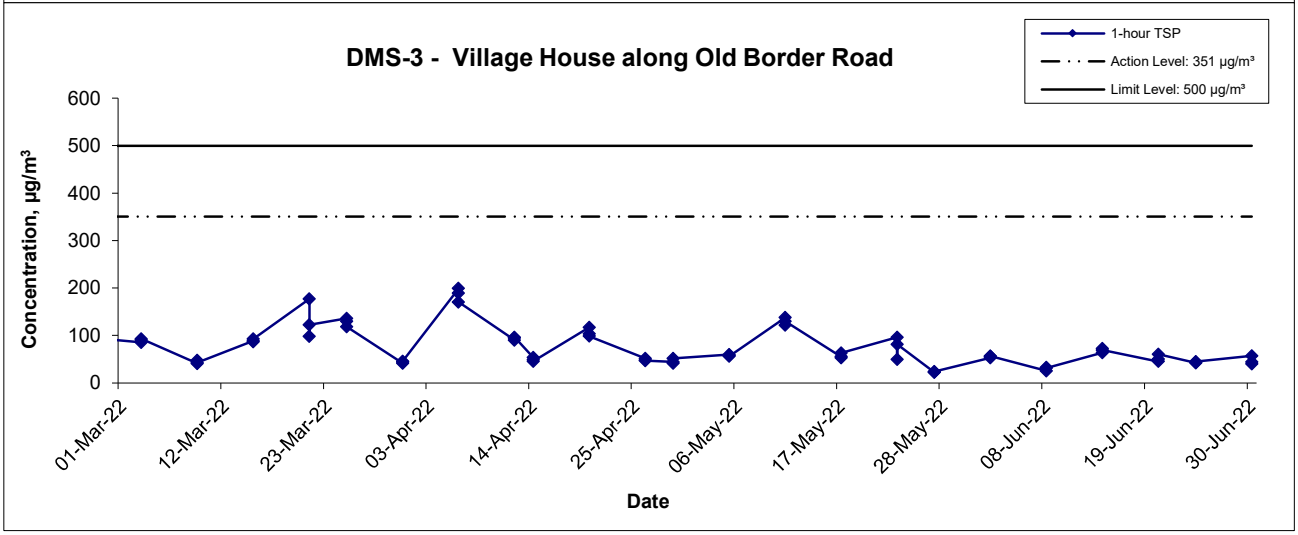
(4) The proposal of adopting 4 mg/L as the Limit Level of DO for the period from April to September due to seasonal change of DO was accepted by EPD via email on 10 Dec 2019.

APPENDIX B
GRAPHICAL PRESENTATION OF 1-HOUR TSP MONITORING RESULTS

1-hour TSP Concentration Levels

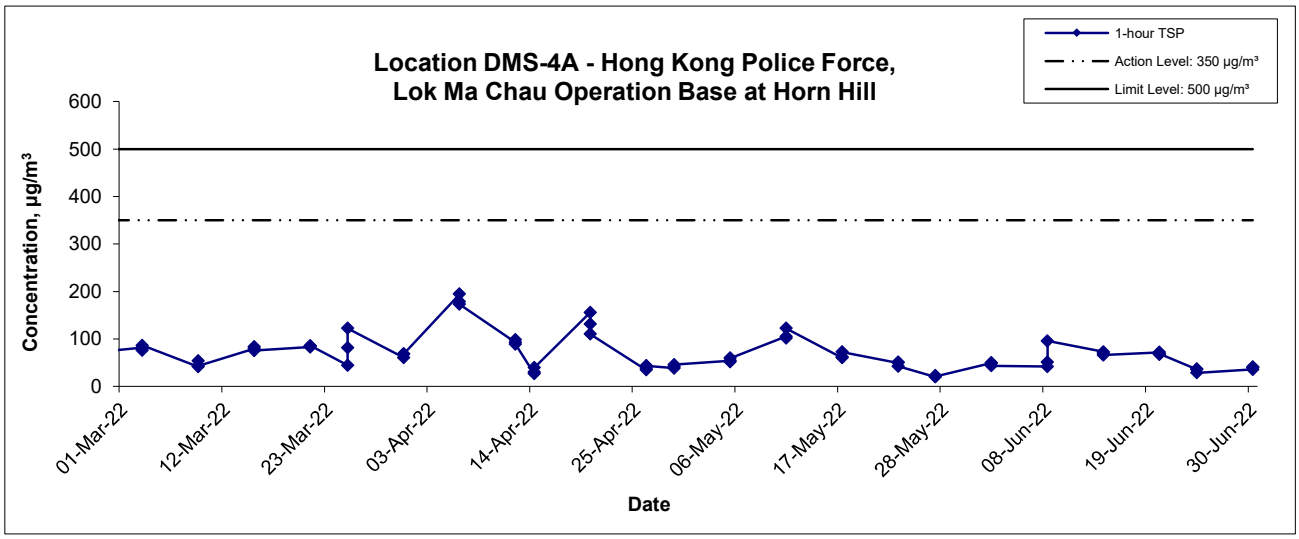






Title: Service Contract No. WD/04/2020 Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S	Project No.: WMA21009	WELLAB 匯力 consulting . testing . research
	Date: Jun 22	Appendix: B	

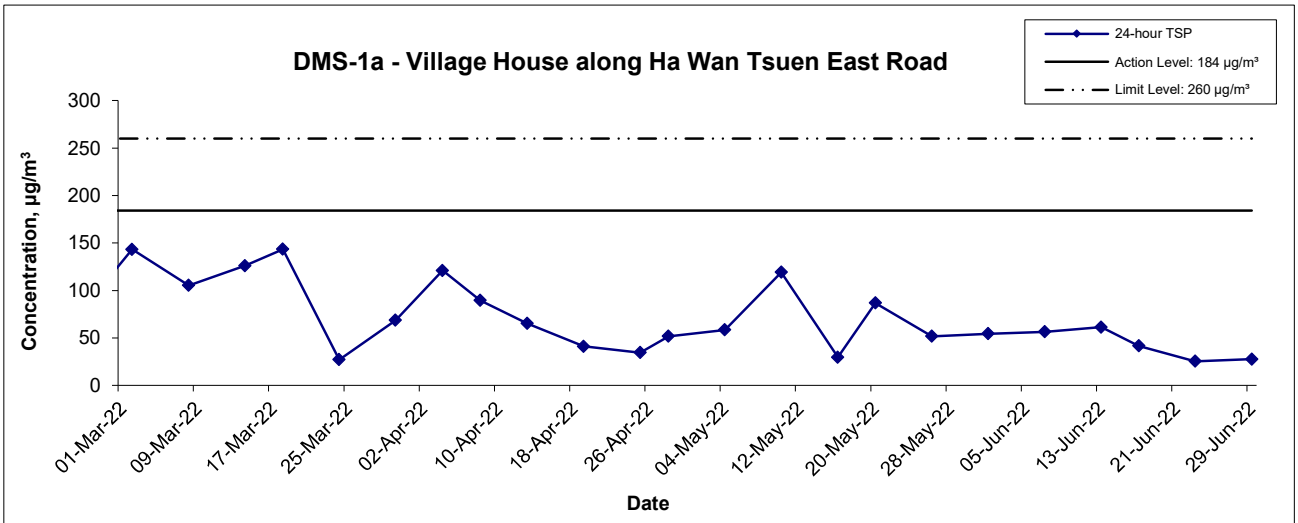
1-hour TSP Concentration Levels

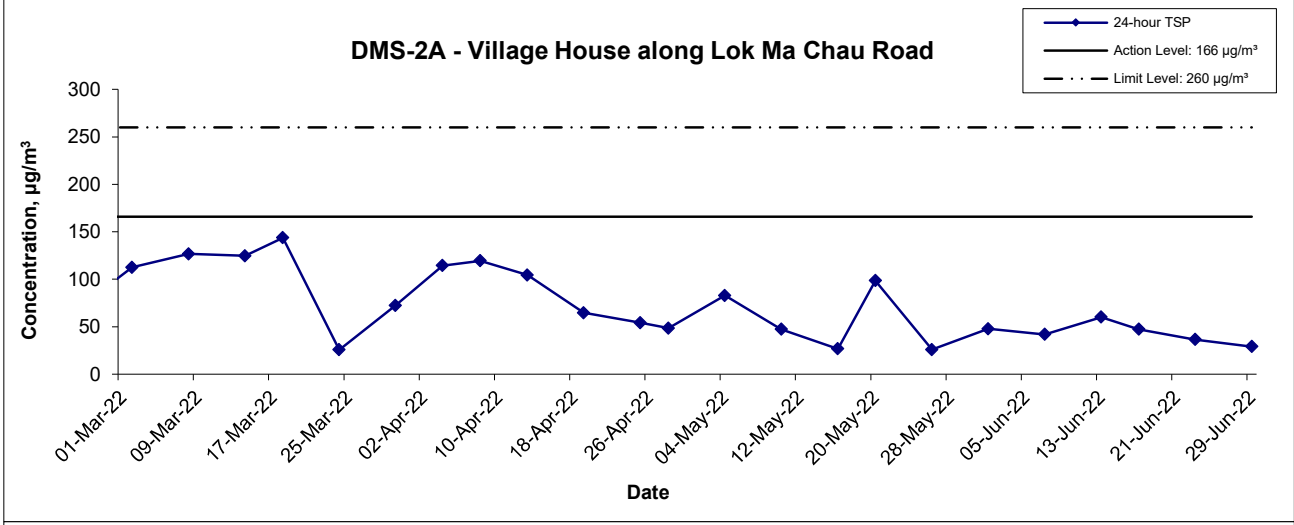


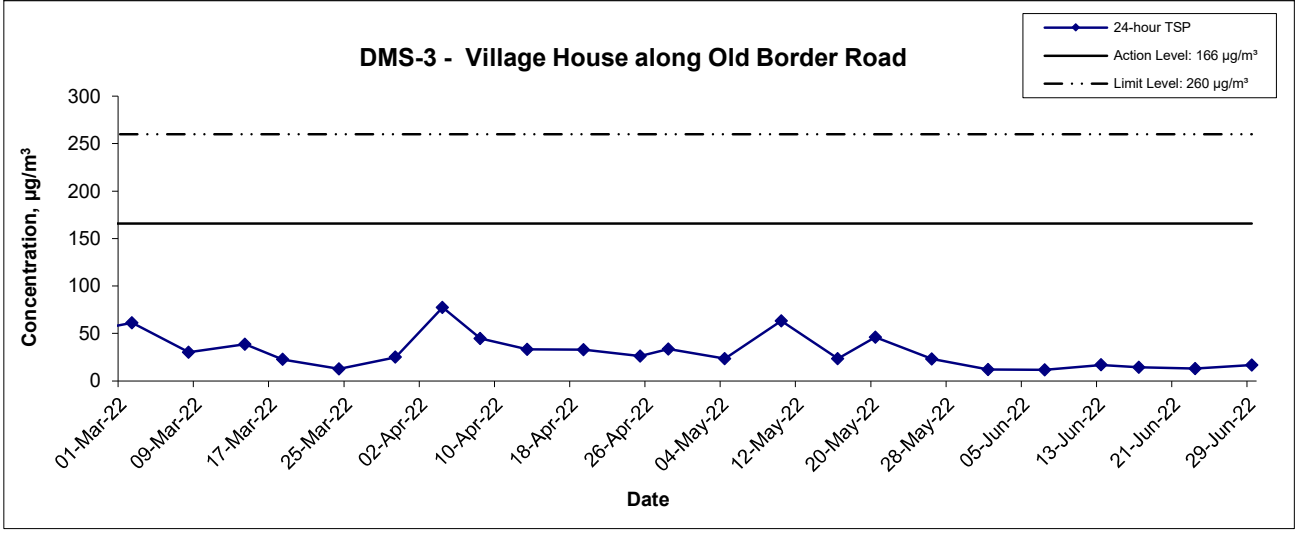
Title	Service Contract No. WD/04/2020 Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. WMA21009	WELLAB 匯力 consulting . testing . research
		Date Jun 22	Appendix B	

APPENDIX C
GRAPHICAL PRESENTATION OF 24-HOUR TSP MONITORING RESULTS

24-hour TSP Concentration Levels







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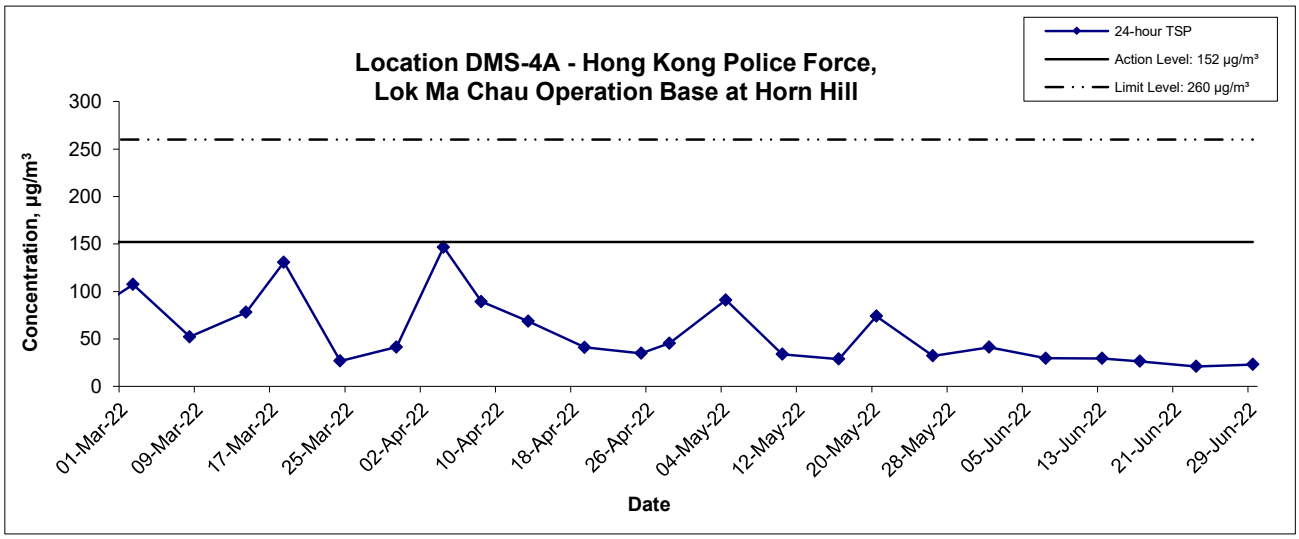
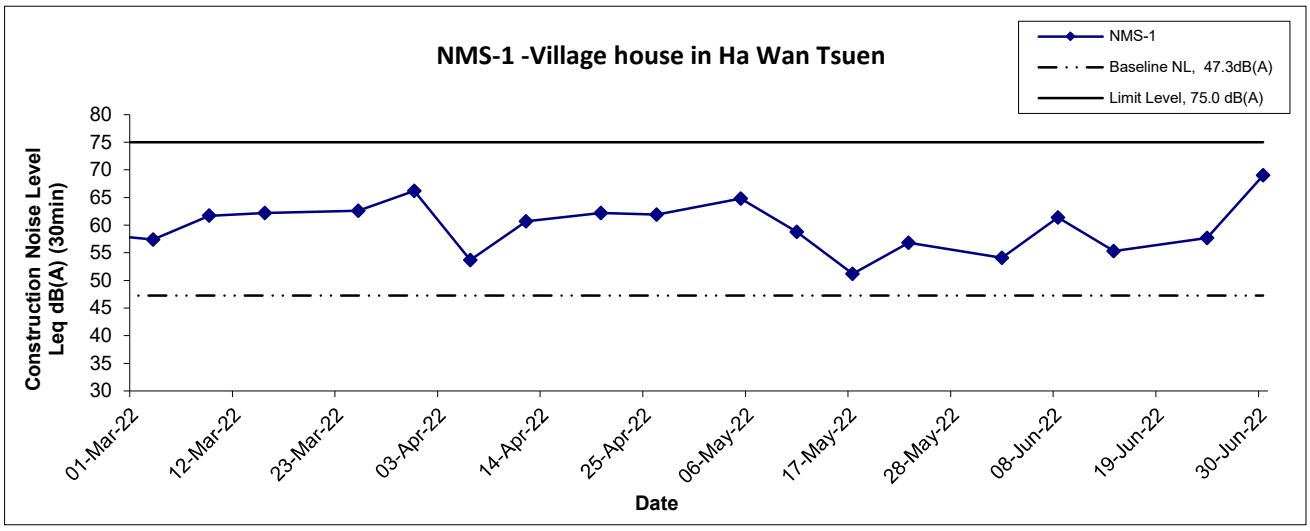
24-hour TSP Concentration Levels

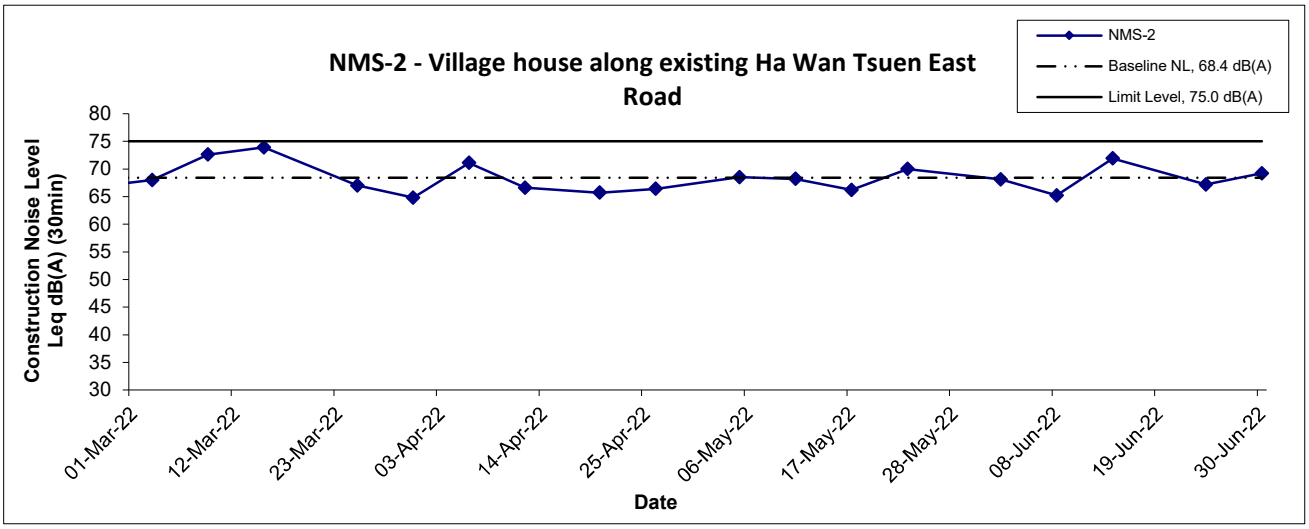


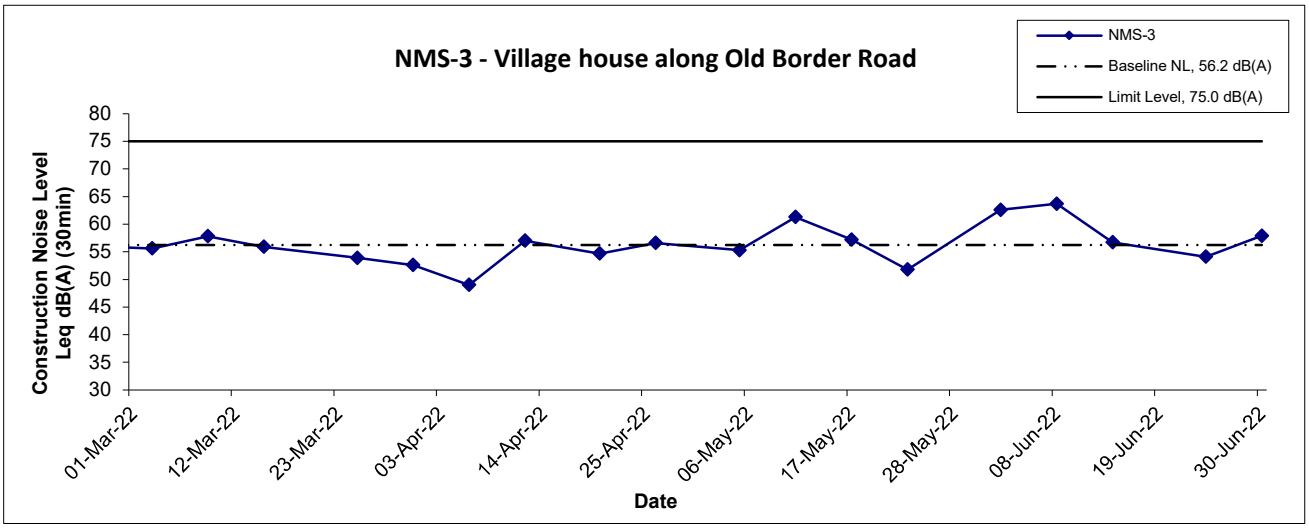
Title	Service Contract No. WD/04/2020 Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. WMA21009	WELLAB 匯力 consulting . testing . research
		Date Jun 22	Appendix C	

APPENDIX D
GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS

Noise Levels

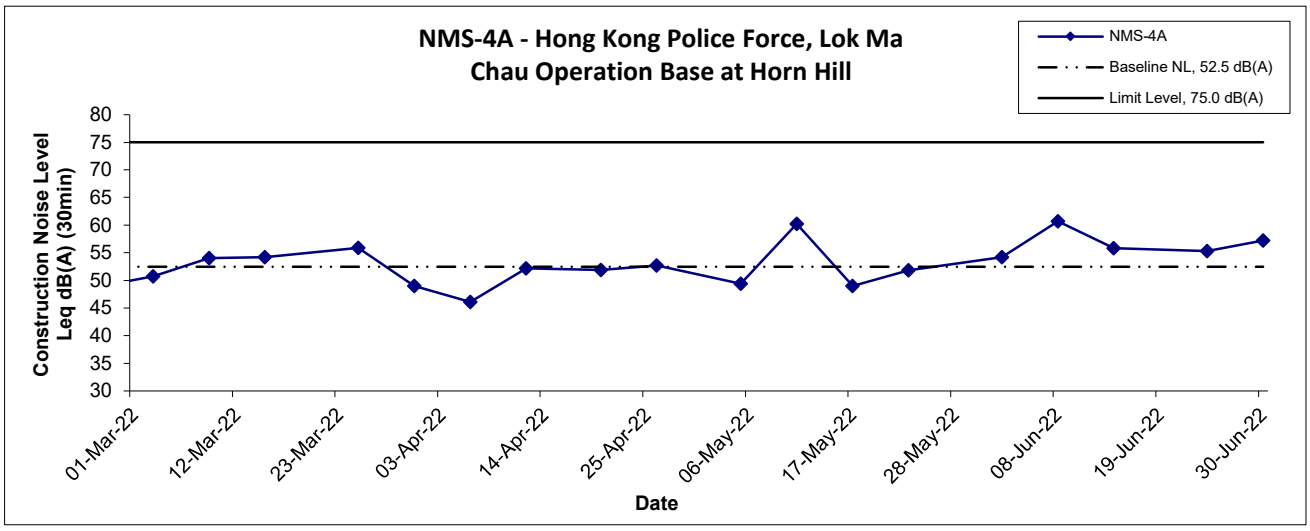






Title: Service Contract No. WD/04/2020 Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S	Project No.: WMA21009	WELLAB 匯力 consulting . testing . research
	Date: Jun 22	Appendix: D	

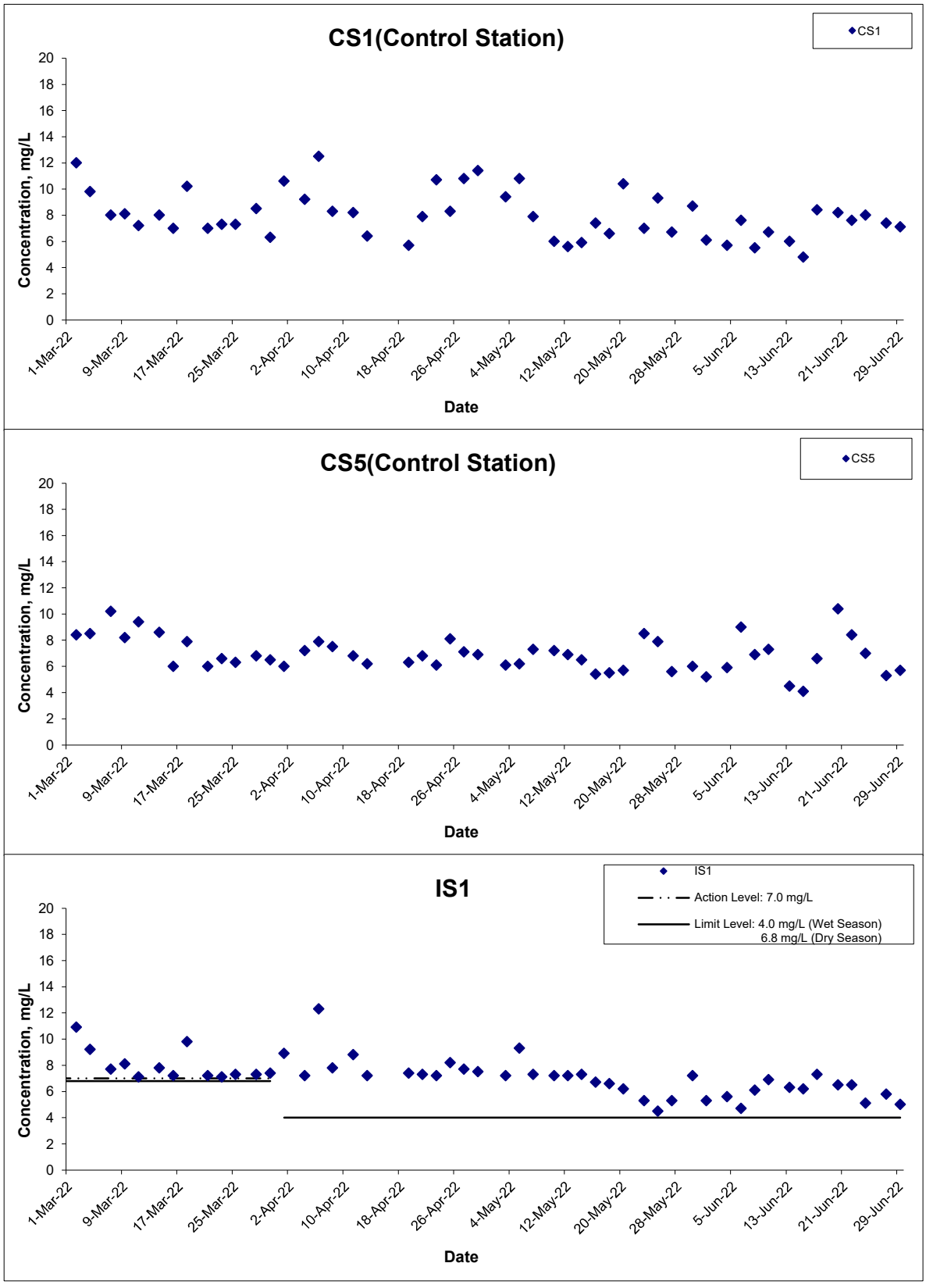
Noise Levels



Title	Service Contract No. WD/04/2020 Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S Date Jun 22	Project No. WMA21009 Appendix D	WELLAB 匯力 consulting . testing . research

