

MTR Corporation Limited

Sheung Shui to Lok Ma Chau Spur Line

Final EM&A Review Report

(Works Contract 1633 – Alteration and Addition Works at
Kwu Tung for East Rail Line Protection Works)

(November 2023)

Verified by:



Adi Lee
Independent Environmental Checker
Meinhardt Infrastructure and Environment
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Date:

14 December 2023

MTR Corporation Limited

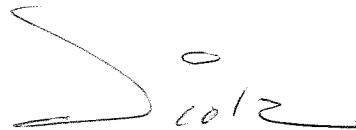
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Certified by:



Viola Tong
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2163 6558

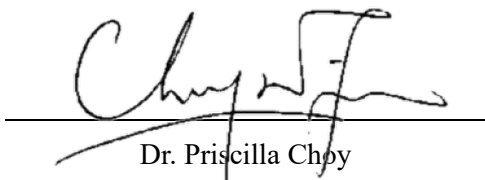
Date:

14 December 2023

Kum Shing (K.F.) Construction Company Limited

Contract 1633 – Alteration and Additional Works at Kwu Tung for East Rail Line Protection Works

Final Environmental Monitoring and Audit Review Report (Version 1.2)

Certified By 
Dr. Priscilla Choy
(Environmental Team Leader)

REMARKS:

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

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

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EXECUTIVE SUMMARY

Introduction

1. This is the Final Environmental Monitoring and Audit (EM&A) Review Report prepared by Wellab Limited for MTR Corporation Limited (i.e. MTRCL, hereinafter called the Project Proponent)'s Contract 1633 "Alteration and Addition Works at Kwu Tung for East Rail Line Protection Works" (hereinafter called the Contract). This report documents the key information of EM&A and environmental monitoring results from the Project (the railway station at Kwu Tung of Sheung Shui to Lok Ma Chau Spur Line, hereinafter called the Project) under Environmental Permit (Permit No. FEP-06/129/2002/I) between 20th February 2023 and 31st October 2023.
2. According to the information from the Contractor (Kum Shing (K.F.) Construction Company Limited), all construction activities with significant environmental impact of Contract 1633 have been completed on 31st October 2023. Thus, the EM&A works under Contract 1633 was ceased since 1st November 2023. The EM&A Programme in accordance with EP requirements were handed over to Contract 1601 since 1st November 2023.

Summary of Site Activities undertaken during the Construction Period

3. The major construction works of the Contract comprises the followings:
 - Installation of Automatic Deformation and Monitoring System (ADMS) and other monitoring instruments within existing EAL tunnels with the provisions of a web-based monitoring data management system and carrying out monitoring works;
 - Construction of trackside steel evacuation walkway deck and fire mains within the EAL tunnel.
 - Installation of cable brackets and diversion of existing cables within EAL tunnels.
 - Removal of existing steel bar fencing at Emergency Access Point (EAP) EAP 3 and security provisions.
 - Site formation, tree removal and tree transplanting works.
 - Diversion of existing utilities and associated building services serving EAP 3, EAP 4 and EAL.
 - Diversion of existing Emergency Vehicular Access (EVA) serving EAL and associated works.
 - Installation of steel walkways leading to EAP 3 and EAP 4 and associated works;
 - All temporary railway protection works such as hoardings, security etc. during the course of providing the Works.
 - Preparation of EDOC, BUGN and method statements of the works for the approval of the Railway Operator and the Project Manager.
 - All statutory submissions, inspections and testing and commissioning necessary for the works.
4. Detail of Contractor's Construction Programme during the construction period could be found in the Appendix A of relevant Monthly EM&A Reports.

Environmental Monitoring Works

5. The environmental monitoring works of the Project were conducted by the Environmental Teams (ET) for Contract 1633 under the same Environmental Permit in accordance with the EM&A Manual. The monitoring results were checked and reviewed. Site audits were conducted once per week. The implementation of the Environmental Mitigation Measures, Event Action Plans and Environmental Complaint Handling Procedures were also checked.

Air Quality and Noise

6. In accordance with the Updated EM&A Manual, impact 1-hour Total Suspended Particulate (TSP) monitoring shall be conducted to monitor the air quality for the project. Also, construction noise monitoring shall be conducted in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}) to monitor the construction noise arising from the construction activities.
7. Summary of the non-compliance of the construction phase of this Project is tabulated in **Table I**.

Table I Summary Table for Non-compliance (Exceedances) Recorded Due to the Contract

Environmental Monitoring	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Total No. of Exceedance Due to the Project
		Action Level	Limit Level	Action Level	Limit Level	
Air Quality	1-hr TSP	0	0	0	0	0
Noise	Noise	0	0	0	0	0

1-hour TSP Monitoring

8. All 1-hour TSP monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances were recorded for 1-hour TSP monitoring throughout the whole construction period.

Construction Noise Monitoring

9. All construction noise monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances were recorded for noise monitoring throughout the whole construction period.

Environmental Licenses and Permits

10. Licenses/Permits granted to the Project include the Environmental Permit (EP), Notification of Works under APCO, Water Discharge Licence, Registered as a Chemical Waste Producer, Billing Account for Disposal of Construction Waste and Construction Noise Permit.

Environmental Mitigation Implementation Schedule

11. According to the Environmental Review Report (ERR), air quality, noise and landscape and visual would be the key environmental issues and mitigation measures shall be implemented during the period covering the EM&A programme. Details of the implementation of mitigation measures are provided in the **Appendix G**.

Summary of Complaints and Prosecutions

12. No environmental non-compliance was recorded in the construction period. The observations and recommendations made in each individual site audit session were attached in the Monthly EM&A Reports.
13. No environmental complaints, notification of summons or successful prosecutions were received in the whole construction period. The complaint and prosecution log are present in **Appendix H**.

Conclusion

14. The EM&A programme was found to be effective and efficient in monitoring impacts arising from the Project. The findings of the environmental monitoring program suggest that no adverse impacts on sensitive receivers at the designated monitoring locations were resulted by the Project. The environmental mitigation measures provided by the Contractor were generally acceptable apart from some minor deficiencies which were rectified timely by the Contractor.
15. In conclusion, the Project was environmentally acceptable.
16. The EM&A Programme of Contract 1633 was handed over to the ET of Contract 1601 since November 2023. Thus, the Monthly EM&A Reports for November 2023 and onwards will present the EM&A works undertaken by the ET of Contract 1601.

1. INTRODUCTION

Background

- 1.1 In December 2020, the MTR Corporation Limited (i.e. MTRCL, hereafter called the Project Proponent) was invited by the Government to commence the detail planning and design of the railway station at Kwu Tung.
- 1.2 The construction and operation of the LMC Spur Line constitutes to Item A.2 Designated Project (DP) “A railway and its associated stations”, under Part I Schedule 2 of Environmental Impact Assessment Ordinance (EIAO). Numbers of Environmental Permits (EPs) and Further Environmental Permits (FEPs) had been granted for its construction and operation of LMC Spur Line, including the existing tunnel box and enabling works.
- 1.3 In order to expand the scope of the FEP (No. FEP-06/129/2002/H) held by MTRCL to cover the construction and operation of the proposed railway station at Kwu Tung, variation of this FEP would be required.
- 1.4 In order to demonstrate no unacceptable impacts will be resulted from the Project, and no exceedance or violation of environmental performance requirement as set out in the approved EIA for LMC Spur Line, the Environmental Review Report (ERR) had been prepared and submitted under the VEP application. The VEP application had been approved and a new Environmental Permit (No. FEP-06/129/2002/I) was granted by EPD on 24 December 2021.
- 1.5 The scope of works under the construction of the railway station at Kwu Tung comprises the following:
 - Excavation of the fill material above the existing tunnel box;
 - Modification of existing tunnel box structures;
 - Construction of concourse and platform areas;
 - Construction of back-of-house areas;
 - Construction of entrances, Ventilation Buildings (VB) and Fire Rescue Stairs (FRS);
 - Modification of existing Emergency Access Point (EAP)/ Emergency Egress Point (EEP);
 - Relocation of existing EVA and associated facilities; and
 - Construction of other station associated facilities and underground adit.
- 1.6 To facilitate the future major construction of the railway station at Kwu Tung, alteration and additional works to the operational railway facilities of the East Rail Line at Kwu Tung are required to be carried out in advance under this contract. The scope of the works for the Contract comprises the following:
 - Installation of Automatic Deformation and Monitoring System (ADMS) and other monitoring instruments within existing EAL tunnels with the provisions of a web-based monitoring data management system and carrying out monitoring works;
 - Construction of trackside steel evacuation walkway deck and fire mains within the EAL tunnel.
 - Installation of cable brackets and diversion of existing cables within EAL tunnels.
 - Removal of existing steel bar fencing at Emergency Access Point (EAP) EAP 3 and security provisions.
 - Site formation, tree removal and tree transplanting works.

-
- Diversion of existing utilities and associated building services serving EAP 3, EAP 4 and EAL.
 - Diversion of existing Emergency Vehicular Access (EVA) serving EAL and associated works.
 - Installation of steel walkways leading to EAP 3 and EAP 4 and associated works;
 - All temporary railway protection works such as hoardings, security etc. during the course of providing the Works.
 - Preparation of EDOC, BUGN and method statements of the works for the approval of the Railway Operator and the Project Manager.
 - All statutory submissions, inspections and testing and commissioning necessary for the works.
- 1.7 Kum Shing (K.F.) Construction Company Limited (hereafter called the KSC) was commissioned by MTRCL to undertake the construction of the Contract 1633. The date of commencement of construction of the Contract is 20th February 2023.
- 1.8 Wellab Limited was commissioned by KSC to undertake the Environmental Monitoring and Audit (EM&A) works for the project and was appointed as the Environmental Team (ET) of the Contract under Condition 2.1 of the EP. The date of commencement of EM&A works is 20th February 2023. The Project cover the environmental monitoring works at monitoring stations CD1a, CD2a, CD3a, CD4a, CD5a and CN1a. The site layout plan of the Project is shown in **Figure 1**, and the locations of the monitoring stations is shown in **Figure 2**.
- 1.9 According to the information from KSC, all construction activities with significant environmental impact of Contract 1633 have been completed on 31st October 2023. The EM&A works under Contract 1633 were handed over to Contract 1601 since 1st November 2023.

