Civil Engineering and Development Department

Agreement No. CE 59/2015 (EP)
Environmental Team for
Tseung Kwan O – Lam Tin Tunnel
Design and Construction

Monthly Environmental Monitoring and Audit Report for August 2021

(version 1.0)

Approved By

(Dr. HF Chan,
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.

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

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Your reference:

Our reference: HKCEDD08/50/107554

Date: 17 September 2021

Attention: Mr Raymond Chan

BY FAX & POST
(Fax no.: 2739 0076)

Dear Sirs

Agreement No.: NTE 06/2016
Independent Environmental Checker for Tseung Kwan O – Lam Tin Tunnel
Monthly Environmental Monitoring and Audit Report for August 2021 (version 1.0)

We refer to emails of 8 and 17 September 2021 from Cinotech Consultants Limited attaching the Monthly Environmental Monitoring and Audit Report for August 2021 (version 1.0).

We have no further comment and hereby verify the captioned report in accordance with Clause 4.4 of the Environmental Permit no. EP-458/2013/C.

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Edric Lau on 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/LCCR/LTKE/lsmt

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EXECUTIVE SUMMARY

Introduction

1. This is the 58th Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the "Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction" (hereinafter called "the Project"). This report documents the findings of EM&A Works conducted in August 2021.

2. During the reporting month, the following works contracts were undertaken:
   - Contract No. NE/2015/01 – Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works;
   - Contract No. NE/2015/02 – Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works;
   - Contract No. NE/2015/03 – Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge;
   - Contract No. NE/2017/01 – Tseung Kwan O – Lam Tin Tunnel –Tseung Kwan O Interchange and Associated Works
   - Contract No. NE/2017/02 – Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works.
   - Contract No. NE/2017/06 – Tseung Kwan O – Lam Tin Tunnel – Traffic Control and Surveillance System(TCSS) and Associated Works
   - Contract No. NE/2017/07 – Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works.

Environmental Monitoring Works

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

4. Summary of the non-compliance (exceedance) in the reporting month for the Project is tabulated in **Table I**.

Table I Non-compliance (exceedance) Record for the Project in the Reporting Month

Environmental Monitoring	No. of Non-compliance (Exceedance)		No. of Non-compliance (Exceedance) due to Construction Activities of this Project		Action Taken
	Action Level	Limit Level	Action Level	Limit Level	
Air Quality	0	0	0	0	N/A
Noise	0	0	3	0	Refer to Appendix K & O
Marine Water Quality	58	130	0	0	Refer to Appendix K
Groundwater Level Monitoring (Piezometer Monitoring)	0	N/A[1]	0	N/A[1]	N/A
Ecological	N/A	N/A	N/A	N/A	N/A
Cultural Heritage	0	0	0	0	N/A
Landfill Gas	0	0	0	0	N/A

Note:(1) No Limit Level for Groundwater Level Monitoring (Piezometer Monitoring).

Air Quality Monitoring

5. No Action/Limit Level exceedance for 1-hour TSP monitoring was recorded.

6. No Limit Level and Action Level exceedance for 24-hour TSP monitoring was recorded.

Construction Noise Monitoring

7. Three (3) Action Level exceedance was recorded due to documented complaints in the reporting month. The Summary of Documented Complaints in Reporting Month is tabulated in **Table III.**

8. No Limit Level exceedance was recorded due to monitoring results in this reporting month.

Water Quality Monitoring

9. Groundwater quality monitoring had been suspended since October 2019 upon the agreement by EPD. Further details should be founded at **Section 5.1**.

10. All marine water quality monitoring was conducted as scheduled in the reporting month. There were fifty-eight (58) Action Level and one-hundred-and-thirty (130) Limit Level exceedances recorded in Monitoring Stations (M) during marine water quality monitoring. During this reporting month, no sand plume was observed during the water quality monitoring and site audits, therefore there is no direct evidence that the recent exceedances were due to the construction works of the Project. Details of this investigation are presented in **Section 5**. Daily silt curtain inspection and weekly diving inspection have been carried out by contractor, the record, as reviewed by the site auditors, indicated that silt curtains were found in good conditions.

11. Construction phase daily piezometer monitoring by the Contractor commenced in June 2018. It has switched to monthly basis since 3 October 2018 as the construction activity was 120m away from the piezometer gate. No monitoring was conducted in the reporting month.

Ecological Monitoring

12. Post-translation coral monitoring survey shall be conducted once every 3 months for a period of 12 months after completion of coral translocation. The post-translocation coral monitoring surveys were completed in November 2017.

Monitoring on Cultural Heritage

13. Monitoring of impacts on Cultural Heritage at Cha Kwo Ling Tin Hau Temple commenced in May 2017. No Alert, Alarm and Action (AAA) Level exceedance was recorded in the reporting month.

Landscape and Visual Monitoring and Audit

14. The implementation of landscape and visual mitigation measures was checked during the environmental site inspections. Recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in Section 10.

Landfill Gas Monitoring

15. Monitoring of landfill gases commenced in December 2016 and were carried out by the Contractor at excavation location, Portion III. No Limit Level exceedance was recorded.

Environmental Site Inspection

16. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Environmental Team. The representative of the IEC joined the site inspection for NE/2015/01 and NE/2017/07 on 19 Aug 2021 & NE/2015/02, NE/2017/01, NE/2017/02 and NE/2017/06 on 25 Aug 2021 respectively. Details of the audit findings and implementation status are presented in **Section 10**.

Waste Management

17. Wastes generated from this Project include inert construction and demolition (C&D) materials, non-inert C&D materials and marine sediment. Details of waste management data is presented in **Section 11** and **Appendix P**.

Key Information in the Reporting Month

18. Summary of key information in the reporting month is tabulated in **Table II**

Table II Key Information in the Reporting Month

Monthly Complaints	Event Details		Action Taken	Status
	Number	Nature		
August 2021	3	Noise	Details refer to App O	Draft CIRs submitted
July 2021	3	Noise / Working Hours	Details refer to App O	Closed
June 2021	3	Light/ Water/ Working Hours	Details refer to App O	Closed
May 2021	3	Air / Noise	Details refer to App O	Closed
April 2021	13*1	Noise	Details refer to App O	Closed
March 2021	18*2	Noise	Details refer to App O	Closed
February 2021	3	Noise	Details refer to App O	Closed
January 2021	13	Noise / Air	Details refer to App O	Closed
December 2020	13	Noise / Operating hours	Details refer to App O	Closed
Notifications of any summons & prosecutions received	0	---	N/A	N/A

*1: 1 complaint at April 2021 was received at early May 2021.
*2: 4 new complaints in March 2021 was received by Environmental Team in April 2021.

19. Summary of complaints received in the reporting month is tabulated in **Table III.**

Table III Summary of Complaints Details in Reporting Month

Complaint No.	Complaint	Investigation Findings	Follow-up Action / Mitigation Measure
Lam Tin Side			
562	Construction noise nuisance near Lei Yu Mun Road	The complaint is considered as project-related and construction works were carried out. No monitoring was conducted on Public Holiday. The details shall be referred to CIR-N148.	The Contractor is reminded to follow the approved valid CNP.
Tseung Kwan O Side			
559	Noise nuisance near Ocean Shores (Jan 2021 – Jun 2021)	The complaint is considered as project-related and current noise mitigation measures were reviewed. The details shall be referred to CIR-N145.	The Contractor is recommended to follow approved CNMP, repair damaged noise barrier as soon as possible, and replace old PMEs with newer ones.
561	Construction Noise Nuisance on Weekday during Daytime (August 2021)	The complaint is considered as project-related. No non-compliance and limit level of daytime construction noise was recorded during late July 2021 – early 2021. The details shall be referred to CIR-N147.	

Key Construction Work in the reporting month & the next reporting month

20. Summary of key construction work in the reporting month is tabulated in **Table IV**.

Table IV Summary Table for Key Construction Work in the Reporting Month

Contract No.	Project Title	Site Activities (August 2021)	
NE/2015/01	Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation Area 1G1 & 1G2 & 5 3) Site Formation Area 2 4) Site Formation Slope Stabilization 5) Site Formation Retaining Wall

Contract No.	Project Title	Site Activities (August 2021)	
			6) Administration Building 7) West Ventilation Building 8) Bridge Construction 9) Emergency Stormwater Storage Tank + Stormwater Pumping Station 10) S01_2, EHC1&4 Construction 11) CKLR Underground Utilities 12) Landscape Deck 13) LTI Drainage
		Main Tunnel	14) Main Tunnel Lining Works 15) S02_2 Excavation & Lining
		TKO Interchange	16) Bridge Construction 17) East Ventilation Building
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Sloping Seawall Construction 2) Construction of U-trough 3) Construction of Underpass 4) Construction of Seawall Coping 5) Construction of Road P2 and SR2	
NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	The construction works under the contract had been completed in December 2019. The EM&A works were terminated in late April 2020.	
NE/2017/01	Tseung Kwan O – Lam Tin Tunnel – Tseung Kwan O Interchange and Associated Works	1) Installation of Parapet Skin 2) Construction of Profile barrier 3) Grouting Works 4) Installation of Traffic Sign Gantry	
NE/2017/02	Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works	1) Inspection pit excavation and utility diversion works 2) Construction of drainage and watermain 3) Asphalt Paving 4) Pier, Staircase and Lift Shalt Construction 5) Road Works	
NE/2017/06	Tseung Kwan O – Lam Tin Tunnel – Traffic Control and Surveillance System(TCSS) and Associated Works	1) System Integration Test 2) Goods arrival & storage on site 3) Installation in Admin Building 4) Installation works inside Tunnel	
NE/2017/07	Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works	1) Predrilling Work at Portion I had completed with 31 out of 35 nos. 2) Piling work at Portion I had completed with 21 out of 35 nos. 3) Precast Shell Installation with 16 out of 16 nos. had completed at portion II 4) 1st Stage Concrete for pile caps with 16 out of 16 nos. had completed at Portion II 5) Precast Pier Installation with 10 out of 10 nos. had completed at portion II 6) 2nd Stage Concrete for pile caps is 14 out of 14 nos. had completed at Portion II 7) Precast Box Girder Installation with 18 out of 18 nos. had completed at Portion II Fabrication of arch rib panels steel 8) E&M Work and External Work at Portion V Plant Room Building are In-progress SE 4-5 to SE 6-7 9) Fabrication of deck segment panels (S420M/ML) steel completed 10) 1st, 2nd, 3rd and 4th round deck segment assembly completed 11) Fabrication of arch rib panels (S690QL) steel completed. 12) 1st, 2nd, 3rd and 4th round arch rib segment assembly	

Contract No.	Project Title	Site Activities (August 2021)
		13) Loadout, transportation and floating-in of steel bridge side span

Future Key Issues

21. The future key environmental issues in the coming month include:

Table V Summary Table for Site Activities in the next Reporting Period

Contract No. and Project Title	Site Activities (September 2021)		Key Environmental Issues *
NE/2015/01 - Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation Area 1G1 & 1G2 & 5 3) Site Formation Area 2 4) Site Formation Slope Stabilization 5) Site Formation Retaining Wall 6) Administration Building 7) West Ventilation Building 8) Bridge Construction 9) Emergency Stormwater Storage Tank & Stormwater Pumping Station 10) S01_2, EHC1&4 Construction 11) CKLR Underground Utilities 12) Landscape Deck 13) LTI Drainage	(A) / (B) / (C) / (D) / (E) / (G)
	Main Tunnel	14) S02_2 Excavation & Lining 15) Main Tunnel Lining Works	(B)
	TKO Interchange	16) Bridge Construction 17) East Ventilation Building	(A) / (C) / (D) / (E) / (F) / (I)
NE/2015/02 - Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Sloping Seawall Construction 2) Construction of U-trough 3) Construction of Underpass 4) Construction of Seawall Coping 5) Construction of Road P2 and SR2		(A) / (B) / (C) / (D) / (E) / (G) / (I)
NE/2015/03 - Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	The construction works under the contract had been completed in December 2019. Materials are being removed from works area.		N/A
NE/2017/01 – Tseung Kwan O Interchange and Associated Works	1) Installation of Parapet Skin 2) Construction of Profile barrier 3) Grouting Works 4) Installation of Traffic Sign Gantry 5) Installation of Road Drainage and Drain Pipe		(A) / (B) / (E) / (F) / (G)
NE/2017/02 –Tseung Kwan O - Lam Tin Tunnel - Road P2/D4 and Associated Works	1) Inspection pit excavation and utility diversion works 2) Construction of drainage and watermain 3) Asphalt Paving 4) Pier, Staircase and Lift Shalt Construction 5) Road Works		(A) / (B) / (E) / (F) / (G)
NE/2017/06 – Tseung Kwan O – Lam Tin Tunnel – Traffic Control and Surveillance System(TCSS) and Associated Works	1) Goods arrival & storage on site 2) Installation in Admin Building 3) Installation works inside Tunnel		(E)
NE/2017/07 - Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works	1) Pre-drilling 2) Bored piling 3) Pile cap construction 4) Pier construction		(A) / (B) / (D) / (E) / (F) / (G) / (H) / (I)

Note:
(A) Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
(B) Noisy construction activity such as rock-breaking activities and piling works;
(C) Runoff from exposed slope or site area;
(D) Wastewater and runoff discharge from site;
(E) Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
(F) Set up and implementation of temporary drainage system for the surface runoff;
(G) Storage of chemicals/fuel and chemical waste/waste oil on site;
(H) Accumulation and storage of general and construction waste on site; and
(I) Marine water quality impact and indirect impact to coral communities due to marine construction for TKO-LTT reclamation

1. INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) as the Environmental Team (ET) to undertake environmental monitoring and auditing services for the Works Contracts involved in the implementation of Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) project to ensure that the environmental performance of the Works Contracts comply with the requirements specified in the Environmental Permit (EP), Environmental Monitoring & Audit (EM&A) Manual, Environmental Impact Assessment (EIA) Report of the TKO-LTT project and other relevant statutory requirements. This is the 58th Monthly EM&A report summarizing the EM&A works for the Project in August 2021.

Purpose of the Report

1.2 This is the 58th Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in August 2021.

Structure of the Report

1.3 The structure of the report is as follows:

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

Section 2: **Contract Information** – summarises background and scope of the Contract, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting month.

Section 3: **Air Quality Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 4: **Noise Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 5: **Water Quality Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 6: **Ecological Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and Action and Limit Levels, monitoring results and Event / Action Plans.

Section 7: **Cultural Heritage** –summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and monitoring results.

Section 8: **Landscape and Visual Monitoring Requirements** – summarises the requirements of landscape and visual monitoring

Section 9: **Landfill Gas Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, monitoring results and Limit Levels and Action Plan

Section 10: **Environmental Site Inspection** – summarises the audit findings of the weekly site inspections undertaken within the reporting month.

Section 11: **Waste Management** – summarises the waste management data in the reporting month.

Section 12: **Environmental Non-conformance** – summarises any monitoring exceedance, environmental complaints, environmental summons and successful prosecutions within the reporting month.

Section 13: **Future Key Issues** – summarises the impact forecast and monitoring schedule for the next three months.

Section 14: **Conclusions and Recommendation**

2. PROJECT INFORMATION

Background

2.1 In 2002, Civil Engineering and Development Department (CEDD) commissioned an integrated planning and engineering study under Agreement No. CE 87/2001 (CE) "Further Development of Tseung Kwan O – Feasibility Study" (the "TKO Study") to formulate a comprehensive plan for further development of TKO New Town. It recommended to further develop TKO to house a total population of 450,000 besides the district's continuous commercial and industrial developments.

2.2 At present, the Tseung Kwan O Tunnel is the main connection between Tseung Kwan O (TKO) and other areas in the territory. To cope with the anticipated transport need, the TKO Study recommended the provision of Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) (hereinafter referred to as "the Project") and Cross Bay Link (CBL) to meet the long-term traffic demand between TKO and the external areas. The site layout plan for the Project is shown in **Figure 1**. CBL was also entrusted with part of the marine viaducts near Tseung Kwan O Interchange since the commencement of the CBL project the December 2018.

2.3 The Environmental Impact Assessment (EIA) Report for the TKO-LTT project was approved under the Environmental Impact Assessment Ordinance (EIAO) in July 2013. The corresponding Environmental Permit (EP) was issued in August 2013 (EP no.: EP-458/2013). Variations to the EP was applied and the latest EP (EP no.: EP-458/2013/C) was issued by the Director of Environmental Protection (DEP) in January 2017.

2.4 The commencement dates of construction of this Project are:

- Contract No. NE/2015/01 and Contract No. NE/2015/02: 7 November 2016.
- Contract No. NE/2015/03: 29 May 2017.
- Contract No. NE/2017/02: 15 March 2018.
- Contract No. NE/2017/01: 23 May 2018.
- Contract No. NE/2017/06: 09 November 2018.
- Contract No. NE/2017/07: 22 February 2021

Project Organizations

2.5 Different parties with different levels of involvement in the project organization include:

- Project Proponent – Civil Engineering and Development Department (CEDD)
- The Engineer and the Engineer's Representative (ER) – AECOM
- Environmental Team (ET) – Cinotech Consultants Limited (Cinotech)
- Independent Environmental Checker (IEC) – AnewR Consulting Limited (AnewR)

2.6 The key contacts of the Project are shown in **Table 2.1**.

Table 2.1 Key Project Contacts

Party	Role	Contact Person	Phone No.	Fax No.
CEDD	Project Proponent	Mr. LO Sai Pak, Sunny	2301 1384	2739 0076
AECOM	Engineer's Representative	Mr. Jackie CW, Ng	3910 1601	3910 1600
Cinotech	Environmental Team	Dr. HF Chan	2151 2088	3107 1388
		Mr. KS Lee	2151 2091	
AnewR	Independent Environmental Checker	Mr. James Choi	2618 2836	3007 8648

Construction Activities undertaken during the Reporting Month

2.7 The major site activities undertaken in the reporting month included:

Table 2.2 Summary Table for Major Site Activities in the Reporting Month

Contract No.	Project Title	Site Activities (August 2021)	
NE/2015/01	Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation Area 1G1 & 1G2 & 5 3) Site Formation Area 2 4) Site Formation Slope Stabilization 5) Site Formation Retaining Wall 6) Administration Building 7) West Ventilation Building 8) Bridge Construction Emergency Stormwater Storage Tank + Stormwater Pumping Station 10) S01_2, EHC1&4 Construction 11) CKLR Underground Utilities 12) Landscape Deck 13) LTI Drainage
		Main Tunnel	14) Main Tunnel Lining Works 15) S02_2 Excavation & Lining
		TKO Interchange	16) Bridge Construction 17) East Ventilation Building
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Sloping Seawall Construction 2) Construction of U-trough 3) Construction of Underpass 4) Construction of Seawall Coping 5) Construction of Road P2 and SR2	
NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	The construction works under the contract had been completed in December 2019. The EM&A works were terminated in late April 2020.	
NE/2017/01	Tseung Kwan O – Lam Tin Tunnel – Tseung Kwan O Interchange and Associated Works	1) Installation of Parapet Skin 2) Construction of Profile barrier 3) Grouting Works 4) Installation of Traffic Sign Gantry	
NE/2017/02	Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works	1) Inspection pit excavation and utility diversion works 2) Construction of drainage and watermain 3) Asphalt Paving 4) Pier, Staircase and Lift Shalt Construction 5) Road Works	
NE/2017/06	Tseung Kwan O – Lam Tin Tunnel – Traffic Control and Surveillance	1) System Integration Test 2) Goods arrival & storage on site 3) Installation in Admin Building	

Contract No.	Project Title	Site Activities (August 2021)
	System(TCSS) and Associated Works	4) Installation in Tunnel Building
NE/2017/07	Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works	1) Predrilling Work at Portion I had completed with 31 out of 35 nos. 2) Piling work at Portion I had completed with 21 out of 35 nos. 3) Precast Shell Installation with 16 out of 16 nos. had completed at portion II 4) 1st Stage Concrete for pile caps with 16 out of 16 nos. had completed at Portion II 5) Precast Pier Installation with 10 out of 10 nos. had completed at portion II 6) 2nd Stage Concrete for pile caps is 14 out of 14 nos. had completed at Portion II 7) Precast Box Girder Installation with 18 out of 18 nos. had completed at Portion II Fabrication of arch rib panels steel 8) E&M Work and External Work at Portion V Plant Room Building are In-progress SE 4-5 to SE 6-7 9) Fabrication of deck segment panels (S420M/ML) steel completed 10) 1st, 2nd, 3rd and 4th round deck segment assembly completed 11) Fabrication of arch rib panels (S690QL) steel completed. 12) 1st, 2nd, 3rd and 4th round arch rib segment assembly 13) Loadout, transportation and floating-in of steel bridge side span

2.8 The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in **Table 2.3**.

Table 2.3 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures

Construction Works	Major Environmental Impact	Control Measures
As mentioned in **Table 2.2**	Noise, dust impact, water quality and waste generation	• Sufficient watering of the works site with active dust emitting activities • Properly cover the stockpiles • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge • Use of quiet plant and well-maintained construction plant • Provide movable noise barrier

Status of Environmental Licences, Notification and Permits

2.9 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.4**.

Table 2.4 Summary of the Status of Environmental Licences, Notification and Permits

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
Environmental Permit (EP)				
N/A	EP-458/2013/C	20/1/2017	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation				
NE/2015/01	EPD Ref no.: 405305	21/07/2016	N/A	Valid
	EPD Ref no.: 405582	28/07/2016	N/A	Valid
NE/2015/02	EPD Ref no.: 406100	12/08/2016	N/A	Valid
NE/2015/03	EPD Ref no.: 416072	26/04/2017	N/A	Valid
NE/2017/02	EPD Ref no.: 429867	19/01/2018	N/A	Valid
NE/2017/01	EPD Ref no.: 430070	25/01/2018	N/A	Valid
NE/2017/06	EPD Ref no.: 461507	03/11/2020	N/A	Valid
Billing Account for Construction Waste Disposal				
NE/2015/01	Account No. 7025431	11/07/2016	N/A	Valid
NE/2015/02	Account No. 7025654	16/08/2016	N/A	Valid
NE/2015/03	Account No. 7026805	30/12/2016	N/A	Valid
NE/2017/02	Account No. 7029651	22/12/2017	N/A	Valid
NE/2017/01	Account No. 7029994	01/02/2018	N/A	Valid
NE/2017/06	Account No. 7032520	22/11/2018	N/A	Valid
NE/2017/07	Account No. 7031412	24/07/2018	N/A	Valid
Registration of Chemical Waste Producer				
NE/2015/01	Waste Producer No. 5218-290-L2881-02	22/08/2016	N/A	Valid
	Waste Producer No. 5213-833-L2532-03	22/08/2016	N/A	Valid
NE/2015/02	Waste Producer No. 5213-838-C4094-01	23/08/2016	N/A	Valid
NE/2015/03	Waste Producer No. 5213-265-W3435-04	19/07/2017	N/A	Valid
NE/2017/02	Waste Producer No. 5213-833-Z4004-04	01/02/2018	N/A	Valid
NE/2017/01	Waste Producer No. 5213-833-C4262-01	12/02/2018	N/A	Valid
NE/2017/07	Waste Producer No. 5213-839-C1232-19	28/08/2018	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance				
NE/2015/01	WT00025806-2016	18/07/2018	30/11/2021	Valid
	WT00026212-2016	16/05/2017	30/11/2021	Valid
	WT00027354-2017	22/03/2017	31/03/2022	Valid
	WT00027405-2017	22/03/2017	31/03/2022	Valid
	WT00028495-2017	11/08/2017	31/08/2022	Valid
NE/2015/02	WT00026386-2016	15/12/2016	31/12/2021	Valid
	WT00027226-2017	23/02/2017	28/02/2022	Valid
	WT00030654-2018	16/04/2018	30/04/2023	Valid
NE/2015/03	WT00027295-2017	20/03/2017	31/03/2022	Valid
NE/2017/01	WT00030711-2018	11/04/2018	30/04/2023	Valid

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
	WT00030716-2018	23/05/2018	31/05/2023	Valid
NE/2017/02	WT00030654-2018	16/04/2018	30/04/2023	Valid
NE/2017/07	WT00032842-2018	01/03/2019	31/03/2024	Valid
	WT00034178-2019	15/07/2019	31/07/2024	Valid
Construction Noise Permit (CNP)				
NE/2015/01	GW-RE0566-21	22/06/2021	21/12/2021	Valid
	GW-RE0199-21	22/03/2021	21/09/2021	Valid
	GW-RE0229-21	05/04/2021	04/07/2021	Valid
	GW-RE0594-21	22/06/2021	21/09/2021	Valid
	GW-RE0607-21	04/07/2021	04/10/2021	Valid
	GW-RE0659-21	21/07/2021	20/10/2021	Valid
	GW-RE0793-21	16/08/2021	16/11/2021	Valid
NE/2015/02	GW-RE0593-21	24/06/2021	23/09/2021	Valid
	GW-RE0596-21	19/06/2021	18/09/2021	Valid
NE/2017/01	GW-RE0559-21	15/06/2021	14/09/2021	Valid
	GW-RE0391-21	01/05/2021	01/11/2021	Valid
	GW-RE0842-21	30/08/2021	15/02/2022	Valid
Marine Dumping Permit				
NE/2017/01	EP/MD/21-011	N/A	N/A	N/A
NE/2015/01	CEDD01062	N/A	10/11/2020	Valid

Summary of EM&A Requirements

2.10 The EM&A programme requires construction noise monitoring, air quality monitoring, water quality monitoring, environmental site audit, etc. 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 Project EIA Report.

2.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 10** of this report.

2.12 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the monitoring parameters of the required environmental monitoring works and audit works for the Project in June 2021.

3. AIR QUALITY

Monitoring Requirements

3.1 According to EM&A Manual of the Project, 1-hour and 24-hour TSP monitoring are required to monitor the air quality. For regular impact monitoring, a sampling frequency of at least once in every six days shall be undertaken at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

3.2 Six designated monitoring stations were selected for air quality monitoring programme. **Table 3.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Table 3.1 Locations for Air Quality Monitoring

Monitoring Stations	Location	Location of Measurement
AM1	Tin Hau Temple	Ground Level
AM2	Sai Tso Wan Recreation Ground	Ground Level
AM3	Yau Lai Estate Bik Lai House	Rooftop (41/F)
AM4(1)	Sitting-out Area at Cha Kwo Ling Village	Ground Level
AM4(A)(2) (*)	Cha Kwo Ling Public Cargo Working Area Administrative Office	Rooftop (3/F)
AM5(A)(*)	Tseung Kwan O DSD Desilting Compound	Ground Level
AM6(A) (*)	Park Central, L1/F Open Space Area	1/F

Remarks: (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring
(*) Air quality monitoring at designated station AM4(24-hr TSP), AM5 and AM6 was rejected by the premise owners. Therefore, baseline and impact air quality monitoring works were carried out at alternative air quality monitoring stations AM4(A) (24-hr TSP only), AM5(A) and AM6(A) respectively.

Monitoring Equipment

3.3 High Volume Samplers (HVS) were used to carry out 24-hour TSP monitoring. Direct reading dust meter were also used to measure 1-hour average TSP levels. The 1-hour sampling was determined periodically by HVS to check the validity and accuracy of the results measured by direct reading method.

3.4 Wind data monitoring equipment was set at rooftop (about 41/F) of Yau Lai Estate Bik Lai House for logging wind speed and wind direction such that the wind sensors are clear of obstructions or turbulence caused by building. The wind data monitoring equipment is re-calibrated at least once every six months and the wind directions are divided into 16 sectors of 22.5 degrees each. The location is shown in **Figure 2**.

3.5 **Table 3.2** summarizes the equipment to be used in the air quality monitoring. Copies of calibration certificates are attached in **Appendix B**.

Table 3.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Calibrator	TISCH Model: TE-5025A	1
1-hour TSP Dust Meter	Sibata Model No.: LD-3B / LD-5R	5
	Met One Instruments Model No.: AEROCET-831	0
	Handheld Particle Counter Hal-HPC300 / Hal-HPC301	0
HVS Sampler	TISCH Model: TE-5170	1
	GMW Model: GS2310	5
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	1
	Davis Weather Stations, Vantage Pro 2, Model No. 6152CUK	0

Monitoring Parameters and Frequency

3.6 **Table 3.3** summarizes the monitoring parameters, monitoring period and frequencies of air quality monitoring.

Table 3.3 Frequency and Parameters of Air Quality Monitoring

Monitoring Stations	Parameter	Frequency
AM1, AM2, AM3, AM4, AM5(A) and AM6(A)	1-hour TSP	3 times per 6 days
AM1, AM2, AM3, AM4(A), AM5(A) and AM6(A)	24-hour TSP	Once per 6 days

Monitoring Methodology

1-hour TSP Monitoring

Measuring Procedures

3.7 The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer's Instruction Manual as follows:

(Model LD3 / LD3B / LD5R)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

(AEROCET-531)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Remove the red rubber cap from the AEROCET-531 inlet nozzle.
- Turn on the power switch that is located on the right side of the AEROCET-531.
- On power up the product intro screen is displayed for 3 seconds. The intro screen displays the product name and firmware version.
- Then the main counter screen will be displayed.
- Press the START button. Internal vacuum pump start running. After 1 minute the pump will stop and the 0.5µm and 5µm channels will show the cumulative counts of particles larger than 0.5µm and 5µm per cubic foot.
- The AEROCET-531 is now checked out and ready for use.
- To switch off the AEROCET-531 power to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, and display value and site condition were recorded during the monitoring period.

(Equipment: Hal Technology; Model no. Hal-HPC300 / Hal-HPC301)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

3.8 The following maintenance/calibration is required for the direct dust meters:

- Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

3.9 High volume samplers (HVS) (TISCH Model: TE-5170 and GMW Model: GS2310) completed with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

3.10 The positioning of the HVS samplers are as follows:

- a horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
- no two samplers shall be placed less than 2 meter apart

- the distance between the sampler and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;
- a minimum of 2 metres of separation from walls, parapets and penthouses is required for rooftop samplers;
- a minimum of 2 metres of separation from any supporting structure, measured horizontally is required;
- no furnace or incinerator flue is nearby;
- airflow around the sampler is unrestricted;
- the sampler is more than 20 metres from the dripline;
- any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring;
- permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
- a secured supply of electricity is needed to operate the samplers.

Operating/analytical procedures for the operation of HVS

3.11 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m^3/min. and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

3.12 For TSP sampling, fiberglass filters with a collection efficiency of > 99% for particles of 0.3μm diameter were used.

3.13 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.

3.14 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centred with the stamped number upwards, on a supporting screen.

3.15 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

3.16 The shelter lid was closed and secured with the aluminium strip.

3.17 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).

3.18 After sampling, the filter was removed and sent to the HOKLAS laboratory (ALS Hong Kong) for weighing. The elapsed time will be also recorded.

3.19 Before weighing, all filters was equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

3.20 The following maintenance/calibration is required for the HVS:

- The high volume motors and their accessories will be properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking will be made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers will be calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

3.21 No Action/Limit Level exceedance was recorded for both 1-hour TSP and 24-hour TSP monitoring respectively.

3.22 The air temperature, precipitation and the relative humidity data was obtained from Hong Kong Observatory where the wind speed and wind direction were recorded by the installed Wind Anemometer at rooftop of Yau Lai Estate Bik Lai House (41/F). The location is shown in **Figure 2**. This weather information for the reporting month is summarized in **Appendix C**.

3.23 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendix E** and **Appendix F** respectively.

3.24 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Table 3.4 Major Dust Source during Air Quality Monitoring

Station	Major Dust Source
AM1 – Tin Hau Temple	Road Traffic at Cha Kwo Ling Road
AM2 – Sai Tso Wan Recreation Ground	N/A
AM3 – Yau Lai Estate Bik Lai House	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
AM4 - Sitting-out Area at Cha Kwo Ling Village	Road Traffic at Cha Kwo Ling Road
AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office	Road Traffic at Cha Kwo Ling Road
AM5(A) - Tseung Kwan O DSD Desilting Compound	Vehicle Movement within the Desilting Compound
AM6(A) - Park Central, L1/F Open Space Area	Road Traffic at Po Yap Road

4. NOISE

Monitoring Requirements

4.1 According to EM&A Manual of the Project, 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 conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

4.2 Noise monitoring was conducted at 9 designated monitoring stations (CM1, CM2, CM3, CM4, CM5, CM6(A), CM7(A), CM8(A), CM9(A)) in the reporting period. **Table 4.1** and **Figure 3** show the locations of these stations.

Table 4.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	Rooftop (41/F)
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	Rooftop (41/F)
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	Rooftop (40/F)
CM4	Tin Hau Temple, Cha Kwo Ling	Ground Level
CM5	CCC Kei Faat Primary School, Yau Tong	Rooftop (6/F)
CM6(A)*	Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores	Ground Level
CM7(A)*	Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores	Ground Level
CM8(A)*	Park Central, L1/F Open Space Area	1/F
CM9(A)[1]	Rooftop of Capri Tower 10	Rooftop (12/F)

Remarks:

* Noise monitoring at designated station CM6, CM7 & CM8 was rejected by the premise owners. Therefore, baseline and impact noise monitoring works were carried out at alternative noise monitoring stations CM6(A), CM7(A) and CM8(A) respectively.

[1] Ad-hoc noise monitoring at station CM9(A) was commenced in September 2019.

4.3 Since the population intake of Capri had commenced during the construction of the TKOLTT, the noise monitoring work in daytime period was conducted at CM9(A) – Rooftop of Capri Tower 10 on normal weekdays. The background Noise Level was recorded during the Lunch Hour of Construction Site (i.e. 12:00-13:00) and to be used as the referencing value for compliance checking for Noise Action and Limit Level.

Monitoring Equipment

4.4 Integrating Sound Level Meter was used for impact noise monitoring. The meters are Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x) that also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 4.2** summarizes the noise monitoring equipment being used. Copies of calibration certificates are attached in **Appendix B**.

Table 4.2 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	SVAN 957/ 959 / 979	2
	BSWA308 SLM	3
Calibrator	SV30A	0
	Brüel & Kjær 4231	1
	ST-120	2

4.5 **Table 4.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**. Additional weekly impact monitoring are carried out for evening time (1900 – 2300 hours) for monitoring stations CM1, CM2, CM3 & CM6(A) and night-time (2300 – 0700 hours) for monitoring stations CM1, CM2 & CM3.

Table 4.3 Frequency and Parameters of Noise Monitoring

Monitoring Stations	Parameter	Period	Frequency	Measurement
CM1	L_{10}(30 min) dB(A) L_{90}(30 min) dB(A) L_{eq}(30 min) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade
CM2				Façade
CM3				Façade
CM4				Façade
CM5				Façade
CM6(A)				Free Field
CM7(A)				Free Field
CM8(A)				Façade
CM9(A)				Façade
CM1	L_{10}(5 min) dB(A) L_{90}(5 min) dB(A) L_{eq}(5 min) dB(A)	1900 – 0700 hrs on normal weekdays		Façade
CM2				Façade
CM3				Façade
CM6(A)		1900 – 2300 hrs on normal weekdays		Free Field

Monitoring Methodology and QA/QC Procedure

4.6 The monitoring procedures are as follows:

- The monitoring station was normally be at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels was adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time was set as follows:
  - frequency weighting: A
  - time weighting : Fast
  - measurement time : 30 minutes
- 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 will be more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

- At the end of the monitoring period, the L_{eq}, L_{90} and L_{10} was recorded. In addition, noise sources was recorded on a standard record sheet.
- Noise monitoring will 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 was provided to ensure sufficient data would be obtained.

Maintenance and Calibration

4.7 The microphone head of the sound level meter and calibrator was cleaned with a soft cloth at quarterly intervals.

4.8 The sound level meter and calibrator was checked and calibrated at yearly intervals.

4.9 Immediately prior to and following each noise measurement the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

4.10 No Limit Level exceedance during daytime was recorded due to monitoring results in this reporting month. No project-related Action/ Limit level exceedances for evening/night-time construction noise monitoring was recorded and no Action Level exceedance for day time was recorded in the reporting month.

4.11 Noise monitoring results and graphical presentations are shown in **Appendix G**.

4.12 The major noise source identified at the noise monitoring stations are shown in **Table 4.4**.

Table 4.4 Major Noise Source during Noise Monitoring

Monitoring Stations	Locations	Major Noise Source
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM4	Tin Hau Temple, Cha Kwo Ling	Road Traffic at Cha Kwo Ling Road
CM5	CCC Kei Faat Primary School, Yau Tong	Road Traffic at Yau Tong Road
CM6(A)	Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores	Road Traffic at O King Road near Ocean Shores
CM7(A)	Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores	Road Traffic at Tong Yin Street
CM8(A)	Park Central, L1/F Open Space Area	Road Traffic at Po Yap Road
CM9(A)	Rooftop of Capri Tower 10	Construction Noise from Portion V/Area A of NE/2015/02 site area

4.13 All the Construction Noise Levels (CNLs) reported in this report were adjusted with the corresponding baseline level (i.e. Measured L_{eq} – Baseline L_{eq} = CNL), in order to facilitate the interpretation of the noise exceedance. The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 4.5, 4.6 and 4.7**.

Table 4.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Station	Baseline Noise Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)	Noise Limit Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)
CM1	65.5	75
CM2	63.6	
CM3	65.6	
CM4	62.0	
CM5	68.2	70*
CM6(A)	61.9	75
CM7(A)	58.3	
CM8(A)	69.1	
CM9(A)	N/A(1)	
(*) Noise Limit Level is 65 dB(A) during school examination periods. (1)) The background Noise Level was recorded during the Lunch Hour of Construction Site (i.e. 12:00-13:00) and to be used as the referencing value for compliance checking for Noise Action and Limit Level.		

Table 4.6 Baseline Noise Level and Noise Limit Level for Monitoring Stations (Evening-time & Daytime (Holiday))

Station	Baseline Noise Level, dB (A) (Evening time on all days (1900-2300 hrs) and Holidays (including Sundays) during daytime (0700-1900 hrs))	Noise Limit Level, dB (A) (Evening time on all days (1900-2300 hrs) and Holidays (including Sundays) during daytime (0700-1900 hrs))
CM1	64.4	70
CM2	62.2	
CM3	64.7	
CM6(A)	60.2	65[1]
1. ASR B was adopted according to the EIA as traffic in the surrounding area has not been changed.		

Table 4.7 Baseline Noise Level and Noise Limit Level for Monitoring Stations (Night-time)

Station	Baseline Noise Level, dB (A) (Night-time (2300 – 0700 hrs)	Noise Limit Level, dB (A) (Night-time (2300 – 0700 hrs)
CM1	14-day baseline monitoring results for the time period of impact measurement at each station would be adopted	55
CM2		
CM3		

Current Tunnel Blasting Arrangement

4.14 The drill and blast method was evaluated as the most appropriate method and the general practice of this method was introduced during the EIA report assessment. The paragraphs 2.9.9 and 2.9.33 of the EIA Report mention that there might be one blast or multiple blasts and the maximum number of blast location per day would be determined by the Contractor to suite his method of working.

4.15 Notwithstanding the information provided by the Engineer at paragraphs 4.6.4 and 6.6.12 of the EIA Report, to minimize blast nuisance to the public and to respond to the community concerns, the tunnel blast should be arranged, where possible, avoiding the blast to be carried out during night time and shortening the blast duration by arranging various work fronts to be blasted at different time slots. Hence, it has become more desirable to split one tunnel blasting operation, which may consist of several blasting work fronts along the tunnels, into a total of two to three tunnel blasts per day. The tunnel blasts, which locate outside the MTR Protection Zone (RPZ) possessing insignificant risk to the MTR's structures would be carried out during day time and before 22:00. For the tunnel blasts within and in close vicinity to RPZ, Contractor's blasting assessment report revealed that those blasts have to be carried out after train service and, generally, at around 01:40.

5. WATER QUALITY

Monitoring Requirements

Groundwater Quality

5.1 The existing groundwater quality monitoring programme has been suspended as the monitoring results had been deemed non-representative of the impact from the project justified by two major factors: (1) influence on the monitoring results from non-project related factors, such as anthropogenic activities and natural phenomenon; and (2) large separation between the monitoring stations and works area. In addition, as no alternative locations for the groundwater quality monitoring were available, the groundwater quality monitoring has been suspended since October 2019 upon the agreement by EPD.

Marine Water Quality

5.2 Marine water quality monitoring was conducted three times per week at the designated monitoring stations. Monitoring took place two times per monitoring day during mid ebb and mid flood tides at three depths (1 meter from surface, mid depth and 1 meter from the bottom). For Tseung Kwan O Salt Water Intake (i.e. Station M6), water sampling and in-situ measurements was taken at the vertical level where the water abstraction point of the intake is located (i.e. approximately mid-depth level). If the water depth is less than 6m, the mid-depth measurement may be omitted. If the depth is less than 3m, only the mid-depth measurements need to be taken.

5.3 Duplicate in-situ measurements (Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity) and water samples (suspended solids (SS)) at each depth were monitored in accordance with the requirements in the EM&A Manual. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides were not less than 0.5m.

5.4 According to the Environmental Review Report (ERR) for Variations of Environmental Permit (Ref: C45-03), water quality monitoring and audit programme was implemented for monitoring of oxygen depletion (e.g. Dissolved Oxygen (DO) level) in this embayed waters during the period when the fully enclosed barrier is installed. A “Proposal for Water Quality Monitoring in Temporary Marine Embayment” has been submitted to EPD in July 2017 to propose the monitoring frequency, parameter, location, etc. EPD has no further comment on the Proposal. Since January 2020, the cofferdam has been partially removed and the seawater is no longer enclosed. Therefore, no embayment water quality monitoring is required.

Groundwater Level Monitoring (Piezometer Monitoring)

5.5 Daily piezometer monitoring at any time of the day shall be carried throughout the whole period when any tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan. The monitoring commenced in June 2018. It has switched to monthly basis since 3 October 2018 as the construction activity was 120m away from the piezometer gate. No monitoring was conducted in the reporting month.

Monitoring Locations

Marine Water Quality

5.6 A total of twelve monitoring stations are designated for the water quality monitoring program according to EM&A Manual. One additional monitoring station (W1) is designated for monitoring of oxygen depletion in the embayed waters during the period when the fully enclosed barrier is installed. The locations are also summarized in **Table 5.2** and shown on **Figure 5**.

Table 5.2 Marine Quality Monitoring Stations

Monitoring Stations	Descriptions	Coordinates	
		Easting	Northing
M1	Junk Bay Coral Site – Junk Bay near Chiu Keng Wan	844255	817565
M2	Junk Bay Coral Site – Junk Bay	844076	817087
M3	Junk Bay Coral Site – Junk Island	844491	817890
M4	Junk Bay Coral Site –Chiu Keng Wan	843209	816416
M5	Junk Bay Coral Site – Fat Tong Chau	845463	815769
M6	Tseung Kwan O Salt Water Intake	845512	817442
C1	Control Station – Southeast	844696	814773
C2	Control Station – Northwest	842873	816014
G1	Gradient Station	844418	817560
G2	Gradient Station	844290	817384
G3	Gradient Station	844488	817735
G4	Gradient Station	844967	817551

Monitoring Equipment

5.7 For in-situ monitoring, a multi-parameter meter (Aquaread AP-2000-D) was used to measure Dissolved oxygen (DO) concentration, DO saturation (DO %), pH, temperature and turbidity. A sampler was used to collect water samples for laboratory analysis of SS, BOD_5, TOC, Total Nitrogen, Ammonia-N and Total Phosphate.

Dissolved Oxygen (DO) and Temperature Measuring Equipment

5.8 The instrument for measuring dissolved oxygen and temperature was portable and weatherproof complete with cable, sensor, comprehensive operation manuals and use DC power source. It was capable of measuring:

- a dissolved oxygen level in the range of 0-20 mg/L and 0-200% saturation; and
- a temperature of 0-45 degree Celsius.

5.9 It has a membrane electrode with automatic temperature compensation complete with a cable.

5.10 Sufficient stocks of spare electrodes and cables were available for replacement where necessary.

5.11 Salinity compensation was built-in in the DO equipment.

Turbidity

5.12 Turbidity was measured in-situ by the nephelometric method. The instrument was portable and weatherproof using a DC power source complete with cable, sensor and comprehensive operation manuals. The equipment was capable of measuring turbidity between 0-1000 NTU. The probe cable was not be less than 25m in length.

pH

5.13 The instrument was consisting of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It was readable to 0.1pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 were used for calibration of the instrument before and after use.

Water Depth Detector

5.14 A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.

Water Sampler

5.15 Water samples collected for laboratory analysis were stored in high density polythene bottles sample containers, with appropriate preservatives added. All sampling bottles were labelled (waterproof) with the sampling date and time, sample lot number and sampling location reference number to avoid mishandling.

Sample Container and Storage

5.16 Following collection, water samples for laboratory analysis were stored in high density polythene bottles, with preservative appropriately added where necessary. They will be packed in ice (cooled to 4°C without being frozen), delivered to the laboratory and analysed as soon as possible.

Calibration of In-Situ Instruments

5.17 All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring.

5.18 For the on-site calibration of field equipment, the BS 1427:1993, "Guide to Field and on-site test methods for the analysis of waters" was observed.

5.19 Before each round of monitoring, a zero check in distilled water was performed with the turbidity probe of Aquaread AP-2000-D. The probe was then be calibrated with a solution of known NTU.

5.20 Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was also made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.

5.21 **Table 5.3** summarizes the equipment used in the water quality monitoring program. Copies of the calibration certificates of the equipment are shown in **Appendix B**.

Table 5.3 Water Quality Monitoring Equipment

Equipment	Model and Make	Qty.
Water Sampler	Kahlsico Water-Bottle Model 135DW 150	1
Multi-parameter Water Quality System	YSI 6820-C-M	0
	Aquaread AP-2000-D	0
	YSI EXO1 Multiparameter Sondes	1
Monitoring Position Equipment	"Magellan" Handheld GPS Model GPS-320	1
Water Depth Detector	Fishfinder 140	1

Monitoring Parameters and Frequency

5.22 **Table 5.4** summarizes the monitoring parameters, monitoring period and frequencies of the water quality monitoring in the reporting period.

Table 5.4 Water Quality Monitoring Parameters and Frequency

Monitoring Stations	Parameters, unit	Depth	Frequency
Marine Water Quality			
M1 M2 M3 M4 M5 M6 C1 C2 G1 G2 G3 G4	*In-situ*: Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity Laboratory Testing: Suspended Solids (SS)	M1-M5, C1-C2, G1-G4 • 3 water depths: 1m below water surface, mid-depth and 1m above sea bed. • If the water depth is less than 3m, mid-depth sampling only. • If the water depth is less than 6m, omit mid-depth sampling. M6 • at the vertical level where the water abstraction point of the intake is located(i.e. approximately mid-depth level)	3 days per week / 2 per monitoring day (1 for mid-ebb and 1 for mid-flood)

Monitoring Methodology

Marine Water Quality

5.23 The monitoring stations were accessed using survey boat by the guide of a hand-held Global Positioning System (GPS). The depth of the monitoring location was measured using depth meter in order to determine the sampling depths. Afterwards, the probes of the in-situ measurement equipment was lowered to the predetermined depths (1 m below water surface, mid-depth and 1 m above seabed) and the measurements was carried out accordingly. The in-situ measurements at predetermined depths was carried out in duplicate. In case the difference in the duplicate in-situ measurement results was larger than 25%, the third set of in-situ measurement would be carried out for result confirmation purpose.

5.24 Water sampler was lowered into the water to the required depths of sampling. Upon reaching the pre-determined depth, a messenger to activate the sampler was then released to travel down the wire. The water sample was sealed within the sampler before retrieving. At each station, water samples for SS at three depths (1 m below water surface, mid-depth and 1 m above seabed) were collected accordingly. Water samples were stored in a cool box and kept at less than 4°C but without frozen and sent to the laboratory as soon as possible.

Laboratory Analytical Methods

5.25 The testing of all parameters were conducted by ALS Hong Kong (HOKLAS Registration No.083) and comprehensive quality assurance and control procedures in place in order to ensure quality and consistency in results. The testing method and limit of reporting are provided in **Table 5.5**.

Table 5.5 Methods for Laboratory Analysis for Water Samples

Parameters (Unit)	Proposed Method	Reporting Limit	Detection Limit
SS (mg/L)	APHA 2540 D	0.5 mg/L (1)	0.5 mg/L
BOD_5 (mg O_2/L)	APHA 19ed 5210B	2 mg O_2/L	--
TOC (mg-TOC/L)	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L	--
Total Nitrogen (mg/L)	In-house method SOP063 (FIA)	0.6 mg/L	--
Ammonia-N (mg NH_3-N/L)	In-house method SOP057 (FIA)	0.05 mg NH_3-N/L	--
Total Phosphorus (mg-P/L)(2)	In-house method SOP055 (FIA)	0.05 mg-P/L	--

Note:
1) Limit of Reporting is reported as Detection Limit for non-HOKLAS report.
2) Parameter Total Phosphorus represents the laboratory testing for total phosphate content in water which is the sum of all three forms of phosphates in water.

QA/QC Requirements

Decontamination Procedures

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

Sampling Management and Supervision

5.27 Water samples were dispatched to the testing laboratory for analysis as soon as possible after the sampling. All samples were stored in a cool box and kept at less than 4°C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.

5.28 QA/QC procedures as attached in **Appendix J** are available for the parameters analysed in the HOKLAS-accredited laboratory, ALS Hong Kong.

Results and Observations

Groundwater Quality Monitoring

5.29 Monitoring of groundwater quality had been suspended since October 2019. (Details refer to Section 5.1)

Marine Water Quality Monitoring

5.30 Marine water monitoring results and graphical presentations are shown in **Appendix I**. Other relevant data was also recorded, such as monitoring location / position, time, sampling depth, weather conditions and any special phenomena or work underway nearby.

Calculated Action and Limit Levels for Marine Water Quality is presented in **Appendix I**. There were thirty-nine (39) Action Level and one-hundred-and-forty (140) Limit Level exceedances recorded in Monitoring Stations (M) during marine water quality monitoring.

5.31 Exceedances of turbidity and suspended solid were recorded on from various monitoring stations non-specifically among all stations including the control stations. Investigations over June 2021 showed that the range of SS levels recorded in May 2021 remained consistent with the records in recent months. All Contractor is reminded to strictly follow the approved drainage plan and clear drainage regularly. In particular, all drainage shall be checked and cleared after heavy rainstorm as sediments may accumulate along pipes and culverts. Further details can be found in **Appendix K**.

5.32 Silt curtain inspections are carried out before the commencement of the construction works every day and diving surveys are also conducted once a week to inspect the silt curtain below the water level. The inspection report are verified by both the RE and the diving specialist and the records are reviewed weekly during the site audits.

Groundwater Level Monitoring (Piezometer Monitoring)

5.33 Daily piezometer monitoring at any time of the day shall be carried throughout the whole period when any tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan.

5.34 Construction phase daily piezometer monitoring by the Contractor commenced in June 2018. As the construction activity was 120m away from the piezometer gate, no monitoring was conducted in this reporting month.

Mitigation Measures Adopted by Contractors for Surface runoff Prevention

5.35 During dry season, the Contractors have maintained the mitigation measures adopted on Site, in order to prevent surface run-off and muddy water from discharging to the public areas. The mitigation measures adopted by each Contract are summarised below:

NE2015/01

5.36 At Lam Tin Side, the Site drainage systems are divided into two parts, namely the site formation and tunnel site drainage which includes:

1. Site formation drainage system collects surface run-off from open excavation areas including slope works and flows naturally to the lowest point in the Site, where they are pumped to the wetseps and sedimentation tank for treatment near LTI site entrance before they are discharged to the designated discharge point.
2. Tunnel drainage system collects surface run-off from the tunnel which are then pumped to the sedimentation tanks near tunnel adit, where three sets of wetseps and sedimentation tanks were set up. The treated water will be discharged to designated discharge point near the Eastern Harbour Crossing (EHC) area.

5.37 At Eastern Harbour Crossing (EHC), two sets of wetseps and sedimentation tanks are set up on site. The wastewater will flow to the lowest catchpit by gravity, which are then pumped to wetseps for wastewater treatment. The sandbags/bunds are also set up at the vehicle entrance to surface run-off from the Site.

5.38 At Tseung Kwan O (TKO), the surface run-off from the slope are directed to the lowest point at cavern via the permanent drainage, which are then pumped to the sedimentation tanks for wastewater treatment via temporary pipes. The treated water will be discharged at designated discharge points. The wetseps and sedimentation tanks are provided under the BMCPC bridge and at the two sides of marine working platform. Water from natural stream will also be diverted to existing drainage to avoid overloading the capacity of the wastewater treatment system. The reservoir on the right side of marine working platform will be enlarged to cater for higher water storage demands. During heavy rainfall, the water stored at the exit of the tunnel shall be pumped into the sedimentation tanks on the right.

NE2015/02

5.39 The exposed sloped area at Portion 9 has been covered with geotextile or tarpaulin to avoid surface run-off. Since March 2021, the stormwater at Portion IX, VIII, VII, VI, II and I will be collected towards to the sedimentation tanks at the edge of site boundary.

5.40 Certain amount of stormwater received in Portion 9 will be directed and pumped via the flex tube and sump towards the water treatment system and the approved discharge points (as shown in **Appendix V**). Water generated from Portion VI and V and some water in Portion IX are treated via storage tanks and sedimentation tanks and discharged into approved discharge points (manholes of DN2100 Drain and Area Z).

5.41 The peripheral open U-channel are also provided along the site boundary, which shall be directed to the storage tank and WetSep for treatment in Area A.

5.42 Regular cleaning depending on site conditions are provided for the WetSep at Area A and Z; and the storage tanks and sedimentation tanks at Area A. The water treated by the sedimentation tank and the wetsep shall be discharged towards the designated discharge point. Quality of the effluent are also monitored regularly.

NE2017/02

5.43 Existing manholes are covered with sandbags and geotextiles to avoid surface run-off from entering the channels.

5.44 Stockpiles are covered with tarpaulin to avoid surface run-off.

5.45 Concrete blocks and sandbags are placed along the periphery of the site boundary to avoid surface run-off.

5.46 Stormwater within the site enters the excavated area and flow naturally into the sump due height difference. The stormwater collected in the sump shall be pumped into the sedimentation tank where the run-off is treated before discharging into the designated discharge point.

NE2015/03

5.47 The existing manhole cover are covered with geotextile to prevent muddy water from entering the existing U-channels along the side of Po Shun Road. Manhole inspection are carried out by taking silt measurement regularly in case if silt enters the channel, and silt shall be removed from the manhole if silt were found.

5.48 Sandbags were placed at the periphery of the site along the hoarding to prevent surface runoff from escaping the site.

5.49 Exposed slopes are covered with tarpaulin to prevent surface run-off.

5.50 The surface run-off shall be pumped into the sedimentation tank where they are treated before entering the designated discharge points.

NE2017/01

5.51 Temporary peripheral open U-channels and sumps are provided for collecting the stormwater, which are pumped and directed towards the sedimentation tank for treatment. The treated water shall be directed to the designated discharge point.

6. ECOLOGY

Post-Translocation Coral Monitoring

6.1 Post-translocation monitoring survey is recommended in the EM&A Manual to audit the success of coral translocation. Information gathered during each post-translocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey.

6.2 Under Contract No. NE/2015/01 and NE/2015/02, a total of 14 and 29 coral colonies were tagged and translocated respectively from the Donor Site to the Recipient Site in November 2016. Ten (10) corals at the Recipient Site were also tagged by each Contract as reference for post-translocation monitoring.

6.3 The post-translocation coral monitoring shall be conducted once every 3 months after completion for a period of 12 months. Location of post-translocation coral monitoring is shown in **Figure 7**. The fourth post-translocation coral monitoring was carried out on 07 November 2017. No further monitoring is required.

7. CULTURAL HERITAGE

Monitoring Requirement

7.1 According to the EP Conditions and EM&A Manual, monitoring of vibration impacts was conducted when the construction works are less than 100m from the Built Heritage in close proximity of the worksite, namely the Cha Kwo Ling Tin Hau temple. Tilting and settlement monitoring should be applied on the Cha Kwo Ling Tin Hau Temple. Construction works less than 100m from the Cha Kwo Ling Tin Hau temple commenced on 8 May 2017.

7.2 As stated in the "*Built Heritage Mitigation Plan*" for this Project, during the period of the construction works conducted within 100m from the Cha Kwo Ling Tin Hau Temple, monitoring on settlement and tilting will be conducted once a day for the Cha Kwo Ling. Monitoring of vibration will be conducted during blasting at Cha Kwo Ling area once a day. When there is no blasting to be conducted at the area, vibration monitoring at the Cha Kwo Ling Tin Hau Temple will be conducted once per day when there are piling works or rock breaking works within the 100m from the Cha Kwo Ling Tin Hau Temple.

Monitoring Locations

7.3 One vibration monitoring point and three building settlement monitoring points were proposed for monitoring of the cultural heritage. The building settlement markers were placed on the wall on three sides of the Temple, except the front, of the Cha Kwo Ling Tin Hau Temple and the vibration monitoring point is located within the Cha Kwo Ling Tin Hau Temple. Monitoring Location is shown in **Figure 8**.

Monitoring Equipment

7.4 Building settlement is measured via a settlement marker attached to the wall of Cha Kwo Ling Tin Hau Temple by adhesive tape.

7.5 Vibration monitoring was conducted by using vibrographs: Minimate Plus manufactured by Instantel. These vibrographs will be calibrated annually and its performance follows the requirements given in the "*Guidance Note on Vibration Monitoring*" (GN-VM) issued by the Civil Engineering and Development Department, which is based on the Performance Specification for Blasting Seismographs by International Society of Explosive Engineers (ISEE (2000)).

7.6 **Table 7.1** summarizes the equipment employed by the Contractor for cultural heritage monitoring. Copies of calibration certificates are attached in **Appendix B**.

Table 7.1 Cultural Heritage Monitoring Equipment

Equipment	Manufacturer and Model	Quantity
Digital Level for tilting	Leica LS15 Serial No.: 701141	1
Digital Caliper for tilting	Mitutoyo CD-6" ASX Serial No.: A17047921	1
iCivil-1011 Inclinometer for building settlement	iCivil-1011 Inclinometer Serial No.: HK110118 / HK110120	2
Vibrographs for vibration monitoring	MiniMate Plus / MicroMate manufactured by Instantel Model No.: 716A0403 / 721A2501	33

Monitoring Methodology

7.7 Vibrograph (velocity seismograph) was deployed at each monitoring station to measure and record the PPV and amplitude of ground motion in three mutually perpendicular directions. Vibration monitoring equipment fulfils the requirements stated in the Government guidelines and is calibrated to HOKLAS standards. Each monitoring would not be more than 10 minutes. Settlement monitoring should be conducted by surveyors manually.

Alert, Alarm and Action Levels

7.8 The Alert, Alarm and Action (AAA) Levels are given in **Table 7.2**.

Table 7.2 AAA Levels for Monitoring for Cultural Heritage

Parameter	Alert Level	Alarm Level	Action Level
Vibration	ppv: 4.5 mm/s	ppv: 4.8 mm/s	ppv: 5mm/s Maximum Allowable Vibration Amplitude: 0.1mm
Building Settlement Markers	6mm	8mm	10mm
Building Tilting(1)	1:2000	1:1500	1:1000

Remarks:
(1) Building tilting measurement was replaced by building settlement point measurement. The tilting can be calculated by the ratio of the maximum settlement difference between 2 points and the distance between the 2 points.

Results

7.9 In the reporting month, cultural heritage monitoring was carried out by the Contractor at the aforesaid location on 26 occasions. No AAA Level exceedance was recorded in the reporting month. The monitoring results are presented in **Appendix T**.

Mitigation Measures for Cultural Heritage

7.10 According to Condition 3.6 of the EP (EP No.: EP-458/2013/C), to prevent damage to Cha Kwo Ling Tin Hau Temple and its Fung Shui rocks (Child-given rocks) during the construction phase, a temporarily fenced-off buffer zone (Rocks buffer zone is 5 m from the edge of Rocks and 15m from the edge of Rocks alter) with allowance for public access (minimum 1 m) around the temple and the Fung Shui rocks shall be provided. The open yard in front of the temple should be kept as usual for annual Tin Hau festival.

7.11 As there is a large buffer distance from the current works to Cha Kwo Ling Tin Hau Temple and the Fung Shui rocks (Child-given rocks), the temporarily fenced-off rocks buffer zone and from the edge of Rocks alter is not required. The fenced-off rocks buffer zone would be implemented when there is construction activities in vicinity of the cultural heritage.

8. LANDSCAPE AND VISUAL IMPACT REQUIREMENTS

8.1 Landscape and visual mitigation measures during the construction phase shall be checked to ensure that they are fully realized and implemented on site.

8.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures listed in "Implementation Schedule and Recommended Mitigation Measures" (shown in **Appendix N)**. The summaries of observations and recommendations related to landscape and visual impacts, if any, are shown in **Appendix L**.

8.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.

9. LANDFILL GAS MONITORING

Monitoring Requirement

9.1 In accordance with the EM&A Manual, monitoring of landfill gas is required for construction works within the Sai Tso Wan Landfill Consultation Zone during the construction phase. This section presents the results of landfill gas measurements performed by the Contractor. **Appendix A** shows the Limit Levels for the monitoring works.

9.2 The "Landfill Gas Monitoring Proposal", including the monitoring programme and detailed actions, is submitted to the EPD for approval. Details of monitoring in this Proposal is in line with the monitoring requirements stipulated in the EM&A Manual.

Monitoring Parameters and Frequency

9.3 Monitoring parameters for Landfill gas monitoring include Methane, Carbon dioxide and Oxygen.

9.4 According to the implementation schedule and recommended mitigation measures of the EM&A Manual, measurements of the following frequencies should be carried out:

Excavations deeper than 1m
- at the ground surface before excavation commences;
- immediately before any worker enters the excavation;
- at the beginning of each working day for the entire period the excavation remains open; and
- periodically throughout the working day whilst workers are in the excavation.

Excavations between 300mm and 1m deep
- directly after the excavation has been completed; and
- periodically whilst the excavation remains open.

For excavations less than 300mm deep
- monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person

Monitoring Locations

9.5 Monitoring of oxygen, methane and carbon dioxide was performed for excavations at 1m depth or more within the Consultation Zone. In this reporting month, the area required to be monitored for landfill gas are shown below and **Figure 6** shows the landfill gas monitoring locations.
- Excavation Locations : Portion III
- Manholes and Chambers : N/A
- Relocation of monitoring wells : N/A
- Any other Confined Spaces : N/A

Monitoring Equipment noise mitigation

9.6 **Table 9.1** summarizes the equipment employed by the Contractor for the landfill gas monitoring.

Table 9.1 Landfill Gas Monitoring Equipment

Equipment	Model and Make	Quantity
Portable gas detector	ALTAIR 5X Multigas Detector (Serial No. 137333)	1

Results and Observations

9.7 In the reporting month, landfill gas monitoring was carried out by the Contractor at the aforesaid locations on 130 occasions. No Limit Level exceedance for landfill gas monitoring was recorded in the reporting month. The monitoring results are provided in **Appendix R**. Copies of calibration certificates are attached in **Appendix B.**

10. ENVIRONMENTAL AUDIT

Site Audits

10.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix L**.

10.2 Joint weekly site audits by the representatives of the Engineer, Contractor and the ET were conducted in the reporting month as shown in below:

- Contract No. NE/2015/01: 4, 11, 18, 25
- Contract No. NE/2015/02: 8, 13, 19, 26
- Contract No. NE/2017/01: 8, 13, 19, 26
- Contract No. NE/2017/02: 8, 13, 19, 26
- Contract No. NE/2017/06: 8, 13, 19, 26
- Contract No. NE/2017/07: 4, 11, 18, 25

10.3 Monthly joint site inspection with the representative of IEC was conducted for NE/2015/01 and NE/2017/07 on 25 Aug 2021, while NE/2015/02, NE/2017/01, NE/2017/02 and NE/2017/06 were conducted on 19 Aug 2021.

10.4 The EM&A programme of Contract No. NE/2015/03 had been terminated on 21 April 2020 under the approval of EPD.

Implementation Status of Environmental Mitigation Measures

10.5 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Implementation Schedule and Recommended Mitigation Measures is provided in **Appendix N**.

10.6 During site inspections in the reporting month, no non-compliance was recorded on reporting month. The observations and recommendations made during the audit sessions are summarized in **Appendix L**.

11. WASTE MANAGEMENT

11.1 Waste generated from this Project includes inert construction and demolition (C&D) materials, non-inert C&D materials and marine sediments. Inert C&D waste includes soil, broken rock, broken concrete and building debris, while non-inert C&D materials are made up of C&D waste which cannot be reused or recycled and has to be disposed of at the designated landfill sites. Marine sediment shall be expected from excavation and dredging works of this Project.

11.2 With reference to relevant handling records of this Project, the quantities of different types of waste generated in the reporting month are summarised and presented in **Appendix P**.

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

12. ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

12.1 No Limit Level exceedance of noise was recorded due to the monitoring results in the reporting month. Three (3) Action Level exceedances of construction noise monitoring was recorded in the reporting month.

12.2 No Limit Level exceedance of air quality was recorded in the reporting month. No Action Level exceedance of air quality monitoring was recorded in the reporting month.

12.3 Fifty-eight (58) Action Level and one-hundred-and-thirty (130) Limit Level exceedances were recorded in Monitoring Stations (M) during marine water quality monitoring.

12.4 Actions carried out in accordance with the Event and Action Plans in **Appendix M** are presented in **Appendix K** – Summary of Exceedance.

Summary of Environmental Complaint

12.5 Three (3) environmental complaints were received in the reporting month. The Cumulative Complaint Log is presented in **Appendix O**. The investigation status and result is also reported in **Appendix O**.

Summary of Environmental Summon and Successful Prosecution

12.6 No notification of summon or successful environmental prosecution was received in this reporting period. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix O**.

13. FUTURE KEY ISSUES

13.1 Tentative construction programmes for the next three months are provided in **Appendix Q**.

13.2 Major site activities to be undertaken for the next reporting period are summarized in **Table 13.1**.

Table 13.1 Summary Table for Site Activities in the next Reporting Period

Contract No. and Project Title	Site Activities (September 2021)		Key Environmental Issues *
NE/2015/01 - Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation – Area 1G1, Area 1G2, Area 2 & Area 5 3) Site Formation – Slope stabilization & Retaining Wall 4) Administration Building, West Ventilation Building & Bridge Construction 5) Stormwater Tank Construction 6) S01_2, EHC1&4 Construction 7) CKLR Underground Utilities 8) Landscape Deck 9) LTI Drainage	(A) / (C) / (D) / (E) / (F) / (I)
	Main Tunnel	10) S02_2 Excavation 11) Main Tunnel Lining Works	(B)
	TKO Interchange	12) Bridge Construction 13) East Ventilation Building	(A) / (C) / (D) / (E) / (F) / (I)
NE/2015/02 - Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Sloping Seawall Construction 2) Construction of U-trough 3) Construction of Underpass 4) Construction of Seawall Coping 5) Construction of Road P2 and SR2		(A) / (B) / (C) / (D) / (E) / (G) / (I)
NE/2015/03 - Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	The construction works under the contract had been completed in December 2019. Materials are being removed from works area.		N/A
NE/2017/01 – Tseung Kwan O Interchange and Associated Works	1) Construction of Pier 2) Construction of Pier Head works 3) Segment erection works 4) Construction of Bridge Decks 5) Installation of Parapet Skin		(A) / (B) / (E) / (F) / (G)
NE/2017/02 – Tseung Kwan O - Lam Tin Tunnel - Road P2/D4 and Associated Works	1) Inspection pit excavation and utility diversion works 2) Construction of drainage and watermain 3) Asphalt Paving 4) Pier, Staircase and Lift Shalt Construction 5) Road Works		(A) / (B) / (E) / (F) / (G)
NE/2017/06 – Tseung Kwan O – Lam Tin Tunnel – Traffic Control and Surveillance System(TCSS) and Associated Works	1) System Integration Test 2) Goods arrival & storage on site 3) Installation works at Admin Building 4) Installation works at Tunnel		(E)

Contract No. and Project Title	Site Activities (September 2021)	Key Environmental Issues *
NE/2017/07 - Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works	1) Pre-drilling 2) Bored piling 3) Pile cap construction 4) Pier construction	(A) / (B) / (D) / (E) / (F) / (G) / (H) / (I)

Note:

(A) Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
(B) Noisy construction activity such as rock-breaking activities and piling works;
(C) Runoff from exposed slope or site area;
(D) Wastewater and runoff discharge from site;
(E) Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
(F) Set up and implementation of temporary drainage system for the surface runoff;
(G) Storage of chemicals/fuel and chemical waste/waste oil on site;
(H) Accumulation and storage of general and construction waste on site; and
(I) Marine water quality impact and indirect impact to coral communities due to marine construction for TKO-LTT reclamation.

Key Issues for the Coming Month

13.3 Key environmental issues in the coming month include:

- Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Noisy construction activity such as rock-breaking activities and piling works;
- Runoff from exposed slope or site area;
- Wastewater and runoff discharge from site;
- Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
- Set up and implementation of temporary drainage system for the surface runoff;
- Precaution measures in case of heavy rainfall brought along by typhoon;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation and storage of general and construction waste on site; and
- Marine water quality impact and indirect impact to coral communities due to marine construction for TKO-LTT reclamation.

14. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

14.1 This is the 58th Environmental Monitoring and Audit (EM&A) Report which presents the EM&A works undertaken during the period in Aug 2021 in accordance with EM&A Manual and the requirement under EP.

Air Quality Monitoring

14.2 No Action/Limit Level exceedance for 1-hour TSP monitoring was recorded.

14.3 No Limit Level exceedance for 24-hour TSP monitoring was recorded.

14.4 No Action Level exceedance for 24-hour TSP monitoring was recorded.

Construction Noise Monitoring

14.5 No Limit Level exceedance was recorded due to the monitoring results recorded in this reporting month.

14.6 No Action Level exceedances was recorded for daytime/evening-time construction noise in the reporting month. No limit level exceedance was recorded for night-time.

14.7 Three (3) Action Level exceedance was recorded for documented complaints. The details of complaint shall be referred to **Appendix O**.

Water Quality Monitoring

14.8 Groundwater quality monitoring had been suspended since October 2019. Details shall be referred to **Section 5.1**.

14.9 Fifty-eight (58) Action Level and one-hundred-and-thirty (130) Limit Level exceedances were recorded in Monitoring Stations (M) during marine water quality monitoring.

14.10 Tunnel construction activities are within +/- 50m of the piezometer gate in plan. Construction phase daily piezometer monitoring by the Contractor commenced in June 2018. It has switched to monthly basis since 3 October 2018 as the construction activity was 120m away from the piezometer gate. No monitoring was conducted in the reporting month.

Ecological Monitoring

14.11 The post-translocation coral monitoring surveys were completed in November 2017.

Monitoring on Cultural Heritage

14.12 No Alert Alarm and Action (AAA) Level exceedance of cultural heritage monitoring on cultural heritage was recorded in the reporting month.

Landscape and Visual Monitoring and Audit

14.13 No non-compliance of the landscape and visual impact was recorded in the reporting month.

Landfill Gas Monitoring

14.14 Monitoring of landfill gases in the reporting month was carried out by the Contractor at excavation location, Portion III. No Limit Level exceedance was recorded.

Environmental Site Inspection

14.15 Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Environmental Team. During site inspections in the reporting month, no non-compliance was identified. The environmental deficiency observed during the reporting month are shown in **Appendix L.**

Complaint, Prosecution and Notification of Summons

14.16 Three (3) environmental complaints, no successful prosecution and notification of summon were received during the reporting period.

Recommendations

14.17 The following recommendations were made to the Contractor for the reporting month:
Air Quality Impact

- To regularly apply watering on dry surface should be applied to minimize erosion.
- To aim the water spray at the rock breaking point for effective dust suppression.
- To water materials before loading/unloading.
- To turn off idle equipment.

Construction Noise

- To provide sufficient noise barriers for noisy PMEs as practically at LTI according to CNMP.
- To repair the gaps between the noise barriers.
- To place compatible noise barrier close to the breaking point for effective noise screening.
- To erect sound proof canvases on derrick lighter barge

Water Quality Impact

- To clear the oil slick and check for any damage of the silt curtain.
- To repair damaged or missing silt curtain
- To check whether the curtain has been set to the seabed.
- To ensure that the pumping rate of bored pile is sufficient to avoid discharging waste water into the sea.
- To clear floating refuse between the cofferdam and silt curtain.
- To clear oil slick within and outside cofferdam.
- To control the amount of loading materials in the barge to avoiding spillage.
- To cover stockpile near seafront.
- To remove wastewater and oil in drip tray.
- To remove pond/still water.

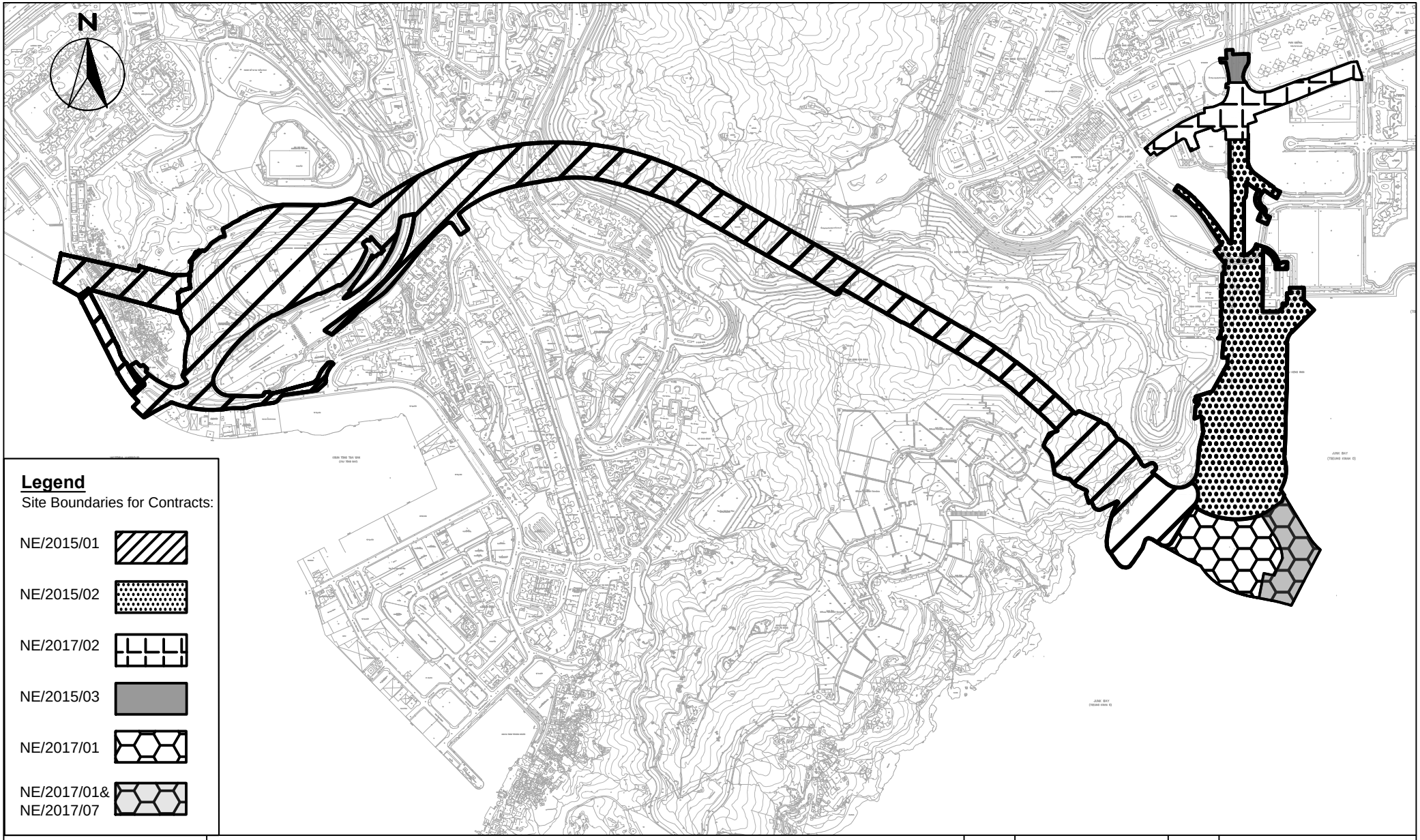
Waste/Chemical Management

- To bund or lock the chemical storage area.
- To clear dripping oil from bored piling machine.
- To clear oil slick on seawater.
- To clear oil on the floor.

Landscape and Visual

- To avoid placing any construction materials in the tree protection zone.

FIGURES



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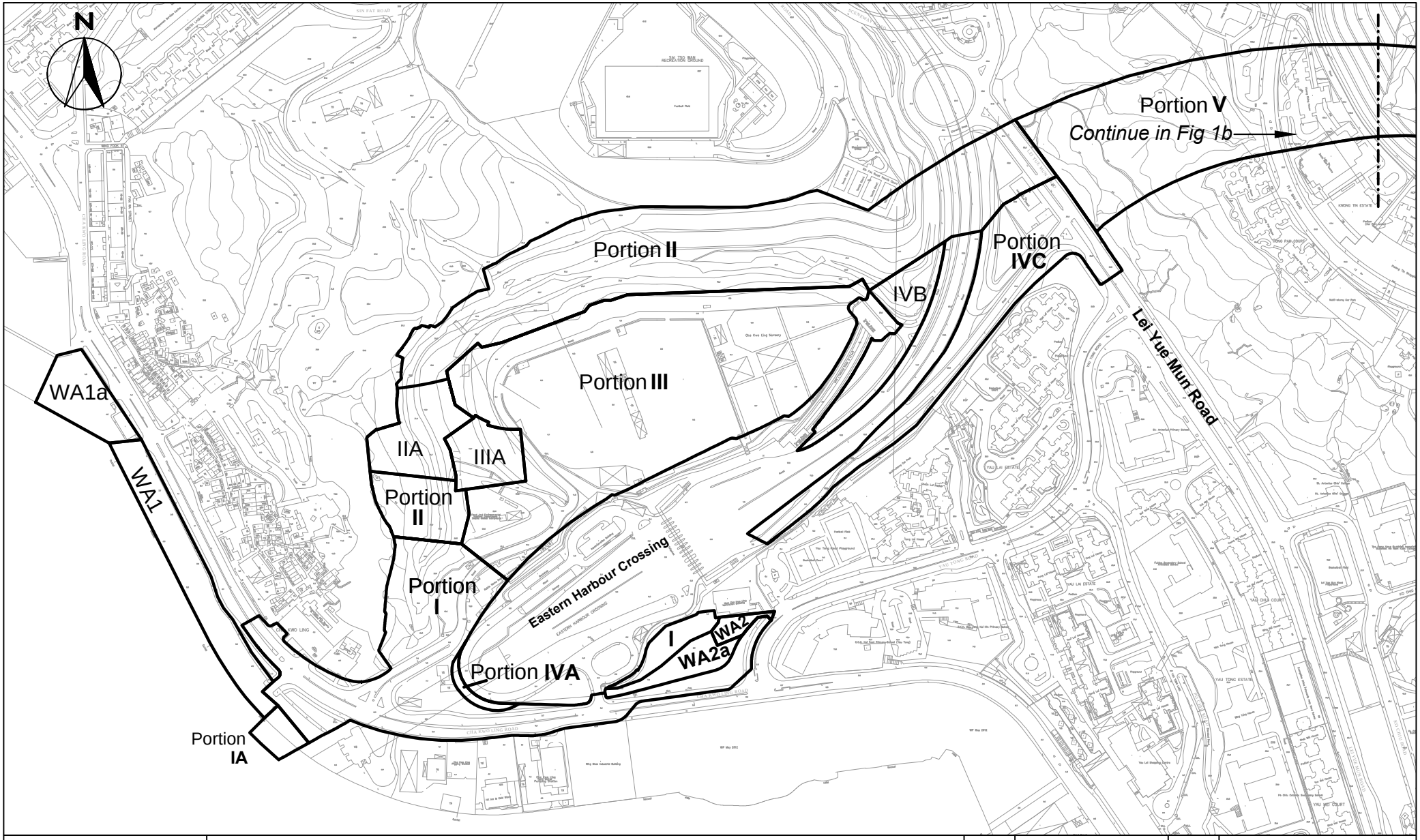
Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Site Layout Plan

SCALE	1:13000@A4	DATE	15 April 2021
CHECK	CC	DRAWN	KC
JOB No.	MA16034	FIGURE NO. 1	REV -



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Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Site Portions under Works Contract No. NE/2015/01 (LT)

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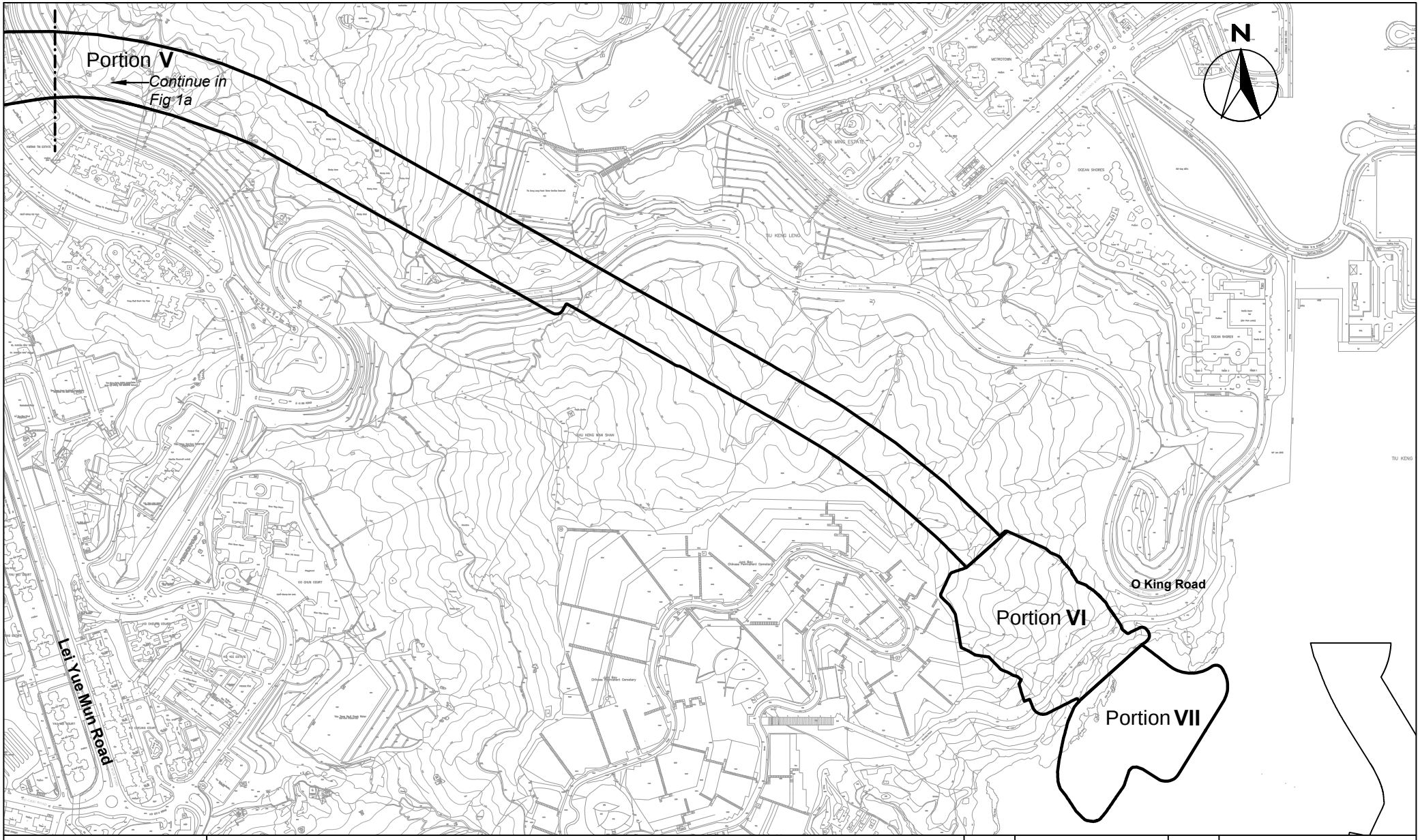
JOB No.	MA16034	FIGURE NO. 1a	REV -



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Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Site Portions under Works Contract No. NE/2015/01 (TKO)

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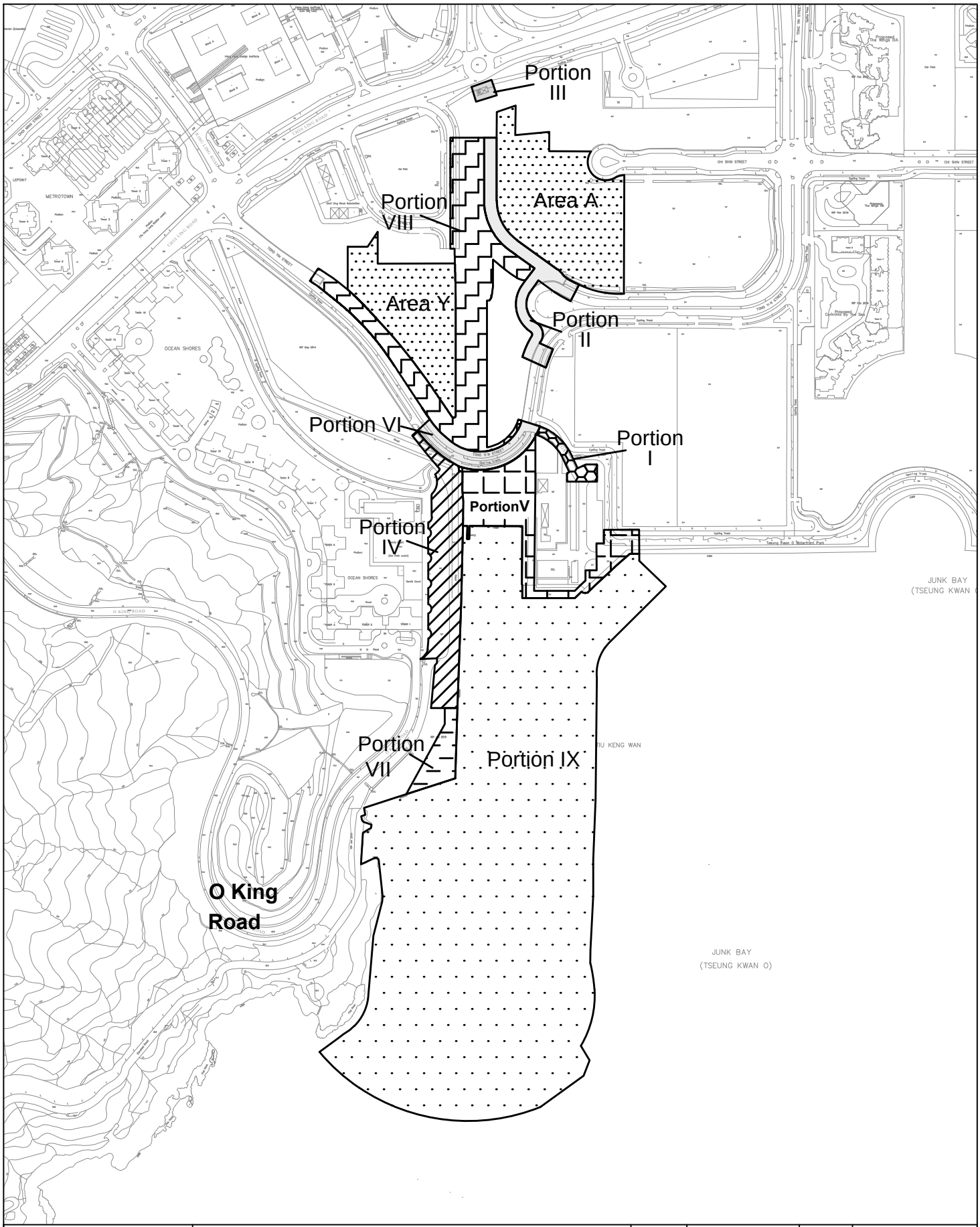

CINOTECH Cinotech Consultants Limited	Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction **Site Portions under Works Contract No. NE/2015/02**	SCALE	1:5000@A4	DATE	25 July 2021
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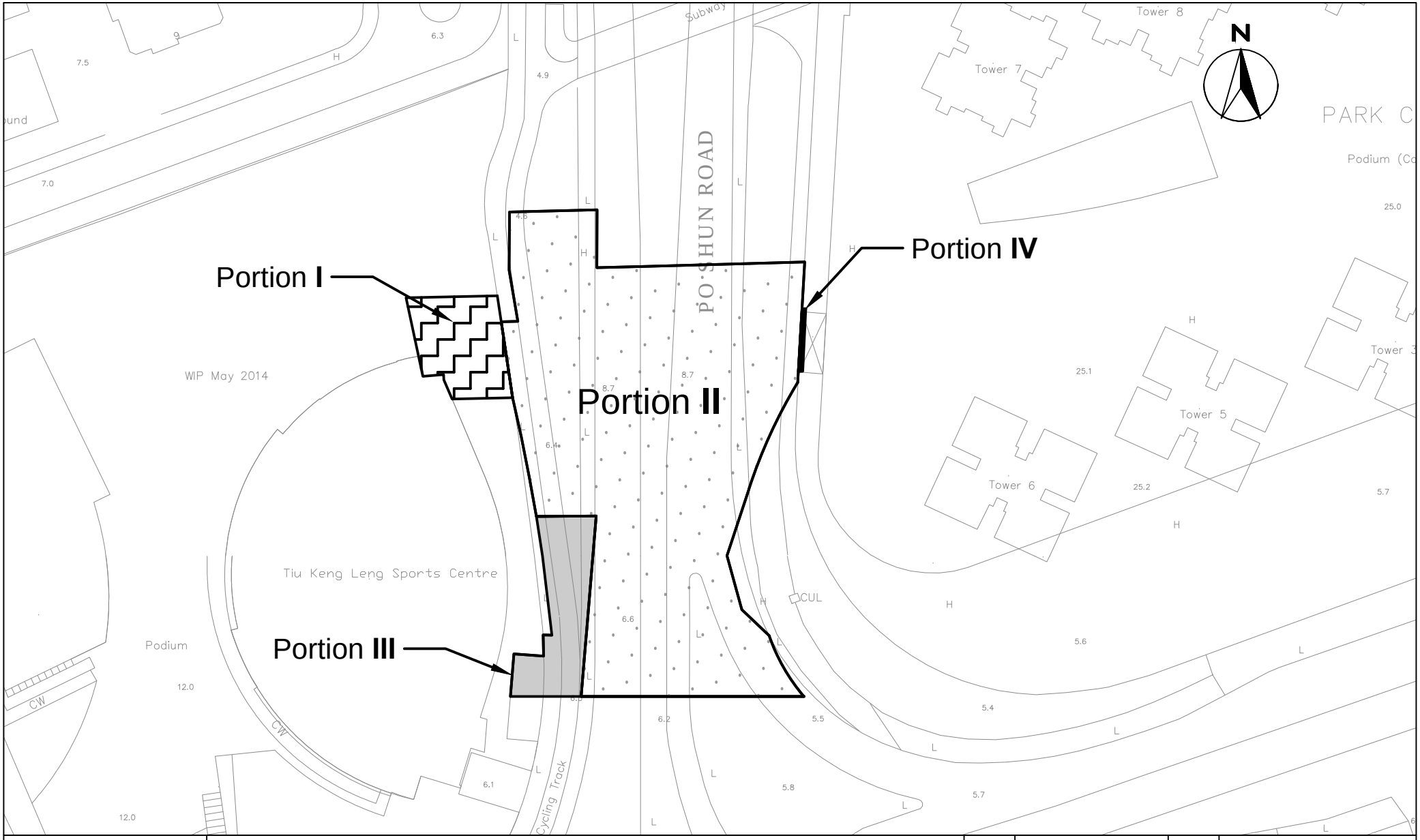

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Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Site Portions in Tseung Kwan O under Works Contract No. NE/2015/03

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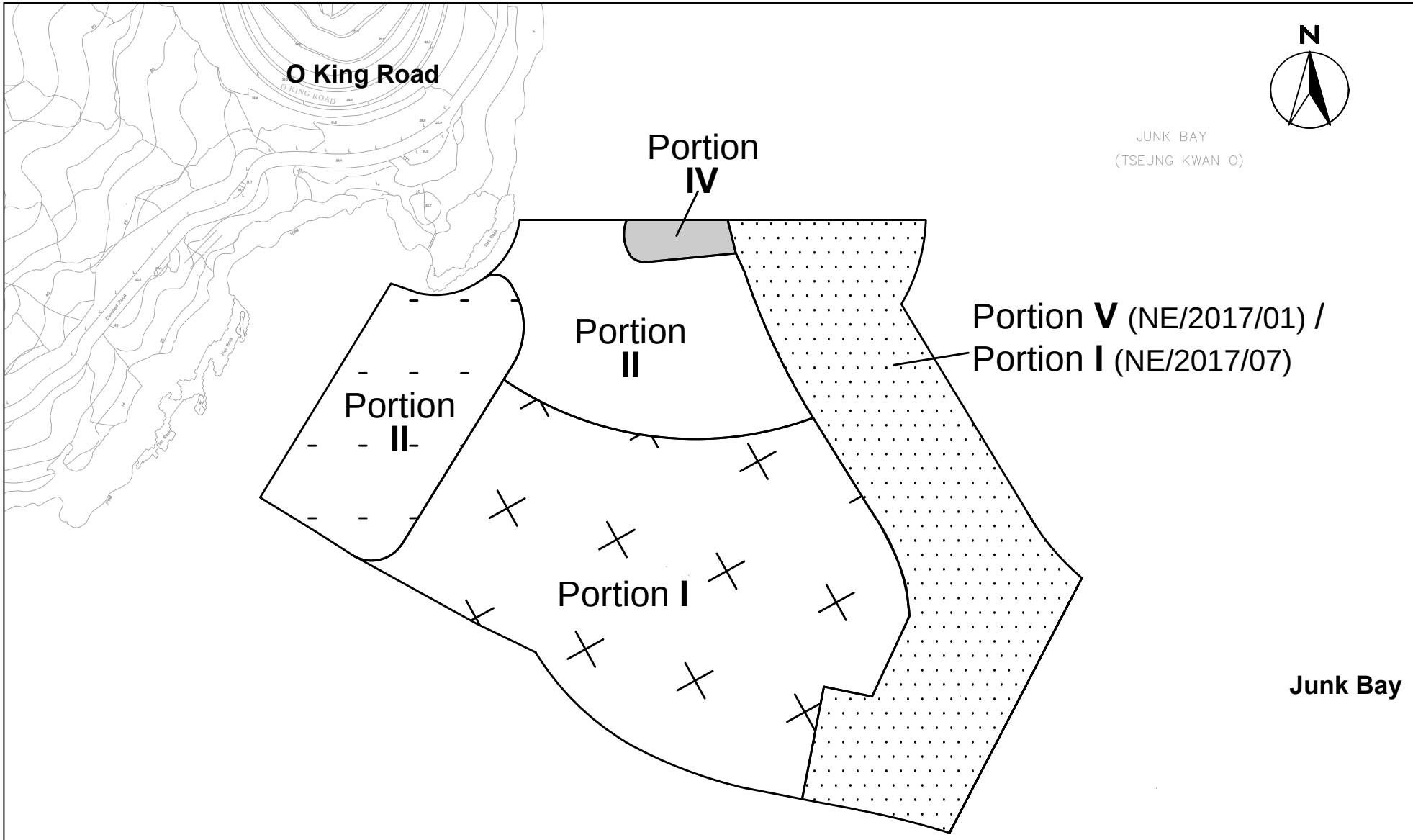

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Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Site Portions in Tseung Kwan O under Works Contract No. NE/2017/01

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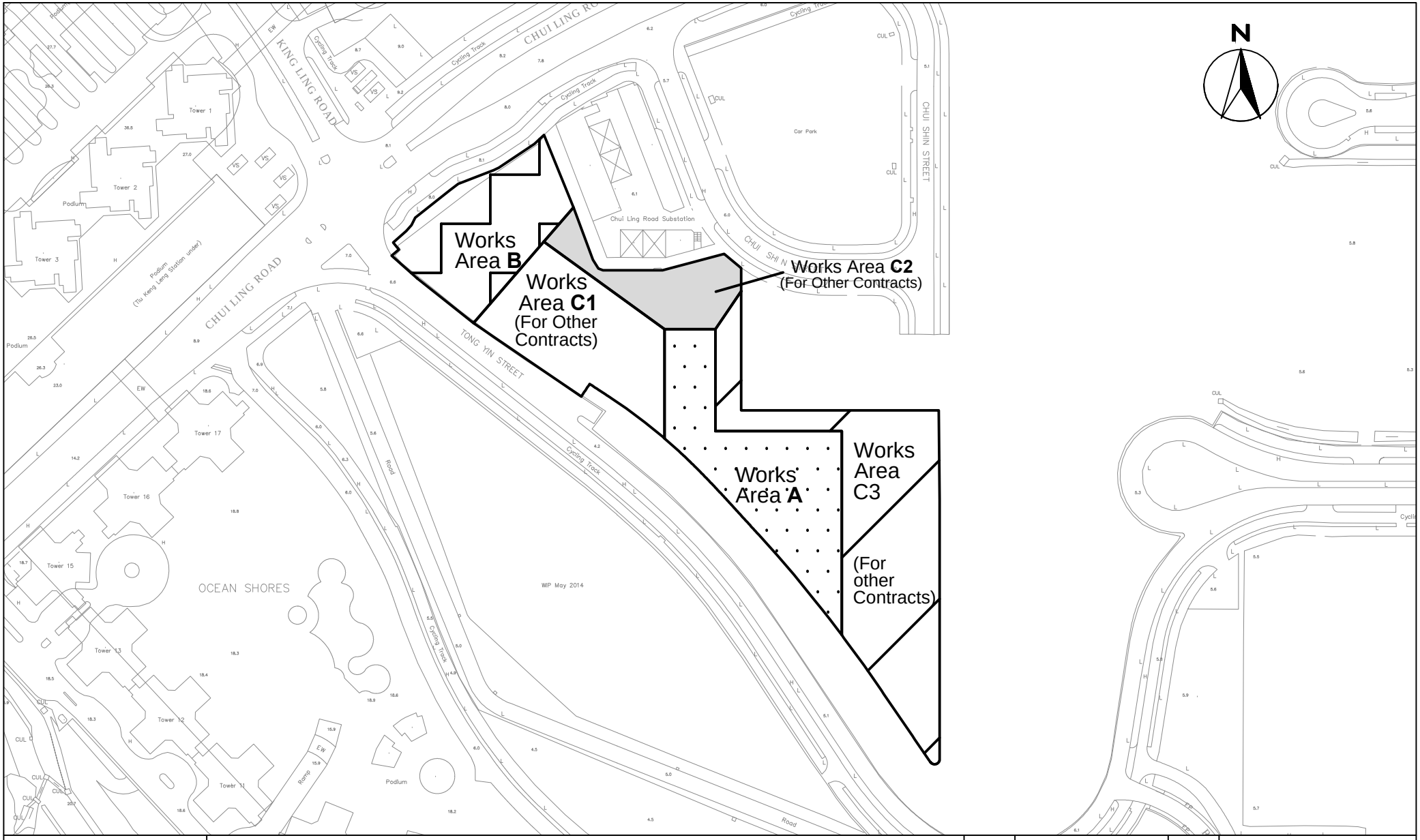

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Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Site Portions in Tseung Kwan O (Site Office) under Works Contract No. NE/2017/02

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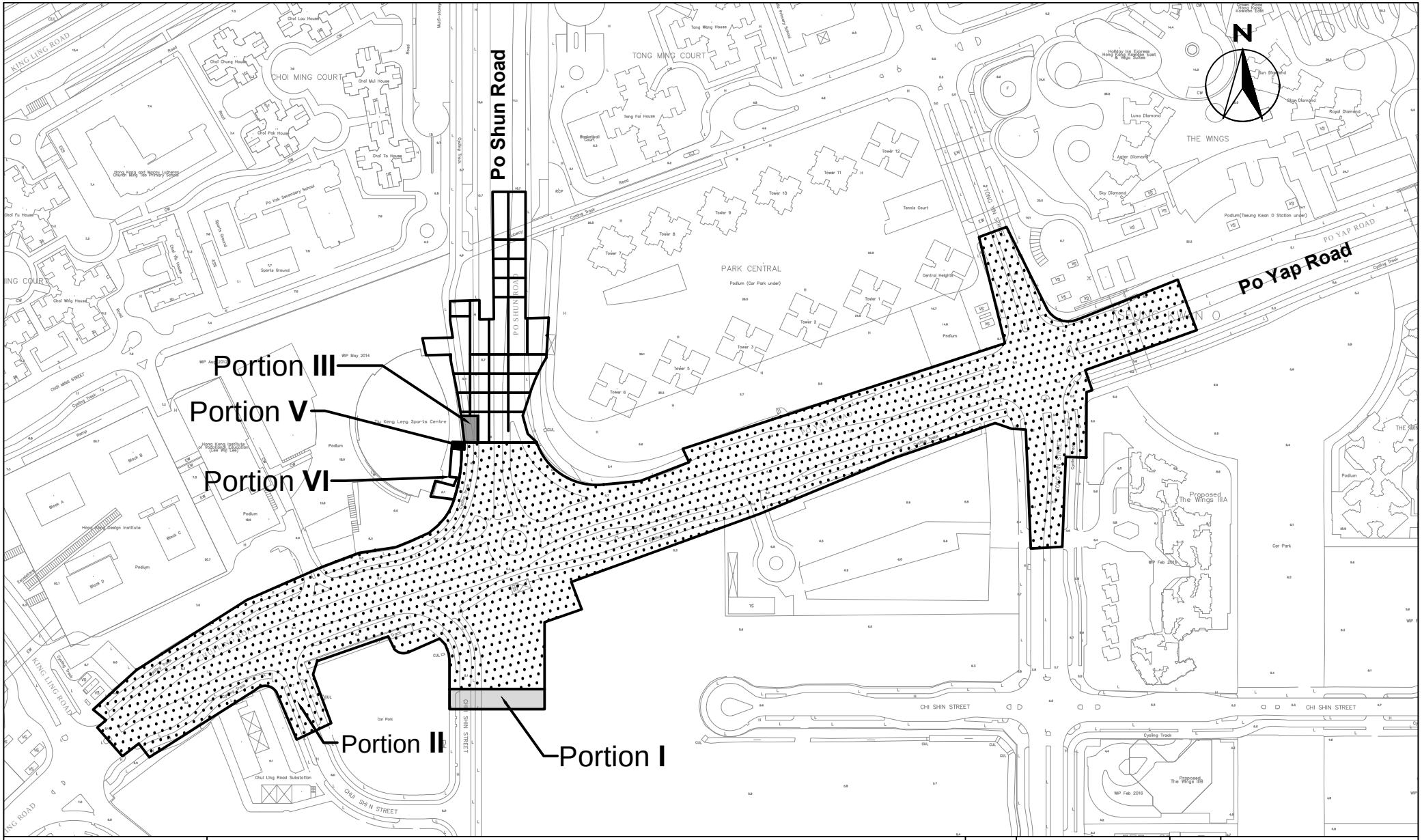
JOB No.	MA16034	FIGURE NO. 1f	REV -



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Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Site Portions in Tseung Kwan O under Works Contract No. NE/2017/02

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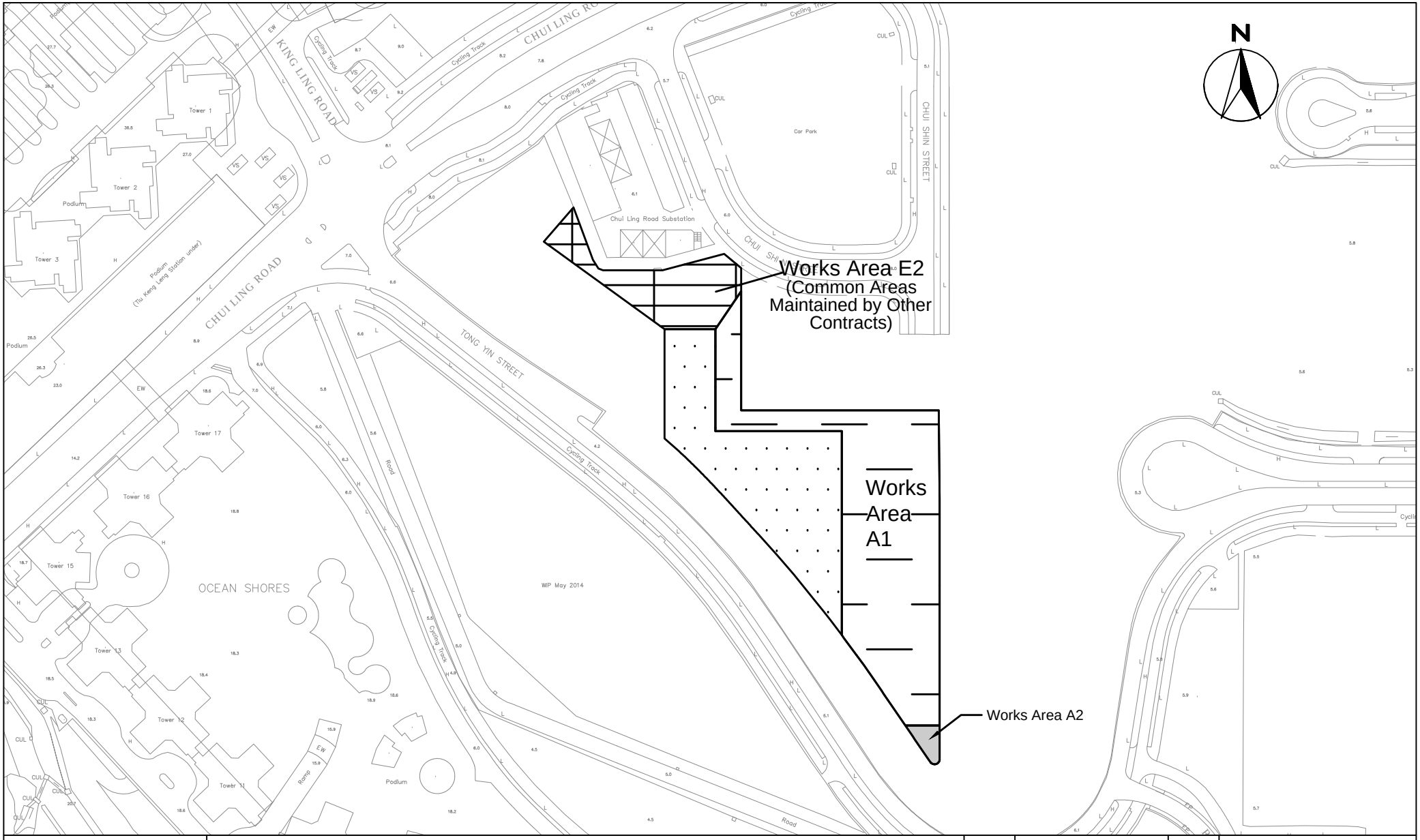

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Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Site Portions in Tseung Kwan O (Site Office) under Works Contract No. NE/2017/01

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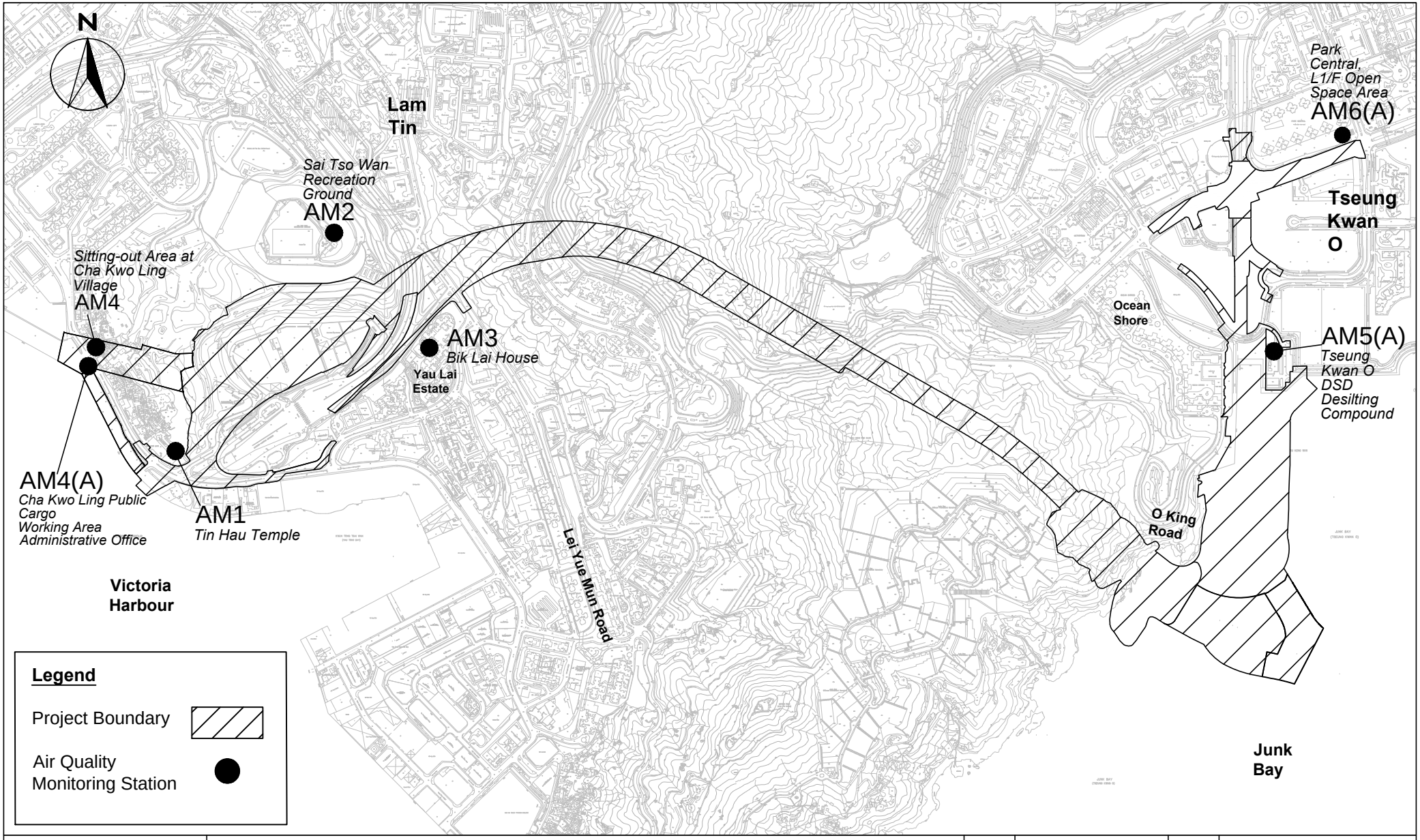
CHECK	CC	DRAWN	KC
JOB No.	MA16034	FIGURE NO.	1h
		REV	-



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Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Air Quality Monitoring Station

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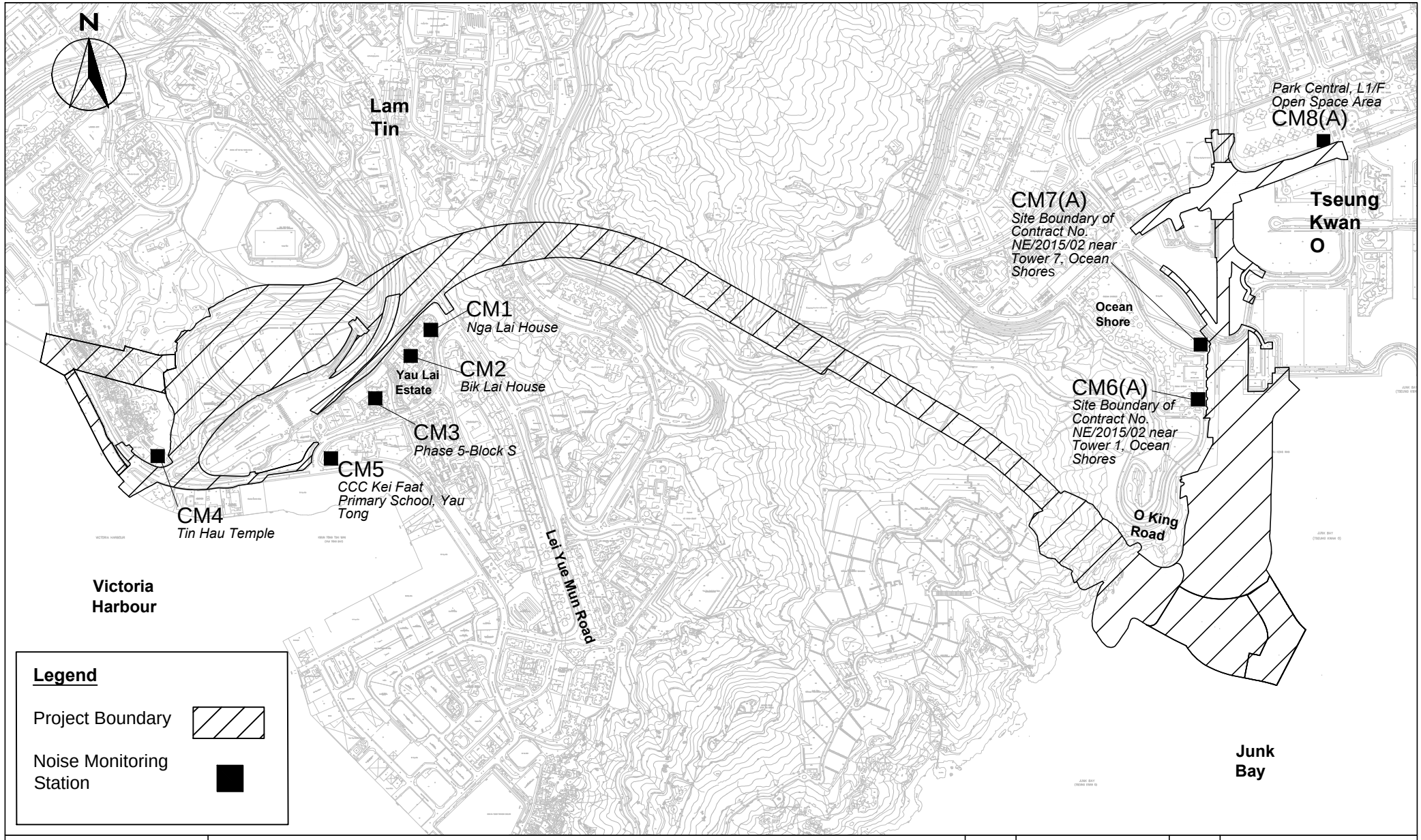
CHECK	CC	DRAWN	KC
JOB No.	MA16034	FIGURE NO.	2
		REV	-



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Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Noise Monitoring Stations

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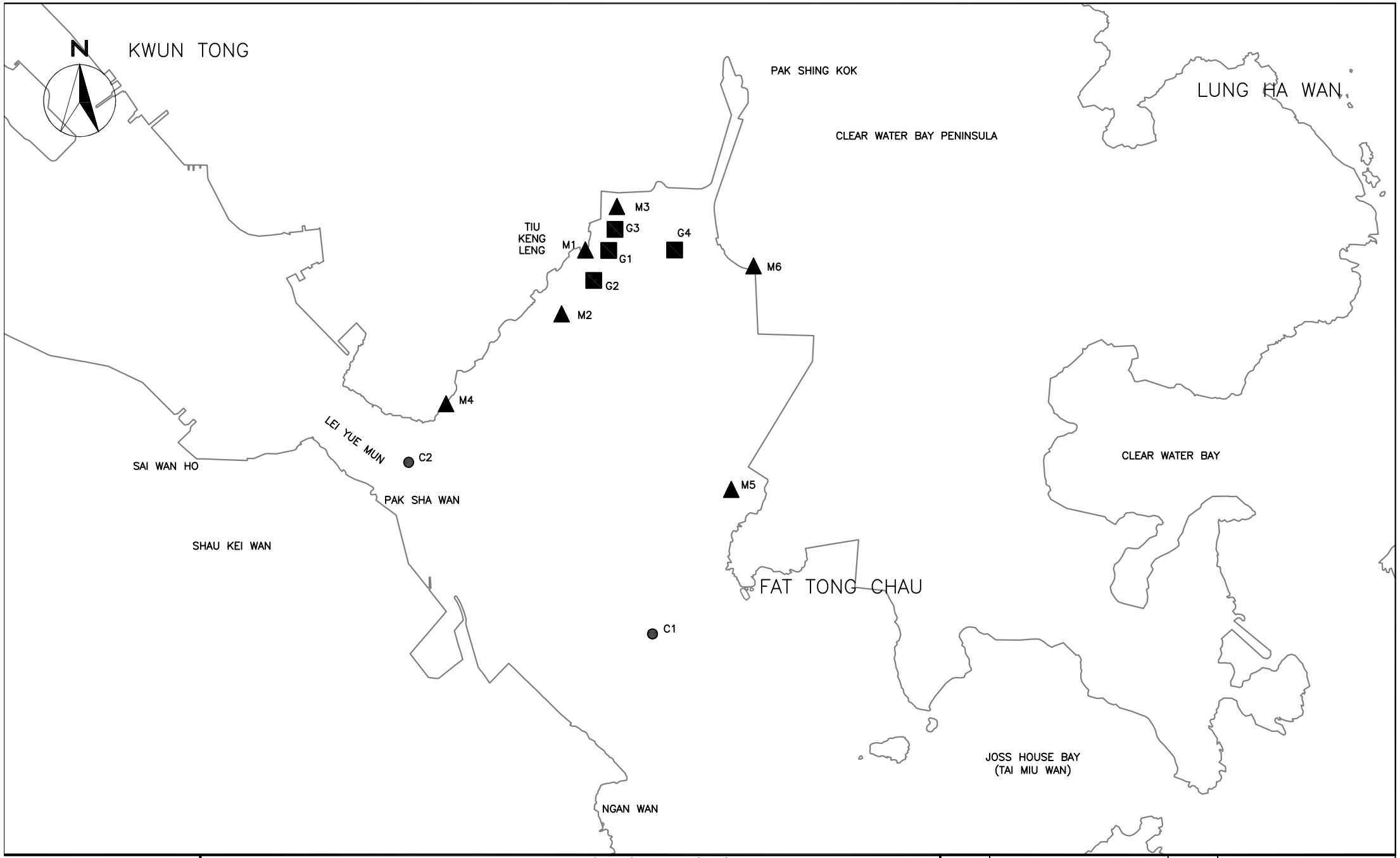
JOB No.	MA16034	FIGURE NO. 3	REV -



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Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction

Locations of Water Quality Monitoring Stations

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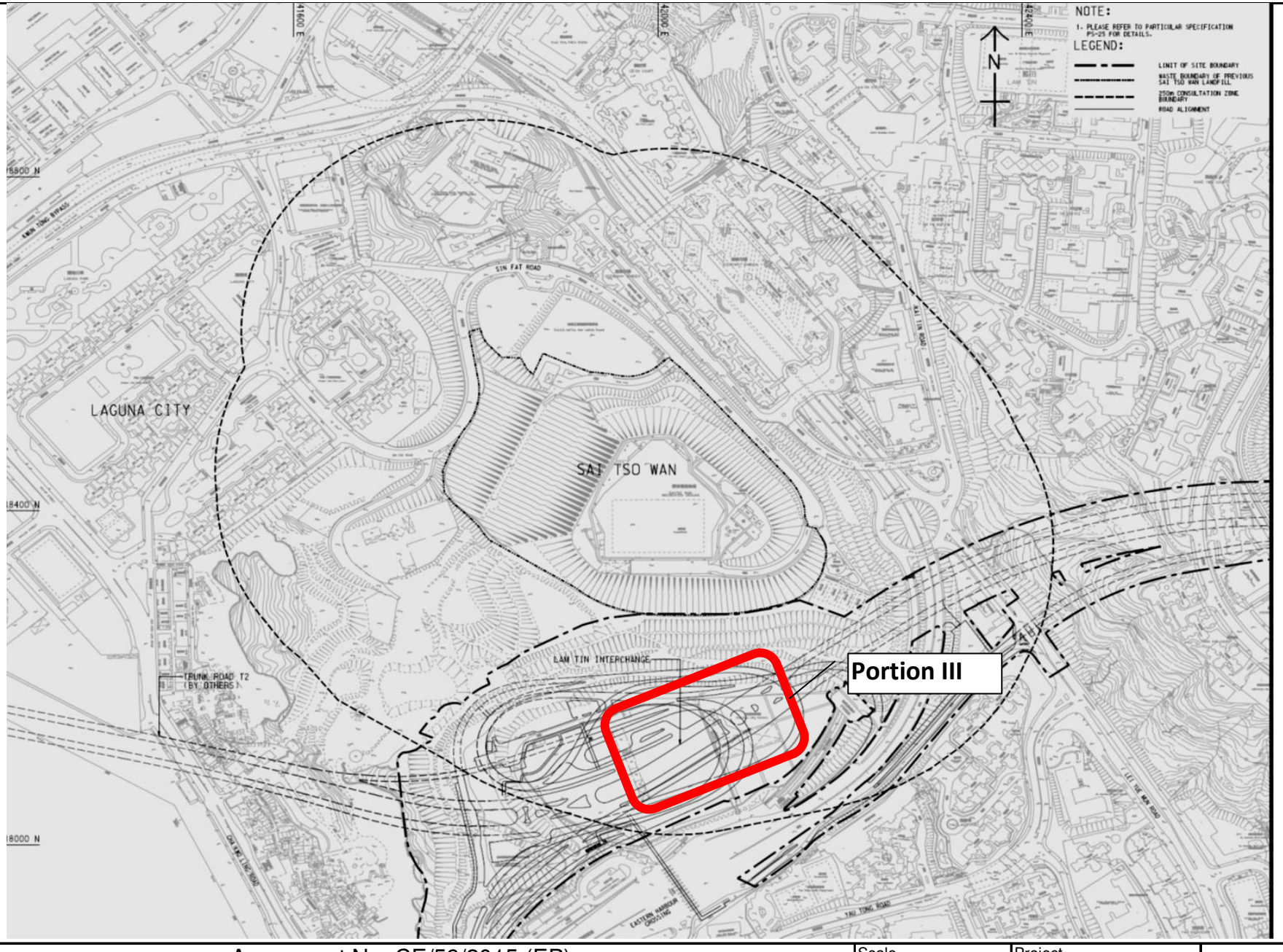
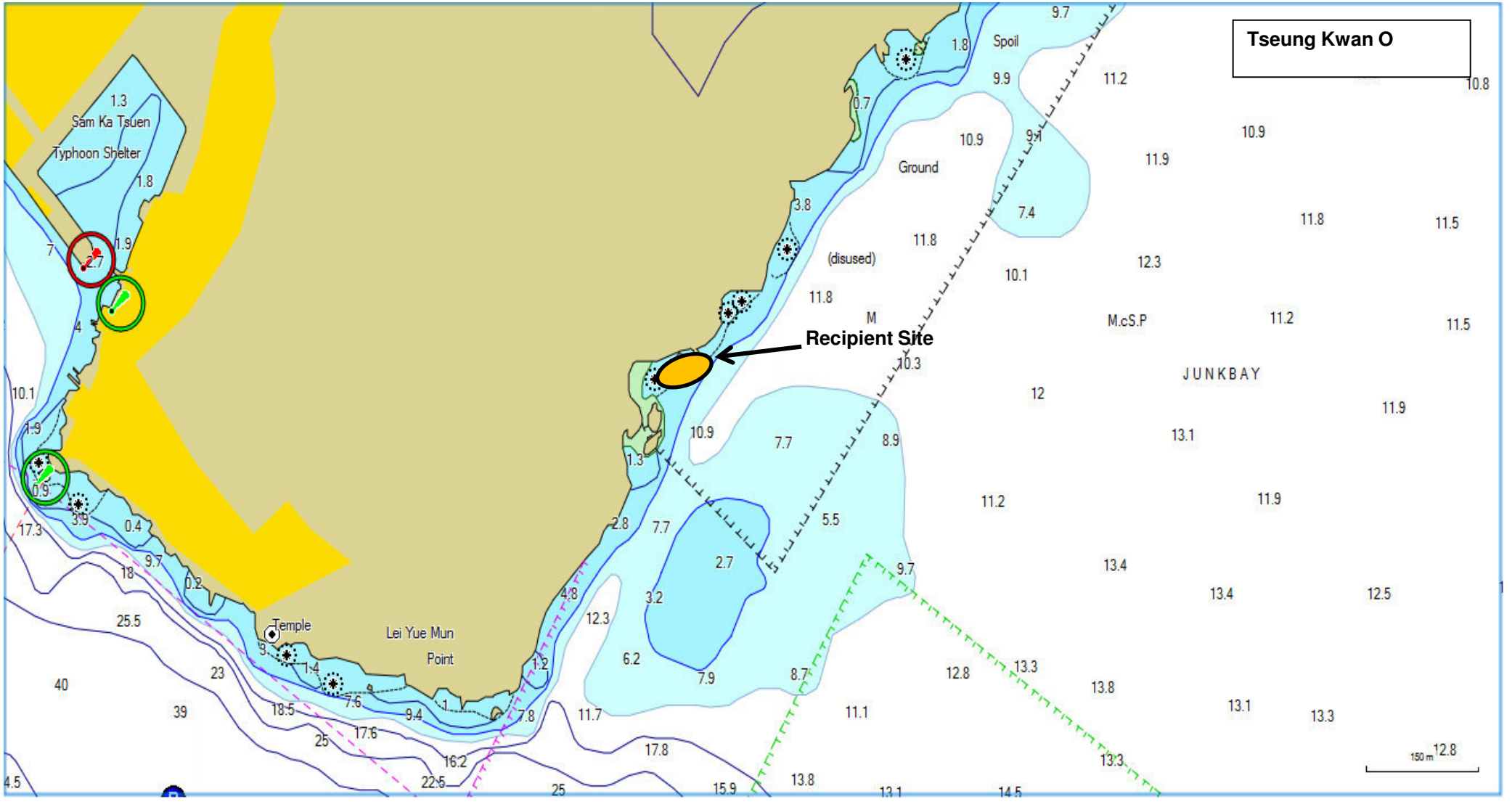
CHECK	JF	DRAWN	JW
PROJECT NO.	MA16034	FIGURE NO.	5
		REV	–

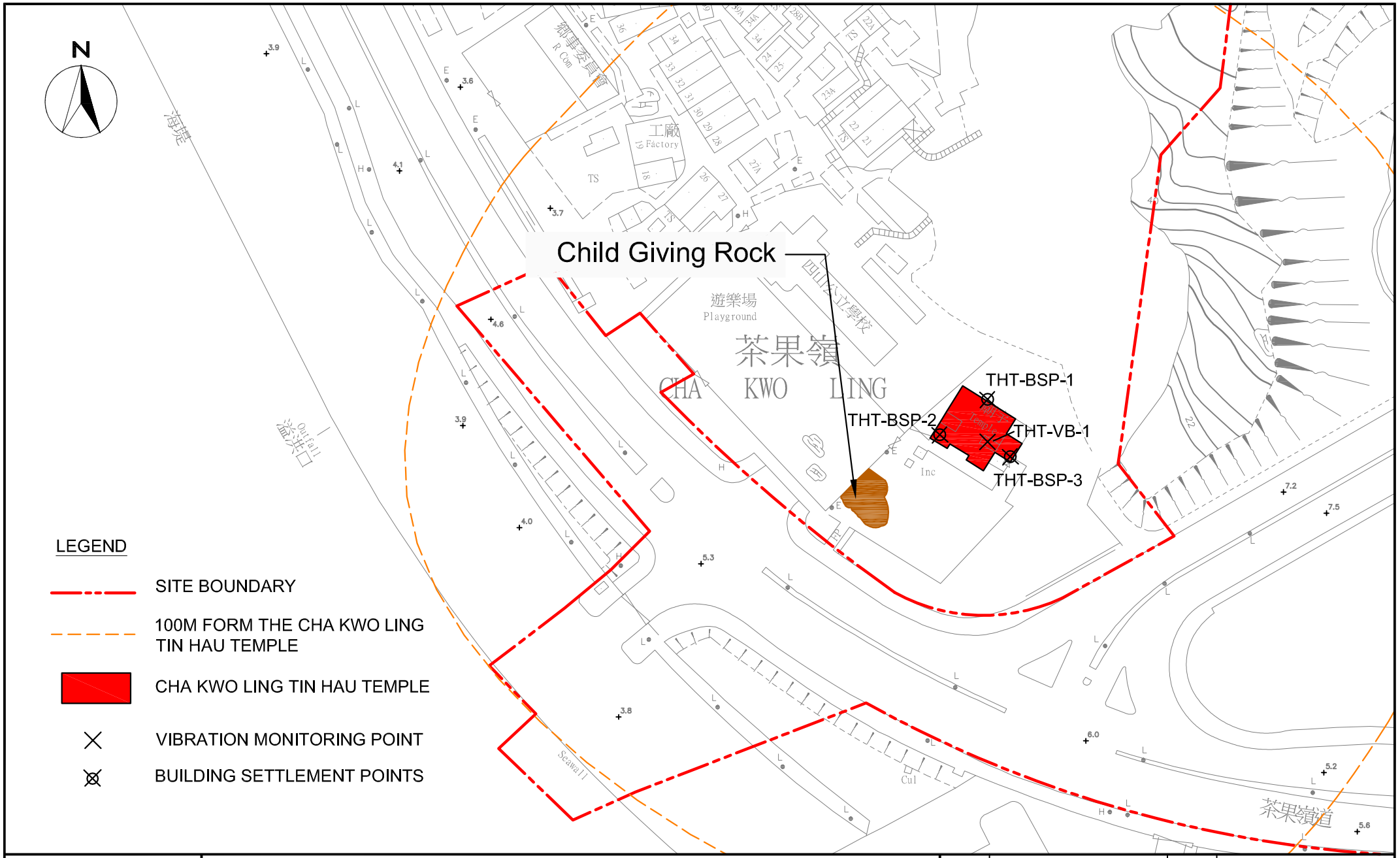


Title	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Locations of Landfill Gas Monitoring	Scale: N.T.S Date: Dec-16	Project No.: MA16034 Figure: 6

CINOTECH



Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Location of Post-translocation Coral Monitoring	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Mar-17	Figure: 7	



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Agreement No. CE/59/2015 (EP)
Environmental Team for Tsueng Kwan O - Lam Tin Tunnel - Design and Construction

Locations of Monitirong for Cultural Heritage

SCALE	N.T.S.	DATE	FEB 2018
CHECK	JF	DRAWN	AC
JOB No.	MA16034	FIGURE NO. 8	REV -

APPENDIX A
ACTION AND LIMIT LEVELS

APPENDIX A – Action and Limit Levels

Air Quality

1-hr TSP

Monitoring Stations	Location	Action Level, µg/m³	Limit Level, µg/m³
AM1	Tin Hau Temple	275	500
AM2	Sai Tso Wan Recreation Ground	273	
AM3	Yau Lai Estate Bik Lai House	271	
AM4	Sitting-out Area at Cha Kwo Ling Village	278	
AM5(A)	Tseung Kwan O DSD Desilting Compound	273	
AM6(A)	Park Central, L1/F Open Space Area	285	

24-hr TSP

Monitoring Stations	Location	Action Level, µg/m³	Limit Level, µg/m³
AM1	Tin Hau Temple	173	260
AM2	Sai Tso Wan Recreation Ground	192	
AM3	Yau Lai Estate Bik Lai House	167	
AM4(A)	Cha Kwo Ling Public Cargo Working Area Administrative Office	210	
AM5(A)	Tseung Kwan O DSD Desilting Compound	175	
AM6(A)	Park Central, L1/F Open Space Area	165	

Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) [(1)]
1900-2300 on all days and 0700-2300 on general holidays (including Sundays)		60/65/70 dB(A)[(2)(3)]
2300-0700 on all days		45/50/55 dB(A)[(2)(3)]

[1] 70 dB(A) for schools and 65 dB(A) for schools during examination period.
[2] Acceptable Noise Levels for Area Sensitivity Rating of A/B/C
3 If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

Water Quality

Groundwater

Parameters	Action	Limit
DO in mg L^{-1}	7.6	7.6
pH	6.0 – 8.9	6.0 – 9.0
BOD_5 in mg L^{-1}	2.0	2.0
TOC in mg L^{-1}	Stream 1 and Stream 2: 9	Stream 1 and Stream 2: 9
	Stream 3: 6	Stream 3: 6
Total Nitrogen in mg L^{-1}	2.0	2.1
Ammonia-N in mg L^{-1}	0.15	0.20
Total Phosphate in mg L^{-1}	0.05	0.05
SS in mg L^{-1}	7.6	12.1
Turbidity in NTU	2.1	2.3

Notes:
1. For pH, non-compliance of the water quality limits occurs when monitoring result is out of the range of the limits.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. For turbidity, SS, 5-day biochemical oxygen demand (BOD_5), Total organic carbon (TOC), Total Nitrogen, Ammonia-N and Total Phosphate, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
4. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

Groundwater Level Monitoring

Drill Hole No.	38568-LDH1	TKO-LBH907
Action Level (mPD)	+74.65	+17.59

Marine Water Quality

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2, 4 and 5)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2, 4 ad 5)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day	***6.9mg/L*** or 130% of upstream control station's SS at the same tide of the same day
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.
5. Refer to Appendix I – Marine Water Quality Monitoring Results and Graphical Presentations for results of upstream control stations at each tide on each day.

Water Quality Monitoring in Temporary Marine Embayment

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 2)	Depth Average	***4.8 mg/L*** (4)	***4 mg/L*** (3)
	Bottom	***2.4 mg/L*** (4)	***2 mg/L*** (3)

Notes:
1. "depth-averaged" is calculated by taking the arithmetic means of reading of all sampling depths.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. Current Water Quality Objectives (WQOs) for marine waters of Hong Kong
4. As an alert for adverse water quality impact, the Action Level is set as 120% of the Current WQOs for marine waters of Hong Kong.

Ecology

Post-translocation Coral Monitoring

Parameter	Action Level Definition	Limit Level Definition
Mortality	If during Impact Monitoring a 15% increase in the percentage of partial mortality on hard corals occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Action Level is exceeded.	If during the Impact Monitoring a 25% increase in the percentage of partial mortality occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Limit Level is exceeded.

Landfill Gas Monitoring

Parameter	Limit Level
Oxygen	<19%
	<18%
Methane	>10% LEL (i.e. > 0.5% by volume)
	>20% LEL (i.e. > 1% by volume)
Carbon Dioxide	>0.5%
	>1.5%

Alert, Alarm, Action Levels for Built Heritage Monitoring

Parameter	Alert Level	Alarm Level	Action Level
Vibration	ppv:4.5mm/s	ppv: 4.8mm/s	ppv: 5mm/s Maximum Allowable Vibration Amplitude: 0.1mm
Building Settlement Point	6mm	8mm	10mm
Building Tilting	1:2000	1:1500	1:1000

APPENDIX B
COPIES OF CALIBRATION CERTIFICATES

CINOTECH CONSULTANTS LIMITED

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description: Laser Dust Monitor

Date of Calibration 2-Aug-21

Manufacturer: Sibata Scientific Technology LTD.

Validity of Calibration Record 2-Oct-21

Model No.: LD-3B

Serial No.: 2Y6194

Equipment No.: SA-01-02

Sensitivity 0.001 mg/m3

High Volume Sampler No.: A-01-03

Before Sensitivity Adjustment 578

Tisch Calibration Orifice No.: 3864

After Sensitivity Adjustment 578

Calibration of 1 hr TSP			
Calibration Point	Laser Dust Monitor		HVS
	Total Count	Count / Minute **X-axis**	Mass concentration (μg/m^3) **Y-axis**
1	4203	70.1	131.0
2	3631	60.5	125.0
3	3009	50.2	116.0
Average		**60.2**	**124.0**

By Linear Regression of Y on X

Slope , mw = **0.7554** **Intercept, bw =** **78.4936**

Correlation coefficient* = **0.9959**

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (μg/m3)] **2.1**

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: _____

Technical Officer (Wong Shing Kwai)

Approved by: _____

Project Manager (Henry Leung)

CINOTECH CONSULTANTS LIMITED

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description: Digital Dust Indicator
Date of Calibration 2-Aug-21
Manufacturer: Sibata Scientific Technology LTD.
Validity of Calibration Record 2-Oct-21
Model No.: LD-5R
Serial No.: 8Y2374
Equipment No.: SA-01-04
Sensitivity 0.001 mg/m3
High Volume Sampler No.: A-01-03
Before Sensitivity Adjustment 652
Tisch Calibration Orifice No.: 3864
After Sensitivity Adjustment 652

Calibration of 1 hr TSP		
Calibration Point	**Laser Dust Monitor** Mass Concentration (µg/m3) **X-axis**	**HVS** Mass concentration (µg/m^3) **Y-axis**
1	67.0	131.0
2	61.0	125.0
3	53.0	116.0
Average	**60.3**	**124.0**

By Linear Regression of Y on X

Slope , mw = **1.0743** **Intercept, bw =** **59.1824**

Correlation coefficient* = **0.9995**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	124.0
Particaulate Concentration by Dust Meter (µg/m^3)	60.3
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] **2.1**

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: _____
Technical Officer (Wong Shing Kwai)

Approved by: _____
Project Manager (Henry Leung)

CINOTECH CONSULTANTS LIMITED

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description: Digital Dust Indicator
Date of Calibration 2-Aug-21
Manufacturer: Sibata Scientific Technology LTD.
Validity of Calibration Record 2-Oct-21
Model No.: LD-5R
Serial No.: 8Y2373
Equipment No.: SA-01-05
Sensitivity 0.001 mg/m3
High Volume Sampler No.: A-01-03
Before Sensitivity Adjustment 657
Tisch Calibration Orifice No.: 3864
After Sensitivity Adjustment 657

Calibration of 1 hr TSP		
Calibration Point	**Laser Dust Monitor** Mass Concentration (µg/m3) **X-axis**	**HVS** Mass concentration (µg/m^3) **Y-axis**
1	57.0	131.0
2	51.0	125.0
3	45.0	116.0
Average	**51.0**	**124.0**

By Linear Regression of Y on X

Slope , mw = **1.2500** **Intercept, bw =** **60.2500**

Correlation coefficient* = **0.9934**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	124.0
Particaulate Concentration by Dust Meter (µg/m^3)	51.0
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] **2.4**

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: _____
Technical Officer (Wong Shing Kwai)

Approved by: _____
Project Manager (Henry Leung)

CINOTECH CONSULTANTS LIMITED

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description: Digital Dust Indicator — Date of Calibration 2-Aug-21

Manufacturer: Sibata Scientific Technology LTD. — Validity of Calibration Record 2-Oct-21

Model No.: LD-5R

Serial No.: 972777

Equipment No.: SA-01-06 — Sensitivity 0.001 mg/m3

High Volume Sampler No.: A-01-03 — Before Sensitivity Adjustment 645

Tisch Calibration Orifice No.: 3864 — After Sensitivity Adjustment 645

Calibration of 1 hr TSP		
Calibration Point	**Laser Dust Monitor** Mass Concentration (µg/m3) **X-axis**	**HVS** Mass concentration (µg/m^3) **Y-axis**
1	60.0	131.0
2	52.0	125.0
3	43.0	116.0
Average	**51.7**	**124.0**

By Linear Regression of Y on X

Slope , mw = **0.8848** **Intercept, bw =** **78.2857**

Correlation coefficient* = **0.9967**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	124.0
Particaulate Concentration by Dust Meter (µg/m^3)	51.7
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] **2.4**

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: _____

Technical Officer (Wong Shing Kwai)

Approved by: _____

Project Manager (Henry Leung)

CINOTECH CONSULTANTS LIMITED

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description: Digital Dust Indicator
Date of Calibration 2-Aug-21
Manufacturer: Sibata Scientific Technology LTD.
Validity of Calibration Record 2-Oct-21
Model No.: LD-5R
Serial No.: 972778
Equipment No.: SA-01-07
Sensitivity 0.001 mg/m3
High Volume Sampler No.: A-01-03
Before Sensitivity Adjustment 735 CPM
Tisch Calibration Orifice No.: 3864
After Sensitivity Adjustment 735 CPM

Calibration of 1 hr TSP		
Calibration Point	**Laser Dust Monitor**	**HVS**
	Mass Concentration (µg/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	61.0	131.0
2	56.0	125.0
3	48.0	116.0
Average	**55.0**	**124.0**

By Linear Regression of Y on X

Slope , mw = **1.1512** **Intercept, bw =** **60.6860**

Correlation coefficient* = **0.9998**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	124.0
Particaulate Concentration by Dust Meter (µg/m^3)	55.0
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] **2.3**

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: _____
Technical Officer (Wong Shing Kwai)

Approved by: _____
Project Manager (Henry Leung)

CINOTECH CONSULTANTS LIMITED

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description: Digital Dust Indicator
Date of Calibration 2-Aug-21
Manufacturer: Sibata Scientific Technology LTD.
Validity of Calibration Record 2-Oct-21
Model No.: LD-5R
Serial No.: 972779
Equipment No.: SA-01-08
Sensitivity 0.001 mg/m3
High Volume Sampler No.: A-01-03
Before Sensitivity Adjustment 744 CPM
Tisch Calibration Orifice No.: 3864
After Sensitivity Adjustment 744 CPM

Calibration of 1 hr TSP		
Calibration Point	**Laser Dust Monitor**	**HVS**
	Mass Concentration (µg/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	60.0	131.0
2	55.0	125.0
3	48.0	116.0
Average	**54.3**	**124.0**

By Linear Regression of Y on X

Slope , mw = **1.2523** **Intercept, bw =** **55.9587**

Correlation coefficient* = **0.9998**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	124.0
Particaulate Concentration by Dust Meter (µg/m^3)	54.3
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] **2.3**

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: _____
Technical Officer (Wong Shing Kwai)

Approved by: _____
Project Manager (Henry Leung)

CINOTECH CONSULTANTS LIMITED

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description: Digital Dust Indicator
Date of Calibration 2-Aug-21
Manufacturer: Sibata Scientific Technology LTD.
Validity of Calibration Record 2-Oct-21
Model No.: LD-5R
Serial No.: 972780
Equipment No.: SA-01-09
Sensitivity 0.001 mg/m3
High Volume Sampler No.: A-01-03
Before Sensitivity Adjustment 739 CPM
Tisch Calibration Orifice No.: 3864
After Sensitivity Adjustment 739 CPM

Calibration of 1 hr TSP		
Calibration Point	**Laser Dust Monitor**	**HVS**
	Mass Concentration (µg/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	56.0	131.0
2	53.0	125.0
3	47.0	116.0
Average	**52.0**	**124.0**

By Linear Regression of Y on X

Slope , mw = **1.6429** **Intercept, bw =** **38.5714**

Correlation coefficient* = **0.9972**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	124.0
Particaulate Concentration by Dust Meter (µg/m^3)	52.0
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] **2.4**

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: _____
Technical Officer (Wong Shing Kwai)

Approved by: _____
Project Manager (Henry Leung)

CINOTECH CONSULTANTS LIMITED

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description: Digital Dust Indicator
Date of Calibration 2-Aug-21
Manufacturer: Sibata Scientific Technology LTD.
Validity of Calibration Record 2-Oct-21
Model No.: LD-5R
Serial No.: 972781
Equipment No.: SA-01-10
Sensitivity 0.001 mg/m3
High Volume Sampler No.: A-01-03
Before Sensitivity Adjustment 734 CPM
Tisch Calibration Orifice No.: 3864
After Sensitivity Adjustment 734 CPM

Calibration of 1 hr TSP		
Calibration Point	**Laser Dust Monitor**	**HVS**
	Mass Concentration (µg/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	66.0	131.0
2	57.0	125.0
3	46.0	116.0
Average	**56.3**	**124.0**

By Linear Regression of Y on X

Slope , mw = **0.7525** **Intercept, bw =** **81.6096**

Correlation coefficient* = **0.9984**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	124.0
Particaulate Concentration by Dust Meter (µg/m^3)	56.3
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] **2.2**

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: _____
Technical Officer (Wong Shing Kwai)

Approved by: _____
Project Manager (Henry Leung)

Certificate of Calibration - Wind Monitoring Station

Description:	Yau Lai Estate, Bik Lai House
Manufacturer:	Davis Instruments
Model No.:	Davis7440
Serial No.:	MC01010A44
Equipment No.:	SA-03-04
Date of Calibration	20-Feb-2021
Next Due Date	20-Aug-2021

1. Performance check of Wind Speed

Wind Speed, m/s		Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V2)	D = V1 – V2
0.0	0.0	0.0
1.5	1.6	-0.1
2.5	2.5	0.0
3.5	3.4	0.1

2. Performance check of Wind Direction

Wind Direction (^{o})		Difference D (^{o})
Wind Direction Reading (W1)	Marine Compass Value (W2)	D = W1 - W2
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

Test Specification:

1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer

2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by: _____ Wong Shing Kwai

Approved by: _____ Henry Leung

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA16034/05/0030

Project No. AM1 - Tin Hau Temple

Date: 10-Jun-21 Next Due Date: 10-Aug-21 Operator: SK

Equipment No.: A-01-05 Model No.: GS2310 Serial No. 10599

Ambient Condition			
Temperature, Ta (K)	301.8	Pressure, Pa (mmHg)	754

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	11-Jan-22	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	12.8	3.54	60.63	9.3	3.02
2	9.4	3.03	51.96	7.0	2.62
3	7.5	2.71	46.42	5.4	2.30
4	4.8	2.17	37.15	3.4	1.83
5	2.5	1.56	26.82	2.0	1.40

By Linear Regression of Y on X

Slope , mw = **0.0487** **Intercept, bw =** **0.0608**

Correlation coefficient* = **0.9987**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

mw x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.74**

Remarks:

Conducted by: SK Wong Signature: Date: 10 June 2021

Checked by: Henry Leung Signature: Date: 10 June 2021

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA16034/08/0030

Project No. AM2 - Sai Tso Wan Recreation Ground

Date: 10-Jun-21 Next Due Date: 10-Aug-21 Operator: SK

Equipment No.: A-01-08 Model No.: GS2310 Serial No. 1287

Ambient Condition			
Temperature, Ta (K)	301.8	Pressure, Pa (mmHg)	754

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	11-Jan-22	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

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Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	13.3	3.61	61.80	8.9	2.95
2	10.1	3.15	53.86	6.3	2.48
3	7.9	2.78	47.64	4.9	2.19
4	5.1	2.24	38.29	3.3	1.80
5	3.0	1.71	29.38	2.0	1.40

By Linear Regression of Y on X

Slope , mw = **0.0470** **Intercept, bw =** **-0.0070**

Correlation coefficient* = **0.9976**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

mw x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.14**

Remarks:

Conducted by: SK Wong Signature: Date: 10 June 2021

Checked by: Henry Leung Signature: Date: 10 June 2021

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA16034/03/0030

Project No. AM3 - Yau Lai Estate, Bik Lai House

Date: 10-Jun-21 Next Due Date: 10-Aug-21 Operator: SK

Equipment No.: A-01-03 Model No.: GS2310 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	301.8	Pressure, Pa (mmHg)	754

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	11-Jan-22	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

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Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	12.9	3.55	60.86	8.5	2.89
2	9.7	3.08	52.78	6.4	2.50
3	7.9	2.78	47.64	4.9	2.19
4	5.1	2.24	38.29	3.2	1.77
5	3.0	1.71	29.38	2.0	1.40

By Linear Regression of Y on X

Slope , mw = 0.0476 **Intercept, bw =** -0.0290

Correlation coefficient* = 0.9984

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

mw x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.15**

Remarks:

Conducted by: SK Wong Signature: Date: 10 June 2021

Checked by: Henry Leung Signature: Date: 10 June 2021

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA16034/54/0030

Project No. AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office

Date: 10-Jun-21 Next Due Date: 10-Aug-21 Operator: SK

Equipment No.: A-01-54 Model No.: TE-5170 Serial No. 1536

Ambient Condition			
Temperature, Ta (K)	301.8	Pressure, Pa (mmHg)	754

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	11-Jan-22	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	13.2	3.60	61.56	9.0	2.97
2	9.9	3.11	53.32	6.4	2.50
3	7.5	2.71	46.42	5.0	2.21
4	5.4	2.30	39.40	3.3	1.80
5	3.0	1.71	29.38	1.9	1.36

By Linear Regression of Y on X

Slope , mw = **0.0499** **Intercept, bw =** **-0.1277**

Correlation coefficient* = **0.9986**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

mw x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.16**

Remarks:

Conducted by: SK Wong Signature: Date: 10 June 2021

Checked by: Henry Leung Signature: Date: 10 June 2021

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA16034/37/0030

Project No. AM5(A) - Tseung Kwan O DSD Desilting Compound

Date: 10-Jun-21 Next Due Date: 10-Aug-21 Operator: SK

Equipment No.: A-01-37 Model No.: GS2310 Serial No. 1704

Ambient Condition			
Temperature, Ta (K)	301.8	Pressure, Pa (mmHg)	754

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	11-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	13.2	3.60	61.56	9.1	2.99
2	10.0	3.13	53.59	6.5	2.52
3	8.3	2.85	48.83	5.5	2.32
4	5.5	2.32	39.76	3.4	1.83
5	3.0	1.71	29.38	2.0	1.40

By Linear Regression of Y on X

Slope , mw = **0.0493** **Intercept, bw =** **-0.0884**

Correlation coefficient* = **0.9980**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.22**

Remarks:

Conducted by: SK Wong Signature: Date: 10 June 2021

Checked by: Henry Leung Signature: Date: 10 June 2021

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA16034/07/0030

Project No. AM6 - Park Central

Date: 5-Jul-21 Next Due Date: 5-Sep-21 Operator: SK

Equipment No.: A-01-07 Model No.: GS2310 Serial No. 10592

Ambient Condition			
Temperature, Ta (K)	303.2	Pressure, Pa (mmHg)	755.4

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	11-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	13.0	3.56	61.01	8.4	2.86
2	8.9	2.95	50.49	6.1	2.44
3	7.5	2.71	46.36	4.8	2.17
4	4.4	2.07	35.52	3.2	1.77
5	3.0	1.71	29.34	2.1	1.43

By Linear Regression of Y on X

Slope , mw = **0.0448** **Intercept, bw =** **0.1390**

Correlation coefficient* = **0.9976**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.37**

Remarks:

Conducted by: Wong Shing Kwai Signature: Date: 5-Jul-21

Checked by: Henry Leung Signature: Date: 5-Jul-21

Equipment no.:N-13-01

Calibration Certificate

0025247

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : ST-120 sound calibrator Serial No. /Ref. No. : 181001608 Object 2 : Serial No. /Ref. No. : Manufacturer : Soundtek
Date of calibration: 05/11/2020 Date of the recommended re-calibration: 05/11/2021	Certificate No.: 0025247 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.7dB	-0.3dB	+/- 0.3dB	1
114.0dB	113.6dB	-0.4dB	+/- 0.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
5.The calibrations certificate may not be reproduced.

Measured value(s) within **the allowable deviation.**

Performed by

Calibration Technician Mr. K.L. Ng

Approved by

Quality Manager

Equipment no.:N-13-02

Calibration Certificate

0025249

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : ST-120 sound calibrator Serial No. /Ref. No. : 181001636 Object 2 : Serial No. /Ref. No. : Manufacturer : Soundtek
Date of calibration: 05/11/2020 Date of the recommended re-calibration: 05/11/2021	Certificate No.: 0025249 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.7dB	-0.3dB	+/- 0.3dB	1
114.0dB	113.6dB	-0.4dB	+/- 0.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
5.The calibrations certificate may not be reproduced.

Measured value(s) within **the allowable deviation.**

Performed by

Calibration Technician Mr. K.L. Ng

Approved by

Quality Manager

Calibration Certificate

0025917

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : B&K4231 sound calibrator Serial No. /Ref. No. : 2326353 / N-02-01 Object 2 : Serial No. /Ref. No. : Manufacturer : Bruel & Kjaer
Date of calibration: 22/01/2021 Date of the recommended re-calibration: 22/01/2022	Certificate No.: 0025917 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 0.2dB	1
114.0dB	114.1dB	+0.1dB	+/- 0.2dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
5.The calibrations certificate may not be reproduced.

Measured value(s) within **the allowable deviation.**

Performed by

Calibration Technician

Approved by

Quality Manager

Appleone Calibration Laboratory Ltd. Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR Tel: +852 2370 4437 Fax: +852 2114 0393

Calibration Certificate

0025914

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : SVAN957 SLM Serial No. /Ref. No. : 23851 / N-08-12 Object 2 : Microphone Serial No. /Ref. No. : 43676 Manufacturer : Svantek
Date of calibration: 22/01/2021 Date of the recommended re-calibration: 22/01/2022	Certificate No.: 0025914 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.6dB	-0.4dB	+/- 1.5dB	1
114.0dB	113.5dB	-0.5dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
5.The calibrations certificate may not be reproduced.

Measured value(s) within **the allowable deviation.**

Performed by

Calibration Technician

Approved by

Quality Manager

Appleone Calibration Laboratory Ltd. Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR Tel: +852 2370 4437 Fax: +852 2114 0393

Equipment no.: N-12-01

Calibration Certificate

0024993

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570183 / 550233 Object 2 : Serial No. /Ref. No. : Manufacturer : BSWAtech
Date of calibration: 07/10/2020 Date of the recommended re-calibration: 07/10/2021	Certificate No.: 0024993 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.4dB	-0.6dB	+/- 1.5dB	1
114.0dB	113.2dB	-0.8dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
5.The calibrations certificate may not be reproduced.

Measured value(s) within **the allowable deviation.**

Performed by

Calibration Technician Mr. K.L. Ng

Approved by

Mr. K.S. Ng

Quality Manager

Equipment no.: N-12-02

Calibration Certificate

0024995

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570187 / 550841 Object 2 : Serial No. /Ref. No. : Manufacturer : BSWAtech
Date of calibration: 07/10/2020 Date of the recommended re-calibration: 07/10/2021	Certificate No.: 0024995 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.1dB	-0.9dB	+/- 1.5dB	1
114.0dB	113.1dB	-0.9dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
5.The calibrations certificate may not be reproduced.

Measured value(s) within **the allowable deviation.**

Performed by

Calibration Technician Mr. K.L. Ng

Approved by

Mr. K.S. Ng

Quality Manager

Equipment no.: N-12-03

Calibration Certificate

0024996

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570188 / 550850 Object 2 : Serial No. /Ref. No. : Manufacturer : BSWAtech
Date of calibration: 07/10/2020 Date of the recommended re-calibration: 07/10/2021	Certificate No.: 0024996 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	92.9dB	-1.1dB	+/- 1.5dB	1
114.0dB	112.8dB	-1.2dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
5.The calibrations certificate may not be reproduced.

Measured value(s) within **the allowable deviation.**

Performed by

Calibration Technician Mr. K.L. Ng

Approved by

Mr. K.S. Ng

Quality Manager

High Precision Chemical Testing Limited
Rm 1904, Technology Park,
18 On Lai Street, Shatin,
New Territories, Hong Kong

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Test Report No.:	00092
Date of Issue:	2021-02-26
Date Received:	2021-02-17
Date Tested:	2021-02-17 to 2021-02-25
Date Completed:	2021-02-26

ATTN: **Mr. Henry Leung**

Certificate of Calibration

Item for calibration

YSI EXO1 Multi-parameter Sonde	Equipment No.: SW-08-166
Manufacturer:	YSI Incorporated, a Xylem brand
Description:	Serial No.
- EXO Optical DO Sensor, Ti	17K101625
- EXO conductivity/Temperature Sensor, Ti	17H103448
- EXO Turbidity Sensor, Ti	17K100333
- EXO pH Sensor Assembly, Guarded, Ti	17B100260

Test conditions:

Room Temperature : 22-25 degree Celsius
Relative Humidity : 35-70%

Test Specifications:

Performance checking for Conductivity, Temperature, pH, Dissolved oxygen (D.O.) and Turbidity

Method reference:

According to manufacturer instruction manual, APHA 23rd Ed 4500-O G

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High Precision Chemical Testing Limited
Rm 1904, Technology Park,
18 On Lai Street, Shatin,
New Territories, Hong Kong

Test Report

Results:

Conductivity performance checking

Expected Reading (mS/cm)	Instrument Readings (mS/cm)	Acceptance Criteria	Comment
1332	1298	1265-1399	Pass
6075	6089	5771-6379	Pass
12150	12188	11543-12758	Pass

Temperature performance checking

Expected Reading (oC)	Instrument Readings (oC)	Acceptance Criteria	Comment
10.7	10.306	±2.0	Pass
25.0	24.953	±2.0	Pass
36.6	36.231	±2.0	Pass

pH performance checking

Expected Reading (pH unit)	Instrument Readings (pH unit)	Acceptance Criteria	Comment
4.0	4.11	4.0 ± 0.2	Pass
7.0	7.10	7.0 ± 0.2	Pass
10.0	10.02	10.0 ± 0.2	Pass

D.O. performance checking

Expected Reading	Instrument Readings (mg/L)	Acceptance Criteria	Comment
0.00	0.15	--	--
7.97	7.88	±0.20	Pass

Turbidity performance checking

Expected Reading(NTU)	Instrument Readings (NTU)	Acceptance Criteria	Comment
0	0.07	--	--
10	10.76	9.0-11.0	Pass
50	51.34	45.0-55.0	Pass
124	121.17	111.6-136.4	Pass

Remark: "Instrument Readings " presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures

----------**End of Report**----------

PREPARED AND CHECKED BY:
For and On Behalf of **High Precision Chemical Testing Limited**

Laboratory Director

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TISCH Environmental

RECALIBRATION DUE DATE:
January 11, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	January 11, 2021	**Rootsmeter S/N:** 438320	**Ta:** 297	°K
Operator:	Jim Tisch		**Pa:** 750.1	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **3864**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4470	3.2	2.00
2	3	4	1	1.0210	6.4	4.00
3	5	6	1	0.9140	8.0	5.00
4	7	8	1	0.8670	8.8	5.50
5	9	10	1	0.7140	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)
0.9860	0.6814	1.4073	0.9957	0.6881	0.8899
0.9818	0.9616	1.9902	0.9915	0.9711	1.2585
0.9797	1.0719	2.2251	0.9893	1.0824	1.4071
0.9786	1.1288	2.3337	0.9883	1.1399	1.4757
0.9732	1.3630	2.8146	0.9828	1.3765	1.7798
QSTD	**m=**	**2.06566**	**QA**	**m=**	**1.29348**
	b=	**0.00315**		**b=**	**0.00199**
	r=	**0.99996**		**r=**	**0.99996**

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

isch Environmental, Inc.
45 South Miami Avenue
illage of Cleves, OH 45002

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

High Precision Chemical Testing Limited
Rm 1904, Technology Park,
18 On Lai Street, Shatin,
New Territories, Hong Kong
Tel: (852) 3841 4388
Email: info@hpct.com.hk

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,

Test Report No.:	00114
Date of Issue:	2021-05-07
Date Received:	2021-03-25
Test Period	2021-03-26 to 2021-03-26
Next Due Date:	2022-03-26

ATTN: **Mr. Henry Leung**

Certificate of Calibration

Item for calibration

Description	Integrating Sound Level Meter
Manufacturer	BSWA Technology
Model No.	BSWA 308
Serial No.	580287
Microphone No.	590079
Equipment No.	N-12-05

Test conditions:

Room Temperature : 22-25 degree Celsius
Relative Humidity : 35-70%

Method reference:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Measuring equipment：

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

****

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18 On Lai Street, Shatin,
New Territories, Hong Kong
Tel: (852) 3841 4388
Email: info@hpct.com.hk

Test Report

Results:

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.0	0.0	± 1.5
114.0	114.0	0.0	± 1.5

REMARK:

1. The indication value was obtained from the average of ten replicated measurement.
2. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC 17025.
3. This report supersedes the test report no. 00100 issued on 26 Mar 2021.

----------**End of Report**----------

PREPARED AND CHECKED BY:
For and On Behalf of **High Precision Chemical Testing Limited**

Laboratory Director (CHAN Hon-Fai)

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High Precision Chemical Testing Limited
Rm 1904, Technology Park,
18 On Lai Street, Shatin,
New Territories, Hong Kong
Tel: (852) 3841 4388
Email: info@hpct.com.hk

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,

Test Report No.:	00122
Date of Issue:	2021-05-12
Date Received:	2021-05-07
Test Period	2021-05-10 to 2021-05-10
Next Due Date:	2022-05-10

ATTN: **Mr. Henry Leung**

Certificate of Calibration

Item for calibration

Description	Integrating Sound Level Meter
Manufacturer	BSWA Technology
Model No.	BSWA 308
Serial No.	580156
Microphone No.	580804
Equipment No.	N-12-06

Test conditions:

Room Temperature : 22-25 degree Celsius
Relative Humidity : 35-70%

Method reference:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Measuring equipment：

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

****

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High Precision Chemical Testing Limited
Rm 1904, Technology Park,
18 On Lai Street, Shatin,
New Territories, Hong Kong
Tel: (852) 3841 4388
Email: info@hpct.com.hk

Test Report

Results:

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.0	0.0	± 1.5
114.0	114.0	+0.1	± 1.5

REMARK:

1. The indication value was obtained from the average of ten replicated measurement.
2. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC 17025.

----------**End of Report**----------

PREPARED AND CHECKED BY:
For and On Behalf of **High Precision Chemical Testing Limited**

Laboratory Director (CHAN Hon-Fai)

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SET 4

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG14852)
Model No.:	716A0403
Serial No.:	BE15890
Calibration Date:	22 March 2021
Next Calibration Date:	22 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 22 March 2021

SET 4

CALIBRATION CERTIFICATE

Calibration Item:	TRIAXIAL GEOPHONE (Calibration with main unit BE15890)
Part Number:	714A9701
Serial No.:	BG14852
Calibration Date:	22 March 2021
Next Calibration Date:	22 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 22 March 2021

SET 4

CALIBRATION CERTIFICATE

Calibration Item:	Linear Microphone (Calibration with main unit BE15890)
Model No.:	714A9801
Serial No.:	BH11455
Calibration Date:	22 March 2021
Next Calibration Date:	22 March 2022
Method Used:	In-house Method MM-002
In-house Testing Procedure No.:	MM-002

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
Linear Microphone	714A9801	BH11561
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Microphone*	4193	2677340
Low Frequency Calibrator*	42AE	105366
Bruel & Kjaer Conditional Amplifier*	269	2152173

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 22 March 2021

SET 5

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG16955)
Model No.:	716A0403
Serial No.:	BE16223
Calibration Date:	22 March 2021
Next Calibration Date:	22 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 22 March 2021

SET 5

CALIBRATION CERTIFICATE

Calibration Item:	TRIAXIAL GEOPHONE (Calibration with main unit BE16223)
Part Number:	714A9701
Serial No.:	BG16955
Calibration Date:	22 March 2021
Next Calibration Date:	22 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 22 March 2021

SET 5

CALIBRATION CERTIFICATE

Calibration Item:	Linear Microphone (Calibration with main unit BE16223)
Model No.:	714A9801
Serial No.:	BH11458
Calibration Date:	22 March 2021
Next Calibration Date:	22 March 2022
Method Used:	In-house Method MM-002
In-house Testing Procedure No.:	MM-002

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
Linear Microphone	714A9801	BH11561
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Microphone*	4193	2677340
Low Frequency Calibrator*	42AE	105366
Bruel & Kjaer Conditional Amplifier*	269	2152173

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 22 March 2021

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG15353)
Model No.:	716A0403
Serial No.:	BE15891
Calibration Date:	11 March 2021
Next Calibration Date:	11 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 11 March 2021

CALIBRATION CERTIFICATE

Calibration Item:	TRIAXIAL GEOPHONE (Calibration with main unit BE15891)
Part Number:	714A9701
Serial No.:	BG15353
Calibration Date:	11 March 2021
Next Calibration Date:	11 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 11 March 2021

SET 11

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG15180)
Model No.:	716A0403
Serial No.:	BE15894
Calibration Date:	1 March 2021
Next Calibration Date:	1 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 1 March 2021

SET 11

CALIBRATION CERTIFICATE

Calibration Item:	TRIAXIAL GEOPHONE (Calibration with main unit BE15894)
Part Number:	714A9701
Serial No.:	BG15180
Calibration Date:	1 March 2021
Next Calibration Date:	1 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 1 March 2021

SET II

CALIBRATION CERTIFICATE

Calibration Item:	Linear Microphone (Calibration with main unit BE15894)
Model No.:	714A9801
Serial No.:	BH10228
Calibration Date:	1 March 2021
Next Calibration Date:	1 March 2022
Method Used:	In-house Method MM-002
In-house Testing Procedure No.:	MM-002

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
Linear Microphone	714A9801	BH11561
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Microphone*	4193	2677340
Low Frequency Calibrator*	42AE	105366
Bruel & Kjaer Conditional Amplifier*	269	2152173

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 1 March 2021

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG20673)
Model No.:	716A0403
Serial No.:	BE13849
Calibration Date:	11 March 2021
Next Calibration Date:	11 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 11 March 2021

CALIBRATION CERTIFICATE

Calibration Item:	TRIAXIAL GEOPHONE (Calibration with main unit BE13849)
Part Number:	714A9701
Serial No.:	BG20673
Calibration Date:	11 March 2021
Next Calibration Date:	11 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 11 March 2021

CALIBRATION CERTIFICATE

Calibration Item:	Linear Microphone (Calibration with main unit BE13849)
Model No.:	714A9801
Serial No.:	BH13154
Calibration Date:	11 March 2021
Next Calibration Date:	11 March 2022
Method Used:	In-house Method MM-002
In-house Testing Procedure No.:	MM-002

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
Linear Microphone	714A9801	BH11561
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Microphone*	4193	2677340
Low Frequency Calibrator*	42AE	105366
Bruel & Kjaer Conditional Amplifier*	269	2152173

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 11 March 2021

SET 16

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG16512)
Model No.:	716A0403
Serial No.:	BE13853
Calibration Date:	1 March 2021
Next Calibration Date:	1 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 1 March 2021

SET 16

CALIBRATION CERTIFICATE

Calibration Item:	TRIAXIAL GEOPHONE (Calibration with main unit BE13853)
Part Number:	714A9701
Serial No.:	BG16512
Calibration Date:	1 March 2021
Next Calibration Date:	1 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 1 March 2021

CALIBRATION CERTIFICATE

Calibration Item:	Minimate Plus Unit (Calibration with Geophone BG17240)
Model No.:	716A0403
Serial No.:	BE20015
Calibration Date:	11 March 2021
Next Calibration Date:	11 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 11 March 2021

CALIBRATION CERTIFICATE

Calibration Item:	TRIAXIAL GEOPHONE (Calibration with main unit BE20015)
Part Number:	714A9701
Serial No.:	BG17240
Calibration Date:	11 March 2021
Next Calibration Date:	11 March 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 11 March 2021

CALIBRATION CERTIFICATE

Calibration Item:	Linear Microphone (Calibration with main unit BE20015)
Model No.:	714A9801
Serial No.:	BH12658
Calibration Date:	11 March 2021
Next Calibration Date:	11 March 2022
Method Used:	In-house Method MM-002
In-house Testing Procedure No.:	MM-002

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
Linear Microphone	714A9801	BH11561
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Microphone*	4193	2677340
Low Frequency Calibrator*	42AE	105366
Bruel & Kjaer Conditional Amplifier*	269	2152173

*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 11 March 2021

SET 35

CALIBRATION CERTIFICATE

Calibration Item:	Micromate System ISEE (Calibration with Geophone UM13703)
Model No.:	721A2501
Serial No.:	UM13703
Calibration Date:	14 April 2021
Next Calibration Date:	14 April 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 14 April 2021

SET 35

CALIBRATION CERTIFICATE

Calibration Item:	TRIAXIAL GEOPHONE (Calibration with main unit UM13703)
Part Number:	721A2901
Serial No.:	UM13703
Calibration Date:	14 April 2021
Next Calibration Date:	14 April 2022
Method Used:	In-house Method B3-001
In-house Testing Procedure No.:	B3-001

Test References	Model	Serial No.
Blastmate III	714A0801	BA15521
ISEE Triaxial Geophone	714A9701	BG14463
15MHz Function Generator*	33120A	US34003309
Stanford Spectrum Analyzer	SR760	41550
Keysight Multimeter*	34470A	MY57700765
HP Distortion Meter*	339A	2025A04515
Bruel & Kjaer Accelerometer*	4370	31474
Bruel & Kjaer Charge Amplifier*	2647	2731339
Bruel & Kjaer Conditional Amplifier*	2690	2437929
LDS Air Cooled Vibrator	V556	92794/1
LDS Field Power Supply	FPS10L	ARA 04/05
LDS Power Amplifier	PA1000L	ARA 07/06

*References are traceable to NIST or equivalent.