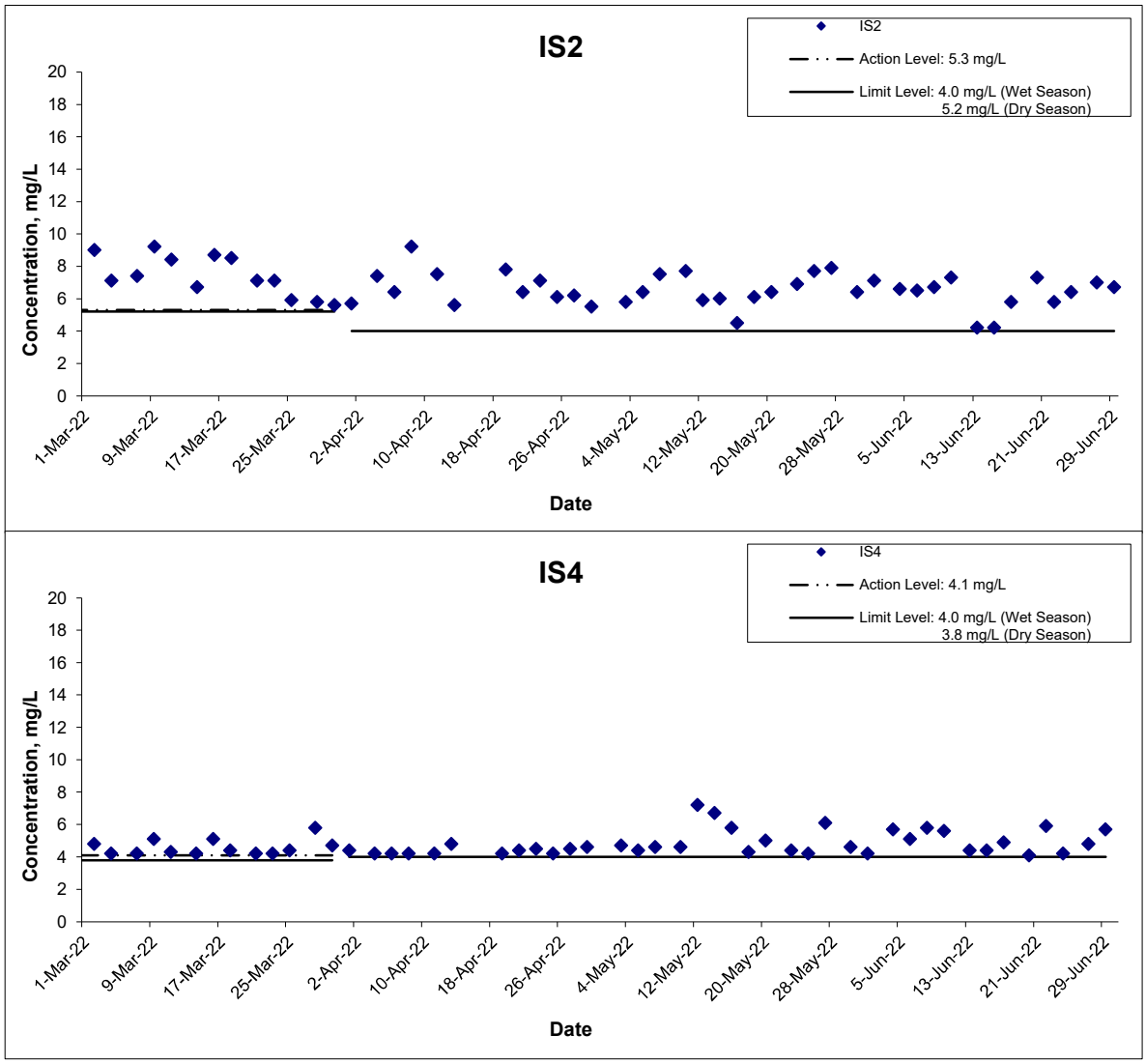
APPENDIX E
GRAPHICAL PRESENTATION OF WATER QUALITY MONITORING RESULTS

Dissolved Oxygen



Title	Service Contract No. WD/04/2020 Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. WMA21009	WELLAB 匯力 consulting . testing . research
		Date Jun 22	Appendix E	

Dissolved Oxygen



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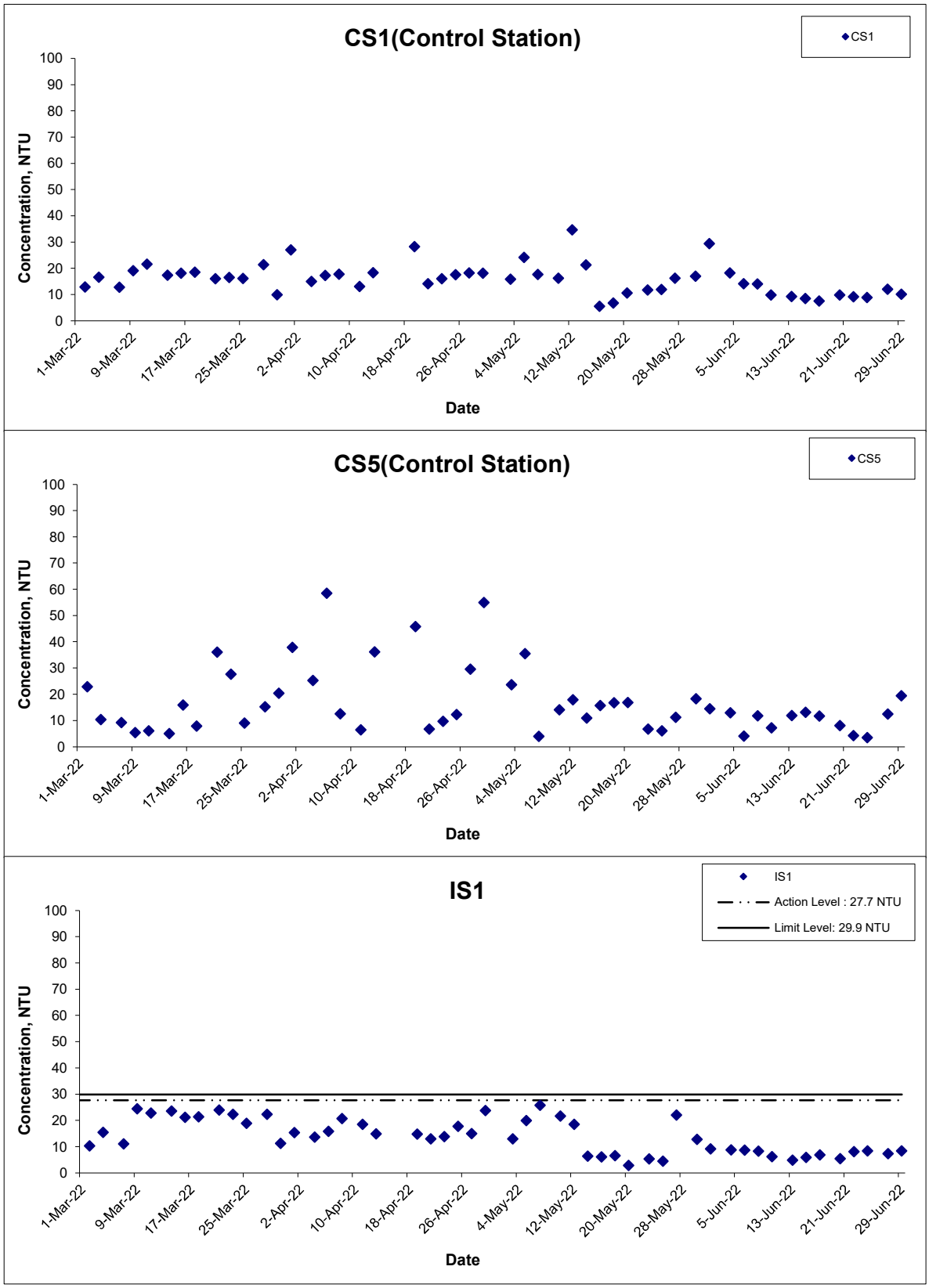
Turbidity



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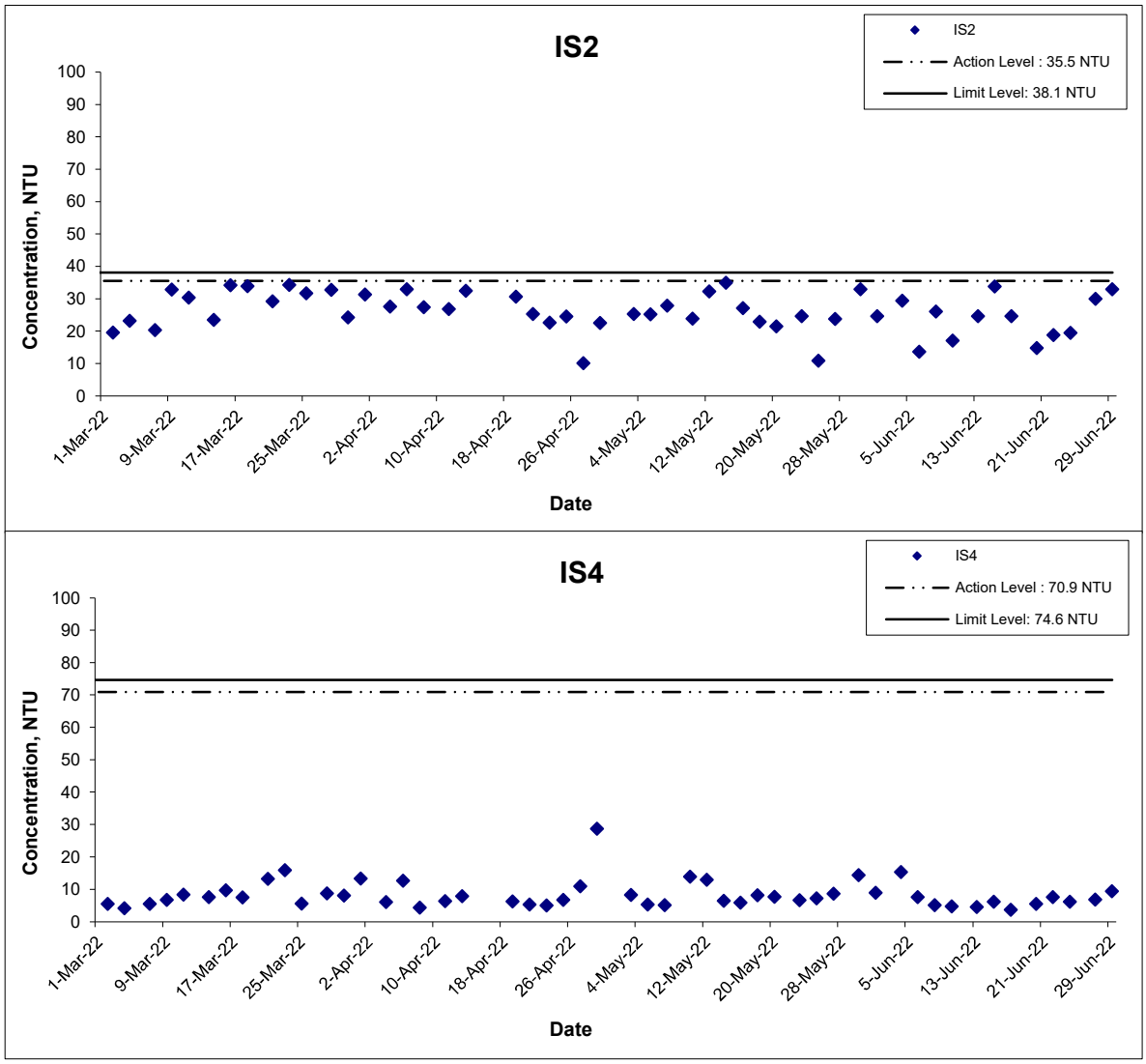
Turbidity



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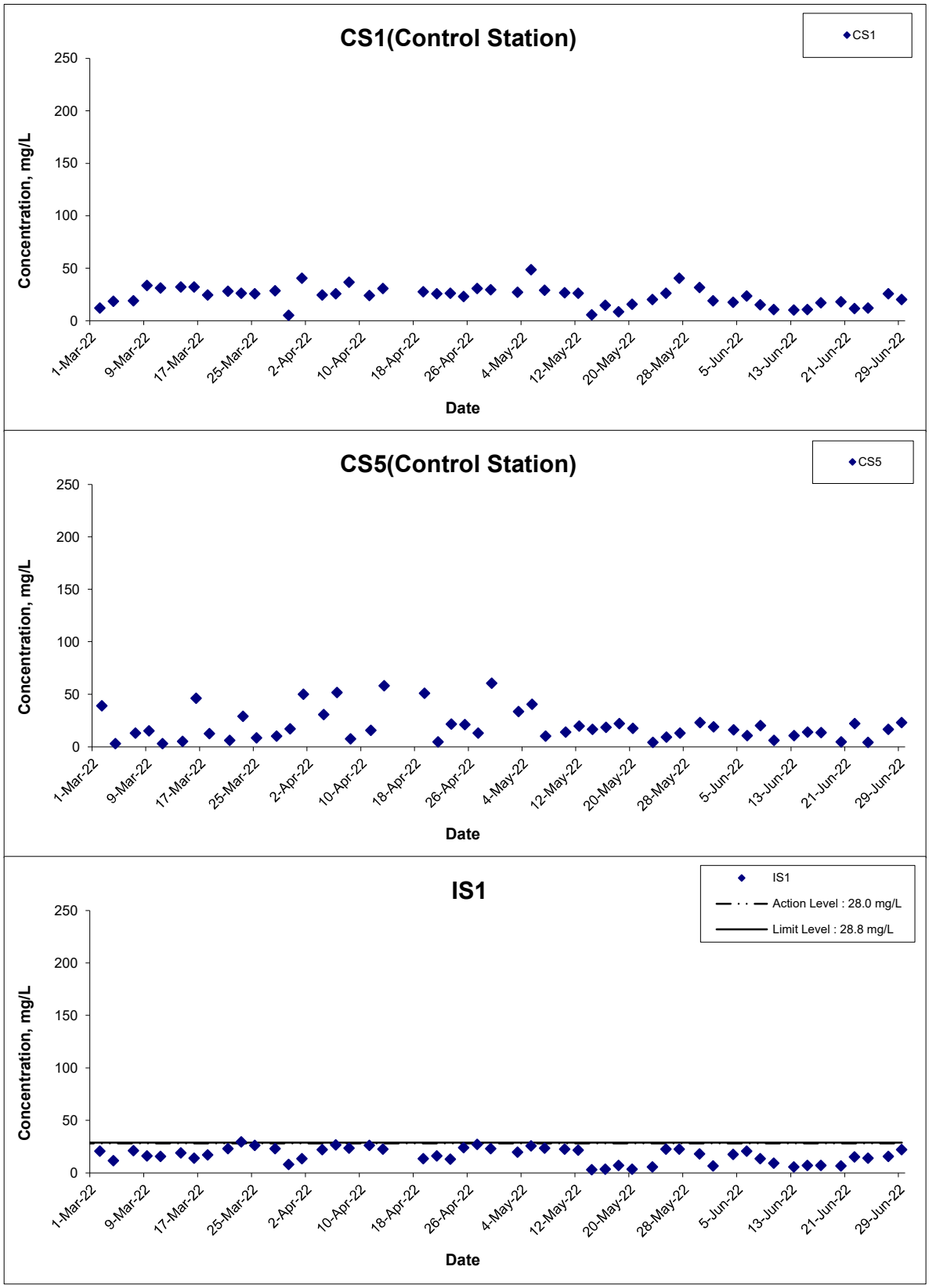
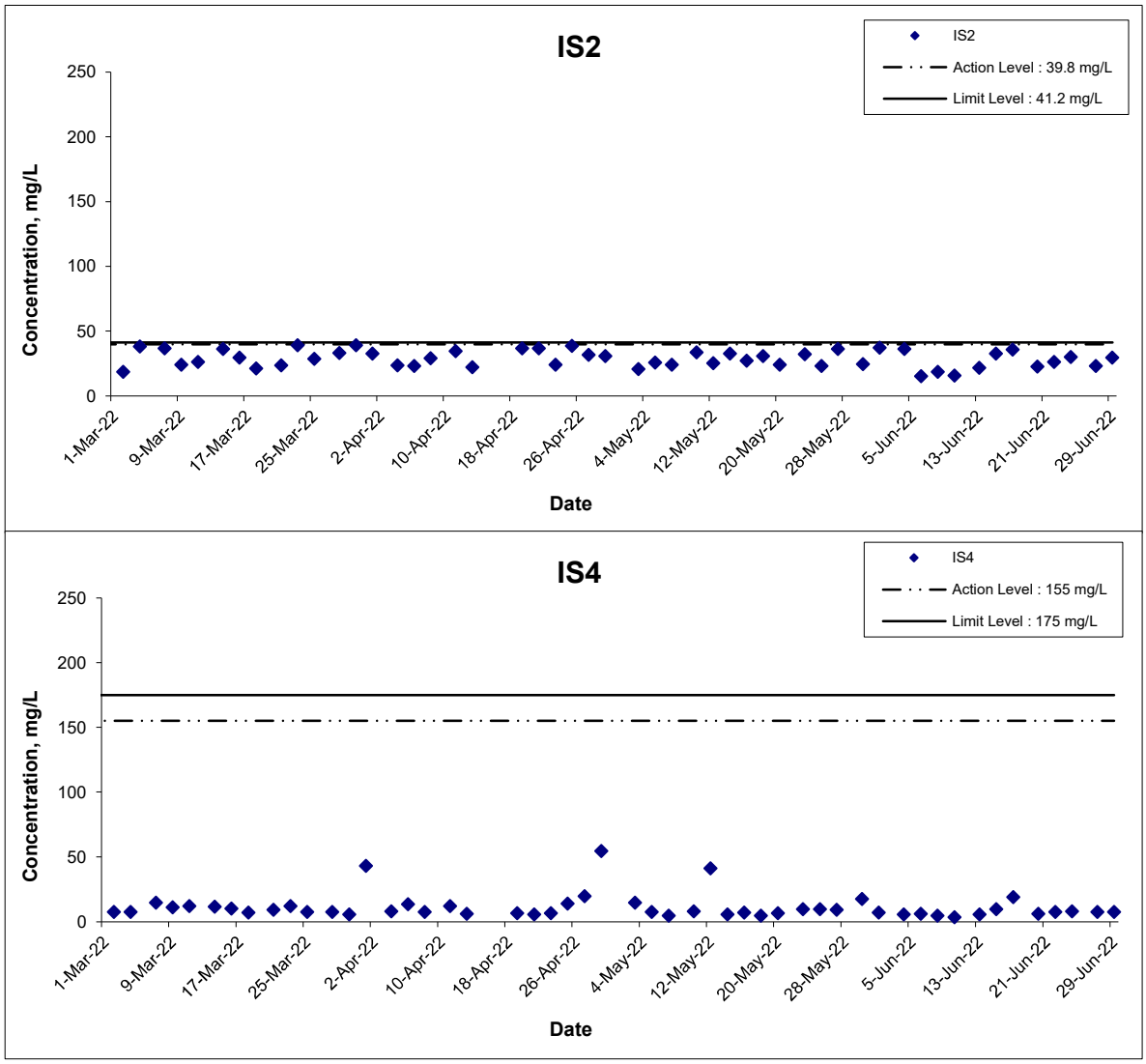
Suspended Solids



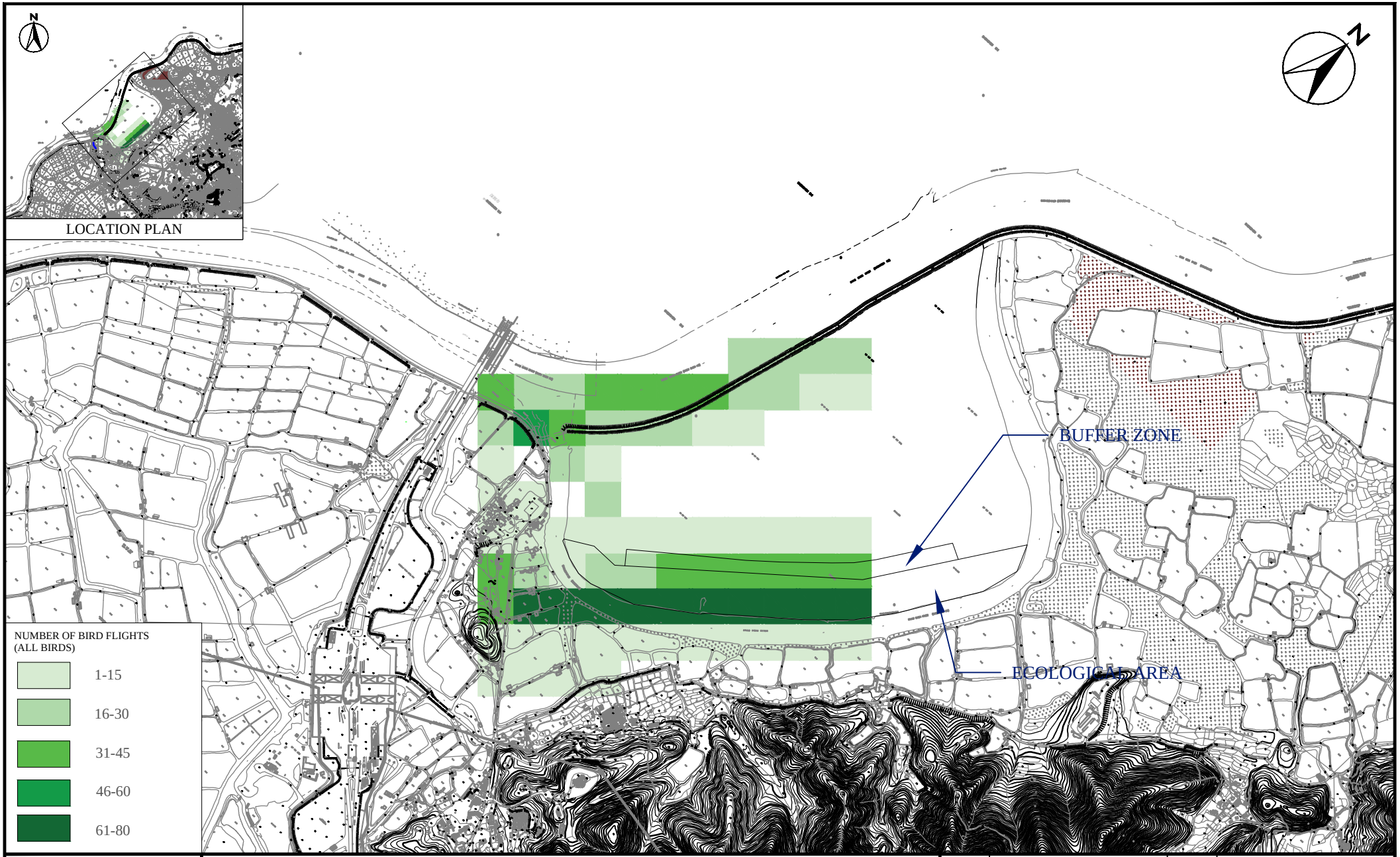
Title	Service Contract No. WD/04/2020 Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: WMA21009	WELLAB 匯力 consulting . testing . research
		Date: Jun 22	Appendix: E	

Suspended Solids



Title	Service Contract No. WD/04/2020 Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: WMA21009	WELLAB 匯力 consulting . testing . research
		Date: Jun 22	Appendix: E	

APPENDIX F
DISTRIBUTION OF FLIGHT LINE USAGE



WELLAB 匯力
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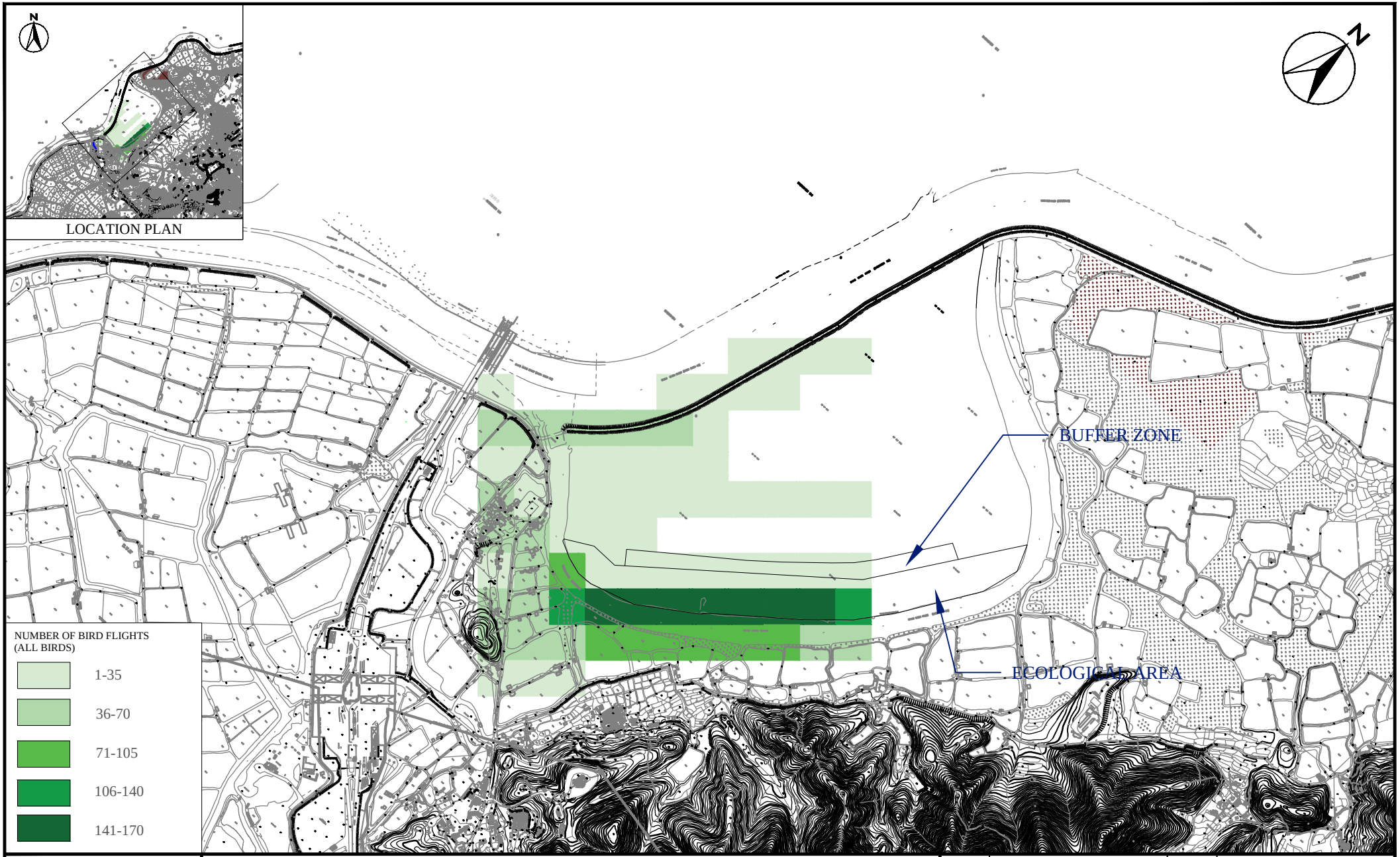
Service Contract No. WD/04/2020
Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team

Flight Lines of All Bird Species

SCALE	1:14000 @A4	DATE	APR 2022
CHECK	IT	DRAWN	ML
JOB No.	WMA 21009	FIGURE NO.	Fig 6
		REV	-



WELLAB 匯力
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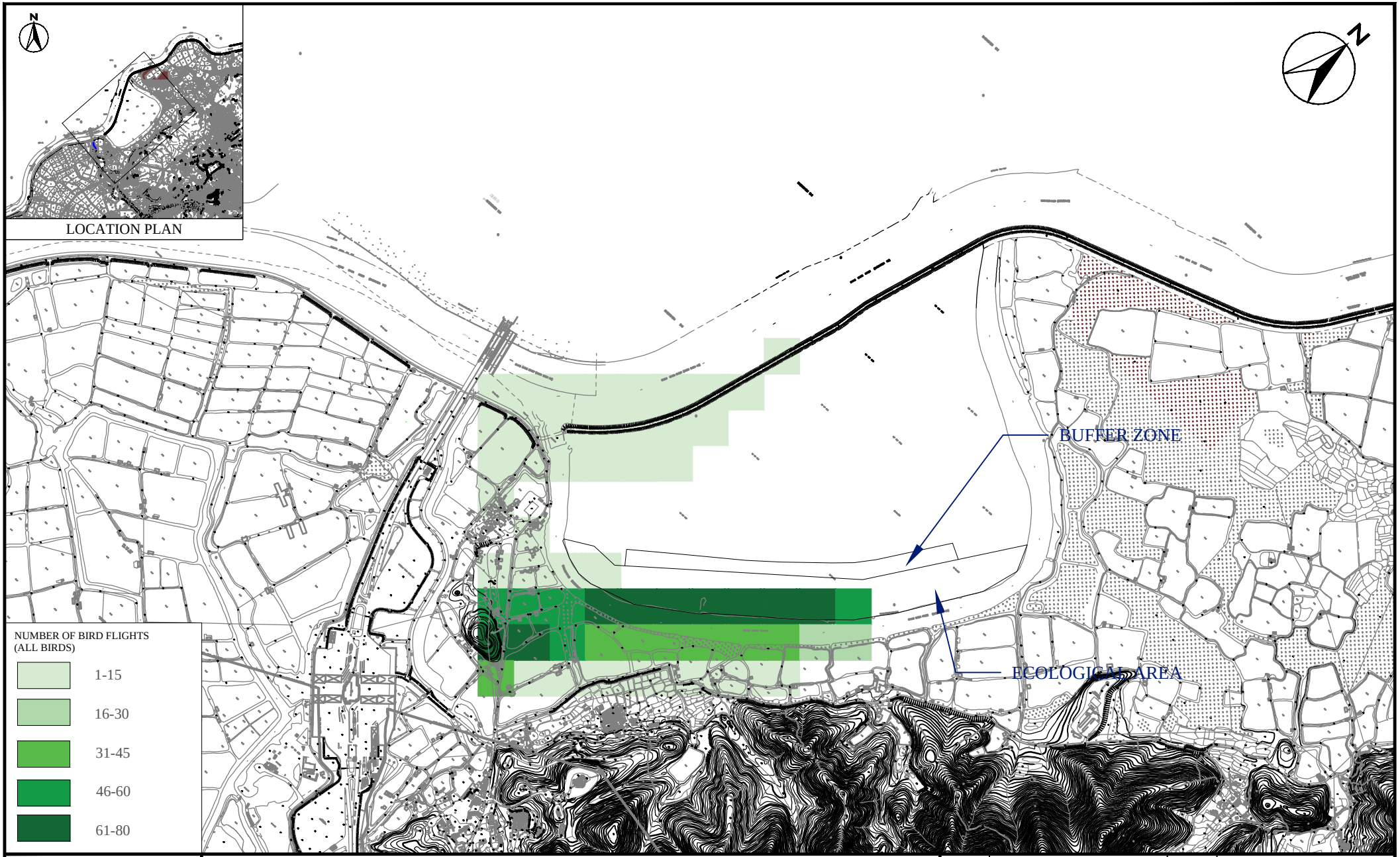
Service Contract No. WD/04/2020
Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team

Flight Lines of All Bird Species

SCALE	1:14000 @A4	DATE	MAY 2022
CHECK	IT	DRAWN	ML
JOB No.	WMA 21009	FIGURE NO.	Fig 6
		REV	-



WELLAB 匯力
consulting . testing . research

Service Contract No. WD/04/2020
Development of Lok Ma Chau Loop: Main Works Package 1 - Environmental Team

Flight Lines of All Bird Species

SCALE	1:14000 @A4	DATE	JUNE 2022
CHECK	IT	DRAWN	ML
JOB No.	WMA 21009	FIGURE NO.	Fig 6
		REV	-

APPENDIX G
WEATHER CONDITION

APPENDIX G –
GENERAL WEATHER CONDITIONS DURING THE MONITORING PERIOD

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 April 2022	19	83	0.5
2 April 2022	15	76	1.3
3 April 2022	18.7	54	-
4 April 2022	20.1	53	-
5 April 2022	21.3	64	-
6 April 2022	22.3	70	-
7 April 2022	22.8	68	-
8 April 2022	23.6	50	-
9 April 2022	23.1	65	-
10 April 2022	23.8	67	-
11 April 2022	25.5	74	-
12 April 2022	25.7	77	-
13 April 2022	25.3	81	Trace
14 April 2022	25.5	69	-
15 April 2022	24.3	69	Trace
16 April 2022	21.8	73	Trace
17 April 2022	21.4	72	0.4

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
18 April 2022	21.7	76	Trace
19 April 2022	20.1	83	0.8
20 April 2022	21.9	75	-
21 April 2022	23.9	78	-
22 April 2022	24.8	84	-
23 April 2022	26.4	81	Trace
24 April 2022	27.2	79	-
25 April 2022	27.9	79	-
26 April 2022	27.7	80	-
27 April 2022	28.4	78	-
28 April 2022	28.4	79	-
29 April 2022	28.2	79	-
30 April 2022	25.4	85	0.5

* The above information was extracted from the daily weather summary by Hong Kong Observatory.