Project Organizations

- 1.10 The contacts of the Project are shown in **Table 1.1** and the Project Organization Chart is shown in **Figure 3**.

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.
MTR Corporation Limited	Construction Management Team	Mr. Henry Wong	Chief Construction Manager	2163 6327
	Environmental Team	Ms. Viola Tong	Sr. EnvM, Project wide-ET leader	2163 6588
Wellab	Contractor's Environmental Team	Dr. Priscilla Choy	Contractor's ET Leader	2151 2089
AnewR (Feb 2023 – Sep 2023)	Independent Environmental Checker	Mr. James Choi	Independent Environmental Checker	2618 2836
Meinhardt (Since Oct 2023)		Mr. Adi Lee		2859 5443
Kum Shing (K.F.)	Contractor	Mr. William Chan	Project Manager	6105 6106
		Ms. Winny Chan	Environmental Officer	6856 0281

Summary of EM&A Requirements

- 1.11 The EM&A programme under Works Contract 1633 requires construction phase monitoring for air quality and construction noise; landscape and visual; and environmental site audits. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental mitigation measures, as recommended in the Environmental Review Report (ERR); and
 - Environmental requirements in contract documents.
- 1.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 4** of this report.
- 1.13 This Final EM&A Review Report represents the monitoring results, observation and locations of the required monitoring parameter, namely air quality, noise and audit works conducted for the Project in the period between 20th February 2023 and 31st October 2023.

2. AIR QUALITY

Monitoring Requirements

- 2.1 In accordance with the Updated EM&A Manual, impact 1-hour Total Suspended Particulate (TSP) monitoring shall be conducted to monitor the air quality throughout the construction period. Impact 1-hour TSP monitoring was conducted for at least three times every 6 days at the designated air quality monitoring stations. **Appendix A** shows the established Action/Limit Level for the air quality monitoring works.

Monitoring Locations

- 2.2 According to Section 5.5.7 of the Updated EM&A Manual, impact air quality monitoring was conducted at the Five (5) designated monitoring stations for the Project are shown in **Table 2.1** and illustrated in **Figure 2**. The locations of the existing air sensitive receivers (ASR) around the Project as identified in the ERR are shown in **Figure 2b**.

Table 2.1 Locations for Air Quality Monitoring Stations

Monitoring Station ID	Description
CD1a	Village Houses along Ma Tso Lung Road
CD2a	Village Houses near Shek Tsai Leng
CD3a	Village Houses along Ho Sheung Heung Road
CD4a	Construction site office of Advance Site Formation and Engineering Infrastructure Works at Kwu Tung North and Fanling North New Development Areas – Contract No. ND/2019/01
CD5a	Dills Corner Garden

Prediction and Evaluation of Environmental Impact

- 2.3 According to ERR Section 7.5.2, the predicted construction dust impacts of the identified ASRs were well below the relevant criterion of 500 $\mu\text{g}/\text{m}^3$. It is anticipated that the cumulative construction dust impact due to the Project is not significant with the proper implementation of the recommended mitigation measures such as frequent watering, covering stockpile of dusty material etc.

Monitoring Parameters, Frequency and Duration

- 2.4 **Table 2.2** summarizes the monitoring parameters and frequencies of impact air quality monitoring during the Works Contracts activities.

Table 2.2 Air Quality Monitoring Parameters, Frequency and Duration

Parameters	Frequency
1-hour TSP	Three times every 6 days

Results and Observations

- 2.5 The monitoring results for 1-hour TSP monitoring are summarized in **Table 2.3**. The monitoring data and graphical presentations of 1-hour TSP monitoring results during monitoring period are shown in **Appendix B**.

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

Monitoring Station(s)	Average $\mu\text{g}/\text{m}^3$	Minimum $\mu\text{g}/\text{m}^3$	Maximum $\mu\text{g}/\text{m}^3$	Action Level $\mu\text{g}/\text{m}^3$	Limit Level $\mu\text{g}/\text{m}^3$
1-hour TSP					
CD1a	69.0	10.3	223.0	275	500
CD2a	66.1	18.6	186.7	279	
CD3a	62.9	8.9	166.1	279	
CD4a	70.2	14.3	217.6	281	
CD5a	83.5	21.3	243.7	280	

- 2.6 All 1-hour TSP monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances were recorded. Summary of exceedance is presented in **Appendix E**.
- 2.7 The air quality monitoring data collected during construction period were generally in line with the prediction of the ERR.
- 2.8 The weather information during construction period is summarized in **Appendix D**.
- 2.9 According to field observations during site inspection, identifiable dust emission sources near the monitoring stations were mainly from the road traffic outside the site, construction works of the other site, and dust generation from the excavated dusty materials and construction works of this Contract in the site.

3. NOISE

Monitoring Requirements

- 3.1 In accordance with the Updated EM&A Manual, construction noise monitoring shall be conducted in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}) to monitor the construction noise arising from the construction activities.
- 3.2 The regular monitoring frequency for each monitoring station was on a weekly basis and one set of measurements between 0700 and 1900 hours on normal weekdays shall be conducted. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

- 3.3 Noise monitoring was conducted at One (1) designed monitoring station as shown in **Figure 2**. The locations of the existing noise sensitive receivers (NSR) around the Project as identified in the ERR are shown in **Figure 2b**. **Table 3.1** describes the locations of the noise monitoring station.

Table 3.1 Locations for Noise Monitoring Stations

Monitoring Station	Location
CN1a	Dills Corner Garden

Prediction and Evaluation of Environmental Impact

- 3.4 According to ERR Section 8.4.2.2, the predicted mitigated construction noise level at PA2 should be further lower than 68dB(A) and the construction noise level would comply with the construction noise criteria with the implementation of suitable good site practices and mitigation measures, such as using temporary noise barriers and noise enclosure to screen noise from relatively static PMEs etc.

Monitoring Parameters, Frequency and Duration

- 3.5 **Table 3.2** summarizes the monitoring parameters, frequency and total duration of monitoring.

Table 3.2 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter and duration	Frequency	Measurement
CN1a	30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays. L_{eq} , L_{10} and L_{90} would be recorded.	Once per week	Free Field ^[1]

Remarks:

[1]: Correction of +3db (A) for free-field measurement.

Results and Observations

- 3.6 The noise monitoring results are summarized in **Table 3.3**. Detailed monitoring results and graphical presentations of noise monitoring are shown in **Appendix C**.

Table 3.3 Summary of Noise Monitoring Results in the Construction Period

Monitoring Station	Average L_{eq} (30 min.) dB(A)	Range, L_{eq} (30 min.) dB(A)	Limit Level, L_{eq} (30 min.) dB(A)
CN1a ^[1]	71.1	65.1 – 74.8	75

Remarks:

[1]: Correction of +3db (A) for free-field measurement.

- 3.7 All construction noise monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances were recorded. Summary of exceedance is presented in **Appendix E**.
- 3.8 The noise monitoring data collected during construction period were generally in line with the prediction of the ERR.
- 3.9 The major noise sources identified at the designated noise monitoring stations were road traffic and construction equipment, as well as construction activities from this Contract and the other construction site next to the Contract.

4. REVIEW OF THE EM&A PROGRAMME

Implementation Status of Environmental Mitigation Measures

- 4.1 The mitigation measures detailed in the Updated EM&A Manual were implemented throughout the whole construction period. A summary of the EMIS is provided in **Appendix G**.
- 4.2 No non-compliance was recorded during the site audits throughout the construction period. Observations and recommendations recorded during the site audits were summarized in each of the Monthly EM&A Reports.

Review of Environmental Monitoring Procedures

- 4.3 The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

Air Quality Monitoring

- The monitoring team recorded all observations around the monitoring stations, within and outside the construction site.
- The monitoring team recorded the temperature and weather conditions on the monitoring days.

Noise Monitoring

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
- Major noise sources were identified and recorded. Other intrusive noise attributing to the result was trimmed off by pausing the monitoring temporarily.

Site Audits

- 4.4 Site audits were carried out by representatives of the Contractor, Engineer and Contractor's ET on weekly basis to observe the aspect of water quality, noise, air quality, landscape, waste and chemical management. Reminders and recommendations were given to the Contractor, and the Contractor rectified and implemented environmental management practices and mitigation measures timely and properly in the Project site. The representative of the IEC joined the site inspection once per month. Details of site audit findings were summarized in Monthly EM&A Reports.

Comparison of the EM&A data with EIA

Air Quality

- 4.5 The ERR has predicted that dust nuisance at ASRs would not be expected if the recommended mitigation measures have been implemented. No air quality complaints from EPD were received by the Project and no Project related exceedances at the monitoring stations were recorded during the construction period.

Noise

- 4.6 The ERR had predicted that residual impacts of construction noise levels can be kept below the construction noise limit if the recommended mitigation measures have been implemented. No noise complaints from EPD were received by the Project and no Project

related exceedances at the monitoring stations were recorded during the construction period. Detail of the exceedance is provided in **Appendix E**.

Status of Waste Management

- 4.7 Waste generated from this Project includes inert C&D materials which are disposed of as public fill, also non-inert C&D materials which are made up of general refuse and yard waste. The amount of wastes generated by the activities of this Contract during the construction period is shown in **Appendix I**.
- 4.8 Most of the necessary mitigation measures have been implemented and recommended follow-up actions have been discharged by the Contractor regarding to waste management in the reporting period. Observations and recommendations recorded during the site audits were summarized in Monthly EM&A Reports.