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Authorized by: _____

(Au Yeung Hang Chuen, Isaac)

Date: 14 April 2021

APPENDIX C
WEATHER INFORMATION

Table I: Weather over the Reporting Month

August 2021				
Table I				
Day	**Mean Pressure (hPa)**	**Air Temperature Mean (°C)**	**Mean Relative Humidity (%)**	**Total Rainfall (mm)**
1	998.5	29.4	83.0	11.6
2	998.3	30.0	80.0	Trace
3	997.2	28.2	88.0	19.7
4	995.6	28.2	85.0	41.9
5	996.0	27.6	90.0	28.1
6	998.0	28.3	89.0	31.0
7	1001.3	28.8	85.0	0.0
8	1004.3	29.3	85.0	3.1
9	1005.4	29.1	85.0	36.3
10	1005.9	29.0	87.0	17.3
11	1008.3	29.5	84.0	3.0
12	1008.9	29.0	82.0	1.0
13	1006.2	28.6	83.0	5.4
14	1006.4	28.0	85.0	2.2
15	1010.2	27.3	87.0	5.7
16	1012.5	28.3	83.0	3.9
17	1010.5	29.5	78.0	0.0
18	1008.2	29.5	77.0	0.0
19	1008.6	28.6	84.0	34.6
20	1009.5	29.5	77.0	Trace
21	1008.6	29.8	76.0	0.0
22	1007.4	30.1	74.0	0.0
23	1007.2	30.2	75.0	Trace
24	1007.7	29.6	79.0	23.7
25	1009.0	29.7	79.0	1.1
26	1011.0	29.7	80.0	2.2
27	1012.0	25.6	89.0	29.3
28	1011.6	26.9	81.0	22.0
29	1011.2	27.8	83.0	13.9
30	1011.4	29.1	81.0	Trace
31	1011.1	27.3	88.0	13.5

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
1 Aug 2021	12:00 AM	1.0	26.2
1 Aug 2021	1:00 AM	2.3	26.2
1 Aug 2021	2:00 AM	2.8	26.2
1 Aug 2021	3:00 AM	1.9	26.3
1 Aug 2021	4:00 AM	1.9	26.6
1 Aug 2021	5:00 AM	1.9	25.8
1 Aug 2021	6:00 AM	2.3	26
1 Aug 2021	7:00 AM	1.9	26.3
1 Aug 2021	8:00 AM	1.9	26.8
1 Aug 2021	9:00 AM	1.9	26.9
1 Aug 2021	10:00 AM	1.9	26.6
1 Aug 2021	11:00 AM	1.4	26.4
1 Aug 2021	12:00 PM	1.4	26.8
1 Aug 2021	1:00 PM	1.4	26.8
1 Aug 2021	2:00 PM	1.9	27.5
1 Aug 2021	3:00 PM	1.4	26.7
1 Aug 2021	4:00 PM	1.4	26
1 Aug 2021	5:00 PM	1.9	26.3
1 Aug 2021	6:00 PM	1.4	26.6
1 Aug 2021	7:00 PM	1.4	26.9
1 Aug 2021	8:00 PM	3.2	27.2
1 Aug 2021	9:00 PM	2.3	27.1
1 Aug 2021	10:00 PM	1.9	27.4
1 Aug 2021	11:00 PM	2.3	27.8
2 Aug 2021	12:00 AM	2.3	28.3
2 Aug 2021	1:00 AM	1.0	28.2
2 Aug 2021	2:00 AM	1.9	27.1
2 Aug 2021	3:00 AM	1.9	27.3
2 Aug 2021	4:00 AM	1.4	27.6
2 Aug 2021	5:00 AM	1.4	27.9
2 Aug 2021	6:00 AM	1.4	27.9
2 Aug 2021	7:00 AM	1.9	28.7
2 Aug 2021	8:00 AM	0.5	29.2
2 Aug 2021	9:00 AM	1.0	30.1
2 Aug 2021	10:00 AM	1.0	30.2
2 Aug 2021	11:00 AM	1.0	29.6
2 Aug 2021	12:00 PM	1.4	30.4
2 Aug 2021	1:00 PM	1.4	30.9
2 Aug 2021	2:00 PM	1.4	31.5
2 Aug 2021	3:00 PM	1.4	32.8
2 Aug 2021	4:00 PM	1.9	31.8
2 Aug 2021	5:00 PM	1.4	29.2
2 Aug 2021	6:00 PM	1.9	29.6
2 Aug 2021	7:00 PM	1.4	29.5
2 Aug 2021	8:00 PM	1.0	29.6

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
2 Aug 2021	9:00 PM	1.4	29.5
2 Aug 2021	10:00 PM	1.9	29.6
2 Aug 2021	11:00 PM	1.9	28.9
3 Aug 2021	12:00 AM	1.4	29.1
3 Aug 2021	1:00 AM	1.0	29.3
3 Aug 2021	2:00 AM	1.0	29.4
3 Aug 2021	3:00 AM	1.0	29.3
3 Aug 2021	4:00 AM	1.0	27.3
3 Aug 2021	5:00 AM	0.5	27.6
3 Aug 2021	6:00 AM	1.0	27.9
3 Aug 2021	7:00 AM	1.0	27.8
3 Aug 2021	8:00 AM	0.5	28.1
3 Aug 2021	9:00 AM	1.0	28.8
3 Aug 2021	10:00 AM	1.0	30.1
3 Aug 2021	11:00 AM	0.5	31.6
3 Aug 2021	12:00 PM	1.0	33.2
3 Aug 2021	1:00 PM	0.1	34.7
3 Aug 2021	2:00 PM	0.5	35.4
3 Aug 2021	3:00 PM	1.0	35.2
3 Aug 2021	4:00 PM	1.4	34.9
3 Aug 2021	5:00 PM	1.0	34.2
3 Aug 2021	6:00 PM	1.4	33.4
3 Aug 2021	7:00 PM	1.4	32.9
3 Aug 2021	8:00 PM	1.0	32.1
3 Aug 2021	9:00 PM	1.4	31.7
3 Aug 2021	10:00 PM	1.4	31.5
3 Aug 2021	11:00 PM	1.0	31.1
4 Aug 2021	12:00 AM	1.0	31
4 Aug 2021	1:00 AM	1.0	30.7
4 Aug 2021	2:00 AM	1.0	30.6
4 Aug 2021	3:00 AM	1.0	30.4
4 Aug 2021	4:00 AM	0.5	30.3
4 Aug 2021	5:00 AM	0.5	30
4 Aug 2021	6:00 AM	1.0	29.4
4 Aug 2021	7:00 AM	0.5	29.6
4 Aug 2021	8:00 AM	0.5	30.2
4 Aug 2021	9:00 AM	0.5	30.9
4 Aug 2021	10:00 AM	1.0	31.3
4 Aug 2021	11:00 AM	0.5	32.3
4 Aug 2021	12:00 PM	1.4	33.1
4 Aug 2021	1:00 PM	1.0	33.8
4 Aug 2021	2:00 PM	1.4	34.4
4 Aug 2021	3:00 PM	1.4	33.6
4 Aug 2021	4:00 PM	1.4	33.7
4 Aug 2021	5:00 PM	1.0	33.1

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
4 Aug 2021	6:00 PM	1.4	32.4
4 Aug 2021	7:00 PM	1.0	32.1
4 Aug 2021	8:00 PM	1.0	31.8
4 Aug 2021	9:00 PM	0.5	31.3
4 Aug 2021	10:00 PM	1.4	31.1
4 Aug 2021	11:00 PM	1.0	30.9
5 Aug 2021	12:00 AM	1.4	30.7
5 Aug 2021	1:00 AM	0.5	30.4
5 Aug 2021	2:00 AM	0.5	30.3
5 Aug 2021	3:00 AM	0.5	30.3
5 Aug 2021	4:00 AM	0.5	30.3
5 Aug 2021	5:00 AM	0.5	30.2
5 Aug 2021	6:00 AM	0.5	30.3
5 Aug 2021	7:00 AM	0.5	30.4
5 Aug 2021	8:00 AM	0.5	31.1
5 Aug 2021	9:00 AM	1.0	31.1
5 Aug 2021	10:00 AM	1.0	31.8
5 Aug 2021	11:00 AM	1.0	31.8
5 Aug 2021	12:00 PM	1.4	34.2
5 Aug 2021	1:00 PM	1.4	32.2
5 Aug 2021	2:00 PM	1.9	31.1
5 Aug 2021	3:00 PM	2.8	31.1
5 Aug 2021	4:00 PM	3.7	31.1
5 Aug 2021	5:00 PM	4.6	31
5 Aug 2021	6:00 PM	3.2	30
5 Aug 2021	7:00 PM	1.9	29.6
5 Aug 2021	8:00 PM	1.0	29.2
5 Aug 2021	9:00 PM	0.5	29.4
5 Aug 2021	10:00 PM	1.0	29.4
5 Aug 2021	11:00 PM	1.9	29.6
6 Aug 2021	12:00 AM	1.9	29.7
6 Aug 2021	1:00 AM	1.4	29.4
6 Aug 2021	2:00 AM	0.5	29.6
6 Aug 2021	3:00 AM	0.5	29.7
6 Aug 2021	4:00 AM	0.5	29.7
6 Aug 2021	5:00 AM	0.5	29.7
6 Aug 2021	6:00 AM	1.0	29.7
6 Aug 2021	7:00 AM	1.0	30
6 Aug 2021	8:00 AM	1.4	30.4
6 Aug 2021	9:00 AM	1.0	30.9
6 Aug 2021	10:00 AM	1.0	31.5
6 Aug 2021	11:00 AM	1.0	32
6 Aug 2021	12:00 PM	1.0	33
6 Aug 2021	1:00 PM	1.4	33.1
6 Aug 2021	2:00 PM	1.9	32.8

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
6 Aug 2021	3:00 PM	1.4	32.6
6 Aug 2021	4:00 PM	2.3	32.9
6 Aug 2021	5:00 PM	4.6	32.7
6 Aug 2021	6:00 PM	1.4	31.9
6 Aug 2021	7:00 PM	1.0	31.2
6 Aug 2021	8:00 PM	0.5	30.6
6 Aug 2021	9:00 PM	1.4	30.6
6 Aug 2021	10:00 PM	1.0	30.5
6 Aug 2021	11:00 PM	1.0	30.3
7 Aug 2021	12:00 AM	1.0	30.3
7 Aug 2021	1:00 AM	1.0	29.9
7 Aug 2021	2:00 AM	1.4	28.9
7 Aug 2021	3:00 AM	0.5	29.2
7 Aug 2021	4:00 AM	0.5	29.4
7 Aug 2021	5:00 AM	0.5	29.6
7 Aug 2021	6:00 AM	1.0	29.7
7 Aug 2021	7:00 AM	1.0	29.8
7 Aug 2021	8:00 AM	1.0	30.3
7 Aug 2021	9:00 AM	1.4	30.8
7 Aug 2021	10:00 AM	1.9	31.3
7 Aug 2021	11:00 AM	1.4	30.3
7 Aug 2021	12:00 PM	1.4	31.7
7 Aug 2021	1:00 PM	1.4	33.1
7 Aug 2021	2:00 PM	2.3	33.4
7 Aug 2021	3:00 PM	4.6	33.2
7 Aug 2021	4:00 PM	5.0	33
7 Aug 2021	5:00 PM	4.6	32.4
7 Aug 2021	6:00 PM	5.0	32
7 Aug 2021	7:00 PM	3.7	31.8
7 Aug 2021	8:00 PM	2.8	31.7
7 Aug 2021	9:00 PM	2.8	31.4
7 Aug 2021	10:00 PM	1.9	31.4
7 Aug 2021	11:00 PM	1.4	31.2
8 Aug 2021	12:00 AM	1.9	29.6
8 Aug 2021	1:00 AM	1.0	29.8
8 Aug 2021	2:00 AM	0.5	29.8
8 Aug 2021	3:00 AM	1.0	27.9
8 Aug 2021	4:00 AM	1.0	28.4
8 Aug 2021	5:00 AM	0.5	28.6
8 Aug 2021	6:00 AM	0.1	28.8
8 Aug 2021	7:00 AM	0.5	29.1
8 Aug 2021	8:00 AM	1.0	29.6
8 Aug 2021	9:00 AM	1.0	29.9
8 Aug 2021	10:00 AM	1.9	29.8
8 Aug 2021	11:00 AM	1.0	29.3

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
8 Aug 2021	12:00 PM	1.4	30.6
8 Aug 2021	1:00 PM	1.9	30.5
8 Aug 2021	2:00 PM	1.4	30.6
8 Aug 2021	3:00 PM	1.0	27.4
8 Aug 2021	4:00 PM	2.3	27.6
8 Aug 2021	5:00 PM	1.4	27.8
8 Aug 2021	6:00 PM	1.0	28
8 Aug 2021	7:00 PM	2.3	27.9
8 Aug 2021	8:00 PM	2.3	28.1
8 Aug 2021	9:00 PM	2.3	27.9
8 Aug 2021	10:00 PM	1.9	28.1
8 Aug 2021	11:00 PM	1.9	28
9 Aug 2021	12:00 AM	1.0	28.3
9 Aug 2021	1:00 AM	1.0	28.4
9 Aug 2021	2:00 AM	1.0	28.3
9 Aug 2021	3:00 AM	1.0	28.3
9 Aug 2021	4:00 AM	0.5	28.5
9 Aug 2021	5:00 AM	1.0	28.5
9 Aug 2021	6:00 AM	0.5	28.3
9 Aug 2021	7:00 AM	1.0	27.7
9 Aug 2021	8:00 AM	1.0	28.1
9 Aug 2021	9:00 AM	0.5	28.8
9 Aug 2021	10:00 AM	1.0	29.6
9 Aug 2021	11:00 AM	1.4	30.2
9 Aug 2021	12:00 PM	1.4	30.9
9 Aug 2021	1:00 PM	1.4	31.2
9 Aug 2021	2:00 PM	1.4	30.8
9 Aug 2021	3:00 PM	1.4	30.8
9 Aug 2021	4:00 PM	1.4	31.4
9 Aug 2021	5:00 PM	2.8	31.3
9 Aug 2021	6:00 PM	3.2	29.3
9 Aug 2021	7:00 PM	3.2	28.3
9 Aug 2021	8:00 PM	2.8	27.9
9 Aug 2021	9:00 PM	2.3	28.2
9 Aug 2021	10:00 PM	2.8	28.3
9 Aug 2021	11:00 PM	1.9	28.7
10 Aug 2021	12:00 AM	1.0	28.8
10 Aug 2021	1:00 AM	1.0	28.9
10 Aug 2021	2:00 AM	1.4	29
10 Aug 2021	3:00 AM	1.0	28.1
10 Aug 2021	4:00 AM	1.0	28.2
10 Aug 2021	5:00 AM	1.0	28.5
10 Aug 2021	6:00 AM	0.5	28.7
10 Aug 2021	7:00 AM	1.0	29.1
10 Aug 2021	8:00 AM	1.0	29.6

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
10 Aug 2021	9:00 AM	1.0	30.3
10 Aug 2021	10:00 AM	1.0	31.7
10 Aug 2021	11:00 AM	1.9	32.3
10 Aug 2021	12:00 PM	1.4	30.4
10 Aug 2021	1:00 PM	2.3	32.2
10 Aug 2021	2:00 PM	1.4	32.9
10 Aug 2021	3:00 PM	1.4	34.6
10 Aug 2021	4:00 PM	1.4	33.5
10 Aug 2021	5:00 PM	1.4	33.6
10 Aug 2021	6:00 PM	1.4	32.6
10 Aug 2021	7:00 PM	1.4	32.2
10 Aug 2021	8:00 PM	1.4	31.8
10 Aug 2021	9:00 PM	1.4	31.3
10 Aug 2021	10:00 PM	1.4	30.9
10 Aug 2021	11:00 PM	1.0	30.6
11 Aug 2021	12:00 AM	1.4	30.3
11 Aug 2021	1:00 AM	1.0	30.2
11 Aug 2021	2:00 AM	1.4	30.2
11 Aug 2021	3:00 AM	1.9	30.1
11 Aug 2021	4:00 AM	1.9	30.1
11 Aug 2021	5:00 AM	1.9	29.8
11 Aug 2021	6:00 AM	1.9	29.8
11 Aug 2021	7:00 AM	1.4	30.2
11 Aug 2021	8:00 AM	1.0	30.7
11 Aug 2021	9:00 AM	1.0	31.3
11 Aug 2021	10:00 AM	1.0	31.7
11 Aug 2021	11:00 AM	1.4	30.7
11 Aug 2021	12:00 PM	1.4	32.1
11 Aug 2021	1:00 PM	1.4	33.9
11 Aug 2021	2:00 PM	1.4	34.3
11 Aug 2021	3:00 PM	1.4	34.1
11 Aug 2021	4:00 PM	1.4	33.4
11 Aug 2021	5:00 PM	1.4	32.8
11 Aug 2021	6:00 PM	1.4	32.8
11 Aug 2021	7:00 PM	1.0	32.1
11 Aug 2021	8:00 PM	1.0	31.8
11 Aug 2021	9:00 PM	1.4	31.6
11 Aug 2021	10:00 PM	1.4	31.2
11 Aug 2021	11:00 PM	1.0	30.8
12 Aug 2021	12:00 AM	1.0	30.6
12 Aug 2021	1:00 AM	1.0	30.4
12 Aug 2021	2:00 AM	1.0	30.2
12 Aug 2021	3:00 AM	1.0	30.1
12 Aug 2021	4:00 AM	1.0	30.3
12 Aug 2021	5:00 AM	1.0	29.4

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
12 Aug 2021	6:00 AM	1.0	29.6
12 Aug 2021	7:00 AM	1.0	29.8
12 Aug 2021	8:00 AM	1.0	30.3
12 Aug 2021	9:00 AM	1.0	30.9
12 Aug 2021	10:00 AM	1.4	31.3
12 Aug 2021	11:00 AM	2.3	31.7
12 Aug 2021	12:00 PM	2.8	32
12 Aug 2021	1:00 PM	3.2	32.7
12 Aug 2021	2:00 PM	3.2	33.9
12 Aug 2021	3:00 PM	3.2	34.2
12 Aug 2021	4:00 PM	2.8	33.1
12 Aug 2021	5:00 PM	1.4	33.1
12 Aug 2021	6:00 PM	1.4	32.7
12 Aug 2021	7:00 PM	1.0	31.8
12 Aug 2021	8:00 PM	1.4	31.7
12 Aug 2021	9:00 PM	1.0	31.6
12 Aug 2021	10:00 PM	1.0	31.4
12 Aug 2021	11:00 PM	1.0	30.7
13 Aug 2021	12:00 AM	1.4	30.4
13 Aug 2021	1:00 AM	1.4	30.1
13 Aug 2021	2:00 AM	1.0	29.9
13 Aug 2021	3:00 AM	1.0	29.9
13 Aug 2021	4:00 AM	1.0	29.9
13 Aug 2021	5:00 AM	1.0	29.7
13 Aug 2021	6:00 AM	0.5	29.6
13 Aug 2021	7:00 AM	0.5	30.1
13 Aug 2021	8:00 AM	1.4	30.6
13 Aug 2021	9:00 AM	1.4	31.6
13 Aug 2021	10:00 AM	1.9	32.6
13 Aug 2021	11:00 AM	1.9	32.6
13 Aug 2021	12:00 PM	1.4	32.6
13 Aug 2021	1:00 PM	2.3	34.7
13 Aug 2021	2:00 PM	1.4	35.5
13 Aug 2021	3:00 PM	1.4	35.3
13 Aug 2021	4:00 PM	1.4	34.1
13 Aug 2021	5:00 PM	1.4	33.3
13 Aug 2021	6:00 PM	1.4	32.8
13 Aug 2021	7:00 PM	1.4	31.8
13 Aug 2021	8:00 PM	1.4	31.3
13 Aug 2021	9:00 PM	1.0	30.9
13 Aug 2021	10:00 PM	1.4	30.7
13 Aug 2021	11:00 PM	1.0	30.4
14 Aug 2021	12:00 AM	1.4	30.1
14 Aug 2021	1:00 AM	1.0	30
14 Aug 2021	2:00 AM	1.0	30.4

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August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
14 Aug 2021	3:00 AM	1.0	30.2
14 Aug 2021	4:00 AM	0.5	30.1
14 Aug 2021	5:00 AM	1.9	29.8
14 Aug 2021	6:00 AM	0.1	29.7
14 Aug 2021	7:00 AM	0.1	30.1
14 Aug 2021	8:00 AM	0.5	30.7
14 Aug 2021	9:00 AM	1.0	31.7
14 Aug 2021	10:00 AM	1.0	33.3
14 Aug 2021	11:00 AM	1.4	34.7
14 Aug 2021	12:00 PM	1.4	34.6
14 Aug 2021	1:00 PM	1.9	35.7
14 Aug 2021	2:00 PM	1.9	38
14 Aug 2021	3:00 PM	2.3	37.3
14 Aug 2021	4:00 PM	1.9	36.8
14 Aug 2021	5:00 PM	1.4	35.9
14 Aug 2021	6:00 PM	1.4	34.8
14 Aug 2021	7:00 PM	1.0	33.4
14 Aug 2021	8:00 PM	1.0	33.2
14 Aug 2021	9:00 PM	1.0	32.5
14 Aug 2021	10:00 PM	1.0	32.2
14 Aug 2021	11:00 PM	1.0	31.8
15 Aug 2021	12:00 AM	1.4	31.7
15 Aug 2021	1:00 AM	1.0	31.2
15 Aug 2021	2:00 AM	1.0	31.1
15 Aug 2021	3:00 AM	1.0	30.8
15 Aug 2021	4:00 AM	1.0	30.7
15 Aug 2021	5:00 AM	1.0	30.5
15 Aug 2021	6:00 AM	0.5	29.9
15 Aug 2021	7:00 AM	0.5	30.3
15 Aug 2021	8:00 AM	1.0	31.6
15 Aug 2021	9:00 AM	1.9	32.8
15 Aug 2021	10:00 AM	1.4	33.9
15 Aug 2021	11:00 AM	1.9	35.2
15 Aug 2021	12:00 PM	2.3	35.7
15 Aug 2021	1:00 PM	1.9	34.3
15 Aug 2021	2:00 PM	1.9	34.2
15 Aug 2021	3:00 PM	1.4	35.8
15 Aug 2021	4:00 PM	1.9	35.2
15 Aug 2021	5:00 PM	1.9	34.7
15 Aug 2021	6:00 PM	1.4	33.7
15 Aug 2021	7:00 PM	1.4	32.7
15 Aug 2021	8:00 PM	1.4	32.4
15 Aug 2021	9:00 PM	1.4	33
15 Aug 2021	10:00 PM	1.4	33.1
15 Aug 2021	11:00 PM	0.5	32.9

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August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
16 Aug 2021	12:00 AM	1.0	32.8
16 Aug 2021	1:00 AM	1.4	32.6
16 Aug 2021	2:00 AM	1.0	32.6
16 Aug 2021	3:00 AM	1.0	32.5
16 Aug 2021	4:00 AM	1.4	32.4
16 Aug 2021	5:00 AM	1.4	31.2
16 Aug 2021	6:00 AM	1.0	30.3
16 Aug 2021	7:00 AM	0.5	30.8
16 Aug 2021	8:00 AM	1.4	31.7
16 Aug 2021	9:00 AM	1.4	33.2
16 Aug 2021	10:00 AM	1.4	33.4
16 Aug 2021	11:00 AM	1.4	33.4
16 Aug 2021	12:00 PM	1.4	33.4
16 Aug 2021	1:00 PM	1.0	35.2
16 Aug 2021	2:00 PM	1.0	36.3
16 Aug 2021	3:00 PM	1.4	36.2
16 Aug 2021	4:00 PM	1.0	36.9
16 Aug 2021	5:00 PM	1.0	35
16 Aug 2021	6:00 PM	0.5	33.7
16 Aug 2021	7:00 PM	1.0	33.1
16 Aug 2021	8:00 PM	1.0	32.8
16 Aug 2021	9:00 PM	1.0	32.6
16 Aug 2021	10:00 PM	1.4	32.7
16 Aug 2021	11:00 PM	0.5	32.8
17 Aug 2021	12:00 AM	0.5	32.1
17 Aug 2021	1:00 AM	0.1	32.2
17 Aug 2021	2:00 AM	0.1	31.9
17 Aug 2021	3:00 AM	0.5	31.4
17 Aug 2021	4:00 AM	1.0	31
17 Aug 2021	5:00 AM	1.0	30.9
17 Aug 2021	6:00 AM	0.5	30.9
17 Aug 2021	7:00 AM	1.0	31
17 Aug 2021	8:00 AM	1.0	31.6
17 Aug 2021	9:00 AM	1.4	32.1
17 Aug 2021	10:00 AM	1.0	33.7
17 Aug 2021	11:00 AM	1.9	35
17 Aug 2021	12:00 PM	0.5	34.9
17 Aug 2021	1:00 PM	0.5	33.3
17 Aug 2021	2:00 PM	0.5	29.1
17 Aug 2021	3:00 PM	1.9	27.1
17 Aug 2021	4:00 PM	1.9	28.2
17 Aug 2021	5:00 PM	1.0	28.7
17 Aug 2021	6:00 PM	1.0	28.9
17 Aug 2021	7:00 PM	1.0	28.4
17 Aug 2021	8:00 PM	1.0	27.2

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August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
17 Aug 2021	9:00 PM	1.4	27.7
17 Aug 2021	10:00 PM	1.0	28.1
17 Aug 2021	11:00 PM	1.4	28.8
18 Aug 2021	12:00 AM	1.4	29.1
18 Aug 2021	1:00 AM	1.0	29.3
18 Aug 2021	2:00 AM	0.5	29.3
18 Aug 2021	3:00 AM	1.0	29.4
18 Aug 2021	4:00 AM	1.0	29.3
18 Aug 2021	5:00 AM	1.0	29.2
18 Aug 2021	6:00 AM	1.0	29.3
18 Aug 2021	7:00 AM	1.4	29.6
18 Aug 2021	8:00 AM	1.4	30.1
18 Aug 2021	9:00 AM	1.0	30.8
18 Aug 2021	10:00 AM	1.9	32.8
18 Aug 2021	11:00 AM	1.4	33.5
18 Aug 2021	12:00 PM	1.9	32.7
18 Aug 2021	1:00 PM	1.4	29.1
18 Aug 2021	2:00 PM	1.4	28.4
18 Aug 2021	3:00 PM	1.9	28.9
18 Aug 2021	4:00 PM	1.4	28.7
18 Aug 2021	5:00 PM	0.5	27.9
18 Aug 2021	6:00 PM	0.1	27.1
18 Aug 2021	7:00 PM	0.5	26.9
18 Aug 2021	8:00 PM	1.0	27.6
18 Aug 2021	9:00 PM	1.0	27.7
18 Aug 2021	10:00 PM	0.5	28
18 Aug 2021	11:00 PM	1.0	28.1
19 Aug 2021	12:00 AM	0.5	28.6
19 Aug 2021	1:00 AM	0.1	28.8
19 Aug 2021	2:00 AM	0.1	28.3
19 Aug 2021	3:00 AM	0.1	28.1
19 Aug 2021	4:00 AM	0.5	28.4
19 Aug 2021	5:00 AM	0.1	28.4
19 Aug 2021	6:00 AM	0.5	28.6
19 Aug 2021	7:00 AM	0.1	29
19 Aug 2021	8:00 AM	0.5	29.8
19 Aug 2021	9:00 AM	1.0	28.6
19 Aug 2021	10:00 AM	1.0	29.1
19 Aug 2021	11:00 AM	1.4	29.3
19 Aug 2021	12:00 PM	1.4	30
19 Aug 2021	1:00 PM	2.3	33.2
19 Aug 2021	2:00 PM	1.9	34
19 Aug 2021	3:00 PM	2.8	32.8
19 Aug 2021	4:00 PM	2.3	33.1
19 Aug 2021	5:00 PM	2.8	33.3

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
19 Aug 2021	6:00 PM	3.2	32.4
19 Aug 2021	7:00 PM	1.9	32.1
19 Aug 2021	8:00 PM	1.4	31.3
19 Aug 2021	9:00 PM	0.5	31
19 Aug 2021	10:00 PM	1.4	31
19 Aug 2021	11:00 PM	1.0	30.8
20 Aug 2021	12:00 AM	1.0	30.4
20 Aug 2021	1:00 AM	0.5	30.2
20 Aug 2021	2:00 AM	1.0	29.8
20 Aug 2021	3:00 AM	0.5	29.8
20 Aug 2021	4:00 AM	0.5	29.9
20 Aug 2021	5:00 AM	0.5	29.8
20 Aug 2021	6:00 AM	0.1	29.6
20 Aug 2021	7:00 AM	0.5	29.8
20 Aug 2021	8:00 AM	1.0	30.2
20 Aug 2021	9:00 AM	1.4	30.8
20 Aug 2021	10:00 AM	1.0	30.9
20 Aug 2021	11:00 AM	1.0	31.2
20 Aug 2021	12:00 PM	1.4	32.2
20 Aug 2021	1:00 PM	1.0	33.7
20 Aug 2021	2:00 PM	1.9	32.1
20 Aug 2021	3:00 PM	1.4	31.7
20 Aug 2021	4:00 PM	1.9	31.6
20 Aug 2021	5:00 PM	1.4	31.6
20 Aug 2021	6:00 PM	1.4	31.3
20 Aug 2021	7:00 PM	1.0	30.7
20 Aug 2021	8:00 PM	1.0	30.4
20 Aug 2021	9:00 PM	0.5	29.4
20 Aug 2021	10:00 PM	1.4	29.2
20 Aug 2021	11:00 PM	1.0	29.5
21 Aug 2021	12:00 AM	1.4	28.9
21 Aug 2021	1:00 AM	1.0	28.9
21 Aug 2021	2:00 AM	0.5	28.4
21 Aug 2021	3:00 AM	0.5	27.9
21 Aug 2021	4:00 AM	2.3	27.6
21 Aug 2021	5:00 AM	1.4	27.8
21 Aug 2021	6:00 AM	0.5	27.9
21 Aug 2021	7:00 AM	1.0	28.3
21 Aug 2021	8:00 AM	0.5	28.9
21 Aug 2021	9:00 AM	0.5	29.9
21 Aug 2021	10:00 AM	1.0	31.3
21 Aug 2021	11:00 AM	1.0	33.2
21 Aug 2021	12:00 PM	1.4	33.6
21 Aug 2021	1:00 PM	1.4	35.3
21 Aug 2021	2:00 PM	1.0	35.1

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
21 Aug 2021	3:00 PM	4.1	34
21 Aug 2021	4:00 PM	5.5	35.1
21 Aug 2021	5:00 PM	5.0	33.9
21 Aug 2021	6:00 PM	5.5	32.5
21 Aug 2021	7:00 PM	2.8	31.9
21 Aug 2021	8:00 PM	1.0	31.4
21 Aug 2021	9:00 PM	1.9	31
21 Aug 2021	10:00 PM	1.9	30.6
21 Aug 2021	11:00 PM	1.9	30.6
22 Aug 2021	12:00 AM	1.4	30.5
22 Aug 2021	1:00 AM	1.0	30
22 Aug 2021	2:00 AM	1.4	29.9
22 Aug 2021	3:00 AM	0.5	29.4
22 Aug 2021	4:00 AM	1.0	29
22 Aug 2021	5:00 AM	0.5	28.7
22 Aug 2021	6:00 AM	0.5	28.7
22 Aug 2021	7:00 AM	0.1	29.1
22 Aug 2021	8:00 AM	1.4	30.2
22 Aug 2021	9:00 AM	1.4	30.4
22 Aug 2021	10:00 AM	1.0	31.1
22 Aug 2021	11:00 AM	1.9	32.9
22 Aug 2021	12:00 PM	1.9	34.3
22 Aug 2021	1:00 PM	3.2	34.6
22 Aug 2021	2:00 PM	3.2	32.9
22 Aug 2021	3:00 PM	2.8	33.2
22 Aug 2021	4:00 PM	3.2	33.2
22 Aug 2021	5:00 PM	2.8	32.2
22 Aug 2021	6:00 PM	3.2	31.8
22 Aug 2021	7:00 PM	3.2	31.3
22 Aug 2021	8:00 PM	2.8	31.1
22 Aug 2021	9:00 PM	1.4	30.8
22 Aug 2021	10:00 PM	0.5	30.1
22 Aug 2021	11:00 PM	1.0	30
23 Aug 2021	12:00 AM	0.5	29.9
23 Aug 2021	1:00 AM	1.0	29.7
23 Aug 2021	2:00 AM	0.1	29.6
23 Aug 2021	3:00 AM	1.4	29.6
23 Aug 2021	4:00 AM	1.4	29.3
23 Aug 2021	5:00 AM	0.5	28.6
23 Aug 2021	6:00 AM	0.5	28.3
23 Aug 2021	7:00 AM	1.0	28.8
23 Aug 2021	8:00 AM	1.0	29.6
23 Aug 2021	9:00 AM	0.5	28.9
23 Aug 2021	10:00 AM	1.0	31.4
23 Aug 2021	11:00 AM	1.4	32.1

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
23 Aug 2021	12:00 PM	1.0	32.4
23 Aug 2021	1:00 PM	1.4	32.4
23 Aug 2021	2:00 PM	2.3	34
23 Aug 2021	3:00 PM	2.8	34.7
23 Aug 2021	4:00 PM	3.2	34.5
23 Aug 2021	5:00 PM	4.1	34.4
23 Aug 2021	6:00 PM	2.8	33.4
23 Aug 2021	7:00 PM	1.9	32.7
23 Aug 2021	8:00 PM	1.0	32.4
23 Aug 2021	9:00 PM	0.1	32.1
23 Aug 2021	10:00 PM	0.1	31.4
23 Aug 2021	11:00 PM	0.1	31.2
24 Aug 2021	12:00 AM	0.1	31.2
24 Aug 2021	1:00 AM	0.1	31
24 Aug 2021	2:00 AM	1.0	30.7
24 Aug 2021	3:00 AM	0.5	30.5
24 Aug 2021	4:00 AM	1.0	30.4
24 Aug 2021	5:00 AM	2.3	30.1
24 Aug 2021	6:00 AM	2.3	30.1
24 Aug 2021	7:00 AM	1.4	30.3
24 Aug 2021	8:00 AM	1.9	30.9
24 Aug 2021	9:00 AM	1.4	31.9
24 Aug 2021	10:00 AM	1.9	33.9
24 Aug 2021	11:00 AM	1.0	35.9
24 Aug 2021	12:00 PM	1.9	36.9
24 Aug 2021	1:00 PM	2.3	37.2
24 Aug 2021	2:00 PM	1.4	37.9
24 Aug 2021	3:00 PM	1.4	37.6
24 Aug 2021	4:00 PM	1.9	36.5
24 Aug 2021	5:00 PM	1.4	35.7
24 Aug 2021	6:00 PM	1.4	34.8
24 Aug 2021	7:00 PM	1.9	34.3
24 Aug 2021	8:00 PM	1.4	33.6
24 Aug 2021	9:00 PM	2.3	32.8
24 Aug 2021	10:00 PM	1.9	32.8
24 Aug 2021	11:00 PM	0.5	32.4
25 Aug 2021	12:00 AM	0.5	32
25 Aug 2021	1:00 AM	0.5	31.7
25 Aug 2021	2:00 AM	0.5	31.3
25 Aug 2021	3:00 AM	0.1	31.2
25 Aug 2021	4:00 AM	0.5	30.9
25 Aug 2021	5:00 AM	1.0	30.7
25 Aug 2021	6:00 AM	0.1	30.6
25 Aug 2021	7:00 AM	1.0	30.9
25 Aug 2021	8:00 AM	1.9	31.3

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
25 Aug 2021	9:00 AM	1.9	32
25 Aug 2021	10:00 AM	1.9	33.6
25 Aug 2021	11:00 AM	1.4	35.4
25 Aug 2021	12:00 PM	0.5	36.7
25 Aug 2021	1:00 PM	0.5	37.6
25 Aug 2021	2:00 PM	0.5	37.8
25 Aug 2021	3:00 PM	1.0	36.8
25 Aug 2021	4:00 PM	1.0	36.3
25 Aug 2021	5:00 PM	0.5	35.5
25 Aug 2021	6:00 PM	0.5	34.4
25 Aug 2021	7:00 PM	0.5	33.3
25 Aug 2021	8:00 PM	1.0	33.3
25 Aug 2021	9:00 PM	1.9	33
25 Aug 2021	10:00 PM	1.0	32.1
25 Aug 2021	11:00 PM	1.0	32
26 Aug 2021	12:00 AM	0.5	31.7
26 Aug 2021	1:00 AM	1.0	31.8
26 Aug 2021	2:00 AM	0.1	31.1
26 Aug 2021	3:00 AM	0.1	31.2
26 Aug 2021	4:00 AM	0.5	31
26 Aug 2021	5:00 AM	1.9	30.7
26 Aug 2021	6:00 AM	1.0	30.7
26 Aug 2021	7:00 AM	1.9	30.7
26 Aug 2021	8:00 AM	1.0	30.8
26 Aug 2021	9:00 AM	1.0	30.1
26 Aug 2021	10:00 AM	1.0	30.4
26 Aug 2021	11:00 AM	1.0	31.2
26 Aug 2021	12:00 PM	1.0	32.9
26 Aug 2021	1:00 PM	0.5	33.1
26 Aug 2021	2:00 PM	0.5	29.3
26 Aug 2021	3:00 PM	0.5	28
26 Aug 2021	4:00 PM	0.5	29.4
26 Aug 2021	5:00 PM	0.5	31.1
26 Aug 2021	6:00 PM	0.5	30.8
26 Aug 2021	7:00 PM	0.5	30.2
26 Aug 2021	8:00 PM	0.5	29.6
26 Aug 2021	9:00 PM	0.5	29.6
26 Aug 2021	10:00 PM	0.1	29.3
26 Aug 2021	11:00 PM	0.1	29.3
27 Aug 2021	12:00 AM	0.1	29.1
27 Aug 2021	1:00 AM	0.1	28.9
27 Aug 2021	2:00 AM	0.5	29.1
27 Aug 2021	3:00 AM	1.0	28.8
27 Aug 2021	4:00 AM	0.5	28.8
27 Aug 2021	5:00 AM	1.0	28.3

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
27 Aug 2021	6:00 AM	1.0	28.1
27 Aug 2021	7:00 AM	1.9	28.5
27 Aug 2021	8:00 AM	1.9	29
27 Aug 2021	9:00 AM	1.4	29.6
27 Aug 2021	10:00 AM	1.0	28.3
27 Aug 2021	11:00 AM	1.0	30.2
27 Aug 2021	12:00 PM	1.9	30.8
27 Aug 2021	1:00 PM	3.2	32.9
27 Aug 2021	2:00 PM	1.4	31.8
27 Aug 2021	3:00 PM	1.9	31.3
27 Aug 2021	4:00 PM	1.4	31.4
27 Aug 2021	5:00 PM	1.4	31.2
27 Aug 2021	6:00 PM	2.3	30.6
27 Aug 2021	7:00 PM	1.0	30
27 Aug 2021	8:00 PM	2.8	29.9
27 Aug 2021	9:00 PM	2.3	29.9
27 Aug 2021	10:00 PM	2.8	29.8
27 Aug 2021	11:00 PM	2.8	29.8
28 Aug 2021	12:00 AM	2.8	27
28 Aug 2021	1:00 AM	2.8	27.6
28 Aug 2021	2:00 AM	1.9	27.8
28 Aug 2021	3:00 AM	1.9	28.3
28 Aug 2021	4:00 AM	2.3	28.8
28 Aug 2021	5:00 AM	1.9	26.8
28 Aug 2021	6:00 AM	2.3	26.6
28 Aug 2021	7:00 AM	2.3	26.7
28 Aug 2021	8:00 AM	2.3	27.3
28 Aug 2021	9:00 AM	1.9	27.9
28 Aug 2021	10:00 AM	1.9	28.3
28 Aug 2021	11:00 AM	1.9	26.2
28 Aug 2021	12:00 PM	1.0	26.1
28 Aug 2021	1:00 PM	1.4	26.2
28 Aug 2021	2:00 PM	1.0	25.4
28 Aug 2021	3:00 PM	1.0	26.4
28 Aug 2021	4:00 PM	1.0	26.9
28 Aug 2021	5:00 PM	1.0	25.6
28 Aug 2021	6:00 PM	1.0	25.5
28 Aug 2021	7:00 PM	1.9	25.7
28 Aug 2021	8:00 PM	1.4	25
28 Aug 2021	9:00 PM	0.5	25.8
28 Aug 2021	10:00 PM	1.0	26.6
28 Aug 2021	11:00 PM	0.5	25.8
29 Aug 2021	12:00 AM	0.5	25.8
29 Aug 2021	1:00 AM	0.5	26.2
29 Aug 2021	2:00 AM	1.0	26.7

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
29 Aug 2021	3:00 AM	1.9	27.2
29 Aug 2021	4:00 AM	1.0	27.8
29 Aug 2021	5:00 AM	1.0	27.7
29 Aug 2021	6:00 AM	1.9	27.9
29 Aug 2021	7:00 AM	1.0	28.1
29 Aug 2021	8:00 AM	0.5	25.8
29 Aug 2021	9:00 AM	1.0	27.1
29 Aug 2021	10:00 AM	1.0	27.8
29 Aug 2021	11:00 AM	1.9	26.3
29 Aug 2021	12:00 PM	2.3	26.5
29 Aug 2021	1:00 PM	2.3	29.9
29 Aug 2021	2:00 PM	2.8	30.5
29 Aug 2021	3:00 PM	1.4	29.8
29 Aug 2021	4:00 PM	2.3	29
29 Aug 2021	5:00 PM	1.4	29.1
29 Aug 2021	6:00 PM	1.0	28.4
29 Aug 2021	7:00 PM	0.5	27
29 Aug 2021	8:00 PM	1.0	27.1
29 Aug 2021	9:00 PM	0.5	26.8
29 Aug 2021	10:00 PM	1.0	27.1
29 Aug 2021	11:00 PM	2.3	27.3
30 Aug 2021	12:00 AM	1.4	27.7
30 Aug 2021	1:00 AM	0.5	27.7
30 Aug 2021	2:00 AM	0.5	27.4
30 Aug 2021	3:00 AM	0.5	27.7
30 Aug 2021	4:00 AM	0.5	27.3
30 Aug 2021	5:00 AM	1.4	27.4
30 Aug 2021	6:00 AM	1.0	27.5
30 Aug 2021	7:00 AM	1.4	27.4
30 Aug 2021	8:00 AM	1.4	27.1
30 Aug 2021	9:00 AM	1.0	27.6
30 Aug 2021	10:00 AM	1.0	28.2
30 Aug 2021	11:00 AM	1.9	27.6
30 Aug 2021	12:00 PM	1.4	26.8
30 Aug 2021	1:00 PM	1.0	28.7
30 Aug 2021	2:00 PM	1.4	29.3
30 Aug 2021	3:00 PM	1.4	30.1
30 Aug 2021	4:00 PM	1.4	29.6
30 Aug 2021	5:00 PM	1.9	30.3
30 Aug 2021	6:00 PM	1.4	29.6
30 Aug 2021	7:00 PM	1.4	29.2
30 Aug 2021	8:00 PM	1.4	28.4
30 Aug 2021	9:00 PM	1.4	28.3
30 Aug 2021	10:00 PM	1.4	28.3
30 Aug 2021	11:00 PM	1.0	28.3

Appendix C - Weather Conditions during Monitoring Period

August 2021			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m-s**	**Direction**
31 Aug 2021	12:00 AM	1.0	28.4
31 Aug 2021	1:00 AM	1.0	26.6
31 Aug 2021	2:00 AM	1.4	27.2
31 Aug 2021	3:00 AM	1.4	27.4
31 Aug 2021	4:00 AM	1.0	27.3
31 Aug 2021	5:00 AM	1.4	27.6
31 Aug 2021	6:00 AM	1.4	27.6
31 Aug 2021	7:00 AM	1.4	26.2
31 Aug 2021	8:00 AM	1.4	25.5
31 Aug 2021	9:00 AM	1.9	26.3
31 Aug 2021	10:00 AM	2.8	26.9
31 Aug 2021	11:00 AM	2.8	27.3
31 Aug 2021	12:00 PM	2.8	26.4
31 Aug 2021	1:00 PM	2.8	26.4
31 Aug 2021	2:00 PM	2.3	25.2
31 Aug 2021	3:00 PM	2.3	24.6
31 Aug 2021	4:00 PM	2.8	25.2
31 Aug 2021	5:00 PM	2.3	26.2
31 Aug 2021	6:00 PM	2.8	25.6
31 Aug 2021	7:00 PM	2.3	25.4
31 Aug 2021	8:00 PM	0.5	25.2
31 Aug 2021	9:00 PM	0.5	24.4
31 Aug 2021	10:00 PM	0.5	24.4
31 Aug 2021	11:00 PM	1.0	24.7

APPENDIX D
ENVIRONMENTAL MONITORING SCHEDULES

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Impact Air Quality and Noise Monitoring Schedule (August 2021)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Aug	2-Aug	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug
		24hr TSP	**1 hr TSP X3** [AM5(A), AM6(A)] [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A))] [CM1, CM2, CM3, CM4, CM5] **Noise [Evening time (19:00-23:00)]** [CM6(A)]		**Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3]	**24hr TSP**
8-Aug	9-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug
	1 hr TSP X3 [AM5(A), AM6(A)] [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A))] [CM1, CM2, CM3, CM4, CM5] **Noise [Evening time (19:00-23:00)]** [CM6(A)]			**24hr TSP**	**Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3] **1 hr TSP X3** [AM5(A), AM6(A)] [AM1, AM2, AM3, AM4]	
15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug
			24hr TSP	**1 hr TSP X3** [AM5(A), AM6(A)] [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A))] [CM1, CM2, CM3, CM4, CM5] **Noise [Evening time (19:00-23:00)]** [CM6(A)]	**Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3]	
22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug
		24hr TSP	**1 hr TSP X3** [AM5(A), AM6(A)] [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A))] [CM1, CM2, CM3, CM4, CM5] **Noise [Evening time (19:00-23:00)]** [CM6(A)]		**Noise [Evening time (19:00-23:00)]** [CM1, CM2, CM3] **Noise [Night-time (23:00-07:00)]** [CM1, CM2, CM3]	
29-Aug	30-Aug	31-Aug				
	24hr TSP	**1 hr TSP X3** [AM5(A), AM6(A)] [AM1, AM2, AM3, AM4] **Noise [Daytime (07:00-19:00)]** [CM6(A), CM7(A), CM8(A))] [CM1, CM2, CM3, CM4, CM5] **Noise [Evening time (19:00-23:00)]** [CM6(A)]				

Air Quality Monitoring Station

AM1 - Tin Hau Temple
AM2 - Sai Tso Wan Recreation Ground
AM3 - Yau Lai Estate Bik Lai House
AM4(1) - Sitting-out Area at Cha Kwo Ling Village
AM4(A)(2) - Cha Kwo Ling Public Cargo Working Area Administrative Office
AM5(A) - Tseung Kwan O DSD Desilting Compound
AM6(A) - Park Central, L1/F Open Space Area

Noise Monitoring Station

CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong
CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong
CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong
CM4 - Tin Hau Temple, Cha Kwo Ling
CM5 - CCC Kei Faat Primary School, Yau Tong
CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores
CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores
CM8(A) - Park Central, L1/F Open Space Area

Note (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Tentative Impact Water Quality Monitoring Schedule (August 2021)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Aug	2-Aug	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug
	Mid-Ebb 14:58 Mid-Flood 08:27		Mid-Ebb N/A Mid-Flood 09:55		Mid-Ebb 18:39 Mid-Flood 11:06	
8-Aug	9-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug
	Mid-Ebb N/A Mid-Flood 12:60		Mid-Ebb 07:34 Mid-Flood 14:19		Mid-Ebb 09:13 Mid-Flood 15:40	
15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug
	Mid-Ebb 13:02 Mid-Flood 18:36		Mid-Ebb 16:40 Mid-Flood 09:00		Mid-Ebb 18:16 Mid-Flood 10:47	
22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug
	Mid-Ebb N/A Mid-Flood 12:58		Mid-Ebb 07:40 Mid-Flood 14:11		Mid-Ebb 09:04 Mid-Flood 15:16	
29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep
	Mid-Ebb 12:03 Mid-Flood 16:57					

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

Monitoring Station:

C1, C2, G1, G2, G3, G4, M1, M2, M3, M4, M5, M6

APPENDIX E
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

APPENDIX E - 1-HOUR TSP MONITORING RESULTS

Location AM1 - Tin Hau Temple			
Date	Time	Weather	Particulate Concentration (µg/m^3)
4-Aug-21	13:36	Cloudy	26.4
4-Aug-21	14:36	Cloudy	31.2
4-Aug-21	15:36	Cloudy	33.6
9-Aug-21	13:00	Fine	28.8
9-Aug-21	14:00	Fine	38.4
9-Aug-21	15:00	Fine	33.6
13-Aug-21	13:00	Fine	28.8
13-Aug-21	14:00	Fine	38.4
13-Aug-21	15:00	Fine	24.0
19-Aug-21	13:00	Sunny	88.0
19-Aug-21	14:00	Sunny	92.4
19-Aug-21	15:00	Sunny	92.4
25-Aug-21	9:00	Sunny	19.2
25-Aug-21	10:00	Sunny	16.8
25-Aug-21	11:00	Sunny	16.8
31-Aug-21	13:00	Cloudy	38.4
31-Aug-21	14:00	Cloudy	45.6
31-Aug-21	15:00	Cloudy	50.4
		Average	41.3
		Maximum	92.4
		Minimum	16.8

Location AM2 - Sai Tso Wan Recreation Ground			
Date	Time	Weather	***Particulate Concentration (µg/m^3)***
4-Aug-21	9:00	Cloudy	41.4
4-Aug-21	10:00	Cloudy	48.3
4-Aug-21	11:00	Cloudy	36.8
9-Aug-21	15:32	Fine	57.2
9-Aug-21	16:32	Fine	55.0
9-Aug-21	17:32	Fine	57.2
13-Aug-21	9:00	Sunny	26.4
13-Aug-21	10:00	Sunny	24.0
13-Aug-21	11:00	Sunny	26.4
19-Aug-21	16:00	Sunny	36.0
19-Aug-21	17:00	Sunny	40.8
19-Aug-21	18:00	Sunny	31.2
25-Aug-21	16:00	Sunny	10.5
25-Aug-21	17:00	Sunny	16.8
25-Aug-21	18:00	Sunny	12.6
31-Aug-21	9:00	Fine	28.8
31-Aug-21	10:00	Fine	31.2
31-Aug-21	11:00	Fine	36.0
		Average	34.3
		Maximum	57.2
		Minimum	10.5

APPENDIX E - 1-HOUR TSP MONITORING RESULTS

Location AM3 - Yau Lai Estate Bik Lai House			
Date	Time	Weather	***Particulate Concentration (µg/m^3)***
4-Aug-21	15:30	Cloudy	67.2
4-Aug-21	16:30	Cloudy	74.4
4-Aug-21	17:30	Cloudy	93.6
9-Aug-21	14:00	Fine	31.2
9-Aug-21	15:00	Fine	48.0
9-Aug-21	16:00	Fine	36.0
13-Aug-21	10:00	Fine	26.4
13-Aug-21	11:00	Fine	21.6
13-Aug-21	13:00	Fine	24.0
19-Aug-21	9:00	Sunny	79.2
19-Aug-21	10:00	Sunny	77.0
19-Aug-21	11:00	Sunny	74.8
25-Aug-21	9:00	Sunny	19.2
25-Aug-21	10:00	Sunny	16.8
25-Aug-21	11:00	Sunny	16.8
31-Aug-21	9:00	Cloudy	21.6
31-Aug-21	10:00	Cloudy	19.2
31-Aug-21	11:00	Cloudy	21.6
		Average	42.7
		Maximum	93.6
		Minimum	16.8

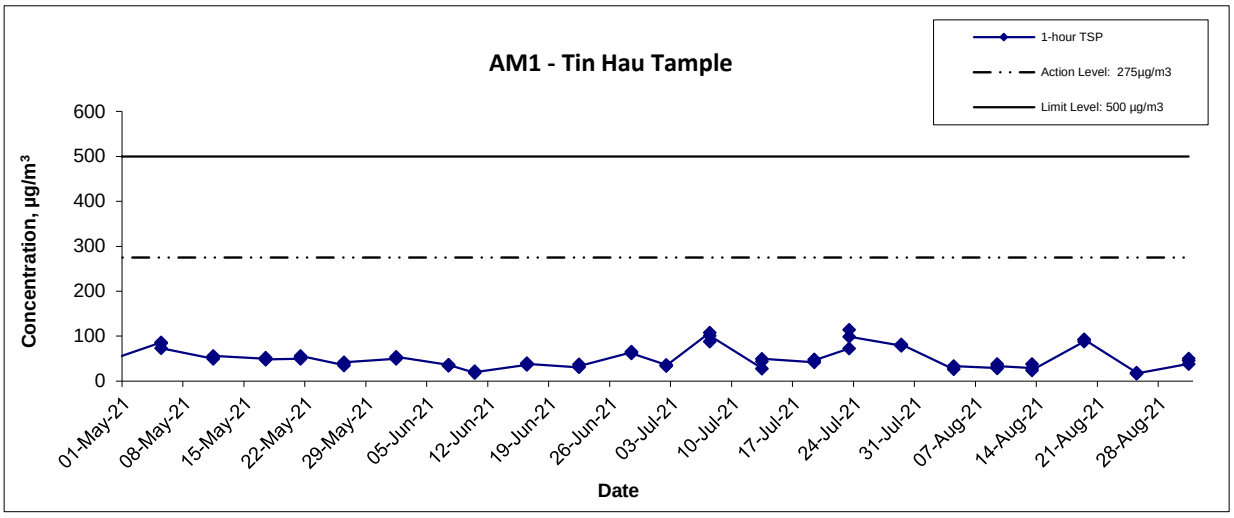
Location AM4 - Sitting-out Area at Cha Kwo Ling Village			
Date	Time	Weather	***Particulate Concentration (µg/m^3)***
4-Aug-21	9:15	Sunny	31.2
4-Aug-21	10:15	Sunny	28.8
4-Aug-21	11:15	Sunny	26.4
9-Aug-21	13:00	Fine	38.4
9-Aug-21	14:00	Fine	36.0
9-Aug-21	15:00	Fine	43.2
13-Aug-21	15:00	Fine	38.4
13-Aug-21	16:00	Fine	26.4
13-Aug-21	17:00	Fine	43.2
19-Aug-21	16:00	Sunny	61.6
19-Aug-21	17:00	Sunny	55.0
19-Aug-21	18:00	Sunny	57.2
25-Aug-21	15:30	Sunny	24.0
25-Aug-21	16:30	Sunny	33.6
25-Aug-21	17:30	Sunny	21.6
31-Aug-21	13:00	Cloudy	24.0
31-Aug-21	14:00	Cloudy	36.0
31-Aug-21	15:00	Cloudy	28.8
		Average	36.3
		Maximum	61.6
		Minimum	21.6

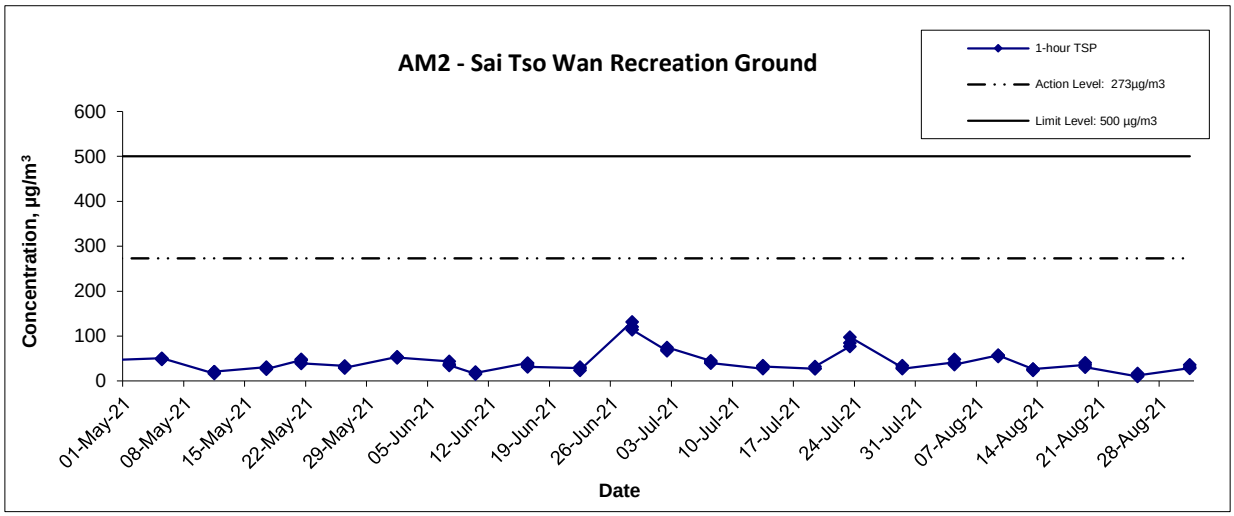
APPENDIX E - 1-HOUR TSP MONITORING RESULTS

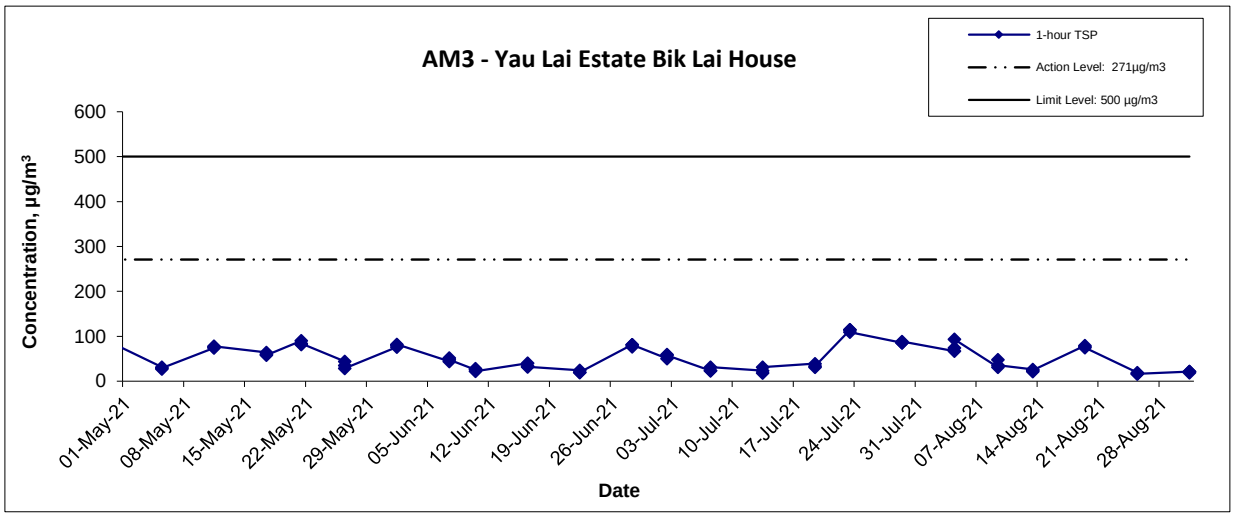
Location AM5(A) - Tseung Kwan O DSD Desilting Compound			
Date	Time	Weather	***Particulate Concentration (µg/m^3)***
4-Aug-21	16:00	Cloudy	73.6
4-Aug-21	17:00	Cloudy	71.3
4-Aug-21	18:00	Cloudy	66.7
9-Aug-21	9:00	Fine	68.2
9-Aug-21	10:00	Fine	61.6
9-Aug-21	11:00	Fine	63.8
13-Aug-21	9:00	Sunny	26.4
13-Aug-21	10:00	Sunny	24.0
13-Aug-21	11:00	Sunny	26.4
19-Aug-21	16:00	Sunny	43.2
19-Aug-21	17:00	Sunny	52.8
19-Aug-21	18:00	Sunny	40.8
25-Aug-21	13:00	Sunny	39.1
25-Aug-21	14:00	Sunny	41.4
25-Aug-21	15:00	Sunny	41.4
31-Aug-21	16:00	Fine	50.4
31-Aug-21	17:00	Fine	45.6
31-Aug-21	18:00	Fine	62.4
		Average	50.0
		Maximum	73.6
		Minimum	24.0

Location AM6(A) - Park Central, L1/F Open Space Area			
Date	Time	Weather	Particulate Concentration (µg/m^3)
4-Aug-21	13:00	Cloudy	55.2
4-Aug-21	14:00	Cloudy	62.1
4-Aug-21	15:00	Cloudy	71.3
9-Aug-21	13:00	Fine	35.2
9-Aug-21	14:00	Fine	35.2
9-Aug-21	15:00	Fine	37.4
13-Aug-21	13:00	Sunny	26.4
13-Aug-21	14:00	Sunny	28.8
13-Aug-21	15:00	Sunny	28.8
19-Aug-21	14:00	Sunny	45.6
19-Aug-21	15:00	Sunny	50.4
19-Aug-21	16:00	Sunny	52.8
25-Aug-21	9:00	Sunny	43.7
25-Aug-21	10:00	Sunny	41.4
25-Aug-21	11:00	Sunny	48.3
31-Aug-21	13:00	Fine	52.8
31-Aug-21	14:00	Fine	62.4
31-Aug-21	15:00	Fine	57.6
		Average	46.4
		Maximum	71.3
		Minimum	26.4

1-hr TSP Concentration Levels

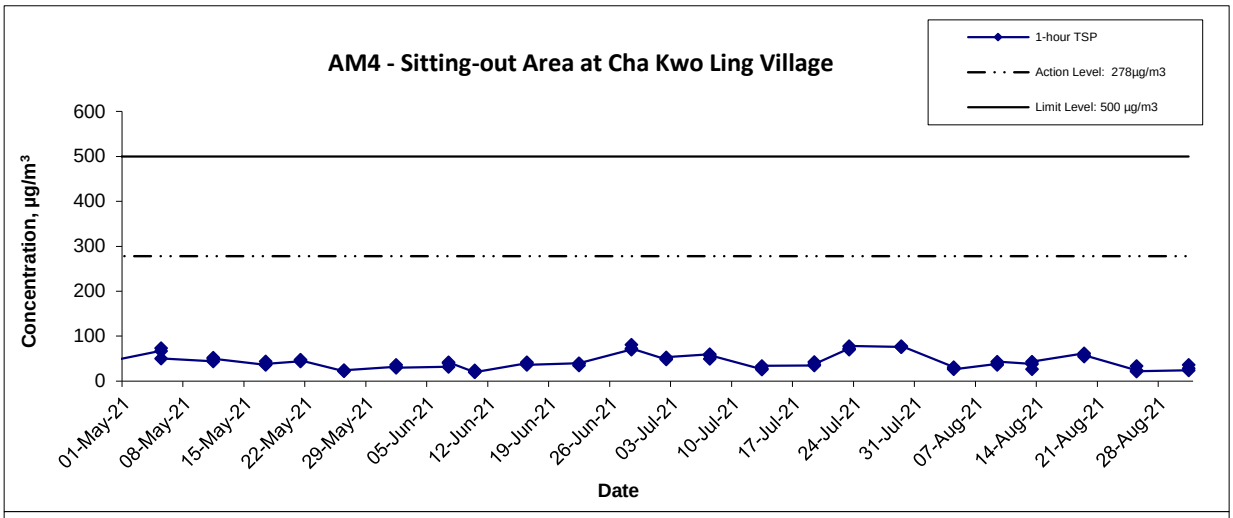


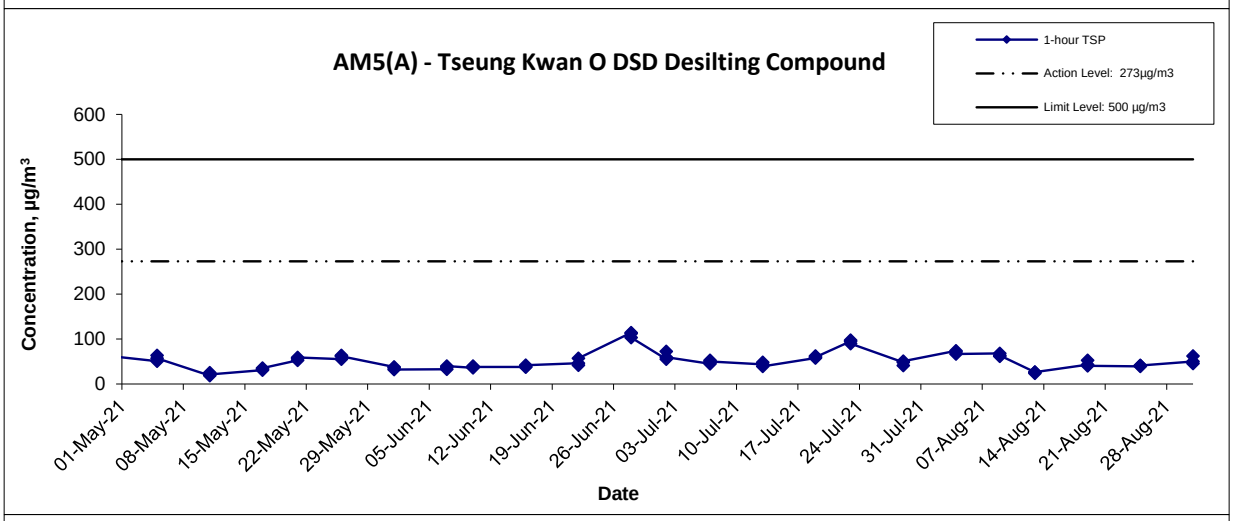


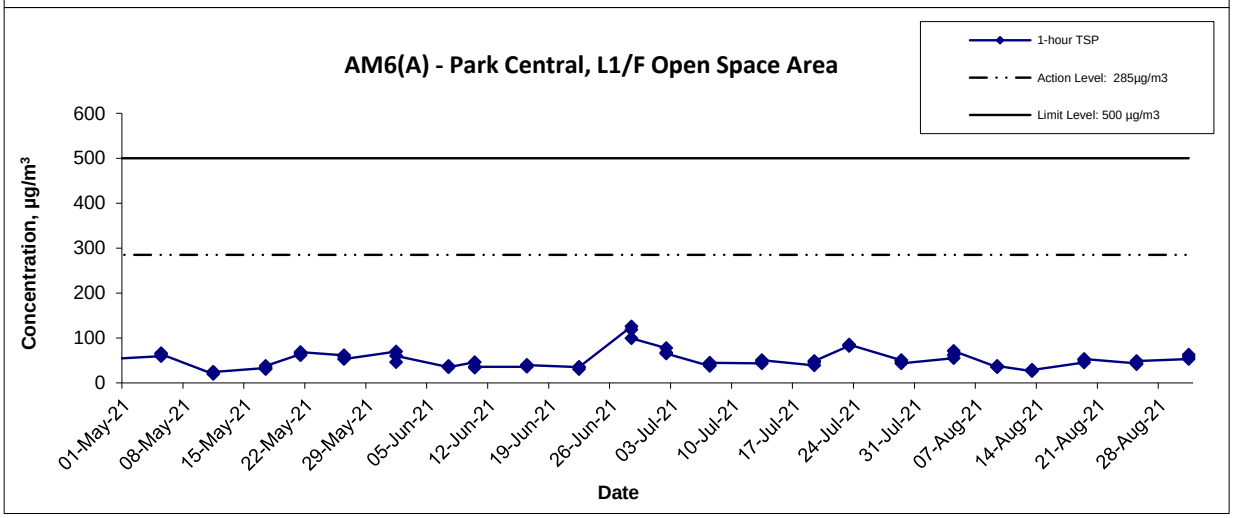


Graphical Presentation of 1-hour TSP Monitoring Results	Aug-21	E	

1-hr TSP Concentration Levels







Graphical Presentation of 1-hour TSP Monitoring Results	Aug-21	E	

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix F - 24-hour TSP Monitoring Results

Location AM1 - Tin Hau Temple

Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m^3/min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m^3/min)	(m^3)	($\mu g/m^3$)
3-Aug-21	Cloudy	3.6803	3.7730	0.0927	8689.7	8713.7	24.0	0.98	0.98	0.98	1407.6	65.9
7-Aug-21	Fine	2.7342	2.8600	0.1258	8713.7	8737.7	24.0	0.98	0.98	0.98	1410.2	89.2
12-Aug-21	Sunny	3.6889	3.7796	0.0907	8737.7	8761.7	24.0	1.22	1.22	1.22	1755.7	51.7
18-Aug-21	Sunny	3.6950	3.8020	0.1070	8761.7	8785.7	24.0	1.22	1.22	1.22	1756.3	60.9
24-Aug-21	Cloudy	3.7284	3.8647	0.1363	8785.7	8809.7	24.0	1.22	1.22	1.22	1754.1	77.7
30-Aug-21	Rainy	3.7096	3.8763	0.1667	8809.7	8833.7	24.0	1.21	1.22	1.22	1752.9	95.1
											Min	51.7
											Max	95.1
											Average	73.4

Location AM2 - Sai Tso Wan Recreation Ground

Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m^3/min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m^3/min)	(m^3)	($\mu g/m^3$)
3-Aug-21	Cloudy	2.7644	2.7940	0.0296	29323.0	29347.0	24.0	1.21	1.21	1.21	1747.3	16.9
7-Aug-21	Fine	3.6959	3.7431	0.0472	29347.0	29371.0	24.0	1.22	1.22	1.22	1750.4	27.0
12-Aug-21	Sunny	3.6971	3.7312	0.0341	29371.0	29395.0	24.0	1.22	1.22	1.22	1756.6	19.4
18-Aug-21	Sunny	3.6843	3.7205	0.0362	29395.0	29419.0	24.0	1.22	1.22	1.22	1757.2	20.6
24-Aug-21	Cloudy	3.6929	3.7073	0.0144	29419.0	29443.0	24.0	1.22	1.22	1.22	1754.8	8.2
30-Aug-21	Rainy	3.6804	3.7658	0.0854	29443.0	29467.0	24.0	1.21	1.22	1.22	1753.5	48.7
											Min	8.2
											Max	48.7
											Average	23.5

Location AM3 - Yau Lai Estate, Bik Lai House

Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m^3/min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m^3/min)	(m^3)	($\mu g/m^3$)
3-Aug-21	Cloudy	3.6888	3.7612	0.0724	4064.8	4088.8	24.0	1.21	1.21	1.21	1746.2	41.5
7-Aug-21	Fine	3.6977	3.7770	0.0793	4088.8	4112.8	24.0	1.21	1.22	1.21	1749.3	45.3
12-Aug-21	Sunny	3.7059	3.7477	0.0418	4112.8	4136.8	24.0	1.22	1.22	1.22	1754.3	23.8
18-Aug-21	Sunny	3.6886	3.7816	0.0930	4136.8	4160.8	24.0	1.22	1.22	1.22	1754.8	53.0
24-Aug-21	Cloudy	3.7264	3.7717	0.0453	4160.8	4184.8	24.0	1.22	1.22	1.22	1752.5	25.8
30-Aug-21	Rainy	3.6943	3.7857	0.0914	4184.8	4208.8	24.0	1.21	1.22	1.22	1751.2	52.2
											Min	23.8
											Max	53.0
											Average	40.3

Appendix F - 24-hour TSP Monitoring Results

Location AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office

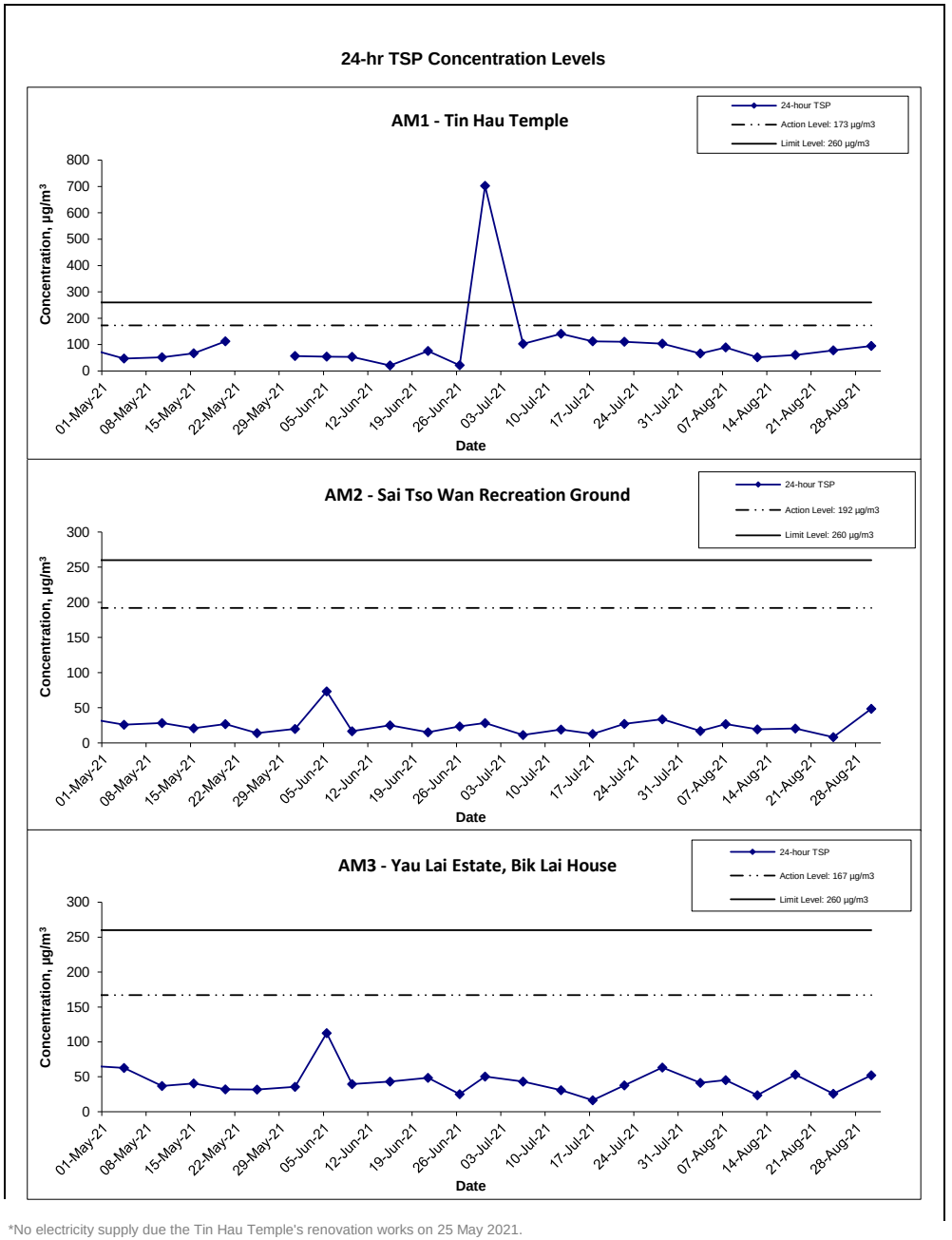
Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m^3/min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m^3/min)	(m^3)	($\mu g/m^3$)
3-Aug-21	Cloudy	3.7014	3.7461	0.0447	14421.7	14445.7	24.0	1.21	1.21	1.21	1748.3	25.6
7-Aug-21	Fine	2.7480	2.8175	0.0695	14445.7	14469.7	24.0	1.22	1.22	1.22	1751.2	39.7
12-Aug-21	Sunny	3.7316	3.7837	0.0521	14469.7	14493.7	24.0	1.22	1.22	1.22	1754.0	29.7
18-Aug-21	Sunny	3.7196	3.8198	0.1002	14493.7	14517.7	24.0	1.22	1.22	1.22	1754.5	57.1
24-Aug-21	Cloudy	3.7036	3.7544	0.0508	14517.7	14541.7	24.0	1.22	1.22	1.22	1752.3	29.0
30-Aug-21	Rainy	3.6804	3.7658	0.0854	14541.7	14565.7	24.0	1.21	1.22	1.22	1751.0	48.8
											Min	25.6
											Max	57.1
											Average	38.3

Location AM5(A) - Tseung Kwan O DSD Desilting Compound

Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m^3/min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m^3/min)	(m^3)	($\mu g/m^3$)
3-Aug-21	Cloudy	2.7736	2.8510	0.0774	31362.6	31386.6	24.0	1.22	1.21	1.21	1749.0	44.3
7-Aug-21	Fine	3.6568	3.7254	0.0686	31386.6	31410.6	24.0	1.22	1.22	1.22	1752.0	39.2
12-Aug-21	Sunny	3.7277	3.7850	0.0573	31410.6	31434.6	24.0	0.59	0.59	0.59	855.2	67.0
18-Aug-21	Sunny	3.6839	3.7460	0.0621	31434.6	31458.6	24.0	0.59	0.59	0.59	855.7	72.6
24-Aug-21	Cloudy	3.6763	3.7303	0.0540	31458.6	31482.6	24.0	0.59	0.59	0.59	853.5	63.3
30-Aug-21	Rainy	3.6964	3.7755	0.0791	31482.6	31506.6	24.0	0.59	0.60	0.59	852.2	92.8
											Min	39.2
											Max	92.8
											Average	63.2

Location AM6(A) - Park Central, L1/F Open Space Area

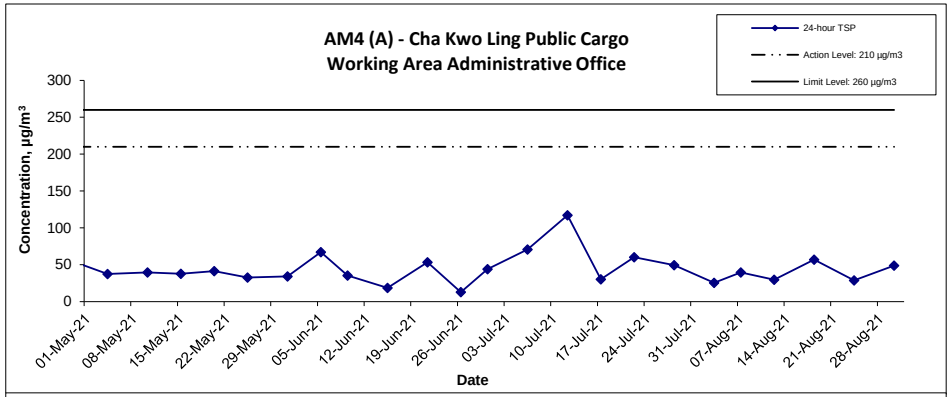
Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m^3/min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m^3/min)	(m^3)	($\mu g/m^3$)
3-Aug-21	Cloudy	2.7647	2.7884	0.0237	3252.8	3276.8	24.0	1.22	1.22	1.22	1750.4	13.5
7-Aug-21	Fine	3.6980	3.7425	0.0445	3276.8	3300.8	24.0	1.22	1.22	1.22	1753.7	25.4
12-Aug-21	Sunny	3.7085	3.7410	0.0325	3300.8	3324.8	24.0	1.22	1.22	1.22	1753.7	18.5
18-Aug-21	Sunny	3.6954	3.7313	0.0359	3324.8	3348.8	24.0	1.22	1.22	1.22	1759.0	20.4
24-Aug-21	Cloudy	3.6957	3.7201	0.0244	3348.8	3372.8	24.0	1.22	1.22	1.22	1759.6	13.9
30-Aug-21	Rainy	3.6804	3.7196	0.0392	3372.8	3396.8	24.0	1.22	1.22	1.22	1757.1	22.3
											Min	13.5
											Max	25.4
											Average	19.0

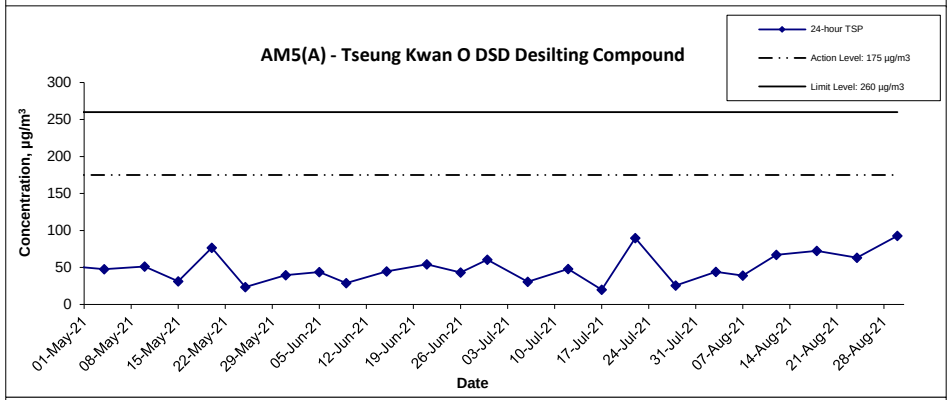


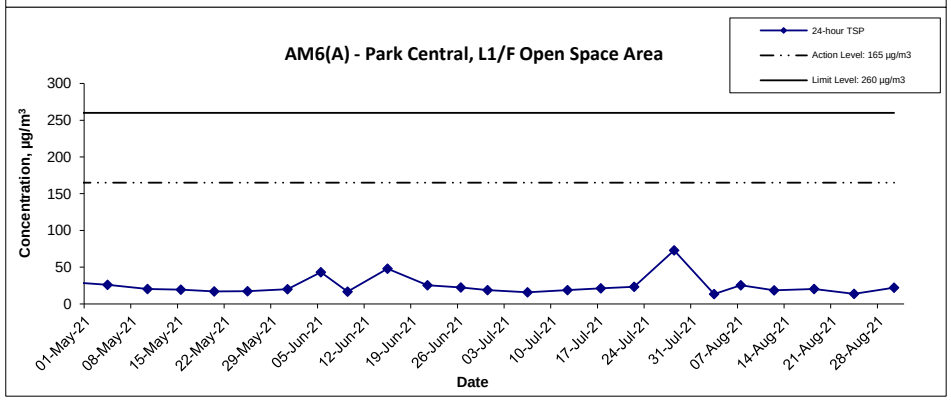
*No electricity supply due the Tin Hau Temple's renovation works on 25 May 2021.

Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S Date Sep-21	Project No. MA16034 Appendix F	CINOTECH

24-hr TSP Concentration Levels







Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S Date Aug-21	Project No. MA16034 Appendix F	CINOTECH

APPENDIX G
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix G - Noise Monitoring Results

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
04-Aug-21	14:45	Cloudy	72.8	75.4	68.4	65.5	72
09-Aug-21	14:35	Cloudy	66.8	68.2	65.6	65.5	61
19-Aug-21	9:30	Sunny	73.1	75.6	71.4	65.5	72
25-Aug-21	9:50	Sunny	73.5	75.8	70.7	65.5	73
31-Aug-21	10:00	Cloudy	70.5	73.1	66.1	65.5	69

Location CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
04-Aug-21	16:00	Cloudy	74.9	77.6	70.6	63.6	75
09-Aug-21	14:00	Cloudy	69.2	70.5	67.7	63.6	68
19-Aug-21	9:00	Sunny	74.4	76.5	72.7	63.6	74
25-Aug-21	9:05	Sunny	73.5	75.9	70.4	63.6	73
31-Aug-21	11:00	Rainy	71.7	74.0	68.9	63.6	71

Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
04-Aug-21	13:45	Cloudy	74.8	78.6	69.3	65.6	74
09-Aug-21	15:15	Fine	71.0	73.1	68.6	65.6	70
19-Aug-21	10:15	Sunny	74.3	75.8	72.3	65.6	74
25-Aug-21	10:35	Sunny	70.0	71.3	68.6	65.6	68
31-Aug-21	9:00	Cloudy	69.5	70.8	68.1	65.6	67

Location CM4 - Tin Hau Temple, Cha Kwo Ling

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
04-Aug-21	10:30	Cloudy	66.4	68.6	62.0	62.0	64
09-Aug-21	13:00	Fine	67.9	69.7	65.3	62.0	67
19-Aug-21	13:30	Sunny	63.3	64.9	61.5	62.0	57
25-Aug-21	13:55	Sunny	60.6	63.5	55.1	62.0	61 Measured ≦ Baseline
31-Aug-21	14:00	Cloudy	68.2	70.3	63.3	62.0	67

Location CM5 - CCC Kei Faat Primary School, Yau Tong

Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
04-Aug-21	13:00	Cloudy	68.0	70.7	63.7	68.2	68 Measured ≦ Baseline
09-Aug-21	13:30	Fine	68.8	70.7	66.2	68.2	60
19-Aug-21	11:00	Sunny	67.2	69.1	65.7	68.2	67 Measured ≦ Baseline
25-Aug-21	11:30	Sunny	68.7	70.8	62.7	68.2	59
31-Aug-21	13:00	Cloudy	68.2	70.3	62.2	68.2	68 Measured ≦ Baseline

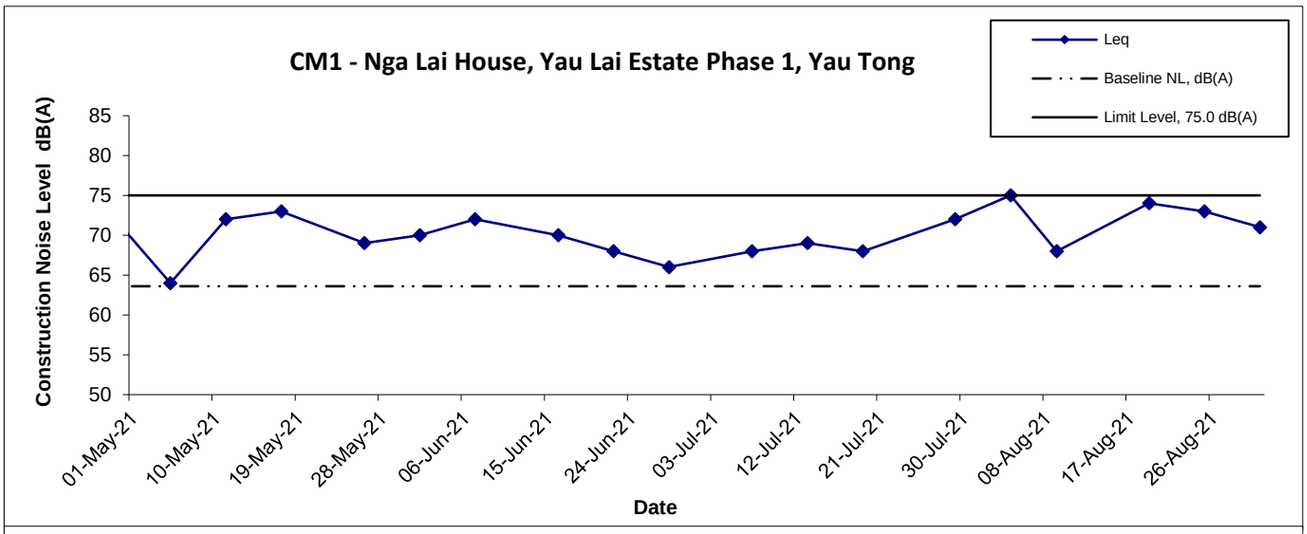
Appendix G - Noise Monitoring Results

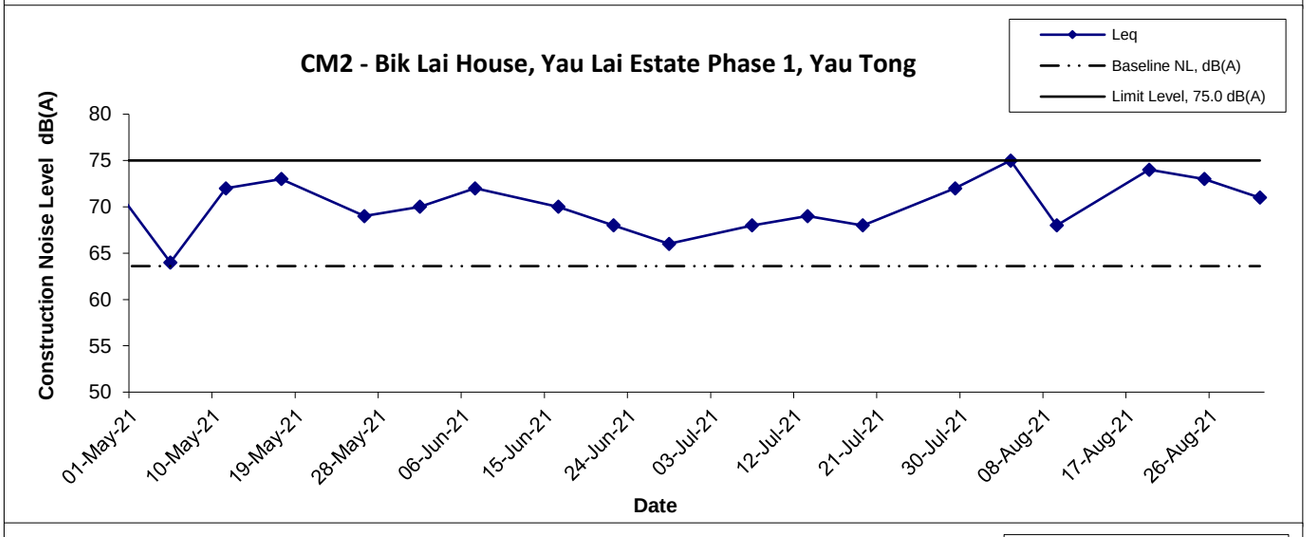
Location CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
04-Aug-21	10:30	Cloudy	65.4	66.8	62.1	61.9	63
09-Aug-21	9:00	Fine	64.1	66.4	61.6	61.9	60
19-Aug-21	16:00	Sunny	64.1	65.6	62.1	61.9	60
25-Aug-21	10:10	Sunny	64.9	65.8	62.9	61.9	62
31-Aug-21	16:00	Fine	65.1	66.9	61.9	61.9	62

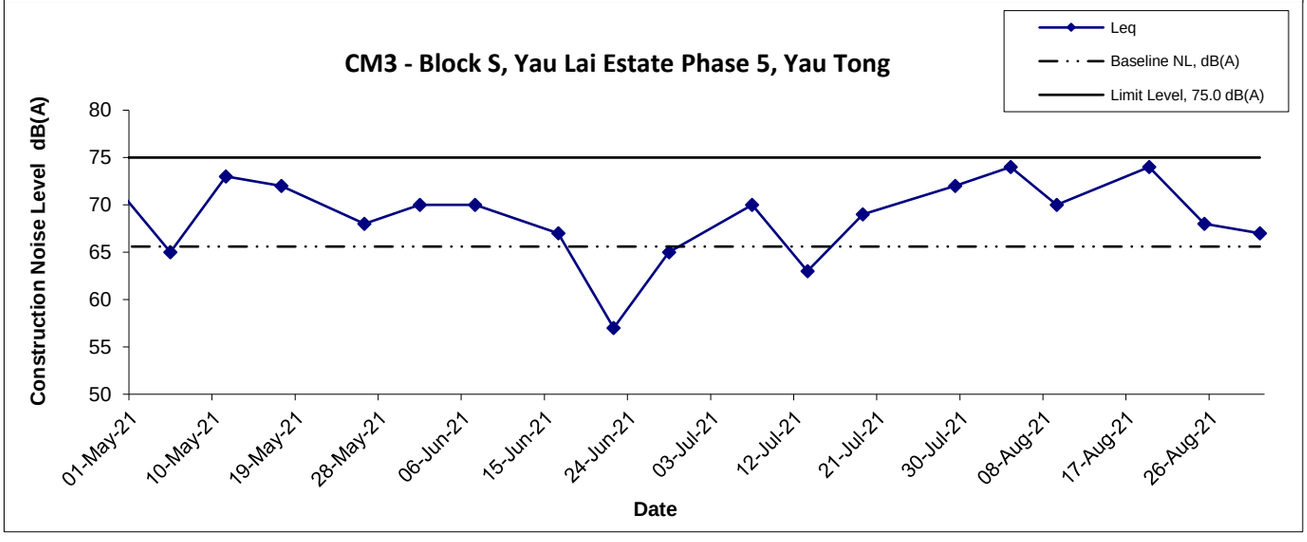
Location CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
04-Aug-21	9:50	Cloudy	62.5	64.6	60.2	58.3	60
09-Aug-21	10:00	Fine	63.7	65.7	59.3	58.3	62
19-Aug-21	14:00	Sunny	64.7	66.6	62.6	58.3	64
25-Aug-21	9:30	Sunny	63.1	64.3	59.2	58.3	61
31-Aug-21	14:00	Fine	62.8	65.3	60.6	58.3	61

Location CM8(A) - Park Central, L1/F Open Space Area							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
04-Aug-21	14:15	Cloudy	62.2	64.5	59.5	69.1	62 Measured ≦ Baseline
09-Aug-21	13:00	Fine	61.4	63.1	58.7	69.1	61 Measured ≦ Baseline
19-Aug-21	13:00	Sunny	64.8	68.5	61.7	69.1	65 Measured ≦ Baseline
25-Aug-21	11:15	Sunny	63.2	65.8	60.8	69.1	63 Measured ≦ Baseline
31-Aug-21	13:00	Fine	62.4	64.6	59.6	69.1	62 Measured ≦ Baseline

Noise Levels

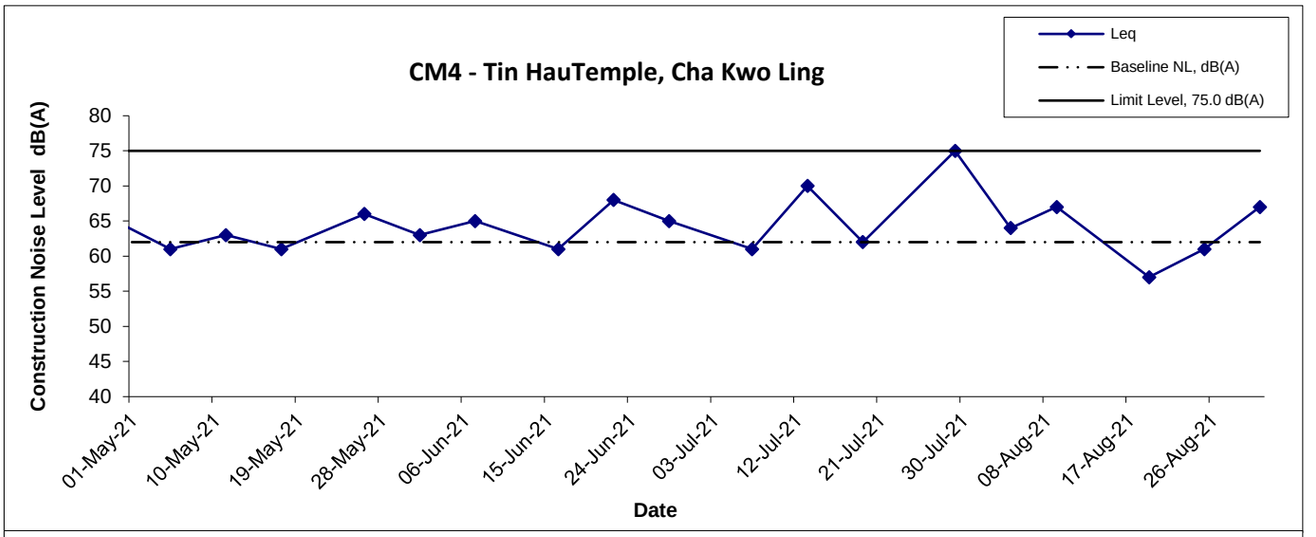


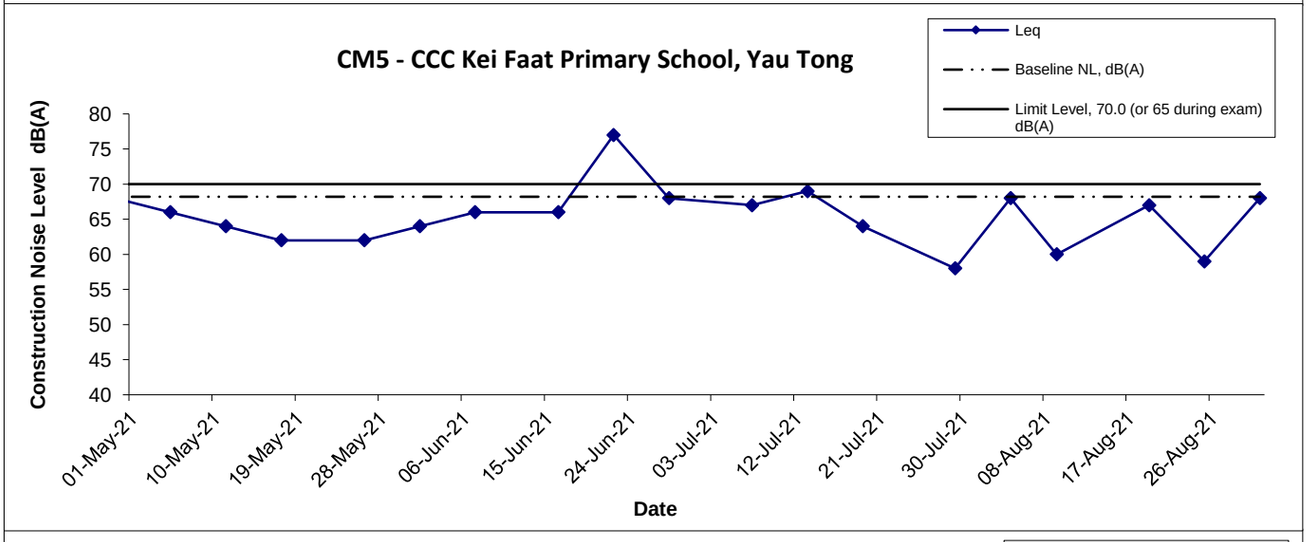


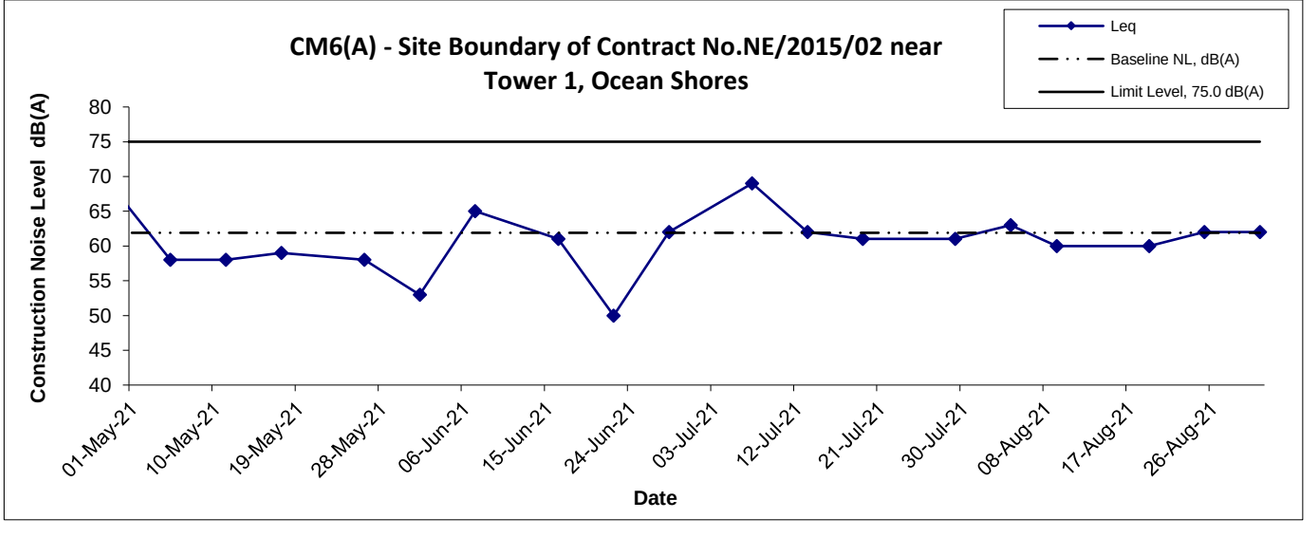


Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Sep-21	Project No. MA16034 Appendix G	CINOTECH

Noise Levels

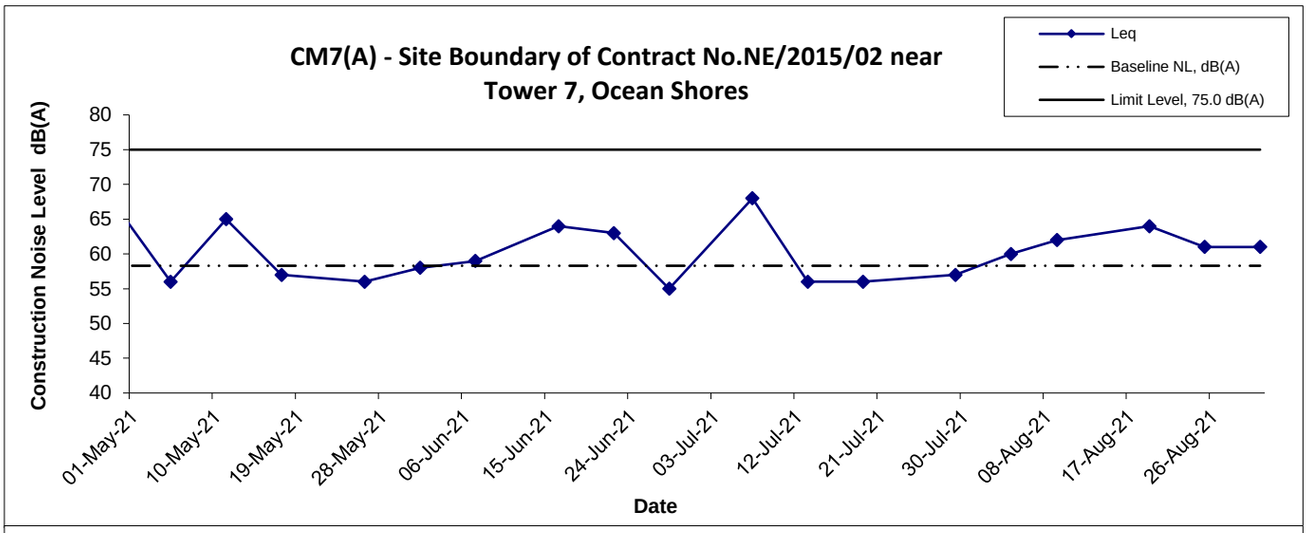


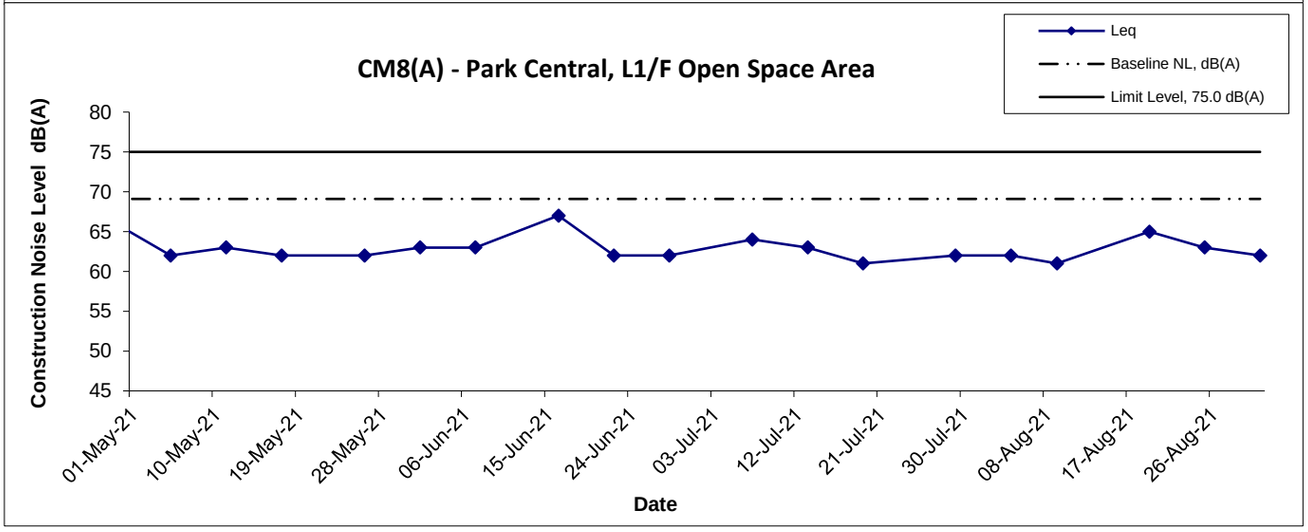




Title	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA16034	CINOTECH
		Date Sep-21	Appendix G	

Noise Levels





Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Sep-21	Project No. MA16034 Appendix G	CINOTECH

Appendix G - Noise Monitoring Results

(Restricted Hours - 19:00 to 23:00 on all other days & 07:00 to 23:00 holidays)

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
6-Aug-21	19:00	Cloudy	59.7	60.8	56.9	59.3	64.4	59Measured ≦ Baseline
	19:05		58.9	60.1	56.0			
	19:10		59.2	60.9	56.8			
13-Aug-21	19:00	Fine	58.6	60.2	56.8	58.6		59Measured ≦ Baseline
	19:05		58.8	60.0	56.5			
	19:10		58.5	60.2	0.0			
20-Aug-21	19:00	Fine	58.9	60.6	55.7	58.7		59Measured ≦ Baseline
	19:05		58.7	60.5	55.6			
	19:10		58.6	60.6	55.8			
27-Aug-21	19:00	Sunny	57.5	59.1	55.1	57.8		58Measured ≦ Baseline
	19:05		58.2	60.3	56.0			
	19:10		57.8	59.4	55.7			

Location CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
6-Aug-21	20:00	Cloudy	62.9	65.3	60.1	62.7	62.2	53
	20:05		62.7	65.2	59.9			
	20:10		62.5	64.7	59.8			
13-Aug-21	22:00	Fine	58.2	60.4	56.3	58.2		58Measured ≦ Baseline
	22:05		58.4	60.4	56.1			
	22:10		58.0	60.2	56.1			
20-Aug-21	21:00	Fine	63.3	66.2	60.5	63.3		57
	21:05		63.2	66.1	60.4			
	21:10		63.5	66.4	60.6			
27-Aug-21	20:00	Sunny	57.1	59.2	55.8	57.0		57Measured ≦ Baseline
	20:05		57.1	59.4	55.7			
	20:10		56.9	59.2	56.1			

Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
6-Aug-21	21:00	Cloudy	61.7	63.9	59.8	61.6	64.7	62Measured ≦ Baseline
	21:05		61.6	63.8	59.8			
	21:10		61.5	63.8	59.7			
13-Aug-21	22:20	Fine	59.3	61.2	57.4	59.6		60Measured ≦ Baseline
	22:25		59.9	62.0	57.8			
	22:30		59.7	62.1	57.7			
20-Aug-21	21:30	Fine	62.1	64.2	59.9	62.1		62Measured ≦ Baseline
	21:35		62.2	64.3	60.1			
	21:40		62.1	64.1	59.7			
27-Aug-21	21:30	Sunny	58.2	60.3	55.7	57.6		58Measured ≦ Baseline
	21:35		56.9	59.2	56.1			
	21:40		57.5	59.4	55.2			

Location CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
4-Aug-21	19:00	Fine	57.6	59.8	55.3	57.6	60.2	58Measured ≦ Baseline
	19:05		57.5	59.7	55.3			
	19:10		57.6	59.7	55.2			
9-Aug-21	19:00	Fine	58.9	61.0	56.4	58.9		59Measured ≦ Baseline
	19:05		58.8	61.0	56.3			
	19:10		58.9	61.3	56.4			
19-Aug-21	19:00	Fine	58.9	60.6	55.7	58.7		59Measured ≦ Baseline
	19:05		58.7	60.5	55.6			
	19:10		58.6	60.6	55.8			
25-Aug-21	19:00	Fine	57.5	59.1	55.1	57.8		58Measured ≦ Baseline
	19:05		58.2	60.3	56.0			
	19:10		57.8	59.4	55.7			
31-Aug-21	19:00	Fine	59.4	61.3	56.9	59.1		59Measured ≦ Baseline
	19:05		59.1	61.1	56.8			
	19:10		58.9	60.9	56.7			

Appendix G - Noise Monitoring Results

(Restricted Hours - 2300-0700 on all days)

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
6-Aug-21	23:00	Cloudy	56.9	59.0	54.9	56.8	63.7	57Measured ≦ Baseline
	23:05		56.8	58.8	54.7			
	23:10		56.7	58.8	54.7			
13-Aug-21	23:00	Fine	58.8	60.2	63.4	58.7		***59***
	23:05		58.7	60.4	63.2			
	23:10		58.7	61.2	56.0			
20-Aug-21	23:00	Fine	58.6	63.4	56.1	60.6		***61***
	23:05		61.2	63.1	59.4			
	23:10		61.5	63.8	59.0			
27-Aug-21	23:00	Sunny	57.2	59.6	55.3	57.3		***57***
	23:05		57.4	59.4	55.8			
	23:10		57.3	59.4	55.2			

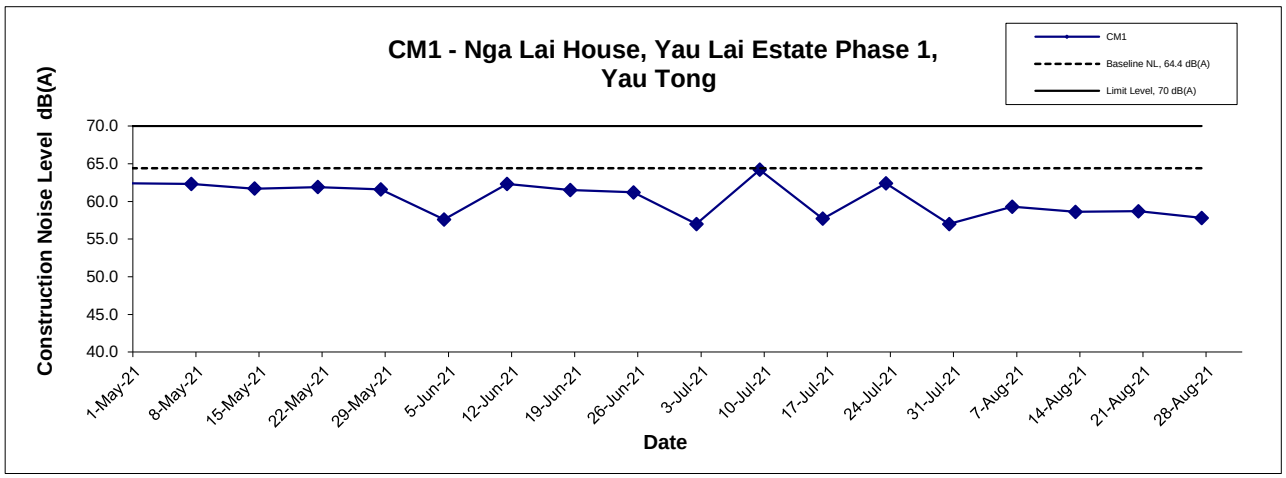
Location CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
6-Aug-21	0:00	Cloudy	57.8	59.3	56.0	57.8	60.8	58Measured ≦ Baseline
	0:05		57.9	59.4	56.1			
	0:10		57.7	59.2	55.8			
13-Aug-21	23:20	Fine	57.7	59.1	55.0	57.8		***58***
	23:25		57.9	59.2	55.3			
	23:30		57.8	59.3	55.2			
20-Aug-21	23:25	Fine	57.5	59.1	55.6	57.3		***57***
	23:30		57.3	59.0	55.4			
	23:35		57.2	58.9	55.3			
27-Aug-21	23:30	Sunny	56.5	58.6	54.9	56.5		***56***
	23:35		56.4	58.3	54.7			
	23:40		56.6	58.5	54.8			

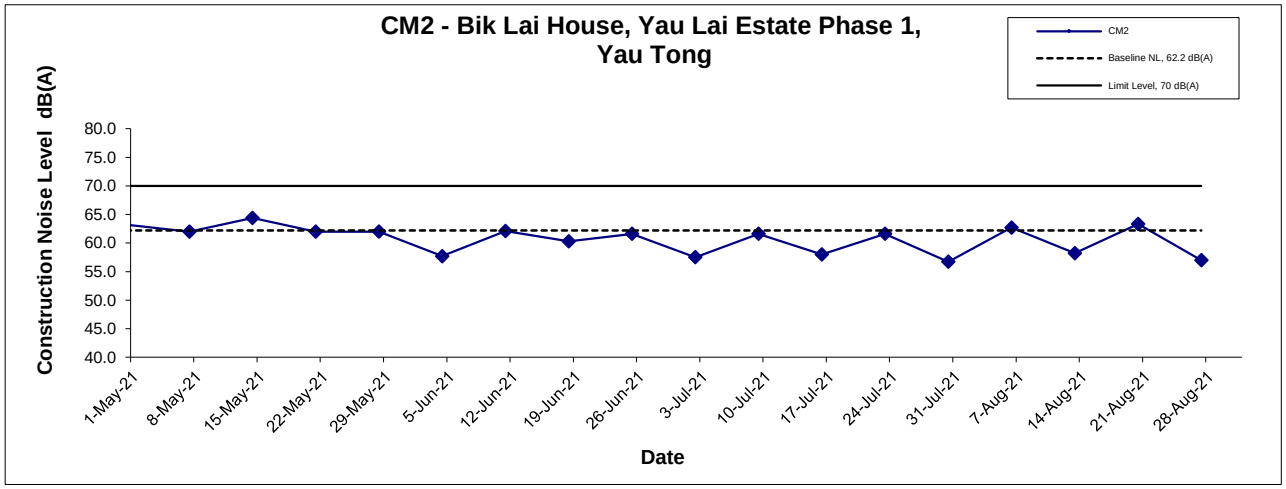
Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
6-Aug-21	1:00	Cloudy	57.3	59.2	55.1	57.2	61.8	57Measured ≦ Baseline
	1:05		57.2	59.3	55.0			
	1:10		57.0	59.1	54.8			
13-Aug-21	23:40	Fine	56.2	58.3	55.4	56.3	62.9	56Measured ≦ Baseline
	23:45		56.4	57.9	55.2			
	23:50		56.3	57.8	55.2			
20-Aug-21	23:50	Fine	56.9	58.7	55.4	56.8	62.9	57Measured ≦ Baseline
	23:55		56.7	58.6	55.3			
	0:00		56.8	58.6	55.2			
27-Aug-21	0:00	Sunny	56.3	58.7	54.1	56.4	62.9	56Measured ≦ Baseline
	0:05		56.6	58.9	54.7			
	0:10		56.2	58.3	54.3			

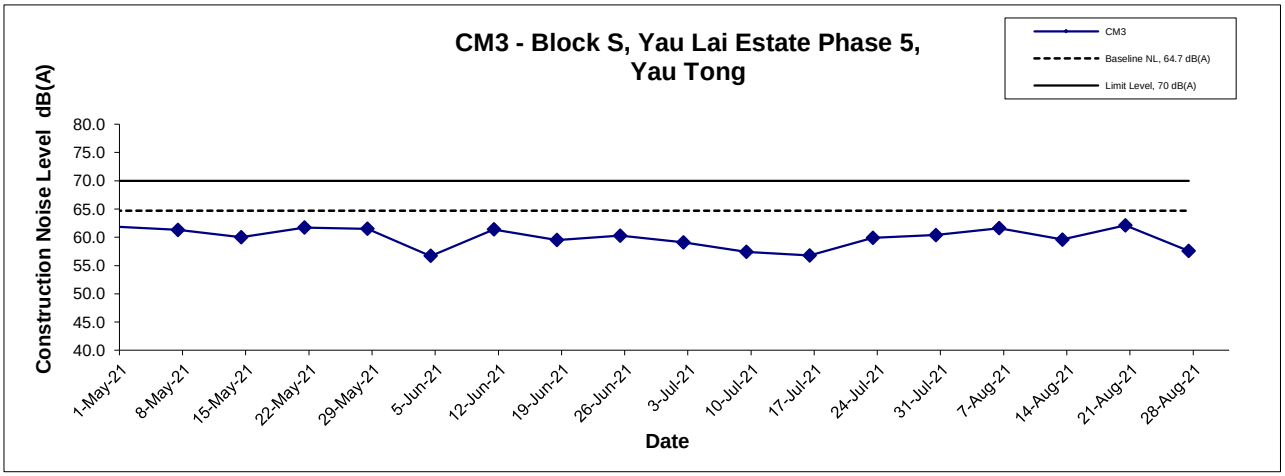
Remark:

"Measured ≦ Baseline" means that the averaged measured Leq is smaller than the baseline Leq, and therefore the measured levels are not valid exceedances.

Noise Levels
(Restricted Hours - 19:00 - 23:00 on normal weekdays)

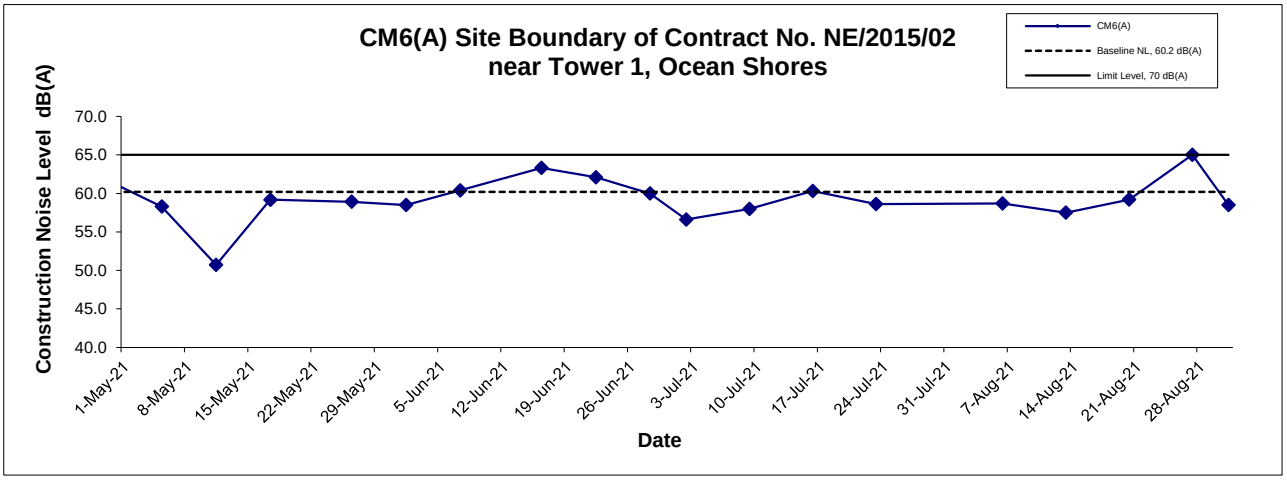






Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Restricted Noise Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Aug-2021	Appendix: G	

Noise Levels
(Restricted Hours - 19:00 - 23:00 on normal weekdays)



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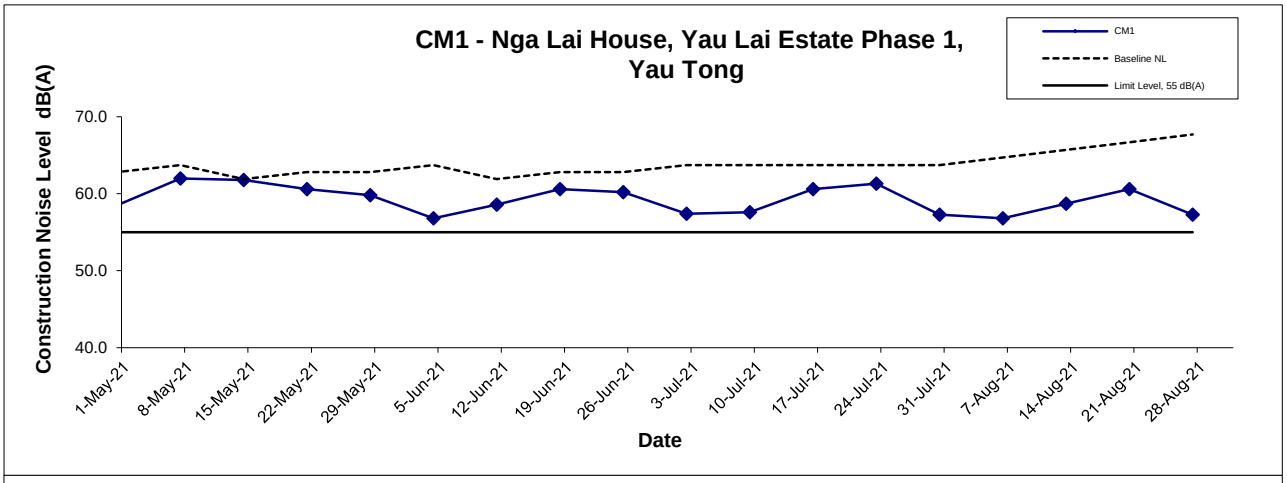
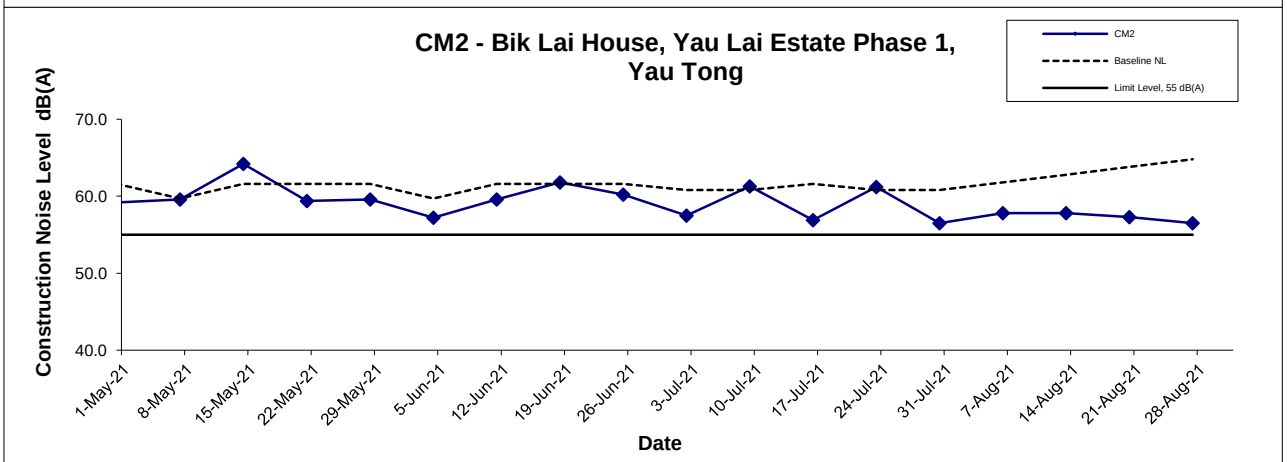
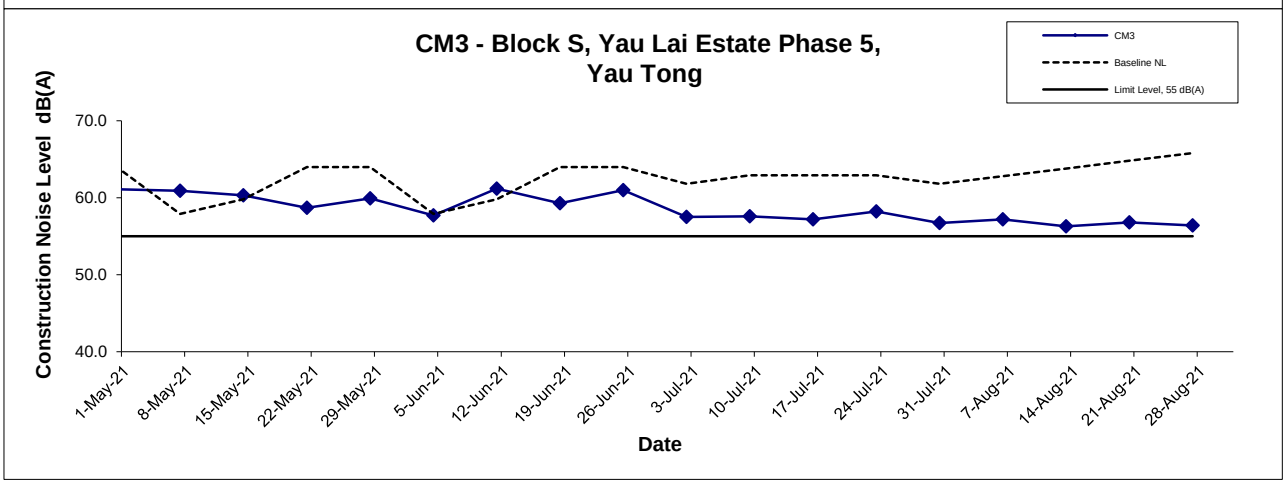
	Date: Aug-2021	Appendix: G	

Noise Levels
(Restricted Hours - 2300-0700 on normal weekdays)







Title: Graphical Presentation of Restricted Noise Monitoring Results	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction	Scale: N.T.S Date: Aug-2021	Project No.: MA16034 Appendix: G

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APPENDIX H
UPDATED CONSTRUCTION NOISE MITIGATION PLAN (NE2017/06)

CONTRACT NO. NE/2017/06

TSEUNG KWAN O – LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

NOISE MITIGATION PLAN

Prepared for

The Government of the Hong Kong Special Administrative Region
Civil Engineering and Development Department

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Revision History

Date	Rev.	Details of Change	Prepared By	Reviewed By	Approved By
2 July 2020	-	- Original issue	Terry Leung	Joyce Chan	Roman Choi
15 March 2021	A	- Addressed EPD's comments dated on 30 November 2020 - Addressed ET's comments dated on 12 January 2021 & 1 February 2021	Terry Leung	Joyce Chan	Roman Choi
3 August 2021	B	- Addressed EPD's comments dated on 8 July 2021 - Addressed ET's comments dated on 2 August 2021	Terry Leung	Joyce Chan	Roman Choi

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1. Project Description

The scope of works included but not limited to design, supply and installation, system verification and Site Acceptance Test of all traffic control and surveillance facilities and field equipment, communications system, interfaces and electrical distribution system for the tunnel, tunnel buildings and associated roads of TKO-LTT (subject to excision) (The Project). The layout of the construction site with portions of construction works and locations of Construction Noise Monitoring Stations are shown in **Appendix A**.

The system will mainly consist of:

- Central System (Software and Hardware)
- Traffic Control Devices
- Communication System
- Closed Circuit Television System
- Building PABX System
- Emergency Telephone System
- Public Address System
- Radio System
- Detection System
- Manual Fallback Control System
- Operation Facilities
- Power Distribution System
- Speed Enforcement System
- Government Optical Fibre System

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2. Requirement of Noise Mitigation Plan (NMP)

In accordance with the condition 2.5 of the EP-458/2013/C, the Permit Holder shall, no later than one month before the commencement of construction of the project, submit to the Director of Environmental Protection for approval three hard copies and two electronic copies of Noise Mitigation Plan detailing the temporary and permanent mitigation measures for the construction and operation phase traffic noise impacts arising from the Project. All noise mitigation measures implemented shall be properly maintained during construction of the project.

The NMP includes:

- A layout plan to show the location of major construction activities
- A layout plan to show the location of Noise Sensitive Receivers (NSRs)
- Prediction of noise levels in accordance with the above updated information and mitigation proposals in place
- Consideration of noise level of construction works to be carried out at individual work portion of the Project between notional distance at each work portion and the NSRs
- An updated powered mechanical equipment (PME) list for the proposed construction works
- Noise mitigation methodologies for proposed construction works
- Noise mitigation measures for the NSRs within 300m from the site boundary of the Project

Noise assessment methodology in this NMP is made reference from GW-TM and Guidance Note "Preparation of Construction Noise Impact Assessment under the Environmental Impact Assessment Ordinance" (EIAO GN 9/2010). These included: Determination of Noise Assessment Areas, Provision of Background Information, Identification of Noise Source, Construction Noise Level Assessment & Mitigation Measures, etc.. All measures recommended in this NMP will be fully and properly implemented during the construction and operation phases of the Project.

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3. Abbreviation

ANL	-	Acceptable Noise Level
CNP	-	Construction Noise Permit
EIA	-	Environmental Impact Assessment
EM&A	-	Environmental Monitoring and Audit
EP	-	Environmental Permit
GTECH	-	GTECH Services (Hong Kong) Limited
NMP	-	Noise Mitigation Plan
NSR	-	Noise Sensitive Receiver
PCW	-	Prescribed Construction Works
PME	-	Powered Mechanical Equipment
PNL	-	Predicted Noise Level
SWL	-	Sound Power Level
QPME	-	Quality Powered Mechanical Equipment

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4. Descriptions of Construction Works and Noise Level Prediction within site boundary

4.1 Potential Noise Sensitive Receivers during Construction Phase

Refer to **Appendix B** extracted from the EM&A Report (Dec 2020), there are total 8 nos. of monitoring stations identified which represented 8 nos. of NSRs within 300m with predicted residual noise impact within our construction site boundary. According to Section 4.2, Table 4.1 & Figure 3 of Monthly EM&A Report (December 2020) & EM&A Manual: Construction noise impact and traffic noise impact from this Project are predicted at the identified NSRs. Detail information of the NSRs as shown below:

Station	NSR ID Reference (Based on EIA Report)	Location	Noise Limit Level, L_{eq} (30mins) dB(A) (at 0700 – 1900 hrs on any day not being a Sunday or general holiday)
CM1	N1102	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	75 dB(A)
CM2	N1204	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	75 dB(A)
CM3	N2105	Block S, Yau Lai Estate Phase 5, Yau Tong	75 dB(A)
CM4	N3101a	Tin Hau Temple, Cha Kwo Ling	75 dB(A)
CM5	N4101	CCC Kei Faat Primary School, Yau Tong	70 dB(A) and 65 dB(A)*
CM6(A)	--	Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores	75 dB(A)
CM7(A)	--	Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores	75 dB(A)
CM8(A)	--	Park Central, L1/F Open Space Area	75 dB(A)

Table 1: Detail information of the monitoring stations within 300m measured from the construction site with reference to the EM&A Report (Dec 2020) & EM&A Manual

Notes:

If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

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** 70 dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively*

Construction phase environmental aspects assessed in the approved EIA are listed below. Potential contribution from works under Contract No.: NE/2017/06 is identified and the notional distance from each portion of work to the affected monitoring stations are tableted in **Appendix C** . For portion 4A, 4B, 5A & 5B, since there are no NSRs at 300m within the site boundary, therefore no noise calculation is required.

According to Section 4.6.1 of the approved EIA report, potential construction noise impacts of the Project may arise by other contractors and GTECH from the following major construction activities:

- Excavation of Lam Tin Interchange (LTI)
- Portal construction
- Piling for the bridge / viaducts
- Seawall construction at Tseung Kwan O side
- Filling activities at Tseung Kwan O side
- Road and road pavement formation and associated earthworks
- Tunnel construction
- Drainage culvert construction
- Reprovisioning of infrastructure, services and utilities

Due to the nature of works under Contract: NE/2017/06 of the TCSS, it is necessary to calculate the cumulative noise level together with the other contracts in order to predict the noise limit. However, from the latest construction programmes of other contracts:

Contract NE/2015/01: All construction activities are expected to be finished in March 2022.
Contract NE/2015/02: All construction activities are expected be finished in May 2023.
Contract NE/2017/01: N/A (No NSRs are identified within 300m from the construction site boundary).
Contract NE/2015/03: All construction activities finished in April 2020.
Contract NE/2017/02: All construction activities are expected be finished in May 2023.

From the above information, construction works for NE/2015/01, NE/2015/02 and NE/2017/02 are overlapped with the works programme of NE/2017/06. Therefore, cumulative noise level calculation is expected to be calculated between the 3 nos. of Contracts and NE/2017/06. However, according to the latest NMP from NE/2017/02, the predicted monthly noise level

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calculations are presented until November 2020, thus cumulative noise calculation can only be predicted according to the latest information from their construction programme.

The potential sources of noise impact during the construction phase of the Project would be the use of Powered Mechanical Equipment (PME). Various construction activities such as cable installation at high level in tunnel and buildings, Private Automatic Branch Exchange (PABX) and Close Circuit Television (CCTV) installations at high levels etc. would require the use of PMEs. PMEs likely to be employed during the construction phase would include, but not limited to, drill (battery), drill, percussive (battery), circular steel saw (Battery), grinder, hand-held (battery), impact wrench (battery), cherry picker & scissor platform (electrical), elevated working platform and crane lorry, with (or without) crane/grab, gross weight less than or equal to 38 tonne, etc. The above PMEs were reviewed, confirmed and allocated by Responsible Engineer to carry out the construction works in each portion. The details of works, notional distance, noise calculations and the type / number of PMEs required at each work portions can be summarized in Table 2 and **Appendix C**. Study area exceeded 300m from site boundary would not be considered as this is out of the range of noise assessment area. In addition, the cumulative noise calculation from Year 2021 to Year 2023 is predicted and presented in **Appendix D**.

In conclusion, as summarized in **Appendix D**, the cumulative noise level with mitigation measures applied from year 2021 to 2023 will NOT exceeded the noise limit level at all the NSRs. In addition for CM5, examination timetable will be acquired form the school and no works / re-scheduling of works during examination period will be considered.

Communication channels are established with all neighboring facilities to alert any possible noise disturbance and immediate respond in particular of road side works at various locations by other contractors.

NSR	Work Portion	Notional Distance (m)	Remarks
CM1	1A	N/A	As this work portion is out of the assessment boundary and the calculation of PNL for this notional source is excluded.
	1B	299	
	1C	179	
CM2	1A	N/A	As this work portion is out of the assessment boundary and the calculation of PNL for this notional source is excluded.
	1B	284	
	1C	165	
CM3	1A	N/A	As this work portion is out of the assessment boundary and the calculation of PNL for this notional source is excluded.

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NSR	Work Portion	Notional Distance (m)	Remarks
	1B	224	
	1C	199	
CM4	1A	344	
	1B	246	
	1C	N/A	As this work portion is out of the assessment boundary and the calculation of PNL for this notional source is excluded.
CM5	1B	271	
	1A & 1C	N/A	As these work portions are out of the assessment boundary and the calculation of PNL for this notional source is excluded.
CM6(A)	2A	139	
	2B	179	
	3A	N/A	As this work portion is out of the assessment boundary and the calculation of PNL for this notional source is excluded.
CM7(A)	2A	223	
	2B	120	
	3A	N/A	As this work portion is out of the assessment boundary and the calculation of PNL for this notional source is excluded.
CM8(A)	2A	N/A	As this work portion is out of the assessment boundary and the calculation of PNL for this notional source is excluded.
	2B	429	
	3A	239	

Table 2: Summary table for NSRs assessed from each portion within 300m assessment boundary

4.2 Noise Mitigation Consideration during Restricted Hours

In view of the nature of the works for the Project listed in Section 1, no significant noise impact is anticipated on the existing NSRs during normal working hours 07:00 hrs to 19:00 hrs from Monday to Saturday except public holidays. However, GTECH is committed to implement good site practice and good acoustic design for PMEs to minimize the construction noise generated from the Project. The normal working hours during construction will be between 07:00 hrs and 19:00 hrs from Monday to Saturday (except public holidays). A Construction Noise Permit (CNP) will be applied from Environmental Protection Department (EPD) if construction works involved PMEs / PCWs will be carried out during restricted hours (i.e.

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between 19:00 hrs to 07:00 hrs of the next day and public holidays between 00:00 hrs to 24:00 hrs).

In addition, the conditions set out under the approved CNP will be strictly followed so that the noise level will comply with the legislation and contract's requirement and GTECH is committed to purchase or hire equipment / plant with a lower sound power level as practicable.

4.3 Construction Programme

Refer to **Appendix E**, the construction activities can be adjusted to minimize the noise impact to the nearby NSRs, especially during school examination periods to fulfill the requirement in the EIA report.

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5. Noise Mitigation Strategies during Construction Phase and Operation Phase

In order to minimize the noise level, even the noise impact to nearby NSRs (i.e. the 8 nos. of NSRs stated in Section 4.1) is small compared with other contracts in the Project, GTECH will implement the following good site practices during the construction phase:

- Only well-maintained plant will be operated on site and plant should be serviced regularly during the construction programme;
- Mobile plant, if any, will be sited as far from NSRs as possible;
- Machines and plant (such as trucks) that may be under intermittent use will be shut down between work periods or will be throttled down to a minimum;
- Plants known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and
- Material stockpiles and other structures will be effectively utilized, wherever practicable, in screening noise from on-site construction activities; and
- Scheduling of construction activities especially during school examination periods.

In accordance with the Section 25.12(6) of Appendix 1.1A in Particular Specification, the following measures will also be implemented:

- Use silencers or mufflers on construction equipment if possible during the construction works;
- Mobile plants, if any, should be sited as far away from NSRs as possible;
- GTECH will provide an acoustic screen or enclosure to shield the public or NSRs from the noisy activity at source or adopt quiet process/plant including the use of "quality powered mechanical equipment" (QPME) under CNP / contract conditions / requirements, except for works under emergency or with the prior certification of the Independent Environmental Consultant (IEC) that the provision of such is not necessary. The acoustic screen or enclosure will be made of incombustible, sound insulating material with performance such that the noise level measured at the NSR do not exceed the limits as mentioned above. The detailed information including the size and form of the screen or enclosure will be proposed by GTECH and submitted to the IEC for certification before the work commences. The acoustic screen or enclosure will be securely fixed at the base to avoid overturning. Notwithstanding any certification given, GTECH will be fully liable for the design in all respects;
- Where a QPME is used, the plant will be registered with EPD, and the label issued by EPD from such registration will be affixed on the plant at all times and kept legible. GTECH will also establish a register to record all QPME used on Site; and

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- The IEC and the Engineer will have the power to inspect the QPME if they have doubt on its compliance with the QPME requirements. The constructional plant will deem to be non-QPME if it does not have the registration label issued by EPD so affixed.

With reference to the EIA report and the nature of work under Contract NE/2017/06, only PA equipment, road sign and over-head electronic road sign boards etc. are expected to be operated during the operation phase. No noise emission is expected and therefore no mitigation measures will be required during operational phase.

Table 3 shows the mitigation measures for the PMEs in each portion. The Sound Power Levels (SWL) for the PMEs is extracted from EPD's Technical Memorandum on Noise from Construction Work Other than Percussive Piling (GW-TM) and British Standard BS 5228-1:2009 if not listed in GW-TM.

Location	PME	TM Ref / BS 5228 Ref	Mitigation Methodology	Noise Level Reduction, dB(A)
1A	Drill, Hand held (Battery)	BS C4/69	Acoustic Enclosure	-10
	Circular Steel Saw (Battery)	BS D7/78	Acoustic Enclosure	-10
	Grinder, Hand-Held (Battery)	BS C4/93	Acoustic Enclosure	-10
1B	Drill, Hand held (Battery)	BS C4/69	Acoustic Enclosure	-10
	Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	N/A	0
	Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	N/A	0
1C	Drill, Hand held (Battery)	BS C4/69	Acoustic Enclosure	-10
	Circular Steel Saw (Battery)	BS D7/78	Acoustic Enclosure	-10
	Grinder, Hand-Held (Battery)	BS C4/93	Acoustic Enclosure	-10
2A	Drill, Hand held (Battery)	BS C4/69	Acoustic Enclosure	-10

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Location	PME	TM Ref / BS 5228 Ref	Mitigation Methodology	Noise Level Reduction, dB(A)
	Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	N/A	0
	Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	N/A	0
2B	Drill, Hand held (Battery)	BS C4/69	Acoustic Enclosure	-10
	Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	N/A	0
	Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	N/A	0
3A	Drill, Hand held (Battery)	BS C4/69	Acoustic Enclosure	-10
	Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	N/A	0
	Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	N/A	0

Table 3: Proposed Mitigation Measures for PMEs in each Work Portion

The acoustic enclosure comprised of minimum 50mm thick sound absorbing lining and 10mm thick plywood (or 1 mm thick steel) backing so that no part of equipment is visible from any nearby NSRs. The figure below shows the appearance of the acoustic enclosure:

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Figure 1: Acoustic Enclosure for Dill, Hand-held (Battery), Circular Steel Saw (Battery) & Grinder, Hand-Held (Battery)

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6. Conclusion

This plan identifies the potential noise sources associated with the construction works of the Project. Several practical and effective noise mitigation measures will be implemented to minimize the noise impacts arising from the construction activities. With the implementation of the proposed mitigation measures, the potential noise impacts would comply with EIA noise criteria. Where necessary, further review and update will be performed during the construction phase.

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Appendix A – Layout drawings of Contract NE/2017/06 Working Portions and Locations of Construction Noise Monitoring Stations

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APPENDIX TO FORM OF TENDER - P. 4

SCC 42A3 Portion Handover Dates

Portion of the Site	Access Date to be made available to the Contractor
1A	To be notified in writing by the Engineer
1B	To be notified in writing by the Engineer
1C	To be notified in writing by the Engineer
2A	To be notified in writing by the Engineer
2B	To be notified in writing by the Engineer
3A	To be notified in writing by the Engineer
4A	To be notified in writing by the Engineer
4B	To be notified in writing by the Engineer
5A	To be notified in writing by the Engineer
5B	To be notified in writing by the Engineer
5C	To be notified in writing by the Engineer
For the extent of the Portions, refer to Drawing Sheet Nos. 60308751/C4/C00/1001 to 60308751/C4/C00/1011 inclusive. The Contractor is not entitled to exclusive possession of these Portions of the Site. For the coordination specification, refer to Clause B2 of Particular Specification Preamble.	

Remark: Portion 5C is for Cross Bay Link but not for TKO-LTT

ISO A1 594mm x 841mm

Approved: HKT

Checked: ALCF

Designer: GLSY

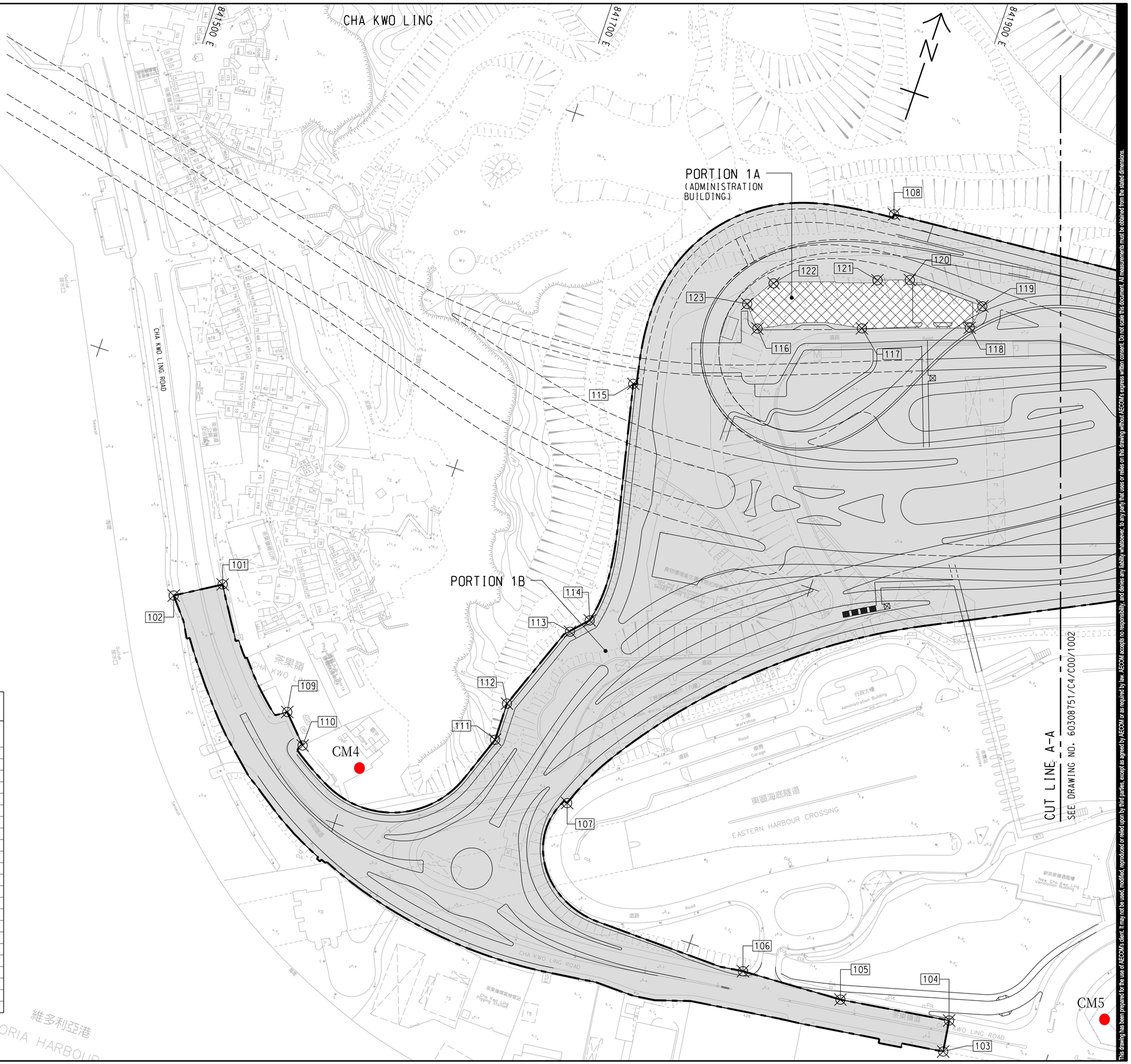
Project Management Initials:

NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60308751/C4/C00/1001 TO 1011.
2. ALL SETTING OUT POINTS SHOWN ON THIS SET OF DRAWINGS ARE REFERENCE ONLY. THE EXACT LIMIT OF SITE BOUNDARY SHALL BE VERIFIED AND DETERMINED BY THE CONTRACTOR ON SITE.
3. THE CONTRACTOR IS NOT ENTITLED TO EXCLUSIVE POSSESSION OF THESE PORTIONS OF THE SITE.

LEGEND:

- LIMIT OF SITE BOUNDARY
- 001 SETTING OUT POINT
- PORTION 1A
- PORTION 1B
- PORTION 1C
- PORTION 2A
- PORTION 2B
- PORTION 3A
- PORTION 4A
- PORTION 4B
- PORTION 5A
- PORTION 5B
- PORTION 5C



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104	842044.088	817805.262
105	841985.627	817797.269
106	841931.550	817794.940
107	841814.022	817849.882
108	841878.503	818203.194
109	841657.101	817848.082
110	841670.573	817833.794
111	841766.805	817869.581
112	841766.628	817889.845
113	841786.153	817936.954
114	841794.180	817946.054
115	841775.729	818073.034
116	841829.009	818122.162
117	841881.752	818140.101
118	841936.090	818158.866
119	841938.794	818171.843
120	841897.660	818172.780
121	841881.390	818167.078
122	841829.425	818147.789
123	841819.624	818132.856

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PROJECT 項目

TSEUNG KWAN O - LAM TIN TUNNEL - TRAFFIC CONTROL AND SURVEILLANCE SYSTEM AND ASSOCIATED WORKS

CLIENT 業主

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

CONSULTANT 工程顧問公司

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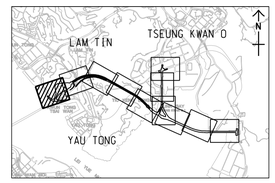

PROJECT NO. 項目編號 60308751

CONTRACT NO. 合約編號 NE/2017/06

SHEET TITLE 圖紙名稱

PORTION OF SITE

SHEET 1 OF 11

SHEET NUMBER 圖紙編號

60308751/C4/C00/1001

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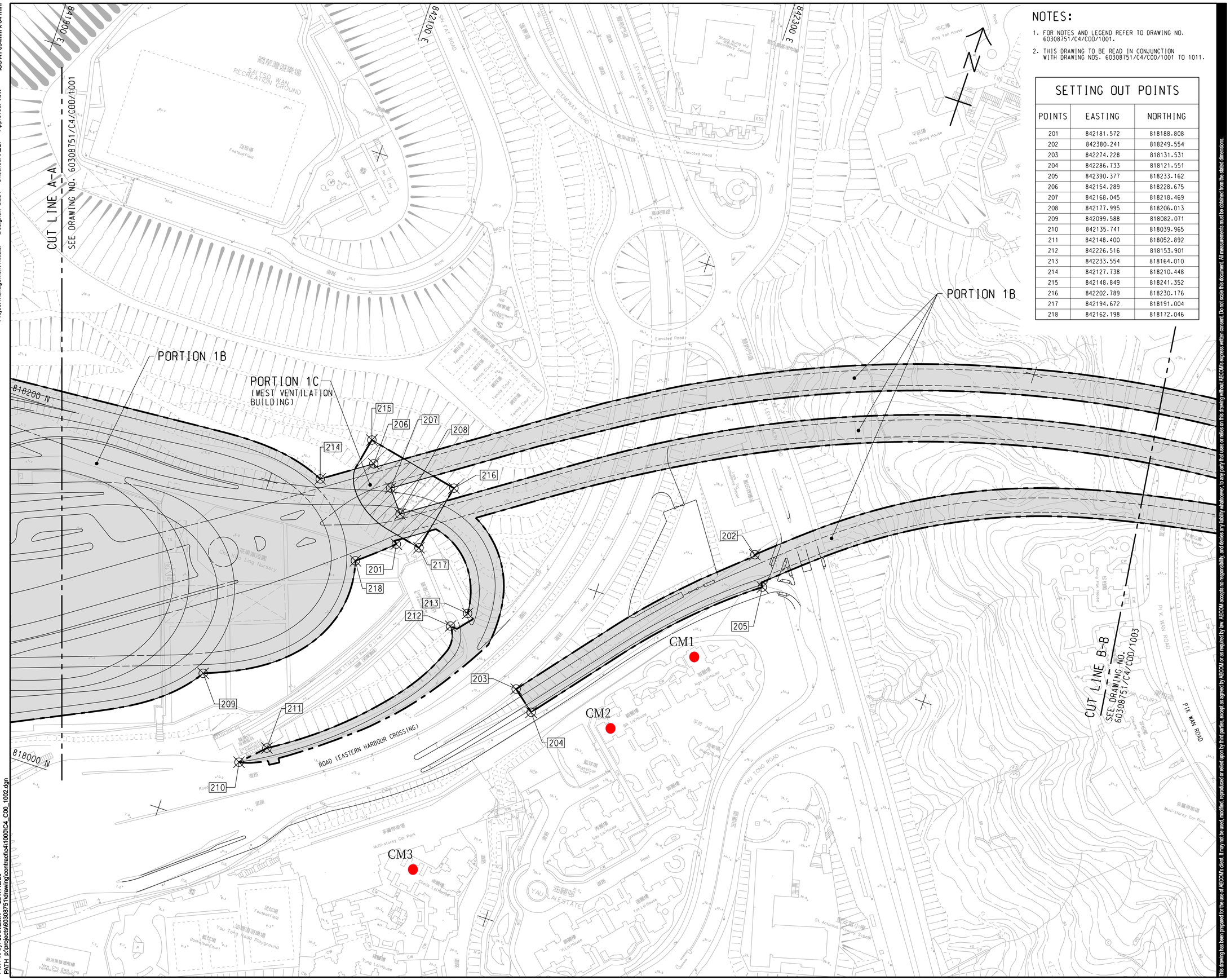

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1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60308751/C4/C00/1001.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60308751/C4/C00/1001 TO 1011.

SETTING OUT POINTS

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202	842380.241	818249.554
203	842274.228	818131.531
204	842286.733	818121.551
205	842390.377	818233.162
206	842154.289	818228.675
207	842168.045	818218.469
208	842177.995	818206.013
209	842099.588	818082.071
210	842135.741	818039.965
211	842148.400	818052.892
212	842226.516	818153.901
213	842233.554	818164.010
214	842127.738	818210.448
215	842148.849	818241.352
216	842202.789	818230.176
217	842194.672	818191.004
218	842162.198	818172.046

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PROJECT 項目

TSEUNG KWAN O - LAM TIN TUNNEL - TRAFFIC CONTROL AND SURVEILLANCE SYSTEM AND ASSOCIATED WORKS

CLIENT 業主

土木工程拓展署
Civil Engineering and Development Department

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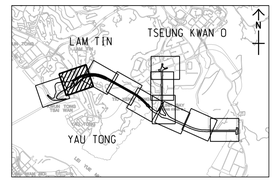

PROJECT NO. 項目編號
60308751

CONTRACT NO. 合約編號
NE/2017/06

SHEET TITLE 圖紙名稱
PORTION OF SITE

SHEET 2 OF 11

SHEET NUMBER 圖紙編號
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842900 E

818600 N

818400 N

PORTION 1B

CUT LINE C-C

SEE DRAWING NO. 60308751/C4/C00/1004

CUT LINE B-B

SEE DRAWING NO. 60308751/C4/C00/1002

301

302

NOTES:

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SETTING OUT POINTS

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302	843079.015	818244.589

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TSEUNG KWAN O - LAM TIN TUNNEL - TRAFFIC CONTROL AND SURVEILLANCE SYSTEM AND ASSOCIATED WORKS

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Civil Engineering and Development Department

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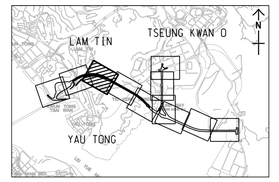

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CONTRACT NO. 合約編號
NE/2017/06

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SHEET 3 OF 11

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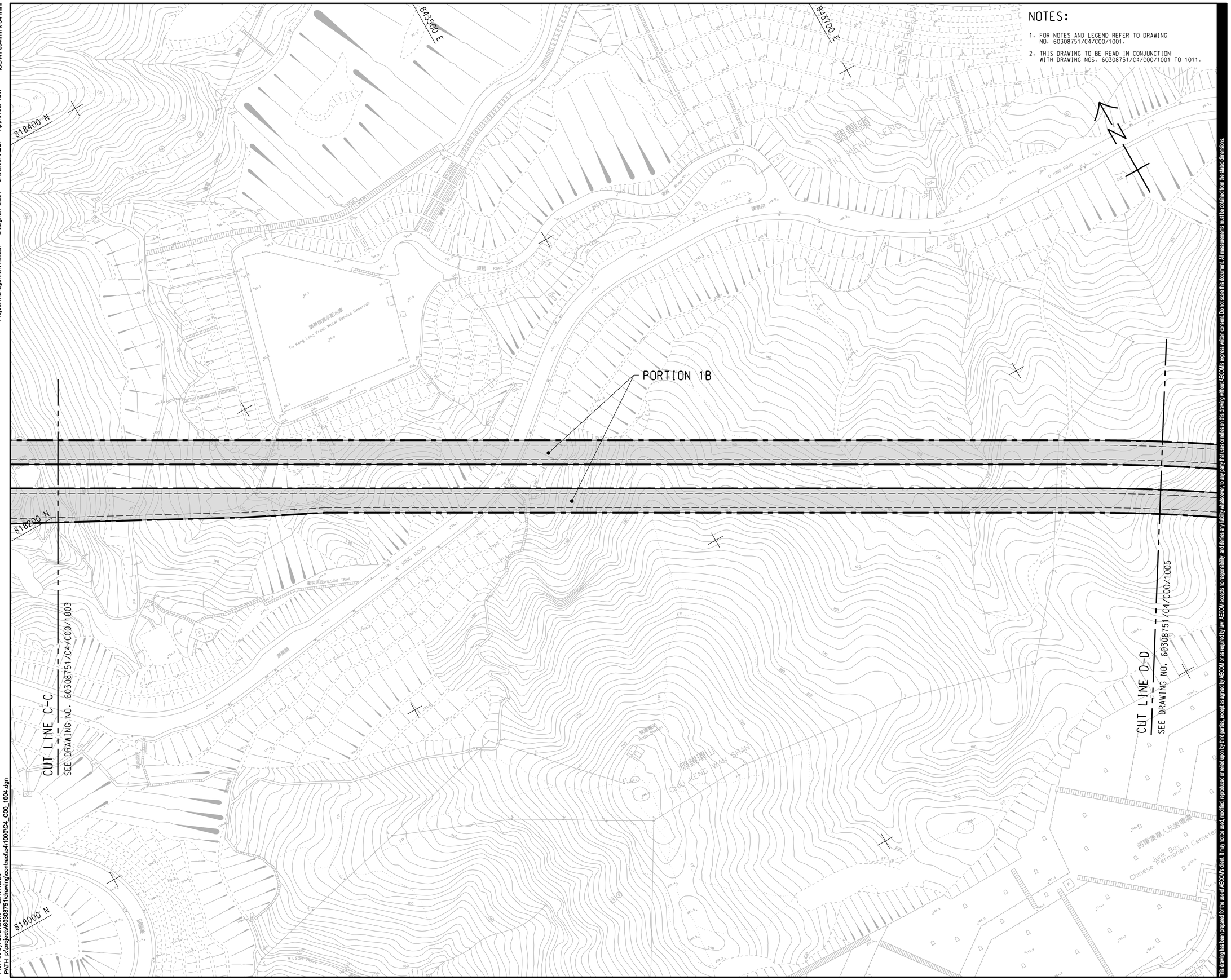

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Project Management Initials: Designer: GLSY Checked: ALCF Approved: HKT ISO A1 594mm x 841mm

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PATH: p:\projects\60308751\drawing\contract\c4\1000\C4_C00_1004.dgn

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PROJECT 項目

TSEUNG KWAN O - LAM TIN TUNNEL - TRAFFIC CONTROL AND SURVEILLANCE SYSTEM AND ASSOCIATED WORKS

CLIENT 業主

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

CONSULTANT 工程顧問公司

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ISSUE/REVISION 修訂

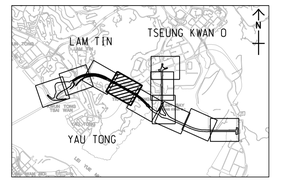
I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 複核
-	DEC. 17	TENDER DRAWING	ALCF

STATUS 階段

SCALE 比例: A1 1 : 1000

DIMENSION UNIT 尺寸單位: METRES

KEY PLAN 索引圖 A1 1 : 75000



PROJECT NO. 項目編號: 60308751

CONTRACT NO. 合約編號: NE/2017/06

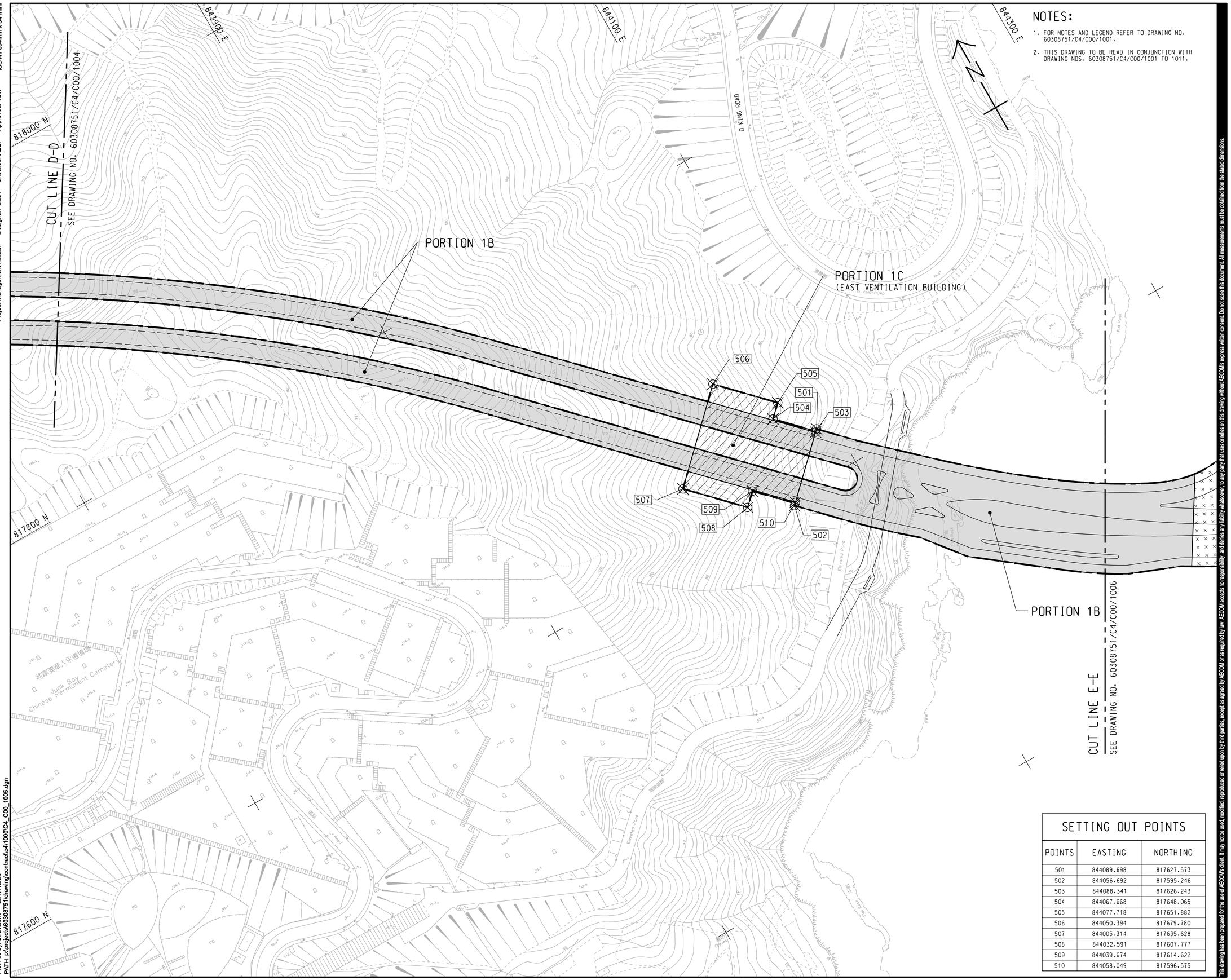
SHEET TITLE 圖紙名稱

PORTION OF SITE

SHEET 4 OF 11

SHEET NUMBER 圖紙編號

60308751/C4/C00/1004



NOTES:

1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60308751/C4/C00/1001.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60308751/C4/C00/1001 TO 1011.

SETTING OUT POINTS

POINTS	EASTING	NORTHING
501	844089.698	817627.573
502	844056.692	817595.246
503	844088.341	817626.243
504	844067.668	817648.065
505	844077.718	817651.882
506	844050.394	817679.780
507	844005.314	817635.628
508	844032.591	817607.777
509	844039.674	817614.622
510	844058.049	817596.575

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PROJECT 項目

TSEUNG KWAN O - LAM TIN TUNNEL - TRAFFIC CONTROL AND SURVEILLANCE SYSTEM AND ASSOCIATED WORKS

CLIENT 業主

土木工程拓展署 Civil Engineering and Development Department

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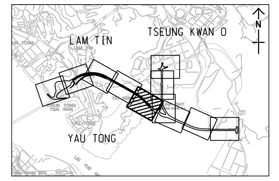
STATUS 階段

SCALE 比例: A1 1 : 1000

DIMENSION UNIT 尺寸單位: METRES

KEY PLAN 索引圖 A1 1 : 75000



PROJECT NO. 項目編號: 60308751

CONTRACT NO. 合約編號: NE/2017/06

SHEET TITLE 圖紙名稱

PORTION OF SITE

SHEET 5 OF 11

SHEET NUMBER 圖紙編號

60308751/C4/C00/1005

Project Management Initials: Designer: GLSY Checked: ALCF Approved: HKT ISO A1 594mm x 841mm

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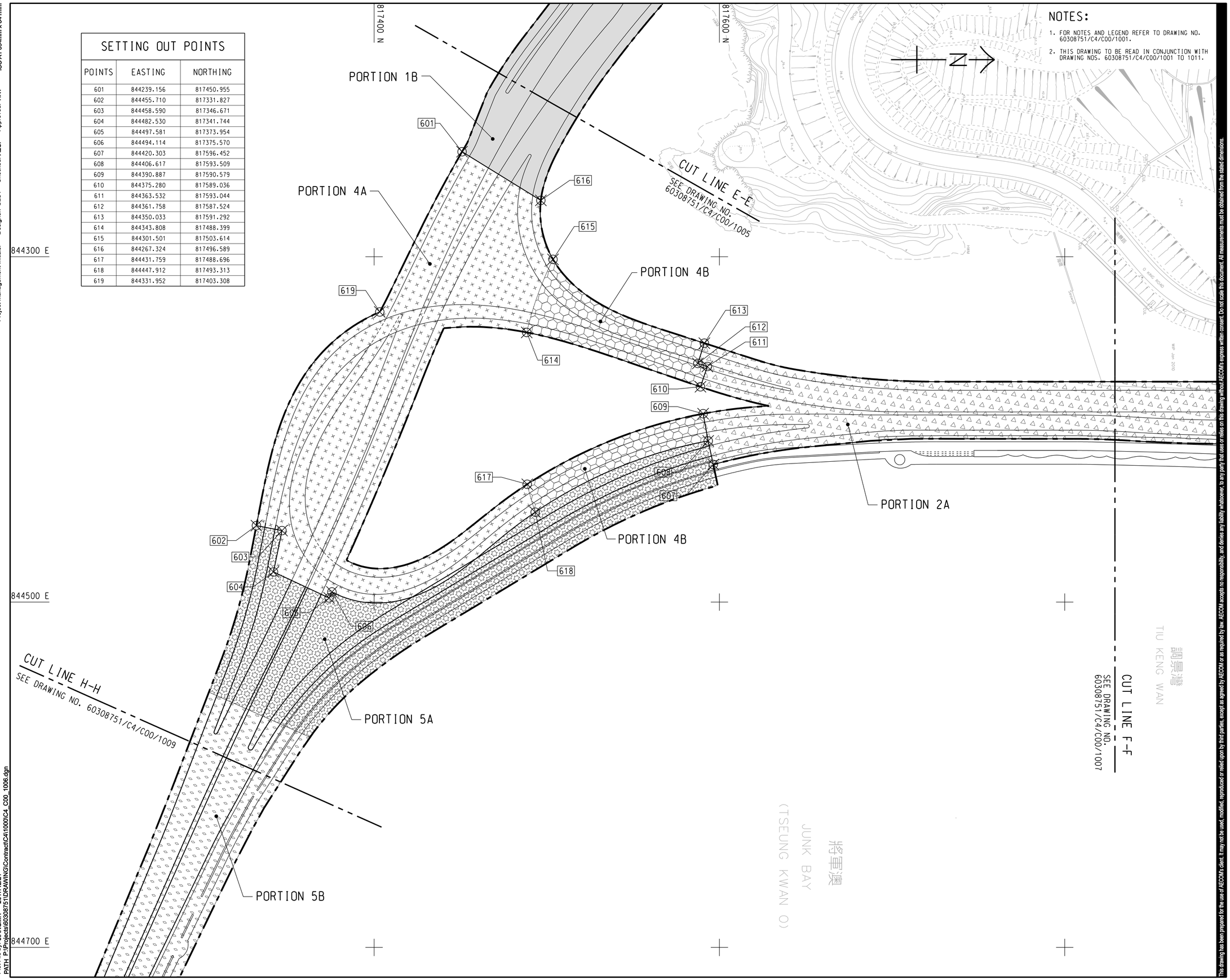
Project Management Initials: Designer: GLSY Checked: ALCF Approved: HKT ISO A1 594mm x 841mm

SETTING OUT POINTS		
POINTS	EASTING	NORTHING
601	844239.156	817450.955
602	844455.710	817331.827
603	844458.590	817346.671
604	844482.530	817341.744
605	844497.581	817373.954
606	844494.114	817375.570
607	844420.303	817596.452
608	844406.617	817593.509
609	844390.887	817590.579
610	844375.280	817589.036
611	844363.532	817593.044
612	844361.758	817587.524
613	844350.033	817591.292
614	844343.808	817488.399
615	844301.501	817503.614
616	844267.324	817496.589
617	844431.759	817488.696
618	844447.912	817493.313
619	844331.952	817403.308



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PROJECT 項目

TSEUNG KWAN O - LAM TIN TUNNEL - TRAFFIC CONTROL AND SURVEILLANCE SYSTEM AND ASSOCIATED WORKS

CLIENT 業主

土木工程拓展署
Civil Engineering and Development Department

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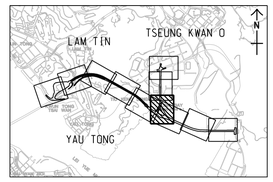
I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 複核
-	DEC. 17	TENDER DRAWING	ALCF

STATUS 階段

SCALE 比例
A1 1 : 1000

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN 索引圖 A1 1 : 75000



PROJECT NO. 項目編號
60308751

CONTRACT NO. 合約編號
NE/2017/06

SHEET TITLE 圖紙名稱
PORTION OF SITE

SHEET 6 OF 11

SHEET NUMBER 圖紙編號
60308751/C4/C00/1006

Project Management Initials:
Designer: GLSY
Checked: ALCF
Approved: HKT
ISO A1 594mm x 841mm

817800 N
818000 N
818200 N
844300 E
844500 E

NOTES:

1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60308751/C4/C00/1001.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60308751/C4/C00/1001 TO 1011.

PORTION 2A
PORTION 2B
CM6(A)
CM7(A)
701
702
703
704
705
706
707
708
709
710

O KING ROAD 鰲景道
TONG YIN STREET 塘仁街
CHI SHIN STREET 至善街
TIU KENG WAN 調景灣
TSEUNG KWAN O

CUT LINE F-F
SEE DRAWING NO. 60308751/C4/C00/1006

CUT LINE G-G
SEE DRAWING NO. 60308751/C4/C00/1008

SETTING OUT POINTS

POINTS	EASTING	NORTHING
701	844372.350	817899.869
702	844372.350	818088.619
703	844363.531	818158.269
704	844376.050	818161.538
705	844408.436	817899.797
706	844408.436	818099.869
707	844404.950	818363.557
708	844414.713	818367.489
709	844375.350	818071.384
710	844405.436	818071.268

Plot File by: JIANGMH 2017/12/20
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PROJECT 項目

TSEUNG KWAN O - LAM TIN TUNNEL - TRAFFIC CONTROL AND SURVEILLANCE SYSTEM AND ASSOCIATED WORKS

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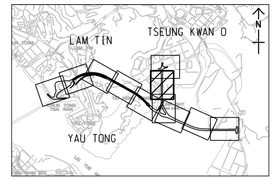
-	DEC. 17	TENDER DRAWING	ALCF

STATUS 階段

SCALE 比例
A1 1 : 1000

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN 索引圖 A1 1 : 75000



PROJECT NO. 項目編號
60308751

CONTRACT NO. 合約編號
NE/2017/06

SHEET TITLE 圖紙名稱
PORTION OF SITE

SHEET 7 OF 11

SHEET NUMBER 圖紙編號
60308751/C4/C00/1007

ISO A1 594mm x 841mm

Project Management Initials:
Designer: GLSY
Checked: ALCF
Approved: HKT

NOTES:

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2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60308751/C4/C00/1001 TO 1011.