APPENDIX G –
GENERAL WEATHER CONDITIONS DURING THE MONITORING PERIOD

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 May 2022	20.7	89	32.4
2 May 2022	18.5	84	23.4
3 May 2022	22.3	62	-
4 May 2022	24.6	63	-
5 May 2022	25.2	73	-
6 May 2022	25.5	76	-
7 May 2022	25.4	77	0.8
8 May 2022	25	70	Trace
9 May 2022	25.6	75	Trace
10 May 2022	25.7	88	1.4
11 May 2022	25	95	61.4
12 May 2022	25.8	91	123.5
13 May 2022	25.5	92	107.1
14 May 2022	24.6	93	5
15 May 2022	22.6	91	26.2
16 May 2022	20	85	4.7
17 May 2022	22.4	72	-

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
18 May 2022	23.9	52	-
19 May 2022	25.8	64	-
20 May 2022	26.9	76	-
21 May 2022	26.9	78	-
22 May 2022	25	83	0.6
23 May 2022	24	90	11.2
24 May 2022	24.4	93	10.3
25 May 2022	25.3	91	1.3
26 May 2022	26.7	88	2.4
27 May 2022	27.4	89	24.7
28 May 2022	28.7	81	Trace
29 May 2022	29.1	79	Trace
30 May 2022	29.2	78	Trace
31 May 2022	28.2	82	0.1

* The above information was extracted from the daily weather summary by Hong Kong Observatory.

APPENDIX G –
GENERAL WEATHER CONDITIONS DURING THE MONITORING PERIOD

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 June 2022	28.7	81	1.2
2 June 2022	28.8	80	11.9
3 June 2022	29.2	81	1.6
4 June 2022	29.6	78	Trace
5 June 2022	29.6	78	Trace
6 June 2022	28.9	83	2.5
7 June 2022	27.4	86	33.8
8 June 2022	25.8	93	66
9 June 2022	26.3	90	28.7
10 June 2022	26.1	92	25.8
11 June 2022	26.8	89	47.5
12 June 2022	28.4	84	2.6
13 June 2022	28.9	80	-
14 June 2022	27.4	87	42.8
15 June 2022	26.7	88	11
16 June 2022	27.6	84	2.6
17 June 2022	29	79	1

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
18 June 2022	28.8	81	1.3
19 June 2022	29.3	81	0.1
20 June 2022	29.2	80	2.8
21 June 2022	29.4	80	Trace
22 June 2022	29.5	78	-
23 June 2022	30	74	-
24 June 2022	30	73	-
25 June 2022	29.6	74	-
26 June 2022	30	74	0.3
27 June 2022	30.1	73	0.1
28 June 2022	30.6	71	-
29 June 2022	30.2	78	0.7
30 June 2022	27.5	89	64.9

* The above information was extracted from the daily weather summary by Hong Kong Observatory.