Implementation Status of Landscape and Visual Mitigation Measures

- 4.9 Landscape and Visual monitoring, by means of site audit, was carried out on site in accordance with the Updated EM&A Manual to ensure that the implementation and maintenance of landscape and visual mitigation measures were achieved. Site inspection of the implementation of landscape and visual mitigation measures were conducted by ET at least once per month during the construction period.
- 4.10 No non-compliance was recorded during the works period of the Project. The implementation status for Landscape and Visual mitigation measures is provided in **Appendix G**.

5. ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

5.1 The Event / Action Plans for air quality and noise are presented in **Appendix F**.

1-hour TSP monitoring

5.2 All 1-hour TSP monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances of 1-hour TSP monitoring were recorded throughout the whole construction period.

Construction Noise Monitoring

5.3 All construction noise monitoring was conducted as scheduled during construction period. No Action and Limit Level exceedances were recorded during the whole construction period. Summary of exceedance is presented in **Appendix E**.

Summary of Environmental Non-Compliance

5.4 No environmental non-compliance was recorded in the construction period. The observations and recommendations made in each individual site audit session were attached in the Monthly EM&A Reports.

Summary of Complaint, Prosecutions, Reporting Changes and Notification of Summons

5.5 No environmental complaints and no notification of summons/ successful prosecutions were received in the whole construction period. The summary of complaint, prosecutions, reporting changes and notification of summons is presented in **Appendix H**.

6. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

Comments on Overall EM&A Programme

- 6.1 The EM&A programme requires construction phase monitoring for air quality, airborne construction noise and environmental site audit. Timely implementation of mitigation measures were carried out according to the environmental data obtained during construction phase. According to the information from the Contractor, all construction activities with significant environmental impact of Contract 1633 have been completed on 31st October 2023. Therefore, no significant environmental impact due to this contract would be anticipated. The EM&A works under Contract 1633 were handed over to Contract 1601 since 1st November 2023.
- 6.2 During the construction phase, the weekly site audits were effective to ensure the implementation and efficiency of the mitigation measures. As a result, environmental nuisance to the public could be reduced to a minimal.
- 6.3 Therefore, the overall performance of the monitoring methodology adopted and environmental management system in this Project was effective.

Overall EM&A Data

- 6.4 Environmental monitoring works were performed during construction period and all monitoring results were checked and reviewed. Impact air quality and noise monitoring were carried out according to the requirements in the Updated EM&A Manual.

1-hour TSP monitoring

- 6.5 1-hour TSP monitoring was conducted as scheduled during construction period. No exceedances of Action and Limit Levels were recorded throughout the whole construction period.

Construction Noise Monitoring


- 6.6 All construction noise monitoring was conducted as scheduled during construction period. No exceedances of Action and Limit Levels were recorded throughout the whole construction period.


Recommendations and Conclusions

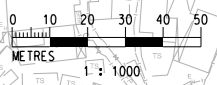
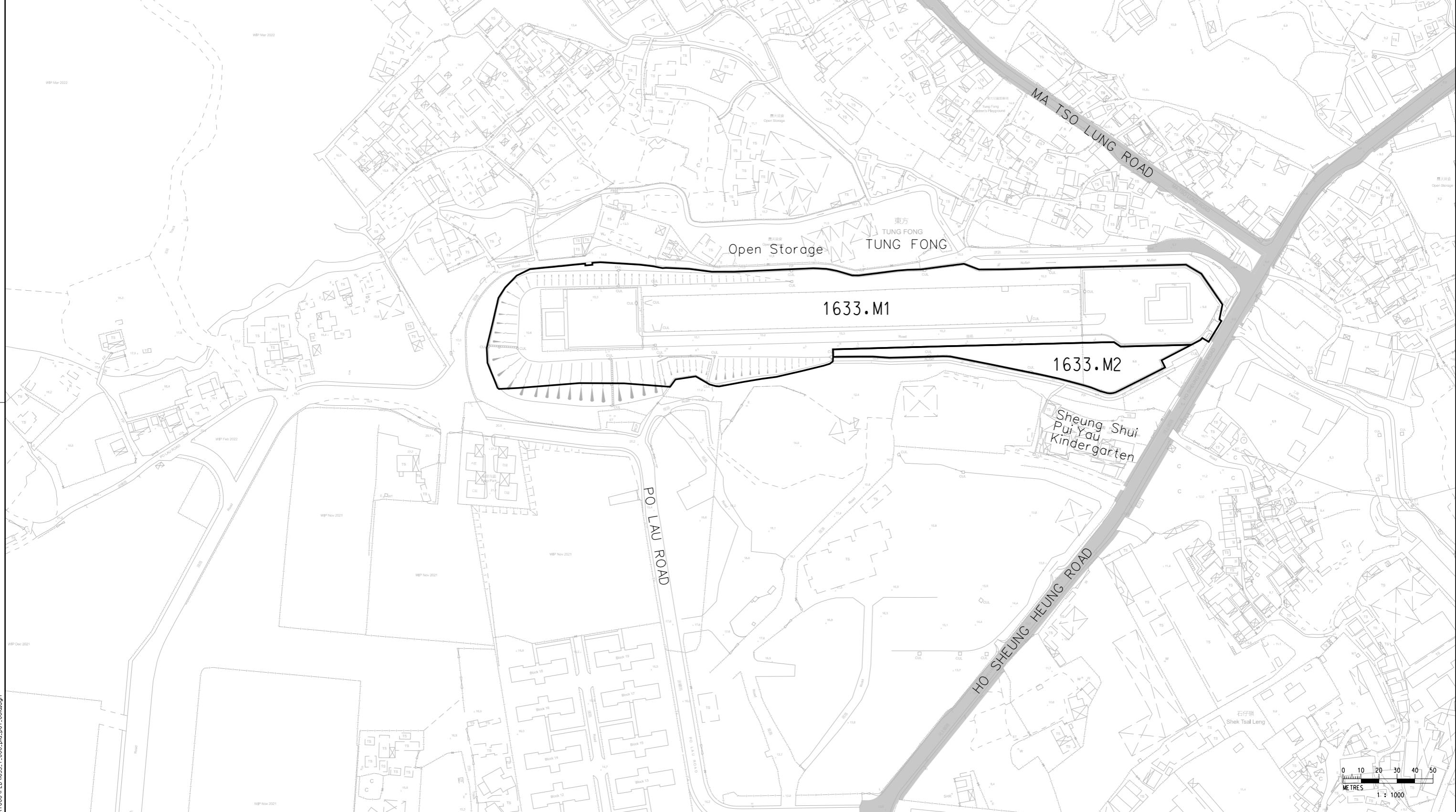
- 6.7 The EM&A programme was found to be effective and efficient in monitoring impacts arising from the Project. The findings of the environmental monitoring programme suggest that no adverse impacts on the sensitive receivers were brought about by the Project. The environmental mitigation measures provided by the Contractor were generally acceptable apart from some minor deficiencies, which were rectified timely by the Contractor. In conclusion, the Project was environmentally acceptable.
- 6.8 With the success of the overall EM&A programme, the deterioration of the environment caused by the Project was cost-effectively identified and necessary prompt effective mitigation measures were implemented to avoid any unacceptable impacts.

FIGURES


LEGEND:

 WORKS AREA BOUNDARY

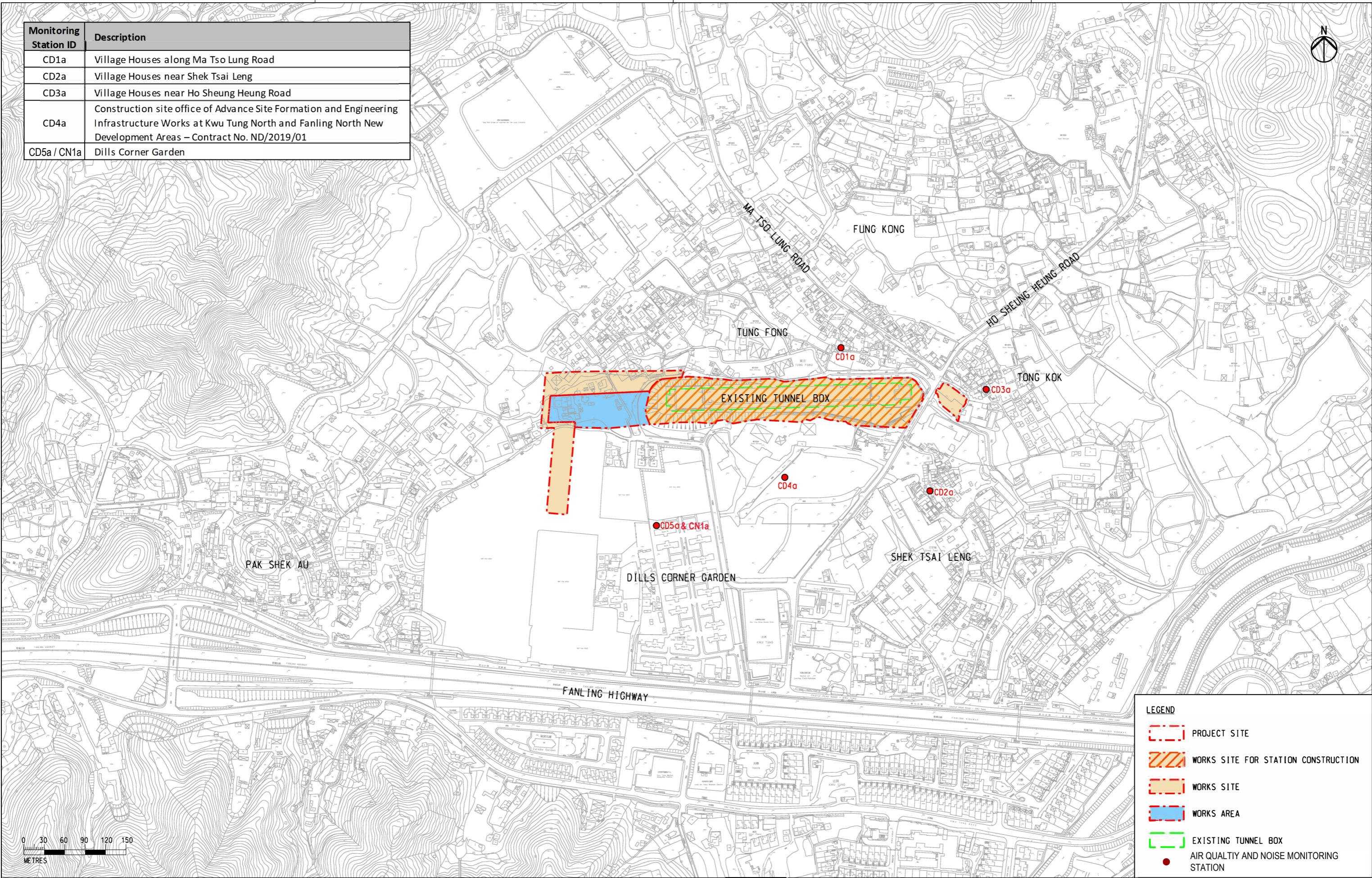
 PUBLIC ROAD / FOOTPATH



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Monitoring Station ID	Description
CD1a	Village Houses along Ma Tso Lung Road
CD2a	Village Houses near Shek Tsai Leng
CD3a	Village Houses near Ho Sheung Heung Road
CD4a	Construction site office of Advance Site Formation and Engineering Infrastructure Works at Kwu Tung North and Fanling North New Development Areas – Contract No. ND/2019/01
CD5a / CN1a	Dills Corner Garden



REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED
B	SECOND ISSUE				GL	02/23	FC		
A	FIRST ISSUE				GL	12/22	FC		

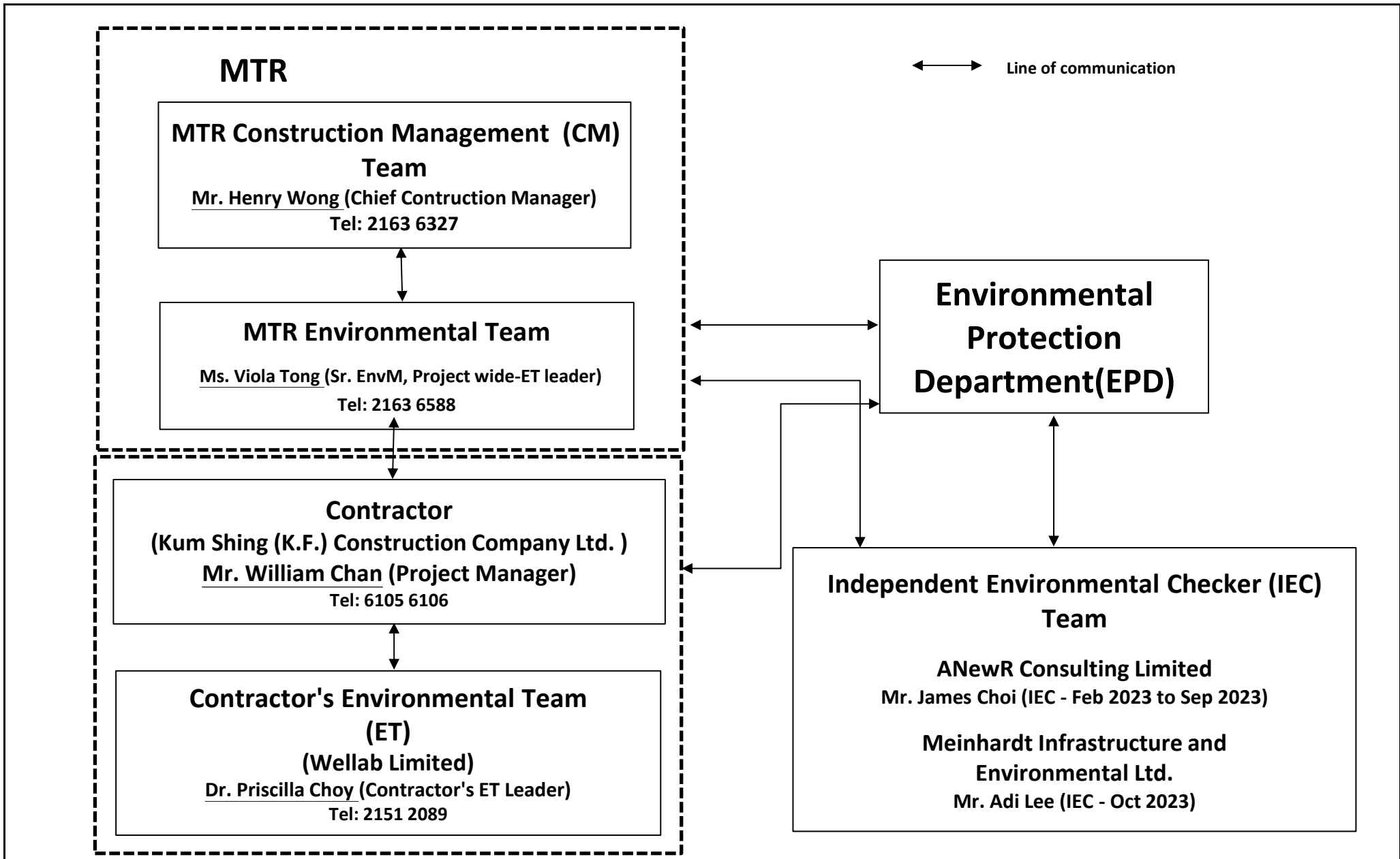
DRAWN	GL
DESIGNED	GL
CHECKED	JC
APPROVED	FC
DATE	10/FEB/23


MTR

ORIGINATOR: **ARUP** Supported by: Arcadis Hong Kong Ltd.

CADD REF: FIGURE 2.1.dgn

TITLE	
SHEUNG SHUI TO LOK MA CHAU SPUR LINE LOCATION OF BASELINE AIR QUALITY MONITORING STATION	
SCALE	DRAWING NO.
1 : 5000 (A3)	FIGURE 2
REV.	B



Title	Contract 1633 - Alteration and Addition Works at Kwu Tung for East Rail Line Protection Works		Scale	N.T.S	Project No.	WMA22014	 <small>consulting . testing . research</small>
	Project Organisation for Environmental Works		Date	Nov-23	Figure	3	

**APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR
QUALITY AND NOISE**

Appendix A - Action and Limit Levels**Table A-1 Action and Limit Levels for 1-hour TSP**

Monitoring station	Action Level (ug/m ³)	Limit Level (ug/m ³)
CD1a	275	500
CD2a	279	
CD3a	279	
CD4a	281	
CD5a	280	

Table A-2 Action and Limit Levels for Construction Noise

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

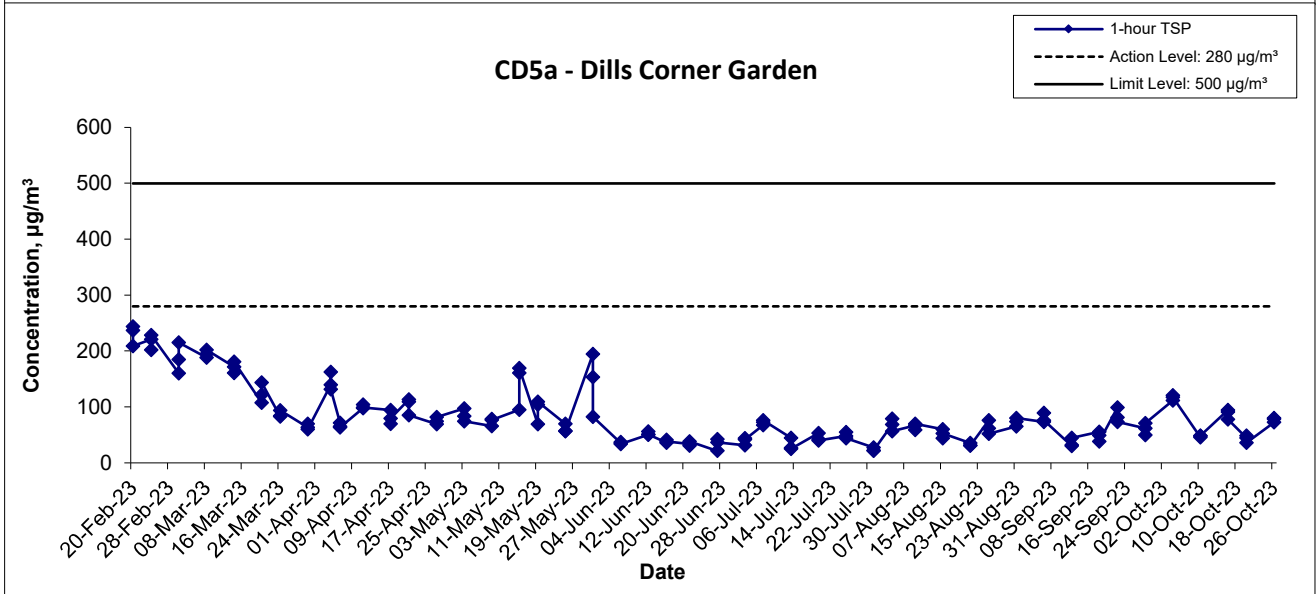
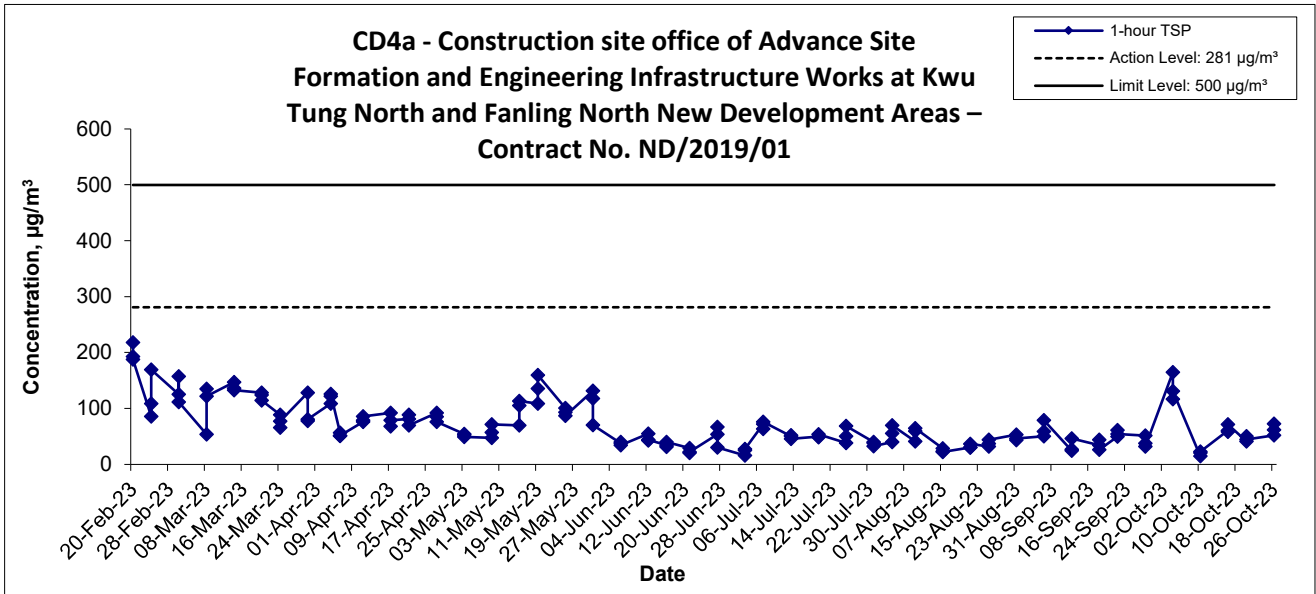
Noted:

If works are to be carried during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

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

**APPENDIX B
1-HOUR TSP
MONITORING RESULTS AND
GRAPHICAL PRESENTATION**

1-hr TSP Concentration Levels



Title Contract 1633 –
Alteration and Addition Works at Kwu Tung for
East Rail Line Protection Works
Graphical Presentation of 1-hour TSP Monitoring Results

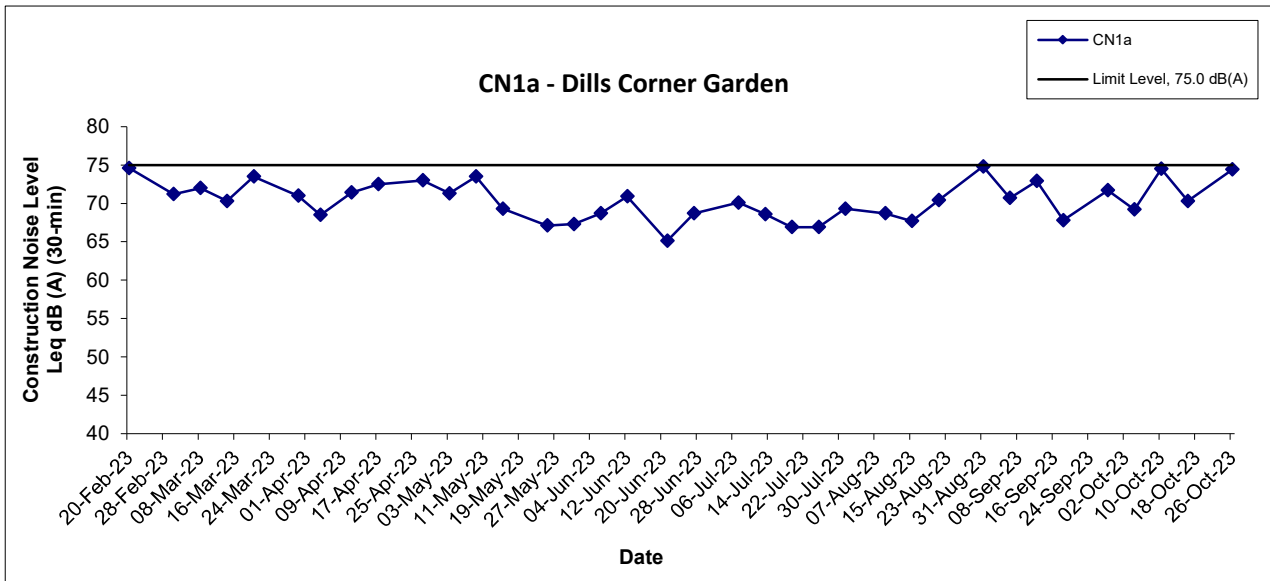
Scale
N.T.S
Date
Nov 23

Project No.
WMA22014
Appendix
B



**APPENDIX C
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATION**

Noise Levels



Title Contract 1633 – Alteration and Addition Works at Kwu Tung for East Rail Line Protection Works Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. WMA22014	consulting . testing . research
	Date Nov 23	Appendix C	

**APPENDIX D
METEOROLOGICAL DATA DURING
MONITORING PERIOD**

Appendix D – Meteorological Data During Monitoring Period (Feb 2023 – Oct 2023)

Month	Mean Pressure (hPa)	Air Temperature					Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean Daily Max (deg. C)	Mean (deg. C)	Mean Daily Min (deg. C)	Absolute Daily Min (deg. C)					
February	1019.3	29.6	23.4	18.3	14.8	9.7	13.0	73	2.5	110	8.9
March	1016.9	30.1	25.2	20.4	16.5	9.7	15.4	76	84.0	110	7.5
April	1011.9	32.5	26.7	23.2	20.7	16.9	19.9	82	66.0	110	8.4
May	1009.7	36.8	30.2	26.3	23.5	20.3	22.8	82	168.5	110	7.0
June	1006.1	36.7	32.5	28.3	25.6	24.2	25.5	86	374.5	100	5.2
July	1005.6	37.2	33.6	29.2	25.6	24.2	25.5	82	299.5	100	5.6
August	1004.3	36.2	33.2	28.6	25.7	23.7	25.7	85	263.0	100	4.2
September	1007.8	35.8	31.7	27.9	25.5	24.0	24.9	85	898.0	100	7.1
October	1014.1	34.9	29.2	25.3	22.5	19.2	21.0	79	268.5	010	7.1

*The above information was extracted from the Monthly data 2023 – Ta Kwu Ling by Hong Kong Observatory.

APPENDIX E
SUMMARY OF EXCEEDANCE

Appendix E: Exceedance Report**(A) Exceedance Report for Air Quality**

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

(B) Exceedance Report for Construction Noise

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

APPENDIX F
EVENT ACTION PLANS

Table 5.5 Event and Action Plan for Construction Dust

Event	Action			
	ET	IEC	ER	Contractor
Action level exceedance for one sample	<ol style="list-style-type: none"> 1. Repeat measurement to confirm finding; 2. If exceedance is confirmed, inform Contractor, IEC and ER; 3. Identify source, investigate the causes of exceedance and propose remedial measures; 4. Discuss with the Contractor, IEC and ER on the remedial measures required; 5. Increase monitoring frequency. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing. 	<ol style="list-style-type: none"> 1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.
Action level exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Repeat measurement to confirm finding; 2. If exceedance is confirmed, inform Contractor, IEC and ER; 3. Identify source, investigate the causes of exceedance and propose remedial measures; 4. Advise the Contractor and ER on the effectiveness of the proposed remedial measures; 5. Increase monitoring frequency; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER to discuss the remedial measures to be taken; 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. In consultation with the ET and IEC agree with the Contractor on the remedial measures to be implemented; 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Submit proposals for remedial measures to the ER, ET and IEC within three working days of notification for agreement; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit level exceedance for one sample	<ol style="list-style-type: none"> 1. Repeat measurement to confirm finding; 2. If exceedance is confirmed, inform IEC, ER, Contractor and EPD; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and Contractor on the remedial measures and assess effectiveness; 5. Keep ER, IEC and EPD informed of the results of the effectiveness of remedial measures. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Review and advise the ET and ER on the effectiveness of the 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Review and agree on the remedial measures proposed by the Contractor; 3. Ensure remedial measures properly implemented; 	<ol style="list-style-type: none"> 1. Identify source(s), investigate the causes of exceedance and propose remedial measures 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial actions to ER, ET and IEC within three

Event	Action			
	ET	IEC	ER	Contractor
		proposed remedial measures.	4. Supervise implementation of remedial measures.	working days of notification for agreement; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
Limit level exceedance for two or more consecutive samples	<ol style="list-style-type: none"> Repeat measurement to confirm finding; If exceedance is confirmed, inform IEC, ER, Contractor and EPD; Increase monitoring frequency to daily; Carry out analysis of Contractor’s working procedures to determine possible mitigation to be implemented; Arrange meeting with IEC and ER to discuss the remedial actions to be taken; Assess effectiveness of Contractor’s remedial actions and keep IEC, EPD and ER informed of the results; If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> Check monitoring data submitted by ET Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor’s remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 	<ol style="list-style-type: none"> Confirm receipt of notification of exceedance in writing; In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; Supervise the implementation of remedial measures; If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> Identify source(s), investigate the causes of exceedance and propose remedial measures Take immediate action to avoid further exceedance; Submit proposals for remedial actions to ER, IEC and ET within three working days of notification for agreement; Implement the agreed proposals; Review and resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Note:

- ET – Environmental Team
- IEC – Independent Environmental Checker
- ER – Engineer or Engineer’s Representative

