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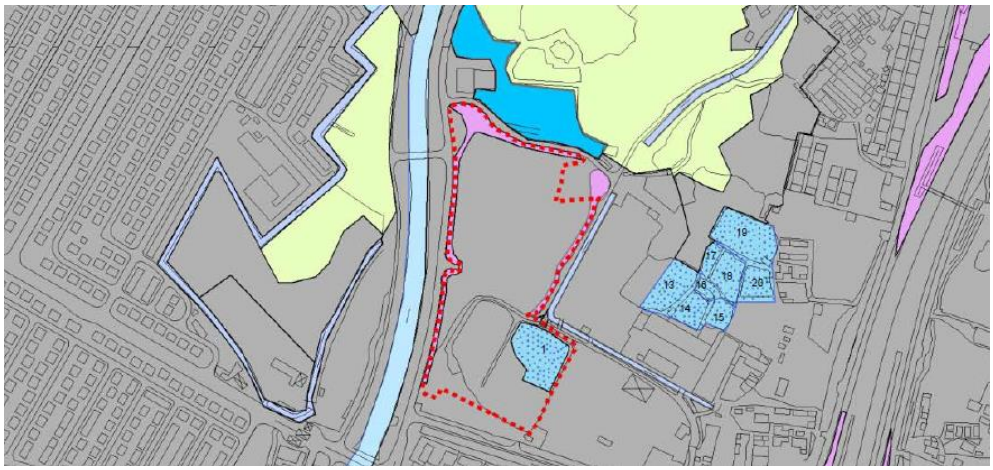
PROPOSED LOW-RISE AND LOW-DENSITY RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS AND THEIR ADJOINING GOVERNMENT LAND IN D.D. 104, EAST OF KAM POK ROAD, MAI PO, YUEN LONG, N.T.

MONTHLY EM&A REPORT

FOR FEBRUARY 2022



RAMBOLL

PROPOSED LOW-RISE AND LOW DENSITY RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS AND THEIR ADJOINING GOVERNMENT LAND IN D.D.104, EAST OF KAM POK ROAD, MAI PO, YUEN LONG, N.T.

MONTHLY EM&A REPORT FOR FEBRUARY 2022

Revision 1.1
Date 15/03/2022

Prepared by **Theo Chan (Assistant Environmental Consultant)**

Certified by **Y H Hui (Environmental Team Leader)**

Ref R8496_v1.1

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Your ref -
Our ref 255436/L016/FC/rc

ARUP

By Email

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16 March 2022

Dear Mr. Hui

Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long. N.T.
Verification of Monthly EM&A Report (February 2022)

Reference is made to Environmental Team's captioned report (R8496_v1.1) by email on 15 March 2022, pursuant to Permit Condition 5.4 of the Environmental Permit No. EP-515/2017. We are pleased to inform you that we have no comments on the captioned report. We hereby verify the captioned report for onward submission.

If you require further information, please do not hesitate to contact the undersigned.

Yours sincerely

Ricky Chui
Independent Environmental Checker

cc. Glory Queen Limited – Ms. Tina Chan (by email)
Stephen Cheng Consulting Engineers Limited – Mr. Jeff Lee (by email)
Heng Shung Construction Company Limited – Ms. Lynn Xu (by email)

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

i. This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for the project "Proposed Low-Rise and Low-Density Residential Development at Various Lots and Their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, N.T.". Ramboll Hong Kong Limited has been appointed by the Permit Holder to undertake the Environmental Team (ET) services for the project and implement the EM&A programmes.

ii. This is the first Monthly EM&A Report for the project which summaries findings of the EM&A programme during the reporting period from 14 February 2022 to 28 February 2022. As informed by the Contractor, major activities in the reporting period were:

- Installation of monitoring checkpoints
- Predrilling work for mini piles (i.e., ground investigation)
- Sand trap construction (i.e., formwork of manhole)

Breaches of Action and Limit Levels

iii. No works related air quality exceedances were recorded in the reporting period .

iv. No works related noise exceedances were recorded in the reporting period.

v. No works related water quality exceedances were recorded in the reporting period.

Complaint Log

vi. No works related environmental complaints were received in the reporting period.

Notifications of any Summons and Successful Prosecutions

vii. No notifications of summons and prosecutions were received in the reporting period.

Reporting Change

viii. There were no reporting changes during the reporting period.

Future Key Issues

ix. The main works will be anticipated in the next three months are as follow:

- Predrilling work for mini piles

- Trial pile construction
- Mini piles construction
- Site formation works
- Sheet pile construction
- Tree transplanting

1.0 INTRODUCTION

1.1 Background

1.1.1 The project site comprises various lots in D.D. 104, East of Kam Pok Road, Yuen Long. It covers an area of about 3.8ha. The site is located between Kam Pok Road, Ha Chuk Yuen Road and Fung Chuk Road, and bounded by a number of existing and planned residential developments adjacent to Castle Peak Road and Fairview Park Boulevard.

1.1.2 The project is a designated project under Item P of Part 1, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) for which Environmental Impact Assessment (EIA) report and Environmental Monitoring and Audit (EM&A) Manual was approved by EPD (Register No.: AEIAR-205/2017) on 10 January 2017. The Environmental Permit (EP) (EP No. EP-515/2017) was issued by EPD on 11 January 2017.

1.1.3 Ramboll Hong Kong Limited has been appointed as the Environmental Team (ET) by the Permit Holder (Glory Queen Limited) to undertake the Environmental Team services for implementing the EM&A programmes for the project.

1.1.4 This is the first Monthly EM&A report to document the findings of the EM&A programme from 14 February 2022 to 28 February 2022 (reporting period) and is submitted to fulfil the Condition 5.4 of the EP and Section 12.3 of the EM&A Manual.

1.2 Project Organisation

1.2.1 The project organisation structure is shown in **Figure 2**. The key personnel contact names and numbers are summarized in **Table 1**.

Table 1 Contact Information of Key Personnel

Party	Role	Post	Name	Telephone
Glory Queen Ltd.	Permit Holder	Project Manager	Ms. Tina Chan	2908 8934
Stephen Cheng Consulting Engineers Ltd.	Engineer's Representative	Project Engineer	Mr. Jeff Lee	9866 7906
Ove Arup & Partners Hong Kong Ltd	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. Ricky Chui	2268 3437
Ramboll Hong Kong Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Y H Hui	3465 2850
Heng Shung Construction Co. LTD.	Contractor	Site Agent	Mr. Leung Tuk Shing	9171 7369
		Project Coordinator	Ms. Lynn Xu	2908 2179
		Environmental Officer (EO)	Mr. Terence Cheung	9869 4146

1.3 Construction Programme and Works Undertaken

1.3.1 The construction programme was shown in **Appendix A**. As informed by the Contractor, major activities in the reporting period were:

- Installation of monitoring checkpoints
- Predrilling work for mini piles (i.e., ground investigation)
- Sand trap construction (i.e., formwork of manhole)

1.3.2 The main construction works carried out in the reporting period were as follow:

- Predrilling work
- Trial pile construction
- Mini piles construction
- Site formation works
- Sheet pile construction

- Tree transplanting

1.4 Status of Environmental Licences, Notification and Permits

1.4.1 A summary of the relevant permits, licenses and/or notifications on environmental protection for this Contract is presented in **Table 2**.

Table 2 Environmental Licenses, Notification and Permits

Permit/ Notification/ License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-515/2017	11 Jan 2017	N/A	Valid
Notification of Carrying out Notifiable Works under Air Pollution Control (Construction Dust) Regulation			
470660	17 Aug 2021	N/A	Valid
Billing Account for Disposal of Construction Waste			
7041613	17 Sep 2021	N/A	Valid
Chemical Waste Producer Registration			
5213-541-H4250-01	6 Sep 2021	N/A	Valid
Wastewater Discharge License			
WT00039502-2021	27 Jan 2022	31 Jan 2027	Valid

2.0 AIR QUALITY

2.1 Monitoring Requirement

2.1.1 In accordance with the EM&A manual, 1-hour Total Suspended Particulates (TSP) levels were measured at the designated air quality monitoring stations to monitor the potential impacts of construction dust on air quality. For construction phase impact monitoring of 1-hour TSP, a sampling frequency of at least three times every 6 days shall be undertaken when the highest dust impacts is anticipated to occur based on the nature of the construction works.

2.2 Monitoring Equipment

2.2.1 A portable direct reading dust meter was used to carry out the 1-hr TSP monitoring at the designated monitoring stations. The 1-hr TSP sampling was determinate by HVS to check the validity and accuracy of the result measured by direct reading method.

2.2.2 The model of the air quality monitoring equipment used is summarized in **Table 3**.

Table 3 Air Quality Monitoring Equipment

Item	Brand	Model	Equipment	Serial No.
1	TSI	Model AM520	Handheld TSP Meter	5201735004

2.3 Monitoring Location

2.3.1 In accordance with the EM&A Manual, one air quality monitoring location, namely AM1 was designated (**Table 4**) and the location of the air monitoring station was shown in **Figure 3**.

Table 4 Air Quality Monitoring Station

Station	Location	Location of Measurement
AM1	Existing building (near Ha San Wai Road)	Ground Level

2.4 Monitoring Methodology

2.4.1 The monitoring procedure for air quality monitoring using portable meter method, in accordance with the manufacturer's instruction, shall be as below:

1. Press the "PAGE" key to switch on the equipment.
2. Press "UP" or "DOWN" key to select "Data Log" mode.
3. Press "UP" or "DOWN" key to select "Run Manual" Mode.
4. Press the "Start/Stop" to start sampling. Light beep sound indicates the sampling in operation.
5. Place the zero cap to allow zero check sampling for 60 seconds. Proceed to next step if reading drops to zero, otherwise conduct zero calibration as per the equipment operation manual and repeat this step.
6. Press "Start/Stop" key to stop the zero-check sampling. Remove the zero cap.
7. Press the "Start/Stop" to start sampling. Record the start time of sampling and allow for sampling for 1 hour.
8. Press "Start/Stop" key to stop the sampling event after 1 hour.
9. Repeat steps 7-8 for the next sampling event.

Maintenance and Calibration

2.4.2 The portable direct reading dust meters are calibrated annually. Calibration certificates of the portable meter direct dust meters are presented in **Appendix C**.

Weather condition

2.4.3 The weather conditions, including wind data during the monitoring period were collected from the nearest Hong Kong Wetland Park Station established by the Hong Kong Observation and provided in **Appendix F**.

2.5 Monitoring Results

2.5.1 The impact air quality monitoring was conducted at the designated monitoring station as scheduled. The schedule of air quality monitoring in reporting period is provided in **Appendix D.**

2.5.2 No Action / Limit Level exceedances were recorded for 1-hr TSP at AM1.

2.5.3 No effect that arose from the other factors was noted during the current monitoring month.

2.5.4 The monitoring data of 1-hr TSP are summarized in **Table 5**. Detailed monitoring data are presented in **Appendix E**.

Table 5 Summary of Air Quality Monitoring Results

Station	Average (μg/ m^3)	Range (μg/ m^3)	Action Level (μg/ m^3)	Limit Level (μg/ m^3)
AM1	49	23 - 92	275	500

2.5.5 The Action and Limit Levels for air quality monitoring have been set and are presented in **Appendix B**.

2.5.6 The Event and Action Plan for air quality is given in **Appendix G**.

2.6 Comparison of EM&A Results with EIA Prediction

2.6.1 The monitoring data recorded in the reporting period was compared with the EIA predictions as summarized in **Table 6**.

Table 6 Comparison of EM&A Data with EIA Predictions

Station	EIA ID	Predicted Maximum 1-hr TSP (μg/ m^3)	Measured Maximum 1-hr TSP (μg/ m^3)
AM1	A27	316	92

Notes: Predicted TSP Concentration extracted from Table 3-9 of EIA Report, AEIAR-205/2017

2.6.2 The measured 1-hr TSP at AM1 was below the predicted maximum hourly average (1-hr TSP) concentration in the approved EIA report.

3.0 NOISE

3.1 Monitoring Requirement

3.1.1 In accordance with the EM&A Manual, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conducted between 0700 and 1900 on normal weekdays at the designated monitoring locations. As supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference.

3.2 Monitoring Equipment

3.2.1 Sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications were used for carrying out the noise monitoring. Immediately prior to and following each noise measurement, the accuracy of the sound level meter were checked using an acoustic calibrator generating a known sound pressure level at a known frequency. The noise monitoring equipment used to carry out the monitoring are listed in **Table 7** below.

Table 7 Noise Monitoring Equipment

Item	Brand	Model	Equipment	Serial No.
1	Rion	NL-52	Sound Level Meter	00175560
2	Rion	NL-52	Sound Level Meter	01143484
3	Rion	NC-74	Sound Level Calibrator	34857296[1]
4	Rion	NC-74	Sound Level Calibrator	34678506

3.3 Monitoring Parameters, Frequency and Location

3.3.1 In accordance with the EM&A Manual, one noise quality monitoring location, namely NM1 was designated (**Table 8**) and the location of the noise monitoring station was shown in **Figure 4.** The details of the monitoring parameters described in **Table 9**.

[1] The Sound Level Calibrator (Serial No.: 34857296) was applied for the noise monitoring on 14 February 2022 only.

Table 8 Noise Monitoring Station

Station	Location	Location of Measurement
NM1	Bethel High School	Ground Level*

*For Free Field measurement, +3dB(A) should be added to the measured results.

Table 9 Noise Monitoring Parameters, Frequency, and Duration

Station	Parameter	Frequency and Duration
NM1	L_{eq} (30 min), (L_{10} and L_{90} will be recorded for reference)	At each station at 0700-1900 hours on normal weekdays at a frequency of once a week

3.4 Monitoring Methodology

3.4.1 The monitoring procedures are as follow:

- For free field measurement, the meter was positioned away from any nearby reflective surfaces and be at a position 1.2m above the ground. All records for free field noise levels were adjusted with a correction of +3 dB(A).
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - Frequency weighting:A
  - Time weighting: Fast
  - Measurement time: 5 minutes ($L_{eq\ (30\text{-}min)}$ would be determined for daytime noise by calculating the logarithmic average of six $L_{eq\ (5min)}$ data.)
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after recalibration or repair of the equipment.
- Noise measurement should be paused during periods of high intrusive noise if possible and observation shall be recorded when intrusive noise is not avoided.
- At the end of the monitoring period, the L_{eq}, L_{10} and L_{90} shall be recorded. In addition, site conditions and noise sources should be recorded on a standard record sheet.
- Noise monitoring would be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. Supplementary monitoring would be provided to ensure sufficient data would be obtained.

3.4.2 Maintenance and calibration procedures are as follows:

- The sound level meter and calibrator should be calibrated annually by a HOKLAS laboratory. The calibration certificates are presented in **Appendix C**.

3.5 Monitoring Results

3.5.1 The schedule of noise monitoring in reporting period is provided in **Appendix D**.

3.5.2 No Action / Limit Level exceedances were recorded at NM1.

3.5.3 No effect that arose from the other factors was noted during the current monitoring month.

3.5.4 The noise monitoring data are summarized in **Table 10**. Detailed monitoring data are presented in **Appendix E**.

Table 10 Summary of Noise Monitoring Results

Time Period	Station	Range L_{eq} (30 min) dB(A)	Action Level	Limit Level dB(A)
0700-1900 hrs on normal weekdays	NM1	55.1 – 57.4	When one documented complaint is received	75

Remark: NM1: Free-field measurement (+3 dB(A) correction has been applied).

3.5.5 The Action and Limit Levels for noise impact monitoring have been set and are presented in **Appendix B**.

3.5.6 The Event and Action Plan for noise is given in **Appendix G**.

3.6 Comparison of EM&A Results with EIA Prediction

3.6.1 The noise monitoring data was compared with the EIA predictions as summarized in **Table 11**.

Table 11 Comparison of EM&A Data with EIA Predictions

Station	EIA ID	Predicted Maximum Noise Level (dB(A))	Measured Maximum Noise Level (dB(A))
NM1	N8	61-62	57.4

Unit of measurement: $L_{eq(30min)}$.

3.6.2 The construction noise monitoring results at NM1 was below the Maximum Predicted mitigated Construction Noise Level in the approved Environmental Impact Assessment (EIA) Report.

4.0 WATER QUALITY

4.1 Monitoring Requirement

4.1.1 In accordance with the EM&A Manual, water quality monitoring at designated locations at the nearby inland water bodies are proposed to be carried out during the construction phase to monitor any sub-standard water discharge into the nearby water bodies from the site. Water quality monitoring is conducted for three days per week with sampling and measurement at the designated stations.

4.2 Monitoring Equipment

4.2.1 The water monitoring equipment used during the water monitoring are presented in **Table 12**.

Table 12 Water Quality Monitoring Equipment

Model	Equipment	Serial Number
YSI (a xylem brand)	YSI ProDSS (Multi-Parameters) (Dissolved Oxygen, Temperature, pH and Turbidity)	21G105356

4.2.2 Calibration certificates of the monitoring equipment are presented in **Appendix C**.

4.3 Monitoring Parameters, Frequency and Locations

4.3.1 Six designated water monitoring stations were proposed for monitoring during construction phase. A location plan showing the monitoring locations is presented in **Figure 5**. The details of the station are described in **Table 13** and **Table 14**.

Table 13 Water Quality Monitoring Stations

Station	Nature	Location	Coordinates	
			Easting	Northing
C1	Control	Ngau Tam Mei Drainage Channel	823596.6	837730.5
W1	Impact		823297.0	837074.5
C2	Control	Drainage ditch along Ha Chuk Yuen Road	823641.3	837126.6
W2	Impact		823550.5	837375.2
C3	Control	Drainage ditch along Ha San Wai Road	823617.1	837016.3
W3	Impact		823380.4	837091.9

Table 14 Water Quality Parameters and Monitoring Frequency

Station	Monitoring Parameters	Monitoring Frequency
C1 W1 C2 W2 C3 W3	Temperature (°C); pH; Turbidity (NTU); Water Depth (m); Dissolved Oxygen (DO) (mg/L & % Saturation); and Suspended Solids (SS) (mg/L).	3 days per week (36 hours interval was allowed between subsequent sets of measurement)

4.4 Monitoring Methodology

Sampling Procedure

4.4.1 All in-situ monitoring instrument were checked and calibrated before use. DO meter and turbidimeter shall be calibrated by a HOKLAS accredited laboratory, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring.

Turbidity, DO, Temperature and pH

4.4.2 Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

4.4.3 Place the entire probe into the water bodies and make sure all the probes are fully immersed during measurement.

Suspended Solids (SS)

4.4.4 The SS determination shall be carried in a HOKLAS accredited laboratory, and the testing method shall meet the technical specification listed in the table below, or the equivalent endorsed under the HOKLAS. The HOKLAS accredited laboratory shall has comprehensive quality assurance and quality control programmes, including conducting one duplicated sample analysis for every batch of 20 samples analyzed.

4.4.5 Water samples were collected for the laboratory analysis of SS. The water samples for SS determination should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen) and keep in dark during both on-site temporary storage and shipment to the testing laboratory. The samples shall be delivered to the laboratory within 24 hours of collection and be analysed as soon as possible after collection.

4.4.6 The test method for SS determination is summarized in **Table 15** below.

Table 15 Laboratory Analysis for Suspended Solids (SS)

Parameter	Analytical Method	Limit of Reporting
Suspended Solids (SS)	APHA 2540D	2 mg/L

4.5 Monitoring Results

4.5.1 The schedule of water quality monitoring in reporting period is provided in **Appendix D**.

4.5.2 Water quality monitoring was conducted at all designated monitoring stations in the reporting period. The detailed monitoring results and graphical presentations are provided in **Appendix E**.

4.5.3 No works related Action / Limit Level exceedances were recorded at the three impact stations.

4.5.4 A total of 4 exceedances were recorded at the three impact stations. After investigation, none of the exceedances were related to the construction works of the project. The exceedances recorded in the reporting period is summarized in **Table 16**.

Table 16 Summary of Water Quality Exceedances

Station	Exceedance	DO	Turbidity	SS	Total
W1	Action	0	0	0	0
	Limit	0	0	0	0
W2	Action	0	0	0	0
	Limit	0	0	0	0
W3	Action	0	1	0	1
	Limit	0	1	2	3

4.5.5 The details of Notification of Exceedance are shown in **Appendix K.**

4.5.6 The Event and Action Plan for water quality is given in **Appendix G.**

5.0 ECOLOGY

5.1 Monitoring Requirements

5.1.1 According to the EM&A Manual, construction phase ecological monitoring will be conducted between October and March. Survey will be conducted twice a month, one at low tide and one at high tide. Transect count method will be used. Survey will cover the section of Ngau Tam Mei Drainage Channel near the project site (**Figure 6**). Abundance and their behaviour of bird species observed in the channel will be recorded. Bird species, their abundance, habitat utilization and behaviour in this section of Ngau Tam Mei Drainage Channel will be recorded during each survey. Any changes in site condition that will potentially affect utilisation of the channel by birds will also be reported.

5.1.2 A summary report will be submitted within one week after completion of monitoring surveys of each year. The report will summarise the survey results, any major changes in site condition that might affect bird uses of the channel and any significant changes in bird community in the surveyed section of Ngau Tam Mei Drainage Channel. Effectiveness of the proposed mitigation measures will also be evaluated.

5.1.3 Regular site audit will be conducted on weekly basis for checking the implementation of good site practice during construction phase. The ecological surveys and the audits should be undertaken by a qualified ecologist.

5.2 Monitoring Results

5.2.1 According to the EM&A Manual, the ecological monitoring results will be submitted separately and is not included in the regular EM&A report.

6.0 WASTE MANAGEMENT

6.1 Monitoring Requirements

6.1.1 According to the EM&A Manual, waste management would be the contractor's responsibility to ensure that all wastes produced during the construction works for the project are handled, stored and disposed of in accordance with good waste management practices, EPD's regulations and requirements. An environmental management plan (EMP) should be prepared and submitted to the Supervisor for approval. The monitoring and auditing requirements of the EMP should be followed with regard to the management of C&D material. Site inspections would be undertaken by the ET at least once every week during the construction period.

6.2 Waste Management Status

6.2.1 Site audits were carried out on a weekly basis to monitor and audit to ensure that proper storage, transportation and disposal practices of waste materials generated during construction activities, such as C&D materials and general refuse are being implemented. The monthly summary of waste flow table is detailed in **Appendix H**.

6.2.2 No outstanding issues were reported during the reporting period. Details of observations recorded during the site inspections are summarized in **Appendix J**.

7.0 LANDSCAPE AND VISUAL

7.1 Audit Requirements

7.1.1 According to the EM&A Manual, quarterly site audit would be undertaken during the construction phase and planting establishment period of the project to check that the proposed landscape and visual mitigation measures are properly implemented and maintained as per their intended objectives.

7.1.2 The audit will be undertaken by a member of the ET who is a certified arborist or who has tree survey relevant experiences not less than 1 year for monitoring and auditing the landscape works during the construction period (construction phase) and the planting establishment period (operation phase).

7.2 Results and Observations

7.2.1 To monitor and audit the implementation of landscape and visual mitigation measures, quarterly site audits would be carried out during the construction phase. No site audit was carried out during the reporting period.

8.0 ENVIRONMENTAL AUDIT

8.1 Site Audits

8.1.1 Site audits should be carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

8.1.2 In the reporting period, two site inspections with the contractor were carried out on 18 and 23 February 2022.

8.1.3 No outstanding issues were reported during the reporting period. Details of observations recorded during the site inspections are summarized in **Appendix J**.

8.2 Implementation Status of Environmental Mitigation Measure

8.2.1 The Contractor had implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and EM&A Manuals. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix L**.

9.0 ENVIRONMENTAL COMPLAINT AND NON-CONFORMANCE

9.1 Environmental Exceedance

9.1.1 No works related air quality exceedances were recorded in the reporting period.

9.1.2 No works related noise exceedances were recorded in the reporting period.

9.1.3 No works related water quality exceedances were recorded in the reporting period. A total of 4 water quality exceedances were recorded in the reporting period and these were investigated and found not works related.

9.2 Complaints, Notification of Summons and Prosecution

9.2.1 No environmental complaint, notification of summons and successful prosecution were received in the reporting period.

9.2.2 Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Appendix I.**

9.2.3 Cumulative statistic on complaints and successful prosecutions are summarized in **Table 17**.

Table 17 Cumulative Statistics on Complaints and Successful Prosecutions

Period	Complaints	Successful Prosecutions
February 2022	0	0
Total	0	0

10.0 FUTURE KEY ISSUES

10.1 Construction Programme

10.1.1 Tentative construction programmes for the next three months are provided in **Appendix D**.

10.2 Key Issues for the Coming Month

10.2.1 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, wastewater, waste management, ecology, and landscape and visual impact issues.

10.3 Monitoring Schedules

10.3.1 The tentative environmental monitoring schedule for the next months is provided in **Appendix D**.

11.0 CONCLUSION AND RECOMMENDATIONS

11.1 Conclusion

11.1.1 The construction phase and EM&A programme of the Project commenced on 14 February 2022.

11.1.2 For construction phase air quality monitoring carried out in the reporting period, no works related Action/Limit Level exceedances were recorded at the designate station.

11.1.3 For construction noise monitoring carried out in the reporting period, no works related Action/Limit Level exceedances were recorded at the designated station.

11.1.4 For construction phase water quality monitoring carried out in the reporting period, no works related Action / Limit Level exceedances were recorded at the designated stations. While a total of 4 exceedances were recorded, they were investigated and found not project works related.

11.1.5 Two environmental site audit and inspections were carried out in the reporting period. Recommendations on remedial actions were given to the Contractor for remediating the deficiencies identified during the site audit and inspections.

11.1.6 Ecological monitoring was conducted in the reporting period and the monitoring result will be submitted separately as per the EM&A Manual.

11.1.7 Audit and monitoring of the implementation of landscape and visual mitigation measures shall be conducted quarterly. No landscape and visual audit and monitoring was scheduled in the reporting period.

11.1.8 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting period.

11.2 Recommendations

11.2.1 The recommended environmental mitigation measures, as proposed in the EIA reports and EM&A Manuals shall be effectively implemented to minimize the potential environmental impacts from the Project. The EM&A programme would effectively monitor the environmental impacts generated from the construction activities and ensure the proper implementation of mitigation measures.

11.2.2 According to the environmental site audit and inspections performed in the reporting period, the following recommendations were provided:

Air Quality Impact

- The contractor was reminded that the stockpile should be covered by impervious material to minimize dust emission.

- Wheel washing should be provided to ensure no mud deposits on public roads.

Construction Noise Impact

- No specific observation was identified in the reporting period.

Water Quality Impact

- No specific observation was identified in the reporting period.

Chemical and Waste Management

- No specific observation was identified in the reporting period.

Ecology

- No specific observation was identified in the reporting period.

Landscape and Visual Impact

- No specific observation was identified in the reporting period.

Hazard to Life

- No specific observation was identified in the reporting period.

Permit / License

- No specific observation was identified in the reporting period.

Figure 1 Location of the Project Site

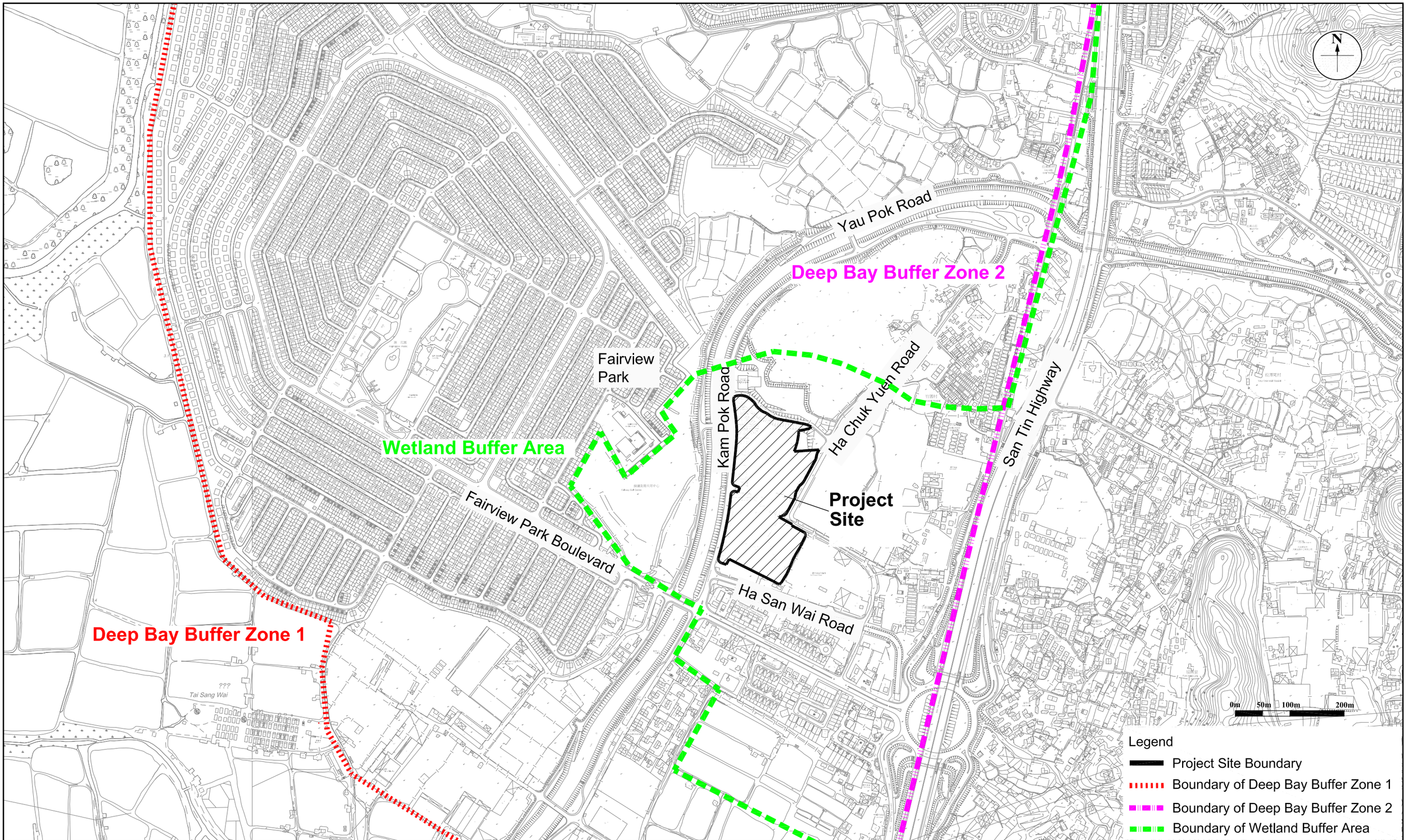
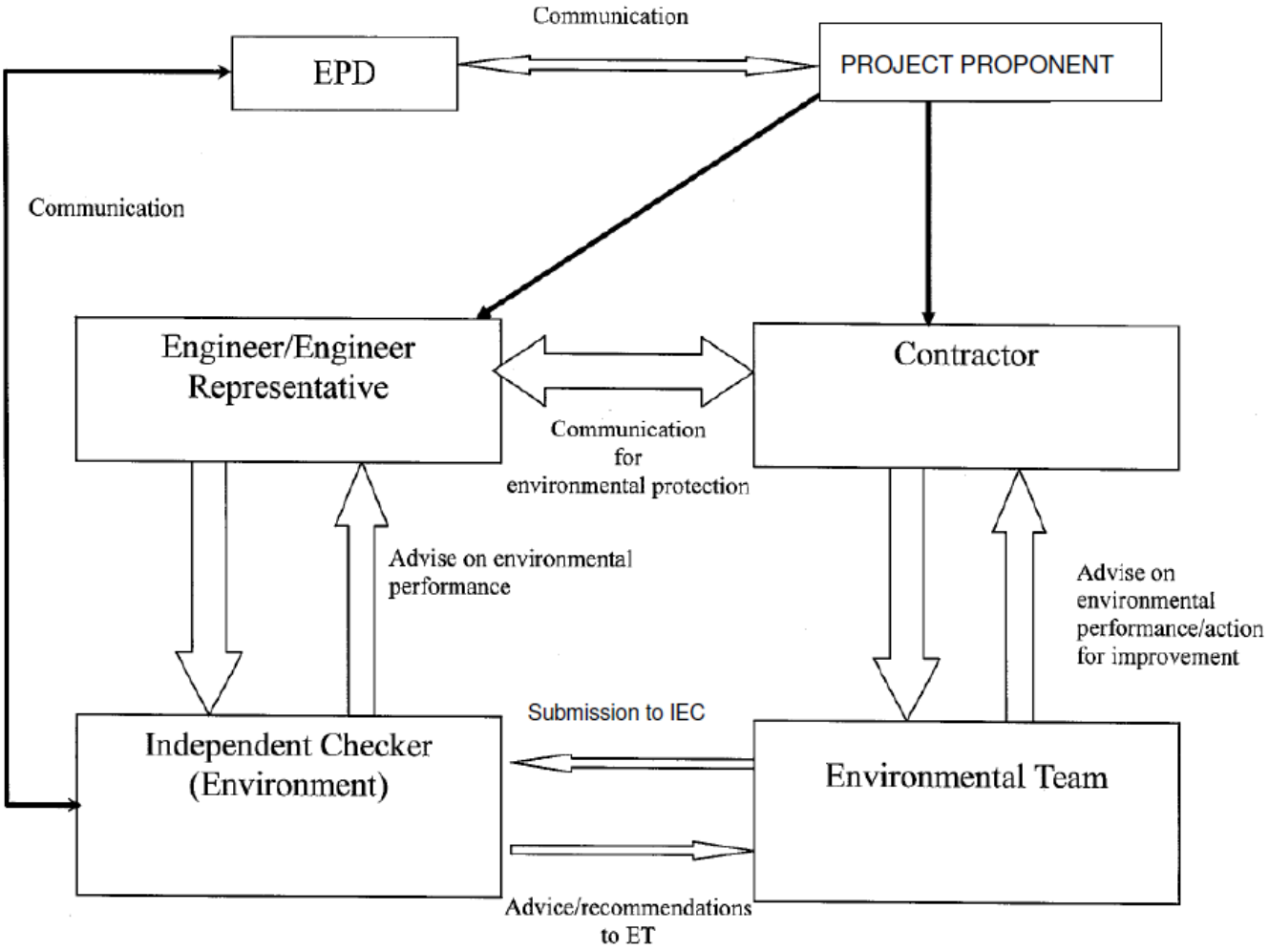


Figure: 1-1	RAMBOLL ENVIRON
Title: Project Location Plan	Drawn by: HN
	Checked by: TC
Project: **EIA for Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, N.T.**	Rev.: 1.4
	Date: Dec 2015

Figure 2 Typical Construction Phase Environmental Monitoring and Audit Procedure with Project Organisation Structure



Notes:

Please refer to the EM&A Manual for duties and responsibilities of each party.