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
1-Apr-2022	0:00	0.4	SSW
1-Apr-2022	1:00	0.4	SSW
1-Apr-2022	2:00	0.4	SSW
1-Apr-2022	3:00	0.9	SSW
1-Apr-2022	4:00	0.4	SW
1-Apr-2022	5:00	0.9	SSW
1-Apr-2022	6:00	0.4	SSW
1-Apr-2022	7:00	0.9	SW
1-Apr-2022	8:00	0.9	SW
1-Apr-2022	9:00	0.9	SSW
1-Apr-2022	10:00	0.9	SSW
1-Apr-2022	11:00	0.9	SSW
1-Apr-2022	12:00	0.4	SSW
1-Apr-2022	13:00	0.4	SSW
1-Apr-2022	14:00	0.4	SSW
1-Apr-2022	15:00	0.9	SSW
1-Apr-2022	16:00	0.9	SSW
1-Apr-2022	17:00	1.3	SSW
1-Apr-2022	18:00	0.9	SSW
1-Apr-2022	19:00	0.9	SSW
1-Apr-2022	20:00	1.3	SSW
1-Apr-2022	21:00	0.9	SSW
1-Apr-2022	22:00	0.4	SSW
1-Apr-2022	23:00	0.4	SSW
2-Apr-2022	0:00	0.4	SSW
2-Apr-2022	1:00	0.0	SSW
2-Apr-2022	2:00	0.4	SSW
2-Apr-2022	3:00	0.4	SSW
2-Apr-2022	4:00	0.4	SSW
2-Apr-2022	5:00	0.4	SSW
2-Apr-2022	6:00	0.4	SSW
2-Apr-2022	7:00	0.4	SSW
2-Apr-2022	8:00	0.0	SSW
2-Apr-2022	9:00	0.0	SSE
2-Apr-2022	10:00	0.0	SSE
2-Apr-2022	11:00	0.4	SSW
2-Apr-2022	12:00	0.9	SSW
2-Apr-2022	13:00	0.9	SSW
2-Apr-2022	14:00	0.9	SSW
2-Apr-2022	15:00	1.3	SSW
2-Apr-2022	16:00	0.4	SSW
2-Apr-2022	17:00	0.0	SSE
2-Apr-2022	18:00	0.4	SSE
2-Apr-2022	19:00	0.0	SSW
2-Apr-2022	20:00	0.0	S
2-Apr-2022	21:00	0.0	SSW
2-Apr-2022	22:00	0.4	SSW
2-Apr-2022	23:00	0.0	SSW
3-Apr-2022	0:00	0.0	---
3-Apr-2022	1:00	0.0	SSW
3-Apr-2022	2:00	0.0	SSW
3-Apr-2022	3:00	0.4	SSW
3-Apr-2022	4:00	0.4	SSW
3-Apr-2022	5:00	0.4	SSW
3-Apr-2022	6:00	0.4	SSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
3-Apr-2022	7:00	0.4	SSW
3-Apr-2022	8:00	0.4	SSW
3-Apr-2022	9:00	0.4	SSW
3-Apr-2022	10:00	0.9	SSW
3-Apr-2022	11:00	0.4	SSW
3-Apr-2022	12:00	0.4	SSW
3-Apr-2022	13:00	0.4	SSW
3-Apr-2022	14:00	0.4	SSW
3-Apr-2022	15:00	0.4	SSW
3-Apr-2022	16:00	0.4	SSE
3-Apr-2022	17:00	0.4	SSW
3-Apr-2022	18:00	0.9	SSW
3-Apr-2022	19:00	0.9	W
3-Apr-2022	20:00	0.0	SSW
3-Apr-2022	21:00	0.0	---
3-Apr-2022	22:00	0.0	WSW
3-Apr-2022	23:00	0.0	S
4-Apr-2022	0:00	0.0	SSW
4-Apr-2022	1:00	0.4	SSW
4-Apr-2022	2:00	0.0	SSW
4-Apr-2022	3:00	0.9	SW
4-Apr-2022	4:00	0.0	SSW
4-Apr-2022	5:00	0.4	SW
4-Apr-2022	6:00	0.9	WSW
4-Apr-2022	7:00	0.9	SW
4-Apr-2022	8:00	0.0	WSW
4-Apr-2022	9:00	0.4	SSW
4-Apr-2022	10:00	0.4	SSW
4-Apr-2022	11:00	0.4	SSE
4-Apr-2022	12:00	0.4	SSW
4-Apr-2022	13:00	0.0	SSW
4-Apr-2022	14:00	0.4	SSE
4-Apr-2022	15:00	0.4	SSW
4-Apr-2022	16:00	0.4	SSE
4-Apr-2022	17:00	0.4	W
4-Apr-2022	18:00	0.4	NE
4-Apr-2022	19:00	0.4	WSW
4-Apr-2022	20:00	0.0	SW
4-Apr-2022	21:00	0.4	WSW
4-Apr-2022	22:00	0.0	WSW
4-Apr-2022	23:00	0.0	WSW
5-Apr-2022	0:00	0.4	WSW
5-Apr-2022	1:00	0.4	SSW
5-Apr-2022	2:00	0.0	SSW
5-Apr-2022	3:00	0.0	SSW
5-Apr-2022	4:00	0.0	SW
5-Apr-2022	5:00	0.0	SSW
5-Apr-2022	6:00	0.0	SW
5-Apr-2022	7:00	0.0	---
5-Apr-2022	8:00	0.0	SW
5-Apr-2022	9:00	0.0	---
5-Apr-2022	10:00	0.0	SSE
5-Apr-2022	11:00	0.0	SSE
5-Apr-2022	12:00	0.0	SSW
5-Apr-2022	13:00	0.0	SSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
5-Apr-2022	14:00	0.0	SSE
5-Apr-2022	15:00	0.0	WSW
5-Apr-2022	16:00	0.9	NE
5-Apr-2022	17:00	1.8	NE
5-Apr-2022	18:00	1.3	NE
5-Apr-2022	19:00	0.4	NE
5-Apr-2022	20:00	0.0	W
5-Apr-2022	21:00	0.9	W
5-Apr-2022	22:00	0.9	WSW
5-Apr-2022	23:00	0.4	WSW
6-Apr-2022	0:00	0.4	SSW
6-Apr-2022	1:00	0.0	SSW
6-Apr-2022	2:00	0.0	---
6-Apr-2022	3:00	0.0	---
6-Apr-2022	4:00	0.0	WSW
6-Apr-2022	5:00	0.0	WSW
6-Apr-2022	6:00	0.0	---
6-Apr-2022	7:00	0.4	W
6-Apr-2022	8:00	0.0	WSW
6-Apr-2022	9:00	0.0	W
6-Apr-2022	10:00	0.0	W
6-Apr-2022	11:00	0.0	SSW
6-Apr-2022	12:00	0.0	SSW
6-Apr-2022	13:00	0.0	WSW
6-Apr-2022	14:00	0.0	SSW
6-Apr-2022	15:00	0.4	SSW
6-Apr-2022	16:00	0.4	WSW
6-Apr-2022	17:00	0.4	SSW
6-Apr-2022	18:00	0.9	SW
6-Apr-2022	19:00	0.9	SW
6-Apr-2022	20:00	0.9	SSW
6-Apr-2022	21:00	0.4	SSW
6-Apr-2022	22:00	0.0	SSW
6-Apr-2022	23:00	0.4	SSW
7-Apr-2022	0:00	0.0	SSW
7-Apr-2022	1:00	0.0	SSW
7-Apr-2022	2:00	0.0	SSW
7-Apr-2022	3:00	0.0	SSW
7-Apr-2022	4:00	0.0	SSW
7-Apr-2022	5:00	0.0	---
7-Apr-2022	6:00	0.0	---
7-Apr-2022	7:00	0.0	---
7-Apr-2022	8:00	0.0	WSW
7-Apr-2022	9:00	0.0	WSW
7-Apr-2022	10:00	0.0	WSW
7-Apr-2022	11:00	0.0	SSW
7-Apr-2022	12:00	0.0	SSW
7-Apr-2022	13:00	0.0	SSW
7-Apr-2022	14:00	0.0	SSW
7-Apr-2022	15:00	0.0	SSE
7-Apr-2022	16:00	0.4	NE
7-Apr-2022	17:00	0.4	NE
7-Apr-2022	18:00	0.4	WSW
7-Apr-2022	19:00	0.9	SW
7-Apr-2022	20:00	0.4	WSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
7-Apr-2022	21:00	0.0	SSW
7-Apr-2022	22:00	0.9	SSW
7-Apr-2022	23:00	0.4	SW
8-Apr-2022	0:00	0.0	SSW
8-Apr-2022	1:00	0.0	SSW
8-Apr-2022	2:00	0.0	SSW
8-Apr-2022	3:00	0.4	SSW
8-Apr-2022	4:00	0.0	SW
8-Apr-2022	5:00	0.0	SSW
8-Apr-2022	6:00	0.0	---
8-Apr-2022	7:00	0.0	SSW
8-Apr-2022	8:00	0.0	SSW
8-Apr-2022	9:00	0.0	WSW
8-Apr-2022	10:00	0.0	SW
8-Apr-2022	11:00	0.0	S
8-Apr-2022	12:00	0.0	SSE
8-Apr-2022	13:00	0.4	SSE
8-Apr-2022	14:00	0.4	SSW
8-Apr-2022	15:00	0.0	SW
8-Apr-2022	16:00	0.4	NE
8-Apr-2022	17:00	2.2	NE
8-Apr-2022	18:00	1.3	NE
8-Apr-2022	19:00	0.4	SSW
8-Apr-2022	20:00	0.9	WNW
8-Apr-2022	21:00	0.4	SW
8-Apr-2022	22:00	0.0	SSW
8-Apr-2022	23:00	0.0	W
9-Apr-2022	0:00	0.9	SSW
9-Apr-2022	1:00	1.3	SSW
9-Apr-2022	2:00	0.4	SW
9-Apr-2022	3:00	0.4	SSW
9-Apr-2022	4:00	0.9	SSW
9-Apr-2022	5:00	0.9	SSW
9-Apr-2022	6:00	0.9	SSW
9-Apr-2022	7:00	0.4	SSW
9-Apr-2022	8:00	0.0	SW
9-Apr-2022	9:00	0.4	SSW
9-Apr-2022	10:00	0.0	SSW
9-Apr-2022	11:00	0.4	WSW
9-Apr-2022	12:00	0.4	SSW
9-Apr-2022	13:00	0.4	SW
9-Apr-2022	14:00	0.4	SSW
9-Apr-2022	15:00	0.4	WSW
9-Apr-2022	16:00	0.9	NE
9-Apr-2022	17:00	1.3	NE
9-Apr-2022	18:00	0.9	NE
9-Apr-2022	19:00	0.4	NE
9-Apr-2022	20:00	0.0	SSW
9-Apr-2022	21:00	0.0	SSW
9-Apr-2022	22:00	0.4	WSW
9-Apr-2022	23:00	0.9	W
10-Apr-2022	0:00	0.0	WSW
10-Apr-2022	1:00	0.0	---
10-Apr-2022	2:00	0.0	WSW
10-Apr-2022	3:00	0.0	SSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
10-Apr-2022	4:00	0.0	SSW
10-Apr-2022	5:00	0.0	---
10-Apr-2022	6:00	0.0	WSW
10-Apr-2022	7:00	0.0	---
10-Apr-2022	8:00	0.0	WSW
10-Apr-2022	9:00	0.0	SSW
10-Apr-2022	10:00	0.4	WSW
10-Apr-2022	11:00	0.0	SSW
10-Apr-2022	12:00	0.4	WSW
10-Apr-2022	13:00	0.4	NW
10-Apr-2022	14:00	0.4	SSW
10-Apr-2022	15:00	0.4	SSW
10-Apr-2022	16:00	0.4	SW
10-Apr-2022	17:00	0.4	W
10-Apr-2022	18:00	0.4	W
10-Apr-2022	19:00	0.4	W
10-Apr-2022	20:00	0.0	WSW
10-Apr-2022	21:00	0.0	WSW
10-Apr-2022	22:00	0.0	WSW
10-Apr-2022	23:00	0.0	SSW
11-Apr-2022	0:00	0.4	WSW
11-Apr-2022	1:00	0.0	SSW
11-Apr-2022	2:00	0.0	---
11-Apr-2022	3:00	0.0	---
11-Apr-2022	4:00	0.0	---
11-Apr-2022	5:00	0.0	---
11-Apr-2022	6:00	0.0	WNW
11-Apr-2022	7:00	0.0	WNW
11-Apr-2022	8:00	0.0	---
11-Apr-2022	9:00	0.4	W
11-Apr-2022	10:00	0.0	---
11-Apr-2022	11:00	0.0	SSW
11-Apr-2022	12:00	0.0	ENE
11-Apr-2022	13:00	0.0	ENE
11-Apr-2022	14:00	0.0	NE
11-Apr-2022	15:00	0.9	NE
11-Apr-2022	16:00	0.9	NE
11-Apr-2022	17:00	0.4	NE
11-Apr-2022	18:00	0.4	NE
11-Apr-2022	19:00	0.4	NE
11-Apr-2022	20:00	0.0	WSW
11-Apr-2022	21:00	0.0	W
11-Apr-2022	22:00	0.0	WSW
11-Apr-2022	23:00	0.0	---
12-Apr-2022	0:00	0.0	---
12-Apr-2022	1:00	0.0	SW
12-Apr-2022	2:00	0.0	WSW
12-Apr-2022	3:00	0.0	---
12-Apr-2022	4:00	0.0	WSW
12-Apr-2022	5:00	0.0	WSW
12-Apr-2022	6:00	0.0	W
12-Apr-2022	7:00	0.0	W
12-Apr-2022	8:00	0.0	---
12-Apr-2022	9:00	0.0	WSW
12-Apr-2022	10:00	0.0	SSE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
12-Apr-2022	11:00	0.0	SSE
12-Apr-2022	12:00	0.0	S
12-Apr-2022	13:00	0.0	NE
12-Apr-2022	14:00	0.4	NE
12-Apr-2022	15:00	0.9	NE
12-Apr-2022	16:00	0.9	NE
12-Apr-2022	17:00	0.0	NE
12-Apr-2022	18:00	0.0	W
12-Apr-2022	19:00	0.0	SW
12-Apr-2022	20:00	0.0	SW
12-Apr-2022	21:00	0.0	SW
12-Apr-2022	22:00	0.0	---
12-Apr-2022	23:00	0.0	---
13-Apr-2022	0:00	0.0	---
13-Apr-2022	1:00	0.0	WSW
13-Apr-2022	2:00	0.0	WSW
13-Apr-2022	3:00	0.0	---
13-Apr-2022	4:00	0.0	W
13-Apr-2022	5:00	0.0	WSW
13-Apr-2022	6:00	0.4	W
13-Apr-2022	7:00	0.0	---
13-Apr-2022	8:00	0.0	W
13-Apr-2022	9:00	0.0	---
13-Apr-2022	10:00	0.0	NE
13-Apr-2022	11:00	0.0	NE
13-Apr-2022	12:00	0.0	NE
13-Apr-2022	13:00	0.4	NE
13-Apr-2022	14:00	0.9	NE
13-Apr-2022	15:00	0.4	NE
13-Apr-2022	16:00	0.9	NE
13-Apr-2022	17:00	0.4	NE
13-Apr-2022	18:00	0.4	NE
13-Apr-2022	19:00	0.0	NE
13-Apr-2022	20:00	0.0	N
13-Apr-2022	21:00	0.0	NNE
13-Apr-2022	22:00	0.0	---
13-Apr-2022	23:00	0.0	NNE
14-Apr-2022	0:00	0.0	S
14-Apr-2022	1:00	0.0	S
14-Apr-2022	2:00	0.0	WSW
14-Apr-2022	3:00	0.0	---
14-Apr-2022	4:00	0.0	---
14-Apr-2022	5:00	0.0	SE
14-Apr-2022	6:00	0.0	SSE
14-Apr-2022	7:00	0.0	S
14-Apr-2022	8:00	0.0	SSW
14-Apr-2022	9:00	0.0	SSW
14-Apr-2022	10:00	0.4	SSW
14-Apr-2022	11:00	0.9	SSW
14-Apr-2022	12:00	0.4	SSE
14-Apr-2022	13:00	0.4	S
14-Apr-2022	14:00	0.0	SSW
14-Apr-2022	15:00	1.3	NE
14-Apr-2022	16:00	0.9	NE
14-Apr-2022	17:00	0.4	SSE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
14-Apr-2022	18:00	0.0	SSE
14-Apr-2022	19:00	0.0	SSE
14-Apr-2022	20:00	0.0	S
14-Apr-2022	21:00	0.0	SSW
14-Apr-2022	22:00	0.4	WSW
14-Apr-2022	23:00	0.4	WSW
15-Apr-2022	0:00	0.0	SW
15-Apr-2022	1:00	0.4	WSW
15-Apr-2022	2:00	0.9	WSW
15-Apr-2022	3:00	1.3	SSW
15-Apr-2022	4:00	0.9	SSW
15-Apr-2022	5:00	0.9	SSW
15-Apr-2022	6:00	0.4	SSW
15-Apr-2022	7:00	0.4	SSW
15-Apr-2022	8:00	0.4	SSW
15-Apr-2022	9:00	0.9	SSW
15-Apr-2022	10:00	1.3	SSW
15-Apr-2022	11:00	0.9	WSW
15-Apr-2022	12:00	1.3	SSW
15-Apr-2022	13:00	1.3	SSW
15-Apr-2022	14:00	1.3	WNW
15-Apr-2022	15:00	1.3	SW
15-Apr-2022	16:00	1.3	WSW
15-Apr-2022	17:00	1.3	WSW
15-Apr-2022	18:00	0.9	SW
15-Apr-2022	19:00	0.4	WSW
15-Apr-2022	20:00	0.9	SW
15-Apr-2022	21:00	1.3	SSW
15-Apr-2022	22:00	0.9	SSW
15-Apr-2022	23:00	1.8	SSW
16-Apr-2022	0:00	1.3	SW
16-Apr-2022	1:00	1.8	SSW
16-Apr-2022	2:00	2.7	SW
16-Apr-2022	3:00	3.1	SW
16-Apr-2022	4:00	2.2	SSW
16-Apr-2022	5:00	2.2	SW
16-Apr-2022	6:00	2.2	SW
16-Apr-2022	7:00	2.7	SW
16-Apr-2022	8:00	1.8	SW
16-Apr-2022	9:00	1.8	SW
16-Apr-2022	10:00	1.8	SW
16-Apr-2022	11:00	2.7	SSW
16-Apr-2022	12:00	2.2	SW
16-Apr-2022	13:00	1.8	SW
16-Apr-2022	14:00	1.8	SW
16-Apr-2022	15:00	2.2	SW
16-Apr-2022	16:00	1.3	SW
16-Apr-2022	17:00	1.8	SW
16-Apr-2022	18:00	0.4	SSW
16-Apr-2022	19:00	1.3	SSW
16-Apr-2022	20:00	0.9	SSW
16-Apr-2022	21:00	1.8	SSW
16-Apr-2022	22:00	0.9	SSW
16-Apr-2022	23:00	0.9	SSW
17-Apr-2022	0:00	1.3	SW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
17-Apr-2022	1:00	1.3	SW
17-Apr-2022	2:00	0.4	SW
17-Apr-2022	3:00	0.9	SW
17-Apr-2022	4:00	0.9	SSW
17-Apr-2022	5:00	0.9	SSW
17-Apr-2022	6:00	0.9	SSW
17-Apr-2022	7:00	0.9	SSW
17-Apr-2022	8:00	0.9	SSW
17-Apr-2022	9:00	0.9	SSW
17-Apr-2022	10:00	0.4	SW
17-Apr-2022	11:00	0.9	SSW
17-Apr-2022	12:00	0.9	SW
17-Apr-2022	13:00	0.9	WSW
17-Apr-2022	14:00	0.9	SW
17-Apr-2022	15:00	0.9	SSW
17-Apr-2022	16:00	0.9	SSW
17-Apr-2022	17:00	0.9	SW
17-Apr-2022	18:00	0.4	SSW
17-Apr-2022	19:00	0.4	SSW
17-Apr-2022	20:00	0.4	SW
17-Apr-2022	21:00	0.0	SW
17-Apr-2022	22:00	0.0	W
17-Apr-2022	23:00	0.4	SSW
18-Apr-2022	0:00	0.0	SSW
18-Apr-2022	1:00	0.0	SSW
18-Apr-2022	2:00	0.0	SSW
18-Apr-2022	3:00	0.0	SSW
18-Apr-2022	4:00	0.0	SSW
18-Apr-2022	5:00	0.4	SSW
18-Apr-2022	6:00	0.0	SSW
18-Apr-2022	7:00	0.0	SSW
18-Apr-2022	8:00	0.0	SW
18-Apr-2022	9:00	0.0	SSW
18-Apr-2022	10:00	0.0	WSW
18-Apr-2022	11:00	0.0	SW
18-Apr-2022	12:00	0.0	SSW
18-Apr-2022	13:00	0.4	SSW
18-Apr-2022	14:00	0.0	SSW
18-Apr-2022	15:00	0.0	SSW
18-Apr-2022	16:00	0.0	SSE
18-Apr-2022	17:00	0.0	S
18-Apr-2022	18:00	0.0	SSW
18-Apr-2022	19:00	0.4	SSE
18-Apr-2022	20:00	0.4	S
18-Apr-2022	21:00	0.0	SSW
18-Apr-2022	22:00	0.4	SSW
18-Apr-2022	23:00	0.0	SSW
19-Apr-2022	0:00	0.0	SSE
19-Apr-2022	1:00	0.0	SSE
19-Apr-2022	2:00	0.0	SSW
19-Apr-2022	3:00	0.4	SSW
19-Apr-2022	4:00	0.0	SSW
19-Apr-2022	5:00	0.0	SSW
19-Apr-2022	6:00	0.0	SSE
19-Apr-2022	7:00	0.0	SSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
19-Apr-2022	8:00	0.0	SSW
19-Apr-2022	9:00	0.0	SSW
19-Apr-2022	10:00	0.0	S
19-Apr-2022	11:00	0.0	SSW
19-Apr-2022	12:00	0.0	SSW
19-Apr-2022	13:00	0.0	SSW
19-Apr-2022	14:00	0.0	SSW
19-Apr-2022	15:00	0.0	SSW
19-Apr-2022	16:00	0.4	SSW
19-Apr-2022	17:00	0.4	SSW
19-Apr-2022	18:00	0.4	SSW
19-Apr-2022	19:00	0.0	SSW
19-Apr-2022	20:00	0.0	WSW
19-Apr-2022	21:00	0.0	SW
19-Apr-2022	22:00	0.4	SSW
19-Apr-2022	23:00	0.0	SSW
20-Apr-2022	0:00	0.0	SSW
20-Apr-2022	1:00	0.0	---
20-Apr-2022	2:00	0.0	---
20-Apr-2022	3:00	0.0	S
20-Apr-2022	4:00	0.0	SSW
20-Apr-2022	5:00	0.0	---
20-Apr-2022	6:00	0.0	SSW
20-Apr-2022	7:00	0.0	SW
20-Apr-2022	8:00	0.0	SSW
20-Apr-2022	9:00	0.0	SW
20-Apr-2022	10:00	0.0	SSW
20-Apr-2022	11:00	0.0	SW
20-Apr-2022	12:00	0.4	WSW
20-Apr-2022	13:00	0.4	SSW
20-Apr-2022	14:00	0.4	SSE
20-Apr-2022	15:00	0.0	SSW
20-Apr-2022	16:00	0.0	SSE
20-Apr-2022	17:00	0.0	NNE
20-Apr-2022	18:00	0.0	NE
20-Apr-2022	19:00	0.0	NE
20-Apr-2022	20:00	0.0	---
20-Apr-2022	21:00	0.0	WSW
20-Apr-2022	22:00	0.9	W
20-Apr-2022	23:00	0.0	WSW
21-Apr-2022	0:00	0.0	WSW
21-Apr-2022	1:00	0.0	W
21-Apr-2022	2:00	0.0	W
21-Apr-2022	3:00	0.0	WSW
21-Apr-2022	4:00	0.0	WSW
21-Apr-2022	5:00	0.0	SW
21-Apr-2022	6:00	0.0	---
21-Apr-2022	7:00	0.0	WNW
21-Apr-2022	8:00	0.0	WSW
21-Apr-2022	9:00	0.0	WSW
21-Apr-2022	10:00	0.0	SSW
21-Apr-2022	11:00	0.0	WSW
21-Apr-2022	12:00	0.0	SSE
21-Apr-2022	13:00	0.0	WSW
21-Apr-2022	14:00	0.4	NE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
21-Apr-2022	15:00	0.9	NE
21-Apr-2022	16:00	0.9	NE
21-Apr-2022	17:00	0.0	NE
21-Apr-2022	18:00	0.4	NE
21-Apr-2022	19:00	0.4	WSW
21-Apr-2022	20:00	0.4	WSW
21-Apr-2022	21:00	0.4	SSW
21-Apr-2022	22:00	0.0	SSW
21-Apr-2022	23:00	0.0	SW
22-Apr-2022	0:00	0.4	SSW
22-Apr-2022	1:00	0.0	SW
22-Apr-2022	2:00	0.0	SSW
22-Apr-2022	3:00	0.0	S
22-Apr-2022	4:00	0.0	---
22-Apr-2022	5:00	0.0	---
22-Apr-2022	6:00	0.0	WSW
22-Apr-2022	7:00	0.0	WSW
22-Apr-2022	8:00	0.0	WSW
22-Apr-2022	9:00	0.0	SSW
22-Apr-2022	10:00	0.0	SW
22-Apr-2022	11:00	0.4	SW
22-Apr-2022	12:00	0.4	SSW
22-Apr-2022	13:00	0.4	WNW
22-Apr-2022	14:00	0.4	WNW
22-Apr-2022	15:00	0.4	W
22-Apr-2022	16:00	0.9	WNW
22-Apr-2022	17:00	0.4	WSW
22-Apr-2022	18:00	0.4	NE
22-Apr-2022	19:00	0.0	NE
22-Apr-2022	20:00	0.0	WSW
22-Apr-2022	21:00	0.0	WSW
22-Apr-2022	22:00	0.0	WSW
22-Apr-2022	23:00	0.4	WSW
23-Apr-2022	0:00	0.0	WSW
23-Apr-2022	1:00	0.0	WSW
23-Apr-2022	2:00	0.0	SW
23-Apr-2022	3:00	0.0	SSW
23-Apr-2022	4:00	0.0	---
23-Apr-2022	5:00	0.0	---
23-Apr-2022	6:00	0.0	WSW
23-Apr-2022	7:00	0.0	W
23-Apr-2022	8:00	0.0	WSW
23-Apr-2022	9:00	0.0	SSW
23-Apr-2022	10:00	0.0	SW
23-Apr-2022	11:00	0.0	SSE
23-Apr-2022	12:00	0.4	NE
23-Apr-2022	13:00	0.9	NE
23-Apr-2022	14:00	1.3	NE
23-Apr-2022	15:00	0.9	NE
23-Apr-2022	16:00	0.9	NE
23-Apr-2022	17:00	0.9	NE
23-Apr-2022	18:00	0.9	NE
23-Apr-2022	19:00	0.9	NE
23-Apr-2022	20:00	0.0	NNE
23-Apr-2022	21:00	0.0	NNE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
23-Apr-2022	22:00	0.0	NW
23-Apr-2022	23:00	0.0	WNW
24-Apr-2022	0:00	0.0	W
24-Apr-2022	1:00	0.0	---
24-Apr-2022	2:00	0.0	---
24-Apr-2022	3:00	0.0	---
24-Apr-2022	4:00	0.0	---
24-Apr-2022	5:00	0.0	---
24-Apr-2022	6:00	0.0	---
24-Apr-2022	7:00	0.0	---
24-Apr-2022	8:00	0.0	W
24-Apr-2022	9:00	0.0	W
24-Apr-2022	10:00	0.0	SSW
24-Apr-2022	11:00	0.0	SSE
24-Apr-2022	12:00	0.4	NE
24-Apr-2022	13:00	0.9	NE
24-Apr-2022	14:00	0.4	NNE
24-Apr-2022	15:00	0.4	NE
24-Apr-2022	16:00	0.9	NNE
24-Apr-2022	17:00	0.4	NNE
24-Apr-2022	18:00	0.9	NNE
24-Apr-2022	19:00	0.9	NNE
24-Apr-2022	20:00	0.0	NNE
24-Apr-2022	21:00	0.0	NNE
24-Apr-2022	22:00	0.0	---
24-Apr-2022	23:00	0.0	---
25-Apr-2022	0:00	0.0	---
25-Apr-2022	1:00	0.0	---
25-Apr-2022	2:00	0.0	---
25-Apr-2022	3:00	0.0	W
25-Apr-2022	4:00	0.0	---
25-Apr-2022	5:00	0.0	---
25-Apr-2022	6:00	0.0	---
25-Apr-2022	7:00	0.0	W
25-Apr-2022	8:00	0.0	W
25-Apr-2022	9:00	0.0	NNE
25-Apr-2022	10:00	0.4	NNE
25-Apr-2022	11:00	0.9	NE
25-Apr-2022	12:00	0.9	NNE
25-Apr-2022	13:00	0.9	NNE
25-Apr-2022	14:00	0.9	NNE
25-Apr-2022	15:00	0.9	NNE
25-Apr-2022	16:00	0.9	NNE
25-Apr-2022	17:00	0.9	NNE
25-Apr-2022	18:00	0.9	NNE
25-Apr-2022	19:00	0.4	NW
25-Apr-2022	20:00	0.4	N
25-Apr-2022	21:00	0.0	N
25-Apr-2022	22:00	0.0	NNE
25-Apr-2022	23:00	0.0	NNE
26-Apr-2022	0:00	0.0	NNW
26-Apr-2022	1:00	0.0	NW
26-Apr-2022	2:00	0.0	NNE
26-Apr-2022	3:00	0.0	N
26-Apr-2022	4:00	0.0	NE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
26-Apr-2022	5:00	0.0	---
26-Apr-2022	6:00	0.0	---
26-Apr-2022	7:00	0.0	W
26-Apr-2022	8:00	0.4	W
26-Apr-2022	9:00	0.0	W
26-Apr-2022	10:00	0.4	NNE
26-Apr-2022	11:00	0.4	NNE
26-Apr-2022	12:00	0.9	NNE
26-Apr-2022	13:00	1.3	NNE
26-Apr-2022	14:00	1.3	NNE
26-Apr-2022	15:00	0.9	NNE
26-Apr-2022	16:00	0.9	NE
26-Apr-2022	17:00	0.4	NNE
26-Apr-2022	18:00	0.4	NNE
26-Apr-2022	19:00	0.0	NNE
26-Apr-2022	20:00	0.0	NE
26-Apr-2022	21:00	0.0	NNE
26-Apr-2022	22:00	0.0	NE
26-Apr-2022	23:00	0.0	---
27-Apr-2022	0:00	0.0	---
27-Apr-2022	1:00	0.0	---
27-Apr-2022	2:00	0.0	---
27-Apr-2022	3:00	0.0	---
27-Apr-2022	4:00	0.0	---
27-Apr-2022	5:00	0.0	N
27-Apr-2022	6:00	0.0	NW
27-Apr-2022	7:00	0.4	W
27-Apr-2022	8:00	0.4	W
27-Apr-2022	9:00	0.0	---
27-Apr-2022	10:00	0.0	ENE
27-Apr-2022	11:00	0.4	NE
27-Apr-2022	12:00	0.4	NE
27-Apr-2022	13:00	0.9	NE
27-Apr-2022	14:00	0.9	NNE
27-Apr-2022	15:00	0.9	NNE
27-Apr-2022	16:00	0.9	NNE
27-Apr-2022	17:00	0.4	NE
27-Apr-2022	18:00	0.9	NE
27-Apr-2022	19:00	0.4	NE
27-Apr-2022	20:00	0.0	NNW
27-Apr-2022	21:00	0.0	N
27-Apr-2022	22:00	0.0	---
27-Apr-2022	23:00	0.0	W
28-Apr-2022	0:00	0.0	W
28-Apr-2022	1:00	0.0	---
28-Apr-2022	2:00	0.0	---
28-Apr-2022	3:00	0.0	---
28-Apr-2022	4:00	0.0	---
28-Apr-2022	5:00	0.0	---
28-Apr-2022	6:00	0.0	---
28-Apr-2022	7:00	0.0	WSW
28-Apr-2022	8:00	0.0	---
28-Apr-2022	9:00	0.0	SW
28-Apr-2022	10:00	0.0	SSW
28-Apr-2022	11:00	0.4	WNW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
28-Apr-2022	12:00	0.4	WNW
28-Apr-2022	13:00	0.9	WNW
28-Apr-2022	14:00	0.9	WSW
28-Apr-2022	15:00	0.9	SW
28-Apr-2022	16:00	0.9	WNW
28-Apr-2022	17:00	0.9	W
28-Apr-2022	18:00	0.4	WSW
28-Apr-2022	19:00	0.0	WNW
28-Apr-2022	20:00	0.4	SW
28-Apr-2022	21:00	0.4	SW
28-Apr-2022	22:00	0.0	WSW
28-Apr-2022	23:00	0.0	SW
29-Apr-2022	0:00	0.4	SW
29-Apr-2022	1:00	0.0	WSW
29-Apr-2022	2:00	0.0	SW
29-Apr-2022	3:00	0.0	SW
29-Apr-2022	4:00	0.0	WSW
29-Apr-2022	5:00	0.0	WSW
29-Apr-2022	6:00	0.0	WSW
29-Apr-2022	7:00	0.4	W
29-Apr-2022	8:00	0.0	SSW
29-Apr-2022	9:00	0.4	SSW
29-Apr-2022	10:00	0.4	SSW
29-Apr-2022	11:00	0.0	SSW
29-Apr-2022	12:00	0.0	NNE
29-Apr-2022	13:00	0.4	NE
29-Apr-2022	14:00	1.3	NE
29-Apr-2022	15:00	0.9	NE
29-Apr-2022	16:00	0.4	NE
29-Apr-2022	17:00	0.9	NE
29-Apr-2022	18:00	0.9	NE
29-Apr-2022	19:00	0.0	NE
29-Apr-2022	20:00	0.0	---
29-Apr-2022	21:00	0.0	---
29-Apr-2022	22:00	0.0	---
29-Apr-2022	23:00	0.0	---
30-Apr-2022	0:00	0.0	---
30-Apr-2022	1:00	0.0	W
30-Apr-2022	2:00	0.0	WSW
30-Apr-2022	3:00	0.0	W
30-Apr-2022	4:00	0.0	W
30-Apr-2022	5:00	0.0	W
30-Apr-2022	6:00	0.0	---
30-Apr-2022	7:00	0.0	SSW
30-Apr-2022	8:00	0.0	SSW
30-Apr-2022	9:00	0.9	SSW
30-Apr-2022	10:00	1.3	SW
30-Apr-2022	11:00	1.3	SSW
30-Apr-2022	12:00	1.3	SSW
30-Apr-2022	13:00	1.3	SW
30-Apr-2022	14:00	1.3	SSW
30-Apr-2022	15:00	1.3	SW
30-Apr-2022	16:00	1.3	SW
30-Apr-2022	17:00	1.3	SSW
30-Apr-2022	18:00	0.4	WSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
30-Apr-2022	19:00	0.9	WSW
30-Apr-2022	20:00	0.4	SSW
30-Apr-2022	21:00	0.4	SW
30-Apr-2022	22:00	0.9	SSW
30-Apr-2022	23:00	0.4	SSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
1-May-2022	0:00	1.3	SSW
1-May-2022	1:00	0.9	SSW
1-May-2022	2:00	0.4	SSW
1-May-2022	3:00	0.4	WSW
1-May-2022	4:00	0.9	SW
1-May-2022	5:00	1.3	SW
1-May-2022	6:00	0.9	SSW
1-May-2022	7:00	0.4	SSW
1-May-2022	8:00	0.9	SSW
1-May-2022	9:00	0.9	SSW
1-May-2022	10:00	0.9	SSW
1-May-2022	11:00	0.4	SSW
1-May-2022	12:00	0.9	SSW
1-May-2022	13:00	0.9	SSW
1-May-2022	14:00	0.4	SSW
1-May-2022	15:00	0.4	SSW
1-May-2022	16:00	0.4	SSW
1-May-2022	17:00	0.4	SSE
1-May-2022	18:00	0.4	SW
1-May-2022	19:00	0.4	SSW
1-May-2022	20:00	0.9	SSW
1-May-2022	21:00	0.4	SSW
1-May-2022	22:00	0.4	SSW
1-May-2022	23:00	0.0	SSE
2-May-2022	0:00	0.4	SSW
2-May-2022	1:00	0.0	SW
2-May-2022	2:00	0.0	SSW
2-May-2022	3:00	0.0	SSE
2-May-2022	4:00	0.0	SW
2-May-2022	5:00	0.0	SSE
2-May-2022	6:00	0.0	SSE
2-May-2022	7:00	0.0	SW
2-May-2022	8:00	0.0	SSW
2-May-2022	9:00	0.0	SW
2-May-2022	10:00	0.0	SSE
2-May-2022	11:00	0.4	SSW
2-May-2022	12:00	0.9	SSW
2-May-2022	13:00	0.9	SSW
2-May-2022	14:00	0.4	SSE
2-May-2022	15:00	0.4	SSW
2-May-2022	16:00	0.4	SSW
2-May-2022	17:00	0.4	SSW
2-May-2022	18:00	0.4	SSW
2-May-2022	19:00	0.4	SSW
2-May-2022	20:00	0.4	SSW
2-May-2022	21:00	0.4	SSW
2-May-2022	22:00	0.4	SSW
2-May-2022	23:00	0.0	SSW
3-May-2022	0:00	0.0	SSW
3-May-2022	1:00	0.0	SW
3-May-2022	2:00	0.0	SW
3-May-2022	3:00	0.0	WSW
3-May-2022	4:00	0.0	SSW
3-May-2022	5:00	0.0	SSW
3-May-2022	6:00	0.0	WSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
3-May-2022	7:00	0.0	SSW
3-May-2022	8:00	0.0	SSW
3-May-2022	9:00	0.4	SSW
3-May-2022	10:00	0.9	SSW
3-May-2022	11:00	0.4	SSW
3-May-2022	12:00	0.4	SSE
3-May-2022	13:00	0.4	SSE
3-May-2022	14:00	0.0	SSE
3-May-2022	15:00	0.0	SSE
3-May-2022	16:00	0.0	SSE
3-May-2022	17:00	0.0	S
3-May-2022	18:00	0.0	SW
3-May-2022	19:00	0.0	WSW
3-May-2022	20:00	0.9	SW
3-May-2022	21:00	0.4	SW
3-May-2022	22:00	0.0	SSW
3-May-2022	23:00	0.0	W
4-May-2022	0:00	0.4	SSW
4-May-2022	1:00	0.0	SW
4-May-2022	2:00	0.4	SW
4-May-2022	3:00	0.4	SW
4-May-2022	4:00	0.0	SW
4-May-2022	5:00	0.0	SSW
4-May-2022	6:00	0.0	WSW
4-May-2022	7:00	0.0	SSW
4-May-2022	8:00	0.0	---
4-May-2022	9:00	0.0	SW
4-May-2022	10:00	0.0	SSW
4-May-2022	11:00	0.0	SSE
4-May-2022	12:00	0.4	SSE
4-May-2022	13:00	0.9	WSW
4-May-2022	14:00	0.9	WSW
4-May-2022	15:00	0.4	W
4-May-2022	16:00	0.4	WNW
4-May-2022	17:00	0.4	WNW
4-May-2022	18:00	1.3	NE
4-May-2022	19:00	0.4	NE
4-May-2022	20:00	0.0	W
4-May-2022	21:00	0.0	W
4-May-2022	22:00	0.0	WSW
4-May-2022	23:00	0.0	WSW
5-May-2022	0:00	0.0	SSW
5-May-2022	1:00	0.0	SSW
5-May-2022	2:00	0.0	SSW
5-May-2022	3:00	0.0	---
5-May-2022	4:00	0.0	---
5-May-2022	5:00	0.0	SSW
5-May-2022	6:00	0.0	SSW
5-May-2022	7:00	0.0	SSW
5-May-2022	8:00	0.0	SSW
5-May-2022	9:00	0.9	SSW
5-May-2022	10:00	0.9	SW
5-May-2022	11:00	0.9	SW
5-May-2022	12:00	0.9	WSW
5-May-2022	13:00	0.9	WNW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
5-May-2022	14:00	0.4	WNW
5-May-2022	15:00	0.4	WNW
5-May-2022	16:00	0.0	WSW
5-May-2022	17:00	0.4	WNW
5-May-2022	18:00	0.9	W
5-May-2022	19:00	0.9	WNW
5-May-2022	20:00	0.4	WSW
5-May-2022	21:00	0.0	WSW
5-May-2022	22:00	0.0	SSW
5-May-2022	23:00	0.0	SSW
6-May-2022	0:00	0.0	WSW
6-May-2022	1:00	0.0	SW
6-May-2022	2:00	0.0	---
6-May-2022	3:00	0.0	---
6-May-2022	4:00	0.0	SW
6-May-2022	5:00	0.0	SW
6-May-2022	6:00	0.0	SW
6-May-2022	7:00	0.0	WSW
6-May-2022	8:00	0.0	SSW
6-May-2022	9:00	0.9	SSW
6-May-2022	10:00	0.9	SSW
6-May-2022	11:00	0.4	SSW
6-May-2022	12:00	0.4	SSW
6-May-2022	13:00	0.4	WSW
6-May-2022	14:00	0.4	WSW
6-May-2022	15:00	0.4	WSW
6-May-2022	16:00	0.9	NE
6-May-2022	17:00	0.4	NE
6-May-2022	18:00	0.0	SSW
6-May-2022	19:00	0.9	SW
6-May-2022	20:00	0.0	WSW
6-May-2022	21:00	0.4	SW
6-May-2022	22:00	0.0	SW
6-May-2022	23:00	0.0	SW
7-May-2022	0:00	0.0	SSW
7-May-2022	1:00	0.0	SSW
7-May-2022	2:00	0.0	SW
7-May-2022	3:00	0.4	SSW
7-May-2022	4:00	0.0	SW
7-May-2022	5:00	0.0	SSW
7-May-2022	6:00	0.0	SSW
7-May-2022	7:00	0.0	WSW
7-May-2022	8:00	0.4	WSW
7-May-2022	9:00	0.0	SW
7-May-2022	10:00	0.0	SSW
7-May-2022	11:00	0.0	SSW
7-May-2022	12:00	0.0	SSE
7-May-2022	13:00	0.0	SSW
7-May-2022	14:00	0.4	SSE
7-May-2022	15:00	0.4	NE
7-May-2022	16:00	0.4	NE
7-May-2022	17:00	0.0	NE
7-May-2022	18:00	0.0	NNE
7-May-2022	19:00	0.0	WSW
7-May-2022	20:00	0.0	SW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
7-May-2022	21:00	0.0	SSW
7-May-2022	22:00	0.0	SW
7-May-2022	23:00	0.0	WSW
8-May-2022	0:00	0.0	SW
8-May-2022	1:00	0.0	WSW
8-May-2022	2:00	0.0	SW
8-May-2022	3:00	0.4	SW
8-May-2022	4:00	0.4	SW
8-May-2022	5:00	0.4	SSW
8-May-2022	6:00	0.0	SW
8-May-2022	7:00	0.4	SSW
8-May-2022	8:00	0.0	WSW
8-May-2022	9:00	0.4	WSW
8-May-2022	10:00	0.0	SSW
8-May-2022	11:00	0.4	SSW
8-May-2022	12:00	0.4	SSW
8-May-2022	13:00	0.9	SSW
8-May-2022	14:00	0.9	SSW
8-May-2022	15:00	0.0	SSW
8-May-2022	16:00	0.0	SSW
8-May-2022	17:00	0.4	SSW
8-May-2022	18:00	0.0	SSW
8-May-2022	19:00	0.0	SW
8-May-2022	20:00	0.0	WSW
8-May-2022	21:00	0.0	WNW
8-May-2022	22:00	0.0	WSW
8-May-2022	23:00	0.0	SSW
9-May-2022	0:00	0.0	SSW
9-May-2022	1:00	0.0	SSW
9-May-2022	2:00	0.0	SW
9-May-2022	3:00	0.0	SSW
9-May-2022	4:00	0.0	SW
9-May-2022	5:00	0.0	SSW
9-May-2022	6:00	0.0	SSW
9-May-2022	7:00	0.0	SSW
9-May-2022	8:00	0.0	WSW
9-May-2022	9:00	0.0	SSW
9-May-2022	10:00	0.0	SSW
9-May-2022	11:00	0.0	SSW
9-May-2022	12:00	0.4	SSW
9-May-2022	13:00	0.9	WSW
9-May-2022	14:00	0.4	WNW
9-May-2022	15:00	0.4	SSW
9-May-2022	16:00	0.4	WSW
9-May-2022	17:00	0.9	SW
9-May-2022	18:00	0.9	WNW
9-May-2022	19:00	0.9	SW
9-May-2022	20:00	0.4	WSW
9-May-2022	21:00	0.4	WSW
9-May-2022	22:00	0.4	SSW
9-May-2022	23:00	0.4	SW
10-May-2022	0:00	0.4	SSW
10-May-2022	1:00	0.9	SSW
10-May-2022	2:00	0.9	SW
10-May-2022	3:00	0.0	SW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
10-May-2022	4:00	0.0	SSW
10-May-2022	5:00	0.0	WSW
10-May-2022	6:00	0.0	SW
10-May-2022	7:00	0.0	SSW
10-May-2022	8:00	0.0	SSW
10-May-2022	9:00	0.0	SSW
10-May-2022	10:00	0.4	SSW
10-May-2022	11:00	0.4	SSW
10-May-2022	12:00	0.9	SW
10-May-2022	13:00	0.4	SSW
10-May-2022	14:00	0.4	SSW
10-May-2022	15:00	0.9	WSW
10-May-2022	16:00	0.9	WNW
10-May-2022	17:00	0.9	WSW
10-May-2022	18:00	0.9	WNW
10-May-2022	19:00	0.4	WNW
10-May-2022	20:00	0.4	W
10-May-2022	21:00	0.0	W
10-May-2022	22:00	0.0	WSW
10-May-2022	23:00	0.0	W
11-May-2022	0:00	0.0	WSW
11-May-2022	1:00	0.0	WSW
11-May-2022	2:00	0.0	WSW
11-May-2022	3:00	0.0	WSW
11-May-2022	4:00	0.0	W
11-May-2022	5:00	0.0	WSW
11-May-2022	6:00	0.0	W
11-May-2022	7:00	0.4	WSW
11-May-2022	8:00	0.4	WSW
11-May-2022	9:00	0.0	SW
11-May-2022	10:00	0.0	SW
11-May-2022	11:00	0.0	SW
11-May-2022	12:00	0.0	WSW
11-May-2022	13:00	0.0	SSW
11-May-2022	14:00	0.0	WSW
11-May-2022	15:00	0.0	NE
11-May-2022	16:00	0.0	NNE
11-May-2022	17:00	0.0	NE
11-May-2022	18:00	0.0	NE
11-May-2022	19:00	0.0	NW
11-May-2022	20:00	0.0	W
11-May-2022	21:00	0.4	W
11-May-2022	22:00	0.0	---
11-May-2022	23:00	0.0	WSW
12-May-2022	0:00	0.0	---
12-May-2022	1:00	0.0	---
12-May-2022	2:00	0.0	---
12-May-2022	3:00	0.4	W
12-May-2022	4:00	0.0	SSW
12-May-2022	5:00	0.0	SW
12-May-2022	6:00	0.0	SW
12-May-2022	7:00	0.4	WSW
12-May-2022	8:00	0.0	NE
12-May-2022	9:00	0.0	WNW
12-May-2022	10:00	0.0	---