844300 E
844500 E
844700 E
818800 N
818600 N
818400 N

CHOI MING COURT
彩明苑
TONG MING COURT
唐明苑
PARK CENTRAL
將軍澳中心
PARK CENTRAL
平台（下層停車場）
Podium (Car Park under)
THE WINGS
天鷺
TSEUNG KWAN O
將軍澳
CM8(A)
PORTION 3A
PORTION 2B
805
806
803
804
807
808
809
810
813
802
801
812
811
CUT LINE G-G
SEE DRAWING NO. 60308751/C4/C00/1007
Proposed Sports Centre and Library in Area 74 in Tseung Kwan O
擬建將軍澳第74區體育館及圖書館
WIP May 2014
WIP Aug 2012
Hong Kong and Macau Lutheran Church Ming Yao Primary School
Po Kok Secondary School
Choi Lau House
Choi Chung House
Choi Mui House
Choi Pak House
Choi To House
Choi Wing House
Sports Ground
Basketball Court
Tong Fai House
Wong House
Tower 1
Tower 2
Tower 3
Tower 5
Tower 6
Tower 7
Tower 8
Tower 9
Tower 10
Tower 11
Tower 12
Central Heights
Tennis Court
Podium
Luna Diamond
Sky Diamond
Aster Diamond
Hong Kong Institute of Vocational Education (Lee Wai Lee)
香港專業教育學院（李惠利）
Hong Kong Design Institute
Block A
Block B
Block C
Block D
Chui Ling Road Substation
翠嶺道變電站
CHUI LING ROAD
翠嶺道
TONG YIN STREET
唐賢街
PO YAP ROAD
寶邑路
CHI SHIN STREET
至善街
CHOI MING STREET
彩明街
Cycling Track
Footpath
Footbridge
Multi-storey Car Park
Basketball Court
Tennis Court
Sports Ground
Podium
Substation
Primary School
Secondary School
Road
Ramp
Subway
RCP
CUL
TS
VS

SETTING OUT POINTS

POINTS	EASTING	NORTHING
801	844321.703	818477.665
802	844321.935	818516.992
803	844372.390	818577.065
804	844388.695	818577.201
805	844388.662	818659.531
806	844417.962	818659.531
807	844447.933	818561.701
808	844447.560	818541.576
809	844523.219	818567.734
810	844529.826	818548.624
811	844408.650	818444.858
812	844372.752	818444.858
813	844307.557	818515.181

Plot File by: JIANGMH 2017/12/20
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PROJECT 項目

TSEUNG KWAN O - LAM TIN TUNNEL - TRAFFIC CONTROL AND SURVEILLANCE SYSTEM AND ASSOCIATED WORKS

CLIENT 業主

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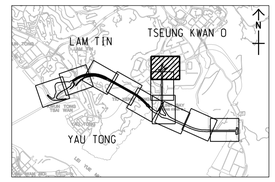
STATUS 階段

SCALE 比例
A1 1 : 1000

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN 索引圖



PROJECT NO. 項目編號
60308751

CONTRACT NO. 合約編號
NE/2017/06

SHEET TITLE 圖紙名稱
PORTION OF SITE

SHEET 8 OF 11

SHEET NUMBER 圖紙編號
60308751/C4/C00/1008

Appendix B – Locations of Construction Noise Monitoring Stations

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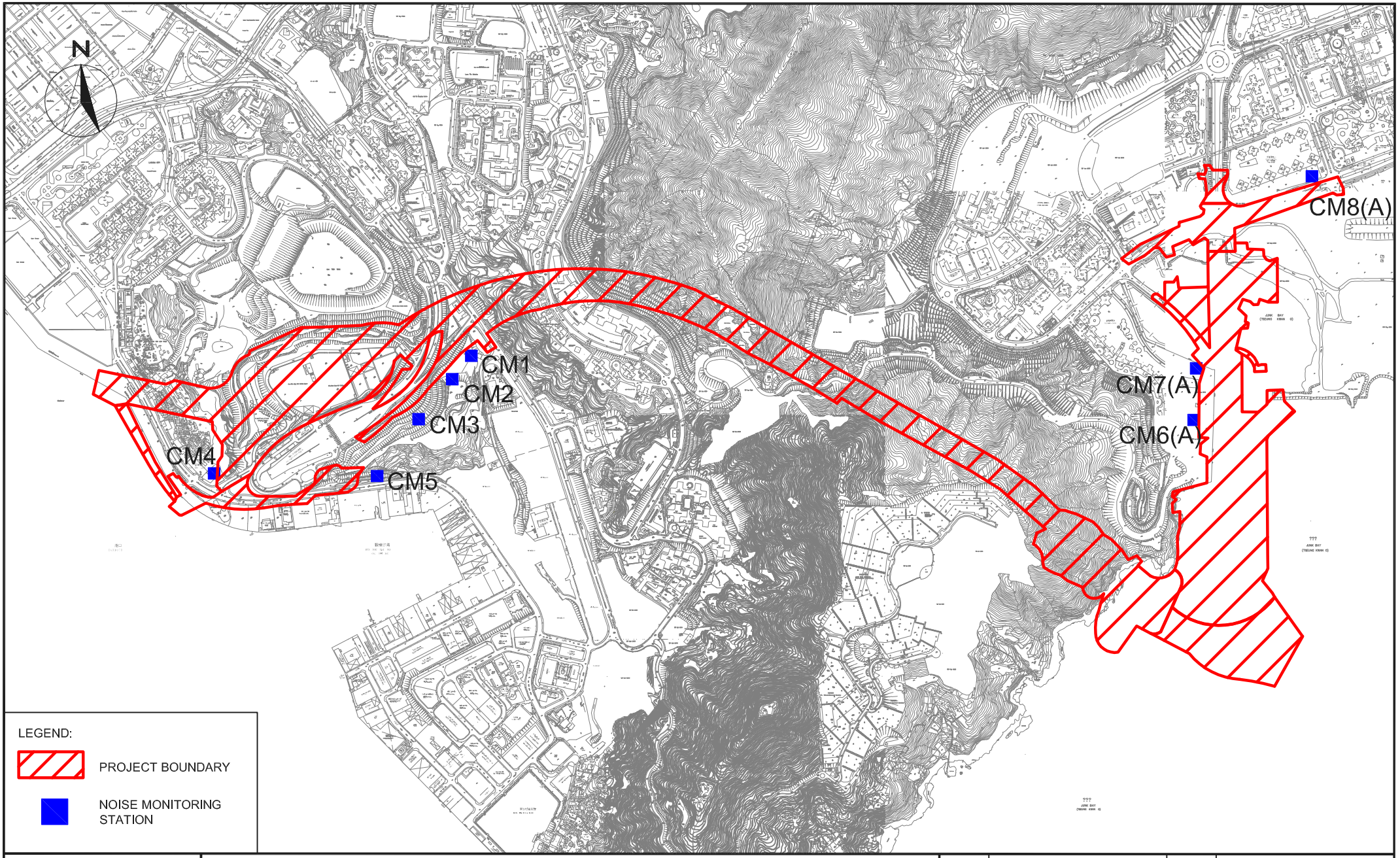

CINOTECH
Cinotech Consultants Limited

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Noise Monitoring Stations

SCALE	1:15000 @ A4	DATE	JAN 2018
CHECK	JF	DRAWN	JW
JOB No.	MA16034	FIGURE NO. 3	REV -

Appendix C – Construction Noise Calculation between the Notional Distance for each Work Portion and the NSRs

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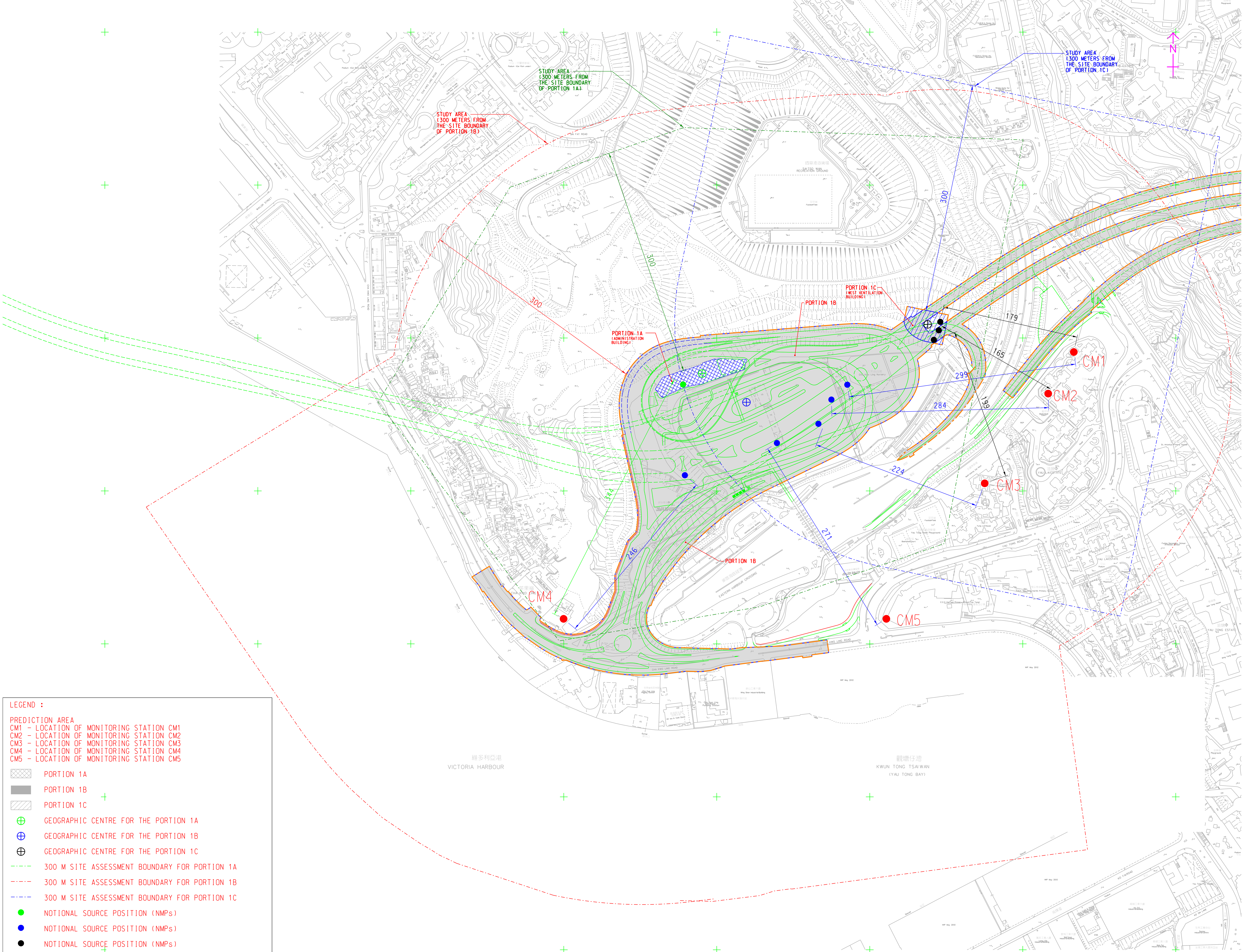
STUDY AREA (300 METERS FROM THE SITE BOUNDARY OF PORTION 1A)
STUDY AREA (300 METERS FROM THE SITE BOUNDARY OF PORTION 1B)
STUDY AREA (300 METERS FROM THE SITE BOUNDARY OF PORTION 1C)
N
PORTION 1A (ADMINISTRATION BUILDING)
PORTION 1B
PORTION 1C (WEST VENTILATION BUILDING)
300
300
300
179
165
199
299
284
224
271
246
344
CM1
CM2
CM3
CM4
CM5
SAI TSO WAN RECREATION GROUND
EASTERN HARBOUR CROSSING
CHA KWO LING ROAD
YAU TONG ROAD
YAU LAI ESTATE
YAU TONG ESTATE
KO FAI ROAD
維多利亞港
VICTORIA HARBOUR
觀塘仔灣
KWUN TONG TSAI WAN
(YAU TONG BAY)
LEGEND :
PREDICTION AREA
CM1 - LOCATION OF MONITORING STATION CM1
CM2 - LOCATION OF MONITORING STATION CM2
CM3 - LOCATION OF MONITORING STATION CM3
CM4 - LOCATION OF MONITORING STATION CM4
CM5 - LOCATION OF MONITORING STATION CM5
PORTION 1A
PORTION 1B
PORTION 1C
GEOGRAPHIC CENTRE FOR THE PORTION 1A
GEOGRAPHIC CENTRE FOR THE PORTION 1B
GEOGRAPHIC CENTRE FOR THE PORTION 1C
300 M SITE ASSESSMENT BOUNDARY FOR PORTION 1A
300 M SITE ASSESSMENT BOUNDARY FOR PORTION 1B
300 M SITE ASSESSMENT BOUNDARY FOR PORTION 1C
NOTIONAL SOURCE POSITION (NMPs)
NOTIONAL SOURCE POSITION (NMPs)
NOTIONAL SOURCE POSITION (NMPs)

STUDY AREA
(300 METERS FROM
THE SITE BOUNDARY
OF PORTION 2A)

STUDY AREA
(300 METERS FROM
THE SITE BOUNDARY
OF PORTION 3A)

STUDY AREA
(300 METERS FROM
THE SITE BOUNDARY
OF PORTION 2B)

CM6(A)

CM7(A)

CM8(A)

PORTION 2A

PORTION 2B

PORTION 3A

300

300

300

139

223

178

120

429

239

LEGEND :

PREDICTION AREA
CM6(A) - LOCATION OF MONITORING STATION CM6(A)
CM7(A) - LOCATION OF MONITORING STATION CM7(A)
CM8(A) - LOCATION OF MONITORING STATION CM8(A)

PORTION 2A

PORTION 2B

PORTION 3A

GEOGRAPHIC CENTRE FOR THE PORTION 2A

GEOGRAPHIC CENTRE FOR THE PORTION 2B

GEOGRAPHIC CENTRE FOR THE PORTION 3A

300 M SITE ASSESSMENT BOUNDARY FOR PORTION 2A

300 M SITE ASSESSMENT BOUNDARY FOR PORTION 2B

300 M SITE ASSESSMENT BOUNDARY FOR PORTION 3A

NOTIONAL SOURCE POSITIONS (NMPs)

NOTIONAL SOURCE POSITIONS (NMPs)

NOTIONAL SOURCE POSITION FOR PORTION 3A

Construction Noise Level Calculation between Notional Distance of work portions and NSRs

Monitoring Station (NSR)	NSR ID Reference (Based on EIA Report)	Portion	Activities	PME	BS5228 / TM Ref	No. of PME	Unit SWL, dB(A)	Notional Distance (m)	On-Time %	Correction factor, dB(A)				Overall PNL at the NSR, dB(A) (5)	PNL for at the NSR, dB(A)	Overall PNL for at the NSR, dB(A)	Criteria (L_{eq}(30mins), dB(A)	Compliance (PNL ≤ Leq(30mins), Yes)
										No. of Plant (1)	$C_{distance(2)}$	$C_{facade(3)}$	$C_{barrier(4)}$					
CM1	N1102	1B	Installtaions Works at Tunnels, Underpass and Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	299	100%	10.0	-57.5	3	-10	34.5	56.5	58.1	75	Yes
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	299	100%	3.0	-57.5	3	0	53.5				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	299	100%	3.0	-57.5	3	0	53.5				
		1C	E&M Installation Works inside Ventilation Builidings	Drill, Hand held (Battery)	BS C4/69	10	89	179	100%	10.0	-53.1	3	-10	38.9	53.0			
				Circular Steel Saw (Battery)	BS D7/78	1	112	179	100%	0.0	-53.1	3	-10	51.9				
				Grinder, Hand-Held (Battery)	BS C4/93	6	98	179	100%	7.8	-53.1	3	-10	45.7				
CM2	N1204	1B	Installtaions Works at Tunnels, Underpass and Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	284	100%	10.0	-57.1	3	-10	34.9	57.0	58.7	75	Yes
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	284	100%	3.0	-57.1	3	0	53.9				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	284	100%	3.0	-57.1	3	0	53.9				
		1C	E&M Installation Works inside Ventilation Builidings	Drill, Hand held (Battery)	BS C4/69	10	89	165	100%	10.0	-52.3	3	-10	39.7	53.8			
				Circular Steel Saw (Battery)	BS D7/78	1	112	165	100%	0.0	-52.3	3	-10	52.7				
				Grinder, Hand-Held (Battery)	BS C4/93	6	98	165	100%	7.8	-52.3	3	-10	46.4				
CM3	N2105	1B	Installtaions Works at Tunnels, Underpass and Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	224	100%	10.0	-55.0	3	-10	37.0	59.0	59.8	75	Yes
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	224	100%	3.0	-55.0	3	0	56.0				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	224	100%	3.0	-55.0	3	0	56.0				
		1C	E&M Installation Works inside Ventilation Builidings	Drill, Hand held (Battery)	BS C4/69	10	89	199	100%	10.0	-54.0	3	-10	38.0	52.1			
				Circular Steel Saw (Battery)	BS D7/78	1	112	199	100%	0.0	-54.0	3	-10	51.0				
				Grinder, Hand-Held (Battery)	BS C4/93	6	98	199	100%	7.8	-54.0	3	-10	44.8				
CM4	N3101a	1A	Installtaions Works inside Administration Building	Drill, Hand held (Battery)	BS C4/69	10	89	344	100%	10.0	-58.7	3	-10	33.3	47.4	58.6	75	Yes
				Circular Steel Saw (Battery)	BS D7/78	1	112	344	100%	0.0	-58.7	3	-10	46.3				
				Grinder, Hand-Held (Battery)	BS C4/93	6	98	344	100%	7.8	-58.7	3	-10	40.1				
		1B	Installtaions Works at Tunnels, Underpass and Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	246	100%	10.0	-55.8	3	-10	36.2	58.2			
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	246	100%	3.0	-55.8	3	0	55.2				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	246	100%	3.0	-55.8	3	0	55.2				
CM5	N4101	1B	Installtaions Works at Tunnels, Underpass and Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	271	100%	10.0	-56.7	3	-10	35.3	57.4	57.4	70 / 65*	Yes
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	271	100%	3.0	-56.7	3	0	54.4				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	271	100%	3.0	-56.7	3	0	54.4				
CM6(A)	--	2A	Installtaions Works at Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	139	100%	10.0	-50.9	3	-10	41.1	63.2	65.3	75	Yes
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	139	100%	3.0	-50.9	3	0	60.2				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	139	100%	3.0	-50.9	3	0	60.2				
		2B	Installtaions Works at Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	178	100%	10.0	-53.0	3	-10	39.0	61.0			
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	178	100%	3.0	-53.0	3	0	58.0				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	178	100%	3.0	-53.0	3	0	58.0				
CM7(A)	--	2A	Installtaions Works at Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	223	100%	10.0	-55.0	3	-10	37.0	59.1	65.6	75	Yes
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	223	100%	3.0	-55.0	3	0	56.0				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	223	100%	3.0	-55.0	3	0	56.0				
		2B	Installtaions Works at Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	120	100%	10.0	-49.6	3	-10	42.4	64.5			
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	120	100%	3.0	-49.6	3	0	61.4				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	120	100%	3.0	-49.6	3	0	61.4				
CM8(A)	--	2B	Installtaions Works at Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	429	100%	10.0	-60.6	3	-10	31.4	53.4	59.7	75	Yes
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	429	100%	3.0	-60.6	3	0	50.4				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	429	100%	3.0	-60.6	3	0	50.4				
		3A	Installtaions Works at Open Roads	Drill, Hand held (Battery)	BS C4/69	10	89	239	100%	10.0	-55.6	3	-10	36.4	58.5			
				Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≦ 38 tonne	CNP145	2	105	239	100%	3.0	-55.6	3	0	55.4				
				Lorry, 5.5 tonne < gross vehicle weight ≦ 38 tonne	BS C4/34	2	105	239	100%	3.0	-55.6	3	0	55.4				

(1) Number of Plant Factor: Multiple plant correction factor and can be calculated by: 10 x log(No. of PMEs)

(2) Distance Attenuation Factor ($C_{distance}$): Assuming point source, the correction is: - (20 x log(distance, in meter) + 8) (in dB(A))

(3) Reflection Correction (C_{facade}): The correction is +3dB(A) for near side façade. (with windows, doors and opening)

(4) Barrier Correction ($C_{barrier}$): Referring to Technical Memorandum on Noise from Construction Work other than Percussive Pilling, if the PME is totally screened by substantial barrier, the correction is -10 dB(A). In this case, no noise barrier will be applied (i.e. Only for Lorry with no barrier to be applied) and thus “0” correction factor will be added

(5) Overall PNL at the NSR (Unit in dB(A)) = Unit SWL + Correction factor of No. of Plant + $C_{distance}$ + C_{facade} + $C_{barrier}$ + 10 * log (On-time %)

* 70 dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively

Appendix D – Cumulative Noise Calculation with drawings from Year 2021 to Year 2023

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Appendix A3: Predicted Construction Noise Levels (Mitigated)

Predicted Construction Noise Levels due to Contract 1 of the TKOLTT Project

NSR	Noise Criteria dB(A)	Overall Noise Level, Leq (30 min), dB(A) 2016											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		1	2	3	4	5	6	7	8	9	10	11	12
N1102a	75										51	51	51
N1204	75										52	52	52
N2105	75										55	55	55
N3101a	75										63	63	63
N4101	70 /65 (Exam period)										66	66	66

Remarks:

xx Highlighted constructionoise level exceeds the relevant noise criteria for educational use.

NSR	Noise Criteria dB(A)	Overall Noise Level, Leq (30 min), dB(A) 2017												2018											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
N1102a	75	52	59	59	59	60	60	67	67	67	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
N1204	75	53	61	61	61	62	62	70	70	70	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
N2105	75	56	63	63	63	64	64	68	68	68	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
N3101a	75	66	66	66	66	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
N4101	70 /65 (Exam period)	66	67	67	67	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68

Remarks:

xx Highlighted constructionoise level exceeds the relevant noise criteria for educational use.

NSR	Noise Criteria dB(A)	Overall Noise Level, Leq (30 min), dB(A) 2019												2020											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
N1102a	75	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	75	75	74	75
N1204	75	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	74	74	74	75
N2105	75	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	72	72	72	72	75
N3101a	75	67	67	67	67	67	67	68	68	68	68	68	68	68	68	68	68	68	68	68	69	69	69	69	68
N4101	70 /65 (Exam period)	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	70	70	70	70	70

Remarks:

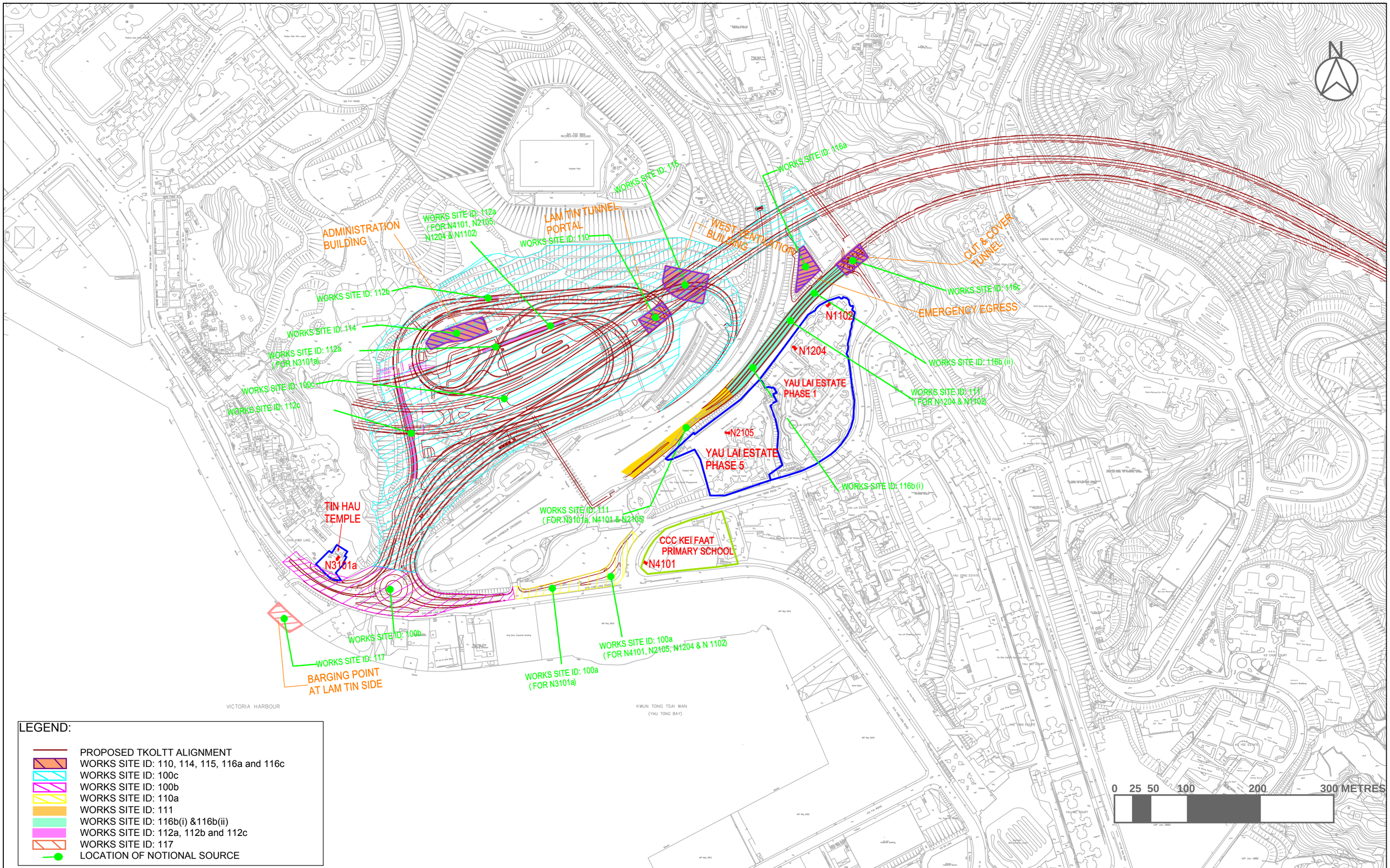
xx Highlighted constructionoise level exceeds the relevant noise criteria for educational use.

NE/2015/01

NSR	Noise Criteria dB(A)	Overall Noise Level, Leq (30 min), dB(A) 2021											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		61	62	62	64	65	66	67	68	69	70	71	72
N1102a	75	75	75	75	75	75	75	75	75	75	73	73	73
N1204	75	75	75	75	75	75	75	75	75	75	67	67	67
N2105	75	75	75	75	75	75	74	74	74	74	63	63	63
N3101a	75	68	68	68	68	68	68	68	68	68	54	54	54
N4101	70 /65 (Exam period)	70	70	70	70	70	70	70	70	70	56	56	56

Remarks:

xx Highlighted constructionoise level exceeds the relevant noise criteria for educational use.



LEGEND:

- PROPOSED TKOLTT ALIGNMENT
- WORKS SITE ID: 110, 114, 115, 116a and 116c
- WORKS SITE ID: 100c
- WORKS SITE ID: 100b
- WORKS SITE ID: 110a
- WORKS SITE ID: 111
- WORKS SITE ID: 116b(i) &116b(ii)
- WORKS SITE ID: 112a, 112b and 112c
- WORKS SITE ID: 117
- LOCATION OF NOTIONAL SOURCE

LEIGHTON CSCEC ATKINS

CONTRACT NO. NE/2015/01
TSEUNG KWAN O LAM TIN TUNNEL - MAIN TUNNEL AND ASSOCIATED WORKS

TITLE:
LOCATIONS OF NOTIONAL SOURCES (SHEET 1 OF 7)

DATE:
FEB 2017

DRAWING NO.:
APPENDIX B1

NE/2017/02

Work Scenario: Zone B cooperate with Zone A

Zone B / Zone A						
Activities	Group no.	1	13	14	16	17
Utilities Diversion	1	X	X	X	X	X
Bored Piling / Pre-bored Socketed H Pile / Pre-drilling	2	O	O	O	X	O
	3	X	X	X	X	X
	4	X	X	X	X	X
	5	X	X	X	X	X
	6	X	X	X	X	X
	7	X	X	X	X	X
	8	X	X	X	X	X
	9	X	X	X	X	X
	10	X	X	X	X	X
	11	X	X	X	X	X
	12	X	X	X	X	X
Drainage, Sewerage and Water Mains	13	X	X	X	X	X
	14	X	X	X	X	X
Footbridge Segment Installation / Staircase and Lift Shaft Construction	15	X	X	X	X	X
Conrete Breaking	16	X	X	X	X	X
Flexible Pavement	17	X	X	X	X	X
Remark	Two activities can be carried out at the same time in Zone B and Zone A.					

Work Scenario: Zone B cooperate with Zone C

Zone B / Zone C						
Activities	Group no.	1	13	14	16	17
Utilities Diversion	1	O	O	O	O	O
Bored Piling / Pre-bored Socketed H Pile / Pre-drilling	2	O	O	O	O	O
	3	O	O	O	O	O
	4	O	O	O	O	O
	5	O	O	O	O	O
	6	O	O	O	O	O
	7	O	O	O	O	O
	8	O	O	O	O	O
	9	O	O	O	O	O
	10	O	O	O	O	O
	11	O	O	O	O	O
	12	O	O	O	O	O
Drainage, Sewerage and Water Mains	13	O	O	O	O	O
	14	O	O	O	O	O
Footbridge Segment Installation / Staircase and Lift Shaft Construction	15	O	O	O	O	O
Conrete Breaking	16	O	O	O	O	O
Flexible Pavement	17	O	O	O	O	O
Remark	Two activities can be carried out at the same time in Zone B and Zone C.					

Work Scenario: Zone B cooperate with Zone D

Zone B / Zone D						
Activities	Group no.	1	13	14	16	17
Utilities Diversion	1	O	O	O	X	O
Bored Piling / Pre-bored Socketed H Pile / Pre-drilling	2	O	O	O	O	O
	3	O	O	O	X	O
	4	O	O	O	X	O
	5	O	O	O	X	O
	6	X	X	X	X	O
	7	X	X	X	X	X
	8	X	X	X	X	X
	9	X	X	X	X	X
	10	X	X	X	X	X
	11	X	X	X	X	X
	12	X	X	X	X	X
Drainage, Sewerage and Water Mains	13	X	X	X	X	O
	14	O	O	O	X	O
Footbridge Segment Installation / Staircase and Lift Shaft Construction	15	X	X	X	X	X
Conrete Breaking	16	X	X	X	X	O
Flexible Pavement	17	O	O	O	X	O
Remark	Two activities can be carried out at the same time in Zone B and Zone D.					

Work Scenario: Zone B

Zone B																		
Activities	Group no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Utilities Diversion	1		O	O	O	O	O	O	X	X	X	X	O	O	O	X	O	O
Bored Piling / Pre-bored Socketed H Pile / Pre-drilling	2	O		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	3	O	O		O	O	O	O	X	X	X	X	O	O	O	X	O	O
	4	O	O	O		O	O	X	X	X	X	X	X	O	O	X	O	O
	5	O	O	O	O		O	O	X	X	X	X	O	O	O	X	O	O
	6	O	O	O	O	O		X	X	X	X	X	X	O	O	X	O	O
	7	O	O	O	X	O	X		X	X	X	X	X	X	O	X	X	O
	8	X	O	X	X	X	X	X		X	X	X	X	X	X	X	X	X
	9	X	O	X	X	X	X	X	X		X	X	X	X	X	X	X	X
	10	X	O	X	X	X	X	X	X	X		X	X	X	X	X	X	X
	11	X	O	X	X	X	X	X	X	X	X		X	X	X	X	X	X
	12	O	O	O	X	O	X	X	X	X	X	X		X	O	X	X	O
Drainage, Sewerage and Water Mains	13	O	O	O	O	O	O	X	X	X	X	X	X		O	X	O	O
	14	O	O	O	O	O	O	O	X	X	X	X	O	O		X	O	O
Footbridge Segment Installation / Staircase and Lift Shaft Construction	15	X	O	X	X	X	X	X	X	X	X	X	X	X	X		X	X
Conrete Breaking	16	O	O	O	O	O	O	X	X	X	X	X	X	O	O	X		O
Flexible Pavement	17	O	O	O	O	O	O	O	X	X	X	X	O	O	O	X	O	
Remark	Two activities can be carried out at the same time in Zone B.																	

Work Scenario: Zone B cooperate with Zone C

Zone B		Zone C									
Activities	Group no.	1&13	1&14	1&16	1&17	13&14	13&16	13&17	14&16	14&17	16&17
Utilities Diversion	1	O	O	O	O	O	O	O	O	O	O
Bored Piling / Pre-bored Socketed H Pile / Pre-drilling	2	O	O	O	O	O	O	O	O	O	O
	3	O	O	O	O	O	O	O	O	O	O
	4	O	O	O	O	O	O	O	O	O	O
	5	O	O	O	O	O	O	O	O	O	O
	6	O	O	O	O	O	O	O	O	O	O
	7	O	O	O	O	O	O	O	O	O	O
	8	X	X	X	X	X	X	X	X	X	X
	9	X	X	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X	X	X
	11	X	X	X	X	X	X	X	X	X	X
	12	O	O	O	O	O	O	O	O	O	O
Drainage, Sewerage and Water Mains	13	O	O	O	O	O	O	O	O	O	O
	14	O	O	O	O	O	O	O	O	O	O
Footbridge Segment Installation / Staircase and	15	X	X	X	X	X	X	X	X	X	X
Conrete Breaking	16	O	O	O	O	O	O	O	O	O	O
Flexible Pavement	17	O	O	O	O	O	O	O	O	O	O
Remark	Zone B can be carrird out with any two activities in Zone C at the same time.										

Work Scenario: Zone D cooprate with Zone C

Zone D / Zone C											
Activities	Group no.	1&13	1&14	1&16	1&17	13&14	13&16	13&17	14&16	14&17	16&17
Utilities Diversion	1	O	O	O	O	O	O	O	O	O	O
Drainage, Sewerage and	13	O	O	O	O	O	O	O	O	O	O
	14	O	O	O	O	O	O	O	O	O	O
Conrete Breaking	16	X	X	X	X	X	X	X	X	X	X
Flexible Pavement	17	O	O	O	O	O	O	O	O	O	O
Remark	Activity 5 in Zone D cannot be carrird out with any two activities in Zone C at the same time.										

Work Scenario: Zone A cooprate with Zone C

Zone A / Zone C											
Activities	Group no.	1&13	1&14	1&16	1&17	13&14	13&16	13&17	14&16	14&17	16&17
Utilities Diversion	1	X	X	X	X	X	X	X	X	X	X
Drainage, Sewerage and	13	X	X	X	X	X	X	X	X	X	X
	14	X	X	X	X	X	X	X	X	X	X
Conrete Breaking	16	X	X	X	X	X	X	X	X	X	X
Flexible Pavement	17	X	X	X	X	X	X	X	X	X	X
Remark	No three activities can be carried out at the same time in Zone A and Zone C.										

Work Scenario: Zone A cooprate with Zone D

Zone A / Zone D											
Activities	Group no.	1&13	1&14	1&16	1&17	13&14	13&16	13&17	14&16	14&17	16&17
Utilities Diversion	1	X	X	X	X	X	X	X	X	X	X
Drainage, Sewerage and	13	X	X	X	X	X	X	X	X	X	X
	14	X	X	X	X	X	X	X	X	X	X
Conrete Breaking	16	X	X	X	X	X	X	X	X	X	X
Flexible Pavement	17	X	X	X	X	X	X	X	X	X	X
Remark	No three activities can be carried out at the same time in Zone A and Zone D.										

Work Scenario: Zone A

Zone A						
Activities	Group no.	1	13	14	16	17
Utilities Diversion	1		X	X	X	X
Drainage, Sewerage and	13	X		X	X	X
	14	X	X		X	X
Conrete Breaking	16	X	X	X		X
Flexible Pavement	17	X	X	X	X	
Remark	Only one activity can be carried out in Zone A.					

Work Scenario: Zone C

Zone C						
Activities	Group no.	1	13	14	16	17
Utilities Diversion	1		O	O	O	O
Drainage, Sewerage and	13	O		O	O	O
	14	O	O		O	O
Conrete Breaking	16	O	O	O		O
Flexible Pavement	17	O	O	O	O	
Remark	Two activities can be carried out at the same time in Zone C.					

Work Scenario: Zone D

Zone D						
Activities	Group no.	1	13	14	16	17
Utilities Diversion	1		X	X	X	X
Drainage, Sewerage and	13	X		X	X	X
	14	X	X		X	X
Conrete Breaking	16	X	X	X		X
Flexible Pavement	17	X	X	X	X	
Remark	Only one activity can be carried out in Zone D.					

Work Scenario: Zone A cooperate with Zone C

Zone A \ Zone C						
Activities	Group no.	1	13	14	16	17
Utilities Diversion	1	O	O	O	O	O
Drainage, Sewerage and	13	O	O	O	O	O
	14	O	O	O	O	O
Conrete Breaking	16	O	O	O	O	O
Flexible Pavement	17	O	O	O	O	O
Remark	Two activities can be carried out at the same time in Zone A and Zone C.					

Work Scenario: Zone A cooperate with Zone D

		Zone D				
Activities	Group no.	1	13	14	16	17
Utilities Diversion	1	X	X	X	X	X
Drainage, Sewerage and	13	X	X	X	X	X
	14	X	X	X	X	X
Conrete Breaking	16	X	X	X	X	X
Flexible Pavement	17	X	X	X	X	X
Remark	No activities can be carried out at the same time in Zone A and Zone D.					

Work Scenario: Zone C cooperate with Zone D

		Zone D				
Activities	Group no.	1	13	14	16	17
Utilities Diversion	1	O	O	O	X	O
Drainage, Sewerage and	13	O	O	O	X	O
	14	O	O	O	X	O
Conrete Breaking	16	O	O	O	X	O
Flexible Pavement	17	O	O	O	O	O
Remark	Activity 5 in Zone D cannot be carried out with activities 1, 3a, 3b and 5 in Zone C at the same time.					

Zone: B
NSR: 6
Distance: 282m
Remarks: i) Bored Pile works with Noise Barrier offering -5dB(A)
ii) Breaking work with Noise Barrier offering -5dB(A)

NE/2017/02

Zone No.	Group No.	Item	CNP No.	Equipment (PME)	Sound Power Level			Distance	Corrections			CNL	Predicted Noise Level, dB(A)	Statutory Noise Limitm dB(A)	
					SWL dB(A)	PME No.	Total SWL		Distance dB(A)	Barrier dB(A)	Reflect dB(A)	dB(A)		Noise Limit in Leq(30mn), dB(A)	Compliance (CNL ≤ Noise Limit)
Zone B	1	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	282	-57.0	0	0	48.0	59	75	Complied
		2	CNP 081	Excavator	112	2	115		-57.0	0	0	58.0			
		3	CNP 185	Road Roller	108	1	108		-57.0	0	0	51.0			
	2	1	CNP 072	Drilling rig (Pre-drilling)	110	1	110	282	-57.0	-5	0	48.0	51	75	Complied
		2	CNP 105	Grout mixer	90	1	90		-57.0	0	0	33.0			
		3	CNP 106	Grout pump	105	1	105		-57.0	0	0	48.0			
		4	CNP 281	Water pump (electric)	88	1	88		-57.0	0	0	31.0			
	3	1	CNP 002	Air compressor ($10m^3$/min < air flow ≤ $30m^3$/min)	102	2	105	282	-57.0	0	0	48.0	58	75	Complied
		2	CNP164 / CNP165	Bored Piling - Grab & Chisel or Oscillator	115	1	115		-57.0	-5	0	53.0			
		3	CNP 166	Bored Piling - Reverse Circulation Drill	100	1	100		-57.0	-5	0	38.0			
		4	CNP 081	Excavator	112	1	112		-57.0	0	0	55.0			
	4	1	CNP 002	Air compressor ($10m^3$/min < air flow ≤ $30m^3$/min)	102	4	108	282	-57.0	0	0	51.0	59	75	Complied
		2	CNP164 / CNP165	Bored Piling - Grab & Chisel or Oscillator	115	2	118		-57.0	-5	0	56.0			
		3	CNP 166	Bored Piling - Reverse Circulation Drill	100	2	103		-57.0	-5	0	41.0			
		4	CNP 081	Excavator	112	1	112		-57.0	0	0	55.0			
	5	1	CNP 002	Air compressor ($10m^3$/min < air flow ≤ $30m^3$/min)	102	2	105	282	-57.0	0	0	48.0	57	75	Complied
		2	CNP 072	Drilling rig (Pre-bored Sockette H Pile)	110	1	110		-57.0	-5	0	48.0			
		3	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-57.0	0	0	43.0			
		4	CNP 081	Excavator	112	1	112		-57.0	0	0	55.0			
	6	1	CNP 002	Air compressor ($10m^3$/min < air flow ≤ $30m^3$/min)	102	2	105	282	-57.0	0	0	48.0	60	75	Complied
		2	CNP 072	Drilling rig (Pre-bored Sockette H Pile)	110	1	110		-57.0	-5	0	48.0			
		3	CNP068 / CNP145	Dump Truck or Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-57.0	0	0	48.0			
		4	CNP 081	Excavator	112	1	112		-57.0	0	0	55.0			
		5	CNP 044	Concrete lorry mixer	109	1	109		-57.0	0	0	52.0			
		6	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-57.0	0	0	43.0			
		7	CNP 048	Mobile / crawler crane	112	1	112		-57.0	0	0	55.0			
		8	CNP 065	Drill/grinder, hand-held (electric)	98	2	101		-57.0	0	0	44.0			
		9	CNP 281	Water pump (electric)	88	1	88		-57.0	0	0	31.0			
	7	1	CNP 002	Air compressor ($10m^3$/min < air flow ≤ $30m^3$/min)	102	2	105	282	-57.0	0	0	48.0	61	75	Complied
		2	CNP164 / CNP165	Bored Piling - Grab & Chisel or Oscillator	115	1	115		-57.0	-5	0	53.0			
		3	CNP 166	Bored Piling - Reverse Circulation Drill	100	1	100		-57.0	-5	0	38.0			
		4	CNP068 / CNP145	Dump Truck or Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-57.0	0	0	48.0			
		5	CNP 081	Excavator	112	1	112		-57.0	0	0	55.0			
		6	CNP 044	Concrete lorry mixer	109	1	109		-57.0	0	0	52.0			
		7	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-57.0	0	0	43.0			
		8	CNP 048	Mobile / crawler crane	112	1	112		-57.0	0	0	55.0			
		9	CNP 065	Drill/grinder, hand-held (electric)	98	2	101		-57.0	0	0	44.0			
		10	CNP 281	Water pump (electric)	88	1	88		-57.0	0	0	31.0			
	8	1	CNP 002	Air compressor ($10m^3$/min < air flow ≤ $30m^3$/min)	102	4	108	282	-57.0	0	0	51.0	63	75	Complied
		2	CNP164 / CNP165	Bored Piling - Grab & Chisel or Oscillator	115	1	115		-57.0	-5	0	53.0			
		3	CNP 166	Bored Piling - Reverse Circulation Drill	100	1	100		-57.0	-5	0	38.0			
		4	CNP 072	Drilling rig (Pre-bored Sockette H Pile)	110	2	113		-57.0	-5	0	51.0			
		5	CNP068 / CNP145	Dump Truck or Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	2	108		-57.0	0	0	51.0			
		6	CNP 081	Excavator	112	2	115		-57.0	0	0	58.0			
		7	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	2	103		-57.0	0	0	46.0			
		8	CNP 048	Mobile / crawler crane	112	2	115		-57.0	0	0	58.0			
		9	CNP 065	Drill/grinder, hand-held (electric)	98	2	101		-57.0	0	0	44.0			
		10	CNP 281	Water pump (electric)	88	2	91		-57.0	0	0	34.0			
	9	1	CNP 003	Air compressor (air flow > 30 m^3/min)	104	4	110	282	-57.0	0	0	53.0	63	75	Complied
		2	CNP 072	Drilling rig (Pre-bored Sockette H Pile)	110	2	113		-57.0	-5	0	51.0			
		3	CNP068 / CNP145	Dump Truck or Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	2	108		-57.0	0	0	51.0			
		4	CNP 081	Excavator	112	2	115		-57.0	0	0	58.0			
		5	CNP 044	Concrete lorry mixer	109	2	112		-57.0	0	0	55.0			
		6	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	2	103		-57.0	0	0	46.0			
		7	CNP 048	Mobile / crawler crane	112	2	115		-57.0	0	0	58.0			
		8	CNP 065	Drill/grinder, hand-held (electric)	98	2	101		-57.0	0	0	44.0			
		9	CNP 281	Water pump (electric)	88	2	91		-57.0	0	0	34.0			
	10	1	CNP 002	Air compressor ($10m^3$/min < air flow ≤ $30m^3$/min)	102	4	108	282	-57.0	0	0	51.0	63	75	Complied
		2	CNP164 / CNP165	Bored Piling - Grab & Chisel or Oscillator	115	2	118		-57.0	-5	0	56.0			
		3	CNP 166	Bored Piling - Reverse Circulation Drill	100	2	103		-57.0	-5	0	41.0			
		4	CNP068 / CNP145	Dump Truck or Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	2	108		-57.0	0	0	51.0			
		5	CNP 081	Excavator	112	2	115		-57.0	0	0	58.0			
		6	CNP 044	Concrete lorry mixer	109	1	109		-57.0	0	0	52.0			
		7	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	2	103		-57.0	0	0	46.0			
		8	CNP 048	Mobile / crawler crane	112	2	115		-57.0	0	0	58.0			
		9	CNP 281	Water pump (electric)	88	2	91		-57.0	0	0	34.0			
	11	1	CNP 044	Concrete lorry mixer	109	4	115	282	-57.0	0	0	58.0	62	75	Complied
		2	CNP068 / CNP145	Dump Truck or Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	2	108		-57.0	0	0	51.0			
		3	CNP 081	Excavator	112	2	115		-57.0	0	0	58.0			
		4	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-57.0	0	0	43.0			
		5	CNP 048	Mobile / crawler crane	112	1	112		-57.0	0	0	55.0			
		6	CNP 065	Drill/grinder, hand-held (electric)	98	2	101		-57.0	0	0	44.0			
		7	CNP 281	Water pump (electric)	88	1	88		-57.0	0	0	31.0			
	12	1	CNP 081	Excavator	112	2	115	282	-57.0	0	0	58.0	61	75	Complied
		2	CNP 172	Piling, Vibrating hammer	115	1	115		-57.0	-5	0	53.0			
		3	CNP068 / CNP145	Dump Truck or Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	2	108		-57.0	0	0	51.0			
		4	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-57.0	0	0	43.0			
		5	CNP 048	Mobile / crawler crane	112	1	112		-57.0	0	0	55.0			
		6	CNP 065	Drill/grinder, hand-held (electric)	98	2	101		-57.0	0	0	44.0			
		7	CNP 281	Water pump (electric)	88	1	88		-57.0	0	0	31.0			
	13	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	282	-57.0	0	0	48.0	60	75	Complied
		2	CNP 081	Excavator	112	2	115		-57.0	0	0	58.0			
		3	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-57.0	0	0	43.0			
		4	CNP 145	Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-57.0	0	0	48.0			
		5	CNP 186	Roller (vibratory)	108	1	108		-57.0	0	0	51.0			
		6	CNP 283	Water pump (submersible, electric)	85	4	91		-57.0	0	0	34.0			
	14	1	CNP 025	Breaker (hand-held, 20 kg ≤ mass ≤ 35 kg)	111	1	111	282	-57.0	0	0	54.0	59	75	Complied
		2	CNP 081	Excavator	112	1	112		-57.0	0	0	55.0			
		3	CNP 044	Concrete lorry mixer	109	1	109		-57.0	0	0	52.0			
		4	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-57.0	0	0	48.0			
		5	CNP 107	Generator (portable) - Welding set	100	1	100		-57.0	0	0	43.0			
		6	CNP 173	Poker (vibratory, hand-held, electric)	102	1	102		-57.0	0	0	45.0			
		7	CNP 283	Water pump (submersible, electric)	85	4	91		-57.0	0	0	34.0			
	15	1	CNP 021	Bar Bender and Cutter (electric)	90	1	90	282	-57.0	0	0	33.0	63	75	Complied
		2	CNP 044	Concrete lorry mixer	109	3	114		-57.0	0	0	57.0			
		3	CNP 048	Crawler Crane	112	1	112		-57.0	0	0	55.0			
		4	CNP 056	Cutter (circular, steel, electric)	112	1	112		-57.0	0	0	55.0			
		5	CNP 081	Excavator	112	2	115		-57.0	0	0	58.0			
		6	CNP 145	Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-57.0	0	0	48.0			
		7	CNP 173	Poker (vibratory, hand-held, electric)	102	1	102		-57.0	0	0	45.0			
		8	CNP 168	Power Pack for Hand-held Items	100	1	100		-57.0	0	0	43.0			
		9	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	2	108		-57.0	0	0	51.0			
	16	1	CNP 028	Breaker (excavator mounted, hydraulic)	122	1	122	282	-57.0	-5	0	60.0	60	75	Complied
	17	1	CNP 004	Asphalt Paver	109	1	109	282	-57.0	0	0	52.0	59	75	Complied
		2	CNP 168	Power Pack for Hand-held Items	100	1	100		-57.0	0	0	43.0			
		3	CNP 184	Road Planer	111	1	111		-57.0	0	0	54.0			
		4	CNP 185	Road Roller (Pneumatic Tyred Roller)	108	1	108		-57.0	0	0	51.0			
		5	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-57.0	0	0	48.0			
		6	CNP 186	Roller (vibratory)	108	1	108		-57.0	0	0	51.0			

Zone: C
NSR: 4
Distance: 285m
Remark: i) Served by mechanical ventilation with 'fixed window + curtain wall' facades instead of natural ventilation via openable windows; offering -10dB(A) noise reduction.
ii) Breaking work with Noise Barrier offering -5dB(A)

Zone No.	Group No.	Item	CNP No.	Equipment (PME)	Sound Power Level			Distance	Corrections			CNL	Predicted Noise Level, dB(A)	Statutory Noise Limitm dB(A)	
					SWL dB(A)	PME No.	Total SWL		Distance dB(A)	Barrier dB(A)	Reflect dB(A)	dB(A)		Noise Limit in Leq(30min), dB(A)	Compliance (CNL ≤ Noise Limit)
Zone C	1	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	285	-57.1	-10	0	37.9	49	70	Complied
		2	CNP 081	Excavator	112	2	115		-57.1	-10	0	47.9			
		3	CNP 185	Road Roller	108	1	108		-57.1	-10	0	40.9			
	13	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	285	-57.1	-10	0	37.9	49	70	Complied
		2	CNP 081	Excavator	112	2	115		-57.1	-10	0	47.9			
		3	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-57.1	-10	0	32.9			
		4	CNP 145	Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-57.1	-10	0	37.9			
		5	CNP 186	Roller (vibratory)	108	1	108		-57.1	-10	0	40.9			
		6	CNP 283	Water pump (submersible, electric)	85	4	91		-57.1	-10	0	23.9			
	14	1	CNP 025	Breaker (hand-held, 20 kg ≤ mass ≤ 35 kg)	111	1	111	285	-57.1	-10	0	43.9	49	70	Complied
		2	CNP 081	Excavator	112	1	112		-57.1	-10	0	44.9			
		3	CNP 044	Concrete lorry mixer	109	1	109		-57.1	-10	0	41.9			
		4	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-57.1	-10	0	37.9			
		5	CNP 107	Generator (portable) - Welding set	100	1	100		-57.1	-10	0	32.9			
		6	CNP 173	Poker (vibratory, hand-held, electric)	102	1	102		-57.1	-10	0	34.9			
		7	CNP 283	Water pump (submersible, electric)	85	4	91		-57.1	-10	0	23.9			
	16	1	CNP 028	Breaker (excavator mounted, hydraulic)	122	1	122	285	-57.1	-15	0	49.9	50	70	Complied
	17	1	CNP 004	Asphalt Paver	109	1	109	285	-57.1	-10	0	41.9	49	70	Complied
		2	CNP 168	Power Pack for Hand-held Items	100	1	100		-57.1	-10	0	32.9			
		3	CNP 184	Road Planer	111	1	111		-57.1	-10	0	43.9			
		4	CNP 185	Road Roller (Pneumatic Tyred Roller)	108	1	108		-57.1	-10	0	40.9			
		5	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-57.1	-10	0	37.9			
		6	CNP 186	Roller (vibratory)	108	1	108		-57.1	-10	0	40.9			

Zone: C
NSR: 5
Distance: 134m
Remark: i) Breaking work with Noise Barrier offering -5dB(A)

Zone No.	Group No.	Item	CNP No.	Equipment (PME)	Sound Power Level			Distance	Corrections			CNL	Predicted Noise Level,	Statutory Noise Limitm dB(A)	
					SWL dB(A)	PME No.	Total SWL		Distance dB(A)	Barrier dB(A)	Reflect dB(A)	dB(A)		Noise Limit in Leq(30min), dB(A)	Compliance (CNL ≤ Noise Limit)
Zone C	1	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	134	-50.5	0	0	54.5	66	75	Complied
		2	CNP 081	Excavator	112	2	115		-50.5	0	0	64.5			
		3	CNP 185	Road Roller	108	1	108		-50.5	0	0	57.5			
	13	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	134	-50.5	0	0	54.5	66	75	Complied
		2	CNP 081	Excavator	112	2	115		-50.5	0	0	64.5			
		3	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-50.5	0	0	49.5			
		4	CNP 145	Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-50.5	0	0	54.5			
		5	CNP 186	Roller (vibratory)	108	1	108		-50.5	0	0	57.5			
		6	CNP 283	Water pump (submersible, electric)	85	4	91		-50.5	0	0	40.5			
	14	1	CNP 025	Breaker (hand-held, 20 kg ≤ mass ≤ 35 kg)	111	1	111	134	-50.5	0	0	60.5	66	75	Complied
		2	CNP 081	Excavator	112	1	112		-50.5	0	0	61.5			
		3	CNP 044	Concrete lorry mixer	109	1	109		-50.5	0	0	58.5			
		4	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-50.5	0	0	54.5			
		5	CNP 107	Generator (portable) - Welding set	100	1	100		-50.5	0	0	49.5			
		6	CNP 173	Poker (vibratory, hand-held, electric)	102	1	102		-50.5	0	0	51.5			
		7	CNP 283	Water pump (submersible, electric)	85	4	91		-50.5	0	0	40.5			
	16	1	CNP 028	Breaker (excavator mounted, hydraulic)	122	1	122	134	-50.5	-5	0	66.5	66	75	Complied
	17	1	CNP 004	Asphalt Paver	109	1	109	134	-50.5	0	0	58.5	65	75	Complied
		2	CNP 168	Power Pack for Hand-held Items	100	1	100		-50.5	0	0	49.5			
		3	CNP 184	Road Planer	111	1	111		-50.5	0	0	60.5			
		4	CNP 185	Road Roller (Pneumatic Tyred Roller)	108	1	108		-50.5	0	0	57.5			
		5	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-50.5	0	0	54.5			
		6	CNP 186	Roller (vibratory)	108	1	108		-50.5	0	0	57.5			

Zone: C
NSR: 6
Distance: 67m
Remark: i) Breaking work with Noise Barrier offering -5dB(A)

Zone No.	Group No.	Item	CNP No.	Equipment (PME)	Sound Power Level			Distance	Corrections			CNL	Predicted Noise Level,	Statutory Noise Limitm dB(A)	
					SWL dB(A)	PME No.	Total SWL		Distance dB(A)	Barrier dB(A)	Reflect dB(A)	dB(A)		Noise Limit in Leq(30min), dB(A)	Compliance (CNL ≤ Noise Limit)
Zone C	1	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	67	-44.5	0	0	60.5	72	75	Complied
		2	CNP 081	Excavator	112	2	115		-44.5	0	0	70.5			
		3	CNP 185	Road Roller	108	1	108		-44.5	0	0	63.5			
	13	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	67	-44.5	0	0	60.5	72	75	Complied
		2	CNP 081	Excavator	112	2	115		-44.5	0	0	70.5			
		3	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-44.5	0	0	55.5			
		4	CNP 145	Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-44.5	0	0	60.5			
		5	CNP 186	Roller (vibratory)	108	1	108		-44.5	0	0	63.5			
		6	CNP 283	Water pump (submersible, electric)	85	4	91		-44.5	0	0	46.5			
	14	1	CNP 025	Breaker (hand-held, 20 kg ≤ mass ≤ 35 kg)	111	1	111	67	-44.5	0	0	66.5	72	75	Complied
		2	CNP 081	Excavator	112	1	112		-44.5	0	0	67.5			
		3	CNP 044	Concrete lorry mixer	109	1	109		-44.5	0	0	64.5			
		4	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-44.5	0	0	60.5			
		5	CNP 107	Generator (portable) - Welding set	100	1	100		-44.5	0	0	55.5			
		6	CNP 173	Poker (vibratory, hand-held, electric)	102	1	102		-44.5	0	0	57.5			
		7	CNP 283	Water pump (submersible, electric)	85	4	91		-44.5	0	0	46.5			
	16	1	CNP 028	Breaker (excavator mounted, hydraulic)	122	1	122	67	-44.5	-5	0	72.5	72	75	Complied
	17	1	CNP 004	Asphalt Paver	109	1	109	67	-44.5	0	0	64.5	71	75	Complied
		2	CNP 168	Power Pack for Hand-held Items	100	1	100		-44.5	0	0	55.5			
		3	CNP 184	Road Planer	111	1	111		-44.5	0	0	66.5			
		4	CNP 185	Road Roller (Pneumatic Tyred Roller)	108	1	108		-44.5	0	0	63.5			
		5	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-44.5	0	0	60.5			
		6	CNP 186	Roller (vibratory)	108	1	108		-44.5	0	0	63.5			

Zone: D
NSR: 4
Distance: 107m
Remark: i) Served by mechanical ventilation with 'fixed window + curtain wall' facades instead of natural ventilation via openable windows; offering -10dB(A) noise reduction.
ii) Breaking work with Noise Barrier offering -5dB(A)

Zone No.	Group No.	Item	CNP No.	Equipment (PME)	Sound Power Level			Distance	Corrections			CNL	Predicted Noise Level, dB(A)	Statutory Noise Limitm dB(A)	
					SWL dB(A)	PME No.	Total SWL		Distance dB(A)	Barrier dB(A)	Reflect dB(A)	dB(A)		Noise Limit in Leq(30min), dB(A)	Compliance (CNL ≤ Noise Limit)
Zone D	1	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	107	-48.6	-10	0	46.4	58	70	Complied
		2	CNP 081	Excavator	112	2	115		-48.6	-10	0	56.4			
		3	CNP 185	Road Roller	108	1	108		-48.6	-10	0	49.4			
	13	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	107	-48.6	-10	0	46.4	58	70	Complied
		2	CNP 081	Excavator	112	2	115		-48.6	-10	0	56.4			
		3	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-48.6	-10	0	41.4			
		4	CNP 145	Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-48.6	-10	0	46.4			
		5	CNP 186	Roller (vibratory)	108	1	108		-48.6	-10	0	49.4			
		6	CNP 283	Water pump (submersible, electric)	85	4	91		-48.6	-10	0	32.4			
	14	1	CNP 025	Breaker (hand-held, 20 kg ≤ mass ≤ 35 kg)	111	1	111	107	-48.6	-10	0	52.4	58	70	Complied
		2	CNP 081	Excavator	112	1	112		-48.6	-10	0	53.4			
		3	CNP 044	Concrete lorry mixer	109	1	109		-48.6	-10	0	50.4			
		4	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-48.6	-10	0	46.4			
		5	CNP 107	Generator (portable) - Welding set	100	1	100		-48.6	-10	0	41.4			
		6	CNP 173	Poker (vibratory, hand-held, electric)	102	1	102		-48.6	-10	0	43.4			
		7	CNP 283	Water pump (submersible, electric)	85	4	91		-48.6	-10	0	32.4			
	16	1	CNP 028	Breaker (excavator mounted, hydraulic)	122	1	122	107	-48.6	-15	0	58.4	58	70	Complied
	17	1	CNP 004	Asphalt Paver	109	1	109	107	-48.6	-10	0	50.4	57	70	Complied
		2	CNP 168	Power Pack for Hand-held Items	100	1	100		-48.6	-10	0	41.4			
		3	CNP 184	Road Planer	111	1	111		-48.6	-10	0	52.4			
		4	CNP 185	Road Roller (Pneumatic Tyred Roller)	108	1	108		-48.6	-10	0	49.4			
		5	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-48.6	-10	0	46.4			
		6	CNP 186	Roller (vibratory)	108	1	108		-48.6	-10	0	49.4			

Zone: D
NSR: 5
Distance: 53m
Remark: i) Breaking work with Noise Barrier offering -5dB(A)

Zone No.	Group No.	Item	CNP No.	Equipment (PME)	Sound Power Level			Distance	Corrections			CNL	Predicted Noise Level,	Statutory Noise Limitm dB(A)	
					SWL dB(A)	PME No.	Total SWL		Distance dB(A)	Barrier dB(A)	Reflect dB(A)	dB(A)		Noise Limit in Leq(30min), dB(A)	Compliance (CNL ≤ Noise Limit)
Zone D	1	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	53	-42.5	0	0	62.5	74	75	Complied
		2	CNP 081	Excavator	112	2	115		-42.5	0	0	72.5			
		3	CNP 185	Road Roller	108	1	108		-42.5	0	0	65.5			
	13	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	53	-42.5	0	0	62.5	74	75	Complied
		2	CNP 081	Excavator	112	2	115		-42.5	0	0	72.5			
		3	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-42.5	0	0	57.5			
		4	CNP 145	Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-42.5	0	0	62.5			
		5	CNP 186	Roller (vibratory)	108	1	108		-42.5	0	0	65.5			
		6	CNP 283	Water pump (submersible, electric)	85	4	91		-42.5	0	0	48.5			
	14	1	CNP 025	Breaker (hand-held, 20 kg ≤ mass ≤ 35 kg)	111	1	111	53	-42.5	0	0	68.5	74	75	Complied
		2	CNP 081	Excavator	112	1	112		-42.5	0	0	69.5			
		3	CNP 044	Concrete lorry mixer	109	1	109		-42.5	0	0	66.5			
		4	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-42.5	0	0	62.5			
		5	CNP 107	Generator (portable) - Welding set	100	1	100		-42.5	0	0	57.5			
		6	CNP 173	Poker (vibratory, hand-held, electric)	102	1	102		-42.5	0	0	59.5			
		7	CNP 283	Water pump (submersible, electric)	85	4	91		-42.5	0	0	48.5			
	16	1	CNP 028	Breaker (excavator mounted, hydraulic)	122	1	122	53	-42.5	-5	0	74.5	75	75	Complied
	17	1	CNP 004	Asphalt Paver	109	1	109	53	-42.5	0	0	66.5	73	75	Complied
		2	CNP 168	Power Pack for Hand-held Items	100	1	100		-42.5	0	0	57.5			
		3	CNP 184	Road Planer	111	1	111		-42.5	0	0	68.5			
		4	CNP 185	Road Roller (Pneumatic Tyred Roller)	108	1	108		-42.5	0	0	65.5			
		5	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-42.5	0	0	62.5			
		6	CNP 186	Roller (vibratory)	108	1	108		-42.5	0	0	65.5			

Zone: D
NSR: 6
Distance: 246m
Remark: i) Breaking work with Noise Barrier offering -5dB(A)

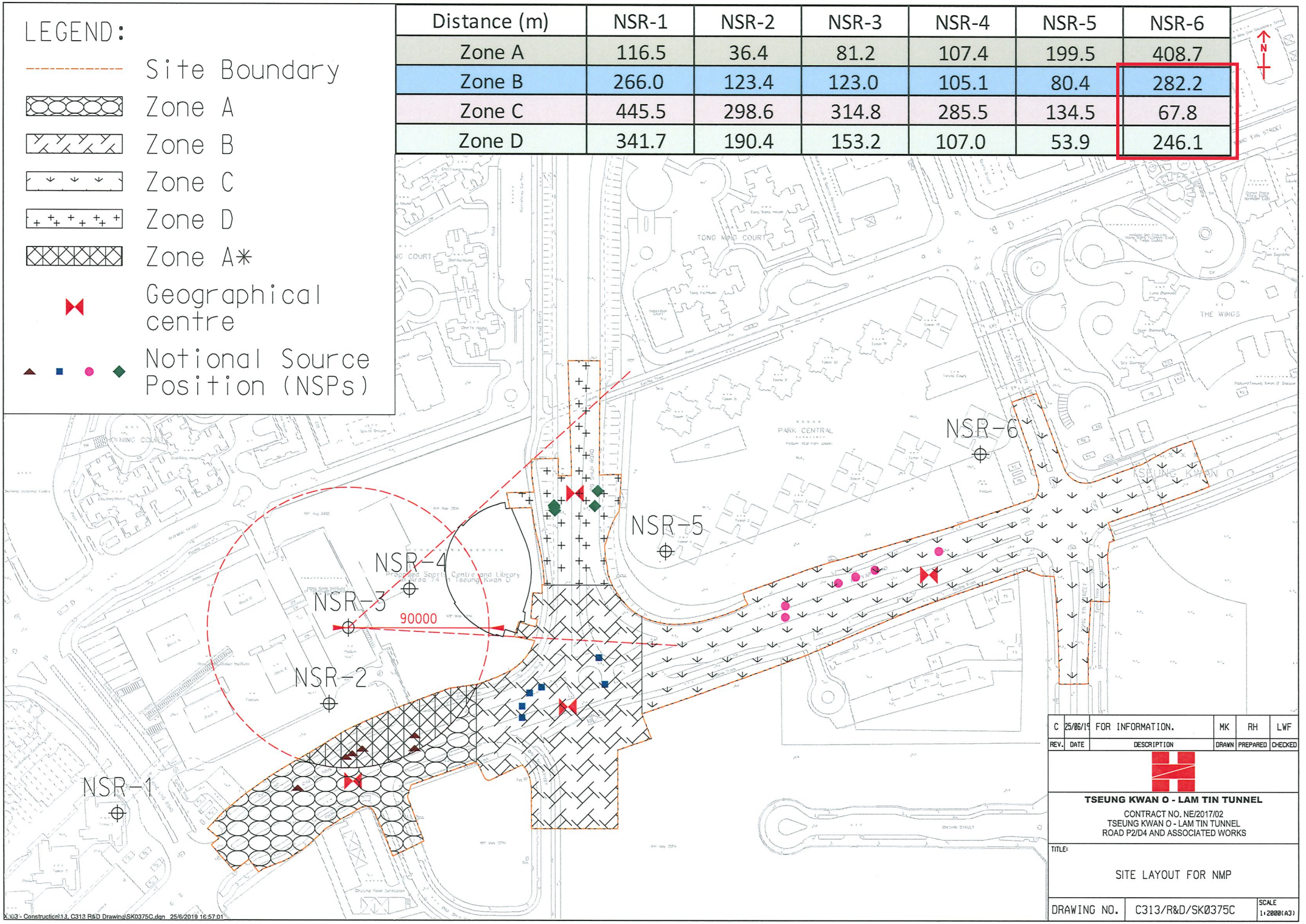
Zone No.	Group No.	Item	CNP No.	Equipment (PME)	Sound Power Level			Distance	Corrections			CNL	Predicted Noise Level,	Statutory Noise Limitm dB(A)	
					SWL dB(A)	PME No.	Total SWL		Distance dB(A)	Barrier dB(A)	Reflect dB(A)	dB(A)		Noise Limit in Leq(30min), dB(A)	Compliance (CNL ≤ Noise Limit)
Zone D	1	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	246	-55.8	0	0	49.2	60	75	Complied
		2	CNP 081	Excavator	112	2	115		-55.8	0	0	59.2			
		3	CNP 185	Road Roller	108	1	108		-55.8	0	0	52.2			
	13	1	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105	246	-55.8	0	0	49.2	61	75	Complied
		2	CNP 081	Excavator	112	2	115		-55.8	0	0	59.2			
		3	CNP 102	Generator (silenced, 75 dB(A) at 7m)	100	1	100		-55.8	0	0	44.2			
		4	CNP 145	Lorry with Crane (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-55.8	0	0	49.2			
		5	CNP 186	Roller (vibratory)	108	1	108		-55.8	0	0	52.2			
		6	CNP 283	Water pump (submersible, electric)	85	4	91		-55.8	0	0	35.2			
	14	1	CNP 025	Breaker (hand-held, 20 kg ≤ mass ≤ 35 kg)	111	1	111	246	-55.8	0	0	55.2	60	75	Complied
		2	CNP 081	Excavator	112	1	112		-55.8	0	0	56.2			
		3	CNP 044	Concrete lorry mixer	109	1	109		-55.8	0	0	53.2			
		4	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-55.8	0	0	49.2			
		5	CNP 107	Generator (portable) - Welding set	100	1	100		-55.8	0	0	44.2			
		6	CNP 173	Poker (vibratory, hand-held, electric)	102	1	102		-55.8	0	0	46.2			
		7	CNP 283	Water pump (submersible, electric)	85	4	91		-55.8	0	0	35.2			
	16	1	CNP 028	Breaker (excavator mounted, hydraulic)	122	1	122	246	-55.8	-5	0	61.2	61	75	Complied
	17	1	CNP 004	Asphalt Paver	109	1	109	246	-55.8	0	0	53.2	60	75	Complied
		2	CNP 168	Power Pack for Hand-held Items	100	1	100		-55.8	0	0	44.2			
		3	CNP 184	Road Planer	111	1	111		-55.8	0	0	55.2			
		4	CNP 185	Road Roller (Pneumatic Tyred Roller)	108	1	108		-55.8	0	0	52.2			
		5	CNP 068	Dump Truck (5.5 tonnes < G.V.W. ≤ 38 tonnes)	105	1	105		-55.8	0	0	49.2			
		6	CNP 186	Roller (vibratory)	108	1	108		-55.8	0	0	52.2			

From the above work scenario and noise level calculation data, the worst case at NSR-6 (i.e. CM8(A)) would be TWO groups of PMEs (with 72dB(A) for each PME) at Zone C are operating at the same time, and no PMEs at Zone B and D is allowed to be operated at this moment.

LEGEND:

- Site Boundary
- Zone A
- Zone B
- Zone C
- Zone D
- Zone A*
- Geographical centre
- Notional Source Position (NSPs)

Distance (m)	NSR-1	NSR-2	NSR-3	NSR-4	NSR-5	NSR-6
Zone A	116.5	36.4	81.2	107.4	199.5	408.7
Zone B	266.0	123.4	123.0	105.1	80.4	282.2
Zone C	445.5	298.6	314.8	285.5	134.5	67.8
Zone D	341.7	190.4	153.2	107.0	53.9	246.1



REV.	DATE	DESCRIPTION	DRAWN	PREPARED	CHECKED
C	25/06/19	FOR INFORMATION.	MK	RH	LWF

TSEUNG KWAN O - LAM TIN TUNNEL

CONTRACT NO. NE/2017/02
TSEUNG KWAN O - LAM TIN TUNNEL
ROAD P2/D4 AND ASSOCIATED WORKS

TITLE:

SITE LAYOUT FOR NMP

DRAWING NO. C313/R&D/SK0375C

SCALE 1:2000(A3)

X:\03 - Construction\13_C313 R&D Drawing\SK0375C.dgn 25/6/2019 16:57:01

Extracted from NMP for NE/2015/02 Rev. 23

NE/2015/02

Associated Cumulative Noise Levels (0-39m)

NSR CM6

Portion	PME Group to be Used	Predicted Noise Level for Individual PME Group / dB(A)	2021											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Portion VIII	Group 1	68.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Portion VIII	Group 2	66.9	✓	✓	✓	✓								
Portion VIII	Group 3	66.3	✓	✓	✓	✓				✓				
Portion VIII	Group 4	67.3					✓	✓	✓					
Portion VIII	Group 5	59.5	✓	✓			✓	✓	✓	✓	✓	✓	✓	
Portion VIII	Group 6	64.2					✓	✓	✓	✓	✓	✓	✓	
Portion VIII	Group 7	58.9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Portion IX	Group 8	68.8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cumulative Noise / dB(A)			74.0	74.0	73.8	73.8	73.8	73.8	73.8	73.6	72.7	72.7	72.7	68.8

NSR CM7

Portion	PME Group to be Used	Predicted Noise Level for Individual PME Group / dB(A)	2021											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Portion VIII	Group 1	68.6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Portion VIII	Group 2	67.2	✓	✓	✓	✓								
Portion VIII	Group 3	66.6	✓	✓	✓	✓				✓				
Portion VIII	Group 4	67.6					✓	✓	✓					
Portion VIII	Group 5	59.9	✓	✓			✓	✓	✓	✓	✓	✓	✓	
Portion VIII	Group 6	64.5					✓	✓	✓	✓	✓	✓	✓	
Portion VIII	Group 7	59.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Cumulative Noise / dB(A)			72.8	72.8	72.5	72.5	72.5	72.5	72.5	72.2	70.7	70.7	70.7	N.A.

Extracted from the latest NMP for NE/2015/02

NE/2015/02

Associated Cumulative Noise Levels (0-39m)

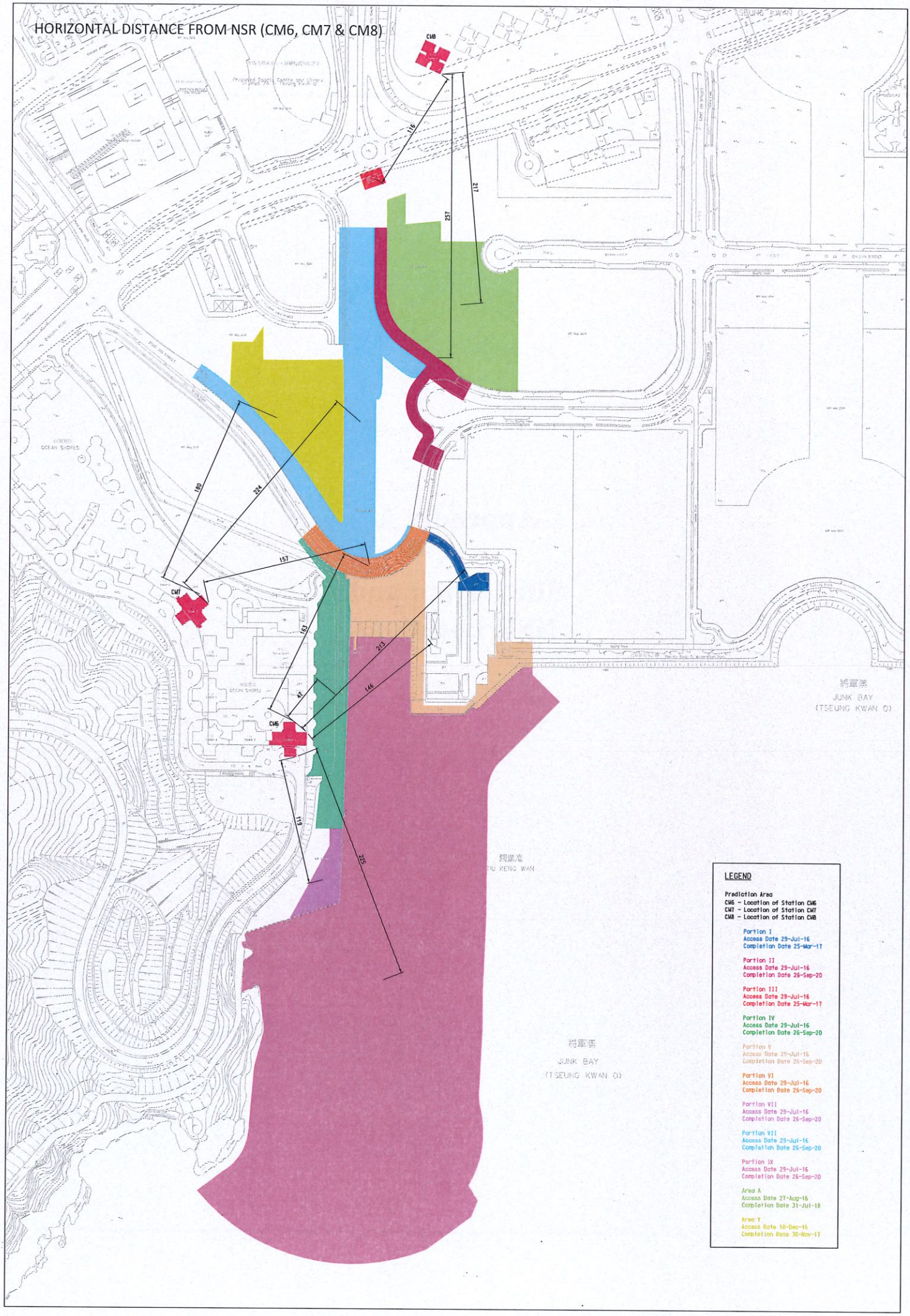
NSR CM6

Portion	PME Group to be Used	Predicted Noise Level for Individual PME Group / dB(A)	2021							2022				
			Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Portion VIII	Group 1	68.9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Portion VIII	Group 2	66.9												
Portion VIII	Group 3	66.3												
Portion VIII	Group 4	68.6	✓	✓	✓	✓								
Portion VIII	Group 5	59.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Portion VIII	Group 6	64.2	✓	✓	✓	✓	✓	✓						
Portion VIII	Group 7	58.9	✓	✓	✓	✓	✓	✓						
Portion IX	Group 8	69.7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cumulative Noise / dB(A)			74.6	74.6	74.6	74.6	73.3	73.3	72.6	72.6	72.6	72.6	72.6	72.6

NSR CM7

Portion	PME Group to be Used	Predicted Noise Level for Individual PME Group / dB(A)	2021							2022				
			Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Portion VIII	Group 1	69.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Portion VIII	Group 2	67.2												
Portion VIII	Group 3	66.6												
Portion VIII	Group 4	68.8	✓	✓	✓	✓								
Portion VIII	Group 5	59.9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Portion VIII	Group 6	64.5	✓	✓	✓	✓	✓	✓						
Portion VIII	Group 7	59.2	✓	✓	✓	✓	✓	✓						
Cumulative Noise / dB(A)			73.2	73.2	73.2	73.2	71.2	71.2	69.7	69.7	69.7	69.7	69.7	69.7

HORIZONTAL DISTANCE FROM NSR (CM6, CM7 & CM8)



Cumulative Noise Prediction from Year 2021 to Year 2023

Monitoring Station (NSR)	Contract No.	Portion	Activities	Predicted Noise Level for each Individual Group, db(A)	Year 2021												Year 2022												Year 2023											
					January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
CM1	NE/2017/06	1B	Installtaions Works at Tunnels, Underpass and Open Roads	56.5	0.0	0.0	0.0	0.0	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5
	NE/2017/06	1C	E&M Installation Works inside Ventilation Builidings	53.0	0.0	0.0	0.0	0.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0
	NE/2015/01	N.A.	Cumulative Noise Level for CM1	N.A.	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	73.0	73.0	73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Predicted Noise Level (PNL), db(A)					75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	73.0	73.0	73.0	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5

Monitoring Station (NSR)	Contract No.	Portion	Activities	Predicted Noise Level for each Individual Group, db(A)	Year 2021												Year 2022												Year 2023											
					January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
CM2	NE/2017/06	1B	Installtaions Works at Tunnels, Underpass and Open Roads	57.0	0.0	0.0	0.0	0.0	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57
	NE/2017/06	1C	E&M Installation Works inside Ventilation Builidings	53.8	0.0	0.0	0.0	0.0	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8
	NE/2015/01	N.A.	Cumulative Noise Level for CM2	N.A.	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	67.0	67.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Predicted Noise Level (PNL), db(A)					75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	67.5	67.5	67.5	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0

Monitoring Station (NSR)	Contract No.	Portion	Activities	Predicted Noise Level for each Individual Group, db(A)	Year 2021												Year 2022												Year 2023											
					January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
CM3	NE/2017/06	1B	Installtaions Works at Tunnels, Underpass and Open Roads	59.0	0.0	0.0	0.0	0.0	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
	NE/2017/06	1C	E&M Installation Works inside Ventilation Builidings	52.1	0.0	0.0	0.0	0.0	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1
	NE/2015/01	N.A.	Cumulative Noise Level for CM3	N.A.	75.0	75.0	75.0	75.0	75.0	74.0	74.0	74.0	74.0	63.0	63.0	63.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Predicted Noise Level (PNL), db(A)					75.0	75.0	75.0	75.0	75.0	74.0	74.0	74.0	74.0	65.0	65.0	65.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0

Monitoring Station (NSR)	Contract No.	Portion	Activities	Predicted Noise Level for each Individual Group, db(A)	Year 2021												Year 2022												Year 2023											
					January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
CM4	NE/2017/06	1A	Installtaions Works inside Administration Building	47.4	0.0	0.0	0.0	0.0	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4
	NE/2017/06	1B	Installtaions Works at Tunnels, Underpass and Open Roads	58.2	0.0	0.0	0.0	0.0	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2
	NE/2015/01	N.A.	Cumulative Noise Level for CM4	N.A.	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	54.0	54.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Predicted Noise Level (PNL), db(A)					68.0	68.0	68.0	68.0	68.5	68.5	68.5	68.5	68.5	59.1	59.1	59.1	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2

Monitoring Station (NSR)	Contract No.	Portion	Activities	Predicted Noise Level for each Individual Group, db(A)	Year 2021												Year 2022												Year 2023											
					January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
CM5	NE/2017/06	1B	Installtaions Works at Tunnels, Underpass and Open Roads	57.4	0.0	0.0	0.0	0.0	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4
	NE/2015/01	N.A.	Cumulative Noise Level for CM5	N.A.	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	56.0	56.0	56.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Predicted Noise Level (PNL), db(A)					70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	59.9	59.9	59.9	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4

Monitoring Station (NSR)	Contract No.	Portion	Activities	Predicted Noise Level for each Individual Group, db(A)	Year 2021												Year 2022												Year 2023											
					January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
CM6(A)	NE/2017/06	2A	Installtaions Works at Open Roads	63.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2
	NE/2017/06	2B	Installtaions Works at Open Roads	61.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61
	NE/2015/02	N.A.	Cumulative Noise Level for CM6(A)	N.A.	74.0	74.0	74.0	73.8	73.8	74.6	74.6	74.6	74.6	73.3	73.3	72.6	72.6	72.6	72.6	72.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Predicted Noise Level (PNL), db(A)					74.0	74.0	74.0	73.8	73.8	74.9	74.9	74.9	74.9	73.3	73.3	72.6	73.6	73.6	73.6	73.6	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3

Monitoring Station (NSR)	Contract No.	Portion	Activities	Predicted Noise Level for each Individual Group, db(A)	Year 2021												Year 2022												Year 2023											
					January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
CM7(A)	NE/2017/06	2A	Installtaions Works at Open Roads	59.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1
	NE/2017/06	2B	Installtaions Works at Open Roads	64.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5
	NE/2015/02	N.A.	Cumulative Noise Level for CM7(A)	N.A.	72.8	72.8	72.5	72.5	72.5	73.2	73.2	73.2	73.2	71.2	71.2	69.7	69.7	69.7	69.7	69.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Predicted Noise Level (PNL), db(A)					72.8	72.8	72.5	72.5	72.5	73.2	73.2	73.2	73.2	71.2	71.2	69.7	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6

Monitoring Station (NSR)	Contract No.	Portion	Activities	Predicted Noise Level for each Individual Group, db(A)	Year 2021												Year 2022												Year 2023											
					January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
CM8(A)	NE/2017/06	2B	Installtaions Works at Open Roads	53.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4
	NE/2017/06	3A	Installtaions Works at Open Roads	58.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
	NE/2015/02	N.A.	Cumulative Noise Level for CM8(A)	N.A.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Predicted Noise Level (PNL), db(A)					75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7

Remark: Data According to NMP of NE/2015/02 Rev. 23

Appendix E – Construction Programme

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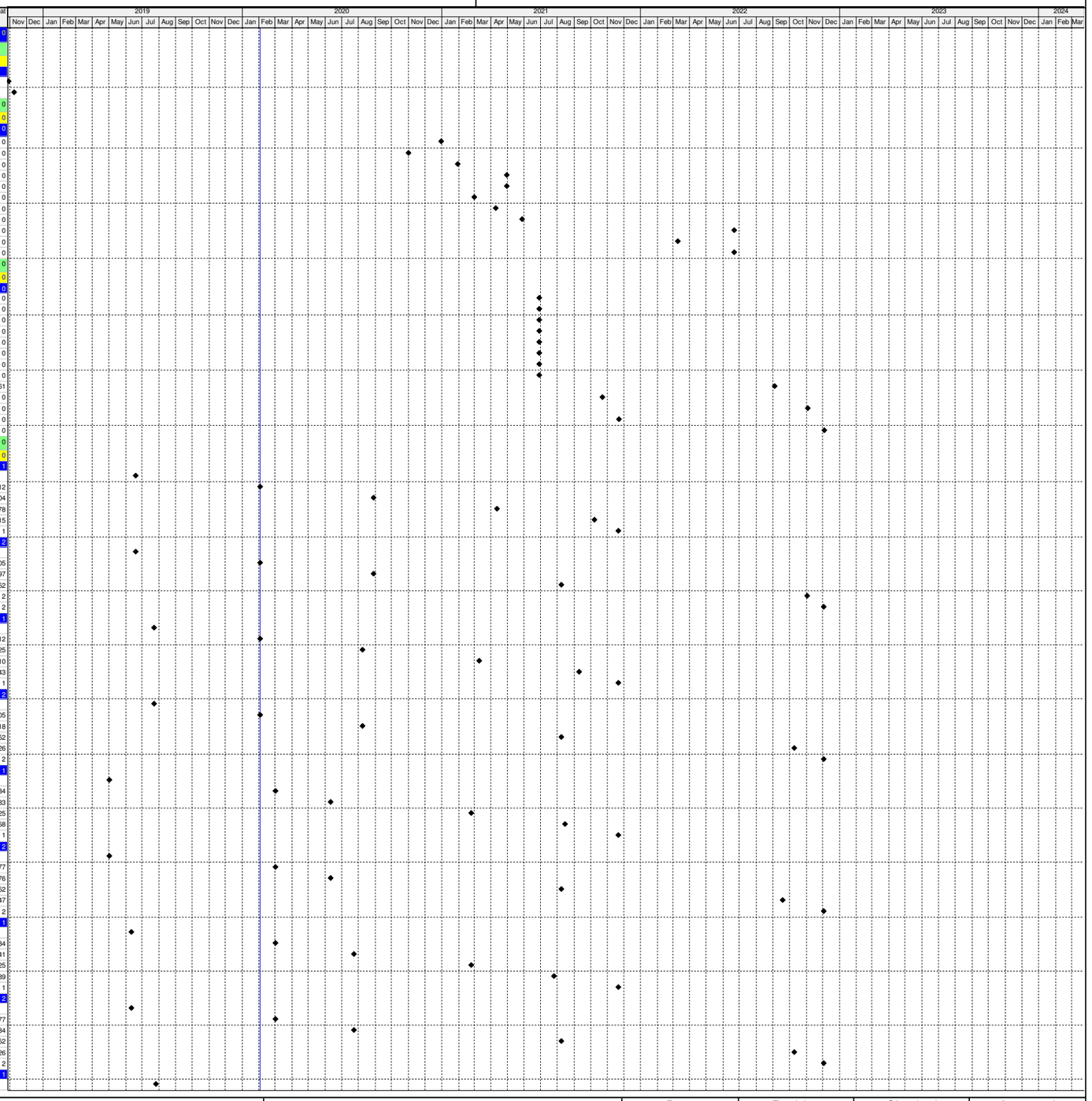
NE/2017/06 TKO-LTT TCSS_DWP_VerD

Detailed Works Programme

09-Jul-20 01:19

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
NE/2017/06 TKO-LTT TCSS_DWP_VerD		1544	29-Oct-18	03-Dec-23	17-Feb-20	03-Dec-23	29-Oct-18		0
Contract Award / Commencement of Works		11	29-Oct-18	09-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	09-Nov-18	
General		11	29-Oct-18	09-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	09-Nov-18	
Contract Award		11	29-Oct-18	09-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	09-Nov-18	
CA01	Letter of Acceptance	0	29-Oct-18		17-Feb-20		29-Oct-18		
CA02	Commencement of the Works	0	09-Nov-18		17-Feb-20		09-Nov-18		
Access Date		597	01-Nov-20	21-Jun-22	01-Nov-20	21-Jun-22			0
General		597	01-Nov-20	21-Jun-22	01-Nov-20	21-Jun-22			0
Access Date		597	01-Nov-20	21-Jun-22	01-Nov-20	21-Jun-22			0
AD01	Portion 1A of the Site	0	31-Dec-20		31-Dec-20				0
AD02	Portion 1B of the Site	0	01-Nov-20		01-Nov-20				0
AD03	Portion 1C of the Site	0	30-Jan-21		30-Jan-21				0
AD04	Portion 2A of the Site	0	30-Apr-21		30-Apr-21				0
AD05	Portion 2B of the Site	0	30-Apr-21		30-Apr-21				0
AD06	Portion 3A of the Site	0	01-Mar-21		01-Mar-21				0
AD07	Portion 4A of the Site	0	10-Apr-21		10-Apr-21				0
AD08	Portion 4B of the Site	0	28-May-21		28-May-21				0
AD09	Portion 5A of the Site	0	21-Jun-22		21-Jun-22				0
AD10	Portion 5B of the Site	0	10-Mar-22		10-Mar-22				0
AD11	Portion 5C of the Site	0	21-Jun-22		21-Jun-22				0
Key Date and Stages / Sections of the Achievement		523	28-Jun-21	03-Dec-22	28-Jun-21	03-Dec-22			0
General		523	28-Jun-21	03-Dec-22	28-Jun-21	03-Dec-22			0
Key Date and Stages / Sections of the Achievement		523	28-Jun-21	03-Dec-22	28-Jun-21	03-Dec-22			0
KD01	KD1 - Stage 1A Works	0		28-Jun-21		28-Jun-21			0
KD02	KD2 - Stage 1B Works	0		28-Jun-21		28-Jun-21			0
KD03	KD3 - Stage 1C Works	0		28-Jun-21		28-Jun-21			0
KD04	KD4 - Stage 2A Works	0		28-Jun-21		28-Jun-21			0
KD05	KD5 - Stage 2B Works	0		28-Jun-21		28-Jun-21			0
KD06	KD6 - Stage 3 Works	0		28-Jun-21		28-Jun-21			0
KD07	KD7 - Stage 4A Works	0		28-Jun-21		28-Jun-21			0
KD08	KD8 - Stage 4B Works	0		28-Jun-21		28-Jun-21			0
KD09	KD9 - Stage 5 Works	0		03-Sep-22		03-Nov-22			61
KD10	KD10 - Section 1A	0		22-Oct-21		22-Oct-21			0
KD11	KD11 - Section 2A	0		03-Nov-22		03-Nov-22			0
KD12	KD12 - Section 1B	0		21-Nov-21		21-Nov-21			0
KD13	KD13 - Section 2B	0		03-Dec-22		03-Dec-22			0
Cost Centre Milestone Dates		1806	23-Dec-18	03-Dec-23	28-Jun-21	03-Dec-23	17-Apr-19		0
General		1806	23-Dec-18	03-Dec-23	28-Jun-21	03-Dec-23	17-Apr-19		0
CC B - Central System - TKOLTT		996	28-Feb-19	20-Nov-21	28-Jun-21	21-Nov-21	19-Jun-19		1
B01	Acceptance of Preliminary System Proposal for Works	0		28-Feb-19		28-Jun-21		19-Jun-19	
B02	Acceptance of Final System Proposal for Works	0		03-Feb-20		28-Jun-21			512
B03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		29-Aug-20		28-Jun-21			304
B04	Complete order and delivery on Site of all equipment for Works	0		11-Apr-21		28-Jun-21			78
B05	Acceptance of Site Acceptance Test of all equipment for Works	0		07-Oct-21		22-Oct-21			15
B06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC B1 - Central System - CBL		1373	28-Feb-19	02-Dec-22	03-Nov-22	03-Dec-22	19-Jun-19		2
B11	Acceptance of Preliminary System Proposal for Works	0		28-Feb-19		03-Nov-22		19-Jun-19	
B12	Acceptance of Final System Proposal for Works	0		03-Feb-20		03-Nov-22			1005
B13	Acceptance of Factory Acceptance Tests of all equipment for Works	0		29-Aug-20		03-Nov-22			797
B14	Complete order and delivery on Site of all equipment for Works	0		08-Aug-21		03-Nov-22			452
B15	Acceptance of Site Acceptance Test of all equipment for Works	0		02-Nov-22		03-Nov-22			2
B16	Issue of certificate of competion of Section 2B of the Works	0		02-Dec-22		03-Dec-22			2
CC C - Traffic Control Devices - TKOLTT		988	08-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	23-Jul-19		1
C01	Acceptance of Preliminary System Proposal for Works	0		08-Mar-19		28-Jun-21		23-Jul-19	
C02	Acceptance of Final System Proposal for Works	0		03-Feb-20		28-Jun-21			512
C03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		08-Aug-20		28-Jun-21			325
C04	Complete order and delivery on Site of all equipment for Works	0		10-Mar-21		28-Jun-21			110
C05	Acceptance of Site Acceptance Test of all equipment for Works	0		09-Sep-21		22-Oct-21			43
C06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC C1 - Traffic Control Devices - CBL		1365	08-Mar-19	02-Dec-22	03-Nov-22	03-Dec-22	23-Jul-19		2
C11	Acceptance of Preliminary System Proposal for Works	0		08-Mar-19		03-Nov-22		23-Jul-19	
C12	Acceptance of Final System Proposal for Works	0		03-Feb-20		03-Nov-22			1005
C13	Acceptance of Factory Acceptance Tests of all equipment for Works	0		08-Aug-20		03-Nov-22			818
C14	Complete order and delivery on Site of all equipment for Works	0		08-Aug-21		03-Nov-22			452
C15	Acceptance of Site Acceptance Test of all equipment for Works	0		09-Oct-22		03-Nov-22			26
C16	Issue of certificate of competion of Section 2B of the Works	0		02-Dec-22		03-Dec-22			2
CC D - Communication System - TKOLTT		993	03-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	02-May-19		1
D01	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		28-Jun-21		02-May-19	
D02	Acceptance of Final System Proposal for Works	0		01-Mar-20		28-Jun-21			484
D03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		11-Jun-20		28-Jun-21			383
D04	Complete order and delivery on Site of all equipment for Works	0		23-Feb-21		28-Jun-21			125
D05	Acceptance of Site Acceptance Test of all equipment for Works	0		15-Aug-21		22-Oct-21			68
D06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC D1 - Communication System - CBL		1370	03-Mar-19	02-Dec-22	03-Nov-22	03-Dec-22	02-May-19		2
D11	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		03-Nov-22		02-May-19	
D12	Acceptance of Final System Proposal for Works	0		01-Mar-20		03-Nov-22			977
D13	Acceptance of Factory Acceptance Tests of all equipment for Works	0		11-Jun-20		03-Nov-22			876
D14	Complete order and delivery on Site of all equipment for Works	0		08-Aug-21		03-Nov-22			452
D15	Acceptance of Site Acceptance Test of all equipment for Works	0		18-Sep-22		03-Nov-22			47
D16	Issue of certificate of competion of Section 2B of the Works	0		02-Dec-22		03-Dec-22			2
CC E - CCTV System - TKOLTT		993	03-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	12-Jun-19		1
E01	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		28-Jun-21		12-Jun-19	
E02	Acceptance of Final System Proposal for Works	0		01-Mar-20		28-Jun-21			484
E03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		23-Jul-20		28-Jun-21			341
E04	Complete order and delivery on Site of all equipment for Works	0		23-Feb-21		28-Jun-21			125
E05	Acceptance of Site Acceptance Test of all equipment for Works	0		25-Jul-21		22-Oct-21			89
E06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC E1 - CCTV System - CBL		1370	03-Mar-19	02-Dec-22	03-Nov-22	03-Dec-22	12-Jun-19		2
E11	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		03-Nov-22		12-Jun-19	
E12	Acceptance of Final System Proposal for Works	0		01-Mar-20		03-Nov-22			977
E13	Acceptance of Factory Acceptance Tests of all equipment for Works	0		23-Jul-20		03-Nov-22			834
E14	Complete order and delivery on Site of all equipment for Works	0		08-Aug-21		03-Nov-22			452
E15	Acceptance of Site Acceptance Test of all equipment for Works	0		09-Oct-22		03-Nov-22			26
E16	Issue of certificate of competion of Section 2B of the Works	0		02-Dec-22		03-Dec-22			2
CC F - Building PABX System - TKOLTT		993	03-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	26-Jul-19		1
F01	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		28-Jun-21		26-Jul-19	



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

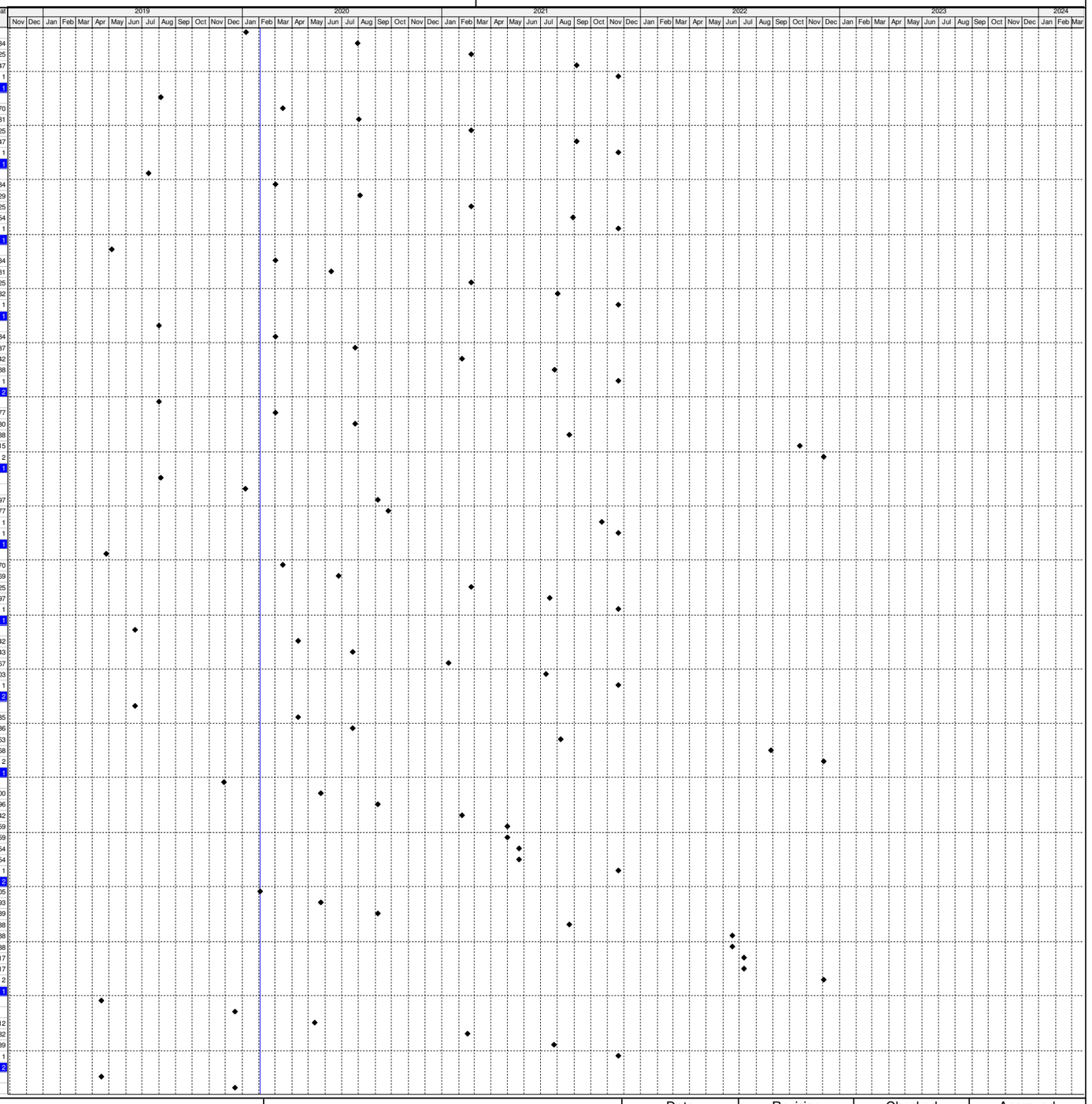
Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

NE/2017/06 TKO-LTT TCSS_DWP_VerD

Detailed Works Programme

09-Jul-20 01:19

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
F02	Acceptance of Final System Proposal for Works	0		23-Jun-19		28-Jun-21		08-Jan-20	
F03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		30-Jul-20		28-Jun-21			334
F04	Complete order and delivery on Site of all equipment for Works	0		23-Feb-21		28-Jun-21			125
F05	Acceptance of Site Acceptance Test of all equipment for Works	0		05-Sep-21		22-Oct-21			47
F06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC G - ET System - TKOLTT		993	03-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	05-Aug-19		1
G01	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		28-Jun-21		05-Aug-19	
G02	Acceptance of Final System Proposal for Works	0		15-Mar-20		28-Jun-21			470
G03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		02-Aug-20		28-Jun-21			331
G04	Complete order and delivery on Site of all equipment for Works	0		23-Feb-21		28-Jun-21			125
G05	Acceptance of Site Acceptance Test of all equipment for Works	0		05-Sep-21		22-Oct-21			47
G06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC H - PA System - TKOLTT		993	03-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	13-Jul-19		1
H01	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		28-Jun-21		13-Jul-19	
H02	Acceptance of Final System Proposal for Works	0		01-Mar-20		28-Jun-21			484
H03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		04-Aug-20		28-Jun-21			329
H04	Complete order and delivery on Site of all equipment for Works	0		23-Feb-21		28-Jun-21			125
H05	Acceptance of Site Acceptance Test of all equipment for Works	0		29-Aug-21		22-Oct-21			54
H06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC I - Radio System - TKOLTT		993	03-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	07-May-19		1
I01	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		28-Jun-21		07-May-19	
I02	Acceptance of Final System Proposal for Works	0		01-Mar-20		28-Jun-21			484
I03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		12-Jun-20		28-Jun-21			381
I04	Complete order and delivery on Site of all equipment for Works	0		23-Feb-21		28-Jun-21			125
I05	Acceptance of Site Acceptance Test of all equipment for Works	0		01-Aug-21		22-Oct-21			82
I06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC J - Detection System - TKOLTT		993	03-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	01-Aug-19		1
J01	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		28-Jun-21		01-Aug-19	
J02	Acceptance of Final System Proposal for Works	0		01-Mar-20		28-Jun-21			484
J03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		26-Jul-20		28-Jun-21			337
J04	Complete order and delivery on Site of all equipment for Works	0		06-Feb-21		28-Jun-21			142
J05	Acceptance of Site Acceptance Test of all equipment for Works	0		27-Jul-21		22-Oct-21			88
J06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC J1 - Detection System - CBL		1370	03-Mar-19	02-Dec-22	03-Nov-22	03-Dec-22	01-Aug-19		2
J11	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		03-Nov-22		01-Aug-19	
J12	Acceptance of Final System Proposal for Works	0		01-Mar-20		03-Nov-22			977
J13	Acceptance of Factory Acceptance Tests of all equipment for Works	0		26-Jul-20		03-Nov-22			830
J14	Complete order and delivery on Site of all equipment for Works	0		23-Aug-21		03-Nov-22			438
J15	Acceptance of Site Acceptance Test of all equipment for Works	0		20-Oct-22		03-Nov-22			15
J16	Issue of certificate of competion of Section 2B of the Works	0		02-Dec-22		03-Dec-22			2
CC K - Manual Fallback System - TKOLTT		993	03-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	05-Aug-19		1
K01	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		28-Jun-21		05-Aug-19	
K02	Acceptance of Final System Proposal for Works	0		23-Jun-19		28-Jun-21		07-Jan-20	
K03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		05-Sep-20		28-Jun-21			297
K04	Complete order and delivery on Site of all equipment for Works	0		24-Sep-20		28-Jun-21			277
K05	Acceptance of Site Acceptance Test of all equipment for Works	0		21-Oct-21		22-Oct-21			1
K06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC L - Operation Facilities - TKOLTT		993	03-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	26-Apr-19		1
L01	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		28-Jun-21		26-Apr-19	
L02	Acceptance of Final System Proposal for Works	0		15-Mar-20		28-Jun-21			470
L03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		25-Jun-20		28-Jun-21			369
L04	Complete order and delivery on Site of all equipment for Works	0		23-Feb-21		28-Jun-21			125
L05	Acceptance of Site Acceptance Test of all equipment for Works	0		17-Jul-21		22-Oct-21			97
L06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC M - Power Distribution System - TKOLTT		965	31-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	18-Jun-19		1
M01	Acceptance of Preliminary System Proposal for Works	0		31-Mar-19		28-Jun-21		18-Jun-19	
M02	Acceptance of Final System Proposal for Works	0		12-Apr-20		28-Jun-21			442
M03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		21-Jul-20		28-Jun-21			343
M04	Complete order and delivery on Site of all equipment for Works	0		13-Jan-21		28-Jun-21			167
M05	Acceptance of Site Acceptance Test of all equipment for Works	0		11-Jul-21		22-Oct-21			103
M06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC M1 - Power Distribution System - CBL		1342	31-Mar-19	02-Dec-22	03-Nov-22	03-Dec-22	18-Jun-19		2
M11	Acceptance of Preliminary System Proposal for Works	0		31-Mar-19		03-Nov-22		18-Jun-19	
M12	Acceptance of Final System Proposal for Works	0		12-Apr-20		03-Nov-22			935
M13	Acceptance of Factory Acceptance Tests of all equipment for Works	0		21-Jul-20		03-Nov-22			836
M14	Complete order and delivery on Site of all equipment for Works	0		07-Aug-21		03-Nov-22			453
M15	Acceptance of Site Acceptance Test of all equipment for Works	0		27-Aug-22		03-Nov-22			68
M16	Issue of certificate of competion of Section 2B of the Works	0		02-Dec-22		03-Dec-22			2
CC N - Speed Enforcement System - TKOLTT		1063	23-Dec-18	20-Nov-21	28-Jun-21	21-Nov-21	28-Nov-19		1
N01	Acceptance of Preliminary System Proposal for Works	0		23-Dec-18		28-Jun-21		28-Nov-19	
N02	Acceptance of Final System Proposal for Works	0		24-May-20		28-Jun-21			400
N03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		05-Sep-20		28-Jun-21			296
N04	Complete order and delivery on Site of all equipment for Works	0		06-Feb-21		28-Jun-21			142
N05	Complete Bench Acceptance Test	0		01-May-21		28-Jun-21			59
N06	Complete Site Commissioning Test	0		01-May-21		28-Jun-21			59
N07	Submit and approval of Expert Report	0		22-May-21		22-Oct-21			154
N08	Complete Reliability Test	0		22-May-21		22-Oct-21			154
N09	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC N1 - Speed Enforcement System - CBL		1034	03-Feb-20	02-Dec-22	03-Nov-22	03-Dec-22			2
N11	Acceptance of Preliminary System Proposal for Works	0		03-Feb-20		03-Nov-22			1005
N12	Acceptance of Final System Proposal for Works	0		24-May-20		03-Nov-22			893
N13	Acceptance of Factory Acceptance Tests of all equipment for Works	0		05-Sep-20		03-Nov-22			789
N14	Complete order and delivery on Site of all equipment for Works	0		23-Aug-21		03-Nov-22			438
N15	Complete Bench Acceptance Test	0		18-Jun-22		03-Nov-22			138
N16	Complete Site Commissioning Test	0		18-Jun-22		03-Nov-22			138
N17	Submit and approval of Expert Report	0		09-Jul-22		03-Nov-22			117
N18	Complete Reliability Test	0		09-Jul-22		03-Nov-22			117
N19	Issue of certificate of competion of Section 1B of the Works	0		02-Dec-22		03-Dec-22			2
CC O - Government Optical Fibre System - TKOLTT		993	03-Mar-19	20-Nov-21	28-Jun-21	21-Nov-21	17-Apr-19		1
O01	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		28-Jun-21		17-Apr-19	
O02	Acceptance of Final System Proposal for Works	0		23-Jun-19		28-Jun-21		19-Dec-19	
O03	Acceptance of Factory Acceptance Tests of all equipment for Works	0		13-May-20		28-Jun-21			412
O04	Complete order and delivery on Site of all equipment for Works	0		17-Feb-21		28-Jun-21			132
O05	Acceptance of Site Acceptance Test of all equipment for Works	0		25-Jul-21		22-Oct-21			89
O06	Issue of certificate of competion of Section 1B of the Works	0		20-Nov-21		21-Nov-21			1
CC O1 - Government Optical Fibre System - CBL		1370	03-Mar-19	02-Dec-22	03-Nov-22	03-Dec-22	17-Apr-19		2
O11	Acceptance of Preliminary System Proposal for Works	0		03-Mar-19		03-Nov-22		17-Apr-19	
O12	Acceptance of Final System Proposal for Works	0		23-Jun-19		03-Nov-22		19-Dec-19	



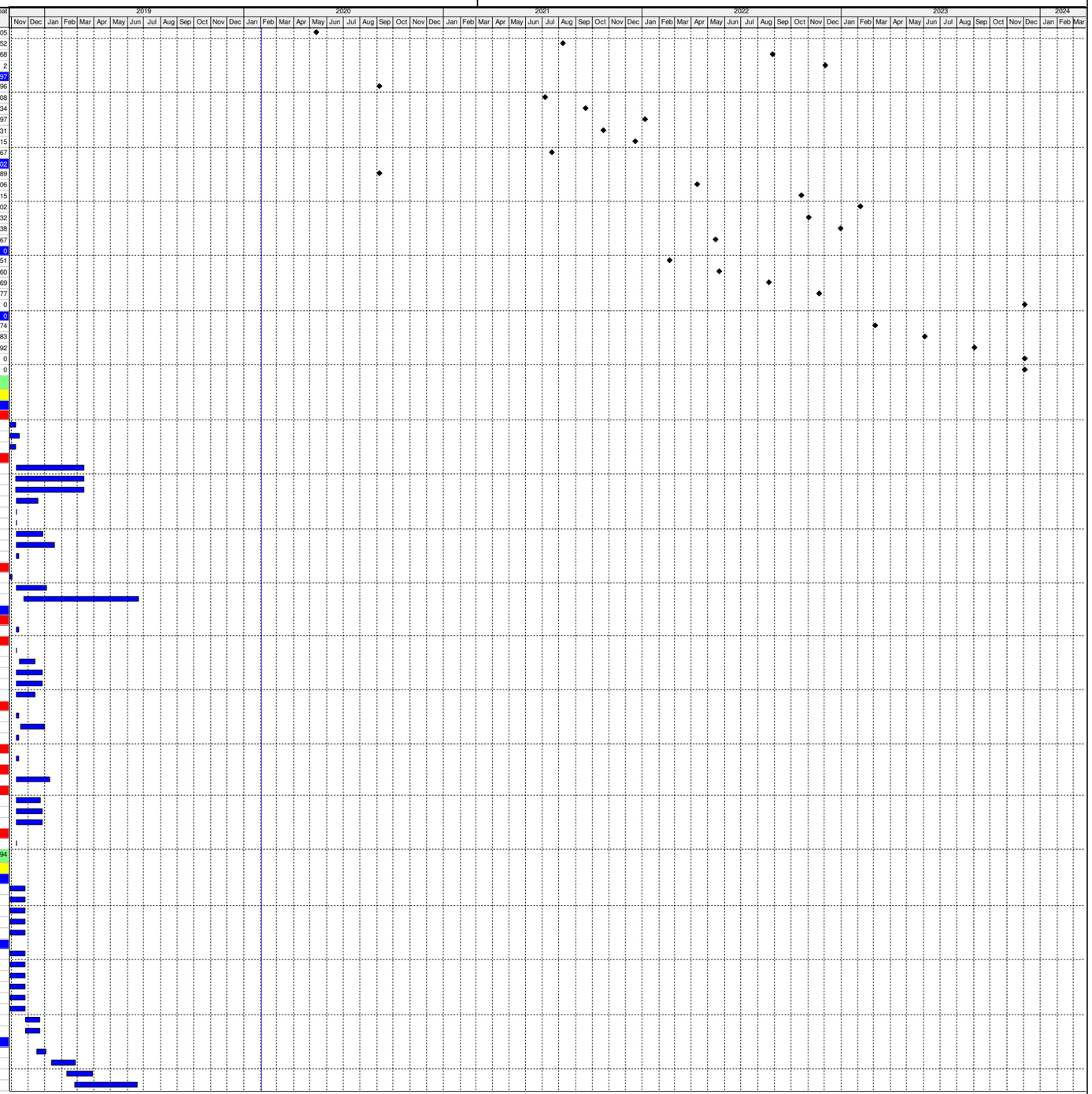
Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

Detailed Works Programme

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
O13	Acceptance of Factory Acceptance Tests of all equipment for Works	0		13-May-20		03-Nov-22			905
O14	Complete order and delivery on Site of all equipment for Works	0		08-Aug-21		03-Nov-22			452
O15	Acceptance of Site Acceptance Test of all equipment for Works	0		28-Aug-22		03-Nov-22			68
O16	Issue of certificate of competion of Section 2B of the Works	0		02-Dec-22		03-Dec-22			2
CC P - Training and Documentation - TKOLTT		487	05-Sep-20	05-Jan-22	28-Jun-21	03-Dec-23			697
P01	Acceptance of all Factory Acceptance Tests Reports	0		05-Sep-20		28-Jun-21			296
P02	Acceptance of all Training Manuals	0		06-Jul-21		22-Oct-21			108
P03	Completion of Operation Training	0		18-Sep-21		22-Oct-21			34
P04	Completion of Maintenance Training	0		05-Jan-22		03-Dec-23			697
P05	Acceptance of all test reports	0		21-Oct-21		21-Nov-21			31
P06	Acceptance of all As-built Drawings	0		18-Dec-21		03-Dec-23			715
P07	Acceptance of Operation and Maintenance Manuals	0		19-Jul-21		03-Dec-23			867
CC P1 - Training and Documentation - CBL		882	05-Sep-20	04-Feb-23	03-Nov-22	03-Dec-23			302
P11	Acceptance of all Factory Acceptance Tests Reports	0		05-Sep-20		03-Nov-22			789
P12	Acceptance of all Training Manuals	0		11-Apr-22		03-Nov-22			206
P13	Completion of Operation Training	0		20-Oct-22		03-Nov-22			15
P14	Completion of Maintenance Training	0		04-Feb-23		03-Dec-23			302
P15	Acceptance of all test reports	0		02-Nov-22		03-Dec-22			32
P16	Acceptance of all As-built Drawings	0		30-Dec-22		03-Dec-23			338
P17	Acceptance of Operation and Maintenance Manuals	0		15-May-22		03-Dec-23			567
CC Q - Comprehensive Maintenance Services and DLP - TKOLTT		651	20-Feb-22	03-Dec-23	03-Dec-23	03-Dec-23			0
Q01	First intermediate payment for works (after 3 months of the commencement of DLP)	0		20-Feb-22		03-Dec-23			651
Q02	Second intermediate payment for works (after 6 months of the commencement of DLP)	0		22-May-22		03-Dec-23			560
Q03	Third intermediate payment for works (after 9 months of the commencement of DLP)	0		21-Aug-22		03-Dec-23			469
Q04	Fourth intermediate payment for works (after 1 year of the commencement of DLP)	0		21-Nov-22		03-Dec-23			377
Q05	Final payment for works (Issue of Defects Liability Certificate)	0		03-Dec-23		03-Dec-23			0
CC Q1 - Comprehensive Maintenance Services and DLP - CBL		274	04-Mar-23	03-Dec-23	03-Dec-23	03-Dec-23			0
Q11	First intermediate payment for works (after 3 months of the commencement of DLP)	0		04-Mar-23		03-Dec-23			274
Q12	Second intermediate payment for works (after 6 months of the commencement of DLP)	0		03-Jun-23		03-Dec-23			183
Q13	Third intermediate payment for works (after 9 months of the commencement of DLP)	0		02-Sep-23		03-Dec-23			92
Q14	Fourth intermediate payment for works (after 1 year of the commencement of DLP)	0		03-Dec-23		03-Dec-23			0
Q15	Final payment for works (Issue of Defects Liability Certificate)	0		03-Dec-23		03-Dec-23			0
Preliminary		474	29-Oct-18	15-Feb-20	17-Feb-20	17-Feb-20	29-Oct-18	22-Jun-19	
Preliminary and General		474	29-Oct-18	15-Feb-20	17-Feb-20	17-Feb-20	29-Oct-18	22-Jun-19	
General		474	29-Oct-18	15-Feb-20	17-Feb-20	17-Feb-20	29-Oct-18	22-Jun-19	
Resource and Insurance		25	29-Oct-18	22-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	15-Nov-18	
GEN.0.01	Prepare and submit the Third Party Insurance	25	29-Oct-18	22-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	09-Nov-18	
GEN.0.02	Prepare and submit the Staffing Proposal	3	29-Oct-18	01-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	15-Nov-18	
GEN.0.03	Prepare and submit Performance Bond	25	29-Oct-18	22-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	09-Nov-18	
Site Accommodation and Facilities		463	09-Nov-18	15-Feb-20	17-Feb-20	17-Feb-20	09-Nov-18	14-Mar-19	
GEN.0.04	Prepare and submit the Computer Facilities	6	09-Nov-18	15-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	14-Mar-19	
GEN.0.05	Prepare and submit the Details of Engineer's Accommodation	12	03-Feb-20	15-Feb-20	17-Feb-20	17-Feb-20	09-Nov-18	14-Mar-19	
GEN.0.06	Prepare and submit the Furniture and Equipment for Engineer Office	12	09-Nov-18	21-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	14-Mar-19	
GEN.0.07	Prepare and submit the Transport for the Engineer	6	09-Nov-18	15-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	19-Dec-18	
GEN.0.08	Prepare and submit the Details of Contractor's Site Accommodation	17	09-Nov-18	26-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	09-Nov-18	
GEN.0.09	Prepare and submit the Project Signboard Details	12	09-Nov-18	21-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	09-Nov-18	
GEN.0.10	Prepare and submit the Arrangement of Hygiene and Welfare Facilities	25	09-Nov-18	03-Dec-18	17-Feb-20	17-Feb-20	09-Nov-18	28-Dec-18	
GEN.0.11	Prepare and submit the Weather Protection Scheme	17	09-Nov-18	26-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	18-Jan-19	
GEN.0.12	Prepare and submit the Telephone Line for Public Compliants and Enquires	12	09-Nov-18	21-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	14-Nov-18	
Planning and Programme		30	29-Oct-18	28-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	22-Jun-19	
GEN.0.13	Prepare and submit the Inital Work Programme	3	29-Oct-18	01-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	02-Nov-18	
GEN.0.14	Prepare and submit the 3-month Rolling Programme	6	09-Nov-18	15-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	04-Jan-19	
GEN.0.15	Prepare and submit the Works Programme	6	22-Nov-18	28-Nov-18	17-Feb-20	17-Feb-20	22-Nov-18	22-Jun-19	
Management System		37	09-Nov-18	16-Dec-18	17-Feb-20	17-Feb-20	09-Nov-18	10-Jan-19	
Quality Management Plan		6	09-Nov-18	15-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	14-Nov-18	
GEN.0.16	Prepare and submit the Quality Management Plan	6	09-Nov-18	15-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	14-Nov-18	
Safety Management		17	09-Nov-18	26-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	27-Dec-18	
GEN.0.17	Prepare and submit the Draft Safety Plan	6	09-Nov-18	15-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	09-Nov-18	
GEN.0.18	Prepare and submit the Detailed Safety Plan	6	15-Nov-18	20-Nov-18	17-Feb-20	17-Feb-20	15-Nov-18	13-Dec-18	
GEN.0.19	Prepare and submit the Materials - Personal Protective Equipment for Workers	8	09-Nov-18	17-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	27-Dec-18	
GEN.0.20	Prepare and submit the Materials - Personal Protective Equipment for Resident Engineer	12	09-Nov-18	21-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	27-Dec-18	
GEN.0.21	Prepare and submit the Site Traffic Safety Management Plan	17	09-Nov-18	26-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	14-Dec-18	
Environmenta; Management Plan		17	09-Nov-18	26-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	31-Dec-18	
GEN.0.22	Prepare and submit the Draft Environment Mangement Plan	9	09-Nov-18	17-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	14-Nov-18	
GEN.0.23	Prepare and submit the Finalized Environment Mangement Plan	9	17-Nov-18	26-Nov-18	17-Feb-20	17-Feb-20	17-Nov-18	31-Dec-18	
GEN.0.24	Prepare and submit the Site Management Plan for Trip Ticket System (Waste Management Plan)	12	09-Nov-18	21-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	14-Nov-18	
Sub-Contract Management		12	09-Nov-18	21-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	14-Nov-18	
GEN.0.25	Prepare and submit the Sub-contractor Management Plan	12	09-Nov-18	21-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	14-Nov-18	
Risk Management		25	09-Nov-18	03-Dec-18	17-Feb-20	17-Feb-20	09-Nov-18	10-Jan-19	
GEN.0.26	Prepare and submit the Systematic Risk Management Plan	25	09-Nov-18	03-Dec-18	17-Feb-20	17-Feb-20	09-Nov-18	10-Jan-19	
Software Management		37	09-Nov-18	16-Dec-18	17-Feb-20	17-Feb-20	09-Nov-18	27-Dec-18	
GEN.0.27	Prepare and submit the Software Quality Plan	37	09-Nov-18	16-Dec-18	17-Feb-20	17-Feb-20	09-Nov-18	24-Dec-18	
GEN.0.28	Prepare and submit the Software Configuration Management Plan	9	09-Nov-18	18-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	27-Dec-18	
GEN.0.29	Prepare and submit the Software Verification & Validation Plan	12	09-Nov-18	21-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	27-Dec-18	
Interface Management		12	09-Nov-18	21-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	09-Nov-18	
GEN.0.30	Prepare and submit the Interface Management Plan	12	09-Nov-18	21-Nov-18	17-Feb-20	17-Feb-20	09-Nov-18	09-Nov-18	
Design Stage		868	29-Oct-18	14-Mar-21	17-Feb-20	03-Dec-23	29-Oct-18		994
Prepare / Submission of PSP for TKO-LTT TCSS and CBLTCSS		154	29-Oct-18	31-Mar-19	17-Feb-20	19-Dec-20	29-Oct-18	28-Nov-19	
Preliminary Design (Software)		28	29-Oct-18	25-Nov-18	17-Feb-20	19-Dec-20	29-Oct-18	25-Nov-18	
DSPSP.0.01	Preliminary Design (Software)	28	29-Oct-18	25-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	25-Nov-18	
DSPSP.0.02	Preliminary AID System Design	28	29-Oct-18	25-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	25-Nov-18	
DSPSP.0.03	Traffic Management Design Approach	28	29-Oct-18	25-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	25-Nov-18	
DSPSP.0.04	TCS System Function Design	28	29-Oct-18	25-Nov-18	17-Feb-20	17-Feb-20	29-Oct-18	25-Nov-18	
DSPSP.0.05	Manual Fallback Control Design	28	29-Oct-18	25-Nov-18	19-Dec-20	19-Dec-20	29-Oct-18	25-Nov-18	
Preliminary Design (Hardware)		56	29-Oct-18	23-Dec-18	21-May-20	19-Sep-20	29-Oct-18	23-Dec-18	
DSPSP.0.06	Control Room and Console	28	29-Oct-18	25-Nov-18	19-Sep-20	19-Sep-20	29-Oct-18	25-Nov-18	
DSPSP.0.07	Communication System	28	29-Oct-18	25-Nov-18	18-Jul-20	18-Jul-20	29-Oct-18	25-Nov-18	
DSPSP.0.08	Detection System	28	29-Oct-18	25-Nov-18	05-Jul-20	05-Jul-20	29-Oct-18	25-Nov-18	
DSPSP.0.09	Enforcement System	28	29-Oct-18	25-Nov-18	24-Jul-20	24-Jul-20	29-Oct-18	25-Nov-18	
DSPSP.0.10	PA, ET, CCTV, Radio, PABX Systems	28	29-Oct-18	25-Nov-18	27-Jun-20	27-Jun-20	29-Oct-18	25-Nov-18	
DSPSP.0.11	Traffic Control Devices and Cables	28	29-Oct-18	25-Nov-18	21-May-20	21-May-20	29-Oct-18	25-Nov-18	
DSPSP.0.12	Power Distribution System	28	26-Nov-18	23-Dec-18	21-May-20	21-May-20	26-Nov-18	23-Dec-18	
DSPSP.0.13	Control Cabinet and Equipment Rack	28	26-Nov-18	23-Dec-18	14-Aug-20	14-Aug-20	26-Nov-18	23-Dec-18	
Central System		75	16-Dec-18	28-Feb-19	17-Feb-20	17-Feb-20	16-Dec-18	19-Jun-19	
DSPSP.0.014	Preparation & Submission of Central System PSP for TKO-LTT TCSS and CBLTCSS	28	16-Dec-18	12-Jan-19	17-Feb-20	17-Feb-20	16-Dec-18	03-Jan-19	
DSPSP.0.015	Comment on PSP / Meeting With Engineer	28	13-Jan-19	09-Feb-19	17-Feb-20	17-Feb-20	13-Jan-19	26-Feb-19	
DSPSP.0.016	Resubmission of PSP	14	10-Feb-19	23-Feb-19	17-Feb-20	17-Feb-20	10-Feb-19	29-Mar-19	
DSPSP.0.017	Approval of PSP Proposal	5	24-Feb-19	28-Feb-19	17-Feb-20	17-Feb-20	24-Feb-19	19-Jun-19	



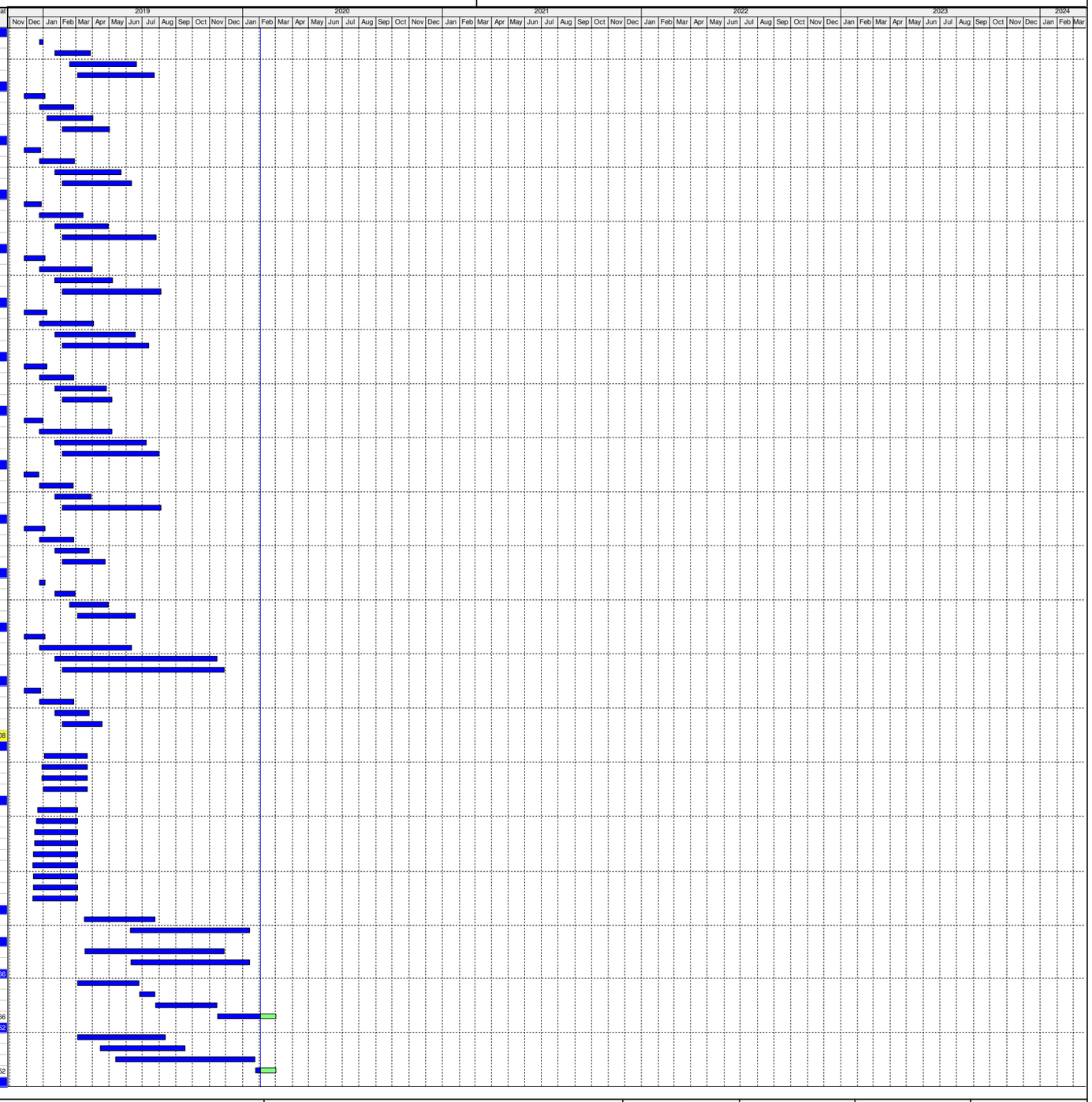
Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

Detailed Works Programme

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
Traffic Control Devices		75	24-Dec-18	08-Mar-19	14-Aug-20	14-Aug-20	24-Dec-18	23-Jul-19	
DSPSP.0.018	Preparation & Submission of Traffic Control System PSP for TKO-LTT TCSS and CBL TCSS	28	24-Dec-18	20-Jan-19	14-Aug-20	14-Aug-20	24-Dec-18	31-Dec-18	
DSPSP.0.019	Comment on PSP / Meeting With Engineer	28	21-Jan-19	17-Feb-19	14-Aug-20	14-Aug-20	21-Jan-19	28-Mar-19	
DSPSP.0.020	Resubmission of PSP	14	18-Feb-19	03-Mar-19	14-Aug-20	14-Aug-20	18-Feb-19	21-Jun-19	
DSPSP.0.021	Approval of PSP Proposal	5	04-Mar-19	08-Mar-19	14-Aug-20	14-Aug-20	04-Mar-19	23-Jul-19	
Communication System		98	26-Nov-18	03-Mar-19	18-Jul-20	18-Jul-20	26-Nov-18	02-May-19	
DSPSP.0.022	Preparation & Submission of Communication System PSP for TKO-LTT TCSS and CBL TCSS	28	26-Nov-18	23-Dec-18	18-Jul-20	18-Jul-20	26-Nov-18	04-Jan-19	
DSPSP.0.023	Comment on PSP / Meeting With Engineer	14	24-Dec-18	06-Jan-19	18-Jul-20	18-Jul-20	24-Dec-18	26-Feb-19	
DSPSP.0.024	Resubmission of PSP	28	07-Jan-19	03-Feb-19	18-Jul-20	18-Jul-20	07-Jan-19	02-Apr-19	
DSPSP.0.025	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	18-Jul-20	18-Jul-20	04-Feb-19	02-May-19	
CCTV System		98	26-Nov-18	03-Mar-19	03-Jul-20	03-Jul-20	26-Nov-18	12-Jun-19	
DSPSP.0.026	Preparation & Submission of CCTV System PSP for TKO-LTT TCSS and CBL TCSS	28	26-Nov-18	23-Dec-18	03-Jul-20	03-Jul-20	26-Nov-18	27-Dec-18	
DSPSP.0.027	Comment on PSP / Meeting With Engineer	28	24-Dec-18	20-Jan-19	03-Jul-20	03-Jul-20	24-Dec-18	27-Feb-19	
DSPSP.0.028	Resubmission of PSP	14	21-Jan-19	03-Feb-19	03-Jul-20	03-Jul-20	21-Jan-19	23-May-19	
DSPSP.0.029	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	03-Jul-20	03-Jul-20	04-Feb-19	12-Jun-19	
Building PABX System		98	26-Nov-18	03-Mar-19	06-Aug-20	06-Aug-20	26-Nov-18	26-Jul-19	
DSPSP.0.030	Preparation & Submission of Building PABX System PSP for TKO-LTT TCSS and CBL TCSS	28	26-Nov-18	23-Dec-18	06-Aug-20	06-Aug-20	26-Nov-18	28-Dec-18	
DSPSP.0.031	Comment on PSP / Meeting With Engineer	28	24-Dec-18	20-Jan-19	06-Aug-20	06-Aug-20	24-Dec-18	15-Mar-19	
DSPSP.0.032	Resubmission of PSP	14	21-Jan-19	03-Feb-19	06-Aug-20	06-Aug-20	21-Jan-19	30-Apr-19	
DSPSP.0.033	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	06-Aug-20	06-Aug-20	04-Feb-19	26-Jul-19	
Emergancy Telephone System		98	26-Nov-18	03-Mar-19	28-Jun-20	28-Jun-20	26-Nov-18	05-Aug-19	
DSPSP.0.034	Preparation & Submission of Emergancy Telephone System PSP for TKO-LTT TCSS and CBL TC	28	26-Nov-18	23-Dec-18	28-Jun-20	28-Jun-20	26-Nov-18	04-Jan-19	
DSPSP.0.035	Comment on PSP / Meeting With Engineer	28	24-Dec-18	20-Jan-19	28-Jun-20	28-Jun-20	24-Dec-18	01-Apr-19	
DSPSP.0.036	Resubmission of PSP	14	21-Jan-19	03-Feb-19	28-Jun-20	28-Jun-20	21-Jan-19	08-May-19	
DSPSP.0.037	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	28-Jun-20	28-Jun-20	04-Feb-19	05-Aug-19	
Public Address System		98	26-Nov-18	03-Mar-19	15-Jul-20	15-Jul-20	26-Nov-18	13-Jul-19	
DSPSP.0.038	Preparation & Submission of Public Address System PSP for TKO-LTT TCSS and CBL TCSS	28	26-Nov-18	23-Dec-18	15-Jul-20	15-Jul-20	26-Nov-18	07-Jan-19	
DSPSP.0.039	Comment on PSP / Meeting With Engineer	28	24-Dec-18	20-Jan-19	15-Jul-20	15-Jul-20	24-Dec-18	03-Apr-19	
DSPSP.0.040	Resubmission of PSP	14	21-Jan-19	03-Feb-19	15-Jul-20	15-Jul-20	21-Jan-19	18-Jun-19	
DSPSP.0.041	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	15-Jul-20	15-Jul-20	04-Feb-19	13-Jul-19	
Radio System		98	26-Nov-18	03-Mar-19	27-Jun-20	27-Jun-20	26-Nov-18	07-May-19	
DSPSP.0.042	Preparation & Submission of Radio System PSP for TKO-LTT TCSS and CBL TCSS	28	26-Nov-18	23-Dec-18	27-Jun-20	27-Jun-20	26-Nov-18	07-Jan-19	
DSPSP.0.043	Comment on PSP / Meeting With Engineer	28	24-Dec-18	20-Jan-19	27-Jun-20	27-Jun-20	24-Dec-18	26-Feb-19	
DSPSP.0.044	Resubmission of PSP	14	21-Jan-19	03-Feb-19	27-Jun-20	27-Jun-20	21-Jan-19	26-Apr-19	
DSPSP.0.045	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	27-Jun-20	27-Jun-20	04-Feb-19	07-May-19	
Detection System		98	26-Nov-18	03-Mar-19	05-Jul-20	05-Jul-20	26-Nov-18	01-Aug-19	
DSPSP.0.046	Preparation & Submission of Detection System PSP for TKO-LTT TCSS and CBL TCSS	28	26-Nov-18	23-Dec-18	05-Jul-20	05-Jul-20	26-Nov-18	31-Dec-18	
DSPSP.0.047	Comment on PSP / Meeting With Engineer	28	24-Dec-18	20-Jan-19	05-Jul-20	05-Jul-20	24-Dec-18	06-May-19	
DSPSP.0.048	Resubmission of PSP	14	21-Jan-19	03-Feb-19	05-Jul-20	05-Jul-20	21-Jan-19	08-Jul-19	
DSPSP.0.049	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	05-Jul-20	05-Jul-20	04-Feb-19	01-Aug-19	
Manual Fallback System		98	26-Nov-18	03-Mar-19	19-Dec-20	19-Dec-20	26-Nov-18	05-Aug-19	
DSPSP.0.050	Preparation & Submission of Manual Fallback System PSP for TKO-LTT TCSS and CBL TCSS	28	26-Nov-18	23-Dec-18	19-Dec-20	19-Dec-20	26-Nov-18	24-Dec-18	
DSPSP.0.051	Comment on PSP / Meeting With Engineer	28	24-Dec-18	20-Jan-19	19-Dec-20	19-Dec-20	24-Dec-18	25-Feb-19	
DSPSP.0.052	Resubmission of PSP	14	21-Jan-19	03-Feb-19	19-Dec-20	19-Dec-20	21-Jan-19	29-Mar-19	
DSPSP.0.053	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	19-Dec-20	19-Dec-20	04-Feb-19	05-Aug-19	
Operation Facilities		98	26-Nov-18	03-Mar-19	19-Sep-20	19-Sep-20	26-Nov-18	24-Apr-19	
DSPSP.0.054	Preparation & Submission of Operation Facilites PSP for TKO-LTT TCSS and CBL TCSS	28	26-Nov-18	23-Dec-18	19-Sep-20	19-Sep-20	26-Nov-18	04-Jan-19	
DSPSP.0.055	Comment on PSP / Meeting With Engineer	28	24-Dec-18	20-Jan-19	19-Sep-20	19-Sep-20	24-Dec-18	26-Feb-19	
DSPSP.0.056	Resubmission of PSP	14	21-Jan-19	03-Feb-19	19-Sep-20	19-Sep-20	21-Jan-19	26-Mar-19	
DSPSP.0.057	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	19-Sep-20	19-Sep-20	04-Feb-19	24-Apr-19	
Power Distribution System		98	24-Dec-18	31-Mar-19	21-May-20	21-May-20	24-Dec-18	18-Jun-19	
DSPSP.0.058	Preparation & Submission of Power Distribution System PSP for TKO-LTT TCSS and CBL TCSS	28	24-Dec-18	20-Jan-19	21-May-20	21-May-20	24-Dec-18	04-Jan-19	
DSPSP.0.059	Comment on PSP / Meeting With Engineer	28	21-Jan-19	17-Feb-19	21-May-20	21-May-20	21-Jan-19	28-Feb-19	
DSPSP.0.060	Resubmission of PSP	14	18-Feb-19	03-Mar-19	21-May-20	21-May-20	18-Feb-19	30-Apr-19	
DSPSP.0.061	Approval of PSP Proposal	28	04-Mar-19	31-Mar-19	21-May-20	21-May-20	04-Mar-19	18-Jun-19	
Speed Enforcement System		98	26-Nov-18	03-Mar-19	24-Jul-20	24-Jul-20	26-Nov-18	28-Nov-19	
DSPSP.0.062	Preparation & Submission of Speed Enforcement System PSP for TKO-LTT TCSS and CBL TCSS	28	26-Nov-18	23-Dec-18	24-Jul-20	24-Jul-20	26-Nov-18	04-Jan-19	
DSPSP.0.063	Comment on PSP / Meeting With Engineer	28	24-Dec-18	20-Jan-19	24-Jul-20	24-Jul-20	24-Dec-18	12-Jun-19	
DSPSP.0.064	Resubmission of PSP	14	21-Jan-19	03-Feb-19	24-Jul-20	24-Jul-20	21-Jan-19	15-Nov-19	
DSPSP.0.065	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	24-Jul-20	24-Jul-20	04-Feb-19	28-Nov-19	
Optical Fibre System		98	26-Nov-18	03-Mar-19	22-Sep-20	22-Sep-20	26-Nov-18	18-Apr-19	
DSPSP.0.066	Preparation & Submission of Optical Fibre System PSP for TKO-LTT TCSS and CBL TCSS	28	26-Nov-18	23-Dec-18	22-Sep-20	22-Sep-20	26-Nov-18	27-Dec-18	
DSPSP.0.067	Comment on PSP / Meeting With Engineer	28	24-Dec-18	20-Jan-19	22-Sep-20	22-Sep-20	24-Dec-18	26-Feb-19	
DSPSP.0.068	Resubmission of PSP	14	21-Jan-19	03-Feb-19	22-Sep-20	22-Sep-20	21-Jan-19	26-Mar-19	
DSPSP.0.069	Approval of PSP Proposal	28	04-Feb-19	03-Mar-19	22-Sep-20	22-Sep-20	04-Feb-19	18-Apr-19	
Prepare / Submission of FSP For TKO-LTT TCSS and CBL TCSS		509	02-Jan-19	24-May-20	17-Feb-20	19-Dec-20	12-Dec-18		208
Final Design (Software)		35	02-Jan-19	05-Feb-19	17-Feb-20	17-Feb-20	29-Dec-18	23-Mar-19	
DSFSP.0.01	Traffic Plan Development	35	02-Jan-19	05-Feb-19	17-Feb-20	17-Feb-20	02-Jan-19	23-Mar-19	
DSFSP.0.02	Software Functional Design	35	02-Jan-19	05-Feb-19	17-Feb-20	17-Feb-20	29-Dec-18	23-Mar-19	
DSFSP.0.03	System Design	35	02-Jan-19	05-Feb-19	17-Feb-20	17-Feb-20	29-Dec-18	23-Mar-19	
DSFSP.0.04	Draft FAT/SCT/SAT Plan	5	02-Jan-19	06-Jan-19	17-Feb-20	17-Feb-20	31-Dec-18	23-Mar-19	
Final Design (Hardware)		28	02-Jan-19	29-Jan-19	14-Aug-20	24-Oct-20	12-Dec-18	04-Mar-19	
DSFSP.0.05	Control Room and Console	28	02-Jan-19	29-Jan-19	24-Oct-20	24-Oct-20	21-Dec-18	04-Mar-19	
DSFSP.0.06	Communication System	28	02-Jan-19	29-Jan-19	24-Oct-20	24-Oct-20	19-Dec-18	04-Mar-19	
DSFSP.0.07	Detection System	28	02-Jan-19	29-Jan-19	24-Oct-20	24-Oct-20	15-Dec-18	04-Mar-19	
DSFSP.0.08	Enforcement System	28	02-Jan-19	29-Jan-19	24-Oct-20	24-Oct-20	15-Dec-18	04-Mar-19	
DSFSP.0.09	PA, ET, CCTV, Radio, PABX Systems	28	02-Jan-19	29-Jan-19	24-Oct-20	24-Oct-20	13-Dec-18	04-Mar-19	
DSFSP.0.10	Traffic Control Devices and Cables	28	02-Jan-19	29-Jan-19	24-Oct-20	24-Oct-20	12-Dec-18	04-Mar-19	
DSFSP.0.11	Power Distribution System	28	02-Jan-19	29-Jan-19	24-Oct-20	24-Oct-20	13-Dec-18	04-Mar-19	
DSFSP.0.12	Control Cabinet and Equipment Rack	28	02-Jan-19	29-Jan-19	14-Aug-20	14-Aug-20	13-Dec-18	04-Mar-19	
DSFSP.0.13	Cable Schedules and Cable Routes	28	02-Jan-19	29-Jan-19	24-Oct-20	24-Oct-20	12-Dec-18	04-Mar-19	
Central System		112	17-Mar-19	06-Jul-19	17-Feb-20	18-Aug-20	17-Mar-19	14-Jan-20	
DSFSP.0.014	Preparation & Submission of Central System FSP for TKO-LTT TCSS and CBL TCSS	42	17-Mar-19	27-Apr-19	17-Feb-20	17-Feb-20	17-Mar-19	24-Jul-19	
DSFSP.0.017	Approval of FSP Proposal	28	09-Jun-19	06-Jul-19	18-Aug-20	18-Aug-20	09-Jun-19	14-Jan-20	
Traffic Control Devices		112	18-Mar-19	07-Jul-19	14-Aug-20	14-Aug-20	18-Mar-19	14-Jan-20	
DSFSP.0.018	Preparation & Submission of Traffic Control System FSP for TKO-LTT TCSS and CBL TCSS	42	18-Mar-19	28-Apr-19	14-Aug-20	14-Aug-20	18-Mar-19	29-Nov-19	
DSFSP.0.021	Approval of FSP Proposal	28	10-Jun-19	07-Jul-19	14-Aug-20	14-Aug-20	10-Jun-19	14-Jan-20	
Communication System		392	04-Mar-19	29-Mar-20	18-Jul-20	15-Aug-20	04-Mar-19		166
DSFSP.0.022	Preparation & Submission of Communication System FSP for TKO-LTT TCSS and CBL TCSS	42	04-Mar-19	14-Apr-19	18-Jul-20	18-Jul-20	04-Mar-19	25-Jun-19	
DSFSP.0.023	Comment on FSP / Meeting With Engineer	28	03-Feb-20	01-Mar-20	18-Jul-20	18-Jul-20	26-Jun-19	24-Jul-19	
DSFSP.0.024	Resubmission of FSP	14	13-May-19	26-May-19	18-Jul-20	18-Jul-20	25-Jul-19	15-Nov-19	
DSFSP.0.025	Approval of FSP Proposal	28	02-Mar-20	29-Mar-20	18-Jul-20	15-Aug-20	16-Nov-19		166
CCTV System		364	04-Mar-19	01-Mar-20	03-Jul-20	31-Jul-20	04-Mar-19		152
DSFSP.0.026	Preparation & Submission of CCTV System FSP for TKO-LTT TCSS and CBL TCSS	42	04-Mar-19	14-Apr-19	03-Jul-20	03-Jul-20	04-Mar-19	12-Aug-19	
DSFSP.0.027	Comment on FSP / Meeting With Engineer	28	15-Apr-19	12-May-19	03-Jul-20	03-Jul-20	15-Apr-19	18-Sep-19	
DSFSP.0.028	Resubmission of FSP	14	13-May-19	26-May-19	03-Jul-20	03-Jul-20	13-May-19	24-Jan-20	
DSFSP.0.029	Approval of FSP Proposal	28	03-Feb-20	01-Mar-20	03-Jul-20	31-Jul-20	25-Jan-20		152
Building PABX System		112	04-Mar-19	23-Jun-19	06-Aug-20	06-Aug-20	04-Mar-19	08-Jan-20	



- Remaining Level of Effort
- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

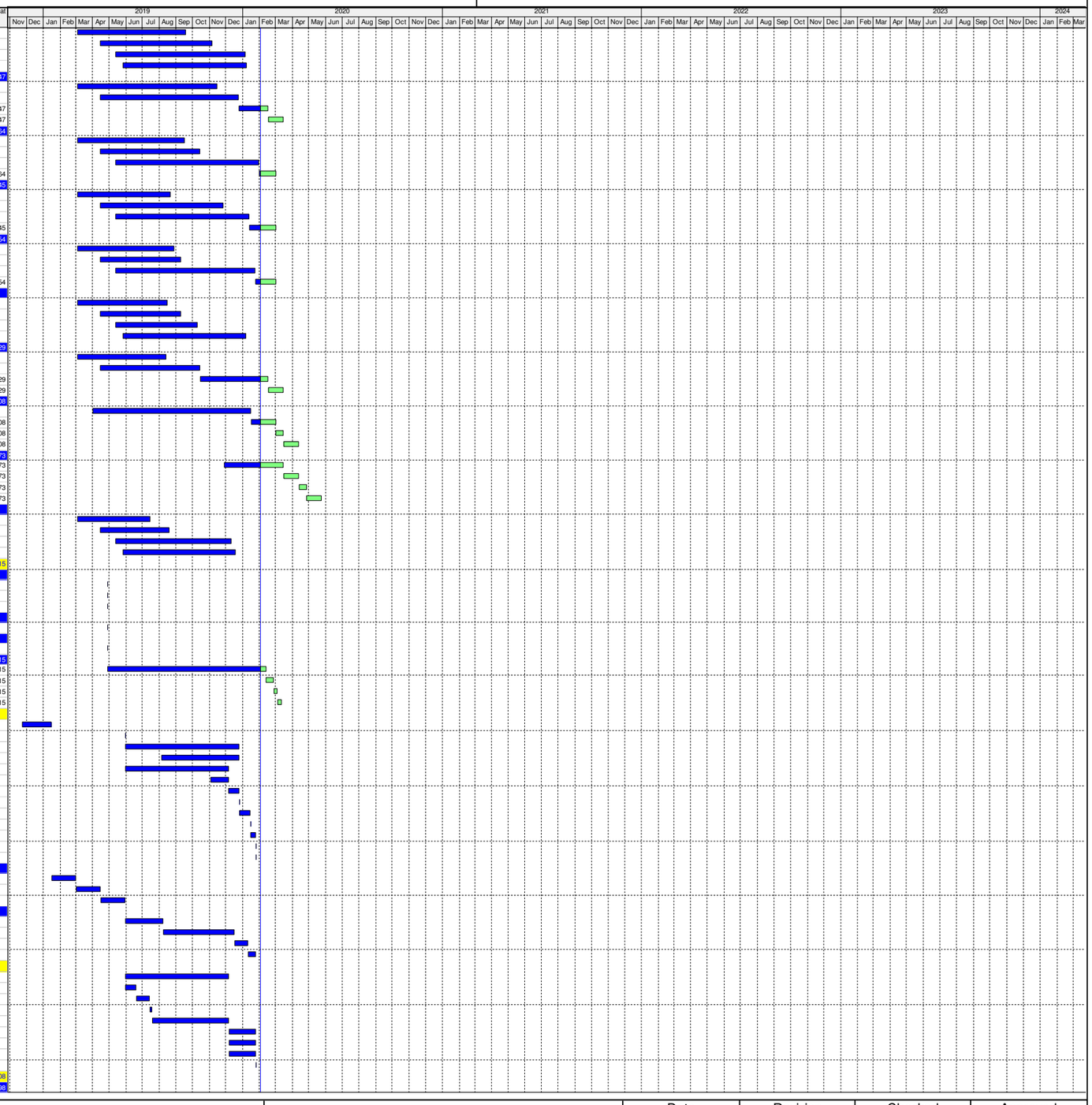
Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

NE/2017/06 TKO-LTT TCSS_DWP_VerD

Detailed Works Programme

09-Jul-20 01:19

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
DSFSP.0.030	Preparation & Submission of Building PABX System FSP for TKO-LTT TCSS and CBL TCSS	42	04-Mar-19	14-Apr-19	06-Aug-20	06-Aug-20	04-Mar-19	19-Sep-19	
DSFSP.0.031	Comment on FSP / Meeting With Engineer	28	15-Apr-19	12-May-19	06-Aug-20	06-Aug-20	15-Apr-19	06-Nov-19	
DSFSP.0.032	Resubmission of FSP	14	13-May-19	26-May-19	06-Aug-20	06-Aug-20	13-May-19	06-Jan-20	
DSFSP.0.033	Approval of FSP Proposal	28	27-May-19	23-Jun-19	06-Aug-20	06-Aug-20	27-May-19	08-Jan-20	
Emergency Telephone System		378	04-Mar-19	15-Mar-20	28-Jun-20	09-Aug-20	04-Mar-19		147
DSFSP.0.034	Preparation & Submission of Emergancy Telephone System FSP for TKO-LTT TCSS and CBL TC	42	04-Mar-19	14-Apr-19	28-Jun-20	28-Jun-20	04-Mar-19	15-Nov-19	
DSFSP.0.035	Comment on FSP / Meeting With Engineer	28	15-Apr-19	12-May-19	28-Jun-20	28-Jun-20	15-Apr-19	24-Dec-19	
DSFSP.0.036	Resubmission of FSP	14	03-Feb-20	16-Feb-20	28-Jun-20	12-Jul-20	25-Dec-19		147
DSFSP.0.037	Approval of FSP Proposal	28	17-Feb-20	15-Mar-20	12-Jul-20	09-Aug-20			147
Public Address System		364	04-Mar-19	01-Mar-20	15-Jul-20	12-Aug-20	04-Mar-19		164
DSFSP.0.038	Preparation & Submission of Public Address System FSP for TKO-LTT TCSS and CBL TCSS	42	04-Mar-19	14-Apr-19	15-Jul-20	15-Jul-20	04-Mar-19	16-Sep-19	
DSFSP.0.039	Comment on FSP / Meeting With Engineer	28	15-Apr-19	12-May-19	15-Jul-20	15-Jul-20	15-Apr-19	15-Oct-19	
DSFSP.0.040	Resubmission of FSP	14	13-May-19	26-May-19	15-Jul-20	15-Jul-20	13-May-19	31-Jan-20	
DSFSP.0.041	Approval of FSP Proposal	28	03-Feb-20	01-Mar-20	15-Jul-20	12-Aug-20	01-Feb-20		164
Radio System		364	04-Mar-19	01-Mar-20	27-Jun-20	25-Jul-20	04-Mar-19		145
DSFSP.0.042	Preparation & Submission of Radio System FSP for TKO-LTT TCSS and CBL TCSS	42	04-Mar-19	14-Apr-19	27-Jun-20	27-Jun-20	04-Mar-19	21-Aug-19	
DSFSP.0.043	Comment on FSP / Meeting With Engineer	28	15-Apr-19	12-May-19	27-Jun-20	27-Jun-20	15-Apr-19	26-Nov-19	
DSFSP.0.044	Resubmission of FSP	14	13-May-19	26-May-19	27-Jun-20	27-Jun-20	13-May-19	13-Jan-20	
DSFSP.0.045	Approval of FSP Proposal	28	03-Feb-20	01-Mar-20	27-Jun-20	25-Jul-20	14-Jan-20		145
Detection System		364	04-Mar-19	01-Mar-20	05-Jul-20	02-Aug-20	04-Mar-19		154
DSFSP.0.046	Preparation & Submission of Detection System FSP for TKO-LTT TCSS and CBL TCSS	42	04-Mar-19	14-Apr-19	05-Jul-20	05-Jul-20	04-Mar-19	28-Aug-19	
DSFSP.0.047	Comment on FSP / Meeting With Engineer	28	15-Apr-19	12-May-19	05-Jul-20	05-Jul-20	15-Apr-19	10-Sep-19	
DSFSP.0.048	Resubmission of FSP	14	13-May-19	26-May-19	05-Jul-20	05-Jul-20	13-May-19	24-Jan-20	
DSFSP.0.049	Approval of FSP Proposal	28	03-Feb-20	01-Mar-20	05-Jul-20	02-Aug-20	25-Jan-20		154
Manual Fallback System		112	04-Mar-19	23-Jun-19	19-Dec-20	19-Dec-20	04-Mar-19	07-Jan-20	
DSFSP.0.050	Preparation & Submission of Manual Fallback System FSP for TKO-LTT TCSS and CBL TCSS	42	04-Mar-19	14-Apr-19	19-Dec-20	19-Dec-20	04-Mar-19	16-Aug-19	
DSFSP.0.051	Comment on FSP / Meeting With Engineer	28	15-Apr-19	12-May-19	19-Dec-20	19-Dec-20	15-Apr-19	10-Sep-19	
DSFSP.0.052	Resubmission of FSP	14	13-May-19	26-May-19	19-Dec-20	19-Dec-20	13-May-19	10-Oct-19	
DSFSP.0.053	Approval of FSP Proposal	28	27-May-19	23-Jun-19	19-Dec-20	19-Dec-20	27-May-19	07-Jan-20	
Operation Facilities		378	04-Mar-19	15-Mar-20	19-Sep-20	30-Oct-20	04-Mar-19		229
DSFSP.0.054	Preparation & Submission of Operation Facilites FSP for TKO-LTT TCSS and CBL TCSS	42	04-Mar-19	14-Apr-19	19-Sep-20	19-Sep-20	04-Mar-19	13-Aug-19	
DSFSP.0.055	Comment on FSP / Meeting With Engineer	28	15-Apr-19	12-May-19	19-Sep-20	19-Sep-20	15-Apr-19	15-Oct-19	
DSFSP.0.056	Resubmission of FSP	14	03-Feb-20	16-Feb-20	19-Sep-20	02-Oct-20	16-Oct-19		229
DSFSP.0.057	Approval of FSP Proposal	28	17-Feb-20	15-Mar-20	03-Oct-20	30-Oct-20			229
Power Distribution System		378	01-Apr-19	12-Apr-20	21-May-20	30-Jul-20	01-Apr-19		108
DSFSP.0.058	Preparation & Submission of Power Distribution System FSP for TKO-LTT TCSS and CBL TCSS	42	01-Apr-19	12-May-19	21-May-20	21-May-20	01-Apr-19	16-Jan-20	
DSFSP.0.059	Comment on FSP / Meeting With Engineer	28	03-Feb-20	01-Mar-20	21-May-20	18-Jun-20	17-Jan-20		108
DSFSP.0.060	Resubmission of FSP	14	02-Mar-20	15-Mar-20	18-Jun-20	02-Jul-20			108
DSFSP.0.061	Approval of FSP Proposal	28	16-Mar-20	12-Apr-20	02-Jul-20	30-Jul-20			108
Speed Enforcement System		112	03-Feb-20	24-May-20	24-Jul-20	13-Nov-20	29-Nov-19		173
DSFSP.0.062	Preparation & Submission of Speed Enforcement System FSP for TKO-LTT TCSS and CBL TCSS	42	03-Feb-20	15-Mar-20	24-Jul-20	04-Sep-20	29-Nov-19		173
DSFSP.0.063	Comment on FSP / Meeting With Engineer	28	16-Mar-20	12-Apr-20	04-Sep-20	02-Oct-20			173
DSFSP.0.064	Resubmission of FSP	14	13-Apr-20	26-Apr-20	02-Oct-20	16-Oct-20			173
DSFSP.0.065	Approval of FSP Proposal	28	27-Apr-20	24-May-20	16-Oct-20	13-Nov-20			173
Optical Fibre System		112	04-Mar-19	23-Jun-19	22-Sep-20	22-Sep-20	04-Mar-19	19-Dec-19	
DSFSP.0.066	Preparation & Submission of Optical Fibre System FSP for TKO-LTT TCSS and CBL TCSS	42	04-Mar-19	14-Apr-19	22-Sep-20	22-Sep-20	04-Mar-19	15-Jul-19	
DSFSP.0.067	Comment on FSP / Meeting With Engineer	28	15-Apr-19	12-May-19	22-Sep-20	22-Sep-20	15-Apr-19	19-Aug-19	
DSFSP.0.068	Resubmission of FSP	14	13-May-19	26-May-19	22-Sep-20	22-Sep-20	13-May-19	11-Dec-19	
DSFSP.0.069	Approval of FSP Proposal	28	27-May-19	23-Jun-19	22-Sep-20	22-Sep-20	27-May-19	19-Dec-19	
Preparation of Functional Design Specification (FDS)		319	28-Apr-19	11-Mar-20	17-Feb-20	26-Mar-20	28-Apr-19		15
Preparation of Software Project Plan (SPP)		28	28-Apr-19	25-May-19	17-Feb-20	17-Feb-20	28-Apr-19	28-Apr-19	
DSFDS.0.01	Software Development Programme	28	28-Apr-19	25-May-19	17-Feb-20	17-Feb-20	28-Apr-19	28-Apr-19	
DSFDS.0.02	Software Configuration Management Plan	28	28-Apr-19	25-May-19	17-Feb-20	17-Feb-20	28-Apr-19	28-Apr-19	
DSFDS.0.03	Software Verification and Validation Plan	28	28-Apr-19	25-May-19	17-Feb-20	17-Feb-20	28-Apr-19	28-Apr-19	
Preparation of Software Architect Document		35	28-Apr-19	01-Jun-19	17-Feb-20	17-Feb-20	28-Apr-19	28-Apr-19	
DSFDS.0.04	Preparation of Software Architect Document	35	28-Apr-19	01-Jun-19	17-Feb-20	17-Feb-20	28-Apr-19	28-Apr-19	
Preparation of Software requirment Specification		35	28-Apr-19	01-Jun-19	17-Feb-20	17-Feb-20	28-Apr-19	28-Apr-19	
DSFDS.0.05	Preparation of Software Requirment Speccification	35	28-Apr-19	01-Jun-19	17-Feb-20	17-Feb-20	28-Apr-19	28-Apr-19	
Preparation & Submission of Function Design Specification (FDS)		291	26-May-19	11-Mar-20	17-Feb-20	26-Mar-20	29-Apr-19		15
DSFDS.0.06	Preparation of Submission of Function Design Speccification (FDS)	40	26-May-19	04-Jul-19	17-Feb-20	27-Feb-20	29-Apr-19		15
DSFDS.0.07	Comment on FDS / Discussion with Engineer	14	13-Feb-20	26-Feb-20	27-Feb-20	12-Mar-20			15
DSFDS.0.08	Resubmission of FDS	7	27-Feb-20	04-Mar-20	12-Mar-20	19-Mar-20			15
DSFDS.0.09	Approval of FDS	7	05-Mar-20	11-Mar-20	19-Mar-20	26-Mar-20			15
Software Development (except GUI) for TKO-LTT TCSS and CBL TCSS		429	23-Nov-18	25-Jan-20	24-Nov-20	03-Dec-23	23-Nov-18	25-Jan-20	
DSSWD.0.01	Analysis of New Functionality	54	23-Nov-18	15-Jan-19	24-Nov-20	24-Nov-20	23-Nov-18	15-Jan-19	
DSSWD.0.02	Start Development of Application Software	0	31-May-19	31-May-19	24-Nov-20	24-Nov-20	31-May-19	31-May-19	
DSSWD.0.03	Detailed Design of Software Changes	66	31-May-19	04-Aug-19	24-Nov-20	24-Nov-20	31-May-19	26-Dec-19	
DSSWD.0.04	Prepare Design of Software Tractability Matrix w.r.t. Specifications	10	05-Aug-19	14-Aug-19	24-Nov-20	24-Nov-20	05-Aug-19	26-Dec-19	
DSSWD.0.05	S/W Module Coding	190	31-May-19	06-Dec-19	24-Nov-20	24-Nov-20	31-May-19	06-Dec-19	
DSSWD.0.06	Configuration / Interface with other TCSS Systems / Equipment	33	03-Nov-19	06-Dec-19	24-Nov-20	24-Nov-20	03-Nov-19	06-Dec-19	
DSSWD.0.07	Software Module Testing	20	06-Dec-19	26-Dec-19	24-Nov-20	24-Nov-20	06-Dec-19	26-Dec-19	
DSSWD.0.08	Completion of SW Unit Test Record	0	26-Dec-19	26-Dec-19	24-Nov-20	24-Nov-20	26-Dec-19	26-Dec-19	
DSSWD.0.09	Software Integration Test	20	26-Dec-19	15-Jan-20	24-Nov-20	24-Nov-20	26-Dec-19	15-Jan-20	
DSSWD.0.10	Completion of SW Validation Report	0	15-Jan-20	15-Jan-20	24-Nov-20	24-Nov-20	15-Jan-20	15-Jan-20	
DSSWD.0.11	System Integration Test / Complete SW Coding Validation	10	15-Jan-20	25-Jan-20	24-Nov-20	24-Nov-20	15-Jan-20	25-Jan-20	
DSSWD.0.12	Completion of SW Coding Validation	0	25-Jan-20	25-Jan-20	24-Nov-20	24-Nov-20	25-Jan-20	25-Jan-20	
DSSWD.0.13	Software Development Completion	0	25-Jan-20	25-Jan-20	24-Nov-20	24-Nov-20	25-Jan-20	25-Jan-20	
Allocation of New Functionality to Existing or New Modules		135	16-Jan-19	30-May-19	24-Nov-20	24-Nov-20	16-Jan-19	30-May-19	
DSSWD.0.014	Review	45	16-Jan-19	01-Mar-19	24-Nov-20	24-Nov-20	16-Jan-19	01-Mar-19	
DSSWD.0.015	Formulation	45	02-Mar-19	15-Apr-19	24-Nov-20	24-Nov-20	02-Mar-19	15-Apr-19	
DSSWD.0.016	Allocation	45	16-Apr-19	30-May-19	24-Nov-20	24-Nov-20	16-Apr-19	30-May-19	
Traffic Plan Coding		240	31-May-19	25-Jan-20	24-Nov-20	03-Dec-23	31-May-19	25-Jan-20	
DSSWD.0.017	Preparation	70	31-May-19	08-Aug-19	24-Nov-20	24-Nov-20	31-May-19	08-Aug-19	
DSSWD.0.018	Plan Coding	130	09-Aug-19	16-Dec-19	03-Dec-23	03-Dec-23	09-Aug-19	16-Dec-19	
DSSWD.0.019	Plan Verification	25	17-Dec-19	10-Jan-20	03-Dec-23	03-Dec-23	17-Dec-19	10-Jan-20	
DSSWD.0.020	Plan Finalization	15	11-Jan-20	25-Jan-20	03-Dec-23	03-Dec-23	11-Jan-20	25-Jan-20	
GUI Development for TKO-LTT TCSS and CBL TCSS		240	31-May-19	26-Jan-20	24-Nov-20	03-Dec-23	31-May-19	26-Jan-20	
DSGUI.0.01	Develop GUI	190	31-May-19	06-Dec-19	03-Dec-23	03-Dec-23	31-May-19	06-Dec-19	
DSGUI.0.02	Base Map Drawing	20	31-May-19	19-Jun-19	24-Nov-20	24-Nov-20	31-May-19	19-Jun-19	
DSGUI.0.03	Develop GUI Prototype	25	20-Jun-19	14-Jul-19	24-Nov-20	24-Nov-20	20-Jun-19	14-Jul-19	
DSGUI.0.04	Prepare GUI Demonstration	5	15-Jul-19	19-Jul-19	24-Nov-20	24-Nov-20	15-Jul-19	19-Jul-19	
DSGUI.0.05	Review and Finalization of GUI	140	20-Jul-19	06-Dec-19	24-Nov-20	24-Nov-20	20-Jul-19	06-Dec-19	
DSGUI.0.06	Development of Detailed Display	50	07-Dec-19	25-Jan-20	03-Dec-23	03-Dec-23	07-Dec-19	25-Jan-20	
DSGUI.0.07	Prpulate Base Map with Icons	50	07-Dec-19	25-Jan-20	03-Dec-23	03-Dec-23	07-Dec-19	25-Jan-20	
DSGUI.0.08	Development of Page Based Display	50	07-Dec-19	25-Jan-20	24-Nov-20	24-Nov-20	07-Dec-19	25-Jan-20	
DSGUI.0.09	GUI Development Completion	0	26-Jan-20	26-Jan-20	24-Nov-20	24-Nov-20	26-Jan-20	26-Jan-20	
Preparation / Submission of FAT Procedures		210	03-Feb-20	30-Aug-20	25-Jul-20	26-Mar-21			208
Central System		98	03-Feb-20	10-May-20	18-Aug-20	24-Nov-20			198



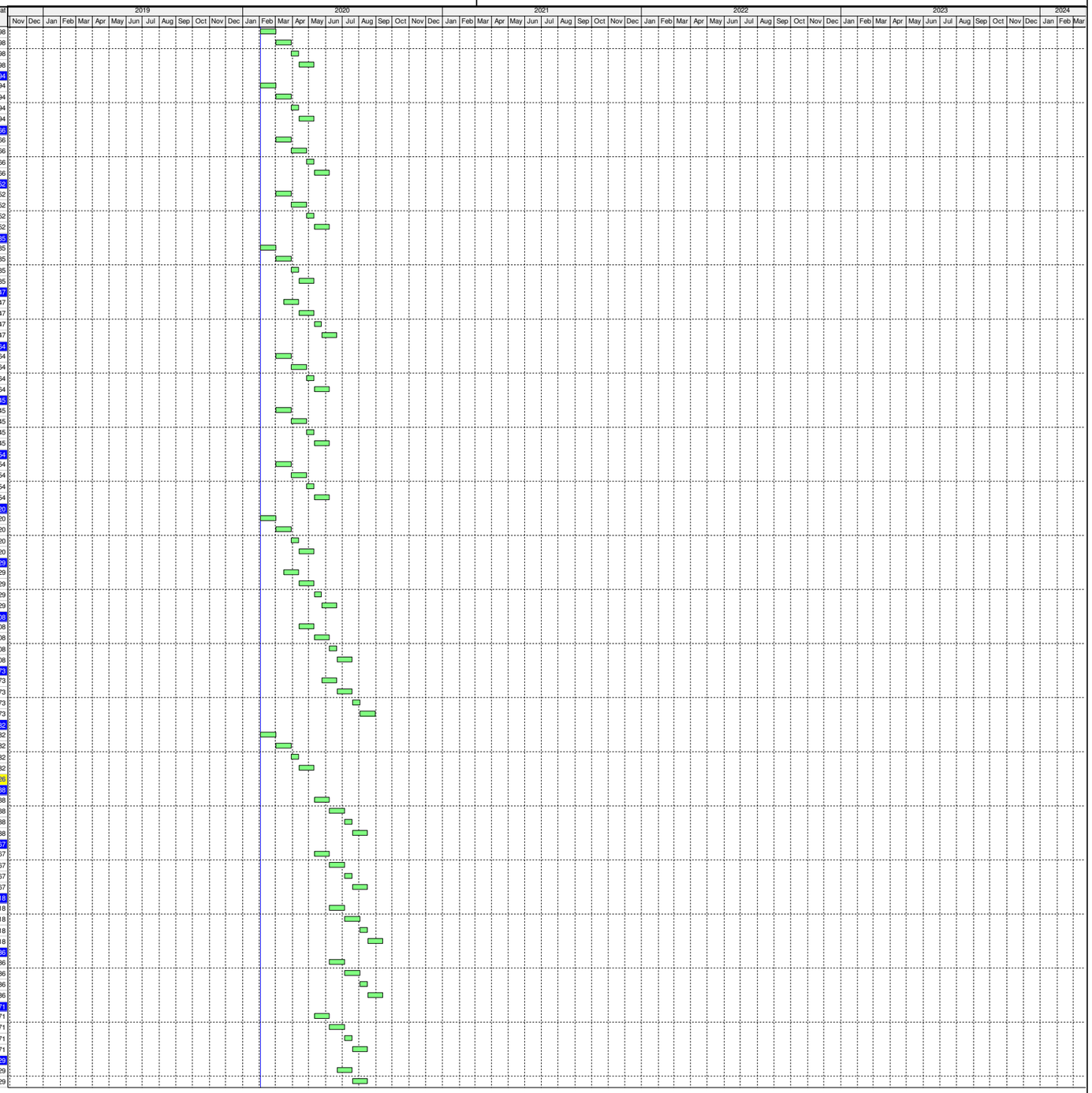
Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

Detailed Works Programme

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
DSFAT.0.01	Preparation & Submission of Central System FAT Procedure	28	03-Feb-20	01-Mar-20	18-Aug-20	15-Sep-20			198
DSFAT.0.02	Comment on FAT Procedure / Meeting With Engineer	28	02-Mar-20	29-Mar-20	15-Sep-20	13-Oct-20			198
DSFAT.0.03	Resubmission of FAT Procedure	14	30-Mar-20	12-Apr-20	13-Oct-20	27-Oct-20			198
DSFAT.0.04	Approval of FAT Procedure	28	13-Apr-20	10-May-20	27-Oct-20	24-Nov-20			198
Traffic Control Devices		98	03-Feb-20	10-May-20	14-Aug-20	20-Nov-20			194
DSFAT.0.05	Preparation & Submission of Traffic Control Devices FAT Procedure	28	03-Feb-20	01-Mar-20	14-Aug-20	11-Sep-20			194
DSFAT.0.06	Comment on FAT Procedure / Meeting With Engineer	28	02-Mar-20	29-Mar-20	11-Sep-20	09-Oct-20			194
DSFAT.0.07	Resubmission of FAT Procedure	14	30-Mar-20	12-Apr-20	09-Oct-20	23-Oct-20			194
DSFAT.0.08	Approval of FAT Procedure	28	13-Apr-20	10-May-20	23-Oct-20	20-Nov-20			194
Communication System		98	02-Mar-20	07-Jun-20	15-Aug-20	21-Nov-20			166
DSFAT.0.09	Preparation & Submission of Communication System FAT Procedure	28	02-Mar-20	29-Mar-20	15-Aug-20	12-Sep-20			166
DSFAT.0.10	Comment on FAT Procedure / Meeting With Engineer	28	30-Mar-20	26-Apr-20	12-Sep-20	10-Oct-20			166
DSFAT.0.11	Resubmission of FAT Procedure	14	27-Apr-20	10-May-20	10-Oct-20	24-Oct-20			166
DSFAT.0.12	Approval of FAT Procedure	28	11-May-20	07-Jun-20	24-Oct-20	21-Nov-20			166
CCTV System		98	02-Mar-20	07-Jun-20	31-Jul-20	06-Nov-20			152
DSFAT.0.013	Preparation & Submission of CCTV System FAT Procedure	28	02-Mar-20	29-Mar-20	31-Jul-20	28-Aug-20			152
DSFAT.0.014	Comment on FAT Procedure / Meeting With Engineer	28	30-Mar-20	26-Apr-20	28-Aug-20	25-Sep-20			152
DSFAT.0.015	Resubmission of FAT Procedure	14	27-Apr-20	10-May-20	25-Sep-20	09-Oct-20			152
DSFAT.0.016	Approval of FAT Procedure	28	11-May-20	07-Jun-20	09-Oct-20	06-Nov-20			152
Building PABX System		98	03-Feb-20	10-May-20	06-Aug-20	12-Nov-20			185
DSFAT.0.017	Preparation & Submission of Building PABX System FAT Procedure	28	03-Feb-20	01-Mar-20	06-Aug-20	03-Sep-20			185
DSFAT.0.018	Comment on FAT Procedure / Meeting With Engineer	28	02-Mar-20	29-Mar-20	03-Sep-20	01-Oct-20			185
DSFAT.0.019	Resubmission of FAT Procedure	14	30-Mar-20	12-Apr-20	01-Oct-20	15-Oct-20			185
DSFAT.0.020	Approval of FAT Procedure	28	13-Apr-20	10-May-20	15-Oct-20	12-Nov-20			185
Emergency Telephone System		98	16-Mar-20	21-Jun-20	09-Aug-20	15-Nov-20			147
DSFAT.0.021	Preparation & Submission of Emergency Telephone System FAT Procedure	28	16-Mar-20	12-Apr-20	09-Aug-20	06-Sep-20			147
DSFAT.0.022	Comment on FAT Procedure / Meeting With Engineer	28	13-Apr-20	10-May-20	06-Sep-20	04-Oct-20			147
DSFAT.0.023	Resubmission of FAT Procedure	14	11-May-20	24-May-20	04-Oct-20	18-Oct-20			147
DSFAT.0.024	Approval of FAT Procedure	28	25-May-20	21-Jun-20	18-Oct-20	15-Nov-20			147
Public Address System		98	02-Mar-20	07-Jun-20	12-Aug-20	18-Nov-20			164
DSFAT.0.025	Preparation & Submission of Public Address System FAT Procedure	28	02-Mar-20	29-Mar-20	12-Aug-20	09-Sep-20			164
DSFAT.0.026	Comment on FAT Procedure / Meeting With Engineer	28	30-Mar-20	26-Apr-20	09-Sep-20	07-Oct-20			164
DSFAT.0.027	Resubmission of FAT Procedure	14	27-Apr-20	10-May-20	07-Oct-20	21-Oct-20			164
DSFAT.0.028	Approval of FAT Procedure	28	11-May-20	07-Jun-20	21-Oct-20	18-Nov-20			164
Radio System		98	02-Mar-20	07-Jun-20	25-Jul-20	31-Oct-20			145
DSFAT.0.029	Preparation & Submission of Radio System FAT Procedure	28	02-Mar-20	29-Mar-20	25-Jul-20	22-Aug-20			145
DSFAT.0.030	Comment on FAT Procedure / Meeting With Engineer	28	30-Mar-20	26-Apr-20	22-Aug-20	19-Sep-20			145
DSFAT.0.031	Resubmission of FAT Procedure	14	27-Apr-20	10-May-20	19-Sep-20	03-Oct-20			145
DSFAT.0.032	Approval of FAT Procedure	28	11-May-20	07-Jun-20	03-Oct-20	31-Oct-20			145
Detection System		98	02-Mar-20	07-Jun-20	02-Aug-20	08-Nov-20			154
DSFAT.0.033	Preparation & Submission of Detection System FAT Procedure	28	02-Mar-20	29-Mar-20	02-Aug-20	30-Aug-20			154
DSFAT.0.034	Comment on FAT Procedure / Meeting With Engineer	28	30-Mar-20	26-Apr-20	30-Aug-20	27-Sep-20			154
DSFAT.0.035	Resubmission of FAT Procedure	14	27-Apr-20	10-May-20	27-Sep-20	11-Oct-20			154
DSFAT.0.036	Approval of FAT Procedure	28	11-May-20	07-Jun-20	11-Oct-20	08-Nov-20			154
Manual Fallback System		98	03-Feb-20	10-May-20	19-Dec-20	26-Mar-21			320
DSFAT.0.037	Preparation & Submission of Manual Fallback System FAT Procedure	28	03-Feb-20	01-Mar-20	19-Dec-20	15-Jan-21			320
DSFAT.0.038	Comment on FAT Procedure / Meeting With Engineer	28	02-Mar-20	29-Mar-20	16-Jan-21	12-Feb-21			320
DSFAT.0.039	Resubmission of FAT Procedure	14	30-Mar-20	12-Apr-20	13-Feb-21	26-Feb-21			320
DSFAT.0.040	Approval of FAT Procedure	28	13-Apr-20	10-May-20	27-Feb-21	26-Mar-21			320
Operation Facilities		98	16-Mar-20	21-Jun-20	31-Oct-20	05-Feb-21			229
DSFAT.0.041	Preparation & Submission of Operation Facilites FAT Procedure	28	16-Mar-20	12-Apr-20	31-Oct-20	27-Nov-20			229
DSFAT.0.042	Comment on FAT Procedure / Meeting With Engineer	28	13-Apr-20	10-May-20	28-Nov-20	25-Dec-20			229
DSFAT.0.043	Resubmission of FAT Procedure	14	11-May-20	24-May-20	26-Dec-20	08-Jan-21			229
DSFAT.0.044	Approval of FAT Procedure	28	25-May-20	21-Jun-20	09-Jan-21	05-Feb-21			229
Power Distribution System		98	13-Apr-20	19-Jul-20	30-Jul-20	05-Nov-20			108
DSFAT.0.045	Preparation & Submission of Power Distribution System FAT Procedure	28	13-Apr-20	10-May-20	30-Jul-20	27-Aug-20			108
DSFAT.0.046	Comment on FAT Procedure / Meeting With Engineer	28	11-May-20	07-Jun-20	27-Aug-20	24-Sep-20			108
DSFAT.0.047	Resubmission of FAT Procedure	14	08-Jun-20	21-Jun-20	24-Sep-20	08-Oct-20			108
DSFAT.0.048	Approval of FAT Procedure	28	22-Jun-20	19-Jul-20	08-Oct-20	05-Nov-20			108
Speed Enforcement System		98	25-May-20	30-Aug-20	13-Nov-20	19-Feb-21			173
DSFAT.0.049	Preparation & Submission of Speed Enforcement System FAT Procedure	28	25-May-20	21-Jun-20	13-Nov-20	11-Dec-20			173
DSFAT.0.050	Comment on FAT Procedure / Meeting With Engineer	28	22-Jun-20	19-Jul-20	11-Dec-20	08-Jan-21			173
DSFAT.0.051	Resubmission of FAT Procedure	14	20-Jul-20	02-Aug-20	08-Jan-21	22-Jan-21			173
DSFAT.0.052	Approval of FAT Procedure	28	03-Aug-20	30-Aug-20	22-Jan-21	19-Feb-21			173
Optical Fibre system		98	03-Feb-20	10-May-20	22-Sep-20	28-Dec-20			232
DSFAT.0.053	Preparation & Submission of Optical Fibre System FAT Procedure	28	03-Feb-20	01-Mar-20	22-Sep-20	19-Oct-20			232
DSFAT.0.054	Comment on FAT Procedure / Meeting With Engineer	28	02-Mar-20	29-Mar-20	20-Oct-20	16-Nov-20			232
DSFAT.0.055	Resubmission of FAT Procedure	14	30-Mar-20	12-Apr-20	17-Nov-20	30-Nov-20			232
DSFAT.0.056	Approval of FAT Procedure	28	13-Apr-20	10-May-20	01-Dec-20	28-Dec-20			232
Preparation / Submission of SCT Procedures		210	11-May-20	06-Dec-20	15-Dec-20	24-Aug-22			626
Central System		98	11-May-20	16-Aug-20	18-May-22	24-Aug-22			738
DSSCT.0.01	Preparation & Submission of Central System SCT Procedure	28	11-May-20	07-Jun-20	18-May-22	15-Jun-22			738
DSSCT.0.02	Comment on SCT Procedure / Meeting With Engineer	28	08-Jun-20	05-Jul-20	15-Jun-22	13-Jul-22			738
DSSCT.0.03	Resubmission of SCT Procedure	14	06-Jul-20	19-Jul-20	13-Jul-22	27-Jul-22			738
DSSCT.0.04	Approval of SCT Procedure	28	20-Jul-20	16-Aug-20	27-Jul-22	24-Aug-22			738
Traffic Control Devices		98	11-May-20	16-Aug-20	02-Feb-21	10-May-21			267
DSSCT.0.05	Preparation & Submission of Traffic Control System SCT Procedure	28	11-May-20	07-Jun-20	02-Feb-21	01-Mar-21			267
DSSCT.0.06	Comment on SCT Procedure / Meeting With Engineer	28	08-Jun-20	05-Jul-20	02-Mar-21	29-Mar-21			267
DSSCT.0.07	Resubmission of SCT Procedure	14	06-Jul-20	19-Jul-20	30-Mar-21	12-Apr-21			267
DSSCT.0.08	Approval of SCT Procedure	28	20-Jul-20	16-Aug-20	13-Apr-21	10-May-21			267
Communication System		98	08-Jun-20	13-Sep-20	12-Jan-21	19-Apr-21			218
DSSCT.0.09	Preparation & Submission of Communication System SCT Procedure	28	08-Jun-20	05-Jul-20	12-Jan-21	08-Feb-21			218
DSSCT.0.10	Comment on SCT Procedure / Meeting With Engineer	28	06-Jul-20	02-Aug-20	09-Feb-21	08-Mar-21			218
DSSCT.0.11	Resubmission of SCT Procedure	14	03-Aug-20	16-Aug-20	09-Mar-21	22-Mar-21			218
DSSCT.0.12	Approval of SCT Procedure	28	17-Aug-20	13-Sep-20	23-Mar-21	19-Apr-21			218
CCTV System		98	08-Jun-20	13-Sep-20	30-Jan-21	07-May-21			236
DSSCT.0.013	Preparation & Submission of CCTV System SCT Procedure	28	08-Jun-20	05-Jul-20	30-Jan-21	26-Feb-21			236
DSSCT.0.014	Comment on SCT Procedure / Meeting With Engineer	28	06-Jul-20	02-Aug-20	27-Feb-21	26-Mar-21			236
DSSCT.0.015	Resubmission of SCT Procedure	14	03-Aug-20	16-Aug-20	27-Mar-21	09-Apr-21			236
DSSCT.0.016	Approval of SCT Procedure	28	17-Aug-20	13-Sep-20	10-Apr-21	07-May-21			236
Building PABX System		98	11-May-20	16-Aug-20	06-Feb-21	14-May-21			271
DSSCT.0.017	Preparation & Submission of Building PABX System SCT Procedure	28	11-May-20	07-Jun-20	06-Feb-21	05-Mar-21			271
DSSCT.0.018	Comment on SCT Procedure / Meeting With Engineer	28	08-Jun-20	05-Jul-20	06-Mar-21	02-Apr-21			271
DSSCT.0.019	Resubmission of SCT Procedure	14	06-Jul-20	19-Jul-20	03-Apr-21	16-Apr-21			271
DSSCT.0.020	Approval of SCT Procedure	28	20-Jul-20	16-Aug-20	17-Apr-21	14-May-21			271
Emergency Telephone System		98	22-Jun-20	27-Sep-20	06-Feb-21	14-May-21			229
DSSCT.0.021	Preparation & Submission of Emergency Telephone System SCT Procedure	28	22-Jun-20	19-Jul-20	06-Feb-21	05-Mar-21			229
DSSCT.0.022	Comment on SCT Procedure / Meeting With Engineer	28	20-Jul-20	16-Aug-20	06-Mar-21	02-Apr-21			229