Submission from ET to IEC:

* Implementation status proforma on mitigation action;
* Proactive environmental protection proforma for construction method alternative;
* Regulatory compliance proforma listing licenses/permit compliance;
* Site inspection proforma;
* Complaint report;
* EM&A report for endorsement;
* Effectiveness of EIA recommendations.

Advice/ Recommendations from IEC to ET:

* Advise on environmental performance
* Return/sign off audit proformas
* Environmental concerns recommendations on construction methods

Figure: 2	RAMBOLL
Title: Typical Construction Phase Environmental Monitoring and Audit Procedure with Project Organisation structure	Drawn by: HN Checked by: TC
Project: Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, N.T.	Rev.: 1.0 Date: Dec 2015

Figure 3 Locations of Air Quality Monitoring Stations

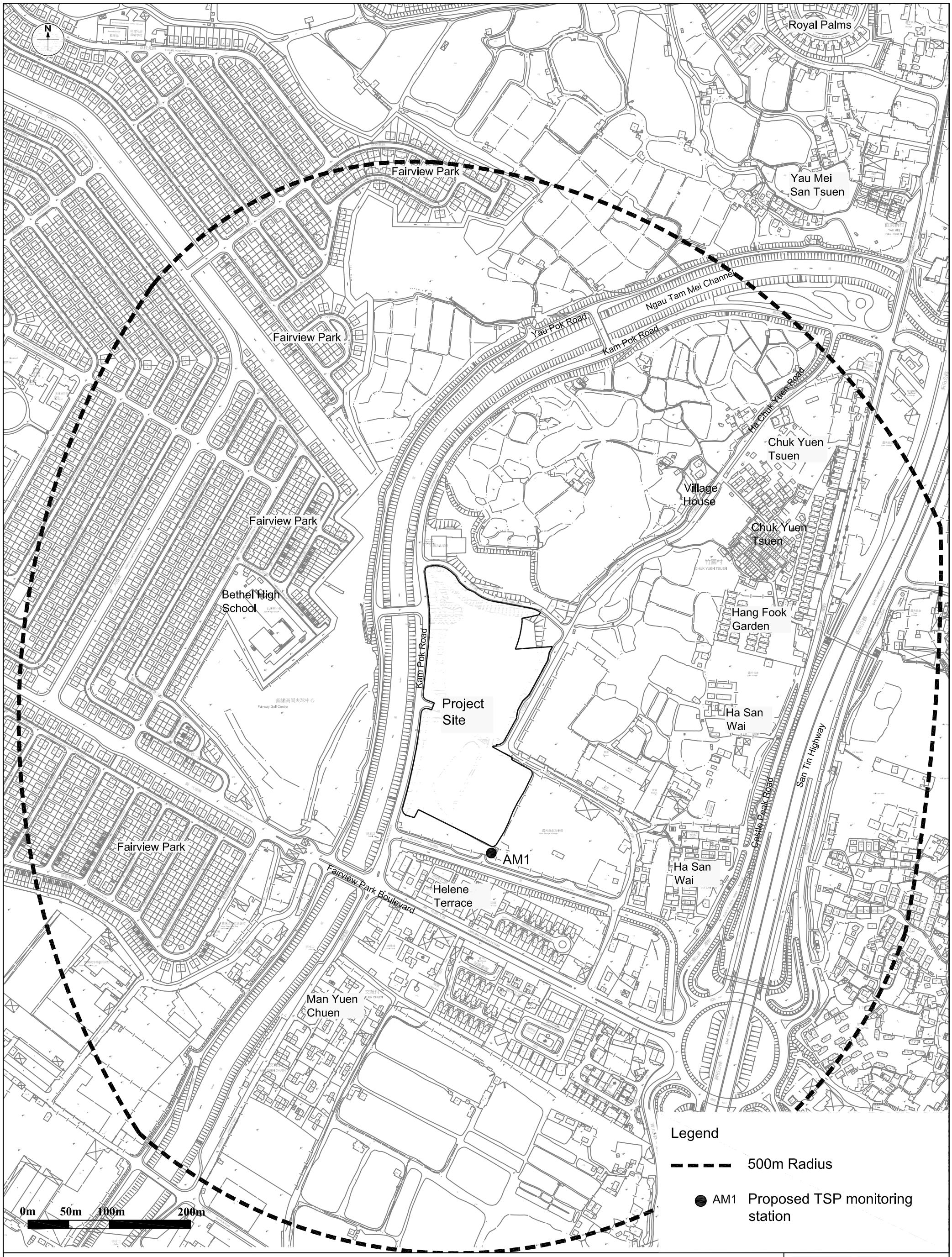


Figure: 3	RAMBOLL
Title: Construction Phase Air Quality Monitoring Station	Drawn by: HN
	Checked by: TC
Project: **EIA for Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, N.T.**	Rev.: 1.0
	Date: Dec 2015

Figure 4 Locations of Noise Monitoring Stations

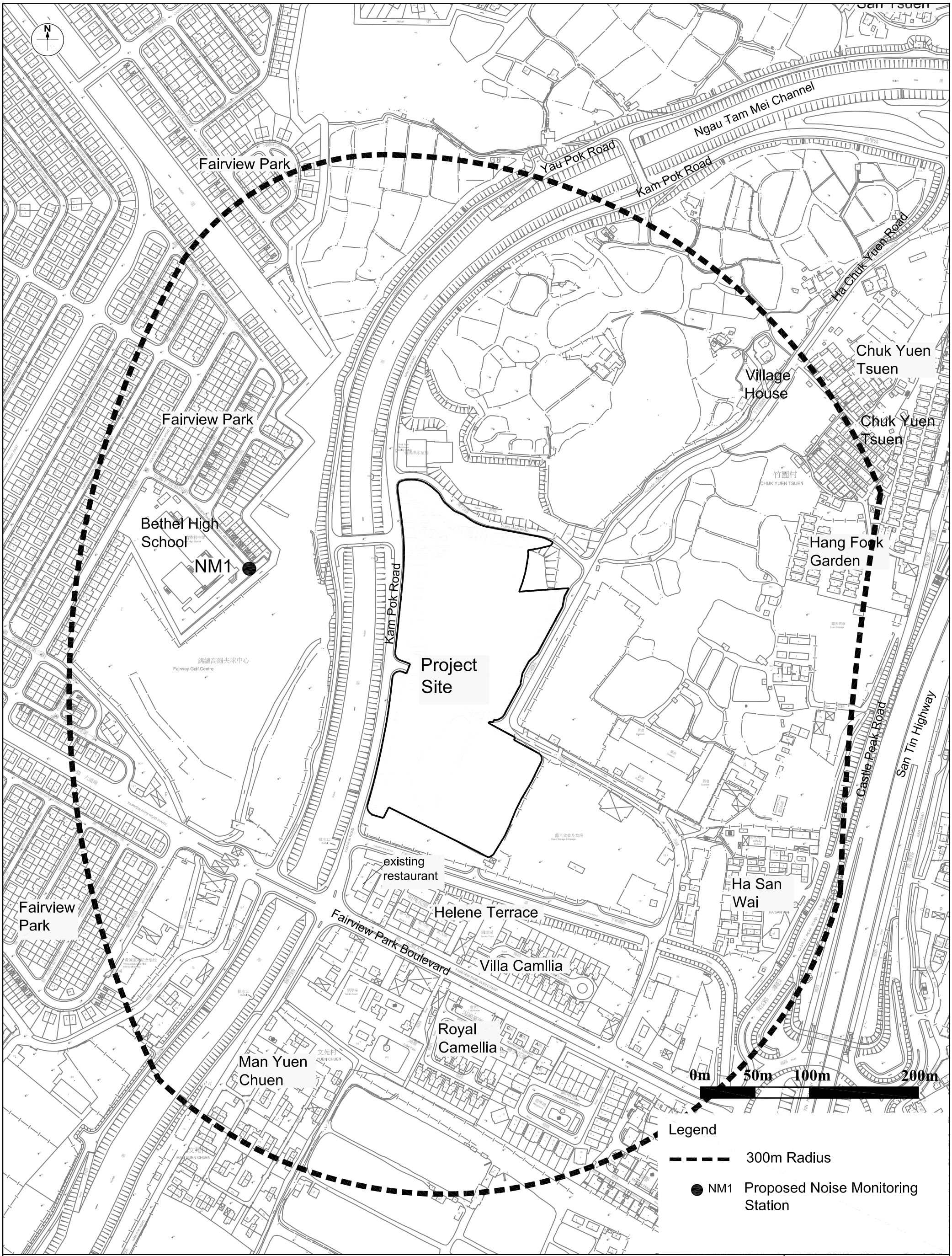


Figure: 4	RAMBOLL
Title: Construction Phase Noise Monitoring Stations	Drawn by: HN
	Checked by: TC
Project: **EIA for Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, N.**T.	Rev.: 1.0
	Date: Dec 2015

Figure 5 Locations of Water Quality Monitoring Stations

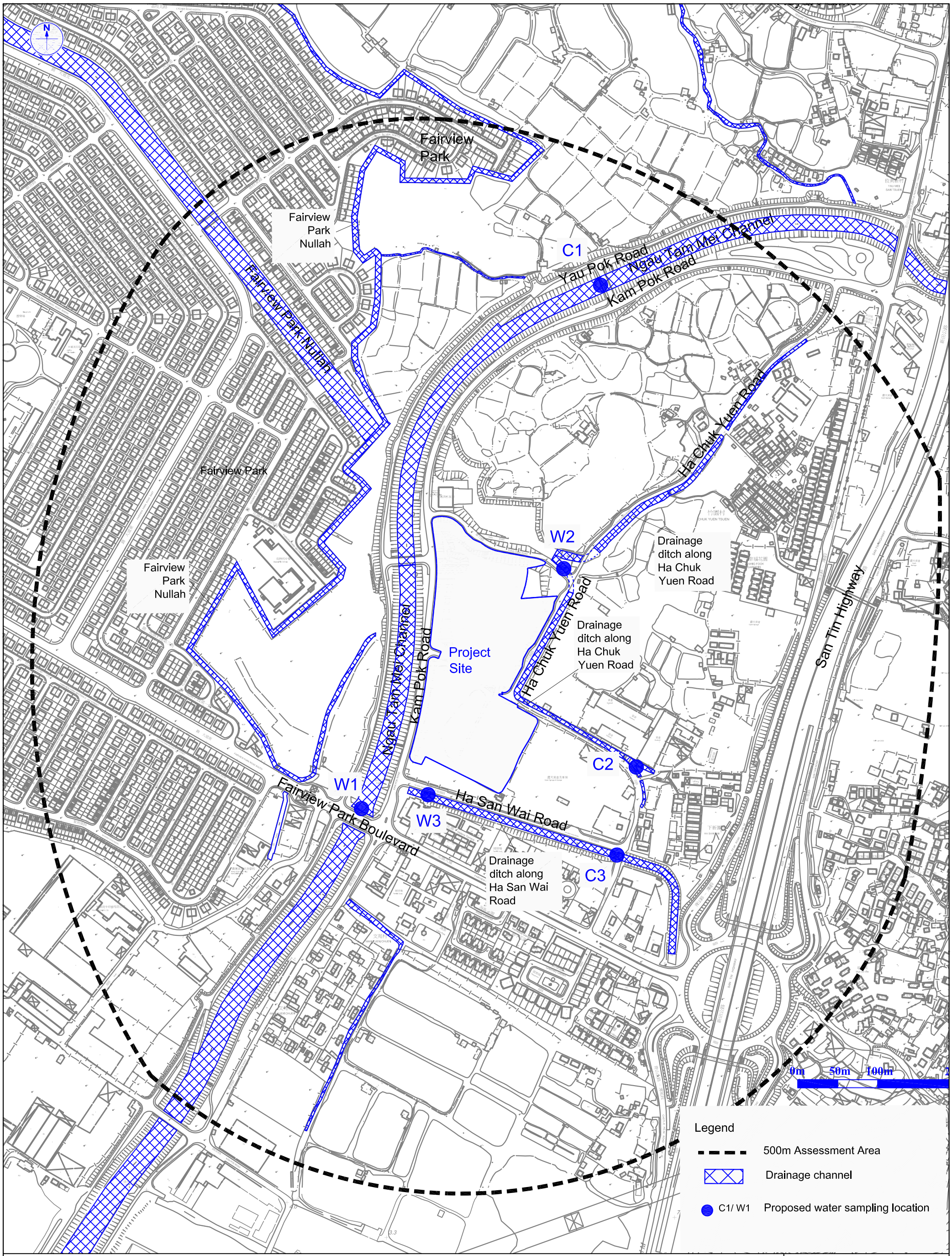


Figure: 5	RAMBOLL
Title: Construction Phase Water Quality Monitoring Stations	Drawn by: HN
	Checked by: TC
Project: Environmental Impact AssessmentProposed Residential cum Passive Recreational Development within "Recreation" (“REC”) Zone and Residential (Group C)” Zone at Various Lots in DD 104, Yuen Long, N.T	Rev.: 1.0
	Date: Dec 2015

Figure 6 Location of Survey Transect to be Covered During Baseline Survey and Construction Phase Monitoring

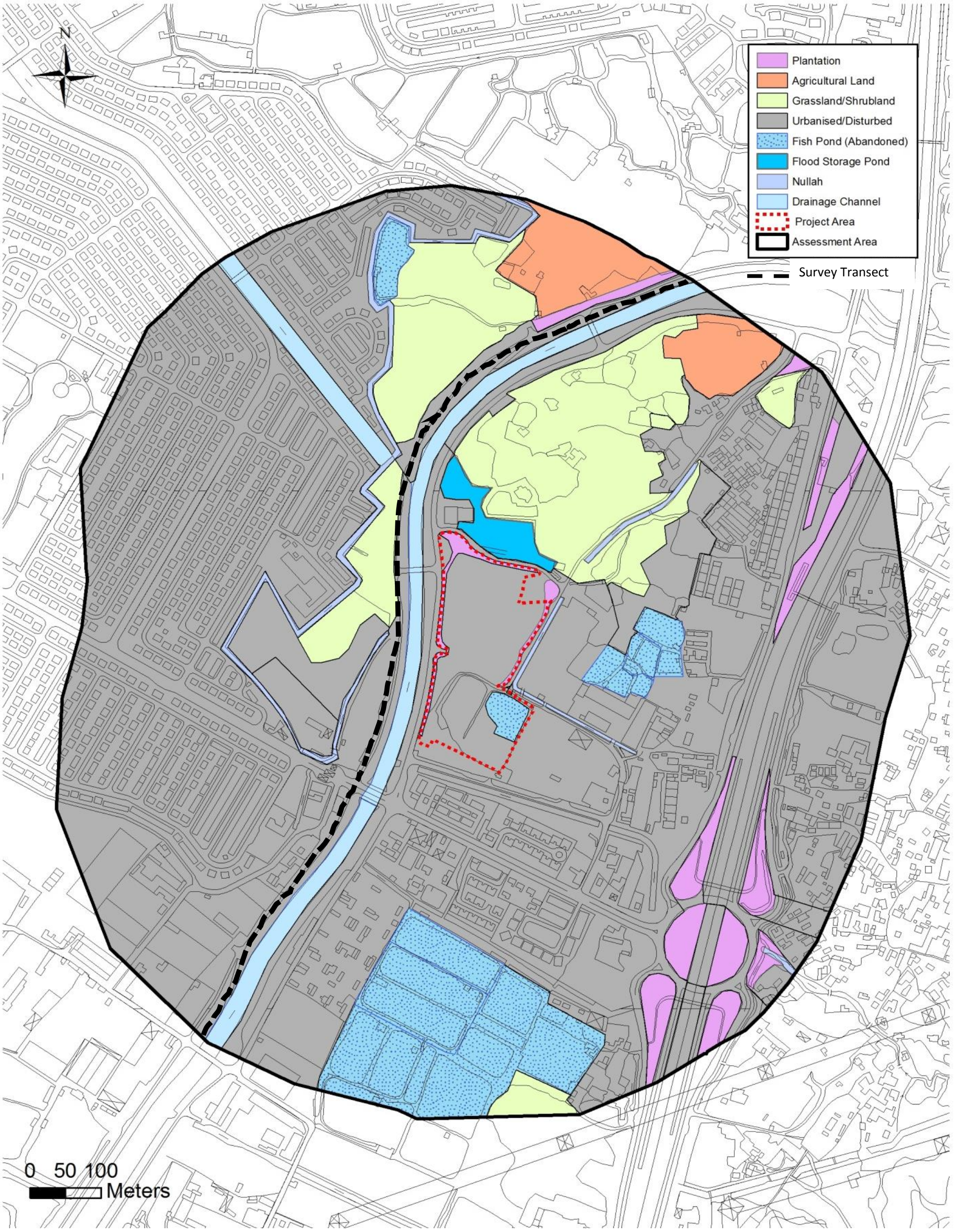


Figure: 6	RAMBOLL
Title: **Location of Survey Transect To be Covered During Baseline Survey and Construction Phase Monitoring**	Drawn by: HK
	Checked by: HN
Project: Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in DD 104, East of Kam Pok Road, Mai Po, Yuen Long, N.T.	Rev.: 1.0
	Date: Feb 2016

Appendix A Construction Programme

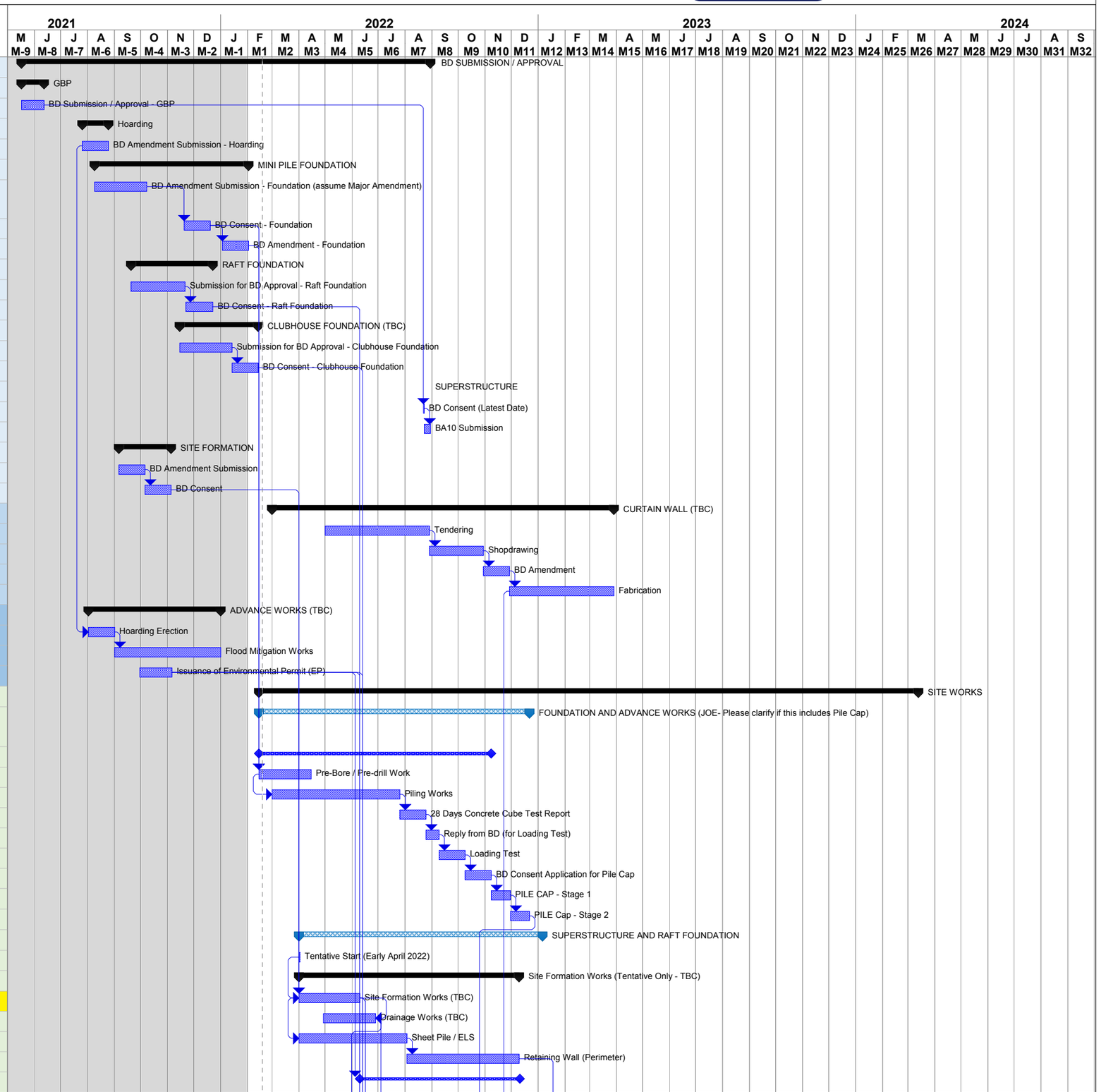
恒順建築有限公司
HENG SHUNG CONSTRUCTION CO. LTD.

Proposed Development
at Kam Pok Road, Mai Po, Yuen Long
Preliminary Programme

DRAFT

Ref. KPR-S-PP01
18-Feb-22
DRAFT8

ID	Task Name	Duration	Start	Finish
1	**BD SUBMISSION / APPROVAL**	**470 days**	**17 May '21**	**29 Aug '22**
2	**GBP**	**26 days**	**17 May '21**	**11 Jun '21**
3	BD Submission / Approval - GBP	26 days	17 May '21	11 Jun '21
4	**Hoarding**	**30 days**	**26 Jul '21**	**24 Aug '21**
5	BD Amendment Submission - Hoarding	30 days	26 Jul '21	24 Aug '21
6	**MINI PILE FOUNDATION**	**177 days**	**09 Aug '21**	**01 Feb '22**
7	BD Amendment Submission - Foundation (assume Major Amendment)	60 days	09 Aug '21	07 Oct '21
8	BD Consent - Foundation	30 days	20 Nov '21	19 Dec '21
9	BD Amendment - Foundation	30 days	03 Jan '22	01 Feb '22
10	**RAFT FOUNDATION**	**94 days**	**20 Sep '21**	**22 Dec '21**
11	Submission for BD Approval - Raft Foundation	62 days	20 Sep '21	20 Nov '21
12	BD Consent - Raft Foundation	31 days	22 Nov '21	22 Dec '21
13	**CLUBHOUSE FOUNDATION (TBC)**	**90 days**	**15 Nov '21**	**12 Feb '22**
14	Submission for BD Approval - Clubhouse Foundation	60 days	15 Nov '21	13 Jan '22
15	BD Consent - Clubhouse Foundation	30 days	14 Jan '22	12 Feb '22
16	**SUPERSTRUCTURE**	**8 days**	**22 Aug '22**	**29 Aug '22**
17	BD Consent (Latest Date)	1 day	22 Aug '22	22 Aug '22
18	BA10 Submission	7 days	23 Aug '22	29 Aug '22
19	**SITE FORMATION**	**60 days**	**06 Sep '21**	**04 Nov '21**
20	BD Amendment Submission	30 days	06 Sep '21	05 Oct '21
21	BD Consent	30 days	06 Oct '21	04 Nov '21
22	**CURTAIN WALL (TBC)**	**393 days**	**01 Mar '22**	**28 Mar '23**
26	Tendering	120 days	01 May '22	28 Aug '22
27	Shopdrawing	62 days	29 Aug '22	29 Oct '22
28	BD Amendment	30 days	30 Oct '22	28 Nov '22
29	Fabrication	120 days	29 Nov '22	28 Mar '23
30	**ADVANCE WORKS (TBC)**	**152 days**	**02 Aug '21**	**31 Dec '21**
31	Hoarding Erection	30 days	02 Aug '21	31 Aug '21
32	Flood Mitigation Works	122 days	01 Sep '21	31 Dec '21
33	**Issuance of Environmental Permit (EP)**	**30 days**	**30 Sep '21**	**05 Nov '21**
34	**SITE WORKS**	**758 days**	**14 Feb '22**	**12 Mar '24**
35	**FOUNDATION AND ADVANCE WORKS (JOE- Please clarify if this includes Pile Cap)**	**311 days**	**14 Feb '22**	**21 Dec '22**
36	**Mini PILE FOUNDATION**	**267 days**	**14 Feb '22**	**07 Nov '22**
37	Pre-Bore / Pre-drill Work	60 days	14 Feb '22	14 Apr '22
38	Piling Works	147 days	01 Mar '22	25 Jul '22
39	28 Days Concrete Cube Test Report	30 days	26 Jul '22	24 Aug '22
40	Reply from BD (for Loading Test)	15 days	25 Aug '22	08 Sep '22
41	Loading Test	30 days	09 Sep '22	08 Oct '22
42	BD Consent Application for Pile Cap	30 days	09 Oct '22	07 Nov '22
43	**PILE CAP - Stage 1**	**22 days**	**08 Nov '22**	**29 Nov '22**
44	**PILE Cap - Stage 2**	**22 days**	**30 Nov '22**	**21 Dec '22**
45	**SUPERSTRUCTURE AND RAFT FOUNDATION**	**280 days**	**01 Apr '22**	**05 Jan '23**
46	Tentative Start (Early April 2022)	1 day	01 Apr '22	01 Apr '22
47	**Site Formation Works (Tentative Only - TBC)**	**253 days**	**01 Apr '22**	**09 Dec '22**
48	Site Formation Works (TBC)	70 days	01 Apr '22	09 Jun '22
49	Drainage Works (TBC)	60 days	29 Apr '22	27 Jun '22
50	Sheet Pile / ELS	90 days	01 Apr '22	02 Aug '22
51	Retaining Wall (Perimeter)	100 days	03 Aug '22	09 Dec '22
52	**Raft FOUNDATION**	**184 days**	**10 Jun '22**	**10 Dec '22**

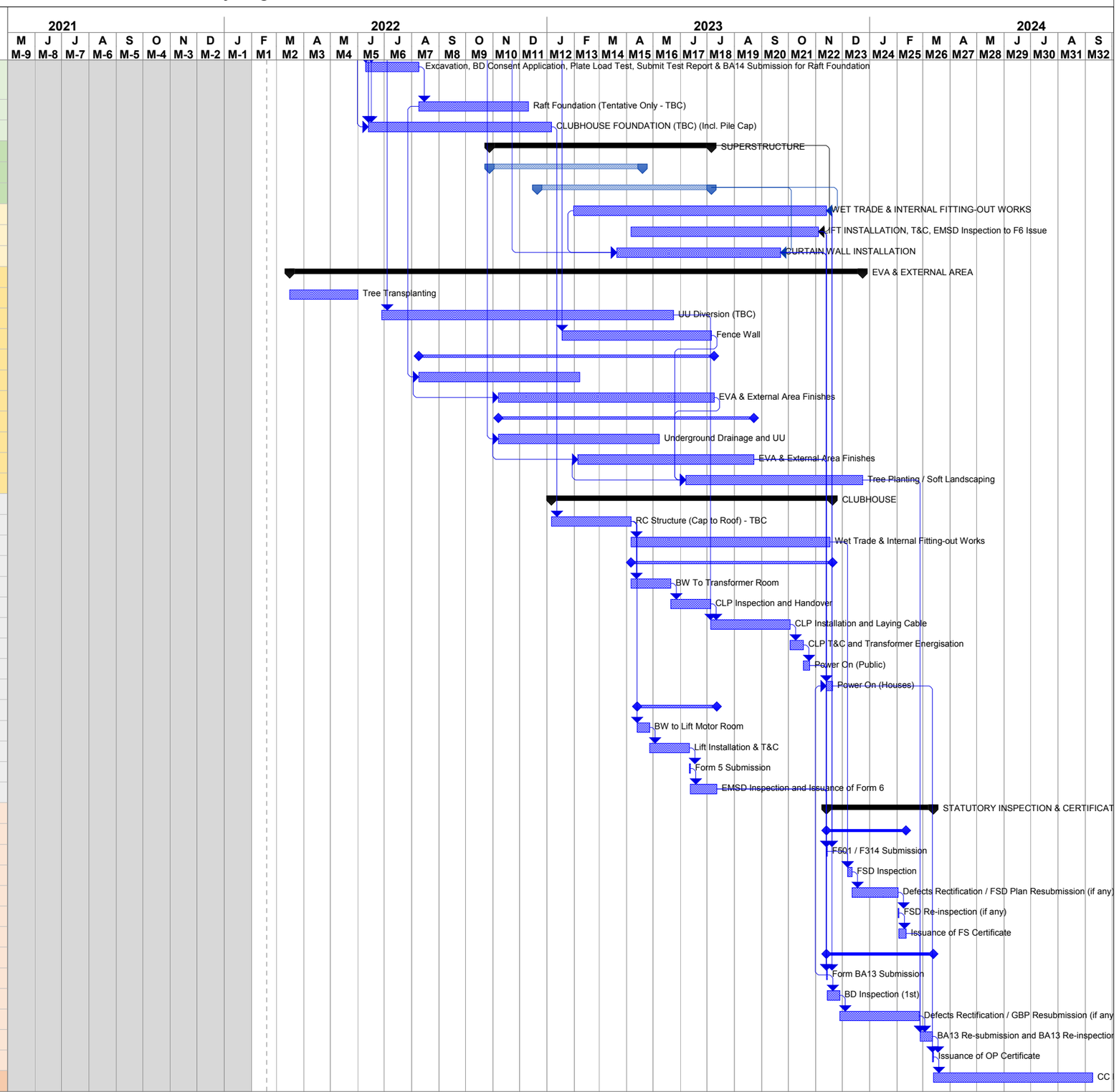


恒順建築有限公司
HENG SHUNG CONSTRUCTION CO. LTD.