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
12-May-2022	11:00	0.0	---
12-May-2022	12:00	0.0	W
12-May-2022	13:00	0.0	WSW
12-May-2022	14:00	0.0	WSW
12-May-2022	15:00	0.0	WSW
12-May-2022	16:00	0.0	W
12-May-2022	17:00	0.4	NE
12-May-2022	18:00	0.0	NE
12-May-2022	19:00	0.4	NE
12-May-2022	20:00	0.0	NE
12-May-2022	21:00	0.0	---
12-May-2022	22:00	0.0	---
12-May-2022	23:00	0.0	---
13-May-2022	0:00	0.0	NNW
13-May-2022	1:00	0.0	---
13-May-2022	2:00	0.0	---
13-May-2022	3:00	0.0	NNW
13-May-2022	4:00	0.0	---
13-May-2022	5:00	0.0	---
13-May-2022	6:00	0.0	NW
13-May-2022	7:00	0.0	---
13-May-2022	8:00	0.0	NE
13-May-2022	9:00	0.9	SW
13-May-2022	10:00	0.9	SSW
13-May-2022	11:00	0.4	SSW
13-May-2022	12:00	0.4	SSW
13-May-2022	13:00	0.0	SSW
13-May-2022	14:00	0.4	SSW
13-May-2022	15:00	0.9	SSW
13-May-2022	16:00	0.9	SSW
13-May-2022	17:00	0.9	SSW
13-May-2022	18:00	0.4	SSW
13-May-2022	19:00	0.9	SW
13-May-2022	20:00	0.4	SW
13-May-2022	21:00	0.9	SSW
13-May-2022	22:00	0.9	SW
13-May-2022	23:00	0.4	WSW
14-May-2022	0:00	1.3	SSW
14-May-2022	1:00	1.3	SSW
14-May-2022	2:00	1.3	SSW
14-May-2022	3:00	0.4	SW
14-May-2022	4:00	0.0	WSW
14-May-2022	5:00	0.4	WSW
14-May-2022	6:00	0.9	SSW
14-May-2022	7:00	0.9	SSW
14-May-2022	8:00	0.9	SSW
14-May-2022	9:00	0.4	SSW
14-May-2022	10:00	0.0	SSW
14-May-2022	11:00	0.4	SSW
14-May-2022	12:00	0.0	SSW
14-May-2022	13:00	0.0	SW
14-May-2022	14:00	0.0	SW
14-May-2022	15:00	0.0	SSW
14-May-2022	16:00	0.4	SSW
14-May-2022	17:00	0.4	SSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
14-May-2022	18:00	0.9	SSW
14-May-2022	19:00	1.3	SSW
14-May-2022	20:00	0.9	SSW
14-May-2022	21:00	0.4	SSW
14-May-2022	22:00	0.4	SSW
14-May-2022	23:00	1.3	SSW
15-May-2022	0:00	0.4	SSW
15-May-2022	1:00	0.0	SSW
15-May-2022	2:00	0.4	SSW
15-May-2022	3:00	0.4	SSW
15-May-2022	4:00	0.0	SSW
15-May-2022	5:00	0.0	SSW
15-May-2022	6:00	0.0	SSE
15-May-2022	7:00	0.0	SSW
15-May-2022	8:00	0.0	SSW
15-May-2022	9:00	0.0	SSW
15-May-2022	10:00	0.0	SSW
15-May-2022	11:00	0.0	SSW
15-May-2022	12:00	0.4	SSW
15-May-2022	13:00	0.4	SSW
15-May-2022	14:00	0.0	SSW
15-May-2022	15:00	0.4	SSW
15-May-2022	16:00	0.4	SSW
15-May-2022	17:00	0.4	SSW
15-May-2022	18:00	0.0	SSW
15-May-2022	19:00	0.0	SSW
15-May-2022	20:00	0.0	SSW
15-May-2022	21:00	0.4	SSW
15-May-2022	22:00	0.0	SSW
15-May-2022	23:00	0.0	SSW
16-May-2022	0:00	0.0	SSW
16-May-2022	1:00	0.4	SSW
16-May-2022	2:00	0.4	SSW
16-May-2022	3:00	0.4	SSW
16-May-2022	4:00	0.4	SSW
16-May-2022	5:00	0.0	SSW
16-May-2022	6:00	0.4	SSW
16-May-2022	7:00	0.0	SSE
16-May-2022	8:00	0.0	WSW
16-May-2022	9:00	0.0	SSE
16-May-2022	10:00	0.9	NE
16-May-2022	11:00	0.4	NE
16-May-2022	12:00	0.0	WSW
16-May-2022	13:00	0.0	WNW
16-May-2022	14:00	0.0	SW
16-May-2022	15:00	0.0	SSW
16-May-2022	16:00	0.0	SSW
16-May-2022	17:00	0.4	SSW
16-May-2022	18:00	0.4	SSW
16-May-2022	19:00	0.4	SW
16-May-2022	20:00	0.4	SSW
16-May-2022	21:00	0.4	SW
16-May-2022	22:00	0.4	SW
16-May-2022	23:00	0.4	WSW
17-May-2022	0:00	0.0	SW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
17-May-2022	1:00	0.0	SSW
17-May-2022	2:00	0.9	SSW
17-May-2022	3:00	1.3	SSW
17-May-2022	4:00	1.8	SSW
17-May-2022	5:00	1.8	SSW
17-May-2022	6:00	1.3	SSW
17-May-2022	7:00	1.3	SSW
17-May-2022	8:00	0.4	SSW
17-May-2022	9:00	0.4	WSW
17-May-2022	10:00	0.4	W
17-May-2022	11:00	0.4	SSW
17-May-2022	12:00	0.9	SW
17-May-2022	13:00	0.9	SW
17-May-2022	14:00	0.0	SSW
17-May-2022	15:00	0.9	SSW
17-May-2022	16:00	0.4	SW
17-May-2022	17:00	0.0	SW
17-May-2022	18:00	0.0	WSW
17-May-2022	19:00	0.0	SW
17-May-2022	20:00	0.0	SW
17-May-2022	21:00	0.0	SW
17-May-2022	22:00	0.0	SSW
17-May-2022	23:00	0.0	WSW
18-May-2022	0:00	0.0	---
18-May-2022	1:00	0.0	---
18-May-2022	2:00	0.0	WSW
18-May-2022	3:00	0.0	WSW
18-May-2022	4:00	0.0	WSW
18-May-2022	5:00	0.0	SSW
18-May-2022	6:00	0.4	SW
18-May-2022	7:00	0.0	SSE
18-May-2022	8:00	0.0	SSE
18-May-2022	9:00	0.9	NE
18-May-2022	10:00	0.9	NE
18-May-2022	11:00	0.4	NE
18-May-2022	12:00	0.0	NNE
18-May-2022	13:00	0.0	W
18-May-2022	14:00	0.0	SSW
18-May-2022	15:00	0.0	W
18-May-2022	16:00	0.0	SSW
18-May-2022	17:00	0.0	SSW
18-May-2022	18:00	0.0	SSW
18-May-2022	19:00	0.0	---
18-May-2022	20:00	0.0	SSW
18-May-2022	21:00	0.0	WSW
18-May-2022	22:00	0.0	SSW
18-May-2022	23:00	0.0	SW
19-May-2022	0:00	0.0	SSW
19-May-2022	1:00	0.0	SSW
19-May-2022	2:00	0.4	SSW
19-May-2022	3:00	0.0	SW
19-May-2022	4:00	0.0	NE
19-May-2022	5:00	0.4	NE
19-May-2022	6:00	1.3	NE
19-May-2022	7:00	0.9	NE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
19-May-2022	8:00	0.9	NE
19-May-2022	9:00	1.3	NE
19-May-2022	10:00	0.9	NE
19-May-2022	11:00	0.4	NE
19-May-2022	12:00	0.4	WSW
19-May-2022	13:00	0.4	W
19-May-2022	14:00	0.0	W
19-May-2022	15:00	0.0	---
19-May-2022	16:00	0.0	---
19-May-2022	17:00	0.0	---
19-May-2022	18:00	0.0	---
19-May-2022	19:00	0.0	---
19-May-2022	20:00	0.0	---
19-May-2022	21:00	0.0	---
19-May-2022	22:00	0.0	---
19-May-2022	23:00	0.0	---
20-May-2022	0:00	0.0	W
20-May-2022	1:00	0.0	W
20-May-2022	2:00	0.0	---
20-May-2022	3:00	0.0	NE
20-May-2022	4:00	0.0	NE
20-May-2022	5:00	0.0	NE
20-May-2022	6:00	0.0	NE
20-May-2022	7:00	0.0	WSW
20-May-2022	8:00	0.4	WNW
20-May-2022	9:00	0.4	WSW
20-May-2022	10:00	0.4	SW
20-May-2022	11:00	0.4	SSW
20-May-2022	12:00	0.4	SW
20-May-2022	13:00	0.4	SSW
20-May-2022	14:00	0.4	SSW
20-May-2022	15:00	0.4	SW
20-May-2022	16:00	0.4	SSW
20-May-2022	17:00	0.4	SSW
20-May-2022	18:00	0.4	SSW
20-May-2022	19:00	0.9	SW
20-May-2022	20:00	0.4	SW
20-May-2022	21:00	1.8	SSW
20-May-2022	22:00	0.9	SW
20-May-2022	23:00	0.4	SW
21-May-2022	0:00	0.9	SSW
21-May-2022	1:00	0.9	SW
21-May-2022	2:00	1.3	SW
21-May-2022	3:00	0.9	SW
21-May-2022	4:00	0.9	SW
21-May-2022	5:00	0.9	SW
21-May-2022	6:00	0.9	WSW
21-May-2022	7:00	0.9	SSW
21-May-2022	8:00	0.9	SSW
21-May-2022	9:00	1.3	SW
21-May-2022	10:00	0.9	WNW
21-May-2022	11:00	1.3	SW
21-May-2022	12:00	1.3	SSW
21-May-2022	13:00	0.9	SW
21-May-2022	14:00	0.9	SSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
21-May-2022	15:00	0.9	SW
21-May-2022	16:00	1.8	SSW
21-May-2022	17:00	1.3	SW
21-May-2022	18:00	0.9	SSW
21-May-2022	19:00	1.8	SSW
21-May-2022	20:00	1.3	SW
21-May-2022	21:00	0.9	SW
21-May-2022	22:00	0.4	SW
21-May-2022	23:00	0.4	SSW
22-May-2022	0:00	0.4	SSW
22-May-2022	1:00	0.9	SSW
22-May-2022	2:00	0.9	SSW
22-May-2022	3:00	0.9	SW
22-May-2022	4:00	1.3	WSW
22-May-2022	5:00	1.3	SW
22-May-2022	6:00	1.3	SW
22-May-2022	7:00	0.9	SW
22-May-2022	8:00	0.4	SW
22-May-2022	9:00	0.9	SW
22-May-2022	10:00	0.4	SW
22-May-2022	11:00	0.4	WSW
22-May-2022	12:00	0.4	SW
22-May-2022	13:00	0.9	SW
22-May-2022	14:00	1.3	SSW
22-May-2022	15:00	0.9	SSW
22-May-2022	16:00	0.4	SSW
22-May-2022	17:00	0.4	SSW
22-May-2022	18:00	0.4	SSW
22-May-2022	19:00	0.9	SSW
22-May-2022	20:00	0.9	SSW
22-May-2022	21:00	0.9	SSW
22-May-2022	22:00	0.9	SW
22-May-2022	23:00	0.4	SSW
23-May-2022	0:00	0.0	SSW
23-May-2022	1:00	0.4	SW
23-May-2022	2:00	1.3	SSW
23-May-2022	3:00	0.9	SW
23-May-2022	4:00	1.3	SW
23-May-2022	5:00	0.9	SSW
23-May-2022	6:00	1.3	SW
23-May-2022	7:00	1.3	SSW
23-May-2022	8:00	0.9	SSW
23-May-2022	9:00	0.4	SSW
23-May-2022	10:00	0.4	WSW
23-May-2022	11:00	0.4	SSW
23-May-2022	12:00	0.4	SW
23-May-2022	13:00	0.4	SSW
23-May-2022	14:00	0.0	SSW
23-May-2022	15:00	0.0	SSW
23-May-2022	16:00	0.0	SSW
23-May-2022	17:00	0.0	WSW
23-May-2022	18:00	0.4	SSW
23-May-2022	19:00	0.0	SSW
23-May-2022	20:00	0.0	SSW
23-May-2022	21:00	0.0	SSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
23-May-2022	22:00	0.0	SSW
23-May-2022	23:00	0.0	SSW
24-May-2022	0:00	0.0	---
24-May-2022	1:00	0.0	W
24-May-2022	2:00	0.0	SSW
24-May-2022	3:00	0.0	SW
24-May-2022	4:00	0.0	SSW
24-May-2022	5:00	0.4	SSW
24-May-2022	6:00	0.0	SW
24-May-2022	7:00	0.0	SW
24-May-2022	8:00	0.0	SSE
24-May-2022	9:00	0.4	WNW
24-May-2022	10:00	0.4	WNW
24-May-2022	11:00	0.0	SW
24-May-2022	12:00	0.4	SSW
24-May-2022	13:00	0.0	SW
24-May-2022	14:00	0.0	W
24-May-2022	15:00	0.0	WSW
24-May-2022	16:00	0.0	SW
24-May-2022	17:00	0.0	SSW
24-May-2022	18:00	0.0	SW
24-May-2022	19:00	0.0	---
24-May-2022	20:00	0.0	SW
24-May-2022	21:00	0.0	---
24-May-2022	22:00	0.0	---
24-May-2022	23:00	0.0	---
25-May-2022	0:00	0.0	W
25-May-2022	1:00	0.0	SSW
25-May-2022	2:00	0.0	SW
25-May-2022	3:00	0.0	SSW
25-May-2022	4:00	0.0	SW
25-May-2022	5:00	0.9	SW
25-May-2022	6:00	0.4	W
25-May-2022	7:00	0.4	SSW
25-May-2022	8:00	0.9	WNW
25-May-2022	9:00	0.4	W
25-May-2022	10:00	0.4	WNW
25-May-2022	11:00	0.0	SSW
25-May-2022	12:00	0.0	SSW
25-May-2022	13:00	0.0	SW
25-May-2022	14:00	0.0	W
25-May-2022	15:00	0.0	W
25-May-2022	16:00	0.0	WSW
25-May-2022	17:00	0.0	WSW
25-May-2022	18:00	0.0	---
25-May-2022	19:00	0.0	---
25-May-2022	20:00	0.0	---
25-May-2022	21:00	0.4	W
25-May-2022	22:00	0.0	W
25-May-2022	23:00	0.9	W
26-May-2022	0:00	0.4	W
26-May-2022	1:00	0.9	W
26-May-2022	2:00	0.0	WSW
26-May-2022	3:00	0.0	WSW
26-May-2022	4:00	0.0	NNE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
26-May-2022	5:00	0.0	NNE
26-May-2022	6:00	0.0	SSW
26-May-2022	7:00	0.0	W
26-May-2022	8:00	0.0	W
26-May-2022	9:00	0.4	W
26-May-2022	10:00	0.0	---
26-May-2022	11:00	0.0	SSW
26-May-2022	12:00	0.0	---
26-May-2022	13:00	0.0	---
26-May-2022	14:00	0.0	SSW
26-May-2022	15:00	0.0	W
26-May-2022	16:00	0.0	W
26-May-2022	17:00	0.0	WSW
26-May-2022	18:00	0.0	WSW
26-May-2022	19:00	0.0	W
26-May-2022	20:00	0.0	---
26-May-2022	21:00	0.0	NW
26-May-2022	22:00	0.0	NNE
26-May-2022	23:00	0.0	NNE
27-May-2022	0:00	0.0	NNE
27-May-2022	1:00	0.0	NNE
27-May-2022	2:00	0.0	NNE
27-May-2022	3:00	0.0	NNE
27-May-2022	4:00	0.4	NNE
27-May-2022	5:00	0.9	NNE
27-May-2022	6:00	0.9	NNE
27-May-2022	7:00	0.9	NNE
27-May-2022	8:00	0.9	NNE
27-May-2022	9:00	0.9	NNE
27-May-2022	10:00	0.9	NNE
27-May-2022	11:00	0.9	NNE
27-May-2022	12:00	0.0	NNE
27-May-2022	13:00	0.0	N
27-May-2022	14:00	0.0	NNW
27-May-2022	15:00	0.0	NNW
27-May-2022	16:00	0.0	WNW
27-May-2022	17:00	0.0	---
27-May-2022	18:00	0.0	WNW
27-May-2022	19:00	0.0	WNW
27-May-2022	20:00	0.0	NE
27-May-2022	21:00	0.0	NNE
27-May-2022	22:00	0.0	NNE
27-May-2022	23:00	0.0	NNE
28-May-2022	0:00	0.0	NNE
28-May-2022	1:00	0.0	NW
28-May-2022	2:00	0.0	W
28-May-2022	3:00	0.4	NNE
28-May-2022	4:00	1.3	NE
28-May-2022	5:00	0.4	NNE
28-May-2022	6:00	0.9	NE
28-May-2022	7:00	0.4	NNE
28-May-2022	8:00	0.4	NE
28-May-2022	9:00	0.9	NE
28-May-2022	10:00	0.4	NE
28-May-2022	11:00	0.4	NE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
28-May-2022	12:00	0.0	NE
28-May-2022	13:00	0.0	WNW
28-May-2022	14:00	0.0	W
28-May-2022	15:00	0.0	WSW
28-May-2022	16:00	0.0	SW
28-May-2022	17:00	0.0	WSW
28-May-2022	18:00	0.0	---
28-May-2022	19:00	0.0	---
28-May-2022	20:00	0.0	WSW
28-May-2022	21:00	0.0	---
28-May-2022	22:00	0.0	W
28-May-2022	23:00	0.0	W
29-May-2022	0:00	0.0	W
29-May-2022	1:00	0.0	SSW
29-May-2022	2:00	0.0	SSW
29-May-2022	3:00	0.0	NE
29-May-2022	4:00	0.0	---
29-May-2022	5:00	0.0	ESE
29-May-2022	6:00	0.0	SSW
29-May-2022	7:00	0.0	WSW
29-May-2022	8:00	0.4	SW
29-May-2022	9:00	0.4	WSW
29-May-2022	10:00	0.0	WSW
29-May-2022	11:00	0.0	WSW
29-May-2022	12:00	0.0	SW
29-May-2022	13:00	0.0	SW
29-May-2022	14:00	0.0	SW
29-May-2022	15:00	0.0	WSW
29-May-2022	16:00	0.0	---
29-May-2022	17:00	0.0	---
29-May-2022	18:00	0.0	W
29-May-2022	19:00	0.0	W
29-May-2022	20:00	0.0	W
29-May-2022	21:00	0.0	W
29-May-2022	22:00	0.0	---
29-May-2022	23:00	0.0	---
30-May-2022	0:00	0.0	W
30-May-2022	1:00	0.9	W
30-May-2022	2:00	0.0	WSW
30-May-2022	3:00	0.0	SSW
30-May-2022	4:00	0.0	SSW
30-May-2022	5:00	0.9	NE
30-May-2022	6:00	1.8	NE
30-May-2022	7:00	0.4	NE
30-May-2022	8:00	0.4	NE
30-May-2022	9:00	0.0	NNE
30-May-2022	10:00	0.0	NE
30-May-2022	11:00	0.0	NE
30-May-2022	12:00	0.0	N
30-May-2022	13:00	0.0	WNW
30-May-2022	14:00	0.0	---
30-May-2022	15:00	0.0	WNW
30-May-2022	16:00	0.0	W
30-May-2022	17:00	0.4	W
30-May-2022	18:00	0.4	W

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
30-May-2022	19:00	0.0	---
30-May-2022	20:00	0.0	WSW
30-May-2022	21:00	0.0	---
30-May-2022	22:00	0.4	W
30-May-2022	23:00	0.9	W
31-May-2022	0:00	0.0	W
31-May-2022	1:00	0.0	W
31-May-2022	2:00	0.0	WSW
31-May-2022	3:00	0.4	NE
31-May-2022	4:00	0.4	NNE
31-May-2022	5:00	0.9	NE
31-May-2022	6:00	0.9	NNE
31-May-2022	7:00	0.4	NNE
31-May-2022	8:00	0.0	NE
31-May-2022	9:00	0.0	NNE
31-May-2022	10:00	0.0	NNE
31-May-2022	11:00	0.0	NW
31-May-2022	12:00	0.0	NE
31-May-2022	13:00	0.0	NNE
31-May-2022	14:00	0.0	NNE
31-May-2022	15:00	0.0	---
31-May-2022	16:00	0.0	---
31-May-2022	17:00	0.0	N
31-May-2022	18:00	0.0	NW
31-May-2022	19:00	0.0	---
31-May-2022	20:00	0.0	NE
31-May-2022	21:00	0.0	WNW
31-May-2022	22:00	0.0	WNW
31-May-2022	23:00	0.0	---

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
1-Jun-2022	0:00	0.9	SSW
1-Jun-2022	1:00	0.4	SSW
1-Jun-2022	2:00	0.4	SSW
1-Jun-2022	3:00	0.4	SSW
1-Jun-2022	4:00	0.0	WSW
1-Jun-2022	5:00	0.0	SSW
1-Jun-2022	6:00	0.0	SW
1-Jun-2022	7:00	0.0	SW
1-Jun-2022	8:00	0.0	W
1-Jun-2022	9:00	0.4	W
1-Jun-2022	10:00	0.9	W
1-Jun-2022	11:00	0.4	SSW
1-Jun-2022	12:00	0.4	SSW
1-Jun-2022	13:00	0.9	WSW
1-Jun-2022	14:00	0.9	WNW
1-Jun-2022	15:00	0.9	WNW
1-Jun-2022	16:00	0.9	W
1-Jun-2022	17:00	0.4	W
1-Jun-2022	18:00	0.0	SW
1-Jun-2022	19:00	0.0	SW
1-Jun-2022	20:00	0.0	N
1-Jun-2022	21:00	0.0	ENE
1-Jun-2022	22:00	0.0	NW
1-Jun-2022	23:00	0.4	W
2-Jun-2022	0:00	0.0	NNW
2-Jun-2022	1:00	0.0	N
2-Jun-2022	2:00	0.0	SW
2-Jun-2022	3:00	0.0	SW
2-Jun-2022	4:00	0.0	WSW
2-Jun-2022	5:00	0.0	W
2-Jun-2022	6:00	0.4	SW
2-Jun-2022	7:00	0.0	WSW
2-Jun-2022	8:00	0.0	SW
2-Jun-2022	9:00	0.4	SSW
2-Jun-2022	10:00	0.4	WSW
2-Jun-2022	11:00	0.4	WSW
2-Jun-2022	12:00	0.4	WSW
2-Jun-2022	13:00	0.4	NNE
2-Jun-2022	14:00	0.4	NNE
2-Jun-2022	15:00	0.4	NW
2-Jun-2022	16:00	0.0	NNW
2-Jun-2022	17:00	0.0	NW
2-Jun-2022	18:00	0.0	NNE
2-Jun-2022	19:00	0.0	---
2-Jun-2022	20:00	0.0	---
2-Jun-2022	21:00	0.0	WNW
2-Jun-2022	22:00	0.9	W
2-Jun-2022	23:00	0.0	WSW
3-Jun-2022	0:00	0.0	W
3-Jun-2022	1:00	0.4	W
3-Jun-2022	2:00	0.0	W
3-Jun-2022	3:00	0.0	W
3-Jun-2022	4:00	0.0	W
3-Jun-2022	5:00	0.4	W
3-Jun-2022	6:00	0.4	W