Table 6.4 Event and Action Plan for Construction Noise

Event	Action			
	ET	IEC	ER	Contractor
Action Level Exceedance	<ol style="list-style-type: none"> 1. Notify IEC, ER and Contractor; 2. Identify source and carry out investigation; 3. Discuss with the Contractor and formulate remedial measures; 4. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly. 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 1. Identify source, and carry out investigation and report the investigation to the ET, IEC and ER; 2. Submit noise mitigation proposals to IEC and ER; 3. Implement noise mitigation proposals.
Limit Level Exceedance	<ol style="list-style-type: none"> 1. Repeat measurements to confirm exceedance; 2. If exceedance is confirmed, notify the Contactor, IEC, EPD and ER; 3. Increase monitoring frequency; 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 5. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 6. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring results and discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Ensure remedial measures properly implemented; and 3. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Identify source and carry out investigation and report the investigation to the ET, IEC and ER; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial actions to ER, ET and IEC within 3 working days of notification; 4. Implement the agreed proposals; 5. Resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Note:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer or Engineer's Representative

**APPENDIX G
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
Construction Dust Impact								
S7.5.3	D1	<p>The following dust suppression measures/practices should be incorporated:</p> <ul style="list-style-type: none"> • undertaking at all times to prevent dust nuisance as a result of the activities. Effective dust suppression measures, as necessary, should be installed to Minimize air quality impacts, at the boundary of the site and at any sensitive receivers. • Frequently cleaning and watering the site to Minimize fugitive dust emissions. • Effective water sprays shall be used during the delivery and handling of all raw sand, aggregate and other similar materials, when dust is likely to be created, to dampen all stored materials during dry and windy weather. • Watering of exposed surfaces shall be conducted as often as possible depending on the circumstances. • Areas within the site where there is a regular movement of vehicles shall have an approved hard surface, be kept clear of loose surface materials and / or regularly watered. • Where dusty materials are being discharged to vehicle from a conveying system at fixed transfer point, a three-sided roofed enclosure with a flexible curtain across the entry shall be provided. Exhaust fans shall be provided for this enclosure and vented to a suitable fabric filter system. • Confine haulage and delivery vehicles to designated roadways inside the site. If in the opinion of the Engineer, any motorised vehicle is causing dust nuisance, the 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and EIAOTM 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>N/A</p> <p>^</p>

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<p>Engineer may require that the vehicle be restricted to a maximum speed of 15 km per hour while within the site area.</p> <ul style="list-style-type: none"> • Wheel cleaning facilities shall be installed and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads. Water in the wheel cleaning facility shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall submit details of proposals for the wheel cleaning facilities to the Engineer prior to construction of the facility. Such wheel cleaning facilities shall be usable prior to any earthwork excavation activity on site. The Contractor shall provide a hard-surfaced road between any cleaning facility and the public road. • Any stockpile of dusty material shall be either: a) covered entirely by impervious sheeting; b) placed in an area sheltered on the top and the three sides; or c) sprayed with water so as to maintain the entire surface wet. • Chemical wetting agents shall only be used on completed cuts and fills to reduce wind erosion. • All site vehicular exhausts should be directed vertically upwards or directed away from ground to Minimize dust nuisance as far as practicable. • Ventilation system, equipped with proprietary filters, should be provided to ensure the safe working environment inside the tunnel. Particular attention should be paid to the location and direction of the ventilation exhausts. The exhausts should not be allowed to face any sensitive 						<p style="text-align: center;">*</p> <p style="text-align: center;">*</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p>

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<p>receivers directly. Consideration should also be given to the location of windows, doors and direction of prevailing winds in relation to the nearby sensitive receivers.</p> <p>The following measures related to stockpiling, loading and unloading activities should be incorporated:</p> <ul style="list-style-type: none"> • The working area of any excavation or earthmoving operation shall spray with water immediately before, during and immediately after the operation so as to maintain the entire surface wet; • Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies; • Any stockpile of dusty materials shall be either covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides; and sprayed with water so as to maintain the entire surface wet; and • Other suitable dust control measures as stipulated in the Air Pollution Control (Construction Dust) Regulation, where appropriate, should be adopted. 						<p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">*</p> <p style="text-align: center;">^</p>
S7.5.3	D2	<p>The following good site practices to reduce the exhaust emission from the use of non-road mobile machinery and construction plant and equipment should be implemented:</p> <ul style="list-style-type: none"> • Regulated machines shall be used and exempted NRMMS should be avoided where practicable. 	Control emissions from non-road mobile machinery	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Air Pollution Control (NRMMS) (Emission) Regulation • To control the fuel combustion 	*

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<ul style="list-style-type: none"> • Use cleaner fuel such as Ultra Low Sulphur Diesel (ULSD) in diesel-operated construction plant to reduce sulphur dioxide emission. • Use of electric PMEs where practicable. • Use power supplied from power utilities when practicable (e.g. to replace generators). • Switch off the engine of PMEs when idling. • Implement regular and proper maintenance for plant and equipment. • Employ plant and equipment of adequate size and power output and avoid overloading of the plant. • Locate the PMEs away from sensitive receivers as far as possible. • Erect screen to shield the emission source from sensitive receivers where necessary and practicable. 					emission from PMEs	^ ^ N/A ^ ^ ^ ^ N/A
S14.3.3.4	D3	Implement regular dust monitoring under EM&A programme during the construction phase.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction phase	<ul style="list-style-type: none"> • EIAO-TM 	^
Construction Noise								
S8.4.4.1	N1	<p>The following good site practices to reduce the noise impact from construction site activities, the following measures should be implemented:</p> <ul style="list-style-type: none"> • only well-maintained plant should be operated onsite and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should 	Control construction airborne noise	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Annex 5, EIAO-TM 	^ ^

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<p>be throttled down to a minimum;</p> <ul style="list-style-type: none"> • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers which available on construction equipment should be properly fitted and maintained during the construction works; • spoil transportation routes should be directed away from NSRs as far as practicable; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities; • noise monitoring at selected NSRs should be conducted as far as practicable; and • provide designated unloading areas away from the NSR as far as possible. 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
S8.4.4.2	N2	Use of quiet plant, where necessary should be made reference to the Powered Mechanical Equipment (PME) listed in the Technical Memorandum or the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department (EPD) web pages as far as possible which includes the Sound Power Level (SWLs) for specific quiet PME	Reduce the noise levels from plant items	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> • Annex 5, EIAO-TM 	^
S8.4.4.3	N3	Install movable temporary noise barriers (typical design is material surface density of 10kg/m2 could achieve at least 5dB(A) reduction for movable plant and 10dB(A) for stationary plant.), and full enclosure, screen the noisy plants including air compressor and generator etc.	Minimize the construction noise levels through screening	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Annex 5, EIAO-TM 	N/A

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
S14.3.3.5	N4	Implement regular airborne construction noise monitoring under EM&A programme.	Monitor the airborne construction noise levels at the selected representative locations	Contractor	Proposed noise monitoring stations	Construction phase	<ul style="list-style-type: none"> Annex 5, EIAO-TM 	^
Operational Fixed Plant Noise								
S8.5.2.1	N5	Housing all noisy equipment inside the plantroom with sufficient sound insulation and sound attenuators for all air louvers (e.g. install plant rooms with fresh air louvers, exhaust air louvers, smoke discharge louvers, etc.) in order to reduce the typical planned fixed noise sources for railway station at the proposed entrances (incorporated with VB) and proposed FRS, including ventilation fans, smoke extraction fans, chillers etc.	Minimize the operational fixed plant noise	Contractor	Construction of railway station at the proposed entrances (incorporated with VB) and proposed FRS	Operational phase	<ul style="list-style-type: none"> Annex 5, EIAO-TM 	N/A
S8.5.2.2	N6	<p>The following good site practices to reduce the noise impact on fixed noise sources, the following measures shall be considered as far as practicable to Minimize any potential impacts:</p> <ul style="list-style-type: none"> Equipment should be placed in a plant room with thick walls or at a much greater distance from the receiver or behind some large enough obstruction (e.g. a building or a barrier); Quieter plant should be chosen as far as practicable; Noise levels specification should be included when ordering new plant items; All openings, including louvers for ventilation and machine room doors should be oriented away from the NSRs as far as practicable; Silencers, acoustic louvers or acoustic doors should be used where necessary; and Regularly scheduled plant maintenance programme should be developed and 	Control the operational fixed plant noise	Contractor	Construction of railway station at the proposed entrances (incorporated with VB) and proposed FRS	Operational phase	<ul style="list-style-type: none"> Annex 5, EIAO-TM 	N/A

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		implemented so that plant items are properly operated and serviced.						
S14.3.3.5	N7	Fixed plant commissioning tests shall be conducted for each planned fixed noise source.	To ensure the compliance of predicted the maximum allowable Sound Power Level	Contractor/ MTR Corporation	Each planned fixed noise source	Prior to operational phase	<ul style="list-style-type: none"> • NCO • EIAO-TM 	N/A
Water Quality (Construction Phase)								
S9.3.2.2	W1	<p>General Construction Activities</p> <p>Best Management Practices (BMPs) should be implemented as far as practicable according to The Professional Persons Environmental Consultative Committee (ProPECC) Practice Note (PN) 1/94 “Construction Site Drainage”. The details of BMPs are presented as follows:</p> <ul style="list-style-type: none"> • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Schedule construction works to minimize surface construction works during the rainy seasons (April to September). If excavation of spoil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces shall be covered e.g. by tarpaulin, and temporary access roads shall be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels shall be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements shall always be in place in such a way that adequate surface protection measures can be safely carried out well 	To reduce water quality impact from construction site runoff and general construction activities	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • WPCO • ProPECC (PN1/94) • EIAO-TM • DSS-TM • Technical Circular No. 1/2017 Practical Notes No. 1/2017 	N/A N/A