Proposed Development
at Kam Pok Road, Mai Po, Yuen Long
Preliminary Programme

Ref. KPR-S-PP01
18-Feb-22
DRAFT8

ID	Task Name	Duration	Start	Finish
53	Excavation, BD Consent Application, Plate Load Test, Submit Test Report & BA14 Submission for Raft Foundation	60 days	10 Jun '22	08 Aug '22
54	Raft Foundation (Tentative Only - TBC)	124 days	09 Aug '22	10 Dec '22
55	**CLUBHOUSE FOUNDATION (TBC) (Incl. Pile Cap)**	**207 days**	**13 Jun '22**	**05 Jan '23**
56	**SUPERSTRUCTURE**	**251 days**	**28 Oct '22**	**05 Jul '23**
57	**HOUSES WITHIN RAFT FOUNDATION**	**173 days**	**28 Oct '22**	**18 Apr '23**
115	**HOUSES WITHIN MINI PILE FOUNDATION**	**197 days**	**21 Dec '22**	**05 Jul '23**
148	**WET TRADE & INTERNAL FITTING-OUT WORKS**	**286 days**	**31 Jan '23**	**12 Nov '23**
149	**LIFT INSTALLATION, T&C, EMSD Inspection to F6 Issue**	**212 days**	**06 Apr '23**	**03 Nov '23**
150	**CURTAIN WALL INSTALLATION**	**185 days**	**21 Mar '23**	**21 Sep '23**
151	**EVA & EXTERNAL AREA**	**648 days**	**16 Mar '22**	**23 Dec '23**
152	Tree Transplanting	77 days	16 Mar '22	31 May '22
153	UU Diversion (TBC)	330 days	28 Jun '22	23 May '23
154	Fence Wall	120 days	18 Jan '23	05 Jul '23
155	**Raft Foundation Area**	**334 days**	**09 Aug '22**	**08 Jul '23**
156	Underground Drainage and UU	182 days	09 Aug '22	06 Feb '23
157	EVA & External Area Finishes	244 days	07 Nov '22	08 Jul '23
158	**Mini-Pile Foundation Area**	**289 days**	**07 Nov '22**	**22 Aug '23**
159	Underground Drainage and UU	182 days	07 Nov '22	07 May '23
160	EVA & External Area Finishes	199 days	05 Feb '23	22 Aug '23
161	Tree Planting / Soft Landscaping	200 days	07 Jun '23	23 Dec '23
162	**CLUBHOUSE**	**318 days**	**06 Jan '23**	**19 Nov '23**
163	RC Structure (Cap to Roof) - TBC	90 days	06 Jan '23	05 Apr '23
164	Wet Trade & Internal Fitting-out Works	225 days	06 Apr '23	16 Nov '23
165	**Transformer Room**	**228 days**	**06 Apr '23**	**19 Nov '23**
166	BW To Transformer Room	45 days	06 Apr '23	20 May '23
167	CLP Inspection and Handover	45 days	21 May '23	04 Jul '23
168	CLP Installation and Laying Cable	90 days	05 Jul '23	02 Oct '23
169	CLP T&C and Transformer Energisation	15 days	03 Oct '23	17 Oct '23
170	Power On (Public)	7 days	18 Oct '23	24 Oct '23
171	Power On (Houses)	7 days	13 Nov '23	19 Nov '23
172	**Lift Installation**	**90 days**	**13 Apr '23**	**11 Jul '23**
173	BW to Lift Motor Room	14 days	13 Apr '23	26 Apr '23
174	Lift Installation & T&C	45 days	27 Apr '23	10 Jun '23
175	Form 5 Submission	1 day	11 Jun '23	11 Jun '23
176	EMSD Inspection and Issuance of Form 6	30 days	12 Jun '23	11 Jul '23
177	**STATUTORY INSPECTION & CERTIFICATION**	**121 days**	**13 Nov '23**	**12 Mar '24**
178	**Fire Services Department (FSD)**	**90 days**	**13 Nov '23**	**10 Feb '24**
179	F501 / F314 Submission	1 day	13 Nov '23	13 Nov '23
180	FSD Inspection	3 days	07 Dec '23	11 Dec '23
181	Defects Rectification / FSD Plan Resubmission (if any)	52 days	12 Dec '23	01 Feb '24
182	FSD Re-inspection (if any)	1 day	02 Feb '24	02 Feb '24
183	Issuance of FS Certificate	8 days	03 Feb '24	10 Feb '24
184	**Buildings Department (BD)**	**121 days**	**13 Nov '23**	**12 Mar '24**
185	Form BA13 Submission	1 day	13 Nov '23	13 Nov '23
186	BD Inspection (1st)	14 days	14 Nov '23	27 Nov '23
187	Defects Rectification / GBP Resubmission (if any)	90 days	28 Nov '23	25 Feb '24
188	BA13 Re-submission and BA13 Re-inspection (if any)	14 days	27 Feb '24	11 Mar '24
189	Issuance of OP Certificate	1 day	12 Mar '24	12 Mar '24
190	**CC Period**	**180 days**	**13 Mar '24**	**08 Sep '24**



Appendix B Action and Limit Levels

Action / Limit Levels for Air Quality

Monitoring Station	Action Level	Limit Level
AM1	275 µg/m^3	500 µg/m^3

Notes:

1. Action level = (baseline level * 1.3 + Limit level)/2; For baseline level > 384 µg/m3, Action level = Limit level

Action and Limit Levels for Construction Noise

Monitoring Station	Action Level	Limit Level
NM1	When one documented complaint is received	75 dB(A) [3]

Notes:

1. 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.
2. Correction of +3 dB(A) shall be made to the free field measurements.
3. Reduce to 10dB(A) for schools and 65dB(A) during school examination periods.

Action and Limit Levels for Water Quality

Stations	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
	AL	LL	AL	LL	AL	LL
W1	2.2	2.1	38.0	38.6	60.1	65.5
W2	2.9	2.8	44.1	46.7	37.8	42.8
W3	1.8	1.7	32.0	32.6	44.5	47.5

Appendix C Calibration Certificates of Air, Noise and Water Quality Monitoring Equipment

Enovative Environmental Service Limited

REPORT OF EQUIPMENT CALIBRATION

INSTRUMENT DESCRIPTION

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler and the filter paper is weighted by HOKLAS laboratory.

Instrument:	Handheld TSP meter
Brand Name:	TSI
Model No.:	AM520
Serial No.:	5201735004
Date of Calibration:	30 July, 2021
Date of Next Calibration :	30 July, 2022

ISSUING ORGANISATION

Address

Enovative Environmental Service Limited

Flat 23, 6/F, Block C, Goldfield Industrial Centre
1 Sui Wo Road
Shatin, N.T.
Hong Kong

Phone: 852-2242 1020
Fax: 852-3691 9240
Email: info@eno.com.hk

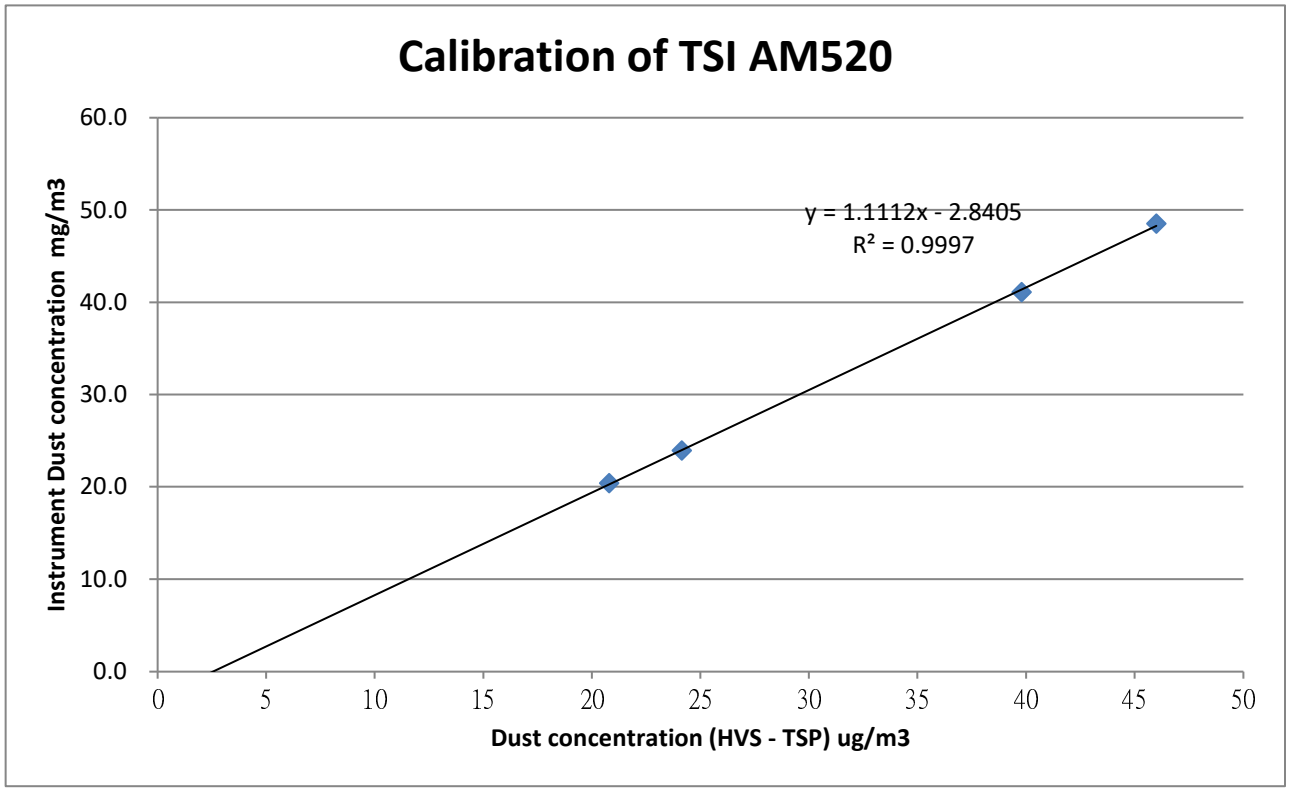
Mr Wong Siu Ho, Thomas
Manager

Enovative Environmental Service Limited

Brand Name:	TSI
Model No.:	AM520
Serial No.:	5201735004
HVS No.:	A12-TSP-104
HVS Calibration Kit No.:	Tisch 1941
Date of Calibration:	30 July, 2021
Date of next Calibration:	30 July, 2022

Calibration Record

HVS - TSP ug/m3	20.8	39.8	46.0	24.15
TSI AM520	20.4	41.1	48.5	23.93



*** Filter paper being used in the calibration : 208332, 208333, 208334, 208335
Those filter papers are weighted by HOKLAS laboratory (ALS Technichem (HK) Pty Ltd.)

Mr Wong Siu Ho, Thomas
Manager

TSP Sampler Calibration

SITE

Location:
Sampler: TE-5170 MFC (Serial # : 2359)

Date: July 14, 2021
Tech: Sam Wong

CONDITIONS

Barometric Pressure (in Hg):	39.70	Corrected Pressure (mm Hg):	1008
Temperature (deg F):	88	Temperature (deg K):	304
Average Press. (in Hg):	39.70	Corrected Average (mm Hg):	1008
Average Temp. (deg F):	88	Average Temp. (deg K):	304

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.10574
Model:	TE-5025A	Qstd Intercept:	-0.00985
Serial#:	1941	Date Certified:	January 19, 2021

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	12.40	1.911	58.0	66.13	Slope =	33.5517
2	10.20	1.734	52.0	59.29	Intercept =	1.4626
3	8.00	1.536	46.0	52.45	Corr. coeff.=	0.9994
4	5.20	1.239	38.0	43.33		
5	3.20	0.973	30.0	34.21	# of Observations:	5

Calculations

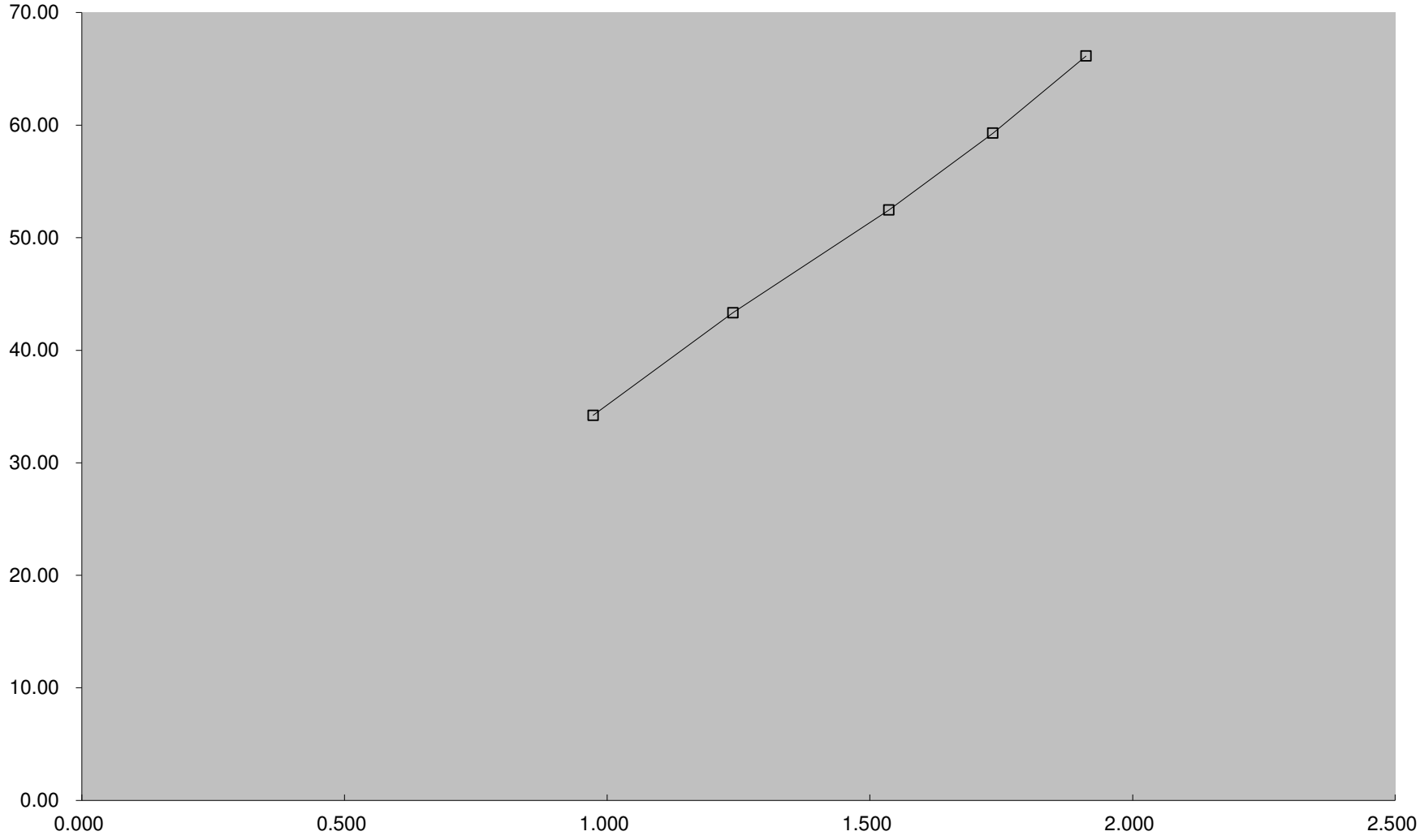
Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

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

Calibrated By : **Sam WONG**

Checked By : **Thomas WONG**


70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
0.000
0.500
1.000
1.500
2.000
2.500

TISCH Environmental

RECALIBRATION DUE DATE:
January 19, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	January 19, 2021	**Rootsmeter S/N:** 438320	**Ta:** 294	°K
Operator:	Jim Tisch		**Pa:** 755.1	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **1941**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4830	3.2	2.00
2	3	4	1	1.0420	6.4	4.00
3	5	6	1	0.9290	8.0	5.00
4	7	8	1	0.8840	8.8	5.50
5	9	10	1	0.7340	12.9	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0029	0.6762	1.4192	0.9958	0.6715	0.8824
0.9986	0.9583	2.0071	0.9915	0.9516	1.2479
0.9965	1.0726	2.2440	0.9894	1.0650	1.3952
0.9954	1.1260	2.3535	0.9883	1.1180	1.4633
0.9899	1.3487	2.8385	0.9829	1.3391	1.7648
QSTD	**m=**	**2.10574**	**QA**	**m=**	**1.31858**
	b=	**-0.00985**		**b=**	**-0.00612**
	r=	**0.99992**		**r=**	**0.99992**

Calculations

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

For subsequent flow rate calculations:

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

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

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

RECALIBRATION

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

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

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

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. 102639 Page 1 of 4 Pages

Customer : Enovative Environmental Service Limited

Address : Room 23, 6/F, Block C, Goldfield Industrial Centre, Shatin, N.T.

Order No. : Q11109 **Date of receipt :** 25-Mar-21

Item Tested

Description : Sound Level Meter

Manufacturer : Rion **I.D.** : --

Model : NL-52 **Serial No.** : 00175560

Test Conditions

Date of Test : 7-Apr-21 **Supply Voltage** : --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: Z01, IEC 61672, IEC 61260.

Test Results

All results were within the IEC 61672 class 1 , IEC 61260 Class 1 or manufacturer's specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S017	Multi-Function Generator	C211339	SCL-HKSAR
S240	Sound Level Calibrator	003053	NIM-PRC & SCL-HKSAR

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

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : Elva Chong

Approved by : Kin Wong

Date: 7-Apr-21

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

Acoustical signal test

1. **Self-generated noise:** 15.1dBA (Mfr's Spec ≤ 17 dBA)

2. **Reference Sound Pressure Level**

UUT Setting				Applied Value (dB)	UUT Reading (dB)
Range (dB)	Frequency Weighting	Time Weighting	Octave Filter		
20 ~ 130	A	F	OFF	94.0	94.0
		S	OFF		94.0
	C	F	OFF		94.0
	Z	F	OFF		94.0
	A	F	OFF	114.0	114.0
		S	OFF		114.0
	C	F	OFF		114.0
	Z	F	OFF		114.0

IEC 61672 Type 1 Spec. : ± 1.1 dB
Uncertainty : ± 0.1 dB

Electrical signal tests

3. **Electrical signal tests of frequency weightings** (A weighting)

Frequency	Attenuation (dB)	IEC 61672 Type 1 Spec.
31.5 Hz	-40.0	- 39.4 dB, ± 2 dB
63 Hz	-26.5	- 26.2 dB, ± 1.5 dB
125 Hz	-16.4	- 16.1 dB, ± 1.5 dB
250 Hz	-8.9	- 8.6 dB, ± 1 dB
500 Hz	-3.3	- 3.2 dB, ± 1.4 dB
1 kHz	0.0 (Ref)	0 dB, ± 1.1 dB
2 kHz	+1.2	+ 1.2 dB, ± 1.6 dB
4 kHz	+0.9	+ 1.0 dB, ± 1.6 dB
8 kHz	-0.9	- 1.1 dB, + 2.1 dB ~ -3.1 dB
16 kHz	-8.4	- 6.6 dB, + 3.5 dB ~ - 17.0 dB

Uncertainty : ± 0.1 dB

Calibration Certificate

4. Frequency & Time weightings at 1 kHz

4.1 Frequency Weighting (Fast)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
A	94.0	94.0 (Ref.)	- -	± 0.4 dB
C	94.0	94.0	0.0	
Z	94.0	94.0	0.0	

4.2 Time Weighting (A-weighted)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
Fast	94.0	94.0 (Ref.)	- -	± 0.3 dB
Slow	94.0	94.0	0.0	
Time-averaging	94.0	94.0	0.0	

Uncertainty : ± 0.1 dB

5. Filter Characteristics

5.1 1/1 – Octave Filter

Frequency	Attenuation (dB)	IEC 61260 Class 1 Spec. (dB)
125 Hz	-81.4	< - 61
250 Hz	-66.7	< - 42
500 Hz	-43.3	< - 17.5
707 Hz	-4.7	- 2 ~ - 5
1 kHz (Ref)	--	--
1.414 kHz	-2.5	- 2 ~ - 5
2 kHz	-39.7	< - 17.5
4 kHz	-87.6	< - 42
8 kHz	-87.7	< - 61

Uncertainty : ± 0.25 dB

Calibration Certificate

5.2 1/3 – Octave Filter

Frequency	Attenuation (dB)	IEC 61260 Class 1 Spec.(dB)
326 Hz	-65.8	< - 61
530 Hz	-50.1	< - 42
772 Hz	-23.5	< - 17.5
891 Hz	-4.0	+ 0.3 ~ - 5.0
1 kHz (Ref)	--	--
1.122 kHz	-3.5	+ 0.3 ~ - 5.0
1.296 kHz	-22.1	< - 17.5
1.887 kHz	-46.5	< - 42
3.070 kHz	-92.9	< - 61

Uncertainty : ± 0.25 dB

Remarks : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 002hPa.
4. Microphone model: UC-59, S/N : 10989
5. Preamplifier model : NH-25 , S/N : 65662
6. Firmware Version: 2.0
7. Power Supply Check: OK
8. The UUT was adjusted with the laboratory's sound calibrator at the reference sound pressure level before the calibration.

---------- END ----------

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. 201031 Page 1 of 3 Pages

Customer : Enovative Environmental Service Limited

Address : Room 23, 6/F, Block C, Goldfield Industrial Centre, Shatin, N.T.

Order No. : Q20449 **Date of receipt :** 8-Feb-22

Item Tested

Description : Sound Level Meter

Manufacturer : Rion **I.D.** : --

Model : NL-52 **Serial No.** : 01143484

Test Conditions

Date of Test : 17-Feb-22 **Supply Voltage** : --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: Z01, IEC 61672.

Test Results

All results were within the IEC 61672 type 1 specification. (where applicable)

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S017	Multi-Function Generator	C211339	SCL-HKSAR
S240	Sound Level Calibrator	106446	NIM-PRC & SCL-HKSAR

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

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : Elva Chong

Approved by : Kin Wong

Date: 17-Feb-22

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

Acoustical signal test

1. **Self-generated noise:** 17.9 dBA

2. **Reference Sound Pressure Level**

UUT Setting				Applied Value (dB)	UUT Reading (dB)
Range (dB)	Frequency Weighting	Time Weighting	Octave Filter		
20 ~ 130	A	F	OFF	94.0	93.9
		S	OFF		93.9
	C	F	OFF		93.9
	Z	F	OFF		94.0
	A	F	OFF	114.0	114.0
		S	OFF		114.0
	C	F	OFF		114.0
	Z	F	OFF		114.0

IEC 61672 Type 1 Spec. : ± 1.1 dB
Uncertainty : ± 0.1 dB

Electrical signal tests

3. **Electrical signal tests of frequency weightings** (A weighting)

Frequency	Attenuation (dB)	IEC 61672 Type 1 Spec.
31.5 Hz	-39.5	- 39.4 dB, ± 2 dB
63 Hz	-26.1	- 26.2 dB, ± 1.5 dB
125 Hz	-16.1	- 16.1 dB, ± 1.5 dB
250 Hz	-8.6	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- 3.2 dB, ± 1.4 dB
1 kHz	0.0 (Ref)	0 dB, ± 1.1 dB
2 kHz	+1.0	+ 1.2 dB, ± 1.6 dB
4 kHz	+0.7	+ 1.0 dB, ± 1.6 dB
8 kHz	-1.1	- 1.1 dB, + 2.1 dB ~ -3.1 dB
16 kHz	-8.6	- 6.6 dB, + 3.5 dB ~ - 17.0 dB

Uncertainty : ± 0.1 dB

Calibration Certificate

4. Frequency & Time weightings at 1 kHz

4.1 Frequency Weighting (Fast)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
A	94.0	94.0 (Ref.)	- -	± 0.4 dB
C	94.0	94.0	0.0	
Z	94.0	94.0	0.0	

4.2 Time Weighting (A-weighted)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
Fast	94.0	94.0 (Ref.)	- -	± 0.3 dB
Slow	94.0	94.0	0.0	
Time-averaging	94.0	94.0	0.0	

Uncertainty : ± 0.1 dB

Remarks :
1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 012 hPa.
4. Microphone model: UC-59, S/N : 07032.
5. Preamplifier model : NH-25 , S/N : 43399.
6. Firmware Version: 1.8
7. Power Supply Check: OK
8. The UUT was adjusted with the supplied sound calibrator at the reference sound pressure level before the calibration.

---------- END ----------

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. 101045

Customer : Enovative Environmental Service Limited

Address : Room 23, 6/F, Block C, Goldfield Industrial Centre, Shatin, N.T.

Order No. : Q10453 **Date of receipt :** 2-Feb-21

Item Tested

Description : Sound Level Calibrator

Manufacturer : Rion **I.D.** : 2159O1

Model : NC-74 **Serial No.** : 34857296

Test Conditions

Date of Test : 22-Feb-21 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : F21, Z02, IEC 60942.

Test Results

All results were within the IEC 60942 Class 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S014	Spectrum Analyzer	005018	NIM-PRC & SCL-HKSAR
S240	Sound Level Calibrator	003053	NIM-PRC & SCL-HKSAR
S041	Universal Counter	001622	SCL-HKSAR
S206	Sound Level Meter	007031	SCL-HKSAR

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

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : Elva Chong

Approved by : Kin Wong

Date: 22-Feb-21

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

1. Generated Sound Pressure Level

UUT Nominal Value (dB)	Measured Value (dB)	IEC 60942 Class 1 Spec.
94.0	94.0	± 0.4 dB

Uncertainty : ± 0.2 dB

2. Short-term Level Fluctuation : 0.0 dB

IEC 60942 Class 1 Spec. : ± 0.1 dB
Uncertainty : ± 0.01 dB

3. Frequency

UUT Nominal Value (kHz)	Measured Value (kHz)	IEC 60942 Class 1 Spec.
1	1.002	± 1 %

Uncertainty : ± 3.6 x 10^{-6}

4. Total Distortion : < 1.1%

IEC 60942 Class 1 Spec. : < 4 %
Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 008hPa.

---------- END ----------

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. 201032 Page 1 of 2 Pages

Customer : Enovative Environmental Service Limited

Address : Room 23, 6/F, Block C, Goldfield Industrial Centre, Shatin, N.T.

Order No. : Q20449 **Date of receipt :** 8-Feb-22

Item Tested

Description : Sound Level Calibrator

Manufacturer : Rion **I.D.** : --

Model : NC-74 **Serial No.** : 34678506

Test Conditions

Date of Test : 17-Feb-22 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : F21, Z02, IEC 60942.

Test Results

All results were within the IEC 60942 Class 1 specifications.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S014	Spectrum Analyzer	106615	NIM-PRC & SCL-HKSAR
S240	Sound Level Calibrator	106446	NIM-PRC & SCL-HKSAR
S041	Universal Counter	101743	SCL-HKSAR
S206	Sound Level Meter	106447	SCL-HKSAR

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

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : _____
Elva Chong

Approved by : _____
Kin Wong

Date: 17-Feb-22

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

1. **Generated Sound Pressure Level**

UUT Nominal Value (dB)	Measured Value (dB)	IEC 60942 Class 1 Spec.
94.0	94.1	± 0.4 dB

Uncertainty : ± 0.2 dB

2. **Short-term Level Fluctuation** : 0.0 dB
IEC 60942 Class 1 Spec. : ± 0.1 dB
Uncertainty : ± 0.01 dB

3. **Frequency**

UUT Nominal Value (kHz)	Measured Value (kHz)	IEC 60942 Class 1 Spec.
1	1.000	± 1 %

Uncertainty : ± 3.6 x 10^{-6}

4. **Total Distortion** : < 0.9 %
IEC 60942 Class 1 Spec. : < 4 %
Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 012 hPa.