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
3-Jun-2022	7:00	0.4	W
3-Jun-2022	8:00	0.0	SSW
3-Jun-2022	9:00	0.0	SSE
3-Jun-2022	10:00	0.0	ENE
3-Jun-2022	11:00	0.0	NE
3-Jun-2022	12:00	0.4	NE
3-Jun-2022	13:00	0.4	NE
3-Jun-2022	14:00	0.4	NE
3-Jun-2022	15:00	0.4	NE
3-Jun-2022	16:00	0.0	NE
3-Jun-2022	17:00	0.4	NE
3-Jun-2022	18:00	0.4	NE
3-Jun-2022	19:00	0.0	NE
3-Jun-2022	20:00	0.0	NE
3-Jun-2022	21:00	0.0	NE
3-Jun-2022	22:00	0.0	NNE
3-Jun-2022	23:00	0.0	NE
4-Jun-2022	0:00	0.0	NNE
4-Jun-2022	1:00	0.0	NNE
4-Jun-2022	2:00	0.0	NNE
4-Jun-2022	3:00	0.0	---
4-Jun-2022	4:00	0.0	---
4-Jun-2022	5:00	0.0	N
4-Jun-2022	6:00	0.0	N
4-Jun-2022	7:00	0.4	W
4-Jun-2022	8:00	0.9	W
4-Jun-2022	9:00	0.4	W
4-Jun-2022	10:00	0.0	W
4-Jun-2022	11:00	0.0	NE
4-Jun-2022	12:00	0.0	NE
4-Jun-2022	13:00	0.4	NE
4-Jun-2022	14:00	0.0	NE
4-Jun-2022	15:00	0.0	ENE
4-Jun-2022	16:00	0.0	SSE
4-Jun-2022	17:00	0.0	NNW
4-Jun-2022	18:00	0.0	SSE
4-Jun-2022	19:00	0.0	SSE
4-Jun-2022	20:00	0.0	SSE
4-Jun-2022	21:00	0.0	S
4-Jun-2022	22:00	0.0	SSE
4-Jun-2022	23:00	0.0	SSE
5-Jun-2022	0:00	0.0	SSE
5-Jun-2022	1:00	0.0	S
5-Jun-2022	2:00	0.0	S
5-Jun-2022	3:00	0.0	S
5-Jun-2022	4:00	0.0	---
5-Jun-2022	5:00	0.0	SSE
5-Jun-2022	6:00	0.0	SE
5-Jun-2022	7:00	0.0	SSE
5-Jun-2022	8:00	0.0	SSE
5-Jun-2022	9:00	0.4	SSE
5-Jun-2022	10:00	0.0	SSE
5-Jun-2022	11:00	0.0	ESE
5-Jun-2022	12:00	0.0	ESE
5-Jun-2022	13:00	0.0	NE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
5-Jun-2022	14:00	0.0	NE
5-Jun-2022	15:00	0.0	NE
5-Jun-2022	16:00	0.4	NE
5-Jun-2022	17:00	0.0	NE
5-Jun-2022	18:00	0.0	NE
5-Jun-2022	19:00	0.0	NNE
5-Jun-2022	20:00	0.0	NNE
5-Jun-2022	21:00	0.0	NNE
5-Jun-2022	22:00	0.0	---
5-Jun-2022	23:00	0.0	---
6-Jun-2022	0:00	0.0	---
6-Jun-2022	1:00	0.0	---
6-Jun-2022	2:00	0.0	---
6-Jun-2022	3:00	0.0	NNE
6-Jun-2022	4:00	0.0	---
6-Jun-2022	5:00	0.0	---
6-Jun-2022	6:00	0.0	---
6-Jun-2022	7:00	0.0	---
6-Jun-2022	8:00	0.0	---
6-Jun-2022	9:00	0.0	---
6-Jun-2022	10:00	0.0	SE
6-Jun-2022	11:00	0.0	SSW
6-Jun-2022	12:00	0.0	ENE
6-Jun-2022	13:00	0.0	ENE
6-Jun-2022	14:00	0.0	SSW
6-Jun-2022	15:00	0.0	NE
6-Jun-2022	16:00	0.4	NE
6-Jun-2022	17:00	0.4	W
6-Jun-2022	18:00	0.4	W
6-Jun-2022	19:00	0.9	SSW
6-Jun-2022	20:00	0.4	SW
6-Jun-2022	21:00	0.9	SSW
6-Jun-2022	22:00	1.3	SSW
6-Jun-2022	23:00	1.3	WSW
7-Jun-2022	0:00	1.3	SSW
7-Jun-2022	1:00	0.4	SSW
7-Jun-2022	2:00	0.9	SSW
7-Jun-2022	3:00	0.9	SSW
7-Jun-2022	4:00	0.4	SSW
7-Jun-2022	5:00	0.9	SSW
7-Jun-2022	6:00	0.9	SSW
7-Jun-2022	7:00	0.9	WSW
7-Jun-2022	8:00	0.4	WSW
7-Jun-2022	9:00	0.9	SSW
7-Jun-2022	10:00	1.3	SSW
7-Jun-2022	11:00	0.9	SSW
7-Jun-2022	12:00	1.3	SSW
7-Jun-2022	13:00	1.3	SW
7-Jun-2022	14:00	1.3	SSW
7-Jun-2022	15:00	1.3	SW
7-Jun-2022	16:00	1.3	SW
7-Jun-2022	17:00	1.3	WSW
7-Jun-2022	18:00	0.9	SSW
7-Jun-2022	19:00	1.3	SSW
7-Jun-2022	20:00	1.3	SW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
7-Jun-2022	21:00	0.4	SSW
7-Jun-2022	22:00	1.3	SSW
7-Jun-2022	23:00	1.3	SSW
8-Jun-2022	0:00	0.9	SSW
8-Jun-2022	1:00	0.4	SSW
8-Jun-2022	2:00	0.4	SSW
8-Jun-2022	3:00	0.4	SSW
8-Jun-2022	4:00	0.9	SSW
8-Jun-2022	5:00	0.9	WSW
8-Jun-2022	6:00	0.4	WSW
8-Jun-2022	7:00	0.4	WSW
8-Jun-2022	8:00	0.0	SSW
8-Jun-2022	9:00	0.4	SSW
8-Jun-2022	10:00	0.9	SSW
8-Jun-2022	11:00	0.9	SSW
8-Jun-2022	12:00	0.9	SSW
8-Jun-2022	13:00	0.4	SSW
8-Jun-2022	14:00	0.9	SSW
8-Jun-2022	15:00	0.4	W
8-Jun-2022	16:00	0.0	NNE
8-Jun-2022	17:00	0.4	W
8-Jun-2022	18:00	0.9	WNW
8-Jun-2022	19:00	0.9	SSW
8-Jun-2022	20:00	1.3	SSW
8-Jun-2022	21:00	0.9	SSW
8-Jun-2022	22:00	0.4	SSW
8-Jun-2022	23:00	0.4	SSW
9-Jun-2022	0:00	0.4	SSW
9-Jun-2022	1:00	0.4	SW
9-Jun-2022	2:00	0.9	SSW
9-Jun-2022	3:00	0.4	SSW
9-Jun-2022	4:00	0.4	SSW
9-Jun-2022	5:00	0.4	SSW
9-Jun-2022	6:00	0.9	WSW
9-Jun-2022	7:00	0.9	WSW
9-Jun-2022	8:00	0.9	SSW
9-Jun-2022	9:00	1.3	SSW
9-Jun-2022	10:00	0.4	SW
9-Jun-2022	11:00	0.9	WSW
9-Jun-2022	12:00	1.3	SW
9-Jun-2022	13:00	0.4	WSW
9-Jun-2022	14:00	0.4	W
9-Jun-2022	15:00	0.4	WNW
9-Jun-2022	16:00	0.4	WSW
9-Jun-2022	17:00	0.9	WSW
9-Jun-2022	18:00	1.3	SSW
9-Jun-2022	19:00	0.4	SSW
9-Jun-2022	20:00	1.3	SSW
9-Jun-2022	21:00	0.9	SSW
9-Jun-2022	22:00	0.4	SSW
9-Jun-2022	23:00	0.9	SSW
10-Jun-2022	0:00	0.4	SSW
10-Jun-2022	1:00	0.4	SSW
10-Jun-2022	2:00	0.4	SSW
10-Jun-2022	3:00	0.0	SSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
10-Jun-2022	4:00	0.4	SSW
10-Jun-2022	5:00	0.0	WSW
10-Jun-2022	6:00	0.4	WSW
10-Jun-2022	7:00	0.4	SSW
10-Jun-2022	8:00	1.3	SSW
10-Jun-2022	9:00	1.3	SSW
10-Jun-2022	10:00	1.3	SSW
10-Jun-2022	11:00	1.3	SSW
10-Jun-2022	12:00	1.3	SSW
10-Jun-2022	13:00	1.8	SW
10-Jun-2022	14:00	1.8	SSW
10-Jun-2022	15:00	1.3	SW
10-Jun-2022	16:00	1.8	SSW
10-Jun-2022	17:00	1.8	SSW
10-Jun-2022	18:00	1.3	SSW
10-Jun-2022	19:00	1.3	SSW
10-Jun-2022	20:00	0.9	SW
10-Jun-2022	21:00	1.3	SSW
10-Jun-2022	22:00	1.3	SW
10-Jun-2022	23:00	0.9	WSW
11-Jun-2022	0:00	0.9	SSW
11-Jun-2022	1:00	1.3	SW
11-Jun-2022	2:00	1.3	SSW
11-Jun-2022	3:00	1.3	SSW
11-Jun-2022	4:00	1.3	SSW
11-Jun-2022	5:00	1.3	WSW
11-Jun-2022	6:00	1.3	SW
11-Jun-2022	7:00	1.3	WSW
11-Jun-2022	8:00	0.9	WSW
11-Jun-2022	9:00	1.3	SW
11-Jun-2022	10:00	1.3	SSW
11-Jun-2022	11:00	1.8	SSW
11-Jun-2022	12:00	1.8	SSW
11-Jun-2022	13:00	1.3	SSW
11-Jun-2022	14:00	2.2	SSW
11-Jun-2022	15:00	2.2	SW
11-Jun-2022	16:00	2.7	SSW
11-Jun-2022	17:00	2.2	SSW
11-Jun-2022	18:00	2.2	SSW
11-Jun-2022	19:00	2.2	SSW
11-Jun-2022	20:00	1.8	SSW
11-Jun-2022	21:00	1.8	SSW
11-Jun-2022	22:00	1.8	SW
11-Jun-2022	23:00	1.8	SW
12-Jun-2022	0:00	1.8	SSW
12-Jun-2022	1:00	2.2	SSW
12-Jun-2022	2:00	2.2	SSW
12-Jun-2022	3:00	2.2	SSW
12-Jun-2022	4:00	1.8	SSW
12-Jun-2022	5:00	1.3	SW
12-Jun-2022	6:00	0.9	SSW
12-Jun-2022	7:00	1.3	SSW
12-Jun-2022	8:00	1.3	SSW
12-Jun-2022	9:00	0.9	SSW
12-Jun-2022	10:00	0.9	SW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
12-Jun-2022	11:00	1.3	W
12-Jun-2022	12:00	0.9	SSW
12-Jun-2022	13:00	0.9	SSW
12-Jun-2022	14:00	0.9	WSW
12-Jun-2022	15:00	0.9	W
12-Jun-2022	16:00	0.9	SSW
12-Jun-2022	17:00	0.4	SSW
12-Jun-2022	18:00	0.4	WNW
12-Jun-2022	19:00	0.4	WNW
12-Jun-2022	20:00	0.0	WSW
12-Jun-2022	21:00	0.0	WSW
12-Jun-2022	22:00	0.0	WNW
12-Jun-2022	23:00	0.0	SSW
13-Jun-2022	0:00	0.0	---
13-Jun-2022	1:00	0.0	---
13-Jun-2022	2:00	0.0	WSW
13-Jun-2022	3:00	0.0	WSW
13-Jun-2022	4:00	0.4	SW
13-Jun-2022	5:00	0.0	SSW
13-Jun-2022	6:00	0.0	WSW
13-Jun-2022	7:00	0.0	SW
13-Jun-2022	8:00	0.0	WSW
13-Jun-2022	9:00	0.4	SSW
13-Jun-2022	10:00	0.4	SSW
13-Jun-2022	11:00	0.4	W
13-Jun-2022	12:00	0.9	W
13-Jun-2022	13:00	0.9	WNW
13-Jun-2022	14:00	0.9	WSW
13-Jun-2022	15:00	0.9	W
13-Jun-2022	16:00	1.3	WNW
13-Jun-2022	17:00	0.4	WSW
13-Jun-2022	18:00	0.0	WNW
13-Jun-2022	19:00	0.0	W
13-Jun-2022	20:00	0.0	WSW
13-Jun-2022	21:00	0.0	SW
13-Jun-2022	22:00	0.0	SSW
13-Jun-2022	23:00	0.4	WSW
14-Jun-2022	0:00	0.0	W
14-Jun-2022	1:00	0.0	SW
14-Jun-2022	2:00	0.0	W
14-Jun-2022	3:00	0.0	WSW
14-Jun-2022	4:00	0.0	SW
14-Jun-2022	5:00	0.0	---
14-Jun-2022	6:00	0.0	SW
14-Jun-2022	7:00	0.0	N
14-Jun-2022	8:00	0.0	W
14-Jun-2022	9:00	0.0	NE
14-Jun-2022	10:00	0.0	NE
14-Jun-2022	11:00	0.4	NE
14-Jun-2022	12:00	0.4	NE
14-Jun-2022	13:00	0.0	NE
14-Jun-2022	14:00	0.4	NE
14-Jun-2022	15:00	0.4	NE
14-Jun-2022	16:00	0.4	WNW
14-Jun-2022	17:00	0.0	NE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
14-Jun-2022	18:00	0.0	NNE
14-Jun-2022	19:00	0.0	NE
14-Jun-2022	20:00	0.0	NNE
14-Jun-2022	21:00	0.0	NNE
14-Jun-2022	22:00	0.0	WNW
14-Jun-2022	23:00	0.0	W
15-Jun-2022	0:00	0.0	---
15-Jun-2022	1:00	0.0	---
15-Jun-2022	2:00	0.0	NNE
15-Jun-2022	3:00	0.0	NE
15-Jun-2022	4:00	0.0	---
15-Jun-2022	5:00	0.0	NNE
15-Jun-2022	6:00	1.3	W
15-Jun-2022	7:00	0.0	W
15-Jun-2022	8:00	0.0	W
15-Jun-2022	9:00	0.0	WNW
15-Jun-2022	10:00	0.0	WNW
15-Jun-2022	11:00	0.4	NE
15-Jun-2022	12:00	0.0	NE
15-Jun-2022	13:00	0.0	WNW
15-Jun-2022	14:00	0.0	NE
15-Jun-2022	15:00	0.0	NE
15-Jun-2022	16:00	0.0	NE
15-Jun-2022	17:00	0.9	NE
15-Jun-2022	18:00	0.9	NE
15-Jun-2022	19:00	0.0	NE
15-Jun-2022	20:00	0.0	NE
15-Jun-2022	21:00	0.0	NNW
15-Jun-2022	22:00	0.0	NNE
15-Jun-2022	23:00	0.0	ENE
16-Jun-2022	0:00	0.0	ENE
16-Jun-2022	1:00	0.0	N
16-Jun-2022	2:00	0.0	NNE
16-Jun-2022	3:00	0.0	NE
16-Jun-2022	4:00	0.0	NNE
16-Jun-2022	5:00	0.0	---
16-Jun-2022	6:00	0.0	---
16-Jun-2022	7:00	0.0	WNW
16-Jun-2022	8:00	0.0	NE
16-Jun-2022	9:00	0.0	NE
16-Jun-2022	10:00	0.4	NE
16-Jun-2022	11:00	0.4	NE
16-Jun-2022	12:00	0.4	NE
16-Jun-2022	13:00	0.4	NE
16-Jun-2022	14:00	0.4	NE
16-Jun-2022	15:00	0.4	NE
16-Jun-2022	16:00	0.4	NNE
16-Jun-2022	17:00	0.0	NE
16-Jun-2022	18:00	0.0	NW
16-Jun-2022	19:00	0.0	NW
16-Jun-2022	20:00	0.0	NW
16-Jun-2022	21:00	0.0	NW
16-Jun-2022	22:00	0.0	NNE
16-Jun-2022	23:00	0.0	NNE
17-Jun-2022	0:00	0.0	NNE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
17-Jun-2022	1:00	0.0	WNW
17-Jun-2022	2:00	0.0	NNE
17-Jun-2022	3:00	0.0	NNE
17-Jun-2022	4:00	0.0	N
17-Jun-2022	5:00	0.0	---
17-Jun-2022	6:00	0.0	N
17-Jun-2022	7:00	0.0	---
17-Jun-2022	8:00	0.0	---
17-Jun-2022	9:00	0.0	---
17-Jun-2022	10:00	0.0	NE
17-Jun-2022	11:00	0.0	NE
17-Jun-2022	12:00	0.0	NE
17-Jun-2022	13:00	0.0	NE
17-Jun-2022	14:00	0.0	NE
17-Jun-2022	15:00	0.4	NE
17-Jun-2022	16:00	0.4	NW
17-Jun-2022	17:00	0.4	NE
17-Jun-2022	18:00	0.4	NE
17-Jun-2022	19:00	0.0	NNE
17-Jun-2022	20:00	0.0	NNE
17-Jun-2022	21:00	0.0	NNE
17-Jun-2022	22:00	0.0	NNE
17-Jun-2022	23:00	0.0	WNW
18-Jun-2022	0:00	0.0	---
18-Jun-2022	1:00	0.0	---
18-Jun-2022	2:00	0.0	---
18-Jun-2022	3:00	0.0	NE
18-Jun-2022	4:00	0.0	NE
18-Jun-2022	5:00	0.0	NE
18-Jun-2022	6:00	0.0	N
18-Jun-2022	7:00	0.0	NE
18-Jun-2022	8:00	0.0	NE
18-Jun-2022	9:00	0.0	NE
18-Jun-2022	10:00	0.4	NE
18-Jun-2022	11:00	0.4	NE
18-Jun-2022	12:00	0.4	NE
18-Jun-2022	13:00	0.0	NE
18-Jun-2022	14:00	0.4	NE
18-Jun-2022	15:00	0.4	NE
18-Jun-2022	16:00	0.4	NE
18-Jun-2022	17:00	0.0	NE
18-Jun-2022	18:00	0.4	NE
18-Jun-2022	19:00	0.0	NE
18-Jun-2022	20:00	0.0	NNE
18-Jun-2022	21:00	0.0	N
18-Jun-2022	22:00	0.0	NNE
18-Jun-2022	23:00	0.0	NE
19-Jun-2022	0:00	0.0	NE
19-Jun-2022	1:00	0.0	NE
19-Jun-2022	2:00	0.0	NNE
19-Jun-2022	3:00	0.0	---
19-Jun-2022	4:00	0.0	---
19-Jun-2022	5:00	0.0	NNE
19-Jun-2022	6:00	0.0	NNE
19-Jun-2022	7:00	0.0	NE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
19-Jun-2022	8:00	0.0	NE
19-Jun-2022	9:00	0.0	NE
19-Jun-2022	10:00	0.0	NE
19-Jun-2022	11:00	0.4	NE
19-Jun-2022	12:00	0.0	NE
19-Jun-2022	13:00	0.4	NE
19-Jun-2022	14:00	0.4	NE
19-Jun-2022	15:00	0.4	NE
19-Jun-2022	16:00	0.4	NNE
19-Jun-2022	17:00	0.0	NE
19-Jun-2022	18:00	0.0	NE
19-Jun-2022	19:00	0.0	NNE
19-Jun-2022	20:00	0.0	NE
19-Jun-2022	21:00	0.0	NNE
19-Jun-2022	22:00	0.0	NNE
19-Jun-2022	23:00	0.0	NNE
20-Jun-2022	0:00	0.0	N
20-Jun-2022	1:00	0.0	NNE
20-Jun-2022	2:00	0.0	NNE
20-Jun-2022	3:00	0.0	NE
20-Jun-2022	4:00	0.0	NE
20-Jun-2022	5:00	0.0	NE
20-Jun-2022	6:00	0.0	NE
20-Jun-2022	7:00	0.0	---
20-Jun-2022	8:00	0.0	NE
20-Jun-2022	9:00	0.0	NE
20-Jun-2022	10:00	0.0	ENE
20-Jun-2022	11:00	0.0	NE
20-Jun-2022	12:00	0.0	NE
20-Jun-2022	13:00	0.0	NE
20-Jun-2022	14:00	0.0	NE
20-Jun-2022	15:00	0.0	NE
20-Jun-2022	16:00	0.4	NE
20-Jun-2022	17:00	0.0	NE
20-Jun-2022	18:00	0.0	NE
20-Jun-2022	19:00	0.0	NE
20-Jun-2022	20:00	0.0	NNE
20-Jun-2022	21:00	0.0	NE
20-Jun-2022	22:00	0.0	NE
20-Jun-2022	23:00	0.0	NE
21-Jun-2022	0:00	0.0	NNE
21-Jun-2022	1:00	0.0	NNE
21-Jun-2022	2:00	0.0	---
21-Jun-2022	3:00	0.0	---
21-Jun-2022	4:00	0.0	---
21-Jun-2022	5:00	0.0	---
21-Jun-2022	6:00	0.0	---
21-Jun-2022	7:00	0.0	NNE
21-Jun-2022	8:00	0.0	NE
21-Jun-2022	9:00	0.0	NE
21-Jun-2022	10:00	0.0	NE
21-Jun-2022	11:00	0.4	NE
21-Jun-2022	12:00	0.4	NE
21-Jun-2022	13:00	0.4	NE
21-Jun-2022	14:00	0.9	NE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
21-Jun-2022	15:00	0.9	NE
21-Jun-2022	16:00	0.0	NNE
21-Jun-2022	17:00	0.0	---
21-Jun-2022	18:00	0.0	---
21-Jun-2022	19:00	0.0	---
21-Jun-2022	20:00	0.0	---
21-Jun-2022	21:00	0.0	---
21-Jun-2022	22:00	0.0	---
21-Jun-2022	23:00	0.0	---
22-Jun-2022	0:00	0.0	NNE
22-Jun-2022	1:00	0.0	---
22-Jun-2022	2:00	0.0	---
22-Jun-2022	3:00	0.0	---
22-Jun-2022	4:00	0.0	W
22-Jun-2022	5:00	0.0	---
22-Jun-2022	6:00	0.0	NW
22-Jun-2022	7:00	0.0	WNW
22-Jun-2022	8:00	0.0	ENE
22-Jun-2022	9:00	0.0	NNE
22-Jun-2022	10:00	0.0	---
22-Jun-2022	11:00	0.4	W
22-Jun-2022	12:00	0.0	WNW
22-Jun-2022	13:00	0.0	SW
22-Jun-2022	14:00	0.0	---
22-Jun-2022	15:00	0.0	---
22-Jun-2022	16:00	0.0	---
22-Jun-2022	17:00	0.0	---
22-Jun-2022	18:00	0.0	---
22-Jun-2022	19:00	0.0	---
22-Jun-2022	20:00	0.9	W
22-Jun-2022	21:00	0.4	NE
22-Jun-2022	22:00	0.0	N
22-Jun-2022	23:00	0.0	---
23-Jun-2022	0:00	0.0	---
23-Jun-2022	1:00	0.0	---
23-Jun-2022	2:00	0.0	---
23-Jun-2022	3:00	0.0	---
23-Jun-2022	4:00	0.0	---
23-Jun-2022	5:00	0.0	---
23-Jun-2022	6:00	0.0	---
23-Jun-2022	7:00	0.0	---
23-Jun-2022	8:00	0.0	---
23-Jun-2022	9:00	0.0	---
23-Jun-2022	10:00	0.0	NE
23-Jun-2022	11:00	0.0	---
23-Jun-2022	12:00	0.0	SSW
23-Jun-2022	13:00	0.0	WSW
23-Jun-2022	14:00	0.0	NE
23-Jun-2022	15:00	0.0	NNE
23-Jun-2022	16:00	0.0	NE
23-Jun-2022	17:00	0.0	NE
23-Jun-2022	18:00	0.0	NE
23-Jun-2022	19:00	0.0	ENE
23-Jun-2022	20:00	0.0	WSW
23-Jun-2022	21:00	0.0	WSW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
23-Jun-2022	22:00	0.4	W
23-Jun-2022	23:00	0.0	---
24-Jun-2022	0:00	0.0	---
24-Jun-2022	1:00	0.0	W
24-Jun-2022	2:00	0.0	W
24-Jun-2022	3:00	0.0	W
24-Jun-2022	4:00	0.4	W
24-Jun-2022	5:00	0.0	WSW
24-Jun-2022	6:00	0.0	WSW
24-Jun-2022	7:00	0.4	SSW
24-Jun-2022	8:00	0.0	SSW
24-Jun-2022	9:00	0.4	W
24-Jun-2022	10:00	0.4	SW
24-Jun-2022	11:00	0.9	SSW
24-Jun-2022	12:00	0.4	SSW
24-Jun-2022	13:00	0.4	W
24-Jun-2022	14:00	0.0	SW
24-Jun-2022	15:00	0.4	SSW
24-Jun-2022	16:00	0.0	W
24-Jun-2022	17:00	0.0	---
24-Jun-2022	18:00	0.0	WNW
24-Jun-2022	19:00	0.4	W
24-Jun-2022	20:00	0.0	WSW
24-Jun-2022	21:00	0.0	W
24-Jun-2022	22:00	0.0	W
24-Jun-2022	23:00	0.0	WSW
25-Jun-2022	0:00	0.0	SSW
25-Jun-2022	1:00	0.0	WNW
25-Jun-2022	2:00	0.4	W
25-Jun-2022	3:00	0.0	W
25-Jun-2022	4:00	0.4	W
25-Jun-2022	5:00	0.0	SSW
25-Jun-2022	6:00	0.0	WSW
25-Jun-2022	7:00	0.4	WSW
25-Jun-2022	8:00	0.0	SSW
25-Jun-2022	9:00	0.4	SW
25-Jun-2022	10:00	0.0	WSW
25-Jun-2022	11:00	0.0	NNE
25-Jun-2022	12:00	0.0	---
25-Jun-2022	13:00	0.0	---
25-Jun-2022	14:00	0.0	E
25-Jun-2022	15:00	0.0	N
25-Jun-2022	16:00	0.0	W
25-Jun-2022	17:00	0.0	NE
25-Jun-2022	18:00	0.0	NW
25-Jun-2022	19:00	0.0	NNW
25-Jun-2022	20:00	0.0	---
25-Jun-2022	21:00	0.0	---
25-Jun-2022	22:00	0.0	---
25-Jun-2022	23:00	0.9	W
26-Jun-2022	0:00	0.0	W
26-Jun-2022	1:00	0.4	W
26-Jun-2022	2:00	0.9	W
26-Jun-2022	3:00	0.9	W
26-Jun-2022	4:00	0.4	W

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
26-Jun-2022	5:00	0.0	W
26-Jun-2022	6:00	0.0	WSW
26-Jun-2022	7:00	0.0	NNE
26-Jun-2022	8:00	0.0	NW
26-Jun-2022	9:00	0.0	WSW
26-Jun-2022	10:00	0.0	WSW
26-Jun-2022	11:00	0.0	SSW
26-Jun-2022	12:00	0.0	SSW
26-Jun-2022	13:00	0.0	NE
26-Jun-2022	14:00	0.9	W
26-Jun-2022	15:00	0.4	W
26-Jun-2022	16:00	0.0	WNW
26-Jun-2022	17:00	0.0	WNW
26-Jun-2022	18:00	0.0	NNE
26-Jun-2022	19:00	0.0	ENE
26-Jun-2022	20:00	0.0	W
26-Jun-2022	21:00	0.4	W
26-Jun-2022	22:00	0.0	W
26-Jun-2022	23:00	0.0	W
27-Jun-2022	0:00	0.0	WNW
27-Jun-2022	1:00	0.0	W
27-Jun-2022	2:00	0.0	---
27-Jun-2022	3:00	0.0	---
27-Jun-2022	4:00	0.0	---
27-Jun-2022	5:00	0.0	---
27-Jun-2022	6:00	0.0	---
27-Jun-2022	7:00	0.0	ENE
27-Jun-2022	8:00	0.0	NE
27-Jun-2022	9:00	0.0	NE
27-Jun-2022	10:00	0.4	NE
27-Jun-2022	11:00	0.4	NE
27-Jun-2022	12:00	0.9	NE
27-Jun-2022	13:00	0.9	NE
27-Jun-2022	14:00	0.0	---
27-Jun-2022	15:00	0.0	---
27-Jun-2022	16:00	0.0	---
27-Jun-2022	17:00	0.0	NW
27-Jun-2022	18:00	0.0	N
27-Jun-2022	19:00	0.0	NNW
27-Jun-2022	20:00	0.0	---
27-Jun-2022	21:00	0.0	NNE
27-Jun-2022	22:00	0.0	NW
27-Jun-2022	23:00	0.0	N
28-Jun-2022	0:00	0.0	NE
28-Jun-2022	1:00	0.0	N
28-Jun-2022	2:00	0.0	NE
28-Jun-2022	3:00	0.0	NNW
28-Jun-2022	4:00	0.0	N
28-Jun-2022	5:00	0.0	NE
28-Jun-2022	6:00	0.0	NE
28-Jun-2022	7:00	0.0	NE
28-Jun-2022	8:00	0.0	W
28-Jun-2022	9:00	0.0	---
28-Jun-2022	10:00	0.0	NE
28-Jun-2022	11:00	0.4	WNW

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
28-Jun-2022	12:00	0.9	W
28-Jun-2022	13:00	0.0	---
28-Jun-2022	14:00	0.0	S
28-Jun-2022	15:00	0.0	NE
28-Jun-2022	16:00	0.0	NE
28-Jun-2022	17:00	0.0	WNW
28-Jun-2022	18:00	0.0	NNE
28-Jun-2022	19:00	0.0	NE
28-Jun-2022	20:00	0.0	W
28-Jun-2022	21:00	0.0	NE
28-Jun-2022	22:00	0.0	NNE
28-Jun-2022	23:00	0.0	N
29-Jun-2022	0:00	0.0	N
29-Jun-2022	1:00	0.0	NE
29-Jun-2022	2:00	0.0	WNW
29-Jun-2022	3:00	0.0	NNE
29-Jun-2022	4:00	0.0	N
29-Jun-2022	5:00	0.0	NE
29-Jun-2022	6:00	0.0	NE
29-Jun-2022	7:00	0.0	---
29-Jun-2022	8:00	0.0	NE
29-Jun-2022	9:00	0.0	ENE
29-Jun-2022	10:00	0.0	ENE
29-Jun-2022	11:00	0.0	NE
29-Jun-2022	12:00	0.0	NE
29-Jun-2022	13:00	0.4	ENE
29-Jun-2022	14:00	0.0	NE
29-Jun-2022	15:00	0.0	NE
29-Jun-2022	16:00	0.0	NNE
29-Jun-2022	17:00	0.0	NE
29-Jun-2022	18:00	0.0	NNE
29-Jun-2022	19:00	0.0	WNW
29-Jun-2022	20:00	0.0	---
29-Jun-2022	21:00	0.0	NE
29-Jun-2022	22:00	0.0	NNE
29-Jun-2022	23:00	0.0	---
30-Jun-2022	0:00	0.0	NNE
30-Jun-2022	1:00	0.0	NW
30-Jun-2022	2:00	0.0	NE
30-Jun-2022	3:00	0.0	N
30-Jun-2022	4:00	0.0	NNE
30-Jun-2022	5:00	0.0	---
30-Jun-2022	6:00	0.0	NNE
30-Jun-2022	7:00	0.0	NE
30-Jun-2022	8:00	0.0	NE
30-Jun-2022	9:00	0.0	NE
30-Jun-2022	10:00	0.4	NE
30-Jun-2022	11:00	0.4	NE
30-Jun-2022	12:00	0.4	NE
30-Jun-2022	13:00	0.4	NE
30-Jun-2022	14:00	0.4	NW
30-Jun-2022	15:00	0.4	NW
30-Jun-2022	16:00	0.4	WNW
30-Jun-2022	17:00	0.4	NNE
30-Jun-2022	18:00	0.0	NE

Appendix G - Wind Data

Date	Time	Wind Speed m/s	Direction
30-Jun-2022	19:00	0.0	NE
30-Jun-2022	20:00	0.0	NNE
30-Jun-2022	21:00	0.0	NE
30-Jun-2022	22:00	0.0	N
30-Jun-2022	23:00	0.0	NE

APPENDIX H
EVENT ACTION PLANS

Appendix H Event / Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC,ER and Contractor; 3. Repeat measurement to confirm finding; and 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; and 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Notify Contractor.	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Rectify any unacceptable practice and implement remedial measures; and 3. Amend working methods agreed with ER if appropriate.
2. Exceedance for two or more consecutive samples	Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC,ER and Contractor; 3. Advise the ER and Contractor on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC, ER and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET and ER on the effectiveness of the proposed remedial measures; and 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; and 3. Supervise and ensure remedial measures properly implemented.	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal if appropriate.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1.Exceedance for one sample	Identify source, investigate the causes of exceedanceand propose remedial measures; 2. Inform ER, Contractor, IEC and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Advise the ER and ET on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; and 3. Supervise and ensure remedial measures properly implemented.	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification; 4. Implement the agreed proposals; and 5. Amend proposal if appropriate.
2.Exceedance for two or more consecutive samples	Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC, Contractor and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and 5. Supervise the implementation	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise and ensure remedial measures properly implemented; and 5. If exceedance continues,	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification; 4. Implement the agreed proposals; 5. Resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	8. If exceedance stops, cease additional monitoring.	of remedial measures.	consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	determined by the ER until the exceedance is abated.

Event / Action Plan for Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level	Notify IEC, ER and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals.
Limit Level	. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Water Quality

	Action			
Event	**ET**	**IEC**	**ER**	**Contractor**
Action level being exceeded by one sampling day	. Inform IEC, Contractor and ER; 2. Check monitoring data, all plant, equipment and Contractor's working methods; and 3. Discuss remedial measures with IEC and Contractor and ER.	1. Discuss with ET, ER and Contractor on the implemented mitigation measures; 2. Review proposals on remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the implemented mitigation measures; 2. Make agreement on the remedial measures to be implemented; 3. Supervise the implementation of agreed remedial measures.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4.Check all plant and equipment; 5. Consider changes of working methods; 6. Discuss with ER, ET and IEC and purpose remedial measures to IEC and ER; and 7. Implement the agreed mitigation measures.
Action level being exceeded by two or more consecutive sampling days	Repeat in-situ measurement on next day of exceedance to confirm findings; 2. Inform IEC, contractor and ER; 3. Check monitoring data, all plant, equipment and Contractor's working methods; 4. Discuss remedial measures with IEC, contractor and ER 5. Ensure remedial measures are implemented	1. Discuss with ET, Contractor and ER on the implemented mitigation measures; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with ET, IEC and Contractor on the proposed mitigation measures; 2. Make agreement on the remedial measures to be implemented ; and 3. Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of remedial measures to ER and IEC within 3 working days of notification; and 6. Implement the agreed mitigation measures.
Limit level being exceeded by one sampling day	Repeat measurement on next day of exceedance to confirm findings; 2. Inform IEC, contractor and ER;	1. Discuss with ET, Contractor and ER on the implemented mitigation measures;	1. Discuss with ET, IEC and Contractor on the implemented remedial measures;	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing;

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

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

Each step of actions required shall be implemented within 1 working day unless otherwise specified or agreed with EPD.