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

Detailed Works Programme

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
DSSCT.0.023	Resubmission of SCT Procedure	14	17-Aug-20	30-Aug-20	03-Apr-21	16-Apr-21			229
DSSCT.0.024	Approval of SCT Procedure	28	31-Aug-20	27-Sep-20	17-Apr-21	14-May-21			229
Public Address System		98	08-Jun-20	13-Sep-20	13-Feb-21	21-May-21			250
DSSCT.0.025	Preparation & Submission of Public Address System SCT Procedure	28	08-Jun-20	05-Jul-20	13-Feb-21	12-Mar-21			250
DSSCT.0.026	Comment on SCT Procedure / Meeting With Engineer	28	06-Jul-20	02-Aug-20	13-Mar-21	09-Apr-21			250
DSSCT.0.027	Resubmission of SCT Procedure	14	03-Aug-20	16-Aug-20	10-Apr-21	23-Apr-21			250
DSSCT.0.028	Approval of SCT Procedure	28	17-Aug-20	13-Sep-20	24-Apr-21	21-May-21			250
Radio System		98	08-Jun-20	13-Sep-20	06-Mar-21	11-Jun-21			271
DSSCT.0.029	Preparation & Submission of Radio System SCT Procedure	28	08-Jun-20	05-Jul-20	06-Mar-21	02-Apr-21			271
DSSCT.0.030	Comment on SCT Procedure / Meeting With Engineer	28	06-Jul-20	02-Aug-20	03-Apr-21	30-Apr-21			271
DSSCT.0.031	Resubmission of SCT Procedure	14	03-Aug-20	16-Aug-20	01-May-21	14-May-21			271
DSSCT.0.032	Approval of SCT Procedure	28	17-Aug-20	13-Sep-20	15-May-21	11-Jun-21			271
Detection System		98	08-Jun-20	13-Sep-20	28-Jan-21	05-May-21			234
DSSCT.0.033	Preparation & Submission of Detection System SCT Procedure	28	08-Jun-20	05-Jul-20	28-Jan-21	24-Feb-21			234
DSSCT.0.034	Comment on SCT Procedure / Meeting With Engineer	28	06-Jul-20	02-Aug-20	25-Feb-21	24-Mar-21			234
DSSCT.0.035	Resubmission of SCT Procedure	14	03-Aug-20	16-Aug-20	25-Mar-21	07-Apr-21			234
DSSCT.0.036	Approval of SCT Procedure	28	17-Aug-20	13-Sep-20	08-Apr-21	05-May-21			234
Manual Fallback System		98	11-May-20	16-Aug-20	27-Mar-21	02-Jul-21			320
DSSCT.0.037	Preparation & Submission of Manual Fallback System SCT Procedure	28	11-May-20	07-Jun-20	27-Mar-21	23-Apr-21			320
DSSCT.0.038	Comment on SCT Procedure / Meeting With Engineer	28	08-Jun-20	05-Jul-20	24-Apr-21	21-May-21			320
DSSCT.0.039	Resubmission of SCT Procedure	14	06-Jul-20	19-Jul-20	22-May-21	04-Jun-21			320
DSSCT.0.040	Approval of SCT Procedure	28	20-Jul-20	16-Aug-20	05-Jun-21	02-Jul-21			320
Operation Facilities		98	22-Jun-20	27-Sep-20	06-Feb-21	14-May-21			229
DSSCT.0.041	Preparation & Submission of Operation Facilites SCT Procedure	28	22-Jun-20	19-Jul-20	06-Feb-21	05-Mar-21			229
DSSCT.0.042	Comment on SCT Procedure / Meeting With Engineer	28	20-Jul-20	16-Aug-20	06-Mar-21	02-Apr-21			229
DSSCT.0.043	Resubmission of SCT Procedure	14	17-Aug-20	30-Aug-20	03-Apr-21	16-Apr-21			229
DSSCT.0.044	Approval of SCT Procedure	28	31-Aug-20	27-Sep-20	17-Apr-21	14-May-21			229
Power Distribution System		98	20-Jul-20	25-Oct-20	15-Dec-20	22-Mar-21			148
DSSCT.0.045	Preparation & Submission of Power Distribution System SCT Procedure	28	20-Jul-20	16-Aug-20	15-Dec-20	11-Jan-21			148
DSSCT.0.046	Comment on SCT Procedure / Meeting With Engineer	28	17-Aug-20	13-Sep-20	12-Jan-21	08-Feb-21			148
DSSCT.0.047	Resubmission of SCT Procedure	14	14-Sep-20	27-Sep-20	09-Feb-21	22-Feb-21			148
DSSCT.0.048	Approval of SCT Procedure	28	28-Sep-20	25-Oct-20	23-Feb-21	22-Mar-21			148
Speed Enforcement System		98	31-Aug-20	06-Dec-20	20-Mar-21	25-Jun-21			201
DSSCT.0.049	Preparation & Submission of Speed Enforcement System SCT Procedure	28	31-Aug-20	27-Sep-20	20-Mar-21	16-Apr-21			201
DSSCT.0.050	Comment on SCT Procedure / Meeting With Engineer	28	28-Sep-20	25-Oct-20	17-Apr-21	14-May-21			201
DSSCT.0.051	Resubmission of SCT Procedure	14	26-Oct-20	08-Nov-20	15-May-21	28-May-21			201
DSSCT.0.052	Approval of SCT Procedure	28	09-Nov-20	06-Dec-20	29-May-21	25-Jun-21			201
Optical Fibre system		98	11-May-20	16-Aug-20	29-Dec-20	05-Apr-21			232
DSSCT.0.053	Preparation & Submission of Optical Fibre System SCT Procedure	28	11-May-20	07-Jun-20	29-Dec-20	25-Jan-21			232
DSSCT.0.054	Comment on SCT Procedure / Meeting With Engineer	28	08-Jun-20	05-Jul-20	26-Jan-21	22-Feb-21			232
DSSCT.0.055	Resubmission of SCT Procedure	14	06-Jul-20	19-Jul-20	23-Feb-21	08-Mar-21			232
DSSCT.0.056	Approval of SCT Procedure	28	20-Jul-20	16-Aug-20	09-Mar-21	05-Apr-21			232
Preparation / Submission of SAT Procedures		210	17-Aug-20	14-Mar-21	23-Mar-21	30-Nov-22			626
Central System		98	17-Aug-20	22-Nov-20	24-Aug-22	30-Nov-22			738
DSSAT.0.01	Preparation & Submission of Central System SAT Procedure	28	17-Aug-20	13-Sep-20	24-Aug-22	21-Sep-22			738
DSSAT.0.02	Comment on SAT Procedure / Meeting With Engineer	28	14-Sep-20	11-Oct-20	21-Sep-22	19-Oct-22			738
DSSAT.0.03	Resubmission of SAT Procedure	14	12-Oct-20	25-Oct-20	19-Oct-22	02-Nov-22			738
DSSAT.0.04	Approval of SAT Procedure	28	26-Oct-20	22-Nov-20	02-Nov-22	30-Nov-22			738
Traffic control Devices		98	17-Aug-20	22-Nov-20	11-May-21	16-Aug-21			267
DSSAT.0.05	Preparation & Submission of Traffic Control System SAT Procedure	28	17-Aug-20	13-Sep-20	11-May-21	07-Jun-21			267
DSSAT.0.06	Comment on SAT Procedure / Meeting With Engineer	28	14-Sep-20	11-Oct-20	08-Jun-21	05-Jul-21			267
DSSAT.0.07	Resubmission of SAT Procedure	14	12-Oct-20	25-Oct-20	06-Jul-21	19-Jul-21			267
DSSAT.0.08	Approval of SAT Procedure	28	26-Oct-20	22-Nov-20	20-Jul-21	16-Aug-21			267
Communication System		98	14-Sep-20	20-Dec-20	20-Apr-21	26-Jul-21			218
DSSAT.0.09	Preparation & Submission of Communication System SAT Procedure	28	14-Sep-20	11-Oct-20	20-Apr-21	17-May-21			218
DSSAT.0.10	Comment on SAT Procedure / Meeting With Engineer	28	12-Oct-20	08-Nov-20	18-May-21	14-Jun-21			218
DSSAT.0.11	Resubmission of SAT Procedure	14	09-Nov-20	22-Nov-20	15-Jun-21	28-Jun-21			218
DSSAT.0.12	Approval of SAT Procedure	28	23-Nov-20	20-Dec-20	29-Jun-21	26-Jul-21			218
CCTV System		98	14-Sep-20	20-Dec-20	08-May-21	13-Aug-21			236
DSSAT.0.013	Preparation & Submission of CCTV System SAT Procedure	28	14-Sep-20	11-Oct-20	08-May-21	04-Jun-21			236
DSSAT.0.014	Comment on SAT Procedure / Meeting With Engineer	28	12-Oct-20	08-Nov-20	05-Jun-21	02-Jul-21			236
DSSAT.0.015	Resubmission of SAT Procedure	14	09-Nov-20	22-Nov-20	03-Jul-21	16-Jul-21			236
DSSAT.0.016	Approval of SAT Procedure	28	23-Nov-20	20-Dec-20	17-Jul-21	13-Aug-21			236
Building PABX System		98	17-Aug-20	22-Nov-20	15-May-21	20-Aug-21			271
DSSAT.0.017	Preparation & Submission of Building PABX System SAT Procedure	28	17-Aug-20	13-Sep-20	15-May-21	11-Jun-21			271
DSSAT.0.018	Comment on SAT Procedure / Meeting With Engineer	28	14-Sep-20	11-Oct-20	12-Jun-21	09-Jul-21			271
DSSAT.0.019	Resubmission of SAT Procedure	14	12-Oct-20	25-Oct-20	10-Jul-21	23-Jul-21			271
DSSAT.0.020	Approval of SAT Procedure	28	26-Oct-20	22-Nov-20	24-Jul-21	20-Aug-21			271
Emergancy Telephone System		98	28-Sep-20	03-Jan-21	15-May-21	20-Aug-21			229
DSSAT.0.021	Preparation & Submission of Emergancy Telephone System SAT Procedure	28	28-Sep-20	25-Oct-20	15-May-21	11-Jun-21			229
DSSAT.0.022	Comment on SAT Procedure / Meeting With Engineer	28	26-Oct-20	22-Nov-20	12-Jun-21	09-Jul-21			229
DSSAT.0.023	Resubmission of SAT Procedure	14	23-Nov-20	06-Dec-20	10-Jul-21	23-Jul-21			229
DSSAT.0.024	Approval of SAT Procedure	28	07-Dec-20	03-Jan-21	24-Jul-21	20-Aug-21			229
Public Address System		98	14-Sep-20	20-Dec-20	22-May-21	27-Aug-21			250
DSSAT.0.025	Preparation & Submission of Public Address System SAT Procedure	28	14-Sep-20	11-Oct-20	22-May-21	18-Jun-21			250
DSSAT.0.026	Comment on SAT Procedure / Meeting With Engineer	28	12-Oct-20	08-Nov-20	19-Jun-21	16-Jul-21			250
DSSAT.0.027	Resubmission of SAT Procedure	14	09-Nov-20	22-Nov-20	17-Jul-21	30-Jul-21			250
DSSAT.0.028	Approval of SAT Procedure	28	23-Nov-20	20-Dec-20	31-Jul-21	27-Aug-21			250
Radio System		98	14-Sep-20	20-Dec-20	12-Jun-21	17-Sep-21			271
DSSAT.0.029	Preparation & Submission of Radio System SAT Procedure	28	14-Sep-20	11-Oct-20	12-Jun-21	09-Jul-21			271
DSSAT.0.030	Comment on SAT Procedure / Meeting With Engineer	28	12-Oct-20	08-Nov-20	10-Jul-21	06-Aug-21			271
DSSAT.0.031	Resubmission of SAT Procedure	14	09-Nov-20	22-Nov-20	07-Aug-21	20-Aug-21			271
DSSAT.0.032	Approval of SAT Procedure	28	23-Nov-20	20-Dec-20	21-Aug-21	17-Sep-21			271
Detection System		98	14-Sep-20	20-Dec-20	06-May-21	11-Aug-21			234
DSSAT.0.033	Preparation & Submission of Detection System SAT Procedure	28	14-Sep-20	11-Oct-20	06-May-21	02-Jun-21			234
DSSAT.0.034	Comment on SAT Procedure / Meeting With Engineer	28	12-Oct-20	08-Nov-20	03-Jun-21	30-Jun-21			234
DSSAT.0.035	Resubmission of SAT Procedure	14	09-Nov-20	22-Nov-20	01-Jul-21	14-Jul-21			234
DSSAT.0.036	Approval of SAT Procedure	28	23-Nov-20	20-Dec-20	15-Jul-21	11-Aug-21			234
Manual Fallback System		98	17-Aug-20	22-Nov-20	03-Jul-21	08-Oct-21			320
DSSAT.0.037	Preparation & Submission of Manual Fallback System SAT Procedure	28	17-Aug-20	13-Sep-20	03-Jul-21	30-Jul-21			320
DSSAT.0.038	Comment on SAT Procedure / Meeting With Engineer	28	14-Sep-20	11-Oct-20	31-Jul-21	27-Aug-21			320
DSSAT.0.039	Resubmission of SAT Procedure	14	12-Oct-20	25-Oct-20	28-Aug-21	10-Sep-21			320
DSSAT.0.040	Approval of SAT Procedure	28	26-Oct-20	22-Nov-20	11-Sep-21	08-Oct-21			320
Operation Facilities		98	28-Sep-20	03-Jan-21	15-May-21	20-Aug-21			229
DSSAT.0.041	Preparation & Submission of Operation Facilites SAT Procedure	28	28-Sep-20	25-Oct-20	15-May-21	11-Jun-21			229
DSSAT.0.042	Comment on SAT Procedure / Meeting With Engineer	28	26-Oct-20	22-Nov-20	12-Jun-21	09-Jul-21			229
DSSAT.0.043	Resubmission of SAT Procedure	14	23-Nov-20	06-Dec-20	10-Jul-21	23-Jul-21			229
DSSAT.0.044	Approval of SAT Procedure	28	07-Dec-20	03-Jan-21	24-Jul-21	20-Aug-21			229

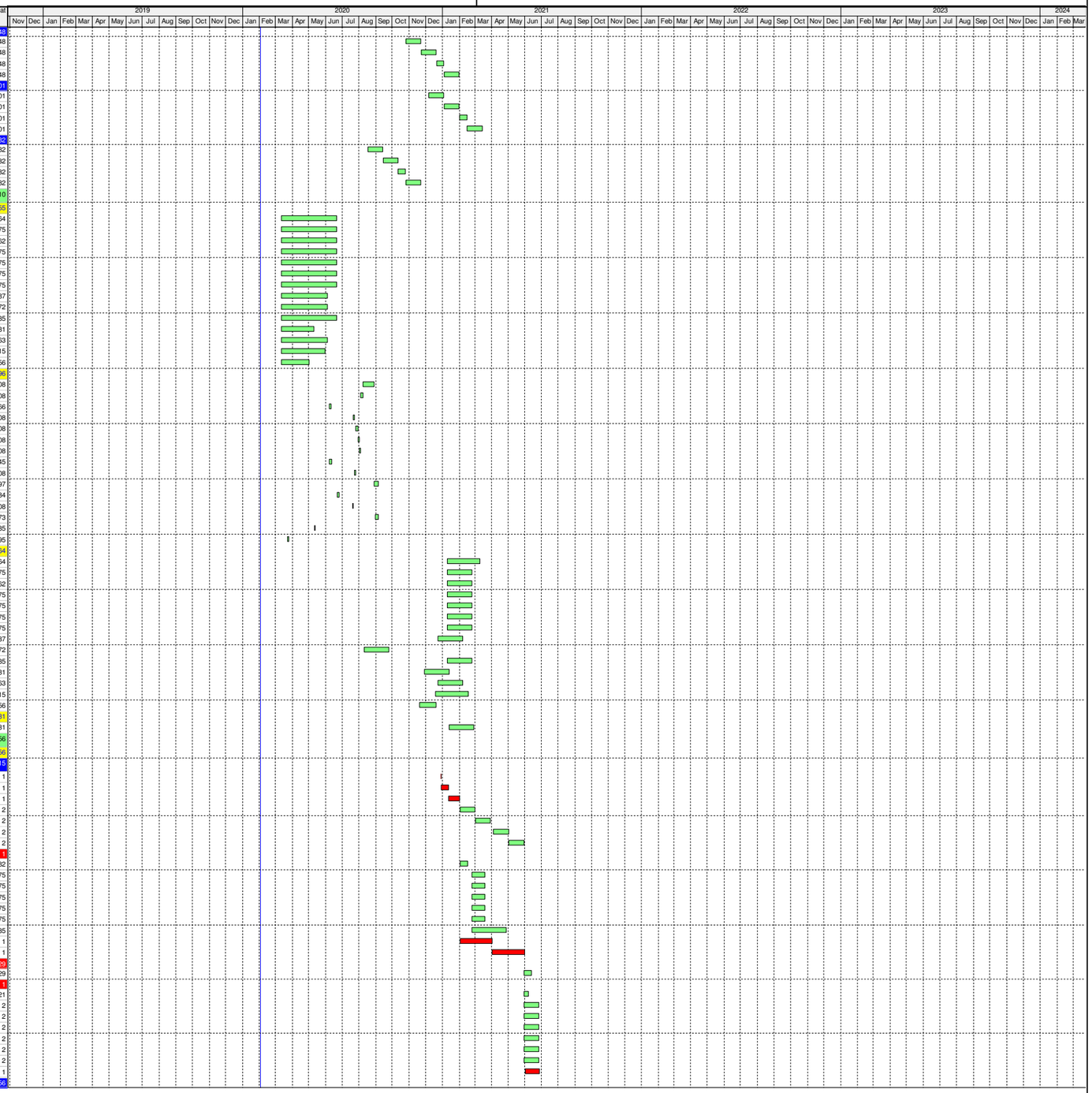
Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

Detailed Works Programme

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
Power Distribution System		98	26-Oct-20	31-Jan-21	23-Mar-21	28-Jun-21			148
DSSAT.0.045	Preparation & Submission of Power Distribution System SAT Procedure	28	26-Oct-20	22-Nov-20	23-Mar-21	19-Apr-21			148
DSSAT.0.046	Comment on SAT Procedure / Meeting With Engineer	28	23-Nov-20	20-Dec-20	20-Apr-21	17-May-21			148
DSSAT.0.047	Resubmission of SAT Procedure	14	21-Dec-20	03-Jan-21	18-May-21	31-May-21			148
DSSAT.0.048	Approval of SAT Procedure	28	04-Jan-21	31-Jan-21	01-Jun-21	28-Jun-21			148
Speed Enforcement System		98	07-Dec-20	14-Mar-21	26-Jun-21	01-Oct-21			201
DSSAT.0.049	Preparation & Submission of Speed Enforcement System SAT Procedure	28	07-Dec-20	03-Jan-21	26-Jun-21	23-Jul-21			201
DSSAT.0.050	Comment on SAT Procedure / Meeting With Engineer	28	04-Jan-21	31-Jan-21	24-Jul-21	20-Aug-21			201
DSSAT.0.051	Resubmission of SAT Procedure	14	01-Feb-21	14-Feb-21	21-Aug-21	03-Sep-21			201
DSSAT.0.052	Approval of SAT Procedure	28	15-Feb-21	14-Mar-21	04-Sep-21	01-Oct-21			201
Optical Fibre system		98	17-Aug-20	22-Nov-20	06-Apr-21	12-Jul-21			232
DSSAT.0.053	Preparation & Submission of Optical Fibre System SAT Procedure	28	17-Aug-20	13-Sep-20	06-Apr-21	03-May-21			232
DSSAT.0.054	Comment on SAT Procedure / Meeting With Engineer	28	14-Sep-20	11-Oct-20	04-May-21	31-May-21			232
DSSAT.0.055	Resubmission of SAT Procedure	14	12-Oct-20	25-Oct-20	01-Jun-21	14-Jun-21			232
DSSAT.0.056	Approval of SAT Procedure	28	26-Oct-20	22-Nov-20	15-Jun-21	12-Jul-21			232
Equipment Manufacturing and FAT Stage for TKO-LTT TCSS and CBL TCSS		364	12-Mar-20	10-Mar-21	26-Mar-20	28-Jun-21			110
Sub-systems Equipment Manufacturing (Including FAT Test Module)		101	12-Mar-20	21-Jun-20	26-Mar-20	23-Nov-20			155
DSEMT1.0.01	Traffic Control Devices	101	12-Mar-20	21-Jun-20	14-May-20	24-Aug-20			64
DSEMT1.0.02	Communications System	101	12-Mar-20	21-Jun-20	25-May-20	03-Sep-20			75
DSEMT1.0.03	CCTV System	101	12-Mar-20	21-Jun-20	13-May-20	22-Aug-20			62
DSEMT1.0.04	Building PABX System	101	12-Mar-20	21-Jun-20	25-May-20	03-Sep-20			75
DSEMT1.0.05	ET System	101	12-Mar-20	21-Jun-20	25-May-20	03-Sep-20			75
DSEMT1.0.06	PA System	101	12-Mar-20	21-Jun-20	25-May-20	03-Sep-20			75
DSEMT1.0.07	Radio System	101	12-Mar-20	21-Jun-20	25-May-20	03-Sep-20			75
DSEMT1.0.08	Detection System	84	12-Mar-20	04-Jun-20	07-Jun-20	30-Aug-20			87
DSEMT1.0.09	Manual Fallback System	84	12-Mar-20	04-Jun-20	31-Aug-20	23-Nov-20			172
DSEMT1.0.10	Operation Facilities	101	12-Mar-20	21-Jun-20	16-Apr-20	26-Jul-20			35
DSEMT1.0.11	Power Distribution System	60	12-Mar-20	10-May-20	12-Apr-20	11-Jun-20			31
DSEMT1.0.12	Enforcement system	84	12-Mar-20	04-Jun-20	14-May-20	06-Aug-20			63
DSEMT1.0.13	Cables (Signal, Power and Fibre Optic)	80	12-Mar-20	30-May-20	26-Mar-20	14-Jun-20			15
DSEMT1.0.14	Control Cabinet and Equipment Rack	51	12-Mar-20	01-May-20	06-May-20	26-Jun-20			56
System and Equipment FAT		166	23-Mar-20	05-Sep-20	31-Oct-20	28-Jun-21			296
DSEMT2.0.01	TCS System Software (For TKO-LTT TCSS & CBL TCSS)	21	08-Aug-20	29-Aug-20	24-Nov-20	15-Dec-20			108
DSEMT2.0.02	Traffic Control Device (For TKO-LTT TCSS & CBL TCSS)	4	04-Aug-20	08-Aug-20	20-Nov-20	24-Nov-20			108
DSEMT2.0.03	Communications System (For TKO-LTT TCSS & CBL TCSS)	3	08-Jun-20	11-Jun-20	21-Nov-20	24-Nov-20			166
DSEMT2.0.04	CCTV System (for TKO-LTT TCSS & CBL TCSS)	2	21-Jul-20	23-Jul-20	06-Nov-20	08-Nov-20			108
DSEMT2.0.05	Building PABX System	3	26-Jul-20	30-Jul-20	12-Nov-20	15-Nov-20			108
DSEMT2.0.06	ET System	3	30-Jul-20	02-Aug-20	15-Nov-20	18-Nov-20			108
DSEMT2.0.07	PA System	2	02-Aug-20	04-Aug-20	18-Nov-20	20-Nov-20			108
DSEMT2.0.08	Radio System	5	08-Jun-20	12-Jun-20	31-Oct-20	05-Nov-20			145
DSEMT2.0.09	Detection System (For TKO-LTT TCSS & CBL TCSS)	3	23-Jul-20	26-Jul-20	08-Nov-20	12-Nov-20			108
DSEMT2.0.10	Manual Fallback Control System Software	7	29-Aug-20	05-Sep-20	22-Jun-21	28-Jun-21			297
DSEMT2.0.11	Control Room and Console	3	22-Jun-20	25-Jun-20	10-Feb-21	13-Feb-21			234
DSEMT2.0.12	Power Distribution System (For TKO-LTT TCSS & CBL TCSS)	1	20-Jul-20	21-Jul-20	05-Nov-20	06-Nov-20			108
DSEMT2.0.13	Enforcement System (For TKO-LTT TCSS & CBL TCSS)	6	31-Aug-20	05-Sep-20	19-Feb-21	25-Feb-21			173
DSEMT2.0.14	Cables (For TKO-LTT TCSS & CBL TCSS)	2	11-May-20	13-May-20	01-Jan-21	03-Jan-21			235
DSEMT2.0.15	Control Cabinet and Equipment rack (For TKO-LTT TCSS & CBL TCSS)	2	23-Mar-20	25-Mar-20	12-Jan-21	14-Jan-21			295
Sub-systems Equipment delivery (Main Batch)		212	10-Aug-20	10-Mar-21	30-Dec-20	13-May-21			64
DSEMT3.0.01	Traffic Control Devices (For TKO-LTT TCSS)	60	09-Jan-21	10-Mar-21	14-Mar-21	13-May-21			64
DSEMT3.0.02	Communications System (For TKO-LTT TCSS)	45	09-Jan-21	23-Feb-21	25-Mar-21	09-May-21			75
DSEMT3.0.03	CCTV System (For TKO-LTT TCSS)	45	09-Jan-21	23-Feb-21	13-Mar-21	26-Apr-21			62
DSEMT3.0.04	Building PABX System	45	09-Jan-21	23-Feb-21	25-Mar-21	09-May-21			75
DSEMT3.0.05	ET System	45	09-Jan-21	23-Feb-21	25-Mar-21	09-May-21			75
DSEMT3.0.06	PA System	45	09-Jan-21	23-Feb-21	25-Mar-21	09-May-21			75
DSEMT3.0.07	Radio System	45	09-Jan-21	23-Feb-21	25-Mar-21	09-May-21			75
DSEMT3.0.08	Detection System (For TKO-LTT TCSS)	45	23-Dec-20	06-Feb-21	20-Mar-21	04-May-21			87
DSEMT3.0.09	Manual Fallback System	45	10-Aug-20	24-Sep-20	30-Jan-21	15-Mar-21			172
DSEMT3.0.10	Operation Facilities	45	09-Jan-21	23-Feb-21	14-Feb-21	30-Mar-21			35
DSEMT3.0.11	Power Distribution System (For TKO-LTT TCSS)	45	29-Nov-20	13-Jan-21	30-Dec-20	13-Feb-21			31
DSEMT3.0.12	Enforcement System (For TKO-LTT TCSS)	45	23-Dec-20	06-Feb-21	25-Feb-21	11-Apr-21			63
DSEMT3.0.13	Cables (For TKO-LTT TCSS)	60	19-Dec-20	17-Feb-21	03-Jan-21	04-Mar-21			15
DSEMT3.0.14	Control Cabinet and Equipment Rack (For TKO-LTT TCSS)	30	20-Nov-20	20-Dec-20	14-Jan-21	13-Feb-21			56
Assembly of Equipment in Control Cabinet		45	13-Jan-21	27-Feb-21	13-Feb-21	30-Mar-21			31
DSEMT4.0.1	Assembly of Equipment in Control Cabinet	45	13-Jan-21	27-Feb-21	13-Feb-21	30-Mar-21			31
Construction Stage for TKO-LTT TCSS		248	25-Aug-20	27-Jun-21	01-Nov-20	03-Dec-23			756
Works For Section 1A and Section 1B		248	25-Aug-20	27-Jun-21	01-Nov-20	03-Dec-23			756
Stage 1A Works (ADB within Portion 1A)		181	29-Dec-20	27-Jun-21	29-Dec-20	12-Jul-21			15
CSTS1A.0.01	Portion 1A Access Date	0	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20			1
CSTS1A.0.02	Inspection of Civil Provisions and Submit Inspection Report	14	29-Dec-20	11-Jan-21	30-Dec-20	12-Jan-21			1
CSTS1A.0.03	Rectification of Civil Provisions Defects by others	21	12-Jan-21	01-Feb-21	13-Jan-21	02-Feb-21			1
CSTS1A.0.04	Installation of Cable Containment	28	02-Feb-21	01-Mar-21	04-Feb-21	04-Mar-21			2
CSTS1A.0.05	Laying Cables (Fibre Backbone , Power)	28	02-Mar-21	29-Mar-21	04-Mar-21	01-Apr-21			2
CSTS1A.0.06	Testing of Cables (Signal and Power)	28	04-Apr-21	02-May-21	07-Apr-21	04-May-21			2
CSTS1A.0.07	Local Cables Installation, Testing and Termination	28	02-May-21	30-May-21	05-May-21	01-Jun-21			2
Administration Building		119	02-Feb-21	31-May-21	03-Feb-21	01-Jun-21			1
CSTS1A.0.08	Installation of Equipment Rack	14	02-Feb-21	15-Feb-21	25-Apr-21	09-May-21			82
CSTS1A.0.09	Installation of Communication Node Equipment	24	23-Feb-21	19-Mar-21	09-May-21	01-Jun-21			75
CSTS1A.0.10	Installation of PABX Equipment	24	23-Feb-21	19-Mar-21	09-May-21	01-Jun-21			75
CSTS1A.0.11	Installation of PA Equipment	24	23-Feb-21	19-Mar-21	09-May-21	01-Jun-21			75
CSTS1A.0.12	Installation of ET Equipment	24	23-Feb-21	19-Mar-21	09-May-21	01-Jun-21			75
CSTS1A.0.13	Installation of Radio Equipment (Incl. Antenna and Feeder)	24	23-Feb-21	19-Mar-21	09-May-21	01-Jun-21			75
CSTS1A.0.14	Installatiom of Operation Facilities Equipment	63	23-Feb-21	27-Apr-21	31-Mar-21	01-Jun-21			35
CSTS1A.0.15	Installation of TCS computer Equipment	59	02-Feb-21	01-Apr-21	03-Feb-21	02-Apr-21			1
CSTS1A.0.16	Installation of Manual Fallback Control Equipment	60	02-Apr-21	31-May-21	03-Apr-21	01-Jun-21			1
Site Commissioning Test of Fibre Cable		14	30-May-21	13-Jun-21	29-Jun-21	12-Jul-21			29
CSTS1A.0.17	Fibre Cable Test (End to End)	14	30-May-21	13-Jun-21	29-Jun-21	12-Jul-21			29
Sub-system Site Comissioning Test		28	30-May-21	27-Jun-21	02-Jun-21	28-Jun-21			1
CSTS1A.0.18	SCT for Power Distribution Equipment	8	30-May-21	07-Jun-21	21-Jun-21	28-Jun-21			21
CSTS1A.0.19	SCT for Comms, Equipment	27	30-May-21	26-Jun-21	02-Jun-21	28-Jun-21			2
CSTS1A.0.20	SCT for PABX Equipment	27	30-May-21	26-Jun-21	02-Jun-21	28-Jun-21			2
CSTS1A.0.21	SCT for PA Equipment	27	30-May-21	26-Jun-21	02-Jun-21	28-Jun-21			2
CSTS1A.0.22	SCT for ET Equipment	27	30-May-21	26-Jun-21	02-Jun-21	28-Jun-21			2
CSTS1A.0.23	SCT for Radio Equipment	27	30-May-21	26-Jun-21	02-Jun-21	28-Jun-21			2
CSTS1A.0.24	SCT for Operation Facilities Equipment	27	30-May-21	26-Jun-21	02-Jun-21	28-Jun-21			2
CSTS1A.0.25	SCT for Manual Fallback Control Equipment	27	01-Jun-21	27-Jun-21	02-Jun-21	28-Jun-21			1
Stage 1B Works (Tunnel, Underpass and Open Roads within Portion 1B)		248	25-Aug-20	27-Jun-21	01-Nov-20	03-Dec-23			756



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

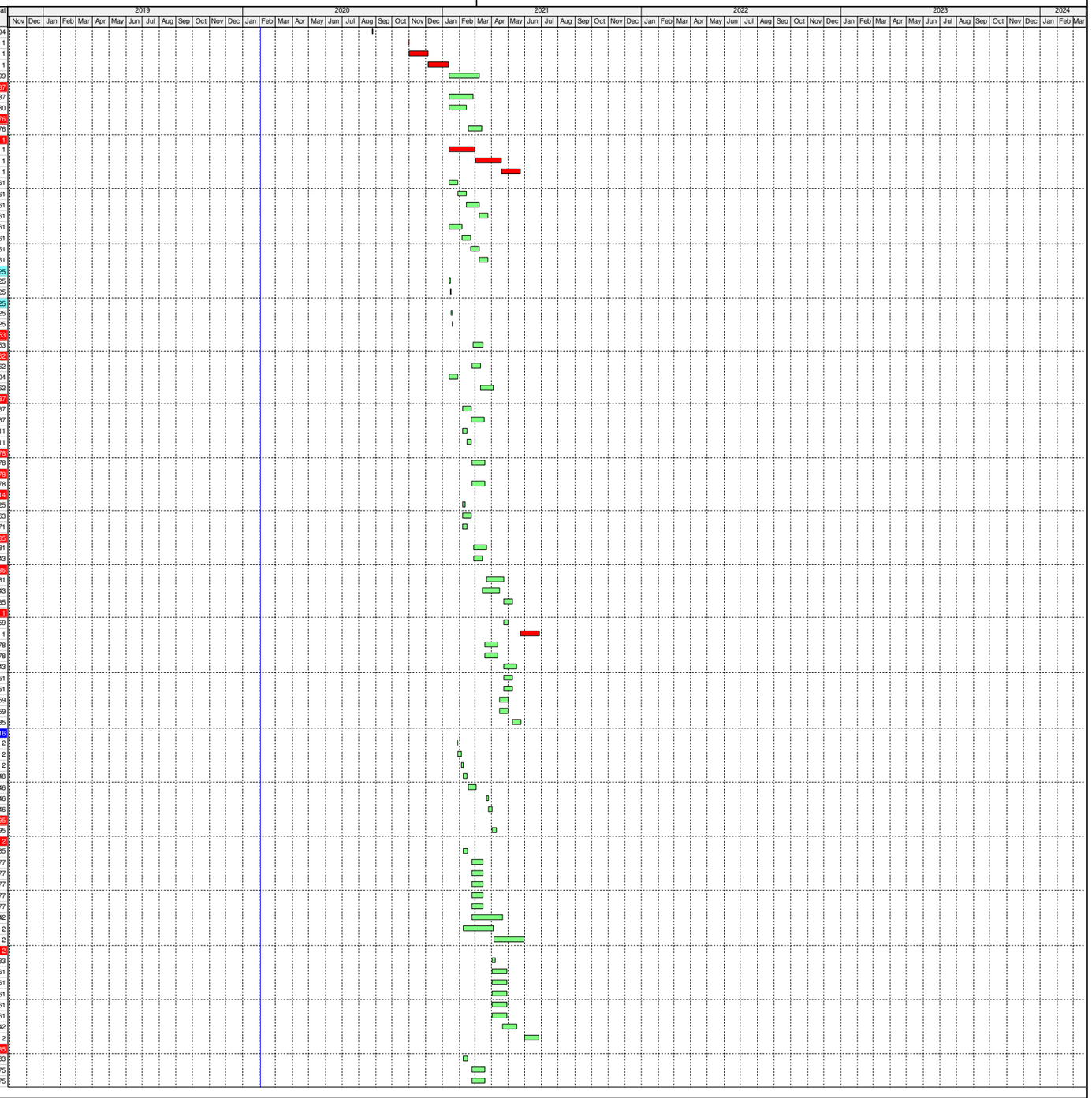
Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

NE/2017/06 TKO-LTT TCSS_DWP_VerD

Detailed Works Programme

09-Jul-20 01:19

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
CSTS1B.0.01	Handover of Holding-down Bolts for Pole Foundation to Civil	1	25-Aug-20	26-Aug-20	02-Dec-23	03-Dec-23			1194
CSTS1B.0.02	Portion 1B Access Date	0	01-Nov-20	01-Nov-20	01-Nov-20	01-Nov-20			1
CSTS1B.0.03	Inspection of Civil Provisions and Submit Inspection Report	35	01-Nov-20	05-Dec-20	02-Nov-20	06-Dec-20			1
CSTS1B.0.04	Rectification of Civil Provisions Defects by others	38	06-Dec-20	12-Jan-21	07-Dec-20	13-Jan-21			1
CSTS1B.0.05	Laying Cables (fiber backbone, signal and power)	55	13-Jan-21	09-Mar-21	09-Oct-23	03-Dec-23			999
Installation of Cable Containment		45	13-Jan-21	26-Feb-21	03-Apr-21	01-Sep-21			187
CSTS1B.0.06	Cable Containment inside Tunnel	45	13-Jan-21	26-Feb-21	19-Jul-21	01-Sep-21			187
CSTS1B.0.07	Cable Containment on Gantry	32	13-Jan-21	13-Feb-21	03-Apr-21	04-May-21			80
Laying Cables		24	17-Feb-21	13-Mar-21	04-May-21	28-May-21			76
CSTS1B.0.08	Fiber, Signal and Power cables Along Roadside	24	17-Feb-21	13-Mar-21	04-May-21	28-May-21			76
Installation of Traffic Control Field Equipment		131	13-Jan-21	23-May-21	14-Jan-21	24-May-21			1
CSTS1B.0.009	Mounting Braket for LCS and VSLS in Tunnel	48	13-Jan-21	01-Mar-21	14-Jan-21	02-Mar-21			1
CSTS1B.0.010	VSLS inside Tunnel	48	02-Mar-21	18-Apr-21	03-Mar-21	19-Apr-21			1
CSTS1B.0.011	LCS inside Tunnel	35	19-Apr-21	23-May-21	20-Apr-21	24-May-21			1
CSTS1B.0.012	MLCS	16	13-Jan-21	28-Jan-21	15-Mar-21	30-Mar-21			61
CSTS1B.0.013	VSLS on Gantry	16	28-Jan-21	13-Feb-21	30-Mar-21	15-Apr-21			61
CSTS1B.0.014	Roadside VMS	24	13-Feb-21	09-Mar-21	15-Apr-21	09-May-21			61
CSTS1B.0.015	Traffic Light Signal	16	09-Mar-21	24-Mar-21	09-May-21	24-May-21			61
CSTS1B.0.016	PVMS	24	13-Jan-21	05-Feb-21	15-Mar-21	07-Apr-21			61
CSTS1B.0.017	Tunnel Closed Sign	16	05-Feb-21	21-Feb-21	07-Apr-21	23-Apr-21			61
CSTS1B.0.018	Turn-on Radio Sign	16	21-Feb-21	09-Mar-21	23-Apr-21	09-May-21			61
CSTS1B.0.019	Manual Barrier	16	09-Mar-21	24-Mar-21	09-May-21	24-May-21			61
FVMS- FVMS/101/A		3	13-Jan-21	16-Jan-21	18-May-21	21-May-21			125
CSTS1B.020	Assembly of FVMS at nearby area	2	13-Jan-21	15-Jan-21	18-May-21	20-May-21			125
CSTS1B.021	Erect the FVMS on Gantry	1	15-Jan-21	16-Jan-21	20-May-21	21-May-21			125
FVMS- FVMS/102/A		3	16-Jan-21	19-Jan-21	21-May-21	24-May-21			125
CSTS1B.0.22	Assembly of FVMS at Nearby Area	2	16-Jan-21	18-Jan-21	21-May-21	23-May-21			125
CSTS1B.0.23	Erect the FVMS on Gantry	1	18-Jan-21	19-Jan-21	23-May-21	24-May-21			125
Installation of Leaky Cable and Radio Equipment		14	26-Feb-21	15-Mar-21	02-Sep-21	17-Sep-21			153
CSTS1B.0.24	Leaky Cable inside Tunnel / Underpass	14	26-Feb-21	15-Mar-21	02-Sep-21	17-Sep-21			153
Installation of CCTV		81	13-Jan-21	04-Apr-21	27-Apr-21	05-Jun-21			62
CSTS1B.0.25	Erect CCTV Highmasts	16	23-Feb-21	11-Mar-21	27-Apr-21	12-May-21			62
CSTS1B.0.26	Mounting Braket for CCTV	16	13-Jan-21	28-Jan-21	27-Apr-21	12-May-21			104
CSTS1B.0.27	CCTV Camera	24	11-Mar-21	04-Apr-21	12-May-21	05-Jun-21			62
Installation of Vehicle Detectors		39	06-Feb-21	18-Mar-21	04-May-21	13-Jun-21			87
CSTS1B.0.28	Mounting Bracket for VD	16	06-Feb-21	22-Feb-21	04-May-21	20-May-21			87
CSTS1B.0.29	VD Detectors	24	22-Feb-21	18-Mar-21	20-May-21	13-Jun-21			87
CSTS1B.0.30	Erect Poles for OHVD	8	06-Feb-21	14-Feb-21	28-May-21	05-Jun-21			111
CSTS1B.0.31	OHVD	8	14-Feb-21	22-Feb-21	05-Jun-21	13-Jun-21			111
Installation of ET Equipment insideTunnel		24	23-Feb-21	19-Mar-21	12-May-21	05-Jun-21			78
CSTS1B.0.32	Installation of ET Equipment Inside Tunnel	24	23-Feb-21	19-Mar-21	12-May-21	05-Jun-21			78
Installation of PA Equipment		24	23-Feb-21	19-Mar-21	12-May-21	05-Jun-21			78
CSTS1B.0.33	Installation of PA Equipment	24	23-Feb-21	19-Mar-21	12-May-21	05-Jun-21			78
Installation of Enforcement Equipment		16	06-Feb-21	22-Feb-21	11-Apr-21	03-Dec-23			1014
CSTS1B.0.34	Installation of Enforcement Equipment	5	06-Feb-21	11-Feb-21	28-Nov-23	03-Dec-23			1025
CSTS1B.0.35	SEC inside Tunnel	16	06-Feb-21	22-Feb-21	11-Apr-21	26-Apr-21			63
CSTS1B.0.36	WeightBridge	8	06-Feb-21	14-Feb-21	19-Apr-21	26-Apr-21			71
Installation of Control Cabinet		24	27-Feb-21	23-Mar-21	30-Mar-21	26-Apr-21			35
CSTS1B.0.37	Control Cabinets for TCSS	24	27-Feb-21	23-Mar-21	30-Mar-21	23-Apr-21			31
CSTS1B.0.38	Control Cabinets for SEC	16	27-Feb-21	15-Mar-21	11-Apr-21	26-Apr-21			43
Local Cables Installation, Testing and Termination		55	15-Mar-21	09-May-21	23-Apr-21	13-Jun-21			35
CSTS1B.0.39	Cables Installation, Testing and Termination aat TCSS Cabinet	32	23-Mar-21	23-Apr-21	23-Apr-21	24-May-21			31
CSTS1B.0.40	Cabinet Installation, Testing and Termination at SEC Cabinet	32	15-Mar-21	15-Apr-21	27-Apr-21	28-May-21			43
CSTS1B.0.41	Fibre Cable Termination	16	23-Apr-21	09-May-21	28-May-21	13-Jun-21			35
Site Commissioning Test of TCD and fibre Cable		101	19-Mar-21	27-Jun-21	25-May-21	28-Jun-21			1
CSTS1B.0.42	SCT for Power Distribution Equipment	8	23-Apr-21	01-May-21	21-Jun-21	28-Jun-21			59
CSTS1B.0.43	SCT for Traffic Control Device	35	24-May-21	27-Jun-21	25-May-21	28-Jun-21			1
CSTS1B.0.44	SCT for ET inside Tunnel	24	19-Mar-21	11-Apr-21	05-Jun-21	28-Jun-21			78
CSTS1B.0.45	SCT for PA Equipment	24	19-Mar-21	11-Apr-21	05-Jun-21	28-Jun-21			78
CSTS1B.0.46	SCT for CCTV	24	23-Apr-21	17-May-21	05-Jun-21	28-Jun-21			43
CSTS1B.0.47	SCT for VD	16	23-Apr-21	09-May-21	13-Jun-21	28-Jun-21			51
CSTS1B.0.48	SCT for OHVD	16	23-Apr-21	09-May-21	13-Jun-21	28-Jun-21			51
CSTS1B.0.49	SCT For SEC	16	15-Apr-21	01-May-21	13-Jun-21	28-Jun-21			59
CSTS1B.0.50	SCT for Weighbridge	16	15-Apr-21	01-May-21	13-Jun-21	28-Jun-21			59
CSTS1B.0.51	Fibre Cable Test (End to End)	16	09-May-21	25-May-21	13-Jun-21	28-Jun-21			35
Stage 1C Works (EVB and VVB within Portion 1C)		149	29-Jan-21	26-Jun-21	30-Jan-21	12-Jul-21			16
CSTS1C.0.1	Portion 1C Access Date	0	29-Jan-21	29-Jan-21	30-Jan-21	30-Jan-21			2
CSTS1C.0.2	Inspection of Civil provicions and Submit Inspection Report	7	29-Jan-21	04-Feb-21	31-Jan-21	06-Feb-21			2
CSTS1C.0.3	Rectifications of Civil Provisions Defects by others	3	05-Feb-21	07-Feb-21	07-Feb-21	09-Feb-21			2
CSTS1C.0.4	Installation of Cable Containment	7	08-Feb-21	14-Feb-21	28-Mar-21	04-Apr-21			48
CSTS1C.0.5	Laying Cables (fibre backbone, power)	14	17-Feb-21	03-Mar-21	04-Apr-21	18-Apr-21			46
CSTS1C.0.6	Test of Cables (signal and power)	3	23-Mar-21	26-Mar-21	08-May-21	10-May-21			46
CSTS1C.0.7	Local Cables Installation , Testing and Termination	7	26-Mar-21	02-Apr-21	11-May-21	17-May-21			46
Site Commissioning Test of Fibre Cable		7	02-Apr-21	09-Apr-21	06-Jul-21	12-Jul-21			95
CSTS1C.0.8	Fibre Cable Test (End to End)	7	02-Apr-21	09-Apr-21	06-Jul-21	12-Jul-21			95
West Ventilation Building		112	08-Feb-21	30-May-21	10-Feb-21	01-Jun-21			2
CSTS1C.0.09	Installation of Equiipment Rack	8	08-Feb-21	15-Feb-21	04-May-21	11-May-21			85
CSTS1C.0.10	Installation of Communication Node Equipment	21	23-Feb-21	16-Mar-21	12-May-21	01-Jun-21			77
CSTS1C.0.11	Installation of PABX Equipment	21	23-Feb-21	16-Mar-21	12-May-21	01-Jun-21			77
CSTS1C.0.12	Installation of PA Equipment	21	23-Feb-21	16-Mar-21	12-May-21	01-Jun-21			77
CSTS1C.0.13	Installation of ET Equipment	21	23-Feb-21	16-Mar-21	12-May-21	01-Jun-21			77
CSTS1C.0.14	Installation of Radio Equipment (Incl. Antenna and Feeder)	21	23-Feb-21	16-Mar-21	12-May-21	01-Jun-21			77
CSTS1C.0.15	Installation of Operation Facilities Equipment	56	23-Feb-21	20-Apr-21	07-Apr-21	01-Jun-21			42
CSTS1C.0.16	Installation of TCS Computer Equipment	56	08-Feb-21	04-Apr-21	10-Feb-21	06-Apr-21			2
CSTS1C.0.17	Installation of Manual Fallback Control Equipment	56	05-Apr-21	30-May-21	07-Apr-21	01-Jun-21			2
Sub-systems Site Commissioning Test		86	02-Apr-21	26-Jun-21	02-Jun-21	28-Jun-21			2
CSTS1C.0.18	SCT for Power Distribution Equipment	5	02-Apr-21	07-Apr-21	24-Jun-21	28-Jun-21			83
CSTS1C.0.19	SCT for Comms, Equipment	27	02-Apr-21	29-Apr-21	02-Jun-21	28-Jun-21			61
CSTS1C.0.20	SCT for PABX Equipment	27	02-Apr-21	29-Apr-21	02-Jun-21	28-Jun-21			61
CSTS1C.0.21	SCT for PA Equipment	27	02-Apr-21	29-Apr-21	02-Jun-21	28-Jun-21			61
CSTS1C.0.22	SCT for ET Equipment	27	02-Apr-21	29-Apr-21	02-Jun-21	28-Jun-21			61
CSTS1C.0.23	SCT for Radio Equipment	27	02-Apr-21	29-Apr-21	02-Jun-21	28-Jun-21			61
CSTS1C.0.24	SCT for Operation Facilities Equipment	27	20-Apr-21	17-May-21	02-Jun-21	28-Jun-21			42
CSTS1C.0.25	SCT for Manual Fallback Control Eqyuipment	27	31-May-21	26-Jun-21	02-Jun-21	28-Jun-21			2
East Ventilation Building		79	08-Feb-21	27-Apr-21	16-Mar-21	01-Jun-21			35
CSTS1C.0.26	Installation of Equiipment Rack	8	08-Feb-21	15-Feb-21	01-May-21	09-May-21			83
CSTS1C.0.27	Installation of Communication Node Equipment	24	23-Feb-21	19-Mar-21	09-May-21	01-Jun-21			75
CSTS1C.0.28	Installation of PABX Equipment	24	23-Feb-21	19-Mar-21	09-May-21	01-Jun-21			75



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

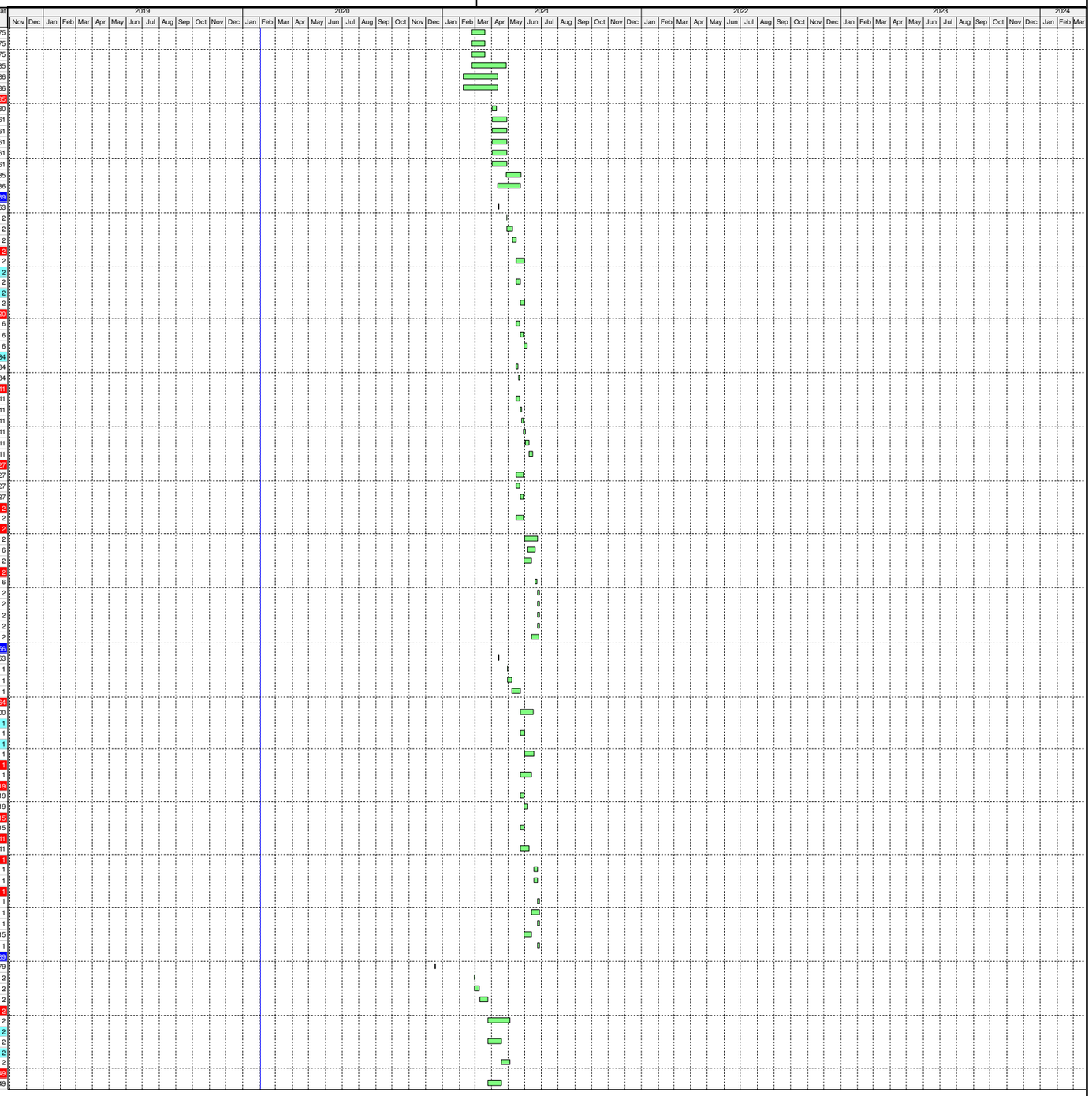
Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

NE/2017/06 TKO-LTT TCSS_DWP_VerD

Detailed Works Programme

09-Jul-20 01:19

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
CSTS1C.0.29	Installation of PA Equipment	24	23-Feb-21	19-Mar-21	09-May-21	01-Jun-21			75
CSTS1C.0.30	Installation of ET Equipment	24	23-Feb-21	19-Mar-21	09-May-21	01-Jun-21			75
CSTS1C.0.31	Installation of Radio Equipment (Incl. Antenna and Feeder)	24	23-Feb-21	19-Mar-21	09-May-21	01-Jun-21			75
CSTS1C.0.32	Installation of Operation Facilities Equipment	63	23-Feb-21	27-Apr-21	31-Mar-21	01-Jun-21			35
CSTS1C.0.33	Installation of TCS Computer Equipment	63	08-Feb-21	11-Apr-21	16-Mar-21	17-May-21			36
CSTS1C.0.34	Installation of Manual Fallback Control Equipment	63	08-Feb-21	11-Apr-21	16-Mar-21	17-May-21			36
Sub-systems Site Commissioning Test-1		53	02-Apr-21	24-May-21	18-May-21	28-Jun-21			35
CSTS1C.0.35	SCT for Power Distribution Equipment	8	02-Apr-21	10-Apr-21	21-Jun-21	28-Jun-21			80
CSTS1C.0.36	SCT for Comms, Equipment	27	02-Apr-21	29-Apr-21	02-Jun-21	28-Jun-21			61
CSTS1C.0.37	SCT for PABX Equipment	27	02-Apr-21	29-Apr-21	02-Jun-21	28-Jun-21			61
CSTS1C.0.38	SCT for PA Equipment	27	02-Apr-21	29-Apr-21	02-Jun-21	28-Jun-21			61
CSTS1C.0.39	SCT for ET Equipment	27	02-Apr-21	29-Apr-21	02-Jun-21	28-Jun-21			61
CSTS1C.0.40	SCT for Radio Equipment	27	02-Apr-21	29-Apr-21	02-Jun-21	28-Jun-21			61
CSTS1C.0.41	SCT for Operation Facilities Equipment	27	27-Apr-21	24-May-21	02-Jun-21	28-Jun-21			35
CSTS1C.0.42	SCT for Manual Fallback Control Equipment	42	12-Apr-21	23-May-21	18-May-21	28-Jun-21			36
Stage 2A Works (Within Portion 2A)		75	13-Apr-21	27-Jun-21	30-Apr-21	03-Dec-23			889
CSTS2A.0.1	Handover of Holding-down Bolts for Pole Foundation to Civil	1	13-Apr-21	14-Apr-21	02-Dec-23	03-Dec-23			963
CSTS2A.0.2	Portion 2A Access Date	0	29-Apr-21	29-Apr-21	30-Apr-21	30-Apr-21			2
CSTS2A.0.3	Inspection of Civil Provisions and Submit Inspection Report	10	29-Apr-21	08-May-21	30-Apr-21	10-May-21			2
CSTS2A.0.4	Rectification of Civil Provisions Defects by others	7	09-May-21	15-May-21	10-May-21	17-May-21			2
Laying Cables (Fibre , Signal and Power)		16	16-May-21	31-May-21	17-May-21	02-Jun-21			2
CSTS2A.0.5	Laying Cables (Fibre , Signal and Power)	16	16-May-21	31-May-21	17-May-21	02-Jun-21			2
Installation of Cable Containment		8	16-May-21	23-May-21	17-May-21	25-May-21			2
CSTS2A.0.6	Cable Containment on Gantry	8	16-May-21	23-May-21	17-May-21	25-May-21			2
Laying Cables		8	23-May-21	31-May-21	25-May-21	02-Jun-21			2
CSTS2A.0.7	Fibre, Signal and Power Cables along Roadside	8	23-May-21	31-May-21	25-May-21	02-Jun-21			2
Installation of Traffic Control Field Equipment		21	16-May-21	05-Jun-21	22-May-21	25-Jun-21			20
CSTS2A.0.08	MLCS	7	16-May-21	22-May-21	22-May-21	28-May-21			6
CSTS2A.0.09	Roadside VMS	7	23-May-21	29-May-21	29-May-21	04-Jun-21			6
CSTS2A.0.10	Tunnel Closed Sign	7	30-May-21	05-Jun-21	05-Jun-21	11-Jun-21			6
FVMS - FVMS/201/A		7	16-May-21	22-May-21	19-Jun-21	25-Jun-21			34
CSTS2A.0.11	Assembly of FVMS at Nearby Area	4	16-May-21	19-May-21	19-Jun-21	22-Jun-21			34
CSTS2A.0.12	Erect the FVMS on Gantry	3	20-May-21	22-May-21	23-Jun-21	25-Jun-21			34
Installation of CCTV		30	16-May-21	15-Jun-21	26-May-21	25-Jun-21			11
CSTS2A.0.13	Assembly and erect CCTV Highmast for CCTV-TV/108/A	7	16-May-21	22-May-21	26-May-21	02-Jun-21			11
CSTS2A.0.14	CCTV-TV /108/A	3	23-May-21	25-May-21	02-Jun-21	05-Jun-21			11
CSTS2A.0.15	Assembly and erect CCTV Highmast for CCTV-TV/247/C	3	26-May-21	29-May-21	05-Jun-21	08-Jun-21			11
CSTS2A.0.16	CCTV-TV /247/C	3	29-May-21	01-Jun-21	09-Jun-21	11-Jun-21			11
CSTS2A.0.17	Mounting Braket for CCTV in Underpass	7	01-Jun-21	08-Jun-21	12-Jun-21	18-Jun-21			11
CSTS2A.0.18	CCTV Camera	7	08-Jun-21	15-Jun-21	19-Jun-21	25-Jun-21			11
Installation of Vehicle Detectors		14	16-May-21	29-May-21	12-Jun-21	25-Jun-21			27
CSTS2A.0.19	VD Detector on Gantry	14	16-May-21	29-May-21	12-Jun-21	25-Jun-21			27
CSTS2A.0.20	Erect Poles for OHVD	7	16-May-21	22-May-21	12-Jun-21	18-Jun-21			27
CSTS2A.0.21	OHVD	7	23-May-21	29-May-21	19-Jun-21	25-Jun-21			27
Installation of Control Cabinet		14	16-May-21	29-May-21	18-May-21	31-May-21			2
CSTS2A.0.22	Installation of Control Cabinet	14	16-May-21	29-May-21	18-May-21	31-May-21			2
Local Cables Installation , Testing and Termination		25	30-May-21	24-Jun-21	01-Jun-21	25-Jun-21			2
CSTS2A.0.23	Local Cables Installation , Testing and Termination	24	31-May-21	24-Jun-21	02-Jun-21	25-Jun-21			2
CSTS2A.0.24	Cables Installation, Testing and Termination at TCSS Cabinet	14	06-Jun-21	19-Jun-21	12-Jun-21	25-Jun-21			6
CSTS2A.0.25	Fibre Cable Termination	14	30-May-21	12-Jun-21	01-Jun-21	14-Jun-21			2
Site Comissioning Test of TCD and Fibre Cable		14	13-Jun-21	27-Jun-21	15-Jun-21	28-Jun-21			2
CSTS2A.0.26	SCT for Power Distribution Equipment	3	20-Jun-21	22-Jun-21	26-Jun-21	28-Jun-21			6
CSTS2A.0.27	SCT for FVMS, MLCS, VMS and TCS	3	24-Jun-21	27-Jun-21	26-Jun-21	28-Jun-21			2
CSTS2A.0.28	SCT for CCTV	3	24-Jun-21	27-Jun-21	26-Jun-21	28-Jun-21			2
CSTS2A.0.29	SCT for VD	3	24-Jun-21	27-Jun-21	26-Jun-21	28-Jun-21			2
CSTS2A.0.30	SCT for OHVD	3	24-Jun-21	27-Jun-21	26-Jun-21	28-Jun-21			2
CSTS2A.0.31	Fibre Cable Test (End to End)	14	13-Jun-21	26-Jun-21	15-Jun-21	28-Jun-21			2
Stage 2B Works (Within Portion 2B)		62	13-Apr-21	27-Jun-21	01-May-21	03-Dec-23			756
CSTS2B.0.1	Handover of Holding-down Bolts for Pole Foundation to Civil	1	13-Apr-21	14-Apr-21	02-Dec-23	03-Dec-23			963
CSTS2B.0.2	Portion 2B Access Day	0	30-Apr-21	30-Apr-21	01-May-21	01-May-21			1
CSTS2B.0.3	Inspection of Civil Provisions and Submit Inspection Report	8	30-Apr-21	07-May-21	01-May-21	09-May-21			1
CSTS2B.0.4	Rectification of Civil Provisions Defects by others	16	08-May-21	23-May-21	09-May-21	24-May-21			1
Laying Cables (Fibre , Signal and Power)		21	23-May-21	17-Jun-21	25-May-21	03-Dec-23			764
CSTS2B.0.5	Laying Cables (Fibre , Signal and Power)	24	23-May-21	16-Jun-21	09-Nov-23	03-Dec-23			900
Installation of Cable Containment		8	23-May-21	31-May-21	25-May-21	01-Jun-21			1
CSTS2B.0.6	Cable Containment on Gantry	8	23-May-21	31-May-21	25-May-21	01-Jun-21			1
Laying Cables		14	31-May-21	17-Jun-21	02-Jun-21	18-Jun-21			1
CSTS2B.0.7	Fibre, Signal and Power Cables along Roadside	14	31-May-21	17-Jun-21	02-Jun-21	18-Jun-21			1
Installation of Leaky Cable and Radio Equipment		21	23-May-21	13-Jun-21	25-May-21	14-Jun-21			1
CSTS2B.0.8	Leaky Cable inside Underpass	21	23-May-21	13-Jun-21	25-May-21	14-Jun-21			1
Installation of CCTV		14	23-May-21	06-Jun-21	12-Jun-21	25-Jun-21			19
CSTS2B.0.09	Assembly and Erect CCTV Highmast for CCTV-TV/145/C	7	23-May-21	30-May-21	12-Jun-21	18-Jun-21			19
CSTS2B.0.10	CCTV-TV /145/C	7	30-May-21	06-Jun-21	19-Jun-21	25-Jun-21			19
Installation of Vehicle Detectors		7	23-May-21	30-May-21	08-Jun-21	14-Jun-21			15
CSTS2B.0.11	VD Detector	7	23-May-21	30-May-21	08-Jun-21	14-Jun-21			15
Installation of Control Cabinet		16	23-May-21	08-Jun-21	03-Jun-21	18-Jun-21			11
CSTS2B.0.12	Installation of Control Cabinet	16	23-May-21	08-Jun-21	03-Jun-21	18-Jun-21			11
Local Cables Installation , Testing and Termination		7	17-Jun-21	24-Jun-21	19-Jun-21	25-Jun-21			1
CSTS2B.0.13	Cables Installation, Testing and Termination at TCSS Cabinet	7	17-Jun-21	24-Jun-21	19-Jun-21	25-Jun-21			1
CSTS2B.0.14	Fibre Cable Termination	7	17-Jun-21	24-Jun-21	19-Jun-21	25-Jun-21			1
Site Comissioning Test of TCD and Fibre Cable		28	30-May-21	27-Jun-21	15-Jun-21	28-Jun-21			1
CSTS2B.0.15	SCT for Power Distribution Equipment	3	24-Jun-21	27-Jun-21	26-Jun-21	28-Jun-21			1
CSTS2B.0.16	SCT for Radio	14	13-Jun-21	27-Jun-21	15-Jun-21	28-Jun-21			1
CSTS2B.0.17	SCT for CCTV	3	24-Jun-21	27-Jun-21	26-Jun-21	28-Jun-21			1
CSTS2B.0.18	SCT for VD	14	30-May-21	13-Jun-21	15-Jun-21	28-Jun-21			15
CSTS2B.0.19	Fibre Cable Test (End to End)	3	24-Jun-21	27-Jun-21	26-Jun-21	28-Jun-21			1
Stage 3 Works (Within Portion 3A)		191	18-Dec-20	27-Jun-21	01-Mar-21	03-Dec-23			889
CSTS3A.0.1	Handover of Holding-down Bolts for Pole Foundation to Civil	1	18-Dec-20	19-Dec-20	02-Dec-23	03-Dec-23			1079
CSTS3A.0.2	Portion 3A Access Date	0	28-Feb-21	28-Feb-21	01-Mar-21	01-Mar-21			2
CSTS3A.0.3	Inspection of Civil Provisions and Submit Inspection Report	10	28-Feb-21	09-Mar-21	01-Mar-21	11-Mar-21			2
CSTS3A.0.4	Rectification of Civil Provisions Defects by others	16	10-Mar-21	25-Mar-21	11-Mar-21	27-Mar-21			2
Laying Cables (fibre , signal and power)		39	25-Mar-21	04-May-21	27-Mar-21	05-May-21			2
CSTS3A.0.5	Laying Cables (Fibre , Signal and Power)	39	25-Mar-21	04-May-21	27-Mar-21	05-May-21			2
Installation of Cable Containment		24	25-Mar-21	18-Apr-21	27-Mar-21	19-Apr-21			2
CSTS3A.0.6	Cable Containment on Gantry	24	25-Mar-21	18-Apr-21	27-Mar-21	19-Apr-21			2
Laying Cables		16	18-Apr-21	04-May-21	20-Apr-21	05-May-21			2
CSTS3A.0.7	Fibre, Signal and Power Cables along Roadside	16	18-Apr-21	04-May-21	20-Apr-21	05-May-21			2
Installation of Traffic Control Field Equipment		39	25-Mar-21	04-May-21	13-May-21	21-Jun-21			49
CSTS3A.0.8	Tunnel Closed Sign	24	25-Mar-21	18-Apr-21	13-May-21	06-Jun-21			49



- Remaining Level of Effort
- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

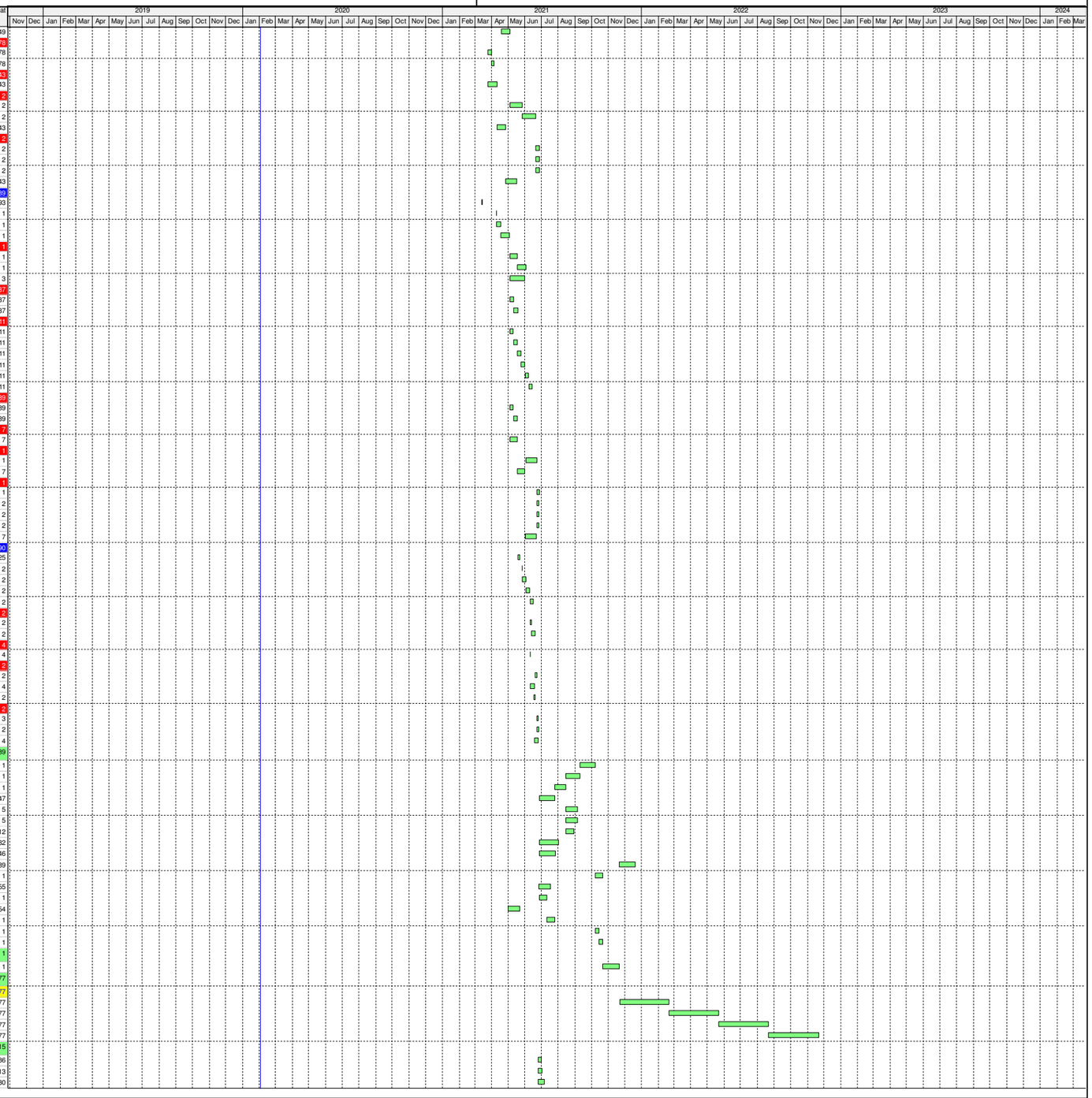
Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

NE/2017/06 TKO-LTT TCSS_DWP_VerD

Detailed Works Programme

09-Jul-20 01:19

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
CSTS3A.0.9	Journey Time Indicator	16	18-Apr-21	04-May-21	06-Jun-21	21-Jun-21			49
Installation of CCTV		11	25-Mar-21	05-Apr-21	11-Jun-21	21-Jun-21			78
CSTS3A.0.10	Assembly and erect CCTV Highmast for CCTV-TV/246/C	6	25-Mar-21	31-Mar-21	11-Jun-21	16-Jun-21			78
CSTS3A.0.11	CCTV-TV /246/C	5	31-Mar-21	05-Apr-21	17-Jun-21	21-Jun-21			78
Installation of Control Cabinet		16	25-Mar-21	10-Apr-21	07-May-21	23-May-21			43
CSTS3A.0.12	Installation of Control Cabinet	16	25-Mar-21	10-Apr-21	07-May-21	23-May-21			43
Local Cables Installation , Testing and Termination		71	10-Apr-21	20-Jun-21	05-May-21	21-Jun-21			2
CSTS3A.0.13	Local Cables Installation , Testing and Termination	24	04-May-21	27-May-21	05-May-21	29-May-21			2
CSTS3A.0.14	Cables Installation, Testing and Termination at TCSS Cabinet	24	27-May-21	20-Jun-21	29-May-21	21-Jun-21			2
CSTS3A.0.15	Fibre Cable Termination	16	10-Apr-21	26-Apr-21	23-May-21	07-Jun-21			43
Site Comissioning Test of TCD and Fibre Cable		62	26-Apr-21	27-Jun-21	08-Jun-21	28-Jun-21			2
CSTS3A.0.16	SCT for Power Distribution Equipment	7	20-Jun-21	27-Jun-21	22-Jun-21	28-Jun-21			2
CSTS3A.0.17	SCT for TCS and JTI	7	20-Jun-21	27-Jun-21	22-Jun-21	28-Jun-21			2
CSTS3A.0.18	SCT for CCTV	7	20-Jun-21	27-Jun-21	22-Jun-21	28-Jun-21			2
CSTS3A.0.19	Fibre Cable Test (End to End)	21	26-Apr-21	17-May-21	08-Jun-21	28-Jun-21			43
Stage 4A Works (Bridges within Portion 4A)		106	14-Mar-21	27-Jun-21	11-Apr-21	03-Dec-23			889
CSTS4A.0.1	Handover of Holding-down Bolts for Pole Foundation to Civil	1	14-Mar-21	15-Mar-21	02-Dec-23	03-Dec-23			993
CSTS4A.0.2	Portion 4A Access Date	0	10-Apr-21	10-Apr-21	11-Apr-21	11-Apr-21			1
CSTS4A.0.3	Inspection of Civil Provisions and Submit Inspection Report	8	10-Apr-21	17-Apr-21	11-Apr-21	19-Apr-21			1
CSTS4A.0.4	Rectification of Civil Provisions Defects by others	16	18-Apr-21	03-May-21	19-Apr-21	05-May-21			1
Laying Cables (fibre , signal and power)		30	04-May-21	02-Jun-21	05-May-21	03-Jun-21			1
CSTS4A.0.5	Installation of Cable Containment	14	04-May-21	17-May-21	05-May-21	19-May-21			1
CSTS4A.0.6	Laying Cables on Gantries	16	18-May-21	02-Jun-21	19-May-21	03-Jun-21			1
CSTS4A.0.7	Fibre, Signal and Power Cables along Roadside	28	04-May-21	31-May-21	07-May-21	03-Jun-21			3
Installation of Traffic Control Field Equipment		16	04-May-21	19-May-21	10-Jun-21	25-Jun-21			37
CSTS4A.0.8	VSLS	8	04-May-21	11-May-21	10-Jun-21	18-Jun-21			37
CSTS4A.0.9	Roadside VMS	8	11-May-21	19-May-21	18-Jun-21	25-Jun-21			37
Installation of CCTV		42	04-May-21	14-Jun-21	15-May-21	25-Jun-21			11
CSTS4A.0.10	Assembly and erect CCTV Highmast for CCTV-TV/201/A	7	04-May-21	10-May-21	15-May-21	21-May-21			11
CSTS4A.0.11	CCTV-TV /201/A	7	11-May-21	17-May-21	22-May-21	28-May-21			11
CSTS4A.0.12	Assembly and erect CCTV Highmast for CCTV-TV/202/A	7	18-May-21	24-May-21	29-May-21	04-Jun-21			11
CSTS4A.0.13	CCTV-TV /202/A	7	25-May-21	31-May-21	05-Jun-21	11-Jun-21			11
CSTS4A.0.14	Assembly and erect CCTV Highmast for CCTV-TV/245/C	7	01-Jun-21	07-Jun-21	12-Jun-21	18-Jun-21			11
CSTS4A.0.15	CCTV-TV /245/C	7	08-Jun-21	14-Jun-21	19-Jun-21	25-Jun-21			11
Installation of Vehicle Detectors		14	04-May-21	17-May-21	12-Jun-21	25-Jun-21			39
CSTS4A.0.16	Erect VD Pole for VD/202/A	7	04-May-21	10-May-21	12-Jun-21	18-Jun-21			39
CSTS4A.0.17	VD/202/A	7	11-May-21	17-May-21	19-Jun-21	25-Jun-21			39
Installation of Control Cabinet		14	04-May-21	17-May-21	11-May-21	24-May-21			7
CSTS4A.0.18	Installation of Control Cabinet	14	04-May-21	17-May-21	11-May-21	24-May-21			7
Local Cables Installation , Testing and Termination		37	18-May-21	23-Jun-21	25-May-21	24-Jun-21			1
CSTS4A.0.19	Cables Installation, Testing and Termination at TCSS Cabinet	21	02-Jun-21	23-Jun-21	04-Jun-21	24-Jun-21			1
CSTS4A.0.20	Fibre Cable Termination	14	18-May-21	31-May-21	25-May-21	07-Jun-21			7
Site Comissioning Test of TCD and Fibre Cable		27	01-Jun-21	27-Jun-21	08-Jun-21	28-Jun-21			1
CSTS4A.0.21	SCT for Power Distribution Equipment	4	23-Jun-21	27-Jun-21	25-Jun-21	28-Jun-21			1
CSTS4A.0.22	SCT for VSLS and VMS	3	23-Jun-21	26-Jun-21	26-Jun-21	28-Jun-21			2
CSTS4A.0.23	SCT for CCTV	3	23-Jun-21	26-Jun-21	26-Jun-21	28-Jun-21			2
CSTS4A.0.24	SCT for VD	3	23-Jun-21	26-Jun-21	26-Jun-21	28-Jun-21			2
CSTS4A.0.25	Fibre Cable Test (End to End)	21	01-Jun-21	21-Jun-21	08-Jun-21	28-Jun-21			7
Stage 4B Works (Bridges within Portion 4B)		39	19-May-21	26-Jun-21	28-May-21	03-Dec-23			890
CSTS4B.0.1	Handover of Holding-down Bolts for Pole Foundation to Civil	3	19-May-21	22-May-21	30-Nov-23	03-Dec-23			925
CSTS4B.0.2	Portion 4B Access Date	0	27-May-21	27-May-21	28-May-21	28-May-21			2
CSTS4B.0.3	Inspection of Civil Provisions and Submit Inspection Report	7	27-May-21	02-Jun-21	29-May-21	04-Jun-21			2
CSTS4B.0.4	Rectification of Civil Provisions Defects by others	7	03-Jun-21	09-Jun-21	05-Jun-21	11-Jun-21			2
CSTS4B.0.5	Laying Cables (Fibre, Signal and Power) along Roadside	7	10-Jun-21	16-Jun-21	12-Jun-21	18-Jun-21			2
Installation of Vehicle Detectors		10	10-Jun-21	19-Jun-21	12-Jun-21	21-Jun-21			2
CSTS4B.0.6	Erect VD Pole for VD/105/A	3	10-Jun-21	12-Jun-21	12-Jun-21	14-Jun-21			2
CSTS4B.0.7	VD/105/A	7	13-Jun-21	19-Jun-21	15-Jun-21	21-Jun-21			2
Insstallation of Control Cabinet		1	10-Jun-21	11-Jun-21	13-Jun-21	14-Jun-21			4
CSTS4B.0.8	Installation of Control Cabinet	1	10-Jun-21	11-Jun-21	13-Jun-21	14-Jun-21			4
Local Cables Installation , Testing and Termination		12	11-Jun-21	22-Jun-21	15-Jun-21	24-Jun-21			2
CSTS4B.0.10	Cables Installation, Testing and Termination at TCSS Cabinet	3	20-Jun-21	22-Jun-21	22-Jun-21	24-Jun-21			2
CSTS4B.0.11	Fibre Cable Termination	7	11-Jun-21	18-Jun-21	15-Jun-21	21-Jun-21			4
CSTS4B.0.9	Local Cables Installation (fibre , signal and power) along Roadside	3	17-Jun-21	19-Jun-21	19-Jun-21	21-Jun-21			2
Site Comissioning Test of TCD and Fibre Cable		9	18-Jun-21	26-Jun-21	22-Jun-21	28-Jun-21			2
CSTS4B.0.12	SCT for Power Distribution Equipment	3	23-Jun-21	25-Jun-21	26-Jun-21	28-Jun-21			3
CSTS4B.0.13	SCT for VD	4	23-Jun-21	26-Jun-21	25-Jun-21	28-Jun-21			2
CSTS4B.0.14	Fibre Cable Test (End to End)	7	18-Jun-21	25-Jun-21	22-Jun-21	28-Jun-21			4
SAT for TKO-LTT TCSS		233	01-May-21	20-Dec-21	29-Jun-21	04-Mar-23			439
SATT.0.01	TCSS System SAT	28	09-Sep-21	07-Oct-21	11-Sep-21	08-Oct-21			1
SATT.0.02	Traffic Control Devices SAT	25	15-Aug-21	09-Sep-21	17-Aug-21	10-Sep-21			1
SATT.0.03	Communication System SAT	21	25-Jul-21	15-Aug-21	27-Jul-21	16-Aug-21			1
SATT.0.04	CCTV SAT	28	27-Jun-21	25-Jul-21	14-Aug-21	10-Sep-21			47
SATT.0.05	Building PABX SAT	21	15-Aug-21	05-Sep-21	21-Aug-21	10-Sep-21			5
SATT.0.06	ET System SAT	21	15-Aug-21	05-Sep-21	21-Aug-21	10-Sep-21			5
SATT.0.07	PA System SAT	14	15-Aug-21	29-Aug-21	28-Aug-21	10-Sep-21			12
SATT.0.08	Radio System SAT	35	27-Jun-21	01-Aug-21	18-Sep-21	22-Oct-21			82
SATT.0.09	Detection System SAT	30	27-Jun-21	27-Jul-21	12-Aug-21	10-Sep-21			46
SATT.0.10	Detection System (VD) SAT after Road Opening	30	20-Nov-21	20-Dec-21	02-Feb-23	04-Mar-23			439
SATT.0.11	MFCS SAT	14	07-Oct-21	21-Oct-21	09-Oct-21	22-Oct-21			1
SATT.0.12	Operation Facilities SAT	21	26-Jun-21	17-Jul-21	21-Aug-21	10-Sep-21			55
SATT.0.13	Power Distribution System SAT	14	27-Jun-21	11-Jul-21	29-Jun-21	12-Jul-21			1
SATT.0.14	SEC SAT	21	01-May-21	22-May-21	02-Oct-21	22-Oct-21			154
SATT.0.15	Optical Fibre System SAT	14	11-Jul-21	25-Jul-21	13-Jul-21	26-Jul-21			1
SATT.0.16	FSD's Inspection under Interfacing Contractor of C1	7	07-Oct-21	14-Oct-21	09-Oct-21	15-Oct-21			1
SATT.0.17	FSD's Inspection under Interfacing Contractor of C2	7	14-Oct-21	21-Oct-21	16-Oct-21	22-Oct-21			1
Operability Period Test for the TKO-LTT TCSS		30	21-Oct-21	20-Nov-21	23-Oct-21	21-Nov-21			1
OPTT.0.01	Operability Period test for the TKO-LTT TCSS	30	21-Oct-21	20-Nov-21	23-Oct-21	21-Nov-21			1
DLP for the TKO-LTT TCSS		365	21-Nov-21	21-Nov-22	03-Dec-22	03-Dec-23			377
General		365	21-Nov-21	21-Nov-22	03-Dec-22	03-Dec-23			377
DLPT.0.01	0-3 months of DLP	91	21-Nov-21	20-Feb-22	03-Dec-22	04-Mar-23			377
DLPT.0.02	4-6 months of DLP	91	20-Feb-22	22-May-22	04-Mar-23	03-Jun-23			377
DLPT.0.03	7-9 months of DLP	91	22-May-22	21-Aug-22	03-Jun-23	02-Sep-23			377
DLPT.0.04	10-12 months of DLP	92	21-Aug-22	21-Nov-22	02-Sep-23	03-Dec-23			377
Documentation Submission for TKO-LTT TCSS		197	04-Jun-21	18-Dec-21	11-Oct-21	03-Dec-23			715
DOC1.0.01	System Description	6	25-Jun-21	30-Jun-21	27-Nov-23	03-Dec-23			886
DOC1.0.02	Operation Manual	7	25-Jun-21	02-Jul-21	16-Oct-21	22-Oct-21			113
DOC1.0.03	System Adminstration Manual	11	25-Jun-21	06-Jul-21	22-Nov-23	03-Dec-23			880



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

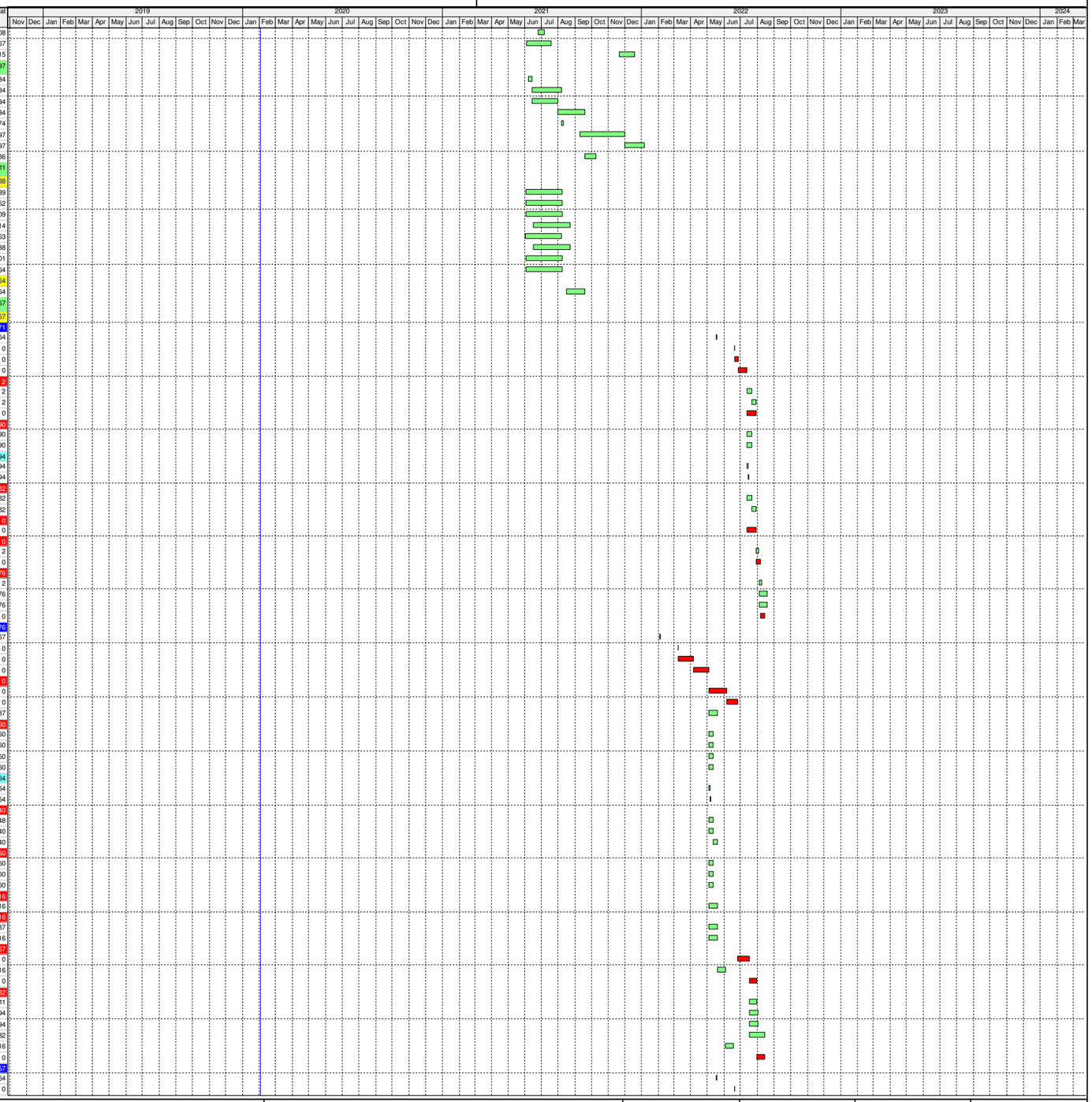
Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

NE/2017/06 TKO-LTT TCSS_DWP_VerD

Detailed Works Programme

09-Jul-20 01:19

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
DOC1.0.04	Training Material	11	25-Jun-21	06-Jul-21	11-Oct-21	22-Oct-21			108
DOC1.0.05	Equipment Mainterance Manual	45	04-Jun-21	19-Jul-21	19-Oct-23	03-Dec-23			867
DOC1.0.06	As-built Drawings	28	20-Nov-21	18-Dec-21	05-Nov-23	03-Dec-23			715
Training for TKO-LTT TCSS		213	07-Jun-21	05-Jan-22	11-Jul-21	03-Dec-23			697
TRT.0.01	TCSS System Overview	7	07-Jun-21	14-Jun-21	11-Jul-21	18-Jul-21			34
TRT.0.02	TCSS Central System & Control Room Operations	54	14-Jun-21	07-Aug-21	18-Jul-21	10-Sep-21			34
TRT.0.03	TCSS Central System Software Design	47	14-Jun-21	31-Jul-21	18-Jul-21	03-Sep-21			34
TRT.0.04	TCSS Central System Administration	50	31-Jul-21	18-Sep-21	03-Sep-21	22-Oct-21			34
TRT.0.05	TCSS Control Kiosk Operation	3	07-Aug-21	10-Aug-21	19-Oct-21	22-Oct-21			74
TRT.0.06	TCSS Field Hardware O&M	82	09-Sep-21	30-Nov-21	07-Aug-23	28-Oct-23			697
TRT.0.07	TCSS Control Centre Equipment O&M	36	30-Nov-21	05-Jan-22	28-Oct-23	03-Dec-23			697
TRT.0.08	TCSS Sub-systems Administration	20	18-Sep-21	08-Oct-21	13-Nov-23	03-Dec-23			786
Equipment Manufacturing and Delivery for CBL TCSS		110	01-Jun-21	19-Sep-21	21-Feb-22	03-Nov-22			411
Sub-systems Equipment Manufacturing And Delivery		83	01-Jun-21	23-Aug-21	21-Feb-22	03-Nov-22			438
EMC.0.01	Traffic Control Devices	68	02-Jun-21	08-Aug-21	07-May-22	14-Jul-22			339
EMC.0.02	Communications System	68	02-Jun-21	08-Aug-21	28-Aug-22	03-Nov-22			452
EMC.0.03	CCTV System	68	02-Jun-21	08-Aug-21	15-Jul-22	21-Sep-22			409
EMC.0.04	Detection System	68	16-Jun-21	23-Aug-21	04-Aug-22	11-Oct-22			414
EMC.0.05	Power Distribution System	68	01-Jun-21	07-Aug-21	28-Aug-22	03-Nov-22			453
EMC.0.06	Enforcement system	68	16-Jun-21	23-Aug-21	28-Aug-22	03-Nov-22			438
EMC.0.07	Cables	68	02-Jun-21	08-Aug-21	30-Mar-22	05-Jun-22			301
EMC.0.08	Control Cabinet and Equipment Rack	68	02-Jun-21	08-Aug-21	21-Feb-22	30-Apr-22			264
Assembly of Equipment in Control Cabinet		34	16-Aug-21	19-Sep-21	08-May-22	10-Jun-22			264
EMC2.0.01	Assembly of Equipment in Control Cabinet	34	16-Aug-21	19-Sep-21	08-May-22	10-Jun-22			264
Construction Stage for CBL TCSS		211	03-Feb-22	02-Sep-22	09-Mar-22	03-Dec-23			457
Works for Section 2A and Section 2B		211	03-Feb-22	02-Sep-22	09-Mar-22	03-Dec-23			457
Stage 5 Works (Within Portion 5A)		95	17-May-22	19-Aug-22	20-Jun-22	03-Dec-23			471
CSTS5A.0.01	Handover of Holding-down Bolts for Pole Foundation to Civil	1	17-May-22	18-May-22	02-Dec-23	03-Dec-23			564
CSTS5A.0.02	Portion 5A Access Date	0	20-Jun-22	20-Jun-22	20-Jun-22	20-Jun-22			0
CSTS5A.0.03	Inspection of Civil Provisions and Submit Inspection Report	8	20-Jun-22	27-Jun-22	20-Jun-22	28-Jun-22			0
CSTS5A.0.04	Rectification of Civil provisions Defects by others	16	27-Jun-22	13-Jul-22	28-Jun-22	13-Jul-22			0
Laying Cables (fibre, signal and power)		16	13-Jul-22	29-Jul-22	14-Jul-22	31-Jul-22			2
CSTS5A.0.05	Installation of Cable Containment	8	13-Jul-22	21-Jul-22	15-Jul-22	23-Jul-22			2
CSTS5A.0.06	Laying Cables on Gantries	8	21-Jul-22	29-Jul-22	23-Jul-22	31-Jul-22			2
CSTS5A.0.07	Fibre, Signal and Power Cables along Roadside	16	13-Jul-22	29-Jul-22	14-Jul-22	29-Jul-22			0
Installation of Traffic Control Field Equipment		8	13-Jul-22	21-Jul-22	11-Oct-22	19-Oct-22			90
CSTS5A.0.08	MLCS	8	13-Jul-22	21-Jul-22	11-Oct-22	19-Oct-22			90
CSTS5A.0.09	Roadside VMS	8	13-Jul-22	21-Jul-22	11-Oct-22	19-Oct-22			90
FVMS - FVMS/141/C		3	13-Jul-22	16-Jul-22	15-Oct-22	19-Oct-22			94
CSTS5A.0.010	Assembly of FVMS at neraby Area	2	13-Jul-22	15-Jul-22	15-Oct-22	18-Oct-22			94
CSTS5A.0.011	Erect the FVMS on Gantry	1	15-Jul-22	16-Jul-22	18-Oct-22	19-Oct-22			94
Installation of CCTV		16	13-Jul-22	29-Jul-22	03-Oct-22	19-Oct-22			82
CSTS5A.0.012	Assembly and Erect CCTV Highmast for CCTV-TV/144/C	8	13-Jul-22	21-Jul-22	03-Oct-22	11-Oct-22			82
CSTS5A.0.013	CCTV-TV/144/C	8	21-Jul-22	29-Jul-22	11-Oct-22	19-Oct-22			82
Installation of Control Cabinet		16	13-Jul-22	29-Jul-22	14-Jul-22	29-Jul-22			0
CSTS5A.0.014	Installation of Control Cabinet	16	13-Jul-22	29-Jul-22	14-Jul-22	29-Jul-22			0
Local Cables Installation, Testing and Termination		8	29-Jul-22	06-Aug-22	29-Jul-22	06-Aug-22			0
CSTS5A.0.015	Cables Installation, Testing and Termination at TCSS Cabinet	6	29-Jul-22	03-Aug-22	31-Jul-22	05-Aug-22			2
CSTS5A.0.016	Fibre Cable termination	8	29-Jul-22	06-Aug-22	29-Jul-22	06-Aug-22			0
Site Commissioning Test of TCD and Fibre Cable		16	04-Aug-22	19-Aug-22	05-Aug-22	03-Nov-22			76
CSTS5A.0.017	SCT for Power Distribution Equipment	6	04-Aug-22	09-Aug-22	05-Aug-22	11-Aug-22			2
CSTS5A.0.018	SCT for MLCS, VMS and FVMS	16	04-Aug-22	19-Aug-22	19-Oct-22	03-Nov-22			76
CSTS5A.0.019	SCT for CCTV	16	04-Aug-22	19-Aug-22	19-Oct-22	03-Nov-22			76
CSTS5A.0.020	Fibre Cable Test (End to End)	8	06-Aug-22	14-Aug-22	06-Aug-22	14-Aug-22			0
Stage 5 Works (Within Portion 5B)		192	03-Feb-22	14-Aug-22	09-Mar-22	03-Dec-23			476
CSTS5B.0.01	Handover of Holding-down Bolts for Pole Foundation to Civil	1	03-Feb-22	04-Feb-22	02-Dec-23	03-Dec-23			667
CSTS5B.0.02	Portion 5B Access Date	0	09-Mar-22	09-Mar-22	09-Mar-22	09-Mar-22			0
CSTS5B.0.03	Inspection of Civil Provisions and Submit Inspection Report	28	09-Mar-22	06-Apr-22	09-Mar-22	06-Apr-22			0
CSTS5B.0.04	Rectification of Civil provisions Defects by others	28	06-Apr-22	04-May-22	06-Apr-22	04-May-22			0
Laying Cables (fibre, signal and power)		53	04-May-22	26-Jun-22	04-May-22	26-Jun-22			0
CSTS5B.0.05	Installation of Cable Containment	32	04-May-22	05-Jun-22	04-May-22	05-Jun-22			0
CSTS5B.0.06	Laying Cables on Gantries	21	05-Jun-22	26-Jun-22	05-Jun-22	26-Jun-22			0
CSTS5B.0.07	Fibre, Signal and Power Cables along Roadside	16	04-May-22	20-May-22	10-Jun-22	26-Jun-22			37
Installation of Traffic Control Field Equipment		8	04-May-22	12-May-22	11-Oct-22	19-Oct-22			160
CSTS5B.0.08	MLCS	8	04-May-22	12-May-22	11-Oct-22	19-Oct-22			160
CSTS5B.0.09	Roadside VMS	8	04-May-22	12-May-22	11-Oct-22	19-Oct-22			160
CSTS5B.0.10	VSLS	8	04-May-22	12-May-22	11-Oct-22	19-Oct-22			160
CSTS5B.0.11	Tunnel Closed Sign	8	04-May-22	12-May-22	11-Oct-22	19-Oct-22			160
FVMS - FVMS/202/A		3	04-May-22	07-May-22	15-Oct-22	19-Oct-22			164
CSTS5B.0.012	Assembly of FVMS at neraby Area	2	04-May-22	06-May-22	15-Oct-22	18-Oct-22			164
CSTS5B.0.013	Erect the FVMS on Gantry	1	06-May-22	07-May-22	18-Oct-22	19-Oct-22			164
Installation of CCTV		16	04-May-22	20-May-22	21-Sep-22	06-Oct-22			140
CSTS5B.0.014	CCTV Cameras on Gantries	8	04-May-22	12-May-22	29-Sep-22	06-Oct-22			148
CSTS5B.0.015	Assembly and Erect CCTV Highmast for CCTV-TV/107/A	8	04-May-22	12-May-22	21-Sep-22	29-Sep-22			140
CSTS5B.0.016	CCTV-TV/107/A	8	12-May-22	20-May-22	29-Sep-22	06-Oct-22			140
Installation of Detection System Equipment		8	04-May-22	12-May-22	11-Oct-22	19-Oct-22			160
CSTS5B.0.017	VD Dectectors	8	04-May-22	12-May-22	11-Oct-22	19-Oct-22			160
CSTS5B.0.018	OHVDs	8	04-May-22	12-May-22	11-Oct-22	19-Oct-22			160
CSTS5B.0.019	Visibility Sensor & Anemometer	8	04-May-22	12-May-22	11-Oct-22	19-Oct-22			160
Installation of Enforcement Equipment		16	04-May-22	20-May-22	28-Aug-22	12-Sep-22			116
CSTS5B.0.020	SEC	16	04-May-22	20-May-22	28-Aug-22	12-Sep-22			116
Installation of Control Cabinet		16	04-May-22	20-May-22	10-Jun-22	12-Sep-22			116
CSTS5B.0.021	Control Cabinet for TCSS	16	04-May-22	20-May-22	10-Jun-22	26-Jun-22			37
CSTS5B.0.022	Control Cabinet for SEC	16	04-May-22	20-May-22	28-Aug-22	12-Sep-22			116
Local Cables Installation, Testing and Termination		72	20-May-22	31-Jul-22	26-Jun-22	26-Sep-22			57
CSTS5B.0.023	Cables Installation, Testing and termination at TCSS Cabinet	21	26-Jun-22	17-Jul-22	26-Jun-22	17-Jul-22			0
CSTS5B.0.024	Cables Installation, Testing and termination at SEC Cabinet	14	20-May-22	03-Jun-22	12-Sep-22	26-Sep-22			116
CSTS5B.0.025	Fibre Cable Termination	14	17-Jul-22	31-Jul-22	17-Jul-22	31-Jul-22			0
Site Commissioning Test of TCD and Fibre Cable		72	03-Jun-22	14-Aug-22	28-Jul-22	03-Nov-22			82
CSTS5B.0.026	SCT for Power Distribution Equipment	14	17-Jul-22	31-Jul-22	28-Jul-22	11-Aug-22			11
CSTS5B.0.027	SCT for Detection Equipment	16	17-Jul-22	02-Aug-22	19-Oct-22	03-Nov-22			94
CSTS5B.0.028	SCT for MLCS, VSLS, VMS, TCS and FVMS	16	17-Jul-22	02-Aug-22	19-Oct-22	03-Nov-22			94
CSTS5B.0.029	SCT for CCTV	28	17-Jul-22	14-Aug-22	07-Oct-22	03-Nov-22			82
CSTS5B.0.030	SCT for SEC	16	03-Jun-22	18-Jun-22	26-Sep-22	12-Oct-22			116
CSTS5B.0.031	Fibre Cable Test (End to End)	14	31-Jul-22	14-Aug-22	31-Jul-22	14-Aug-22			0
Stage 5 Works (Within Portion 5C)		108	17-May-22	02-Sep-22	20-Jun-22	03-Dec-23			457
CSTS5C.0.01	Handover of Holding-down Bolts for Pole Foundation to Civil	1	17-May-22	18-May-22	02-Dec-23	03-Dec-23			564
CSTS5C.0.02	Portion 5C Access Date	0	20-Jun-22	20-Jun-22	20-Jun-22	20-Jun-22			0



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

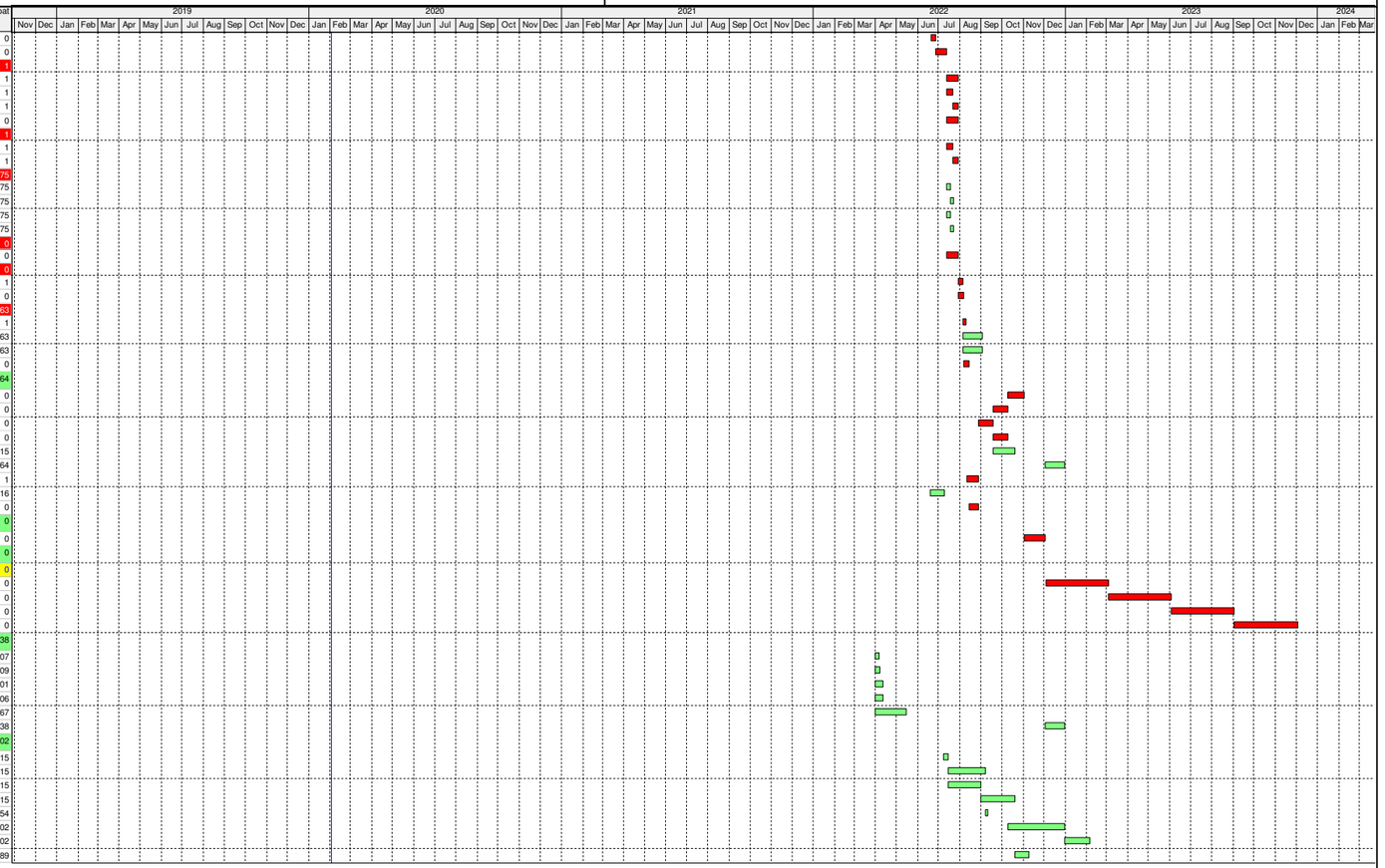
Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

NE/2017/06 TKO-LTT TCSS_DWP_VerD

Detailed Works Programme

09-Jul-20 01:19

Activity ID	Activity Name	Original Duration	Planned Start	Planned Finish	Late Start	Late Finish	Actual Start	Actual Finish	Total Float
CSTS5C.0.03	Inspection of Civil Provisions and Submit Inspection Report	8	20-Jun-22	27-Jun-22	20-Jun-22	28-Jun-22			0
CSTS5C.0.04	Rectification of Civil Provisions Defects by others	16	27-Jun-22	13-Jul-22	28-Jun-22	13-Jul-22			0
Laying Cables (fibre, signal and power)		16	13-Jul-22	29-Jul-22	14-Jul-22	29-Jul-22			1
CSTS5C.0.05	Laying Cables (fibre , signal and power)	16	13-Jul-22	29-Jul-22	14-Jul-22	29-Jul-22			1
CSTS5C.0.06	Installation of Cable Containment	8	13-Jul-22	21-Jul-22	14-Jul-22	21-Jul-22			1
CSTS5C.0.07	Laying Cables on Gantries	8	21-Jul-22	29-Jul-22	22-Jul-22	29-Jul-22			1
CSTS5C.0.08	Fibre, Signal and Power Cables along Roadside	16	13-Jul-22	29-Jul-22	14-Jul-22	29-Jul-22			0
Installation of Traffic Control Field Equipment		16	13-Jul-22	29-Jul-22	14-Jul-22	29-Jul-22			1
CSTS5C.0.09	VMS	8	13-Jul-22	21-Jul-22	14-Jul-22	21-Jul-22			1
CSTS5C.0.10	Tunnel Closed Sign	8	21-Jul-22	29-Jul-22	22-Jul-22	29-Jul-22			1
Installation of CCTV		10	13-Jul-22	23-Jul-22	27-Sep-22	06-Oct-22			75
CSTS5C.011	Mounting Bracket for CCTV in Enlosure / Underpass	5	13-Jul-22	18-Jul-22	27-Sep-22	01-Oct-22			75
CSTS5C.012	CCTV Camera	5	18-Jul-22	23-Jul-22	02-Oct-22	06-Oct-22			75
CSTS5C.013	Assembly and Erect CCTV Highmast for CCTV-TV/241/C	5	13-Jul-22	18-Jul-22	27-Sep-22	01-Oct-22			75
CSTS5C.014	CCTV-TV/241/C	5	18-Jul-22	23-Jul-22	02-Oct-22	06-Oct-22			75
Installation of Control Cabinet		16	13-Jul-22	29-Jul-22	14-Jul-22	29-Jul-22			0
CSTS5C.015	Installation fo Control Cabinet	16	13-Jul-22	29-Jul-22	14-Jul-22	29-Jul-22			0
Local Cables Installation, Testing and Termination		8	29-Jul-22	06-Aug-22	29-Jul-22	06-Aug-22			0
CSTS5C.016	Cables Installation, Testing and termination at TCSS Cabinet	7	29-Jul-22	05-Aug-22	29-Jul-22	05-Aug-22			1
CSTS5C.017	Fibre Cable Termination	8	29-Jul-22	06-Aug-22	29-Jul-22	06-Aug-22			0
Site Commissioning Test of TCD and Fibre Cable		28	05-Aug-22	02-Sep-22	05-Aug-22	03-Nov-22			63
CSTS5C.018	SCT for Power Distribution Equipment	6	05-Aug-22	10-Aug-22	05-Aug-22	11-Aug-22			1
CSTS5C.019	SCT for VMS and TCS	28	05-Aug-22	02-Sep-22	07-Oct-22	03-Nov-22			63
CSTS5C.020	SCT for CCTV	28	05-Aug-22	02-Sep-22	07-Oct-22	03-Nov-22			63
CSTS5C.021	Fibre Cable Test (End to End)	8	06-Aug-22	14-Aug-22	06-Aug-22	14-Aug-22			0
SAT for CBL TCSS		195	19-Jun-22	30-Dec-22	11-Aug-22	04-Mar-23			64
SATC.0.01	TCSS System SAT	24	09-Oct-22	02-Nov-22	09-Oct-22	02-Nov-22			0
SATC.0.02	Traffic Control Devices SAT	21	18-Sep-22	09-Oct-22	18-Sep-22	09-Oct-22			0
SATC.0.03	Communication System SAT	21	28-Aug-22	18-Sep-22	28-Aug-22	18-Sep-22			0
SATC.0.04	CCTV SAT	21	18-Sep-22	09-Oct-22	18-Sep-22	09-Oct-22			0
SATC.0.05	Detection System SAT	32	18-Sep-22	20-Oct-22	03-Oct-22	03-Nov-22			15
SATC.0.06	Detection System (VD) SAT after Road Opening	28	02-Dec-22	30-Dec-22	04-Feb-23	04-Mar-23			64
SATC.0.07	Power Distribution System SAT	17	11-Aug-22	27-Aug-22	11-Aug-22	28-Aug-22			1
SATC.0.08	SEC SAT	21	19-Jun-22	09-Jul-22	12-Oct-22	02-Nov-22			116
SATC.0.09	Optical Fibre System SAT	14	14-Aug-22	28-Aug-22	14-Aug-22	28-Aug-22			0
Operability Period Test For the CBL TCSS		30	02-Nov-22	02-Dec-22	02-Nov-22	02-Dec-22			0
OPTC.0.01	Operability Period Test for the CBL TCSS	30	02-Nov-22	02-Dec-22	02-Nov-22	02-Dec-22			0
DLP for the CBL TCSS		365	03-Dec-22	03-Dec-23	03-Dec-22	03-Dec-23			0
General		365	03-Dec-22	03-Dec-23	03-Dec-22	03-Dec-23			0
DLPC.0.0.1	0-3 months of the DLP	91	03-Dec-22	04-Mar-23	03-Dec-22	04-Mar-23			0
DLPC.0.0.2	4-6 months of the DLP	91	04-Mar-23	03-Jun-23	04-Mar-23	03-Jun-23			0
DLPC.0.0.3	7-9 months of the DLP	91	03-Jun-23	02-Sep-23	03-Jun-23	02-Sep-23			0
DLPC.0.0.4	10-12 months of the DLP	92	02-Sep-23	03-Dec-23	02-Sep-23	03-Dec-23			0
Documentation Submission for CBL TCSS		274	31-Mar-22	30-Dec-22	23-Oct-22	03-Dec-23			338
DOC.0.0.1	System Description	6	31-Mar-22	05-Apr-22	27-Nov-23	03-Dec-23			607
DOC.0.0.2	Operation Manual	7	31-Mar-22	07-Apr-22	26-Oct-22	02-Nov-22			209
DOC.0.0.3	System Adminstration Manual	11	31-Mar-22	11-Apr-22	22-Nov-23	03-Dec-23			601
DOC.0.0.4	Training Material	11	31-Mar-22	11-Apr-22	23-Oct-22	03-Nov-22			206
DOC.0.0.5	Equipment Mainterance Manual	45	31-Mar-22	15-May-22	19-Oct-23	03-Dec-23			567
DOC.0.0.6	As-built Drawings	28	02-Dec-22	30-Dec-22	05-Nov-23	03-Dec-23			338
Training for CBL TCSS		211	08-Jul-22	04-Feb-23	23-Jul-22	03-Dec-23			302
TRC.0.0.1	TCSS System Overview	7	08-Jul-22	15-Jul-22	23-Jul-22	30-Jul-22			15
TRC.0.0.2	TCSS Central System & Control Room Operations	54	15-Jul-22	07-Sep-22	30-Jul-22	22-Sep-22			15
TRC.0.0.3	TCSS Central System Software Design	47	15-Jul-22	31-Aug-22	30-Jul-22	15-Sep-22			15
TRC.0.0.4	TCSS Central System Administrarion	50	31-Aug-22	20-Oct-22	15-Sep-22	03-Nov-22			15
TRC.0.0.5	TCSS Control Kiosk Operation	3	07-Sep-22	10-Sep-22	31-Oct-22	03-Nov-22			54
TRC.0.0.6	TCSS Field Hardware O&M	82	09-Oct-22	30-Dec-22	07-Aug-23	28-Oct-23			302
TRC.0.0.7	TCSS Control Centre Equipment O&M	36	30-Dec-22	04-Feb-23	28-Oct-23	03-Dec-23			302
TRC.0.0.8	TCSS Sub-systems Administration	20	20-Oct-22	09-Nov-22	13-Nov-23	03-Dec-23			389



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

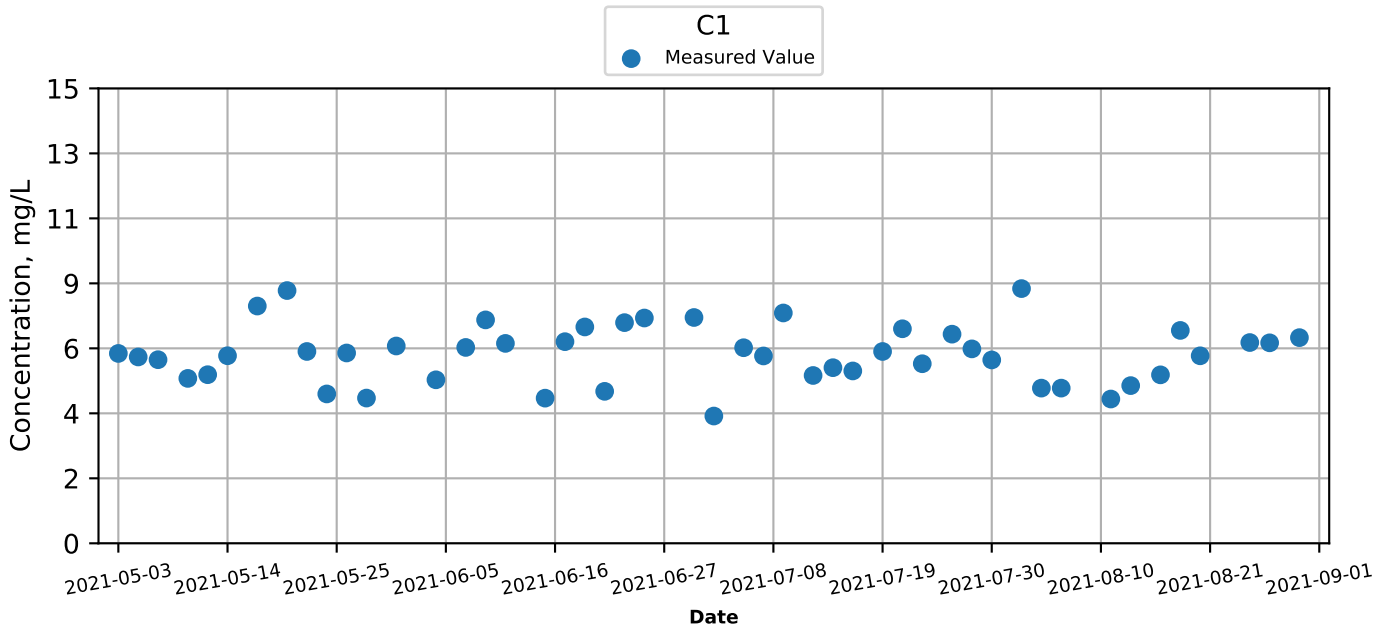
NE/2017/06 - TSEUNG KWAN O - LAM TIN TUNNEL
TRAFFIC CONTROL AND SURVEILLANCE SYSTEM (TCSS) AND ASSOCIATED WORKS

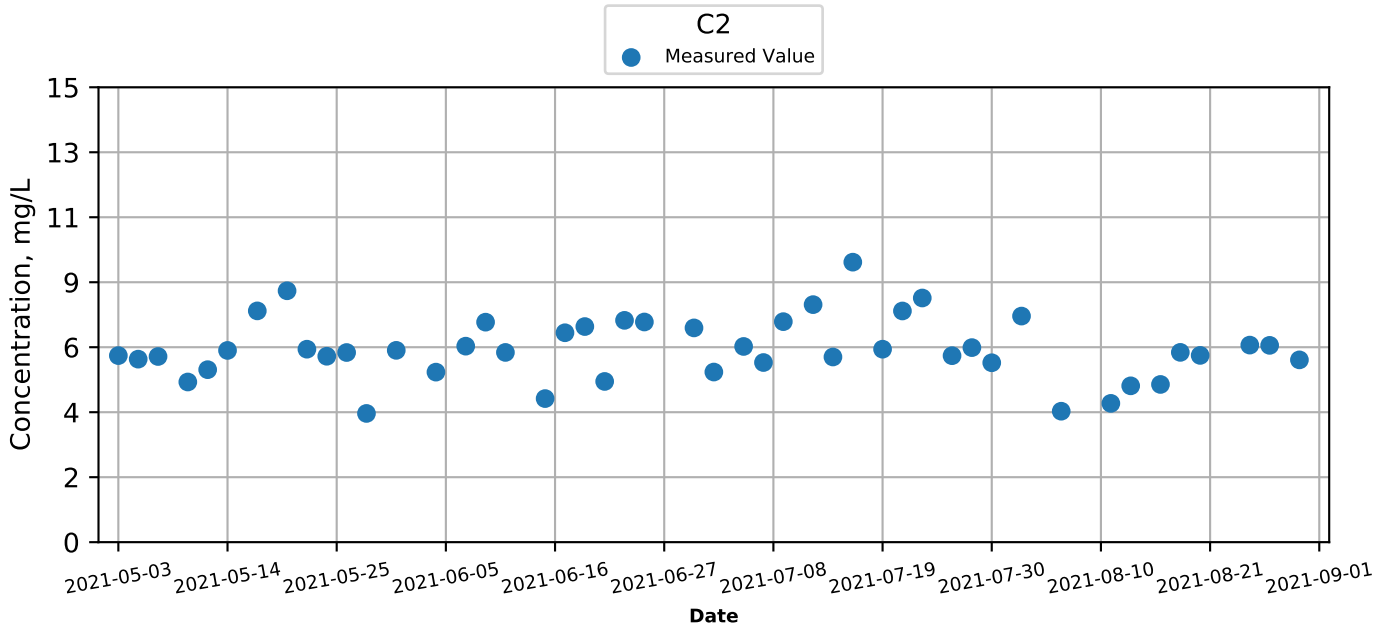
Date	Revision	Checked	Approved
22-Jun-19	0	DaN	DeN
16-Aug-19	A	DaN	DeN
18-Nov-19	B	DaN	DeN
04-Feb-20	C	DaN	DeN
09-Jul-20	D	DaN	DeN

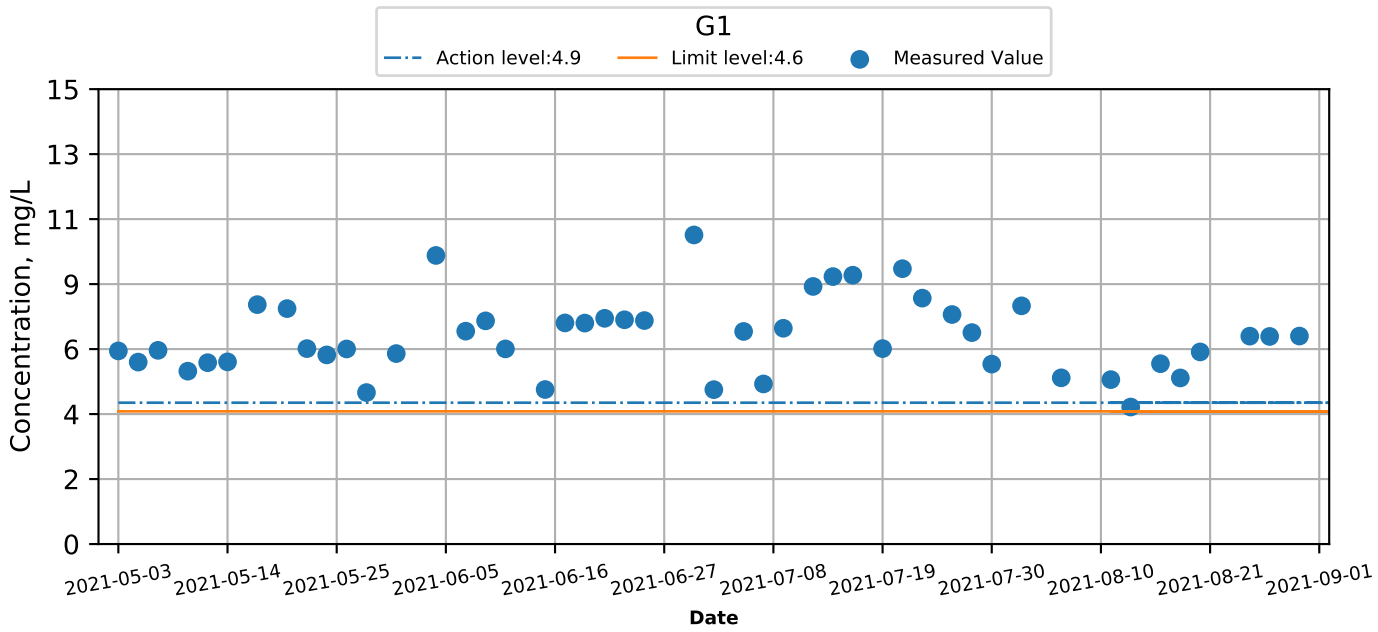
APPENDIX I
MARINE WATER QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Ebb

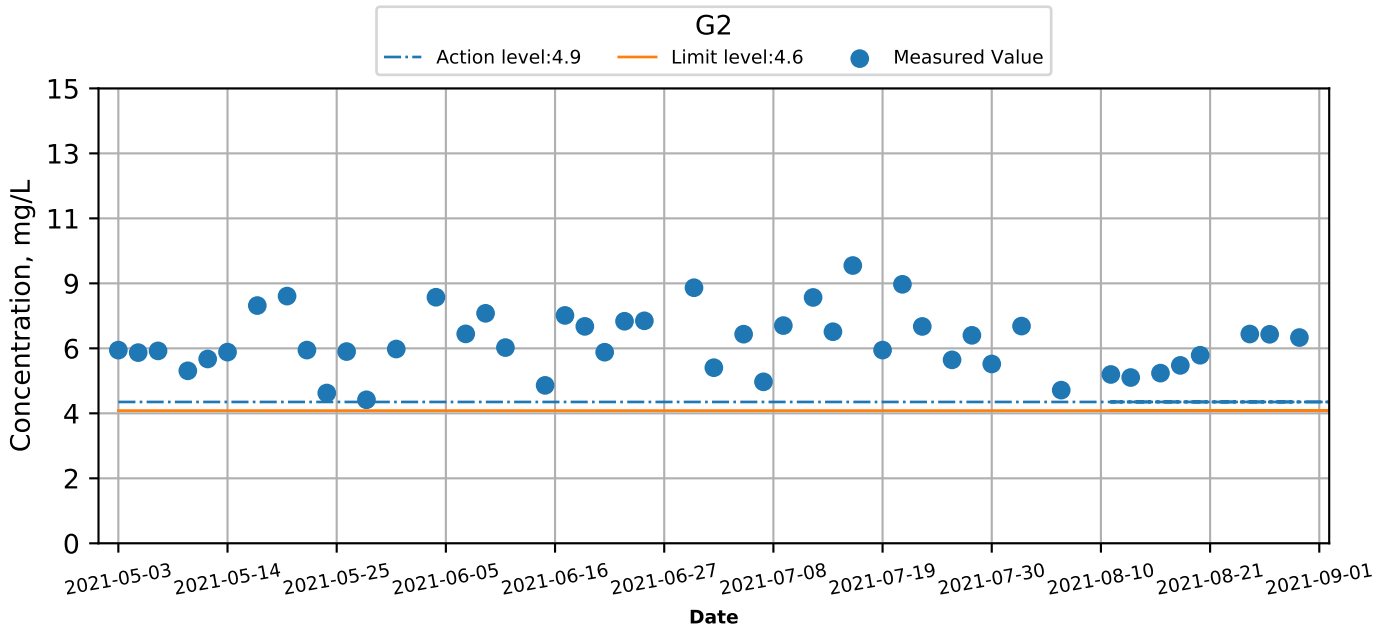


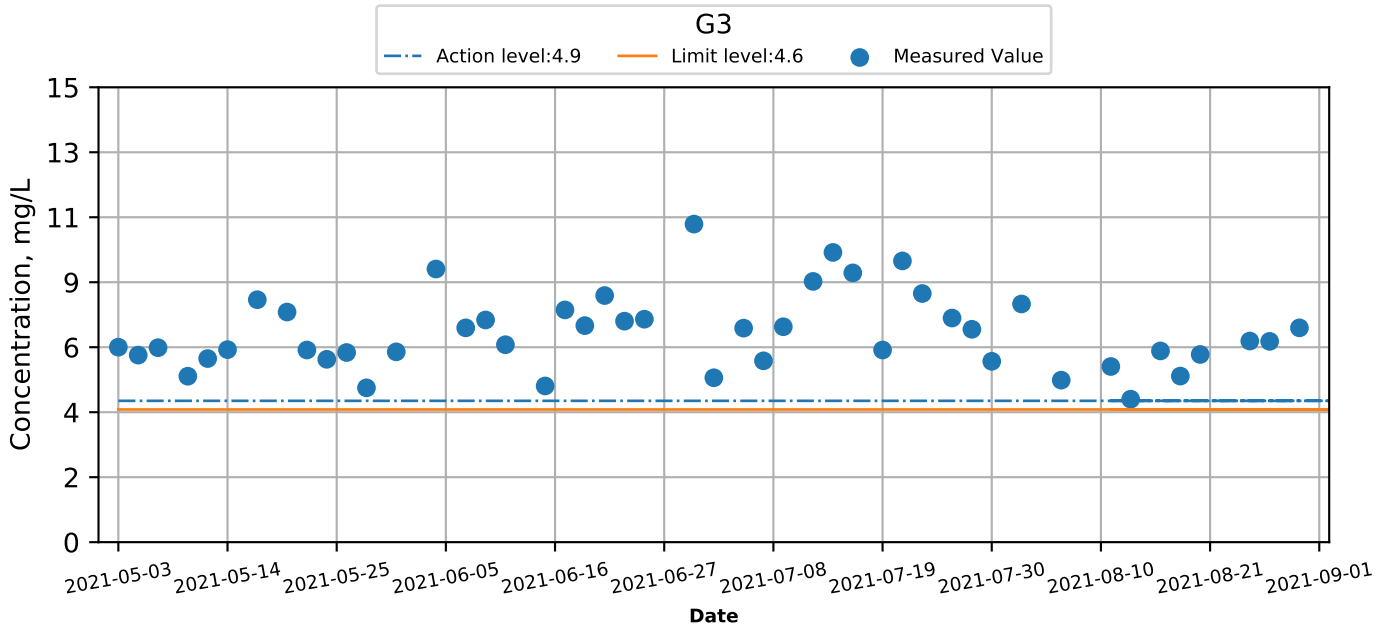


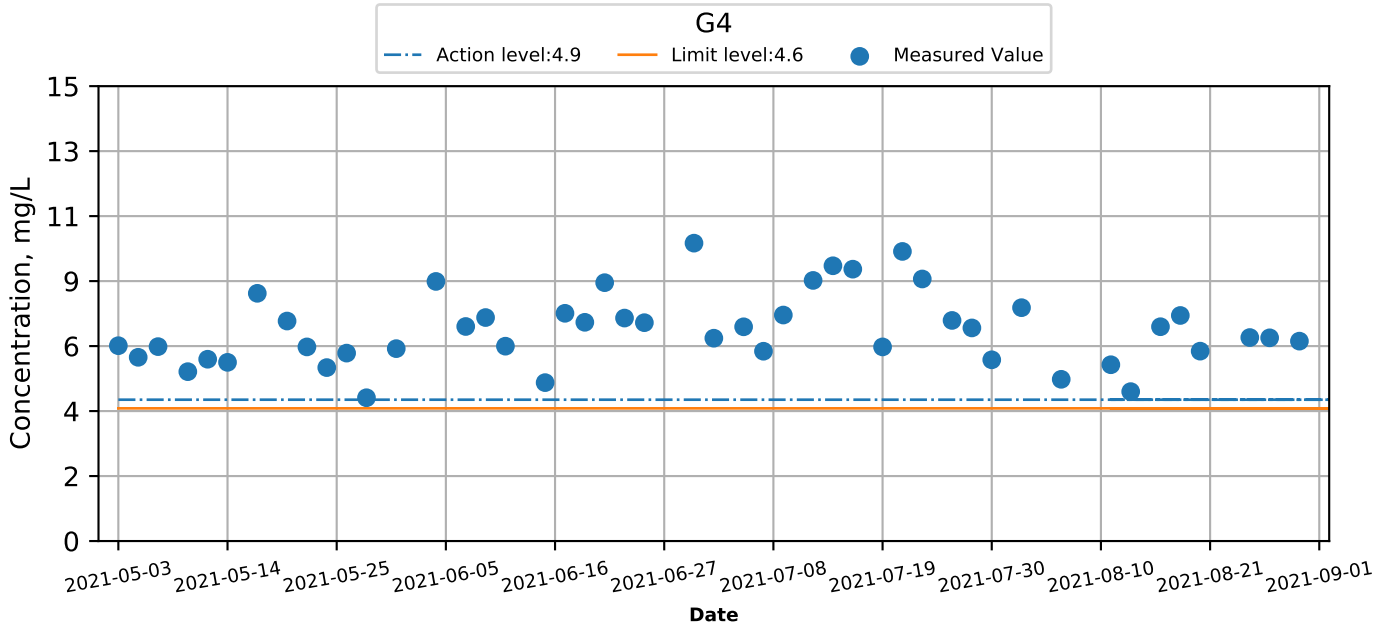


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Ebb

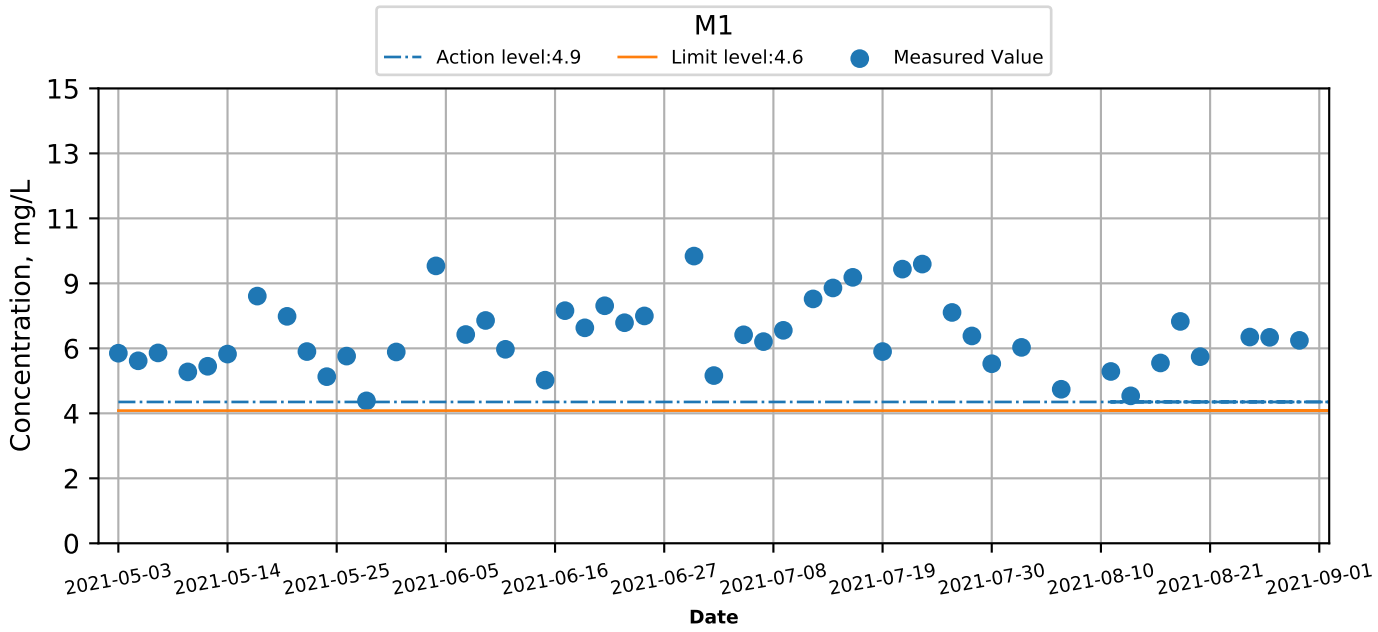


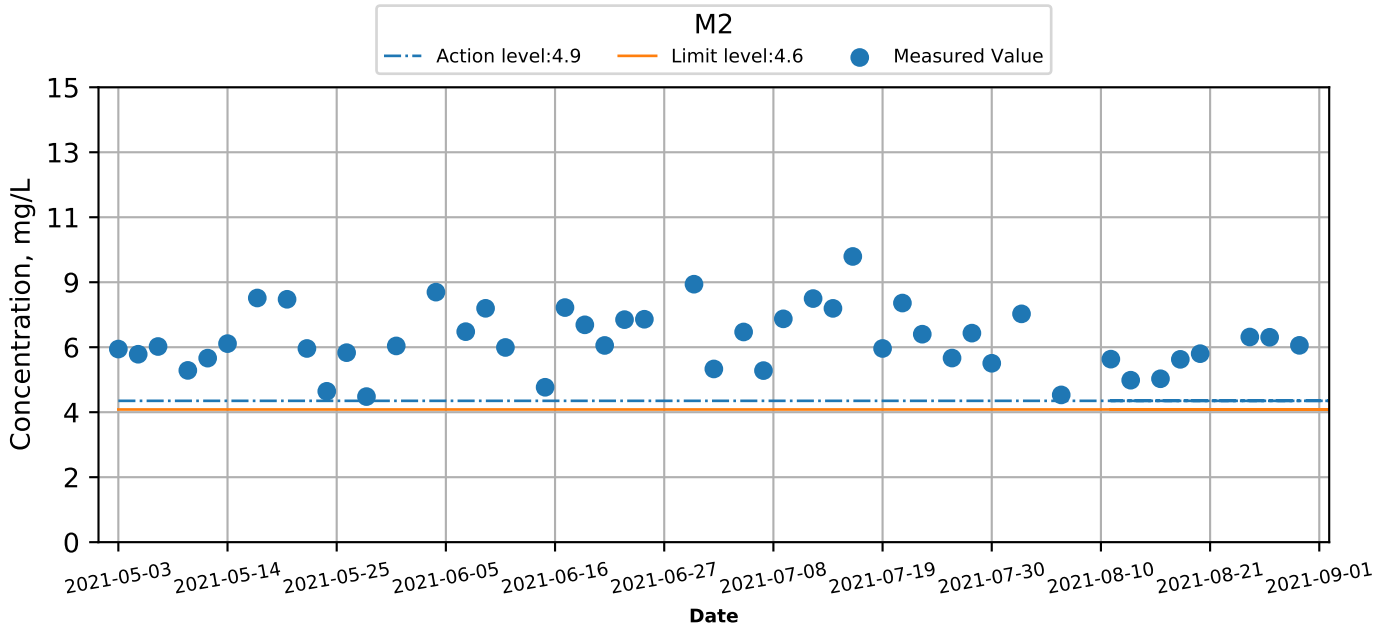


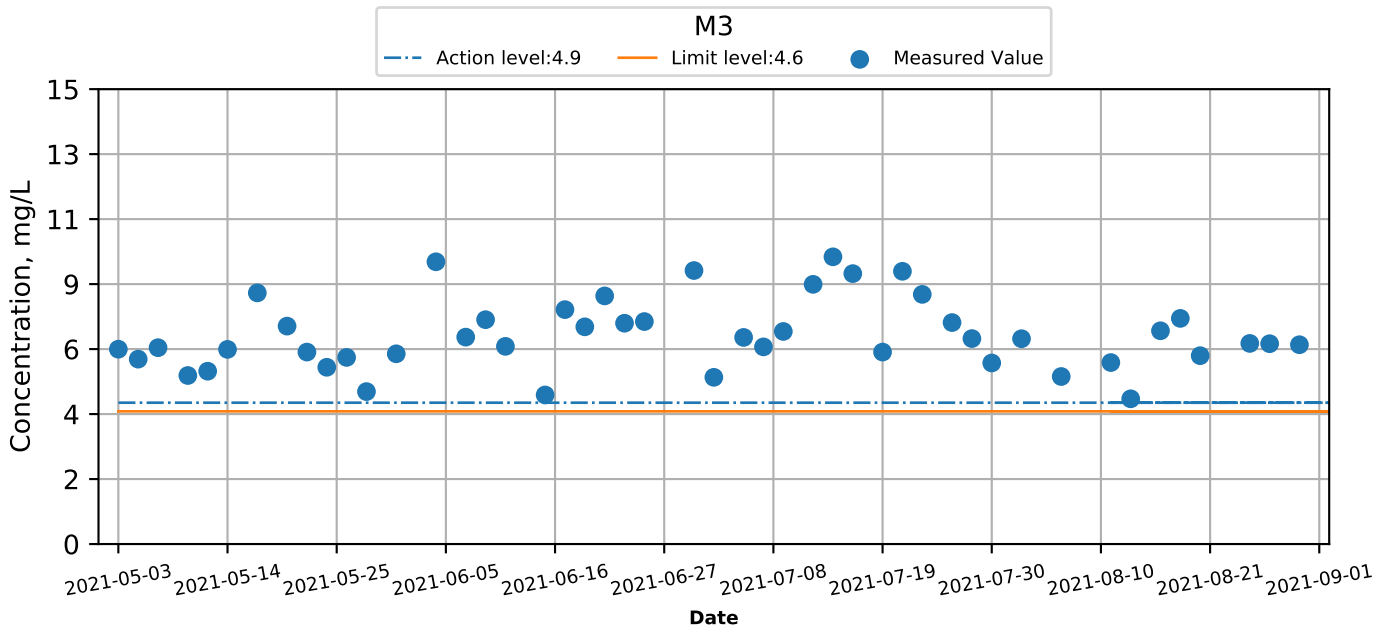


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Ebb

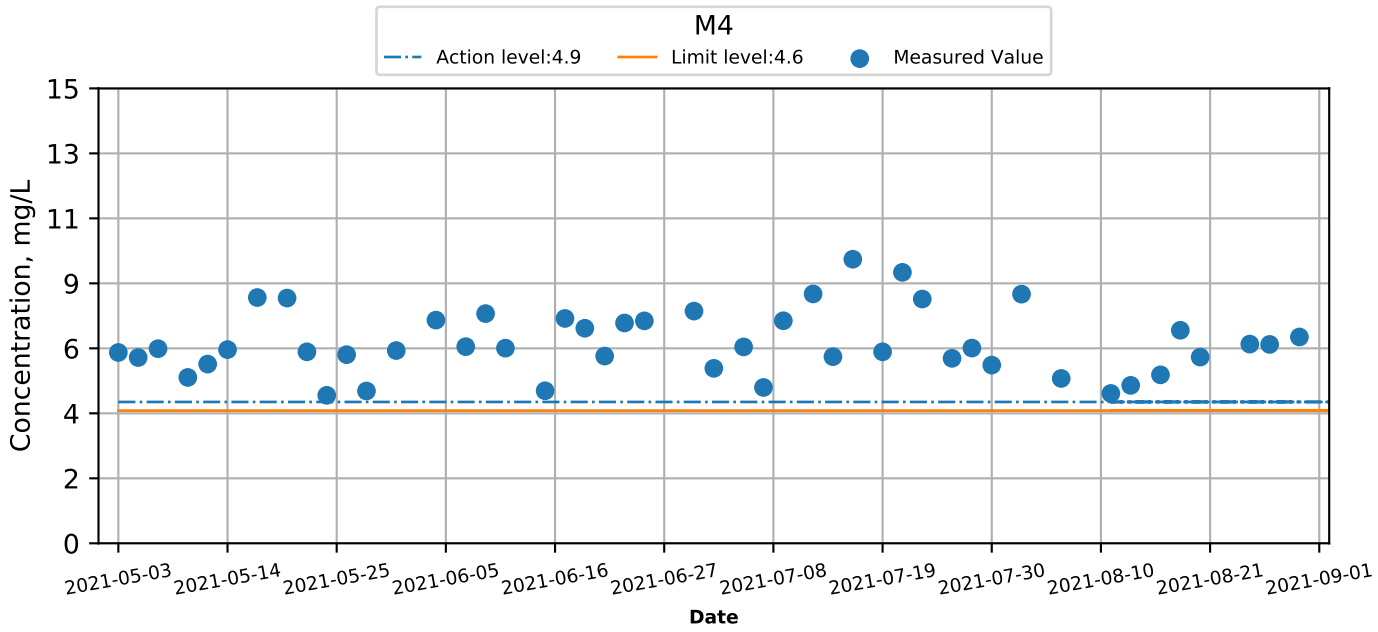


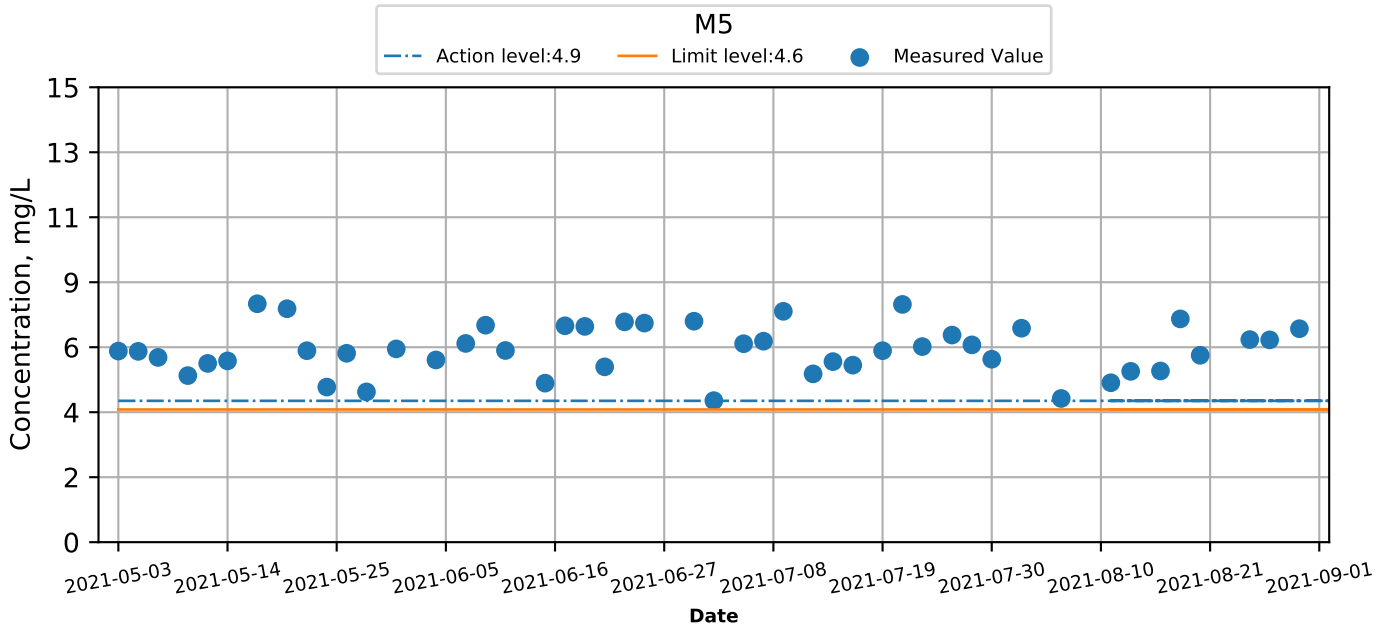




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

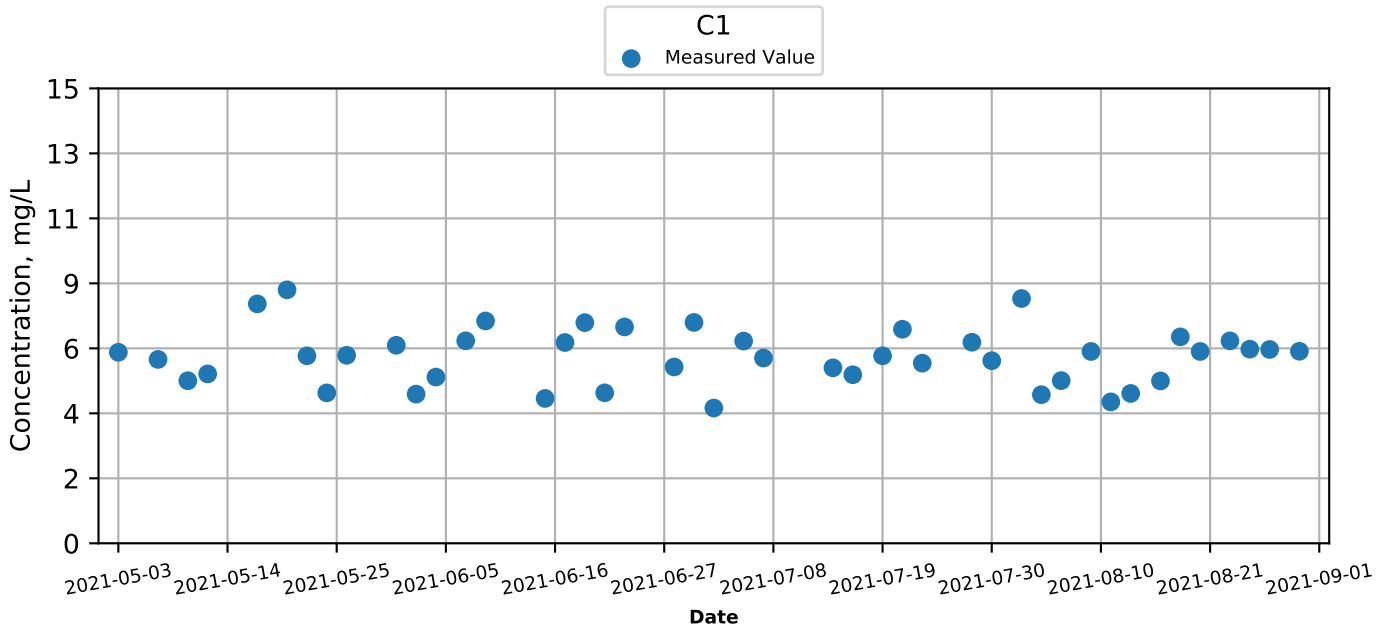
Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Ebb

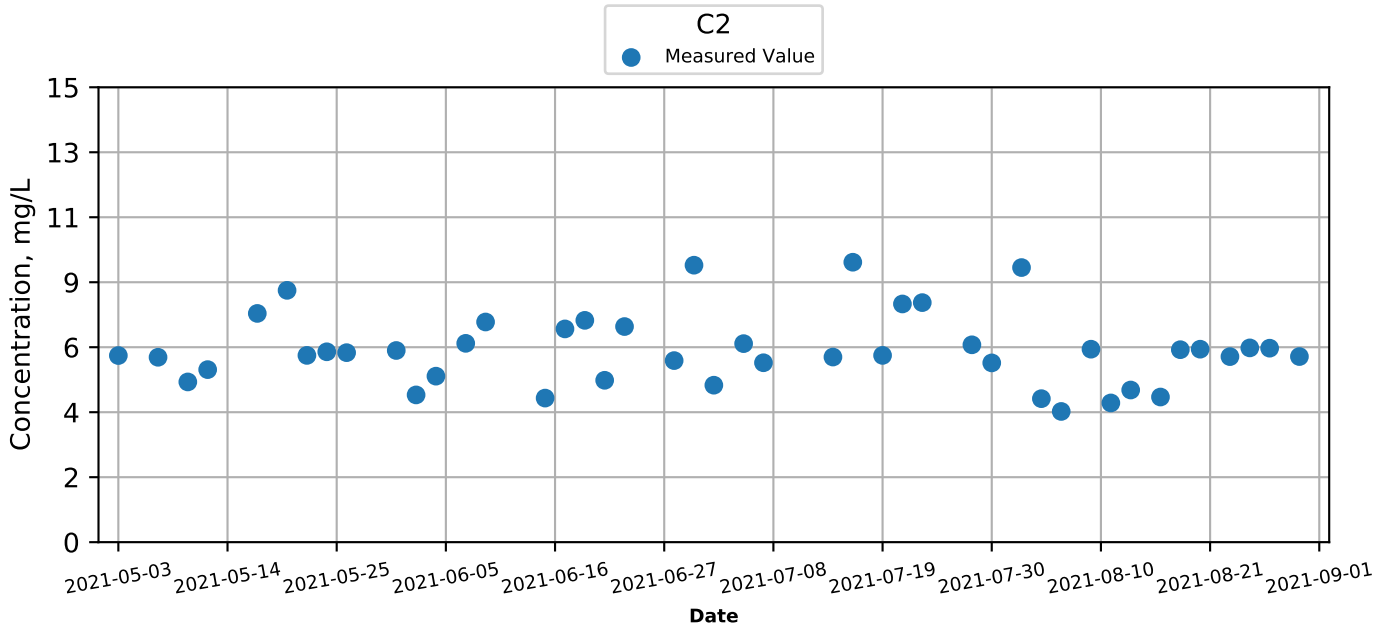


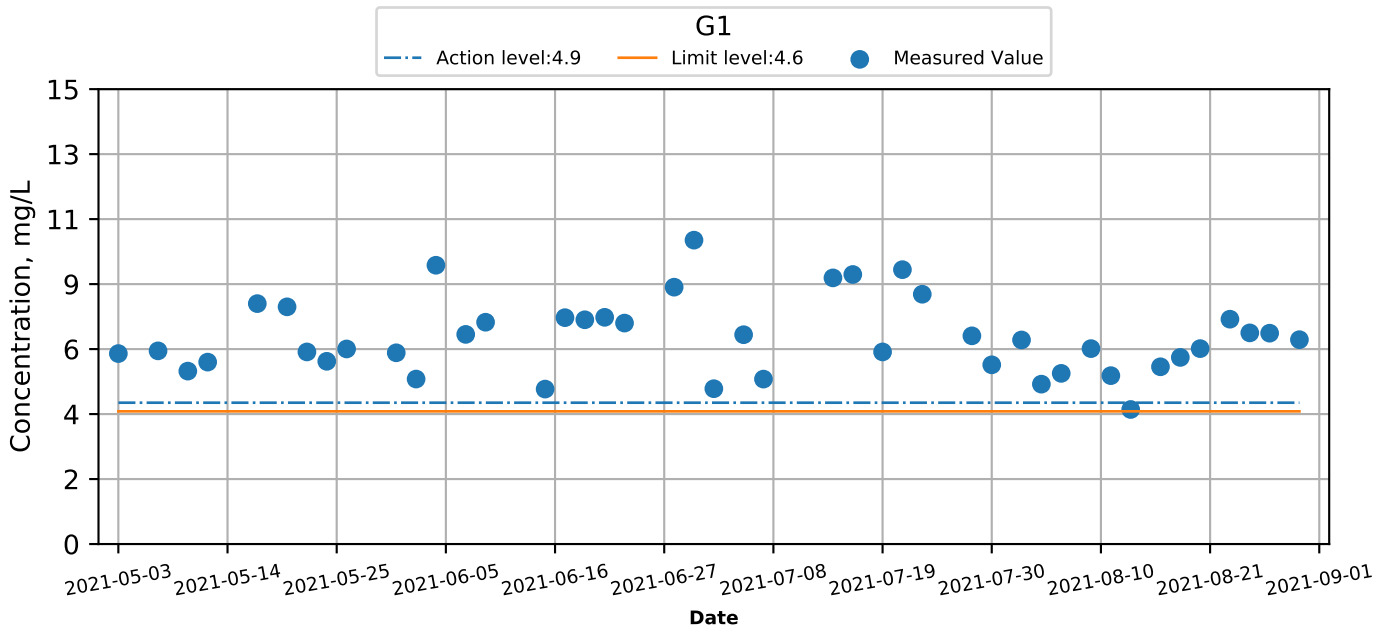


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Flood

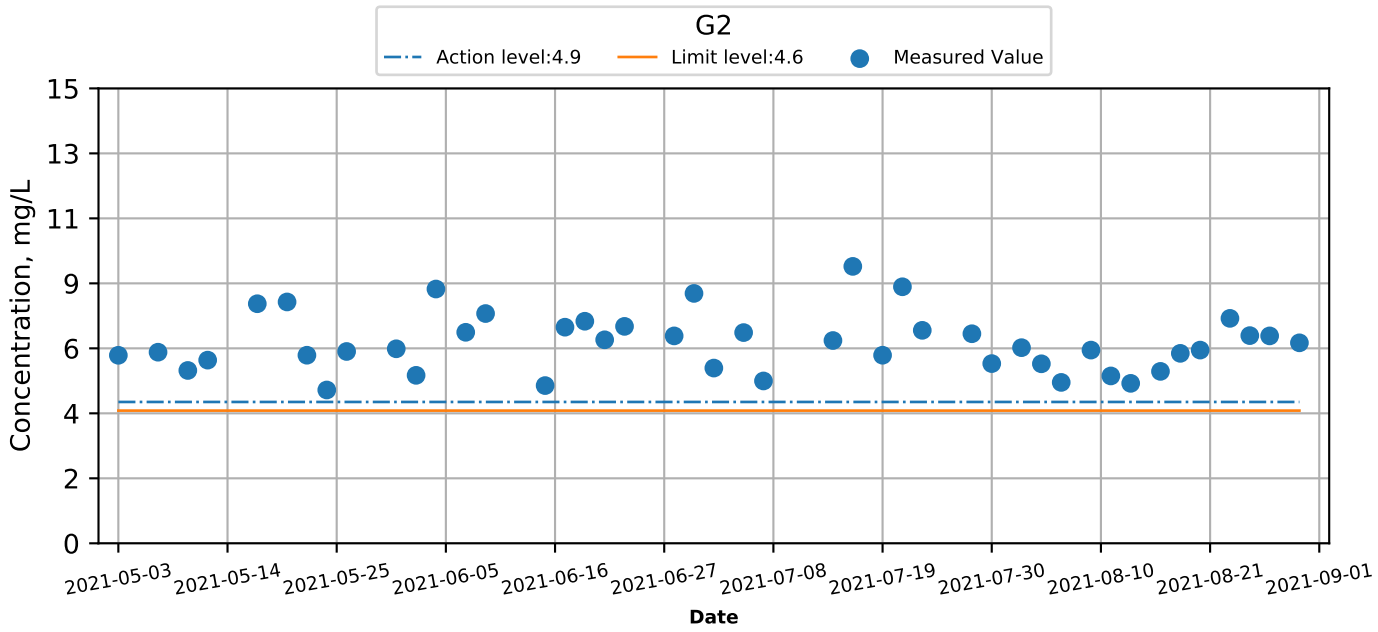


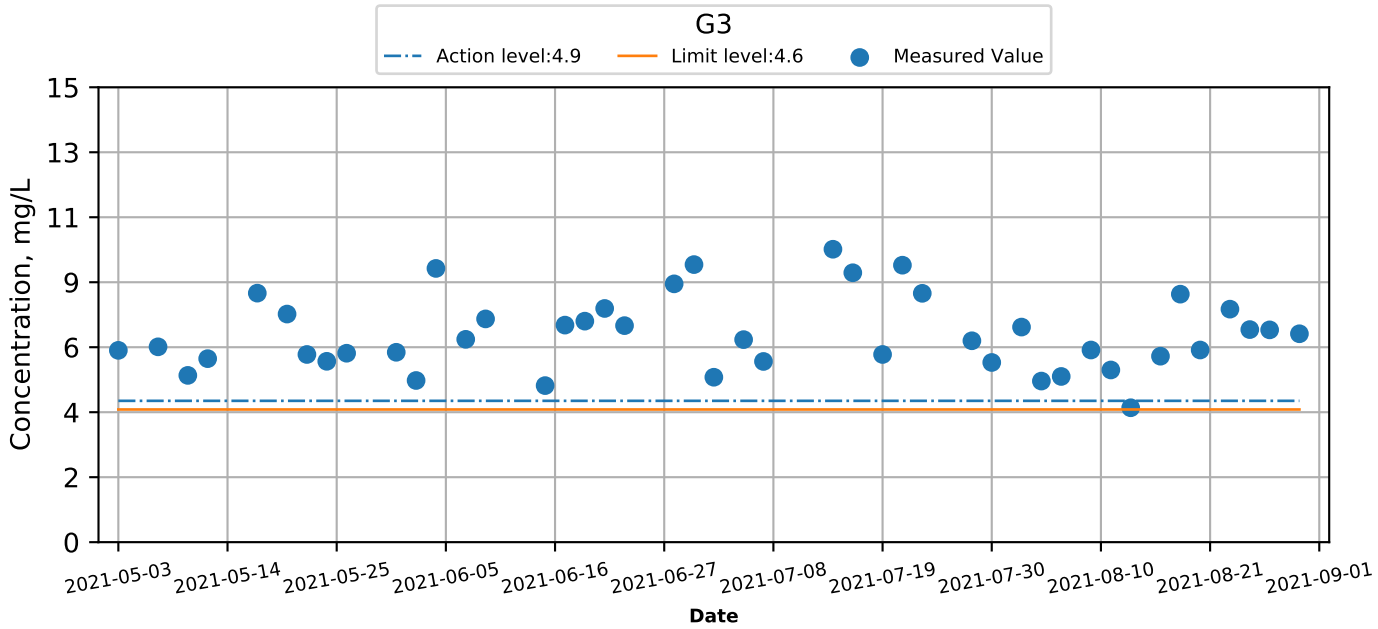


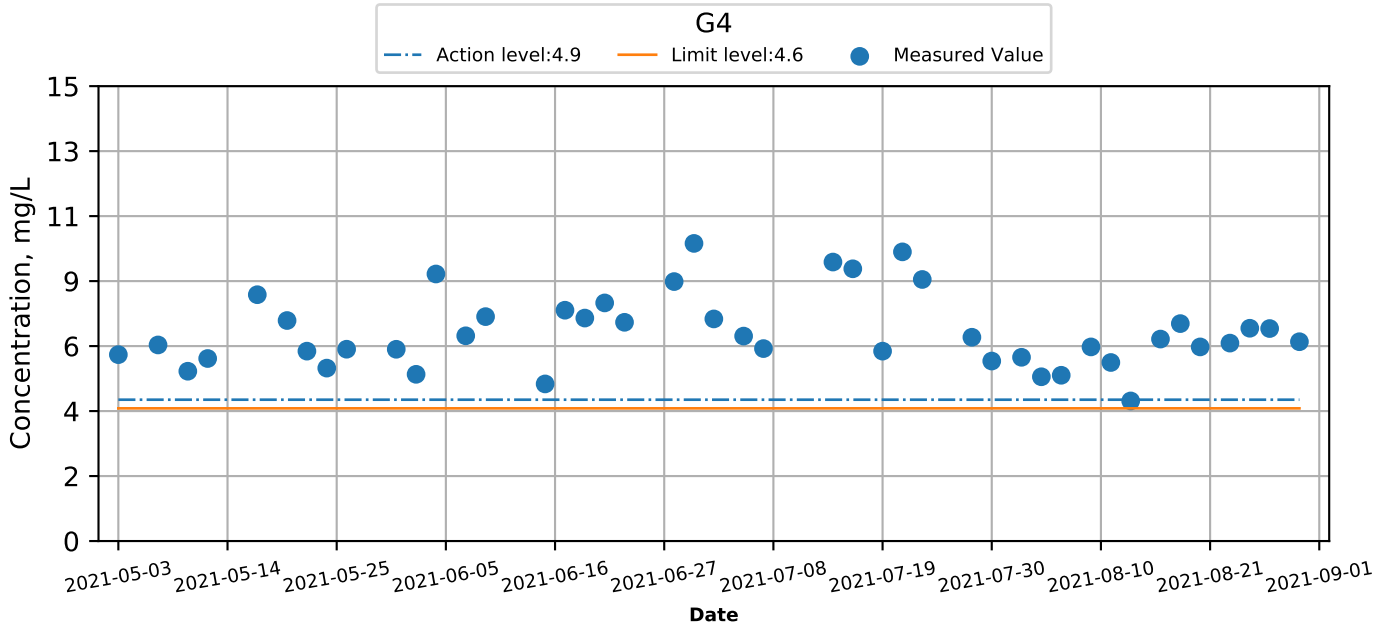


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Flood

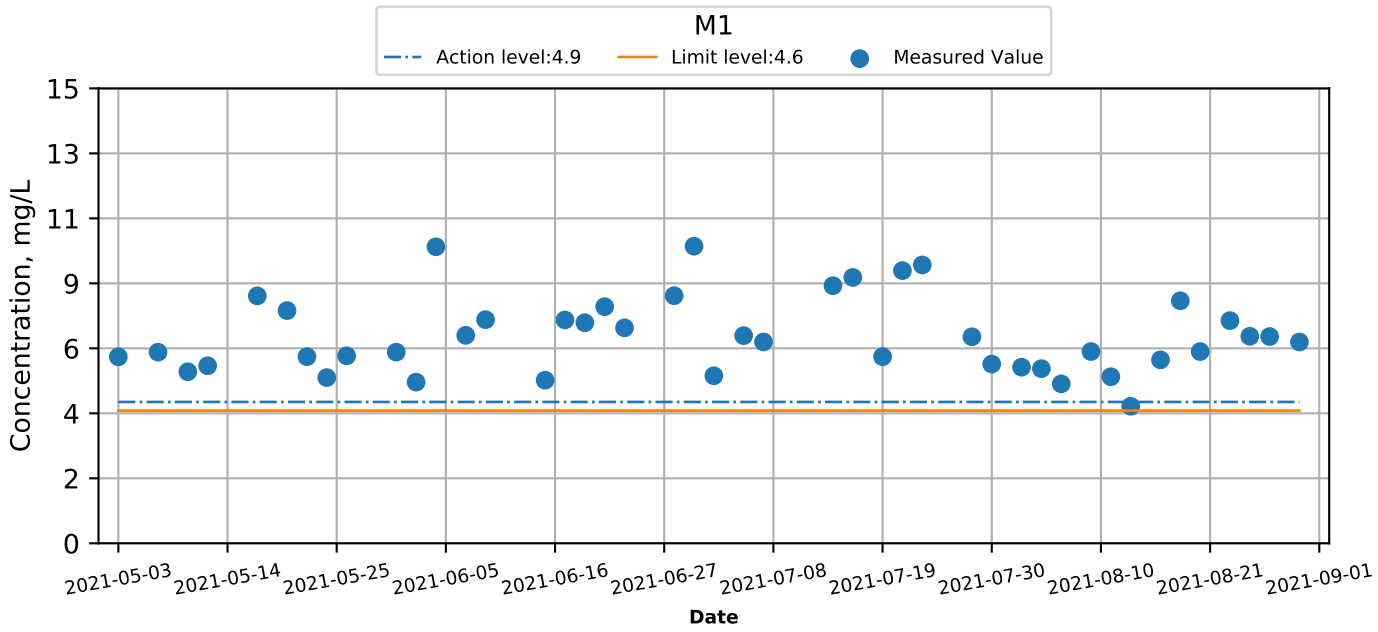


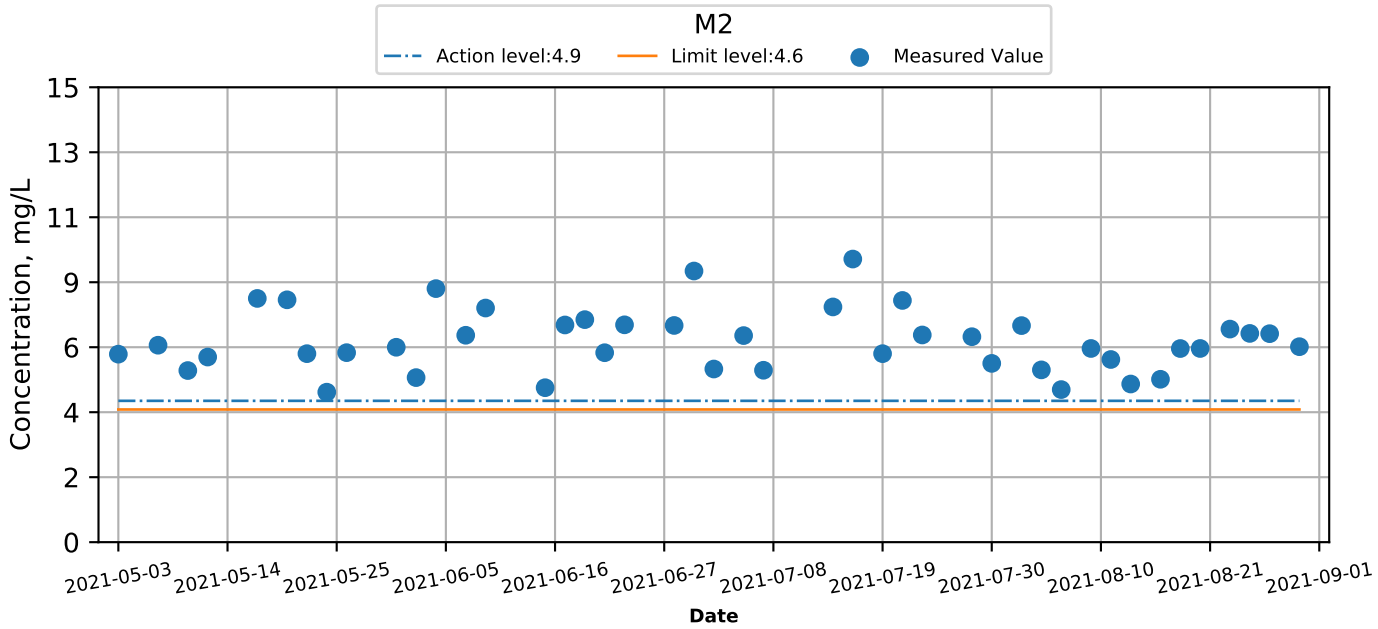


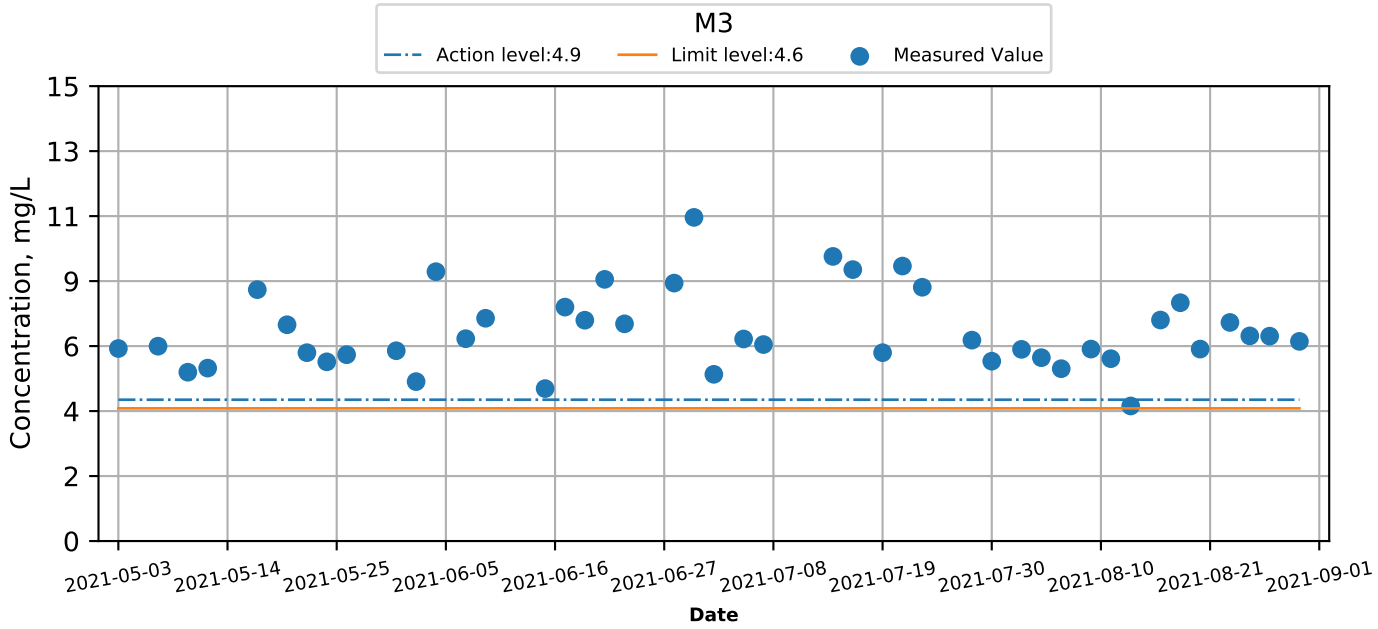


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Flood

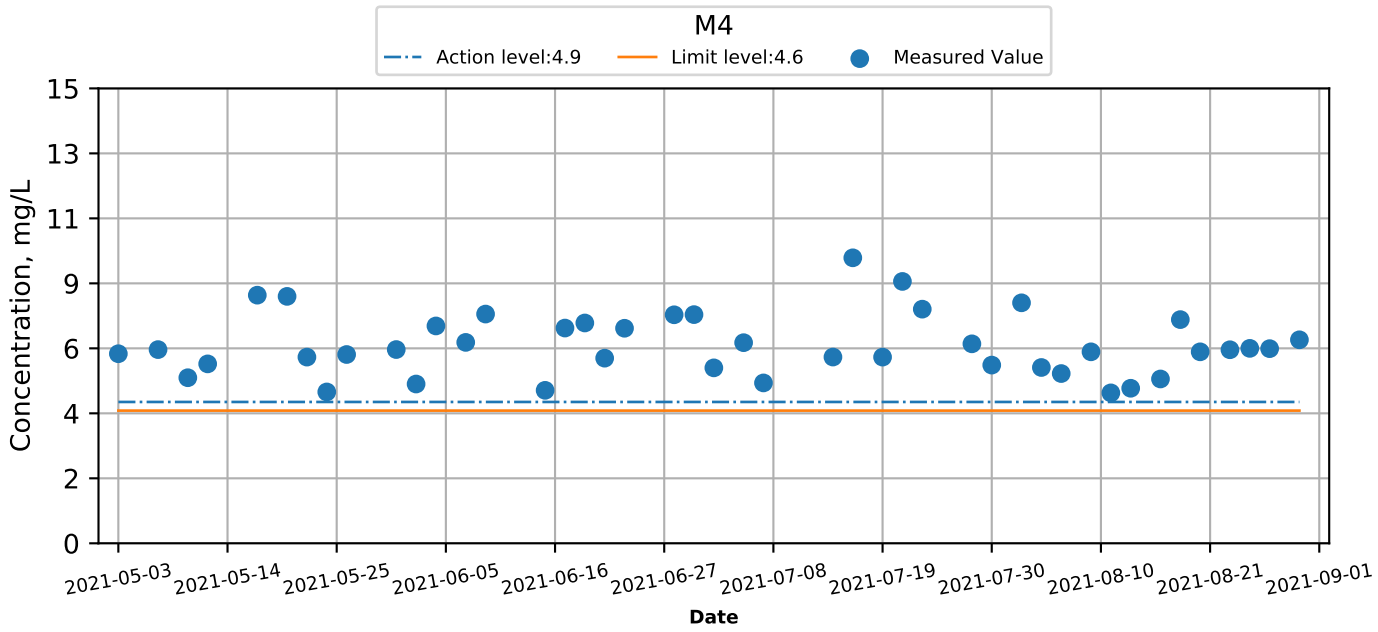


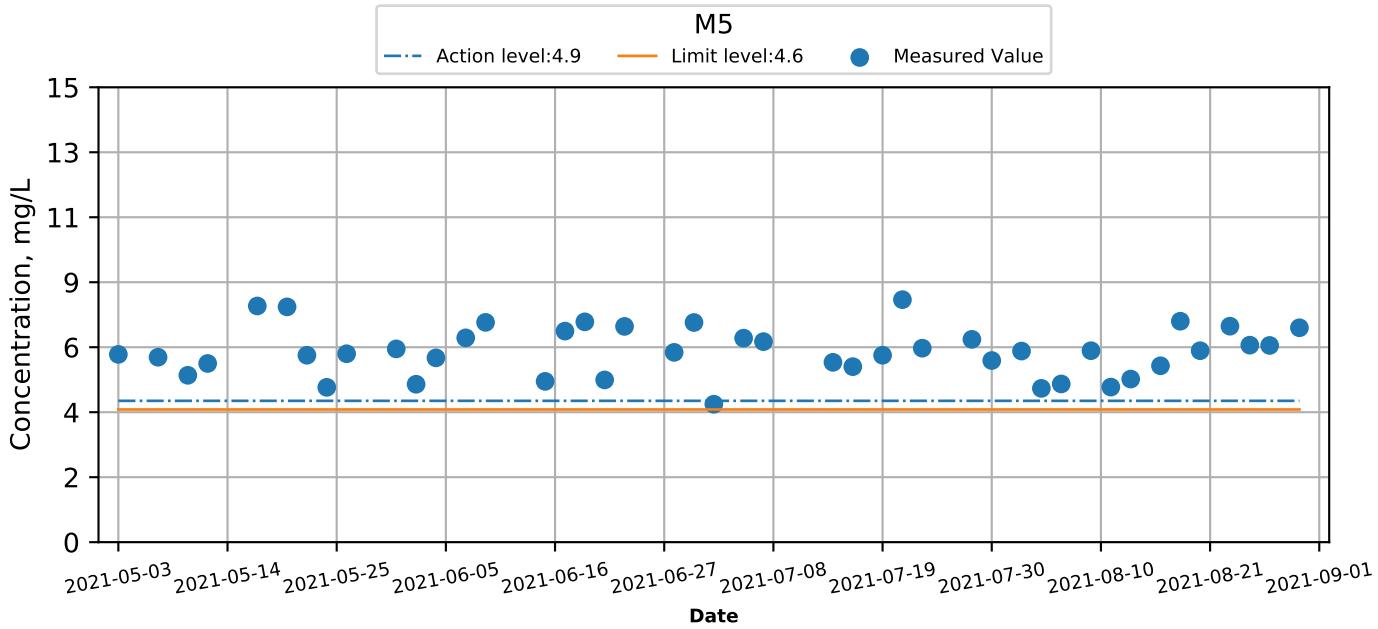




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

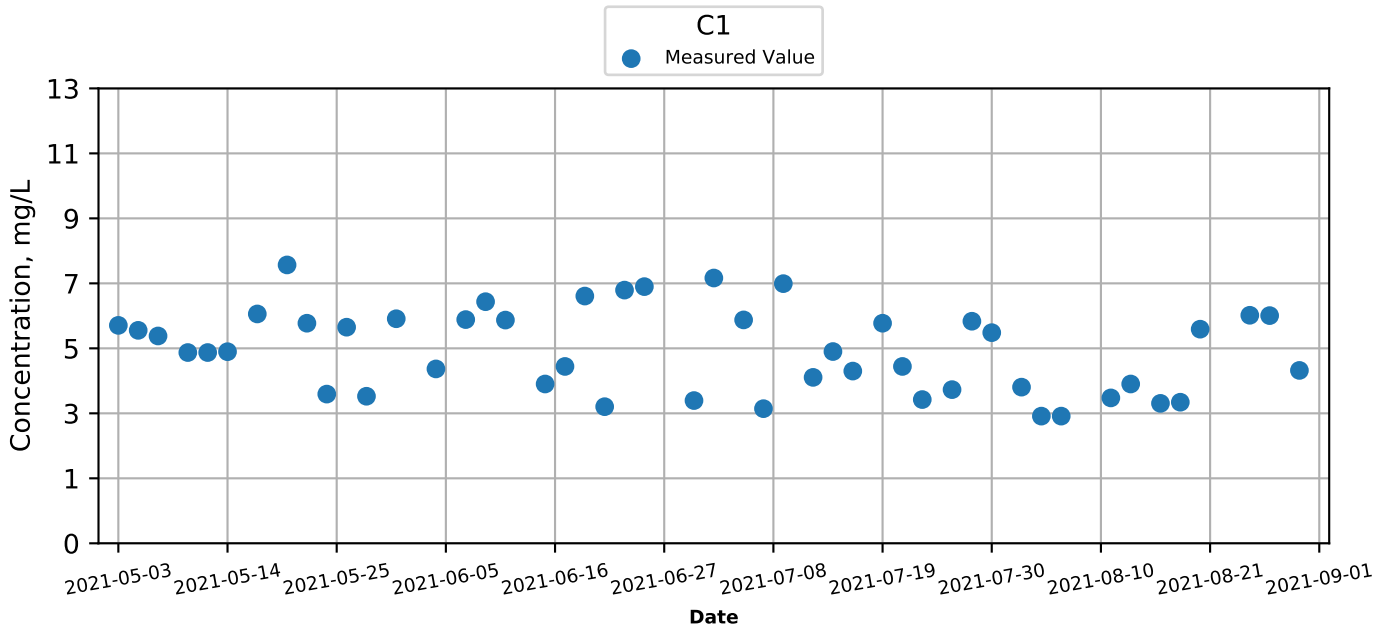
Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Flood