---------- END ----------

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BA120148
Date of Issue : 30 December 2021

PART A - CUSTOMER INFORMATION

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

PART B - SAMPLE INFORMATION

Name of Equipment :	YSI ProDSS (Multi-Parameters)
Manufacturer :	YSI (a xylem brand)
Serial Number :	21G105356
Date of Received :	24 December 2021
Date of Calibration :	24 December 2021
Date of Next Calibration :	23 March 2022

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

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

PART D - CALIBRATION RESULT

(1) Turbidity

EXPECTED READING (NTU)	DISPLAY READING (NTU)	TOLERANCE (%)	RESULT
0	0.10	--	Satisfactory
10	9.81	-1.9	Satisfactory
20	19.82	-0.9	Satisfactory
100	100.22	0.2	Satisfactory
800	810.23	1.3	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

(2) Conductivity

EXPECTED READING (MS/CM AT 25°C)	DISPLAY READING (MS/CM AT 25°C)	TOLERANCE (%)	RESULT
146.9	150.3	2.31	Satisfactory
1412	1369	-3.05	Satisfactory
12890	12488	-3.12	Satisfactory
58670	57746	-1.57	Satisfactory
111900	111426	-0.42	Satisfactory

Tolerance of Conductivity should be less than ± 10.0 (%)

--- CONTINUED ON NEXT PAGE ---

AUTHORIZED SIGNATORY:

LEE Chun-ning
Assistant Manager (Chemical Testing)

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BA120148
Date of Issue : 30 December 2021

(3) Dissolved oxygen

EXPECTED READING (MG/L)	DISPLAY READING (MG/L)	TOLERANCE (MG/L)	RESULT
7.65	7.80	0.15	Satisfactory
6.09	6.20	0.11	Satisfactory
3.20	3.33	0.13	Satisfactory
0.78	0.56	-0.22	Satisfactory

Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(4) pH value

TARGET (PH UNIT)	DISPLAY READING (PH UNIT)	TOLERANCE	RESULT
4.00	4.03	0.03	Satisfactory
7.42	7.45	0.03	Satisfactory
10.01	10.11	0.10	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(5) Salinity

EXPECTED READING (G/L)	DISPLAY READING (G/L)	TOLERANCE (%)	RESULT
10	9.93	-0.70	Satisfactory
20	19.88	-0.60	Satisfactory
30	30.19	0.63	Satisfactory

Tolerance of Salinity should be less than ± 0.0 (%)

(6) Temperature

READING OF REF. THERMOMETER (°C)	DISPLAY READING (°C)	TOLERANCE (°C)	RESULT
10	9.9	-0.1	Satisfactory
20	20.0	0.0	Satisfactory
40	40.0	0.0	Satisfactory

Tolerance of Temperature should be less than ± 2.0 (°C)

Remark(s)

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

--- END OF REPORT ---

Appendix D Environmental Monitoring Schedules

Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long. New Territories (EP-515/2017) - Impact Water Quality Monitoring Schedule for February 2022

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

* The schedule may be changed due to unforeseen circumstances (such as adverse weather).

Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long. New Territories (EP-515/2017) - Impact Water Quality Monitoring Schedule for March 2022

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

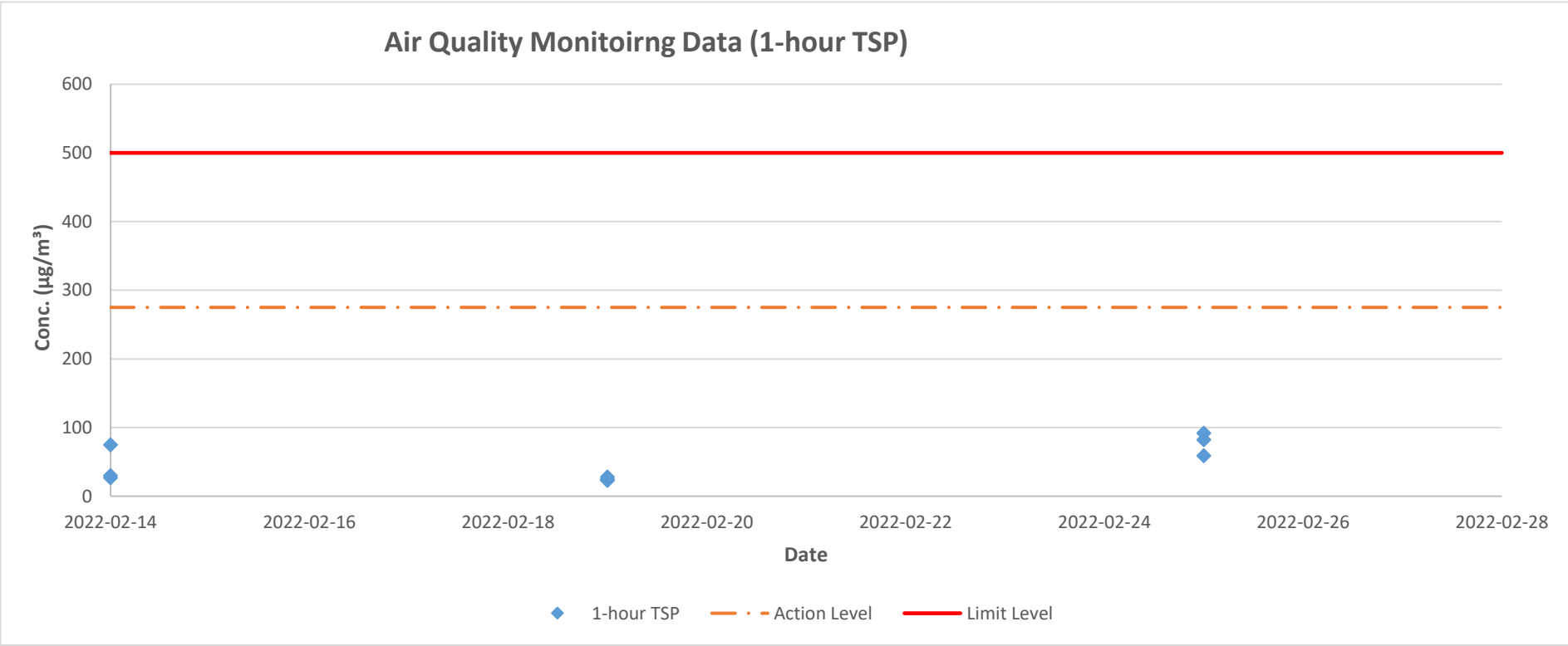
* The schedule may be changed due to unforeseen circumstances (such as adverse weather).

Appendix E Monitoring Results

Appendix E - 1-hr TSP Monitoring Result

Monitoring Station: AM1 - Existing Building

Date	Weather	Time	1hr TSP (μg/m³)
2022-02-14	Fine	9:00-10:00	75
2022-02-14	Fine	10:00-11:00	30
2022-02-14	Fine	11:00-12:00	27
2022-02-19	Rainy	9:00-10:00	23
2022-02-19	Rainy	10:00-11:00	25
2022-02-19	Rainy	11:00-12:00	28
2022-02-25	Fine	9:00-10:00	59
2022-02-25	Fine	10:00-11:00	82
2022-02-25	Fine	11:00-12:00	92
		Average	**49.0**
		Maximum	**92.0**
		Minimum	**23.0**
		Action Level	**275**
		Limit Level	**500**

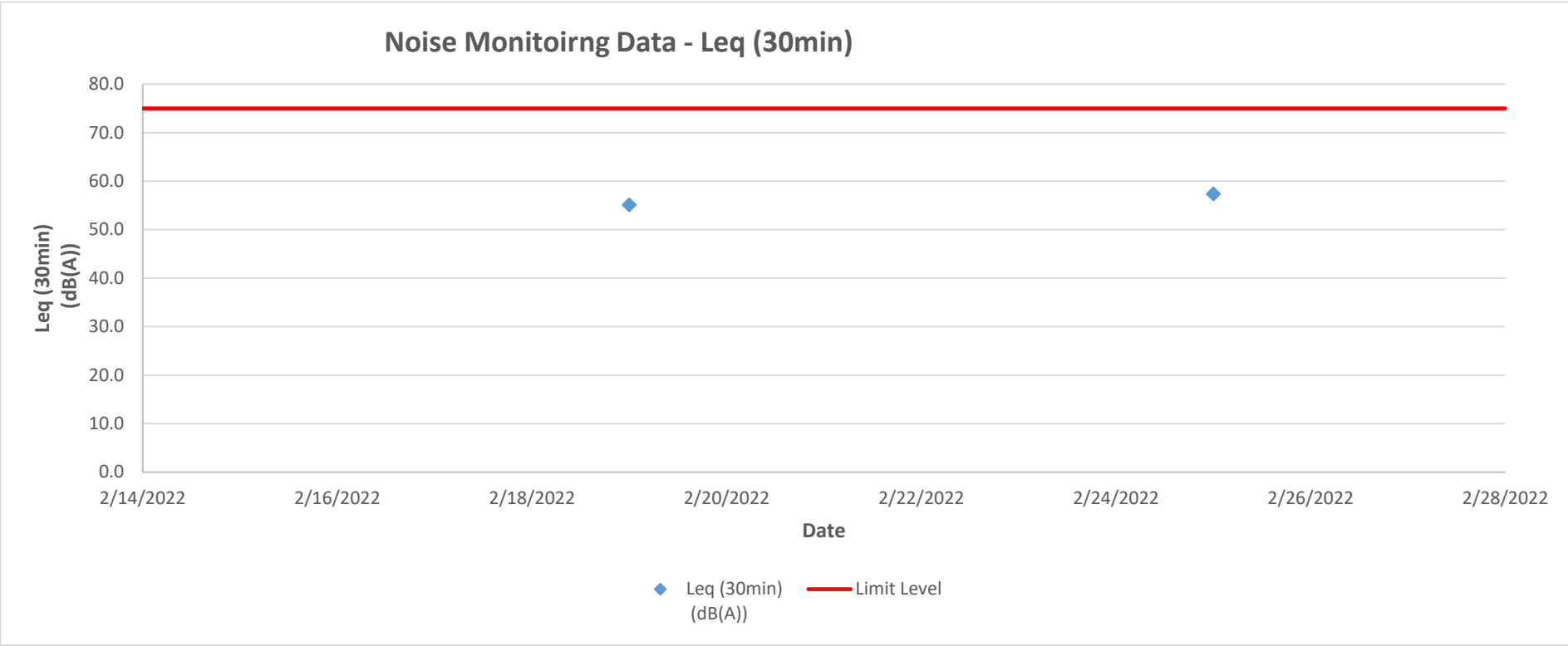

Air Quality Monitoirng Data (1-hour TSP)
600
500
400
300
200
100
0
Conc. (µg/m³)
2022-02-14
2022-02-16
2022-02-18
2022-02-20
2022-02-22
2022-02-24
2022-02-26
2022-02-28
Date
1-hour TSP
Action Level
Limit Level

Appendix E - Noise Monitoring Result

Monitoring Station: NM1 - Bethel High School

Date	**Wind Direction / Wind Speed (m/s)**	**Time**	**Leq (30min)** (dB(A))	L10 (dB(A))	L90 (dB(A))
2/19/2022	E/1.5	10:00-10:30	55.1	56.3	53.4
2/25/2022	E/0.9	10:00-10:30	57.4	64.1	45.0

Note: +3dB for Free Field is added

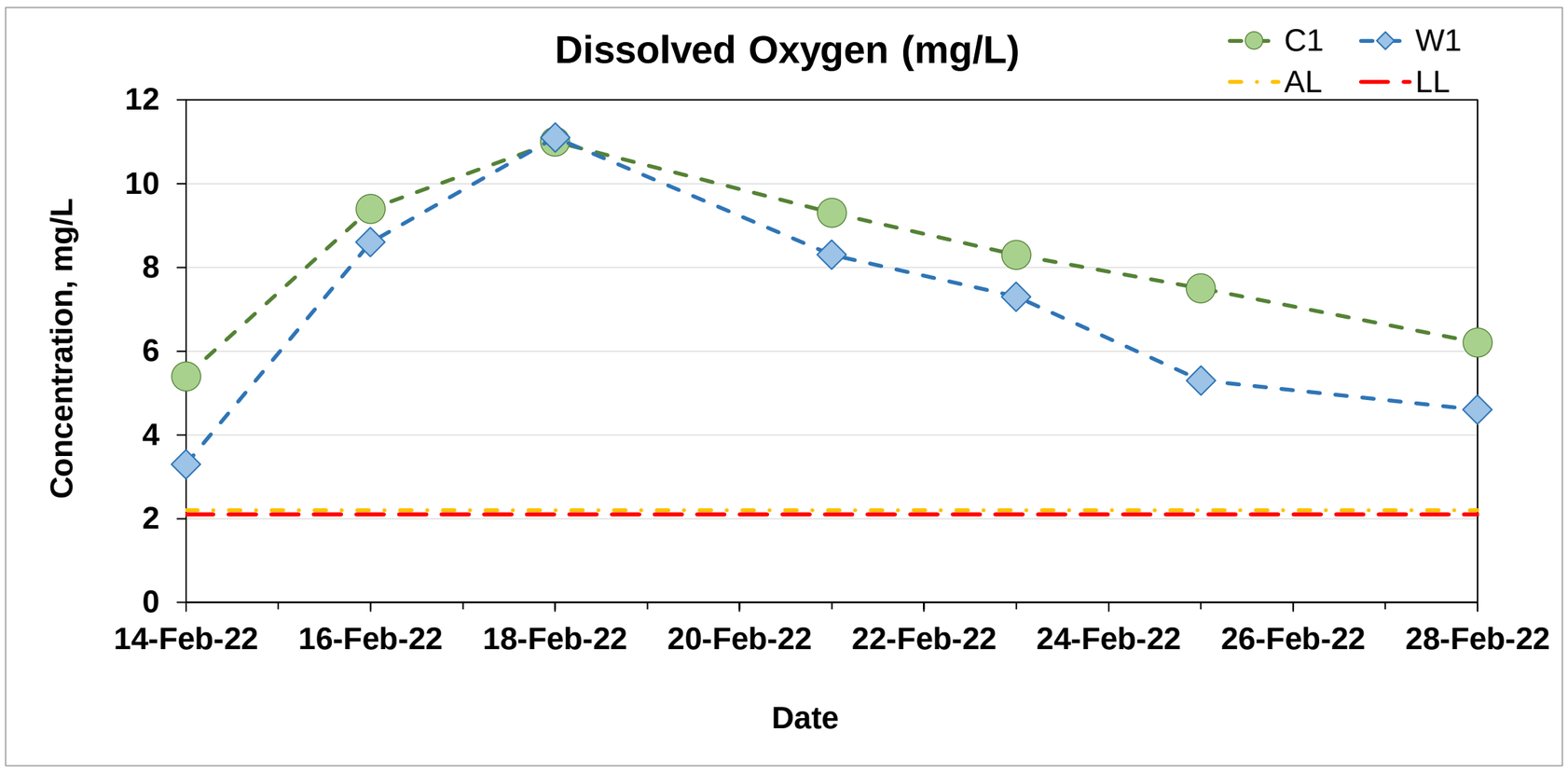

Noise Monitoirng Data - Leq (30min)
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Leq (30min) (dB(A))
2/14/2022
2/16/2022
2/18/2022
2/20/2022
2/22/2022
2/24/2022
2/26/2022
2/28/2022
Date
Leq (30min) (dB(A))
Limit Level

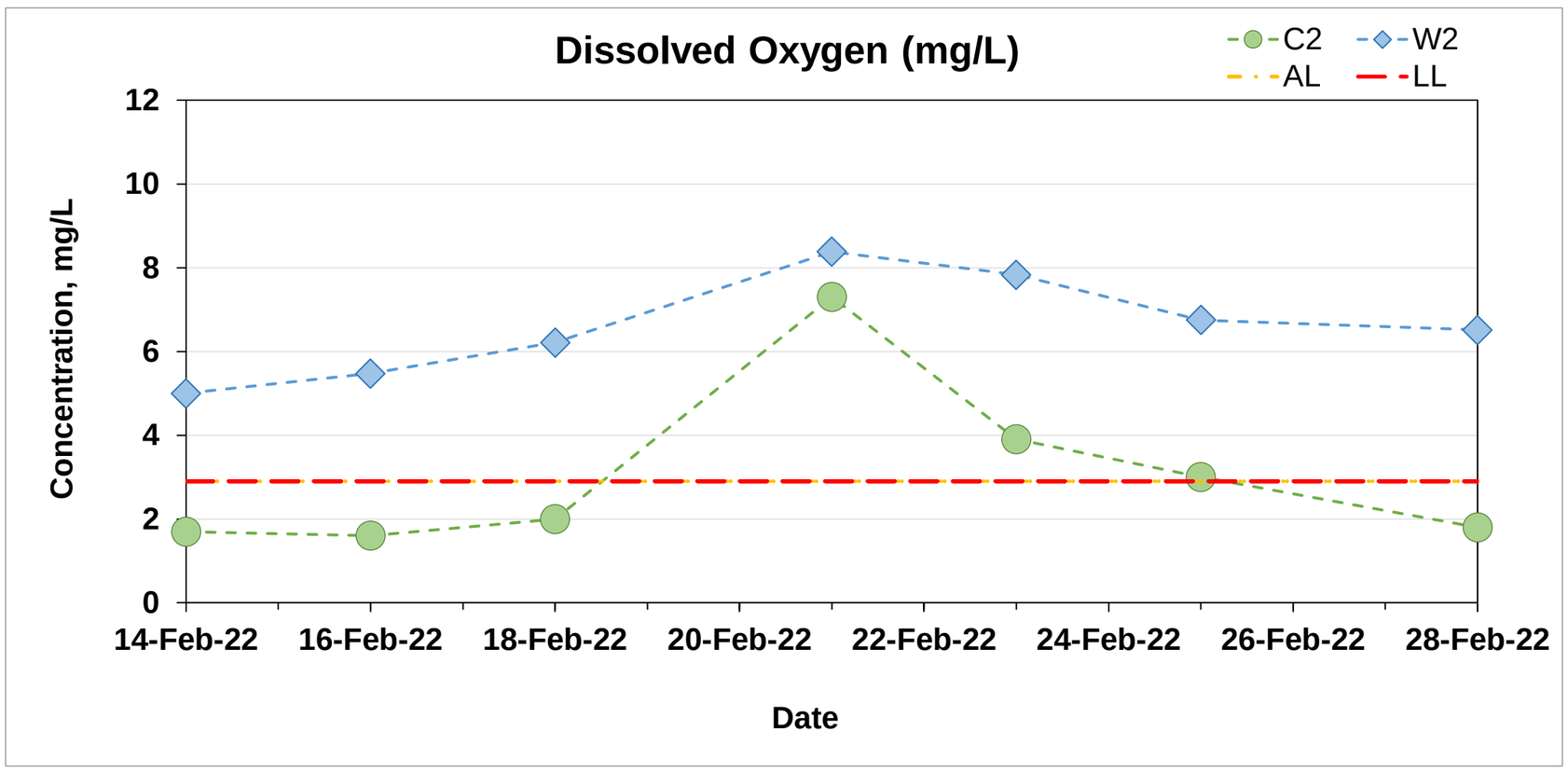
Date	Station	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		SS (mg/L)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
2022-02-14	C1	11:49	0.7	18.6	18.6	7.1	7.1	5.4	5.4	58.4	58.3	29.3	29.2	35.0	35.0
		11:49		18.6		7.1		5.4		58.1		29.1		35.0	
	C2	11:27	<0.5	18.2	18.2	7.4	7.4	1.7	1.7	17.9	17.7	29.6	29.7	16.0	15.5
		11:27		18.2		7.4		1.6		17.4		29.9		15.0	
	C3	11:18	<0.5	17.8	17.8	7.8	7.8	6.5	6.5	68.9	68.8	17.8	17.8	32.0	32.0
		11:19		17.8		7.8		6.5		68.6		17.9		32.0	
	W1	10:44	0.6	18.3	18.3	7.1	7.1	3.3	3.3	36.8	36.8	16.3	16.3	23.0	23.0
		10:44		18.3		7.1		3.3		36.7		16.2		23.0	
	W2	11:39	<0.5	19.0	19.0	7.6	7.5	5.0	5.0	53.9	53.7	18.0	18.3	31.0	31.0
		11:39		19.0		7.5		5.0		53.5		18.6		31.0	
	W3	10:57	<0.5	17.0	17.0	7.7	7.7	6.3	6.3	65.6	65.4	17.4	17.4	18.0	18.0
		10:57		17.0		7.7		6.3		65.2		17.4		18.0	
2022-02-16	C1	15:08	0.6	20.4	20.4	7.3	7.3	9.4	9.4	107.6	107.6	21.1	21.1	28.0	29.0
		15:08		20.4		7.3		9.4		107.5		21.2		30.0	
	C2	14:36	<0.5	18.8	18.9	7.4	7.4	1.6	1.6	17.1	17.2	39.9	40.7	30.0	30.0
		14:37		18.9		7.4		1.6		17.2		41.5		30.0	
	C3	14:25	<0.5	18.9	18.9	7.8	7.8	5.8	5.8	62.6	62.6	12.4	12.4	14.0	14.5
		14:25		18.9		7.8		5.8		62.5		12.4		15.0	
	W1	13:46	0.5	20.3	20.3	7.1	7.1	8.5	8.6	97.3	97.5	17.1	17.2	25.0	24.5
		13:48		20.3		7.2		8.6		97.6		17.3		24.0	
	W2	14:55	<0.5	19.4	19.4	7.5	7.5	5.5	5.5	59.5	59.5	19.3	19.4	27.0	27.5
		14:56		19.4		7.5		5.5		59.5		19.5		28.0	
	W3	13:59	<0.5	19.0	19.0	7.6	7.6	5.9	5.9	64.2	64.2	14.5	16.0	40.0	39.0
		13:59		19.0		7.6		5.9		64.1		17.5		38.0	
2022-02-18	C1	15:54	0.6	19.8	19.8	7.6	7.6	10.9	11.0	124.2	123.7	16.2	16.1	26.0	26.0
		15:55		19.8		7.6		11.1		123.2		16.0		26.0	
	C2	15:33	<0.5	18.6	18.6	7.6	7.6	2.0	2.0	21.8	21.7	39.6	39.5	30.0	31.5
		15:33		18.6		7.6		2.0		21.5		39.5		33.0	
	C3	15:27	<0.5	18.6	18.6	7.9	7.9	5.2	5.2	53.8	55.1	13.9	13.9	14.0	13.5
		15:28		18.6		7.9		5.3		56.4		13.9		13.0	
	W1	15:07	0.6	20.1	20.1	7.6	7.7	11.1	11.1	127.4	127.5	20.3	20.3	33.0	32.0
		15:08		20.1		7.7		11.1		127.6		20.3		31.0	
	W2	15:44	<0.5	18.6	18.6	7.8	7.8	6.2	6.2	66.5	66.8	17.9	17.6	19.0	20.0
		15:45		18.6		7.8		6.3		67.0		17.4		21.0	
	W3	15:15	<0.5	18.9	18.9	7.5	7.5	5.1	5.2	56.1	56.4	17.1	16.8	25.0	24.5
		15:16		18.9		7.5		5.2		56.7		16.4		24.0	
2022-02-21	C1	14:02	0.7	12.1	12.1	7.2	7.2	9.3	9.3	86.3	86.4	28.1	27.9	29.0	29.5
		14:02		12.1		7.2		9.3		86.4		27.8		30.0	
	C2	13:42	<0.5	13.0	13.0	7.2	7.2	7.3	7.3	69.4	69.3	7.9	7.9	8.0	7.5
		13:42		12.9		7.2		7.3		69.2		7.9		7.0	
	C3	13:37	<0.5	12.6	12.6	7.3	7.4	8.5	8.5	79.8	79.8	21.7	21.8	16.0	16.5
		13:37		12.6		7.4		8.5		79.7		21.9		17.0	
	W1	13:17	0.6	11.8	11.8	7.2	7.2	8.2	8.3	75.6	76.6	27.6	27.6	31.0	32.0
		13:19		11.7		7.2		8.4		77.6		27.7		33.0	
	W2	13:54	<0.5	13.5	13.5	7.4	7.4	8.4	8.4	80.5	80.5	14.8	15.1	16.0	17.0
		13:54		13.5		7.4		8.4		80.4		15.4		18.0	
	W3	13:25	<0.5	12.0	12.0	7.5	7.5	9.2	9.2	85.6	85.7	29.3	31.4	39.0	**51.5**
		13:25		12.0		7.5		9.2		85.7		33.6		64.0	
2022-02-23	C1	15:34	<0.5	17.4	17.4	7.2	7.2	8.3	8.3	86.4	86.3	23.7	23.7	24.0	24.0
		15:34		17.4		7.2		8.3		86.2		23.7		24.0	
	C2	15:09	<0.5	16.1	16.1	7.2	7.2	3.9	3.9	40.0	39.7	16.7	17.5	24.0	25.0
		15:09		16.1		7.2		3.9		39.3		18.4		26.0	
	C3	15:00	<0.5	15.5	15.5	7.4	7.4	6.6	6.5	65.9	65.7	13.2	13.2	4.0	4.5
		15:00		15.5		7.4		6.5		65.4		13.1		5.0	
	W1	14:43	<0.5	15.3	15.3	7.1	7.1	7.3	7.3	73.0	72.9	25.7	25.7	22.0	21.5
		14:43		15.3		7.1		7.3		72.7		25.7		21.0	
	W2	15:24	<0.5	16.4	16.4	8.1	8.1	7.8	7.8	80.1	80.1	10.5	10.4	8.0	7.5
		15:24		16.4		8.1		7.8		80.0		10.2		7.0	
	W3	14:49	<0.5	14.7	14.7	7.2	7.2	7.0	7.0	69.0	68.9	32.3	**32.3**	30.0	29.5
		14:49		14.7		7.2		7.0		68.7		32.2		29.0	
2022-02-25	C1	10:44	<0.5	15.8	15.8	7.1	7.1	7.6	7.5	76.2	76.1	21.7	21.7	25.0	25.0
		10:44		15.8		7.1		7.5		76.0		21.6		25.0	
	C2	10:19	<0.5	15.5	15.6	7.2	7.2	3.0	3.0	30.6	30.4	18.5	19.0	15.0	15.5
		10:19		15.6		7.2		3.0		30.2		19.4		16.0	
	C3	10:10	<0.5	15.5	15.5	7.3	7.3	5.9	5.9	59.7	59.6	13.2	12.8	7.0	7.5
		10:11		15.5		7.3		5.9		59.4		12.4		8.0	
	W1	9:33	<0.5	14.6	14.6	7.1	7.1	5.3	5.3	52.1	51.9	18.0	17.8	17.0	17.5
		9:34		14.6		7.1		5.3		51.7		17.6		18.0	
	W2	10:30	<0.5	16.3	16.3	7.5	7.5	6.8	6.7	68.9	68.8	14.6	14.6	10.0	9.5
		10:30		16.3		7.5		6.7		68.6		14.6		9.0	
	W3	9:43	<0.5	15.0	15.0	7.3	7.3	6.0	6.0	59.5	59.4	36.9	**38.1**	75.0	**75.5**
		9:44		14.9		7.3		6.0		59.3		39.2		76.0	

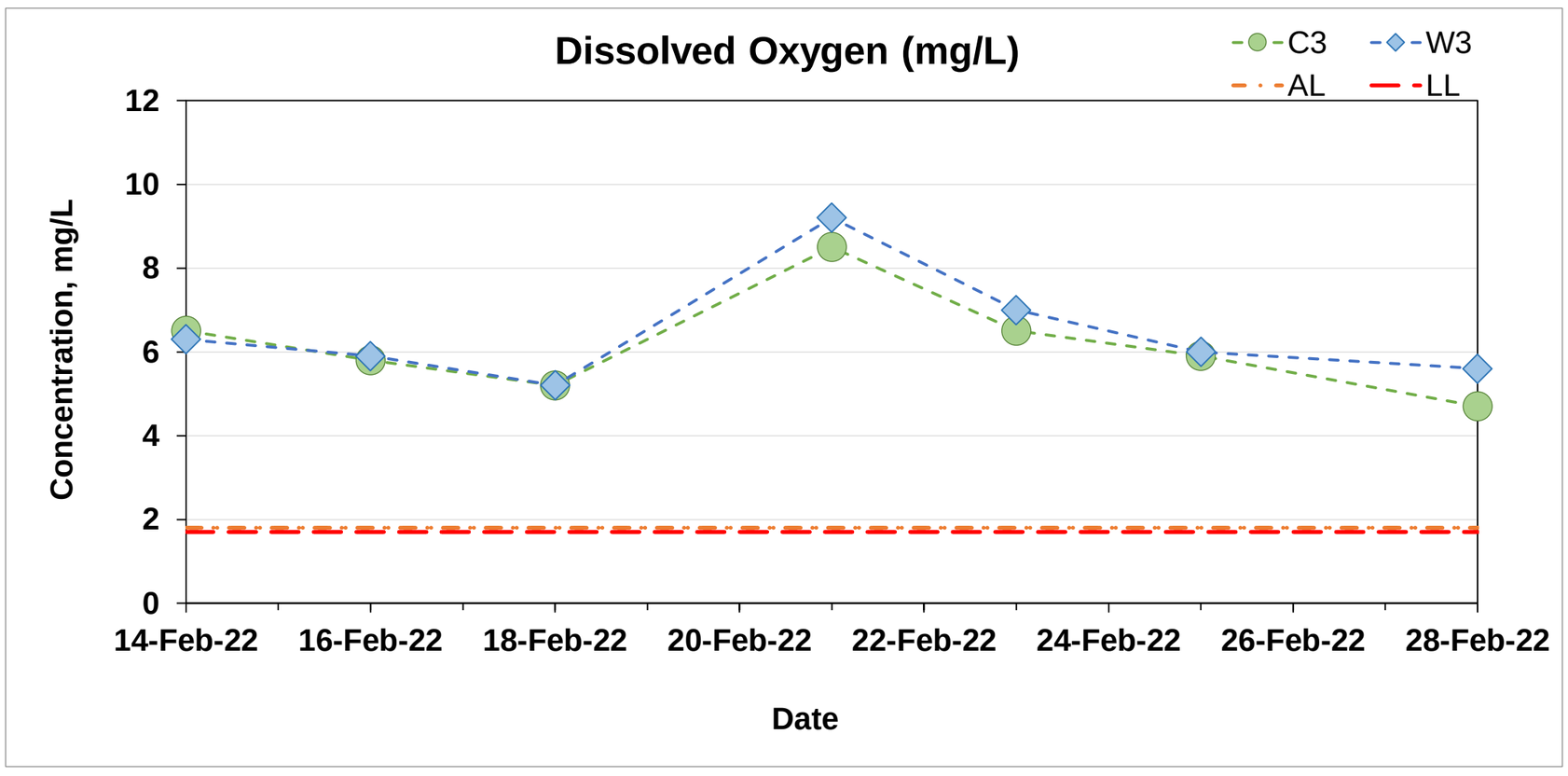
Date	Station	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		SS (mg/L)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
2022-02-28	C1	12:25	<0.5	19.1	19.1	7.3	7.3	6.2	6.2	67.0	66.9	24.9	24.8	33.0	34.5
		12:25		19.1		7.3		6.2		66.8		24.8		36.0	
	C2	11:56	<0.5	19.6	19.6	7.5	7.5	1.8	1.8	20.0	20.0	38.0	37.5	16.0	15.0
		11:56		19.6		7.5		1.8		20.0		37.0		14.0	
	C3	11:46	<0.5	18.9	19.0	7.7	7.7	4.8	4.7	51.3	51.2	8.5	8.5	8.0	8.0
		11:46		19.0		7.7		4.7		51.0		8.6		8.0	
	W1	11:24	<0.5	19.6	19.6	7.1	7.1	4.6	4.6	52.0	51.9	21.2	21.2	27.0	27.0
		11:24		19.6		7.1		4.6		51.8		21.2		27.0	
	W2	12:14	<0.5	18.6	18.6	7.7	7.7	6.5	6.5	69.7	69.5	18.1	17.1	15.0	15.0
		12:15		18.6		7.7		6.5		69.3		16.0		15.0	
	W3	11:32	<0.5	19.5	19.5	7.6	7.6	5.6	5.6	61.3	60.9	10.9	10.6	10.0	10.0
		11:33		19.5		7.6		5.5		60.5		10.4		10.0	