APPENDIX I
SUMMARY OF EXCEEDANCE

Appendix I: Exceedance Report

Reporting Quarter: April to June 2022

(A) Exceedance Report for Air Quality

Environmental Monitoring	Parameter	No. of non-project related Exceedance		No. of Exceedance related to the Construction Activities of the Project	
		Action Level	Limit Level	Action Level	Limit Level
Air Quality	1-hr TSP	0	0	0	0
	24-hr TSP	0	0	0	0

(B) Exceedance Report for Construction Noise

Environmental Monitoring	Parameter	No. of non-project related Exceedance		No. of Exceedance related to the Construction Activities of the Project	
		Action Level	Limit Level	Action Level	Limit Level
Noise	L_{eq}(30 min.) dB(A)	0	0	0	0

(C) Exceedance Report for Water Quality

Environmental Monitoring	Parameter	No. of non-project related Exceedance		No. of Exceedance related to the Construction Activities of the Project	
		Action Level	Limit Level	Action Level	Limit Level
Water Quality	Dissolved Oxygen (DO)	0	0	0	0
	Turbidity	0	0	0	0
	Suspended Solids (SS)	0	0	0	0

APPENDIX J
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
Construction Dust Impact							
S3.8	D1-DP 1/DP2/ DP3	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.6 L/m2 to achieve the respective dust removal efficiencies	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	*
S3.8	D2-DP 1/DP2/ DP3	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation • All vehicles shall be shut down in intermittent use • Only well-maintained plant should be operated on-site to avoid emission of dark smoke • Valid No-Road Mobile Machinery (NRMM) labels should be provided to regulated machines	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	^ ^ *
S3.8	D2-DP 1/DP2/ DP3	• Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction Phase • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty material do not leak from	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	* * ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period. • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by					* ^ ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					N/A N/A ^
S3.8	D4-DP1/DP2/DP3	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	^
Construction Noise Impact							
S4.8	N-CP1-DP1/DP2/DP3	Implement the following good site management practices: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction	Control construction airborne noise	Contractor	All construction sites	Construction stage	^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		equipment should be properly fitted and maintained during the construction works; • Mobile plant should be sited as far away from NSRs as possible and practicable; • Material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.					^ ^
S4.8	N-CP2-DP1/DP2/DP3	Install temporary site hoarding (approx 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	^
S4.8	N-CP3-DP1/DP2/DP3	Install movable noise barriers and full enclosure, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	*
S4.8	N-CP4-DP1/DP2/DP3	Use of “Quiet” Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction phase	^
S4.8	N-CP5-DP1/DP2/DP3	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction phase	^
S4.8	N-CP6-DP2	Setting the concrete lorry mixer at around 25m away from the existing NSRs along Ha Wan Tsuen Road and Lok Ma Chau Road	Reduce the noise levels from concrete lorry mixer	Contractor	Sections with NSRs along Ha Wan Tsuen Road and Lok	Construction phase	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
					Ma Chau Road		
S4.8	N-CP8-DP2	Provide temporary noise barrier during construction phase.	Control airborne noise from construction access road traffic	Contractor	Refer to Figure 4-8 of the EIA report	Construction phase	^
S4.8	N-CP7-DP2/N-CP6-DP1/N-CP6-DP3	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction phase	^
Water Quality Impact (Construction Phase)							
S5.7	W1-CP-DP1/DP2/DP3	Construction Runoff and Site Drainage In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, should include the following: • Update and implementation of Stormwater Pollution Control Plan • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.	Minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction phase	* *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipments in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed					* * * ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • All open stockpiles of construction materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.					* * * * *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheelwash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any					* ^ * ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		sewage or wastewater into the meander, wetlands and fish ponds.					
S5.7	W3-CP-DP1/DP2/DP3	*Groundwater from Contaminated Area* • No mitigation measure is required for groundwater treatment in LMC Loop. • Additional investigation is required to identify if contaminated groundwater is found. • If the investigation results indicated that the groundwater to be generated from construction works would be contaminated, the contaminated groundwater should be either discharged into recharged wells, or properly treated in compliance with the requirements of Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters. • If recharged well method were used, the groundwater quality in the recharged well should not be affected by recharging operation, i.e. the pollution levels of the recharged groundwater should not be higher than that in the recharging wells. • If treatment and discharge method were used, the design of wastewater treatment facilities, such as active carbon and petrol interceptor, should be submitted to the EPD and a discharge license should be obtained under the WPCO through the Regional Offices of EPD.	Minimize groundwater quality impact from contaminated area	Contractor	Areas where contamination is found.	Construction phase	N/A N/A N/A N/A N/A
S5.7	W3-CP-DP1/DP2/DP3	*Sewage from Workforce* • Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate	Minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		portable toilets to cater 0.15m3/day/employed populations and be responsible for appropriate disposal and maintenance. • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					^ ^
S5.7	W4-CP -DP1	*Riverbanks Formation* • In order to prevent sediment transport during riverbank works, deployment of silt curtain should be implemented, especially when construction works encroach or occur in close distance to water body. It is recommended to carry out all the riverbank works within a cofferdam or diaphragm wall. • Water quality of the Shenzhen River and the meander would be monitored to ensure effectiveness of the implemented mitigation measures.	Minimize water quality impact from riverbank works	Contractor	Riverbank works	Construction Phase	^ ^
S5.7	W1-CP -BR	*Bio-remediation in Shenzhen River* • Water quality monitoring and audit is recommended to ensure that the proposed bio-remediation operation would not result in adverse water quality impact. Details of the water quality monitoring programme are presented in the EM&A Manual. If unacceptable water quality impact in the receiving water is recorded, additional measures such as slowing down, or rescheduling of works should be	Minimize water quality impact from bio-remediation of Shenzhen River	Contractor	Shenzhen River where practicable	Construction phase	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		implemented as necessary.					
S5.7	W4-CP-DP3	*Construction of Viaduct across Reedbed in LMC Station* As a precautionary measures, three options are recommended to ensure the compliance of No Net Increase in Pollution Load in Deep Bay for further consideration. They include: • On-site compensate the same area of the occupied reedbed; • Provide pilot plant during construction; or • Increase the hydraulic retention time of the proposed Loop STW. Details of these measures will be subject to further liaison with MTRC and a separate VEP application.	Minimize water quality impact from of viaduct on reedbed	Contractor	Construction sites across reedbed in LMC Station	Construction phase	N/A
S5.7	W5-CP-DP2/DP3	*Construction of Bridge Crossing* • Good site management as stipulated in ProPECC PN1/94 should be fully implemented to avoid polluted liquid or solid wastes from falling into the WSRs. • All the fishponds will be drained and no fishpond will be affected by bridge crossing. • In the meander, cofferdam or diaphragm walls should be deployed for protecting fish ponds or nearby rivers during bridge pier construction and or road widening work at fishponds. • For the low level viaducts crossing the small streams at Ma Tso Lung, Ping Hang and channel near Lung Hau Road, precast structures will be used such that there will be no construction work in the water streams, and thus, to avoid direct water quality impacts.	Minimize water quality impact from construction of bridge crossing	Contractor	Construction sites for bridge crossing where practicable	Construction phase	N/A N/A N/A N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
Waste Management (Construction Waste)							
S7.6	WM1-DP1/DP2/DP3	*Waste Reduction Measures* Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • Segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • proper storage and site practices to minimize the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.	Reduce waste generation	Contractor	All construction sites where practicable	Construction phase	^ ^ ^ ^ ^
S7.6	WM2-DP1/DP2/DP3	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	^
S7.6	WM2-DP1/DP2/DP3	*Good Site Practice* The following good site practices are recommended throughout the construction activities: • Nomination of an approved personnel, such as a site manager, to be responsible for the implementation of	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • Training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • Provision of sufficient waste disposal points and regular collection for disposal; • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;					^ ^ ^ ^
S7.6	WM4-DP1/DP2/DP3	*Storage of Waste* The following recommendation should be implemented to minimize the impacts: • Waste such as soil should be handled and stored well to ensuresecure containment; • Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; • Different locations should be designated to stockpile each material to enhance reuse;	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	^ ^ ^
S7.6	WM5-DP1/DP2/DP3	*Collection and Transportation of Waste* The following recommendation should be implemented to minimize the impacts: • Remove waste in timely manner; • Employ the trucks with cover or enclosed containers for	Minimize waste impact from storage	Contractor	All construction sites	Construction phase	^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		waste transportation; • Obtain relevant waste disposal permits from the appropriate authorities; and • Disposal of waste should be done at licensed waste disposal facilities.					^ ^
S7.6	WM6-DP1/DP2/DP3	*Excavated and C&D Material* Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • Maintain temporary stockpiles and reuse excavated fill material for backfilling; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. The recommended C&D materials handling should include: • On-site Sorting of C&D Materials • Reuse of C&D Materials • Use of Standard Formwork and Planning of Construction Materials Purchasing • Provision of Wheel Wash Facilities Details refer to Section 7.6.1.4 of the EIA report.	Minimize waste impacts from excavated and C&D material	Contractor	All construction sites	Construction phase	^ ^ ^ ^ ^ ^ ^ ^
S7.6	WM7-D	*Contaminated Soil* As a precaution, it is recommended that standard good site	Remediate contaminated	Contractor	All construction	Construction	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
	P1/DP2 /DP3	practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.	soil		sites where applicable	phase	N/A
S7.6	WM8-D P1/DP2 /DP3	*Chemical Waste* • If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal	Contractor	All construction sites	Construction phase	*
S7.6	WM9-D P1/DP2 /DP3	*General Waste* • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• A reputable waste collector should be employed to remove general refuse on a daily basis.					
S7.6	WM10-DP1/DP2	*Sewage* • The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. • Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts.	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	^ ^
S7.6	WM11-DP2	*Sediment* The following mitigation measures are recommended during transportation and stockpiling: • stockpiling area(s) must be properly designed and closed to the dredging locations as far as possible; • Stockpiling area(s) should be lined with impermeable sheeting and bunded; • stockpiles should be properly covered by impermeable sheeting; • vehicles delivering the sediments should be covered, and truck bodies and tailgates should be sealed to prevent any discharge during transportation; • bulk earth moving equipments should be utilized as much as possible to minimize workers' handling and contact of the excavated materials; and • personal protective clothing should be provided to site	Minimize waste impacts from sediment	Contractor	All construction sites	Construction phase	N/A N/A N/A N/A N/A N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		workers. In case contamination of excavated materials is confirmed after testing, the mitigation measures described in Land Contamination Impacts section should also be implemented to minimize potential environmental impacts.					
Land Contamination							
S8.7	LC1-D P2/DP3	<u>*Remediation of arsenic-contaminated soil*</u> • "Solidification/Stabilization" (S/S) treatment method was proposed for the remediation of arsenic-contaminated soil. Toxicity Characteristic Leaching Procedure (TCLP) test should be undertaken after S/S in order to ensure that the contaminant will not leach to the environment. Unconfined Compressive Strength (UCS) test should be conducted, and not less than 1MPa should be met prior to the backfilling or stockpiled for future reuse within the study area. Off-site disposal or reuse of the solidified material is not allowed.	To remediate arsenic-contaminated soil	Project Proponent/ Contractor	LMC Loop, contaminated area	Prior to commencement of construction works within the contaminated area	N/A
S8.7	LC1-D P1/DP2 /DP3	<u>*Excavation and Transportation*</u> • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area		N/A N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		means; • Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or contaminated run-off during rainy season. Watering should be avoided on stockpiles of contaminated soil to minimize contaminated runoff; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used.					N/A N/A N/A N/A N/A N/A
S8.7	LC3-DP1/DP2/DP3	*Solidification/Stabilization* • The loading, unloading, handling, transfer or storage of cement should be carried out in an enclosed system;	To minimize the potential environmental impacts arising from the handling	Contractor	Contaminated area	The course of remediation	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission; • The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers; • Mixing of contaminated soil and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching; • Runoff from the solidification / stabilization area should be prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area; • The run-off contained in the concrete bund area along the perimeter of the paved solidification / stabilization area, if any, will be collected, stored and used for the mixing process of cement / contaminated soil; • If stockpile of treated soil is required, the stockpiling site(s) should be lined with impermeable sheeting and bunded. • Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or site run-off during rainy season; and If necessary, there should be clear and separated areas for stockpiling of untreated and treated materials.	of contaminated materials				N/A N/A N/A N/A N/A N/A N/A
S8.7	LC4-D P3	<u>Safety Measures</u> • Set up a list of safety measures for site workers;	To minimize the potential adverse effects on health	Contractor	Contaminated area	The course of remediation	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• Provide written information and training on safety for site workers; • Keep a log-book and plan showing the contaminated zones and clean zones; • Maintain a hygienic working environment; • Avoid dust generation; • Provide face and respiratory protection gear to site workers if necessary; • Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers, if necessary; • Provide first aid training and materials to site worker; • Bulk earth moving equipment should be utilized as much as possible to minimize workers' handling and contact of the contaminated materials; and • Eating, drinking and smoking should not be allowed in contaminated areas to avoid inadvertent ingestion of contaminant.	and safety of construction workers				
S8.8	LC5-DP3	Re-appraisal on the entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop.	Ensure any potential contamination activities from land use changes after the approval of this land contamination assessment study	Project Proponent /Detailed design consultant	Entire contamination assessment area for associated infrastructure in	After land resumption	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
					the adjacent areas in Hong Kong outside LMC Loop		
Landscape and Visual Impact (Construction Phase)							
S11.5.4 Table11.5 .9	L-CP1-DP1/DP3	<u>*Preservation and Protection of Existing Trees (Good Site Practice)*</u> • The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. • It is recommended that a full detailed tree survey and felling application will be undertaken and submitted for approval by the relevant government departments in accordance with ETWB TCW No. 3/2006, 'Tree Preservation'. This will be conducted during the detailed design phase of the project and submitted to DLO for approval. The methodology and scope including the programme for the tree survey and felling application are also subject to the approval of the relevant authorities. • Trees which are not in conflict with the proposals would be retained and shall be protected by means of fencing during	Avoid disturbance and protection of existing trees	Detailed design consultant/ Contractor	Within project site	Detailed design and construction phase	* ^ *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		construction phase to prevent damage to tree canopies and root zones from vehicles and storage of materials. • Specifications for the protection of existing trees will be provided during the preparation of the detailed tree survey by Detailed Design consultants at detailed design and construction phase.					*
S11.5.4 Table 11.5.9	L-CP2-DP1/DP2/DP3	*Works Area and Temporary Works Areas (Good Site Practice)* • The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. • Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. • The temporary works areas shall be restored to its original condition or enhanced through the introduction of new amenity areas or planting areas following the completion of the construction phase.	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	^ ^ ^
	L-CP3-DP1/DP2/DP3	*Advance Implementation of Mitigation Planting* • Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas.	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
	L-CP4-DP1/DP2/DP3	<u>*Transplantation of Existing Trees*</u> • Some specimens have relatively higher amenity value which are in conflict with the proposals shall be considered for transplantation. For trees affected by the proposed infrastructure works the final receptor sites shall be preferably adjacent to their current locations alongside of the alignment to retain their contribution to the local landscape context. For the LMC Loop the receptor locations will be selected to allow the trees to be moved directly to their final locations in accordance with the detailed landscape proposals. • The transplanting proposals are subject to review at the detailed design phase and to agreement-in-principle with the relevant management and maintenance agents and/or government departments. The implementation programme for the proposed works shall reserve sufficient time for the advanced tree transplanting preparation works to enhance the survival of the transplanted trees. • The transplanting proposals will be subject to the findings of the detailed tree survey and felling application to be undertaken by the detailed design consultants and following approval by the relevant departments.	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	^ ^ ^
	L-CP6-DP1/D	<u>*Creation of Wetland and Landscape Buffer*</u> • The existing reedbed acquired for development areas for	Compensation of the loss of landscape resources	Project Proponent/	The whole project area	Detailed design, construction and	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
	P2	the project will be reinstated as part of the Ecological Area. The reinstatement shall be undertaken at the earliest possible stage during the construction phase of the project. • Creation of 12.78ha of Ecological Area (EA) containing reed marsh and marsh will be created at the southern portion of the LMC Loop, and a 50m width landscape buffer area will be set up in between the EA and the development area. Wetland creation concepts please refer to Figure 11.9zf and Chapter 12 Ecology Impact Assessment of this EIA. • Native tree and shrub mix will be utilised for the creation of landscape buffer along northern edge of EA to support the creation of avifauna habitat from ecologist perspectives as well as enhance the aesthetic and landscape diversity within the LMC Loop Development. • Creation of minimum 11.72 Ha. of permanent compensatory off-site wetland areas at Sam Po Shue and Hoo Hok Wai. For the potential locations for off-site wetlands please refer to Figure 11.9zf and 11.9zh, Chapter 2 Project Description and Chapter 12 Ecology Impact Assessment of this EIA.		Detailed design consultant/ Contractor/ Operator	where applicable	operational phases	^ ^ ^
	V-CP5-DP1/DP2/DP3	*Coordination with Concurrent Projects* • Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce	Minimize landscape impacts	Contractor	The whole project area where	Construction phase	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		the period of disturbance.			applicable		
S11.6.5 Table 11.6.3	V-CP1-DP3	*Preservation and Protection of Existing Trees (Good Site Practice)* • The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. • The preservation of existing tree shall provide instant greening and screening effect for proposed works.	Minimise visual impact	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phase	^
	V-CP2-DP3	*Works Area and Temporary Works Areas (Good Site Practice)* • The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. • Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. • Hoarding designed with recessive colour shall be set up around the construction site providing screening effect for the construction works. • The site office or temporary above-ground structures shall	Minimise visual impact	Contractor	The whole project area where applicable	Construction phase	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		be sited at less visual prominent locations.					
	V-CP3-DP3	*Advance Implementation of Mitigation Planting* • Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas.	Minimise visual impact and advance mitigation planting for screening purpose.	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	N/A
	V-CP5-DP3	*Coordination with Concurrent Projects* • Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance.	Minimize visual impacts	Contractor	The whole project area where applicable	Construction phase	^
Ecology (Construction Phase)							
S12.7	E1-DP1	*Disturbance to Fish Ponds at HHW* • Development set back a minimum of 23m from the edge Meander. • Management of fish pond habitat to enhance ecological value to twice existing value, in order to compensate for disturbance to large waterbirds. • Creation and establishment will occur prior to commencement of substantive works associated with any element of the project for which fish pond compensation is required. *Construction phase*	On the disturbance to fish ponds at HHW	Detailed design consultant/ Contractor	Fish ponds at HHW and LMC	Detailed design, construction phase	N/A N/A N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• Erection of a 3m high, dull green site boundary fence to minimise disturbance to wetland habitats caused by human activity in LMC Loop.					^
S12.7	E2-DP1 /DP3	<u>*Construction run-off*</u> • Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby water bodies; • Proper locations well away from nearby water bodies will be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works; • To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies will be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site; • If temporary access along a riverbed is unavoidable, this will be kept to the minimum in width and length. Temporary river crossings will be supported on stilts above the river bed; • Stockpiling of construction materials, if necessary, will be	Minimise the indirect impact from the increasing suspended solids and pollutants in LMC Meander	Contractor	Seawall,	During construction	^ ^ * ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		properly covered and located away from nearby water bodies; • Construction debris and spoil will be covered and/or properly disposed of as soon as possible to avoid being washed into nearby water bodies; • Construction effluent, site run-off and sewage will be properly collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment; • Proper locations for discharge outlets of wastewater treatment facilities well away from sensitive receivers will be identified (i.e. treated wastewater will not be discharged into LMC Meander, natural streams, marsh, reedbed, active or abandoned fish ponds); • Adequate lateral support will be erected where necessary in order to prevent soil/mud from slipping into the Ecological Area or LMC Meander; • Site boundary will be clearly marked and any works beyond the boundary strictly prohibited; • Regular water monitoring and site audit will be carried out at adequate points along LMC Meander, and at the outfalls of the natural streams around LMC Loop. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works will be					^ ^ ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		considered.					
S12.7	E3-DP1 /DP2/D P3	*Pollutant Runoff to Downstream areas from Accidental Spillage* • Prepare an emergency contingency plan The plan will include, but not be limited to, the following: - Potential emergency situations; - Chemicals or hazardous materials used on-site (and their location); - Emergency response team; - Emergency response procedures; - List of emergency telephone hotlines; - Locations and types of emergency response equipment; - Training plan and testing for effectiveness.	Minimize indirect impact from pollutant runoff to downstream areas from accidental spillage	Contractor/ Operator	Area within project site near streams	Construction phase and operation phase	^
S12.7	E4-DP1 /DP2/D P3	• Use opaque, non-transparent, non-reflective noise barriers for all developments associated with the Project. • Design of buildings should not incorporate use of night-time lighting at or near top of buildings, highly reflective materials should not be used where vegetation is adjacent and glass surfaces should not be angled upwards in a way that reflects the sky. Unnecessary lighting should be eliminated. Appropriate glass and façade treatments should be used where required to minimise impact. Unnecessary lighting should be avoided. These include the following:	Minimize the mortality impacts on birds	Developer / Detailed design consultant/ contractor/ operator	Area within project site	Detailed design, construction and operation phases	^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• Fritting, or the placement of ceramic lines or dots on glass, has little effect on the human-perceived transparency of the window but creates a visual barrier to birds outside. This treatment also has the advantage of reducing air conditioning loads by lowering heat gain, while still allowing light transmission for interior spaces. It is most successful when the frits are applied on the outside surface. Frosted glass has similar effects. • Angled glass may be used only for smaller panes in buildings with a limited amount of glass. • The use of glass that reflects UV light (primarily visible to birds, but not to humans) acts to reduce collision. • Film and art treatment allow glass surfaces to be used a medium of expression, often related to the nature and use of the building, as well indicating to birds their impenetrability. • Lightweight external screens can be added to windows or become a façade element of larger buildings, and are suitable where non-operable windows are prevalent, which is often the case in modern buildings in HK. In terms of reducing night-time mortality impacts, eliminating unnecessary lighting is one of the easiest methods, and has the added advantage of saving energy and expense. Potential impacts of nocturnal avian collision with buildings should be minimised by not creating sky glow from the use of night-time					^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		lighting at or near the top of buildings or other structures. In addition to avoiding uplighting, light spillage should be minimised, while green and blue lights should be used where possible. As far as possible, lights should be controlled by motion sensors, and building operations should be managed in such a way as reduce or eliminate night lighting near windows. The potential advantages of removing unnecessary lighting in terms of reducing the carbon footprint of the LMC Loop development are obvious.					
S12.7	E5-DP1 /DP2/D P3	• Minimize loss of natural vegetation along LMC Meander, and suitable replacement planting with possible installation of otter holts and the provision of potential feeding area and spraint locations for otters in the stabilized bank subject to detailed design. • No significant change to velocity of water flow, water level or water quality. • No direct lighting on Meander. • 3m high, dull green site boundary fence for all developments associated with the project. • Pre-construction surveys for otter holts or natal dens will be conducted in LMC Loop before the commencement of construction works. Work in the area of any otter holt found to cease pending examination by experienced Ecologist. If in use for breeding, works in the area will temporarily stop until end of breeding activity. • No construction activities within 100m of LMC Meander	Minimize impacts on Eurasian Otter	Detailed design consultant/ Contractor	Construction site within the project	Detailed design, construction phase	^ ^ ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		between one hour prior to sunset and one hour after sunrise. • Provision of compensatory reed marsh in the Ecological Area in LMC Loop, including open water channels and islands within the reed marsh, both of which features are considered to be used by the species.					^
S12.7	E8-DP2	• Refer to E2 and E3	Prevent impacts on Rose Bitterling, small snakehead and *Somanniathelphus zanklon*	Contractor	Within project site	Construction phase	^
S12.7	E10-DP 1	• Preserve undisturbed, semi-natural habitat conditions of LMC Meander and adjacent areas of LMC Loop up to approximately 150m in width in order to avoid disturbance to core part of flight line corridor. • This area to comprise an Ecological Area largely constituting reed marsh and a 50m wide buffer zone densely planted with shrubs and trees. Small number of low buildings (max 14mPD high, except the building height of on-site STW is 15mPD high) allowed in inner 25m of this area at a plot ratio of 0.1. • At Ha Wan Tsuen entry point for many birds to LMC Loop area provide a wider Ecological Area to minimize disturbance from nearby buildings.	Minimize impacts on flight line corridor from LMC Loop development	Developer / Detailed design consultant/ Contractor/ Operator	Within project site	Detailed design, construction and operation phases	^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• Further minimisation of impact by maintaining a lower building height in areas adjacent to the buffer zone for the EA. In addition, the sewage treatment works, which is located near the point where many birds cross from the Meander to HHW, should not exceed 15mPD.					N/A
S12.7	E11-DP 1	• Employ site boundary fence as long as possible. Use of movable barrier for more intense site formation activity. Provision of fencing with 30cm gap between the existing reed marsh and LMC Meander during the establishment period of Ecological Area and the gap will be closed once established. • Restrict work to period from 0900h to 1700h. All major works along the edge of LMC Meander and in the Ecological Area will be conducted in the wet season.	Minimize disturbance impacts of mitigation provisions	Contractor	Within project site	Construction phase	^ ^
S12.7	E12-DP 1/DP2/ DP3	• Minimal night-time lighting • No direct light on Meander	Minimize impacts on LMC Meander	Contractor/ Operator	All	Construction and operation phases	^ ^
S12.7	E13-DP 2	• Construction limited to wet season between the hours of 9am and 5pm. • Use of opaque visual/noise barriers and planting of trees shrubs along length of road adjacent to fish ponds. • Compensatory habitat management elsewhere to mitigate wetland loss.	Minimize impacts from the construction and operation disturbance impacts	Contractor/ Operator	Pond habitat along alignment (mainly Ha Wan Tsuen Road)	Construction and operation phases	^ ^ ^
S12.7	E13-DP	• Use of viaduct alignment to minimize wetland loss.	Minmize wetland loss	Project	Within project	Detailed design	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
	3	Compensatory wetland habitat elsewhere.		Proponent / Detailed design consultant / Contractor /	site	and construction phases	
S12.7	E16-DP 1	• Provision of compensatory reed marsh in the Ecological Area will provide habitat suitable for Common Evening Hawker. • Measures designed to protect other fauna and water quality will generally benefit odonata.	Protect Odonata	Project Proponent/ Detailed design consultant/ Contractor Operator	Ecological area	EA established prior to construction and manage at all phases	^ ^
S12.7	E14-DP 2	• Replacement planting of native tree species relevant to Deep Bay area and the area impacted. Planting to occur in tandem with that required for woodland loss arising	Minimize the ecological impacts	Contractor	Woodland and shrubland habitat along Ha Wan Tsuen Road	Construction phase	^
S12.7	E15-DP 2	• Use noise/visual barriers to minimise disturbance. • Construction activities should not be carried out before 0900h or after 1700h in order to minimise disturbance to the flight line corridor (and to mammals).	Minimize impacts on flight line corridor from Western Connection Road	Contractor	Construction site from Western Connection Road	Construction phase	^ ^
S12.7	E16-DP 2	• Use of opaque visual/noise barriers and roadside planting of trees and shrubs to minimize disturbance impacts.	Minimize impacts on flight line corridor from	Project Proponent/	Construction site from	Detailed design, construction and	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
			Western Connection Road	Detailed design consultant/ Contractor Operator	Western Connection Road	operation phases	
S12.9	EG2-DP3	All generic mitigation measures proposed in Tables 12.82a and 12.82b in the EIA report.	Avoid, minimize and mitigate overall ecological impact.	Project proponent / contractor / detailed design consultant / developer / operator	All areas.	All phases	^
Fisheries (Construction Phase)							
S13.7	F4-	• Reprovision of replacement Artificial Reefs(of the same volume as the existing ARs inside Marine Exclusion Zone)	Mitigate water quality impacts on the existing ARs	Project proponent	To be determined	Construction phase or operation phase	N/A
S11.7	F2	• Reduce re-suspension of sediments • Limit dredging and works fronts. • Good site practices • Strict enforcement of no marine dumping • Spill response plan	Minimise marine water quality impacts	Contractor	Seawall	During construction	N/A N/A N/A N/A N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S13.7	F4-DP3	During the construction phase, a layer of sheet pile wall will be erected along the site boundary adjacent to fish ponds after commencement of site works. The sheet pile wall will be constructed by silent piling method (Press-in method) which induces minimal vibration. Therefore the stability of the fish pond bund will not be influenced by the construction of the sheet pile wall, subsequent construction works and the loading from the road during operational phase. In addition, the sheet pile wall will have grouting or a grout curtain to avoid water seepage from the fish pond to the excavation area. With these measures, significant impacts are not anticipated.	Bund stability	Contractor	Fish ponds	Construction phase	N/A
S13.7	F5-DP3	Temporary traffic arrangements will be instigated to maintain or provide alternative access to fish ponds during construction phase.	Prevent Blockage of Access Roads to Fish Ponds	Contractor	Fish ponds	Construction phase	^
S13.7	F6-DP3	Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented during the construction phase of the Project. Excavated material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill) (see Waste Management Section). Sewage from the proposed development will be dealt with via a sewerage system and will not be discharged directly to surrounding water bodies.	Avoid water quality impact	Contractor	Fish ponds	Construction phase	*
S13.7	F7-DP3	*Dust Minimization* • During all excavation works, good site practice should be adopted to minimize impacts on fisheries. The below site practices should be adopted during this time. • Any excavated or stockpile of dusty material should be	Dust minimization	Contractor	Fish ponds	Construction phase	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used.					
S13.7	F8-DP3	*Contingency plan* The contractor should prepare an emergency contingency plan for actions to be taken if significant impacts, such as accidental spillage of chemicals, water seepage from fish ponds, damaged/ destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur. The contractor should submit the emergency contingency plan dealing with, but not limited to, the aforementioned potential impacts to the engineer for review, comment and approval. The fish pond operators will also be consulted for the details of the contingency plan, which will also be submitted to AFCD for review and comment. The plan should include, but not limited to, the following: • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hotlines; • Locations and types of emergency response equipment;	Deal with any accidental spillage event	Contractor / Operator	Fish ponds	Construction and operational phases	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• Training plan and testing for effectiveness.					
Food Safety (Construction Phase)							
S15	F1-DP3	*Contingency plan* The contractor should have effective communication with Food and Environmental Hygiene Department (FEHD) / Centre of Food Safety (CFS), on food surveillance and food incidents. Food Surveillance Programme (http://www.cfs.gov.hk/english/programme/programme_fs/programme_fs.html). is undertaken by CFS to inspect food safety in Hong Kong, with a three-tier surveillance strategy (consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance). Under this programme, aquatic products (including pond fish) at import, wholesale and retail levels are sampled for microbiological (i.e. bacteria and viruses), chemical (i.e. natural toxins, food additives and contaminants) and radiation testings. All food safety surveillance results of by a monthly "Food Safety Report" in press releases and also presented in CFS website. If pond fish samples do not comply with food safety standards and they are verified to be from fish ponds of concerned under this study through "food tracing", fish selling shall be stopped as instructed by CFS.	Minimize significant impacts on fish ponds	Contractor	Fish pond within project site	Construction phase	N/A
S15	F2-DP3	*Dust Minimization* • During all excavation works, good site practice should be adopted to minimize the release of TSP, impact of land contamination and the associated food safety implications. The below site practices should be adopted during excavation works.	Dust minimization	Contractor	Fish pond within project site	Construction phase	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used.					

Remarks: ^ Compliance of mitigation measure

* Recommendation was made during site audit but improved/rectified by the contractor

\# Recommendation was made during site audit but not yet improved/rectified by the contractor.