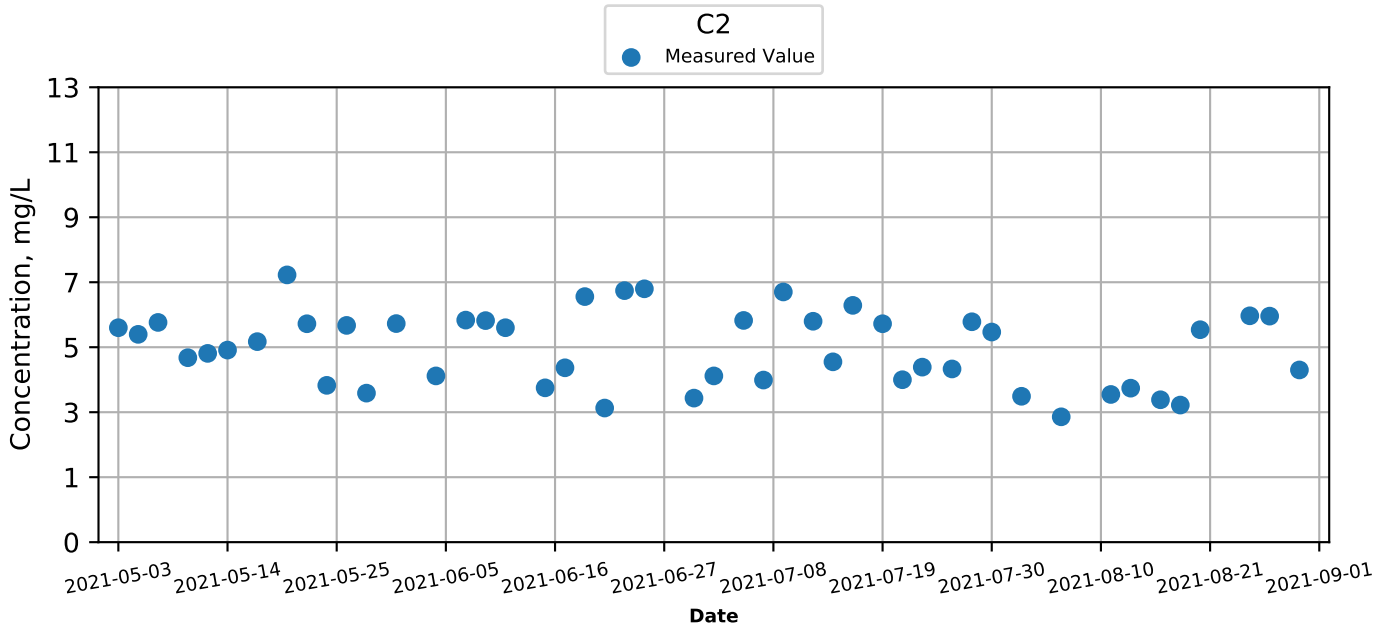


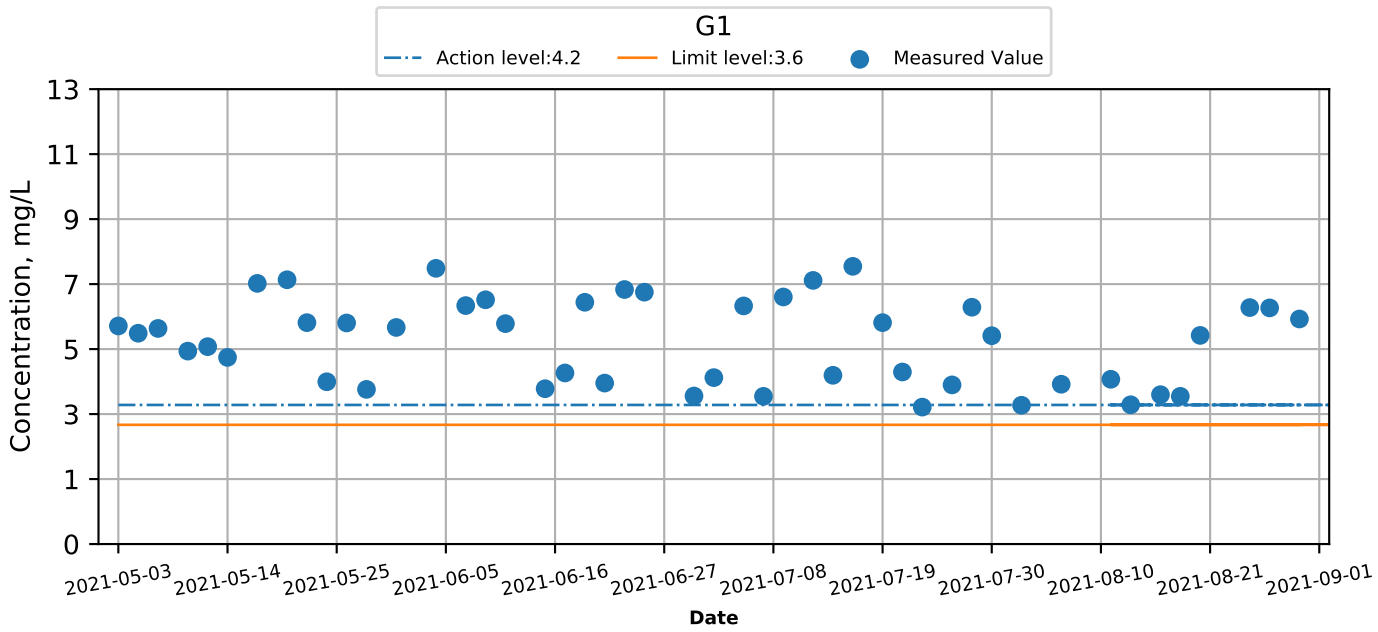


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Ebb

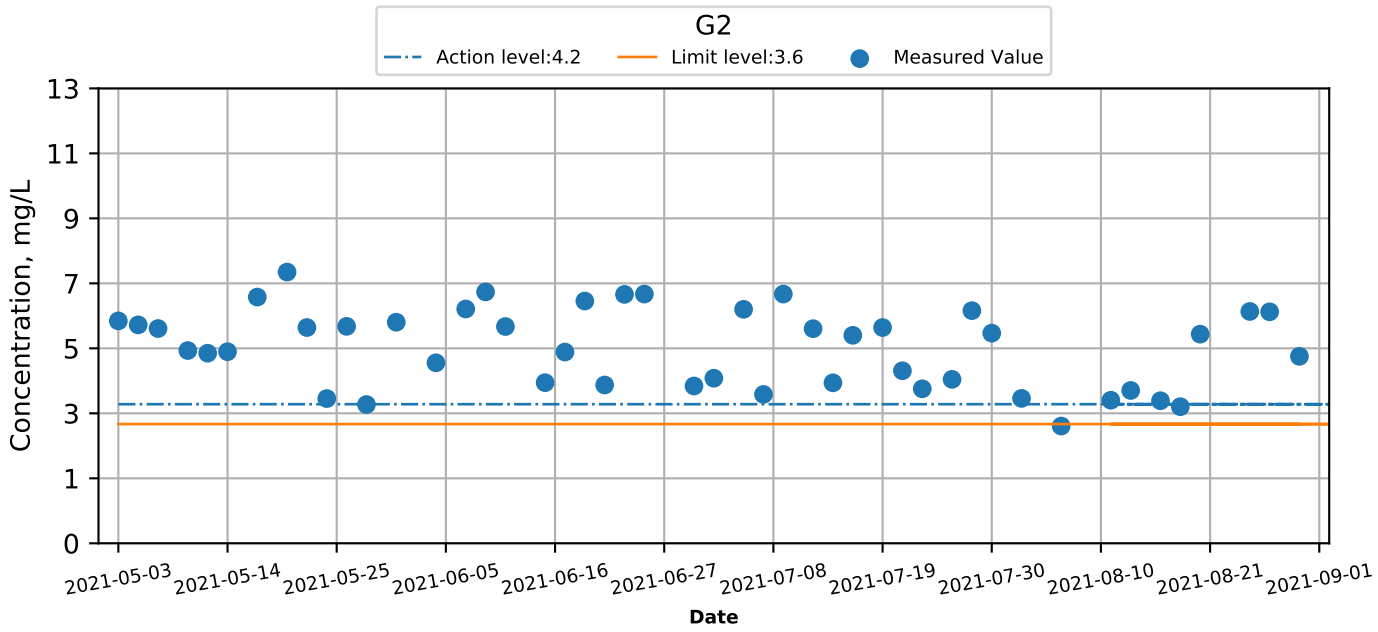


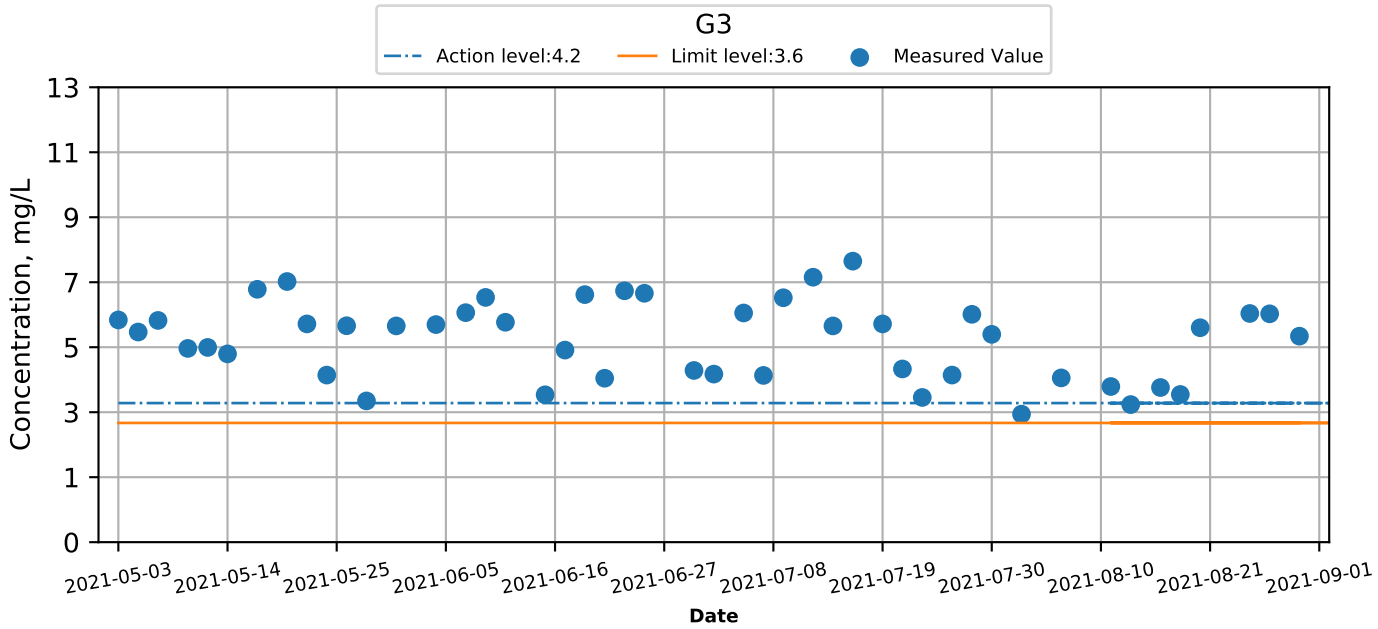


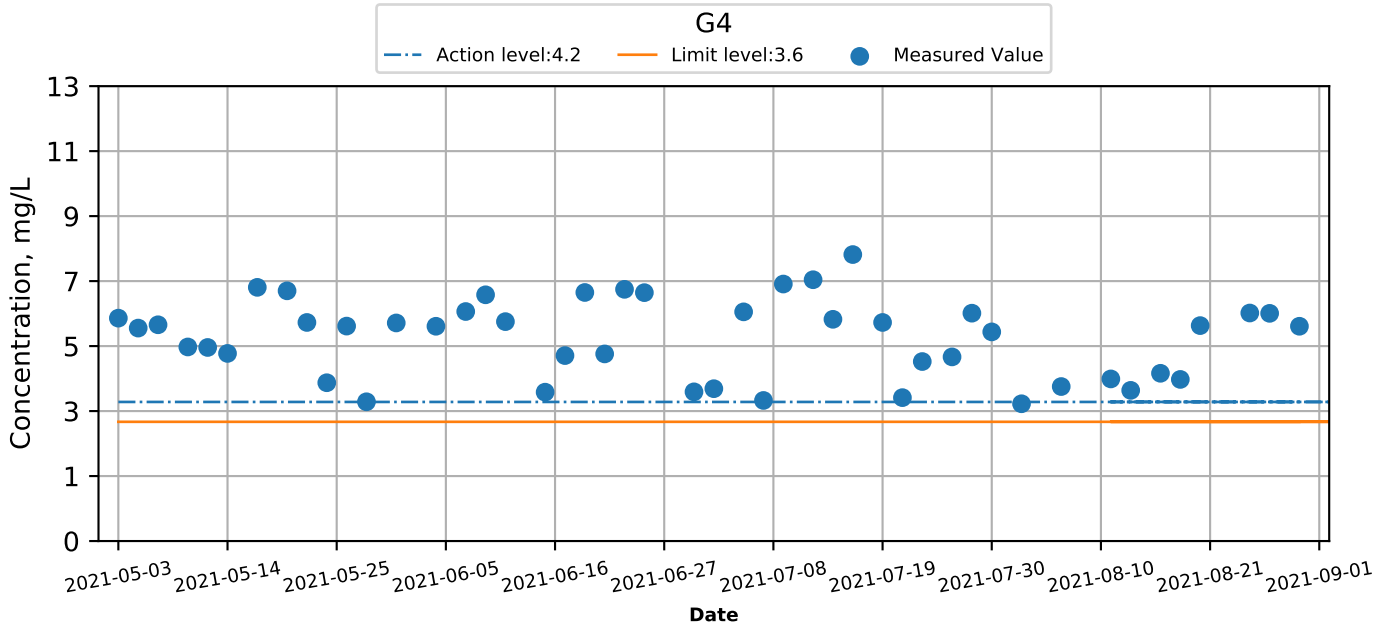


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Ebb

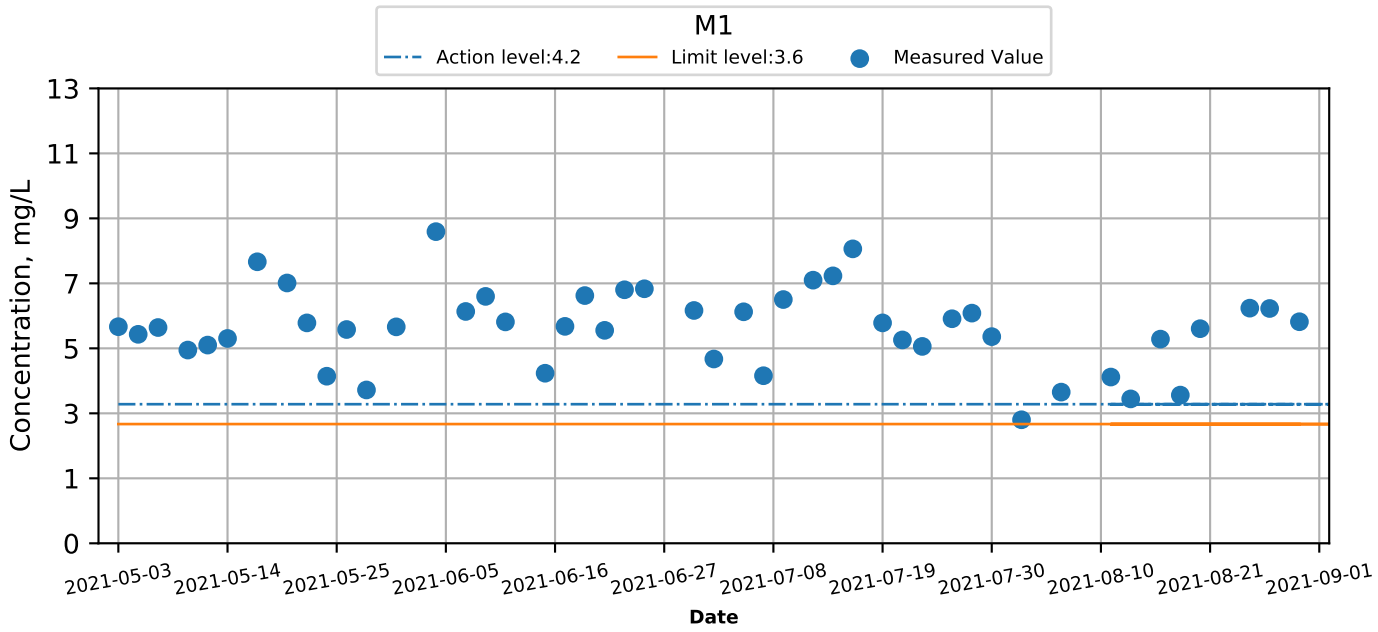


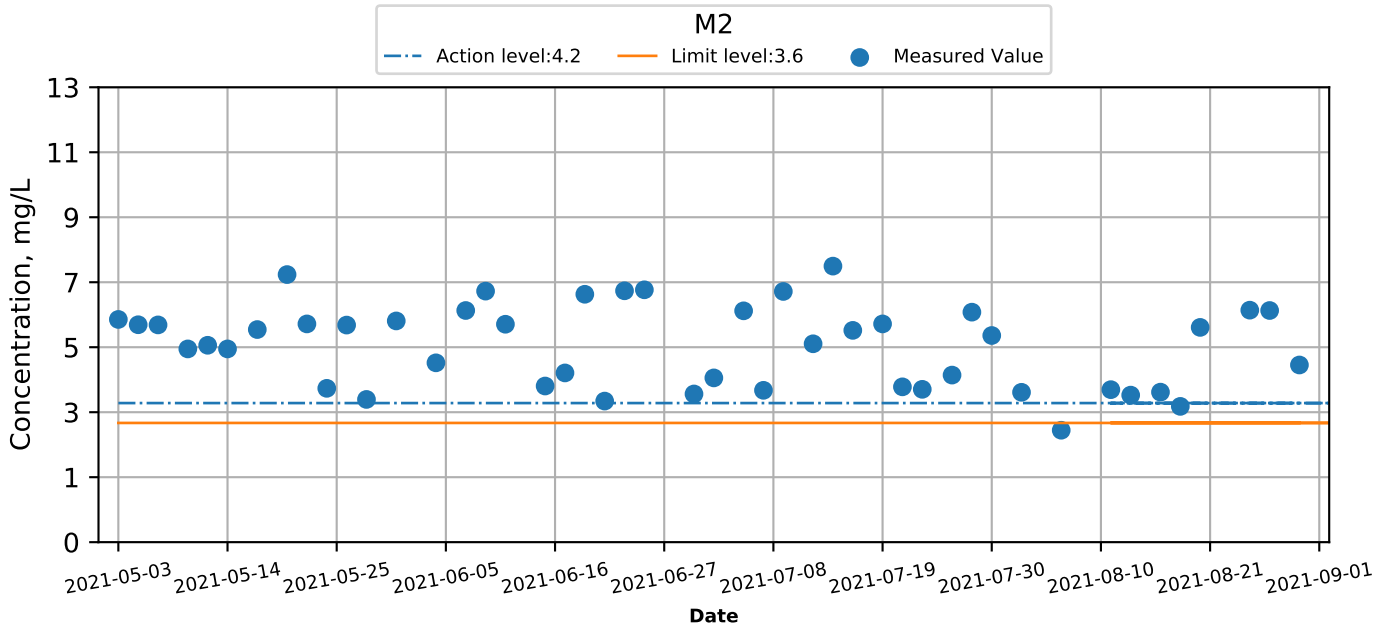


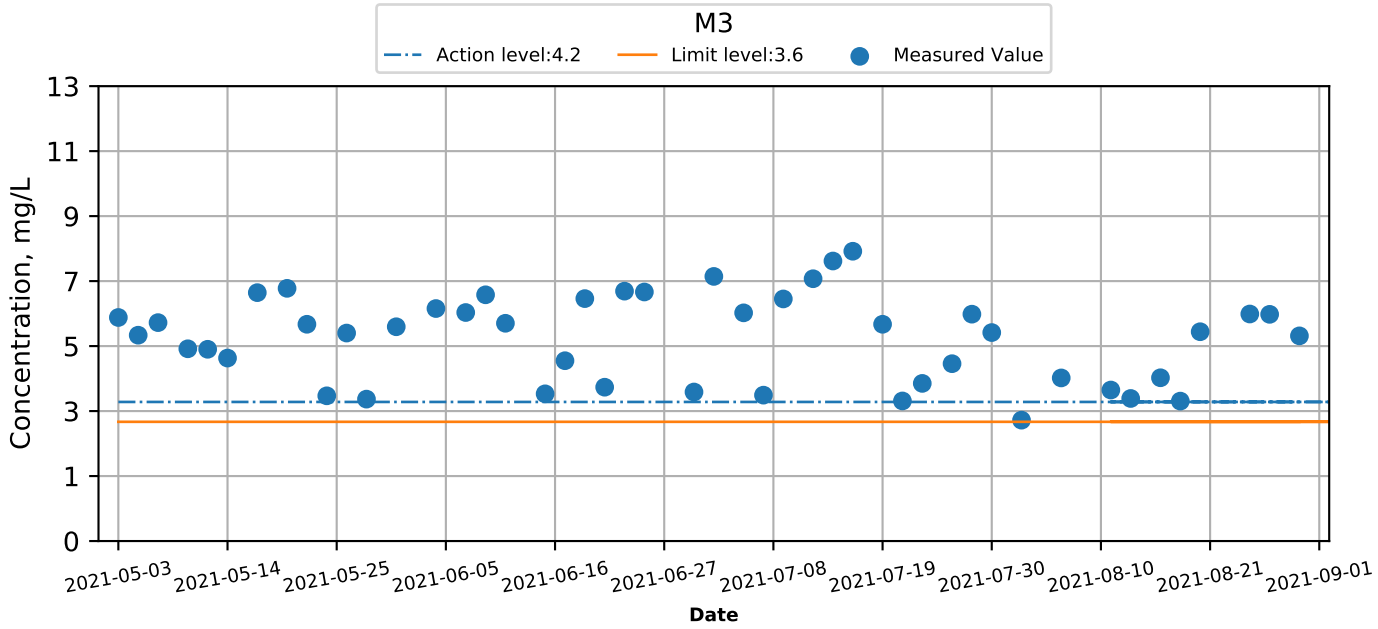


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Ebb

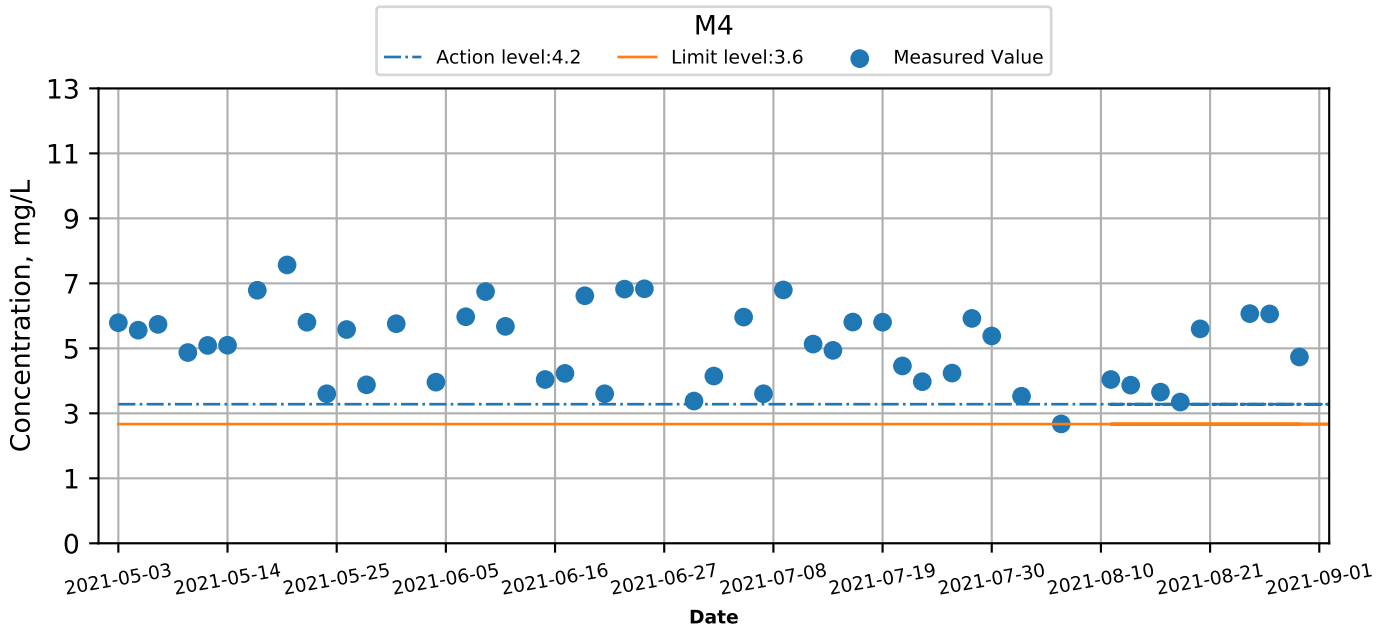


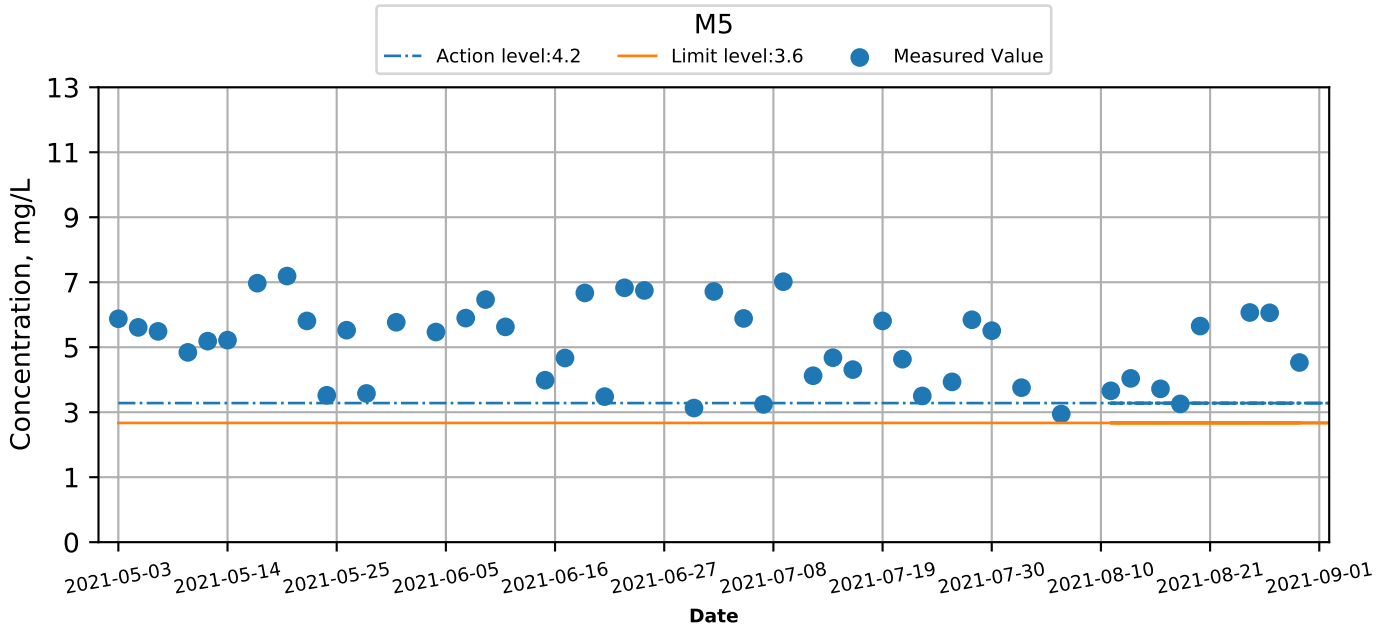




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

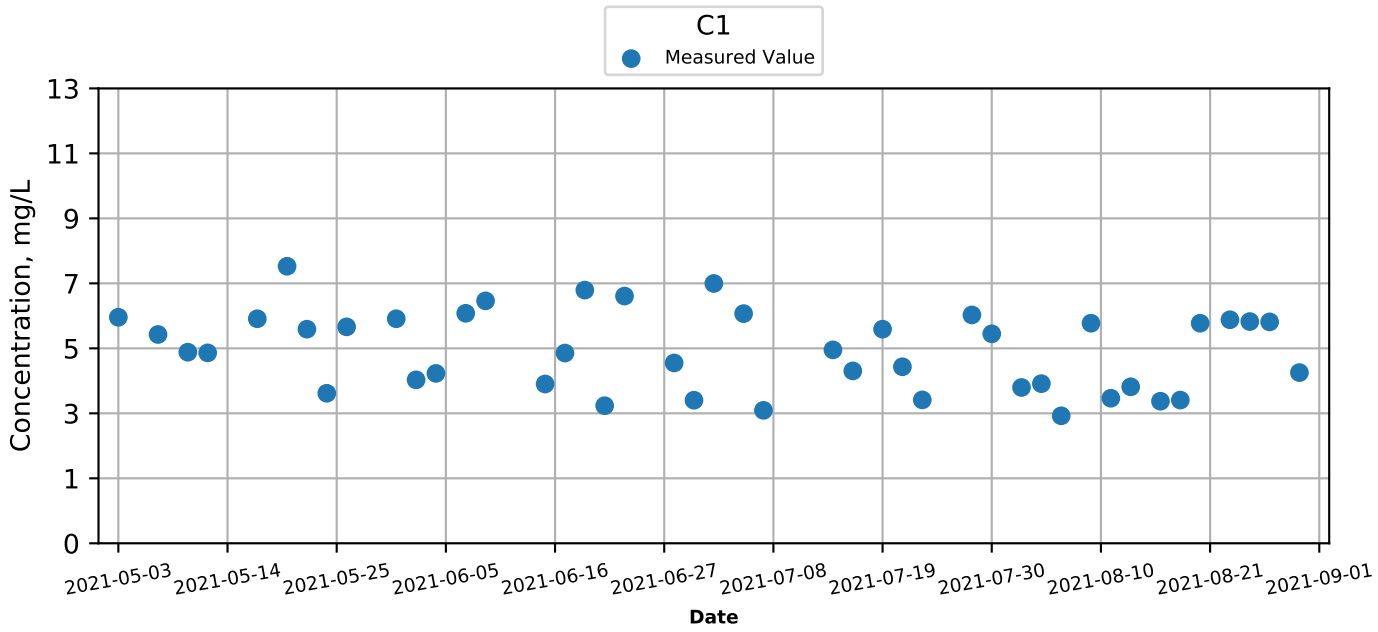
Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Ebb

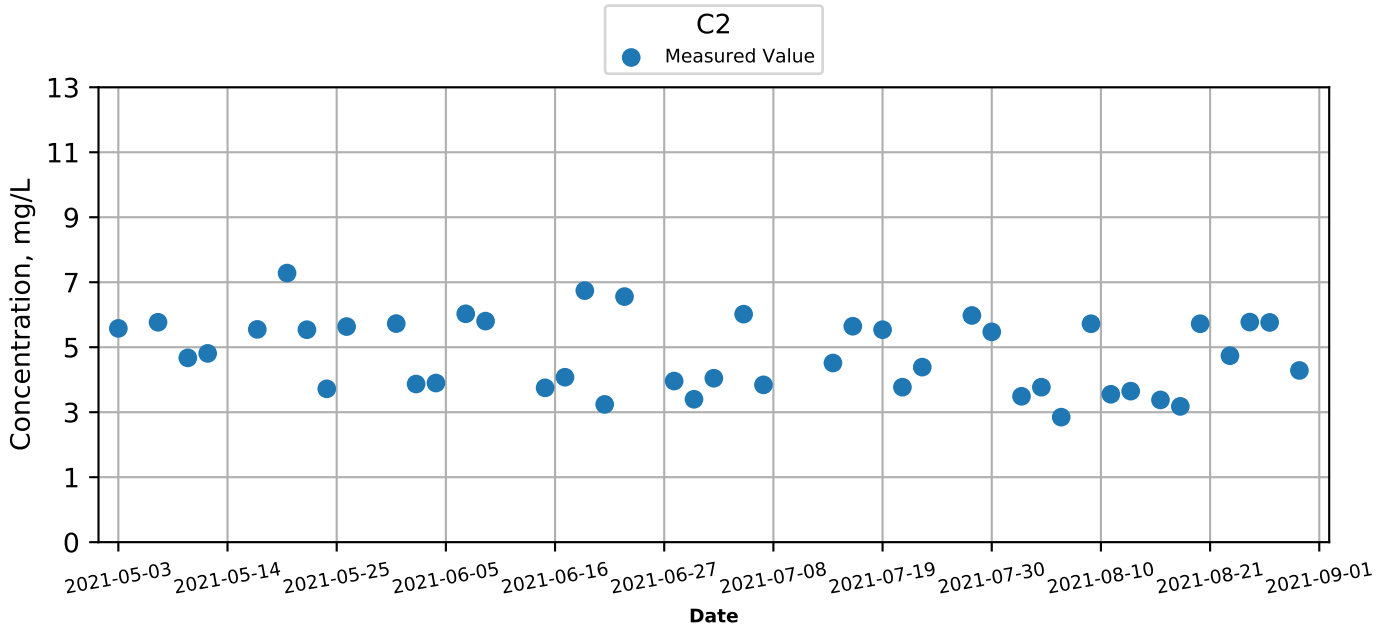


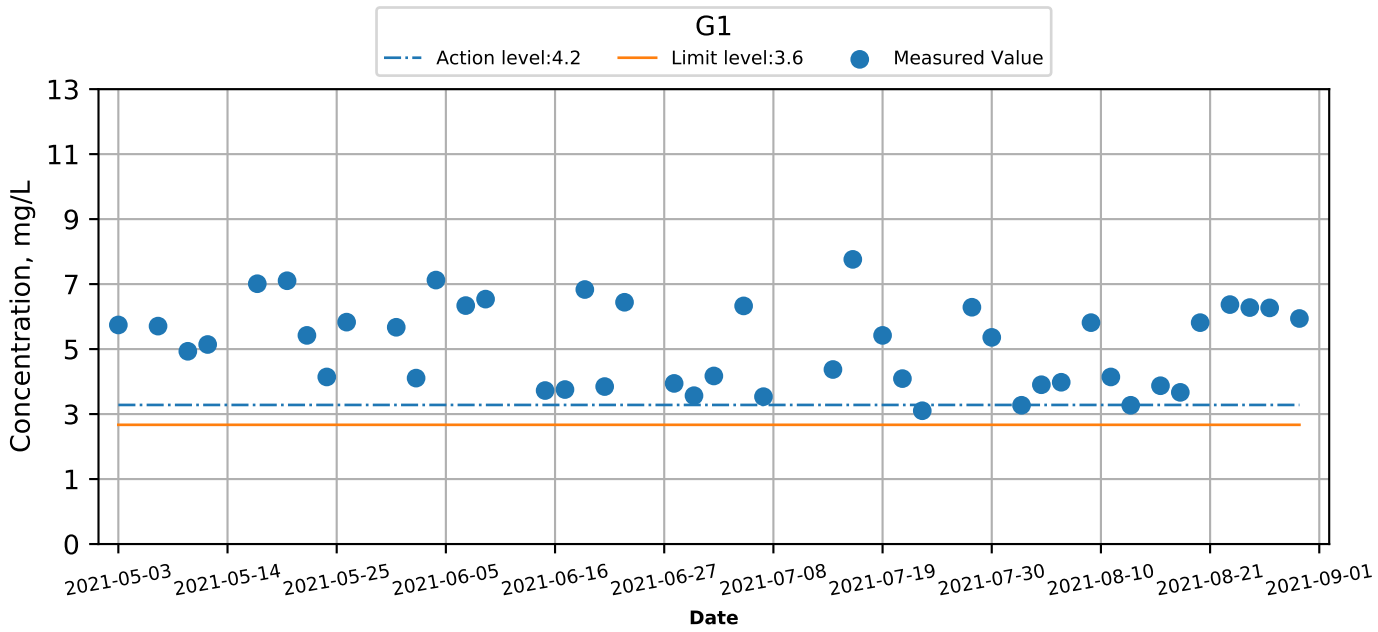


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Flood

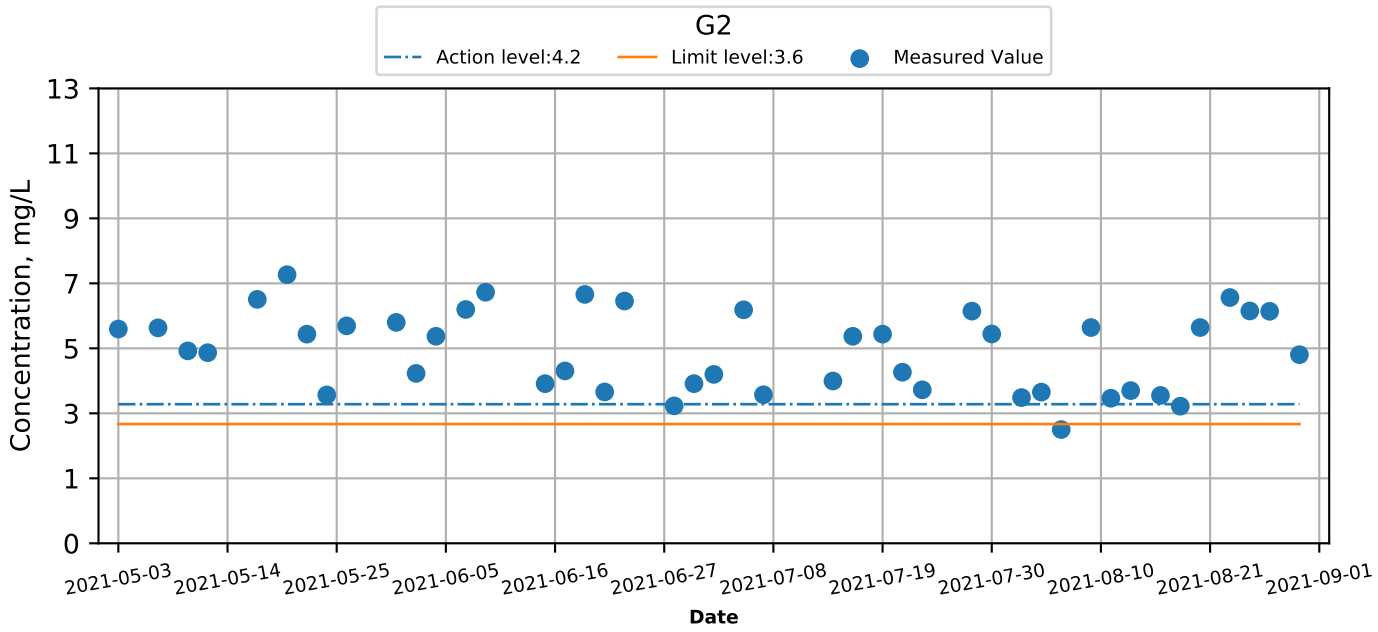


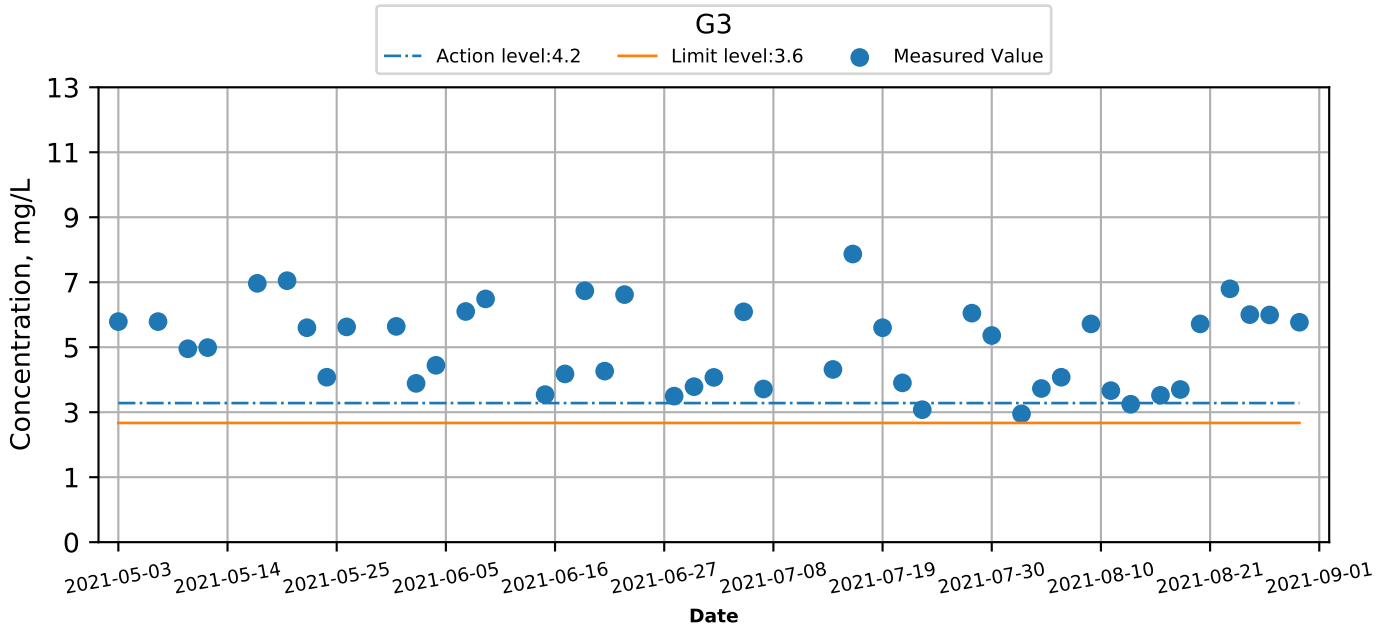


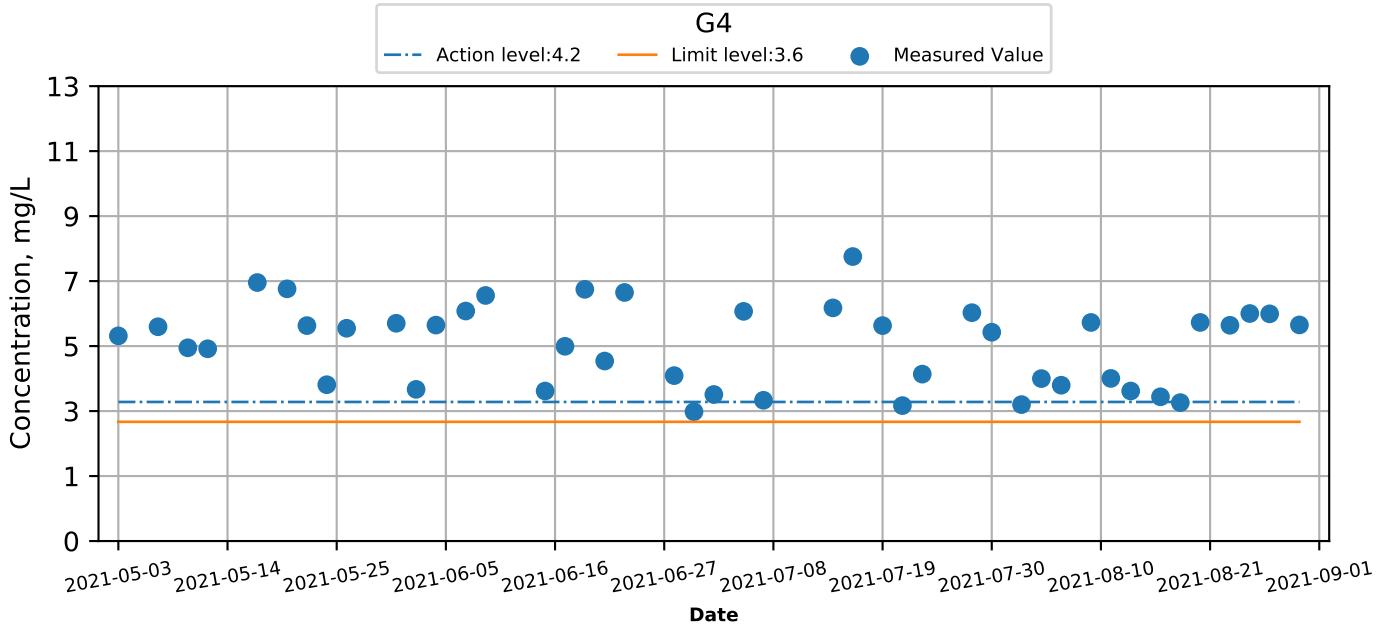


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Flood

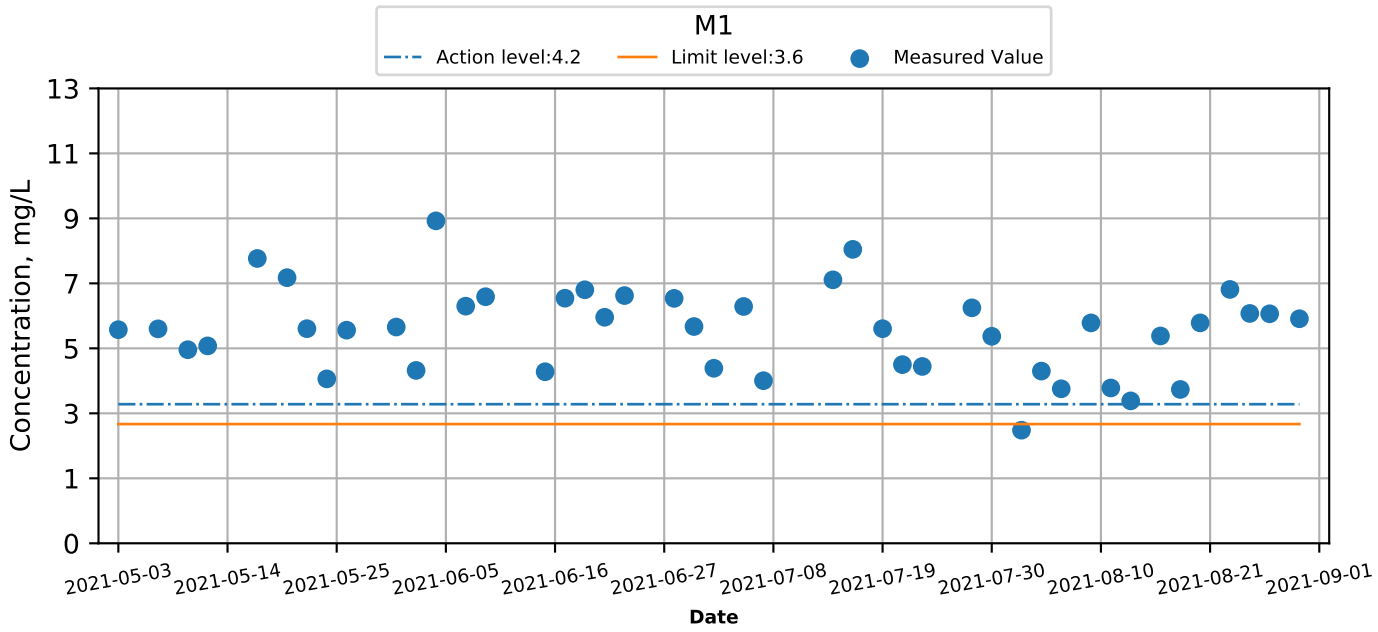


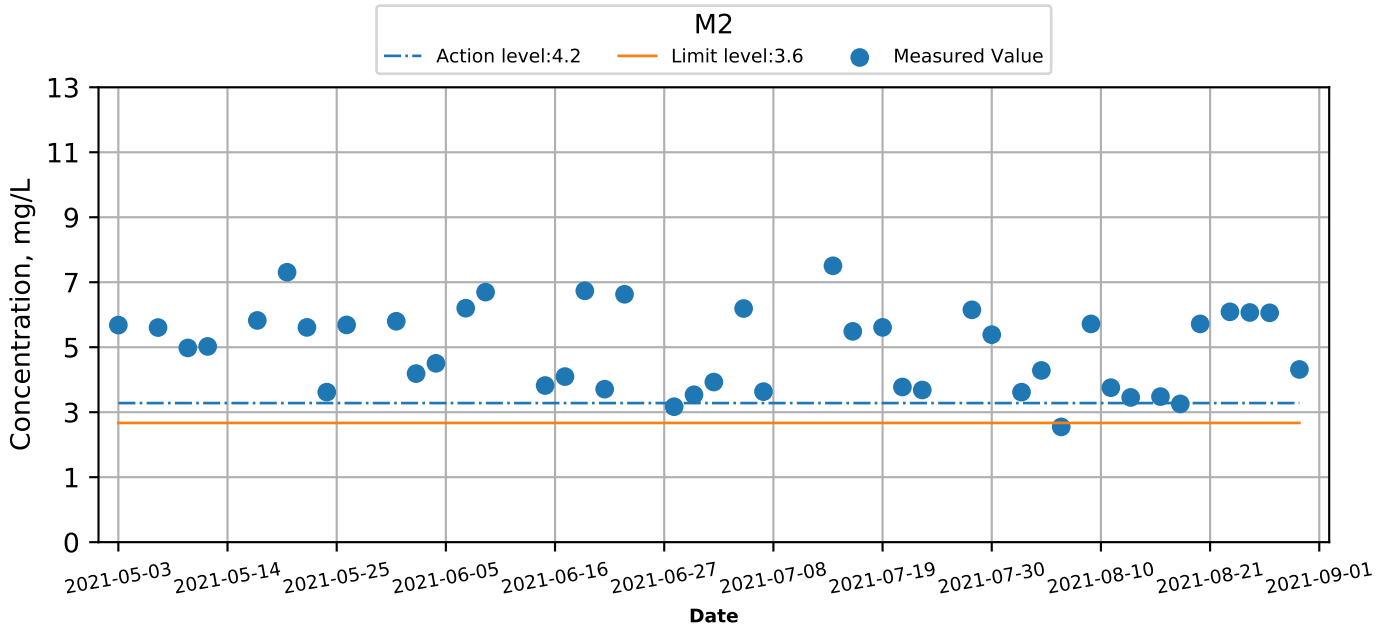


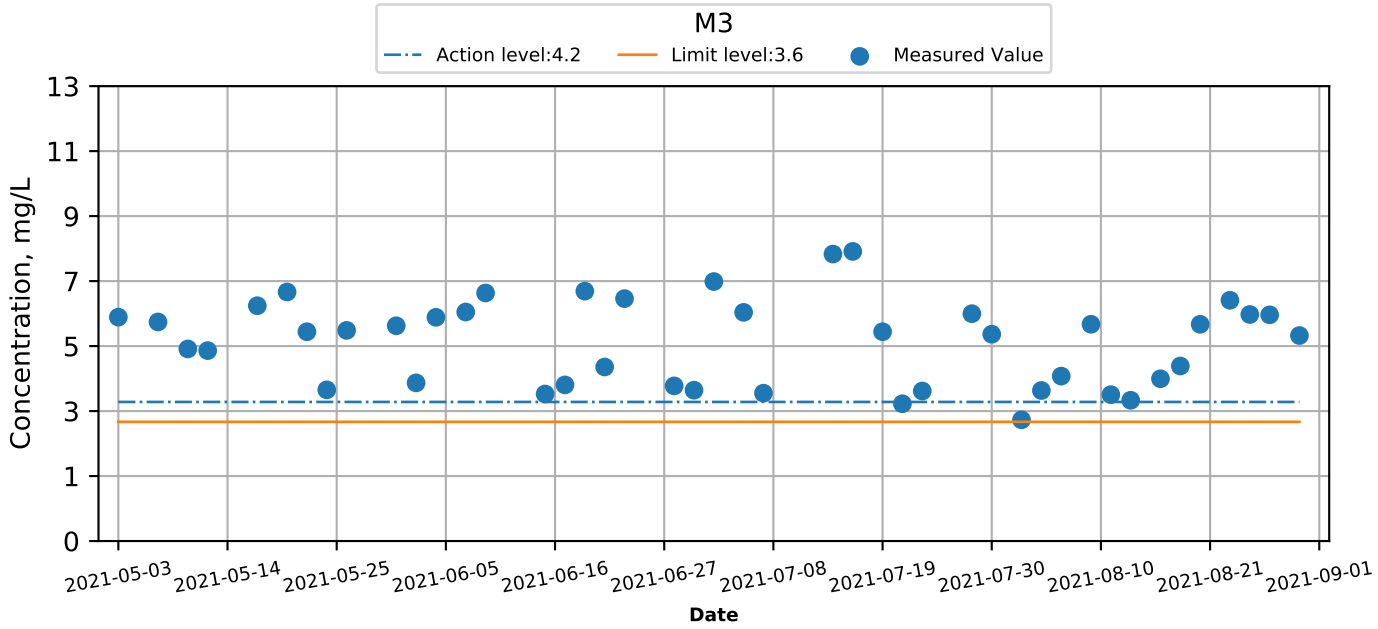


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Flood

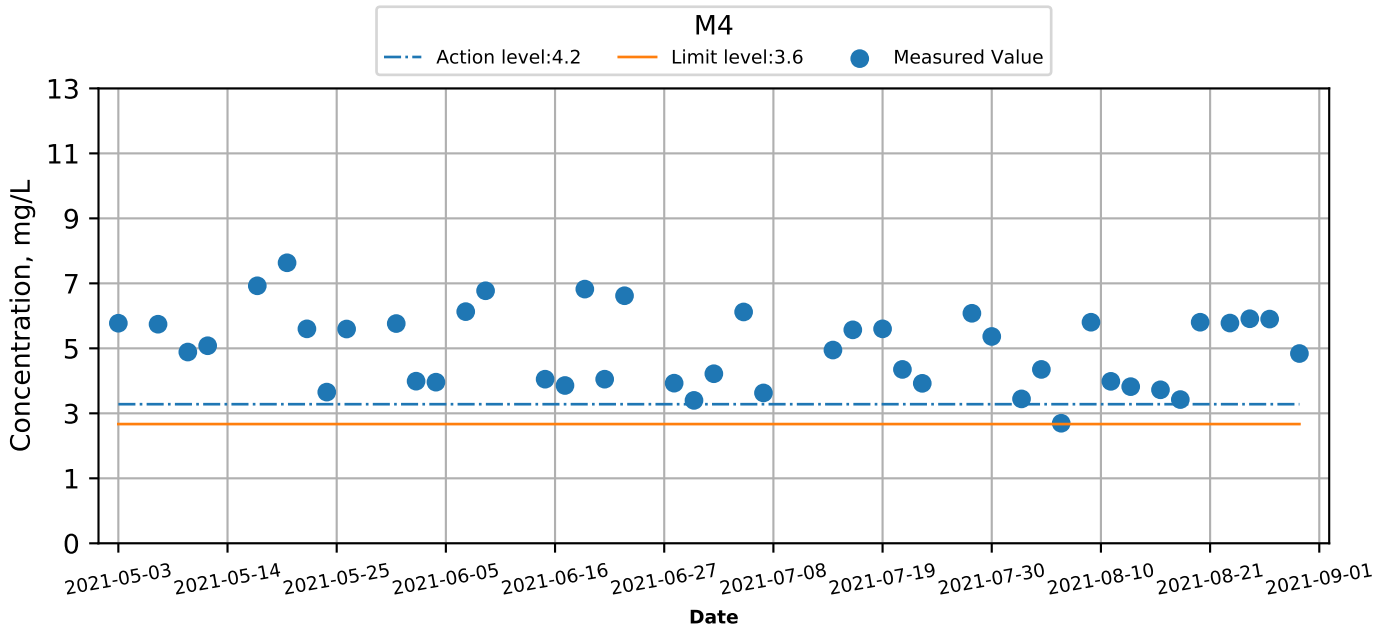


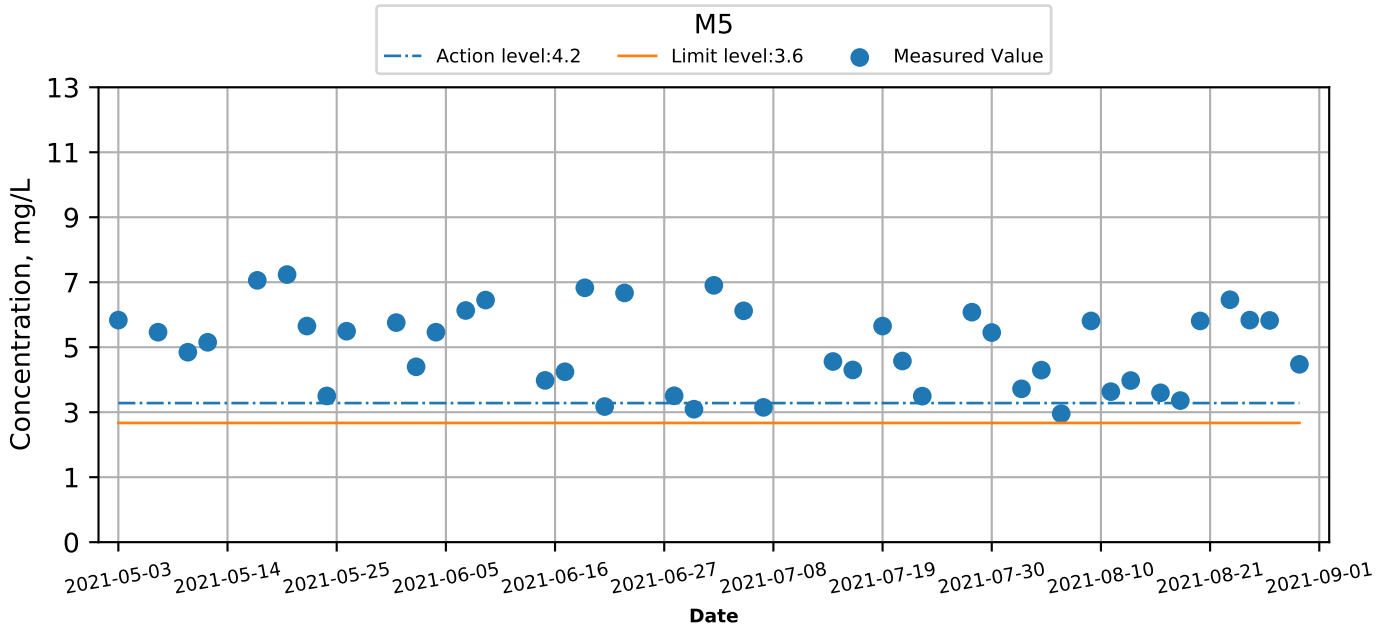




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

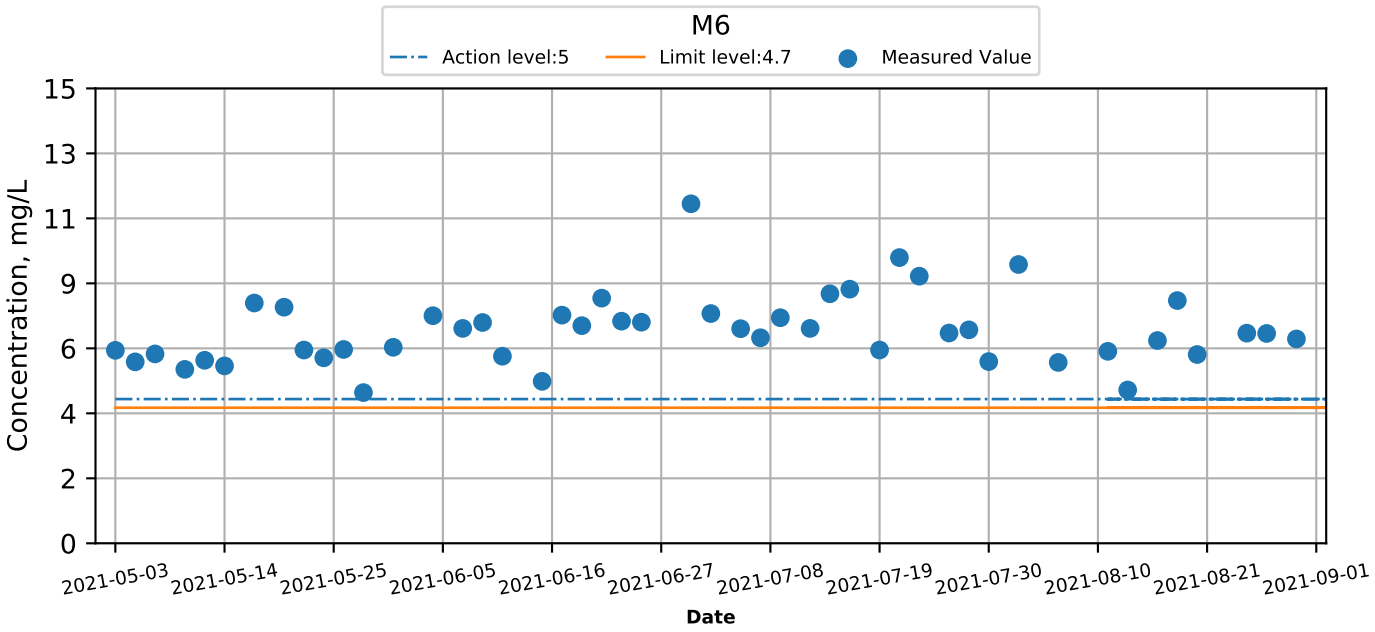
Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Flood





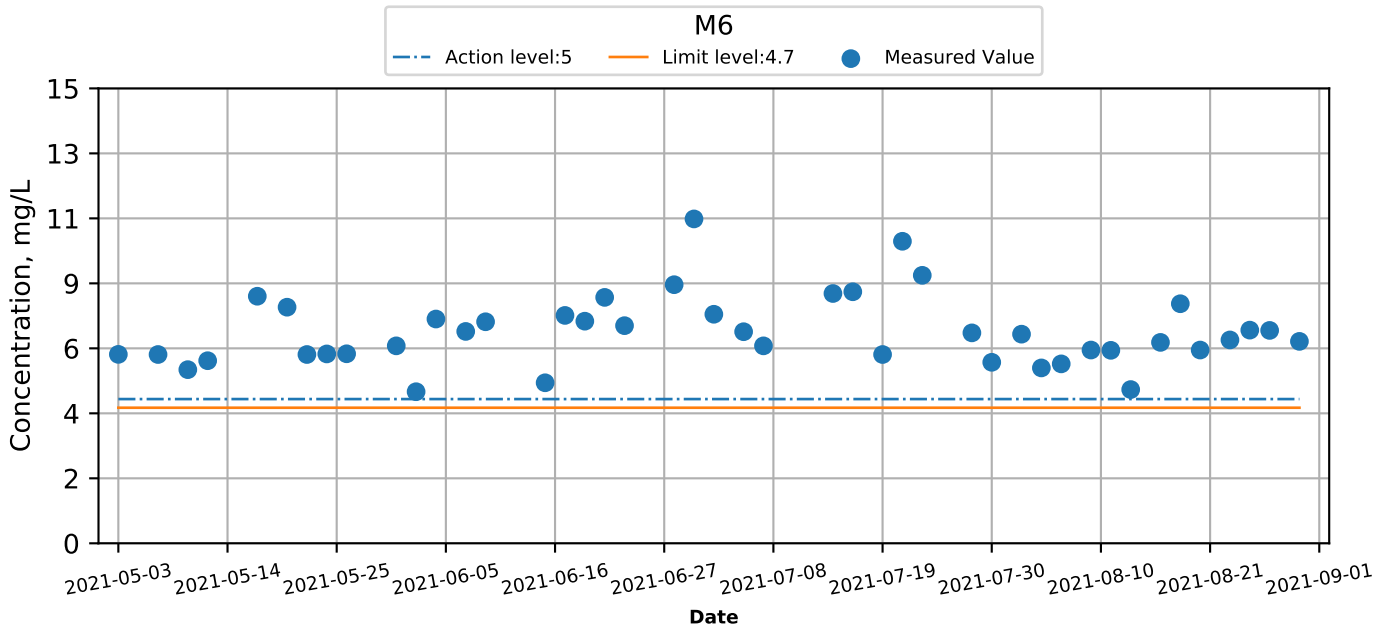
Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Dissolved Oxygen (Intake level) at Monitoring Stations during Mid-Ebb



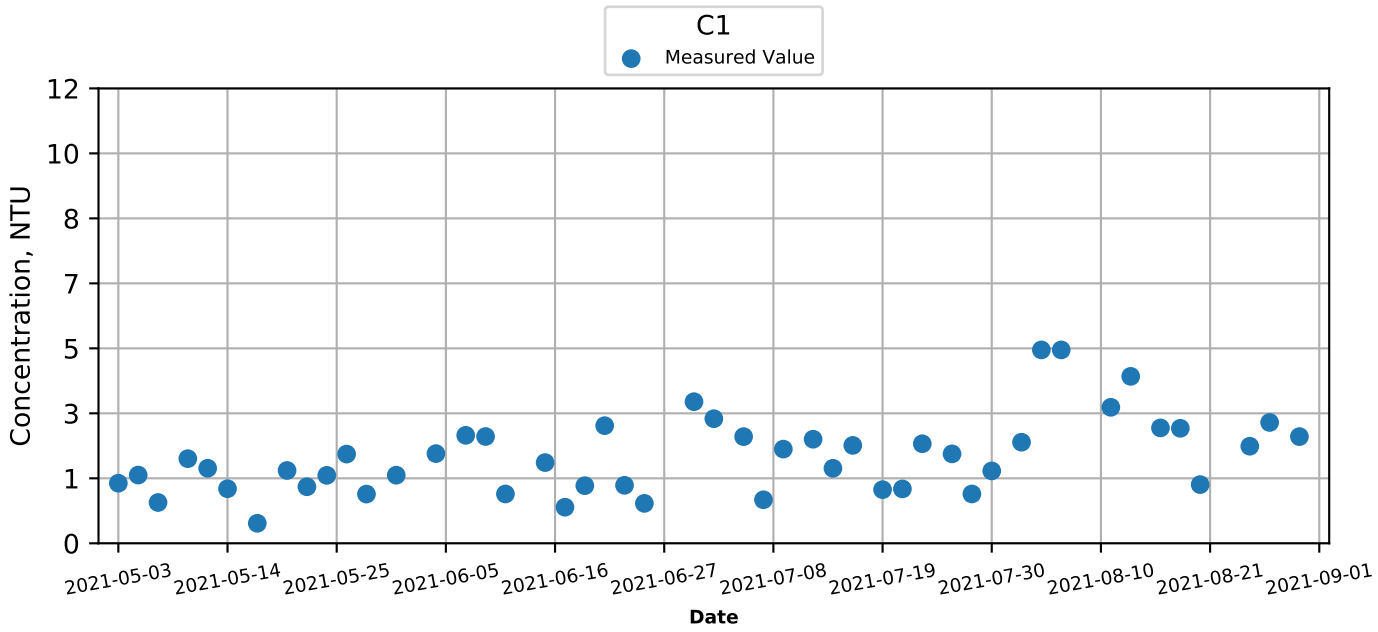
Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

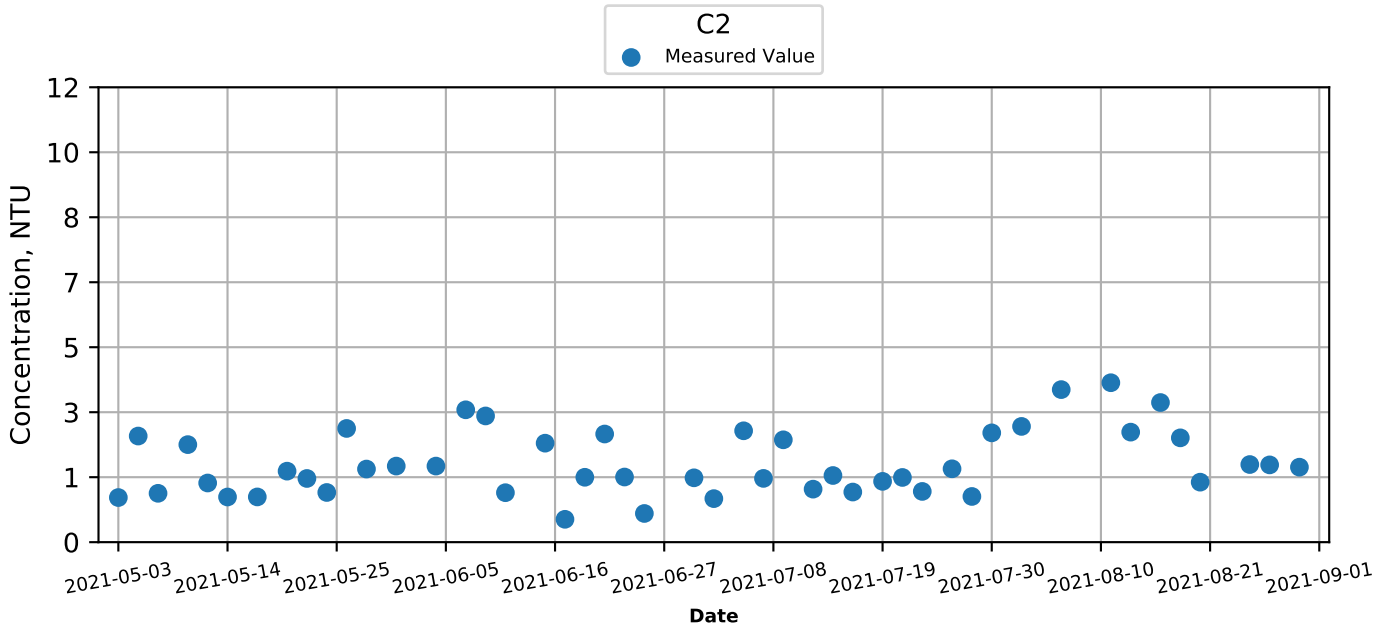
Dissolved Oxygen (Intake level) at Monitoring Stations during Mid-Flood

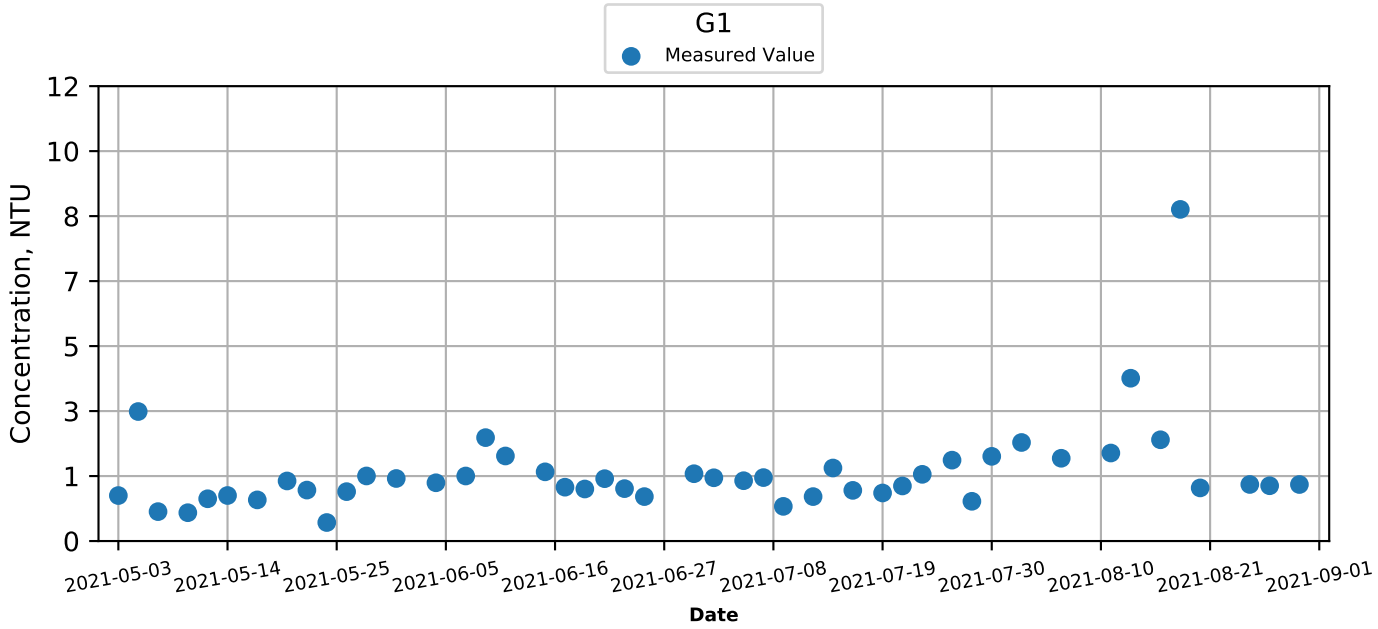


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Ebb

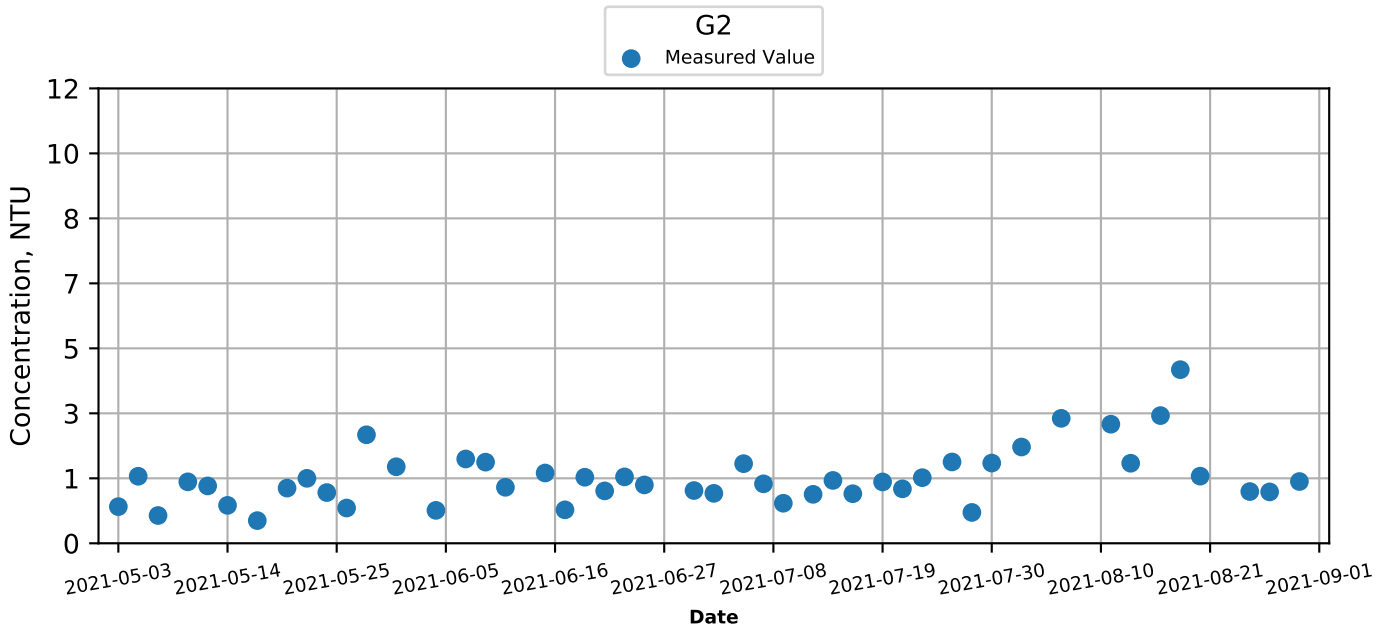


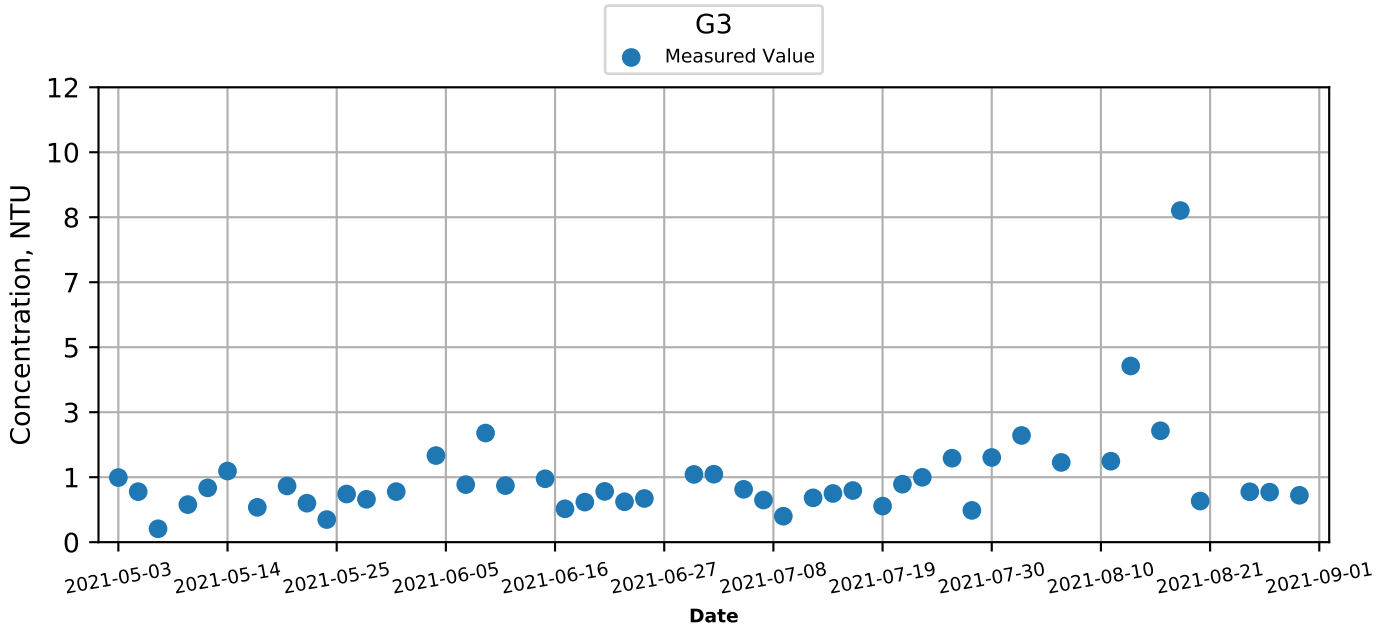


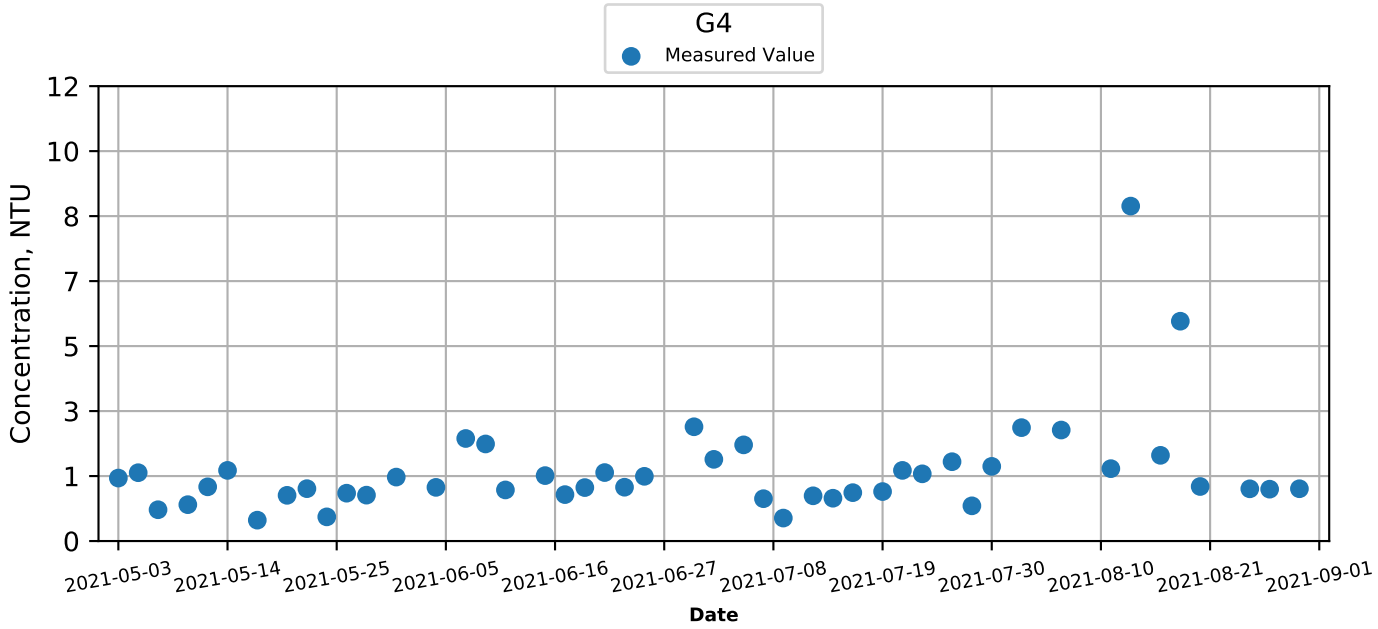


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Ebb

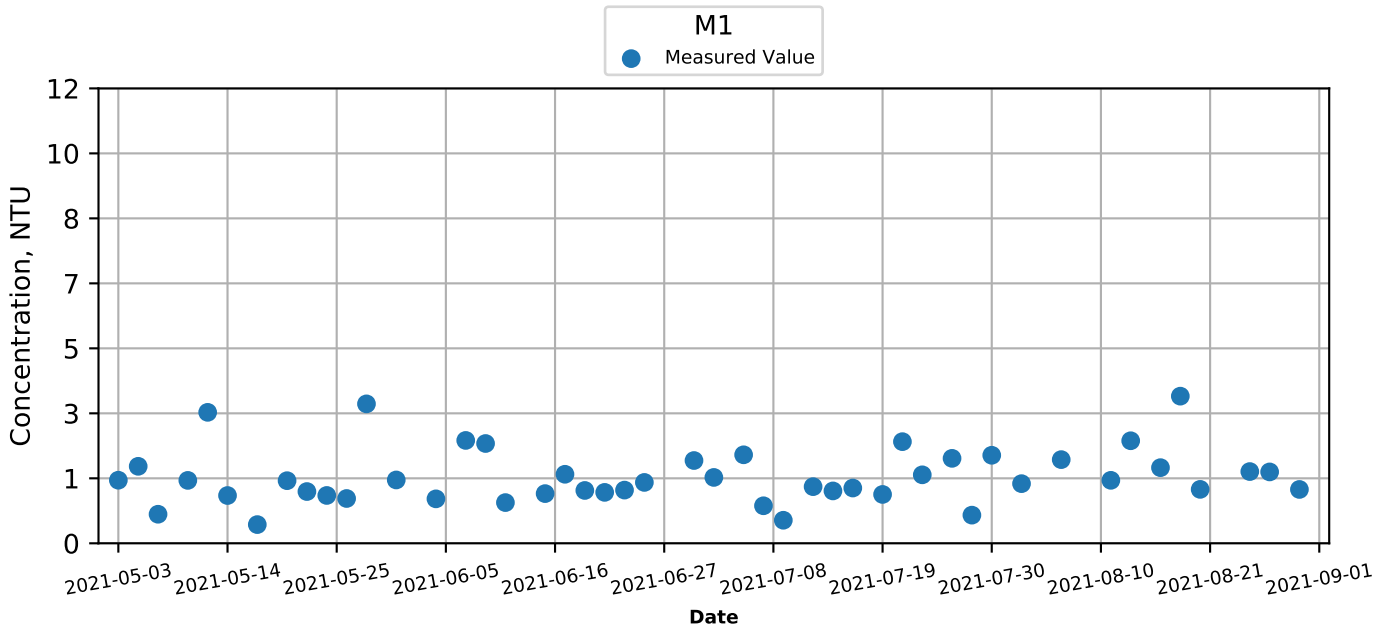


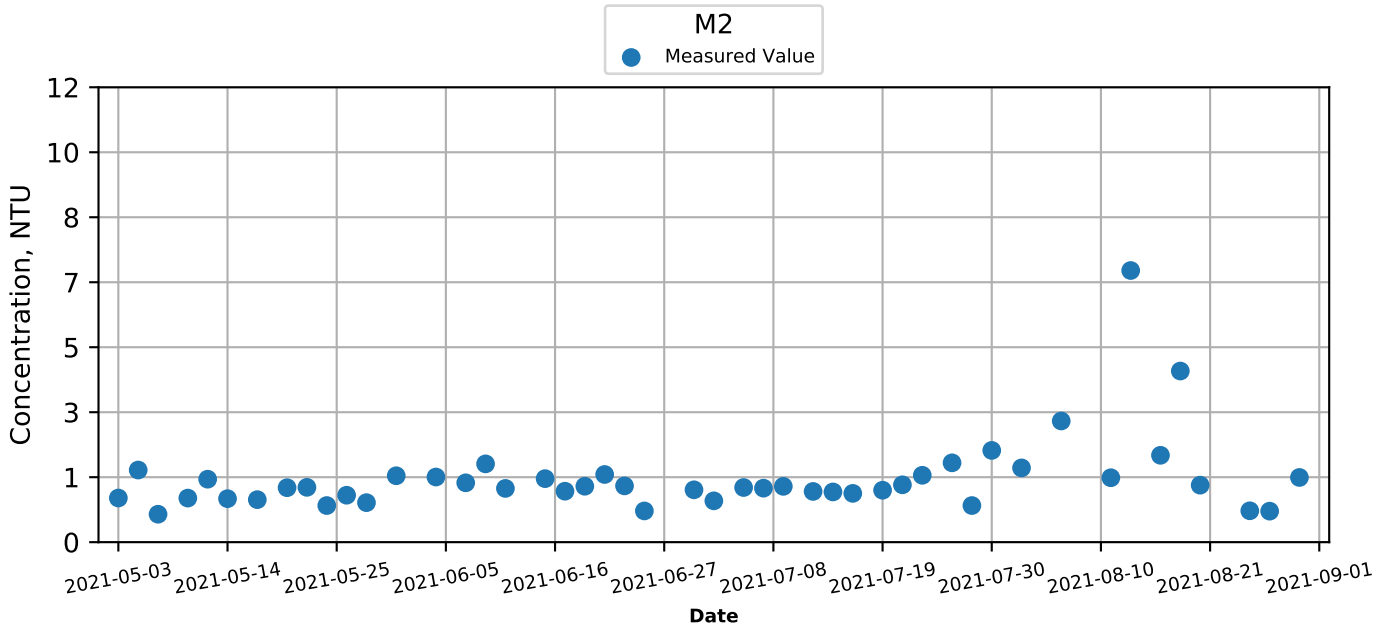


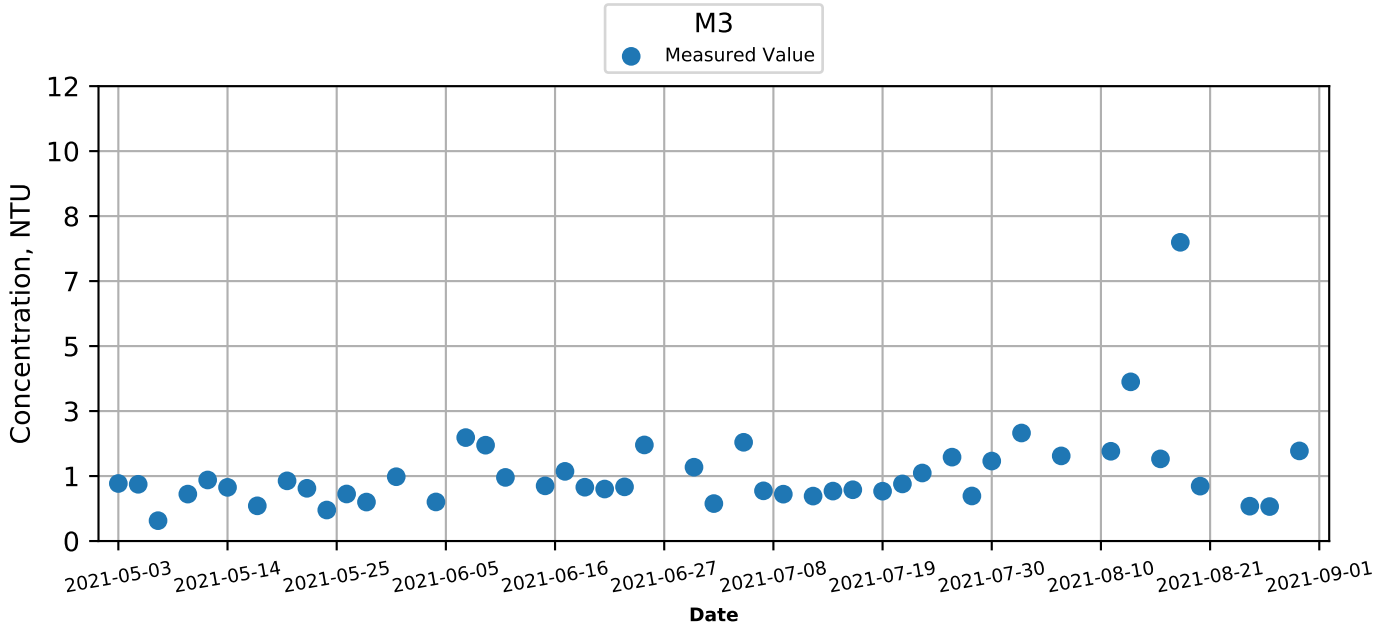


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Ebb

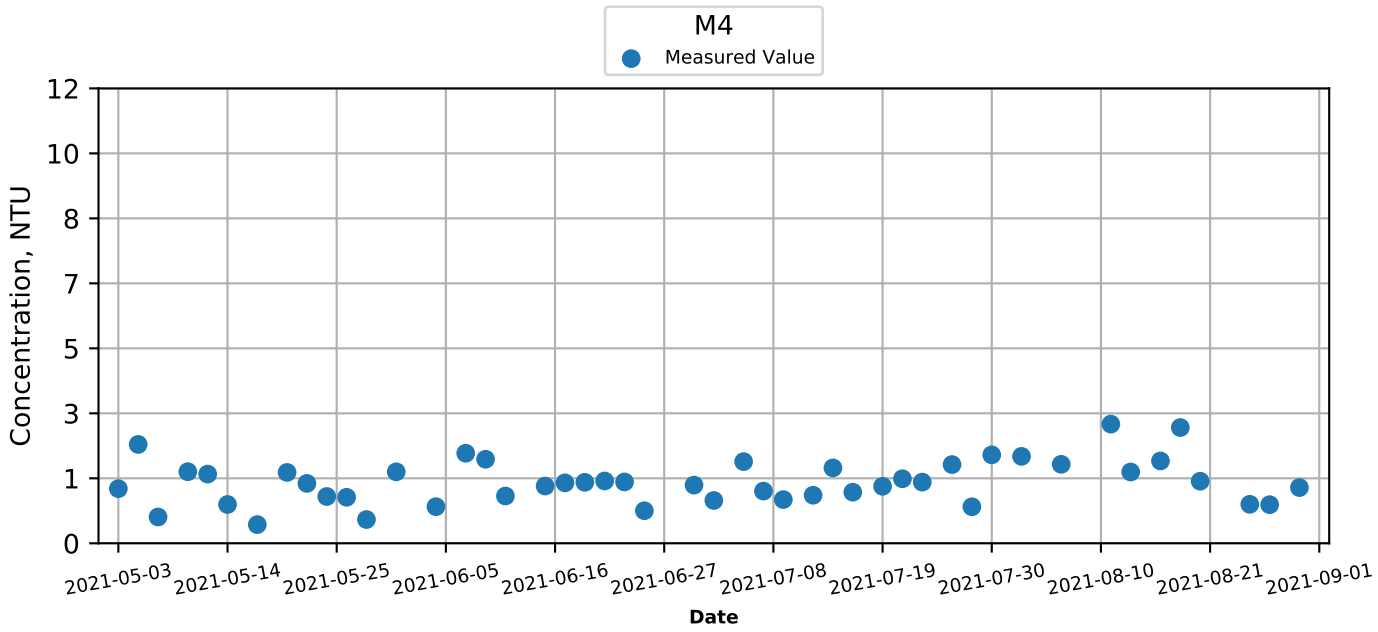


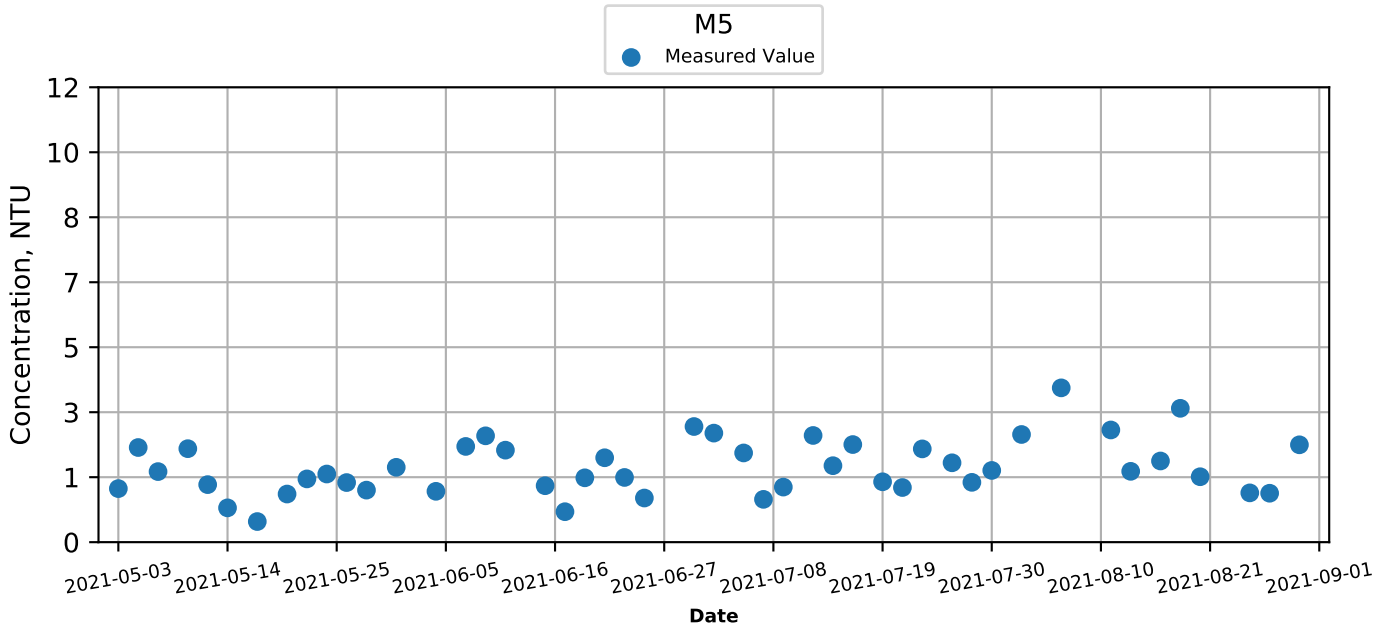




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

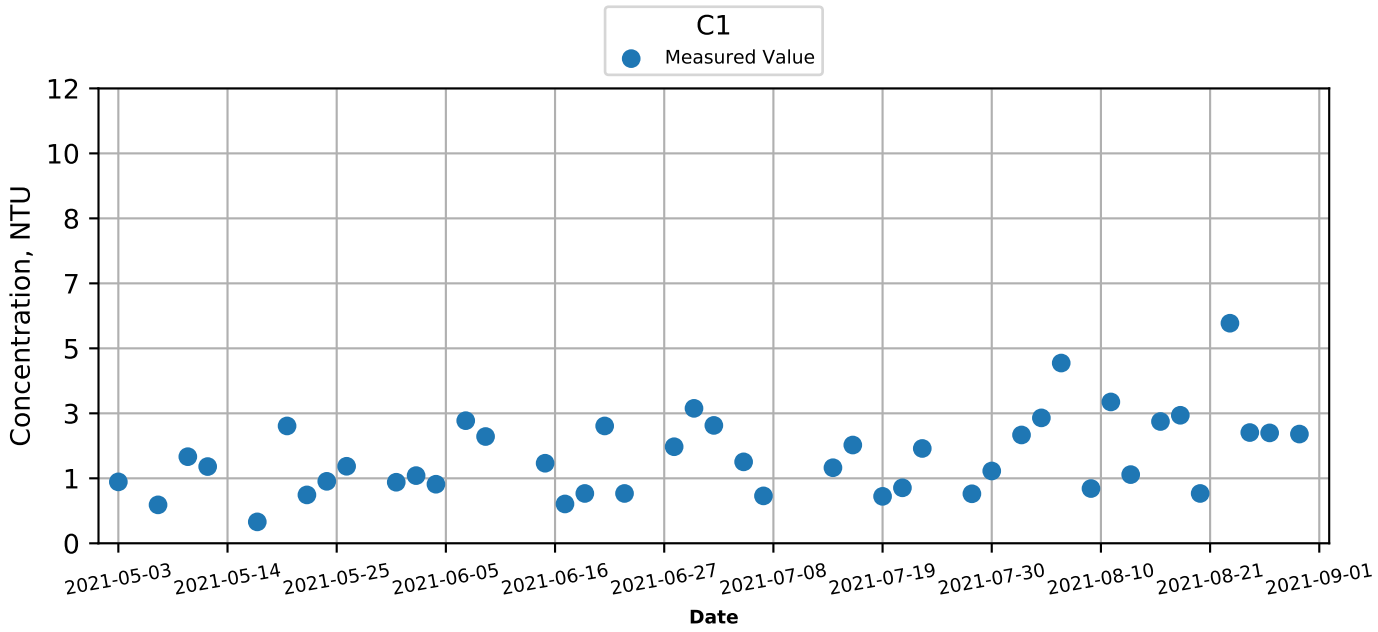
Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Ebb

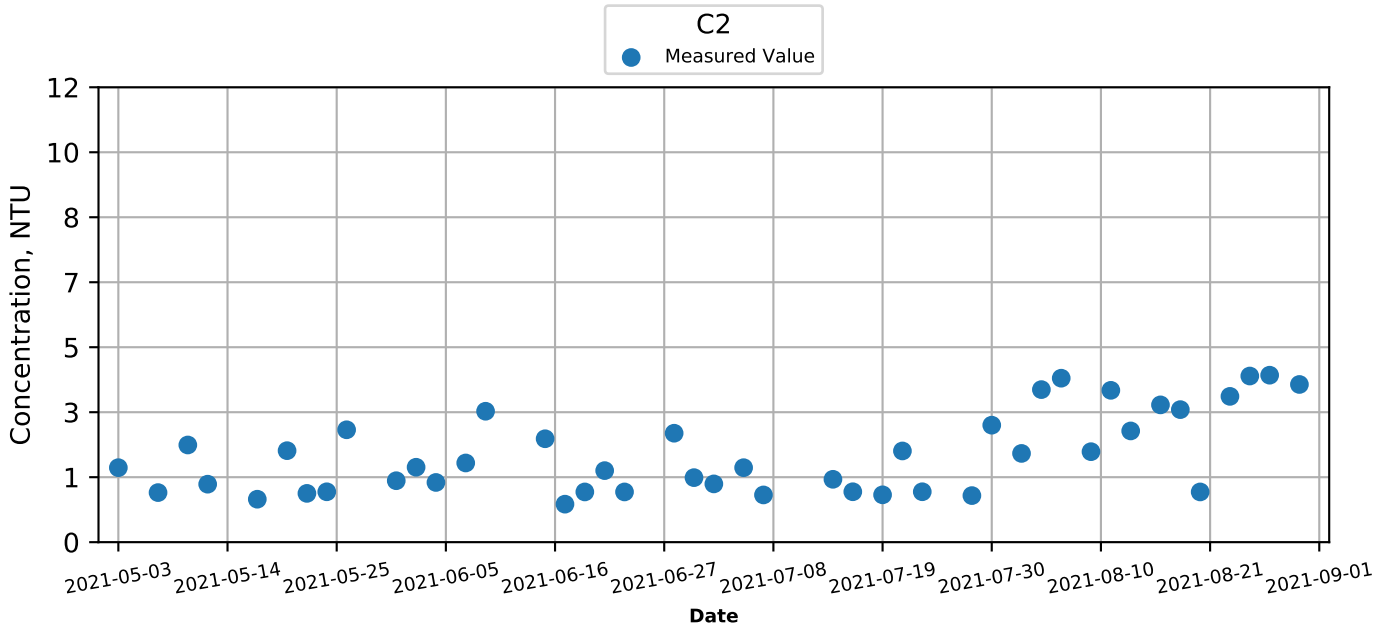


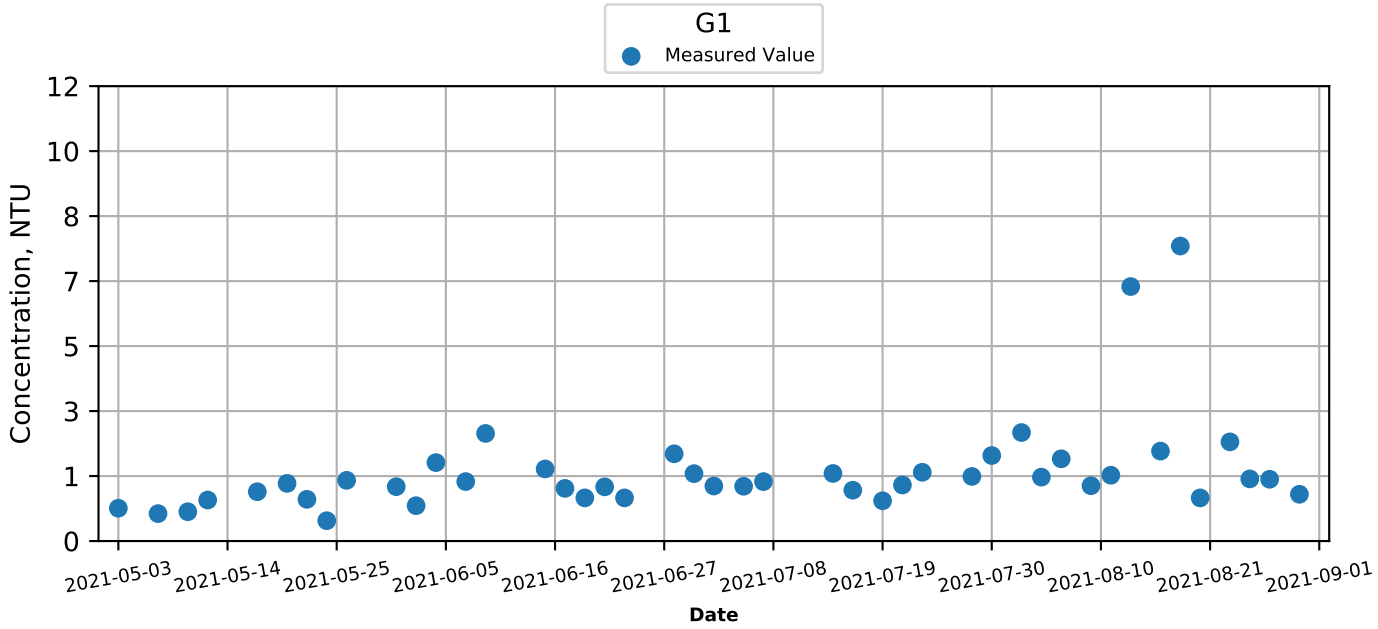


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Flood

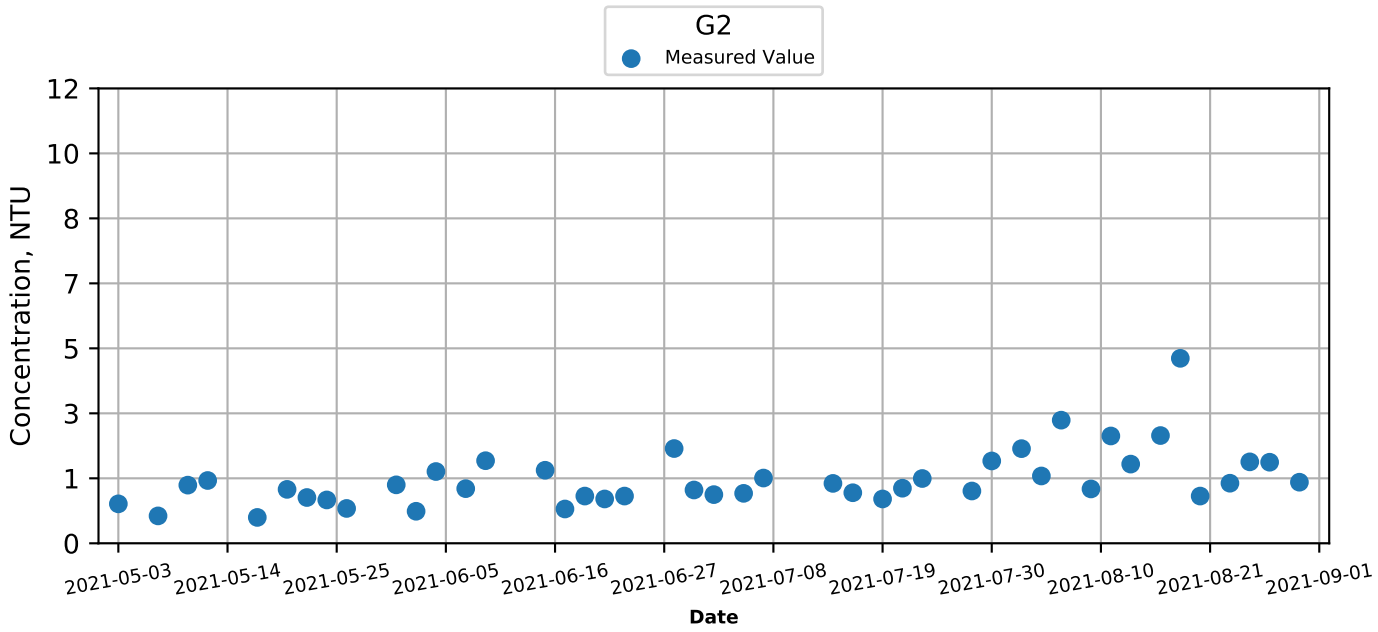


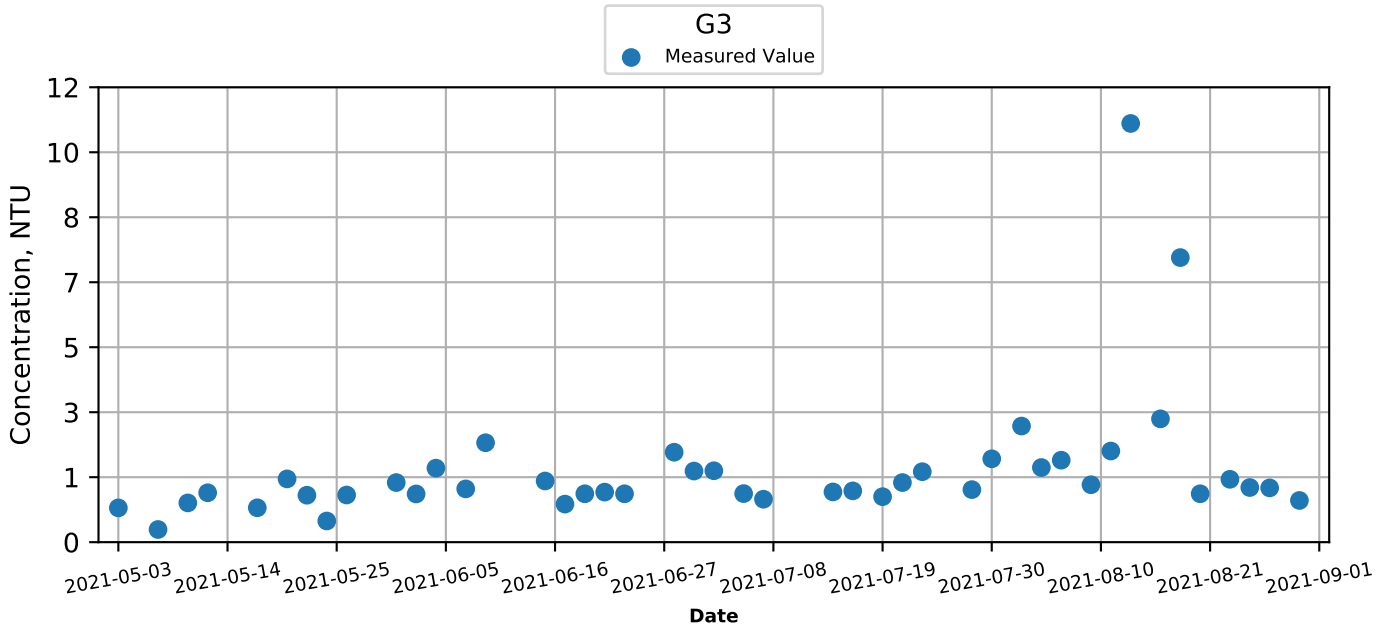


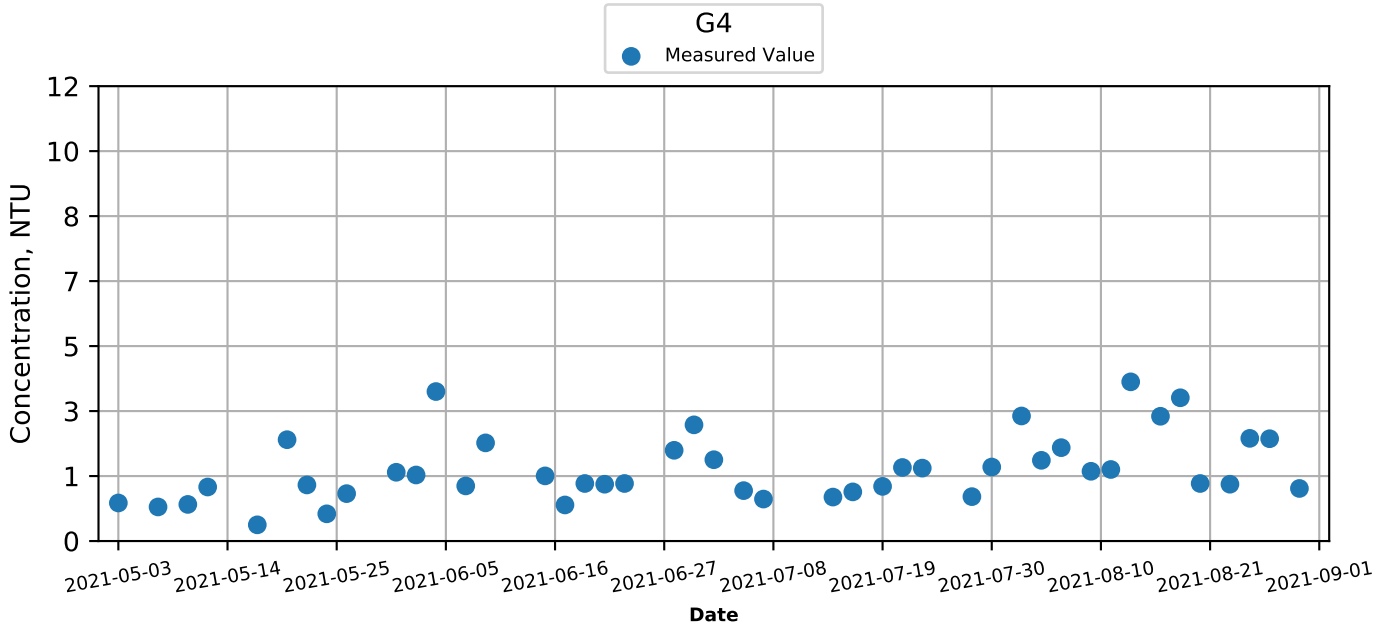


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Flood

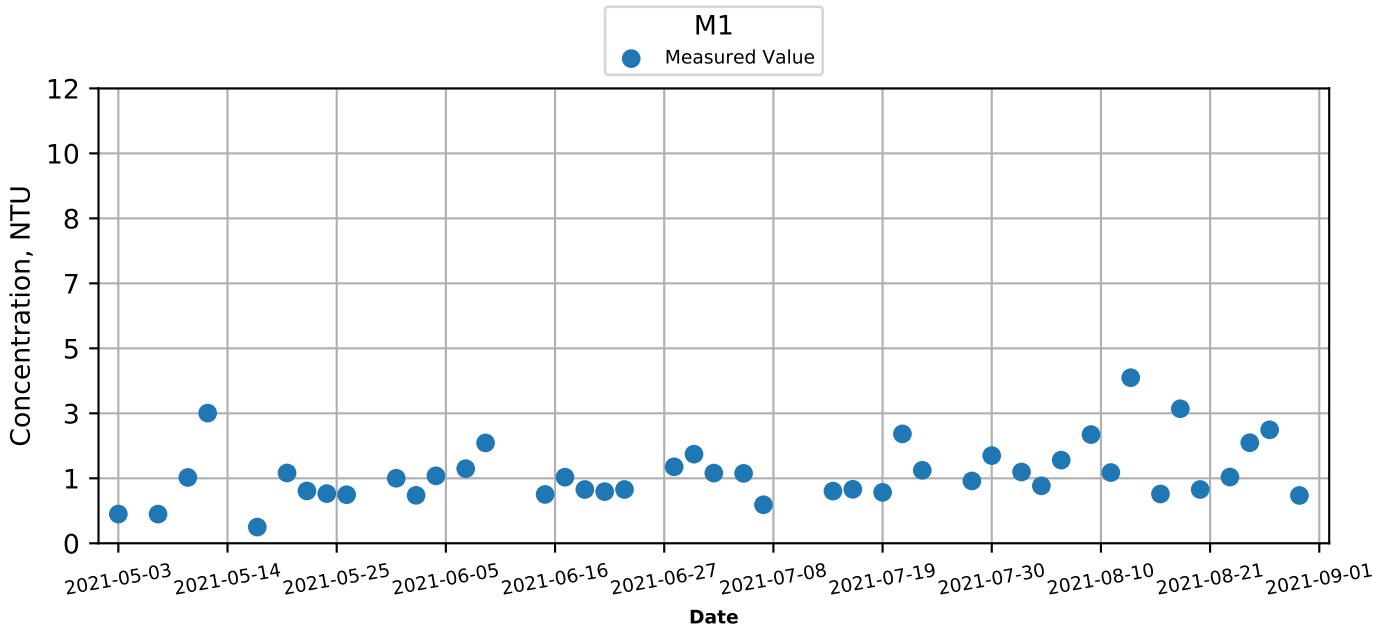


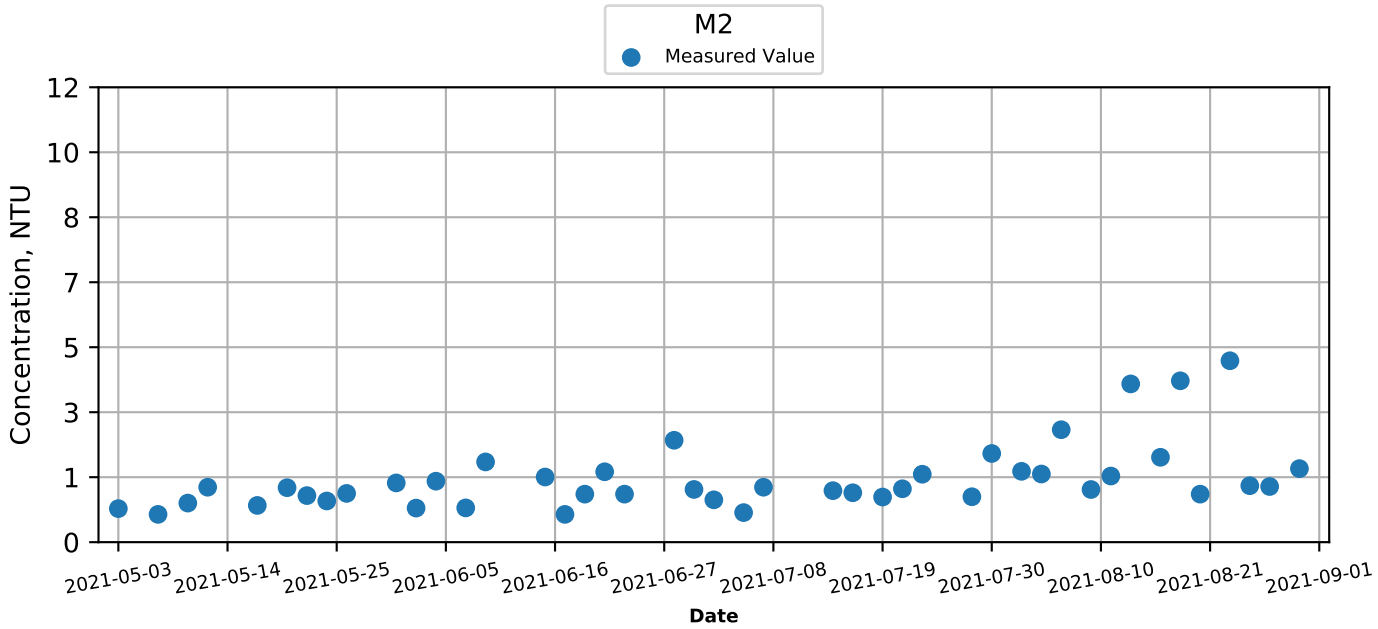


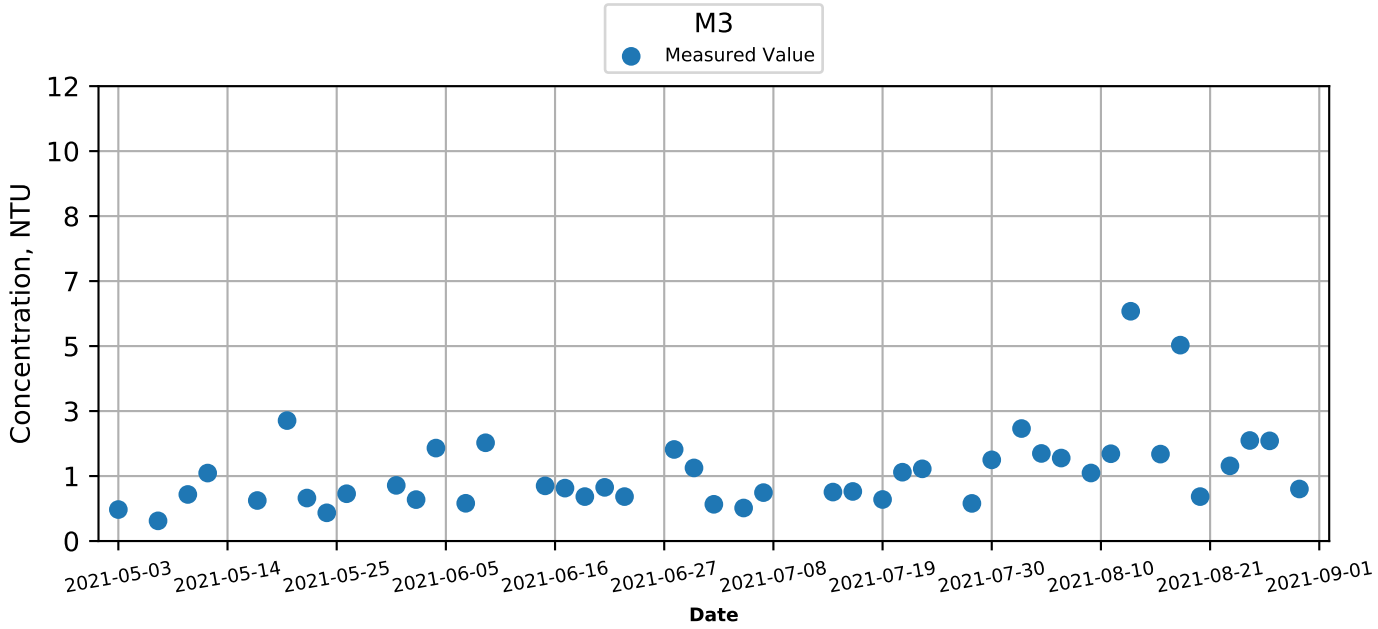


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Flood

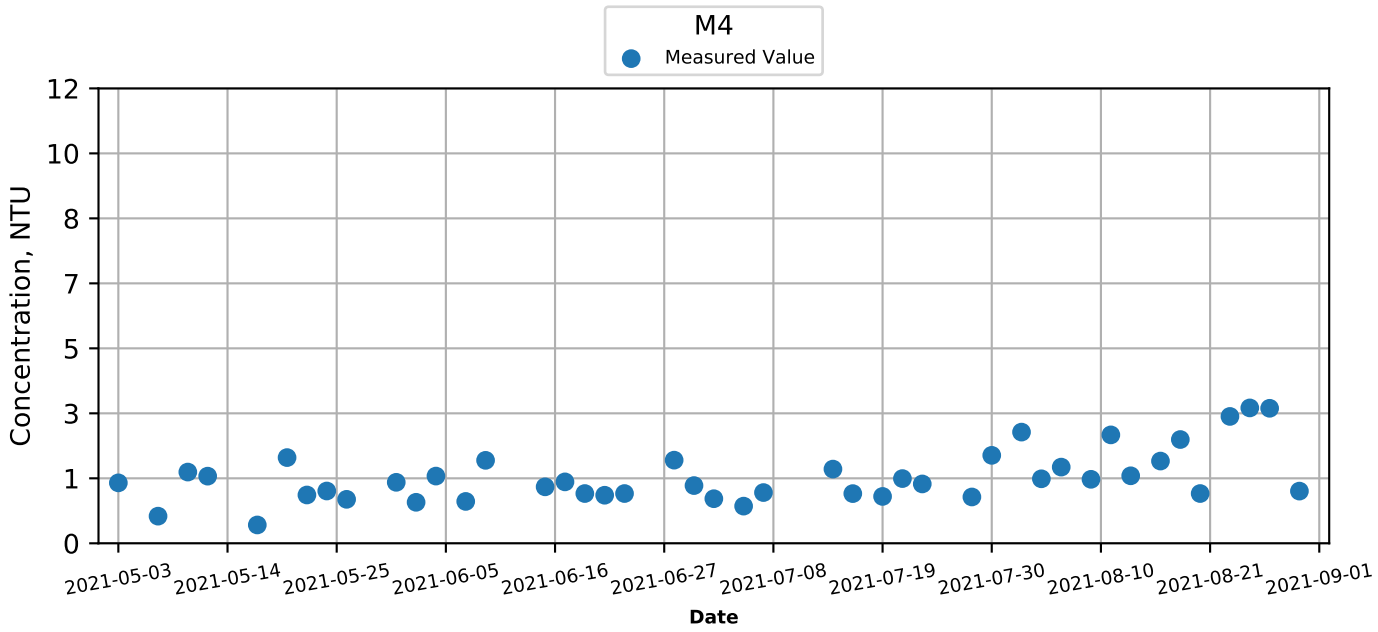


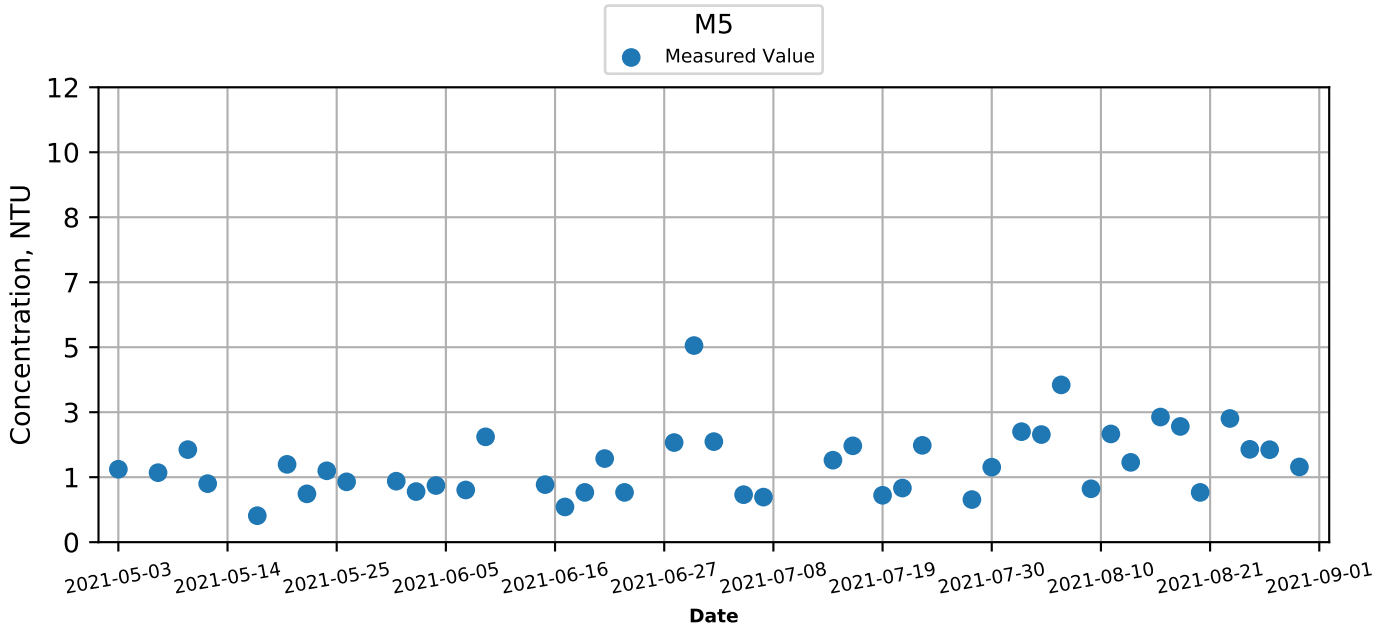




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

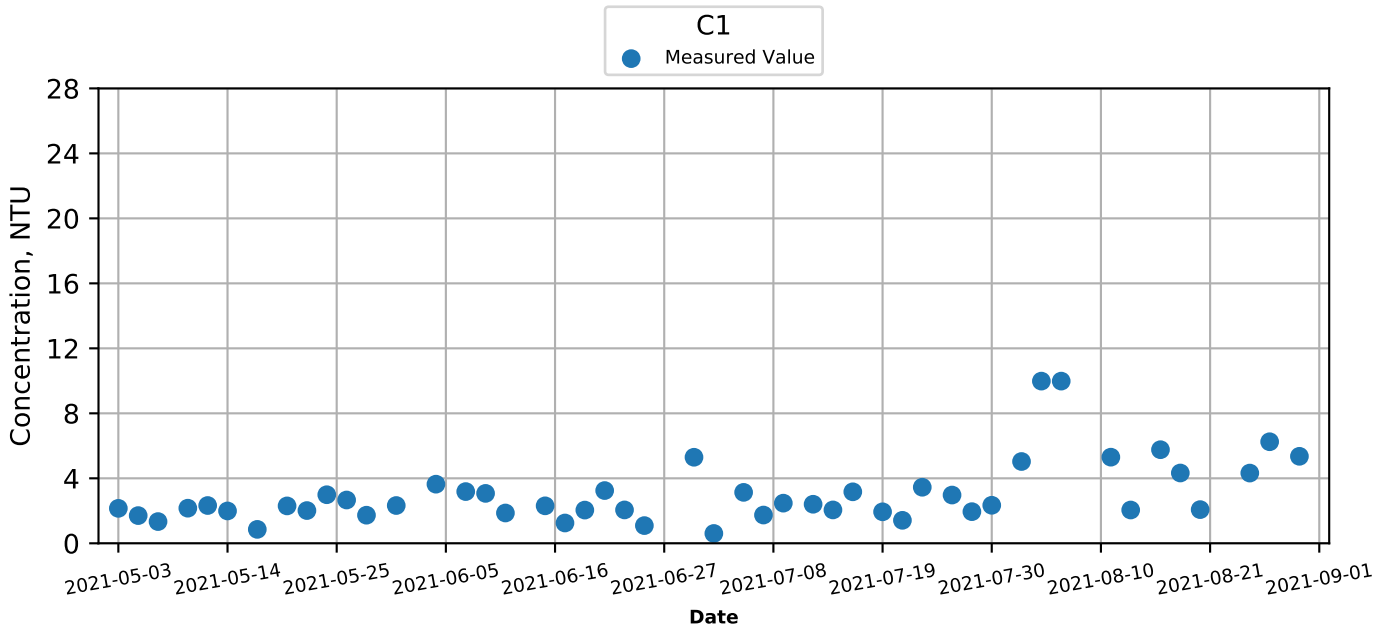
Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Flood

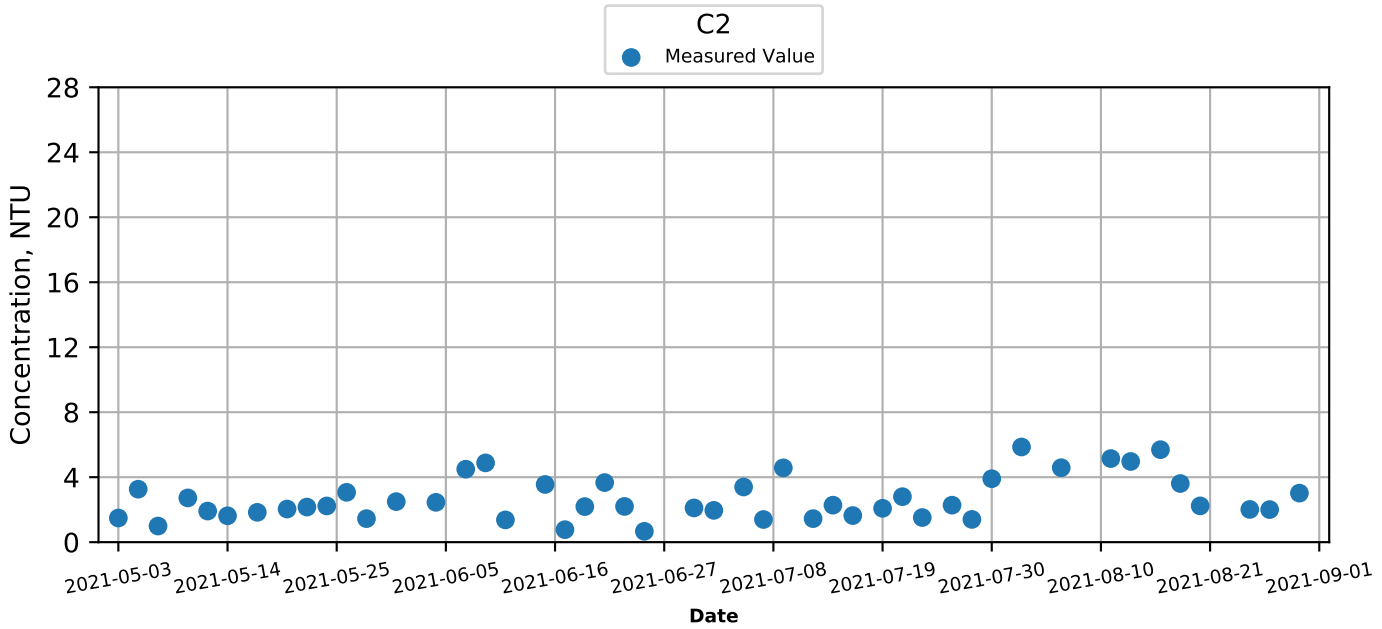


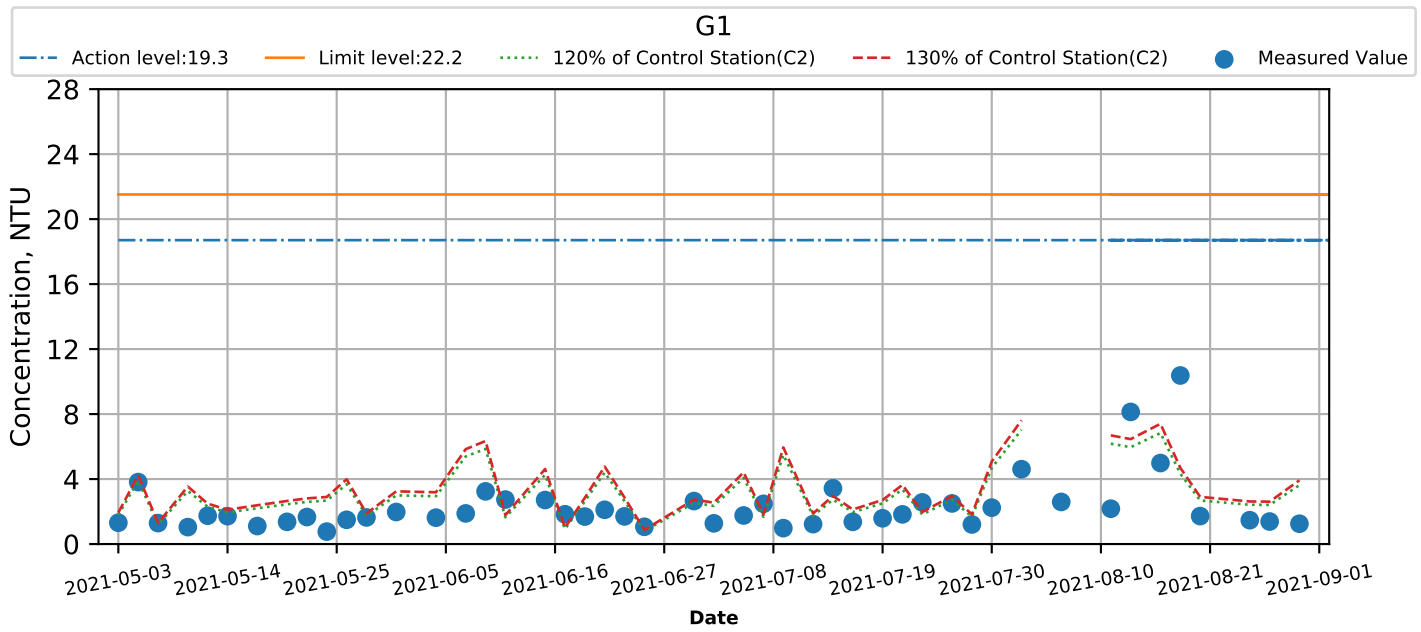


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Ebb

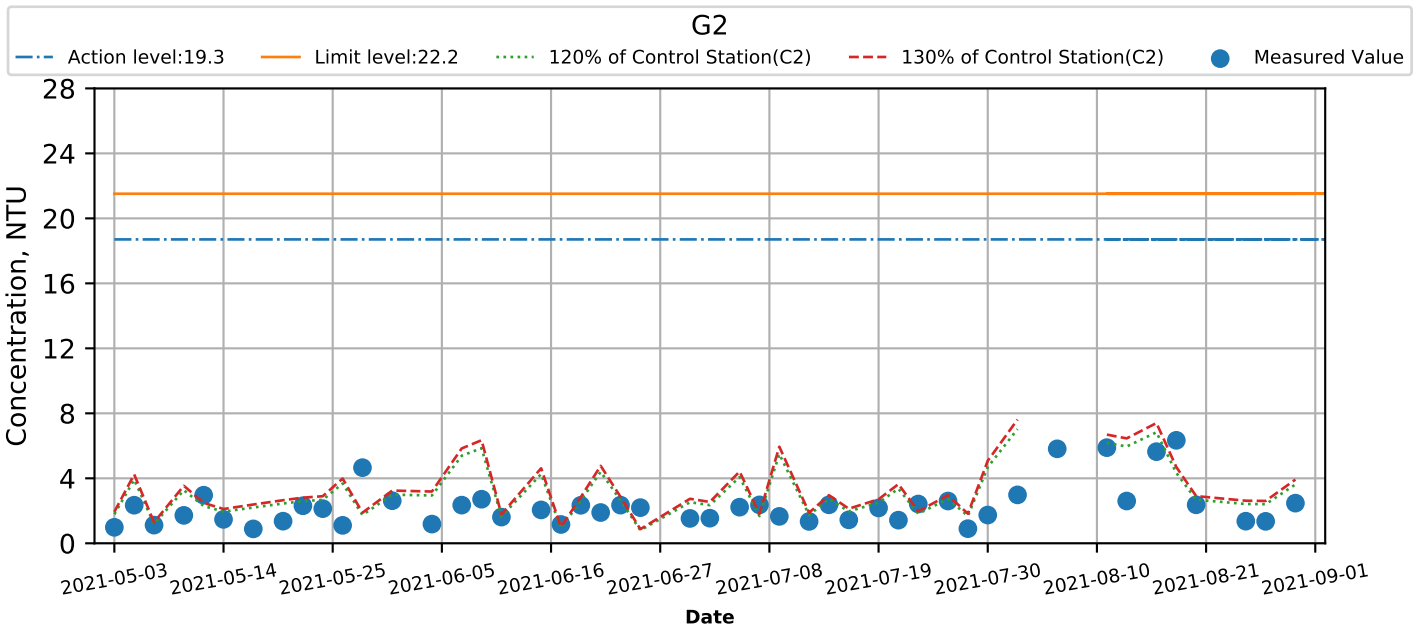


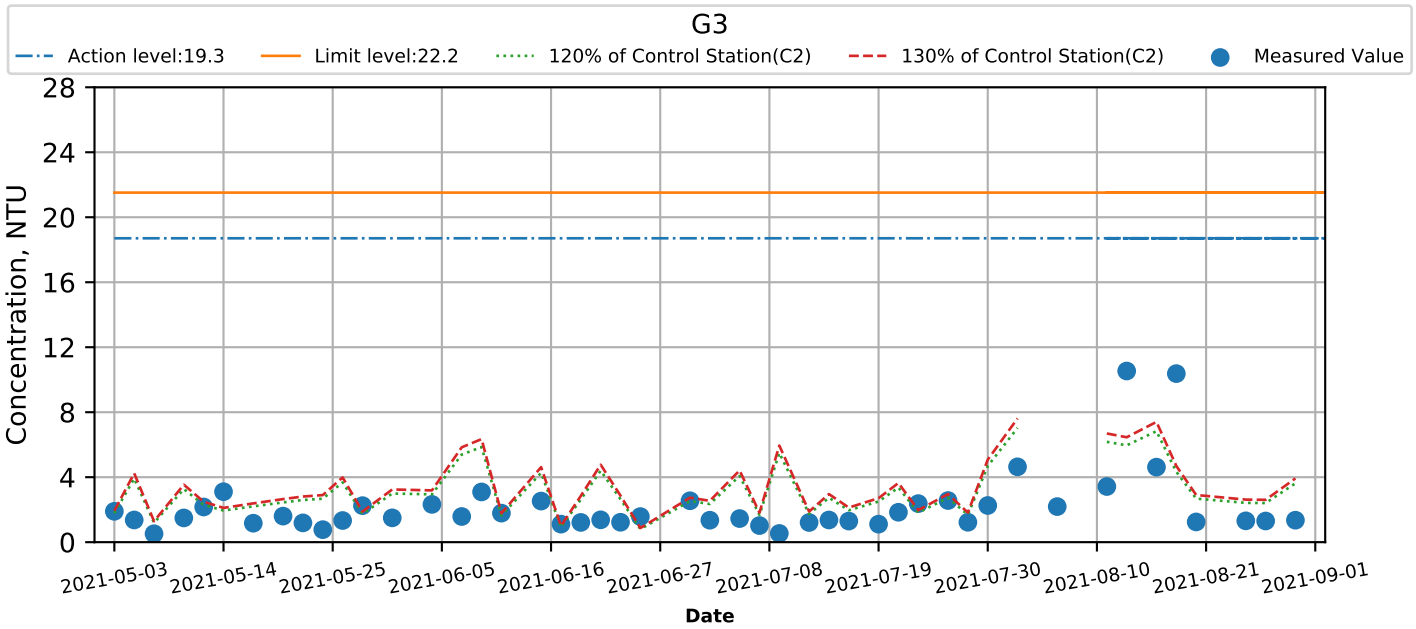


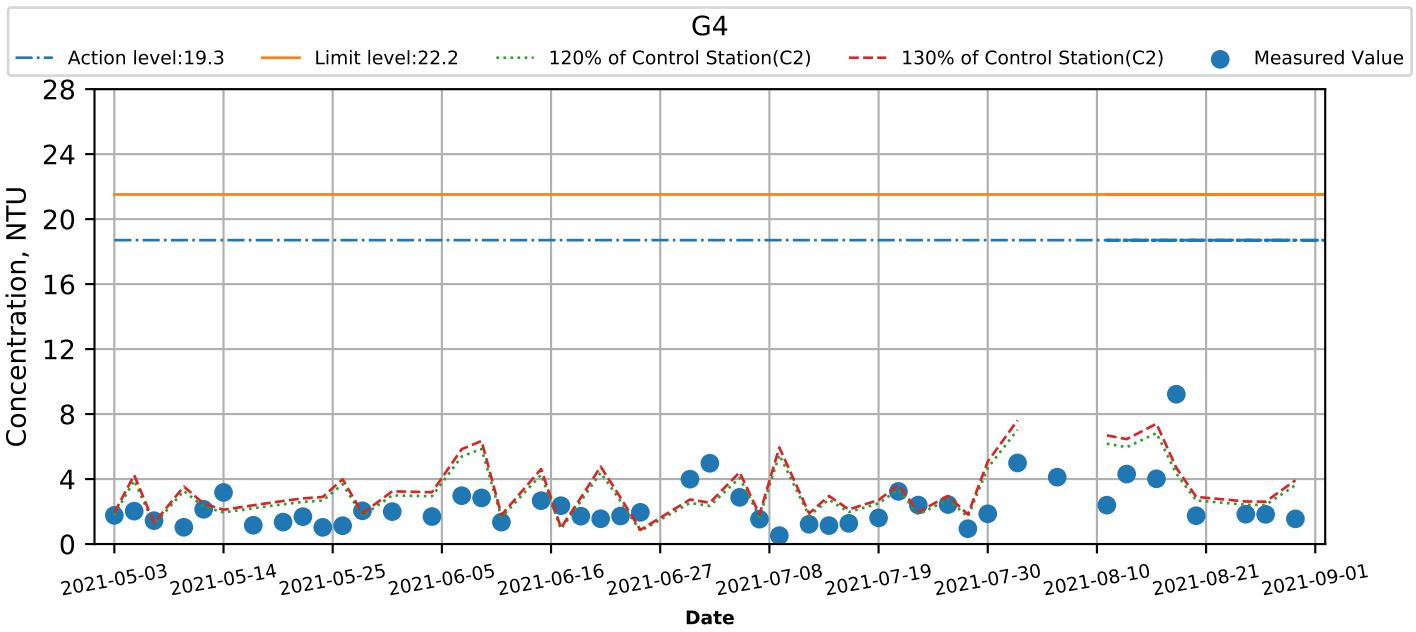


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Ebb

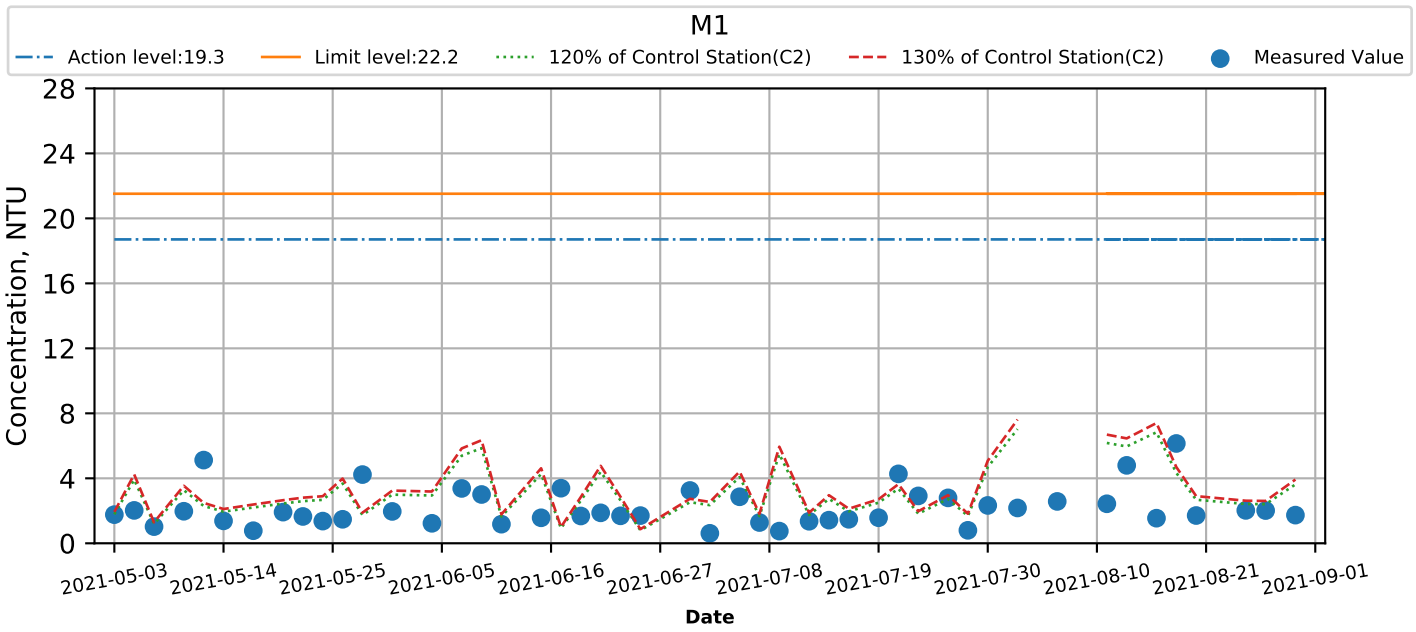


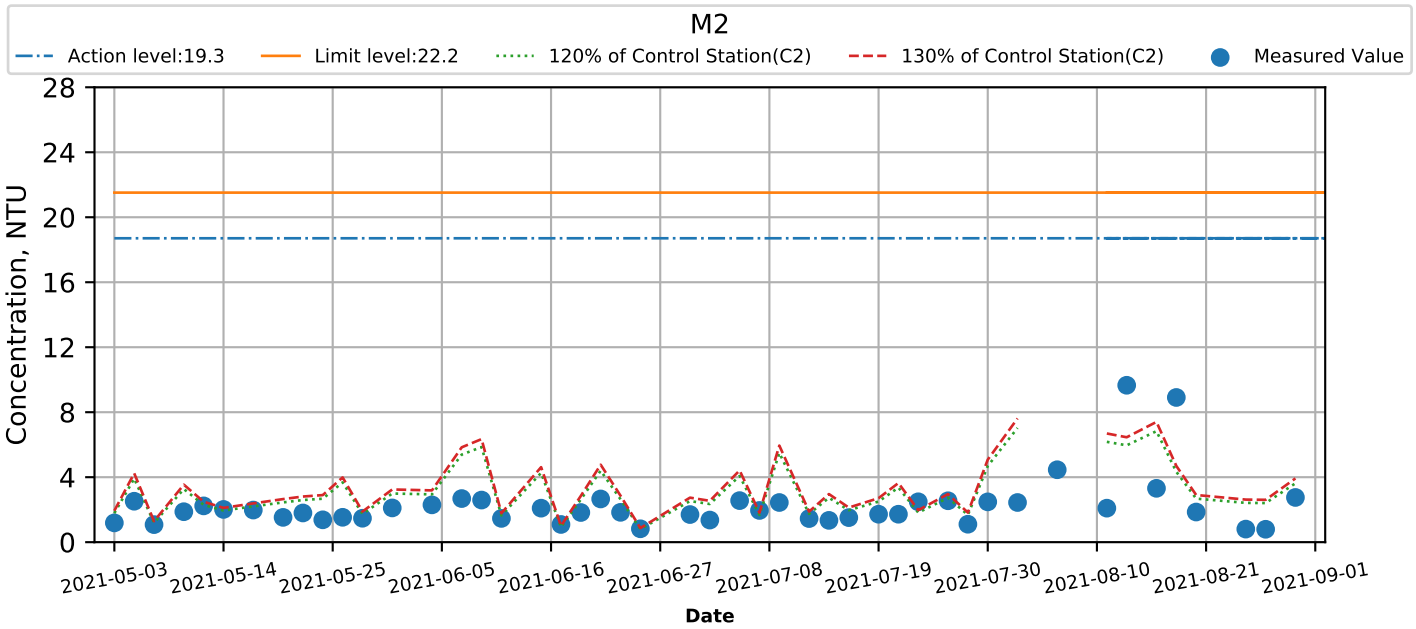


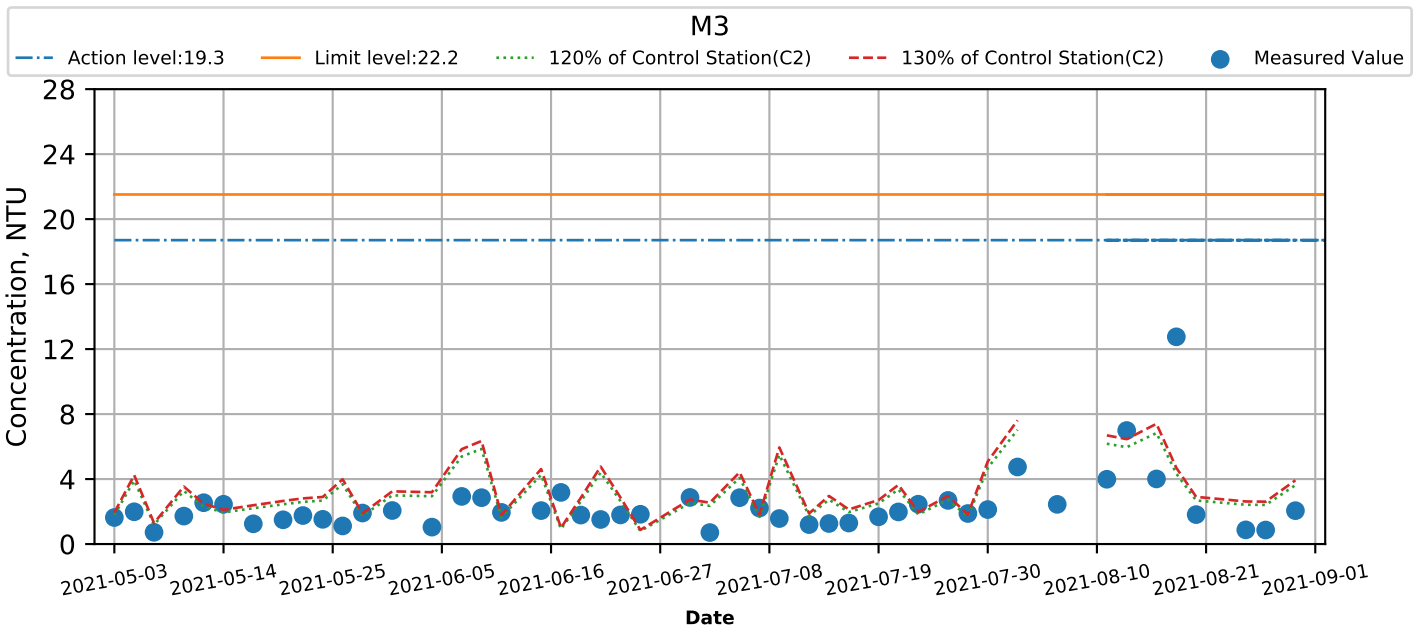


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Ebb

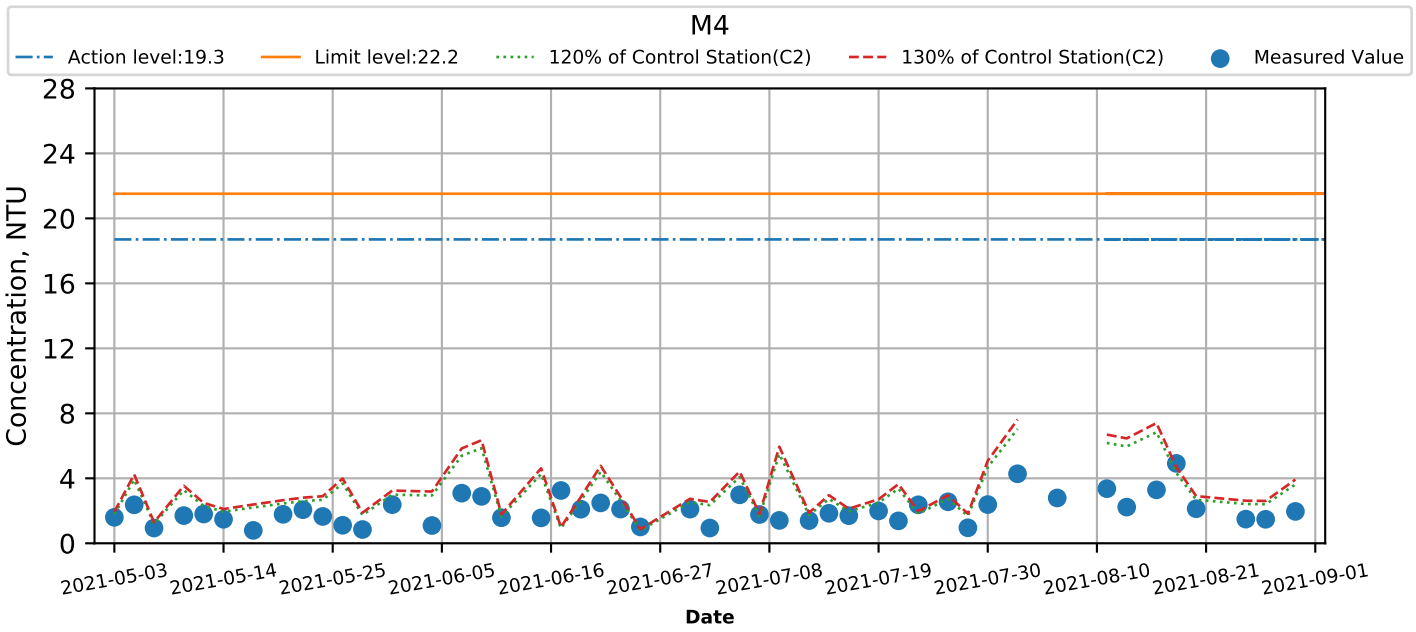


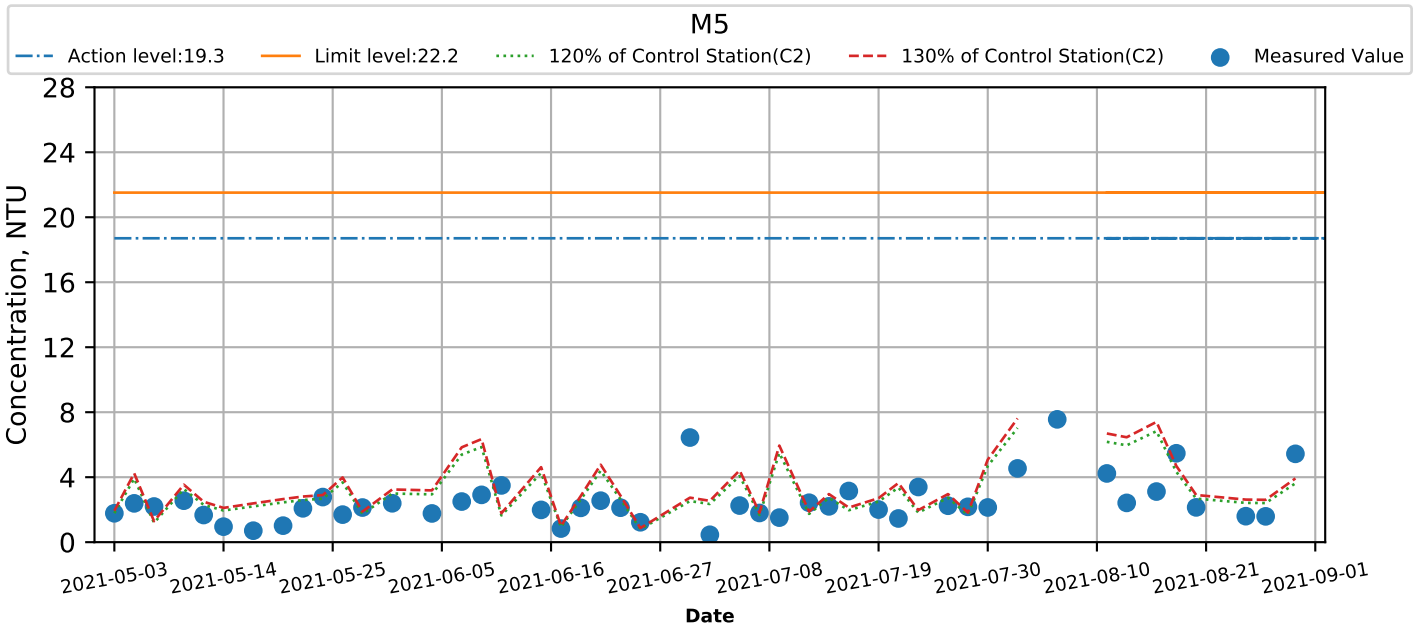




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

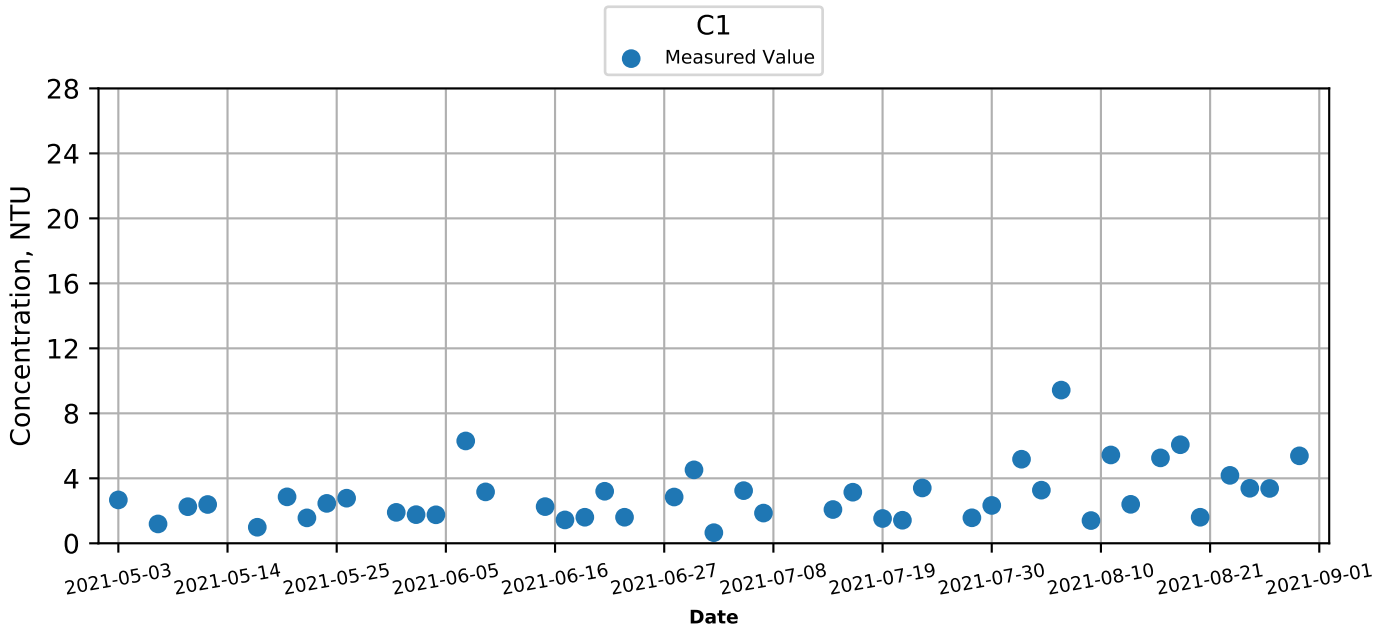
Turbidity (Bottom) at Monitoring Stations during Mid-Ebb