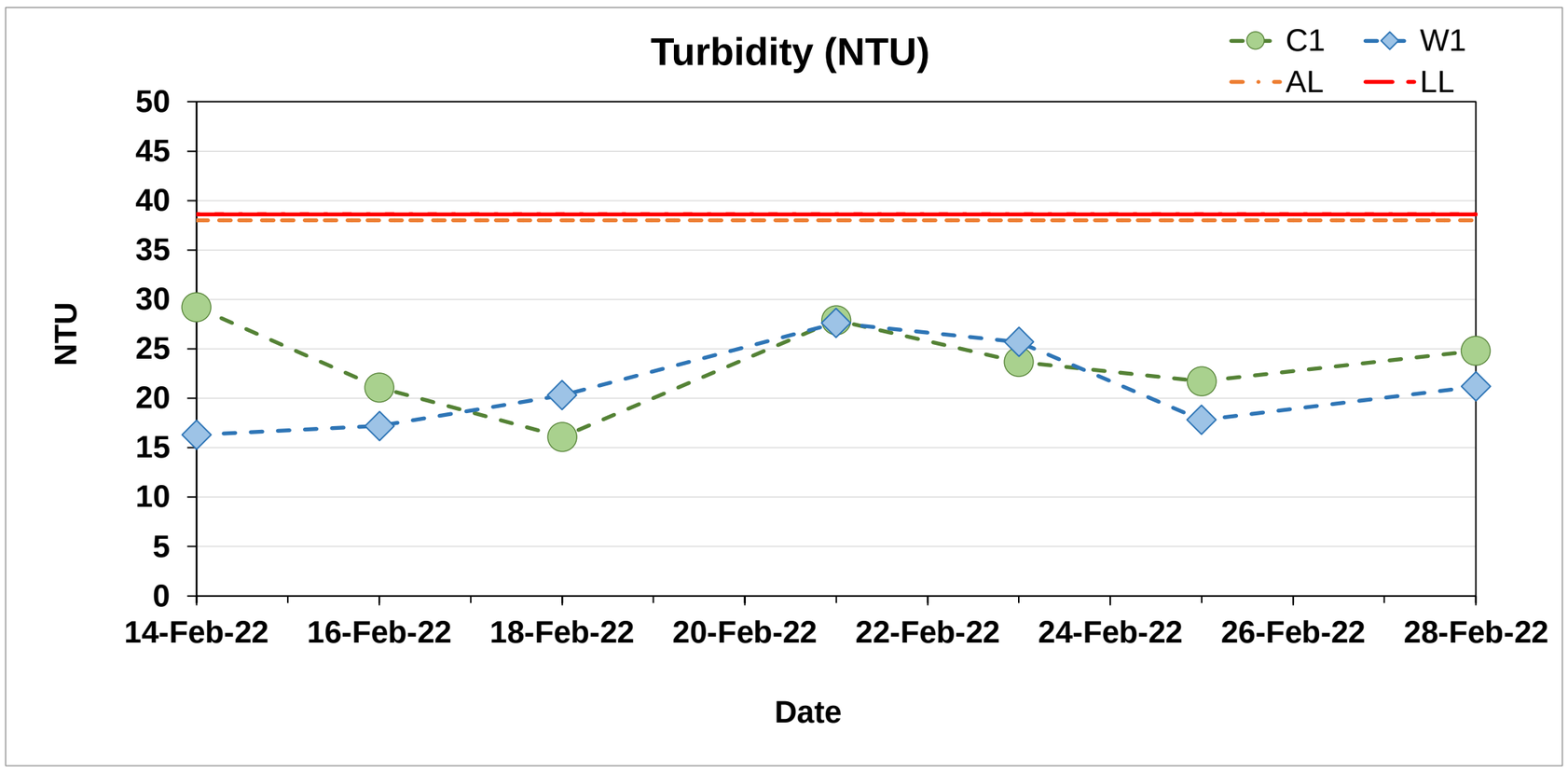
Note: 1. Bold numbers indicate action level exceeded

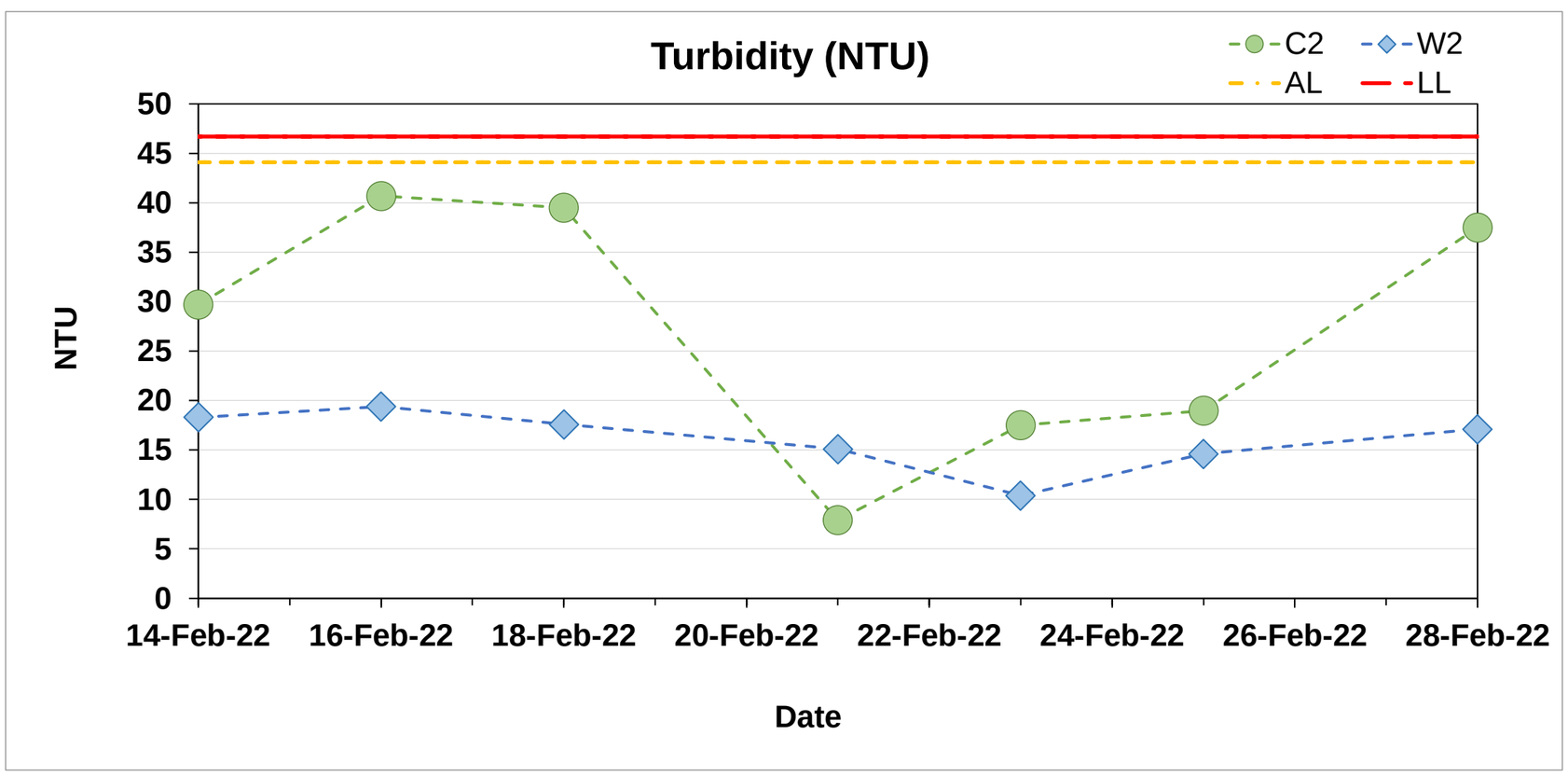
2. Bold and underlined numbers indicate limit level exceeded

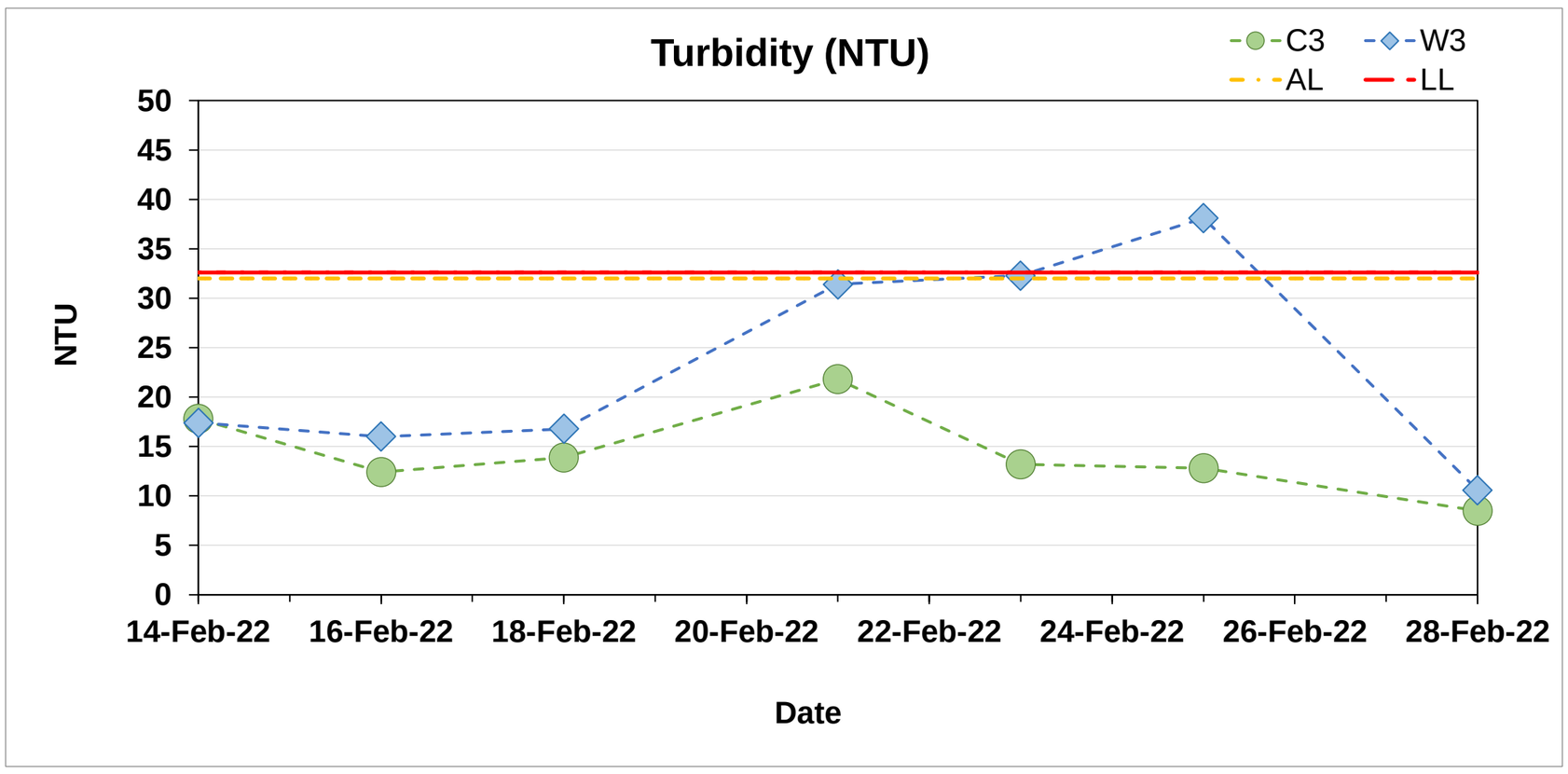

Dissolved Oxygen (mg/L)
C1
W1
AL
LL
Concentration, mg/L
12
10
8
6
4
2
0
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date

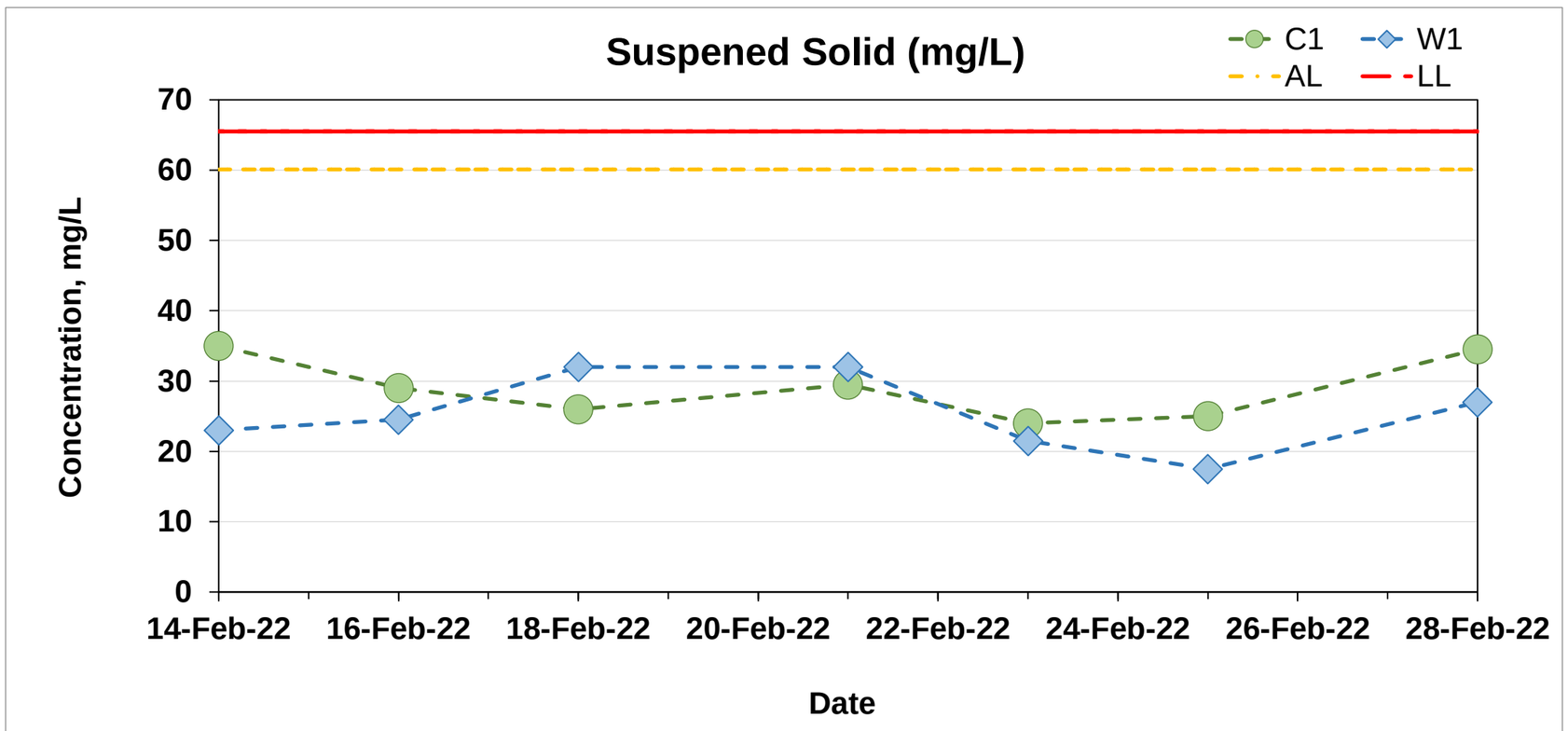

Dissolved Oxygen (mg/L)
C2
W2
AL
LL
Concentration, mg/L
12
10
8
6
4
2
0
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date

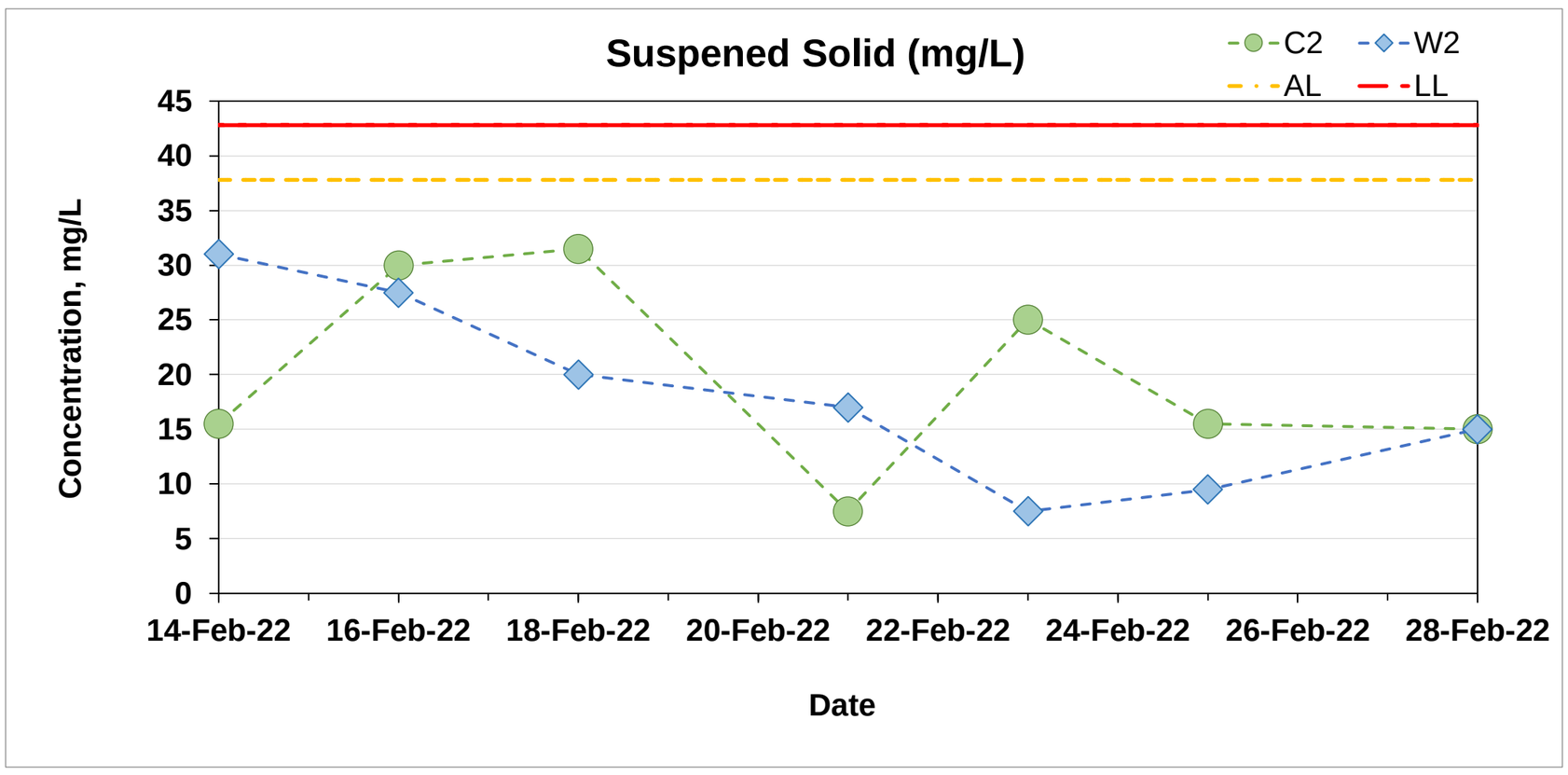

Dissolved Oxygen (mg/L)
C3
W3
AL
LL
Concentration, mg/L
12
10
8
6
4
2
0
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date

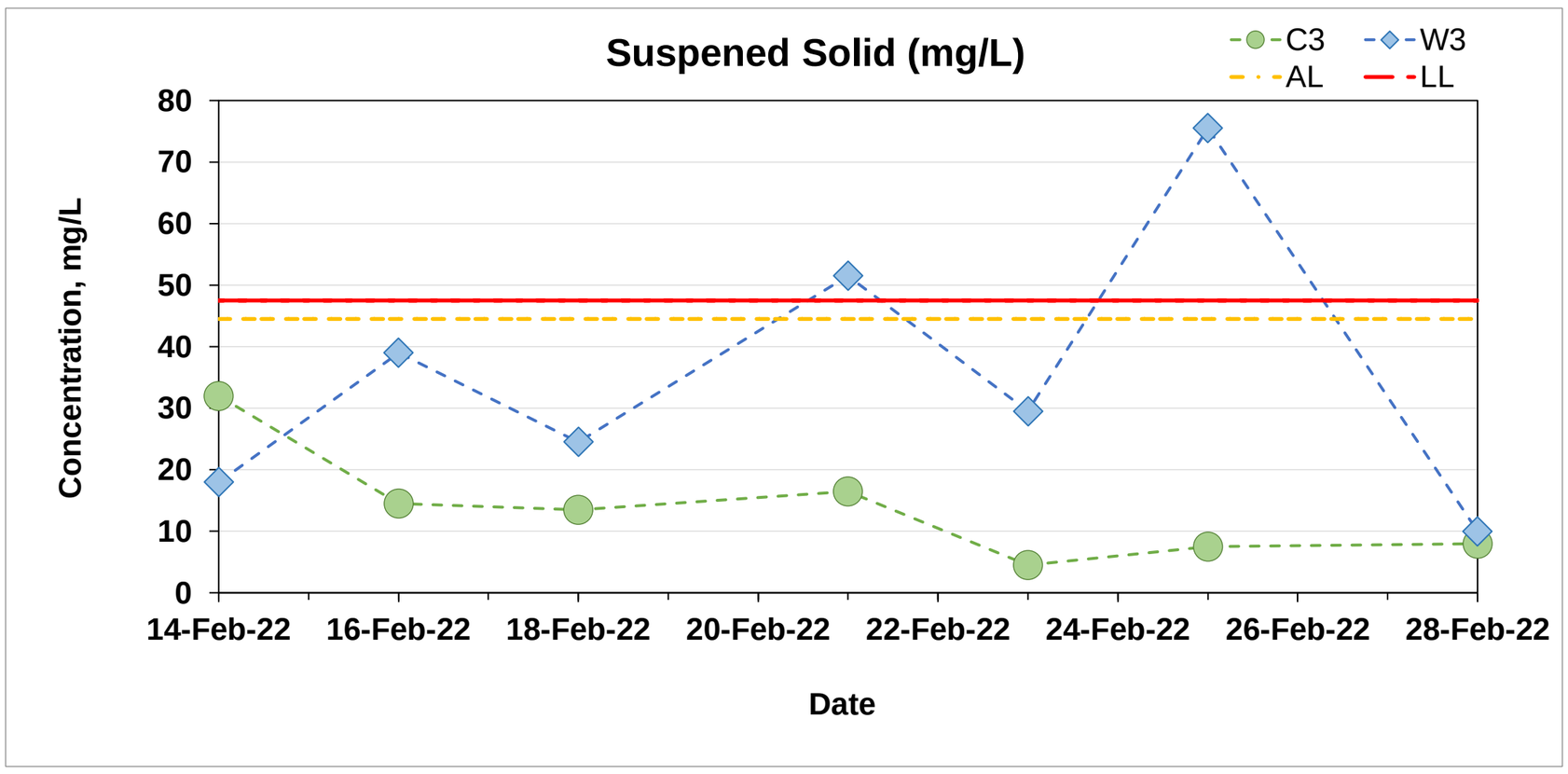

Turbidity (NTU)
C1
W1
AL
LL
NTU
50
45
40
35
30
25
20
15
10
5
0
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date

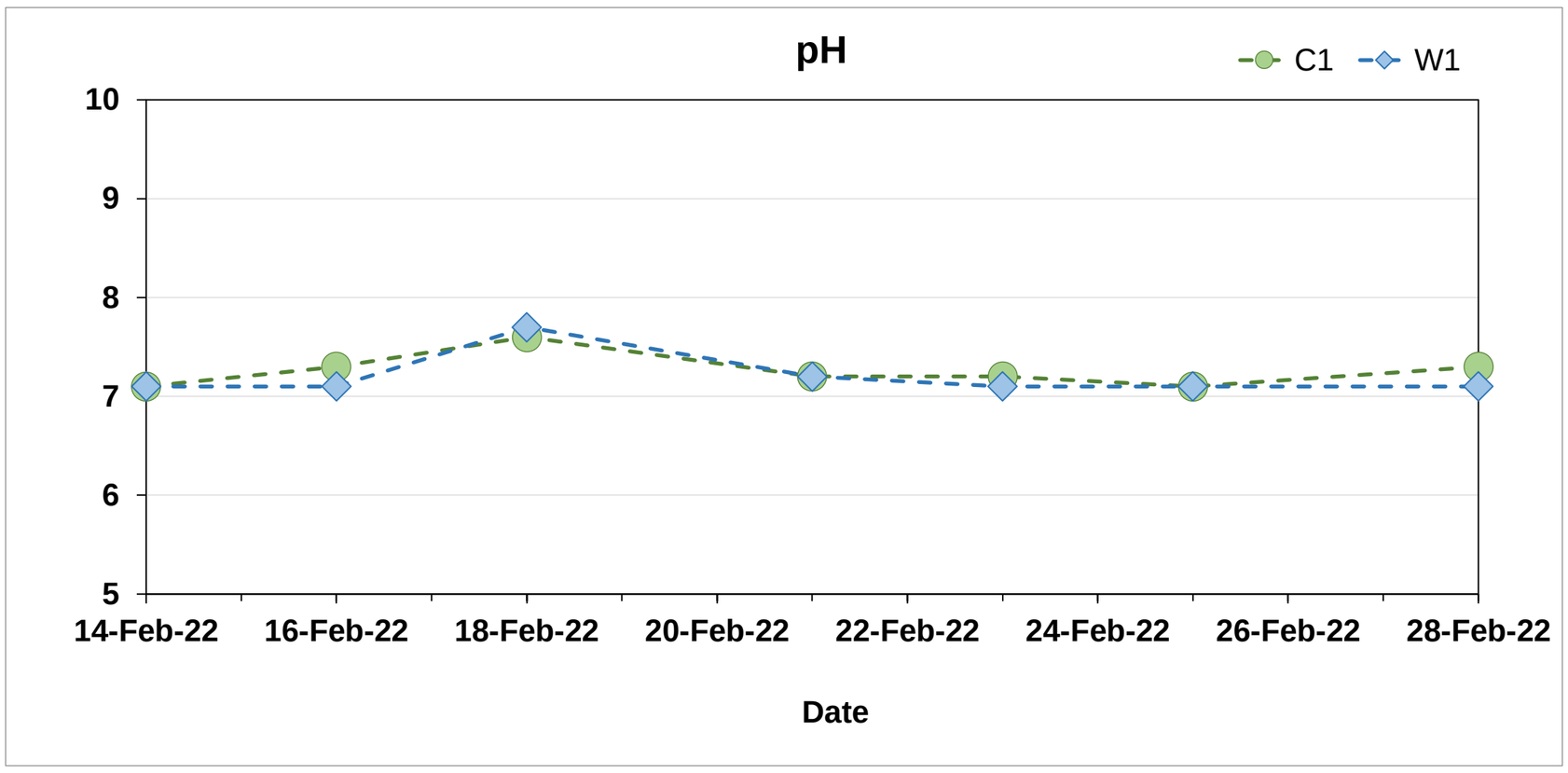

Turbidity (NTU)
C2
W2
AL
LL
NTU
50
45
40
35
30
25
20
15
10
5
0
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date

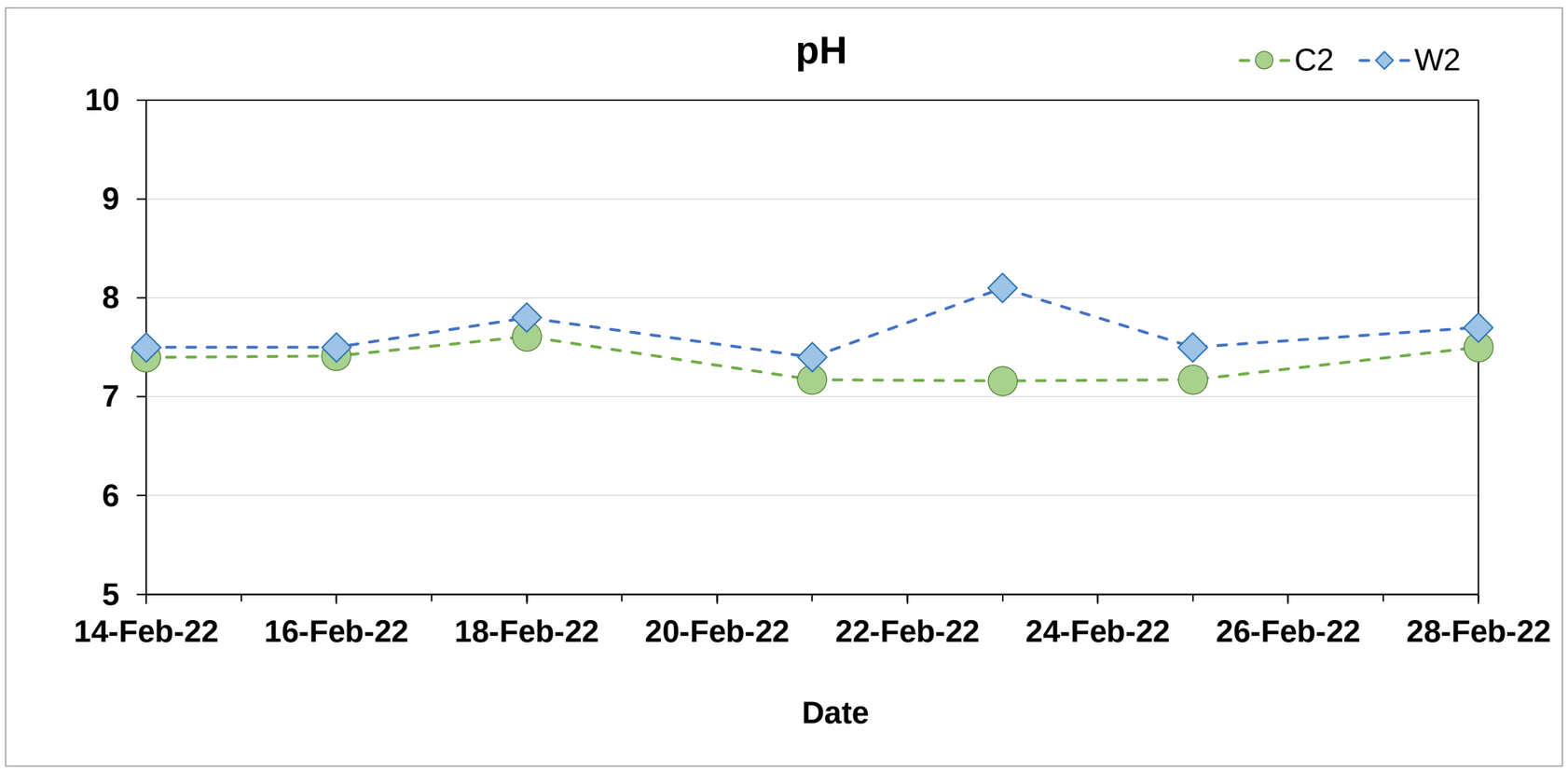

Turbidity (NTU)
C3
W3
AL
LL
NTU
50
45
40
35
30
25
20
15
10
5
0
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date