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<p>before the arrival of a rainstorm;</p> <ul style="list-style-type: none"> • Inspect and maintain all drainage facilities and erosion and sediment control structures regularly to ensure proper and efficient operation at all times and particularly following rainstorms; • Cover all construction materials at temporary storage area with tarpaulin or similar fabric, and temporary access roads shall be protected by crushed stone or gravel, as excavation proceeds during rainstorms and implementation of measures to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Intercepting channels shall be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces during rainstorm; • Cover manholes (including newly constructed ones), if any, adequately and seal temporarily to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Take precautions at any time of year when rainstorms are likely. The actions to be taken based on the guidelines in Appendix A2 of ProPECC PN 1/94; • Collect, handle and dispose construction solid waste, debris and rubbish on site to avoid water quality impacts; • Provide locks for all fuel tanks and storage areas and locate on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p>

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<p>prevent spilled fuel oils from reaching water sensitive receivers nearby; and</p> <ul style="list-style-type: none"> Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, marsh and ponds. 						^
S9.3.2.1	W2	<p><u>Mitigation measures/ enhancement measures during demolition of watercourse</u></p> <ul style="list-style-type: none"> any surface runoff would be diverted by temporary drain or pumped away and treated by sedimentation tanks before discharge. All discharge to stormwater drain should be followed discharge licence under the Water Pollution Control Ordinance (WPCO) 	To avoid the untreated surface run-off being accidentally discharged into the adjoining water bodies.	Contractor	watercourse	Construction phase	<ul style="list-style-type: none"> WPCO ProPECC (PN1/94) EIAO-TM DSS-TM 	N/A N/A
S9.3.2.3	W3	<p><u>Mitigation measures for effluent discharge from excavation</u></p> <ul style="list-style-type: none"> Wastewater from excavation with a high level of suspended solids should be filtered before discharge by settlement in tanks with sufficient retention time. Oil interceptors would be required to remove any oil, lubricants, and grease from wastewater. All discharge to stormwater drain should be followed discharge licence under the Water Pollution Control Ordinance (WPCO) The contractor should be monitoring the quantity and quality of effluent discharge to ensure compliance with the conditions of the discharge license 	To minimize the water quality impact from the wastewater generated from excavation	Contractor	All Construction sites	Construction phase	<ul style="list-style-type: none"> WPCO ProPECC (PN1/94) EIAO-TM DSS-TM 	^ N/A ^ ^

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
S9.3.2.4	W5	<p><u>Sewage Effluent from Construction Workforce</u></p> <ul style="list-style-type: none"> No discharge of sewage to the stormwater system and marine water will be allowed; Establish adequate and sufficient portable chemical toilets in the works areas to handle sewage from the construction workforce; Employ a licenced waste collector to clean and maintain the chemical toilets on a regular basis; and Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment. 	To reduce water quality impact from wastewater from construction workforce.	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> WPCO ProPECC (PN1/94) EIAO-TM DSS-TM 	<p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p>
S9.3.2.5	W6	<p><u>Accidental Spillage</u></p> <ul style="list-style-type: none"> Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities; Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation; The Contractor should develop management procedures for chemicals used and prepare an emergency spillage handling procedure to deal with chemical spillage in case of an accident occurs; Any services and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with the potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges; 	To minimize water quality impact from accidental spillage of chemicals	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> WPCO ProPECC (PN1/94) EIAO-TM DSS-TM WDO 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<ul style="list-style-type: none"> The service and maintenance as well as any chemical storage area would be avoided to position near the watercourse as a safe guard; The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance shall be followed to deal with chemical wastes; Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling, and transport; Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and Storage area should be selected at a safe location on-site and adequate space should be allocated to the storage area. 						<p>N/A</p> <p>^</p> <p>*</p> <p>N/A</p> <p>N/A</p>
Water Quality (Operational Phase)								
S9.4.2.1	W7	<p><u>The following mitigation measures for stormwater surface runoff will be implemented.</u></p> <ul style="list-style-type: none"> Stormwater surface runoff generated should be discharged to the nearby government drainage system. The rainwater runoff from station structures (e.g. ventilation building, entrance, etc.) is provided with peripheral drain conveying to government drainage 	To minimize the water quality impact from stormwater surface runoff	MTR Corporation	Whole alignment	Operational Phase	<ul style="list-style-type: none"> WPCO 	<p>N/A</p> <p>N/A</p>
S9.4.2.2	W8	<p><u>The following mitigation measures for sewage and other wastewater will be implemented.</u></p> <ul style="list-style-type: none"> Sewage effluents including the sewage from 	To minimize the water quality impact from sewage and other wastewater	MTR Corporation	Whole alignment	Operational Phase	<ul style="list-style-type: none"> WPCO ProPECC PN 5/93 	N/A

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<p>the sanitary fitment and the foul water from washing facilities and track of the proposed railway station at Kwu Tung should be conveyed to the public sewers.</p> <ul style="list-style-type: none"> • During the interim phase, the sewage will be connecting to the public sewer at the west. • As for the ultimate phase, the sewage will be conveyed to the public sewer along Road L3 of Kwu Tung North New Development Area. • Standard oil/grit interceptors/chambers should be provided where necessary to remove the oil, lubricants, grease, silt, and grit from wastewater generated from facilities washing before discharge to public sewers. • A discharge licence for the discharge of commercial and industrial effluent is needed and the discharge quality must satisfy all the standards listed in the DSS-TM and meet the requirements specified in the discharge licence. • The practices outlined in ProPECC PN 5/93 for handling, treatment, and disposal of operational stage effluent should also be adopted where applicable. 					<ul style="list-style-type: none"> • DSS-TM 	<p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p>
Waste Management (Construction Phase)								
S10.2.2.1	WM1	<p>Good Site Practices</p> <p>The following good site practices are recommended to reduce waste generation during construction:</p> <ul style="list-style-type: none"> • Nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, 	Ensure proper waste management system throughout the construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • WDO • ETWB TC(W) 19/2005 	^

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<p>arrangements for collection and effective disposal to an appropriate facility, of all waste generated at the site;</p> <ul style="list-style-type: none"> • Training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • Provision of sufficient waste disposal points and regular collection for disposal; • Appropriate measures to Minimize windblown litter and dust during transportation of waste by transporting waste in enclosed containers; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • A Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) should be prepared by the Contractor in accordance with ETWB TC(W) No.19/2005 and submitted to the Engineer for approval before construction works. 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
S10.2.2.2	WM2	<p><u>Waste Reduction Measures</u></p> <p>The following recommendations are proposed to achieve reduction of waste:</p> <ul style="list-style-type: none"> • Segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; • Sort out demolition debris from demolition 	Reduce waste generation	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • WDO 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p>

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<p>works to recover reusable/ recyclable portions (i.e. Soil, broken concrete, metal etc.); and</p> <ul style="list-style-type: none"> • Provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 						^
S10.2.2.3	WM3	<p><u>Storage, Collection and Transportation of Waste</u></p> <p>The following recommendation should be implemented to minimize the impacts from storage, collection and transportation of waste:</p> <ul style="list-style-type: none"> • Non-inert C&D materials (if any) should be handled and stored well to ensure secure containment; • Stockpiling area should be provided with covers and water spraying system to prevent materials from windblown or being washed away; • Different locations should be designated to stockpile each material to enhance reuse; • Remove waste in timely manner; • Employ the trucks with cover or enclosed containers for waste transportation; • Obtain relevant waste disposal permits from the appropriate authorities; and • Disposal of waste should be done at licensed waste disposal facilities. 	Minimize impact to the environment due to storage, collection and transport of waste	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • WDO • Land (Miscellaneous Provisions) Ordinance • ETWB TCW No. 19/2005 	^ ^ ^ ^ ^ ^
S10.2.2.4	WM4	<p><u>C&D Materials</u></p> <p>The following recommendation should be implemented in handling the C&D materials:</p> <ul style="list-style-type: none"> • Carry out on-site sorting; 	Minimize waste impacts from C&D materials handling	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • WDO • ETWB TCW No. 19/2005 • Land 	^

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<ul style="list-style-type: none"> • Allow and promote the use of recycled aggregates where appropriate; and • Implement a trip-ticket system in accordance with DEVB TC(W) No. 6/2010 Trip Ticket System for Disposal of Construction and Demolition Materials, if dumping trucks are required, for each works contract to ensure that the disposal of C&D materials is properly documented and verified. <p><u>On-site Sorting of C&D Materials</u></p> <ul style="list-style-type: none"> • Storage areas would be located within the site during construction phase for temporary storage of inert C&D materials. • All C&D materials arising from the construction would be sorted on-site to recover the inert C&D materials and reusable and recyclable materials prior to disposal off-site. Non-inert portion of C&D materials should also be reused whenever possible and be disposed of at landfills as a last resort. • The Contractor would be responsible for devising a system to work for on-site sorting of C&D materials and promptly remove all sorted and processed material arising from the construction activities to minimize temporary stocking on-site. • It is recommended that the system should include the identification of the source of generation, estimated quantity, arrangement for on-site sorting and/ or collection, temporary storage areas, and frequency of collection by recycling Contractors or frequency of removal off-site. 					(Miscellaneous Provisions) Ordinance	^ ^ ^ ^