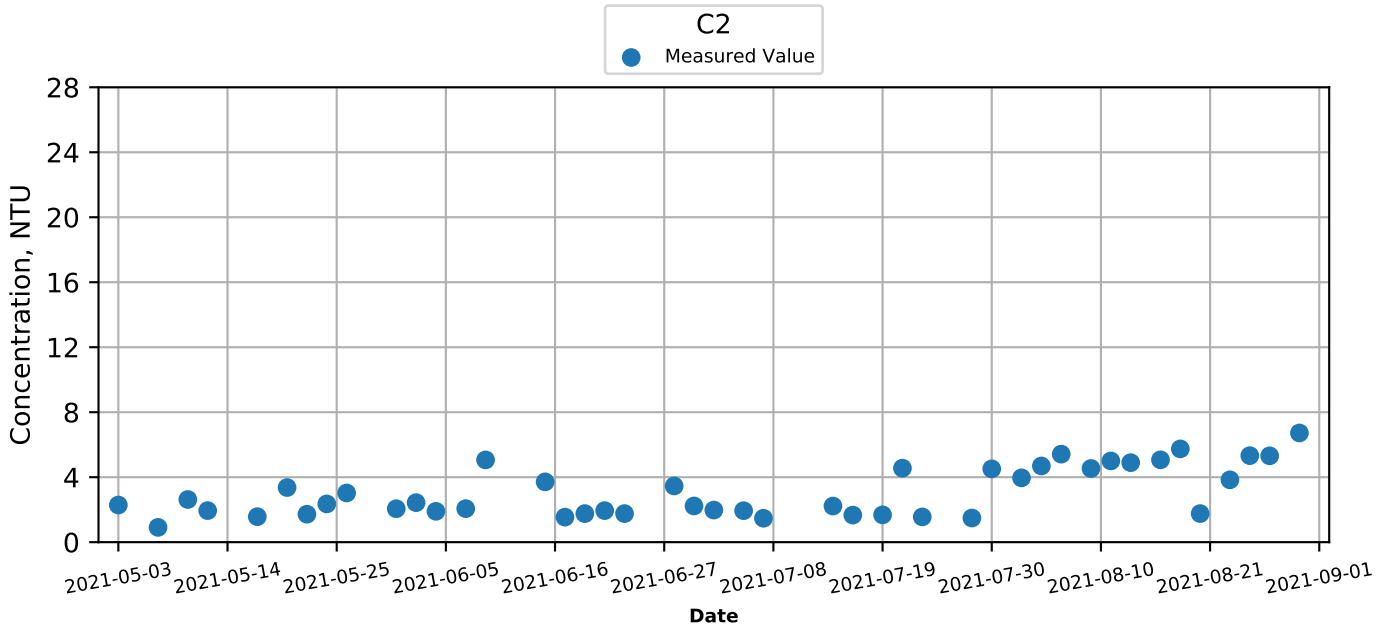


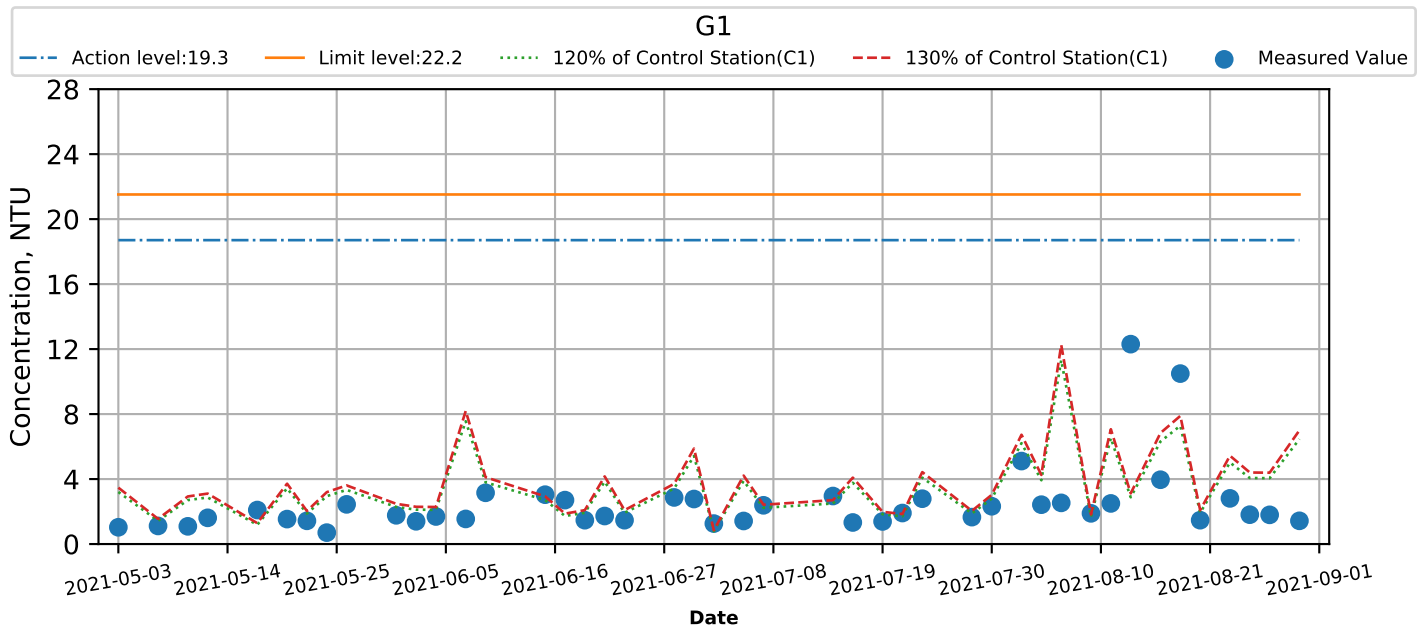


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Flood

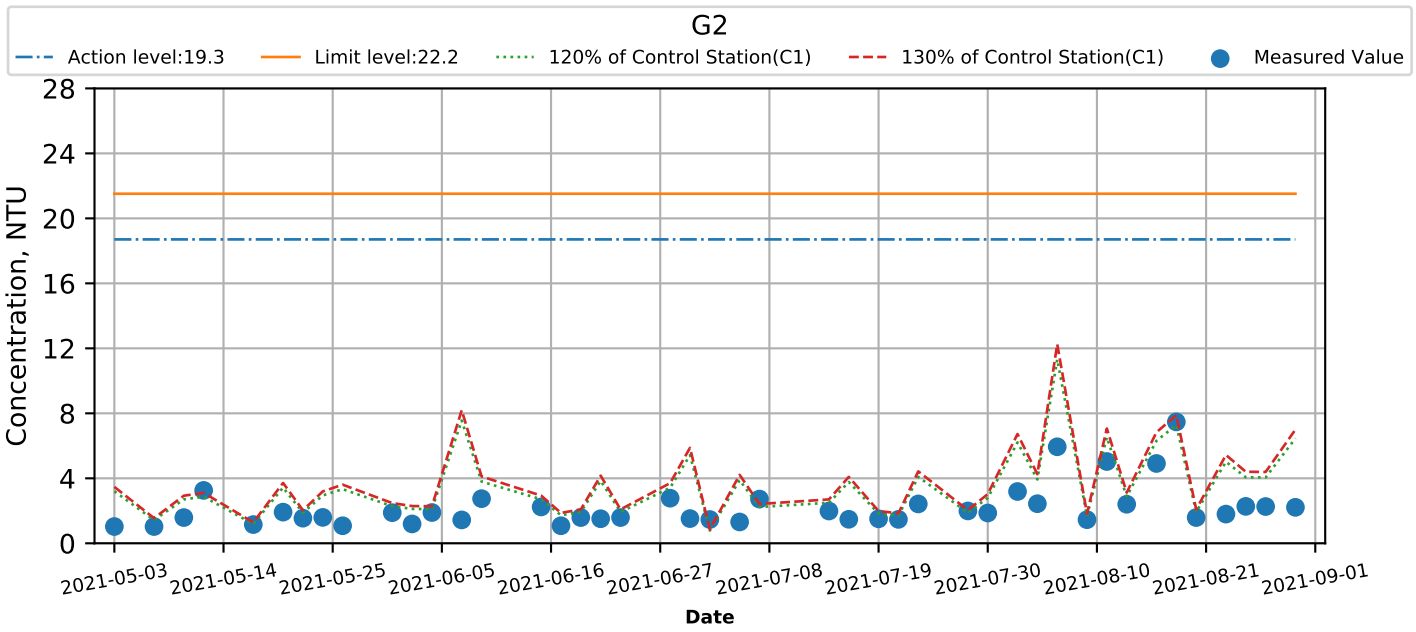


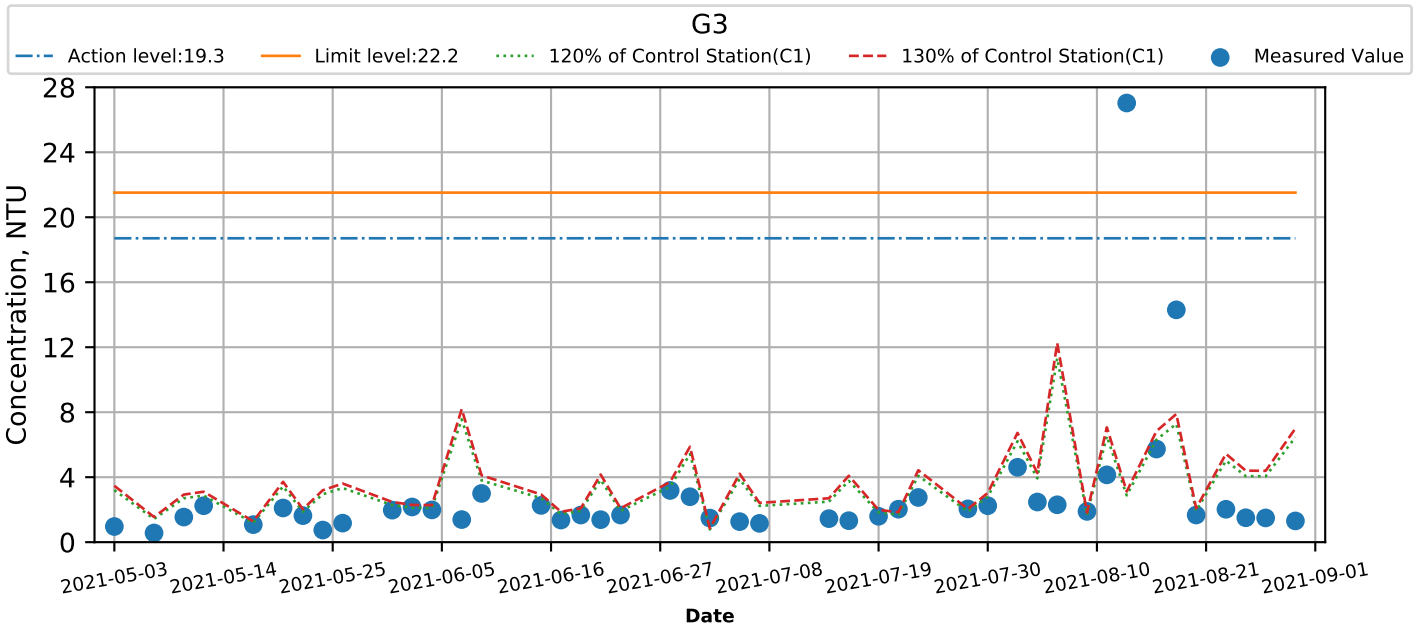


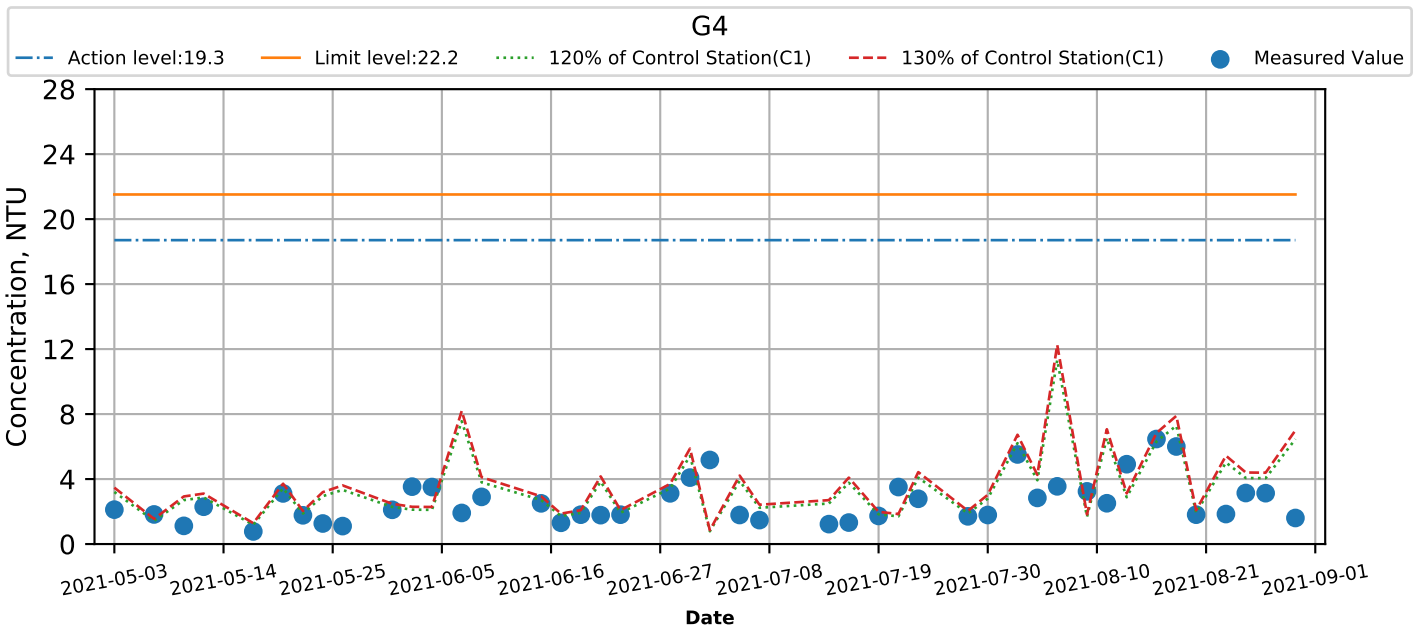


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Flood

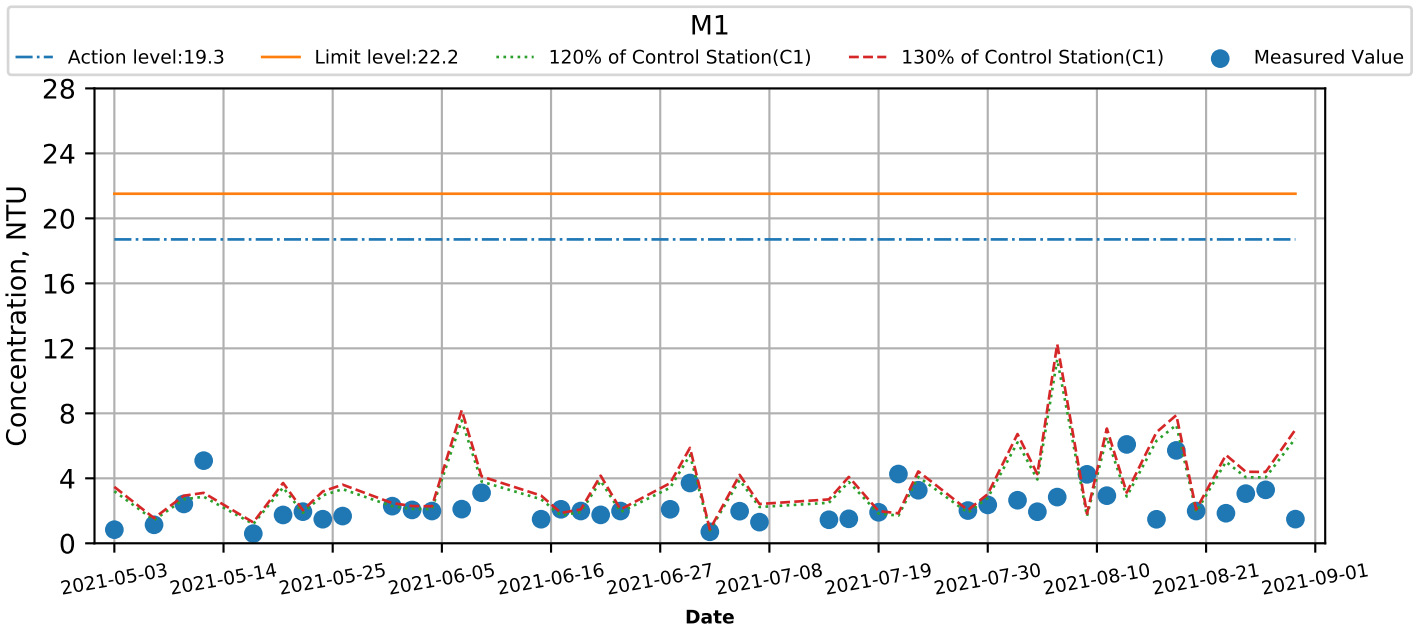


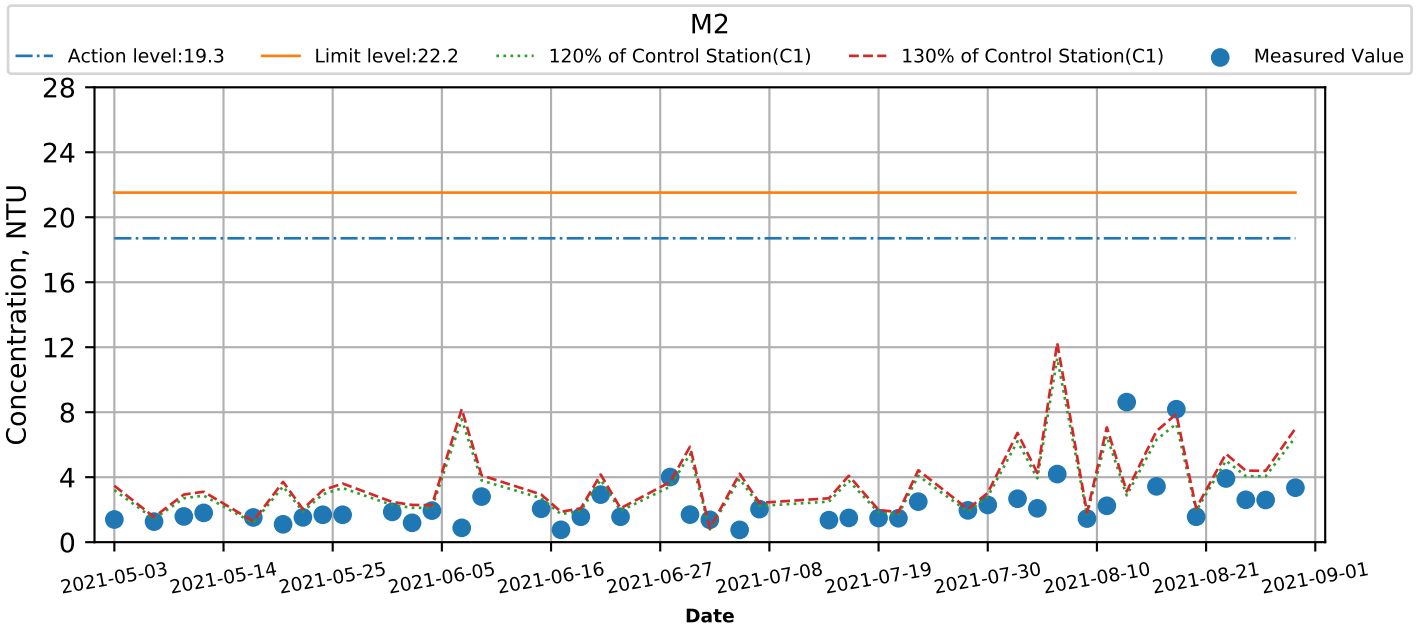


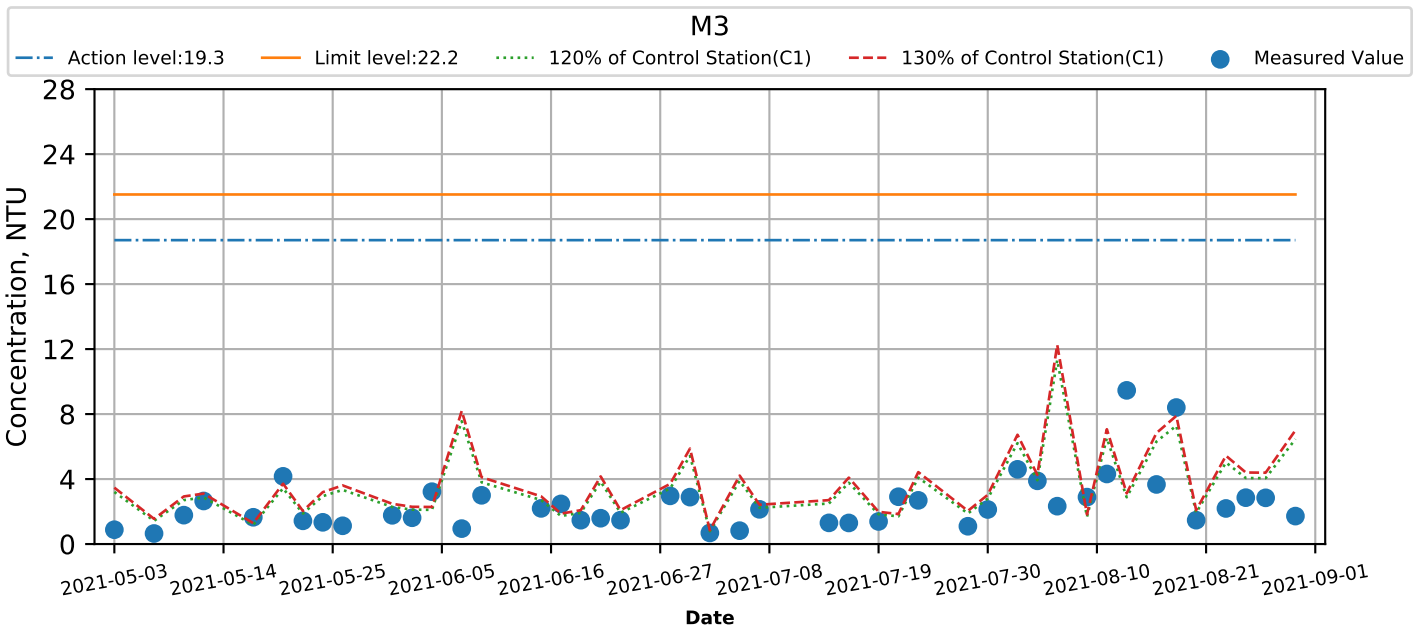


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Flood

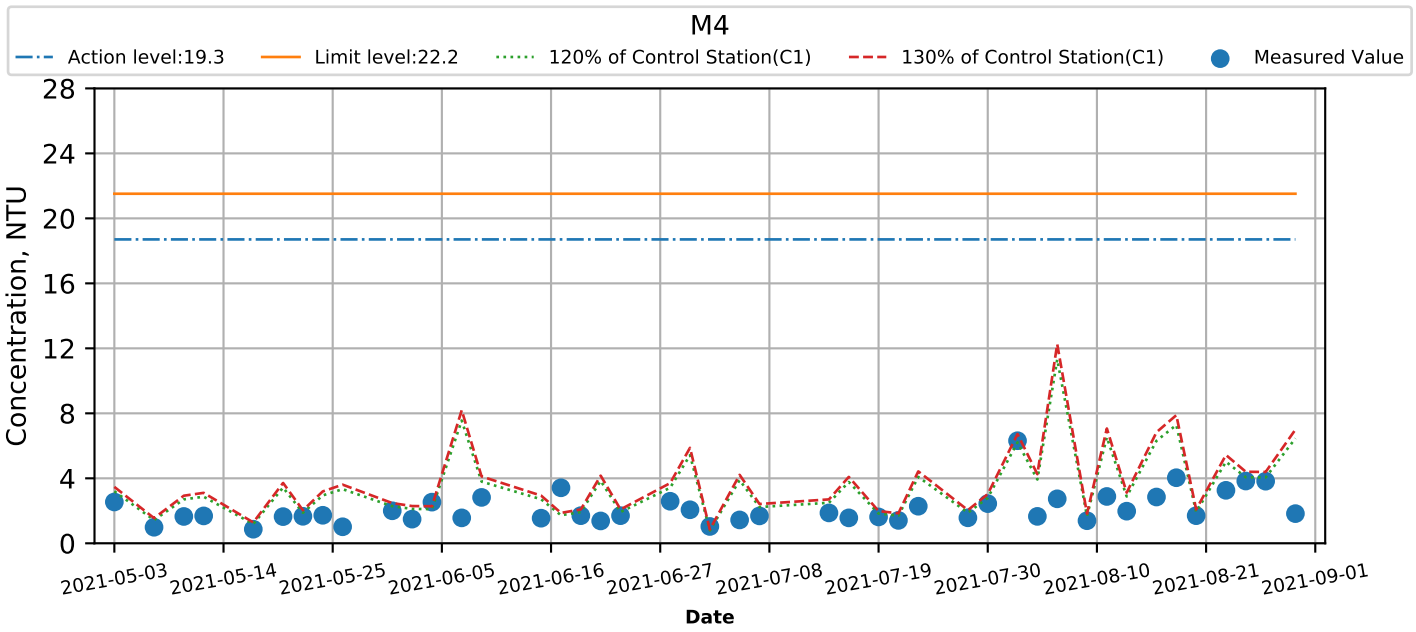


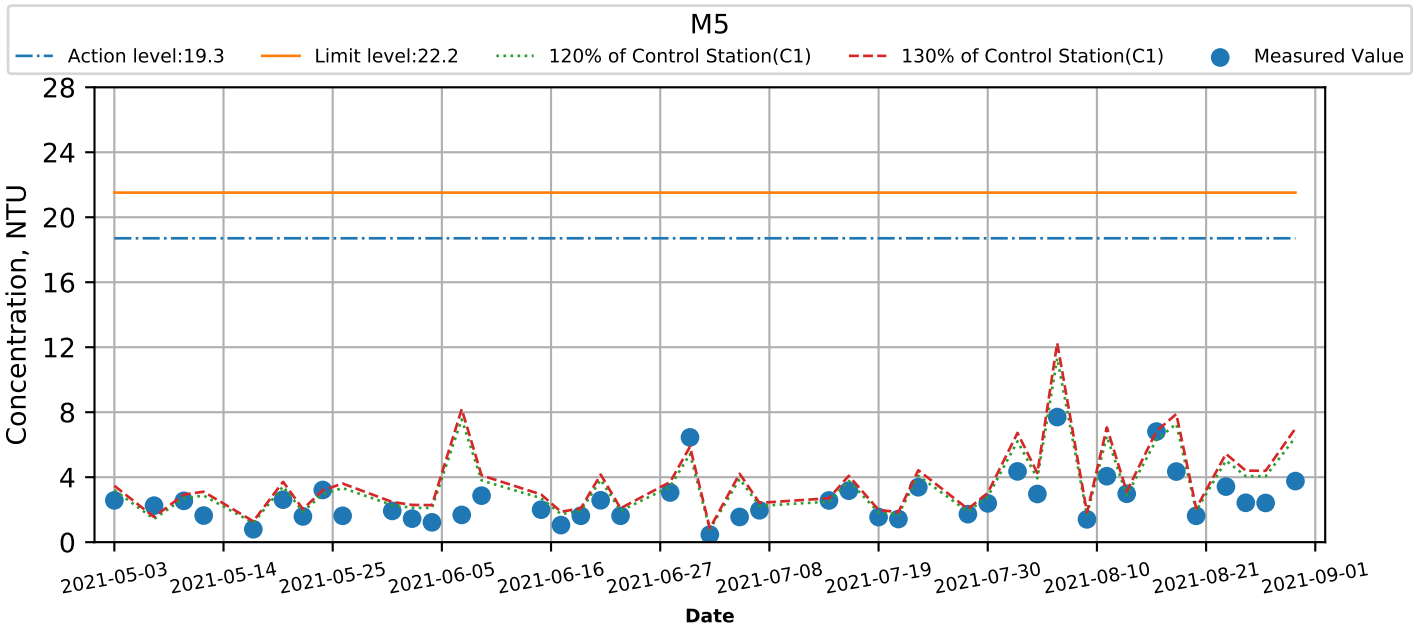




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

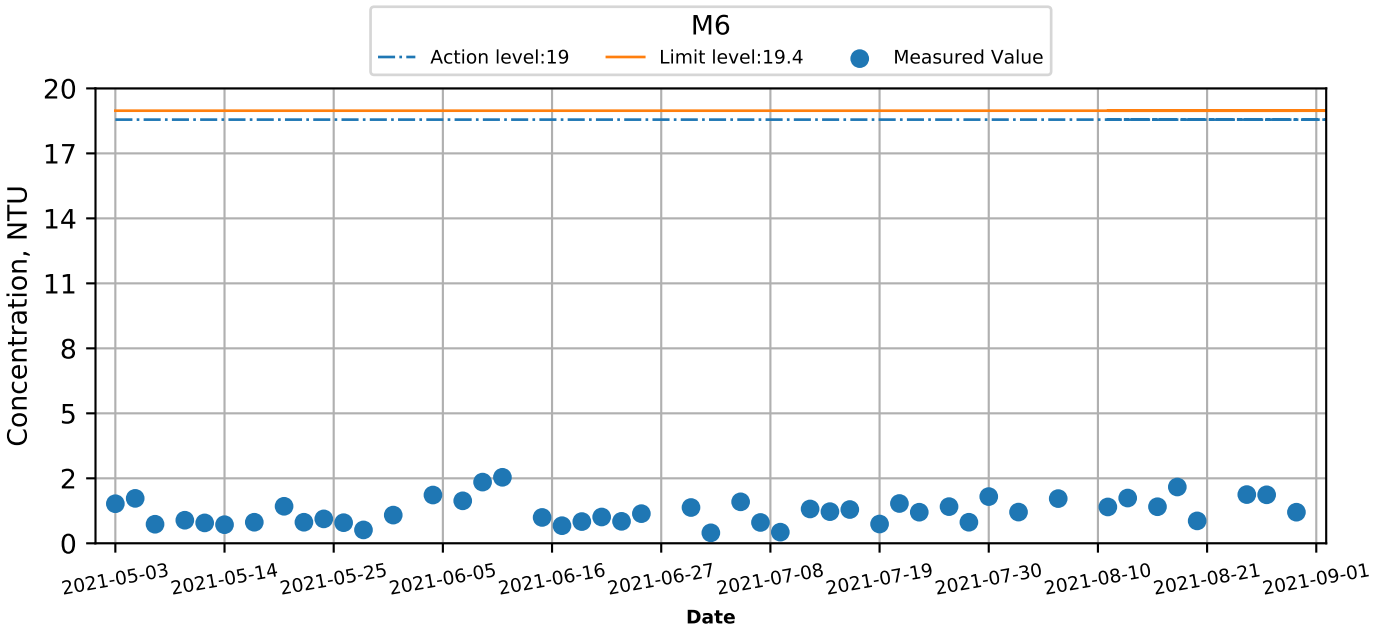
Turbidity (Bottom) at Monitoring Stations during Mid-Flood





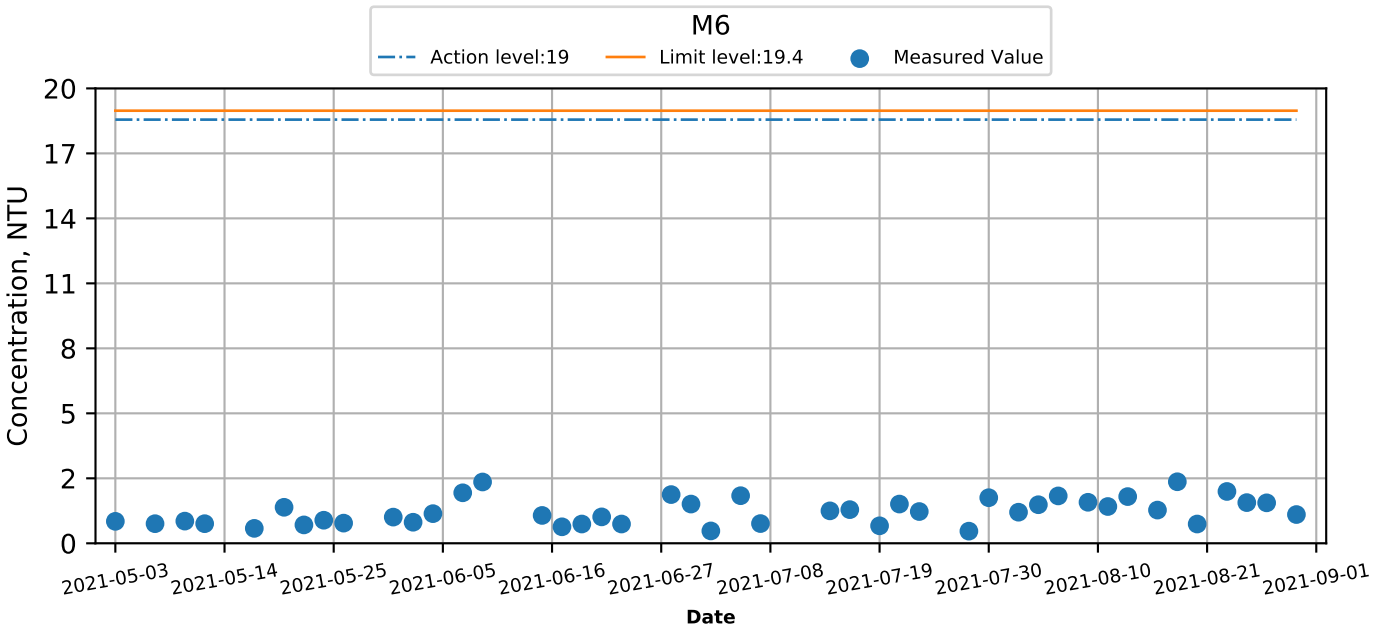
Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Turbidity (Intake level) at Monitoring Stations during Mid-Ebb



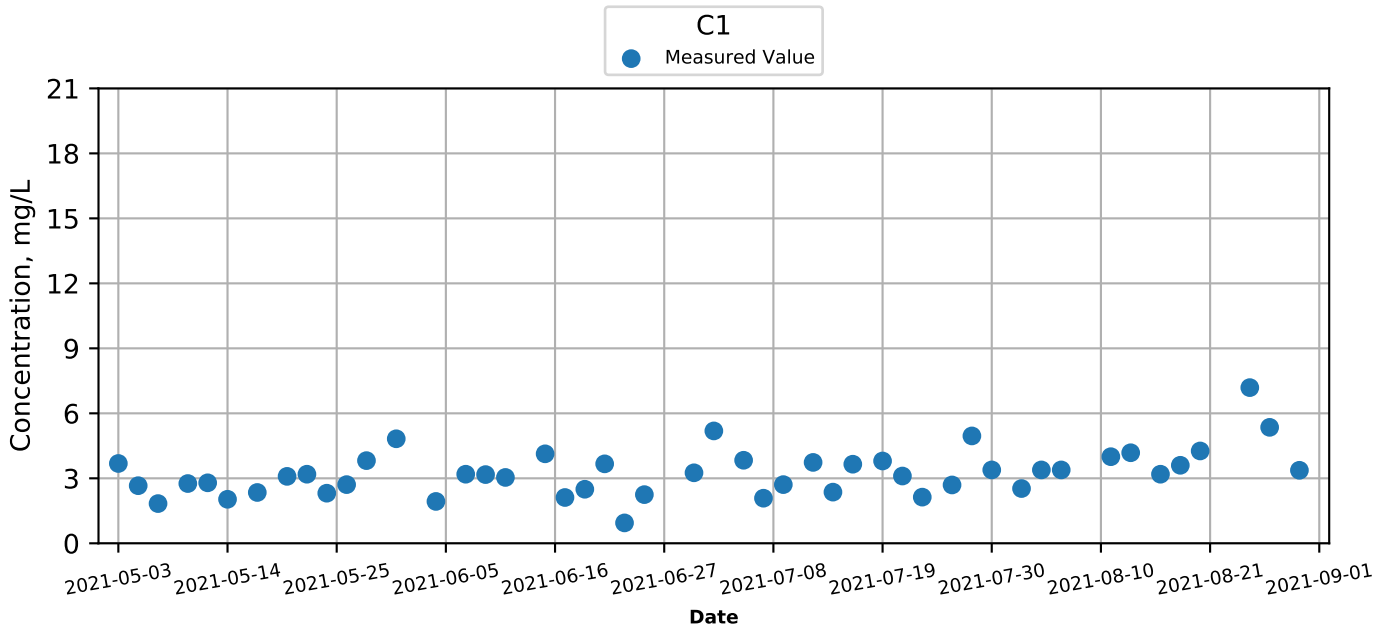
Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

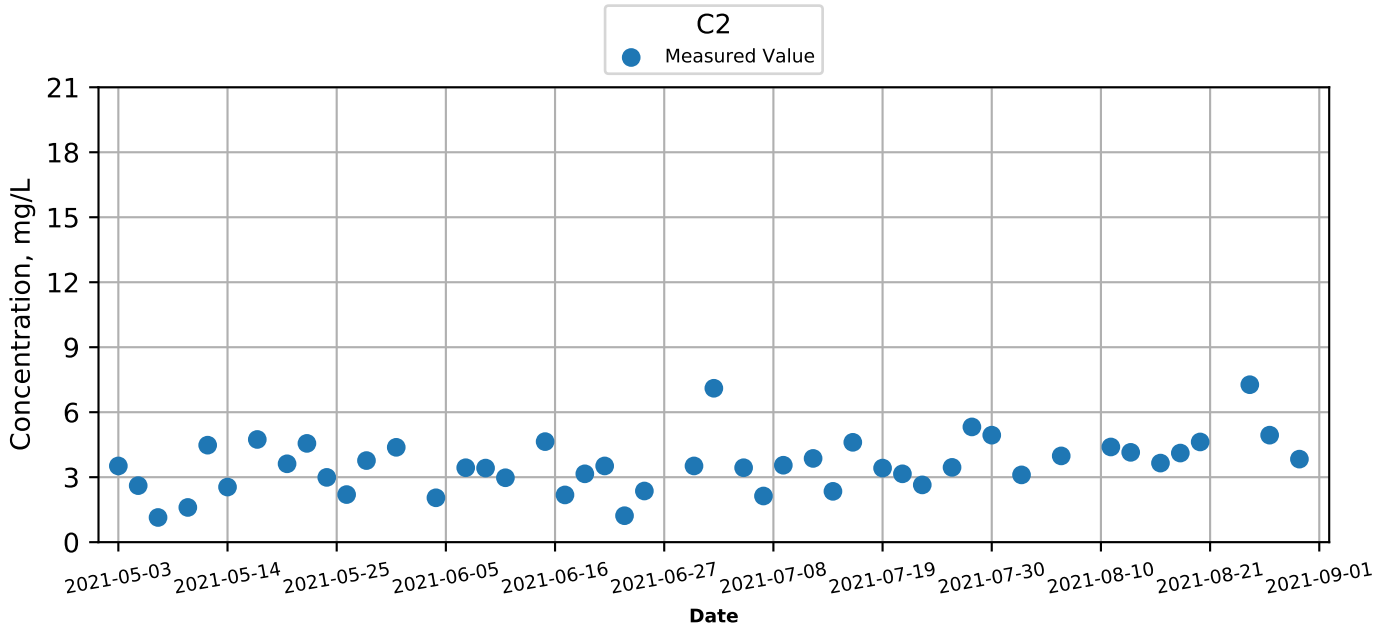
Turbidity (Intake level) at Monitoring Stations during Mid-Flood

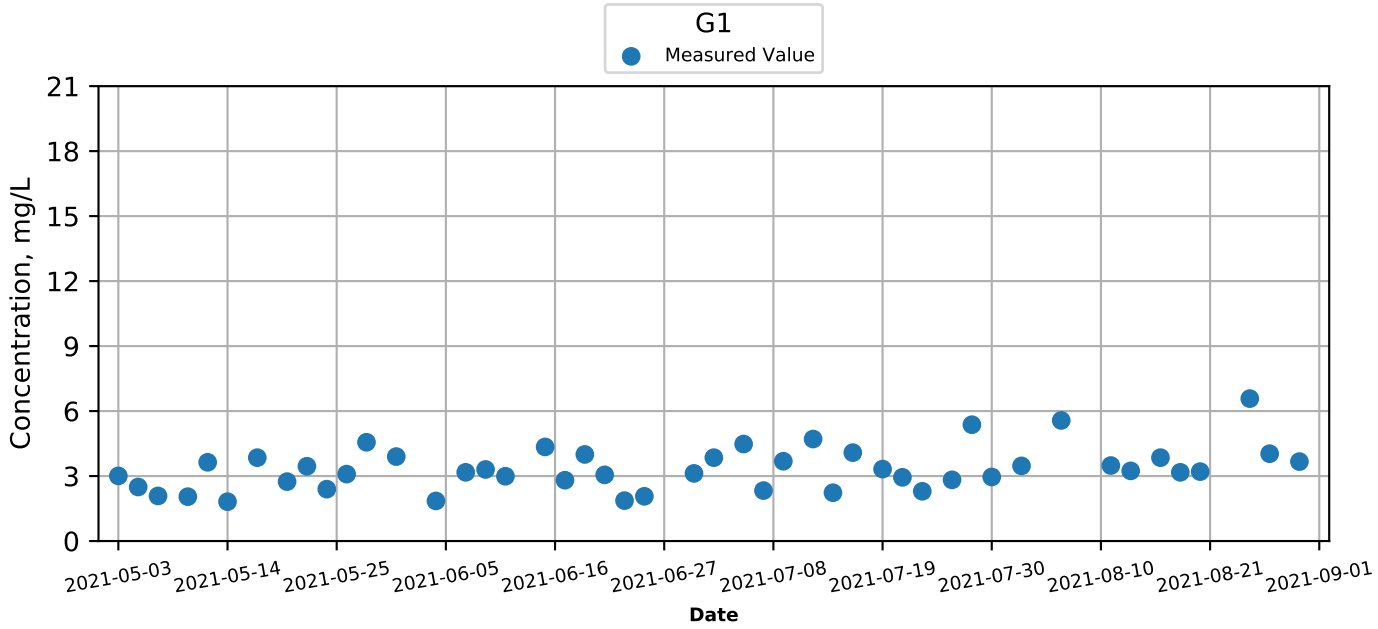


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Ebb

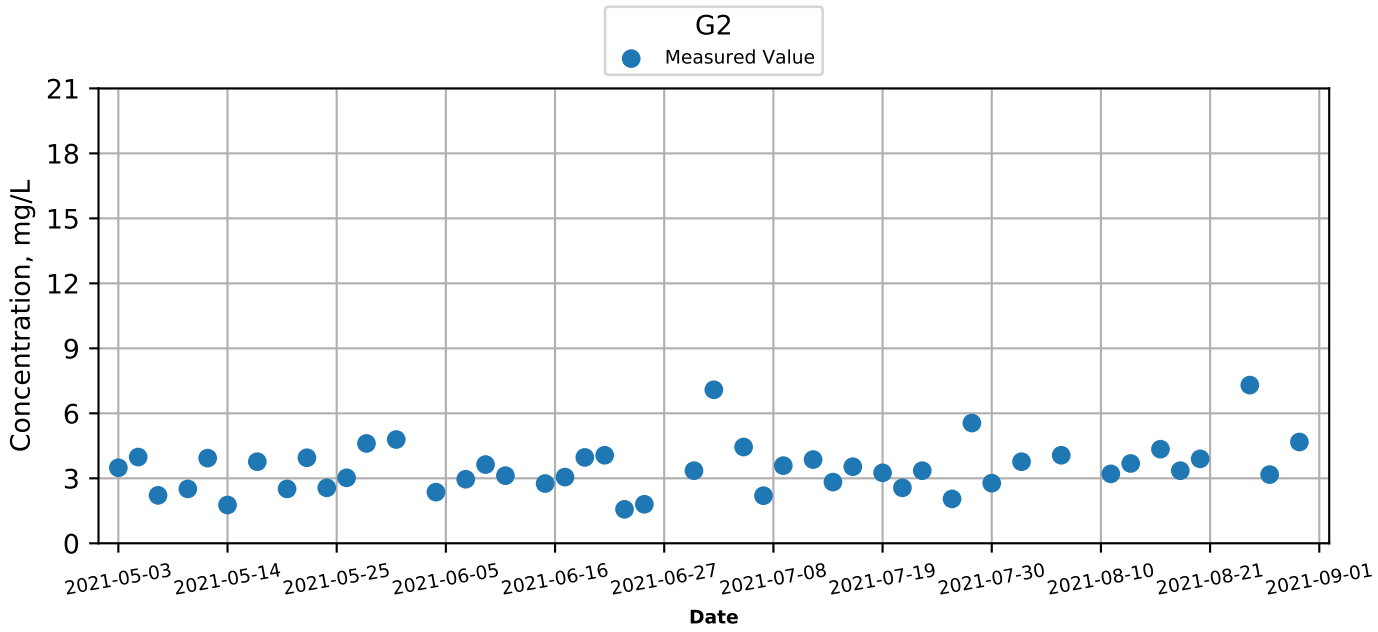


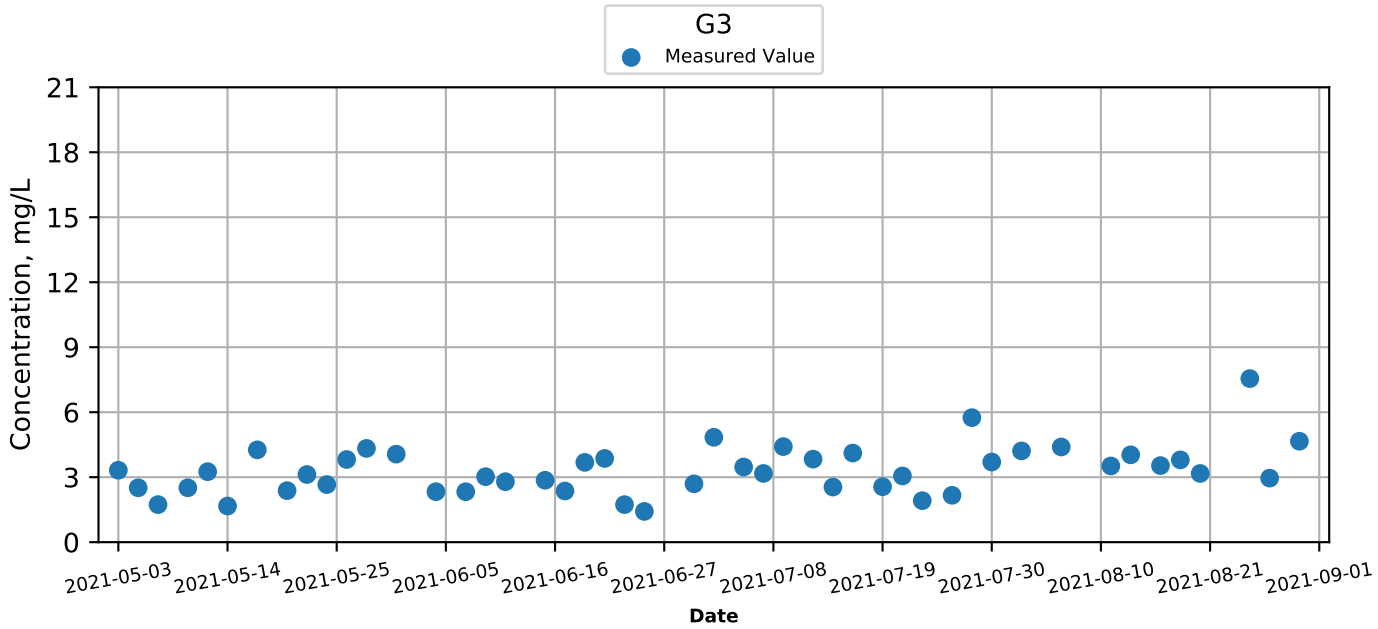


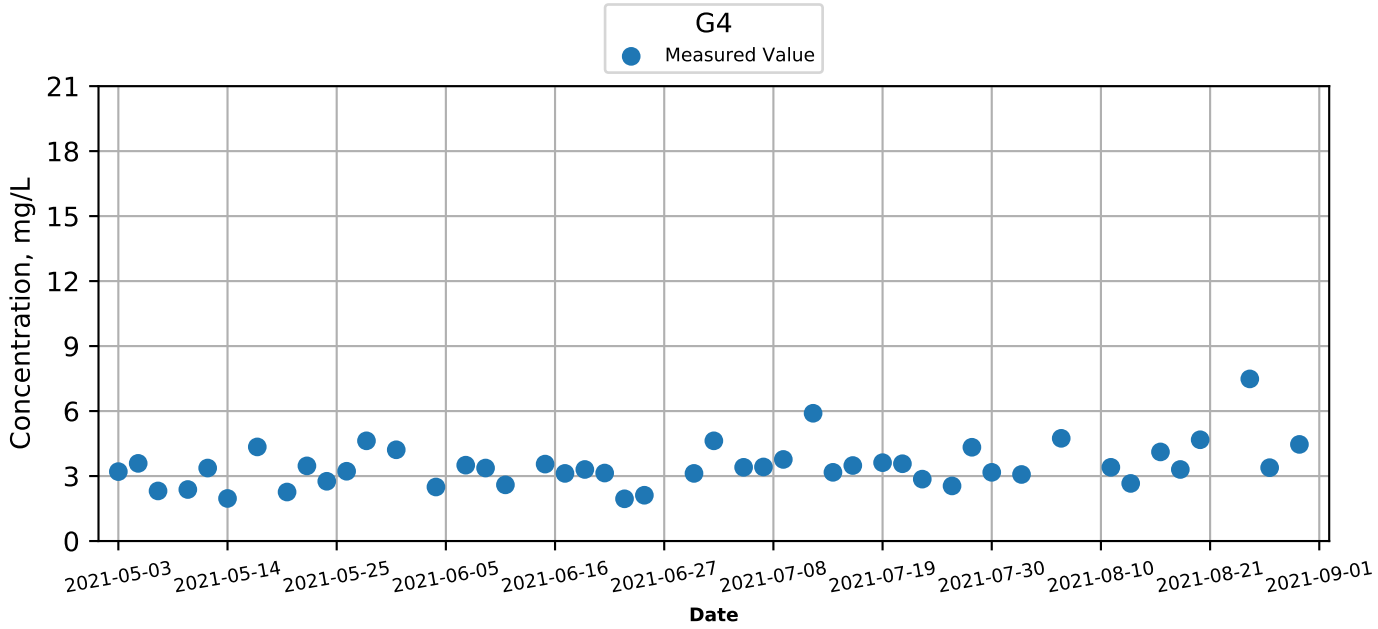


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Ebb

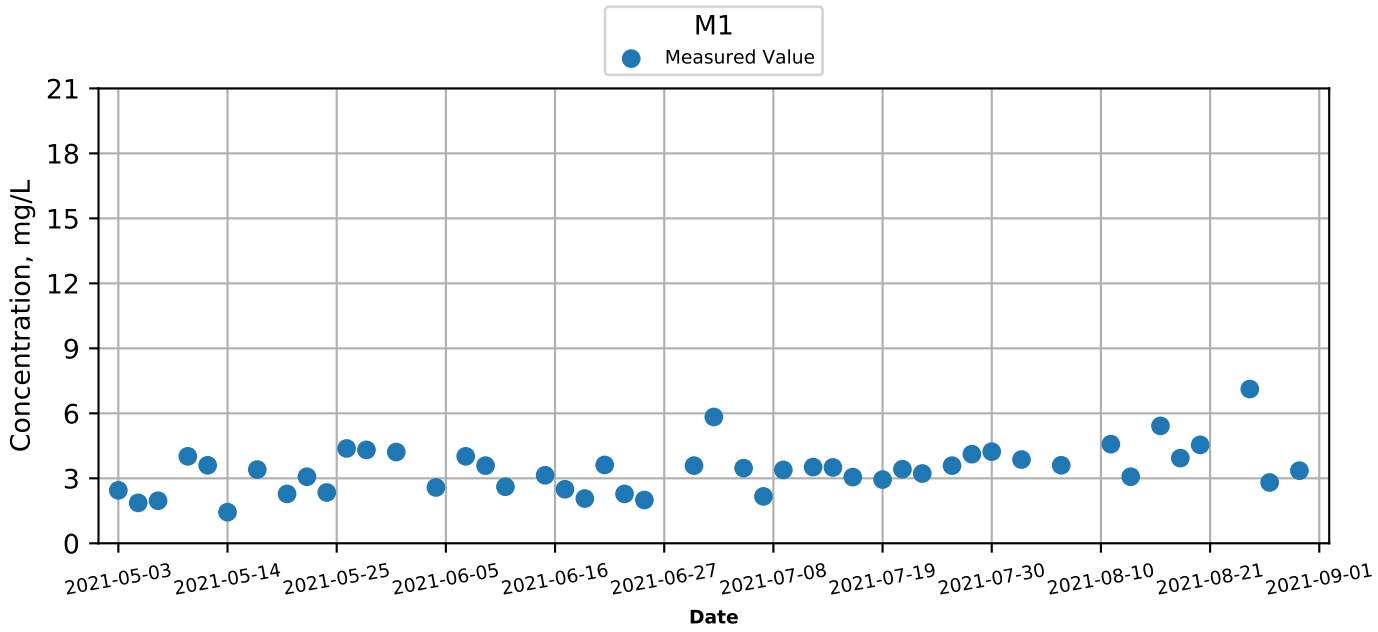


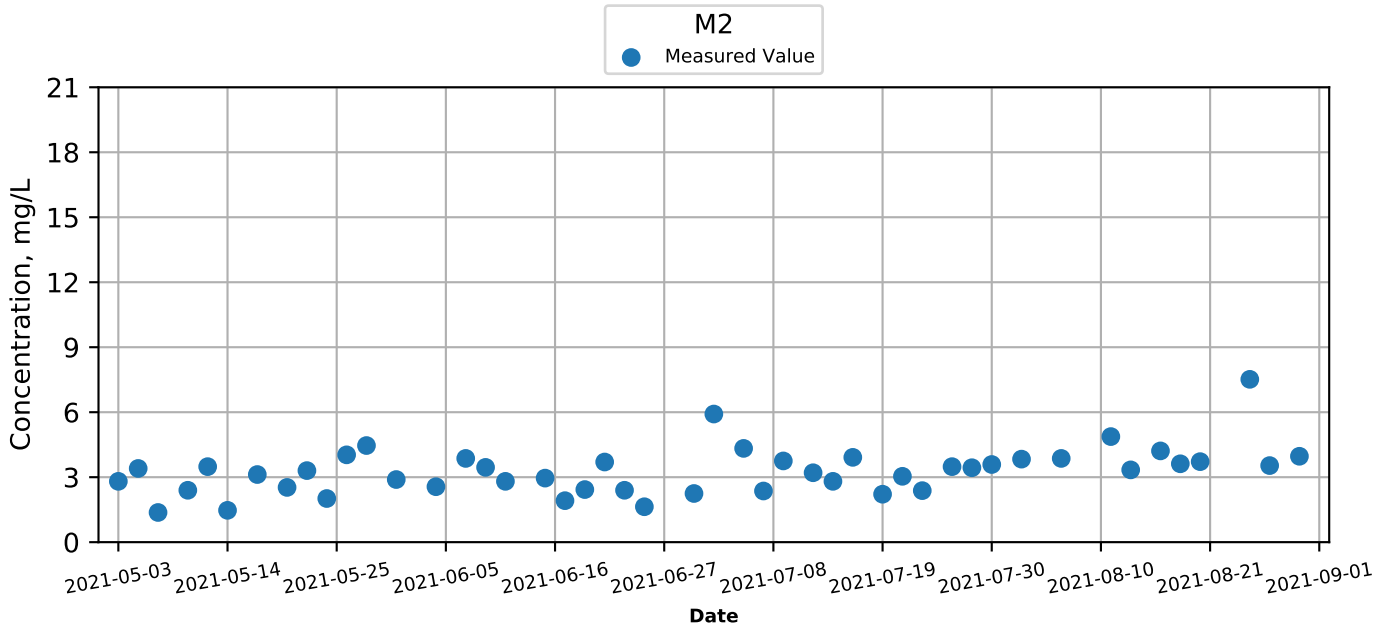


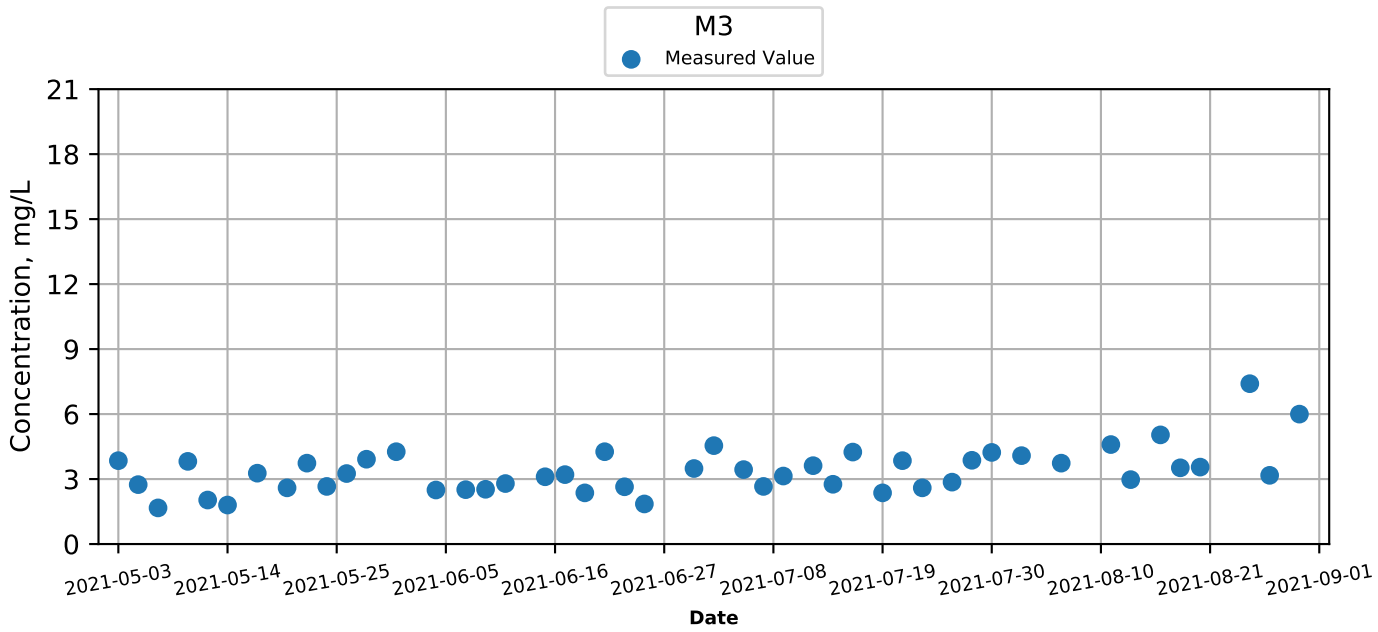


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Ebb

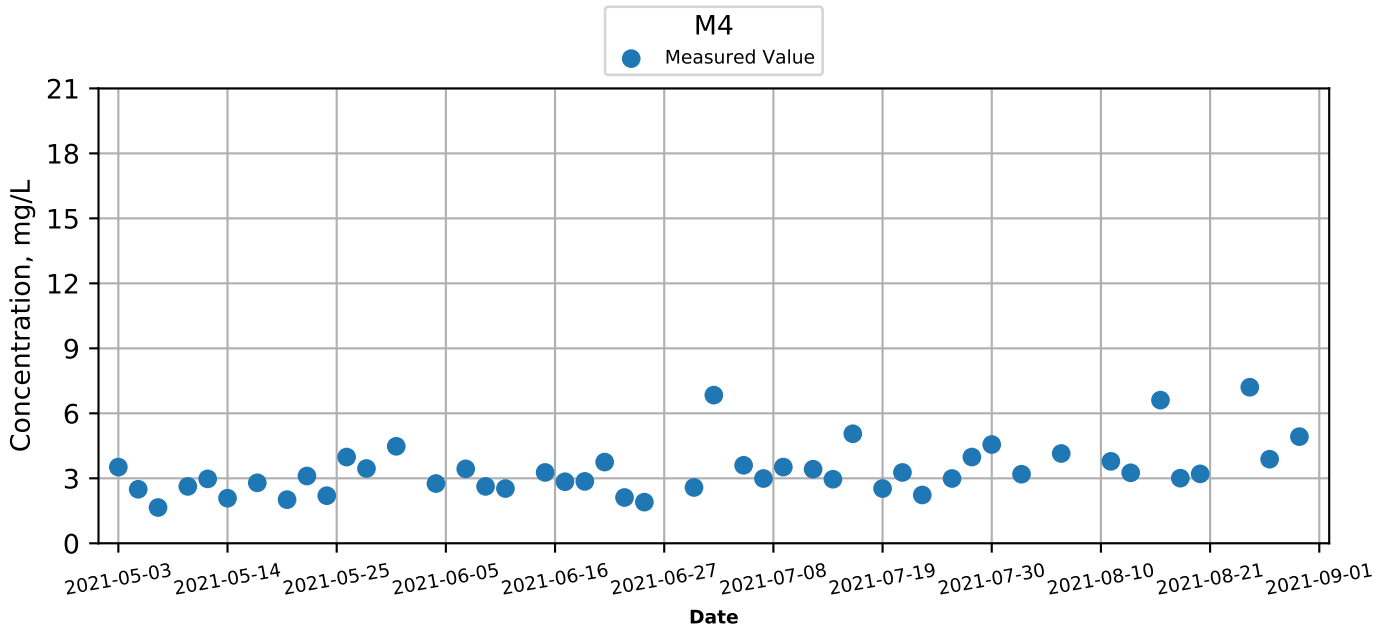


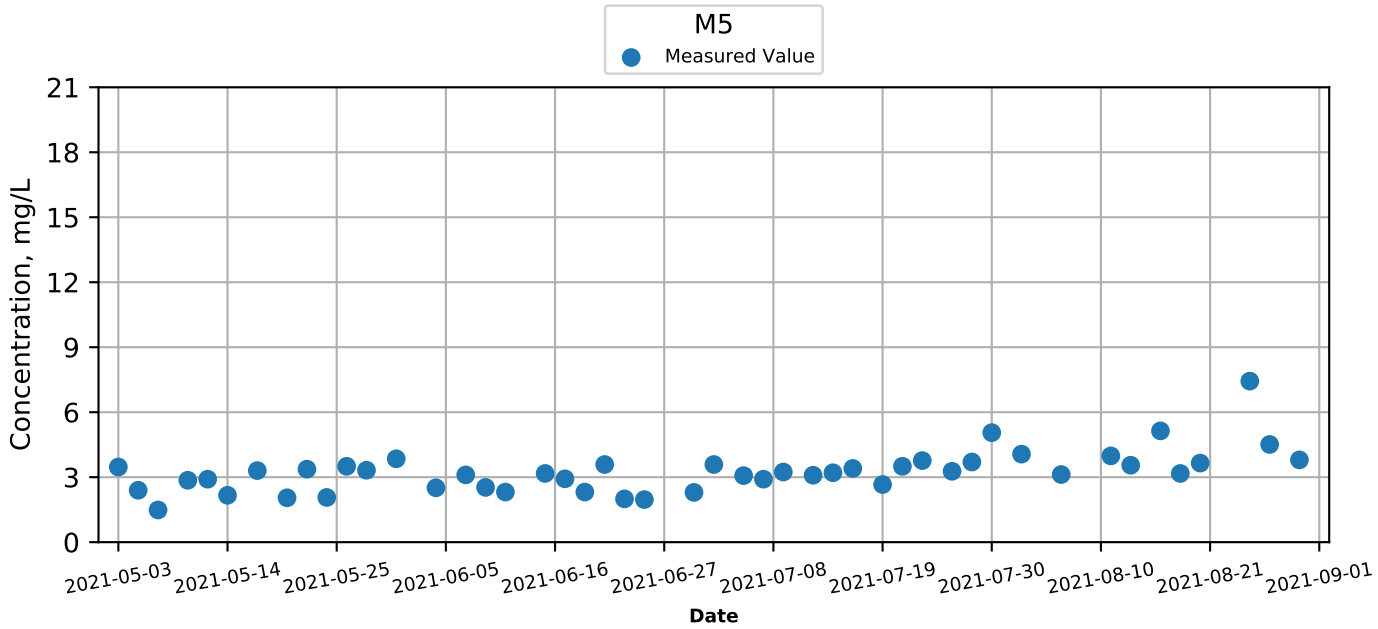




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

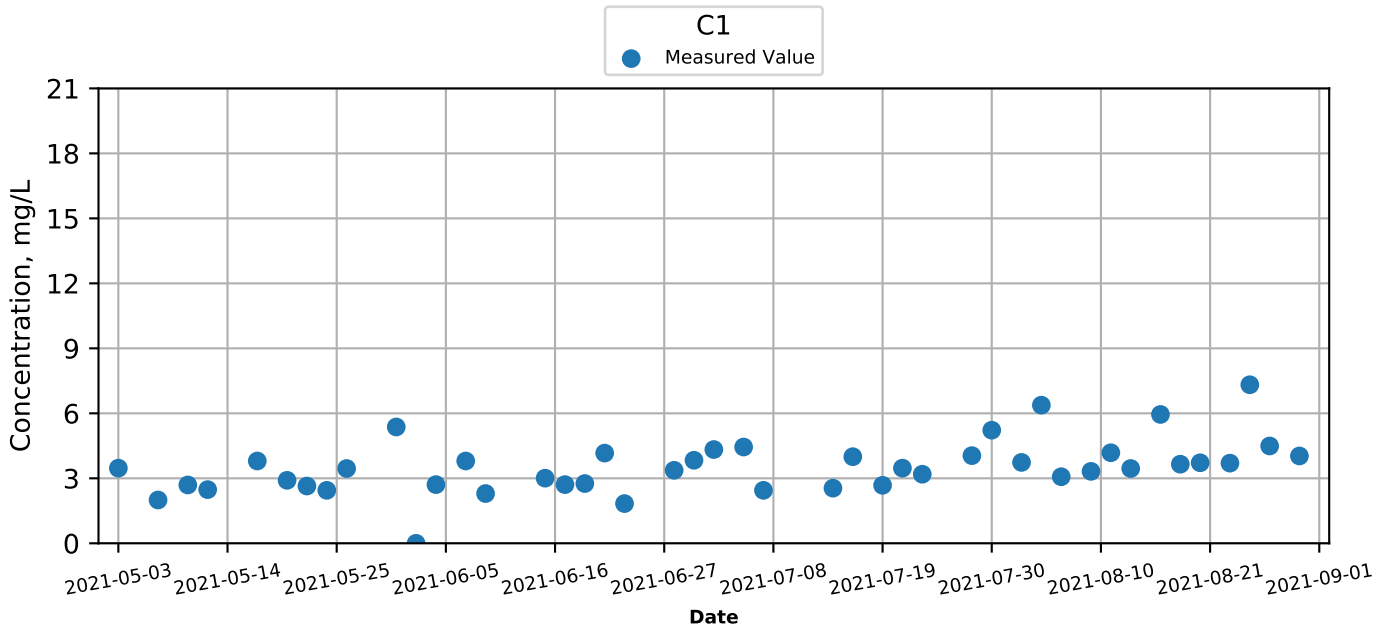
Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Ebb

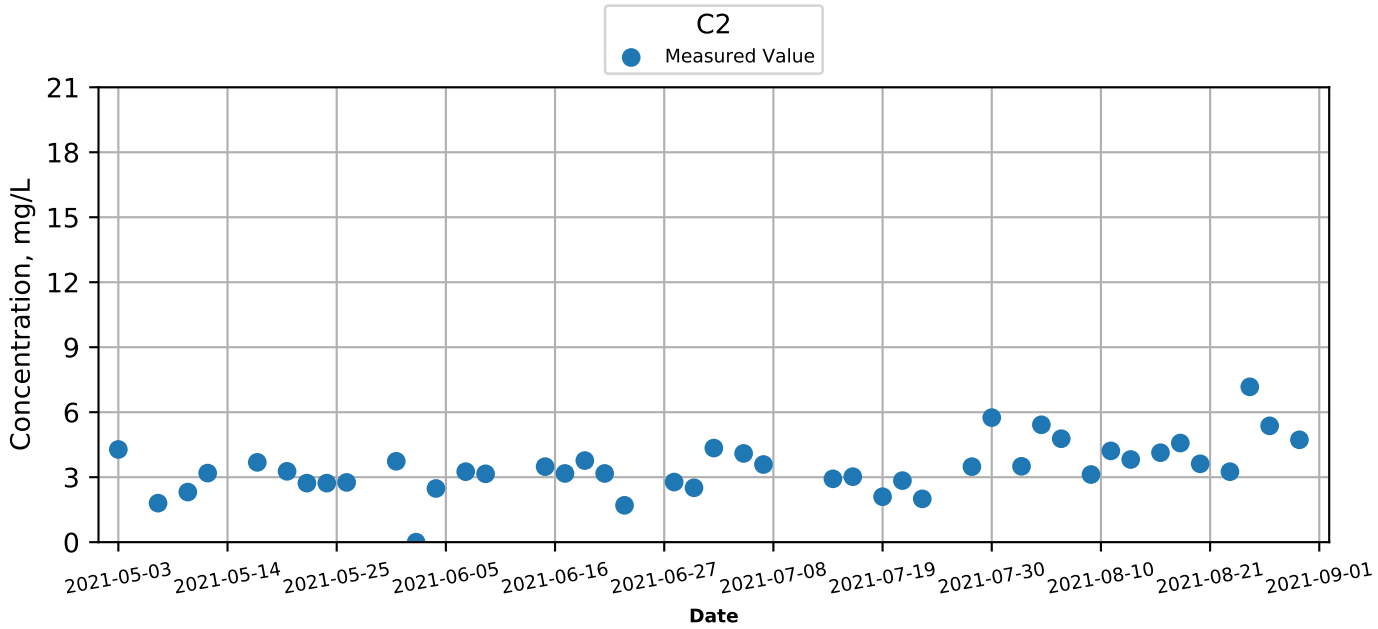


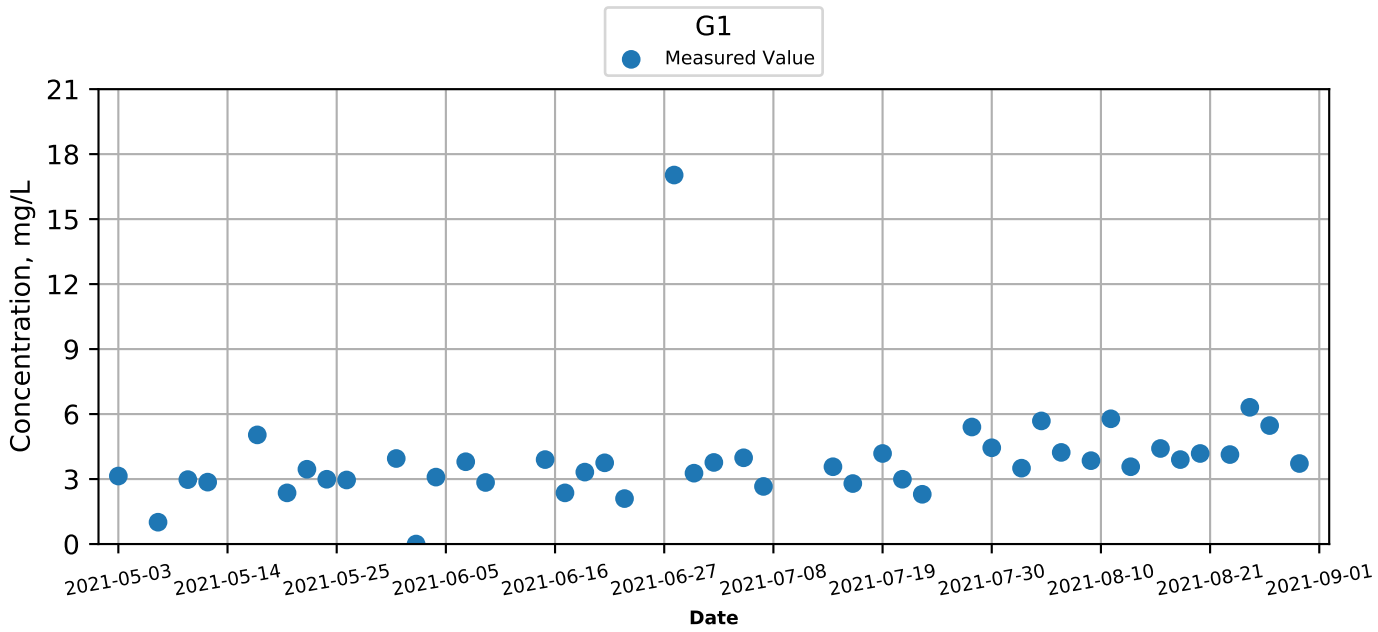


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Flood

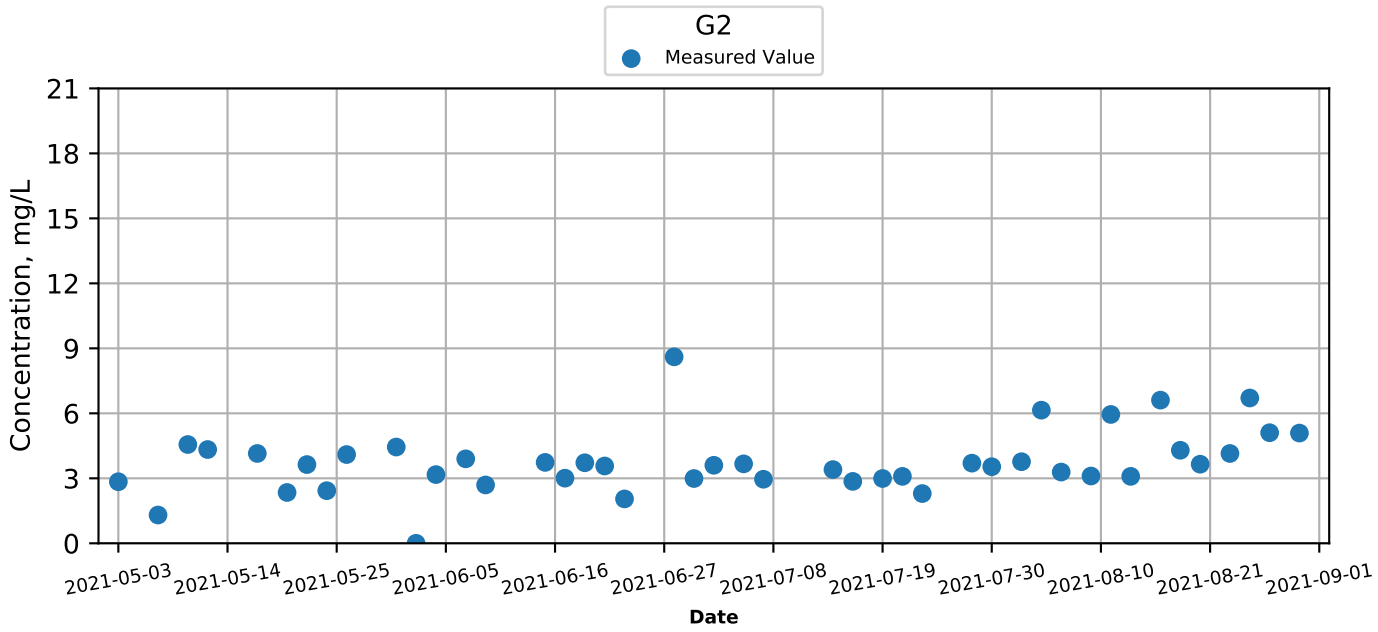


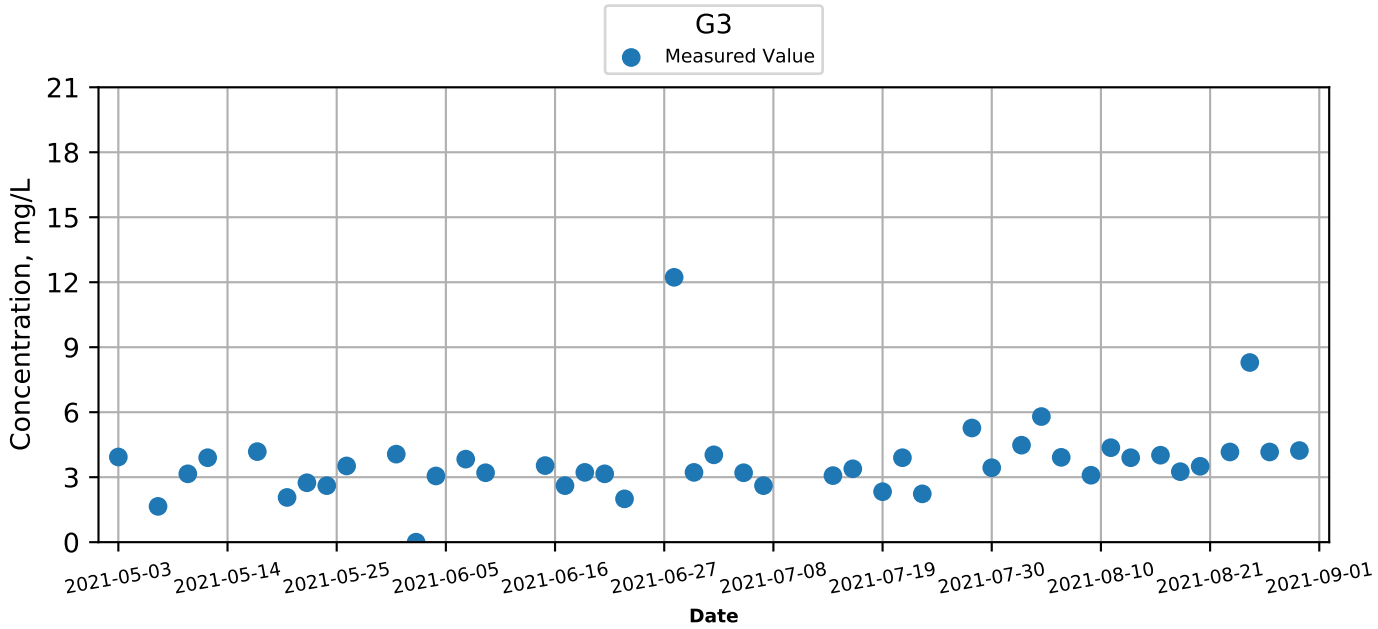


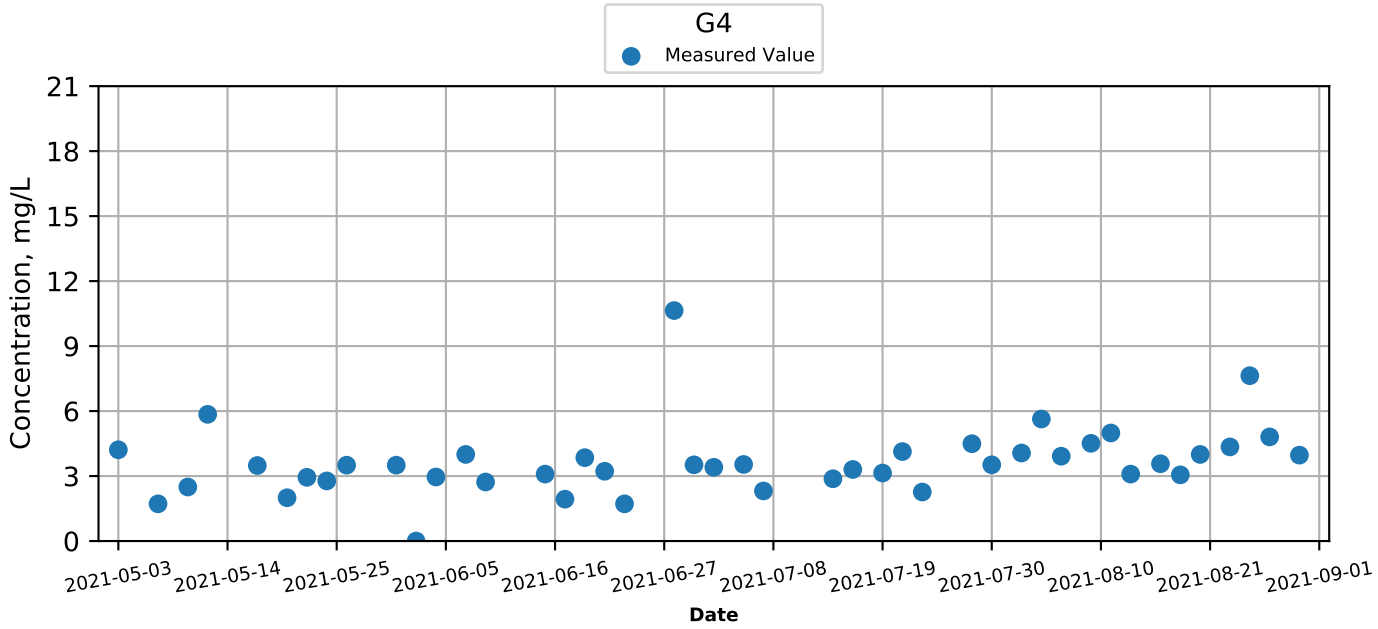


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Flood

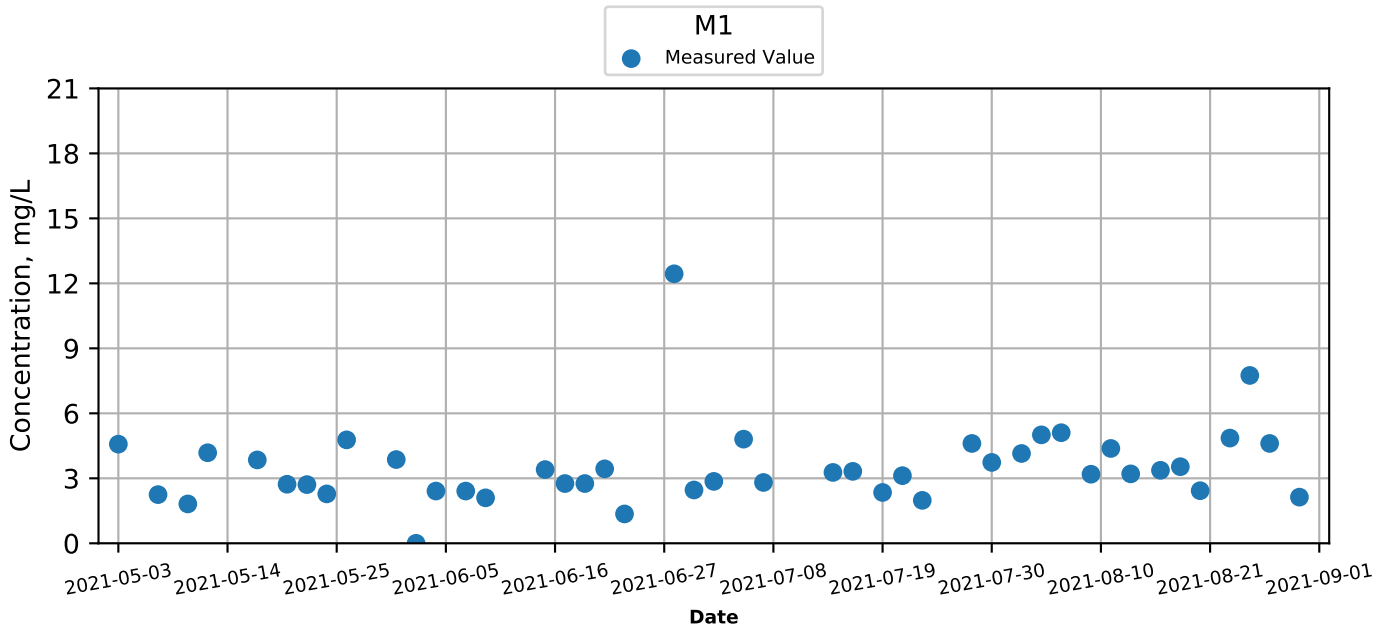


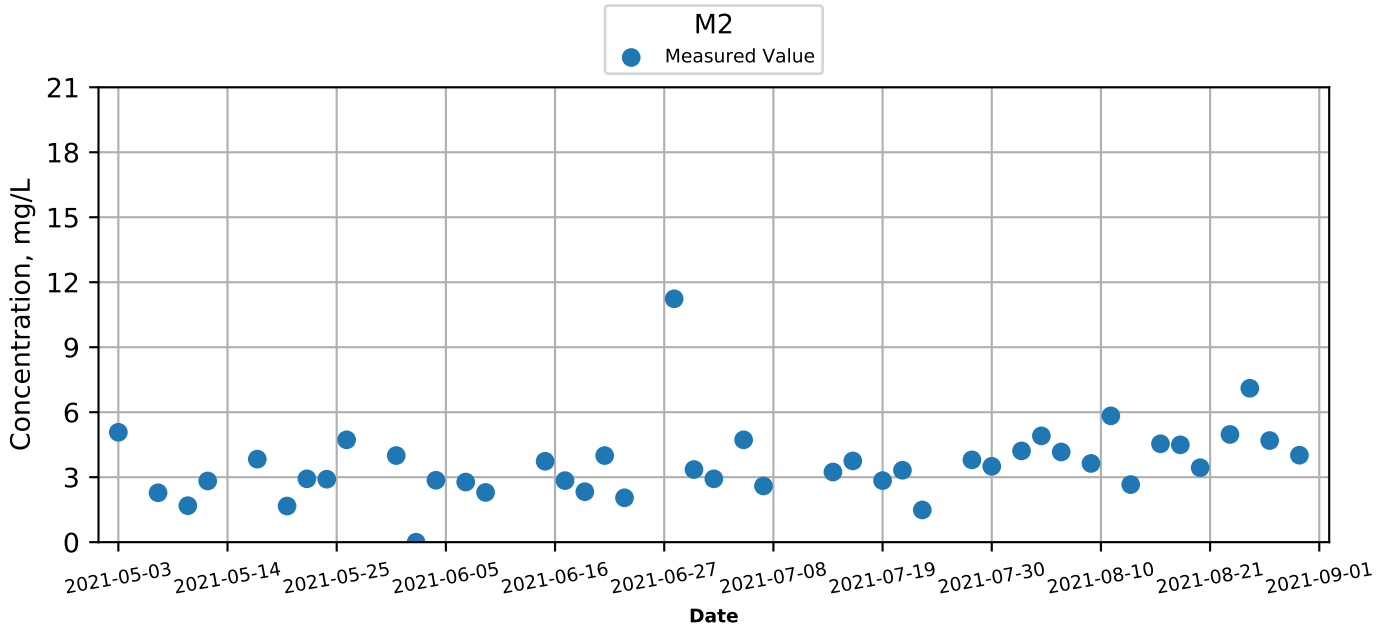


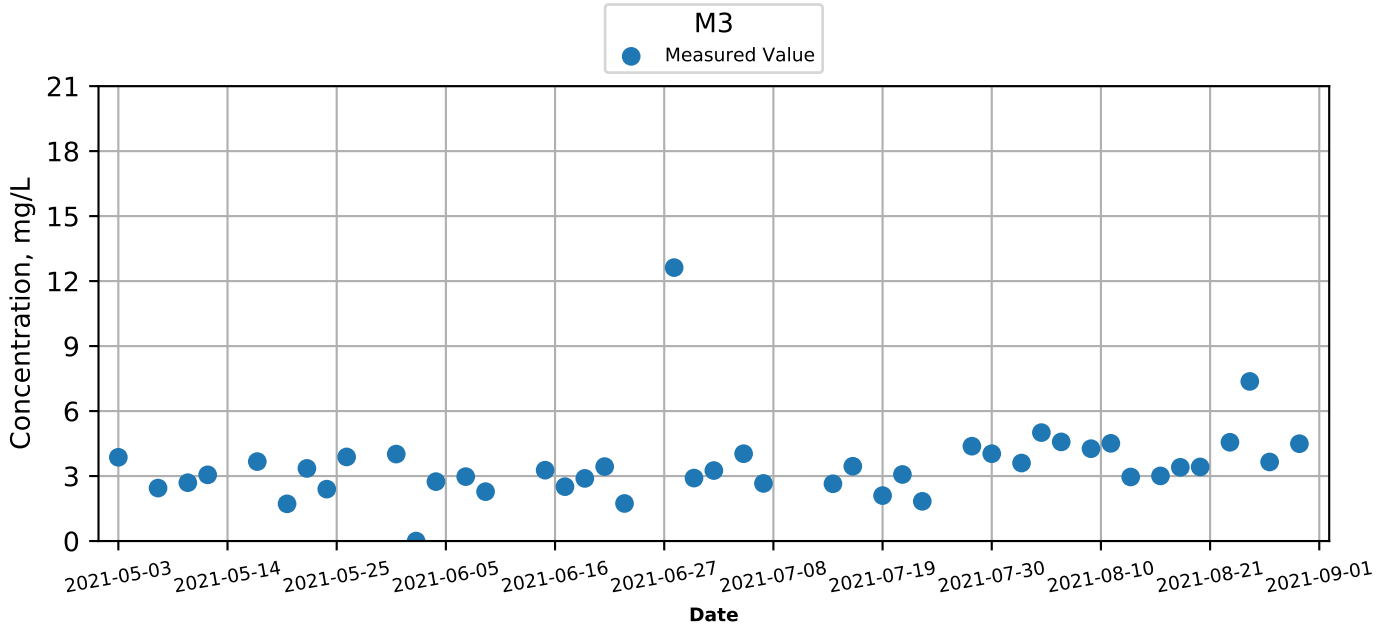


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Flood

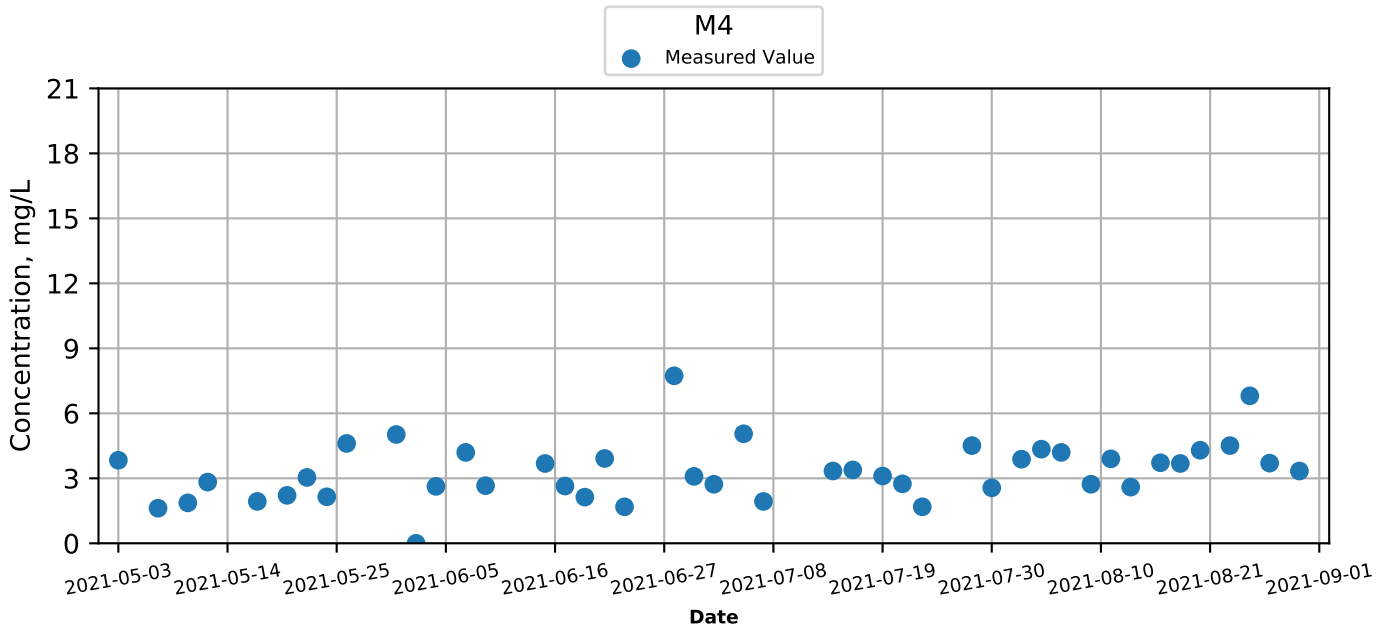


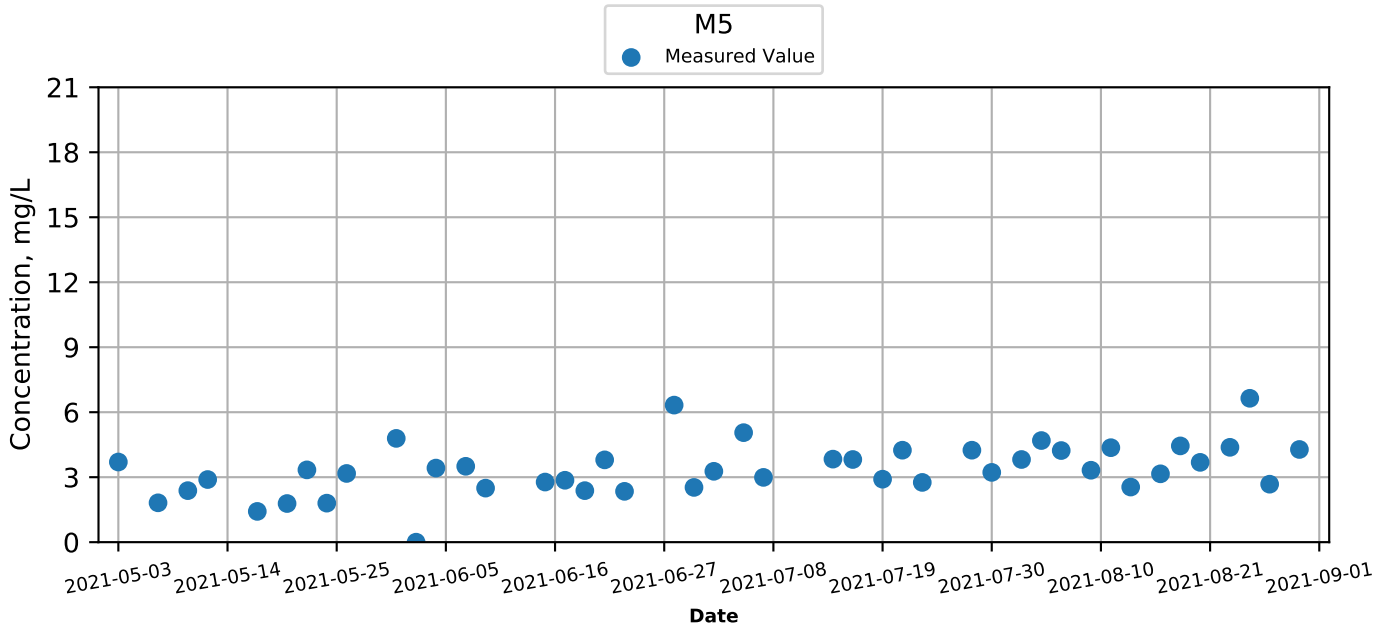




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

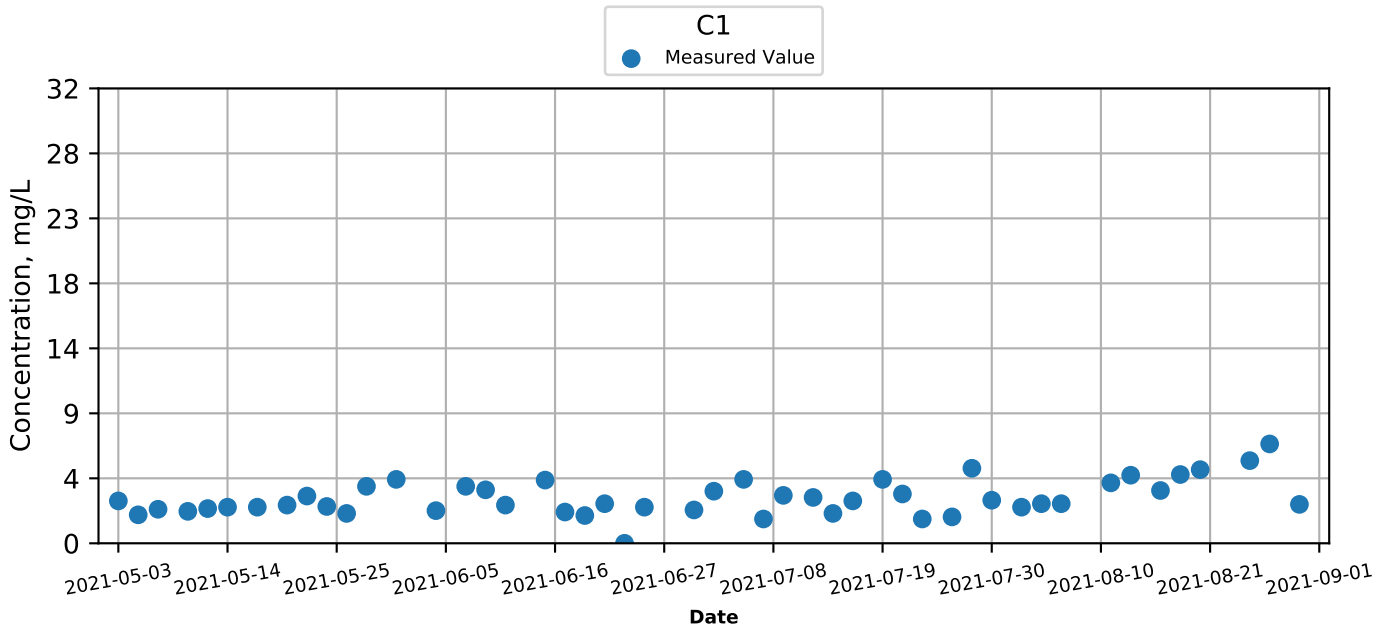
Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Flood

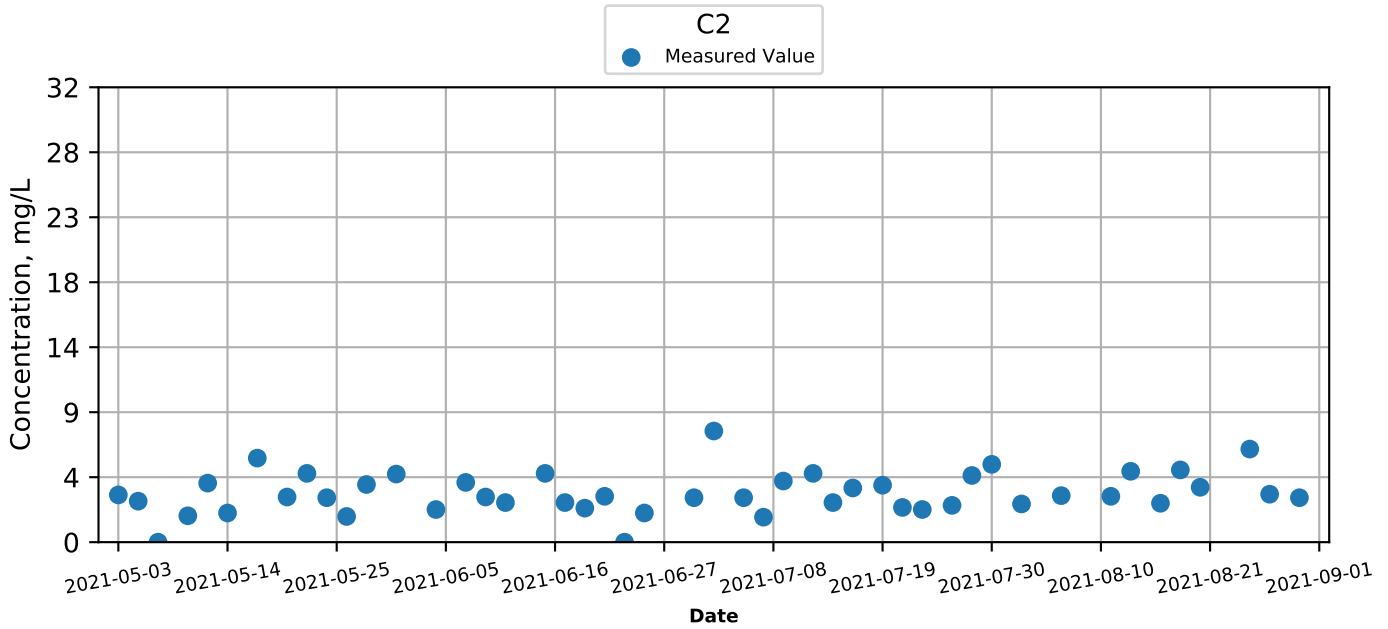


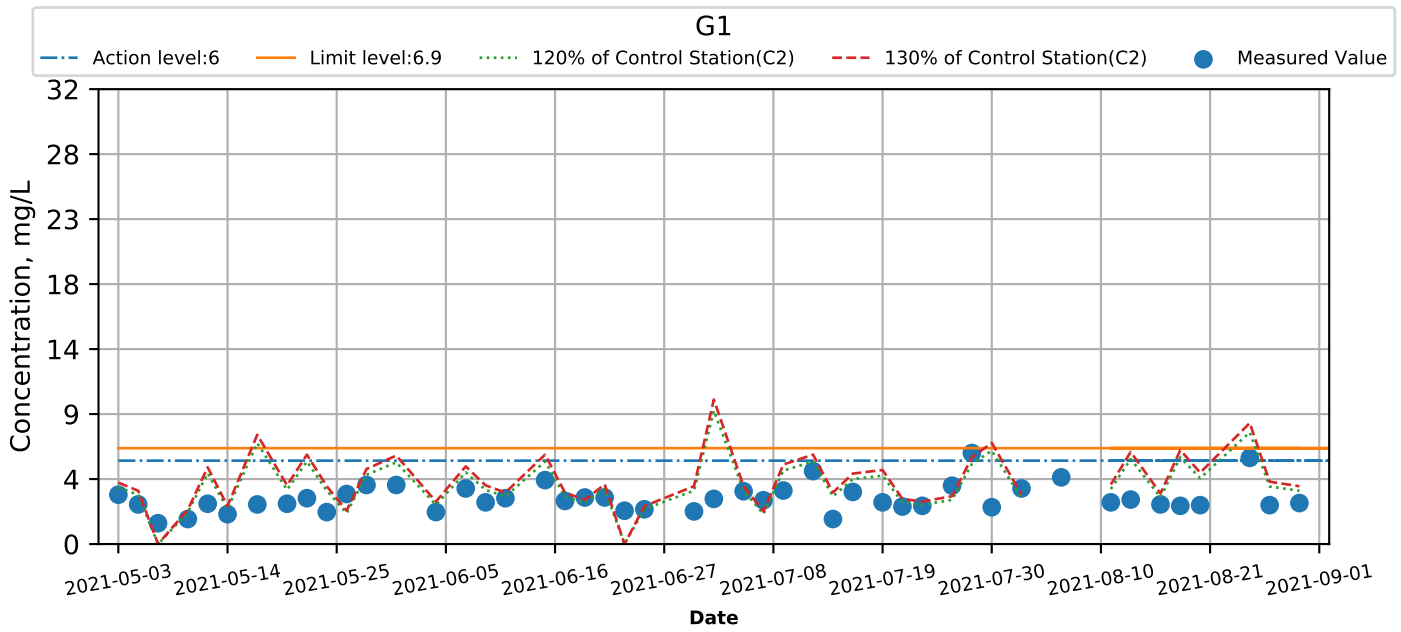


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Ebb

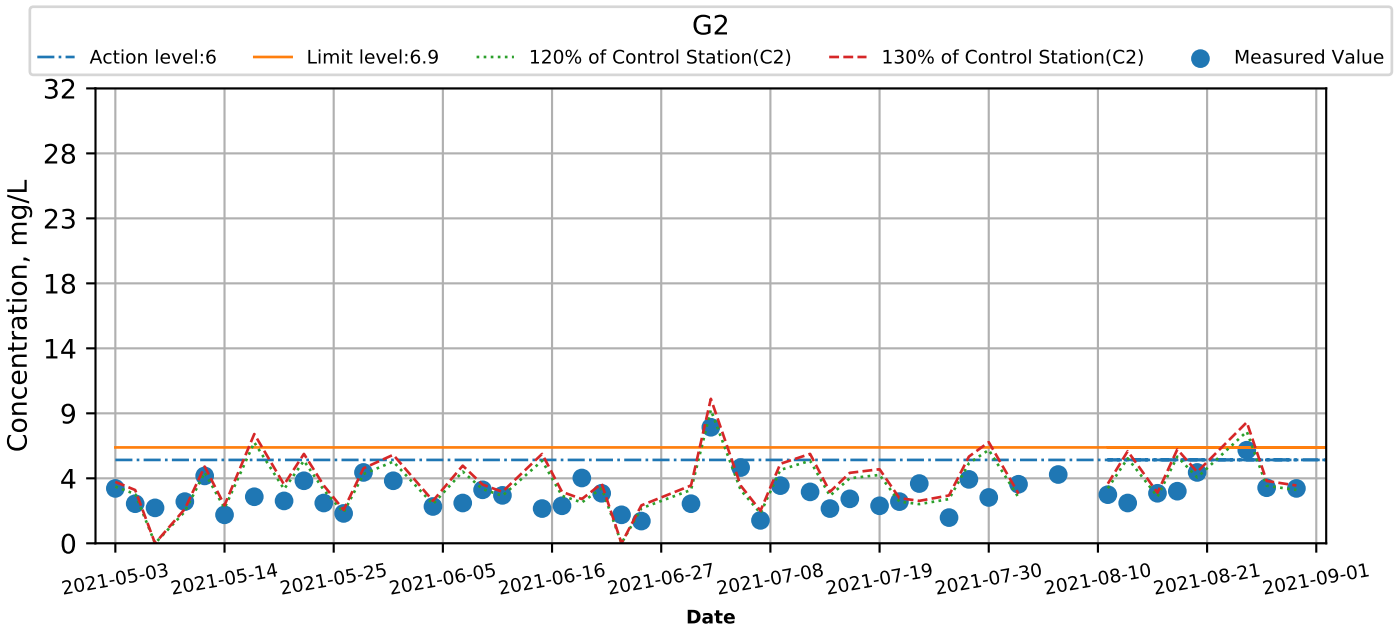


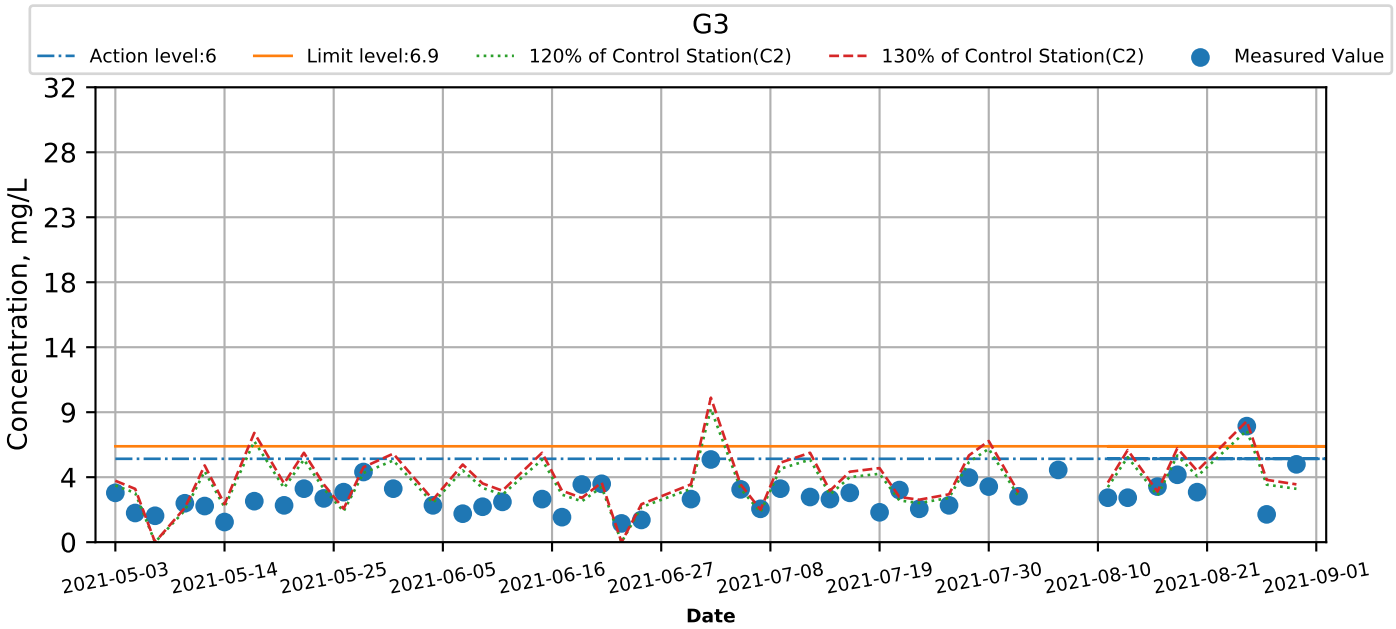


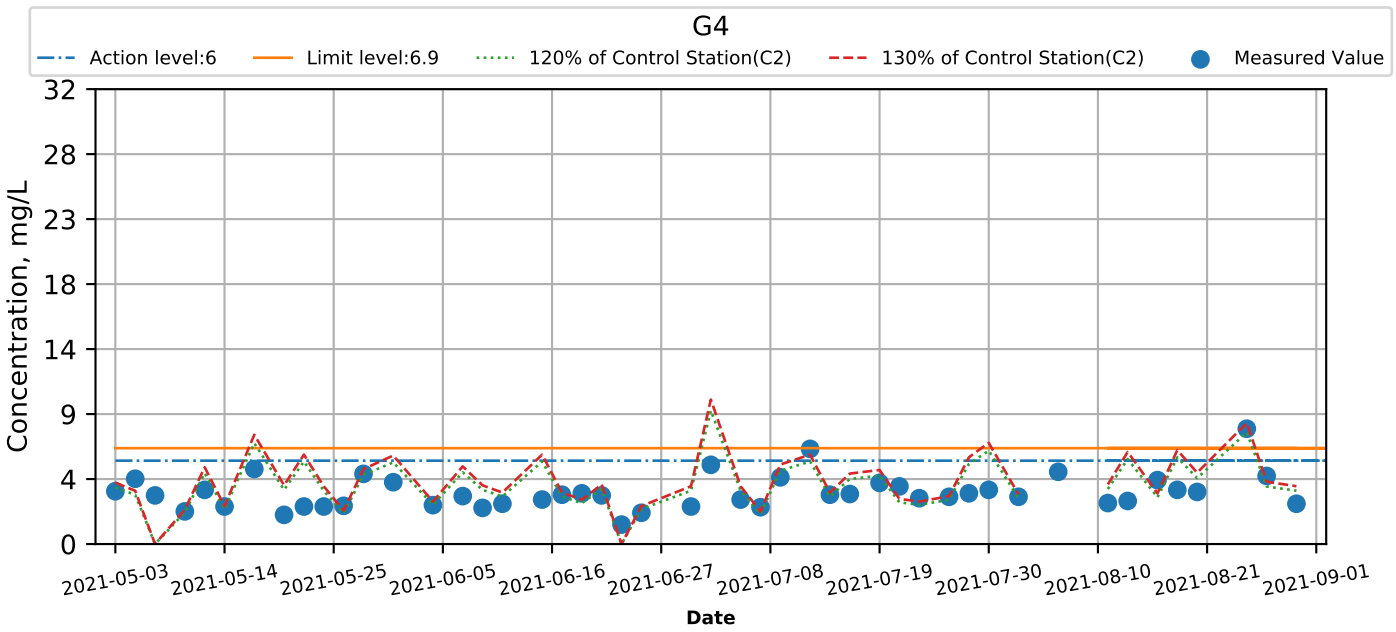


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Ebb

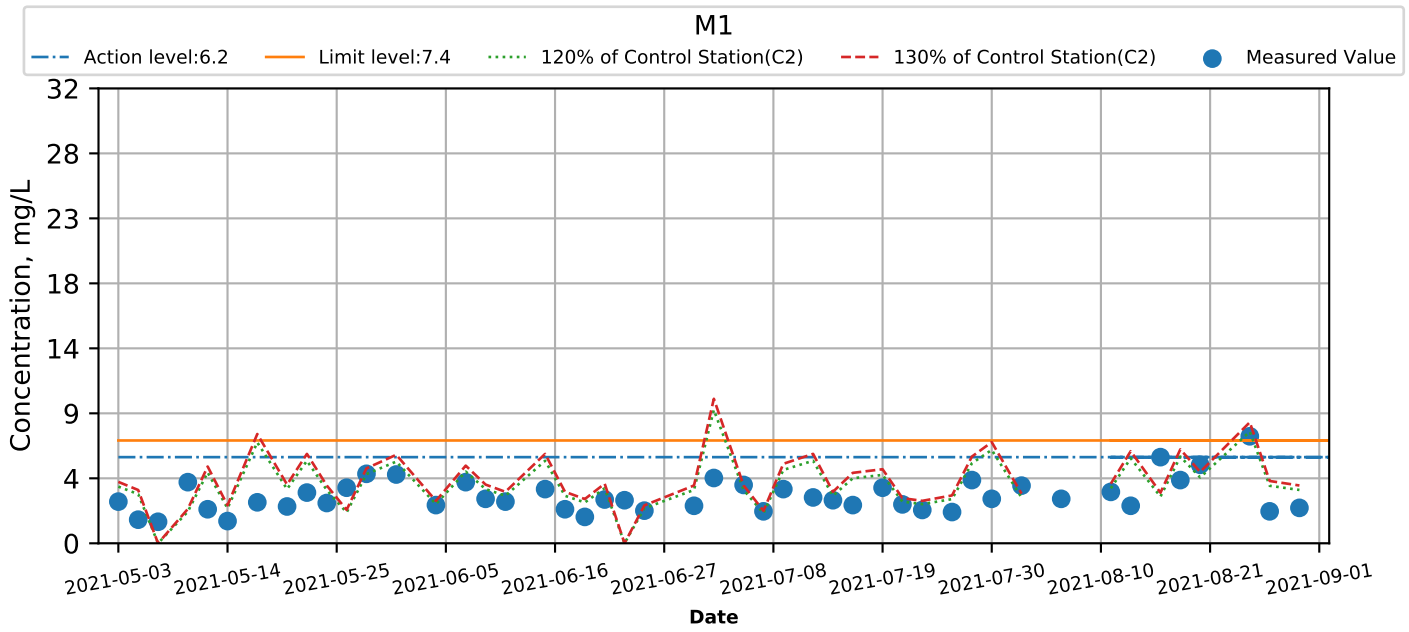


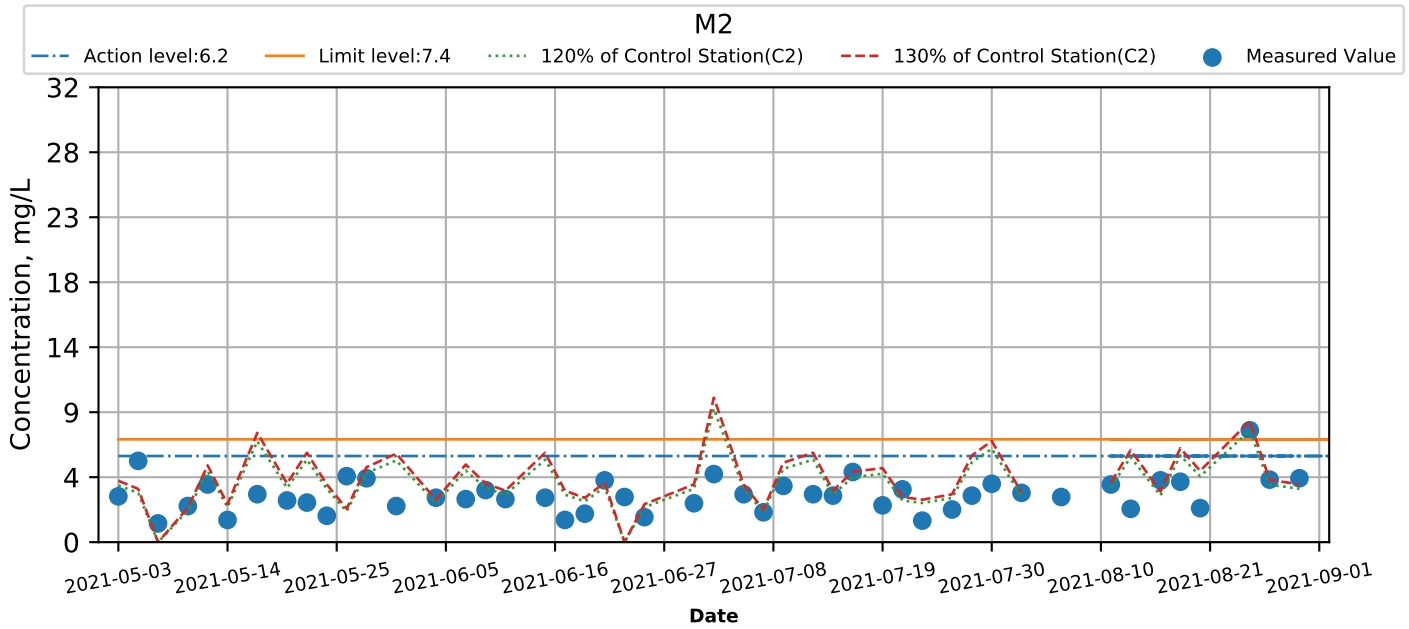


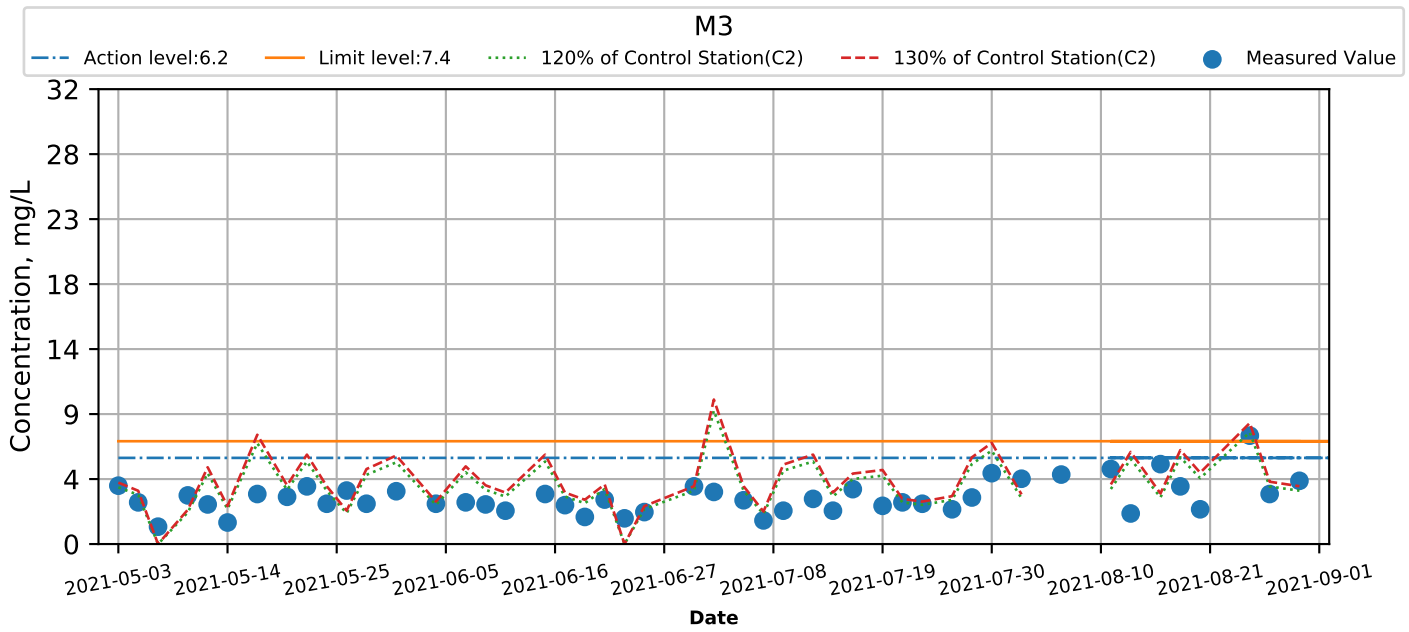


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Ebb

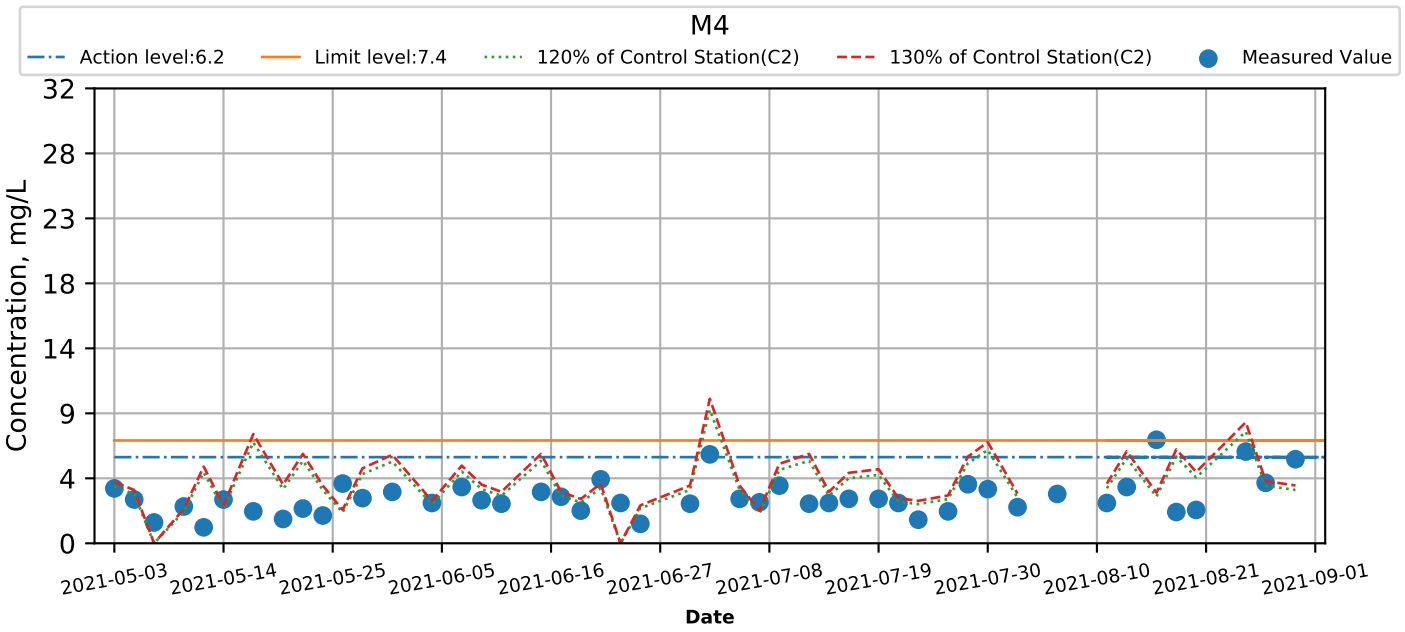


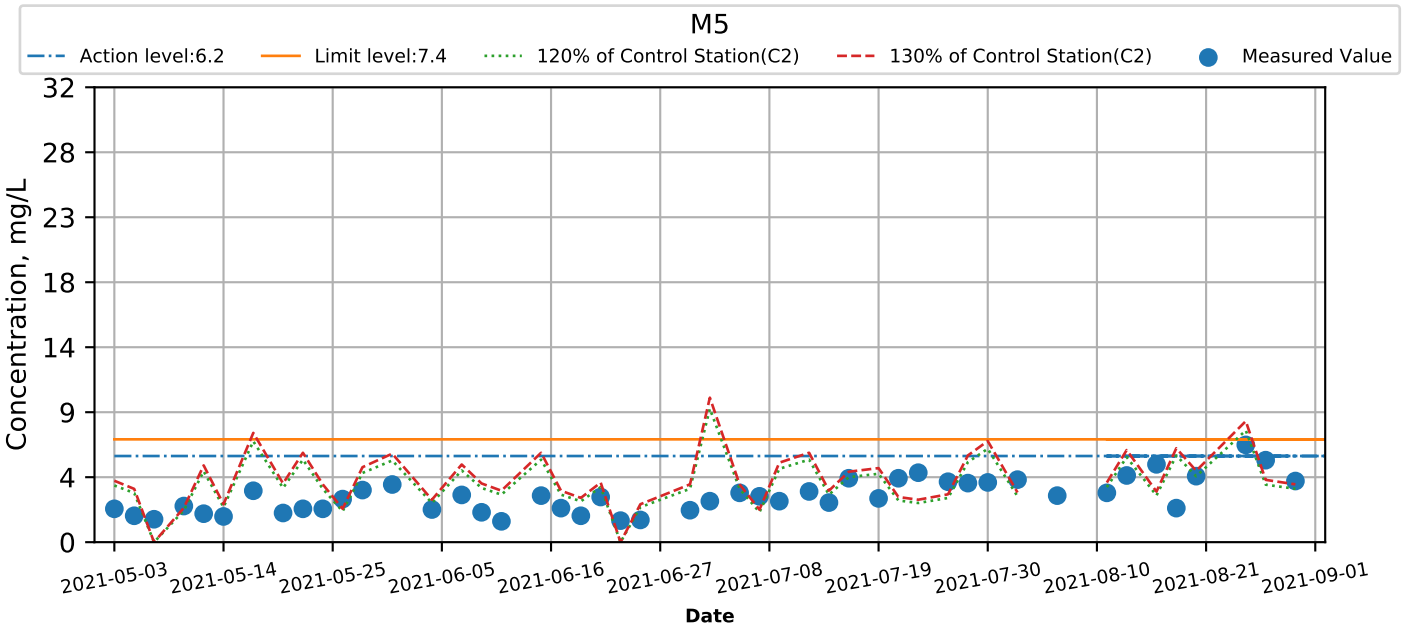




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

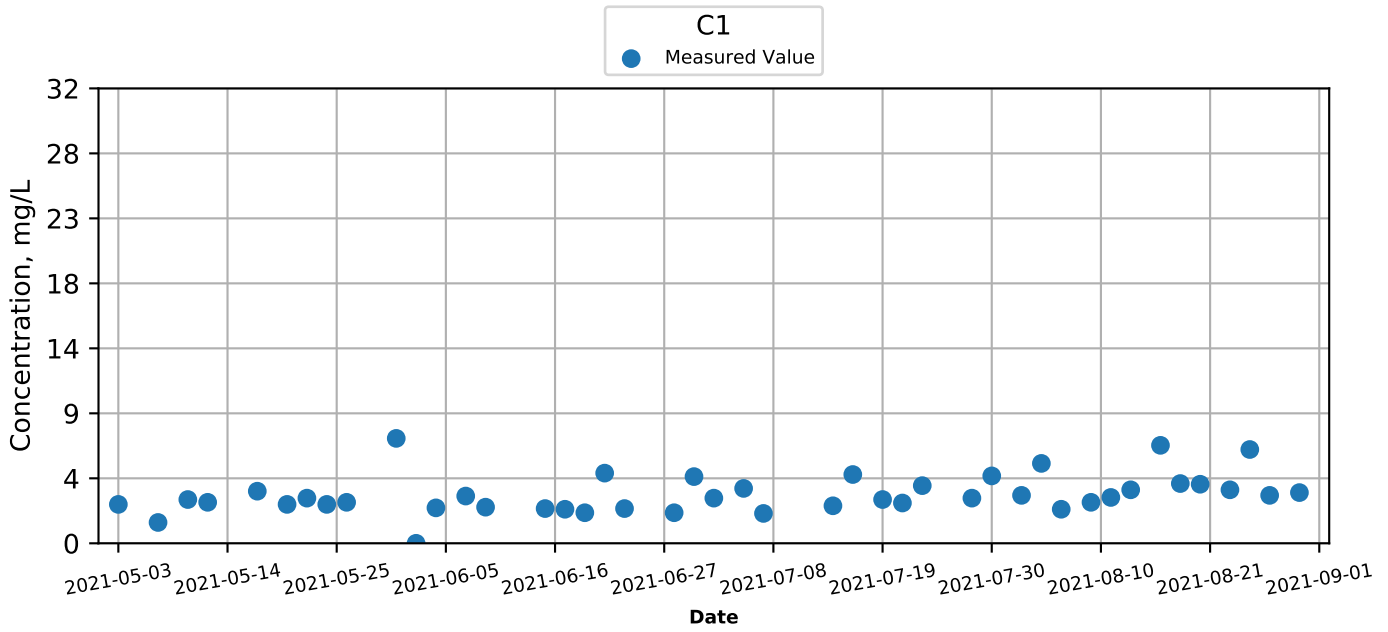
Suspended Solids (Surface) at Monitoring Stations during Mid-Ebb

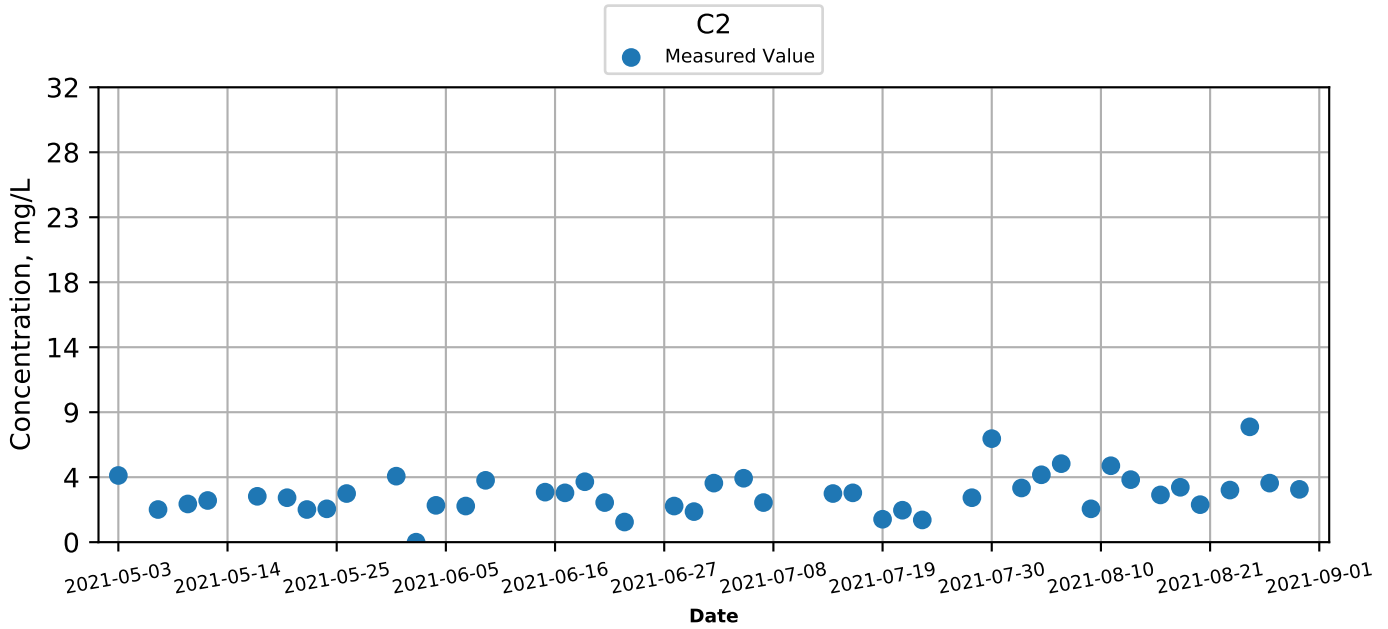


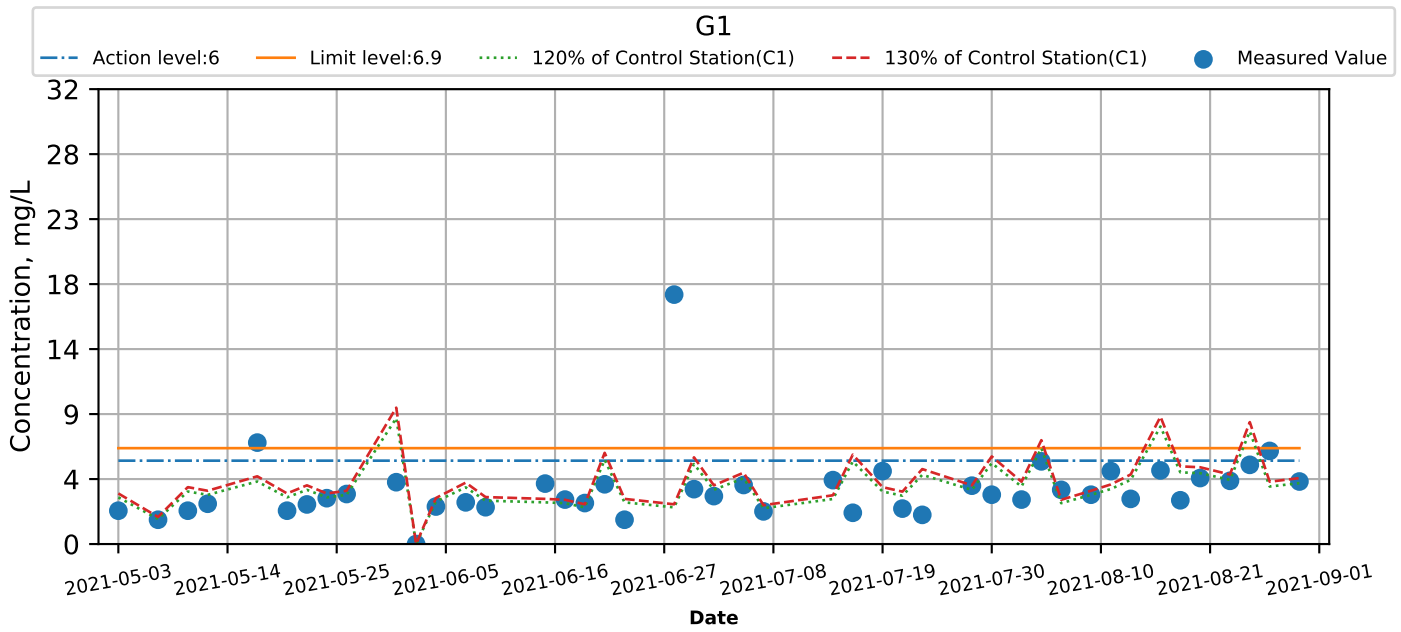


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Flood

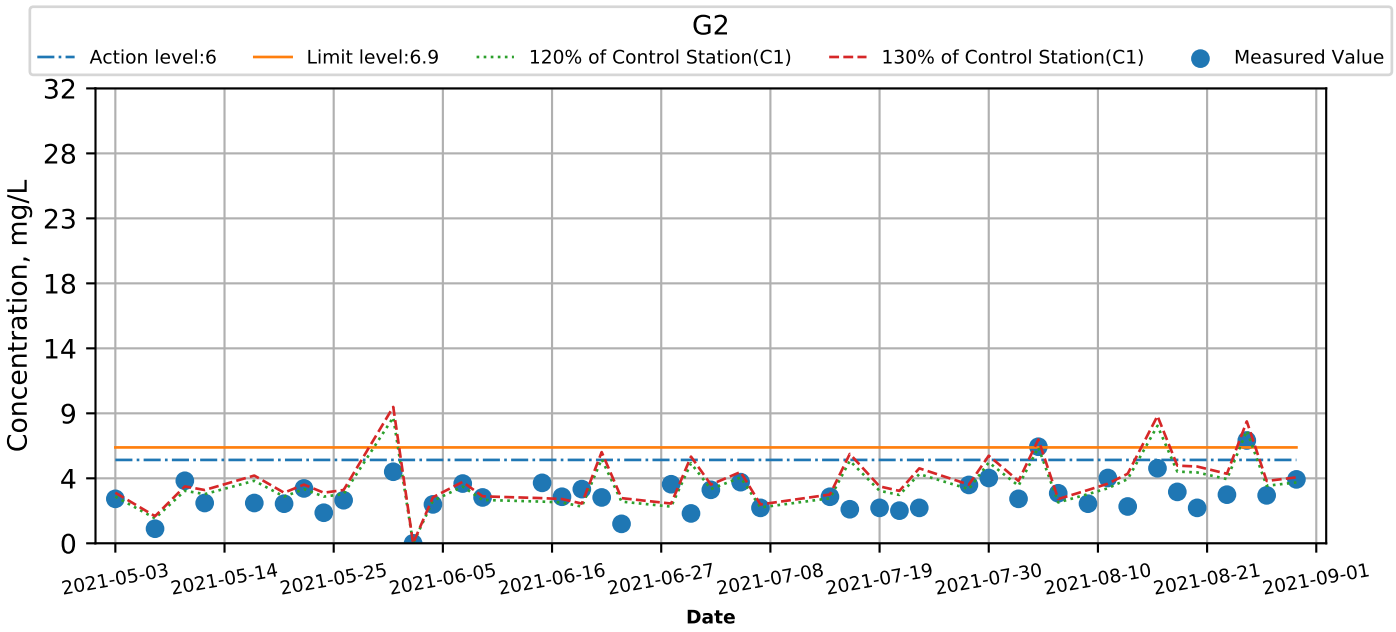


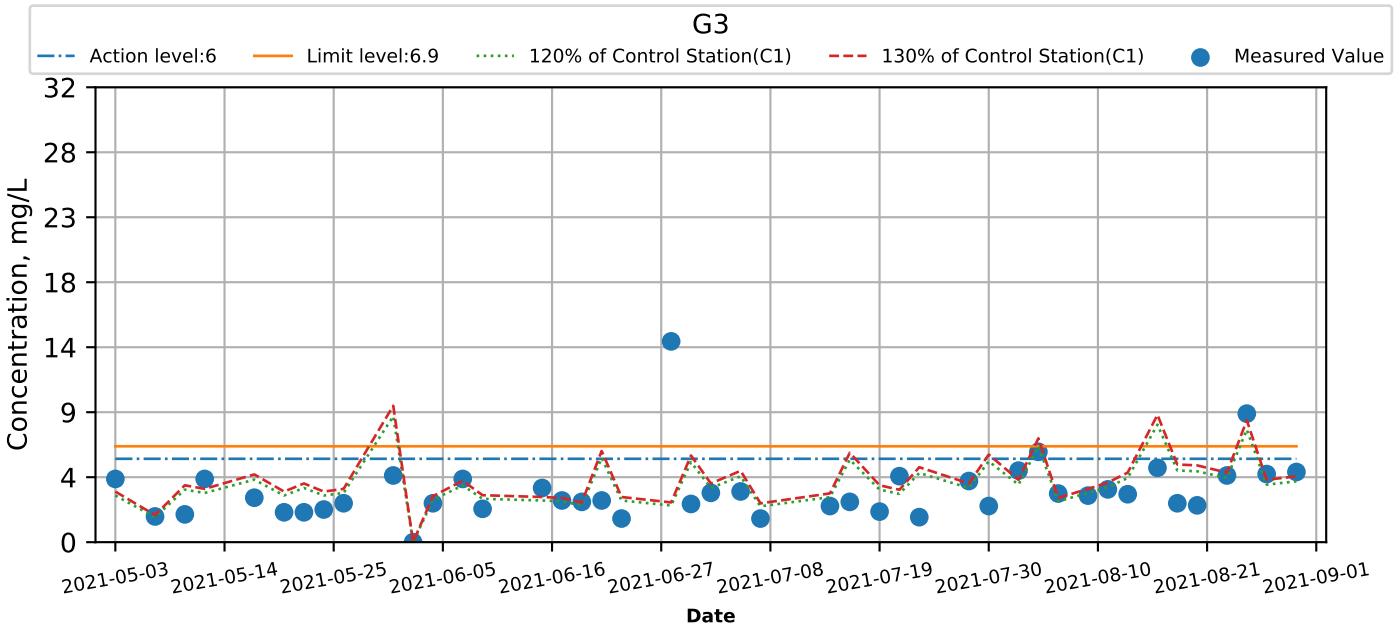


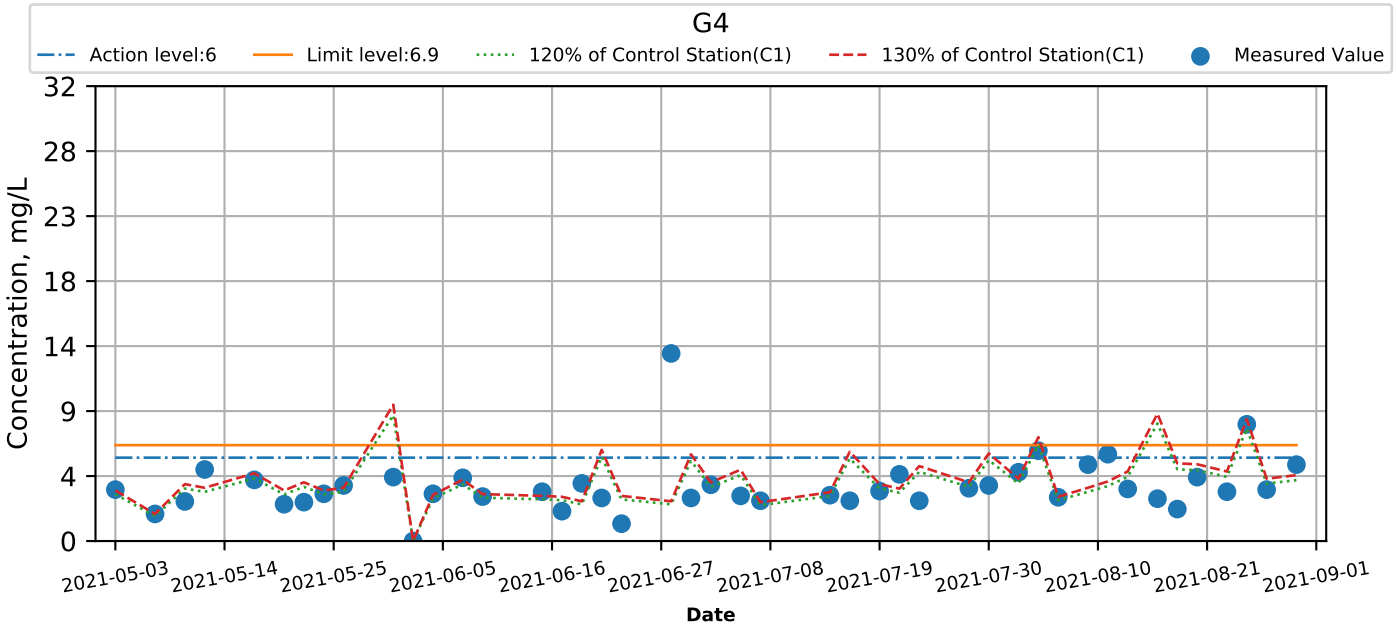


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Flood

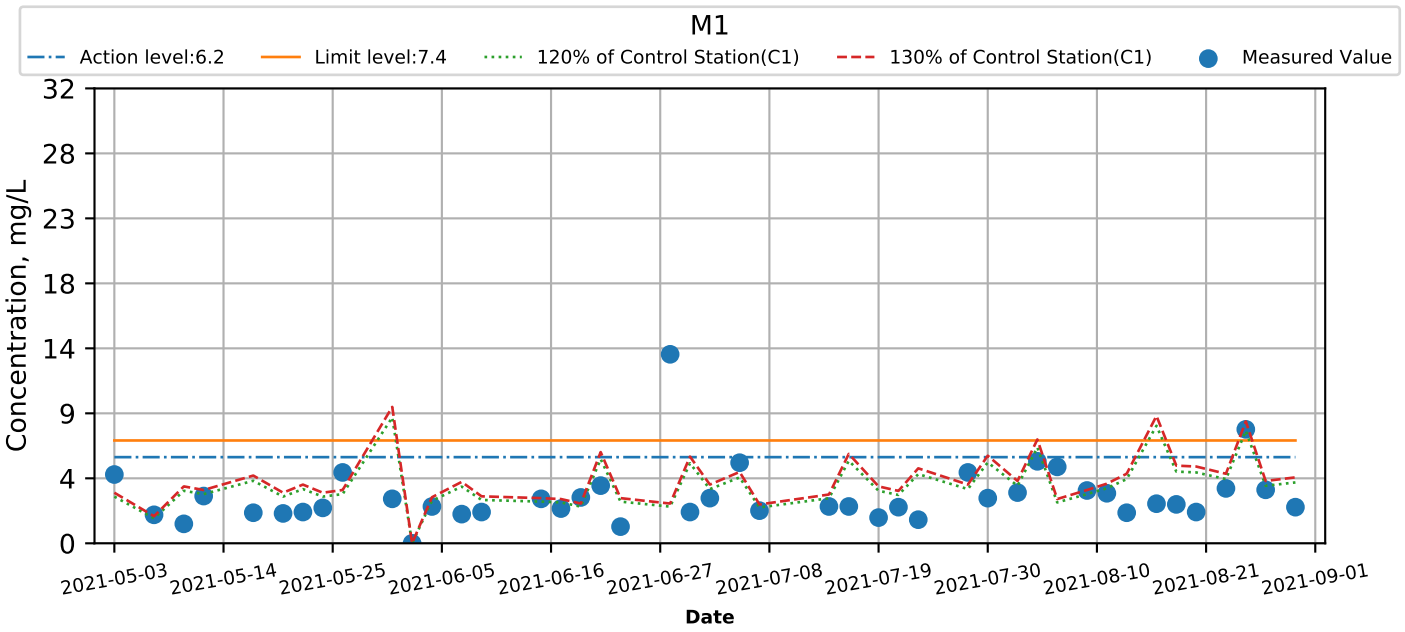


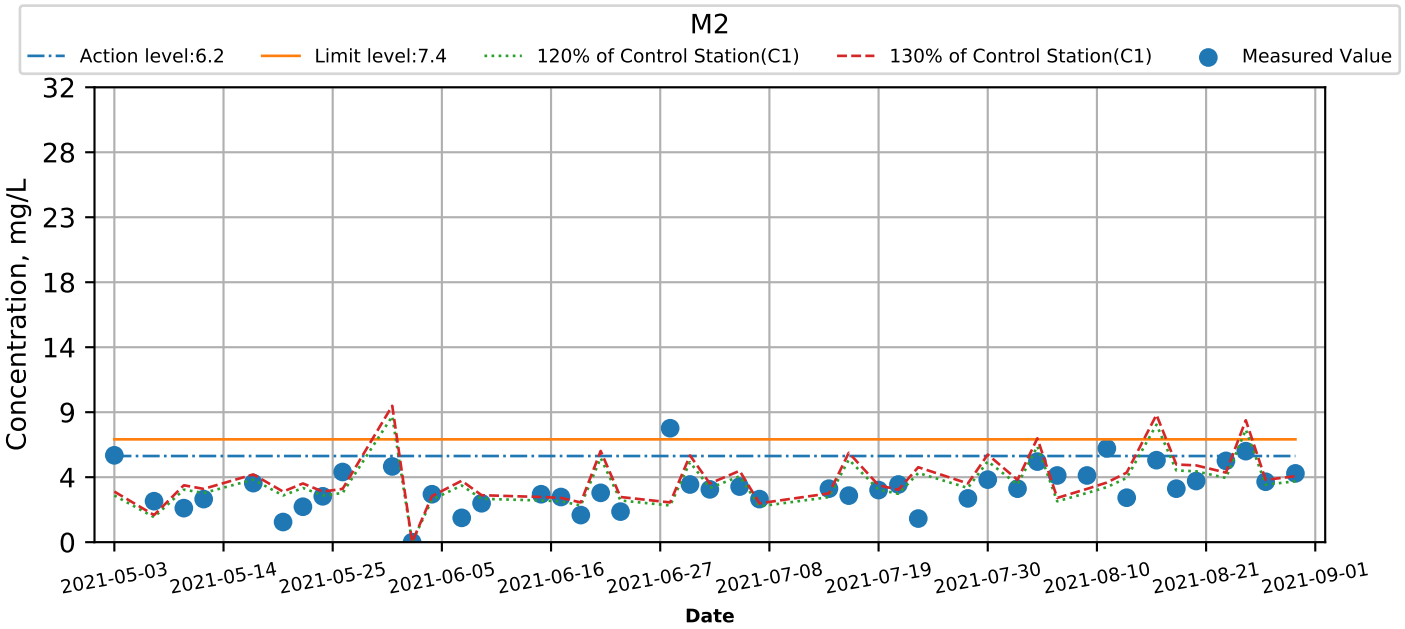


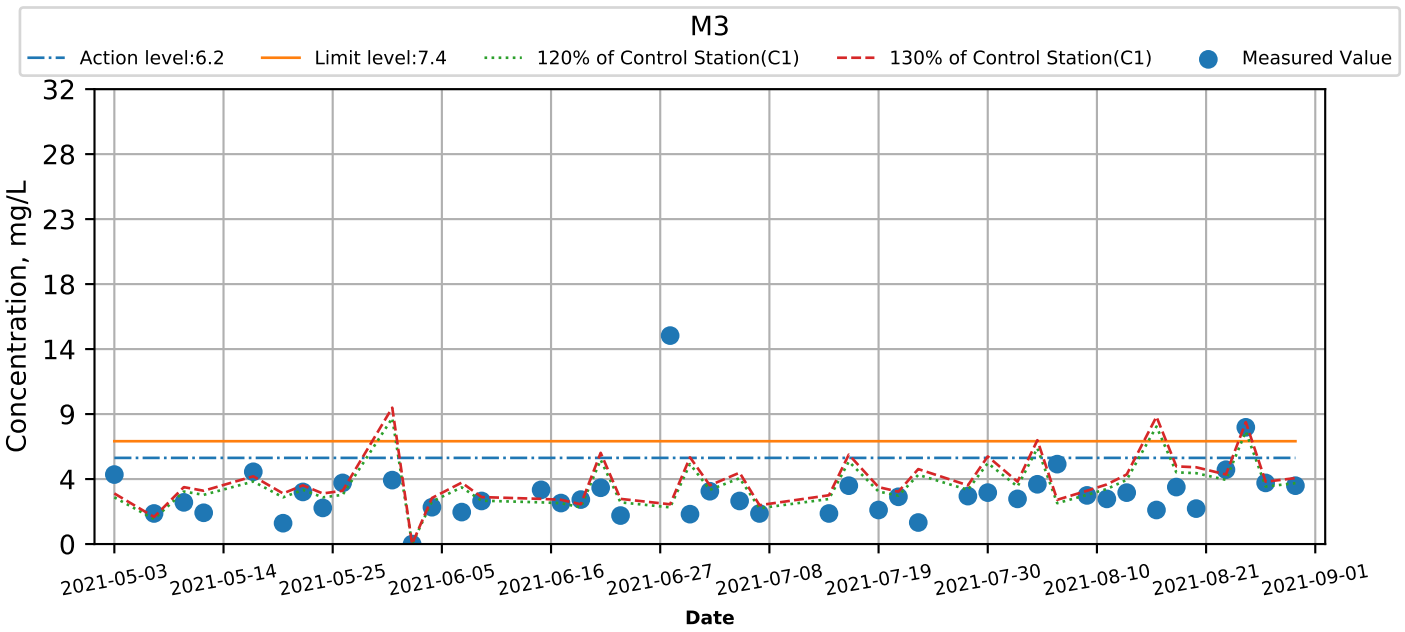


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Flood

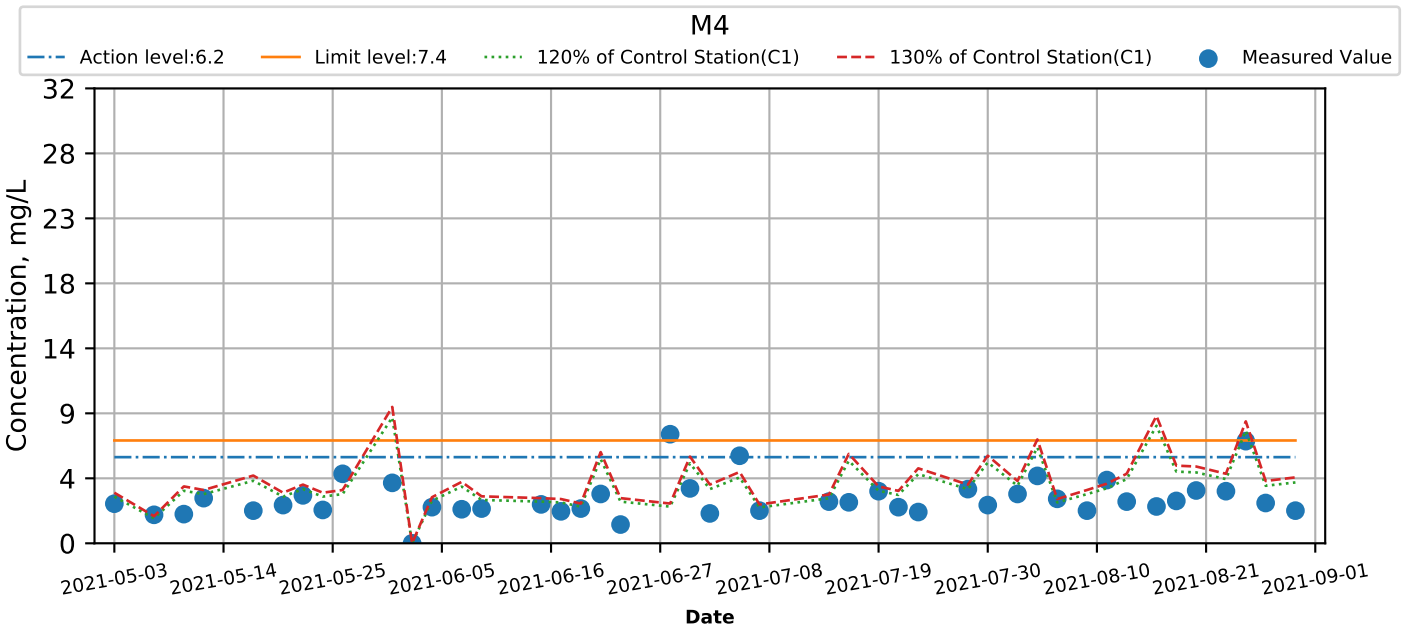


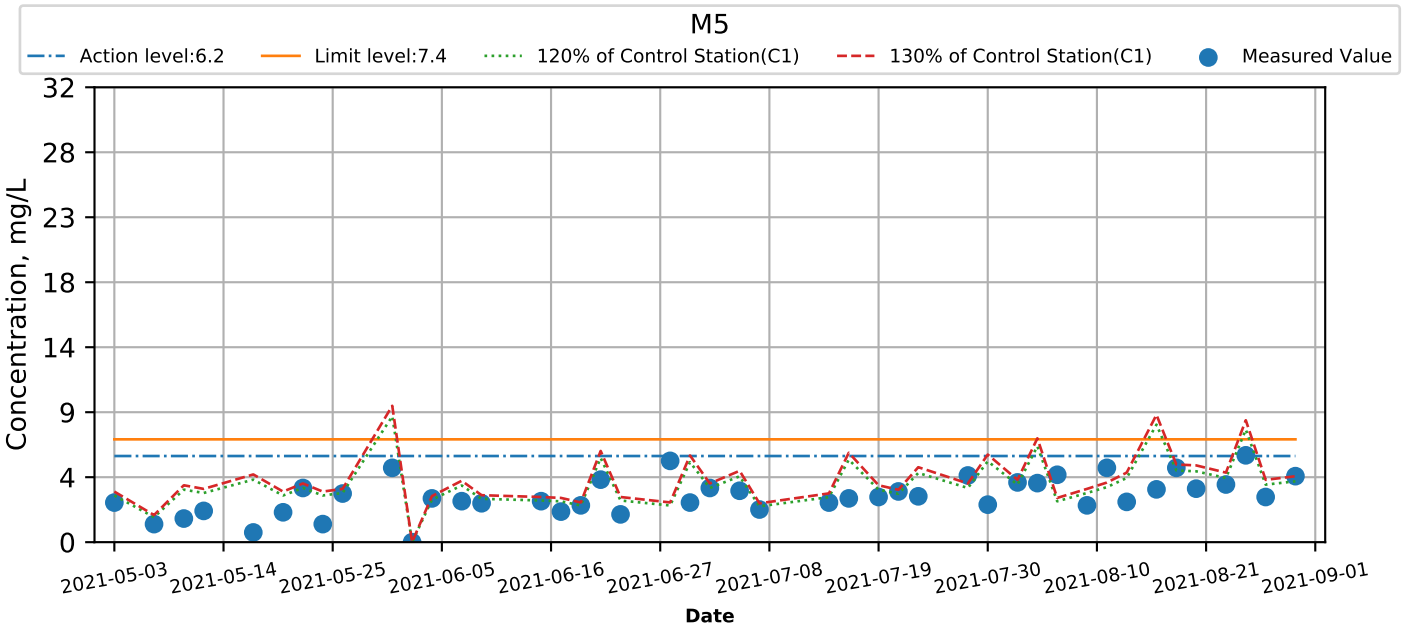




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

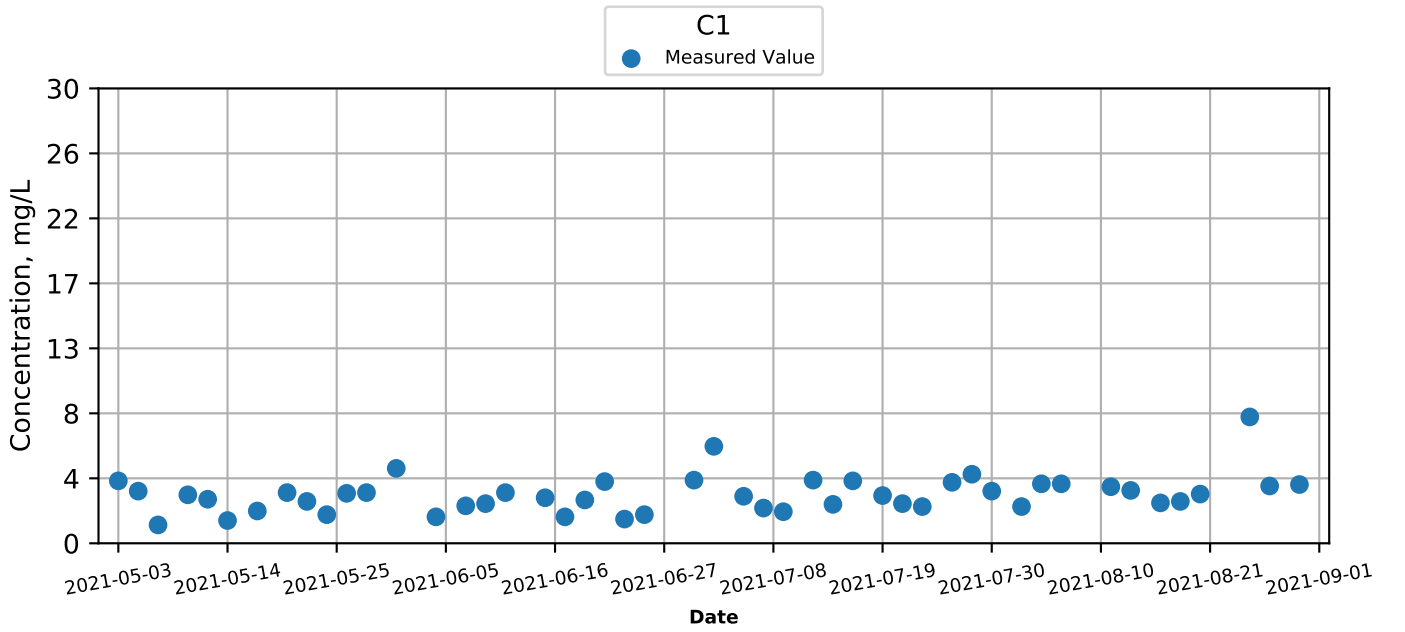
Suspended Solids (Surface) at Monitoring Stations during Mid-Flood

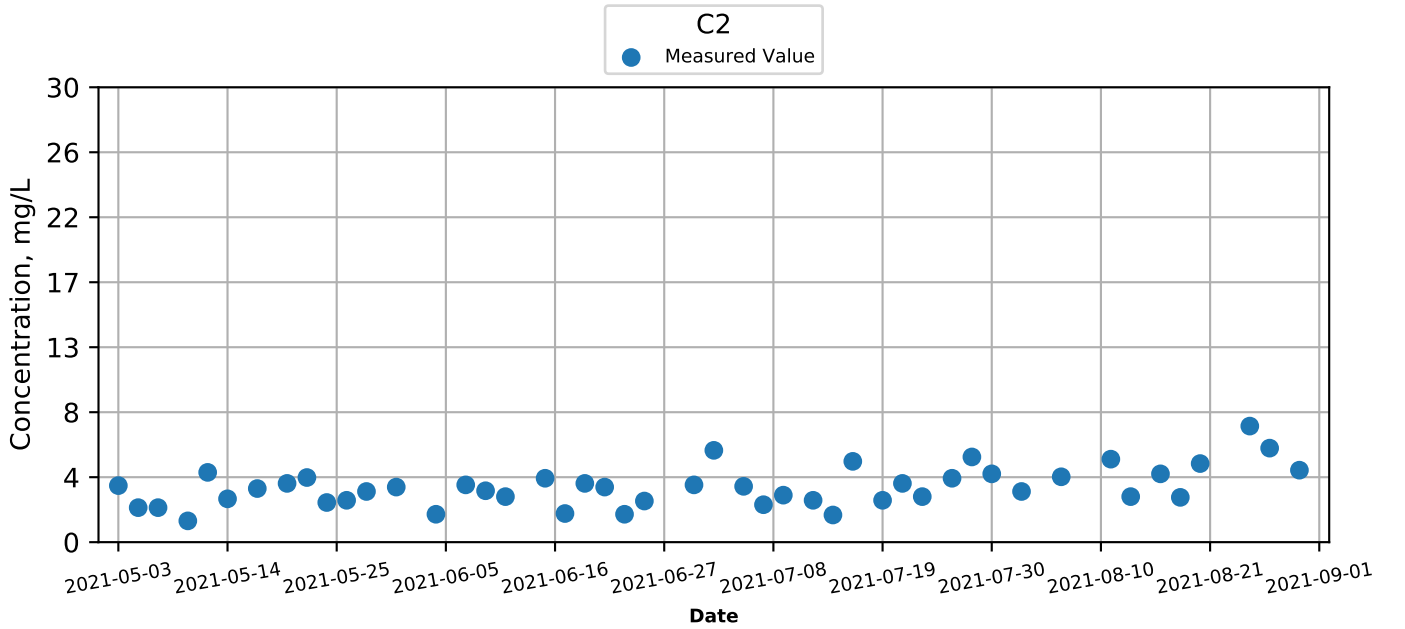


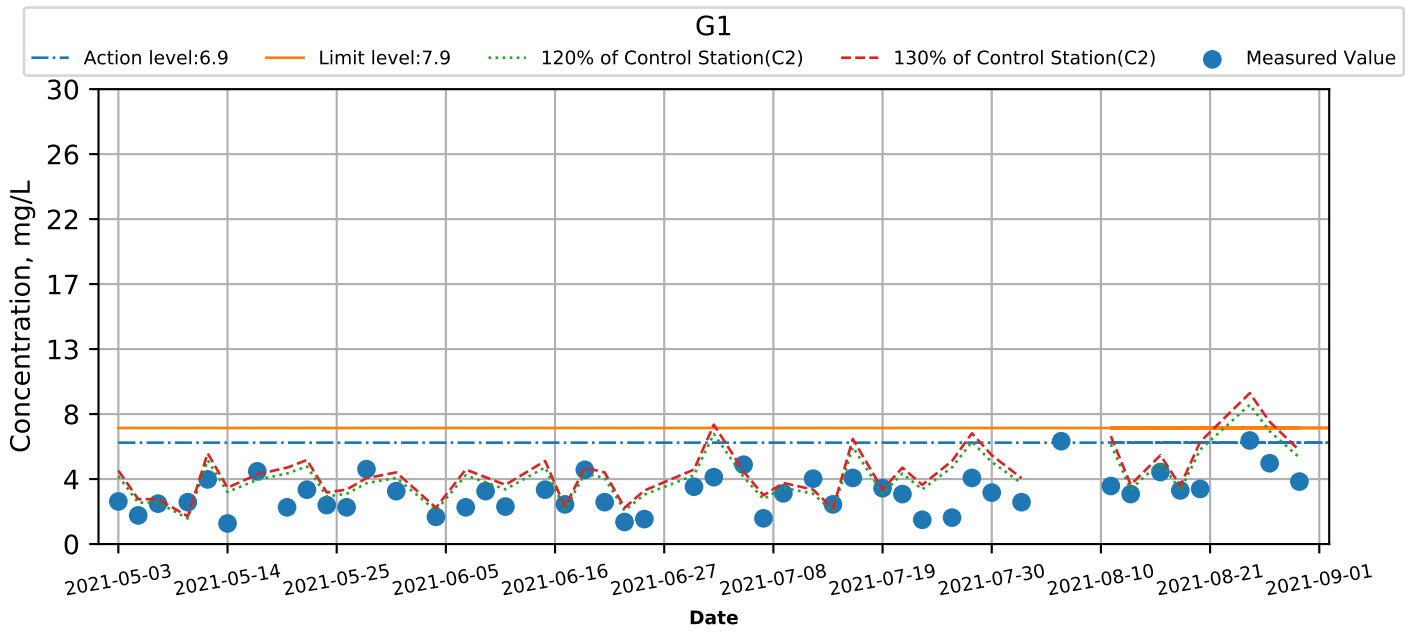


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Ebb

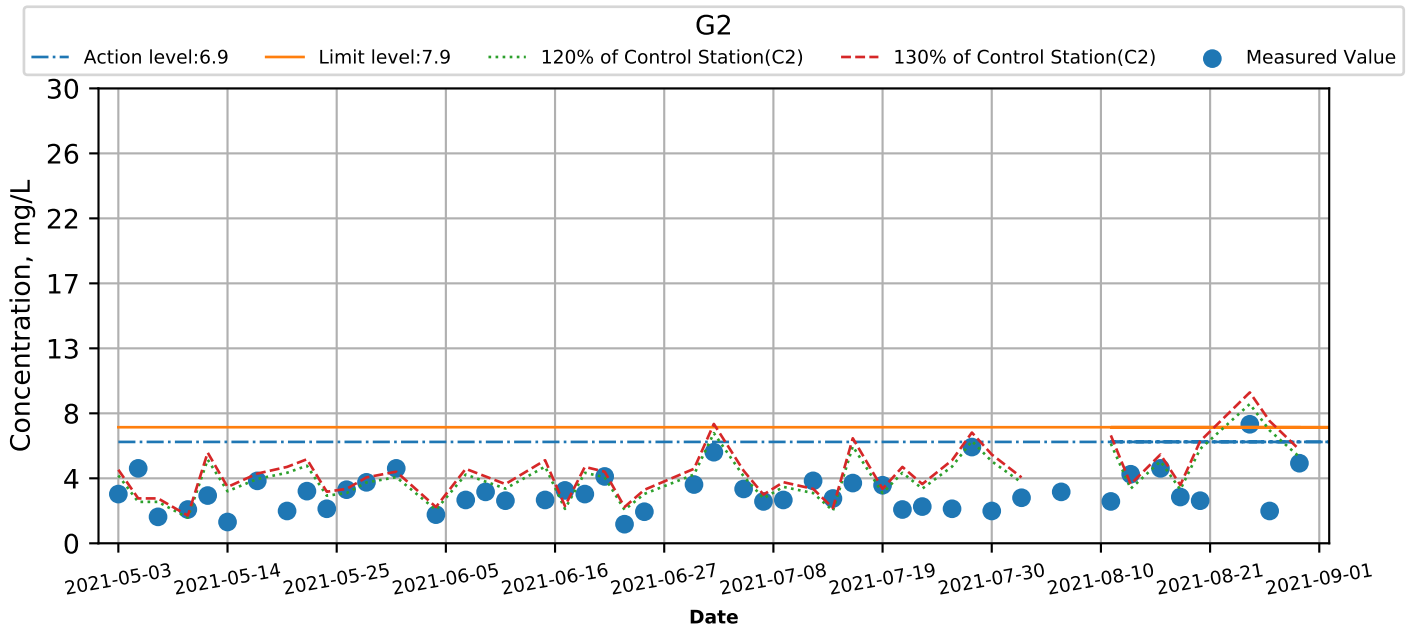


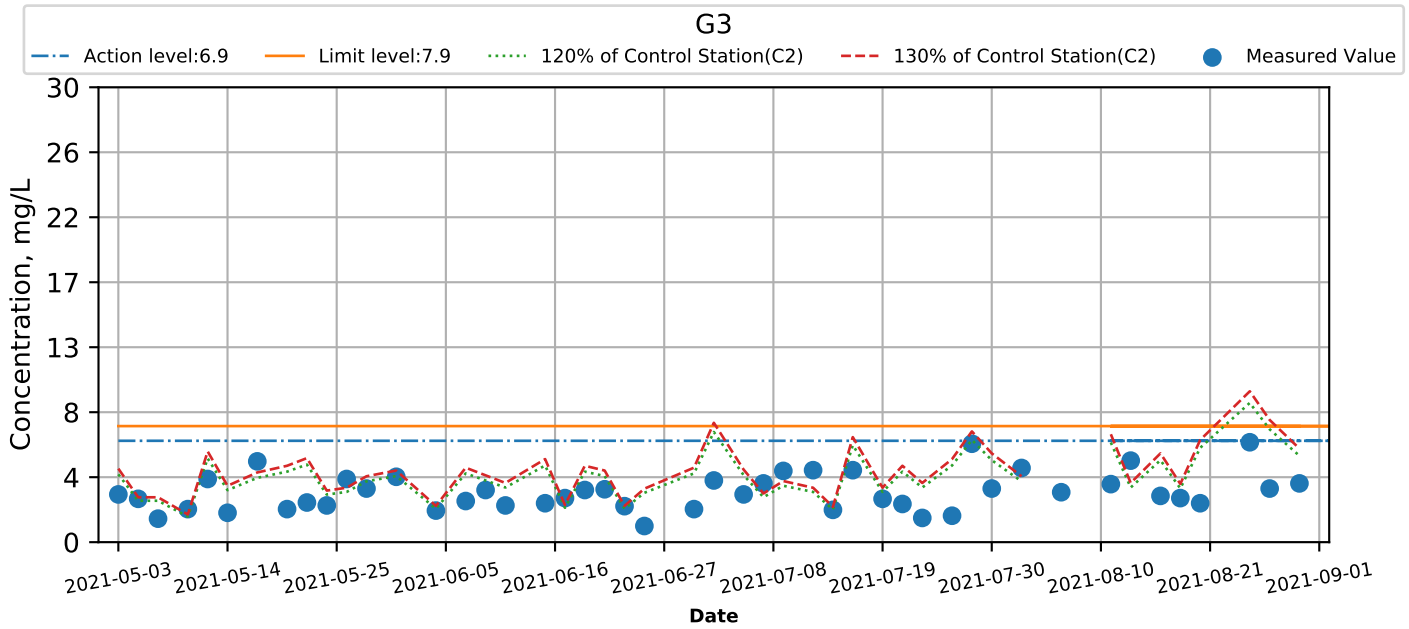


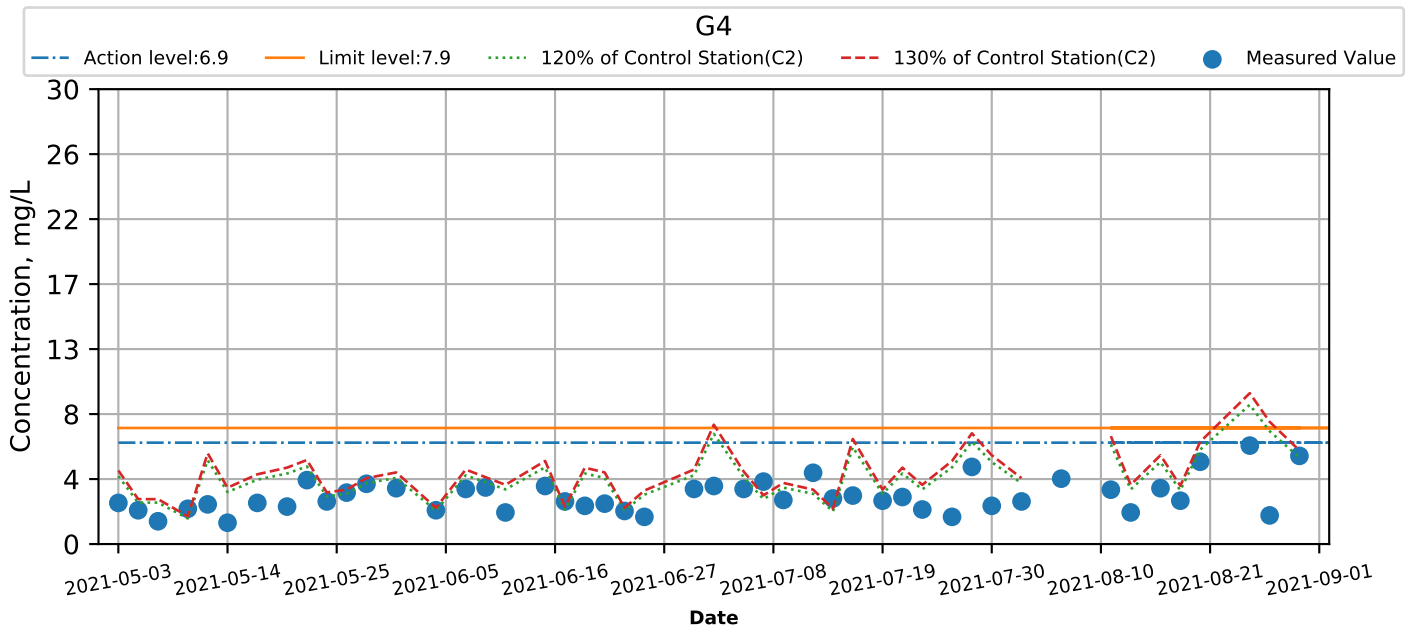


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Ebb

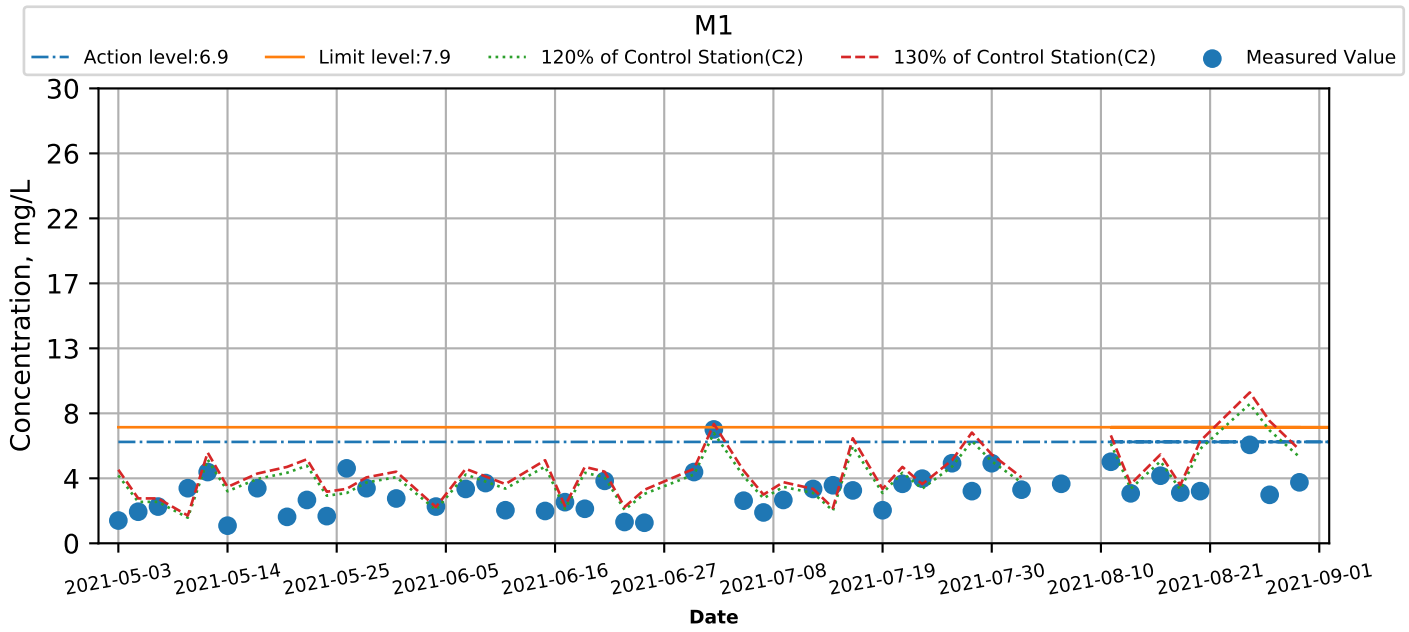


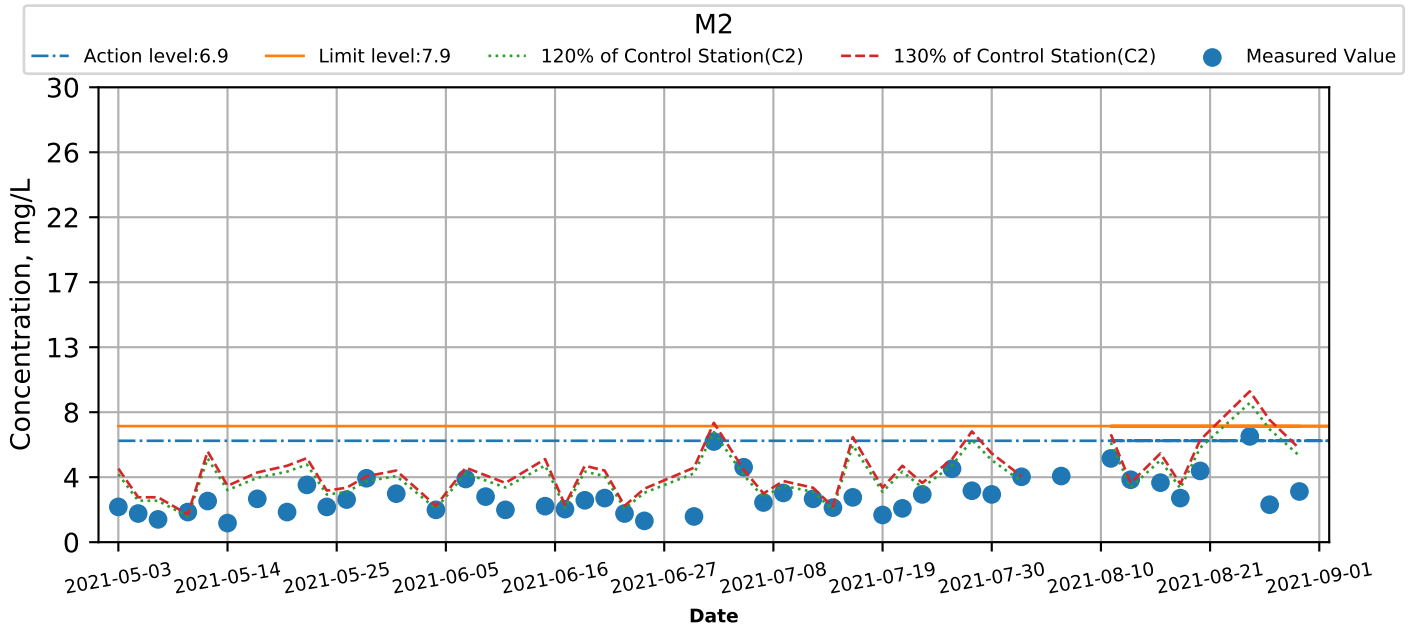


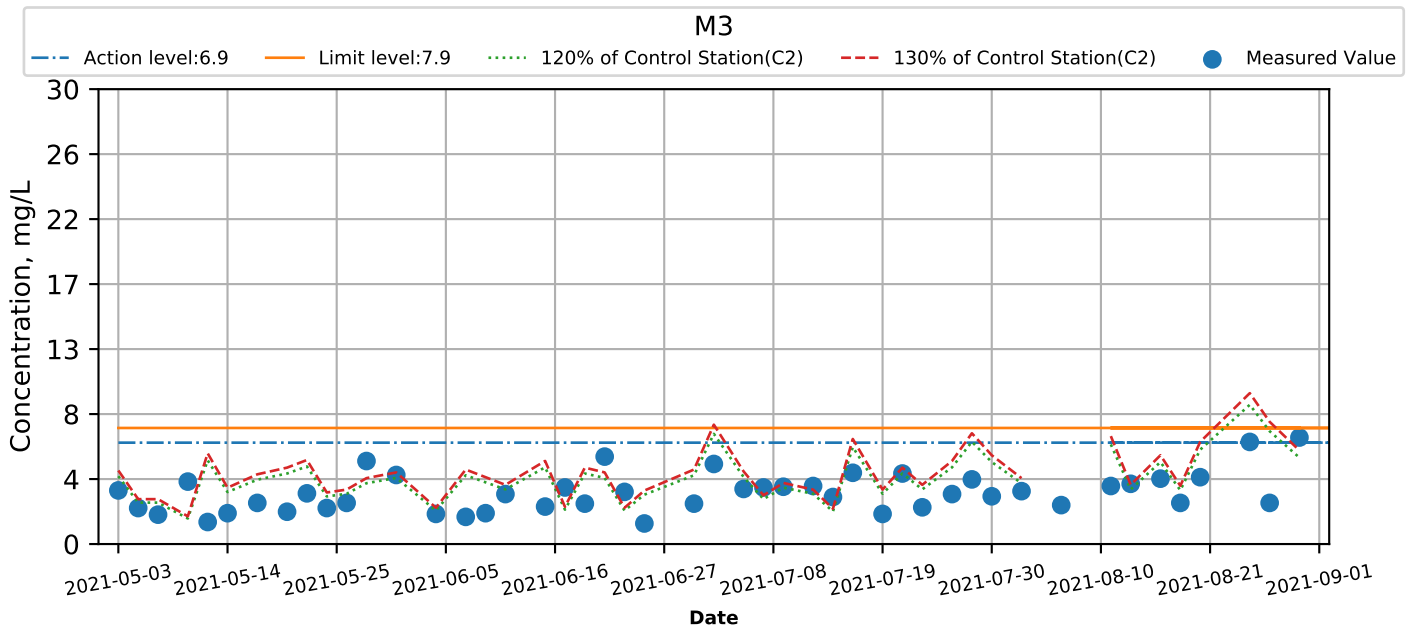


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Ebb

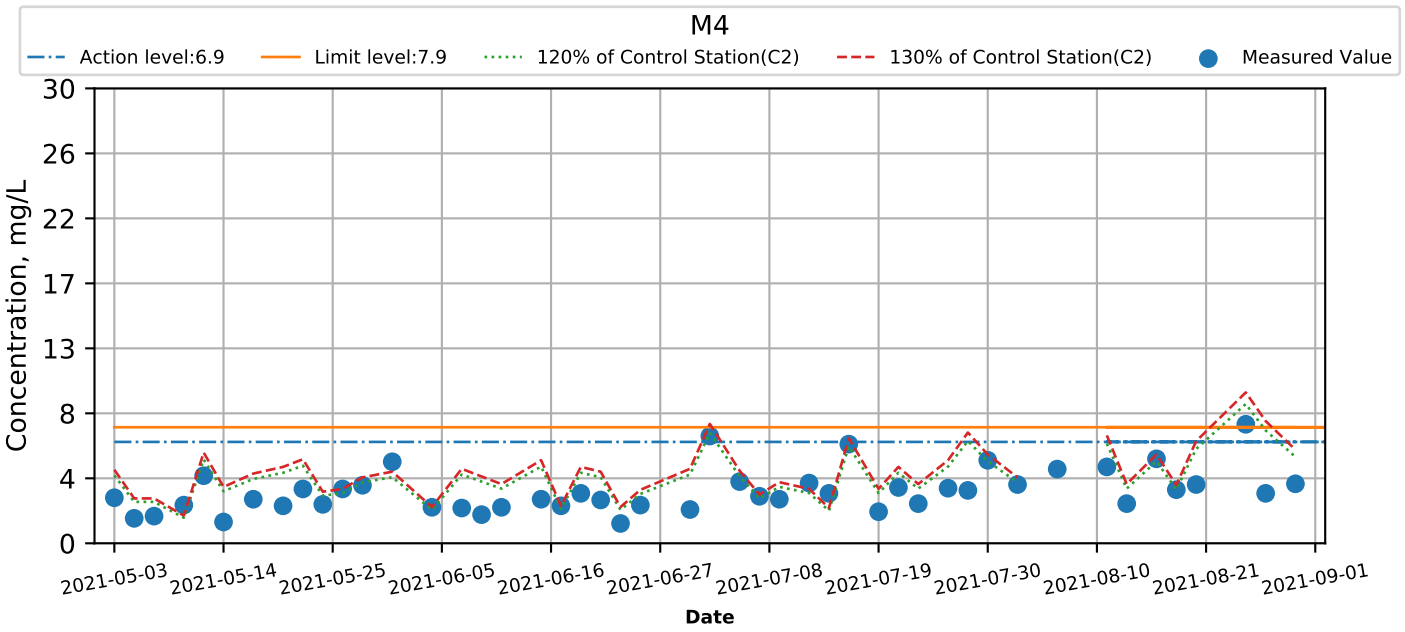


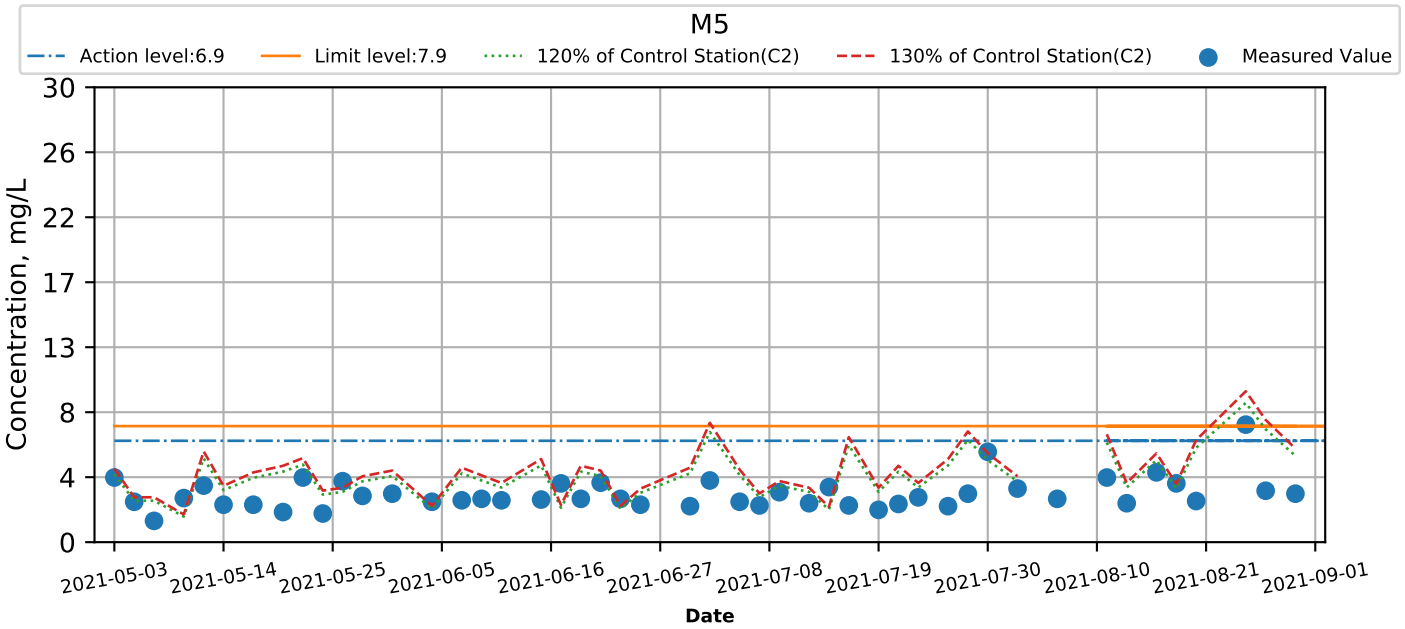




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

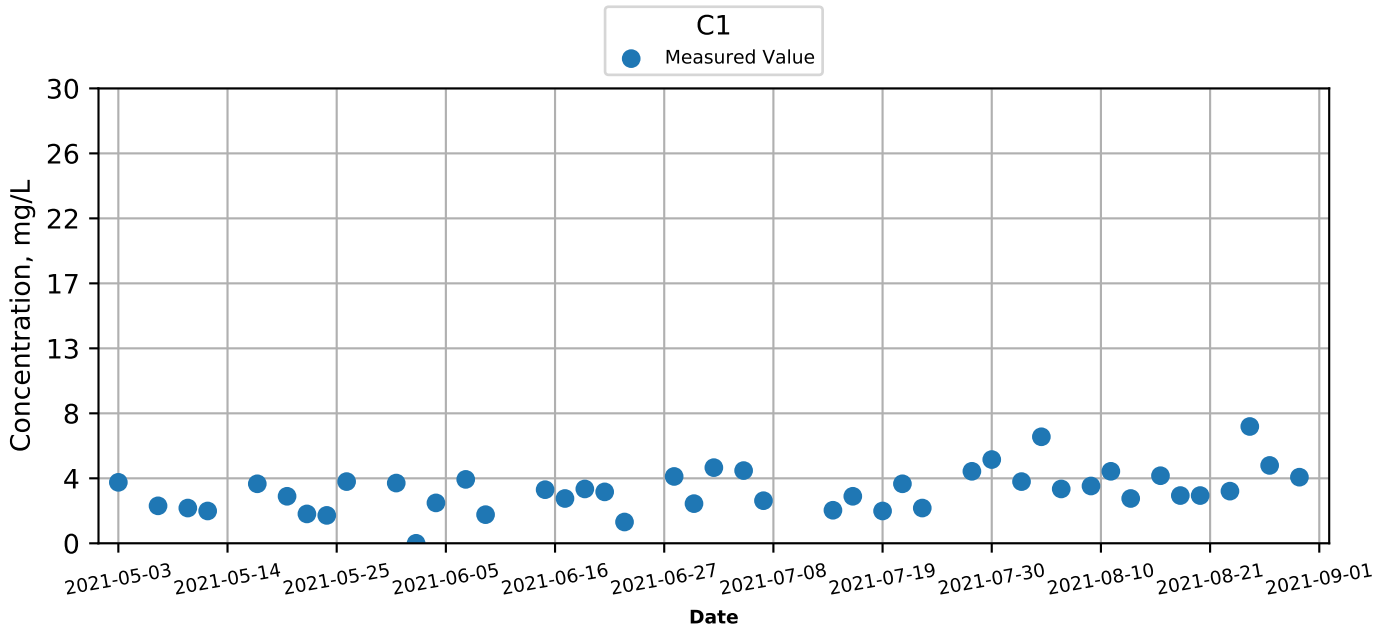
Suspended Solids (Bottom) at Monitoring Stations during Mid-Ebb