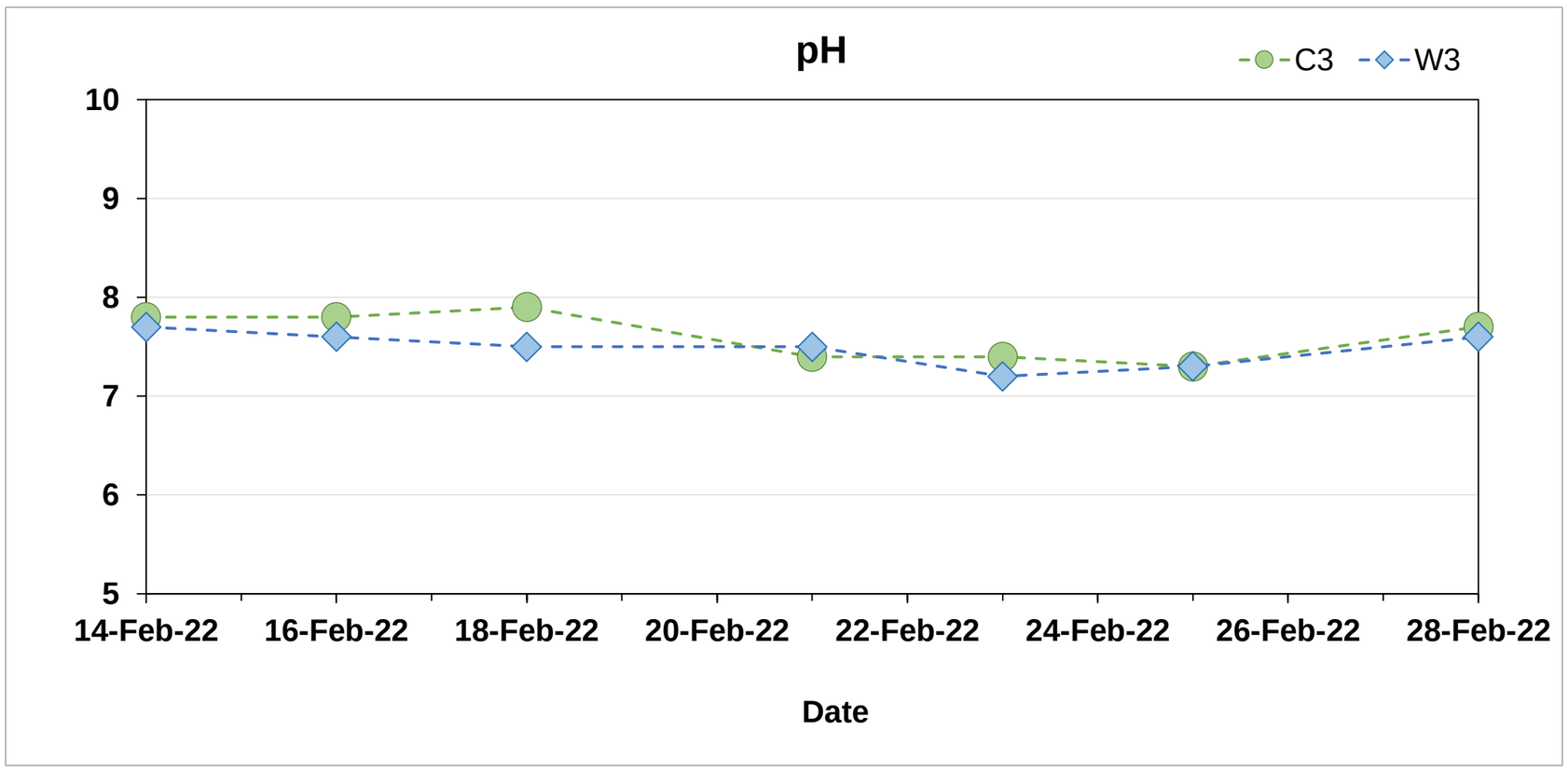

Suspened Solid (mg/L)
C1
W1
AL
LL
Concentration, mg/L
70
60
50
40
30
20
10
0
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date


Suspened Solid (mg/L)
C2
W2
AL
LL
Concentration, mg/L
45
40
35
30
25
20
15
10
5
0
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date


Suspened Solid (mg/L)
C3
W3
AL
LL
Concentration, mg/L
80
70
60
50
40
30
20
10
0
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date


pH
C1
W1
10
9
8
7
6
5
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date


pH
C2
W2
10
9
8
7
6
5
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date


pH
C3
W3
10
9
8
7
6
5
14-Feb-22
16-Feb-22
18-Feb-22
20-Feb-22
22-Feb-22
24-Feb-22
26-Feb-22
28-Feb-22
Date

Appendix F Weather and Meteorological Conditions

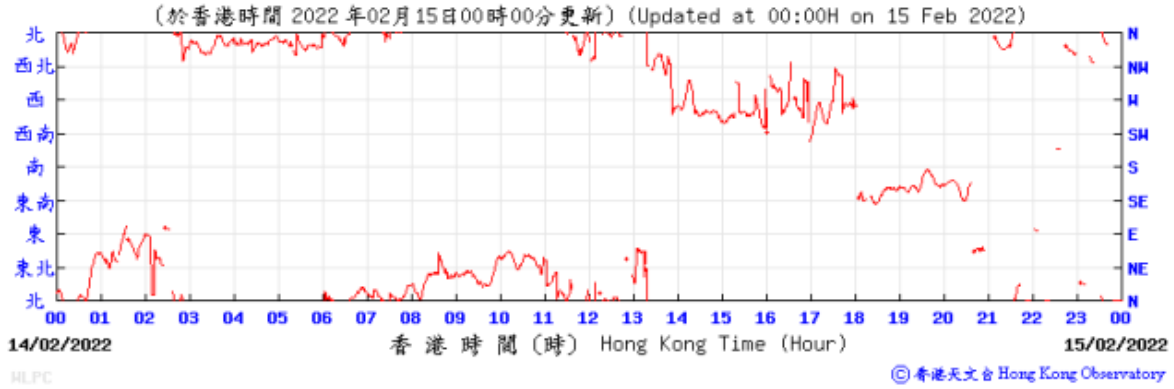
14 February 2022 00:00

Wetland Park

Elevation of station : 4m above mean sea level

Elevation of Anemometer : 15m above mean sea level

| Exposure of Wetland Park Wind Station |

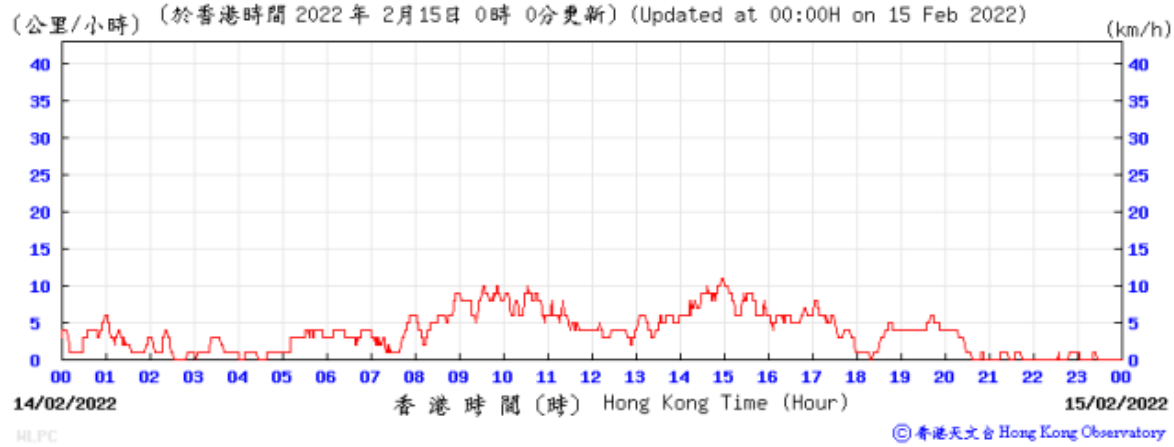


Wetland Park

Elevation of station : 4m above mean sea level

Elevation of Anemometer : 15m above mean sea level

| Exposure of Wetland Park Wind Station |

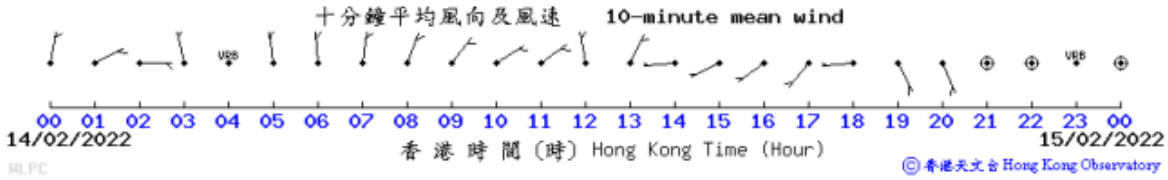


Wetland Park

Elevation of station : 4m above mean sea level

Elevation of Anemometer : 15m above mean sea level

| Exposure of Wetland Park Wind Station |



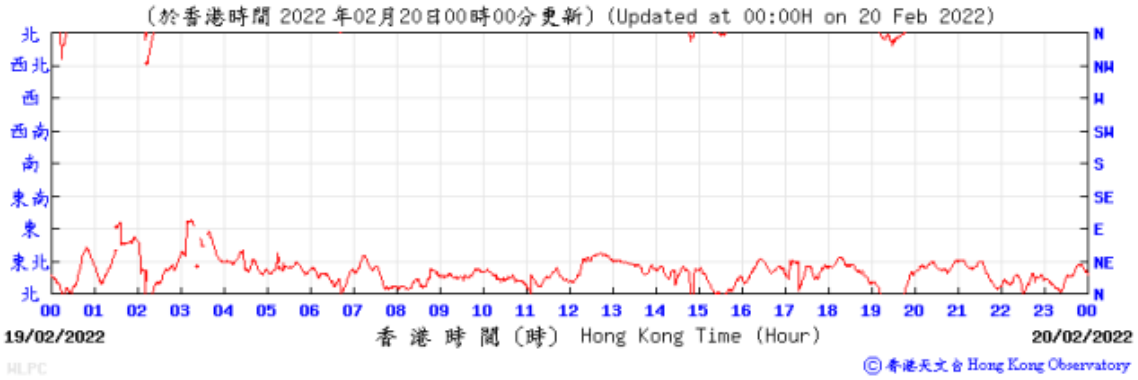
19 February 2022 00:00

Wetland Park

Elevation of station : 4m above mean sea level

Elevation of Anemometer : 15m above mean sea level

| Exposure of Wetland Park Wind Station |

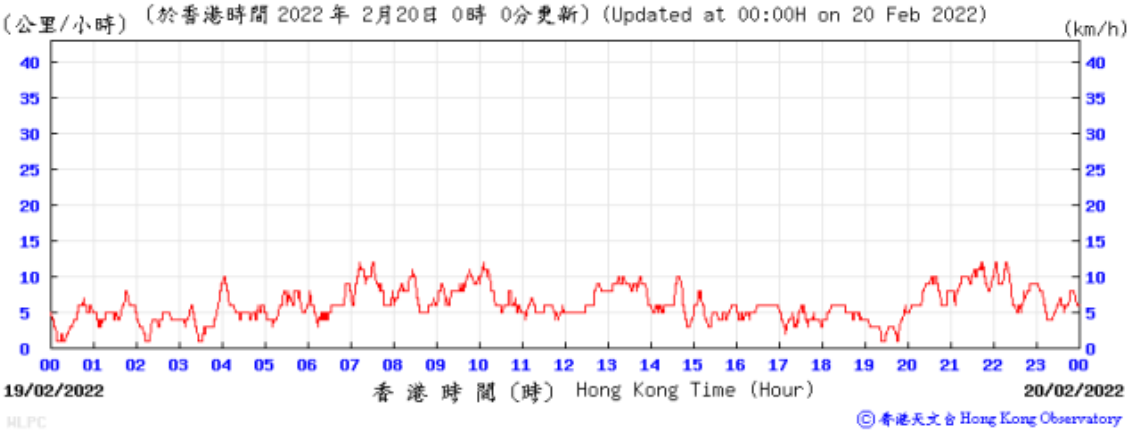


Wetland Park

Elevation of station : 4m above mean sea level

Elevation of Anemometer : 15m above mean sea level

| Exposure of Wetland Park Wind Station |

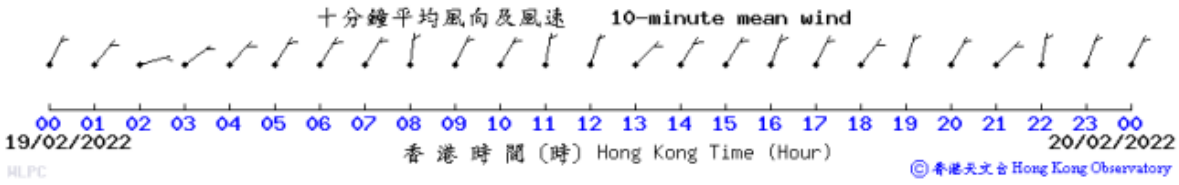


Wetland Park

Elevation of station : 4m above mean sea level

Elevation of Anemometer : 15m above mean sea level

| Exposure of Wetland Park Wind Station |



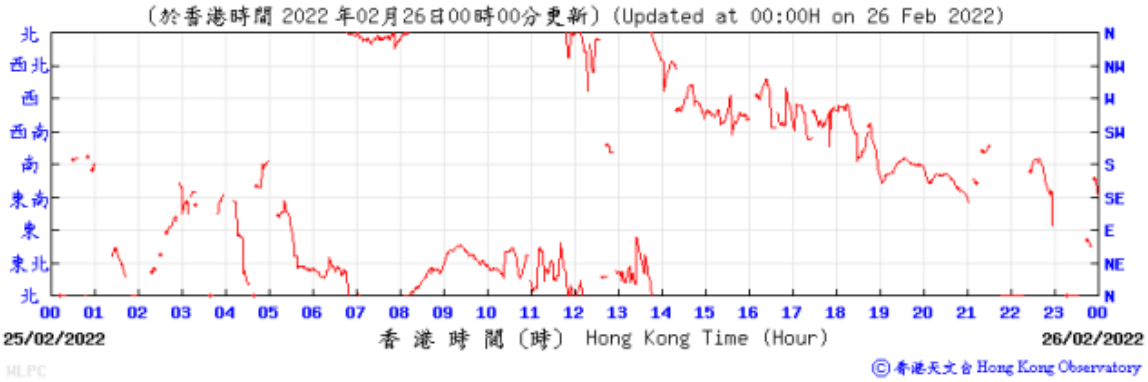
25 February 2022 00:00

Wetland Park

Elevation of station : 4m above mean sea level

Elevation of Anemometer : 15m above mean sea level

| Exposure of Wetland Park Wind Station |

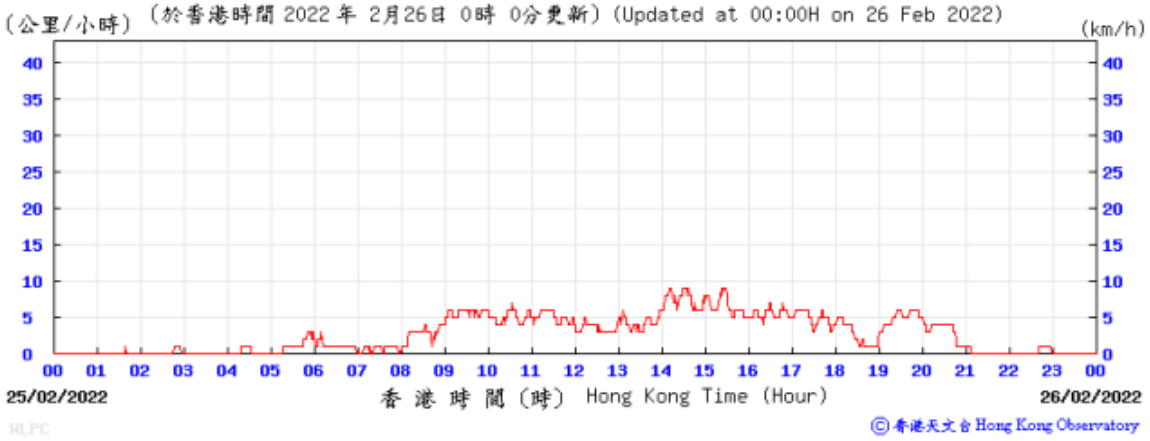


Wetland Park

Elevation of station : 4m above mean sea level

Elevation of Anemometer : 15m above mean sea level

| Exposure of Wetland Park Wind Station |

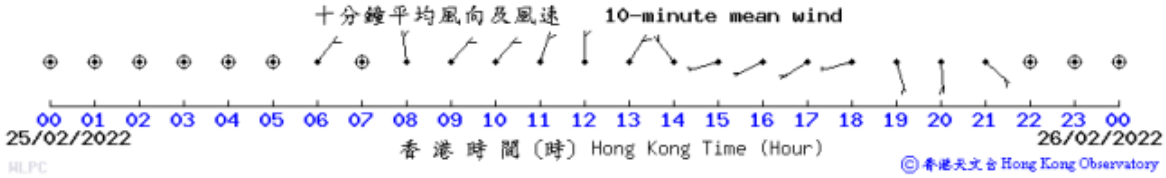


Wetland Park

Elevation of station : 4m above mean sea level

Elevation of Anemometer : 15m above mean sea level

| Exposure of Wetland Park Wind Station |



Appendix G Event and Action Plan

Appendix VII – Event and Action Plan

Table VII-1 Event and Action Plan for Air Quality*

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

Event	Action			
	ET	IEC	ER	Contractor
Limit Level				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, EPD, IEC and Contractor; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; and 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Checking monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; and 5. Supervisor implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; and 3. Ensure remedial measures properly implemented.	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; and 4. Amend proposal if appropriate.
Exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Notify ER, EPD, IEC and Contractor; 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 and ER to	1. Discuss amongst ER, ET and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; and 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to	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; and 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event	Action			
	ET	IEC	ER	Contractor
	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; and 8. If exceedance stops, cease additional monitoring.		stop that portion of work until the exceedance is abated.	

*Remark: The Event and Action Plan for Air Quality is extracted from Table 4-3 of the EM&A manual.

Table VII-2 Event and Action Plan for Construction Noise*

Event	Action			
	ET	IEC	ER	Contractor
Action Level				
Action Level	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the ER, IEC and Contractor; 4. Discuss with the IEC and Contractor, and formulate remedial measures; and 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; and 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; and 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; and 2. Implement noise mitigation proposals.
Limit Level				
Limit Level	1. Notify IEC, ER, EPD and Contractor; 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. Inform IEC, ER and EPD the causes & actions taken for the exceedances; 7. Assess effectiveness of	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and 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; and 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of	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; and 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	Action			
	ET	IEC	ER	Contractor
	Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.		work until the exceedance is abated.	

*Remark: The Event and Action Plan for Construction Noise is extracted from Table 5-3 of the EM&A manual.

Table VII-3 Event and Action Plan for Water Quality Monitoring*

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

Event	Action			
	ET	IEC	ER	Contractor
	7. Repeat measurement on next day of exceedance.			mitigation measures.
Limit Level				
Limit Level being exceeded by one sampling day	1. Repeat measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Ensure mitigation measures are implemented; and 6. Discuss mitigation measures with IEC, ER and Contractor	1. Check monitoring data submitted by ET and Contractor's working methods; 2. Discuss with ET and Contractor on possible mitigation measures; and 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Discuss with IEC, ET and Contractor on the proposed mitigation; 3. Request Contractor to critically review the working methods; 4. Make agreement on mitigation measures to be implemented; and 5. Ensure mitigation measures are properly implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Discuss with ET, IEC and ER and propose mitigation measures to ER and IEC within 3 working days; and 5. Implement the agreed mitigation measures.
Limit level being exceeded by two or more consecutive sampling days	1. Repeat measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods;	1. Check monitoring data submitted by ET and Contractor's working methods. 2. Discuss with ET and Contractor on possible mitigation measures; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; and	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented ; 4. Ensure mitigation measures are properly	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Take immediate action to avoid further exceedance; 3. Discuss with ET, IEC and ER and propose mitigation measures to ER and IEC within 3 working days;

Event	Action			
	ET	IEC	ER	Contractor
	5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; and 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	4. Supervise the implementation of mitigation measures.	implemented ; and 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.	4. Implement the agreed mitigation measures; 5. Resubmit proposals of mitigation measures if problem still not under control; and 6. As directed by the ER, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.

*Remark: The Event and Action Plan for Water Quality Monitoring is extracted from Table 6-4 of the EM&A manual.

Appendix H Waste Flow Table

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- **Monthly Summary Waste Flow Table for Inert C&D Materials (exclude excavated waste)**

-

Month	Estimated (Est.) and Actual (Act.) Waste Quantity											
	Inert C&D (‘000 m3) (Exclude excavated waste)											
	Total		Recycled as aggregates			Reused on site		Reuse in other project			Dispose to public fill	
	Est.	Act.	Est.	Act.	Recycling Company Name	Est.	Act.	Est.	Act.	Other Project Site Location	Est.	Act.
02-2022	0	0	0	0	0	0	0	0	0	0	0	0

-

- **Monthly Summary Waste Flow Table for Inert C&D Materials (exclude excavated waste)**

-

Month	Estimated (Est.), Actual (Act.) and Recycled (Rec.) Waste Quantity																
	Metal			Paper / cardboard / packaging			Plastics			Chemical			Other			Dispose to landfill	
	Est.	Act.	Rec.	Est.	Act.	Rec.	Est.	Act.	Rec.	Est.	Act.	Rec.	Est.	Act.	Rec.	Est.	Act.
02-2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recycling Company Name																	

Appendix I Summaries of Environmental Complaint Warning Summon and Notification of Successful Prosecution

Environmental Complaints Log

Complaint Log	Date of Complaint	Received from	Location	Nature of Complaint	Outcome	Status
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix J Summary of Observations and Findings made in Site Audit and Inspection in the Reporting Period

Summary of Site Audit in Reporting Month

Parameter	Date	Observations and Reminders
Air Quality	18 February 2022	The stockpiles should be covered by impervious materials to minimize dust emission. Wheel Washing should be provided to ensure no mud deposits on public roads
Noise	N/A	No particular observation
Water Quality	N/A	No particular observation
Waste Management	N/A	No particular observation
Ecology	N/A	No particular observation
Landscape and Visual	N/A	No particular observation
Permits/ Licences	N/A	No particular observation

Appendix K Notification of Exceedance

Proposed Low-rise and Low-density Residential Development at Various Lots and Their Adjoining Government Lan in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, N.T.

Water Quality Monitoring
Notification of Exceedance / Investigation Report

NOE / IR No.	KPR_202202_W001					
Monitoring Details						
Date	21 Feb 22		Time	13:25		
Station	W3					
Parameter(s)	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
Result(s)					**51.5**	
AL/LL criteria	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
	AL	LL	AL	LL	AL	LL
W1	2.2	2.1	38.0	38.6	60.1	65.5
W2	2.9	2.8	44.1	46.7	37.8	42.8
W3	1.8	1.7	32.0	32.6	44.5	47.5
Actions taken / to be taken	✓	• Repeat in-situ measurement				
	✓	• Notifiy ER / IEC / Contractor				
		• Others:				
Works undertaken at the time of monitoring event	According to the information provided by the Contractor, Ground investigation and formwork of manhole were carried out on 21 February 2022.					
Possible Reason for Action or Limit Level Exceedance(s)	The followings were reviewed / considered: • Control and mitigation measure for water quality impact from above mentioned works were implement including erected trenches surround the machine, and u-channel along the site boundary, to direct wastewater to wastewater treatment facilities before discharge; • Wastewater treatment plant has been checked by contractor, and is functional and well maintained; and • No surface runoff and no effluent discharge from construction activities into the concerned waterbody were observed on monitoring day and during the regular site audit. Hence, it is considered that there was no evidence to suggest the exceedance was related to the project works					

Prepared by: Theo Chan

Signature:

Date of Issue: 11 Mar 22

Certifeid by: Y H Hui (ET Leader)

Signature:

Date	Station	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		SS (mg/L)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
2/21/2022	C1	14:02	0.7	12.1	12.1	7.2	7.2	9.3	9.3	86.3	86.4	28.1	27.9	29.0	29.5
		14:02		12.1		7.2		9.3		86.4		27.8		30.0	
	C2	13:42	<0.5	13.0	13.0	7.2	7.2	7.3	7.3	69.4	69.3	7.9	7.9	8.0	7.5
		13:42		12.9		7.2		7.3		69.2		7.9		7.0	
	C3	13:37	<0.5	12.6	12.6	7.3	7.4	8.5	8.5	79.8	79.8	21.7	21.8	16.0	16.5
		13:37		12.6		7.4		8.5		79.7		21.9		17.0	
	W1	13:17	0.6	11.8	11.8	7.2	7.2	8.2	8.3	75.6	76.6	27.6	27.6	31.0	32.0
		13:19		11.7		7.2		8.4		77.6		27.7		33.0	
	W2	13:54	<0.5	13.5	13.5	7.4	7.4	8.4	8.4	80.5	80.5	14.8	15.1	16.0	17.0
		13:54		13.5		7.4		8.4		80.4		15.4		18.0	
	W3	13:25	<0.5	12.0	12.0	7.5	7.5	9.2	9.2	85.6	85.7	29.3	31.4	39.0	**<u>51.5</u>**
		13:25		12.0		7.5		9.2		85.7		33.6		64.0	

Note: Bold numbers indicate action level exceeded

Bold and underlined numbers indicate limit level exceeded

Proposed Low-rise and Low-density Residential Development at Various Lots and Their Adjoining Government Lan in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, N.T.

Water Quality Monitoring
Notification of Exceedance / Investigation Report

NOE / IR No.	KPR_202202_W002					
Monitoring Details						
Date	23 Feb 22		Time	13:25		
Station	W3					
Parameter(s)	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
Result(s)			**32.3**			
AL/LL criteria	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
	AL	LL	AL	LL	AL	LL
W1	2.2	2.1	38.0	38.6	60.1	65.5
W2	2.9	2.8	44.1	46.7	37.8	42.8
W3	1.8	1.7	32.0	32.6	44.5	47.5

Actions taken / to be taken	✓	• Repeat in-situ measurement
	✓	• Notifiy ER / IEC / Contractor
		• Others:
Works undertaken at the time of monitoring event	According to the information provided by the Contractor, Ground investigation and formwork of manhole were carried out on 23 February 2022.	
Possible Reason for Action or Limit Level Exceedance(s)	The followings were reviewed / considered: • Control and mitigation measure for water quality impact from above mentioned works were implement including erected trenches surround the machine, and u-channel along the site boundary, to direct wastewater to wastewater treatment facilities before discharge; • Wastewater treatment plant has been checked by contractor, and is functional and well maintained; and • No surface runoff and no effluent discharge from construction activities into the concerned waterbody were observed on monitoring day and during the regular site audit. Hence, it is considered that there was no evidence to suggest the exceedance was related to the project works	

Prepared by: Theo Chan

Signature:

Date of Issue: 11 Mar 22

Certifeid by: Y H Hui (ET Leader)

Signature:

Date	Station	Time	Water	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		SS (mg/L)	
			Depth (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
2/23/2022	C1	15:34	<0.5	17.4	17.4	7.2	7.2	8.3	8.3	86.4	86.3	23.7	23.7	24.0	24.0
		15:34		17.4		7.2		8.3		86.2		23.7		24.0	
	C2	15:09	<0.5	16.1	16.1	7.2	7.2	3.9	3.9	40.0	39.7	16.7	17.5	24.0	25.0
		15:09		16.1		7.2		3.9		39.3		18.4		26.0	
	C3	15:00	<0.5	15.5	15.5	7.4	7.4	6.6	6.5	65.9	65.7	13.2	13.2	4.0	4.5
		15:00		15.5		7.4		6.5		65.4		13.1		5.0	
	W1	14:43	<0.5	15.3	15.3	7.1	7.1	7.3	7.3	73.0	72.9	25.7	25.7	22.0	21.5
		14:43		15.3		7.1		7.3		72.7		25.7		21.0	
	W2	15:24	<0.5	16.4	16.4	8.1	8.1	7.8	7.8	80.1	80.1	10.5	10.4	8.0	7.5
		15:24		16.4		8.1		7.8		80.0		10.2		7.0	
	W3	14:49	<0.5	14.7	14.7	7.2	7.2	7.0	7.0	69.0	68.9	32.3	**32.3**	30.0	29.5
		14:49		14.7		7.2		7.0		68.7		32.2		29.0	

Note: Bold numbers indicate action level exceeded

Bold and underlined numbers indicate limit level exceeded

Proposed Low-rise and Low-density Residential Development at Various Lots and Their Adjoining Government Lan in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, N.T.