N/A Not Applicable at this stage as no such site activities were conducted in the reporting period (e.g. concrete batching plan, barging point, seawall dredging and filling, bored piling, landscaping works etc)

APPENDIX K
SITE AUDIT SUMMARY

Appendix K: Site Audit Summary

Table K-1: Observations and Recommendations of Site Audit in April 2022

Parameters	Date	Observations and Recommendations	Follow-up
Contract No. YL/2020/01			
No major environmental deficiency was identified during site inspection.			
Contract No. YL/2020/02			
Waste / Chemical Management	27/04/2022	Clear the oil spillage arising from the breaker as chemical waste and properly maintenance should be provided for the equipment to avoid further oil leakage (LCS site).	Improvement/ Rectification was observed during follow-up audit session on 4 May 2022.
Ecology	06/04/2022	Clear the construction materials at the stream and avoid further materials nearby from getting into the stream (Fu Tai Site Area).	Improvement/ Rectification was observed during follow-up audit session on 13 April 2022.

Table K-2: Observations and Recommendations of Site Audit in May 2022

Parameters	Date	Observations and Recommendations	Follow-up
Contract No. YL/2020/01			
Water Quality /Ecology	11/05/2022	Provide sand bag bund to protect the nullah at TAR1.	Improvement/ Rectification was observed during follow-up audit session on 18th May 2022.
Contract No. YL/2020/02			
Water Quality	04/05/2022	The floating rubbish at the Nullah at LCS should be cleared to avoid flooding.	Improvement/ Rectification was observed during follow-up audit session on 11th May 2022.
	11/05/2022	Muddy surface runoff was observed discharging out from the GI works at Fu Tai Site Area. The Contractor was reminded to provide cut-off drain to direct off site water around the site.	Improvement/ Rectification was observed during follow-up audit session on 18th May 2022.
Landscape and Visual	25/05/2022	Clear the construction materials within the tree protection zone and provide the fencing surrounding the retain trees at LCS.	Follow-up action was needed during the audit session on 1st June 2022.
Contract No. YL/2021/01			
No major environmental deficiency was identified during site inspection.			

Table K-3: Observations and Recommendations of Site Audit in June 2022

Parameters	Date	Observations and Recommendations	Follow-up
Contract No. YL/2020/01			
Water Quality	01/06/2022	The site exit at the TAR3 should be paved.	Follow-up action was needed during the audit session on 8th June 2022.
	08/06/2022	The site exit at TAR3 should be paved and the sand bag bund should be placed at the site boundary facing EA zone.	Improvement/ Rectification was observed during follow-up audit session on 15th June 2022.
	15/06/2022	Clear the muddy surface runoff & mud trails at the site exits at Ha Wan Tsuen Road and provide mitigation measures to avoid the recurrence of the aforesaid issue.	Improvement/ Rectification was observed during follow-up audit session on 22nd June 2022.
	22/06/2022	The exposed soil surface at WCR should be covered with tarpaulin sheet to avoid muddy surface runoff.	Improvement/ Rectification was observed during follow-up audit session on 29th June 2022.
Contract No. YL/2020/02			
Landscape and Visual	01/06/2022	Clear the construction materials within the tree protection zone and provide the fencing surrounding the retain trees at LCS.	Improvement/ Rectification was observed during follow-up audit session on 8th June 2022.
Water Quality	01/06/2022	Provide proper management of dredged muck arising from the bored piling work to avoid spreading out to the nearby drain (LCS)	Improvement/ Rectification was observed during follow-up audit session on 8th June 2022.
	08/06/2022	Muddy water was observed overflow to the drain at LCS. The Contractor was reminded to enhance the sand bag bund to avoid the muddy water discharging out directly.	Follow-up action was needed during the audit session on 29th June 2022.
Air Quality	22/06/2022	Provide wheel washing facilities at the site exit of CS1.	Follow-up action was needed during the audit session on 29th June 2022.
Contract No. YL/2021/01			
Air Quality	20/06/2022	Faded NRMM label should be replaced.	Improvement/ Rectification was observed during follow-up audit session on 27th June 2022.
Water Quality	20/06/2022	To enhance water mitigation measures next to water outlet to ensure untreated waste water does not exit through water outlet.	Improvement/ Rectification was observed during follow-up audit session on 27th June 2022.

APPENDIX L
WASTE GENERATION IN THE REPORTING PERIOD

Monthly Summary Waste Flow Table for 2022 (year)

Name of Person completing the record: Lila Lui (EO)

Development of Lok Ma Chau Loop : Main Works Package 1 – Contract 1 Site Formation and Infrastructure Works inside Lok Ma Chau Loop and Western Connection Contract No.: YL/2020/01

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated (a)= (b)+(c)+(d)+(e)	Hard Rock and Large Broken Concrete (b)	*Reused in the Contract (c)	Reused in other Projects (d)	Disposed as Public Fill (e)	Imported Fill	Metals	Paper/ cardboard packaging/	Plastics	Yard Waste	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan-22	1.485	0.000	1.472	0.000	0.013	0.000	0.000	0.000	0.000	76.140	0.000	1.730
Feb-22	0.242	0.000	0.000	0.000	0.242	0.000	9.150	0.000	0.000	24.170	0.000	0.426
Mar-22	0.120	0.000	0.000	0.000	0.120	0.000	0.000	0.000	0.000	0.000	0.000	0.143
Apr-22	0.058	0.000	0.000	0.000	0.058	0.000	0.000	0.000	0.000	0.000	0.000	0.068
May-22	0.022	0.000	0.000	0.000	0.022	0.000	0.001	0.000	0.010	13.630	0.000	0.021
Jun-22	0.004	0.000	0.000	0.000	0.004	0.000	0.008	0.000	0.194	0.000	0.000	0.023
Sub-total	1.930	0.000	1.472	0.000	0.458	0.000	9.159	0.000	0.204	113.940	0.000	2.411
Jul-22												
Aug-22												
Sep-22												
Oct-22												
Nov-22												
Dec-22												
Total	1.930	0.000	1.472	0.000	0.458	0.000	9.159	0.000	0.204	113.940	0.000	2.411

Remarks:

1.Assume the density of soil fill=2.0 tonnes/m3
2.Assume the density of rock and broken concrete=2.5 tonnes/m3
3.Assume the density of refuse = 1.5 tonnes/m3
4. The inert C&D material except slurry and bentonite are disposed at Tuen Mun 38
5. The slurry and bentonite are disposed at Tseung Kuwn O 137.
6.The non-inert C&D wastes, including general refuse are disposed at NENT

Monthly Summary Waste Flow Table for 2022 (year)

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

Project : Development of Lok Ma Chau Loop: Main Works Package 1– Contract 2, Western Connection Road Phase 2, Connection Roads in Fanling / San Tin Highway and Direct Road Link Phase 1

Contract No.: YL/2020/02

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m^3)
Jan	0.000	0.000	0.000	0.000	0.000	0.458	0.000	0.000	0.000	0.000	0.131
Feb	0.000	0.000	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.121
Mar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040
Apr	0.000	0.000	0.000	0.000	0.063	0.000	0.000	0.000	0.000	0.000	0.121
May	0.000	0.000	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.184
Jun	0.000	0.000	0.000	0.000	0.167	0.000	0.000	0.000	0.000	0.000	0.576
Sub-total	0.000	0.000	0.000	0.000	0.248	0.503	0.000	0.000	0.000	0.000	1.173
Jul	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.000	0.000	0.000	0.000	0.248	0.503	0.000	0.000	0.000	0.000	1.173

Note:

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

Monthly Summary Waste Flow Table for 2022 (year)

Name of Person completing the record:

Development of Lok Ma Chau Loop : Main Works Package 1 – Contract 3 Contract No.: YL/2021/01

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated (a)= (b)+(c)+(d)+(e)	Hard Rock and Large Broken Concrete (b)	*Reused in the Contract (c)	Reused in other Projects (d)	Disposed as Public Fill (e)	Imported Fill	Metals	Paper/ cardboard packaging/	Plastics (see Note 3)	Yard Waste	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan-22												
Feb-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mar-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Apr-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.002
Jun-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sub-total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.002
Jul-22												
Aug-22												
Sep-22												
Oct-22												
Nov-22												
Dec-22												
Total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.002

Remarks:

1.Assume the density of soil fill=2.0 tonnes/m3

2.Assume the density of rock and broken concrete=2.5 tonnes/m3

3.Assume the density of refuse = 1.5 tonnes/m3

4. The inert C&D material except slurry and bentonite are disposed at Tuen Mun 38

5. The slurry and bentonite are disposed at Tseung Kuwn O 137.

6.The non-inert C&D wastes, including general refuse are disposed at NENT

APPENDIX M
COMPLAINT LOG

Appendix M - Complaint Log

Contract No. YL/2017/03 – Development of Lok Ma Chau Loop: Land Decontamination and Advance Engineering Works

Log Ref.	Date of Complaint	Complaint Route	Reference No.	Complaint Nature	Investigation Fining	Status
1	9-Sep-19	EPD	EPD Ref: 25222-19	Water quality and air quality	Non-project related	Interim report was submitted to EPD on 23 Sep 2019
2	11-Oct-19	EPD	EPD Ref: 28550-19	Air quality	Non-project related	Interim report was submitted to EPD on 6 Nov 2019
3	30-Oct-19	EPD	EPD Ref: 30478-19	Air quality	Non-project related	Interim report was submitted to EPD 14 Nov 2019
4	10-Dec-19	1823 (CEDD)	1823 Case no: 2-6145710343	Noise and air quality	Non-project related	Final reply to 1823 on 24 Dec 2019. IR prepared by Contractor was agreed by IEC and ET
5	5-Mar-21	1823	1823 Case no: 3-6641544979	Air quality	Non-project related	Final reply to 1823 on 11 Mar 2021. IR prepared by Contractor was agreed by IEC and ET

Contract No. YL/2020/01 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 1 – Site Formation and Infrastructure Works inside Lok Ma Chau Loop and Western Connection Road Phase 1 / Contract No.: YL/2020/02 – Development of Lok Ma Chau Loop: Main Works Package 1 – Contract 2 Western Connection Road Phase 2, Connection Roads to Fanling / San Tin Highway and Direct Road Link Phase

Log Ref.	Date of Complaint	Complaint Route	Reference No.	Details of Complaint	Investigation Fining	Status
COM-2021-10-01	11 October 2021	EPD	EPD File Ref.: N07/RN/00024120-21	EPD received a public complaint on 11 October 2021. The complainant alleged the following: (a) Discharge of muddy water from construction sites of "Development of Lok Ma Chau Loop" project to Shenzhen River in the morning of 8 October 2021; and, (b) Use of powered mechanical equipment (including excavators and dump trucks) in the construction sites of "Development of Lok Ma Chau Loop" project on Sunday.	(a) Water Quality Non-project related According to the interim report, wastewater treatment facilities and relevant mitigation measures were properly implemented and there is no direct evidence to demonstrate the muddy discharge was inducted by the Contract. Further preventive measures, such as increasing the height of the temporary drainage by using sandbag and providing the earth bund with geo-textile along the site boundary, were implemented on 12 October 2021 in order to avoid muddy water from leaking into Shen Zhen River. (b) Noise Project related Typhoon No. 8 (Tropical cyclone: Lion Rock) was hoisted on 9 October 2021. Severe rainfall was recorded due to the adverse weather. To avoid leakage of the muddy water into the meander of the Shenzhen River, JV mobilized an excavator and dump truck to clear the blockage as an emergency measure. ET reminded the Contractor to update the site drainage plan according to the construction programme and closely check the effectiveness of the implemented mitigation	Interim report was submitted to EPD on 29 Oct 2021

Log Ref.	Date of Complaint	Complaint Route	Reference No.	Details of Complaint	Investigation Fining	Status
					measures on site so that the EP, EIA and EM&A manual recommendation and requirements are complied with. In addition, the Contractor was also reminded to prepare a contingency plan for emergency environmental incidents.	
COM-2021-11-01	15 November 2021	EPD	EPD File Ref.: N06/RN/00027302-21	EPD received a public complaint on 15 November 2021. The complainant concerned about the dust nuisance in the construction sites of "Development of Lok Ma Chau Loop" project.	According to the interim report, dust mitigation measures have been properly implemented on site: - Haul road of the main site have been paved with concrete and the speed of the vehicle has been restricted to below 8kmper hour within the construction area to minimize fugitive dust emission. - Wheel washing fallibilities have been established at the location where the vehicles into the haul road in order to keep clear of any loose surface material. - Mist spray and water trucks have been provided to water the paved haul road regularly and at least once per hour on exposed work site. - Water spray has been provided during the handling of the fill material at the site and all the dusty loads transported to, from and between site location have been covered. - Induction training and tool box talk have been provided to the site staff and workers regarding the dust suppression measure. - Temporary covers have been provided to stockpile of the dusty materials and the exposed slope. Further preventive measures, establishment of the	Interim report was submitted to EPD on 25 Nov 2021

Log Ref.	Date of Complaint	Complaint Route	Reference No.	Details of Complaint	Investigation Fining	Status
					automatic water spray system along the haul road and increasing the amount of the mist spray machine to enhance the efficiency of the dust suppression measures will also be provided.	
COM-2022-01-01	2 January 2022	EPD	EPD File Ref.: N06/RN/000000184-22	EPD received a public complaint by phone in Jan 2022 regarding noise from general construction work associated with the Lok Ma Chau Loop Development Project being carried out on 2.1.2022 at around 15:30 hours (i.e. within the restricted hours on Sunday).	According to the location under complaint, the work was likely carried out within the work site of "Direct Road Link to MTR Lok Ma Chau Station" and/or "Western Connection Road". Therefore, interim reports were submitted by Contract No.: YL/2020/01 and YL/2020/02 respectively:- <u>Contract No.: YL/2020/01</u> According to the site diary, no construction work was carried out during restricted hours at the location under complaint for YL/2020/01 on 2 January 2022. For prevention measure, Permit –to –Work system has been implemented for all the construction works being conducted in the restricted hours to enhance site control. All the construction works need to inform JV at least one day in advance. In addition, all staff and workers involved in the site operation during the restricted hours have to obtain a valid site pass and display to the security guards when entering site area for the enhancement of the site security system. Based on the above information and investigation findings, the noise complaint is not related to the construction works of the Contract YL/2020/01.	Interim report was submitted to EPD on 14 Feb 2022

Log Ref.	Date of Complaint	Complaint Route	Reference No.	Details of Complaint	Investigation Fining	Status
					Contract No.: YL/2020/02 According to the site diary, no construction work was carried out during restricted hours at the location under complaint on 2 January 2022 for YL/2020/02. Nevertheless, construction team was reminded to strictly follow the requirement stated in the issued construction noise permit when construction work is required during restricted hours. Based on the above information and investigation findings, the noise complaint is not related to the construction works of the Contract YL/2020/02.	
COM-2022-04-01	4 April 2022	1823	1823 Case no: 3-7155426748	The complainant concerned about the muddy surface runoff arising from the construction works of "Development of Lok Ma Chau Loop" project. at Lok Ma Chau Road near Ha Wan Tsuen Road.	According to the interim report, no construction works was carried out at the location of complaint which is outside the site boundary of the Project from 1st April to 4th April 2022. Appropriate water quality mitigation measures have been properly implemented on site and there is no direct evidence to demonstrate the muddy discharge was inducted by the Project. Further preventive measures, such as set up a monitoring point at the exit of the site to check the wheels of the vehicles are clean enough so that no mud and grit adhered to the wheels of the trucks when leaving the site. In addition, sprinkler truck will be only operated at appropriate location within the project site to avoid nuisance to the public road user.	Final reply to 1823 on 12 April 2022. Interim report prepared by Contractor was agreed by IEC and ET

APPENDIX N
SUMMARY OF SUCCESSFUL PROSECUTION

Appendix N - Summary of Successful Prosecution

Date of Successful Prosecution	Details of the Successful Prosecution	Status	Follow Up
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APPENDIX O
MONITORING SCHEDULE FOR THE PRESENT AND NEXT REPORTING QUARTER

Service Contract No. WD/04/2020
Development of Lok Ma Chau Loop: Main Works Package 1 – Environmental Team
Impact Monitoring Schedule (April 2022)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Apr	2-Apr
					Water Quality Monitoring	
3-Apr	4-Apr	**5-Apr**	6-Apr	7-Apr	8-Apr	9-Apr
	24hr TSP Water Quality Monitoring		1hr TSP X 3 Noise Water Quality Monitoring Avifauna Survey (Pond 12)		Aquatic Fauna Survey (Water Quality Monitoring only) 24hr TSP Water Quality Monitoring	
10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	**15-Apr**	**16-Apr**
	Water Quality Monitoring	1hr TSP X 3 Noise	Aquatic Fauna Survey (Water Quality Monitoring only) 24hr TSP Water Quality Monitoring Avifauna Survey (Pond 12)	1hr TSP X 3		
17-Apr	**18-Apr**	19-Apr	20-Apr	21-Apr	22-Apr	23-Apr
		24hr TSP Water Quality Monitoring	1hr TSP X 3 Noise Avifauna Survey (Pond 12)	Aquatic Fauna Survey Water Quality Monitoring	Avifauna flight line survey	Water Quality Monitoring
24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	29-Apr	30-Apr
	Aquatic Fauna Survey (Water Quality Monitoring only) 24hr TSP Water Quality Monitoring Herpetofauna Survey	1hr TSP X 3 Noise	Water Quality Monitoring Avifauna Survey (Pond 12)	24hr TSP	1hr TSP X 3 Water Quality Monitoring	

Air Quality Monitoring Station
DMS-1a - Village House along Ha Wan Tsuen East Road
DMS-2A - Village house along Lok Ma Chau Road
DMS-3 - Village house along Old Border Road
DMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Noise Monitoring Station
NMS-1 - Village House in Ha Wan Tsuen
NMS-2 - Village house along existing Ha Wan Tsuen East Road
NMS-3 - Village house along Old Border Road
NMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Water Quality Monitoring Station
CS1 - Control Station at Old Shenzhen River Meander
IS1 - Impact Station at Old Shenzhen River Meander
IS2 - Impact Station at Old Shenzhen River Meander
IS4 - Impact Station for at Ping Hang Stream
CS5 - Control Station at channel at south of Lung Hau Road
IS6 - Impact Station next to Lung Hau Road
BS1 - Impact Station at Old Shenzhen River Meander
(Terminated starting from 28 June 2021- approved by EPD via email dated 22 June 2021)

Service Contract No. WD/04/2020
Impact Monitoring Schedule (May 2022)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-May	**2-May**	3-May	4-May	5-May	6-May	7-May
		Water Quality Monitoring	Aquatic Fauna Survey (Water Quality Monitoring only) 24hr TSP Avifauna Survey (Pond 12)	1hr TSP X 3 Noise Water Quality Monitoring		Water Quality Monitoring
8-May	**9-May**	10-May	11-May	12-May	13-May	14-May
		24hr TSP Water Quality Monitoring	1hr TSP X 3 Noise Avifauna Survey (Pond 12)	Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring	Herpetofauna Survey	Water Quality Monitoring
15-May	16-May	17-May	18-May	19-May	20-May	21-May
	24hr TSP Water Quality Monitoring	1hr TSP X 3 Noise	Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring Avifauna Survey (Pond 12)		24hr TSP Water Quality Monitoring Avifauna flight line survey	
22-May	23-May	24-May	25-May	26-May	27-May	28-May
	1hr TSP X 3 Noise Water Quality Monitoring	Aquatic Fauna Survey	Water Quality Monitoring Avifauna Survey (Pond 12)	24hr TSP	1hr TSP X 3 Water Quality Monitoring	
29-May	30-May	31-May				
	Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring					

Air Quality Monitoring Station
DMS-1a - Village House along Ha Wan Tsuen East Road
DMS-2A - Village house along Lok Ma Chau Road
DMS-3 - Village house along Old Border Road
DMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Noise Monitoring Station
NMS-1 - Village House in Ha Wan Tsuen
NMS-2 - Village house along existing Ha Wan Tsuen East Road
NMS-3 - Village house along Old Border Road
NMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Water Quality Monitoring Station
CS1 - Control Station at Old Shenzhen River Meander
IS1 - Impact Station at Old Shenzhen River Meander
IS2 - Impact Station at Old Shenzhen River Meander
IS4 - Impact Station for at Ping Hang Stream
CS5 - Control Station at channel at south of Lung Hau Road
IS6 - Impact Station next to Lung Hau Road
BS1 - Impact Station at Old Shenzhen River Meander
(Terminated starting from 28 June 2021- approved by EPD via email dated 22 June 2021)

Service Contract No. WD/04/2020
Impact Monitoring Schedule (June 2022)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Jun	2-Jun	**3-Jun**	4-Jun
			24hr TSP Water Quality Monitoring Avifauna Survey (Pond 12)	1hr TSP X 3 Noise		Water Quality Monitoring
5-Jun	6-Jun	7-Jun	8-Jun	9-Jun	10-Jun	11-Jun
	Water Quality Monitoring	24hr TSP	1hr TSP X 3 Noise Water Quality Monitoring Avifauna Survey (Pond 12)	Herpetofauna Survey	Aquatic Fauna Survey (Water Quality Monitoring Water Quality Monitoring	
12-Jun	13-Jun	14-Jun	15-Jun	16-Jun	17-Jun	18-Jun
	24hr TSP Water Quality Monitoring	1hr TSP X 3 Noise	Aquatic Fauna Survey Water Quality Monitoring Avifauna Survey (Pond 12)		24hr TSP Water Quality Monitoring Avifauna flight line survey	
19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun
	1hr TSP X 3 Water Quality Monitoring		Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring Avifauna Survey (Pond 12)	24hr TSP	1hr TSP X 3 Noise Water Quality Monitoring	
26-Jun	27-Jun	28-Jun	29-Jun	30-Jun		
	Aquatic Fauna Survey (Water Quality Monitoring Water Quality Monitoring		24hr TSP Water Quality Monitoring Avifauna Survey (Pond 12)	1hr TSP X 3 Noise		

Air Quality Monitoring Station
DMS-1a - Village House along Ha Wan Tsuen East Road
DMS-2A - Village house along Lok Ma Chau Road
DMS-3 - Village house along Old Border Road
DMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Noise Monitoring Station
NMS-1 - Village House in Ha Wan Tsuen
NMS-2 - Village house along existing Ha Wan Tsuen East Road
NMS-3 - Village house along Old Border Road
NMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Water Quality Monitoring Station
CS1 - Control Station at Old Shenzhen River Meander
IS1 - Impact Station at Old Shenzhen River Meander
IS2 - Impact Station at Old Shenzhen River Meander
IS4 - Impact Station for at Ping Hang Stream
CS5 - Control Station at channel at south of Lung Hau Road
IS6 - Impact Station next to Lung Hau Road
BS1 - Impact Station at Old Shenzhen River Meander
(Terminated starting from 28 June 2021- approved by EPD via email dated 22 June 2021)

Service Contract No. WD/04/2020
Tentative Impact Monitoring Schedule (July 2022)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jul	2-Jul
						*Water Quality Monitoring
3-Jul	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul	9-Jul
	Water Quality Monitoring	Aquatic Fauna Survey (Water Quality Monitoring 24hr TSP	1hr TSP X 3 Noise Water Quality Monitoring Avifauna Survey (Pond 12)		Water Quality Monitoring	
10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
	24hr TSP Water Quality Monitoring	1hr TSP X 3 Noise	Aquatic Fauna Survey Water Quality Monitoring Avifauna Survey (Pond 12)		24hr TSP Water Quality Monitoring	
17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul
	1hr TSP X 3 Noise Water Quality Monitoring		Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring Avifauna Survey (Pond 12)	24hr TSP	1hr TSP X 3 Water Quality Monitoring Avifauna flight line survey	
24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul
	Herpetofauna Survey Water Quality Monitoring		Aquatic Fauna Survey (Water Quality Monitoring only) 24hr TSP Water Quality Monitoring Avifauna Survey (Pond 12)	1hr TSP X 3 Noise	Water Quality Monitoring	
31-Jul						

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)
* Water quality monitoring scheduled on 2 July 2022 was cancelled due to Typhoon Signal no. 8

Air Quality Monitoring Station
DMS-1a - Village House along Ha Wan Tsuen East Road
DMS-2A - Village house along Lok Ma Chau Road
DMS-3 - Village house along Old Border Road
DMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Noise Monitoring Station
NMS-1 - Village House in Ha Wan Tsuen
NMS-2 - Village house along existing Ha Wan Tsuen East Road
NMS-3 - Village house along Old Border Road
NMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Water Quality Monitoring Station
CS1 - Control Station at Old Shenzhen River Meander
IS1 - Impact Station at Old Shenzhen River Meander
IS2 - Impact Station at Old Shenzhen River Meander
IS4 - Impact Station for at Ping Hang Stream
CS5 - Control Station at channel at south of Lung Hau Road
IS6 - Impact Station next to Lung Hau Road
BS1 - Impact Station at Old Shenzhen River Meander
(Terminated starting from 28 June 2021- approved by EPD via email dated 22 June 2021)

Service Contract No. WD/04/2020
Tentative Impact Monitoring Schedule (August 2022)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Aug	2-Aug	3-Aug	4-Aug	5-Aug	6-Aug
	Water Quality Monitoring	24hr TSP	1hr TSP X 3 Noise Water Quality Monitoring Avifauna Survey (Pond 12)	Aquatic Fauna Survey	Water Quality Monitoring	
7-Aug	8-Aug	9-Aug	10-Aug	11-Aug	12-Aug	13-Aug
	24hr TSP Water Quality Monitoring	1hr TSP X 3 Noise	Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring		24hr TSP Water Quality Monitoring Avifauna Survey (Pond 12)	
14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug
	1hr TSP X 3 Water Quality Monitoring		Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring Avifauna Survey (Pond 12)	Herpetofauna Survey 24hr TSP	1hr TSP X 3 Noise Water Quality Monitoring Avifauna flight line survey	
21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug
	Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring		24hr TSP Water Quality Monitoring Avifauna Survey (Pond 12)	1hr TSP X 3 Noise	Water Quality Monitoring	
28-Aug	29-Aug	30-Aug	31-Aug			
	Water Quality Monitoring	24hr TSP	1hr TSP X 3 Noise Water Quality Monitoring Avifauna Survey (Pond 12)			

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station
DMS-1a - Village House along Ha Wan Tsuen East Road
DMS-2A - Village house along Lok Ma Chau Road
DMS-3 - Village house along Old Border Road
DMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Noise Monitoring Station
NMS-1 - Village House in Ha Wan Tsuen
NMS-2 - Village house along existing Ha Wan Tsuen East Road
NMS-3 - Village house along Old Border Road
NMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Water Quality Monitoring Station
CS1 - Control Station at Old Shenzhen River Meander
IS1 - Impact Station at Old Shenzhen River Meander
IS2 - Impact Station at Old Shenzhen River Meander
IS4 - Impact Station for at Ping Hang Stream
CS5 - Control Station at channel at south of Lung Hau Road
IS6 - Impact Station next to Lung Hau Road
BS1 - Impact Station at Old Shenzhen River Meander
(Terminated starting from 28 June 2021- approved by EPD via email dated 22 June 2021)

Service Contract No. WD/04/2020
Tentative Impact Monitoring Schedule (September 2022)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Sep	2-Sep	3-Sep
					Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring	
4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep
	24hr TSP Water Quality Monitoring	1hr TSP X 3 Noise	Aquatic Fauna Survey Water Quality Monitoring Avifauna Survey (Pond 12)	24hr TSP	1hr TSP X 3 Water Quality Monitoring	
11-Sep	**12-Sep**	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep
		Aquatic Fauna Survey (Water Quality Monitoring only) Herpetofauna Survey Water Quality Monitoring	24hr TSP Avifauna Survey (Pond 12)	1hr TSP X 3 Noise Water Quality Monitoring	Avifauna flight line survey	Water Quality Monitoring
18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep
	Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring	24hr TSP	1hr TSP X 3 Noise Water Quality Monitoring Avifauna Survey (Pond 12)		Water Quality Monitoring	
25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	
	24hr TSP Water Quality Monitoring	1hr TSP X 3 Noise	Aquatic Fauna Survey (Water Quality Monitoring only) Water Quality Monitoring Avifauna Survey (Pond 12)		24hr TSP Water Quality Monitoring	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station
DMS-1a - Village House along Ha Wan Tsuen East Road
DMS-2A - Village house along Lok Ma Chau Road
DMS-3 - Village house along Old Border Road
DMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Noise Monitoring Station
NMS-1 - Village House in Ha Wan Tsuen
NMS-2 - Village house along existing Ha Wan Tsuen East Road
NMS-3 - Village house along Old Border Road
NMS-4A - Hong Kong Police Force, Lok Ma Chau Operation Base at Horn Hill

Water Quality Monitoring Station
CS1 - Control Station at Old Shenzhen River Meander
IS1 - Impact Station at Old Shenzhen River Meander
IS2 - Impact Station at Old Shenzhen River Meander
IS4 - Impact Station for at Ping Hang Stream
CS5 - Control Station at channel at south of Lung Hau Road
IS6 - Impact Station next to Lung Hau Road
BS1 - Impact Station at Old Shenzhen River Meander
(Terminated starting from 28 June 2021- approved by EPD via email dated 22 June 2021)