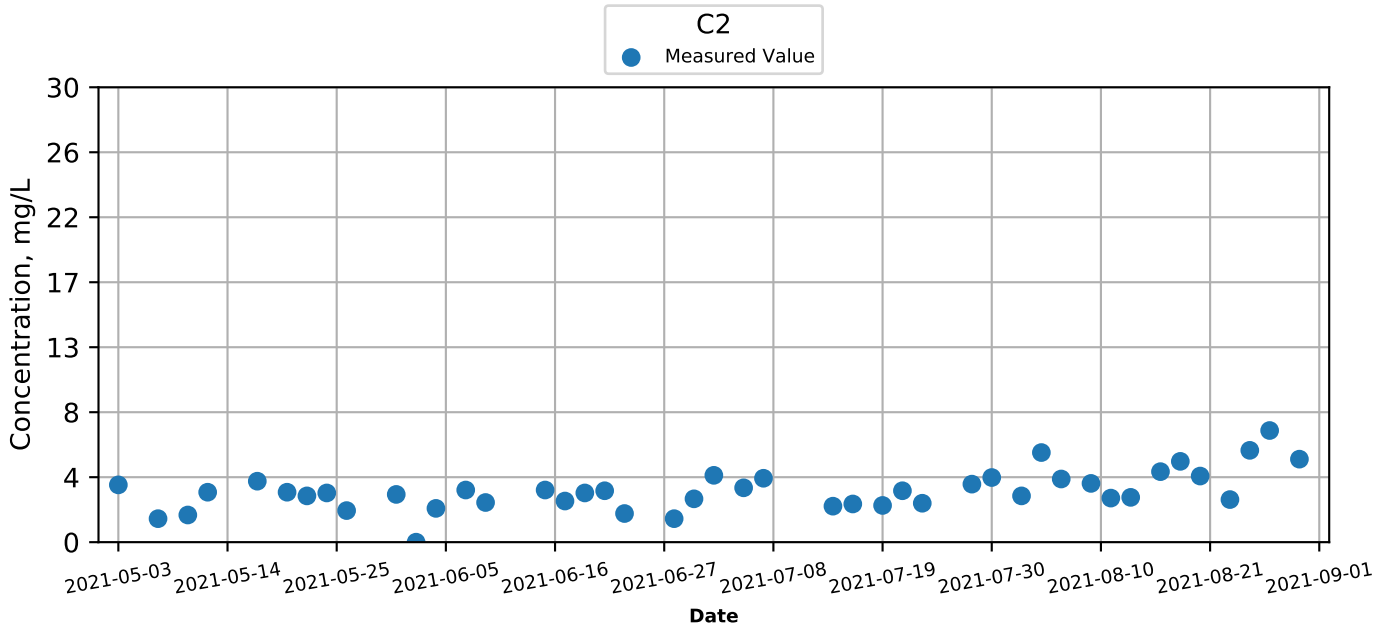


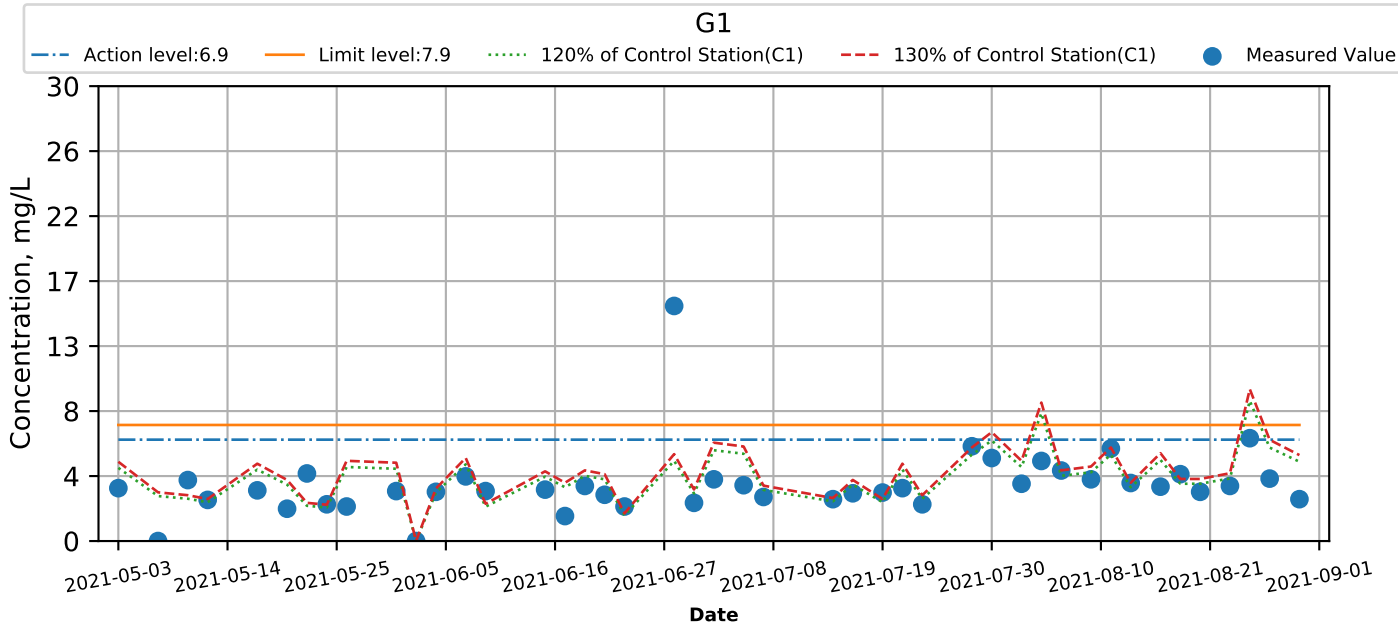


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Flood

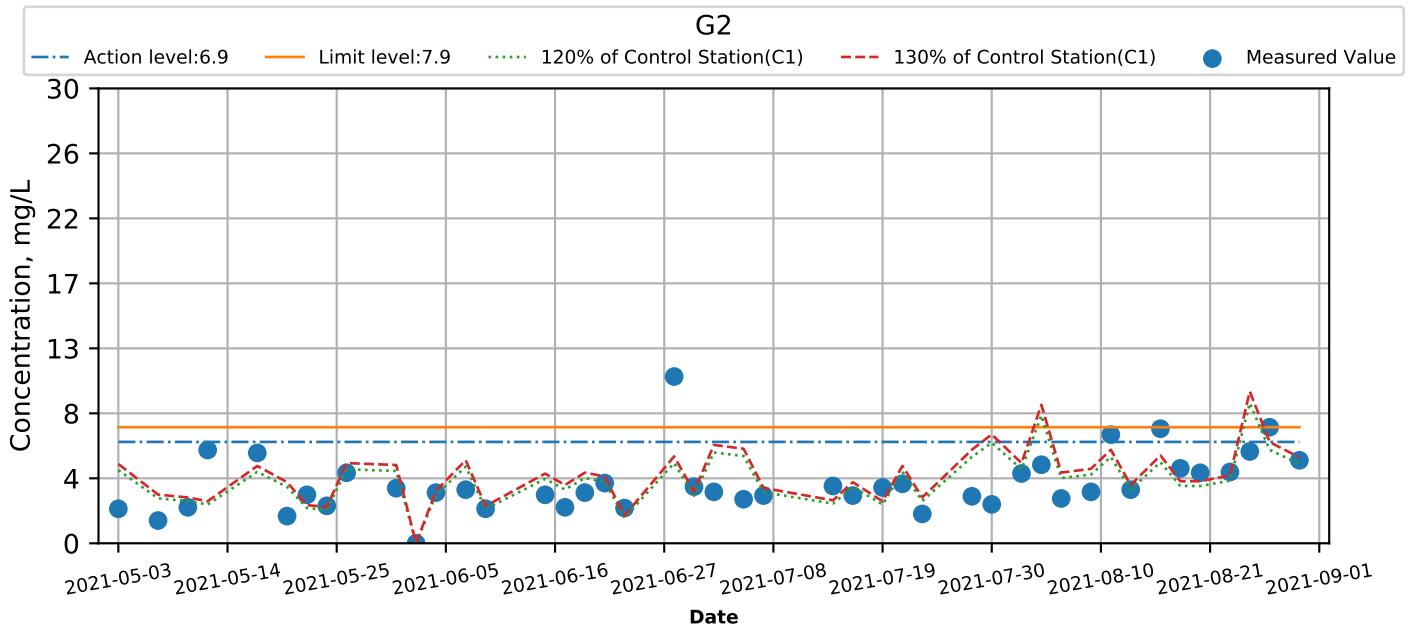


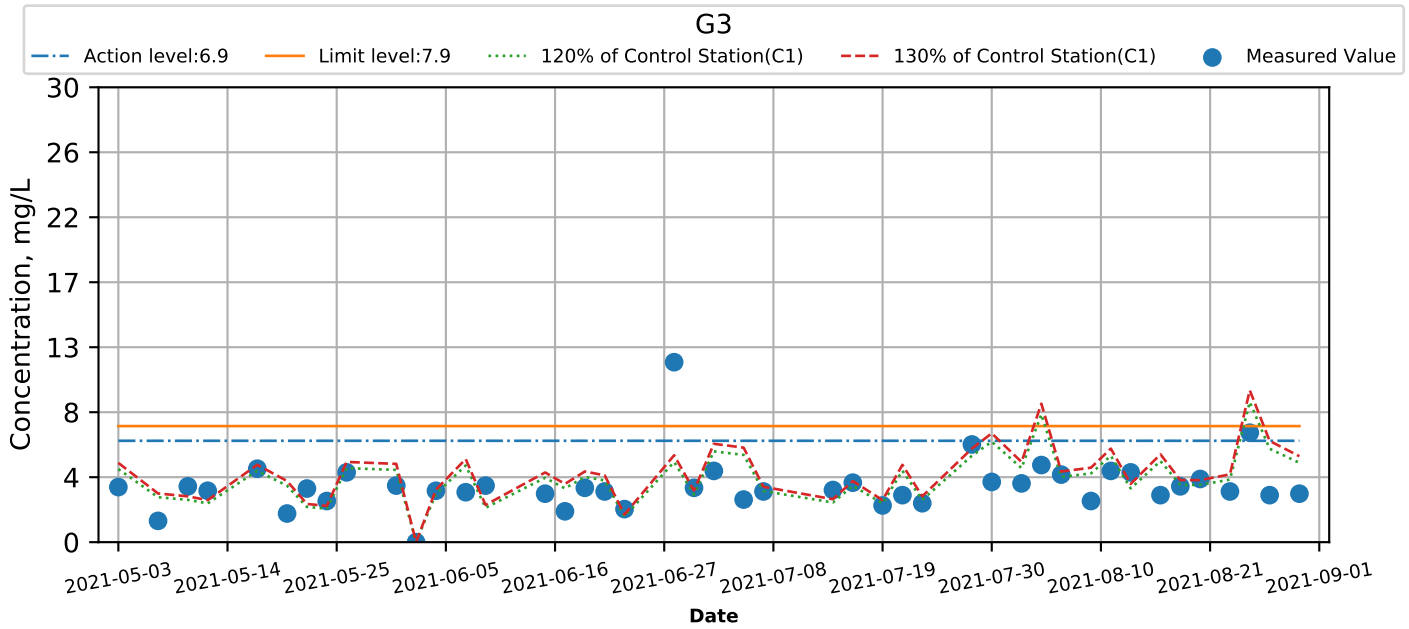


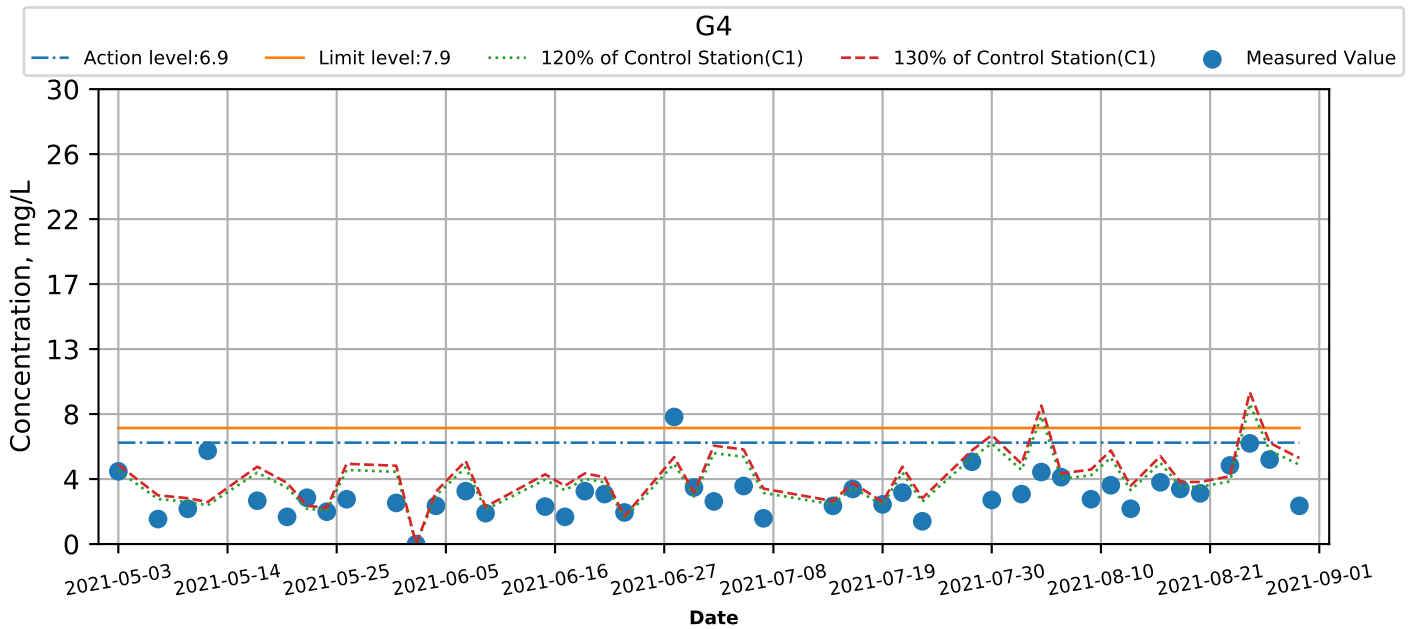


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Flood

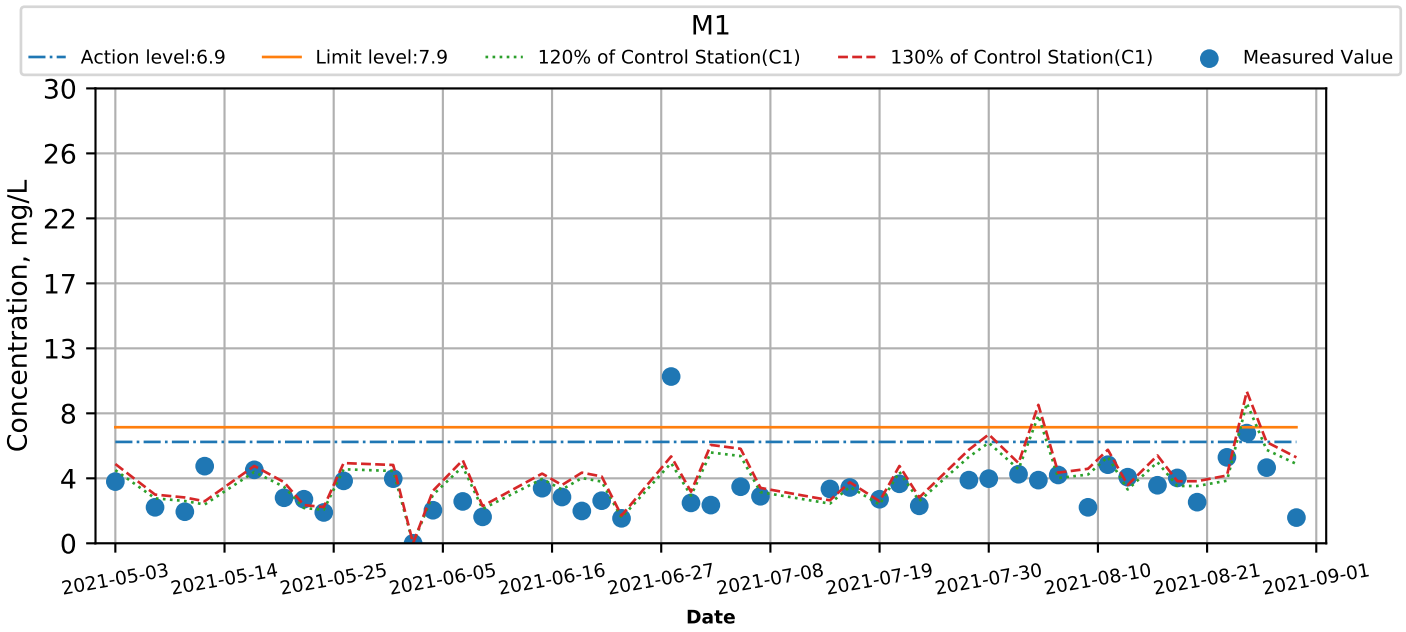


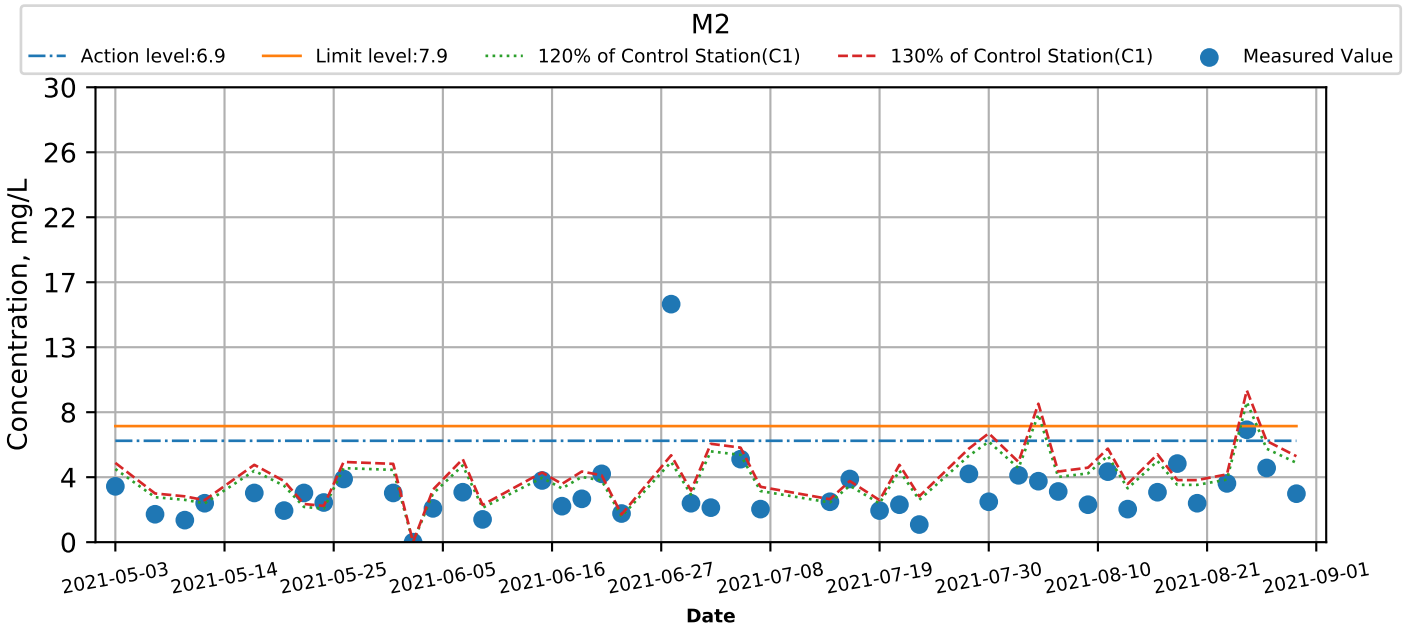


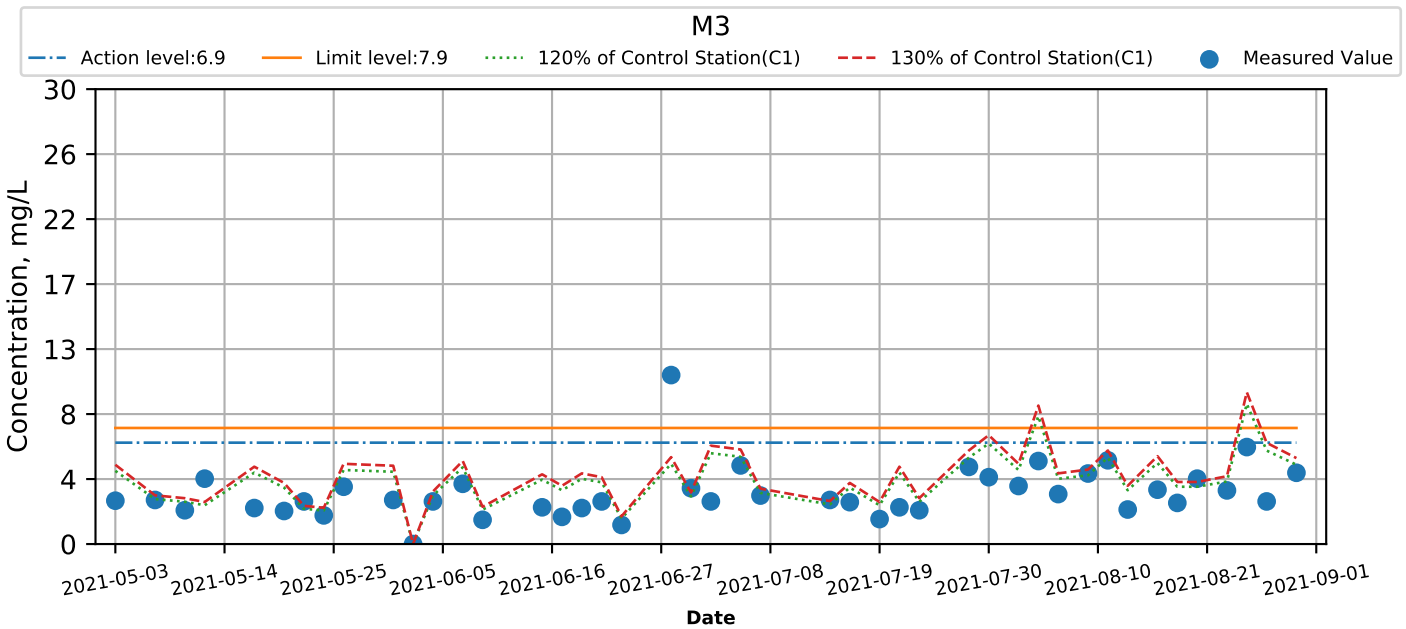


Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Flood

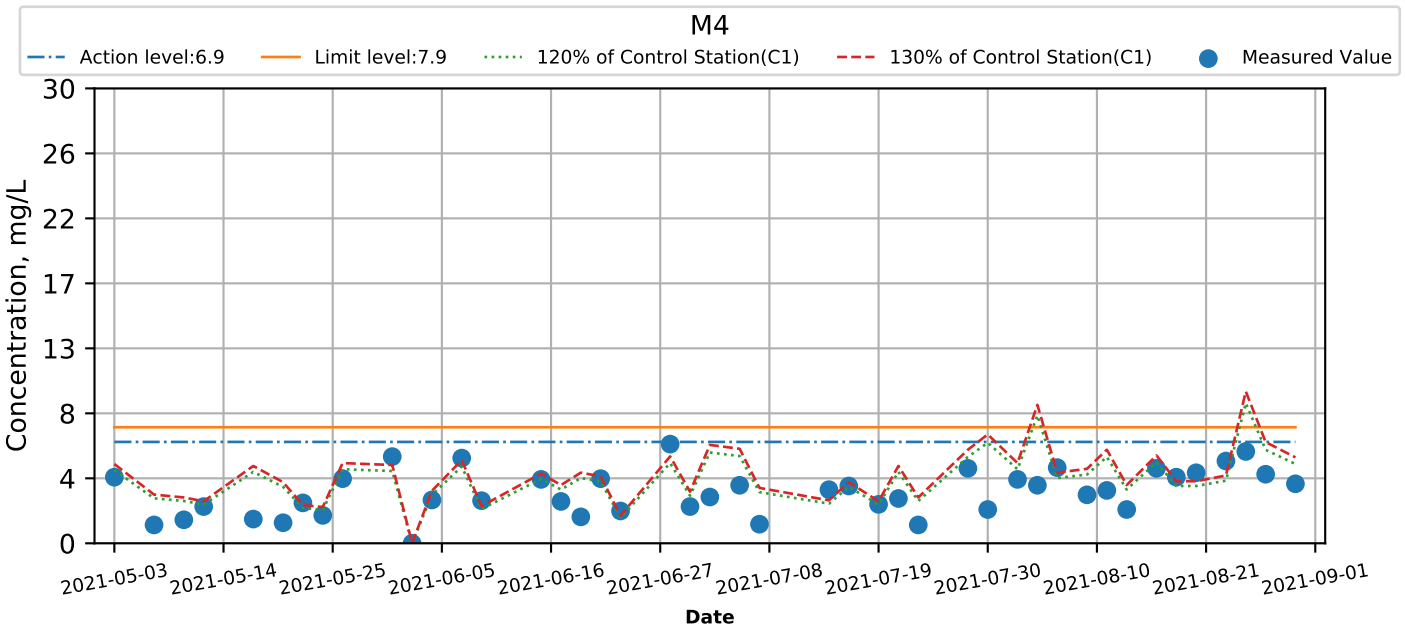


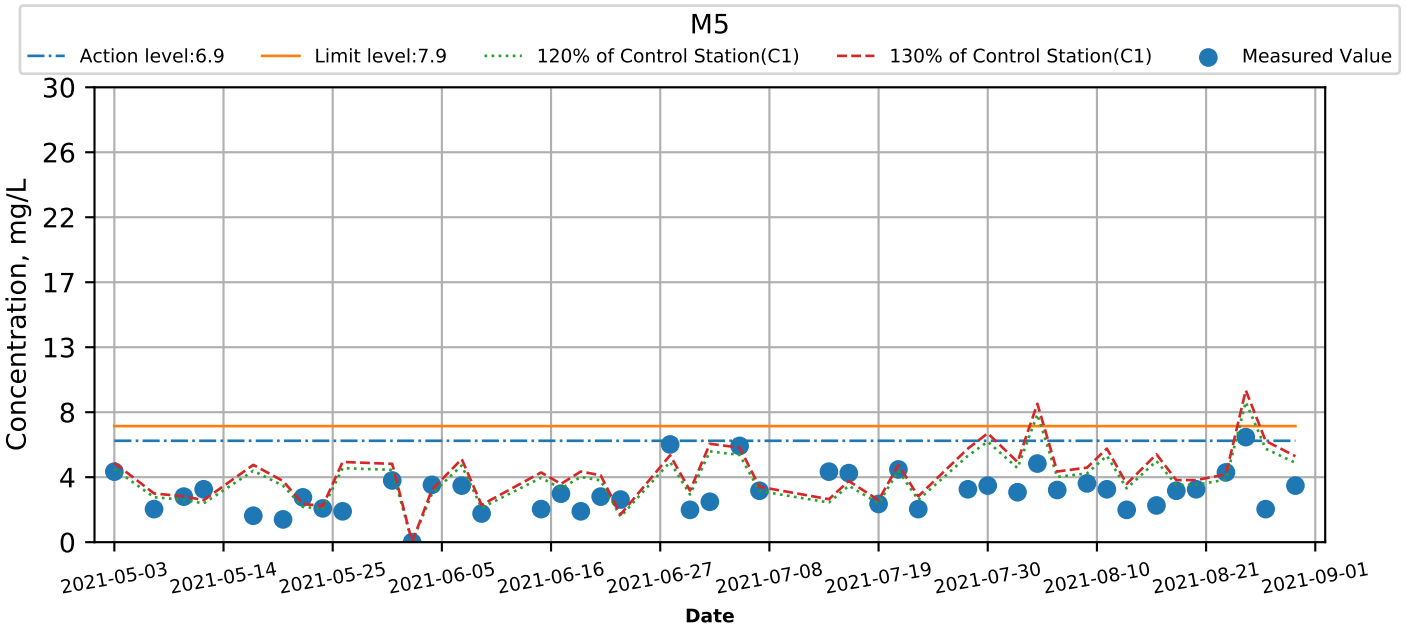




Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

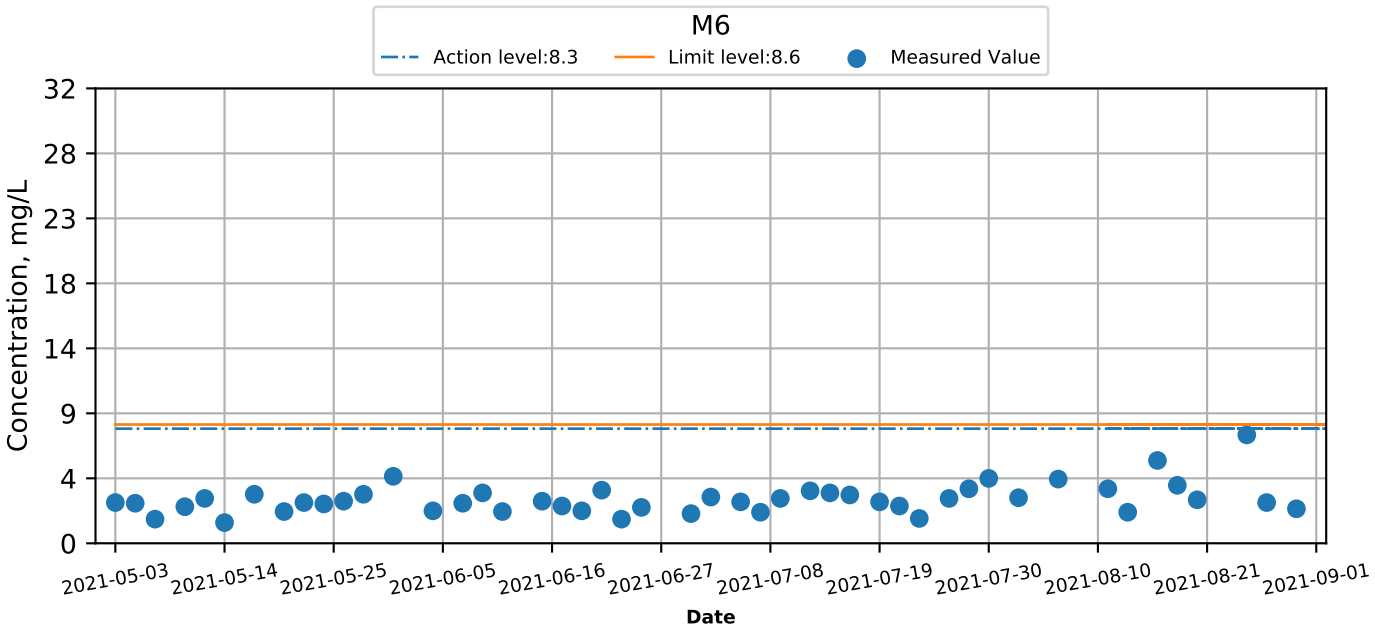
Suspended Solids (Bottom) at Monitoring Stations during Mid-Flood





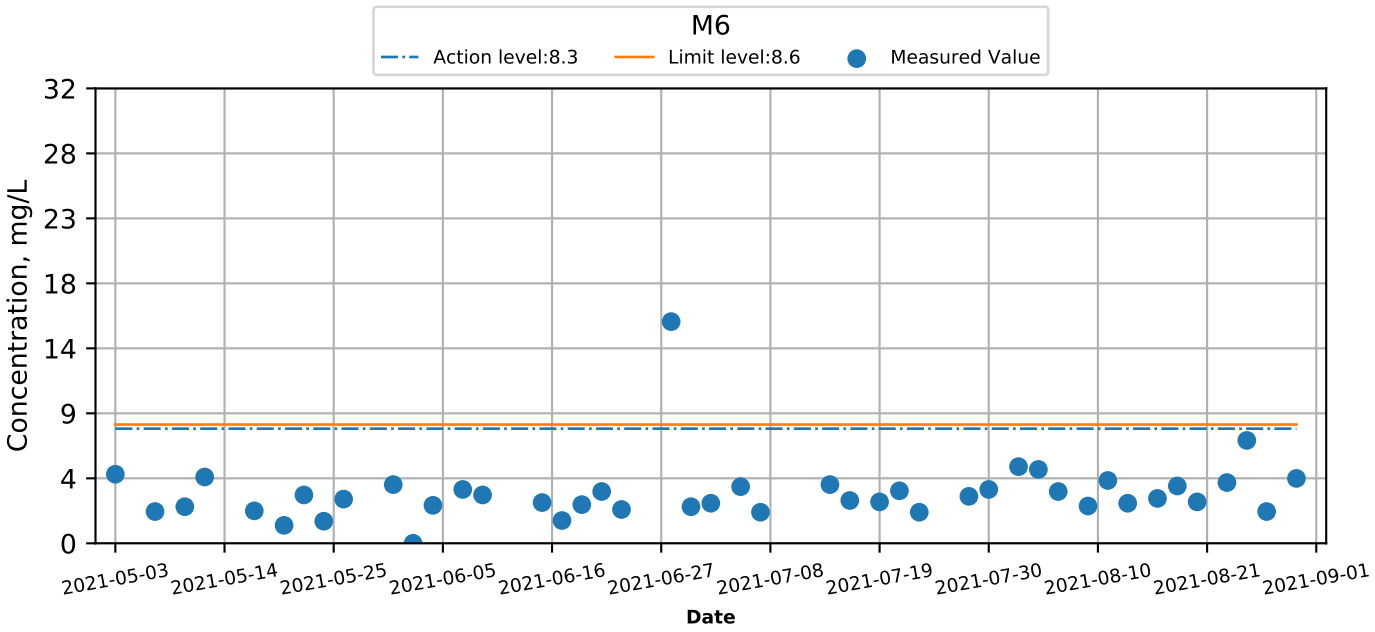
Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Intake level) at Monitoring Stations during Mid-Ebb



Graphical Presentation of Water Quality Monitoring Results (May-2021 to Aug-2021)

Suspended Solids (Intake level) at Monitoring Stations during Mid-Flood



Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction

Water Quality Monitoring Results on 06 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	18:10	Surface	1.0	26.8	26.8	8.7	8.6	30.1	30.0	103.1	101.8	7.0	6.9	5.4	1.8	2.0	5.3	2.6	2.9	3.4
						26.9		8.6		29.9		100.4		6.8			2.1			3.1		
				Middle	9.2	23.8	23.8	8.2	8.3	34.1	34.1	55.9	56.0	3.9	3.9		3.8	3.7		3.5	3.4	
						23.8		8.3		34.1		56.0		3.9			3.7			3.2		
				Bottom	17.1	23.2	23.2	8.6	8.5	34.7	34.7	54.8	54.9	3.8	3.8	3.8	10.4	10.3		4.3	4.1	
						23.2		8.5		34.7		54.9		3.8			10.2			3.8		
C2	Sunny	Calm	17:25	Surface	1.1	26.3	26.2	8.5	8.5	31.5	31.5	78.6	78.7	5.3	5.3	4.5	2.2	2.2	4.2	3.2	3.4	4.0
						26.2		8.4		31.5		78.7		5.3			2.2			3.5		
				Middle	12.7	24.0	24.0	8.5	8.4	34.0	34.0	54.2	54.2	3.8	3.8		5.8	5.8		4.2	4.3	
						23.9		8.4		34.1		54.2		3.8			5.7			4.3		
				Bottom	14.1	23.8	23.8	8.5	8.4	34.2	34.2	54.6	54.5	3.8	3.8	3.8	4.7	4.7		4.3	4.5	
						23.8		8.4		34.2		54.4		3.8			4.7			4.6		
G1	Sunny	Calm	17:45	Surface	1.1	26.2	26.2	8.8	8.8	30.7	30.8	90.3	89.9	6.1	6.1	5.8	2.0	2.1	2.3	4.6	4.8	5.6
						26.1		8.7		30.9		89.4		6.1			2.1			5.0		
				Middle	4.0	25.7	25.7	8.3	8.3	31.9	31.9	79.4	79.5	5.4	5.4		2.1	2.1		4.9	5.1	
						25.7		8.4		31.9		79.6		5.4			2.1			5.2		
				Bottom	7.1	25.2	25.2	8.6	8.6	32.6	32.6	70.4	70.6	4.8	4.8	4.8	2.7	2.7		6.8	7.0	
						25.2		8.6		32.6		70.8		4.8			2.7			7.2		
G2	Sunny	Calm	17:37	Surface	1.1	26.2	26.2	8.5	8.5	30.9	30.9	85.5	85.2	5.8	5.8	5.3	1.8	1.9	3.5	4.8	5.0	4.1
						26.2		8.6		30.9		84.8		5.8			1.9			5.1		
				Middle	5.0	25.3	25.3	8.4	8.4	32.5	32.4	70.5	70.7	4.8	4.8		2.6	2.5		4.0	3.9	
						25.3		8.5		32.4		70.8		4.8			2.5			3.7		
				Bottom	8.9	24.3	24.3	8.5	8.5	33.7	33.7	51.4	51.3	3.6	3.5	3.5	6.0	6.0		3.2	3.5	
						24.3		8.6		33.7		51.2		3.5			6.0			3.8		
G3	Sunny	Calm	17:48	Surface	1.1	26.2	26.1	8.7	8.7	30.6	30.8	88.9	88.7	6.1	6.0	5.6	2.0	2.1	2.2	5.3	5.2	4.4
						26.1		8.7		30.9		88.4		6.0			2.1			5.1		
				Middle	4.0	25.6	25.6	8.3	8.3	32.1	32.1	76.3	76.3	5.2	5.2		2.2	2.3		4.8	4.7	
						25.6		8.2		32.1		76.3		5.2			2.3			4.6		
				Bottom	7.1	25.3	25.3	8.7	8.7	32.4	32.4	72.4	72.6	5.0	5.0	5.0	2.1	2.3		3.6	3.4	
						25.3		8.7		32.4		72.7		5.0			2.4			3.2		
G4	Sunny	Calm	17:55	Surface	1.1	26.4	26.4	8.7	8.6	30.3	30.2	91.0	90.8	6.2	6.2	5.6	2.1	2.1	3.1	5.1	5.2	4.8
						26.4		8.6		30.2		90.6		6.2			2.1			5.3		
				Middle	4.0	25.3	25.3	8.7	8.7	32.5	32.4	73.7	73.8	5.0	5.0		3.1	2.9		4.5	4.7	
						25.4		8.7		32.4		73.9		5.1			2.6			4.9		
				Bottom	7.1	25.1	25.1	8.8	8.7	32.8	32.8	67.8	68.1	4.7	4.7	4.7	4.3	4.2		4.6	4.5	
						25.1		8.7		32.8		68.4		4.7			4.2			4.3		
M1	Sunny	Calm	17:41	Surface	1.1	26.1	26.1	8.3	8.3	31.0	31.1	82.1	81.8	5.6	5.6	5.3	1.9	1.9	2.3	3.4	3.2	3.6
						26.0		8.3		31.2		81.5		5.5			1.9			3.0		
				Middle	3.0	25.7	25.7	8.6	8.6	32.0	31.9	74.8	75.2	5.1	5.1		2.5	2.4		3.8	3.7	
						25.7		8.6		31.9		75.6		5.2			2.3			3.5		
				Bottom	5.0	25.5	25.5	8.5	8.5	32.2	32.2	66.8	67.0	4.6	4.6	4.6	2.7	2.7		3.8	4.1	
						25.5		8.5		32.2		67.1		4.6			2.6			4.3		
M2	Sunny	Calm	17:33	Surface	1.1	26.3	26.3	8.8	8.8	31.0	31.0	86.6	86.3	5.9	5.9	5.1	1.7	1.8	3.3	3.0	3.3	3.9
						26.2		8.7		31.0		85.9		5.8			1.8			3.5		
				Middle	6.1	24.7	24.7	8.7	8.7	33.2	33.1	60.7	63.4	4.2	4.4		3.9	3.7		3.8	4.0	
						24.8		8.7		33.1		66.1		4.5			3.5			4.1		
				Bottom	11.1	23.8	23.8	8.4	8.4	34.3	34.3	48.5	48.7	3.4	3.4	3.4	4.7	4.6		4.4	4.5	
						23.8		8.4		34.3		48.9		3.4			4.5			4.6		
M3	Sunny	Calm	17:51	Surface	1.1	26.1	26.0	8.4	8.4	31.2	31.3	90.0	89.3	6.1	6.1	5.8	2.4	2.3	2.4	4.8	5.0	3.8
						25.9		8.4		31.5		88.6		6.0			2.3			5.2		
				Middle	4.0	25.6	25.7	8.7	8.7	32.0	31.9	81.1	81.4	5.5	5.6		2.3	2.2		3.6	3.7	
						25.7		8.7		31.9		81.7		5.6			2.2			3.7		
				Bottom	7.1	25.3	25.3	8.4	8.4	32.5	32.5	71.8	72.1	4.9	4.9	4.9	2.5	2.5		2.6	2.7	
						25.3		8.4		32.5		72.3		4.9			2.5			2.7		
M4	Sunny	Calm	17:29	Surface	1.1	26.5	26.4	8.6	8.6	31.1	31.2	98.3	98.0	6.6	6.6	5.7	1.4	1.5	2.2	3.7	3.6	4.2
						26.2		8.7		31.4		97.6		6.6			1.6			3.4		
				Middle	5.1	25.3	25.3	8.6	8.6	32.6	32.6	70.4	70.4	4.8	4.8		2.2	2.2		3.8	4.0	
						25.4		8.6		32.6		70.4		4.8			2.2			4.1		
				Bottom	9.0	24.4	24.4	8.7	8.7	33.8	33.8	52.3	52.4	3.6	3.6	3.6	2.9	2.9		5.2	5.1	
						24.4		8.7		33.8		52.4		3.6			2.9			4.9		
M5	Sunny	Calm	18:04	Surface	1.1	26.3	26.3	8.4	8.4	31.4	31.5	87.2	86.2	5.9	5.8	5.0	2.2	2.3	4.3	3.5	3.4	3.2
						26.3		8.4		31.6		85.2		5.8			2.4			3.2		
				Middle	6.0	24.5	24.5	8.4	8.4	33.4	33.4	59.5	60.1	4.1	4.1		2.6	2.7		3.3	3.2	
						24.5		8.4		33.4		60.7		4.2			2.8			3.0		
				Bottom	11.0	23.3	23.3	8.7	8.7	34.6	34.6	55.3	55.3	3.9	3.9	3.9	7.8	7.8		2.8	3.0	
						23.3		8.7		34.6		55.3		3.9			7.8			3.1		
M6	Sunny	Calm	17:58	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	2.0	-	-	4.7
						-		-		-		-		-			-			-		
				Middle	2.1	26.1	26.1	8.7	8.8	31.2	31.2	92.0	92.3	6.3	6.3		2.1	2.0		4.9	4.7	
						26.2		8.8		31.1		92.6		6.3			2.0			4.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 6 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 5.7 NTU	***C2: 6.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.0 mg/L	***C2: 4.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.0 mg/L	***C2: 4.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 5.3 mg/L	***C2: 5.8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 06 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	11:45	Surface	1.1	26.9	26.9	8.7	8.7	29.9	29.9	105.4	105.9	7.1	7.2	5.6	1.7	1.7	5.0	2.6	2.5	3.1
						26.9		8.8		29.9		106.4		7.2			1.7			2.3		
				Middle	9.1	23.8	23.8	8.4	8.4	34.1	34.1	59.3	59.4	4.1	4.1		3.5	3.5		3.3	3.2	
						23.8		8.3		34.2		59.5		4.1			3.6			3.0		
				Bottom	17.0	23.2	23.2	8.7	8.7	34.7	34.7	55.0	55.0	3.9	3.9	3.9	10.0	9.7		3.9	3.7	
						23.2		8.7		34.7		55.0		3.9			9.5			3.5		
C2	Sunny	Calm	11:00	Surface	1.0	26.4	26.4	8.7	8.7	31.2	31.2	78.6	78.5	5.3	5.3	4.5	2.3	2.3	4.5	5.5	5.7	4.8
						26.4		8.6		31.2		78.4		5.3			2.2			5.8		
				Middle	13.0	23.9	23.9	8.4	8.3	34.1	34.1	54.3	54.3	3.8	3.8		5.7	5.8		4.3	4.5	
						23.9		8.3		34.1		54.3		3.8			5.8			4.7		
				Bottom	14.7	23.9	23.9	8.7	8.6	34.1	34.1	54.4	54.4	3.8	3.8	3.8	5.6	5.6		4.5	4.3	
						23.9		8.6		34.1		54.3		3.8			5.6			4.1		
G1	Sunny	Calm	11:22	Surface	1.1	26.3	26.3	8.8	8.7	30.3	30.2	92.7	92.6	6.3	6.3	5.9	2.0	2.0	2.3	3.8	3.9	4.3
						26.3		8.7		30.2		92.4		6.3			2.0			4.0		
				Middle	4.0	25.7	25.7	8.4	8.4	31.9	31.9	81.1	81.4	5.5	5.5		2.2	2.2		4.0	4.1	
						25.7		8.4		31.9		81.7		5.6			2.2			4.2		
				Bottom	7.1	25.3	25.3	8.7	8.7	32.5	32.5	71.6	71.5	4.9	4.9	4.9	2.6	2.6		5.0	4.8	
						25.2		8.7		32.6		71.3		4.9			2.6			4.6		
G2	Sunny	Calm	11:14	Surface	1.1	26.2	26.2	8.4	8.3	31.0	31.0	88.2	88.2	6.0	6.0	5.6	1.8	1.8	3.4	3.7	3.6	3.3
						26.2		8.3		30.9		88.1		6.0			1.8			3.5		
				Middle	5.1	25.3	25.4	8.6	8.5	32.4	32.2	74.4	75.7	5.1	5.2		2.4	2.3		3.2	3.3	
						25.5		8.5		32.1		76.9		5.3			2.2			3.4		
				Bottom	9.1	24.2	24.3	8.7	8.8	33.8	33.8	48.5	49.8	3.4	3.4	3.4	6.2	6.1		2.8	3.1	
						24.3		8.8		33.7		51.0		3.5			6.1			3.3		
G3	Sunny	Calm	11:25	Surface	1.0	26.2	26.2	8.4	8.4	30.6	30.7	90.0	90.2	6.1	6.1	5.7	2.4	2.3	2.3	3.6	3.5	4.0
						26.2		8.4		30.7		90.3		6.1			2.2			3.4		
				Middle	4.1	25.6	25.6	8.6	8.6	32.1	32.0	78.3	78.6	5.3	5.4		2.1	2.1		3.6	3.8	
						25.6		8.6		32.0		78.8		5.4			2.2			3.9		
				Bottom	7.1	25.3	25.3	8.5	8.5	32.4	32.4	72.9	72.9	5.0	5.0	5.0	2.4	2.4		4.4	4.6	
						25.3		8.4		32.4		72.8		5.0			2.4			4.8		
G4	Sunny	Calm	11:32	Surface	1.0	26.5	26.5	8.7	8.6	30.1	29.8	92.2	91.9	6.3	6.2	5.7	1.9	1.9	2.6	3.3	3.2	4.0
						26.5		8.6		29.6		91.5		6.2			1.9			3.0		
				Middle	4.0	25.5	25.5	8.8	8.7	32.3	32.3	76.4	77.0	5.2	5.3		2.2	2.2		4.1	4.2	
						25.5		8.7		32.3		77.6		5.3			2.1			4.2		
				Bottom	7.0	25.2	25.1	8.3	8.3	32.6	32.7	68.9	68.8	4.7	4.7	4.7	3.5	3.7		4.5	4.6	
						25.1		8.2		32.7		68.6		4.7			3.9			4.6		
M1	Sunny	Calm	11:19	Surface	1.0	26.2	26.2	8.6	8.5	30.8	30.8	81.8	81.7	5.6	5.6	5.5	2.0	2.0	2.3	5.8	5.5	5.2
						26.2		8.5		30.8		81.6		5.5			2.0			5.2		
				Middle	3.1	25.9	26.0	8.7	8.7	31.6	31.5	80.7	81.0	5.5	5.5		2.0	2.0		5.5	5.3	
						26.0		8.8		31.4		81.3		5.5			2.0			5.1		
				Bottom	5.1	25.7	25.6	8.7	8.7	32.0	32.1	68.7	68.5	4.7	4.7	4.7	2.9	2.9		4.5	4.7	
						25.6		8.7		32.1		68.3		4.7			3.0			4.8		
M2	Sunny	Calm	11:10	Surface	1.1	26.3	26.3	8.2	8.2	31.0	31.0	90.1	90.2	6.1	6.1	5.3	1.7	1.7	3.1	5.0	4.8	4.2
						26.3		8.2		31.0		90.3		6.1			1.7			4.6		
				Middle	6.1	24.7	24.7	8.2	8.2	33.2	33.2	64.6	65.0	4.4	4.5		3.3	3.3		4.4	4.4	
						24.7		8.1		33.2		65.3		4.5			3.3			4.3		
				Bottom	11.2	23.7	23.7	8.5	8.6	34.4	34.4	50.4	50.1	3.5	3.5	3.5	4.4	4.3		3.3	3.5	
						23.7		8.6		34.4		49.7		3.5			4.3			3.6		
M3	Sunny	Calm	11:29	Surface	1.1	26.1	26.2	8.3	8.3	30.9	30.9	90.0	90.6	6.1	6.2	6.0	2.3	2.4	2.3	5.5	5.8	4.6
						26.2		8.3		31.0		91.1		6.2			2.4			6.0		
				Middle	4.1	25.8	25.8	8.3	8.3	31.7	31.7	85.1	85.2	5.8	5.8		2.1	2.1		4.9	4.7	
						25.8		8.3		31.7		85.3		5.8			2.1			4.5		
				Bottom	7.0	25.4	25.4	8.3	8.3	32.3	32.4	73.2	72.9	5.0	5.0	5.0	2.3	2.4		3.2	3.4	
						25.3		8.3		32.5		72.6		5.0			2.5			3.6		
M4	Sunny	Calm	11:06	Surface	1.0	26.5	26.5	8.7	8.7	31.1	31.1	102.0	101.8	6.9	6.9	5.9	1.5	1.5	2.1	3.3	3.2	4.2
						26.5		8.7		31.1		101.6		6.9			1.5			3.1		
				Middle	5.1	25.3	25.4	8.8	8.7	32.7	32.7	69.7	72.0	4.8	4.9		2.1	2.0		4.6	4.4	
						25.4		8.7		32.6		74.2		5.1			2.0			4.1		
				Bottom	9.0	24.4	24.4	8.5	8.4	33.8	33.8	52.7	52.7	3.6	3.6	3.6	2.9	2.8		4.9	5.2	
						24.4		8.4		33.8		52.6		3.6			2.8			5.4		
M5	Sunny	Calm	11:40	Surface	1.1	26.9	26.8	8.6	8.5	29.9	30.1	100.1	99.2	6.8	6.7	5.5	2.2	2.2	4.3	5.1	4.9	4.3
						26.7		8.5		30.3		98.2		6.6			2.2			4.6		
				Middle	6.1	24.5	24.5	8.7	8.7	33.4	33.4	62.0	62.0	4.3	4.3		2.9	2.9		4.3	4.4	
						24.5		8.7		33.4		61.9		4.3			2.9			4.5		
				Bottom	11.1	23.3	23.3	8.6	8.6	34.6	34.6	55.5	55.5	3.9	3.9	3.9	8.0	7.9		3.7	3.6	
						23.3		8.6		34.6		55.5		3.9			7.9			3.4		
M6	Sunny	Calm	11:37	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	2.1	-	-	3.8
						-		-		-		-		-			-			-		
				Middle	2.1	26.1	26.1	8.2	8.2	31.2	31.2	91.6	91.6	6.2	6.2		8.0	8.0		3.6	3.8	
						26.1		8.3		31.2		91.6		6.2			8.0			3.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 8 June 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 11.7 NTU	***C1: 12.6 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 2.9 mg/L	***C1: 3.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 2.9 mg/L	***C1: 3.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.4 mg/L	***C1: 4.8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 02 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	14:57	Surface	1.0	28.7	28.7	8.5	8.5	30.8	30.8	193.1	193.3	12.6	12.6	8.8	1.2	1.2	2.8	2.8	2.6	2.6
						28.7		8.5		30.8		193.4		12.6			1.2			2.4		
				Middle	9.1	23.9	23.9	8.5	8.5	34.4	34.4	73.5	73.0	5.1	5.1		2.0	2.0		2.7	2.6	
						23.9		8.5		34.4		72.5		5.0			2.0			2.4		
				Bottom	17.1	23.2	23.2	8.5	8.5	34.7	34.7	67.3	67.3	4.7	4.7	4.7	5.2	5.2		2.6	2.5	
						23.2		8.4		34.7		67.3		4.7			5.2			2.4		
C2	Sunny	Calm	14:33	Surface	1.1	29.4	29.4	8.3	8.3	30.1	30.1	172.4	172.5	11.2	11.2	7.8	1.1	1.1	3.2	2.8	2.8	3.1
						29.3		8.3		30.1		172.6		11.2			1.2			2.7		
				Middle	16.2	23.8	23.8	8.4	8.4	34.5	34.5	65.3	65.2	4.5	4.5		2.5	2.4		3.3	3.2	
						23.8		8.3		34.5		65.1		4.5			2.4			3.1		
				Bottom	25.9	23.5	23.5	8.4	8.4	34.6	34.6	63.3	63.3	4.4	4.4	4.4	6.0	6.0		3.3	3.5	
						23.5		8.4		34.6		63.2		4.4			6.1			3.6		
G1	Sunny	Calm	14:46	Surface	1.1	27.7	27.7	8.5	8.5	31.1	31.0	186.3	186.4	12.3	12.3	8.3	1.5	1.5	2.7	4.2	4.0	3.5
						27.7		8.5		31.0		186.4		12.3			1.5			3.8		
				Middle	4.0	24.7	24.7	8.4	8.4	34.0	34.1	63.0	61.0	4.3	4.2		1.8	1.9		3.9	3.7	
						24.7		8.3		34.2		59.0		4.0			2.1			3.4		
				Bottom	7.0	23.7	23.7	8.5	8.5	34.6	34.6	60.1	60.4	4.2	4.2	4.2	5.0	4.8		3.1	2.9	
						23.7		8.4		34.6		60.6		4.2			4.5			2.6		
G2	Sunny	Calm	14:40	Surface	1.0	29.1	29.2	8.4	8.4	29.4	29.3	167.4	167.4	10.9	10.9	7.5	1.1	1.1	2.7	4.4	4.3	3.8
						29.3		8.4		29.3		167.4		10.9			1.1			4.1		
				Middle	5.0	24.1	24.1	8.3	8.4	34.4	34.4	60.3	60.1	4.2	4.1		3.9	3.8		4.0	4.1	
						24.1		8.4		34.4		59.8		4.1			3.8			4.1		
				Bottom	9.0	23.6	23.6	8.3	8.4	34.6	34.6	62.8	62.9	4.4	4.4	4.4	3.1	3.1		3.4	3.1	
						23.6		8.4		34.6		63.0		4.4			3.0			2.8		
G3	Sunny	Calm	14:48	Surface	1.1	27.8	27.8	8.4	8.4	30.9	30.9	184.9	185.1	12.2	12.2	8.3	1.4	1.4	2.9	3.1	3.3	4.3
						27.8		8.5		30.9		185.3		12.3			1.4			3.5		
				Middle	4.0	24.7	24.7	8.3	8.3	34.1	34.1	63.2	62.4	4.3	4.3		2.5	2.6		4.6	4.4	
						24.7		8.3		34.2		61.5		4.2			2.8			4.2		
				Bottom	7.1	23.9	23.9	8.5	8.5	34.5	34.5	55.8	55.9	3.9	3.9	3.9	4.8	4.8		5.2	5.1	
						23.9		8.5		34.5		55.9		3.9			4.8			4.9		
G4	Sunny	Calm	14:53	Surface	1.0	28.1	28.1	8.4	8.4	30.8	30.7	177.1	176.8	11.7	11.6	8.1	1.7	1.6	3.1	3.6	3.4	3.1
						28.1		8.5		30.7		176.4		11.6			1.6			3.2		
				Middle	4.0	24.3	24.3	8.4	8.4	34.3	34.3	68.0	65.9	4.7	4.5		3.1	2.6		2.9	3.0	
						24.2		8.4		34.3		63.7		4.4			2.2			3.1		
				Bottom	7.1	23.7	23.7	8.5	8.5	34.5	34.5	59.8	59.8	4.2	4.1	4.1	5.0	5.2		3.1	2.9	
						23.7		8.5		34.5		59.7		4.1			5.3			2.7		
M1	Sunny	Calm	14:44	Surface	1.1	27.7	27.8	8.3	8.3	30.2	30.0	118.4	122.1	7.9	8.1	6.8	1.2	1.1	1.6	4.0	4.2	3.9
						28.0		8.2		29.7		125.8		8.4			1.0			4.3		
				Middle	3.0	25.4	25.4	8.5	8.5	33.5	33.5	81.2	80.7	5.5	5.5		1.5	1.6		4.0	3.9	
						25.4		8.5		33.5		80.2		5.4			1.7			3.8		
				Bottom	5.0	24.8	24.7	8.5	8.5	34.0	34.0	57.0	54.6	3.9	3.7	3.7	2.2	2.2		3.8	3.7	
						24.6		8.5		34.1		52.1		3.6			2.3			3.5		
M2	Sunny	Calm	14:38	Surface	1.0	28.7	28.7	8.5	8.5	29.9	29.9	172.8	172.9	11.3	11.3	7.9	1.2	1.1	2.1	3.7	3.6	3.9
						28.6		8.5		30.0		173.0		11.4			1.1			3.4		
				Middle	6.5	23.9	23.9	8.4	8.4	34.5	34.5	66.6	65.0	4.6	4.5		2.4	2.5		3.4	3.6	
						23.9		8.5		34.5		63.4		4.4			2.5			3.8		
				Bottom	11.0	23.6	23.5	8.3	8.3	34.6	34.6	64.9	65.0	4.5	4.5	4.5	2.5	2.5		4.7	4.5	
						23.5		8.3		34.6		65.1		4.5			2.6			4.2		
M3	Sunny	Calm	14:52	Surface	1.0	27.9	27.9	8.3	8.3	29.9	30.0	156.1	157.1	10.4	10.4	7.1	1.1	1.1	3.0	4.5	4.7	4.1
						27.9		8.2		30.1		158.1		10.5			1.1			4.9		
				Middle	4.0	24.6	24.6	8.4	8.4	34.0	34.1	61.0	55.6	4.2	3.8		2.7	3.0		4.2	4.1	
						24.6		8.3		34.3		50.2		3.4			3.3			3.9		
				Bottom	7.1	23.9	23.9	8.4	8.4	34.5	34.5	52.7	52.8	3.7	3.7	3.7	5.0	4.9		3.8	3.6	
						23.9		8.4		34.5		52.8		3.7			4.8			3.4		
M4	Sunny	Calm	14:35	Surface	1.1	29.2	29.2	8.4	8.3	30.3	30.3	189.5	189.9	12.3	12.3	8.6	1.1	1.0	2.4	2.7	2.6	3.2
						29.2		8.3		30.3		190.3		12.3			1.0			2.5		
				Middle	5.0	24.7	24.5	8.4	8.4	33.9	34.0	73.9	72.2	5.1	5.0		1.8	1.8		2.9	3.1	
						24.4		8.4		34.0		70.5		4.9			1.7			3.2		
				Bottom	9.1	23.7	23.6	8.5	8.5	34.6	34.6	64.2	63.9	4.5	4.4	4.4	3.8	4.4		3.9	4.0	
						23.6		8.5		34.6		63.5		4.4			5.1			4.1		
M5	Sunny	Calm	14:56	Surface	1.1	28.1	28.2	8.3	8.3	31.3	31.3	149.4	150.9	9.8	9.9	7.4	1.6	1.5	3.0	4.6	4.5	4.1
						28.3		8.4		31.3		152.4		10.0			1.4			4.4		
				Middle	6.0	24.1	24.0	8.5	8.4	34.3	34.3	71.9	71.5	5.0	4.9		2.8	2.7		4.0	4.2	
						24.0		8.4		34.3		71.1		4.9			2.7			4.3		
				Bottom	11.0	23.2	23.2	8.3	8.3	34.7	34.7	66.7	66.7	4.7	4.7	4.7	4.7	4.7		3.5	3.7	
						23.2		8.3		34.7		66.6		4.7			4.7			3.8		
M6	Sunny	Calm	14:54	Surface	-	-	-	-	-	-	-	-	-	-	-	9.7	-	-	1.4	-	-	3.3
						-		-		-		-		-			-			-		
				Middle	2.0	27.5	27.4	8.3	8.3	31.7	31.7	148.9	145.9	9.9	9.7		1.4	1.4		3.1	3.3	
						27.3		8.2		31.8		142.9		9.5			1.4			3.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 2 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 7.3 NTU	***C2: 7.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 3.3 mg/L	***C2: 3.6 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 3.3 mg/L	***C2: 3.6 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.1 mg/L	***C2: 4.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 02 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	15:19	Surface	1.0	28.5	28.5	8.4	8.5	30.8	30.8	189.6	189.2	12.4	12.4	8.5	1.4	1.5	3.0	3.3	3.5	3.8
						28.4		8.5		30.8		188.8		12.4			1.6			3.6		
				Middle	9.0	23.8	23.8	8.4	8.3	34.4	34.4	66.0	66.1	4.6	4.6		2.2	2.2		3.4	3.7	
						23.8		8.3		34.4		66.1		4.6			2.1			3.9		
				Bottom	17.1	23.1	23.1	8.5	8.4	34.7	34.7	67.1	67.2	4.7	4.7	4.7	5.3	5.3		4.4	4.2	
						23.2		8.4		34.7		67.2		4.7			5.3			4.0		
C2	Sunny	Calm	14:59	Surface	1.1	28.5	28.5	8.3	8.3	30.7	30.7	173.6	172.1	11.4	11.3	9.5	1.5	1.6	2.5	4.0	3.9	3.5
						28.6		8.2		30.7		170.6		11.2			1.6			3.8		
				Middle	8.4	28.7	26.3	8.3	8.4	30.6	32.5	170.7	117.2	11.2	7.8		1.5	1.7		3.7	3.6	
						23.9		8.4		34.5		63.7		4.4			1.9			3.4		
				Bottom	20.9	23.9	23.7	8.5	8.4	34.5	34.5	63.7	63.4	4.4	4.4	4.4	1.9	4.1		3.3	3.2	
						23.5		8.4		34.6		63.1		4.4			6.3			3.0		
G1	Sunny	Calm	15:09	Surface	1.1	27.6	27.6	8.5	8.5	31.1	31.2	165.7	163.0	11.0	10.8	7.1	1.7	1.7	3.0	3.1	3.2	3.5
						27.6		8.5		31.3		160.3		10.6			1.7			3.3		
				Middle	4.0	24.6	24.6	8.5	8.5	34.1	34.1	48.7	49.0	3.3	3.4		2.0	2.0		3.4	3.5	
						24.6		8.5		34.1		49.3		3.4			2.0			3.6		
				Bottom	7.1	23.7	23.7	8.3	8.3	34.6	34.6	60.3	60.4	4.2	4.2	4.2	5.5	5.3		3.7	3.9	
						23.7		8.3		34.6		60.5		4.2			5.1			4.1		
G2	Sunny	Calm	15:03	Surface	1.0	28.9	29.0	8.5	8.5	29.3	29.3	153.4	153.0	10.1	10.0	6.8	1.2	1.2	2.6	3.0	3.2	3.8
						28.0		8.4		29.3		152.6		10.0			1.2			3.4		
				Middle	5.0	24.2	24.2	8.4	8.5	34.4	34.4	51.7	51.6	3.6	3.6		3.3	3.4		3.3	3.5	
						24.1		8.5		34.4		51.4		3.5			3.4			3.6		
				Bottom	9.0	23.6	23.6	8.4	8.4	34.6	34.6	63.3	63.3	4.4	4.4	4.4	3.6	3.3		4.8	4.8	
						23.6		8.5		34.6		63.2		4.4			3.0			4.7		
G3	Sunny	Calm	15:10	Surface	1.1	27.7	27.7	8.4	8.4	31.0	30.9	172.8	173.2	11.5	11.5	7.5	1.6	1.6	3.2	5.4	5.2	4.5
						27.7		8.5		30.8		173.6		11.5			1.6			4.9		
				Middle	4.1	24.5	24.5	8.5	8.5	34.3	34.2	50.0	50.2	3.4	3.4		3.3	3.3		4.2	4.4	
						24.5		8.5		34.2		50.3		3.5			3.3			4.6		
				Bottom	7.0	23.9	23.9	8.5	8.5	34.5	34.5	56.0	56.0	3.9	3.9	3.9	4.7	4.8		3.8	4.0	
						23.9		8.6		34.5		56.0		3.9			4.8			4.2		
G4	Sunny	Calm	15:13	Surface	1.1	26.4	26.4	8.4	8.4	32.3	32.2	125.9	129.5	8.5	8.7	6.4	2.1	2.0	3.5	5.2	5.0	4.1
						26.4		8.4		32.1		133.0		8.9			1.9			4.7		
				Middle	4.0	24.2	24.2	8.4	8.4	34.3	34.3	58.6	58.6	4.0	4.0		2.7	2.7		4.1	4.0	
						24.2		8.4		34.3		58.5		4.0			2.7			3.8		
				Bottom	7.1	23.7	23.7	8.4	8.4	34.5	34.5	59.3	59.4	4.1	4.1	4.1	5.9	5.7		3.3	3.4	
						23.7		8.4		34.5		59.5		4.1			5.5			3.5		
M1	Sunny	Calm	15:04	Surface	1.1	27.9	27.9	8.4	8.3	29.7	29.7	117.9	117.2	7.8	7.8	6.1	1.1	1.1	2.0	3.5	3.7	4.2
						27.9		8.3		29.6		116.4		7.7			1.1			3.8		
				Middle	3.0	25.0	24.9	8.4	8.4	33.8	33.8	65.7	64.9	4.5	4.4		2.0	2.1		4.4	4.2	
						24.9		8.4		33.9		64.1		4.4			2.1			4.0		
				Bottom	5.1	24.1	24.3	8.4	8.4	34.4	34.3	48.6	49.6	3.4	3.4	3.4	3.0	2.7		4.6	4.7	
						24.4		8.5		34.2		50.6		3.5			2.5			4.8		
M2	Sunny	Calm	15:03	Surface	1.1	28.8	28.8	8.4	8.3	29.8	29.8	166.7	160.9	10.9	10.5	7.5	1.0	1.0	2.0	4.0	3.9	4.3
						28.8		8.3		29.9		155.1		10.1			1.0			3.7		
				Middle	6.0	23.8	23.8	8.4	8.4	34.5	34.5	64.6	64.7	4.5	4.5		2.1	2.1		4.2	4.4	
						23.7		8.4		34.5		64.8		4.5			2.1			4.5		
				Bottom	11.0	23.5	23.5	8.4	8.3	34.6	34.6	65.1	65.1	4.5	4.5	4.5	2.8	2.8		4.4	4.6	
						23.5		8.3		34.6		65.1		4.5			2.7			4.7		
M3	Sunny	Calm	15:13	Surface	1.1	27.7	27.7	8.5	8.4	30.5	30.5	153.5	149.3	10.2	9.9	6.6	1.3	1.3	3.1	3.1	3.3	3.6
						27.7		8.4		30.4		145.0		9.6			1.4			3.4		
				Middle	4.1	24.4	24.4	8.4	8.4	34.3	34.2	47.2	49.2	3.2	3.4		3.3	3.2		3.8	3.7	
						24.5		8.4		34.2		51.1		3.5			3.1			3.6		
				Bottom	7.0	23.9	23.9	8.3	8.4	34.5	34.5	52.9	52.9	3.7	3.7	3.7	4.8	4.7		4.1	4.0	
						23.9		8.4		34.5		52.9		3.7			4.7			3.8		
M4	Sunny	Calm	15:00	Surface	1.1	29.4	29.4	8.4	8.4	30.3	30.2	189.5	186.5	12.3	12.1	8.3	1.1	1.0	3.1	3.7	3.6	3.9
						29.4		8.4		30.2		183.5		11.9			1.0			3.4		
				Middle	5.1	24.3	24.3	8.4	8.4	34.1	34.1	67.0	67.1	4.6	4.6		1.7	1.7		3.7	3.9	
						24.4		8.4		34.1		67.2		4.6			1.7			4.0		
				Bottom	9.0	23.5	23.5	8.3	8.3	34.6	34.6	62.5	62.7	4.4	4.4	4.4	6.7	6.5		4.5	4.4	
						23.5		8.3		34.6		62.8		4.4			6.3			4.2		
M5	Sunny	Calm	15:18	Surface	1.0	28.1	28.1	8.5	8.5	31.3	31.3	134.5	133.3	8.8	8.8	6.6	1.7	1.7	3.1	4.5	4.3	3.9
						28.1		8.5		31.3		132.1		8.7			1.8			4.1		
				Middle	6.1	24.0	23.9	8.4	8.5	34.3	34.3	64.7	64.9	4.5	4.5		2.8	2.9		4.0	3.9	
						23.9		8.5		34.4		65.0		4.5			3.1			3.7		
				Bottom	11.0	23.3	23.3	8.3	8.4	34.7	34.7	66.1	66.3	4.6	4.6	4.6	4.4	4.5		3.5	3.4	
						23.3		8.4		34.7		66.4		4.6			4.6			3.3		
M6	Sunny	Calm	15:17	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	1.4	-	-	5.6
						-		-		-		-		-			-			-		
				Middle	2.1	26.7	26.8	8.4	8.3	32.3	32.2	102.3	108.7	6.8	7.3		8.0	8.0		5.3	5.6	
						26.9		8.3		32.1		115.1		7.7			8.0			5.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 2 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 6.4 NTU	***C1: 6.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.1 mg/L	***C1: 4.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.1 mg/L	***C1: 4.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 5.0 mg/L	***C1: 5.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 04 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	10:15	Surface	1.1	26.1	26.1	8.5	8.5	33.4	33.4	77.4	77.1	5.4	5.4	5.2	3.3	3.4	3.5	5.9	5.8	6.4
						26.1		8.5		33.4		76.8		5.4			3.5			5.6		
				Middle	8.6	25.5	25.6	8.5	8.5	34.1	34.0	70.3	70.5	4.9	4.9		3.6	3.6		6.4	6.3	
						25.7		8.5		33.9		70.6		4.9			3.7			6.2		
				Bottom	16.1	25.3	25.3	8.5	8.5	34.4	34.4	68.7	68.7	4.8	4.8	4.8	3.3	3.4		7.4	7.3	
						25.3		8.5		34.4		68.6		4.8			3.4			7.1		
C2	Sunny	Calm	8:43	Surface	1.1	25.8	25.8	8.3	8.3	33.8	33.8	73.4	73.2	5.1	5.1	5.0	3.7	3.6	4.2	5.0	4.9	5.5
						25.8		8.4		33.8		73.0		5.1			3.6			4.7		
				Middle	16.1	25.5	25.5	8.4	8.4	34.2	34.2	68.8	69.1	4.8	4.8		4.2	4.2		5.2	5.5	
						25.5		8.4		34.1		69.4		4.9			4.1			5.7		
				Bottom	31.1	25.2	25.1	8.4	8.4	34.6	34.6	66.8	66.5	4.7	4.7	4.7	4.8	4.8		5.9	6.1	
						25.1		8.4		34.7		66.1		4.7			4.9			6.3		
G1	Sunny	Calm	9:22	Surface	1.1	26.5	26.5	8.5	8.5	34.0	34.0	79.2	79.2	5.5	5.5	5.5	1.1	1.2	1.8	5.8	6.0	5.7
						26.5		8.5		34.0		79.2		5.5			1.2			6.1		
				Middle	3.8	25.9	26.0	8.5	8.5	34.4	34.3	81.0	81.1	5.6	5.6		1.7	1.6		5.9	5.8	
						26.1		8.5		34.3		81.1		5.6			1.6			5.7		
				Bottom	6.5	25.2	25.2	8.5	8.5	34.8	34.8	69.0	68.5	4.8	4.8	4.8	2.5	2.5		5.3	5.5	
						25.1		8.5		34.9		68.0		4.8			2.6			5.6		
G2	Sunny	Calm	9:03	Surface	1.1	26.7	26.7	8.6	8.6	34.0	34.0	96.6	96.6	6.6	6.6	6.2	1.5	1.5	1.9	7.1	7.0	6.2
						26.7		8.6		34.0		96.5		6.6			1.5			6.8		
				Middle	5.0	25.9	26.0	8.5	8.5	34.3	34.3	83.0	83.7	5.8	5.8		1.6	1.6		6.4	6.3	
						26.1		8.6		34.2		84.4		5.9			1.6			6.2		
				Bottom	9.1	25.1	25.0	8.5	8.5	34.9	34.9	65.2	64.9	4.6	4.6	4.6	2.4	2.5		5.5	5.4	
						24.9		8.5		35.0		64.6		4.6			2.6			5.2		
G3	Sunny	Calm	9:28	Surface	1.0	26.1	26.1	8.5	8.5	34.3	34.2	81.9	81.9	5.7	5.7	5.6	1.7	1.7	2.1	6.7	6.5	5.9
						26.2		8.5		34.2		81.8		5.7			1.6			6.3		
				Middle	3.8	25.8	25.8	8.5	8.5	34.4	34.4	79.2	78.8	5.5	5.5		1.9	2.0		6.0	5.8	
						25.7		8.5		34.4		78.4		5.5			2.0			5.6		
				Bottom	6.6	25.1	25.1	8.5	8.5	34.9	34.9	66.7	66.1	4.7	4.6	4.6	2.6	2.6		5.4	5.3	
						25.1		8.5		34.9		65.4		4.6			2.5			5.1		
G4	Sunny	Calm	9:44	Surface	1.1	26.0	26.1	8.5	8.5	34.3	34.3	86.5	87.2	6.0	6.0	5.7	1.8	1.7	2.2	6.6	6.5	5.7
						26.2		8.5		34.2		87.8		6.1			1.7			6.4		
				Middle	3.8	25.6	25.5	8.5	8.5	34.6	34.6	76.7	76.5	5.4	5.3		2.0	2.0		5.5	5.7	
						25.5		8.5		34.6		76.3		5.3			2.1			5.8		
				Bottom	6.5	25.3	25.3	8.5	8.5	34.8	34.7	69.7	70.0	4.9	4.9	4.9	3.2	2.9		5.0	4.9	
						25.3		8.5		34.7		70.2		4.9			2.7			4.8		
M1	Sunny	Calm	9:10	Surface	1.1	27.4	27.4	8.5	8.5	34.1	34.1	93.6	93.6	6.3	6.3	6.1	1.3	1.2	1.6	5.7	5.9	5.1
						27.4		8.5		34.1		93.5		6.3			1.2			6.1		
				Middle	3.1	26.2	26.2	8.5	8.5	34.2	34.2	83.0	83.4	5.8	5.8		1.6	1.5		4.8	5.0	
						26.3		8.5		34.3		83.7		5.8			1.5			5.1		
				Bottom	5.1	26.0	25.9	8.5	8.5	34.3	34.4	75.3	74.9	5.2	5.2	5.2	2.0	2.0		4.4	4.3	
						25.8		8.5		34.4		74.4		5.2			2.0			4.2		
M2	Sunny	Calm	8:56	Surface	1.1	26.1	26.1	8.5	8.5	34.0	34.0	84.9	85.3	5.9	5.9	6.0	1.8	1.8	1.9	6.0	5.8	5.0
						26.1		8.5		34.0		85.6		5.9			1.8			5.6		
				Middle	5.3	26.0	26.0	8.5	8.5	34.2	34.2	86.5	86.8	6.0	6.0		1.7	1.7		5.0	4.9	
						26.0		8.5		34.2		87.0		6.1			1.7			4.8		
				Bottom	9.5	25.5	25.4	8.5	8.5	34.6	34.6	74.9	74.1	5.2	5.2	5.2	2.1	2.2		4.4	4.2	
						25.3		8.5		34.7		73.2		5.1			2.2			3.9		
M3	Sunny	Calm	9:36	Surface	1.1	27.3	27.2	8.5	8.5	34.0	34.0	95.9	95.9	6.5	6.5	6.4	1.7	1.6	2.4	4.5	4.3	5.1
						27.2		8.5		34.1		95.9		6.5			1.5			4.1		
				Middle	3.8	25.7	25.8	8.6	8.6	34.8	34.8	88.3	89.2	6.2	6.2		1.7	1.7		5.0	5.2	
						25.9		8.6		34.8		90.0		6.2			1.6			5.4		
				Bottom	6.6	25.2	25.1	8.5	8.5	34.9	34.9	65.4	64.7	4.6	4.5	4.5	3.7	4.0		5.5	5.7	
						25.1		8.5		35.0		64.0		4.5			4.4			5.8		
M4	Sunny	Calm	8:50	Surface	1.1	26.1	26.1	8.5	8.5	34.0	34.0	88.0	88.0	6.1	6.1	6.1	1.9	1.9	1.8	5.0	4.9	4.4
						26.1		8.5		34.0		88.0		6.1			2.0			4.7		
				Middle	5.0	26.0	26.0	8.5	8.5	34.2	34.1	87.3	87.5	6.1	6.1		1.7	1.7		4.2	4.4	
						26.0		8.5		34.1		87.6		6.1			1.7			4.5		
				Bottom	9.1	25.2	25.2	8.5	8.5	34.7	34.7	75.0	74.8	5.3	5.3	5.3	1.7	1.7		3.8	4.0	
						25.1		8.5		34.8		74.5		5.2			1.7			4.1		
M5	Sunny	Calm	10:05	Surface	1.0	26.0	26.0	8.5	8.5	33.9	33.9	78.3	78.1	5.5	5.4	5.3	2.9	2.9	3.0	4.3	4.3	4.7
						26.0		8.5		33.9		77.9		5.4			2.9			4.2		
				Middle	5.6	25.9	25.9	8.5	8.5	33.9	33.9	75.0	75.1	5.2	5.2		3.0	3.0		4.8	4.6	
						25.9		8.5		33.9		75.1		5.2			3.0			4.4		
				Bottom	10.1	25.9	25.9	8.5	8.5	34.0	34.0	74.6	74.6	5.2	5.2	5.2	3.2	3.1		5.6	5.4	
						25.9		8.5		34.0		74.5		5.2			2.9			5.1		
M6	Sunny	Calm	9:53	Surface	-	-	-	-	-	-	-	-	-	-	-	6.1	-	-	1.7	-	0.0	5.4
						-		-		-		-		-			-			-		
				Middle	2.1	26.1	26.1	8.5	8.5	34.2	34.2	87.9	87.7	6.1	6.1		8.0	8.0		5.1	5.4	
						26.0		8.6		34.3		87.4		6.1			8.0			5.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	0.0	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 4 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 4.1 NTU	***C1: 4.4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 6.9 mg/L	***C1: 7.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 6.9 mg/L	***C1: 7.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 8.7 mg/L	***C1: 9.4 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 06 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	18:10	Surface	1.0	26.8	26.8	8.7	8.6	30.1	30.0	103.1	101.8	7.0	6.9	5.4	1.8	2.0	5.3	2.6	2.9	3.4
						26.9		8.6		29.9		100.4		6.8			2.1			3.1		
				Middle	9.2	23.8	23.8	8.2	8.3	34.1	34.1	55.9	56.0	3.9	3.9		3.8	3.7		3.5	3.4	
						23.8		8.3		34.1		56.0		3.9			3.7			3.2		
				Bottom	17.1	23.2	23.2	8.6	8.5	34.7	34.7	54.8	54.9	3.8	3.8	3.8	10.4	10.3		4.3	4.1	
						23.2		8.5		34.7		54.9		3.8			10.2			3.8		
C2	Sunny	Calm	17:25	Surface	1.1	26.3	26.2	8.5	8.5	31.5	31.5	78.6	78.7	5.3	5.3	4.5	2.2	2.2	4.2	3.2	3.4	4.0
						26.2		8.4		31.5		78.7		5.3			2.2			3.5		
				Middle	12.7	24.0	24.0	8.5	8.4	34.0	34.0	54.2	54.2	3.8	3.8		5.8	5.8		4.2	4.3	
						23.9		8.4		34.1		54.2		3.8			5.7			4.3		
				Bottom	14.1	23.8	23.8	8.5	8.4	34.2	34.2	54.6	54.5	3.8	3.8	3.8	4.7	4.7		4.3	4.5	
						23.8		8.4		34.2		54.4		3.8			4.7			4.6		
G1	Sunny	Calm	17:45	Surface	1.1	26.2	26.2	8.8	8.8	30.7	30.8	90.3	89.9	6.1	6.1	5.8	2.0	2.1	2.3	4.6	4.8	5.6
						26.1		8.7		30.9		89.4		6.1			2.1			5.0		
				Middle	4.0	25.7	25.7	8.3	8.3	31.9	31.9	79.4	79.5	5.4	5.4		2.1	2.1		4.9	5.1	
						25.7		8.4		31.9		79.6		5.4			2.1			5.2		
				Bottom	7.1	25.2	25.2	8.6	8.6	32.6	32.6	70.4	70.6	4.8	4.8	4.8	2.7	2.7		6.8	7.0	
						25.2		8.6		32.6		70.8		4.8			2.7			7.2		
G2	Sunny	Calm	17:37	Surface	1.1	26.2	26.2	8.5	8.5	30.9	30.9	85.5	85.2	5.8	5.8	5.3	1.8	1.9	3.5	4.8	5.0	4.1
						26.2		8.6		30.9		84.8		5.8			1.9			5.1		
				Middle	5.0	25.3	25.3	8.4	8.4	32.5	32.4	70.5	70.7	4.8	4.8		2.6	2.5		4.0	3.9	
						25.3		8.5		32.4		70.8		4.8			2.5			3.7		
				Bottom	8.9	24.3	24.3	8.5	8.5	33.7	33.7	51.4	51.3	3.6	3.5	3.5	6.0	6.0		3.2	3.5	
						24.3		8.6		33.7		51.2		3.5			6.0			3.8		
G3	Sunny	Calm	17:48	Surface	1.1	26.2	26.1	8.7	8.7	30.6	30.8	88.9	88.7	6.1	6.0	5.6	2.0	2.1	2.2	5.3	5.2	4.4
						26.1		8.7		30.9		88.4		6.0			2.1			5.1		
				Middle	4.0	25.6	25.6	8.3	8.3	32.1	32.1	76.3	76.3	5.2	5.2		2.2	2.3		4.8	4.7	
						25.6		8.2		32.1		76.3		5.2			2.3			4.6		
				Bottom	7.1	25.3	25.3	8.7	8.7	32.4	32.4	72.4	72.6	5.0	5.0	5.0	2.1	2.3		3.6	3.4	
						25.3		8.7		32.4		72.7		5.0			2.4			3.2		
G4	Sunny	Calm	17:55	Surface	1.1	26.4	26.4	8.7	8.6	30.3	30.2	91.0	90.8	6.2	6.2	5.6	2.1	2.1	3.1	5.1	5.2	4.8
						26.4		8.6		30.2		90.6		6.2			2.1			5.3		
				Middle	4.0	25.3	25.3	8.7	8.7	32.5	32.4	73.7	73.8	5.0	5.0		3.1	2.9		4.5	4.7	
						25.4		8.7		32.4		73.9		5.1			2.6			4.9		
				Bottom	7.1	25.1	25.1	8.8	8.7	32.8	32.8	67.8	68.1	4.7	4.7	4.7	4.3	4.2		4.6	4.5	
						25.1		8.7		32.8		68.4		4.7			4.2			4.3		
M1	Sunny	Calm	17:41	Surface	1.1	26.1	26.1	8.3	8.3	31.0	31.1	82.1	81.8	5.6	5.6	5.3	1.9	1.9	2.3	3.4	3.2	3.6
						26.0		8.3		31.2		81.5		5.5			1.9			3.0		
				Middle	3.0	25.7	25.7	8.6	8.6	32.0	31.9	74.8	75.2	5.1	5.1		2.5	2.4		3.8	3.7	
						25.7		8.6		31.9		75.6		5.2			2.3			3.5		
				Bottom	5.0	25.5	25.5	8.5	8.5	32.2	32.2	66.8	67.0	4.6	4.6	4.6	2.7	2.7		3.8	4.1	
						25.5		8.5		32.2		67.1		4.6			2.6			4.3		
M2	Sunny	Calm	17:33	Surface	1.1	26.3	26.3	8.8	8.8	31.0	31.0	86.6	86.3	5.9	5.9	5.1	1.7	1.8	3.3	3.0	3.3	3.9
						26.2		8.7		31.0		85.9		5.8			1.8			3.5		
				Middle	6.1	24.7	24.7	8.7	8.7	33.2	33.1	60.7	63.4	4.2	4.4		3.9	3.7		3.8	4.0	
						24.8		8.7		33.1		66.1		4.5			3.5			4.1		
				Bottom	11.1	23.8	23.8	8.4	8.4	34.3	34.3	48.5	48.7	3.4	3.4	3.4	4.7	4.6		4.4	4.5	
						23.8		8.4		34.3		48.9		3.4			4.5			4.6		
M3	Sunny	Calm	17:51	Surface	1.1	26.1	26.0	8.4	8.4	31.2	31.3	90.0	89.3	6.1	6.1	5.8	2.4	2.3	2.4	4.8	5.0	3.8
						25.9		8.4		31.5		88.6		6.0			2.3			5.2		
				Middle	4.0	25.6	25.7	8.7	8.7	32.0	31.9	81.1	81.4	5.5	5.6		2.3	2.2		3.6	3.7	
						25.7		8.7		31.9		81.7		5.6			2.2			3.7		
				Bottom	7.1	25.3	25.3	8.4	8.4	32.5	32.5	71.8	72.1	4.9	4.9	4.9	2.5	2.5		2.6	2.7	
						25.3		8.4		32.5		72.3		4.9			2.5			2.7		
M4	Sunny	Calm	17:29	Surface	1.1	26.5	26.4	8.6	8.6	31.1	31.2	98.3	98.0	6.6	6.6	5.7	1.4	1.5	2.2	3.7	3.6	4.2
						26.2		8.7		31.4		97.6		6.6			1.6			3.4		
				Middle	5.1	25.3	25.3	8.6	8.6	32.6	32.6	70.4	70.4	4.8	4.8		2.2	2.2		3.8	4.0	
						25.4		8.6		32.6		70.4		4.8			2.2			4.1		
				Bottom	9.0	24.4	24.4	8.7	8.7	33.8	33.8	52.3	52.4	3.6	3.6	3.6	2.9	2.9		5.2	5.1	
						24.4		8.7		33.8		52.4		3.6			2.9			4.9		
M5	Sunny	Calm	18:04	Surface	1.1	26.3	26.3	8.4	8.4	31.4	31.5	87.2	86.2	5.9	5.8	5.0	2.2	2.3	4.3	3.5	3.4	3.2
						26.3		8.4		31.6		85.2		5.8			2.4			3.2		
				Middle	6.0	24.5	24.5	8.4	8.4	33.4	33.4	59.5	60.1	4.1	4.1		2.6	2.7		3.3	3.2	
						24.5		8.4		33.4		60.7		4.2			2.8			3.0		
				Bottom	11.0	23.3	23.3	8.7	8.7	34.6	34.6	55.3	55.3	3.9	3.9	3.9	7.8	7.8		2.8	3.0	
						23.3		8.7		34.6		55.3		3.9			7.8			3.1		
M6	Sunny	Calm	17:58	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	2.0	-	-	4.7
						-		-		-		-		-			-			-		
				Middle	2.1	26.1	26.1	8.7	8.8	31.2	31.2	92.0	92.3	6.3	6.3		2.1	2.0		4.9	4.7	
						26.2		8.8		31.1		92.6		6.3			2.0			4.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 6 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 5.7 NTU	***C2: 6.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.0 mg/L	***C2: 4.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.0 mg/L	***C2: 4.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 5.3 mg/L	***C2: 5.8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 06 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	11:45	Surface	1.1	26.9	26.9	8.7	8.7	29.9	29.9	105.4	105.9	7.1	7.2	5.6	1.7	1.7	5.0	2.6	2.5	3.1
						26.9		8.8		29.9		106.4		7.2			1.7			2.3		
				Middle	9.1	23.8	23.8	8.4	8.4	34.1	34.1	59.3	59.4	4.1	4.1		3.5	3.5		3.3	3.2	
						23.8		8.3		34.2		59.5		4.1			3.6			3.0		
				Bottom	17.0	23.2	23.2	8.7	8.7	34.7	34.7	55.0	55.0	3.9	3.9	3.9	10.0	9.7		3.9	3.7	
						23.2		8.7		34.7		55.0		3.9			9.5			3.5		
C2	Sunny	Calm	11:00	Surface	1.0	26.4	26.4	8.7	8.7	31.2	31.2	78.6	78.5	5.3	5.3	4.5	2.3	2.3	4.5	5.5	5.7	4.8
						26.4		8.6		31.2		78.4		5.3			2.2			5.8		
				Middle	13.0	23.9	23.9	8.4	8.3	34.1	34.1	54.3	54.3	3.8	3.8		5.7	5.8		4.3	4.5	
						23.9		8.3		34.1		54.3		3.8			5.8			4.7		
				Bottom	14.7	23.9	23.9	8.7	8.6	34.1	34.1	54.4	54.4	3.8	3.8	3.8	5.6	5.6		4.5	4.3	
						23.9		8.6		34.1		54.3		3.8			5.6			4.1		
G1	Sunny	Calm	11:22	Surface	1.1	26.3	26.3	8.8	8.7	30.3	30.2	92.7	92.6	6.3	6.3	5.9	2.0	2.0	2.3	3.8	3.9	4.3
						26.3		8.7		30.2		92.4		6.3			2.0			4.0		
				Middle	4.0	25.7	25.7	8.4	8.4	31.9	31.9	81.1	81.4	5.5	5.5		2.2	2.2		4.0	4.1	
						25.7		8.4		31.9		81.7		5.6			2.2			4.2		
				Bottom	7.1	25.3	25.3	8.7	8.7	32.5	32.5	71.6	71.5	4.9	4.9	4.9	2.6	2.6		5.0	4.8	
						25.2		8.7		32.6		71.3		4.9			2.6			4.6		
G2	Sunny	Calm	11:14	Surface	1.1	26.2	26.2	8.4	8.3	31.0	31.0	88.2	88.2	6.0	6.0	5.6	1.8	1.8	3.4	3.7	3.6	3.3
						26.2		8.3		30.9		88.1		6.0			1.8			3.5		
				Middle	5.1	25.3	25.4	8.6	8.5	32.4	32.2	74.4	75.7	5.1	5.2		2.4	2.3		3.2	3.3	
						25.5		8.5		32.1		76.9		5.3			2.2			3.4		
				Bottom	9.1	24.2	24.3	8.7	8.8	33.8	33.8	48.5	49.8	3.4	3.4	3.4	6.2	6.1		2.8	3.1	
						24.3		8.8		33.7		51.0		3.5			6.1			3.3		
G3	Sunny	Calm	11:25	Surface	1.0	26.2	26.2	8.4	8.4	30.6	30.7	90.0	90.2	6.1	6.1	5.7	2.4	2.3	2.3	3.6	3.5	4.0
						26.2		8.4		30.7		90.3		6.1			2.2			3.4		
				Middle	4.1	25.6	25.6	8.6	8.6	32.1	32.0	78.3	78.6	5.3	5.4		2.1	2.1		3.6	3.8	
						25.6		8.6		32.0		78.8		5.4			2.2			3.9		
				Bottom	7.1	25.3	25.3	8.5	8.5	32.4	32.4	72.9	72.9	5.0	5.0	5.0	2.4	2.4		4.4	4.6	
						25.3		8.4		32.4		72.8		5.0			2.4			4.8		
G4	Sunny	Calm	11:32	Surface	1.0	26.5	26.5	8.7	8.6	30.1	29.8	92.2	91.9	6.3	6.2	5.7	1.9	1.9	2.6	3.3	3.2	4.0
						26.5		8.6		29.6		91.5		6.2			1.9			3.0		
				Middle	4.0	25.5	25.5	8.8	8.7	32.3	32.3	76.4	77.0	5.2	5.3		2.2	2.2		4.1	4.2	
						25.5		8.7		32.3		77.6		5.3			2.1			4.2		
				Bottom	7.0	25.2	25.1	8.3	8.3	32.6	32.7	68.9	68.8	4.7	4.7	4.7	3.5	3.7		4.5	4.6	
						25.1		8.2		32.7		68.6		4.7			3.9			4.6		
M1	Sunny	Calm	11:19	Surface	1.0	26.2	26.2	8.6	8.5	30.8	30.8	81.8	81.7	5.6	5.6	5.5	2.0	2.0	2.3	5.8	5.5	5.2
						26.2		8.5		30.8		81.6		5.5			2.0			5.2		
				Middle	3.1	25.9	26.0	8.7	8.7	31.6	31.5	80.7	81.0	5.5	5.5		2.0	2.0		5.5	5.3	
						26.0		8.8		31.4		81.3		5.5			2.0			5.1		
				Bottom	5.1	25.7	25.6	8.7	8.7	32.0	32.1	68.7	68.5	4.7	4.7	4.7	2.9	2.9		4.5	4.7	
						25.6		8.7		32.1		68.3		4.7			3.0			4.8		
M2	Sunny	Calm	11:10	Surface	1.1	26.3	26.3	8.2	8.2	31.0	31.0	90.1	90.2	6.1	6.1	5.3	1.7	1.7	3.1	5.0	4.8	4.2
						26.3		8.2		31.0		90.3		6.1			1.7			4.6		
				Middle	6.1	24.7	24.7	8.2	8.2	33.2	33.2	64.6	65.0	4.4	4.5		3.3	3.3		4.4	4.4	
						24.7		8.1		33.2		65.3		4.5			3.3			4.3		
				Bottom	11.2	23.7	23.7	8.5	8.6	34.4	34.4	50.4	50.1	3.5	3.5	3.5	4.4	4.3		3.3	3.5	
						23.7		8.6		34.4		49.7		3.5			4.3			3.6		
M3	Sunny	Calm	11:29	Surface	1.1	26.1	26.2	8.3	8.3	30.9	30.9	90.0	90.6	6.1	6.2	6.0	2.3	2.4	2.3	5.5	5.8	4.6
						26.2		8.3		31.0		91.1		6.2			2.4			6.0		
				Middle	4.1	25.8	25.8	8.3	8.3	31.7	31.7	85.1	85.2	5.8	5.8		2.1	2.1		4.9	4.7	
						25.8		8.3		31.7		85.3		5.8			2.1			4.5		
				Bottom	7.0	25.4	25.4	8.3	8.3	32.3	32.4	73.2	72.9	5.0	5.0	5.0	2.3	2.4		3.2	3.4	
						25.3		8.3		32.5		72.6		5.0			2.5			3.6		
M4	Sunny	Calm	11:06	Surface	1.0	26.5	26.5	8.7	8.7	31.1	31.1	102.0	101.8	6.9	6.9	5.9	1.5	1.5	2.1	3.3	3.2	4.2
						26.5		8.7		31.1		101.6		6.9			1.5			3.1		
				Middle	5.1	25.3	25.4	8.8	8.7	32.7	32.7	69.7	72.0	4.8	4.9		2.1	2.0		4.6	4.4	
						25.4		8.7		32.6		74.2		5.1			2.0			4.1		
				Bottom	9.0	24.4	24.4	8.5	8.4	33.8	33.8	52.7	52.7	3.6	3.6	3.6	2.9	2.8		4.9	5.2	
						24.4		8.4		33.8		52.6		3.6			2.8			5.4		
M5	Sunny	Calm	11:40	Surface	1.1	26.9	26.8	8.6	8.5	29.9	30.1	100.1	99.2	6.8	6.7	5.5	2.2	2.2	4.3	5.1	4.9	4.3
						26.7		8.5		30.3		98.2		6.6			2.2			4.6		
				Middle	6.1	24.5	24.5	8.7	8.7	33.4	33.4	62.0	62.0	4.3	4.3		2.9	2.9		4.3	4.4	
						24.5		8.7		33.4		61.9		4.3			2.9			4.5		
				Bottom	11.1	23.3	23.3	8.6	8.6	34.6	34.6	55.5	55.5	3.9	3.9	3.9	8.0	7.9		3.7	3.6	
						23.3		8.6		34.6		55.5		3.9			7.9			3.4		
M6	Sunny	Calm	11:37	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	2.1	-	-	3.8
						-		-		-		-		-			-			-		
				Middle	2.1	26.1	26.1	8.2	8.2	31.2	31.2	91.6	91.6	6.2	6.2		8.0	8.0		3.6	3.8	
						26.1		8.3		31.2		91.6		6.2			8.0			3.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 6 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 11.7 NTU	***C1: 12.6 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 2.9 mg/L	***C1: 3.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 2.9 mg/L	***C1: 3.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.4 mg/L	***C1: 4.8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 09 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	13:31	Surface	1.0	25.7	25.2	8.2	8.2	34.8	34.8	91.3	91.3	6.7	6.7	6.7	1.6	1.7	1.5	3.2	3.0	3.4
						24.7		8.2		34.8		91.3		6.7			1.7			2.7		
				Middle	9.1	22.6	22.4	8.2	8.2	34.9	34.9	91.0	91.0	6.7	6.6		1.4	1.4		3.4	3.2	
						22.2		8.2		34.9		91.0		6.6			1.4			3.0		
				Bottom	17.0	22.4	22.4	8.2	8.2	34.9	34.9	90.9	90.9	6.7	6.6	6.6	1.5	1.4		3.8	3.9	
						22.3		8.2		34.9		90.8		6.6			1.4			4.0		
C2	Sunny	Moderate	11:49	Surface	1.0	26.2	26.0	8.2	8.2	34.9	34.9	91.3	91.3	6.7	6.7	6.7	1.4	1.4	2.5	2.6	2.4	3.2
						25.9		8.2		34.9		91.2		6.7			1.4			2.2		
				Middle	16.0	23.8	23.5	8.2	8.2	34.8	34.8	91.5	91.5	6.7	6.7		1.4	1.4		3.2	3.1	
						23.1		8.2		34.8		91.5		6.7			1.4			2.9		
				Bottom	31.5	22.7	22.8	8.2	8.2	35.1	35.1	90.3	90.2	6.6	6.6	6.6	4.6	4.7		3.8	4.0	
						22.8		8.2		35.0		90.1		6.6			4.8			4.2		
G1	Sunny	Moderate	12:27	Surface	1.0	27.3	27.3	8.2	8.2	34.8	34.8	92.8	92.9	6.7	6.8	6.8	1.3	1.2	1.5	3.4	3.6	3.9
						27.2		8.2		34.8		92.9		6.8			1.2			3.7		
				Middle	4.0	27.1	27.0	8.2	8.2	34.8	34.8	92.1	92.2	6.8	6.8		1.4	1.4		4.0	3.9	
						26.9		8.2		34.8		92.3		6.8			1.4			3.8		
				Bottom	7.1	23.1	23.1	8.2	8.2	35.0	35.0	91.3	91.1	6.7	6.7	6.7	1.9	2.0		4.0	4.2	
						23.1		8.2		35.0		90.9		6.7			2.0			4.4		
G2	Sunny	Moderate	12:07	Surface	1.0	27.1	27.2	8.2	8.2	34.9	34.8	92.0	92.0	6.7	6.7	6.7	1.5	1.5	1.5	3.0	2.9	3.1
						27.2		8.2		34.8		91.9		6.7			1.6			2.7		
				Middle	5.0	23.5	23.4	8.2	8.2	34.8	34.8	91.0	91.0	6.7	6.7		1.5	1.5		2.9	3.1	
						23.4		8.2		34.9		91.0		6.7			1.5			3.2		
				Bottom	9.0	23.0	22.9	8.2	8.2	35.1	35.1	89.5	89.3	6.5	6.5	6.5	1.5	1.5		3.5	3.5	
						22.9		8.2		35.1		89.0		6.5			1.5			3.5		
G3	Sunny	Moderate	12:34	Surface	1.0	27.5	27.6	8.2	8.2	34.8	34.8	90.7	90.8	6.5	6.6	6.7	1.3	1.3	1.6	3.3	3.4	3.1
						27.7		8.2		34.8		90.8		6.6			1.2			3.4		
				Middle	4.0	25.7	25.4	8.2	8.2	34.8	34.8	91.8	91.9	6.7	6.7		1.4	1.6		3.1	3.2	
						25.2		8.2		34.8		91.9		6.7			1.7			3.3		
				Bottom	7.0	23.5	23.3	8.2	8.2	35.0	35.0	90.1	90.0	6.6	6.6	6.6	1.9	2.0		2.7	2.8	
						23.1		8.2		35.0		89.9		6.6			2.0			2.9		
G4	Sunny	Moderate	12:48	Surface	1.0	27.2	27.2	8.2	8.2	34.8	34.8	92.5	92.6	6.6	6.7	6.7	1.1	1.2	1.9	5.7	5.5	4.6
						27.1		8.2		34.8		92.7		6.8			1.2			5.3		
				Middle	4.0	26.8	26.8	8.2	8.2	34.8	34.8	92.1	92.2	6.7	6.8		1.3	1.3		5.2	5.1	
						26.8		8.2		34.8		92.3		6.8			1.3			5.0		
				Bottom	7.0	23.1	23.0	8.2	8.2	34.9	34.9	90.5	90.3	6.6	6.6	6.6	3.3	3.3		3.2	3.1	
						22.9		8.2		34.9		90.1		6.6			3.4			2.9		
M1	Sunny	Moderate	12:13	Surface	1.0	27.0	27.0	8.2	8.2	34.8	34.8	91.1	91.1	6.6	6.6	6.6	1.3	1.3	3.0	4.0	3.8	3.2
						27.0		8.2		34.8		91.1		6.6			1.2			3.6		
				Middle	3.0	26.9	26.9	8.2	8.2	34.8	34.8	91.1	91.1	6.7	6.7		3.3	3.4		3.5	3.4	
						26.9		8.2		34.8		91.1		6.7			3.4			3.3		
				Bottom	5.0	24.0	24.0	8.2	8.2	35.1	35.1	90.8	90.8	6.7	6.7	6.7	4.4	4.4		2.5	2.5	
						24.1		8.2		35.1		90.8		6.7			4.4			2.4		
M2	Sunny	Moderate	12:01	Surface	1.0	27.0	27.0	8.2	8.2	34.8	34.8	91.9	92.0	6.7	6.7	6.7	1.5	1.4	1.5	4.6	4.8	3.7
						27.0		8.2		34.9		92.0		6.8			1.4			5.0		
				Middle	5.5	22.5	22.5	8.2	8.2	34.9	34.9	91.6	91.7	6.7	6.7		1.4	1.4		3.8	3.7	
						22.6		8.2		34.9		91.7		6.7			1.5			3.5		
				Bottom	10.0	22.3	22.3	8.2	8.2	35.0	35.0	90.3	90.1	6.6	6.6	6.6	1.5	1.5		2.6	2.6	
						22.4		8.2		35.0		89.9		6.6			1.5			2.5		
M3	Sunny	Moderate	12:42	Surface	1.0	27.6	27.6	8.2	8.2	34.8	34.8	91.5	91.5	6.6	6.6	6.7	1.2	1.2	1.9	3.6	3.5	4.3
						27.7		8.2		34.8		91.5		6.7			1.2			3.4		
				Middle	4.1	25.4	26.5	8.2	8.2	34.8	34.8	91.1	91.1	6.7	6.7		1.4	1.4		4.8	4.6	
						27.6		8.2		34.8		91.0		6.7			1.4			4.4		
				Bottom	7.0	23.5	23.3	8.2	8.2	35.0	34.9	89.5	89.4	6.6	6.5	6.5	3.0	3.0		5.0	4.8	
						23.1		8.2		34.8		89.3		6.5			3.0			4.6		
M4	Sunny	Moderate	11:55	Surface	1.0	26.2	26.1	8.2	8.2	34.9	34.9	91.2	91.2	6.5	6.6	6.6	2.3	2.3	1.8	2.2	2.4	2.8
						26.1		8.2		34.9		91.2		6.7			2.4			2.5		
				Middle	4.0	23.7	23.8	8.2	8.2	34.9	34.9	91.0	91.0	6.7	6.7		1.5	1.5		2.4	2.6	
						23.8		8.2		34.9		91.0		6.7			1.6			2.8		
				Bottom	9.1	24.1	23.7	8.2	8.2	35.0	35.0	91.0	91.1	6.7	6.7	6.7	1.4	1.4		3.1	3.3	
						23.4		8.2		35.0		91.1		6.7			1.4			3.5		
M5	Sunny	Moderate	13:21	Surface	1.1	25.6	25.5	8.2	8.2	34.9	34.8	91.5	91.6	6.7	6.7	6.6	1.6	1.6	1.5	2.6	2.7	3.4
						25.5		8.2		34.8		91.6		6.7			1.6			2.7		
				Middle	6.1	22.7	22.8	8.2	8.2	34.9	34.9	90.8	90.9	6.6	6.6		1.3	1.4		3.6	3.4	
						22.8		8.2		34.8		91.0		6.5			1.4			3.2		
				Bottom	11.0	22.3	22.3	8.2	8.2	35.0	35.0	91.3	91.3	6.7	6.7	6.7	1.5	1.5		4.2	4.0	
						22.3		8.3		35.0		91.2		6.7			1.4			3.8		
M6	Sunny	Moderate	13:03	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	1.8	-	0.0	2.7
						-		-		-		-		-			-			-		
				Middle	2.2	26.5	26.5	8.2	8.2	34.8	34.8	91.6	91.7	6.7	6.7		8.0	8.0		2.8	2.7	
						26.4		8.2		34.8		91.8		6.7			8.0			2.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	0.0	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 9 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 1.7 NTU	***C1: 1.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 3.5 mg/L	***C1: 3.8 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 3.5 mg/L	***C1: 3.8 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.7 mg/L	***C1: 5.1 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 11 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	14:48	Surface	1.0	24.9	24.9	8.5	8.5	33.0	33.0	75.2	75.1	5.2	5.1	5.0	2.7	2.7	3.8	4.5	4.4	4.0
						24.9		8.6		33.0		74.9		5.1			2.7			4.2		
				Middle	9.1	24.0	24.0	8.5	8.6	33.7	33.7	69.8	70.0	4.9	4.9		3.1	3.1		3.7	3.9	
						24.1		8.6		33.6		70.2		4.9			3.1			4.1		
				Bottom	15.6	23.1	23.1	8.4	8.5	34.3	34.3	62.5	62.5	4.4	4.4	4.4	5.5	5.5		3.8	3.9	
						23.1		8.5		34.3		62.5		4.4			5.4			3.9		
C2	Sunny	Calm	13:57	Surface	0.9	25.2	25.3	8.4	8.5	32.7	32.6	75.4	75.5	5.2	5.2	4.8	2.6	2.6	4.4	3.1	3.3	4.4
						25.3		8.5		32.6		75.5		5.2			2.6			3.5		
				Middle	15.9	23.5	23.5	8.6	8.6	34.0	34.0	63.9	63.9	4.5	4.5		5.2	5.4		4.2	4.4	
						23.5		8.6		34.0		63.9		4.5			5.6			4.5		
				Bottom	17.1	23.5	23.5	8.6	8.6	34.0	34.0	63.9	63.9	4.5	4.5	4.5	5.3	5.3		5.9	5.7	
						23.5		8.7		34.0		63.8		4.5			5.3			5.4		
G1	Sunny	Calm	14:22	Surface	0.9	26.3	26.4	8.4	8.5	30.6	30.4	87.2	86.5	5.9	5.9	5.7	3.1	3.1	2.4	2.8	3.0	3.5
						26.4		8.5		30.3		85.7		5.8			3.1			3.2		
				Middle	4.2	24.5	24.5	8.5	8.4	33.4	33.4	80.1	80.3	5.5	5.5		2.0	2.0		3.5	3.6	
						24.5		8.4		33.4		80.4		5.5			2.0			3.7		
				Bottom	6.9	23.7	23.7	8.3	8.4	34.0	33.9	71.4	71.5	5.0	5.0	5.0	2.3	2.2		3.8	4.0	
						23.7		8.4		33.9		71.5		5.0			2.2			4.1		
G2	Sunny	Calm	14:12	Surface	1.2	25.5	25.5	8.6	8.5	33.0	33.0	95.8	95.8	6.5	6.5	5.9	1.5	1.5	3.3	3.3	3.5	3.2
						25.5		8.5		33.0		95.7		6.5			1.5			3.7		
				Middle	5.0	23.9	23.9	8.6	8.5	33.8	33.8	74.7	74.8	5.2	5.2		2.3	2.3		3.2	3.4	
						23.9		8.5		33.8		74.9		5.2			2.3			3.5		
				Bottom	9.1	23.3	23.3	8.6	8.6	34.3	34.3	61.8	61.7	4.3	4.3	4.3	5.9	6.1		2.9	2.9	
						23.3		8.7		34.3		61.5		4.3			6.3			2.8		
G3	Sunny	Calm	14:26	Surface	1.1	26.4	26.4	8.4	8.4	31.8	31.9	94.5	94.5	6.4	6.4	6.1	1.2	1.2	2.2	3.4	3.2	3.6
						26.4		8.4		31.9		94.4		6.4			1.2			3.0		
				Middle	4.2	24.6	24.7	8.5	8.5	33.3	33.3	84.4	84.6	5.8	5.8		2.1	2.0		3.4	3.5	
						24.7		8.5		33.3		84.7		5.8			1.9			3.6		
				Bottom	7.1	23.6	23.6	8.4	8.4	34.1	34.1	67.5	67.4	4.7	4.7	4.7	3.5	3.5		3.9	4.0	
						23.6		8.5		34.1		67.3		4.7			3.6			4.0		
G4	Sunny	Calm	14:33	Surface	0.9	26.3	26.3	8.6	8.5	32.2	32.2	97.7	97.8	6.6	6.6	6.1	1.7	1.5	2.0	3.1	3.0	3.4
						26.2		8.5		32.2		97.9		6.6			1.3			2.8		
				Middle	4.0	24.9	24.9	8.4	8.4	33.1	33.1	82.2	82.2	5.6	5.6		2.1	2.0		3.8	3.7	
						24.9		8.4		33.1		82.2		5.6			2.0			3.5		
				Bottom	7.1	23.5	23.5	8.4	8.4	34.1	34.1	70.1	70.1	4.9	4.9	4.9	2.5	2.5		4.0	3.7	
						23.5		8.4		34.1		70.0		4.9			2.5			3.4		
M1	Sunny	Calm	14:17	Surface	1.2	26.4	26.4	8.4	8.4	32.0	32.1	91.4	91.7	6.2	6.2	6.0	1.3	1.4	1.7	3.8	3.7	4.6
						26.4		8.4		32.1		91.9		6.2			1.4			3.6		
				Middle	3.2	25.1	25.1	8.5	8.5	33.0	33.0	84.1	84.2	5.8	5.8		1.4	1.4		4.4	4.6	
						25.1		8.4		33.0		84.2		5.8			1.3			4.8		
				Bottom	5.2	24.2	24.2	8.4	8.4	33.6	33.6	72.7	72.6	5.0	5.0	5.0	2.5	2.5		5.7	5.6	
						24.2		8.4		33.6		72.4		5.0			2.6			5.4		
M2	Sunny	Calm	14:07	Surface	1.0	25.5	25.4	8.5	8.5	33.1	33.1	94.7	94.3	6.4	6.4	6.3	1.6	1.6	1.8	4.0	4.2	4.9
						25.4		8.5		33.1		93.9		6.4			1.5			4.3		
				Middle	6.0	25.0	25.0	8.5	8.5	33.2	33.2	91.7	91.8	6.3	6.3		1.6	1.6		4.7	4.9	
						25.0		8.6		33.2		91.8		6.3			1.6			5.1		
				Bottom	11.0	23.1	23.1	8.4	8.4	34.3	34.3	65.7	65.7	4.6	4.6	4.6	2.2	2.2		5.9	5.7	
						23.1		8.4		34.3		65.6		4.6			2.2			5.5		
M3	Sunny	Calm	14:29	Surface	1.1	26.4	26.4	8.6	8.6	30.3	30.5	93.3	93.1	6.4	6.3	6.3	1.6	1.6	2.5	5.6	5.4	4.6
						26.4		8.7		30.6		92.8		6.3			1.6			5.2		
				Middle	4.1	25.0	25.1	8.4	8.4	33.1	33.1	91.6	91.5	6.3	6.3		1.8	1.7		4.7	4.6	
						25.1		8.4		33.0		91.3		6.3			1.7			4.4		
				Bottom	7.1	23.6	23.6	8.4	8.3	34.1	34.1	65.8	65.5	4.6	4.6	4.6	4.1	4.1		3.9	4.0	
						23.6		8.3		34.1		65.2		4.5			4.2			4.0		
M4	Sunny	Calm	14:02	Surface	1.0	25.2	25.2	8.3	8.3	32.7	32.7	77.6	77.4	5.3	5.3	5.2	2.9	2.9	3.3	3.0	2.9	3.8
						25.2		8.3		32.7		77.2		5.3			2.9			2.8		
				Middle	5.0	24.8	24.8	8.5	8.6	33.0	33.0	74.2	74.2	5.1	5.1		3.5	3.5		3.5	3.4	
						24.8		8.6		33.0		74.1		5.1			3.5			3.2		
				Bottom	9.0	24.3	24.3	8.5	8.4	33.5	33.5	71.6	71.5	5.0	4.9	4.9	3.5	3.5		4.9	5.2	
						24.3		8.4		33.5		71.4		4.9			3.4			5.5		
M5	Sunny	Calm	14:43	Surface	1.1	24.6	24.6	8.4	8.4	33.5	33.5	83.5	83.1	5.7	5.7	5.5	2.3	2.3	3.1	3.4	3.6	4.0
						24.6		8.4		33.5		82.6		5.7			2.3			3.7		
				Middle	6.0	24.4	24.4	8.3	8.3	33.6	33.5	77.3	77.4	5.3	5.3		2.6	2.6		4.2	4.1	
						24.4		8.3		33.5		77.5		5.4			2.6			4.0		
				Bottom	11.1	23.4	23.4	8.5	8.4	34.1	34.1	65.5	65.4	4.6	4.6	4.6	4.4	4.4		4.2	4.4	
						23.4		8.4		34.1		65.2		4.6			4.4			4.6		
M6	Sunny	Calm	14:39	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	1.6	-	-	4.0
						-		-		-		-		-			-			-		
				Middle	1.9	25.5	25.5	8.6	8.5	32.9	32.9	97.9	98.0	6.7	6.7		1.6	1.6		3.9	4.0	
						25.5		8.5		32.9		98.0		6.7			1.6			4.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 11 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 6.4 NTU	***C2: 6.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.0 mg/L	***C2: 4.3 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.0 mg/L	***C2: 4.3 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 6.8 mg/L	***C2: 7.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 11 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	14:50	Surface	1.1	24.9	24.8	8.4	8.4	33.0	33.0	72.3	72.2	5.0	5.0	4.9	2.9	2.9	3.9	3.5	3.3	4.2
						24.8		8.3		33.1		72.1		5.0			2.9			3.1		
				Middle	8.9	24.1	24.1	8.5	8.5	33.7	33.7	69.9	69.9	4.9	4.9		3.2	3.2		4.3	4.5	
						24.1		8.5		33.7		69.9		4.9			3.2			4.6		
				Bottom	16.5	23.1	23.2	8.5	8.5	34.3	34.3	62.3	62.4	4.4	4.4	4.4	5.7	5.6		4.8	4.9	
						23.2		8.6		34.3		62.4		4.4			5.5			5.0		
C2	Sunny	Calm	13:59	Surface	1.0	25.5	25.5	8.6	8.6	32.5	32.5	76.0	76.1	5.2	5.2	4.8	2.2	2.2	4.2	5.7	5.5	4.3
						25.5		8.6		32.5		76.1		5.2			2.3			5.3		
				Middle	15.9	23.5	23.5	8.4	8.4	34.0	34.0	64.0	64.0	4.5	4.5		5.2	5.2		4.4	4.3	
						23.5		8.4		34.0		64.0		4.5			5.2			4.1		
				Bottom	20.4	23.6	23.6	8.3	8.3	34.0	34.0	64.0	64.0	4.5	4.5	4.5	5.2	5.2		3.2	3.0	
						23.6		8.3		34.0		63.9		4.5			5.2			2.8		
G1	Sunny	Calm	14:23	Surface	0.9	26.1	26.2	8.3	8.3	31.5	31.4	87.9	88.1	6.0	6.0	5.8	1.2	1.2	1.8	5.5	5.3	5.8
						26.3		8.2		31.2		88.2		6.0			1.2			5.0		
				Middle	4.1	24.7	24.7	8.4	8.5	33.3	33.3	83.0	83.1	5.7	5.7		1.7	1.7		6.2	6.0	
						24.7		8.5		33.3		83.1		5.7			1.7			5.7		
				Bottom	7.2	23.8	23.8	8.5	8.4	33.9	33.9	72.6	72.5	5.1	5.0	5.0	2.6	2.6		6.1	6.3	
						23.8		8.4		33.9		72.4		5.0			2.6			6.5		
G2	Sunny	Calm	14:13	Surface	1.1	25.5	25.5	8.5	8.6	33.0	33.0	94.3	94.4	6.4	6.4	5.8	1.6	1.6	3.0	4.9	4.7	6.0
						25.5		8.6		33.0		94.5		6.4			1.6			4.5		
				Middle	5.1	23.9	23.9	8.5	8.4	33.8	33.8	74.6	74.7	5.2	5.2		2.2	2.2		6.1	5.9	
						23.9		8.4		33.8		74.8		5.2			2.1			5.7		
				Bottom	9.0	23.3	23.3	8.4	8.4	34.2	34.2	63.0	62.6	4.4	4.4	4.4	5.2	5.2		7.3	7.4	
						23.3		8.4		34.2		62.1		4.4			5.2			7.5		
G3	Sunny	Calm	14:27	Surface	1.0	26.1	26.1	8.4	8.4	32.2	32.1	91.0	91.1	6.2	6.2	6.0	1.3	1.3	2.5	3.6	3.8	4.4
						26.2		8.5		32.1		91.1		6.2			1.3			4.0		
				Middle	4.1	24.7	24.7	8.6	8.6	33.3	33.3	84.2	84.2	5.8	5.8		2.0	2.0		4.7	4.6	
						24.7		8.6		33.3		84.2		5.8			2.0			4.4		
				Bottom	6.0	23.6	23.6	8.3	8.3	34.1	34.1	65.5	65.7	4.6	4.6	4.6	4.3	4.3		4.6	4.9	
						23.7		8.3		34.0		65.8		4.6			4.3			5.1		
G4	Sunny	Calm	14:34	Surface	1.0	26.4	26.4	8.3	8.4	31.8	31.7	95.9	96.0	6.5	6.5	6.2	1.3	1.3	2.0	6.5	6.3	5.0
						26.4		8.4		31.7		96.0		6.5			1.3			6.0		
				Middle	4.1	25.1	25.2	8.6	8.6	33.0	33.0	86.2	86.7	5.9	5.9		2.1	2.0		4.7	4.9	
						25.2		8.6		33.0		87.1		5.9			2.0			5.0		
				Bottom	7.0	23.5	23.5	8.3	8.3	34.1	34.1	70.5	70.3	4.9	4.9	4.9	2.6	2.6		3.8	4.0	
						23.5		8.2		34.1		70.1		4.9			2.6			4.2		
M1	Sunny	Calm	14:18	Surface	1.1	26.3	26.3	8.5	8.4	32.2	32.2	85.9	87.6	5.8	5.9	5.8	1.2	1.1	2.0	3.4	3.6	4.4
						26.3		8.4		32.2		89.2		6.0			1.1			3.8		
				Middle	3.1	24.6	24.7	8.5	8.4	33.3	33.3	82.2	82.2	5.7	5.7		1.8	1.7		4.2	4.3	
						24.7		8.4		33.3		82.2		5.7			1.7			4.4		
				Bottom	5.1	24.1	24.1	8.5	8.5	33.7	33.7	67.8	67.7	4.7	4.7	4.7	2.9	3.0		5.6	5.4	
						24.0		8.5		33.8		67.5		4.7			3.1			5.1		
M2	Sunny	Calm	14:09	Surface	1.1	25.4	25.4	8.4	8.5	33.1	33.1	93.7	93.8	6.4	6.4	6.3	1.6	1.6	1.8	7.0	6.8	5.9
						25.4		8.5		33.1		93.9		6.4			1.6			6.5		
				Middle	6.1	25.0	25.0	8.4	8.4	33.2	33.2	91.8	92.0	6.3	6.3		1.6	1.6		5.9	6.1	
						25.0		8.5		33.2		92.1		6.3			1.6			6.3		
				Bottom	11.0	23.1	23.1	8.5	8.4	34.4	34.4	66.7	66.5	4.7	4.7	4.7	2.3	2.3		5.0	4.8	
						23.1		8.4		34.4		66.3		4.7			2.3			4.6		
M3	Sunny	Calm	14:30	Surface	1.0	26.3	26.4	8.5	8.5	31.6	31.7	93.4	94.5	6.3	6.4	6.3	1.2	1.2	2.4	3.3	3.3	4.6
						26.4		8.6		31.7		95.6		6.4			1.2			3.2		
				Middle	4.2	25.1	25.1	8.4	8.4	33.1	33.0	92.0	91.9	6.3	6.3		1.6	1.6		4.5	4.7	
						25.2		8.4		32.9		91.8		6.3			1.6			4.9		
				Bottom	6.9	23.6	23.6	8.6	8.5	34.1	34.1	63.6	63.4	4.4	4.4	4.4	4.4	4.5		5.9	5.7	
						23.6		8.5		34.1		63.1		4.4			4.5			5.5		
M4	Sunny	Calm	14:04	Surface	0.9	25.0	25.0	8.5	8.6	32.9	32.9	75.3	75.3	5.2	5.2	5.2	3.0	3.0	3.0	4.8	4.6	3.9
						25.0		8.6		32.9		75.3		5.2			3.0			4.3		
				Middle	5.2	25.0	25.0	8.3	8.3	33.0	33.0	76.9	76.9	5.3	5.3		3.0	3.0		3.5	3.7	
						25.0		8.3		33.0		76.8		5.3			3.0			3.8		
				Bottom	8.6	24.1	24.1	8.3	8.4	33.6	33.7	70.9	70.6	4.9	4.9	4.9	3.0	3.0		3.5	3.6	
						24.1		8.4		33.7		70.3		4.9			3.0			3.7		
M5	Sunny	Calm	14:45	Surface	1.0	24.6	24.6	8.4	8.4	33.5	33.5	78.8	79.1	5.4	5.4	5.4	2.2	2.2	3.0	5.1	5.4	4.4
						24.7		8.4		33.5		79.3		5.5			2.2			5.6		
				Middle	6.1	24.4	24.4	8.6	8.6	33.6	33.6	77.0	77.2	5.3	5.3		2.6	2.6		4.4	4.3	
						24.4		8.7		33.6		77.3		5.3			2.6			4.1		
				Bottom	11.0	23.4	23.4	8.4	8.3	34.1	34.1	65.1	65.0	4.6	4.5	4.5	4.2	4.2		3.8	3.6	
						23.4		8.3		34.1		64.9		4.5			4.2			3.4		
M6	Sunny	Calm	14:39	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	1.7	-	-	4.6
						-		-		-		-		-			-			-		
				Middle	1.9	25.5	25.5	8.4	8.4	32.9	32.9	98.4	98.5	6.7	6.7		8.0	8.0		4.8	4.6	
						25.6		8.3		32.9		98.6		6.7			8.0			4.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 11 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 6.7 NTU	***C1: 7.3 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.0 mg/L	***C1: 4.3 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.0 mg/L	***C1: 4.3 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 5.9 mg/L	***C1: 6.4 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 13 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	12:27	Surface	1.1	24.9	24.2	8.5	8.4	33.2	33.2	87.0	86.7	6.0	6.0	5.5	10.5	10.2	4.6	5.0	4.9	4.2
						23.6		8.4		33.2		86.3		5.9			9.8			4.8		
				Middle	8.9	24.7	23.9	8.3	8.3	34.0	34.0	71.4	71.5	5.0	5.0		1.6	1.6		4.3	4.2	
						23.1		8.2		34.0		71.6		5.0			1.6			4.0		
				Bottom	17.1	23.6	23.3	8.6	8.6	34.4	34.4	68.7	68.4	4.8	4.8	4.8	2.0	2.1		3.7	3.6	
						22.9		8.6		34.5		68.0		4.8			2.2			3.5		
C2	Sunny	Calm	11:48	Surface	1.0	24.7	24.7	8.4	8.4	33.2	33.2	88.8	88.7	6.1	6.1	5.4	1.4	1.4	3.0	4.9	5.1	4.2
						24.7		8.4		33.2		88.5		6.1			1.4			5.3		
				Middle	16.0	23.2	23.2	8.6	8.6	34.3	34.3	67.6	67.7	4.7	4.7		2.6	2.6		4.2	4.4	
						23.2		8.6		34.3		67.7		4.8			2.6			4.5		
				Bottom	31.0	23.2	23.0	8.5	8.4	34.3	34.4	67.5	66.1	4.7	4.7	4.7	5.1	5.1		3.2	3.1	
						22.8		8.4		34.5		64.7		4.6			5.1			3.0		
G1	Sunny	Calm	12:11	Surface	1.1	25.0	25.0	8.4	8.3	32.9	32.9	74.4	74.4	5.1	5.1	4.8	0.8	0.8	4.5	3.2	3.2	3.3
						25.0		8.3		32.9		74.3		5.1			0.8			3.2		
				Middle	4.2	23.9	24.0	8.5	8.5	33.9	33.8	63.0	63.5	4.4	4.4		4.7	4.3		3.3	3.2	
						24.1		8.6		33.7		63.9		4.4			4.0			3.1		
				Bottom	7.0	23.6	23.6	8.6	8.5	34.1	34.1	60.4	60.3	4.2	4.2	4.2	7.5	8.4		3.3	3.4	
						23.5		8.5		34.1		60.1		4.2			9.3			3.5		
G2	Sunny	Calm	12:06	Surface	0.9	25.3	25.3	8.6	8.6	33.1	33.1	94.9	94.9	6.5	6.5	5.7	1.2	1.2	2.2	2.8	2.9	3.7
						25.3		8.6		33.1		94.8		6.5			1.2			3.0		
				Middle	4.0	24.1	24.1	8.3	8.3	33.7	33.7	72.7	72.6	5.0	5.0		2.8	2.7		3.7	3.6	
						24.0		8.3		33.7		72.4		5.0			2.7			3.4		
				Bottom	9.1	23.2	23.2	8.4	8.4	34.2	34.2	65.9	65.9	4.6	4.6	4.6	2.7	2.7		4.5	4.7	
						23.2		8.4		34.3		65.8		4.6			2.7			4.9		
G3	Sunny	Calm	12:12	Surface	1.0	25.0	25.1	8.6	8.5	32.9	32.9	78.0	77.7	5.3	5.3	5.0	1.1	1.0	4.9	3.0	3.2	4.1
						25.1		8.5		32.8		77.4		5.3			0.9			3.4		
				Middle	4.0	23.8	23.8	8.4	8.5	33.9	33.9	65.3	66.1	4.5	4.6		3.1	2.7		3.3	3.5	
						23.9		8.5		33.8		66.9		4.7			2.4			3.6		
				Bottom	7.1	23.4	23.4	8.4	8.4	34.2	34.2	59.4	59.5	4.2	4.2	4.2	9.0	10.9		5.8	5.6	
						23.4		8.5		34.2		59.5		4.2			12.8			5.3		
G4	Sunny	Calm	12:17	Surface	1.1	25.1	25.0	8.5	8.6	32.8	32.8	79.5	79.4	5.5	5.4	5.2	10.3	12.9	9.3	3.0	3.1	2.7
						25.0		8.6		32.9		79.2		5.4			15.4			3.2		
				Middle	4.1	23.7	23.7	8.3	8.3	33.9	33.9	70.4	70.7	4.9	4.9		10.0	10.5		3.0	2.8	
						23.8		8.2		33.9		71.0		4.9			10.9			2.6		
				Bottom	7.1	23.6	23.5	8.3	8.3	34.1	34.1	65.4	65.2	4.6	4.6	4.6	4.4	4.4		2.1	2.2	
						23.5		8.2		34.1		65.0		4.5			4.5			2.2		
M1	Sunny	Calm	12:10	Surface	1.0	25.1	25.1	8.5	8.5	32.8	32.9	82.0	79.4	5.6	5.4	5.1	1.9	1.6	2.8	2.8	2.7	3.1
						25.0		8.6		33.0		76.7		5.3			1.4			2.6		
				Middle	3.0	24.5	24.6	8.5	8.5	33.4	33.3	69.0	69.8	4.8	4.8		2.2	1.9		3.1	3.2	
						24.7		8.6		33.3		70.6		4.9			1.7			3.3		
				Bottom	4.9	23.9	23.9	8.5	8.5	33.9	33.9	62.9	62.7	4.4	4.4	4.4	4.7	5.0		3.6	3.4	
						23.8		8.4		33.9		62.5		4.4			5.2			3.2		
M2	Sunny	Calm	12:02	Surface	1.0	25.3	25.2	8.6	8.6	32.9	33.0	92.3	92.3	6.3	6.3	5.6	10.4	9.9	7.5	2.2	2.4	3.4
						25.2		8.6		33.0		92.3		6.3			9.4			2.6		
				Middle	6.0	23.7	23.7	8.3	8.3	34.0	34.0	70.4	70.7	4.9	4.9		2.8	2.7		3.2	3.5	
						23.7		8.3		34.0		71.0		5.0			2.6			3.7		
				Bottom	11.2	23.0	23.0	8.3	8.3	34.4	34.4	63.2	63.2	4.4	4.4	4.4	9.6	10.0		4.3	4.3	
						23.0		8.2		34.4		63.1		4.4			10.3			4.2		
M3	Sunny	Calm	12:15	Surface	1.0	25.0	25.0	8.4	8.4	32.9	33.0	77.7	77.7	5.3	5.3	5.0	1.0	1.1	4.4	2.0	2.2	3.0
						25.0		8.4		33.0		77.7		5.3			1.1			2.4		
				Middle	4.0	24.5	24.6	8.5	8.5	33.4	33.3	68.4	69.1	4.7	4.8		5.1	4.9		2.6	2.7	
						24.8		8.5		33.2		69.8		4.8			4.8			2.8		
				Bottom	7.0	23.5	23.5	8.5	8.4	34.2	34.2	61.7	61.6	4.3	4.3	4.3	7.1	7.2		4.3	4.1	
						23.4		8.4		34.2		61.5		4.3			7.4			3.9		
M4	Sunny	Calm	11:57	Surface	1.1	24.5	24.5	8.5	8.6	33.4	33.4	82.2	82.1	5.7	5.7	5.5	1.8	1.8	2.0	4.2	4.1	3.3
						24.5		8.6		33.4		82.0		5.7			1.8			3.9		
				Middle	5.0	24.2	24.2	8.6	8.6	33.6	33.6	76.3	76.4	5.3	5.3		1.8	1.8		3.3	3.1	
						24.2		8.6		33.6		76.4		5.3			1.9			2.9		
				Bottom	9.0	23.4	23.4	8.5	8.5	34.1	34.1	68.4	68.3	4.8	4.8	4.8	2.3	2.3		2.7	2.7	
						23.4		8.5		34.1		68.2		4.8			2.3			2.7		
M5	Sunny	Calm	12:23	Surface	1.1	25.2	24.9	8.4	8.3	32.9	32.9	91.7	91.9	6.3	6.3	5.9	1.6	1.6	2.0	5.0	4.8	3.6
						24.6		8.3		33.0		92.1		6.3			1.6			4.6		
				Middle	6.1	25.1	24.6	8.6	8.6	33.4	33.3	80.7	80.8	5.6	5.6		1.9	1.8		3.4	3.3	
						24.1		8.6		33.3		80.9		5.6			1.7			3.2		
				Bottom	11.1	24.6	24.2	8.6	8.6	33.7	33.7	71.7	71.3	5.0	4.9	4.9	2.5	2.5		2.4	2.7	
						23.9		8.6		33.8		70.8		4.9			2.5			2.9		
M6	Sunny	Calm	12:18	Surface	-	-	-	-	-	-	-	-	-	-	-	5.3	-	-	2.0	-	-	2.3
						-		-		-		-		-			-			-		
				Middle	2.0	24.9	24.8	8.4	8.4	33.1	33.1	77.4	77.5	5.3	5.3		2.1	2.0		2.3	2.3	
						24.8		8.5		33.1		77.5		5.3			2.0			2.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 13 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 6.2 NTU	***C2: 6.7 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 6.1 mg/L	***C2: 6.6 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 6.1 mg/L	***C2: 6.6 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 3.7 mg/L	***C2: 4.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 13 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	12:28	Surface	1.2	24.2	24.3	8.4	8.4	33.6	33.5	79.2	79.5	5.5	5.5	5.2	1.6	1.6	1.9	3.9	3.9	3.5
						24.4		8.4		33.5		79.8		5.5			1.6			3.8		
				Middle	9.2	23.6	23.6	8.4	8.4	34.0	34.0	70.2	70.2	4.9	4.9		1.6	1.6		3.4	3.6	
						23.6		8.4		34.0		70.1		4.9			1.7			3.7		
				Bottom	17.0	22.8	22.8	8.4	8.4	34.5	34.5	67.3	67.0	4.8	4.7	4.7	2.4	2.5		3.2	3.1	
						22.7		8.5		34.6		66.6		4.7			2.6			2.9		
C2	Sunny	Calm	11:54	Surface	0.9	24.7	24.7	8.5	8.5	33.2	33.2	85.6	85.7	5.9	5.9	5.3	1.4	1.4	3.1	4.2	4.5	3.9
						24.7		8.5		33.1		85.8		5.9			1.4			4.8		
				Middle	16.1	23.2	23.2	8.6	8.6	34.3	34.3	66.4	66.3	4.7	4.7		2.8	2.8		3.9	4.0	
						23.2		8.6		34.3		66.2		4.7			2.8			4.1		
				Bottom	31.1	22.8	22.8	8.4	8.3	34.5	34.5	64.6	64.7	4.6	4.6	4.6	5.1	5.1		2.9	3.1	
						22.8		8.3		34.5		64.7		4.6			5.0			3.2		
G1	Sunny	Calm	12:12	Surface	1.0	24.7	24.8	8.6	8.5	33.2	33.1	72.9	75.0	5.0	5.2	4.7	2.2	1.8	7.0	3.1	3.3	3.6
						24.9		8.5		33.0		77.0		5.3			1.5			3.4		
				Middle	3.9	23.8	23.7	8.5	8.5	33.9	34.0	60.4	60.0	4.2	4.2		5.1	6.6		3.7	3.6	
						23.6		8.5		34.0		59.6		4.2			8.0			3.5		
				Bottom	7.0	23.5	23.5	8.4	8.3	34.2	34.2	60.0	60.0	4.2	4.2	4.2	11.8	12.7		4.1	4.0	
						23.5		8.3		34.2		59.9		4.2			13.6			3.8		
G2	Sunny	Calm	12:07	Surface	1.0	25.1	25.1	8.5	8.5	33.1	33.1	88.8	89.1	6.1	6.1	5.5	1.4	1.4	2.2	2.8	2.7	3.1
						25.1		8.5		33.1		89.3		6.1			1.4			2.5		
				Middle	5.1	24.2	24.2	8.3	8.4	33.6	33.6	72.2	72.3	5.0	5.0		2.7	2.7		3.2	3.1	
						24.2		8.4		33.6		72.4		5.0			2.7			2.9		
				Bottom	9.0	23.2	23.3	8.4	8.4	34.2	34.2	65.7	65.8	4.6	4.6	4.6	2.6	2.5		3.4	3.7	
						23.3		8.5		34.2		65.8		4.6			2.4			3.9		
G3	Sunny	Calm	12:14	Surface	1.1	25.0	25.1	8.4	8.3	32.9	32.8	74.6	74.9	5.1	5.1	4.7	1.1	1.0	11.6	3.6	3.5	3.9
						25.1		8.3		32.8		75.1		5.1			0.8			3.3		
				Middle	4.1	23.7	23.6	8.3	8.4	34.0	34.0	60.2	60.1	4.2	4.2		5.8	5.9		3.5	3.6	
						23.6		8.4		34.1		60.0		4.2			5.9			3.7		
				Bottom	7.1	23.4	23.4	8.4	8.4	34.2	34.2	59.6	59.7	4.2	4.2	4.2	45.2	27.9		5.0	4.8	
						23.4		8.5		34.2		59.7		4.2			10.6			4.5		
G4	Sunny	Calm	12:17	Surface	1.1	24.1	24.3	8.6	8.6	33.6	33.5	74.1	74.6	5.1	5.2	4.9	3.6	3.4	4.4	3.8	3.8	3.1
						24.4		8.6		33.4		75.1		5.2			3.2			3.7		
				Middle	3.6	23.6	23.5	8.4	8.4	34.0	34.1	65.3	65.1	4.6	4.6		4.7	4.7		3.4	3.2	
						23.5		8.3		34.1		64.9		4.5			4.8			3.0		
				Bottom	7.1	23.4	23.4	8.5	8.4	34.2	34.2	64.9	64.8	4.5	4.5	4.5	4.9	5.1		2.6	2.4	
						23.4		8.4		34.2		64.7		4.5			5.2			2.2		
M1	Sunny	Calm	12:10	Surface	0.9	24.5	24.6	8.4	8.4	33.4	33.3	73.3	73.8	5.1	5.1	4.8	2.3	2.0	4.6	2.3	2.2	3.2
						24.7		8.5		33.2		74.2		5.1			1.8			2.1		
				Middle	3.0	23.8	23.8	8.4	8.3	33.9	33.9	65.5	63.4	4.6	4.4		5.1	5.4		2.8	3.0	
						23.7		8.3		34.0		61.2		4.3			5.7			3.2		
				Bottom	5.1	23.6	23.6	8.4	8.4	34.1	34.1	61.8	61.7	4.3	4.3	4.3	6.3	6.3		4.3	4.5	
						23.6		8.4		34.1		61.5		4.3			6.3			4.7		
M2	Sunny	Calm	12:04	Surface	1.1	25.3	25.3	8.4	8.3	33.0	33.0	91.7	91.9	6.3	6.3	5.5	1.3	1.3	4.4	3.4	3.2	2.7
						25.3		8.3		33.0		92.1		6.3			1.3			3.0		
				Middle	6.0	23.7	23.7	8.5	8.5	33.9	33.9	67.6	67.5	4.7	4.7		2.9	2.9		2.4	2.6	
						23.7		8.5		33.9		67.3		4.7			3.0			2.8		
				Bottom	11.0	23.0	23.0	8.5	8.4	34.4	34.4	62.1	62.1	4.4	4.4	4.4	8.9	8.9		2.1	2.3	
						23.0		8.4		34.4		62.1		4.4			8.9			2.4		
M3	Sunny	Calm	12:15	Surface	1.0	25.2	25.2	8.5	8.5	32.9	32.8	73.6	74.7	5.0	5.1	4.7	3.2	2.9	6.3	3.5	3.7	3.0
						25.2		8.5		32.8		75.8		5.2			2.6			3.9		
				Middle	4.1	23.8	23.7	8.4	8.4	33.9	34.0	61.7	61.2	4.3	4.3		5.7	6.4		3.1	2.9	
						23.6		8.5		34.0		60.6		4.2			7.1			2.7		
				Bottom	7.1	23.5	23.5	8.4	8.4	34.2	34.2	61.0	60.8	4.3	4.3	4.3	9.8	9.8		2.6	2.4	
						23.5		8.5		34.2		60.6		4.2			9.7			2.1		
M4	Sunny	Calm	11:59	Surface	1.1	24.5	24.5	8.4	8.4	33.3	33.3	81.1	81.2	5.6	5.6	5.4	1.8	1.8	1.9	3.2	3.0	2.6
						24.5		8.4		33.3		81.2		5.6			1.8			2.8		
				Middle	4.9	24.1	24.1	8.3	8.3	33.6	33.6	74.6	74.4	5.2	5.2		1.8	1.8		2.4	2.6	
						24.1		8.3		33.6		74.2		5.1			1.8			2.7		
				Bottom	9.0	23.4	23.4	8.5	8.5	34.1	34.1	67.7	67.7	4.7	4.7	4.7	2.0	2.0		2.2	2.3	
						23.4		8.5		34.1		67.6		4.7			2.0			2.4		
M5	Sunny	Calm	12:23	Surface	1.0	24.8	24.8	8.5	8.4	33.2	33.2	87.4	87.8	6.0	6.0	5.7	1.7	1.6	2.2	3.1	2.9	2.6
						24.9		8.4		33.1		88.2		6.1			1.5			2.7		
				Middle	5.9	24.4	24.4	8.5	8.4	33.4	33.5	76.6	76.5	5.3	5.3		1.8	1.9		2.7	2.6	
						24.3		8.4		33.5		76.3		5.3			2.1			2.5		
				Bottom	11.0	23.7	23.7	8.5	8.5	33.9	34.0	70.3	70.1	4.9	4.9	4.9	2.9	3.1		2.3	2.2	
						23.6		8.5		34.0		69.8		4.9			3.3			2.1		
M6	Sunny	Calm	12:18	Surface	-	-	-	-	-	-	-	-	-	-	-	5.3	-	-	2.1	-	-	2.9
						-		-		-		-		-			-			-		
				Middle	2.0	24.8	24.8	8.5	8.5	33.1	33.1	77.6	77.6	5.3	5.3		8.0	8.0		2.9	2.9	
						24.8		8.5		33.1		77.6		5.3			8.0			2.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 13 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 3.0 NTU	***C1: 3.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.6 mg/L	***C1: 5.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.6 mg/L	***C1: 5.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 3.7 mg/L	***C1: 4.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 16 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	13:32	Surface	1.1	26.4	26.3	8.5	8.5	32.3	32.4	101.1	101.3	6.8	6.8	5.8	1.4	1.4	3.2	3.7	3.8	3.2
						26.3		8.6		32.4		101.5		6.8			1.3			3.9		
				Middle	9.0	23.3	23.4	8.4	8.5	34.0	33.9	68.3	69.7	4.8	4.9		2.3	2.3		3.2	3.1	
						23.6		8.5		33.8		71.0		5.0			2.3			3.0		
				Bottom	17.0	22.6	22.6	8.3	8.3	34.6	34.6	59.9	59.7	4.2	4.2	4.2	5.9	5.9		2.7	2.8	
						22.6		8.2		34.6		59.5		4.2			6.0			2.8		
C2	Sunny	Calm	12:37	Surface	1.0	25.9	25.9	8.4	8.4	32.7	32.7	95.8	96.0	6.5	6.5	5.5	1.3	1.4	3.9	2.6	2.8	3.7
						25.9		8.4		32.7		96.1		6.5			1.4			3.0		
				Middle	16.0	22.7	22.7	8.5	8.5	34.5	34.4	62.7	62.9	4.4	4.4		4.4	4.3		3.4	3.6	
						22.7		8.5		34.4		63.1		4.5			4.3			3.8		
				Bottom	31.0	22.6	22.6	8.5	8.5	34.5	34.5	60.7	60.7	4.3	4.3	4.3	6.0	5.9		4.4	4.7	
						22.6		8.5		34.5		60.7		4.3			5.8			4.9		
G1	Sunny	Calm	13:01	Surface	1.1	26.0	26.0	8.5	8.5	32.7	32.7	93.6	93.4	6.3	6.3	6.3	1.4	1.4	2.8	2.7	2.9	3.9
						26.0		8.5		32.7		93.1		6.3			1.4			3.0		
				Middle	4.0	25.3	25.4	8.5	8.5	32.9	32.8	90.9	91.2	6.2	6.2		2.0	1.9		3.8	3.9	
						25.5		8.5		32.8		91.5		6.2			1.8			4.0		
				Bottom	7.0	23.5	23.5	8.3	8.3	34.0	34.0	65.4	64.6	4.6	4.5	4.5	5.1	5.1		5.1	4.9	
						23.5		8.4		33.9		63.7		4.5			5.2			4.7		
G2	Sunny	Calm	12:53	Surface	1.1	26.3	26.3	8.4	8.4	32.5	32.5	95.7	95.6	6.4	6.4	5.9	1.4	1.3	3.5	3.4	3.6	4.4
						26.2		8.5		32.5		95.4		6.4			1.3			3.8		
				Middle	5.1	24.0	24.0	8.5	8.5	33.5	33.6	76.9	77.5	5.3	5.4		3.5	3.4		4.6	4.5	
						24.0		8.5		33.6		78.0		5.4			3.4			4.3		
				Bottom	9.0	23.1	23.0	8.5	8.5	34.2	34.2	62.1	61.2	4.4	4.3	4.3	5.2	5.8		4.9	5.1	
						23.0		8.5		34.3		60.3		4.2			6.5			5.3		
G3	Sunny	Calm	13:03	Surface	1.0	26.3	26.3	8.6	8.6	31.7	31.7	101.4	101.7	6.8	6.9	6.6	1.7	1.7	3.1	3.8	4.0	3.6
						26.3		8.7		31.6		102.0		6.9			1.7			4.2		
				Middle	4.1	24.6	24.6	8.5	8.5	33.2	33.2	91.2	93.0	6.3	6.4		2.7	2.8		3.4	3.6	
						24.6		8.5		33.1		94.7		6.5			2.8			3.7		
				Bottom	7.0	23.2	23.2	8.6	8.5	34.2	34.2	70.2	66.6	4.9	4.7	4.7	4.8	4.8		3.0	3.2	
						23.2		8.5		34.2		62.9		4.4			4.8			3.3		
G4	Sunny	Calm	13:10	Surface	1.0	25.7	25.7	8.6	8.6	32.6	32.7	106.8	108.5	7.2	7.4	7.4	1.4	1.4	2.4	4.8	4.6	4.2
						25.7		8.7		32.7		110.1		7.5			1.4			4.4		
				Middle	4.2	25.1	25.3	8.4	8.4	32.8	32.8	109.4	110.0	7.5	7.5		1.6	1.6		4.3	4.1	
						25.4		8.4		32.7		110.5		7.5			1.5			3.8		
				Bottom	7.0	23.2	23.2	8.5	8.5	34.1	34.1	74.6	72.2	5.2	5.1	5.1	3.6	4.1		3.6	3.8	
						23.2		8.5		34.1		69.8		4.9			4.7			4.0		
M1	Sunny	Calm	12:57	Surface	1.1	26.2	26.2	8.6	8.7	32.5	32.5	92.9	92.9	6.3	6.3	6.3	2.1	2.1	2.1	6.4	6.2	5.5
						26.2		8.7		32.5		92.9		6.3			2.2			6.0		
				Middle	3.0	26.0	26.0	8.5	8.5	32.6	32.6	92.8	92.8	6.3	6.3		2.6	2.5		5.8	5.6	
						26.1		8.4		32.5		92.7		6.3			2.5			5.4		
				Bottom	5.1	25.3	25.3	8.6	8.5	32.7	32.7	90.3	90.3	6.2	6.2	6.2	1.6	1.6		4.7	4.6	
						25.2		8.5		32.7		90.3		6.2			1.6			4.5		
M2	Sunny	Calm	12:49	Surface	1.1	25.9	25.9	8.3	8.3	32.6	32.6	96.0	95.8	6.5	6.5	5.7	1.4	1.4	2.4	4.6	4.5	4.3
						25.9		8.3		32.6		95.5		6.5			1.4			4.3		
				Middle	6.1	23.2	23.2	8.5	8.5	34.1	34.1	68.6	69.1	4.8	4.9		2.4	2.4		4.2	4.3	
						23.2		8.6		34.1		69.6		4.9			2.4			4.3		
				Bottom	11.1	22.9	22.9	8.6	8.6	34.3	34.3	64.8	64.3	4.6	4.5	4.5	3.4	3.4		4.2	4.1	
						22.9		8.5		34.4		63.8		4.5			3.4			3.9		
M3	Sunny	Calm	13:06	Surface	1.0	26.1	26.1	8.4	8.4	32.2	32.2	113.7	113.7	7.7	7.7	7.4	1.3	1.2	2.3	5.9	5.8	5.1
						26.1		8.4		32.2		113.7		7.7			1.2			5.6		
				Middle	4.1	25.3	25.4	8.5	8.5	32.8	32.8	99.9	104.2	6.8	7.1		1.4	1.4		5.3	5.1	
						25.4		8.5		32.7		108.5		7.4			1.5			4.8		
				Bottom	7.1	23.2	23.2	8.4	8.4	34.3	34.3	72.0	70.3	5.1	4.9	4.9	4.1	4.1		4.3	4.5	
						23.2		8.5		34.3		68.5		4.8			4.2			4.6		
M4	Sunny	Calm	12:45	Surface	1.0	26.0	25.9	8.4	8.4	32.6	32.6	97.0	96.8	6.6	6.5	5.8	1.4	1.4	2.3	7.7	7.5	6.7
						25.9		8.4		32.7		96.6		6.5			1.4			7.2		
				Middle	5.1	23.7	23.7	8.3	8.3	33.8	33.9	72.7	73.6	5.1	5.1		2.0	2.1		6.6	6.8	
						23.7		8.2		34.0		74.5		5.2			2.1			7.0		
				Bottom	9.1	23.2	23.1	8.5	8.6	34.1	34.2	65.1	65.0	4.6	4.6	4.6	3.3	3.4		6.0	5.8	
						23.0		8.6		34.2		64.9		4.6			3.5			5.5		
M5	Sunny	Calm	13:25	Surface	1.1	26.0	26.0	8.3	8.3	32.5	32.5	98.6	98.5	6.7	6.7	5.9	1.4	1.4	2.2	5.7	5.6	5.2
						26.0		8.3		32.5		98.4		6.6			1.5			5.5		
				Middle	6.0	23.8	23.8	8.3	8.3	33.6	33.6	74.1	74.9	5.2	5.2		2.1	2.1		5.3	5.2	
						23.8		8.2		33.6		75.6		5.3			2.0			5.1		
				Bottom	10.9	23.2	23.2	8.4	8.4	34.1	34.1	65.8	66.0	4.6	4.6	4.6	3.6	3.2		4.9	4.8	
						23.2		8.4		34.1		66.1		4.6			2.8			4.6		
M6	Sunny	Calm	13:20	Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-	1.6	-	-	6.0
						-		-		-		-		-			-			-		
				Middle	2.1	25.9	25.8	8.5	8.4	32.6	32.7	104.0	104.0	7.0	7.0		1.6	1.6		6.3	6.0	
						25.8		8.2		32.7		103.9		7.0			1.7			5.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 16 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 7.1 NTU	***C2: 7.6 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 3.4 mg/L	***C2: 3.6 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 3.4 mg/L	***C2: 3.6 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 5.6 mg/L	***C2: 6.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 16 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	18:19	Surface	1.1	26.3	26.3	8.5	8.6	32.1	32.2	96.5	96.9	6.5	6.5	5.6	1.4	1.4	3.4	7.3	7.1	6.0
						26.3		8.6		32.3		97.2		6.5			1.4			6.8		
				Middle	9.0	23.1	23.2	8.6	8.6	34.2	34.1	67.1	67.5	4.7	4.7		3.4	3.3		6.1	6.4	
						23.2		8.5		34.0		67.8		4.8			3.1			6.6		
				Bottom	17.1	22.7	22.6	8.6	8.6	34.5	34.5	60.8	60.7	4.3	4.3	4.3	5.4	5.4		4.8	4.6	
						22.6		8.5		34.6		60.6		4.3			5.5			4.4		
C2	Sunny	Calm	17:25	Surface	1.1	25.4	25.3	8.6	8.6	32.5	32.6	83.0	84.0	5.7	5.7	5.0	2.0	2.0	3.8	3.2	3.4	4.2
						25.2		8.6		32.7		85.0		5.8			2.0			3.6		
				Middle	16.0	22.7	22.7	8.5	8.4	34.5	34.5	61.3	61.3	4.3	4.3		4.2	4.1		4.5	4.3	
						22.7		8.4		34.5		61.3		4.3			4.1			4.1		
				Bottom	31.1	22.7	22.7	8.5	8.5	34.5	34.5	60.8	60.7	4.3	4.3	4.3	5.2	5.2		4.8	4.8	
						22.6		8.5		34.5		60.6		4.3			5.3			4.8		
G1	Sunny	Calm	17:46	Surface	1.1	26.0	26.0	8.4	8.4	32.6	32.6	90.6	90.7	6.1	6.1	6.1	1.5	1.4	2.5	5.2	5.3	4.5
						25.0		8.5		32.7		90.8		6.1			1.4			5.4		
				Middle	4.0	25.0	25.2	8.5	8.5	33.0	32.9	90.0	90.3	6.2	6.2		2.0	1.9		4.1	4.4	
						25.3		8.5		32.9		90.5		6.2			1.9			4.6		
				Bottom	7.1	23.6	23.6	8.5	8.6	33.9	33.9	71.9	68.5	5.0	4.8	4.8	4.1	4.1		3.5	3.7	
						23.6		8.6		33.9		65.1		4.5			4.1			3.9		
G2	Sunny	Calm	17:40	Surface	1.1	25.9	26.1	8.3	8.3	32.5	32.5	88.7	90.9	6.0	6.1	6.0	2.1	1.7	3.0	5.2	5.4	6.7
						26.2		8.4		32.6		93.1		6.3			1.3			5.6		
				Middle	5.1	24.5	24.5	8.3	8.3	33.4	33.5	83.5	84.2	5.8	5.8		2.4	2.2		6.6	6.8	
						24.6		8.3		33.6		84.8		5.8			2.0			7.0		
				Bottom	9.1	23.1	23.1	8.6	8.6	34.3	34.3	66.1	63.5	4.7	4.5	4.5	4.4	5.1		8.0	7.8	
						23.0		8.6		34.2		60.8		4.3			5.7			7.6		
G3	Sunny	Calm	17:49	Surface	1.0	25.6	25.6	8.4	8.3	32.5	32.5	97.1	98.4	6.6	6.7	6.4	1.7	1.8	3.4	5.6	5.4	4.1
						25.7		8.3		32.5		99.7		6.8			1.8			5.1		
				Middle	4.1	24.7	24.7	8.3	8.3	33.1	33.1	90.4	90.2	6.2	6.2		2.5	2.5		3.7	3.6	
						24.7		8.3		33.1		90.0		6.2			2.6			3.5		
				Bottom	7.1	23.2	23.2	8.4	8.3	34.2	34.2	63.9	63.3	4.5	4.4	4.4	6.0	5.9		3.0	3.2	
						23.2		8.3		34.2		62.6		4.4			5.9			3.4		
G4	Sunny	Calm	17:55	Surface	1.1	25.5	25.5	8.5	8.5	32.5	32.5	102.7	103.3	7.0	7.0	7.0	1.5	1.5	3.4	2.9	3.1	3.6
						25.6		8.5		32.5		103.8		7.1			1.5			3.2		
				Middle	3.9	24.8	24.9	8.5	8.5	32.9	32.9	103.3	101.6	7.1	7.0		2.1	2.1		3.4	3.6	
						24.9		8.5		32.9		99.9		6.9			2.2			3.7		
				Bottom	7.0	23.1	23.1	8.5	8.5	34.2	34.2	62.5	62.0	4.4	4.4	4.4	6.7	6.7		4.4	4.2	
						23.1		8.5		34.2		61.5		4.3			6.6			4.0		
M1	Sunny	Calm	17:43	Surface	1.1	25.6	25.9	8.4	8.4	32.7	32.6	94.6	94.5	6.4	6.4	6.4	1.4	1.3	1.4	2.9	2.9	3.4
						26.2		8.4		32.6		94.3		6.3			1.2			2.8		
				Middle	3.1	25.9	26.0	8.5	8.5	32.6	32.6	93.8	93.9	6.3	6.3		1.3	1.3		3.6	3.4	
						26.1		8.5		32.6		94.0		6.3			1.3			3.2		
				Bottom	5.0	25.0	25.1	8.4	8.4	32.8	32.7	91.5	91.4	6.3	6.3	6.3	1.5	1.5		4.1	4.0	
						25.1		8.4		32.7		91.3		6.3			1.5			3.8		
M2	Sunny	Calm	17:36	Surface	1.0	26.0	26.1	8.6	8.6	32.3	32.4	91.2	94.3	6.2	6.4	5.6	1.3	1.3	2.3	6.1	5.9	4.6
						26.2		8.7		32.6		97.3		6.6			1.2			5.7		
				Middle	6.0	23.2	23.3	8.4	8.3	34.1	34.1	68.8	70.4	4.8	4.9		2.3	2.2		4.2	4.5	
						23.3		8.3		34.1		72.0		5.0			2.2			4.7		
				Bottom	11.0	22.9	22.9	8.5	8.6	34.3	34.3	62.5	62.4	4.4	4.4	4.4	3.6	3.5		3.6	3.4	
						22.8		8.6		34.4		62.2		4.4			3.5			3.2		
M3	Sunny	Calm	17:52	Surface	1.0	25.7	25.7	8.5	8.5	32.5	32.5	111.7	112.8	7.6	7.7	7.7	2.2	2.1	2.4	2.3	2.5	3.0
						25.7		8.6		32.5		113.8		7.7			2.1			2.6		
				Middle	4.1	25.3	25.4	8.6	8.6	32.8	32.8	112.6	112.6	7.7	7.7		1.3	1.3		3.1	3.0	
						25.4		8.7		32.7		112.5		7.7			1.2			2.8		
				Bottom	7.1	23.2	23.2	8.4	8.4	34.2	34.2	73.3	69.8	5.2	4.9	4.9	3.9	3.8		3.8	3.7	
						23.2		8.5		34.2		66.3		4.7			3.7			3.6		
M4	Sunny	Calm	17:30	Surface	1.1	25.3	25.4	8.5	8.5	32.6	32.6	88.5	89.3	6.1	6.1	5.7	1.8	1.8	2.3	2.6	2.7	3.8
						25.4		8.5		32.6		90.0		6.1			1.8			2.7		
				Middle	5.1	23.6	23.6	8.3	8.3	33.9	33.9	75.0	76.1	5.2	5.3		2.0	2.0		3.3	3.5	
						23.6		8.3		34.0		77.1		5.4			2.1			3.7		
				Bottom	9.0	23.4	23.3	8.3	8.3	34.0	34.0	66.5	66.1	4.7	4.6	4.6	2.8	2.9		4.9	5.1	
						23.3		8.3		34.0		65.7		4.6			3.1			5.3		
M5	Sunny	Calm	18:13	Surface	1.0	26.3	26.3	8.5	8.6	32.4	32.4	99.7	99.9	6.7	6.7	6.1	1.3	1.3	3.5	3.6	3.8	3.2
						26.3		8.6		32.4		100.1		6.7			1.3			4.0		
				Middle	6.0	23.8	23.9	8.6	8.6	33.5	33.6	78.4	79.2	5.5	5.5		2.0	2.0		3.2	3.3	
						23.9		8.7		33.6		80.0		5.6			2.0			3.3		
				Bottom	11.0	23.2	23.2	8.4	8.4	34.1	34.1	64.3	64.2	4.5	4.5	4.5	7.0	7.0		2.6	2.5	
						23.1		8.4		34.2		64.1		4.5			7.0			2.4		
M6	Sunny	Calm	18:06	Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-	1.5	-	-	3.3
						-		-		-		-		-			-			-		
				Middle	2.1	26.1	26.1	8.6	8.6	32.6	32.6	103.3	103.4	7.0	7.0		8.0	8.0		3.1	3.3	
						26.1		8.5		32.6		103.5		7.0			8.0			3.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 16 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 6.5 NTU	***C1: 7.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 8.5 mg/L	***C1: 9.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 8.5 mg/L	***C1: 9.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 5.5 mg/L	***C1: 6.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 18 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	17:37	Surface	1.0	26.5	26.5	8.7	8.7	32.1	32.1	144.6	144.0	9.7	9.7	7.4	2.2	2.2	3.2	5.2	5.0	3.6
						26.4		8.7		32.1		143.3		9.6			2.2			4.7		
				Middle	6.0	24.0	24.0	8.4	8.3	33.3	33.3	73.4	73.1	5.1	5.1		2.8	2.9		3.0	3.1	
						24.0		8.3		33.3		72.8		5.1			3.0			3.2		
				Bottom	10.9	22.7	22.7	8.6	8.6	34.4	34.4	60.1	60.2	4.3	4.3	4.3	4.4	4.5		2.7	2.9	
						22.7		8.6		34.4		60.2		4.3			4.5			3.0		
C2	Sunny	Calm	16:40	Surface	1.0	27.4	27.4	8.6	8.6	32.1	32.1	137.0	136.8	9.1	9.1	6.6	1.4	1.4	2.9	5.4	5.2	4.2
						27.4		8.7		32.1		136.6		9.0			1.4			5.0		
				Middle	16.0	22.9	22.9	8.7	8.7	34.3	34.3	58.3	58.3	4.1	4.1		3.6	3.5		4.4	4.2	
						22.9		8.7		34.3		58.3		4.1			3.5			4.0		
				Bottom	18.7	22.8	22.7	8.7	8.7	34.4	34.4	58.6	58.6	4.1	4.1	4.1	3.6	3.7		3.3	3.1	
						22.7		8.7		34.4		58.5		4.1			3.8			2.8		
G1	Sunny	Calm	17:04	Surface	1.0	24.2	24.1	8.5	8.5	33.4	33.5	94.8	88.7	6.6	6.2	5.8	7.7	8.3	9.2	2.7	2.8	3.2
						23.9		8.4		33.6		82.5		5.7			8.9			2.8		
				Middle	4.0	23.8	23.8	8.8	8.8	33.7	33.7	77.0	77.0	5.4	5.4		8.4	8.5		3.4	3.2	
						23.8		8.9		33.7		77.0		5.4			8.5			3.0		
				Bottom	7.0	22.9	23.0	8.2	8.2	34.3	34.3	62.8	63.3	4.4	4.5	4.5	10.7	10.7		3.8	3.7	
						23.0		8.2		34.3		63.8		4.5			10.8			3.5		
G2	Sunny	Calm	16:59	Surface	1.0	26.1	26.2	8.2	8.2	32.5	32.4	116.3	116.7	7.8	7.9	6.2	2.3	2.3	4.8	3.6	3.8	3.4
						26.4		8.2		32.4		117.1		7.9			2.2			3.9		
				Middle	5.0	23.3	23.4	8.2	8.3	34.0	33.9	63.7	64.0	4.5	4.5		5.4	5.6		3.1	3.3	
						23.5		8.3		33.8		64.2		4.5			5.8			3.4		
				Bottom	9.0	22.6	22.6	8.7	8.7	34.5	34.5	58.1	58.3	4.1	4.1	4.1	6.4	6.5		3.2	3.2	
						22.6		8.8		34.5		58.5		4.1			6.7			3.1		
G3	Sunny	Calm	17:07	Surface	1.0	24.2	24.1	8.6	8.6	33.4	33.5	94.8	88.7	6.6	6.2	5.8	7.7	8.3	9.2	5.1	4.9	3.8
						23.9		8.6		33.6		82.5		5.7			8.9			4.6		
				Middle	4.0	23.8	23.8	8.7	8.7	33.7	33.7	77.0	77.0	5.4	5.4		8.4	8.5		3.8	3.7	
						23.8		8.8		33.7		77.0		5.4			8.5			3.5		
				Bottom	7.0	22.9	23.0	8.4	8.4	34.3	34.3	62.8	63.3	4.4	4.5	4.5	10.7	10.7		2.8	3.0	
						23.0		8.4		34.3		63.8		4.5			10.8			3.2		
G4	Sunny	Calm	17:14	Surface	1.1	26.0	25.9	8.7	8.7	32.3	32.3	135.6	134.8	9.2	9.1	7.8	2.6	2.7	6.1	4.0	3.9	3.3
						25.8		8.7		32.3		133.9		9.1			2.8			3.8		
				Middle	4.1	24.6	24.6	8.6	8.6	33.1	33.1	91.4	94.5	6.3	6.5		6.1	6.0		3.0	3.2	
						24.7		8.6		33.1		97.6		6.7			6.0			3.3		
				Bottom	7.0	23.6	23.6	8.4	8.4	33.8	33.8	69.9	69.9	4.9	4.9	4.9	9.6	9.5		3.1	3.0	
						23.6		8.5		33.8		69.9		4.9			9.4			2.8		
M1	Sunny	Calm	17:03	Surface	1.0	26.6	26.6	8.8	8.8	31.8	31.8	134.3	133.1	9.0	8.9	7.7	1.7	2.0	4.1	4.8	4.6	4.0
						26.6		8.8		31.8		131.8		8.9			2.3			4.3		
				Middle	3.0	25.1	25.1	8.5	8.4	32.7	32.7	93.8	94.2	6.4	6.5		4.0	3.9		4.0	3.9	
						25.0		8.4		32.7		94.5		6.5			3.7			3.8		
				Bottom	5.0	23.5	23.5	8.6	8.6	33.9	33.9	63.3	64.0	4.4	4.5	4.5	6.6	6.3		3.6	3.5	
						23.5		8.6		33.9		64.7		4.5			6.1			3.3		
M2	Sunny	Calm	16:54	Surface	0.9	26.3	26.3	8.2	8.3	32.3	32.3	126.6	126.2	8.5	8.5	6.3	2.0	2.0	4.7	4.5	4.4	3.7
						26.3		8.3		32.3		125.7		8.5			1.9			4.2		
				Middle	6.0	22.8	22.8	8.7	8.7	34.3	34.4	59.4	59.3	4.2	4.2		3.2	3.0		3.7	3.6	
						22.8		8.8		34.4		59.1		4.2			2.9			3.5		
				Bottom	10.9	22.5	22.5	8.5	8.5	34.6	34.6	57.8	57.9	4.1	4.1	4.1	9.3	9.2		2.8	3.0	
						22.5		8.5		34.6		57.9		4.1			9.1			3.2		
M3	Sunny	Calm	17:10	Surface	1.0	26.2	26.3	8.5	8.5	32.3	32.2	143.0	144.3	9.6	9.7	7.8	2.4	2.3	8.3	4.0	4.2	3.6
						26.3		8.5		32.2		145.5		9.8			2.3			4.3		
				Middle	4.1	24.1	24.2	8.4	8.4	33.4	33.4	81.3	85.7	5.6	5.9		9.7	9.3		3.9	3.7	
						24.3		8.5		33.3		90.0		6.2			8.8			3.5		
				Bottom	7.0	23.0	23.1	8.8	8.8	34.2	34.2	59.6	60.0	4.2	4.2	4.2	12.5	13.2		2.7	2.8	
						23.1		8.8		34.2		60.4		4.3			13.8			2.9		
M4	Sunny	Calm	16:48	Surface	1.1	25.7	25.7	8.2	8.2	32.6	32.6	149.3	148.6	10.1	10.1	7.4	1.8	1.8	3.2	2.4	2.3	3.0
						25.6		8.2		32.6		147.9		10.0			1.9			2.1		
				Middle	6.0	23.2	23.2	8.4	8.3	34.1	34.1	66.5	66.7	4.7	4.7		2.7	2.7		3.4	3.2	
						23.2		8.3		34.1		66.9		4.7			2.7			3.0		
				Bottom	11.0	22.6	22.6	8.4	8.4	34.5	34.5	60.3	60.2	4.3	4.3	4.3	5.1	5.1		3.8	3.7	
						22.6		8.5		34.5		60.1		4.3			5.1			3.5		
M5	Sunny	Calm	17:24	Surface	1.0	26.9	26.9	8.2	8.2	31.8	31.8	129.4	128.9	8.6	8.6	7.7	2.2	2.2	3.7	2.6	2.5	3.2
						26.9		8.2		31.8		128.4		8.6			2.2			2.3		
				Middle	3.9	25.0	25.1	8.5	8.5	32.6	32.6	101.0	100.2	6.9	6.9		3.3	3.3		3.0	3.2	
						25.1		8.5		32.6		99.4		6.8			3.2			3.3		
				Bottom	7.0	22.9	22.9	8.4	8.5	34.3	34.3	59.1	59.2	4.2	4.2	4.2	5.3	5.6		3.9	4.0	
						22.9		8.5		34.4		59.2		4.2			6.0			4.1		
M6	Sunny	Calm	17:18	Surface	-	-	-	-	-	-	-	-	-	-	-	8.4	-	-	2.5	-	-	4.2
						-		-		-		-		-			-			-		
				Middle	2.0	26.0	26.0	8.3	8.3	32.4	32.4	124.6	124.6	8.4	8.4		2.6	2.5		4.0	4.2	
						26.1		8.4		32.4		124.5		8.4			2.5			4.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 18 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 4.5 NTU	***C2: 4.8 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 6.2 mg/L	***C2: 6.8 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 6.2 mg/L	***C2: 6.8 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 3.7 mg/L	***C2: 4.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 18 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)			pH			Salinity ppt			DO Saturation (%)			Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	9:50	Surface	1.0	26.9	26.8		8.4	8.4		32.0	32.0		139.9	140.6		9.3	9.4	7.2	1.9	2.0		4.4	4.3	
						26.8			8.4			32.1			141.3			9.4			2.1			4.2		
				Middle	9.0	23.1	23.1		8.2	8.3		34.2	34.2		69.9	70.2		4.9	4.9		2.4	2.4	3.5	3.6	3.5	3.7
						23.1			8.3			34.2			70.4			5.0			2.3			3.4		
				Bottom	17.0	22.4	22.4		8.4	8.5		34.6	34.6		61.2	61.0		4.3	4.3	4.3	6.2	6.3		3.4	3.3	
						22.4			8.5			34.6			60.7			4.3			6.4			3.1		
C2	Sunny	Calm	9:00	Surface	1.0	27.0	27.0		8.5	8.5		32.1	32.1		136.7	137.1		9.1	9.1	6.7	1.6	1.6		4.0	4.0	
						27.0			8.5			32.1			137.5			9.1			1.6			3.9		
				Middle	15.9	23.0	23.0		8.8	8.8		34.3	34.2		60.1	60.1		4.2	4.2		3.5	3.5	3.7	4.5	4.4	4.6
						23.0			8.8			34.2			60.1			4.2			3.5			4.3		
				Bottom	19.5	22.6	22.6		8.3	8.2		34.5	34.5		58.0	57.9		4.1	4.1	4.1	5.9	5.9		5.7	5.5	
						22.6			8.2			34.5			57.8			4.1			5.9			5.3		
G1	Sunny	Calm	9:25	Surface	1.1	24.6	24.4		8.7	8.7		33.2	33.3		92.1	91.0		6.4	6.3	6.5	6.7	6.9		3.0	3.2	
						24.3			8.6			33.4			89.8			6.2			7.1			3.3		
				Middle	4.0	24.6	24.5		8.7	8.6		33.1	33.2		96.4	96.6		6.6	6.7		6.4	6.8	8.2	4.0	4.1	3.9
						24.5			8.6			33.2			96.7			6.7			7.1			4.2		
				Bottom	7.0	23.0	23.0		8.3	8.3		34.3	34.3		65.6	65.0		4.6	4.6	4.6	10.5	10.8		4.7	4.6	
						23.0			8.4			34.3			64.4			4.5			11.1			4.4		
G2	Sunny	Calm	9:14	Surface	1.0	26.0	26.0		8.4	8.4		32.6	32.6		118.8	119.3		8.0	8.1	6.6	2.5	2.6		3.6	3.7	
						25.9			8.4			32.6			119.7			8.1			2.7			3.8		
				Middle	5.0	23.6	23.6		8.3	8.3		33.8	33.8		73.0	73.4		5.1	5.1		5.0	5.0	5.1	4.0	4.2	4.3
						23.7			8.4			33.8			73.7			5.1			5.1			4.4		
				Bottom	9.2	22.6	22.6		8.5	8.5		34.5	34.5		58.7	58.5		4.2	4.1	4.1	7.5	7.7		5.2	5.1	
						22.6			8.4			34.5			58.2			4.1			7.9			5.0		
G3	Sunny	Calm	9:28	Surface	1.0	26.5	26.5		8.8	8.8		32.1	32.1		151.7	152.6		10.2	10.2	8.6	2.0	1.9		3.0	2.8	
						26.5			8.9			32.1			153.4			10.3			1.9			2.6		
				Middle	3.0	24.6	24.7		8.2	8.2		33.2	33.1		100.5	101.1		6.9	7.0		7.3	6.9	7.9	3.1	3.3	3.3
						24.8			8.2			33.1			101.6			7.0			6.5			3.4		
				Bottom	7.1	23.3	23.3		8.5	8.5		34.0	34.1		66.2	65.8		4.6	4.6	4.6	14.8	14.8		4.0	3.8	
						23.2			8.6			34.1			65.3			4.6			14.8			3.6		
G4	Sunny	Calm	9:36	Surface	1.1	26.4	26.4		8.8	8.8		32.1	32.1		131.1	131.8		8.8	8.9	7.5	2.3	2.3		2.2	2.3	
						26.3			8.8			32.1			132.4			8.9			2.3			2.4		
				Middle	4.1	24.5	24.5		8.7	8.7		33.0	33.0		90.2	89.9		6.2	6.2		3.3	3.4	4.0	3.4	3.2	3.1
						24.5			8.7			33.0			89.6			6.2			3.5			3.0		
				Bottom	7.0	22.8	22.8		8.3	8.3		34.4	34.4		59.3	59.3		4.2	4.2	4.2	6.3	6.2		3.9	3.8	
						22.8			8.4			34.4			59.2			4.2			6.1			3.6		
M1	Sunny	Calm	9:21	Surface	1.1	26.4	26.4		8.4	8.4		32.2	32.2		142.6	145.5		9.6	9.8	8.4	1.8	1.8		2.6	2.8	
						26.4			8.4			32.2			148.4			10.0			1.8			3.0		
				Middle	3.0	25.0	25.1		8.6	8.6		32.7	32.7		102.5	102.7		7.0	7.0		3.6	3.5	3.7	3.3	3.5	3.6
						25.2			8.5			32.7			102.9			7.0			3.3			3.6		
				Bottom	5.0	23.5	23.5		8.4	8.4		33.9	33.9		67.2	66.5		4.7	4.6	4.6	5.8	5.9		4.2	4.5	
						23.5			8.3			33.9			65.7			4.6			6.0			4.7		
M2	Sunny	Calm	9:09	Surface	1.1	26.4	26.5		8.2	8.3		32.4	32.3		131.1	131.9		8.8	8.9	6.7	2.0	1.9		4.0	3.9	
						26.5			8.3			32.3			132.6			8.9			1.9			3.7		
				Middle	6.1	22.8	22.8		8.6	8.6		34.4	34.4		63.6	64.9		4.5	4.6		2.8	3.0	4.5	4.2	4.4	4.5
						22.9			8.6			34.4			66.1			4.7			3.2			4.6		
				Bottom	10.9	22.5	22.5		8.5	8.5		34.6	34.6		59.0	58.9		4.2	4.2	4.2	8.4	8.4		5.4	5.4	
						22.5			8.4			34.6			58.7			4.2			8.5			5.3		
M3	Sunny	Calm	9:32	Surface	1.0	26.1	26.1		8.6	8.6		32.4	32.4		155.5	148.8		10.5	10.0	8.3	2.2	2.1		4.2	4.1	
						26.0			8.7			32.4			142.0			9.6			2.1			4.0		
				Middle	4.0	24.5	24.5		8.7	8.6		33.2	33.2		93.7	94.1		6.5	6.5		5.6	5.5	5.4	3.6	3.4	3.4
						24.6			8.6			33.1			94.5			6.5			5.3			3.2		
				Bottom	7.0	23.9	23.8		8.8	8.8		33.6	33.7		76.4	75.9		5.3	5.3	5.3	8.5	8.7		2.9	2.8	
						23.7			8.8			33.7			75.3			5.3			8.9			2.7		
M4	Sunny	Calm	9:06	Surface	1.0	27.4	27.4		8.5	8.5		32.2	32.2		152.7	153.1		10.1	10.1	7.8	1.5	1.5		2.9	3.1	
						27.4			8.5			32.2			153.5			10.1			1.5			3.2		
				Middle	5.0	23.9	23.9		8.4	8.4		33.6	33.6		77.5	77.6		5.4	5.4		3.0	2.9	2.9	3.4	3.6	3.7
						23.9			8.4			33.6			77.6			5.4			2.8			3.8		
				Bottom	9.0	22.7	22.6		8.7	8.7		34.5	34.5		61.6	61.3		4.4	4.3	4.3	3.9	4.2		4.4	4.5	
						22.6			8.7			34.5			61.0			4.3			4.4			4.6		
M5	Sunny	Calm	9:45	Surface	1.0	26.5	26.4		8.4	8.4		32.2	32.2		147.8	147.9		9.9	9.9	7.7	2.3	2.2		5.6	5.4	
						26.4			8.4			32.2			148.0			9.9			2.2			5.1		
				Middle	6.1	24.1	24.1		8.5	8.5		33.3	33.3		77.3	77.5		5.4	5.4		2.9	2.9	3.2	4.8	4.6	4.5
						24.1			8.5			33.3			77.7			5.4			2.8			4.4		
				Bottom	11.0	22.7	22.7		8.2	8.2		34.4	34.4		60.5	60.4		4.3	4.3	4.3	4.5	4.5		3.4	3.5	
						22.7			8.3			34.4			60.3			4.3			4.5			3.6		
M6	Sunny	Calm	9:41	Surface	-	-	-		-	-		-	-		-	-		-	-	8.3	-	-		-	-	
						-			-			-			-			-			-			-		
				Middle	2.0	25.7	25.7		8.5	8.5		32.6	32.5		120.8	122.4		8.2	8.3		8.0	8.0	2.8	4.0	4.2	4.2
						25.8			8.5			32.5			123.9			8.4			8.0			4.3		
				Bottom	-	-	-		-	-		-	-		-	-		-	-	-	-	-		-	-	
						-			-			-			-			-			-			-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 18 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 7.5 NTU	***C1: 8.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 5.2 mg/L	***C1: 5.6 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 5.2 mg/L	***C1: 5.6 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 3.9 mg/L	***C1: 4.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 20 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	11:29	Surface	1.0	25.7	25.2	8.2	8.2	34.8	34.8	91.4	91.4	6.5	6.5	6.5	1.0	1.0	1.6	5.5	5.3	4.3
						24.8		8.2		34.8		91.4		6.5			0.9			5.1		
				Middle	9.1	22.5	22.4	8.2	8.2	34.9	34.9	91.1	91.1	6.5	6.5		1.7	1.8		4.1	4.3	
						22.4		8.2		34.9		91.1		6.5			1.8			4.4		
				Bottom	17.0	22.2	22.2	8.2	8.2	34.9	34.9	90.8	90.8	6.5	6.5	6.5	2.1	2.1		3.2	3.4	
						22.2		8.2		34.9		90.7		6.5			2.2			3.5		
C2	Sunny	Calm	10:01	Surface	1.0	26.2	26.0	8.2	8.2	34.9	34.9	90.8	90.9	6.5	6.5	6.5	1.1	1.1	1.7	3.8	4.0	4.7
						25.8		8.2		34.9		90.9		6.5			1.1			4.1		
				Middle	16.5	23.2	23.3	8.2	8.2	34.8	34.8	91.0	91.1	6.5	6.5		1.6	1.6		4.8	4.7	
						23.4		8.2		34.8		91.1		6.5			1.6			4.6		
				Bottom	32.0	22.5	22.5	8.2	8.2	35.1	35.1	90.1	90.1	6.4	6.4	6.4	2.3	2.3		5.5	5.4	
						22.5		8.2		35.0		90.0		6.4			2.3			5.2		
G1	Sunny	Calm	10:37	Surface	1.0	27.4	27.2	8.2	8.2	34.8	34.8	93.2	93.3	6.7	6.7	6.7	1.1	1.0	1.5	2.9	2.8	3.2
						27.1		8.2		34.8		93.3		6.7			1.0			2.7		
				Middle	4.0	25.5	26.0	8.2	8.2	34.8	34.8	92.9	93.0	6.6	6.6		1.6	1.6		3.3	3.2	
						26.6		8.2		34.8		93.0		6.7			1.6			3.0		
				Bottom	7.1	23.3	23.2	8.2	8.2	35.0	35.0	89.0	88.9	6.3	6.3	6.3	1.8	1.8		3.6	3.8	
						23.0		8.2		35.0		88.7		6.3			1.8			3.9		
G2	Sunny	Calm	10:19	Surface	1.0	27.2	27.1	8.2	8.2	34.9	34.8	91.9	91.9	6.6	6.6	6.5	1.1	1.1	1.9	4.9	5.1	3.9
						27.1		8.2		34.8		91.8		6.6			1.1			5.3		
				Middle	5.0	22.7	23.2	8.2	8.2	34.8	34.8	91.0	91.1	6.5	6.5		2.0	2.0		3.6	3.8	
						23.7		8.2		34.9		91.1		6.5			2.0			4.0		
				Bottom	9.0	22.4	22.6	8.2	8.2	35.1	35.1	88.9	88.9	6.3	6.3	6.3	2.4	2.4		2.8	2.9	
						22.8		8.2		35.1		88.8		6.3			2.5			3.0		
G3	Sunny	Calm	10:43	Surface	1.0	27.6	27.4	8.2	8.2	34.8	34.8	90.7	90.8	6.5	6.5	6.5	1.0	1.0	1.1	3.4	3.6	3.2
						27.2		8.2		34.8		90.9		6.5			1.0			3.8		
				Middle	4.0	25.4	25.4	8.2	8.2	34.8	34.8	91.8	91.9	6.6	6.6		1.1	1.1		3.5	3.4	
						25.4		8.2		34.8		92.0		6.6			1.1			3.2		
				Bottom	7.1	23.1	23.1	8.2	8.2	35.0	35.0	91.0	90.8	6.5	6.5	6.5	1.3	1.3		2.8	2.7	
						23.1		8.2		35.0		90.6		6.5			1.3			2.5		
G4	Sunny	Calm	10:59	Surface	1.0	27.1	27.1	8.2	8.2	34.8	34.8	92.3	92.5	6.6	6.6	6.6	1.0	1.0	1.5	3.9	3.8	4.7
						27.1		8.2		34.8		92.6		6.6			1.0			3.6		
				Middle	4.1	27.0	26.9	8.2	8.2	34.8	34.8	91.9	92.0	6.6	6.6		1.7	1.7		4.6	4.8	
						26.9		8.2		34.8		92.1		6.6			1.7			5.0		
				Bottom	7.1	23.0	23.1	8.2	8.2	34.9	34.9	91.4	91.3	6.5	6.5	6.5	1.8	1.8		5.8	5.6	
						23.1		8.2		34.9		91.2		6.5			1.8			5.4		
M1	Sunny	Calm	10:27	Surface	1.1	26.9	26.9	8.2	8.2	34.8	34.8	90.9	90.9	6.5	6.5	6.5	1.1	1.0	1.5	5.9	5.7	4.6
						26.9		8.2		34.8		90.9		6.5			1.0			5.4		
				Middle	3.0	26.7	26.2	8.2	8.2	34.8	34.8	90.9	90.9	6.5	6.5		1.6	1.7		4.7	4.6	
						25.6		8.2		34.8		90.9		6.5			1.7			4.4		
				Bottom	5.0	23.8	23.8	8.2	8.2	35.1	35.1	90.8	90.8	6.5	6.5	6.5	1.8	1.8		3.7	3.6	
						23.8		8.2		35.1		90.7		6.5			1.8			3.4		
M2	Sunny	Calm	10:12	Surface	1.0	27.0	26.7	8.2	8.2	34.8	34.8	91.8	91.9	6.6	6.6	6.5	1.1	1.1	1.6	2.4	2.5	3.8
						26.4		8.2		34.9		91.9		6.6			1.1			2.5		
				Middle	5.6	22.7	22.7	8.2	8.2	34.9	34.9	91.3	91.4	6.5	6.5		1.7	1.7		4.1	4.0	
						22.6		8.2		34.9		91.4		6.5			1.7			3.8		
				Bottom	10.0	22.4	22.3	8.2	8.2	35.0	35.0	90.9	90.9	6.5	6.5	6.5	1.9	1.9		5.0	4.9	
						22.3		8.2		35.0		90.8		6.5			1.9			4.7		
M3	Sunny	Calm	10:51	Surface	1.0	27.4	27.4	8.2	8.2	34.8	34.8	91.9	92.0	6.6	6.6	6.5	1.1	1.1	1.5	2.3	2.5	3.6
						27.5		8.2		34.8		92.0		6.6			1.1			2.7		
				Middle	4.1	24.5	25.2	8.2	8.2	34.8	34.8	91.3	91.3	6.5	6.5		1.6	1.6		3.5	3.7	
						26.0		8.2		34.8		91.3		6.5			1.6			3.9		
				Bottom	7.0	22.9	22.9	8.2	8.2	35.0	34.9	89.4	89.3	6.3	6.3	6.3	1.9	1.9		4.5	4.6	
						22.8		8.2		34.8		89.1		6.3			1.8			4.6		
M4	Sunny	Calm	10:07	Surface	1.0	26.1	25.0	8.2	8.2	34.9	34.9	90.7	90.7	6.5	6.5	6.5	1.1	1.1	1.7	2.2	2.4	3.2
						25.9		8.2		34.9		90.7		6.5			1.1			2.6		
				Middle	5.0	23.6	23.6	8.2	8.2	34.9	34.9	90.7	90.7	6.5	6.5		1.9	1.9		3.2	3.3	
						23.6		8.2		34.9		90.7		6.5			1.8			3.4		
				Bottom	9.1	22.5	23.1	8.2	8.2	35.0	35.0	90.7	90.8	6.5	6.5	6.5	2.2	2.2		3.9	4.0	
						23.6		8.2		35.0		90.8		6.5			2.2			4.1		
M5	Sunny	Calm	11:17	Surface	1.1	25.4	25.4	8.2	8.2	34.9	34.8	91.1	91.3	6.5	6.5	6.5	1.2	1.2	1.8	4.9	4.8	3.7
						25.3		8.2		34.8		91.4		6.5			1.2			4.6		
				Middle	6.1	22.6	22.6	8.2	8.2	34.9	34.9	90.7	90.7	6.5	6.5		2.0	2.0		3.3	3.5	
						22.5		8.2		34.8		90.7		6.5			2.1			3.7		
				Bottom	11.0	22.2	22.2	8.2	8.2	35.0	35.0	91.5	91.5	6.5	6.5	6.5	2.2	2.2		3.0	2.8	
						22.2		8.3		35.0		91.4		6.5			2.2			2.6		
M6	Sunny	Calm	11:05	Surface	-	-	-	-	-	-	-	-	-	-	-	6.5	-	-	1.0	-	-	3.2
						-		-		-		-		-			-			-		
				Middle	2.2	26.5	26.5	8.2	8.2	34.8	34.8	91.7	91.8	6.5	6.5		1.0	1.0		3.3	3.2	
						26.5		8.2		34.8		91.8		6.6			1.0			3.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 20 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 2.8 NTU	***C2: 3.0 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.7 mg/L	***C2: 5.1 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.7 mg/L	***C2: 5.1 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 6.4 mg/L	***C2: 7.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 20 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	18:44	Surface	1.0	25.6	25.1	8.2	8.2	35.0	35.0	91.3	91.3	6.7	6.7	6.7	0.9	0.9	1.4	4.4	4.3	3.8
						24.6		8.2		35.0		91.3		6.7			0.9			4.1		
				Middle	8.5	22.5	22.3	8.2	8.2	35.0	35.0	91.0	91.0	6.7	6.6		1.6	1.6		3.6	3.8	
						22.1		8.2		35.0		91.0		6.6			1.6			3.9		
				Bottom	16.0	22.3	22.3	8.2	8.2	35.1	35.1	90.9	90.9	6.7	6.6	6.6	1.6	1.7		3.4	3.3	
						22.2		8.2		35.1		90.8		6.6			1.7			3.1		
C2	Sunny	Calm	17:02	Surface	1.1	26.1	25.9	8.1	8.1	35.0	35.0	91.3	91.3	6.7	6.7	6.7	0.9	0.9	1.4	2.5	2.7	3.7
						25.8		8.1		35.0		91.2		6.7			0.9			2.9		
				Middle	16.1	23.7	23.4	8.2	8.2	35.0	35.0	91.5	91.5	6.7	6.7		1.4	1.5		3.9	3.8	
						23.0		8.2		35.0		91.5		6.7			1.5			3.6		
				Bottom	31.1	22.6	22.7	8.2	8.2	35.2	35.2	90.3	90.2	6.6	6.6	6.6	1.8	1.8		4.4	4.5	
						22.7		8.2		35.2		90.1		6.6			1.8			4.6		
G1	Sunny	Calm	17:41	Surface	1.0	27.2	27.2	8.2	8.2	35.0	35.0	92.8	92.9	6.7	6.8	6.8	0.8	0.8	1.2	4.9	4.8	4.2
						27.1		8.2		35.0		92.9		6.8			0.9			4.6		
				Middle	4.1	27.0	26.9	8.2	8.2	35.0	35.0	92.1	92.2	6.8	6.8		1.2	1.2		4.7	4.6	
						26.8		8.2		35.0		92.3		6.8			1.2			4.4		
				Bottom	7.0	23.0	23.0	8.2	8.2	35.1	35.1	91.3	91.1	6.7	6.7	6.7	1.6	1.5		3.5	3.4	
						23.0		8.2		35.1		90.9		6.7			1.5			3.2		
G2	Sunny	Calm	17:21	Surface	1.0	27.0	27.1	8.2	8.2	35.0	35.0	92.0	92.0	6.7	6.7	6.7	1.0	1.0	1.3	2.4	2.6	3.7
						27.1		8.2		35.0		91.9		6.7			1.0			2.7		
				Middle	5.1	23.4	23.3	8.2	8.2	35.0	35.0	91.0	91.0	6.7	6.7		1.3	1.3		3.8	3.7	
						23.3		8.2		35.0		91.0		6.7			1.3			3.6		
				Bottom	9.1	22.9	22.8	8.2	8.2	35.2	35.2	89.5	89.3	6.5	6.5	6.5	1.6	1.6		4.6	4.8	
						22.8		8.2		35.2		89.0		6.5			1.6			5.0		
G3	Sunny	Calm	17:48	Surface	1.0	27.4	27.5	8.2	8.2	35.0	35.0	90.7	90.8	6.5	6.6	6.7	0.8	0.9	1.3	2.8	2.7	3.5
						27.6		8.2		35.0		90.8		6.6			0.9			2.5		
				Middle	4.0	25.6	25.3	8.2	8.2	35.0	35.0	91.8	91.9	6.7	6.7		1.5	1.4		3.9	3.7	
						25.1		8.2		35.0		91.9		6.7			1.4			3.4		
				Bottom	7.1	23.3	23.2	8.2	8.2	35.1	35.1	90.1	90.0	6.6	6.6	6.6	1.7	1.7		4.1	4.3	
						23.0		8.2		35.2		89.9		6.6			1.7			4.5		
G4	Sunny	Calm	18:01	Surface	1.1	27.1	27.1	8.2	8.2	35.0	35.0	92.5	92.6	6.6	6.7	6.7	1.3	1.2	1.6	4.7	4.6	4.0
						27.0		8.2		35.0		92.7		6.8			1.2			4.5		
				Middle	4.1	26.7	26.7	8.2	8.2	35.0	35.0	92.1	92.2	6.7	6.8		1.7	1.7		4.2	4.1	
						26.6		8.2		35.0		92.3		6.8			1.7			3.9		
				Bottom	7.1	23.0	22.9	8.2	8.2	35.0	35.0	90.5	90.3	6.6	6.6	6.6	1.9	1.9		3.6	3.5	
						22.8		8.2		35.0		90.1		6.6			1.9			3.3		
M1	Sunny	Calm	17:27	Surface	1.0	26.9	26.9	8.2	8.2	35.0	35.0	91.1	91.1	6.6	6.6	6.6	0.8	0.8	1.5	2.4	2.3	2.5
						26.9		8.2		35.0		91.1		6.6			0.8			2.1		
				Middle	3.0	26.8	26.8	8.2	8.2	35.0	35.0	91.1	91.1	6.7	6.7		1.6	1.6		2.4	2.3	
						26.8		8.2		35.0		91.1		6.7			1.6			2.2		
				Bottom	5.1	23.9	23.9	8.2	8.2	35.2	35.2	90.8	90.8	6.7	6.7	6.7	2.1	2.1		2.8	2.8	
						24.0		8.2		35.2		90.8		6.7			2.0			2.8		
M2	Sunny	Calm	17:15	Surface	1.0	26.9	26.9	8.2	8.2	35.0	35.0	91.9	92.0	6.7	6.7	6.7	0.9	1.0	1.3	4.6	4.4	3.5
						26.9		8.2		35.0		92.0		6.8			1.0			4.2		
				Middle	5.2	22.4	22.4	8.2	8.2	35.0	35.0	91.6	91.7	6.7	6.7		1.4	1.4		3.2	3.4	
						22.5		8.2		35.0		91.7		6.7			1.4			3.5		
				Bottom	9.5	22.2	22.2	8.2	8.2	35.2	35.2	90.3	90.1	6.6	6.6	6.6	1.6	1.6		2.5	2.7	
						22.3		8.2		35.2		89.9		6.6			1.6			2.8		
M3	Sunny	Calm	17:56	Surface	1.0	27.5	27.5	8.2	8.2	35.0	35.0	91.5	91.5	6.6	6.6	6.7	0.9	0.9	1.2	2.4	2.6	3.5
						27.5		8.2		35.0		91.5		6.7			0.9			2.7		
				Middle	4.1	25.3	26.4	8.2	8.2	35.0	35.0	91.1	91.1	6.7	6.7		1.2	1.3		3.2	3.4	
						27.5		8.2		35.0		91.0		6.7			1.3			3.5		
				Bottom	7.1	23.4	23.2	8.2	8.2	35.0	35.0	89.5	89.4	6.6	6.5	6.5	1.5	1.5		4.6	4.5	
						23.0		8.2		35.0		89.3		6.5			1.5			4.3		
M4	Sunny	Calm	17:08	Surface	1.1	26.0	26.0	8.2	8.2	35.0	35.0	91.2	91.2	6.5	6.6	6.6	0.9	0.9	1.4	3.7	3.8	4.3
						26.0		8.2		35.0		91.2		6.7			0.9			3.9		
				Middle	5.1	23.6	23.7	8.2	8.2	35.0	35.0	91.0	91.0	6.7	6.7		1.5	1.5		4.4	4.4	
						23.7		8.2		35.0		91.0		6.7			1.5			4.4		
				Bottom	9.0	24.0	23.6	8.2	8.2	35.2	35.2	91.0	91.1	6.7	6.7	6.7	1.7	1.8		4.6	4.8	
						23.3		8.2		35.2		91.1		6.7			1.8			5.0		
M5	Sunny	Calm	18:34	Surface	1.0	25.5	25.4	8.2	8.2	35.0	35.0	91.5	91.6	6.7	6.7	6.6	1.0	1.0	1.4	3.9	3.9	3.7
						25.4		8.2		35.0		91.6		6.7			0.9			3.8		
				Middle	5.5	22.6	22.6	8.2	8.2	35.1	35.1	90.8	90.9	6.6	6.6		1.5	1.5		3.8	3.7	
						22.7		8.2		35.0		91.0		6.5			1.5			3.6		
				Bottom	10.0	22.2	22.2	8.2	8.2	35.1	35.1	91.3	91.3	6.7	6.7	6.7	1.7	1.7		3.5	3.6	
						22.2		8.2		35.1		91.2		6.7			1.7			3.7		
M6	Sunny	Calm	18:16	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	0.9	-	-	3.0
						-		-		-		-		-			-			-		
				Middle	2.0	26.4	26.4	8.2	8.2	35.0	35.0	91.6	91.7	6.7	6.7		8.0	8.0		2.8	3.0	
						26.3		8.2		35.0		91.8		6.7			8.0			3.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 20 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 2.0 NTU	***C1: 2.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 5.1 mg/L	***C1: 5.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 5.1 mg/L	***C1: 5.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 3.9 mg/L	***C1: 4.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 23 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	13:43	Surface	5.0	25.1	24.5	8.4	8.4	32.5	33.1	77.5	72.7	7.3	7.0	7.0	11.6	8.0	6.1	3.9	3.9	3.7
						23.8		8.4		33.6		67.8		6.7			4.5			3.8		
				Middle	8.3	24.9	24.3	8.4	8.4	32.7	33.2	76.8	72.6	7.3	7.0		7.6	5.9		3.7	3.8	
						23.8		8.4		33.7		68.4		6.8			4.2			3.9		
				Bottom	12.0	23.8	23.8	8.4	8.4	33.6	33.6	68.1	68.2	6.7	6.8	6.8	4.4	4.3		3.4	3.6	
						23.8		8.4		33.7		68.3		6.8			4.2			3.7		
C2	Sunny	Calm	12:54	Surface	8.9	25.7	24.3	7.7	7.7	32.2	33.3	84.3	70.0	7.2	6.3	6.4	3.7	3.8	4.0	3.9	3.8	3.3
						22.9		7.7		34.3		55.6		5.4			4.0			3.6		
				Middle	6.9	25.7	24.4	7.9	7.9	32.2	33.1	84.5	73.0	7.3	6.5		3.7	4.3		3.0	3.2	
						23.2		7.9		34.1		61.5		5.8			4.9			3.4		
				Bottom	14.7	23.1	23.1	8.0	8.0	34.2	34.1	56.1	58.8	5.4	5.6	5.6	3.1	4.0		3.0	2.9	
						23.2		8.1		34.1		61.5		5.8			4.8			2.8		
G1	Sunny	Calm	13:19	Surface	2.5	25.6	25.4	8.6	8.6	33.3	33.3	100.4	99.4	8.3	8.2	7.8	2.6	2.2	2.7	4.4	4.6	4.2
						25.1		8.6		33.4		98.3		8.2			1.9			4.7		
				Middle	4.0	25.6	24.7	8.6	8.6	33.3	33.6	100.8	85.3	8.3	7.3		2.4	3.1		4.1	4.2	
						23.7		8.6		34.0		69.7		6.4			3.8			4.3		
				Bottom	5.5	25.2	24.4	8.6	8.6	33.4	33.7	97.2	83.4	8.1	7.2	7.2	1.9	2.9		3.8	3.8	
						23.6		8.6		34.0		69.5		6.3			3.9			3.7		
G2	Sunny	Calm	13:12	Surface	3.2	25.2	25.0	8.6	8.6	33.4	33.5	98.0	97.6	8.2	8.2	7.8	1.4	1.4	1.7	3.6	3.5	4.2
						24.8		8.6		33.5		97.1		8.2			1.4			3.4		
				Middle	5.2	25.2	24.3	8.6	8.6	33.4	33.8	97.9	86.2	8.2	7.4		1.2	1.8		4.0	4.2	
						23.5		8.6		34.1		74.4		6.7			2.3			4.4		
				Bottom	7.2	24.9	24.2	8.6	8.6	33.5	33.8	97.5	85.8	8.2	7.4	7.4	1.3	1.9		4.7	4.9	
						23.4		8.6		34.1		74.0		6.7			2.4			5.0		
G3	Sunny	Calm	13:22	Surface	2.6	26.0	25.7	8.6	8.6	32.9	33.2	100.9	101.3	8.3	8.4	8.1	1.2	1.4	1.7	5.0	4.8	4.2
						25.4		8.6		33.4		101.6		8.4			1.5			4.6		
				Middle	4.2	26.0	25.0	8.6	8.6	33.0	33.6	101.4	92.6	8.3	7.8		1.2	1.7		4.1	4.4	
						24.0		8.6		34.2		83.7		7.3			2.3			4.6		
				Bottom	5.6	25.4	24.7	8.6	8.6	33.4	33.7	101.7	89.9	8.4	7.7	7.7	1.5	2.1		3.3	3.5	
						24.0		8.6		34.1		78.0		6.9			2.7			3.6		
G4	Sunny	Calm	13:27	Surface	2.7	25.7	25.6	8.6	8.6	33.2	33.2	106.3	105.5	7.2	7.1	6.9	1.2	1.3	1.6	3.4	3.6	4.4
						25.5		8.6		33.3		104.7		7.1			1.4			3.7		
				Middle	4.1	25.6	24.7	8.6	8.6	33.3	33.6	106.7	96.0	7.2	6.6		1.2	1.5		4.1	4.3	
						23.8		8.6		33.9		85.3		5.9			1.9			4.4		
				Bottom	5.5	25.2	24.5	8.6	8.6	33.4	33.6	104.1	94.8	7.1	6.5	6.5	2.0	1.9		5.5	5.4	
						23.9		8.6		33.9		85.5		5.9			1.8			5.2		
M1	Sunny	Calm	13:15	Surface	2.9	25.2	24.9	8.6	8.6	33.3	33.4	97.6	91.3	8.2	7.7	7.7	1.6	1.7	1.8	4.1	4.0	4.9
						24.7		8.6		33.5		85.0		7.3			1.9			3.8		
				Middle	3.1	25.2	24.7	8.6	8.6	33.4	33.5	97.5	90.3	8.2	7.7		1.6	1.8		4.7	4.9	
						24.2		8.6		33.7		83.0		7.2			2.1			5.1		
				Bottom	4.1	25.0	24.6	8.6	8.6	33.4	33.6	97.3	89.7	8.2	7.7	7.7	1.8	1.9		5.7	5.9	
						24.2		8.6		33.7		82.1		7.2			2.0			6.0		
M2	Sunny	Calm	13:08	Surface	3.6	25.1	25.0	8.4	8.4	33.4	33.4	94.1	94.2	7.9	7.9	7.4	7.7	4.5	5.0	6.0	5.9	5.0
						24.8		8.4		33.5		94.3		8.0			1.4			5.7		
				Middle	6.0	25.1	24.0	8.4	8.4	33.4	33.9	94.1	77.2	7.9	6.8		6.6	6.5		5.1	5.2	
						22.8		8.4		34.4		60.2		5.8			6.3			5.3		
				Bottom	8.5	24.8	23.8	8.5	8.5	33.5	33.9	97.6	78.8	8.2	7.0	7.0	1.4	4.0		3.8	4.0	
						22.8		8.5		34.4		60.0		5.7			6.7			4.2		
M3	Sunny	Calm	13:24	Surface	2.5	26.2	25.9	8.6	8.6	32.4	32.9	94.2	98.3	7.9	8.1	7.6	1.8	1.5	2.1	5.2	5.4	4.6
						25.7		8.6		33.3		102.4		8.4			1.3			5.5		
				Middle	4.1	26.1	25.0	8.6	8.6	32.5	33.2	95.2	80.9	7.9	7.0		1.9	2.4		5.0	4.8	
						23.9		8.6		33.9		66.5		6.1			3.0			4.6		
				Bottom	5.5	25.8	24.8	8.6	8.6	33.1	33.5	101.5	84.5	8.4	7.3	7.3	1.4	2.3		3.5	3.7	
						23.9		8.6		33.8		67.4		6.2			3.1			3.8		
M4	Sunny	Calm	13:05	Surface	3.3	24.5	24.4	8.2	8.2	33.1	33.3	76.5	75.7	6.8	6.7	6.7	3.8	3.7	3.5	3.6	3.8	4.6
						24.3		8.2		33.4		74.9		6.7			3.6			3.9		
				Middle	5.2	24.5	24.2	8.3	8.2	33.1	33.4	76.3	75.0	6.8	6.7		3.7	3.5		4.4	4.3	
						23.9		8.2		33.7		73.6		6.6			3.2			4.2		
				Bottom	7.0	24.3	24.1	8.3	8.3	33.3	33.5	75.1	74.2	6.7	6.7	6.7	3.7	3.4		5.8	5.6	
						23.8		8.3		33.8		73.3		6.6			3.0			5.4		
M5	Sunny	Calm	13:40	Surface	3.6	24.9	24.7	8.6	8.5	33.0	33.1	82.7	80.4	7.7	7.5	7.5	3.2	3.2	3.4	4.0	4.2	4.4
						24.5		8.4		33.2		78.0		7.4			3.2			4.3		
				Middle	6.0	24.8	24.6	8.6	8.5	33.1	33.2	82.3	79.1	7.7	7.5		3.1	3.5		4.5	4.4	
						24.4		8.4		33.3		75.8		7.2			3.9			4.2		
				Bottom	8.5	24.6	24.5	8.6	8.5	33.2	33.2	78.6	77.1	7.4	7.3	7.3	3.1	3.5		4.9	4.8	
						24.4		8.4		33.3		75.6		7.2			3.9			4.6		
M6	Sunny	Calm	13:32	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	0.0	4.4
						-		-		-		-		-		-	-			-		
				Middle	1.9	24.9	24.8	8.6	8.6	33.8	33.7	103.2	103.1	7.1	7.1	7.1	8.0	8.0		4.3	4.4	
						24.8		8.6		33.7		102.9		7.0			8.0			4.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	0.0	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 23 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 5.2 NTU	***C1: 5.6 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.6 mg/L	***C1: 5.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.6 mg/L	***C1: 5.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.3 mg/L	***C1: 4.6 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 25 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	8:22	Surface	1.1	26.0	26.0	8.4	8.4	32.7	32.7	97.2	95.0	7.2	7.0	7.0	1.7	1.7	2.7	6.2	6.0	7.3
						26.0		8.4		32.7		92.9		6.9			1.8			5.7		
				Middle	9.0	25.7	25.7	8.4	8.4	33.5	33.4	93.7	93.3	6.9	6.9		1.8	1.8		7.0	7.2	
						25.8		8.4		33.3		93.0		6.9			1.9			7.4		
				Bottom	17.0	25.7	25.7	8.4	8.4	33.7	33.7	93.3	93.1	6.9	6.9	6.9	4.4	4.5		8.5	8.6	
						25.7		8.4		33.7		92.9		6.9			4.5			8.7		
C2	Sunny	Calm	7:26	Surface	1.0	26.0	26.0	8.5	8.6	31.9	31.9	92.2	91.8	6.9	6.8	6.8	2.3	2.3	2.1	6.6	6.7	7.3
						26.0		8.6		32.0		91.4		6.8			2.3			6.8		
				Middle	16.5	25.7	25.7	8.5	8.6	33.7	33.6	92.4	92.4	6.8	6.8		2.1	2.1		7.6	7.4	
						25.7		8.6		33.6		92.5		6.9			2.1			7.2		
				Bottom	31.0	25.7	25.6	8.6	8.6	33.6	33.7	92.4	92.3	6.8	6.8	6.8	2.1	2.1		7.8	7.9	
						25.6		8.6		33.8		92.2		6.8			2.1			8.0		
G1	Sunny	Calm	7:52	Surface	1.0	25.9	25.9	8.5	8.5	32.9	32.9	98.8	98.0	7.3	7.2	7.2	1.5	1.5	1.6	6.4	6.2	6.6
						25.9		8.5		32.9		97.3		7.2			1.6			6.0		
				Middle	3.7	25.9	25.9	8.5	8.5	33.0	33.0	97.9	97.7	7.2	7.2		1.6	1.6		6.8	6.7	
						25.9		8.5		32.9		97.5		7.2			1.6			6.5		
				Bottom	6.5	25.9	25.9	8.5	8.5	33.1	33.1	97.0	96.8	7.2	7.1	7.1	1.3	1.5		7.0	7.1	
						25.9		8.5		33.1		96.7		7.1			1.7			7.1		
G2	Sunny	Calm	7:42	Surface	1.0	25.8	25.8	8.5	8.6	33.1	33.2	103.0	99.4	7.6	7.3	7.3	1.7	1.7	1.4	6.6	6.7	7.4
						25.8		8.6		33.2		95.9		7.1			1.6			6.8		
				Middle	5.0	25.8	25.8	8.6	8.6	33.2	33.2	98.4	97.5	7.3	7.2		1.2	1.2		7.2	7.3	
						25.8		8.6		33.2		96.6		7.1			1.2			7.4		
				Bottom	9.0	25.6	25.6	8.5	8.5	34.0	33.9	94.9	94.9	7.0	7.0	7.0	1.4	1.4		8.2	8.1	
						25.7		8.5		33.7		94.9		7.0			1.4			8.0		
G3	Sunny	Calm	7:55	Surface	1.0	25.9	25.9	8.5	8.5	31.8	32.2	95.9	94.8	7.1	7.0	7.0	1.5	1.6	1.4	8.5	8.4	7.6
						25.9		8.5		32.7		93.7		6.9			1.6			8.2		
				Middle	3.7	25.9	25.9	8.5	8.5	33.0	32.8	93.8	93.6	6.9	6.9		1.3	1.3		7.8	7.7	
						25.9		8.5		32.6		93.4		6.9			1.3			7.6		
				Bottom	6.5	25.6	25.7	8.5	8.5	34.0	33.5	93.9	93.4	6.9	6.9	6.9	1.4	1.4		7.0	6.8	
						25.9		8.5		33.1		93.0		6.9			1.4			6.6		
G4	Sunny	Calm	8:06	Surface	1.0	26.0	25.9	8.4	8.4	31.5	32.0	100.2	97.7	7.4	7.2	7.1	1.6	1.6	1.4	8.5	8.3	7.6
						25.9		8.4		32.5		95.2		7.1			1.6			8.1		
				Middle	3.7	25.9	25.9	8.4	8.4	32.8	32.9	93.3	92.9	6.9	6.9		0.8	0.9		7.8	7.7	
						25.9		8.4		33.0		92.6		6.9			0.9			7.5		
				Bottom	6.5	25.8	25.7	8.4	8.4	33.5	33.7	93.0	93.1	6.9	6.9	6.9	1.9	1.9		6.8	6.7	
						25.7		8.4		33.8		93.3		6.9			1.9			6.6		
M1	Sunny	Calm	7:46	Surface	1.0	26.0	25.9	8.6	8.5	32.2	32.5	98.0	97.1	7.2	7.2	7.2	1.9	1.9	2.0	7.8	7.7	7.2
						25.9		8.5		32.8		96.2		7.1			1.9			7.6		
				Middle	3.0	25.9	25.9	8.6	8.5	32.5	32.6	97.0	96.4	7.2	7.1		2.0	2.0		7.0	7.2	
						25.9		8.5		32.7		95.9		7.1			2.0			7.3		
				Bottom	5.0	25.8	25.8	8.5	8.5	33.1	33.1	96.4	96.2	7.1	7.1	7.1	2.1	2.1		6.8	6.7	
						25.8		8.5		33.1		96.0		7.1			2.1			6.6		
M2	Sunny	Calm	7:38	Surface	1.0	25.8	25.8	8.5	8.5	33.2	33.2	99.3	97.7	7.3	7.2	7.1	1.0	1.0	0.9	8.2	8.1	7.6
						25.8		8.6		33.3		96.1		7.1			1.0			7.9		
				Middle	5.2	25.6	25.7	8.6	8.6	34.0	33.8	94.9	95.3	7.0	7.0		0.8	0.8		7.6	7.5	
						25.8		8.5		33.5		95.7		7.1			0.8			7.4		
				Bottom	9.5	25.6	25.6	8.6	8.6	34.2	34.2	94.8	94.9	7.0	7.0	7.0	0.8	0.8		7.1	7.2	
						25.6		8.6		34.2		95.0		7.0			0.8			7.3		
M3	Sunny	Calm	8:02	Surface	1.0	25.9	25.8	8.4	8.4	31.5	32.2	96.0	94.5	7.1	7.0	7.0	1.7	1.7	1.0	8.0	7.8	7.5
						25.8		8.5		32.9		93.1		6.9			1.7			7.6		
				Middle	3.7	25.9	25.9	8.4	8.4	33.0	32.8	93.3	93.0	6.9	6.9		0.3	0.3		7.9	7.7	
						25.9		8.5		32.7		92.8		6.9			0.3			7.4		
				Bottom	6.5	25.7	25.7	8.5	8.5	33.9	33.9	92.7	92.7	6.9	6.9	6.9	0.9	0.9		6.8	7.0	
						25.6		8.5		33.9		92.7		6.9			0.9			7.1		
M4	Sunny	Calm	7:33	Surface	1.0	25.9	25.8	8.6	8.6	32.5	32.8	92.8	93.1	6.9	6.9	6.9	0.6	0.6	1.1	6.4	6.6	7.3
						25.8		8.6		33.1		93.4		6.9			0.6			6.8		
				Middle	5.0	25.7	25.8	8.6	8.6	33.4	33.3	93.4	93.3	6.9	6.9		1.1	1.1		7.0	7.1	
						25.8		8.6		33.3		93.2		6.9			1.2			7.2		
				Bottom	9.0	25.7	25.7	8.6	8.6	33.5	33.5	93.4	93.7	6.9	6.9	6.9	1.5	1.5		8.3	8.1	
						25.7		8.6		33.5		94.1		7.0			1.6			7.9		
M5	Sunny	Calm	8:17	Surface	1.0	25.9	25.9	8.4	8.4	33.0	33.0	97.3	95.8	7.2	7.1	7.0	1.0	1.0	1.4	6.9	7.0	7.5
						25.9		8.4		33.0		94.3		7.0			1.0			7.1		
				Middle	6.1	25.8	25.8	8.4	8.4	33.1	33.1	94.6	94.3	7.0	7.0		1.4	1.4		7.4	7.5	
						25.8		8.4		33.1		94.1		7.0			1.5			7.6		
				Bottom	11.0	25.8	25.8	8.4	8.4	33.2	33.2	93.9	93.8	6.9	6.9	6.9	1.6	1.7		8.0	8.0	
						25.8		8.4		33.2		93.7		6.9			1.7			8.0		
M6	Sunny	Calm	8:11	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-	-	7.9
						-		-		-		-		-			-			-		
				Middle	2.0	25.9	25.9	8.4	8.4	32.3	32.3	99.6	98.7	7.3	7.3	7.3	2.2	2.2		7.7	7.9	
						25.9		8.4		32.3		97.9		7.2			2.2			8.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 25 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 2.5 NTU	***C2: 2.7 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 8.0 mg/L	***C2: 8.7 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 8.0 mg/L	***C2: 8.7 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 9.5 mg/L	***C2: 10.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 25 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	14:50	Surface	1.1	26.2	26.1	8.4	8.4	31.7	31.7	91.0	89.5	6.9	6.8	6.7	2.3	2.4	3.1	6.6	6.8	7.4
						26.1		8.4		31.8		88.0		6.7			2.6			6.9		
				Middle	9.0	25.9	25.9	8.4	8.4	32.5	32.5	87.8	87.6	6.7	6.7		3.3	3.3		7.6	7.5	
						26.0		8.4		32.4		87.4		6.7			3.2			7.3		
				Bottom	17.0	25.7	25.6	8.4	8.4	33.5	33.9	88.2	88.1	6.7	6.7	6.7	3.3	3.5		7.8	8.0	
						25.4		8.4		34.3		88.1		6.7			3.7			8.1		
C2	Sunny	Calm	13:49	Surface	1.0	26.5	26.4	8.6	8.6	30.7	30.7	91.5	90.0	6.9	6.8	6.7	2.9	2.9	4.6	8.6	8.3	7.2
						26.4		8.6		30.7		88.5		6.7			3.0			8.0		
				Middle	15.9	25.9	25.8	8.6	8.6	32.8	32.9	86.8	87.2	6.6	6.6		5.4	5.3		7.3	7.2	
						25.8		8.5		33.0		87.6		6.7			5.3			7.0		
				Bottom	31.0	25.8	25.8	8.6	8.5	33.1	33.0	87.2	87.4	6.6	6.6	6.6	5.6	5.5		6.4	6.3	
						25.8		8.5		33.0		87.6		6.7			5.4			6.1		
G1	Sunny	Calm	14:15	Surface	0.9	26.1	26.1	8.4	8.4	32.1	32.2	100.3	98.4	7.5	7.4	7.3	1.7	1.7	1.7	5.5	5.7	6.4
						26.1		8.4		32.3		96.6		7.3			1.8			5.9		
				Middle	3.9	26.1	26.1	8.4	8.4	32.5	32.5	95.7	96.3	7.2	7.2		1.4	1.5		6.3	6.4	
						26.1		8.4		32.5		97.0		7.3			1.7			6.5		
				Bottom	7.0	26.0	26.0	8.4	8.4	32.9	32.8	94.7	94.9	7.1	7.1	7.1	1.7	1.9		7.2	7.0	
						26.0		8.4		32.7		95.2		7.2			2.0			6.8		
G2	Sunny	Calm	14:04	Surface	1.0	26.2	26.1	8.5	8.5	32.5	32.6	98.9	96.6	7.4	7.3	7.2	2.3	2.3	2.3	7.6	7.4	6.8
						26.0		8.5		32.8		94.4		7.1			2.2			7.2		
				Middle	5.0	26.0	26.0	8.5	8.5	32.8	32.9	96.4	95.0	7.2	7.1		2.2	2.1		6.8	6.7	
						26.0		8.5		33.0		93.7		7.1			2.1			6.5		
				Bottom	8.9	25.9	25.9	8.5	8.5	33.1	33.1	93.7	93.1	7.1	7.0	7.0	2.5	2.3		6.2	6.3	
						25.9		8.5		33.2		92.6		7.0			2.2			6.3		
G3	Sunny	Calm	14:20	Surface	1.0	26.4	26.2	8.4	8.4	31.2	31.4	99.9	98.3	7.5	7.4	7.4	1.7	1.9	1.5	9.4	9.3	8.4
						26.0		8.4		31.5		96.7		7.3			2.0			9.1		
				Middle	4.0	26.0	26.0	8.4	8.4	32.6	32.6	98.7	97.7	7.4	7.3		1.1	1.1		8.6	8.4	
						26.0		8.4		32.7		96.8		7.3			1.1			8.2		
				Bottom	7.0	25.9	25.9	8.4	8.4	33.0	33.0	91.1	90.8	6.9	6.9	6.9	1.6	1.6		7.3	7.5	
						25.9		8.4		32.9		90.6		6.9			1.5			7.6		
G4	Sunny	Calm	14:32	Surface	1.0	26.0	26.2	8.3	8.3	32.1	31.6	98.7	99.7	7.4	7.5	7.4	2.8	2.6	2.8	8.2	8.4	7.7
						26.3		8.3		31.1		100.7		7.6			2.4			8.6		
				Middle	4.5	25.0	26.0	8.3	8.3	32.6	32.7	96.9	96.7	7.3	7.3		2.7	2.7		8.0	7.9	
						26.0		8.3		32.8		96.6		7.3			2.8			7.7		
				Bottom	7.0	25.9	25.9	8.3	8.3	33.0	33.1	91.8	90.9	6.9	6.9	6.9	3.0	3.2		6.7	6.9	
						25.9		8.3		33.1		90.0		6.8			3.5			7.0		
M1	Sunny	Calm	14:09	Surface	0.9	26.4	26.2	8.4	8.4	31.8	32.2	99.9	96.1	7.5	7.2	7.2	2.3	2.3	2.8	8.0	8.2	7.8
						26.0		8.5		32.7		92.3		7.0			2.2			8.4		
				Middle	2.9	26.2	26.1	8.5	8.5	32.3	32.4	96.6	94.8	7.3	7.1		2.9	2.9		7.6	7.8	
						26.1		8.5		32.5		93.1		7.0			3.0			7.9		
				Bottom	4.9	26.0	26.0	8.5	8.5	32.8	32.8	92.1	91.9	7.0	6.9	6.9	3.2	3.2		7.6	7.5	
						26.0		8.5		32.8		91.8		6.9			3.1			7.4		
M2	Sunny	Calm	13:59	Surface	0.9	26.2	26.1	8.6	8.6	32.4	32.6	100.4	97.2	7.5	7.3	7.2	1.3	1.2	1.6	6.4	6.6	7.2
						26.0		8.6		32.9		94.1		7.1			1.2			6.7		
				Middle	6.0	25.9	26.0	8.6	8.6	33.0	32.9	95.3	95.5	7.2	7.2		0.6	0.7		7.5	7.3	
						26.0		8.6		32.8		95.7		7.2			0.9			7.1		
				Bottom	10.0	25.7	25.7	8.6	8.6	33.7	33.8	92.9	91.8	7.0	6.9	6.9	2.5	2.7		7.8	7.7	
						25.6		8.6		33.9		90.8		6.9			2.9			7.5		
M3	Sunny	Calm	14:27	Surface	1.0	26.1	26.0	8.4	8.4	31.7	32.2	98.7	96.9	7.4	7.3	7.1	3.0	2.9	2.8	8.6	8.4	7.4
						26.0		8.4		32.6		95.1		7.2			2.7			8.2		
				Middle	3.9	26.0	26.0	8.3	8.3	32.6	32.6	92.5	91.7	7.0	6.9		2.4	2.5		7.4	7.3	
						26.0		8.3		32.6		90.9		6.9			2.6			7.2		
				Bottom	7.0	25.9	25.9	8.4	8.3	32.9	33.0	91.7	90.4	6.9	6.8	6.8	3.0	2.9		6.9	6.6	
						25.9		8.3		33.1		89.2		6.8			2.9			6.3		
M4	Sunny	Calm	13:54	Surface	0.9	26.4	26.2	8.5	8.5	31.5	31.7	93.2	90.3	7.0	6.8	6.8	3.8	3.7	3.7	7.3	7.4	6.9
						26.1		8.5		31.9		87.4		6.7			3.7			7.4		
				Middle	4.9	26.0	26.0	8.6	8.6	32.1	32.2	87.8	87.7	6.7	6.7		3.3	3.5		7.1	7.0	
						26.0		8.6		32.3		87.6		6.7			3.7			6.9		
				Bottom	8.9	25.9	25.9	8.5	8.5	32.7	32.6	89.4	89.4	6.8	6.8	6.8	4.1	4.0		6.4	6.3	
						26.0		8.5		32.6		89.4		6.8			3.8			6.1		
M5	Sunny	Calm	14:44	Surface	1.0	26.3	26.2	8.3	8.3	31.9	32.0	94.3	91.3	7.1	6.9	6.8	2.9	2.8	2.6	6.2	6.3	6.7
						26.1		8.3		32.1		88.4		6.7			2.7			6.3		
				Middle	6.1	26.1	26.1	8.3	8.3	32.1	32.1	89.9	89.0	6.8	6.8		2.7	2.4		6.9	6.7	
						26.1		8.3		32.1		88.2		6.7			2.2			6.5		
				Bottom	11.0	26.1	26.1	8.3	8.3	32.1	32.1	88.4	88.3	6.7	6.7	6.7	2.4	2.5		7.3	7.2	
						26.1		8.3		32.1		88.2		6.7			2.6			7.0		
M6	Sunny	Calm	14:38	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	-	-	7.5
						-		-		-		-		-		-	-			-		
				Middle	2.0	26.2	26.1	8.3	8.3	31.9	32.2	100.1	98.5	7.5	7.4	7.4	8.0	8.0		7.4	7.5	
						26.0		8.3		32.6		96.9		7.3			8.0			7.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-		-	-			-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 25 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 4.2 NTU	***C1: 4.5 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 8.1 mg/L	***C1: 8.8 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 8.1 mg/L	***C1: 8.8 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 9.5 mg/L	***C1: 10.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 27 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	9:38	Surface	1.1	27.1	27.1	8.4	8.4	32.7	32.7	97.2	95.0	7.2	7.0	7.0	1.7	1.7	3.3	7.2	7.2	5.4
						27.1		8.4		32.7		92.9		6.9			1.8			7.1		
				Middle	9.1	26.8	26.9	8.4	8.4	33.5	33.4	93.7	93.3	6.9	6.9		1.8	1.8		5.4	5.2	
						26.9		8.4		33.3		93.0		6.9			1.9			4.9		
				Bottom	17.0	26.8	26.8	8.4	8.4	33.6	33.7	93.3	93.1	6.9	6.9	6.9	6.4	6.5		4.0	3.9	
						26.8		8.4		33.7		92.9		6.9			6.5			3.8		
C2	Sunny	Calm	8:41	Surface	1.1	27.2	27.1	8.5	8.6	31.9	31.9	92.2	91.8	6.8	6.8	6.8	2.3	2.3	2.1	3.6	3.5	5.0
						27.1		8.6		31.9		91.4		6.8			2.2			3.3		
				Middle	16.5	26.8	26.8	8.5	8.6	33.7	33.6	92.4	92.4	6.8	6.8		2.1	2.1		5.0	5.1	
						26.8		8.6		33.5		92.5		6.8			2.1			5.2		
				Bottom	31.0	26.8	26.8	8.5	8.6	33.6	33.7	92.4	92.3	6.8	6.8	6.8	2.1	2.1		6.4	6.4	
						26.7		8.6		33.8		92.2		6.8			2.1			6.4		
G1	Sunny	Calm	9:07	Surface	1.1	27.1	27.1	8.5	8.5	32.9	32.9	98.8	98.0	7.3	7.2	7.2	1.5	1.5	1.5	3.0	2.8	4.1
						27.1		8.5		32.9		97.3		7.2			1.6			2.6		
				Middle	3.7	27.0	27.0	8.5	8.5	33.0	32.9	97.9	97.7	7.2	7.2		1.6	1.6		3.8	3.9	
						27.1		8.5		32.9		97.5		7.2			1.6			4.0		
				Bottom	6.5	27.0	27.0	8.5	8.5	33.1	33.1	97.0	96.8	7.1	7.1	7.1	1.3	1.4		5.5	5.5	
						27.0		8.5		33.1		96.7		7.1			1.6			5.5		
G2	Sunny	Calm	8:58	Surface	1.0	26.9	26.9	8.5	8.6	33.1	33.2	103.0	99.4	7.6	7.3	7.2	1.7	1.7	1.4	4.0	4.0	3.2
						26.9		8.6		33.2		95.9		7.1			1.6			4.0		
				Middle	5.1	27.0	27.0	8.6	8.6	33.1	33.2	98.4	97.5	7.2	7.2		1.2	1.2		3.2	3.4	
						27.0		8.6		33.2		96.6		7.1			1.2			3.6		
				Bottom	9.0	26.7	26.8	8.5	8.5	34.0	33.9	94.9	94.9	7.0	7.0	7.0	1.4	1.4		2.4	2.2	
						26.8		8.5		33.7		94.9		7.0			1.4			2.0		
G3	Sunny	Calm	9:10	Surface	1.0	27.0	27.0	8.5	8.5	31.8	32.2	95.9	94.8	7.1	7.0	7.0	1.5	1.6	1.4	1.9	2.0	3.0
						27.0		8.5		32.6		93.7		6.9			1.6			2.1		
				Middle	3.7	27.0	27.0	8.5	8.5	33.0	32.8	93.8	93.6	6.9	6.9		1.2	1.2		3.3	3.3	
						27.1		8.5		32.6		93.4		6.9			1.3			3.3		
				Bottom	6.5	26.8	26.9	8.5	8.5	33.9	33.5	93.9	93.4	6.9	6.9	6.9	1.3	1.3		3.8	3.7	
						27.0		8.5		33.1		93.0		6.9			1.4			3.5		
G4	Sunny	Calm	9:21	Surface	1.1	27.1	27.1	8.4	8.4	31.5	32.0	100.2	97.7	7.4	7.2	7.0	1.6	1.6	1.4	4.9	4.9	3.4
						27.0		8.4		32.5		95.2		7.0			1.6			4.9		
				Middle	3.7	27.1	27.1	8.4	8.4	32.8	32.9	93.3	92.9	6.9	6.9		0.8	0.8		3.6	3.4	
						27.1		8.4		33.0		92.6		6.8			0.9			3.2		
				Bottom	6.5	26.9	26.9	8.4	8.4	33.5	33.7	93.0	93.1	6.9	6.9	6.9	1.8	1.9		1.9	2.0	
						26.8		8.4		33.8		93.3		6.9			1.9			2.0		
M1	Sunny	Calm	9:02	Surface	1.0	27.1	27.1	8.6	8.5	32.2	32.5	98.0	97.1	7.2	7.2	7.1	1.9	1.9	2.0	2.2	2.3	2.8
						27.0		8.5		32.8		96.2		7.1			1.9			2.4		
				Middle	3.0	27.0	27.0	8.5	8.5	32.5	32.6	97.0	96.4	7.2	7.1		1.9	1.9		3.1	2.9	
						27.0		8.5		32.7		95.9		7.1			2.0			2.7		
				Bottom	5.0	26.9	26.9	8.5	8.5	33.1	33.1	96.4	96.2	7.1	7.1	7.1	2.1	2.1		3.4	3.3	
						26.9		8.5		33.1		96.0		7.1			2.1			3.2		
M2	Sunny	Calm	8:54	Surface	1.0	27.0	27.0	8.5	8.5	33.2	33.2	99.3	97.7	7.3	7.2	7.1	1.0	1.0	0.9	4.5	4.5	3.6
						26.9		8.5		33.3		96.1		7.1			1.0			4.5		
				Middle	5.2	26.7	26.8	8.6	8.5	34.0	33.7	94.9	95.3	7.0	7.0		0.8	0.8		3.6	3.7	
						26.9		8.5		33.5		95.7		7.1			0.8			3.7		
				Bottom	9.5	26.7	26.7	8.6	8.6	34.1	34.2	94.8	94.9	7.0	7.0	7.0	0.8	0.8		2.7	2.6	
						26.7		8.6		34.2		95.0		7.0			0.8			2.4		
M3	Sunny	Calm	9:17	Surface	1.0	27.0	27.0	8.4	8.4	31.5	32.2	96.0	94.5	7.1	7.0	6.9	1.7	1.7	1.0	3.4	3.6	3.2
						27.0		8.5		32.9		93.1		6.9			1.7			3.8		
				Middle	3.7	27.0	27.0	8.4	8.4	33.0	32.8	93.3	93.0	6.9	6.9		0.3	0.3		3.0	3.2	
						27.0		8.4		32.7		92.8		6.9			0.3			3.4		
				Bottom	6.5	26.8	26.8	8.5	8.5	33.8	33.9	92.7	92.7	6.9	6.8	6.8	0.9	0.9		2.9	2.8	
						26.8		8.5		33.9		92.7		6.8			0.9			2.7		
M4	Sunny	Calm	8:48	Surface	1.0	27.0	27.0	8.6	8.6	32.5	32.8	92.8	93.1	6.9	6.9	6.9	0.6	0.6	1.1	4.4	4.4	3.9
						26.9		8.6		33.1		93.4		6.9			0.6			4.3		
				Middle	5.0	26.9	26.9	8.6	8.6	33.3	33.3	93.4	93.3	6.9	6.9		1.1	1.1		4.0	4.0	
						26.9		8.6		33.3		93.2		6.9			1.1			4.0		
				Bottom	9.0	26.9	26.9	8.6	8.6	33.5	33.5	93.4	93.7	6.9	6.9	6.9	1.5	1.5		3.6	3.4	
						26.9		8.5		33.5		94.1		7.0			1.5			3.2		
M5	Sunny	Calm	9:33	Surface	1.0	27.0	27.0	8.4	8.4	33.0	33.0	97.3	95.8	7.2	7.1	7.0	1.0	1.0	1.4	6.0	5.9	4.6
						27.0		8.4		33.0		94.3		7.0			1.0			5.8		
				Middle	6.1	27.0	27.0	8.4	8.4	33.1	33.1	94.6	94.3	7.0	7.0		1.4	1.4		4.5	4.3	
						27.0		8.4		33.1		94.1		7.0			1.4			4.0		
				Bottom	11.0	26.9	26.9	8.4	8.4	33.2	33.2	93.9	93.8	6.9	6.9	6.9	1.6	1.6		3.7	3.5	
						27.0		8.4		33.2		93.7		6.9			1.7			3.3		
M6	Sunny	Calm	9:26	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	2.2	-	-	3.0
						-		-		-		-		-			-			-		
				Middle	2.0	27.1	27.1	8.4	8.4	32.3	32.3	99.6	98.7	7.3	7.3		2.2	2.2		3.0	3.0	
						27.1		8.4		32.3		97.9		7.2			2.2			2.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 27 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 2.5 NTU	***C2: 2.7 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.1 mg/L	***C2: 4.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 4.1 mg/L	***C2: 4.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 7.7 mg/L	***C2: 8.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 27 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	15:04	Surface	1.1	27.3	27.3	8.4	8.4	31.7	31.7	91.0	89.5	6.9	6.8	6.7	2.2	2.4	3.1	3.5	3.5	4.5
						27.2		8.4		31.8		88.0		6.7			2.6			3.4		
				Middle	9.1	27.1	27.1	8.4	8.4	32.5	32.4	87.8	87.6	6.7	6.7		3.3	3.2		4.9	4.9	
						27.1		8.4		32.4		87.4		6.6			3.2			4.8		
				Bottom	17.0	26.8	26.7	8.4	8.4	33.5	33.9	88.2	88.1	6.7	6.7	6.7	3.3	3.5		5.2	5.3	
						26.6		8.4		34.3		88.1		6.7			3.7			5.4		
C2	Sunny	Calm	14:03	Surface	1.0	27.6	27.6	8.6	8.6	30.7	30.7	91.5	90.0	6.9	6.8	6.7	2.9	3.0	4.6	4.2	4.3	5.4
						27.5		8.6		30.7		88.5		6.7			3.2			4.3		
				Middle	15.9	27.0	27.0	8.6	8.5	32.8	32.9	86.8	87.2	6.6	6.6		5.4	5.3		4.4	4.4	
						26.9		8.5		33.0		87.6		6.7			5.3			4.4		
				Bottom	31.0	26.9	26.9	8.5	8.5	33.0	33.0	87.2	87.4	6.6	6.6	6.6	5.6	5.5		7.8	7.6	
						26.9		8.5		33.0		87.6		6.7			5.4			7.4		
G1	Sunny	Calm	14:28	Surface	0.9	27.3	27.2	8.4	8.4	32.1	32.2	100.3	98.4	7.5	7.4	7.3	1.6	1.7	1.7	6.5	6.7	5.5
						27.2		8.4		32.3		96.6		7.3			1.8			6.9		
				Middle	3.9	27.2	27.2	8.4	8.4	32.5	32.5	95.7	96.3	7.2	7.2		1.4	1.5		5.4	5.6	
						27.2		8.4		32.5		97.0		7.3			1.7			5.8		
				Bottom	7.0	27.1	27.1	8.4	8.4	32.9	32.8	94.7	94.9	7.1	7.1	7.1	1.7	1.9		4.5	4.3	
						27.1		8.4		32.7		95.2		7.2			2.0			4.0		
G2	Sunny	Calm	14:18	Surface	1.0	27.3	27.2	8.5	8.5	32.5	32.6	98.9	96.6	7.4	7.2	7.2	2.3	2.3	2.2	3.4	3.5	5.2
						27.2		8.5		32.8		94.4		7.1			2.2			3.5		
				Middle	5.0	27.2	27.1	8.5	8.5	32.8	32.9	96.4	95.0	7.2	7.1		2.2	2.1		4.0	4.1	
						27.1		8.5		33.0		93.7		7.0			2.1			4.2		
				Bottom	8.9	27.1	27.0	8.5	8.5	33.1	33.1	93.7	93.1	7.0	7.0	7.0	2.5	2.3		8.0	7.9	
						27.0		8.4		33.2		92.6		7.0			2.2			7.8		
G3	Sunny	Calm	14:34	Surface	1.0	27.5	27.3	8.4	8.4	31.2	31.4	99.9	98.3	7.5	7.4	7.4	1.7	1.8	1.5	4.8	4.9	4.2
						27.1		8.4		31.5		96.7		7.3			2.0			5.0		
				Middle	4.0	27.2	27.1	8.4	8.4	32.6	32.6	98.7	97.7	7.4	7.3		1.1	1.1		4.6	4.5	
						27.1		8.4		32.7		96.8		7.3			1.1			4.4		
				Bottom	7.0	27.0	27.0	8.4	8.4	33.0	33.0	91.1	90.8	6.9	6.9	6.9	1.6	1.5		3.2	3.2	
						27.1		8.4		32.9		90.6		6.9			1.5			3.2		
G4	Sunny	Calm	14:46	Surface	1.0	27.2	27.3	8.3	8.3	32.1	31.6	98.7	99.7	7.4	7.5	7.4	2.8	2.6	2.8	3.8	3.7	4.9
						27.5		8.3		31.1		100.7		7.6			2.3			3.6		
				Middle	4.5	27.1	27.1	8.3	8.3	32.6	32.7	96.9	96.7	7.3	7.3		2.7	2.7		5.1	5.1	
						27.1		8.3		32.8		96.6		7.3			2.7			5.1		
				Bottom	7.0	27.0	27.0	8.3	8.3	33.0	33.1	91.8	90.9	6.9	6.9	6.9	3.0	3.2		5.5	5.8	
						27.0		8.3		33.1		90.0		6.8			3.5			6.0		
M1	Sunny	Calm	14:23	Surface	0.9	27.5	27.3	8.4	8.4	31.7	32.2	99.9	96.1	7.5	7.2	7.2	3.0	3.1	3.1	3.7	3.9	4.7
						27.1		8.4		32.7		92.3		7.0			3.2			4.0		
				Middle	2.9	27.3	27.2	8.4	8.4	32.2	32.4	96.6	94.8	7.2	7.1		2.9	2.9		4.9	5.0	
						27.2		8.4		32.5		93.1		7.0			2.9			5.0		
				Bottom	4.9	27.1	27.1	8.4	8.4	32.8	32.8	92.1	91.9	6.9	6.9	6.9	3.2	3.4		5.1	5.2	
						27.1		8.4		32.8		91.8		6.9			3.6			5.2		
M2	Sunny	Calm	14:13	Surface	0.9	27.4	27.2	8.6	8.6	32.3	32.6	100.4	97.2	7.5	7.3	7.2	1.3	1.2	1.5	4.2	4.4	4.7
						27.1		8.6		32.9		94.1		7.1			1.2			4.5		
				Middle	6.0	27.0	27.1	8.6	8.6	33.0	32.9	95.3	95.5	7.2	7.2		0.6	0.7		4.7	4.8	
						27.1		8.6		32.8		95.7		7.2			0.8			4.9		
				Bottom	11.0	26.8	26.8	8.6	8.6	33.7	33.8	92.9	91.8	7.0	6.9	6.9	2.5	2.7		5.0	5.1	
						26.8		8.6		33.9		90.8		6.9			2.9			5.1		
M3	Sunny	Calm	14:41	Surface	1.0	27.2	27.1	8.3	8.3	31.7	32.2	98.7	96.9	7.4	7.3	7.1	3.0	2.9	2.8	4.4	4.4	3.7
						27.1		8.4		32.6		95.1		7.2			2.7			4.4		
				Middle	3.9	27.1	27.1	8.3	8.3	32.6	32.6	92.5	91.7	7.0	6.9		2.4	2.5		4.0	3.8	
						27.1		8.3		32.6		90.9		6.9			2.6			3.5		
				Bottom	7.0	27.1	27.0	8.4	8.3	32.9	33.0	91.7	90.4	6.9	6.8	6.8	3.0	2.9		3.1	2.9	
						27.0		8.3		33.1		89.2		6.8			2.9			2.7		
M4	Sunny	Calm	14:08	Surface	1.0	27.5	27.4	8.5	8.5	31.5	31.7	93.2	90.3	7.0	6.8	6.7	3.8	3.7	3.7	3.0	2.9	3.7
						27.2		8.5		31.9		87.4		6.7			3.6			2.8		
				Middle	4.9	27.2	27.1	8.5	8.6	32.1	32.2	87.8	87.7	6.7	6.7		3.3	3.5		3.6	3.6	
						27.1		8.6		32.3		87.6		6.7			3.7			3.6		
				Bottom	8.9	27.1	27.1	8.5	8.5	32.7	32.6	89.4	89.4	6.8	6.8	6.8	4.1	3.9		4.7	4.7	
						27.1		8.5		32.6		89.4		6.8			3.8			4.7		
M5	Sunny	Calm	14:58	Surface	1.0	27.4	27.3	8.3	8.3	31.9	32.0	94.3	91.3	7.1	6.9	6.8	2.9	2.8	2.6	3.3	3.3	2.7
						27.2		8.3		32.0		88.4		6.7			2.6			3.2		
				Middle	6.1	27.3	27.2	8.3	8.3	32.0	32.1	89.9	89.0	6.8	6.7		2.7	2.4		2.8	2.6	
						27.2		8.3		32.1		88.2		6.7			2.2			2.4		
				Bottom	11.0	27.2	27.2	8.3	8.3	32.1	32.1	88.4	88.3	6.7	6.7	6.7	2.4	2.5		2.3	2.3	
						27.2		8.3		32.1		88.2		6.7			2.6			2.2		
M6	Sunny	Calm	14:51	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	-	-	2.3
						-		-		-		-		-		-	-			-		
				Middle	2.0	27.3	27.2	8.3	8.3	31.8	32.2	100.1	98.5	7.5	7.4	7.4	8.0	8.0		2.2	2.3	
						27.1		8.3		32.6		96.9		7.3			8.0			2.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 27 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 4.2 NTU	***C1: 4.5 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.1 mg/L	***C1: 4.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.1 mg/L	***C1: 4.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 6.4 mg/L	***C1: 6.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 30 August 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	12:47	Surface	1.1	26.4	26.4	8.6	8.6	31.6	31.6	101.7	101.4	8.5	8.5	7.1	1.2	1.2	2.9	2.8	2.8	3.4
						26.4		8.6		31.6		101.1		8.4			1.2			2.8		
				Middle	9.1	24.3	24.3	8.4	8.4	33.0	33.0	60.1	60.4	5.8	5.8		2.2	2.1		3.3	3.4	
						24.3		8.4		33.0		60.7		5.8			2.1			3.5		
				Bottom	17.1	23.0	23.0	8.4	8.4	34.3	34.3	51.2	51.2	5.2	5.2	5.2	5.6	5.5		3.8	4.0	
						23.0		8.4		34.3		51.1		5.2			5.5			4.2		
C2	Sunny	Calm	12:03	Surface	1.1	26.2	26.2	8.9	8.8	31.6	31.6	85.8	85.7	7.4	7.4	6.3	1.1	1.1	2.1	3.3	3.2	3.9
						26.2		8.8		31.6		85.6		7.4			1.1			3.1		
				Middle	16.0	23.2	23.2	8.7	8.7	34.1	34.1	51.2	51.3	5.2	5.2		2.5	2.0		3.4	3.5	
						23.2		8.7		34.1		51.3		5.2			1.5			3.6		
				Bottom	22.0	23.0	23.0	8.6	8.6	34.3	34.3	50.9	50.9	5.2	5.2	5.2	4.4	3.1		5.2	4.9	
						23.0		8.6		34.3		50.9		5.2			1.8			4.6		
G1	Sunny	Calm	12:27	Surface	1.3	26.2	26.2	8.7	8.7	31.5	31.5	86.0	86.0	7.4	7.4	7.2	3.3	2.2	1.6	2.8	3.0	3.7
						26.2		8.7		31.5		85.9		7.4			1.0			3.1		
				Middle	4.2	25.6	25.6	8.5	8.5	31.8	31.8	78.2	78.5	7.0	7.0		1.2	1.2		3.5	3.9	
						25.6		8.5		31.8		78.8		7.0			1.3			4.3		
				Bottom	7.1	25.4	25.4	8.5	8.5	32.0	32.0	76.0	75.7	6.8	6.8	6.8	1.3	1.3		4.4	4.3	
						25.4		8.5		32.0		75.3		6.8			1.3			4.1		
G2	Sunny	Calm	12:19	Surface	1.0	26.3	26.3	8.6	8.6	31.5	31.5	85.2	84.8	7.4	7.4	7.1	1.3	1.2	1.7	4.1	4.0	4.7
						26.3		8.6		31.5		84.4		7.3			1.2			3.8		
				Middle	5.1	25.7	25.7	8.4	8.4	31.8	31.8	77.7	77.7	6.9	6.9		1.4	1.3		4.8	4.8	
						25.7		8.4		31.8		77.7		6.9			1.3			4.7		
				Bottom	8.9	24.8	24.8	8.4	8.4	32.5	32.6	58.9	58.4	5.7	5.6	5.6	2.6	2.6		5.6	5.5	
						24.7		8.4		32.6		57.8		5.6			2.5			5.3		
G3	Sunny	Calm	12:30	Surface	1.0	26.4	26.4	8.6	8.6	31.2	31.1	87.6	87.3	7.5	7.5	7.4	1.5	1.6	1.3	5.8	5.6	4.7
						26.5		8.6		31.0		86.9		7.5			1.7			5.4		
				Middle	4.1	25.6	25.6	8.6	8.6	31.9	31.8	83.9	84.0	7.3	7.3		0.9	0.9		4.7	4.5	
						25.7		8.6		31.7		84.0		7.4			0.9			4.3		
				Bottom	7.1	25.1	25.1	8.4	8.4	32.3	32.3	67.1	67.0	6.2	6.2	6.2	1.4	1.4		4.0	4.0	
						25.1		8.4		32.3		66.9		6.2			1.4			4.0		
G4	Sunny	Calm	12:35	Surface	1.0	26.1	26.1	8.6	8.6	31.7	31.7	78.1	78.1	6.9	6.9	6.9	1.4	1.4	1.4	2.9	2.9	4.5
						26.1		8.6		31.7		78.0		6.9			1.4			2.9		
				Middle	4.0	25.6	25.6	8.4	8.4	31.9	31.9	78.2	78.1	7.0	7.0		1.4	1.4		4.4	4.6	
						25.6		8.4		31.9		78.0		6.9			1.4			4.8		
				Bottom	7.0	25.3	25.2	8.4	8.4	32.1	32.1	71.0	70.9	6.5	6.5	6.5	1.6	1.6		6.2	6.0	
						25.2		8.4		32.1		70.8		6.5			1.6			5.8		
M1	Sunny	Calm	12:24	Surface	1.1	26.2	26.2	8.6	8.6	31.2	31.3	82.7	82.4	7.2	7.2	7.0	1.2	1.2	1.5	2.6	2.6	3.4
						26.2		8.6		31.3		82.1		7.2			1.2			2.5		
				Middle	3.1	25.8	25.8	8.5	8.5	31.7	31.7	77.0	77.2	6.9	6.9		1.5	1.5		3.6	3.5	
						25.8		8.5		31.7		77.3		6.9			1.5			3.3		
				Bottom	5.0	25.6	25.7	8.5	8.4	31.9	31.9	73.5	73.8	6.6	6.7	6.7	1.9	1.8		4.0	4.2	
						25.9		8.4		31.9		74.0		6.7			1.7			4.3		
M2	Sunny	Calm	12:15	Surface	1.0	26.3	26.3	8.6	8.6	31.7	31.7	87.8	87.9	7.5	7.5	6.8	0.9	0.9	1.8	4.4	4.6	4.0
						26.3		8.6		31.7		87.9		7.6			0.9			4.8		
				Middle	6.1	25.0	25.1	8.4	8.4	32.3	32.3	64.9	65.2	6.1	6.1		1.6	1.6		3.8	4.0	
						25.1		8.4		32.3		65.5		6.1			1.6			4.1		
				Bottom	11.0	24.5	24.4	8.4	8.4	32.9	32.9	54.0	53.9	5.4	5.4	5.4	2.7	2.8		3.4	3.5	
						24.4		8.4		33.0		53.8		5.3			3.0			3.5		
M3	Sunny	Calm	12:32	Surface	1.2	26.4	26.4	8.6	8.6	30.4	30.5	78.5	78.3	7.0	6.9	6.9	4.9	3.9	2.5	4.7	4.6	6.1
						26.4		8.6		30.5		78.1		6.9			2.9			4.4		
				Middle	4.2	25.6	25.6	8.4	8.4	31.9	31.9	77.2	77.2	6.9	6.9		1.5	1.5		6.5	6.4	
						25.7		8.4		31.8		77.1		6.9			1.4			6.2		
				Bottom	6.9	25.1	25.1	8.4	8.4	32.3	32.3	66.8	66.6	6.2	6.2	6.2	2.1	2.1		7.2	7.3	
						25.1		8.4		32.3		66.4		6.2			2.1			7.3		
M4	Sunny	Calm	12:11	Surface	1.1	26.4	26.4	8.6	8.6	31.5	31.5	92.6	92.6	7.9	7.9	7.2	1.1	1.1	1.5	5.9	6.1	5.0
						26.4		8.6		31.5		92.6		7.9			1.1			6.2		
				Middle	4.9	25.1	25.1	8.4	8.4	32.3	32.3	70.1	70.2	6.4	6.4		1.5	1.5		5.0	4.8	
						25.1		8.5		32.2		70.2		6.4			1.5			4.6		
				Bottom	9.0	24.2	24.2	8.4	8.4	33.1	33.1	57.9	57.8	5.6	5.6	5.6	2.0	2.0		3.9	4.1	
						24.3		8.4		33.1		57.7		5.6			2.1			4.2		
M5	Sunny	Calm	12:42	Surface	1.1	26.1	26.1	8.6	8.6	31.7	31.7	93.3	93.1	7.9	7.9	7.4	1.5	1.3	2.7	4.4	4.4	3.8
						26.1		8.6		31.7		92.8		7.9			1.1			4.4		
				Middle	6.1	25.5	25.6	8.4	8.4	31.9	31.9	76.5	77.0	6.9	6.9		1.2	1.2		3.6	3.8	
						25.7		8.4		31.9		77.5		6.9			1.2			4.0		
				Bottom	11.2	23.9	23.9	8.4	8.4	33.3	33.4	55.0	54.7	5.5	5.4	5.4	5.0	5.6		3.3	3.3	
						23.9		8.4		33.4		54.3		5.4			6.2			3.3		
M6	Sunny	Calm	12:39	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	1.4	-	-	2.5
						-		-		-		-		-			-			-		
				Middle	2.1	26.1	26.1	8.6	8.6	31.8	31.8	80.9	80.8	7.1	7.1		1.4	1.4		2.6	2.5	
						26.1		8.6		31.8		80.7		7.1			1.4			2.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 30 August 2021 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C2: 3.7 NTU	***C2: 4.0 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 3.8 mg/L	***C2: 4.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 3.8 mg/L	***C2: 4.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C2: 5.9 mg/L	***C2: 6.4 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 30 August 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	17:39	Surface	1.2	26.1	26.2	8.5	8.5	31.7	31.7	89.9	89.7	7.7	7.7	6.7	1.2	1.2	3.0	3.8	3.7	4.1
						26.2		8.5		31.7		89.4		7.7			1.2			3.5		
				Middle	9.0	24.3	24.3	8.2	8.2	33.0	33.0	57.3	57.8	5.6	5.6		2.3	2.3		4.0	4.1	
						24.3		8.2		33.0		58.3		5.7			2.3			4.1		
				Bottom	17.2	23.0	23.0	8.2	8.2	34.3	34.3	50.3	50.3	5.2	5.2	5.2	5.6	5.6		4.6	4.5	
						23.0		8.2		34.3		50.2		5.2			5.5			4.4		
C2	Sunny	Calm	16:58	Surface	1.2	26.4	26.4	8.4	8.4	31.5	31.5	88.5	88.7	7.6	7.6	6.4	1.2	1.2	4.4	3.6	3.8	4.8
						26.4		8.4		31.5		88.8		7.6			1.1			4.0		
				Middle	15.8	23.4	23.4	8.4	8.4	33.9	33.9	51.8	52.0	5.3	5.3		4.9	5.0		4.9	4.9	
						23.4		8.4		33.9		52.1		5.3			5.0			4.8		
				Bottom	22.0	23.0	23.0	8.4	8.4	34.3	34.3	50.6	50.6	5.2	5.2	5.2	7.0	6.9		5.5	5.7	
						23.0		8.4		34.3		50.6		5.2			6.9			5.8		
G1	Sunny	Calm	17:19	Surface	1.1	25.7	25.7	8.5	8.5	31.8	31.8	83.0	83.5	7.3	7.3	7.1	1.2	1.2	1.3	4.6	4.5	3.8
						25.8		8.5		31.7		84.0		7.3			1.2			4.4		
				Middle	4.0	25.7	25.7	8.3	8.3	31.8	31.7	76.7	77.0	6.9	6.9		1.2	1.2		4.0	3.9	
						25.8		8.3		31.7		77.2		6.9			1.2			3.8		
				Bottom	7.0	25.5	25.5	8.3	8.3	31.9	31.9	76.1	75.9	6.8	6.8	6.8	1.5	1.5		2.9	2.9	
						25.5		8.3		31.9		75.7		6.8			1.5			2.8		
G2	Sunny	Calm	17:11	Surface	1.1	26.1	26.2	8.5	8.5	31.6	31.6	81.9	82.1	7.2	7.2	7.0	1.4	1.4	1.7	4.7	4.6	5.1
						26.2		8.5		31.6		82.3		7.2			1.3			4.5		
				Middle	5.1	25.8	25.9	8.3	8.3	31.8	31.8	74.9	75.1	6.7	6.7		1.4	1.4		5.0	5.2	
						25.9		8.3		31.8		75.2		6.7			1.4			5.3		
				Bottom	8.9	24.7	24.7	8.3	8.3	32.6	32.6	59.3	59.1	5.7	5.7	5.7	2.3	2.3		5.8	5.7	
						24.7		8.3		32.6		58.8		5.7			2.3			5.5		
G3	Sunny	Calm	17:21	Surface	1.0	26.4	26.4	8.5	8.5	31.3	31.3	82.5	82.9	7.2	7.2	7.2	1.1	1.1	1.2	5.2	5.1	4.3
						26.4		8.5		31.3		83.2		7.2			1.0			4.9		
				Middle	4.1	25.5	25.5	8.3	8.3	31.9	31.9	82.2	82.1	7.2	7.2		1.0	1.0		4.7	4.5	
						25.5		8.3		31.9		81.9		7.2			1.0			4.2		
				Bottom	7.1	25.2	25.2	8.3	8.3	32.2	32.2	73.3	73.2	6.7	6.6	6.6	1.3	1.4		3.5	3.3	
						25.1		8.3		32.2		73.0		6.6			1.4			3.1		
G4	Sunny	Calm	17:27	Surface	1.1	25.7	25.8	8.5	8.5	31.9	31.8	77.1	77.1	6.9	6.9	6.9	1.5	1.4	1.5	5.3	5.5	4.0
						25.8		8.5		31.8		77.1		6.9			1.4			5.7		
				Middle	4.1	25.6	25.6	8.3	8.3	31.9	31.9	78.3	78.2	7.0	7.0		1.3	1.3		4.0	3.9	
						25.6		8.3		31.9		78.0		6.9			1.3			3.8		
				Bottom	7.0	25.3	25.3	8.3	8.3	32.1	32.1	71.7	71.6	6.5	6.5	6.5	1.7	1.7		2.5	2.6	
						25.2		8.3		32.1		71.5		6.5			1.7			2.7		
M1	Sunny	Calm	17:16	Surface	1.1	26.3	26.2	8.5	8.5	31.2	31.2	80.1	80.0	7.0	7.0	7.0	1.1	1.1	1.3	2.8	2.6	2.2
						26.2		8.5		31.2		79.9		7.0			1.1			2.4		
				Middle	3.2	25.8	25.8	8.3	8.3	31.6	31.6	77.6	77.9	6.9	6.9		1.3	1.3		2.1	2.1	
						25.9		8.3		31.6		78.1		6.9			1.3			2.1		
				Bottom	5.1	25.7	25.7	8.3	8.3	31.7	31.8	75.9	75.6	6.8	6.8	6.8	1.5	1.5		1.7	1.8	
						25.7		8.3		31.8		75.3		6.8			1.6			1.8		
M2	Sunny	Calm	17:07	Surface	1.2	26.3	26.3	8.5	8.5	31.6	31.7	82.5	83.9	7.2	7.3	6.8	1.1	1.0	2.0	5.2	5.0	4.1
						26.3		8.5		31.7		85.3		7.4			1.0			4.7		
				Middle	6.1	25.1	25.1	8.3	8.3	32.3	32.3	67.5	67.7	6.3	6.3		1.7	1.6		4.1	3.9	
						25.1		8.3		32.3		67.9		6.3			1.6			3.7		
				Bottom	11.1	24.4	24.4	8.3	8.3	33.0	33.0	52.1	51.9	5.2	5.2	5.2	3.4	3.5		3.3	3.3	
						24.4		8.3		33.0		51.7		5.2			3.5			3.3		
M3	Sunny	Calm	17:24	Surface	1.0	25.7	25.8	8.5	8.5	31.7	31.6	78.2	78.1	7.0	6.9	6.9	1.4	1.3	1.4	4.4	4.2	4.5
						25.9		8.5		31.5		78.0		6.9			1.2			4.0		
				Middle	4.0	25.9	26.0	8.3	8.3	31.7	31.6	77.4	77.8	6.9	6.9		1.3	1.2		4.6	4.6	
						26.0		8.3		31.5		78.1		6.9			1.2			4.5		
				Bottom	7.1	25.4	25.3	8.3	8.3	32.1	32.1	67.2	67.0	6.2	6.2	6.2	1.7	1.8		5.0	4.9	
						25.2		8.3		32.2		66.7		6.2			1.8			4.7		
M4	Sunny	Calm	17:03	Surface	1.1	26.4	26.4	8.5	8.5	31.5	31.5	88.7	88.9	7.6	7.6	7.1	1.1	1.1	1.4	2.5	2.4	3.4
						26.4		8.5		31.5		89.1		7.6			1.1			2.2		
				Middle	5.2	25.2	25.3	8.3	8.3	32.2	32.2	70.8	71.2	6.5	6.5		1.4	1.4		3.6	3.7	
						25.3		8.3		32.1		71.6		6.5			1.4			3.8		
				Bottom	9.2	24.4	24.4	8.3	8.3	32.9	32.9	59.5	59.4	5.7	5.7	5.7	1.9	1.9		4.0	4.1	
						24.4		8.3		33.0		59.2		5.7			1.9			4.1		
M5	Sunny	Calm	17:35	Surface	1.1	26.1	26.1	8.4	8.4	31.6	31.6	104.1	97.6	8.7	8.2	7.4	1.1	1.1	2.1	4.7	4.8	4.3
						26.1		8.4		31.7		91.1		7.8			1.1			4.8		
				Middle	6.1	25.3	25.3	8.3	8.3	32.1	32.1	72.4	73.4	6.6	6.6		1.2	1.2		4.2	4.4	
						25.3		8.3		32.1		74.3		6.7			1.3			4.5		
				Bottom	11.1	23.9	23.9	8.3	8.3	33.4	33.4	54.4	53.9	5.4	5.4	5.4	4.2	3.9		3.9	3.9	
						23.9		8.3		33.5		53.3		5.3			3.6			3.8		
M6	Sunny	Calm	17:30	Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-	1.3	-	-	4.7
						-		-		-		-		-			-			-		
				Middle	2.0	26.1	26.1	8.5	8.5	31.8	31.8	79.5	79.5	7.0	7.0		8.0	8.0		4.8	4.7	
						26.1		8.5		31.8		79.4		7.0			8.0			4.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 30 August 2021 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU***	***22.2 NTU***
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		C1: 6.7 NTU	***C1: 7.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L***	***6.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.4 mg/L	***C1: 4.7 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L***	***7.4 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 4.4 mg/L	***C1: 4.7 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L***	***7.9 mg/L***
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		C1: 5.4 mg/L	***C1: 5.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