Water Quality Monitoring
Notification of Exceedance / Investigation Report

NOE / IR No.	KPR_202202_W003					
Monitoring Details						
Date	25 Feb 22		Time	13:25		
Station	W3					
Parameter(s)	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
Result(s)			**38.1**		**75.5**	
AL/LL criteria	DO (mg/L)		Turbidity (NTU)		SS (mg/L)	
	AL	LL	AL	LL	AL	LL
W1	2.2	2.1	38.0	38.6	60.1	65.5
W2	2.9	2.8	44.1	46.7	37.8	42.8
W3	1.8	1.7	32.0	32.6	44.5	47.5
Actions taken / to be taken	✓	• Repeat in-situ measurement				
	✓	• Notifiy ER / IEC / Contractor				
		• Others:				
Works undertaken at the time of monitoring event	According to the information provided by the Contractor, Ground investigation and formwork of manhole were carried out on 25 February 2022.					
Possible Reason for Action or Limit Level Exceedance(s)	The followings were reviewed / considered: • Control and mitigation measure for water quality impact from above mentioned works were implement including erected trenches surround the machine, and u-channel along the site boundary, to direct wastewater to wastewater treatment facilities before discharge; • Wastewater treatment plant has been checked by contractor, and is functional and well maintained; and • No surface runoff and no effluent discharge from construction activities into the concerned waterbody were observed on monitoring day and during the regular site audit. Hence, it is considered that there was no evidence to suggest the exceedance was related to the project works					

Prepared by: Theo Chan

Signature:

Date of Issue: 11 Mar 22

Certifeid by: Y H Hui (ET Leader)

Signature:

Date	Station	Time	Water	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		SS (mg/L)	
			Depth (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
2/25/2022	C1	10:44	<0.5	15.8	15.8	7.1	7.1	7.6	7.5	76.2	76.1	21.7	21.7	25.0	25.0
		10:44		15.8		7.1		7.5		76.0		21.6		25.0	
	C2	10:19	<0.5	15.5	15.6	7.2	7.2	3.0	3.0	30.6	30.4	18.5	19.0	15.0	15.5
		10:19		15.6		7.2		3.0		30.2		19.4		16.0	
	C3	10:10	<0.5	15.5	15.5	7.3	7.3	5.9	5.9	59.7	59.6	13.2	12.8	7.0	7.5
		10:11		15.5		7.3		5.9		59.4		12.4		8.0	
	W1	9:33	<0.5	14.6	14.6	7.1	7.1	5.3	5.3	52.1	51.9	18.0	17.8	17.0	17.5
		9:34		14.6		7.1		5.3		51.7		17.6		18.0	
	W2	10:30	<0.5	16.3	16.3	7.5	7.5	6.8	6.7	68.9	68.8	14.6	14.6	10.0	9.5
		10:30		16.3		7.5		6.7		68.6		14.6		9.0	
	W3	9:43	<0.5	15.0	15.0	7.3	7.3	6.0	6.0	59.5	59.4	36.9	**38.1**	75.0	**75.5**
		9:44		14.9		7.3		6.0		59.3		39.2		76.0	

Note: Bold numbers indicate action level exceeded

Bold and underlined numbers indicate limit level exceeded

Appendix L Implementation Status of Environment Mitigation Measures

Appendix XII Implementation Status of Environmental Mitigation Measures

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
Air Quality			
During Construction Phase:			
4.9.2	Good site management practices are important in reducing potential air quality impacts. As a general guidance, the contractor shall maintain high standard of housekeeping to prevent emission of fugitive dust emission. Loading, unloading, handling and storage of fuel, raw materials, products, wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission. It is recommended that the active works areas within the construction site to be watered regularly during construction period so as to supress dust emission effectively.	At all construction areas of the site during the entire construction period	✓
4.9.3	The speed of the trucks travelling on haul roads within the Project Site will be controlled at 10 kph in order to reduce dust impact and for safe movement around the Project Site. Any piles of materials accumulated on-site to be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas to be carried out in a manner without generating fugitive dust emissions. The material to be handled properly to prevent fugitive dust emission before cleaning.	At all construction areas of the site during the entire construction period	✓
4.9.4	If concrete batching is required on-site, the plant should be cleaned and watered regularly as a good practice. Cement and other fine grained materials delivered in bulk should be stored in enclosed silos fitted with high level alarm indicator. Wet mix batching process is preferred over dry mix batching. In addition, concrete batching plant shall comply with the specified process (SP) licence requirements including specified emission limits and dust control measures.	At all construction areas of the site during the entire construction period	✓
4.9.5	All the relevant dust control measures stipulated in the *Air Pollution Control (Construction Dust) Regulation* would be fully implemented:	At all construction areas of the site during the entire construction period	✓
4.9.5	• The designated haul road should be hard paved to minimize fugitive dust emission; • During the site formation works, the active works areas should be water sprayed with water browser or sprayed regularly during the construction period. The Contractor(s) should ensure that the amount of water spraying is just enough to dampen the exposed surfaces without over-watering which could result in surface water runoff; • Dump trucks for material transport should be totally enclosed using impervious	At all construction areas of the site during the entire construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	sheeting; • Any excavated dusty materials or stockpile of dusty materials to be covered by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated as soon as practicable; • Dusty materials remaining after a stockpile is removed should be wetted with water; • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with e.g. concrete, bituminous materials or hardcore or similar; • The Contractor(s) shall only transport adequate amount of fill materials to the Project Site to minimise stockpiling of fill materials on-site, thus reducing fugitive dust emission due to wind erosion; • Should temporary stockpiling of dusty materials be required, it shall be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides; or sprayed with water so as to maintain the entire surface wet;		
4.9.5	• All dusty materials shall be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet; • Vehicle speed to be limited to 10 kph except on completed access roads; • The portion of road leading only to a construction site that is within 30 m of a designated vehicle entrance or exit should be kept clear of dusty materials; • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites; • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • The working area of excavation should be sprayed with water before, during and after (as necessary) the works so as to maintain the entire surface wet;	At all construction areas of the site during the entire construction period	✓
4.9.5	• Use of effective dust screens, sheeting or netting to be provided to enclose dry scaffolding which may be provided from the ground floor level of the building or if a canopy is provided at the first floor level, from the first floor level, up to the highest level (maximum four floors for this Project) of the scaffolding where scaffolding is erected around the perimeter of a building under construction.	At all construction areas of the site during the entire construction period	✓
4.9.6	In order to minimize potential fugitive dust impacts, the site formation works should be carried out in stages. Regular site watering will be applied within the construction site in order to effectively supress dust emission, and that dusty materials will be properly covered to prevent wind erosion. Works area shall be properly covered at the end of working day to minimize wind erosion.	At all construction areas of the site during the entire construction period	✓
4.9.7	The concerned sediment at existing pond is intended to be left in place and not to be	During construction at the abandoned	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	disturbed as far as possible. However, in case pond sediment is involved during construction at the abandoned pond area, the following precautionary measures are proposed:	pond (in case pond sediment is involved)	
4.9.7	• Exposed surface shall be filled by filling materials; • Malodorous material, if any, should be placed as far as possible from any ASRs; • Malodorous materials should be covered by plastic tarpaulin sheets; and • Regular odour patrol to examine the effectiveness of the above control measures.	During construction at the abandoned pond (in case pond sediment is involved)	✓
During Operational Phase			
4.10.6	During operation, RCP will be provided for the residential development. A licensed waste collector shall be employed to collect domestic waste on daily basis.	During operational stage	N/A
4.10.3, 4.10.2	During the operational stage, an interim sewage treatment plant may be proposed within the Project Site before connection to the public sewerage system becomes available. Detailed design of the interim STP has yet been carried out, but the interim sewage treatment plant will be within a totally enclosed building with biological treatment, membrane filtration and Reverse Osmosis processes to be located underground. The concerned facility will only be temporary and will be carefully planned such that the brine disposal during maintenance (a potential odour source) will be away from the residential area as much as possible and will be close to the vehicular access connecting the nearby road.	During operational stage	N/A
4.10.4	The STP will be equipped with odour removal system (with an odour removal efficiency of not less than 99.5%). In addition, the exhaust of the STP will be directed away from nearby ASRs.	During operational stage	N/A
Noise Quality			
During Construction Stage:			
5.7.6	Asides from QPMEs mentioned above, additional noise mitigation measures in terms of movable noise barriers are also proposed. Movable noise barriers are proposed to shield construction plants. The movable noise barriers should have sufficient surface density of at least 10 kg/m^2 or material providing equivalent acoustic performance to block the line of sight from the sensitive receivers. There should not be any gaps and openings at the noise barriers to avoid noise leakage. The design of the noise barriers shall be proposed by the work contractor(s), and approved by the Engineers Representative (ER) and the Environmental Team in accordance with the Project EM&A	Construction areas near the specified locations during the construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	Manual		
5.7.11	It is also recommended that good housekeeping activities shall also be carried out to further minimise the potential construction noise impact, and these are summarised below. The following good site practices are also recommended for incorporation into the contractual requirements:	Construction areas near the specified locations during the construction period	✓
5.7.11	■ Before the commencement of any work, the Contractor shall submit to the Engineer for approval the method of working, equipment and sound-reducing measures intended to be used at the Project Site; ■ Contractor shall comply with and observe the Noise Control Ordinance (NCO) and its current subsidiary regulations. Percussive piling will require a Construction Noise Permit to be issued by EPD in advance; ■ Contractor shall devise and execute working methods that will minimise the noise impact on the surrounding environment; and shall provide experienced personnel with suitable training to ensure that these methods are implemented; ■ Only well-maintained plants should be operated on-site; ■ Plants should be serviced regularly during the construction programme; ■ Machines that may be in intermittent use should be shut down or throttled down to a minimum between work periods; ■ Silencer and mufflers on construction equipment should be utilised and should be properly maintained during the construction programme;	Construction areas near the specified locations during the construction period	✓
5.7.11	■ Noisy activities can be scheduled to minimise exposure of nearby NSRs to high levels of construction noise. For example, noisy activities can be scheduled for midday or at times coinciding with periods of high background noise (such as during peak traffic hours); ■ Noisy equipment such as emergency generators shall always be sited as far away as possible from noise sensitive receivers; ■ Provision of mobile noise barriers in adjacent to construction plants , piling machine,or provision of acoustic screens by the Contractor(s); ■ Mobile plants should be sited as far away from NSRs as possible;	Construction areas near the specified locations during the construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	■ Material stockpiles and other structures should be effectively utilised as noise barrier, where practicable; ■ The contractor(s) is also encouraged to arrange construction activities with care so that concurrent construction activities are avoided as much as possible. The contractor(s) should closely liaise with the school so that noisy activities are not undertaken during school's examination period. With the above noise mitigation measures in place and good site practices, residual noise impact at the school would be temporary and unacceptable noise impact is not expected; and		
5.7.11	■ EM&A will be carried out for this Project during the Project construction phase in order to monitor the construction noise level and to verify the effectiveness of the noise mitigation measures. A Project Environmental Team will be formed as part of the Project EM&A works, which will closely monitor contractor(s)' performance and the residual noise level at the school. Should unacceptable construction noise level be identified during the construction noise monitoring, necessary actions following the standard Event and Action Plan specified in the Project EM&A Manual, will be required by the Project Environmental Team.	Construction areas near the specified locations during the construction period	✓
5.7.7 to 5.7.10	Since site hoarding will be erected along the site boundary, the proposed temporary fixed noise barriers may be combined with the site hoarding. It is proposed that 3m tall temporary fixed noise barrier would be required along the western site boundary in order to shield N8 (i.e. the Bethel High School) from construction site of this Project. Figure 4-8 of EIA report refers. It shall be noted that these proposed temporary fixed noise barriers are only required when this Project is constructed concurrently with the nearby approved EIA projects (namely, the approved cycle track project; the approved public sewerage project). The exact alignment and design of these temporary noise barriers is subject to the contractor(s) and the prior approval from the Engineer's Representative (ER). To minimize potential impact, erection of temporary fixed noise barriers will be carried out section by section and precast units will be used for the foundation of the noise barrier. These noise barriers shall be erected before the commencement of construction works of this Project. The temporary fixed noise barriers should have sufficient surface density of at least 10 kg/m^2 or material providing equivalent acoustic performance. There should not be any gaps and openings at the noise barriers and site hoardings to avoid noise leakage. The design of the noise barriers shall be proposed by the work contractor(s), and approved by the Engineers Representative (RE) and the Environmental Team in accordance with the Project EM&A Manual	Construction areas near the specified locations during the construction period	✓
During Operational Phase:			

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
5.8.3, 5.8.2	According to the approved EIA report "Comprehensive Development and Wetland Protection Near Yau Mei San Tsuen" Project, the reverberant noise Sound Pressure Level inside the plant room is 85dB(A). With reference to the above EIA report, maximum noise level of 74dB(A) has been assumed for the sewerage treatment plant room in the Development. During detailed design, the acoustic performance of the temporary STP should be reviewed and acoustic treatments such as provision of acoustic louver, acoustic silencer and noise treatment inside the plant room shall be proposed so that the noise level at louver of STP should be 74dB(A) or below in order to meet the stipulated noise criteria.	During detailed design stage	N/A
5.8.1	Given to the site condition and the presence of industrial noise sources in adjacent to the Project Site and the proposed interim STP, proactive noise protection measures have already beenincorporated into the design of the proposed development, which include setback from Kam Pok Road, placing noise tolerant uses such as the proposed STP (with 10.4mPD at roof level) between the proposed house and the industrial noise source; a noise barrier along the remaining eastern site boundary with a minimum 4.5m tall solid boundary wall; and recommended noise mitigation measures for the proposed interim STP (as mentioned above). The locations of the above-mentioned noise barriers and noise tolerant uses as proactive measures are shown in Figure 5-3 of this manual.	During detailed design stage and operation	N/A
	<u>Water Quality</u>		
	During Construction Phase:		
6.3.3	The Contractor shall apply for a discharge licence under the WPCO and the discharge shall comply with the terms and conditions of the licence. Contractor(s) of this Project is required to submit a Construction Phase Drainage Management Plan with details such as design of the temporary site drainage system; wastewater treatment facilities; and maintenance of drainage system for the approval of the Engineers Representative (ER) and the Environmental Team in order to ensure that the mitigation measures are in place. The concerned drainage management plan should include recommended mitigation measures as well as best practices listed out in the EM&A Manual.	At all construction areas of the site during the entire construction period	✓
6.3.4	The Drainage Management Plan and recommended mitigation measures shall be implemented by the Contractor(s) and inspection shall be carried out regularly (e.g.	At all construction areas of the site during the entire construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	weekly) by the Engineer's Representative (ER), and Environmental Team (ET) in order to ensure all mitigation measures are effectively implemented, in particular to ensure that no off-site spillage of runoff from the project site. Any deficiencies identified shall be timely rectified by the Contractor(s).		
6.3.5	The BMPs given in the ProPECC PN 1/94 shall be implemented in controlling water pollution during the whole construction phase. The main practices provided in the above-mentioned document (i.e. ProPECC PN 1/94) are also summarized in the following paragraphs which should be implemented by the contractor during construction phase where practicable :	At all construction areas of the site during the entire construction period	✓
6.3.5	• High loading of suspended solids (SS) in construction site runoff shall be prevented through proper site management by the contractor;	At all construction areas of the site during the entire construction period	✓
6.3.5	• The boundary of critical work areas shall be surrounded by ditches or embankment. Accidental release of soil or refuse into the adjoining land should be prevented by the provision of site hoarding or earth bunds, etc. at the site boundary. These facilities should be constructed in advance of site formation works and roadworks;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Consideration should be given to plan construction activities to allow the use of natural topography of the Project Site as a barrier to minimise uncontrolled non-point source discharge of construction site runoff;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Temporary ditches, earth bunds should be provided to facilitate directed and controlled discharge of runoff into storm drains via sand/ silt removal facilities such as sand traps and sedimentation basins. Oil and grease removal facilities should also be provided where appropriate, for example, in area near plant workshop/ maintenance areas; • Sedimentation basins and sand traps designed in accordance with the requirements of ProPECC Note PN 1/94 should be installed at the construction site for collecting surface runoff;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Sand and silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly by the contractor, and at the onset of and after each rainstorm to ensure that these facilities area functioning properly;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Slope exposure should be minimised where practicable especially during the wet season. Exposed soil surfaces should be protected from rainfall through covering the temporary exposed slope surfaces or stockpiles with tarpaulin or the like;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Haul roads should be protected by crushed rock, gravel or other granular materials to minimise discharge of contaminated runoff;	At all construction areas of the site during the entire construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
6.3.5	• Slow down water run-off flowing across exposed soil surfaces;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Plant workshop/ maintenance areas should be bunded and constructed on a hard standing. Sediment traps and oil interceptors should be provided at appropriate locations;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Manholes (including newly constructed ones) should be adequately covered or temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system;	At all construction areas of the site during the entire construction period	N/A
6.3.5	• Construction works should be programmed to minimise soil excavation works where practicable during rainy conditions;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Chemical stores should be contained (bunded) to prevent any spills from contact with water bodies. All fuel tanks and/ or storage areas should be provided with locks and be sited on hard surface;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Chemical waste arising from the Project Site should be properly stored, handled, treated and disposed of in compliance with the requirements stipulated under the Waste Disposal (Chemical Waste) (General) Regulation;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Drainage facilities must be adequate for the controlled release of storm flows.	At all construction areas of the site during the entire construction period	✓
6.3.5	• Vehicle wheel washing facilities should be provided at the site exit such that mud, debris, etc. attached to the vehicle wheels or body can be washed off before the vehicles leave the work site.	At all construction areas of the site during the entire construction period	✓
6.3.5	• Section of the road between the wheel washing bay and the public road will be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains	At all construction areas of the site during the entire construction period	✓
6.3.5	• Bentonite slurries, if any to be generated, shall be reconditioned and reused as far as practicable. Spent bentonite should be kept in a separate slurry collection system for disposal at a marine spoil grounds subject to obtaining a marine dumping licence from EPD. If used bentonite slurry is to be disposed of through public drainage system, it should be treated to meet the respective applicable effluent standards for discharges into sewers, storm drains or the receiving waters	At all construction areas of the site during the entire construction period	✓
6.3.5	• Appropriate peripheral drainage system shall be constructed along the Project Site boundary to divert away surface runoff in accordance with requirements stipulated in ProPECC PN 1/94 in order to collect surface runoff and discharge it into the nearby existing stormwater drains, and via which into the existing NTMDC	At all construction areas of the site during the entire construction period	✓
6.3.5	• Temporary drains, sedimentation basins, sand traps and similar facilities shall be provided during the construction works in accordance with the ProPECC PN 1/94.	At all construction areas of the site during the entire construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
6.3.5	• Sewage generated from the construction workforce should be contained in chemical toilets before connection to public foul sewer becomes available. Chemical toilets should be provided at a minimum rate of about 1 per 50 workers. The facility should be serviced and cleaned by a specialist contractor at regular intervals;	At all construction areas of the site during the entire construction period	✓
6.3.5	• Spillage of fuel oils or other polluting fluids should be prevented at source. It is recommended that all stocks should be stored inside proper containers and sited on sealed areas, preferably surrounded by bunds.	At all construction areas of the site during the entire construction period	✓
6.3.7	During construction, temporary drains, peripheral site drainage comprising precast concrete u-channels, sedimentation basins, sand traps and similar facilities will be provided along the Site boundary. **Figure 5-3** of EIA report (Figure 6-2 in this Manual) shows the indicative site drainage during construction phase. The construction of water extraction facility for interim STP should be carried out in dry season so that to avoid affecting water quality at the channel. Silt curtain or sand bags should be provided to carve out the working area so as to bypass the channel flow and to avoid any solids/materials arising from the construction activities from entering the channel during construction phase. The work sites at the NTMDC for construction of water abstraction facilities should be maintained in dry conditions. Regular visual inspections should also be carried out by the Environmental Team and Contractor to ensure there is no spillage into the channel.	At all construction areas of the site during the entire construction period	✓
6.3.8	The existing abandoned pond will be filled up by imported fill materials. The pond sediment is intended to be left in place and not to be disturbed as far as possible. However, in case any sediment is encountered during construction, preventative measures are proposed below. Temporary access roads of Project Site should be protected by crushed stone or gravel. Offsite disposal should be avoided and pond sediment should be re-used on-site. For the purpose of prevention of soil erosion, temporary exposed surfaces should be covered by tarpaulin sheets to prevent materials from washing away. Appropriate site drainage should be provided, as part of the construction phase drainage system, to ensure surface runoff is properly collected and treated and there should be spillage to offsite location. In addition, intercepting channels should be provided along the edge of pond to divert surface runoff away from this pond and to prevent storm runoff from washing across exposed surfaces (Figure 5-3 refers). Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.	During construction at existing abandoned pond	N/A
6.3.9	As the concerned existing abandoned pond will be filled up to the proposed site formation level during construction, remaining water in the pond will be absorbed by soakaway mechanism and no discharge to off-site location is expected. Site drainage should be provided around the existing abandoned pond to divert surface runoff away from this pond during pond filling. Draining of pond water and discharge to surrounding area should be avoided as far as possible.	During construction at the existing abandoned pond	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
6.3.9	In case there is still surplus pond water, the pond water will be on-site re-used for the construction activities such as dust suppression and wheel washing facilities to minimize the water consumption of project as well as the volume of pond water that needs to be handled. In case there is a need for disposal, on-site treatment should be proposed by the Contractor(s) and the discharge of treated effluent will be subject to agreement with EPD and DSD, where necessary. The contractor(s) will be required to properly treat the water on-site with the quality of the treated water complying with the requirement of the discharge license to be issued by the EPD.	At all construction areas of the site during the entire construction period	N/A
6.3.10	During construction period, in order to better control potential water pollution due to site runoff during inclement weather and emergencies, the Contractor(s) will be required to prepare and implement an Emergency Response Plan (ERP). As a general indication, the ERP should include but not limited to the design of drainage facilities/ system; maintenance of drainage system; recommended measures and best practices identified in the EIA study; an event and action plan during inclement weather and emergencies condition; emergency procedures and emergency contact details; and responsibility of relevant parties and follow up actions. In particular, the plan should provide details of procedure and actions required both before and after forecasted rainstorm such as checking/ inspection before onset of rainy season/ rainstorm that all drains are cleared from blockage and functioning properly; checking standby plant and equipment are ready for use; frequency of updating weather conditions; persons who will implement the measures and follow up actions; ensuring easily loose construction materials are well covered; more frequent inspection and cleansing preferably before and after every rainstorm event. In case of severe weather condition, upon the instruction from the Engineers' Representative (ER), to stop works for the sake of safety reasons.	At all construction areas of the site during the entire construction period	✓
During Operational Phase:			
6.3.12, 6.3.13	All domestic sewage generated will be discharged to the public sewerage system via a proposed rising main from the Project Site. The discharge from the club house and swimming pool shall apply for a discharge licence under the WPCO, and the discharge shall comply with the terms and conditions of a licence and the standards for effluents specified in the licence, as well as conditions in Environmental Permit.	During operation	N/A
6.3.14, 6.3.12	An interim STP will be proposed with discharge of the treated effluent to the adjacent NTMDC in case the public sewerage is not available when the Project is in operation. Samples of treated effluent will be taken regularly and tested according to the discharge licence under the Water Pollution Control Ordinance to ensure compliance with discharge standards as well as conditions in Environmental Permit of this Project under the EIAO.	During operation	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
6.3.14	The proposed interim sewerage system will be designed in such a way to facilitate the future connection to the planned Ngau Tam Mei sewerage system with the flow direction to be controlled by several flow control devices such as valves or stop-log, etc. The interim STP will be decommissioned and converted to a sewage pumping station once the trunk sewer becomes available for connection. Small amount of residual sewage left in the interim STP would be tankered away. No sewage will be discharged into the nearby water body during decommissioning of the interim STP.	During operation	N/A
6.3.15	Precautionary measures have also been proposed in Section 6.12 and 6.6 of the EIA report to deal with sewage overflow, emergencies discharge, and change in flow regime. In addition, equalization tank will be provided in the STP for temporary storage of sewage in case of outage of the interim STP, and tank away will be provided for proper disposal at designated sewage treatment works to be assigned by DSD	During operation	N/A
6.3.16	Best Management Practices (BMPs) have been proposed for the development, which are summarised and grouped under the following categories: <u>Design Measures</u> • Exposed surface shall be avoided within the proposed development to minimize soil erosion. Development site shall be either hard paved or covered by landscaping area where possible. • The landscaped open area should be managed and maintained by the property management company (and its contractor) during operation. • Paved area of development has been minimized by a simpler and more effective internal road layout, at which proposed houses are allocated on both sides of the road. Thus hard paved area of internal access road as well as increase in surface runoff, can be minimized; • The roadside channel surrounding the Project Site will be retained to maintain the original flow path. The drainage system will be designed to avoid flooding;	During operation	N/A
6.3.16	• Drainage system of the development shall be designed in such a way that surface runoff from the residential area is directed towards the internal access road, where appropriate drainage system with control facilities have been proposed. Additional paved U-channels with screening facilities are also provided along site boundary to avoid uncontrolled spillage of runoff. • Street level tree planting should be introduced along roadside of internal	During operation	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	access road, which can help to reduce soil erosion and as a buffer zone between the residential area and the drainage system along roadside. • Broadleaf and evergreen species, which in general generate relatively smaller amount of fallen leaves, should be selected where possible (e.g., at landscape berm at the periphery of the site). • Fertilizer will only be applied on landscape area when needed. If required, the fertilizer should be applied in early Spring and in later summer in order to avoid major rainy season as far as possible. Slow release fertilizer should be selected as far as possible to minimize the amount of nutrient to be washed out by rain. Application of fertilizer should not be arranged before forecasted heavy rainfall, and overdosing should be avoided. Application of fertilizer should be managed by an experienced contractor through the property management comply.		
6.3.16	Devices/ Facilities to Control Pollution • Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system as well as at upstream location of the u-channels. • Road gullies with standard design and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater runoff. • Drainage outlet of any covered car park should be connected to foul sewers via petrol interceptors or similar facilities	During operation	N/A
6.3.16	In the event of emergency (e.g. car accident) where there is a major spillage of oil, chemical or fuel, dispersants or firefighting foam, etc., a system of contaminant bunding will be implemented as appropriate.	During operation	N/A
6.3.18	Good management measures such as regular cleaning and sweeping of road surface/ open areas is suggested. The road surface/ open area cleaning should also be carried out prior to occurrence of rainstorm	During operation	N/A
6.3.19	Stormwater gullies and ditches provided among the residential development will be regularly inspected and cleaned (e.g. monthly) by the property management company. Additional inspection and cleansing should be carried out if heavy rainfall is forecasted.	During operation	N/A
6.3.20	During operation, in order to control/ minimize water pollution during inclement	During operation	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	weather and emergencies, an Emergency Response Plan should be established and implemented. As a general indication, the ERP should include but not limited to record plans of drainage facilities/ system; maintenance of drainage system; recommended measures and best practices identified in the EIA study; an event and action plan during inclement weather and emergencies condition; emergency procedures and emergency contact details; and responsibility of relevant parties and follow up actions. In particular, the plan should provide details of procedure and actions required both before and after forecasted rainstorm such as checking/ inspection before onset of rainy season/ rainstorm that all drains are cleared from blockage and functioning properly; checking standby plant and equipment are ready for use; frequency of updating weather conditions; persons who will implement the measures and follow up actions; more frequent inspection and cleansing preferably before and after every rainstorm event.		
	<u>Sewerage and Sewage Treatment</u>		
	During Construction Phase:		
Nil	Nil	Nil	N/A
	During Operational Phase:		
7.2.1	With reference to the routing of the planned trunk sewerage in the vicinity, sewage from the Project Site is proposed to be discharged to the planned public gravity trunk sewer via a rising main to be constructed and maintained by the subject development for eventual discharge to the existing YLSTW. The proposed rising main for conveying sewage from the Project Site to the future public sewer will be in the form of twin rising mains, so as to provide continued operation of the pumping system when one of the mains is damaged. The rising main will run underneath the internal roads within the Project Site and then northward along Kam Pok Road to a new sewage manhole at immediate upstream of San Tin No.1 Sewage Pumping Station. The section of rising main within the development will be constructed before the occupation intake to minimize disruption to the residents. The construction programme of the remaining rising main along public road will be discussed with relevant departments at later stage to cope with the construction programme of the trunk sewerage project. Agreements will be sought from all relevant authorities for the construction of the proposed sewerage, connection to the planned public sewerage system, and the	During operation stage (permanent scheme)	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	associated future maintenance responsibility.		
7.1.2	In view of the programme gap between the provision of public sewerage and the occupation of the proposed development, it is necessary to consider the provision of STP as an interim measure to handle the sewage generated from the development before the availability of public sewerage for connection. To minimize disturbance to the residents, all sewers within the development for connection to the public system in the future will also be constructed together with the construction of this Project.	During operation stage	N/A
7.2.4	The treated effluent will be discharged into the new drainage system within the development and conveyed to the adjacent Ngau Tam Mei Channel via existing twin cell box culvert. The channel water will be co-treated in the interim STP with the sewage generated by the development. Considering the influent characteristic, the process of biological treatment, membrane filtration and Reverse Osmosis (such as MBR + RO), is proposed for the interim STP. The interim STP will adopt RO system after membrane filtration process to further polish the effluent quality in order to cover fluctuation of pollutants in Ngau Tam Mei Drainage Channel water, to ensure that the Target Effluent Quality can be met. After successful operation of the interim STP for a period not less than one year, and the end of year result showing no net increase in pollution loading is confirmed, the operation frequency of the RO system will then be reviewed. Before reviewing the performance of the RO system, sufficient performance data including influent quality and effluent quality of the RO system should be collected. The RO system can be served as a backup process to further polish the upstream effluent and eliminate the residual pollution loads of the STP, competent personnel will be responsible to constantly review the effluent water quality and decide the need of the RO system as it is readily available for operation when upstream system experienced deficiency in handling the fluctuation of the influent.	During operation stage	N/A
7.2.11	In order to offset the additional pollution load due to the development, it is proposed to abstract water from Ngau Tam Mei Drainage Channel for cotreatment in the interim STP. The water abstraction facility which is to be located within the application site is subject to detailed design and relevant approval for construction access and government land matters. The construction of water abstraction facility should be carried out in dry season. Silt curtain or sand bags should be provided to carve out the working area so as to bypass the channel flow and to avoid any solids/materials	Project Proponent / Contractor	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	arising from the construction activities from entering the channel during construction phase. The work sites at the NTMDC for construction of water abstraction facilities should be maintained in dry conditions. Regular visual inspections should also be carried out by the Environmental Team and Contractor to ensure there is no spillage into the channel.		
7.2.6	Proper operation and maintenance of interim sewage treatment plant is essential to safeguard the quality of discharge effluent, subject to the following aspects: • Competent technicians to be employed by the development management office to operate the sewage treatment plant (STP). They are to be fully conversant with the operating procedures as stipulated in the operation and maintenance manuals. • The proposed STP only serves the proposed development and thus the operation and maintenance (O&M) cost would be borne by the future management office of the development. The Applicant will ensure the design of STP is cost-effective such that the O&M cost imposed is reasonable. • The STP is to be kept in a tidy state. This includes regular hosing down, scraping of the walkways, whitewashing the walls, cleaning and painting the metalwork, and maintaining adequate lighting and ventilation.	During operation stage	N/A
7.2.6	• Where parts of the STP are sited beneath ground, forced ventilation will be provided. • Online sensors will be installed in the STP to monitor the parameters of Ammonia, Nitrite & Nitrate, and TSS. Easily accessible sampling point will also be provided for sampling of the treated effluent for laboratory testing. • Turbidity meter will be installed at the outlet of membrane filtration as well as the outlet of Reverse Osmosis (RO) to indicate the efficiency of pollutant removal from the corresponding process units, adjustment of RO system can then be made to suit the variation of pollutants. • Samples of treated effluent and abstracted channel water will be documented weekly, such that the lows and highs of the pollutant variations can be captured. Results will be compared against the total annual loadings, adjustment of water abstraction amount, membrane backwash frequency, RO unit operation will be fine-tuned to ensure effluent quality meet discharge license under the Water Pollution Control Ordinance and the target effluent quality. • Based on the pollutant offsetting approach, co-treating sewage with abstracted	During operation stage	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	channel water will be subject to the amount of pollutants in the channel water for offsetting. The proposed target effluent quality of the STP has taken it into account. The annual pollution loading in abstracted channel water (kg) and annual pollution loading in effluent of the interim STP (kg) would be balanced. • A check and balance system monitor the pollutant loading every week. Monthly or quarterly report shall be submitted. By the end of each year, the exceeding and shortcoming amount will be balanced to quantify no net increase in pollutant loading achieved based on total pollutant reduction of the year. • The production of sludge is estimated to be approx. 4 m^3/d. While the reject water from the RO unit is normally around 20% of the influent depends on the quality of RO influent. The sludge and reject water will be transported by tankers from the interim private STP to government's STW for offsite treatment. A storage tank with capacity of 150 m^3 will be provided for storage of the RO reject water. • The Project Proponent will be responsible for the future sewer connection upon its available in the future and STP decommissioning with connection details subject to agreement of DSD. Appropriate conditions could be imposed in the Environmental Permit (EP) to ensure the EP holder to take up the responsibility to ensure connection to public sewer when trunk sewer is ready. • The Project Proponent will be responsible for the maintenance of the proposed water abstraction facilities and the associated pipelines. The proposed water abstraction facilities will be decommissioned together with the interim STP once the public sewer becomes available. • The discharge of treated effluent from the interim STP should follow the discharge licence requirements under the WPCO as well as the terms and conditions specified in the EP under the EIAO.		
7.2.8	The following measures will be adopted in order to eliminate adverse impact due to potential sewage overflow, emergencies discharge and change in flow regime beyond the expectation of this assessment: • Adequate spare parts for the plant will have to be made readily available by storage. • Qualified personnel will be hired to inspect the plant condition and carry out maintenance on a regular basis. • Regular test, maintenance and replacement of membranes and plant equipment will	During operation stage	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	be carried out in accordance to the recommendations from manufacturers or as recommended by the qualified personnel after inspection. • Equalization tank with capacity of 168 m3 (~ 3 days of sewage storage depending on actual flow condition) will be provided in case of entire outage of the interim STP. • Tank away will be provided for prolonged outage of the interim STP, for disposal of sewage to Government operated public sewage treatment works to be assigned by DSD. In case of abnormal effluent quality is detected from water sampling, discharge of treated effluent will be suspended and all sewage will be diverted to the equalization tank for temporary storage until the problem is rectified. In case of entire outage of the STP, channel water will not be abstracted from Ngau Tam Mei Drainage Channel. And if prolonged outage of the interim STP is anticipated, tankers will be arranged to transport the sewage for disposal to Government operated public sewage treatment works to be assigned by DSD.		
	<u>Waste Management</u>		
	During Construction Phase:		
8.3.2	Cross contamination of inert C&D materials by other waste categories shall be minimised as far as practicable through provision of storage facilities for storage of different categories of waste. Inert materials including soil, rock, concrete, brick, cement plaster/ mortar, inert building debris, aggregates and asphalt should be segregated from and stored separately from other waste categories to ensure proper handling and reuse. The on-site temporary facilities should be equipped with dust control measures where necessary.	At all construction areas of the site during the entire construction period	✓
8.3.32	Spent bentonite slurries, if any, will be handled and disposed of properly in accordance with the requirements set out in the Practice Note for Professional Persons (PN1/94) Construction Site Drainage.	At all construction areas of the site during the entire construction period	N/A
8.3.2	Wooden boards can be reused on-site or off-site, though the reusability and quantity of final waste to be generated will be subject to the quality, size and shape of the boards proposed by the contractor(s). Timbers which cannot be reused shall be sorted and stored separately from all other inert waste before disposal	At all construction areas of the site during the entire construction period	N/A
8.3.3	Should construction site hoarding be erected, metal fencing or building panels, which are more durable than wooden panels, are recommended to be used as far as	At all construction areas of the site during the entire construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	practicable. Opportunity shall also be sought to re-use any wooden boards used in site fencing on-site or off-site. Concrete and masonry can be crushed and used as fill material if practicable. On-site burning of wooden waste is prohibited		
8.3.4	In order to avoid dust, odour and erosion impacts, any stockpile areas within the Project Site should be covered with tarpaulin or impermeable sheeting. Any vehicle carrying C&D waste should have their load covered when leaving the works area. Vehicles should be routed as far as possible to avoid sensitive receivers in the area	At all construction areas of the site during the entire construction period	✓
8.3.5	Chemical waste that could be generated from construction works would primarily arise from chemicals used in operation and maintenance of on-site equipment. These may include fuel, oil, lubricants, cleaning fluids, and solvents arising from leakage or maintenance of on-site equipment and vehicles. Chemical generated from daily operation of the construction works shall be recycled/ reused on-site as far as practicable	At all construction areas of the site during the entire construction period	✓
8.3.6	If off-site disposal of chemical waste is required, they should be collected and delivered by a licensed contractor, and disposed of strictly following the Waste Disposal (Chemical Waste) (General) Regulation	At all construction areas of the site during the entire construction period	✓
8.3.7	The contractors shall register with EPD as chemical waste producers when chemical waste is produced. All chemical waste shall be properly stored, labelled, packaged and collected in accordance with the Regulation	At all construction areas of the site during the entire construction period	✓
8.3.7	Fossil fuel and used lubricants from trucks and machinery are classified as chemical waste.	At all construction areas of the site during the entire construction period	✓
8.3.8	Chemical waste generated has to be stored in suitable containers and away from water bodies so that leakage or spillage is prevented during the handling, storage, and subsequent transportation	At all construction areas of the site during the entire construction period	✓
8.3.9	The Contractor shall prevent fuel and lubricating oil leakage from plant and storage sites from contaminating the construction site. All compounds in work areas shall be positioned on areas with hard paving and served by drainage facility. Sand/ silt traps and oil interceptors shall be provided at appropriate locations prior to the discharge points	At all construction areas of the site during the entire construction period	✓
8.3.10	General refuse generated at the construction site should be stored separately from construction and chemical wastes to avoid cross contamination. A reliable waste collector shall be employed by the Contractor to remove general refuse from the	At all construction areas of the site during the entire construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	construction site on a daily basis where appropriate to minimise the potential odour, pest and litter impacts		
8.3.11	Open burning for the disposal of construction waste or the clearance of the Project Site in preparation for construction work is prohibited under the Air Pollution Control (Open Burning) Regulation	At all construction areas of the site during the entire construction period	✓
8.3.12	To ensure the appropriate handling of the C&D materials, it is recommended that a Waste Management Plan (WMP) shall be developed by the contractor and incorporated in the Environmental Management Plan (EMP) in accordance with ETWB TCW No. 19/2005 – Environmental Management on Construction Sites at the commencement of the construction works.	Throughout the entire construction period	✓
8.3.14	In formulating the EMP in respect to waste management, the following hierarchy should be considered: • Avoidance and minimization to reduce the potential quantity of C&D materials generated; • Reuse of materials as practical as possible; • Recovery and Recycling as practical as possible; and • Proper treatment and disposal in respect to relevant laws, guidelines and good practice.	Throughout the entire construction period	✓
8.3.12	The EMP shall be submitted to the Engineers' Representative (RE) and the Project Environmental Team Leader (ETL) for approval, and shall be implemented throughout the Project.	Throughout the entire construction period	✓
8.3.15	The EMP should be developed taking into account the recommended control measures given in the EIA report where appropriate, including:	Throughout the entire construction period	✓
8.3.15	• A waste management policy, organization chart, and responsibility	Throughout the entire construction period	✓
8.3.15	• An estimation on the location, type, nature, quality and quantity of different waste streams to be generated from the Project works, and the corresponding waste management methodology	Throughout the entire construction period	✓
8.3.15	• A method statement for demolition and transportation of the excavated materials and other construction wastes	Throughout the entire construction period	✓
8.3.15	• The potential for recycling or reuse should be explored and opportunities taken if waste generation is unavoidable	Throughout the entire construction period	✓
8.3.15	• Recommendations for appropriate disposal routes if waste cannot be recycled.	Throughout the entire construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
8.3.15	• A system to control the disposal of C&D materials and C&D waste to public fill reception facilities, sorting facilities and landfills respectively through a trip-ticket system in accordance with the PNAP ADV-19	Throughout the entire construction period	✓
8.3.15	• A system to record the disposal, reuse and recycling of C&D materials for monitoring purposes	Throughout the entire construction period	✓
8.3.15	• The EMP should be approved before the commencement of construction. All mitigation measures in the approved EMP should be fully implemented.	Throughout the entire construction period	✓
8.3.16	• The Project Proponent will ensure that the day-to-day operations comply with the approved EMP.	Throughout the entire construction period	✓
8.3.16	• The Project Proponent/ RE shall require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. In addition, the Project Proponent/ ER shall regularly audit Contractor(s)' records for the disposal, reuse and recycling of C&D materials for monitoring purposes.	Throughout the entire construction period	✓
8.3.17	Based on the above waste management recommendations, a detailed management and control plan shall be formulated during the detailed design stage. A good management and control can prevent the generation of significant amount of waste. On-site sorting of construction wastes will be recommended. Secondary on-site sorting can be achieved by avoiding the generation of "mixed waste" through good site control. Construction wastes shall be sorted to remove contaminants, with the inert materials broken up into small pieces before being transported to the public fill reception facilities.	Throughout the entire construction period	✓
8.3.18	Chemical and oily wastes generated from the construction activities, vehicle and plant maintenance and oil interceptors should be disposed of as chemical waste in strict compliance with the Waste Disposal (Chemical Waste) (General) Regulations	Throughout the entire construction period	✓
8.3.19	The demolition and construction work shall be considered in the planning and design stages to reduce the generation of C&D waste where possible. Landfill disposal shall only be considered as the last resort	Throughout the entire construction period	✓
8.3.20	Construction methods with minimum waste generation quantity and other environmental impacts shall be considered in the detailed design	Throughout the entire construction period	✓
8.3.21	In addition, the Project Proponent shall require the contractor to reuse inert C&D materials (e.g. excavated soil) on-site or in other suitable construction sites as far as possible, in order to minimize the disposal of C&D materials to public fill reception facilities	Throughout the entire construction period	✓
8.3.21	The Project Proponent shall encourage the contractor to maximize the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimize the generation of construction waste.	Throughout the entire construction period	✓
8.3.22	The following additional control/ mitigation measures are recommended to be followed by the Contractor	Throughout the entire construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
8.3.22	• Storage of different waste types – different types of waste should be segregated and stored in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. An on-site temporary storage area equipped with required control measures (e.g. dust control) should be provided;	Throughout the entire construction period	✓
8.3.22	• Trip-ticket system – in order to monitor the proper disposal of non-inert C&D waste to landfills and to control fly-tipping, a trip-ticket system should be included as one of the contractual requirements and audited by the Environmental Team;	Throughout the entire construction period	✓
8.3.22	• Records of Wastes – a recording system should be proposed to record the amount of wastes generated, recycled and disposed of (including the location of disposal sites);	Throughout the entire construction period	✓
8.3.22	• Training – The contractor should provide his workers with proper training of appropriate waste management procedure to achieve waste reduction as far as practicable and cost-effective through recovery, reuse and recycling and avoid contamination of reusable C&D materials;	Throughout the entire construction period	✓
8.3.22	• Incorporate good practice in “Recommended Pollution Control Clauses for Construction Contracts” published by EPD in respect to removal of waste material from the construction site into the contract of the contractor.	Throughout the entire construction period	✓
8.3.24	In additional to the above, the following construction waste pollution clauses shall be included in construction contracts:		
8.3.24	• The Contractor shall submit to the Engineer for approval a waste management plan with appropriate mitigation measures including the allocation of an area for waste segregation and shall ensure that the day-to-day site operations comply with the approved waste management plan.	Throughout the entire construction period	✓
8.3.25	• The Contractor shall minimise the generation of waste from his work. Avoidance and minimisation of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.	Throughout the entire construction period	✓
8.3.26	• The Contractor shall ensure that different types of wastes are segregated on-site and stored in different containers, skips or stockpiles to facilitate reuse/recycling of waste and, as the last resort, disposal at different outlets as appropriate	Throughout the entire construction period	✓
8.3.27	• The reuse and recycling of waste shall be practised as far as possible. The recycled materials shall include paper/cardboard, timber and metal etc.	Throughout the entire construction period	✓
8.3.28	• The Contractor shall ensure that Construction and Demolition (C&D) materials are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building	Throughout the entire construction period	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	debris, aggregates and asphalt shall be reused in earth filling, reclamation or site formation works. The C&D waste which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled and, as the last resort, disposal of at landfills.		
8.3.29	• The Contractor shall record the amount of wastes generated, recycled and disposed of (including the disposal sites)	Throughout the entire construction period	✓
8.3.30	• The Contractor shall implement a trip ticket system in accordance with the Construction and Demolition Waste in PNAP ADV-19 for public fill, C&D materials and C&D waste to public fill reception facilities, sorting facilities and landfills respectively	Throughout the entire construction period	✓
8.3.31	• Training shall be provided for workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling	Throughout the entire construction period	✓
8.3.33	• The Contractor shall not permit any sewage, wastewater or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the Project Site onto any adjoining land or allow any waste matter [or refuse] which is not part of the final product from waste processing plants to be deposited anywhere within the Project Site [or onto any adjoining land]. He shall arrange removal of such matter from the Project Site [or any building erected or to be erected thereon] in a proper manner to the satisfaction of the Engineer in consultation with the Director of Environmental Protection	Throughout the entire construction period	✓
8.3.34	• The Contractor shall observe and comply with the Waste Disposal (Chemical Waste) (General) Regulation	Throughout the entire construction period	✓
8.2.5 to 8.2.6, & 8.3.23	*Minimization/ Avoidance of Excavation of Pond Sediment* During construction, the concerned abandoned pond within Project Site will be filled up. The concerned pond sediment is intended to be left in place and not to be disturbed as far as possible. However, should pond sediment be encountered during construction, it should be temporarily stored and re-used on-site, and no offsite disposal is expected (for example, re-use as fill material during site formation stage. Subject to detailed design stage, mixing pond sediment with cement material may be required so that its quality can meet the engineering requirements). If solidified materials will not be reused on-site and to be used as public filling materials, prior approval from Public Fill Committee of Civil Engineering and Development Department should be sought beforehand in accepting the solidified materials at public fill. As this Project will require imported fill materials in order to raise the site level to the proposed site formation level, this also provides an incentive for contractor(s) to reduce the amount of materials to be excavated provided that the materials can be re-used and its quality can meet the	Throughout the entire construction period	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	engineering requirements. The Contractor(s) will be required to minimize the amount of materials to be excavated and to re-use excavated materials on-site.		
	During Operational Phase:		
8.4.1	Refuse collection points (RCP) will be provided for the residential development. A licensed waste collector shall be employed to collect domestic waste on daily basis.	During operation	N/A
8.4.2	Separate collection bins for used aluminium cans, waste paper and plastic bottles should be provided at strategic locations within the residential development area and adjacent to the passive recreational facilities in order to promote and encourage recycling during the operational phase	During operation	N/A
	Ecology		
	During Construction Phase:		
10.4.1	Site hoarding made of opaque, non-reflective materials and painted with colour blending with the environment should be erected to properly delineate the works site boundary and screen disturbance to the nearby habitats before the wintering season of waterbirds from October to March during construction phase.	Works area before construction phase	✓
10.4.2	Construction noise will be minimised by the use of quiet construction piling method (non-percussive) and quiet/silenced equipment (QPMEs), provision of mobile noise barriers in adjacent to construction plants or provision of acoustic screens by the Contractor(s).	Works area during construction phase	✓
10.4.2	Measures proposed in compliance with the Noise Control Ordinance will also be enforced and monitored as a mitigation measure under the Noise Impact Assessment (details see Chapter 4 of the EIA report) (also in Section 5 of the EM&A Manual).	Works area during construction phase	✓
10.4.3	Dust control measures listed in Section 3.9.1 of the EIA report (also in Section 4 of the EM&A Manual)	Works area during construction phase	✓
10.4.4	Submission of a Construction Phase Drainage Management Plan with details such as design of the temporary site drainage system; wastewater treatment facilities; and maintenance of drainage system for the approval of the Engineers Representative (ER) and the Environmental Team in order to ensure that the mitigation measures are in place.	Works area during construction phase	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
10.4.5	Good site practice and precautionary measures (e.g. those in Section 5.5 of the EIA report)(also in Section 6 of this Manual) will be implemented to avoid the potential impact due to runoff.	Works area during construction phase	✓
10.4.6	Good site practice listed as follows would be implemented to minimise potential impacts due to noise, dust and runoff on the surrounding environment. • Regular checking should be undertaken to ensure that the work site boundaries are not exceeded and that no damage occurs to surrounding areas; • Implementation of mitigation measures specified in ProPECC PN 1/94 to control site runoff and drainage at all work sites during construction; • Implementation of noise control measures at all construction sites to reduce impacts of construction noise to wildlife habitats adjacent works areas; • Implementation of dust control measures at all construction sites to minimise dust nuisance to adjacent wildlife habitats during construction activities;	Whole construction site	✓
10.4.6	• Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby waterbodies by rain; • Construction effluent, site run-off and sewage should be properly collected and/or treated. Wastewater from a construction site should be managed with the following approach in descending order; • Dusty materials remaining after a stockpile is removed should be wetted with water; • All dusty materials shall be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet; • Proper locations for discharge outlets of wastewater treatment facilities well away from the natural streams/rivers should be identified; and • Supervisory staff should be assigned to station on site to closely supervise and monitor the works.	Whole construction site	✓
10.2.2 – 10.2.4	• Conduct baseline survey of bird uses of the section of Ngau Tam Mei drainage channel within the Assessment Area	Prior to commencement of site construction works; Section of Ngau Tam Mei drainage channel within the Assessment Area	✓
10.2.5 – 10.2.6	• Monitoring of bird uses of the section of Ngau Tam Mei drainage channel within the Assessment Area between October and March annually	During construction phase; Section of Ngau Tam Mei drainage channel within the Assessment Area	✓
10.2.7	• Regular site audit on weekly basis	Works area during construction phase	✓
During Operational Phase:			