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
S10.2.2.4	WM5	<p><u>Reuse of C&D Materials</u></p> <ul style="list-style-type: none"> Reuse suitable excavated rock by reworking at approved quarries (e.g. crushed as aggregates); Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (e.g. soil, broken concrete, metal); and Protect recyclable material to keep it in usable condition. 	Minimize waste impacts from C&D materials handling	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> WDO ETWB TCW No. 19/2005 Land (Miscellaneous Provisions) Ordinance 	N/A N/A ^
S10.2.2.4	WM6	<p><u>Specification of Inert C&D Materials to be Delivered Offsite</u></p> <p>In case there are surplus inert C&D materials generated in the Project and are required to delivered to the Public Fill Reception Facilities (PFRFs), the inert C&D materials should fulfil the following requirements:</p> <ul style="list-style-type: none"> Reclaimed asphalt pavement will not be mixed with other materials when delivered to the public fill reception facilities; Moisture content of inert C&D materials will be lowered to 25% max. when delivered to the public fill reception facilities; Inert C&D materials delivered to the public fill reception facilities should be a size less than 250mm; and Inert construction waste shall not be in liquid form such that it can be contained and delivered by dump truck as far as possible. Inert C&D materials in liquid form shall be solidified before delivering to the public fill reception facilities. 	Reduce waste generation	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> WDO ETWB TCW No. 19/2005 Land (Miscellaneous Provisions) Ordinance 	N/A ^ ^ ^
S10.2.2.5	WM7	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> For those processes which generate chemical 	Control the chemical waste and ensure proper storage,	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) 	N/A

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<p>areas clean.</p> <ul style="list-style-type: none"> A reputable waste collector should be employed to remove general refuse on a regular basis. Arrangements should be made with the recycling companies to collect the recycle waste as required. It is expected that such arrangements would minimize potential environmental impacts. The Contractor should implement an education programme for workers relating to avoiding, reducing, reusing and recycling general waste. Participation in a local collection scheme should be considered by the Contractor to facilitate waste reduction. 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
Waste Management (Operational Phase)								
S10.3.2.1	WM9	<p>General Refuse</p> <ul style="list-style-type: none"> Recycling of waste paper, aluminium cans and plastic bottles should be encouraged. It is recommended to place clearly labelled recycling bins at designated locations which could be accessed conveniently. General refuse should be separated from chemical waste by providing separated bins for storage to maximize the recyclable volume as far as practicable. A reputable waste collector should be employed to remove general refuse regularly to minimize odour, pest and litter impacts. Arrangements should be made with the recycling companies to collect the recycle waste as required. 	Remove municipal solid waste generated	MTR Corporation	Kwu Tung Station as well as associated facilities	Operational phase	<ul style="list-style-type: none"> WDO 	<p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p>

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
S10.3.2.2	WM10	<p>Chemical Waste</p> <ul style="list-style-type: none"> Subject to operational needs, if chemical waste is to be produced, the Project Proponent shall register with EPD as chemical waste producers as appropriate in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. Chemical waste should be collected and disposed of at appropriate facility like CWTC by licensed collectors. The requirements given in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes should be followed, where applicable, in handling of these chemical wastes. The requirements for the collection and disposal of chemical waste as stipulated in the Waste Disposal (Chemical Waste) (General) Regulation should be followed to monitor all movements of chemical wastes which will be collected by a licensed collector to a licensed facility for final treatment and disposal. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidising, irritant, toxic, harmful, corrosive, etc. Non-recyclable chemical waste (e.g. spent lubricant oil) should be disposed of at appropriate facility like CWTC by licensed collectors. Recyclable chemical waste (e.g. used fluorescent tubes) should be collected 	Minimize production of chemical waste	MTR Corporation	All construction site	Operational phase	<ul style="list-style-type: none"> WDO Code of Practice on the Packaging, Labelling and Storage of Chemical Waste 	<p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">N/A</p>

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		and transported off-site by licensed collectors.						
<i>Cultural Heritage (Construction Phase)</i>								
S12.3.1.2	CH1	AMO should be informed immediately in case of discovery of antiquities or supposed antiquities in the course of the project works in accordance with the Antiquities and Monuments Ordinance (Cap. 53), so that appropriate mitigation measures, if needed, can be timely formulated and implemented in agreement with AMO.	To timely formulate and implement appropriate mitigation measures for protection of archaeological remains if needed within all construction sites	Contractor/ MTR Corporation	All construction sites	Construction phase	<ul style="list-style-type: none"> Antiquities and Monuments Ordinance (Cap. 53) 	^
S12.4	CH2	If there are any buildings / structures both at grade level and underground which were built on or before 1969 within the works sites/ works areas during the construction, the Project Proponent will alert AMO in an early stage or once identified.	To timely formulate and implement appropriate mitigation measures for protection of archaeological remains if needed within all construction sites	Contractor/ MTR Corporation	All construction sites	Construction phase	<ul style="list-style-type: none"> Antiquities and Monuments Ordinance (Cap. 53) 	^
<i>Landscape and Visual (Construction Phase)</i>								
S13.6.1	LV1	<p><u>Decorative Site Hoarding</u></p> <p>Decorative site hoardings with aesthetic designs could be provided at the construction sites such that the construction site could be compatible with the surroundings and mitigate the visual impact.</p>	Compatible with the surroundings and mitigate the visual impact.	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> EIAO-TM 	N/A
<i>Landscape and Visual (Operational Phase)</i>								
S13.6.2.2	LV2	<p><u>Compensatory Tree Planting</u></p> <p>On-site and off-site tree compensation methods are being considered. The Project Proponent is still exploring the possible locations including the new development area at KTN NDA, LCSD park etc. of tree compensation and would continue to liaise with different government departments such as CEDD,</p>	Compensate for trees due to the Project	Contractor/ MTR Corporation	Onsite where possible. Otherwise consider offsite locations	Detailed design and operational phase	<ul style="list-style-type: none"> EIAO-TM DEVB TCW No. 4/2020 	N/A

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		<p>LCSD, LandsD and AFCD etc. on the details for tree compensation. The following potential locations for tree compensation were identified and the actual locations are subject to further liaison with relevant parties:</p> <ul style="list-style-type: none"> • Town Plaza in KTN NDA; • LCSD sitting-out areas, parks, roadside tree pits and landscape areas in North District; • Hillside in the North District for whip tree planting; and <p>Any other locations to be agreed with government departments.</p>						
S13.6.2.1	LV3	<p><u>Screen Planting/ Vertical Greening</u></p> <p>Screen planting/ vertical greening could effectively constitute a fascinating landscape and blend the building with the surrounding greenery.</p>	Improve compatibility with the surrounding environment	Contractor/ MTR Corporation	All structures as feasible, final location to be confirmed at detailed design phase	Detailed design and operational phase	<ul style="list-style-type: none"> • EIAO-TM 	N/A
S13.7.2	LV4	<p><u>Architectural Aesthetic Design of Built Structure</u></p> <p>The design objectives are as follows:</p> <ul style="list-style-type: none"> • To Minimize the visual impact within a densely populated residential area by creating a simple and elegant design; • To create a lean building massing, maximise the at grade green landscaping area to locals and Minimize the visual impact; and • To introduce biophilic orientated design as far as practicable. It is aimed to integrate the above-ground structures to the future landscape design by others and contributes to the immediate surroundings, such as 	Improve visual amenity of the built structure	Contractor/ MTR Corporation	All structures as feasible, final location to be confirmed at detailed design phase	Detailed design and operational phase	<ul style="list-style-type: none"> • EIAO-TM 	<p>N/A</p> <p>N/A</p> <p>N/A</p>

Environmental Mitigation Implementation Schedule

ERR Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved	Implementation Status
		green roofing, green wall, green fifth elevation design and environmentally sustainable architecture.						
EM&A Project								
S14.3.1.4	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A performance	MTR Corporation	All construction sites	Construction Phase	<ul style="list-style-type: none"> • EIAO Guidance Note No.4/2010 • EIAO-TM 	^
S14.3.1.3	EM2	<ul style="list-style-type: none"> • An Environmental Team needs to be employed as per the EM&A Manual. • An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with. 	Perform environmental monitoring and auditing	Contractor/ MTR Corporation	All construction sites	Construction Phase	<ul style="list-style-type: none"> • EIAO Guidance Note No.4/2010 • EIAO-TM 	^ ^

Implementation status:

- ^ Mitigation measure was fully implemented
- * Observation/reminder was made during site audit but improved/rectified by the contractor
- # Observation/reminder was made during site audit but not yet improved/rectified by the contractor
- X Non-compliance of mitigation measure
- Non-compliance but rectified by the contractor
- N/A Not Applicable at this stage as no such site activities were conducted in the reporting period

**APPENDIX H
SUMMARY OF COMPLAINTS,
PROSECUTIONS, REPORTING
CHANGES AND NOTIFICATION OF
SUMMONS**

Appendix H - Summary of Complaint, Notifications of Summons and Successful Prosecution

Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
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Summary of Notifications of Summons

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
--	--	--	--	--	--

Summary of Successful Prosecution

Date of Successful Prosecution	Details of the Successful Prosecution	Status	Follow Up	Total no. Received in this Reporting Month	Total no. Received since Project Commencement
--	--	--	--	--	--

**APPENDIX I
SUMMARY OF AMOUNT OF WASTE
GENERATED**

Contract 1633 - Alteration and Addition Works at Kwu Tung
for East Rail Line Protection Works

Monthly Summary Waste Flow Table for 2023

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly						
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Timber	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Yard Waste	Others, e.g. general refuse
	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000kg)
Jan	/	/	/	/	/	/	/	/	/	/	/	/	/
Feb	0	0	0	0	0	0	0	0	0	0	0	51.47	0
Mar	0	0	0	0	0	0	0	0	0	0	0	0	100.13
Apr	0	0	0	0	20.51	0	0	0	0	0	0	7.63	34.1
May	0	0	0	0	244.26	0	0	0	0	0	0	0	59.24
Jun	0	0	0	0	940.37	0	0	0	0	0	0	0	31.76
Jul	0	0	0	0	1279.92	0	0	0	0	0	0	0	4.84
Aug	0	0	0	0	56.42	0	0	0	0	0	0	0	23.51
Sep	0	0	0	0	0	0	0	0	0	0	0	0	281.33
Oct	0	0	0	0	0	0	0	0	0	0	0	0	30.23
Nov													
Dec													
Total	0	0	0	0	2541.48	0	0	0	0	0	0	59.1	565.14