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
10.5.1	Minimization of bird collision will be taken into account in the design of noise barrier. Materials which are opaque, non-reflective panels with colour will be used for construction of noise barriers to reduce the risk of bird collision, particularly under dim condition (e.g., dusk and dawn) to reduce bird collision.	Noise barrier along eastern site boundary	✓
10.5.2	Extent of glass panels of the noise barrier will be reduced by incorporation of the interim sewage treatment plant as part of the noise mitigation measures.	Noise barrier along eastern site boundary	N/A
10.5.3	Setback area on the western side of the Project Area will increase the distance between houses and Ngau Tam Mei Drainage Channel.	During operation	N/A
10.5.4	A continuous 5-8m wide landscape buffer will be included in the northern, eastern and western boundary of the Project Area.	During operation	N/A
10.5.5	The layout proposed will only involve the construction of low-rise buildings with a maximum height of 6.6m.	During operation	N/A
Fisheries			
During Construction Phase:			
10.6.3	Standard site practice detailed in Chapter 5 of the EIA would be implemented to avoid or minimise the impacts on water quality on site, which are summarized as follows:	Works area during construction	✓
10.6.3	- Implementation of mitigation measures specified in ProPECC PN 1/94 to control site runoff and drainage at all work sites during construction; - Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby waterbodies by rain;	Works area during construction	✓
10.6.3	• Construction effluent, site run-off and sewage should be properly collected and/or treated. Wastewater from the construction site should be managed with the following approach in descending order; • Proper locations for discharge outlets of wastewater treatment facilities well away from the natural streams/rivers should be identified; and • Supervisory staff should be assigned to station on site to closely supervise and monitor the works	Works area during construction	✓
10.6.4	Provide adequate site drainage to ensure that site runoff and wastewater will be properly contained and treated prior to discharge into the surrounding water courses	Works area during construction	✓
During Operational Phase:			

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
Nil	Nil	Nil	
Cultural Heritage			
During Construction Phase:			
Nil	Nil	Nil	
During Operational Phase:			
Nil	Nil	Nil	
Landscape and Visual			
Landscape Mitigation Measures			
During Construction Phase:			
Table 9.1 **CP1**	**Preservation of Existing Vegetation:**		
CP1.1	Avoid disturbance to the existing trees and vegetation as far as practicable within the works areas.	Site / Throughout the design and construction phase.	✓
CP1.2	Creation of Tree Protection Zone around trees/tree groups to be retained and to be fenced off from construction works.	Set up at the areas with preserved trees before construction works commence and maintained throughout construction phase	N/A
CP1.3	Prohibition of the runoff from construction activities, the storage of materials including fuel, the movement of construction vehicles, and the refuelling and washing of equipment including concrete mixers within the Tree Protection Zone.	Site / Throughout construction phase	✓
CP1.4	All works affecting the trees identified for retention and transplantation will be carefully monitored. This includes the key stages in the preparation of the trees, the implementation of protection measures and health monitoring throughout the construction period	Site / Throughout construction phase	✓
CP1.5	Detailed landscape and tree preservation proposals will be submitted to the relevant government departments for approval.	Site / Throughout design phase	✓
CP1.6	The tree preservation works should be implemented by qualified softworks contractor. Works will be inspected by a competent person of the ET. A tree protection specification would be included within the contract documents.	Site / Throughout design and construction phases	N/A
CP3	**Implementation of Mitigation Planting and planting species selection**		

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
CP3.1	Replanting of existing/disturbed vegetation will be undertaken at the earliest possible stage of the construction phase.	Site / After the site formation or on completion of planting areas.	N/A
CP3.2	Use of predominabtly native and/or ornamental species and broadleaf plant species in the planting design.	Site / Throughout the design phase.	✓
CP3.3	Proposed mitigation planting will not only limit to conventional amenity planting, but also consider alternative greening measures such as vertical greening for screening and softening of the built structures and green roof on built structures for enhancing the visual amenity. Small shrubs, climbing plants, lawn and groundcovers shall be used in specific locations where technically feasible.	Site / Throughout the design phase.	N/A
CP3.4	The tree planting works should be implemented by qualified softworks contractors. Inspected by the ET/Landscape Architects. A tree planting specification would be included within the contract documents.	Site / Throughout design and construction phases	N/A
CP4	**Transplantation of Existing Trees**		
CP4.1	The tree transplanting works should be implemented by qualified softworks contractors. Inspected by the ET/Landscape Architects. A tree protection / transplanting specification would be included within the contract documents.	Site / Throughout design and construction phases	N/A
CP4.2	Approximately 78 existing trees to be transplanted, majority of them shall be relocated to future planting areas within the development.	Site / Throughout design and construction phases	N/A
CP4.3	Tree to be replanted will be kept in the temporary holding nurseries which closely monitoring by softwork contractors before replanting to the final recipient site.	Site / Throughout construction phase until the completion of new planting areas in the site	N/A
CP4.4	Phased segmental root pruning for preparation of tree transplanting over a suitable period (determined by species and size).	Site / Throughout construction phase	N/A
CP4.5	Pruning of the branches of transplanted trees to be based on the principle of crown thinning that would maintain their original tree form and amenity value.	Site / Throughout construction phase	N/A
CP4.6	The implementation programme for the proposed works will reserve enough time for the advance tree transplanting preparation works.	Site / Throughout design and construction phases	N/A
CP4.7	Detailed tree transplanting proposals will be submitted to the relevant government departments for approval.	Site / Throughout design phase	N/A
Table 9.2 **OP1**	**Roadside and Amenity Planting**		

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
OP1.1	Utilise native and ornamental species and broadleaf trees in combination of shade tolerant shrub planting and climbing plants in proposed landscape buffer to soften the horizontal emphasis of proposed noise barrier and fence wall.	Site / Throughout design and operation phase	N/A
OP1.2	Enough soil depth of 1200mm will be reserved for tree planting area to ensure healthy planting establishment. High clearance tree planting will be utilised alongside of internal road and not to interfere the EVA requirement.	Site / Throughout design and operation phase	N/A
OP1.3	The implementation of new planting shall be undertaken as soon as technically feasible after completion of building works to ensure the effectiveness of this mitigation during operational stage.	Site / Throughout the construction abnd operation phases	N/A
OP2	**Compensatory Planting Proposals**		
OP2.1	Utilise all available spaces for new tree and shrub planting to create a comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting.	Site / Throughout design phase	N/A
OP2.2	The new planting will be maintained in accordance with good horticultural practice in order to realise the objectives of the mitigation measures. This includes the replacement of defective plant species in the new planting areas to enhance the aesthetic, landscape and ecological quality of the proposals.	Site / Throughout design phase	N/A
OP2.3	The planting proposals for the proposed development will achieve a compensatory planting ratio of minimum 1:1 (new planting: trees recommended for felling). Plant 126 compensatory trees and 65 amenity trees to compensate the loss of existing trees.	Site / Throughout design and operation phases	N/A
OP2.4	The proposed compensatory and new tree planting will utilise heavy standard size tree at selected area as accent, standard to light standard size tree in general landscape and roadside planting areas. Smaller planting stock will be used on slope and landscape buffer.	Site / Throughout design phases	N/A
CP2.5	Detailed compensatory planting proposals will be submitted to the relevant government departments for approval.	Site / Throughout design and operation phases	N/A
OP2.6	Selection of native and ornamental planting species in proposed gardens and landscape buffer and bird-attracting and butterfly-attracting plant species in and surrounding the proposed landscape pond.	Site / Throughout design phase	N/A
OP5	**Design of Engineering Structures**		
OP5.1	Alternative greening measures including greening on the roof and/or vertical greening adjacent to the structures and regarded sloping areas will be used.	Site / Throughout design and operation phases	N/A
OP5.3	Treatment of Slopes should be aesthetically enhanced through the use of soft	Site / Throughout design and operation phases	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape.		
OP6	**Creation of Landscape Buffer**		
OP6.1	Native and ornamental tree and shrub mix, climbing plants will be utilised for the creation of landscape buffer along noise barrier and sewage treatment plant at Ha Chuk Yuen Road.	Site / Throughout design and operation phases	N/A
OP6.2	Treatment of Slopes should be aesthetically enhanced through the use of soft landscape works including tree and shrub planting	Site / Throughout design and operation phases	N/A
OP7	**Provision of Landscape Pond**		
OP7	A Landscape Pond (110m2) proposed in the landscape core of proposed development and will be composed of water plants and/or plant species attracting birds and butterfly.	Site / Throughout design and operation phases	N/A
<u>Visual Mitigation Measures</u>			
During Construction Phase:			
Table 9.3 CP1	**Preservation of Existing Vegetation**		
CP1.1	The tree preservation proposals will coordinate with the layout and design of the engineering and architectural works at detailed design stage.	Site / Throughout the design phase	✓
CP1.2	The preservation of existing tree shall provide instant greening and screening effect for proposed works.	Site / Throughout the design phase	✓
CP2	**Works Area and Temporary Works Areas**		
CP2.1	The landscape of the works areas will be restored to their original condition or enhanced through the introduction of new amenity planting areas or open spaces following the completion of the construction phase.	Site / Throughout the construction phase	N/A
CP2.2	Optimize the construction sequence and construction programme.	Site / Throughout the construction phase	✓
CP2.3	Construction site controls will 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.	Site / Throughout the construction phase	✓

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
CP2.4	Hoarding designed with recessive colour shall be set up around the construction site providing screening effect for the construction works.	Site / Throughout the construction phase	✓
CP2.5	The site office or temporary above-ground structures shall be sited at less visual prominent locations.	Site / Throughout the construction phase	✓
CP5	**Coordination with Concurrent Projects**		
CP5.1	Coordinated implementation programme with concurrent projects.	Site / Throughout design and construction phases	N/A
During Operational Phase			
Table 9.4 **OP3**	**Responsive Design of Building and Structure**		
OP3.1	*Integrated Design Approach* Responsive design of built structures considered the location of houses and utilities structures.The disposition and height profile of the houses and above ground utilities structures respond to the existing context. Design measures include the creation of setbacks, articulating the development frontage and incorporation of view corridors/breezeway, avoid abrupt transitions between the existing and proposed built environment, reduce the apparent visual mass to enhance the sense of visual integration with the existing low-rise development context.	Site / Throughout design phase	N/A
OP3.2	*Building Treatment* The architectural design seeks to reduce the apparent visual mass of the structures further through the use of recessive colour palette. Incorporation of alternative greening measures such as green roof /vertical greening on built structures where condition allows and particularly at where fronting to the public realm. Non-reflective finishes also recommended reducing the potential glare effect.	Site / Throughout design phase	N/A
OP4	**Noise Mitigation Structures**		
OP4.1	The design of noise barrier should reduce the visual effect of the structure through the use of form, materials and textures colours. Setting back with articulated alignment from the site boundary to create a continuous landscape buffer (5-8m wide) with both preserved and new planted trees forming an instant screening effect to the engineering structures. Introduction of landscape berms, by virtue of its height and natural form, would reduce the perceived scale and height of the noise barriers. Integrated the proposed sewage treatment plant with noise barrier to reduce the engineering mass	Site / Throughout design phase	N/A

EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Location / Timing of implementation of Measures	Implementation Status
	making the appearance blending into the rural setting		
OP4.2	The design of engineering structures should avoid unnecessary visual cluster, this would be achieved through the co-ordination of the various engineering disciplines involved to arrive at innovative design solutions.	Site / Throughout design phase	N/A
OP5	**Design of Engineering Structures**		
OP5.1	The detailed design landscape consultants will work in liaison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape.	Site / Throughout design phase	N/A
OP5.2	Alternative greening measures including greening on the roof and/or vertical greening on the structures and on regarded sloping areas will be used wherever possible to disguise their function appearance in both medium and long distance views and maximise the greening opportunities.	Site / Throughout design phase	N/A
OP5.3	Tree preservation, new tree planting and alternative greening measures on and adjacent to the engineering structures will create an instant greening effect soften the visual mass.	Site / Throughout design phase	N/A
OP6	**Creation of Landscape Buffer**		
OP6.1	Native and ornamental tree and shrub planting and climbing plants will be utilised for the creation of landscape buffer along noise barrier and sewage treatment plant at Ha Chuk Yuen Road to enhance the aesthetic and landscape diversity of the local context.	Site / Throughout design phase	N/A
OP6.2	Appropriate height and form of the landscape buffer/ berm to integrate with the noise mitigation measures and provide screening effect to the built structures.	Site / Throughout design phase	N/A
OP6.3	Treatment of Slopes should be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to create a more natural appearance blending into the local rural landscape.	Site / Throughout design phase	N/A
OP6.4	The creation of landscape buffer at the periphery of the site, the height and form of the landscape berms and planting proposals have key role in mitigating the visual mass of the external fence walls of 2.5m high, the sewage treatment plant of roof at 10.4mPD and the noise barriers of height at 10.1mPD high.	Site / Throughout design phase	N/A