APPENDIX J
QUALITY CONTROL REPORTS FOR LABORATORY ANALYSIS

CERTIFICATE OF ANALYSIS

Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 9
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2134350**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 30-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 07-Sep-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 136
Site	:						- *Analysed* : 136

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This document has been signed by those names that appear on this report and are the authorised signatories.

Signatory	*Position*	*Authorised results for:*
Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

This report supersedes any previous report(s) with this reference. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 30-Aug-2021 to 07-Sep-2021.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2134350 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 9
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2130201**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 02-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 09-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 136
Site	:						- *Analysed* : 136

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Signatory	*Position*	*Authorised results for:*
Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2130201 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

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Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 6
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2130202**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 04-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 10-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 68
Site	:						- *Analysed* : 68

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Signatory	*Position*	*Authorised results for:*
Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2130202 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 9
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2130207**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 06-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 11-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 136
Site	:						- *Analysed* : 136

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Signatory	*Position*	*Authorised results for:*
Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2130207 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 6
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2130989**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 09-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 16-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 68
Site	:						- *Analysed* : 68

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Signatory	*Position*	*Authorised results for:*
Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2130989 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

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Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 9
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2130990**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 11-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 19-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 136
Site	:						- *Analysed* : 136

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Signatory	*Position*	*Authorised results for:*
Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2130990 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

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Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2130991**
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E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 13-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 20-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 136
Site	:						- *Analysed* : 136

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Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2130991 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

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Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 9
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2132358**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 16-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 23-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 136
Site	:						- *Analysed* : 136

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Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2132358 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

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Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 9
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2132360**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 18-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 25-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 136
Site	:						- *Analysed* : 136

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Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2132360 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

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Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 9
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2132361**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 20-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 27-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 136
Site	:						- *Analysed* : 136

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2132361 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

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Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 6
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2133398**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
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Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 23-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 27-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 68
Site	:						- *Analysed* : 68

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Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2133398 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

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Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2133404**
Address	:	RM 1710, TECHNOLOGY PARK, 18 ON LAI STREET, SHATIN, N.T. HONG KONG HONG KONG	*Address*	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 25-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 31-Aug-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 136
Site	:						- *Analysed* : 136

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Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2133404 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

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Client	:	CINOTECH CONSULTANTS LIMITED	*Laboratory*	:	ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 9
Contact	:	CCL	*Contact*	:	Richard Fung	*Work Order*	: **HK2133407**
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E-mail	:	data@cinotech.com.hk	*E-mail*	:	richard.fung@alsglobal.com		
Telephone	:	----	*Telephone*	:	+852 2610 1044		
Facsimile	:	----	*Facsimile*	:	+852 2610 2021		
Project	:	TKOLTT/MA16034				*Date received*	: 27-Aug-2021
Order number	:	PO20008	*Quote number*	:	HKE/2756/2020	*Date of issue*	: 06-Sep-2021
C-O-C number	:	—				*No. of samples*	- *Received* : 136
Site	:						- *Analysed* : 136

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Signatory	*Position*	*Authorised results for:*
Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2133407 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

APPENDIX K
SUMMARY OF EXCEEDANCE

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel – Design and Construction

Appendix K – Summary of Exceedance

Reporting Period: August 2021

(A) Exceedance Report for Air Quality

No limit level and action level exceedance for air quality monitoring of 24-hr TSP was recorded in the reporting month.

No exceedance for air quality monitoring of 1-hr TSP was recorded in the reporting month.

(B) Exceedance Report for Construction Noise

Action Level for Construction Noise

No action level exceedances were recorded due to the documented complaints received in this reporting month.

Limit Level for Construction Noise

No limit level exceedance for daytime construction noise monitoring was recorded in the reporting month.

No exceedance for evening-time construction noise monitoring was recorded in the reporting month.

No exceedances for nighttime construction noise monitoring was recorded in the reporting month.

Exceedance recorded during daytime

(NIL in the reporting month)

Exceedance recorded during night-time

(NIL in the reporting month)

(C) Exceedance Report for Water Quality

Fifty-eight (58) Action Level and one-hundred-and-thirty (130) Limit Level exceedances were recorded in Monitoring Stations (M) during marine water quality monitoring. Refer to the attached notifications and investigation report for details.

Since October 2019, groundwater monitoring had been suspended.

(D) Exceedance Report for Ecology

(NIL in the reporting month)

(E) Exceedance Report for Cultural Heritage

(NIL in the reporting month)

(F) Exceedance Report for Landfill Gas

(NIL in the reporting month)

Date of Water Quality Monitoring: **02 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	2.8	G1	14:46	6.0	6.9	3.3	3.6	**4.0**
Mid-Ebb	C2	surface	2.8	G2	14:40	6.0	6.9	3.3	3.6	**4.3**
Mid-Ebb	C2	surface	2.8	G4	14:53	6.0	6.9	3.3	3.6	**3.4**
Mid-Ebb	C2	surface	2.8	M1	14:44	6.2	7.4	3.3	3.6	**4.2**
Mid-Ebb	C2	surface	2.8	M2	14:38	6.2	7.4	3.3	3.6	**3.6**
Mid-Ebb	C2	surface	2.8	M3	14:52	6.2	7.4	3.3	3.6	**4.7**
Mid-Ebb	C2	surface	2.8	M5	14:56	8.0	6.0	3.3	3.6	**4.5**
Mid-Ebb	C2	bottom	3.5	G3	14:48	6.9	7.9	4.1	4.5	**5.1**
Mid-Ebb	C2	bottom	3.5	M2	14:38	6.9	7.9	4.1	4.5	**4.5**
Mid-Flood	C1	surface	3.5	G3	15:10	6.0	6.9	4.1	4.5	**5.2**
Mid-Flood	C1	surface	3.5	G4	15:13	6.0	6.9	4.1	4.5	**5.0**
Mid-Flood	C1	surface	3.5	M5	15:18	6.2	7.4	4.1	4.5	**4.3**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **02 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-flood	C1	5.3	M4	15:00	6.4	6.9	**6.5**
Intake	N/A	N/A	Mid-flood	C1	5.3	M6	15:17	6.4	6.9	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **04 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB) /~~ Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Flood	C1	surface	5.8	G2	9:03	6.0	6.9	6.9	7.5	***7.0***
Mid-Flood	C1	surface	5.8	G3	9:28	6.0	6.9	6.9	7.5	***6.5***
Mid-Flood	C1	surface	5.8	G4	9:44	6.0	6.9	6.9	7.5	***6.5***

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **04 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Intake	N/A	N/A	Mid-flood	C1	3.4	M6	9:53	4.1	4.4	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **06 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB) /~~ Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	3.4	G1	17:45	6.0	6.9	4.0	4.4	**4.8**
Mid-Ebb	C2	surface	3.4	G2	17:37	6.0	6.9	4.0	4.4	**5.0**
Mid-Ebb	C2	surface	3.4	G3	17:48	6.0	6.9	4.0	4.4	**5.2**
Mid-Ebb	C2	surface	3.4	G4	17:55	6.0	6.9	4.0	4.4	**5.2**
Mid-Ebb	C2	surface	3.4	M3	17:51	6.2	7.4	4.0	4.4	**5.0**
Mid-Ebb	C2	bottom	4.5	G1	17:45	6.9	7.9	5.3	5.8	7.0
Mid-Flood	C1	surface	2.5	G1	11:22	6.0	6.9	2.9	3.2	**3.9**
Mid-Flood	C1	surface	2.5	G2	11:14	6.0	6.9	2.9	3.2	**3.6**
Mid-Flood	C1	surface	2.5	G3	11:25	6.0	6.9	2.9	3.2	**3.5**
Mid-Flood	C1	surface	2.5	G4	11:32	6.0	6.9	2.9	3.2	**3.2**
Mid-Flood	C1	surface	2.5	M1	11:19	6.2	7.4	2.9	3.2	**5.5**
Mid-Flood	C1	surface	2.5	M2	11:10	6.2	7.4	2.9	3.2	**4.8**
Mid-Flood	C1	surface	2.5	M3	11:29	6.2	7.4	2.9	3.2	**5.8**
Mid-Flood	C1	surface	2.5	M4	17:29	6.2	7.4	2.9	3.2	**3.6**
Mid-Flood	C1	surface	2.5	M5	11:40	6.2	7.4	2.9	3.2	**4.9**
Mid-Flood	C1	bottom	3.7	G1	11:22	6.9	7.9	4.4	4.8	**4.8**
Mid-Flood	C1	bottom	3.7	G3	11:25	6.9	7.9	4.4	4.8	**4.6**
Mid-Flood	C1	bottom	3.7	G4	11:32	6.9	7.9	4.4	4.8	**4.6**
Mid-Flood	C1	bottom	3.7	M1	11:19	6.9	7.9	4.4	4.8	**4.7**
Mid-Flood	C1	bottom	3.7	M4	17:29	6.9	7.9	4.4	4.8	**5.1**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **06 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-Ebb	C2	4.7	G2	17:37	5.7	6.1	**6.0**
Bottom	19.3	22.2	Mid-Ebb	C2	4.7	M5	18:04	5.7	6.1	**7.8**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **09 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB) /~~ Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Flood	C1	surface	3.0	G1	12:27	6.0	6.9	3.5	3.8	**3.6**
Mid-Flood	C1	surface	3.0	G4	12:48	6.0	6.9	3.5	3.8	**5.5**
Mid-Flood	C1	surface	3.0	M1	12:13	6.2	7.4	3.5	3.8	**3.8**
Mid-Flood	C1	surface	3.0	M2	12:01	6.2	7.4	3.5	3.8	**4.8**
Mid-Flood	C1	bottom	3.9	M3	12:42	6.9	7.9	4.7	5.1	**4.8**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **09 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-flood	C1	1.4	G1	12:27	1.7	1.9	**2.0**
Bottom	19.3	22.2	Mid-flood	C1	1.4	G3	12:34	1.7	1.9	**2.0**
Bottom	19.3	22.2	Mid-flood	C1	1.4	G4	12:48	1.7	1.9	**3.3**
Bottom	19.3	22.2	Mid-flood	C1	1.4	M1	12:13	1.7	1.9	**4.4**
Bottom	19.3	22.2	Mid-flood	C1	1.4	M3	12:42	1.7	1.9	**3.0**
Intake	N/A	N/A	Mid-flood	C1	1.4	M6	13:03	1.7	1.9	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **11 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB) /~~ Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	3.3	M2	14:07	6.2	7.4	4.0	4.3	**4.2**
Mid-Ebb	C2	surface	3.3	M3	14:29	6.2	7.4	4.0	4.3	**5.4**
Mid-Flood	C1	surface	3.3	G1	14:23	6.0	6.9	4.0	4.3	**5.3**
Mid-Flood	C1	surface	3.3	G2	14:13	6.0	6.9	4.0	4.3	**4.7**
Mid-Flood	C1	surface	3.3	G4	14:34	6.0	6.9	4.0	4.3	6.3
Mid-Flood	C1	surface	3.3	M2	14:09	6.2	7.4	4.0	4.3	6.8
Mid-Flood	C1	surface	3.3	M5	14:45	6.2	7.4	4.0	4.3	**5.4**
Mid-Flood	C1	bottom	4.9	G1	14:23	6.9	7.9	5.9	6.4	**6.3**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **11 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Intake	N/A	N/A	Mid-flood	C1	5.6	M6	14:39	6.7	7.3	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **13 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	bottom	3.1	G2	12:06	6.9	7.9	3.7	4.0	**4.7**
Mid-Ebb	C2	bottom	3.1	G3	12:12	6.9	7.9	3.7	4.0	**5.6**
Mid-Ebb	C2	bottom	3.1	M2	12:02	6.9	7.9	3.7	4.0	**4.3**
Mid-Ebb	C2	bottom	3.1	M3	12:15	6.9	7.9	3.7	4.0	**4.1**
Mid-Flood	C1	bottom	3.1	G1	12:12	6.9	7.9	3.7	4.0	**4.0**
Mid-Flood	C1	bottom	3.1	G2	12:06	6.9	7.9	3.7	4.0	**4.7**
Mid-Flood	C1	bottom	3.1	G3	12:14	6.9	7.9	3.7	4.0	**4.8**
Mid-Flood	C1	bottom	3.1	M1	12:10	6.9	7.9	3.7	4.0	**4.5**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **13 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-Ebb	C2	5.1	G1	12:11	6.2	6.7	**8.4**
Bottom	19.3	22.2	Mid-Ebb	C2	5.1	G3	12:12	6.2	6.7	**10.9**
Bottom	19.3	22.2	Mid-Ebb	C2	5.1	M2	12:02	6.2	6.7	**10.0**
Bottom	19.3	22.2	Mid-Ebb	C2	5.1	M3	12:15	6.2	6.7	**7.2**
Bottom	19.3	22.2	Mid-flood	C1	2.5	G1	12:12	3.0	3.2	**12.7**
Bottom	19.3	22.2	Mid-flood	C1	2.5	G3	12:14	3.0	3.2	***27.9***
Bottom	19.3	22.2	Mid-flood	C1	2.5	G4	12:17	3.0	3.2	**5.1**
Bottom	19.3	22.2	Mid-flood	C1	2.5	M1	12:10	3.0	3.2	**6.3**
Bottom	19.3	22.2	Mid-flood	C1	2.5	M2	12:04	3.0	3.2	**8.9**
Bottom	19.3	22.2	Mid-flood	C1	2.5	M3	12:15	3.0	3.2	**9.8**
Bottom	19.3	22.2	Mid-flood	C1	2.5	M5	12:23	3.0	3.2	**3.1**
Intake	N/A	N/A	Mid-flood	C1	2.5	M6	12:18	3.0	3.2	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **16 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	2.8	G2	12:53	6.0	6.9	3.4	3.6	**3.6**
Mid-Ebb	C2	surface	2.8	G3	13:03	6.0	6.9	3.4	3.6	**4.0**
Mid-Ebb	C2	surface	2.8	G4	13:10	6.0	6.9	3.4	3.6	**4.6**
Mid-Ebb	C2	surface	2.8	M1	12:57	6.2	7.4	3.4	3.6	**6.2**
Mid-Ebb	C2	surface	2.8	M2	12:49	6.2	7.4	3.4	3.6	**4.5**
Mid-Ebb	C2	surface	2.8	M3	13:06	6.2	7.4	3.4	3.6	**5.8**
Mid-Ebb	C2	surface	2.8	M4	12:45	6.2	7.4	3.4	3.6	***7.5***
Mid-Ebb	C2	surface	2.8	M5	13:25	8.0	6.0	3.4	3.6	**5.6**
Mid-Ebb	C2	bottom	4.7	M4	12:45	6.9	7.9	5.6	6.0	**5.8**
Mid-Flood	C1	surface	7.1	M4	12:45	6.2	7.4	8.5	9.2	***7.5***
Mid-Flood	C1	bottom	4.6	M4	12:45	6.9	7.9	5.5	6.0	**5.8**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **16 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-flood	C1	5.4	G4	17:55	6.5	7.1	**6.7**
Bottom	19.3	22.2	Mid-flood	C1	5.4	M5	18:13	6.5	7.1	**7.0**
Intake	N/A	N/A	Mid-flood	C1	5.4	M6	18:06	6.5	7.1	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **18 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB) /~~ Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	bottom	3.1	M5	17:24	6.9	7.9	3.7	4.0	**4.0**
Mid-Flood	C1	surface	4.3	M5	9:45	6.2	7.4	5.2	5.6	**5.4**
Mid-Flood	C1	bottom	3.3	G1	9:25	6.9	7.9	3.9	4.2	**4.6**
Mid-Flood	C1	bottom	3.3	M1	9:21	6.9	7.9	3.9	4.2	**4.5**
Mid-Flood	C1	bottom	3.3	M2	9:09	6.9	7.9	3.9	4.2	**5.4**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **18 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-Ebb	C2	3.7	G1	17:04	4.5	4.8	**10.7**
Bottom	19.3	22.2	Mid-Ebb	C2	3.7	G2	16:59	4.5	4.8	**6.5**
Bottom	19.3	22.2	Mid-Ebb	C2	3.7	G3	17:07	4.5	4.8	**10.7**
Bottom	19.3	22.2	Mid-Ebb	C2	3.7	G4	17:14	4.5	4.8	**9.5**
Bottom	19.3	22.2	Mid-Ebb	C2	3.7	M1	17:03	4.5	4.8	**6.3**
Bottom	19.3	22.2	Mid-Ebb	C2	3.7	M2	16:54	4.5	4.8	**9.2**
Bottom	19.3	22.2	Mid-Ebb	C2	3.7	M3	17:10	4.5	4.8	**13.2**
Bottom	19.3	22.2	Mid-Ebb	C2	3.7	M4	16:48	4.5	4.8	**5.1**
Bottom	19.3	22.2	Mid-Ebb	C2	3.7	M5	17:24	4.5	4.8	**5.6**
Bottom	19.3	22.2	Mid-flood	C1	6.3	G1	9:25	7.5	8.1	**10.8**
Bottom	19.3	22.2	Mid-flood	C1	6.3	G2	9:14	7.5	8.1	**7.7**
Bottom	19.3	22.2	Mid-flood	C1	6.3	G3	9:28	7.5	8.1	**14.8**
Bottom	19.3	22.2	Mid-flood	C1	6.3	M2	9:09	7.5	8.1	**8.4**
Bottom	19.3	22.2	Mid-flood	C1	6.3	M3	9:32	7.5	8.1	**8.7**
Intake	N/A	N/A	Mid-flood	C1	6.3	M6	9:41	7.5	8.1	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **20 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	4.0	G2	10:19	6.0	6.9	4.7	5.1	**5.1**
Mid-Ebb	C2	surface	4.0	M1	10:27	6.2	7.4	4.7	5.1	**5.7**
Mid-Ebb	C2	surface	4.0	M5	11:17	8.0	6.0	4.7	5.1	**4.8**
Mid-Flood	C1	bottom	3.3	G3	17:48	6.9	7.9	3.9	4.2	**4.3**
Mid-Flood	C1	bottom	3.3	M3	17:56	6.9	7.9	3.9	4.2	**4.5**
Mid-Flood	C1	bottom	3.3	M4	10:07	6.9	7.9	3.9	4.2	**4.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **20 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-flood	C1	1.7	M1	17:27	2.0	2.2	**2.1**
Intake	N/A	N/A	Mid-flood	C1	1.7	M6	18:16	2.0	2.2	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **23 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB) /~~ Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Flood	C1	surface	3.9	G3	13:22	6.0	6.9	4.6	5.0	**4.8**
Mid-Flood	C1	surface	3.9	M2	13:08	6.2	7.4	4.6	5.0	**5.9**
Mid-Flood	C1	surface	3.9	M3	13:24	6.2	7.4	4.6	5.0	**5.4**
Mid-Flood	C1	bottom	3.6	G4	13:27	6.9	7.9	4.3	4.6	**5.4**
Mid-Flood	C1	bottom	3.6	M1	13:15	6.9	7.9	4.3	4.6	**5.9**
Mid-Flood	C1	bottom	3.6	M5	13:40	6.9	7.9	4.3	4.6	**4.8**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **23 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Intake	N/A	N/A	Mid-flood	C1	4.3	M6	13:32	5.2	5.6	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **25 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	6.7	G1	7:52	6.0	6.9	8.0	8.7	***6.2***
Mid-Ebb	C2	surface	6.7	G2	7:42	6.0	6.9	8.0	8.7	***6.7***
Mid-Ebb	C2	surface	6.7	G3	7:55	6.0	6.9	8.0	8.7	***8.4***
Mid-Ebb	C2	surface	6.7	G4	8:06	6.0	6.9	8.0	8.7	***8.3***
Mid-Ebb	C2	surface	6.7	M1	7:46	6.2	7.4	8.0	8.7	***7.7***
Mid-Ebb	C2	surface	6.7	M2	7:38	6.2	7.4	8.0	8.7	***8.1***
Mid-Ebb	C2	surface	6.7	M3	8:02	6.2	7.4	8.0	8.7	***7.8***
Mid-Ebb	C2	surface	6.7	M4	7:33	6.2	7.4	8.0	8.7	***6.6***
Mid-Ebb	C2	surface	6.7	M5	8:17	8.0	6.0	8.0	8.7	***7.0***
Mid-Ebb	C2	bottom	7.9	G1	7:52	6.9	7.9	9.5	10.3	***7.1***
Mid-Ebb	C2	bottom	7.9	G2	7:42	6.9	7.9	9.5	10.3	***8.1***
Mid-Ebb	C2	bottom	7.9	M2	7:38	6.9	7.9	9.5	10.3	***7.2***
Mid-Ebb	C2	bottom	7.9	M3	8:02	6.9	7.9	9.5	10.3	***7.0***
Mid-Ebb	C2	bottom	7.9	M4	7:33	6.9	7.9	9.5	10.3	***8.1***
Mid-Ebb	C2	bottom	7.9	M5	8:17	6.9	7.9	9.5	10.3	***8.0***
Mid-Flood	C1	surface	6.8	G2	14:04	6.0	6.9	8.1	8.8	***7.4***
Mid-Flood	C1	surface	6.8	G3	14:20	6.0	6.9	8.1	8.8	***9.3***
Mid-Flood	C1	surface	6.8	G4	14:32	6.0	6.9	8.1	8.8	***8.4***
Mid-Flood	C1	surface	6.8	M1	14:09	6.2	7.4	8.1	8.8	***8.2***
Mid-Flood	C1	surface	6.8	M2	13:59	6.2	7.4	8.1	8.8	***6.6***
Mid-Flood	C1	surface	6.8	M3	14:27	6.2	7.4	8.1	8.8	***8.4***
Mid-Flood	C1	surface	6.8	M4	7:33	6.2	7.4	8.1	8.8	***6.6***

Date of Water Quality Monitoring: **25 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB) /~~ Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Flood	C1	surface	6.8	M5	14:44	6.2	7.4	8.1	8.8	***6.3***
Mid-Flood	C1	bottom	8.0	G1	14:15	6.9	7.9	9.5	10.3	***7.0***
Mid-Flood	C1	bottom	8.0	G2	7:42	6.9	7.9	9.5	10.3	***8.1***
Mid-Flood	C1	bottom	8.0	G3	14:20	6.9	7.9	9.5	10.3	***7.5***
Mid-Flood	C1	bottom	8.0	M1	14:09	6.9	7.9	9.5	10.3	***7.5***
Mid-Flood	C1	bottom	8.0	M2	13:59	6.9	7.9	9.5	10.3	***7.7***
Mid-Flood	C1	bottom	8.0	M4	7:33	6.9	7.9	9.5	10.3	***8.1***
Mid-Flood	C1	bottom	8.0	M5	14:44	6.9	7.9	9.5	10.3	***7.2***

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **25 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Intake	N/A	N/A	Mid-flood	C1	3.5	M6	14:38	4.2	4.5	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **27 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	3.5	G4	9:21	6.0	6.9	4.1	4.5	**4.9**
Mid-Ebb	C2	surface	3.5	M2	8:54	6.2	7.4	4.1	4.5	**4.5**
Mid-Ebb	C2	surface	3.5	M4	8:48	6.2	7.4	4.1	4.5	**4.4**
Mid-Ebb	C2	surface	3.5	M5	9:33	8.0	6.0	4.1	4.5	**5.9**
Mid-Flood	C1	surface	3.5	G1	14:28	6.0	6.9	4.1	4.5	6.7
Mid-Flood	C1	surface	3.5	G3	14:34	6.0	6.9	4.1	4.5	**4.9**
Mid-Flood	C1	surface	3.5	M2	14:13	6.2	7.4	4.1	4.5	**4.4**
Mid-Flood	C1	surface	3.5	M3	14:41	6.2	7.4	4.1	4.5	**4.4**
Mid-Flood	C1	surface	3.5	M4	8:48	6.2	7.4	4.1	4.5	**4.4**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **27 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Intake	N/A	N/A	Mid-flood	C1	3.5	M6	14:51	4.2	4.5	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **30 August 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	3.2	G2	12:19	6.0	6.9	3.8	4.2	**4.0**
Mid-Ebb	C2	surface	3.2	G3	12:30	6.0	6.9	3.8	4.2	**5.6**
Mid-Ebb	C2	surface	3.2	M2	12:15	6.2	7.4	3.8	4.2	**4.6**
Mid-Ebb	C2	surface	3.2	M3	12:32	6.2	7.4	3.8	4.2	**4.6**
Mid-Ebb	C2	surface	3.2	M4	12:11	6.2	7.4	3.8	4.2	**6.1**
Mid-Ebb	C2	surface	3.2	M5	12:42	8.0	6.0	3.8	4.2	**4.4**
Mid-Ebb	C2	bottom	4.9	G4	12:35	6.9	7.9	5.9	6.4	**6.0**
Mid-Ebb	C2	bottom	4.9	M3	12:32	6.9	7.9	5.9	6.4	7.3
Mid-Flood	C1	surface	3.7	G1	17:19	6.0	6.9	4.4	4.7	**4.5**
Mid-Flood	C1	surface	3.7	G2	17:11	6.0	6.9	4.4	4.7	**4.6**
Mid-Flood	C1	surface	3.7	G3	17:21	6.0	6.9	4.4	4.7	**5.1**
Mid-Flood	C1	surface	3.7	G4	17:27	6.0	6.9	4.4	4.7	**5.5**
Mid-Flood	C1	surface	3.7	M2	17:07	6.2	7.4	4.4	4.7	**5.0**
Mid-Flood	C1	surface	3.7	M4	12:11	6.2	7.4	4.4	4.7	**6.1**
Mid-Flood	C1	surface	3.7	M5	17:35	6.2	7.4	4.4	4.7	**4.8**
Mid-Flood	C1	bottom	4.5	G2	12:19	6.9	7.9	5.4	5.9	**5.5**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Date of Water Quality Monitoring: **30 August 2021**

Part A – Exceedance Summary Tables

Table II: **Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~**

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-Ebb	C2	3.1	M5	12:42	3.7	4.0	**5.6**
Intake	N/A	N/A	Mid-flood	C1	5.6	M6	17:30	6.7	7.2	**8.0**

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic)***

Contract No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O – Lam Tin Tunnel Design and Construction

- Investigation Report of Environmental Quality Limit Exceedances

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Part A Details of Investigation

For the reporting month, exceedances for suspended solids and turbidity have been recorded continuously at various monitoring stations. During regular water quality monitoring, the water outside the site boundary seemed to be clear and clean (Photo 1 to 2)

During site inspections, the sea appears to be clear (Photo 3 to 6). The sediment tank was free from silt and sediments and the drainage system remained well-maintained. No sand plumes were observed during the site inspection.

No direct evidence that the recent exceedances were due to the ongoing reclamation activities of the Project. Therefore, no additional marine water quality monitoring is required.

Part B Photo Record

Photo 1 (Recorded on 30th August 2021)	Photo 2 (Recorded on 30th August 2021)

Photo 3 (Recorded on 26th August 2021)	Photo 4 (Recorded on 26th August 2021)
Photo 5 (Recorded on 19th August 2021)	Photo 6 (Recorded on 19th August 2021)

Part C – Recommendations

Since Hong Kong has entered the wind season, all Contractors are reminded to maintain the drainage system for heavy rainfall. All Contractors are recommended to inspect the drainage system after rainfall and maintain them if needed.

Appropriate diversion of received rainwater to the wastewater treatment system within the site should be provided to minimise the chance of accidental runoff. Silt curtain should be checked and maintained regularly; diver inspection for checking damage and leakage should be conducted weekly to ensure the functionality of cofferdam and silt curtains.

Reviewed by: (Environmental Team Leader:(Dr. HF Chan) Date: 4th September 2021

APPENDIX L
SITE AUDIT SUMMARY

Appendix L - Site Audit Summary

Contract No. — NE2015/01
Tseung Kwan O - Lam Tin Tunnel — Main Tunnel and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
The contractor is reminded to avoid ponding of water.	4-Aug-21 18-Aug-21 25-Aug-21	✓	11, 25-Aug-21 The Contractor has removed the ponding water.
The contractor is reminded to keep waterproof filters in good condition.	4-Aug-21	✓	11-Aug-21 The wasterproof filters were well maintained
Ecology			
--	--	--	--
Noise			
The contractor is reminded to cover PME with acoustic sheets	18-Aug-21	✓	25-Aug-21 The PME was covered with acoustic sheets.
Landscape and Visual			
--	--	--	--
Air Quality			
--	--	--	--
Waste/Chemical Management			
The contractor is reminded to provide a drip tray for chemicals.	4-Aug-21 25-Aug-21	✓	11-Aug-21 A drip tray was provided for the chemicals.
Impact on Cultural Heritage			
--	--	--	--
Permit/Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✕ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month
✻ Non-compliance of mitigation measure
• Non-compliance but improved by the contractor

Appendix L - Site Audit Summary

Contract No. — NE2015/02
Tseung Kwan O - Lam Tin Tunnel — Road P2 and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
--	--	--	--
Ecology			
--	--	--	--
Noise			
--	--	--	--
Landscape and Visual			
--	--	--	--
Air Quality			
The contractor is reminded to sprinkle water regularly to suppress dust	19-Aug-21	✓	19-Jul-2021: Water was sprinkled immediately to suppress dust emission
Waste/Chemical Management			
The Contractor is reminded to remove the accumulated waste outside the office.	19-Aug-21	✓	26-Jul-2021: The waste had been removed
The contractor is reminded to clear the drip tray.	26-Aug-21	#	--
Impact on Cultural Heritage			
--	--	--	--
Permit/Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✕ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month
✻ Non-compliance of mitigation measure
• Non-compliance but improved by the contractor

Appendix L - Site Audit Summary

Contract No. — NE2017/02
Tseung Kwan O - Lam Tin Tunnel — Road P2/D4 and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
--	--	--	--
Ecology			
--	--	--	--
Noise			
--	--	--	--
Landscape and Visual			
--	--	--	--
Air Quality			
--	--	--	--
Waste/Chemical Management			
--	--	--	--
Impact on Cultural Heritage			
--	--	--	--
Permit/Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✕ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month
✻ Non-compliance of mitigation measure
• Non-compliance but improved by the contractor

Appendix L - Site Audit Summary

Contract No. — NE2017/06
Tseung Kwan O - Lam Tin Tunnel — Traffic Control and Surveillance System (TCSS) and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
The Contractor is reminded to clear the drainage to maintain its capacity.	29-Jul-21	#	--
Ecology			
--	--	--	--
Noise			
--	--	--	--
Landscape and Visual			
--	--	--	--
Air Quality			
--	--	--	--
Waste/Chemical Management			
--	--	--	--
Impact on Cultural Heritage			
--	--	--	--
Permit/Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✕ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month
✻ Non-compliance of mitigation measure
• Non-compliance but improved by the contractor

Appendix L - Site Audit Summary

Contract No. — NE2017/01
Tseung Kwan O - Lam Tin Tunnel — Tseung Kwan O Interchange and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
--	--	--	--
Ecology			
--	--	--	--
Noise			
--	--	--	--
Landscape and Visual			
--	--	--	--
Air Quality			
--	--	--	--
Waste/Chemical Management			
--	--	--	--
Impact on Cultural Heritage			
--	--	--	--
Permit/Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✕ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month
✻ Non-compliance of mitigation measure
• Non-compliance but improved by the contractor

Appendix L - Site Audit Summary

Contract No. — NE2017/07
Tseung Kwan O - Lam Tin Tunnel — Cross Bay Link Main Bridge and Associated Works

Items	Date	Status*	Follow up Action
Water Quality			
--	--	--	--
Ecology			
--	--	--	--
Noise			
--	--	--	--
Landscape and Visual			
--	--	--	--
Air Quality			
--	--	--	--
Waste/Chemical Management			
--	--	--	--
Impact on Cultural Heritage			
--	--	--	--
Permit/Licenses			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✕ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
\# Follow up action will be reported in next reporting month
✻ Non-compliance of mitigation measure
• Non-compliance but improved by the contractor

APPENDIX M
EVENT AND ACTION PLANS

Event and Action Plan for Air Quality (Dust)

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action level being exceeded by one sampling	1. Identify source, investigate the causes of complaint and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER;	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IEC within three working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	8. If exceedance stops, cease additional monitoring.			
Limit level being exceeded by one sampling	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform Contractor ,IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit level being exceeded by two or more consecutive sampling	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily;	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;	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals;

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	3. Supervise the implementation of remedial measures.	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.	4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Construction Noise

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

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.			

Event and Action Plan for Marine Water Quality

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action level being exceeded by one sampling day at water sensitive receiver(s)	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; • If exceedance is found to be caused by the reclamation activities, repeat *in-situ* measurement to confirm findings; • Inform IEC and contractor; • Check monitoring data, all plant, equipment and Contractor's working methods; • If exceedance occurs at WSD salt water intake, inform WSD; • Discuss mitigation measures with IEC and Contractor; • Repeat measurement on next day of exceedance.	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures.	• Discuss with IEC on the proposed mitigation measures; • Make agreement on the mitigation proposal.	• Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice; • Check all plant and equipment; • Amend working methods if appropriate; • Discuss with ET and IEC and propose mitigation measures to IEC and ER; • Implement the agree mitigation measures.
Action level being exceeded by two or more consecutive	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;	• Discuss with ET and Contractor on the mitigation measures;	• Discuss with IEC on the proposed mitigation measures; • Make agreement on the mitigation proposal;	• Inform the Engineer and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
sampling days at water sensitive receiver(s)	• If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings; • Inform IEC and contractor; • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IEC and Contractor; • Ensure mitigation measures are implemented; • Prepare to increase the monitoring frequency to daily; • If exceedance occurs at WSD salt water intake, inform WSD; • Repeat measurement on next day of exceedance.	• Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures.	• Assess the effectiveness of the implemented mitigation measures.	• Check all plant and equipment and consider changes of working methods; • Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; • Implement the agreed mitigation measures.
Limit level being exceeded by one sampling day at water sensitive receiver(s)	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly;	• Discuss with IEC, ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods;	• Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
	• If exceedance is found to be caused by the reclamation activities, repeat *in-situ* measurement to confirm findings; • Inform IEC, contractor, AFCD and EPD • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IEC, ER and Contractor; • Ensure mitigation measures are implemented; • Increase the monitoring frequency to daily until no exceedance of Limit level; • If exceedance occurs at WSD salt water intake, inform WSD.	• Assess the effectiveness of the implemented mitigation measures.	• Make agreement on the mitigation measures to be implemented; • Assess the effectiveness of the implemented mitigation measures.	• Check all plant and equipment and consider changes of working methods; • Discuss with ET, IEC and ER and submit proposal of mitigation measures to IEC and ER within 3 working days of notification; • Implement the agreed mitigation measures.
Limit level being exceeded by two or more consecutive sampling days at	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate;	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly;	• Discuss with IC(E), ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods;	• Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
water sensitive receiver(s)	• If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings; • Inform IC(E), AFCD, contractor and EPD; • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IC(E), ER and Contractor; • Ensure mitigation measures are implemented; • Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days; • If exceedance occurs at WSD salt water intake, inform WSD.	• Assess the effectiveness of the implemented mitigation measures.	• Make agreement on the mitigation measures to be implemented; • Assess the effectiveness of the implemented mitigation measures; • Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level.	• Check all plant and equipment and consider changes of working methods; • Discuss with ET, IC(E) and ER and submit proposal of mitigation measures to IC(E) and ER within 3 working days of notification; • Implement the agreed mitigation measures; • As directed by the Engineer, to slow down or to stop all or part of the construction activities.

Limit Levels and Action Plan for Landfill Gas

Parameter	Limit Level	Action
Oxygen	<19%	• Ventilate to restore oxygen to >19%
	<18%	• Stop works • Evacuate personnel/prohibit entry • Increase ventilation to restore oxygen to >19%
Methane	>10% LEL (i.e. > 0.5% by volume)	• Prohibit hot works • Ventilate to restore methane to <10% LEL
	>20% LEL (i.e. > 1% by volume)	• Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore methane to <10% LEL
Carbon Dioxide	>0.5%	• Ventilate to restore carbon dioxide to < 0.5%
	>1.5%	• Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore carbon dioxide to < 0.5%

Event and Action Plan for Coral Post-Translocation Monitoring

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level Exceedance	1. Check monitoring data; 2. Inform the IEC, ER and Contractor of the findings; 3. Increase the monitoring to at least once a month to confirm findings; 4. Propose mitigation measures for consideration	1.Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional Monitoring and any other measures submitted by the Contractor and advise the ER accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make agreement on the measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER; 3. Implement the agreed measures.
Limit Level Exceedance	Undertake Steps 1-4 as in the Action Level Exceedance. If further exceedance of Limit Level, suspend construction works until an effective solution is identified.	1.Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional Monitoring and any other measures submitted by the Contractor and advise the ER accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make agreement on the measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER; 3. Implement the agreed measures.

Mitigation Measures for Vibration Monitoring

Level	Contingency Action
Alert Level	● The Engineer shall be informed immediately. ● The Contractor shall submit an investigation report to describe works being undertaken. To review the instrument responses and to study the cause of undue response. ● The Contractor shall review and increase the instrumentation monitoring and reporting frequency, if applicable. ● The Contractor shall submit a detailed plan of action describing the measures to be taken should the concerned instrument reach the action level to the Engineer for approval.
Alarm Level	● The Engineer shall be informed immediately. ● The active construction works may require to be suspended subject to the Engineer's review of monitoring data. ● The Contractor shall immediately implement the measures as defined in the detailed plan of action to prevent further ground movement and groundwater drawdown etc. ● The Contractor shall prepare a detailed investigation report to study the cause of the exceedance ● The Contractor shall propose a contingency plan for the Engineer's approval in the event that alarm value is reached or exceeded ● The Contractor shall develop an emergency plan for the Engineer's approval in the event the applied contingency measures cannot control the situation. ● The Contractor shall meet the Engineer to discuss the instrument response and review the effectiveness of the implemented measures. ● The Contractor shall carry out design review of the works

Action Level	● Consideration shall be given to suspend all active construction works and the Engineer shall be informed immediately ● The Contractor shall immediately implement the measures defined in the contingency plan ● The Contractor shall implement the measures defined in the emergency plan in the event that the applied contingency measures are found inadequate ● The Contractor shall provide a complete report to examine the construction method and review the response of the instruments with full history of the monitoring data and construction activities and necessary design update ● To resume the suspended activities, the Contractor shall demonstrate to the Engineer's satisfaction that it is safe to do so with approval from the Engineer.

APPENDIX N
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

App N1 - IMPLEMENTATION SCHEDULE AND RECOMMANDED MITIGATION MEASURES

Table I - Recommended Mitigation Measures stipulated in EM&A Manual for the Project

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
Air Quality						
S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	To minimize the dust impact	Contractor	All Active Work Sites	Construction phase	APCO
S3.8.1	Enclosing the unloading process at barging point by a 3-sided screen with top tipping hall / mixing area in Work Area A, provision of water spraying and flexible dust curtains	To minimize the dust impact	Contractor	Barging Points	Construction phase	APCO
S3.8.7 S3.8.7 S3.8.7 S3.8.7 S3.8.7 S3.8.7 S3.8.7 S3.8.7 S3.8.7 S3.8.7 S3.8.7 S3.8.7	Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. • Use of frequent watering for particularly dusty construction areas and areas close to ASRs.. • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. • Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. • Imposition of speed controls for vehicles on site haul roads. • Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	To minimize the dust impact	Contractor	All Construction Work Sites	Construction phase	APCO and Air Pollution Control (Construction Dust) Regulation
/	Emission from Vehicles and Plants • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	APCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
/	Valid No-road Mobile Machinery (NRMM) labels should be provided to regulated machines	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	APCO
Noise Impact (Construction Phase)						
S4.8	• Use of quiet PME. Use of movable noise barriers for Excavator, Lorry, Dump Truck, Mobile Crane, Compactor, Concrete Mixer Truck, Concrete Lorry Mixer, Breaker, Mobile Crusher, Backhoe, Vibratory Poker, Saw, Asphalt Paver, Vibratory Roller, Vibrolance, Hydraulic Vibratory Lance and Piling (Vibration Hammer). Use of full enclosure for Air Compressor, Compressor, Bar Bender, Generator, Drilling Rig, Chisel, Large Diameter Bore Piling, Grout Mixer & Pump and Concrete Pump.	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO
Noise Mitigation Plan	Use of Temporary Noise Barriers (i.e Acoustic box, SilentUp and etc.) or Full Enclosure for PME according to the approved Noise Mitigation Plan	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO
S4.9	**Good Site Practice** • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program • Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. • Mobile plant, if any, should be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	To minimize construction noise impact arising from the Project at the affected NSRs	Project Proponent	Work sites	Construction Period	EIAO-TM, NCO
S4.9	Scheduling of Construction Works during School Examination Period	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work site near school	Construction phase	EIAO-TM, NCO
Water Quality Impact (Construction Phase)						
S5.6.24	The dry density of filling material for the TKO-LT Tunnel reclamation should be 1,900kg/m^3, with fine content of 25% or less	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.1	Non-dredged method by constructing steel cellular caisson structure with stone column shall be adopted for construction of seawall foundation. During the stone column installation (also including the installation of steel cellular caisson), silt curtain shall be employed around the active stone column installation points.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.2	Formation of seawall enclosing the reclamation for Road P2 (notwithstanding an opening of about 50m for marine access) shall be completed prior to the filling activities. The seawall opening of about 50m wide for marine access shall be selected at a location as indicatively shown in Appendix 5.10. No more than 3 filling barge trips per day shall be made with a maximum daily rate of 3,000m^3 (i.e. 1,000 m^3 per trip) for the filling operation at the reclamation area for Road P2. All filling works shall be carried out behind the seawall with the use of single silt curtain at the marine access.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
Silt Curtain Deployment Plan	• Silt curtains should be deployed properly to surround the works area. • Maintenance of silt curtain should be provided.	Control potential impacts from marine woroks	Contractor	NE/2015/01	Construction stage	EIAO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
	• Sufficient stock of silt curtain should be provided on site.					

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S5.8.3	Other good site practices should be undertaken during filling operations include: • all marine works should adopt the environmental friendly construction methods as far as practically possible including the use of cofferdams to cover the construction area to separate the construction works from the sea; • floating single silt curtain shall be employed for all marine works; • all vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; • all hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; • excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved; • adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action; • loading of barges and hoppers should be controlled to prevent splashing of filling material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation; • any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes; • construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site or dumping grounds; and • before commencement of the reclamation works, the holder of Environmental Permit has to submit plans showing the phased construction of the reclamation, design and operation of the silt curtain.	Control potential impacts from filling activities and marine-based construction	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, Waste Disposal Ordinance (WDO)
S5.8.4	Site specific mitigation plan for reclamation areas using public fill materials should be submitted for EPD agreement before commencement of construction phase with due consideration of good site practices.	Control potential impacts from filling activities and marine based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
ERR S5.6.1	To minimize water quality impact arising from the dredging and filling works for Reclamation for Road P2, the following mitigation measures shall be implemented: - Before carrying out any dredging and underwater filling works, a temporary barrier shall first be constructed to a height above the high water mark to completely enclose the works site (without any opening at the barrier wall) - The temporary barrier fully enclosing the dredging and underwater filling works site shall not be removed before completion of all dredging and underwater filling works. - Water quality sampling and testing shall be carried out to demonstrate that the water quality inside the enclosed barrier is comparable to the ambient or baseline levels prior to the removal of the fully enclosed barrier. - Silt curtains shall be deployed for the installation and removal of the temporary barrier and at the double water gates marine access opening during its operation.	Control potential impacts from dredging and filling works for Reclamation for Road P2	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S5.8.5	It is important that appropriate measures are implemented to control runoff and drainage and prevent high loading of SS from entering the marine environment. Proper site management is essential to minimise surface water runoff, soil erosion and sewage effluents.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.6	Any practical options for the diversion and realignment of drainage should comply with both engineering and environmental requirements in order to ensure adequate hydraulic capacity of all drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, TM-DSS
S5.8.7	Construction site runoff and drainage should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). Good housekeeping and stormwater best management practices, as detailed in below, should be implemented to ensure that all construction runoff complies with WPCO standards and no unacceptable impact on the WSRs arises due to construction of the TKO-LT Tunnel. All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the corresponding WCZ under the TM-DSS.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, TM-DSS
S5.8.8 S5.8.8 S5.8.8	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include: • use of sediment traps; and • adequate maintenance of drainage systems to prevent flooding and overflow.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.9	Construction site should be provided with adequately designed perimeter channel and pretreatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.10	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m^3 capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.12	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S5.8.13	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.14	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than $50m^3$ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.15	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.16	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.17	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.18	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and washwater should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheelwash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.19	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.20	It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There shall be no direct discharge of effluent from the site into the sea.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.21	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S5.8.22	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.23	Minimum distances of 100m shall be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes during construction and operational phases	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, TMDSS
S5.8.24	Under normal circumstances, groundwater pumped out of wells, etc. for the lowering of ground water level in basement or foundation construction, and groundwater seepage pumped out of tunnels or caverns under construction should be discharged into storm drains after the removal of silt in silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.25 - S5.8.27 & Table 5.18	Grouting would be adopted as measure to reduce the groundwater inflow into the tunnel. During the tunnel excavation, the inflow rate of groundwater into the tunnel will be measured during the excavation. The groundwater levels above the tunnel will also be monitored by piezometers. If the inflow rate exceeds the pre-determined groundwater control criteria or the groundwater drawdown exceeds the required limit, pre-excavation grouting will be required to reduce the groundwater inflow. No significant change of groundwater levels would therefore be expected. Any chemicals/ foaming agents which would be entrained to the groundwater should be biodegradable and non-toxic throughout the tunnel construction. Potential groundwater quality impact would be minimal as the used material is non-toxic and biodegradable. No adverse groundwater quality would therefore be expected. Prescriptive measures in the form of an Action Plan with pre-emptive and re-active to preserve the groundwater levels at all times during the tunnel construction are set out in Table 5.18.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, Buildings Ordinance
S5.8.28	Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phas	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.29 - S5.8.31	Wastewater generated from the washing down of mixing trucks and drum mixers and similar equipment should whenever practicable be recycled. The discharge of wastewater should be kept to a minimum. To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an online standby pump of adequate capacity and with automatic alternating devices. Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within the pH range of 6 to 10). Disposal of wastewater into storm drains will require more elaborate treatment.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.32	All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S5.8.33	Bentonite slurries used in diaphragm wall and borepile construction should be reconditioned and reused wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.34	If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.35	Water used in water testing to check leakage of structures and pipes should be reused for other purposes as far as practicable. Surplus unpolluted water could be discharged into storm drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.36	Sterilization is commonly accomplished by chlorination. Specific advice from EPD should be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water should be reused wherever practicable.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.37	Before commencing any demolition works, all sewer and drainage connections should be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.38	Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.39	Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater should be tinkered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.40	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into foul sewer via grease traps capable of providing at least 20 minutes retention during peak flow.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.41	Drainage serving an open oil filling point should be connected to storm drains via a petrol interceptor with peak storm bypass.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.42	Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should as far as possible be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor. Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.43	Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

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S5.8.44	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO
S5.8.45	Any service shop 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 potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.46	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The "Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes" published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO
S5.8.46	• suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;					
S5.8.46	• chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and					
S5.8.46	• storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.					
S5.8.47	Collection and removal of floating refuse should be performed at regular intervals on a daily basis. The contractor should be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish.	Control potential impacts from floating refuse and debris	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO,
Ecological Impact						
S6.8.4	**Measures to Minimize Disturbance**	Minimize noise, human and traffic disturbance to terrestrial habitat and wildlife; and reduce dust generation	Design Team / Contractor	Land-based works are	Construction Phase	N/A
S6.8.4	• Use of Quiet Mechanical Plant during the construction phase should be adopted wherever possible.					
S6.8.4	• Hoarding or fencing should be erected around the works area boundaries during the construction phase. The hoarding would screen adjacent habitats from construction phase activities, reduce noise disturbance to these habitats and also to restrict access to habitats adjacent to works areas by site workers;					
S6.8.4	• Regular spraying of haul roads to minimize impacts of dust deposition on adjacent vegetation and habitats during the construction activities					
S6.8.5	**Standard Good Site Practice**	Reduce disturbance to surrounding habitats	Contractor	Land-based works are	Construction Phase	N/A
S6.8.5	• Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats.					
S6.8.5	• Construction activities should be restricted to works areas that should be clearly demarcated. The works areas should be reinstated after completion of the works.					
S6.8.5	• Waste skips should be provided to collect general refuse and construction wastes. The wastes should be properly disposed off-site in a timely manner.					
S6.8.5	• General drainage arrangements should include sediment and oil traps to collect and control construction site run-off.					
S6.8.5	• Open burning on works sites is illegal, and should be strictly prohibited.					

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S6.8.5	• Measures should also be put into place so that litter, fuel and solvents do not enter the nearby watercourses.					
S6.8.6 S6.8.6 S6.8.6	**Measure to Minimize Groundwater Inflow** • The drained tunnel construction method with groundwater inflow control measures would generally be adopted. • During the tunnel excavation, pre-excavation grouting could be adopted to reduce the groundwater inflow and ensure that the tunnel would meet the long term water tightness requirements.	Minimize groundwater inflow	Contractor	Tunnel	Construction Phase	N/A
S6.8.8	**Measure to Minimize Impact on Corals** <u>Coral translocation</u> • It is recommended to translocate the affected coral colonies, except the locally common *Oulastrea crispata* , within the reclamation area and bridge footprint to the other suitable locations as far as practicable. • The coral translocation should be conducted during the winter months (November-March) in order to avoid disturbance during their spawning period (i.e. July to October). • A detailed coral translocation plan with a description on the methodology for pretranslocation coral survey, translocation methodology, identification/proposal of coral recipient site, monitoring methodology for posttranslocation should be prepared during the detailed design stage. • The coral translocation plan should be subject to approval by relevant authorities (e.g. EPD and AFCD) before commencement of the coral translocation. All the translocation exercises should be conducted by experienced marine ecologist(s) who is/are approved by AFCD prior to commencement of coral translocation. <u>Post translocation Monitoring</u> • A coral monitoring programme is recommended to assess any adverse and unacceptable impacts to the translocated coral communities • Information gathered during each posttranslocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey.	Minimize loss of coral	Design team, contractor, project operator	Within reclamation areas and pier footprint	Prior construction	N/A
S6.8.9 S6.8.10	**Measure to Control Water Quality Impact** • Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area. • Diverting of the site runoff to silt trap facilities before discharging into storm drain; • Proper waste and dumping management; and • Standard good-site practice for land-based construction.	Control water quality impact, especially on suspended solid level; minimize the contamination of wastewater discharge, accidental chemical spillage and construction site runoff to the receiving water bodies	Design Team, contractor	Marine and landbased works area	Construction phase	WQO
S6.8.11	**Compensation for Vegetation Loss** • Felling of mature trees should be compensated by planting of standard or heavy standard trees within or in vicinity of the affected area as far as practicable. Such compensatory planting for trees should be provided with at least a 1:1 ratio. In addition, vegetation at the temporarily affected area should be reinstated with species similar to the existing condition.	Compensate for the vegetation loss	Design Team, contractor	Land-based works area	Construction phase	N/A

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Fisheries Impact						
S7.7.3	**Measure to Control Water Quality Impact** • Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area.	Control water quality impact, especially on suspended solid level	Design Team / Contractor	Marine work area	Construction phase	WQO
Waste Management (Construction Phase)						
S8.6.3	**Good Site Practices and Waste Reduction Measures** • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • Training of site personnel in site cleanliness, proper waste management and chemical handling procedures; • Provision of sufficient waste disposal points and regular collection of waste; • Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	To reduce waste management impacts	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28)
S8.6.4	***Good Site Practices and Waste Reduction Measures (con't)*** • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce; • Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and • Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.	To achieve waste reduction	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28)
S8.6.5	**Good Site Practices and Waste Reduction Measures (con't)** The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005
S8.6.6	**Good Site Practices and Waste Reduction Measures (con't)** • C&D materials would be reused in the project and other local concurrent projects as far as possible.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005

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S8.6.7	**Storage, Collection and Transportation of Waste** Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include: • Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; • Maintain and clean storage areas routinely; • Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • Different locations should be designated to stockpile each material to enhance reuse.	To minimize potential adverse environmental impacts arising from waste storage	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005
S8.6.8/ Waste Management Plan S8.6.8/ Waste Management Plan S8.6.8/ Waste Management Plan S8.6.8/ Waste Management Plan S8.6.8/ Waste Management Plan S8.6.8/ Waste Management Plan S8.6.8/ Waste Management Plan	**Storage, Collection and Transportation of Waste (con't)** • Remove waste in timely manner; • Waste collectors should only collect wastes prescribed by their permits; • Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers; • Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); • Waste should be disposed of at licensed waste disposal facilities/ alternative disposal ground approved by RE and DEP; and • Maintain records of quantities of waste generated, recycled and disposed.	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005
S8.6.9/ Waste Management Plan	**Storage, Collection and Transportation of Waste (con't)** • Implementation of trip ticket system with reference to DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials, to monitor disposal of waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including disposal sites) should be proposed.	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010
S8.6.11 - S8.6.13/ Waste Management Plan	**Sorting of C&D Materials** • Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site. • Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials. • The C&D materials should at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled in the reclamation as far as practicable before delivery to PFRFs. While opportunities for reusing the non-inert portion should be investigated before disposal of at designated landfills	To minimize potential adverse environmental	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010 ETWB TCW No. 33/2002 ETWB TCW No. 19/2005

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S8.6.17 – S8.6.20	**Sediments (con't)** • Requirements of the Air Pollution Control (Construction Dust) Regulation, where relevant, shall be adhered to during boring, excavation, transportation and disposal of sediments or cement stabilization of sediment. • A treatment area should be confined for carrying out the cement stabilization mixing and temporary stockpile. The area should be designed to prevent leachate from entering the ground. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO). • In order to minimise the potential odour / dust emissions during boring, excavation and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges/trucks. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. • In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site.	To determine the best handling and treatment of sediment	Contractor	All works areas with sediments concern	Construction Phase	ETWB TCW No. 19/2005
S8.6.24 - S8.6.28/ Waste Management Plan	**Sediments (con't)** • The excavated sediments is expected to be loaded onto the barge and transported to the designated disposal sites allocated by the MFC. The excaveted sediment would be disposed of according to its determined disposal options and ETWB TC(W) No. 34/2002. • Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO). • In order to minimise the potential odour / dust emissions during boring and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. • The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP. • In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site.	To ensure handling of sediments are in accordance to statutory requirements	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance

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	• Another possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal.					
S8.6.26/ Waste Management Plan	**Chemical Wastes.** • If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. 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, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To ensure proper management of chemical waste	Contractor	All works sites	Construction Phase	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes Waste Disposal (Chemical Waste) (General) Regulation
S8.6.27/ Waste Management Plan	**General Refuse** • General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	To ensure proper management of general refuse	Contractor	All works sites	Construction Phase	Public Health and Municipal Services Ordinance (Cap. 132)
Impact on Cultural Heritage (Construction Phase)						
S9.6.4	**Dust and visual impacts** • Temporarily fenced off buffer zone with allowance for public access (minimum 1 m) should be provided; • The open yard in front of the temple should be kept as usual for annual Tin Hau festival; • Monitoring of vibration impacts should be conducted when the construction works are less than 100m from the temple.	To prevent dust and visual impacts	Contractors	Work areas	Construction Phase	EIAO; GCHIA; AMO
S9.6.4	**Indirect vibration impact** • Vibration level is suggest to be controlled within a peak particle velocity (ppv) limit of 5mm/s measured inside the historical buildings; • Monitoring of vibration should be carried out during construction phase. • Tilting and settlement monitoring should will be applied on the Cha Kwo Ling Tin Hau Temple as well. • A proposal with details for the mitigation measures and monitoring of impacts on built heritage shall be submitted to AMO for comments before commencement of work.	To prevent indirect vibration impact	Contractors	Work areas	Construction Phase	Vibration Limits on Heritage Buildings by CEDD; GCHIA; AMO.

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Built Heritage Mitigation Plan	• Established Alert, Alarm and Action Level for the monitoring parameters. • To increase the instrumentation monitoring and reporting frequency. • To propose detailed action plan or contingency plan for the Engineer's approval when AAA Level is reached or exceeded.	To prevent vibration impacts	NE/2015/01	Tin Hau Temple	Construction Phase	Vibration Limits on Heritage Buildings by CEDD; GCHIA; AMO.

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Landscape and Visual Impact (Construction Phase)						
Table 10.8.1/ Landscape Mitigation Plan	CM1 - Construction area and contractor's temporary works areas to be minimised to avoid impacts on adjacent landscape.	Avoid impact on adjacent landscape areas	CEDD (via Contractor)	General	Construction planning and during construction period	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM2 - Reduction of construction period to practical minimum.	Minimise duration of impact	CEDD (via Contractor)	N/A	Construction planning	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM3 - Topsoil, where the soil material meets acceptable criteria and where practical, to be stripped and stored for re-use in the construction of the soft landscape works. The Contract Specification shall include storage and reuse of topsoil as appropriate.	To allow re-use of topsoil	CEDD (via Contractor)	General	Site clearance	As per the Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM4 - Existing trees at boundary of site and retained trees within site boundary to be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification, under which the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).	To minimize tree loss	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance and throughout construction period	ETWB TC 3/2006 and as per tree protection measures in Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM5 - Trees unavoidably affected by the works shall be transplanted where practicable. Where possible, trees should be transplanted direct to permanent locations rather than temporary holding nurseries. A detailed tree transplanting specification shall be provided in the Contract Specification and sufficient time for preparation shall be allowed in the construction programme.	To maximize preservation of existing trees	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance	ETWB TC 3/2006 and as per tree protection measures in Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM6 - Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	To maximize screening of the works	CEDD (via Contractor)	At Lam Tin Interchange and edge of Road P2 landscape deck, TKO	Beginning of construction period	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM7 - Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	As per Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM8 - Control of night-time lighting by hooding all lights and through minimisation of night working periods.	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM9 - Screening of works areas with hoardings with appropriate colours compatible with the surrounding area	Reduction of visual intrusion	CEDD (via Contractor)	Project site Boundary	Excretion of site hoarding	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM10 - Avoidance of excessive height and bulk of site buildings and structure	Reduction of visual intrusion and integration with environment	CEDD (via Contractor)	Built structures	Design and construction stage	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM11 - Limitation of run-off into freshwater streams, ponds and sea areas	Avoidance of contamination of water courses and water bodie	CEDD (via Contractor)	TKO reclamation, TKO tunnel portal, Cha Kwo Ling roadworks	Throughout construction period	N/A

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Table 10.8.1	CM12 - Minimise area of reclamation and design the edges sensitively to tie in with adjacent coastline characte	Minimise loss of Junk Bay and integration with existing coastlin	CEDD (via Contractor)	Temporary reclamation for barging points at TKO and Lam Tin and permanent reclamation for TKO Interchange slip roads and Road P2	Construction planning and reclamation stages	N/A
Landfill Gas Hazard (Design and Construction Phase)						
S11.5.9	A Safety Officer, trained in the use of gas detection equipment and landfill gas-related hazards, should be present on site throughout the groundworks phase. The Safety Officer should be provided with an intrinsically safe portable instrument, which is appropriately calibrated and able to measure the following gases in the ranges indicated below: Methane 0-100% LEL and 0100% v/v Carbon dioxide 0-100% Oxygen 0-21%	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note
	Safety Measures • For staff who work in, or have responsibility for "at risk" area, such as all excavation workers, supervisors and engineers working within the Consultation Zone, should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards. • An excavation procedure or code of practice to minimize landfill gas related risk should be devised and carried out. • No worker should be allowed to work alone at any time in or near to any excavation. At least one other worker should be available to assist with a rescue if needed. • Smoking, naked flames and all other sources of ignition should be prohibited within 15m of any excavation or ground-level confined space. "No smoking" and "No naked flame" notices should be posted prominently on the construction site and, if necessary, special areas should be designed for smoking. • Welding, flame-cutting or other hot works should be confined to open areas at least 15m from any trench or excavation. • Welding, flame-cutting or other hot works may only be carried out in trenches or confined spaces when controlled by a "permit to work" procedure, properly authorized by the Safety Officer (or, in the case of small developments, other appropriately qualified person). • The permit to work procedure should set down clearly the requirements for continuous monitoring for methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure should also require the presence of an appropriately qualified person, in attendance outside the 'confined area', who should be responsible for reviewing the gas measurements as they are made, and who should have executive responsibility for suspending the work in the event of unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise should be permitted to carry out hot works in confined areas.					

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S11.5.10 S11.5.25	• Where there are any temporary site offices, or any other buildings located within the Sai Tso Wan Landfill Consultation Zone which have enclosed spaces with the capacity to accumulate landfill gas, then they should either be located in an area which has been proven to be free of landfill gas (by survey using portable gas detectors); or be raised clear of the ground by a minimum of 500mm. This aims to create a clear void under the structure which is ventilated by natural air movement such that emission of gas from the ground are mixed and diluted by air. • Any electrical equipment, such as motors and extension cords, should be intrinsically safe. During piping assembly or conduiting construction, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed to prevent the migration of gases through the pipeline/conduit. All piping /conduiting should be capped at the end of each working day. • During construction, adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus (BA) sets should be made available on site. • Fire drills should be organized at not less than six monthly intervals. • The contractor should formulate a health and safety policy, standards and instructions for site personnel to follow. • All personnel who work on the site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices (in Chinese and English) should be posted at prominent position around the site warning danger of the potential hazards. • Service runs within the Consultation Zone should be designated as "special routes"; utilities companies should be informed of this and precautionary measures should be implemented. Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces such as manholes and service chambers, and that appropriate monitoring procedures are in place to prevent hazards due to asphyxiating atmospheres in confined spaces. Detailed guidance on entry into confined spaces is given in Code of Practice on Safety and Health at Work in Confined Spaces (Labour Department, Hong Kong). • Periodically during ground-works construction within the 250m Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person.	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note Labour Department's Code of Practice for Safety and Health at Work in Confined Space
	Monitoring ● Routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make sure that the area is free of landfill gas before any man enters into the area. ● For excavations **deeper than 1m**, measurements should be carried out: • at the ground surface before excavation commences;- • immediately before any worker enters the excavation;					

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S11.5.26 - S11.5.31	• at the beginning of each working day for the entire period the excavation remains open; and • periodically throughout the working day whilst workers are in the excavation. ● For excavations **between 300mm and 1m deep**, measurements should be carried out: • directly after the excavation has been completed; and • periodically whilst the excavation remains open. ● For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person. ● Depending on the results of the measurements, actions required will vary and should be set down by the Safety Officer or other appropriately qualified person. ● The exact frequency of monitoring should be determined prior to the commencement of works, but should be at least once per day, and be carried out by a suitably qualified or qualified person before starting the work of the day. Measurements shall be recorded and kept as a record of safe working conditions with copies of the site diary and submitted to the Engineer for approval. The Contractor may elect to carry out monitoring via an automated monitoring system.	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note
S11.5.32	The hazards from landfill gas during the construction stage within the Sai Tso Wan Landfill Consultation Zone should be minimized by suitable precautionary measures recommended in Chapter 8 of the Landfill Gas Hazard Assessment Guidance Note.	construction stage within the Sai Tso Wan Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note

Table II - Observation / Reminder / Non-compliance made during Site Audit

Key: ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
✕ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
Follow up action will be reported in next reporting month
✻ Non-compliance of mitigation measure
· Non-compliance but improved by the contractor

EIA Ref	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Reminder/Observation	Recorded Date	Status
Water Quality Impact						
S5.8.12	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	NE2015/01	WVB/ CKL	The contractor is reminded to avoid ponding of water.	4-Aug-21 18-Aug-21 25-Aug-21	✓
S5.8.5	It is important that appropriate measures are implemented to control runoff and drainage and prevent high loading of SS from entering the marine environment. Proper site management is essential to minimise surface water runoff, soil erosion and sewage effluents.	NE2015/01	CKL	The contractor is reminded to keep waterproof filters in good condition.	4-Aug-21	✓
S5.8.5	It is important that appropriate measures are implemented to control runoff and drainage and prevent high loading of SS from entering the marine environment. Proper site management is essential to minimise surface water runoff, soil erosion and sewage effluents.	NE2017/06	Storage area	The Contractor is reminded to clear the drainage to maintain its capacity.	29-Jul-21	#
Ecological Impact						
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Construction Noise Impact						
0	· Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke.	NE2015/01	Portion III	The contractor is reminded to cover PME with acoustic sheets	18-Aug-21	✓
Landscape and Visual Impact						
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Air Quality Impact						
S3.8.1	g eight times a day on active works areas, exposed areas and paved hau	NE2015/02	Portion IX	The contractor is reminded to sprinkle water regularly to suppress dust	19-Aug-21	✓
Fisheries Impact						
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Waste Management						
S5.8.22	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters.	NE2015/01	Portion III	Waste/Chemical Management	4-Aug-21 25-Aug-21	✓
0	· Provision of sufficient waste disposal points and regular collection of waste;	NE2015/02	Portion IX	The Contractor is reminded to remove the accumulated waste outside the office.	19-Aug-21	✓
S5.8.22	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters.	NE2015/02	Portion IX	The contractor is reminded to clear the drip tray.	26-Aug-21	#
Landfill Gas Hazards						
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APPENDIX O
SUMMARIES OF ENVIRONMENTAL COMPLAINT, WARNING, SUMMON AND NOTIFICATION OF SUCCESSFUL PROSECUTION

Table O1 - Cumulative Complaint Log for Tseung Kwan O - Lam Tin Tunnel

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
562	19-Aug-21	15-Aug-21 / Lei Yu Mun Road	Anonymous	Noise	Construction noise nuisance near Lei Yu Mun Road on Sunday	Y	The complaint is considere as project-related as the construction works were carried out during the time of complaint. No monitoring was conducted on Public Holiday. The details shall be referred to CIR-N148.	Draft CIR submitted
561	6-Aug-21	6-Aug-2021 / Non-specific	Resident living in Tiu Keng Ling	Noise	Construction Noise Nuisance on Weekday during Daytime (Aug 2021)	Y	The complaint was considered as project-related. No non-compliance and limit level of daytime construction noise was recorded during late July 2021 and early August 2021. The details of complaint shall be referred to CIR-N147.	Draft CIR submitted
560	31-Jul-21	31-Jul-2021 / Portion VIII	Resident from Ocean Shores	Noise	Construction Noise Nuisance on Saturnday near Ocean Shores (Jul 2021)	Y	The complaint is considered as project-related. Results of construction noise is reviewed and no limit level exceedance was recorded. No non-compliance was found. The details shall be referred to CIR-N146.	Closed
559	3-Aug-21	Jan 2021 - Jun 2021 / Marine Works Area	Resident from Ocean Shores	Noise	Noise Nuisance near Ocean Shores (Jan - Jun 2021)	Y	The complaint included a long-period of time and the current noise mitigation measures were reviewed. No limit level of construction noise was recorded throughout Jan 21 - Jun 21, Despite the complaint is considered as project-related, no non-compliance was recorded. The details shall be referred to the CIR-N145.	Draft CIR submitted
558	11-Jul-21	11-Jul-2021 / Marine Works Area	Anonymous	Working Hours	Operation of Marine Construction Works during Restricted Hours (Jul - 2021)	N	The barge shown in the photo provided by the Complainant was not belong to the Project. The compliant was non-valid and thus the complaint is considered as non-project-related. The details shall be referreed to CIR-O8.	Closed
557	20-Jul-21	19-Jul-2021 / Eastern Harbour Crossing	Resident from Bik Lai Estate	Noise	Noise Nuisance from Construction Works (C1 - Jul)	Y	The complaint is considered as project-related. Construction works were undergoing at the time of complaint and PMEs were operating. No non-compliance was recorded. The details shall be referred to CIR-N144.	Closed
556	27-Jun-21	27-Jun-2021 / Marine Works Area	Anonymous	Working Hours	Operation of Marine Construction Works during Restricted Hours	Y	Tug boat and crane barge were used for relocating barge and airlifting materials. The Contractors held valid and approved CNP. No non-compliance was recorded. The details shall referred to CIR-N143.	Closed
555	29-Jun-21	29-Jun-21 / Marine Works Area	Anonymous	Water	Suspected Muddy Water at the Marine Works Area	N	No ddirect evidewnce point towards C2 was the source of muddy water. The details of complaint shall be referred to CIR-W17.	Closed
554	29-Jun-21	25-Jun-21 / Marine Works Area	Anonymous	Light / Working Hours	Construction works during restricted hours and light nuisance	N	No construction was undergoing during the time of complaint. The light shown in photo was used as safeguarding purpose. Details shall be referred to CIR-O7.	Closed
553	27-May-21	26-May-21 / C3	Anonymous	Air	Air quality impact nuisance nearby Po Yap Road (C3 - Apr & May 2021)	N	See Complaint #551	Closed
552	18-May-21	17-May-21 / C1	Anonymous	Noise	Noise Nusiance from Construction Works (C1 - May)	Y	The complaint is considered as project-related. Construction activities were undergoing during the time of complaint and deficiencies of noise mitigation measures can be observed. The details shall be referred to CIR-N142.	Closed
551	21-May-21	23-Apr-21 / C3	Resident from Ocean Shores	Air	Air quality impact nuisance nearby Po Yap Road (C3 - Apr & May 2021)	N	The contractor had applied mitigation measures such as regular watering and covering stockpile of dusty materials. The complaint is considered as project-related and details shall be referred to CIR-A21	Closed
550	21-May-21	4-May-21 / C2 & C3	Resident from Ocean Shores	Noise	Noise nuisance at early morning (C2&C3 May 2021)	N	The complaint is considered as non-project-related as both contractor and RE confirmed that no construction was carried out on or before 8 a.m. on the date of incident. The details shall be referred to CIR-N139	Closed
549	26-Apr-21	21-Apr-21 / C1	Mr. Chan from Hong Nga Court	Noise	Noise nuisance at morning (C1-Late Apr)	Y	See Compliant #547	Closed
548	26-Apr-21	23-Apr-21 / C1	Mrs. Ho from Lung pak House	Noise	Noise nuisance at morning (C1-Late Apr)	Y	See Compliant #547	Closed
547	26-Apr-21	25-Apr-21 / C1	Mr. Lau from Yung Lai House	Noise	Noise nuisance at morning (C1-Late Apr)	Y	The complaint is considered as project-related. Construction works were undergoing at the time of complaint and PMEs were operating. No non-compliance was recorded. The details shall be referred to CIR-N141.	Closed
546	19-Apr-21	4&11-Mar-21 / Marine Works Area	Anonymous	Noise	Noise nuisance on holiday mornings (C6 - Apr)	Y	The complaint is considered as project-related and rebar fixing and framework erection was undergoing. No PME was operating during the time of complaint. A valid CNP is held by the Contractor and no non-compliance was identified. The details shall be referred to CIR-N140.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
545	19-Apr-21	22-Mar-21 / Portion IX	Mr. Lai (Sai Kung District Council Member)	Noise	Noise nuisance on holiday mornings (C2 - Mar)	N	See Complaint #538	Closed
544	19-Apr-21	11-Mar-21 / Portion III	Resident of Yau Lai Estate	Noise	Noise Nusiance from Construction Works (C1 - Mar)	Y	See Complaint #521	Closed
543	19-Apr-21	3-Apr-21 / Portion III	Resident of Yau Lai Estate	Noise	Noise Nusiance from Construction Works (C1 - Apr)	Y	See Complaint #534	Closed
542	19-Apr-21	3-Apr-21 / Portion III	Resident of Yau Lai Estate	Noise	Noise Nusiance from Construction Works (C1 - Apr)	Y	See Complaint #534	Closed
541	19-Apr-21	7-Apr-21 / Portion III	Resident of Ping Tin Estate	Noise	Noise Nusiance from Construction Works (C1 - Apr)	Y	See Complaint #534	Closed
540	19-Apr-21	14-Apr-21 / Portion III	Mr. Wang (Kwun Tong District Council Member)	Noise	Noise Nusiance from Construction Works (C1 - Apr)	Y	See Complaint #534	Closed
539	16-Apr-21	22-Mar-21 / Portion IX	Residentof Ocean Shores	Noise	Suspected Construction Works during evening-time (C2 - Mar)	N	See Complaint #534	Closed
538	16-Apr-21	Non-specific / Works area near Ocean Shores	Residentof Ocean Shores	Noise	Noise nuisance on holiday mornings (C2 - Mar)	N	No works was conducted during the time of complaint. The complaint is considered as non-project-related.Details shall be referred to CIR-N138.	Closed
537	15-Apr-21	14/4/2021 / Works area near Park Central	Resident of Park Central	Noise	Noise Nusiance due to Breaking Works (C3- Apr)	Y	Breaking works was conduced during the time of complaint. No limit level for noise monitoring was triggered. The complaint is considerd as project-related. Details shall be referred to CIR-N137.	Closed
536	14-Apr-21	7/4/2021 / Portion IX	Resident of Ocean Shores	Noise	Suspected low-frequency noise nuisance at Portion IX (Apr 2021)	N	The complaint is considered as non-project-related as no PME was turned on during the time of complaint. Details shall be referred to CIR-N136.	Closed
535	14-Apr-21	7/4/2021 / C1	Resident of Lam Tin Districct	Noise	Noise nuisance during nighttime (C1 - Apr 2021)	Y	See Complaint #534	Closed
534	8-Apr-21	3/4/2021 / C1	Resident of Yau Lai Estate	Noise	Noise nuisance during nighttime (C1 - Apr 2021)	Y	The complaint is considered as project-related as there was construction works conducted at Kwun Tong Bypass. The details shall be referred to CIR-N135.	Closed
533	26-Mar-21	15-Mar-2021 / Portion IVC or III	Resident of Yau Lai Estate	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	See Complaint #521	Closed
533A	2-Mar-21	2-Mar-2021 / Portion IVC or III	Anonymous	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	See Complaint #521	Closed
532	16-Mar-21	10-Mar-2021 / Zone C	Mr. Lui (Sai Kong District Council Member)	Noise	Noise nuisance during daytime (C3 - Mar 2021)	Y	See Complaint #529	Closed
531	10-Mar-21	10-Mar-2021 / Zone C	Resident of Park Central	Noise	Noise nuisance during daytime (C3 - Mar 2021)	Y	See Complaint #529	Closed
530	10-Mar-21	10-Mar-2021 / Zone C	Resident of Park Central	Noise	Noise nuisance during daytime (C3 - Mar 2021)	Y	See Complaint #529	Closed
529	10-Mar-21	10-Mar-2021 / Zone C	Resident of Park Central	Noise	Noise nuisance during daytime (C3 - Mar 2021)	Y	The complaint is considered as project-related and no non-compliance was found. The noise origin was believed to be the breaking works conducting at Po Yap Road. The concerned breaking works was completed on 13 Mar 2021. The details shall be referred to CIR-N134.	Closed
528	10-Mar-21	10-Mar-2021 / Portion IVC or III	Resident of Yau Lai Estate	Noise	Percussive Noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed
527	10-Mar-21	10-Mar-2021 / Portion IVC or III	Resident of Yau Lai Estate	Noise	Percussive Noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed
526	10-Mar-21	10-Mar-2021 / Portion IVC or III	Resident of Yau Lai Estate	Noise	Percussive noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed
525	9-Mar-21	5-Mar-2021 / Portion IX	Anonymous	Noise	Noise nuisance during daytime (C2 - Mar 2021)	Y	See Complaint #522	Closed
524	9-Mar-21	9-Mar-2021 / Portion IVC or III	Mr. Wong from District Councilers	Noise	Percussive noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
523	9-Mar-21	9-Mar-2021 / Portion IVC or III	Resident of Yau Lai Estate	Noise	Percussive noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed
523A	5-Mar-21	5-Mar-2021 / Portion III or IVC	Anonymous	Noise	Percussive noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed
522	4-Mar-21	3-Mar-2021 / Portion IX	Resident of Ocean Shore	Noise	Noise nuisance during daytime (C2 - Mar 2021)	Y	The complaint case was considered as project-related. The Contractor is reminded to close the gap of noise barrier and repair damaged noise barriers. The details shall be referred to CIR-N132.	Closed
521	4-Mar-21	3-Mar-2021 / Portion IVC or III	Resident of Yau Lei Estate	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	The complaint is considered as project-related. No limit level of construction noise was recorede during March 2021 and the details shall be referred to CIR-N133.	Closed
521A	1-Mar-21	2-Mar-2021 / Portion IVC or III	Resident of Ping Tin Estate	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	See Complaint #521	Closed
520	1-Mar-21	1-Mar-2021 / Portion IVC or III	Resident of Yau Lei Estate	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	See Complaint #518	Closed
520A	1-Mar-21	Non-specific	Resident of Yau Lei Estate	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	See Complaint #521	Closed
519	24-Feb-21	21-Feb-2021 / Non-specific	Resident of Ocean Shores	Noise	Noise nuisance on morning (Feb 2021)	N	No PME was operating on-site at the time of compliant and the complaint is considered as non-project-related. The details shall be referred to CIR-N131	Closed
518	19-Feb-21	12-13 & 18 Feb 2021 / Non-specific	Resident of Yau Lei Estate & Hong Pak Court	Noise	Percussive noise nuisance at morning (C1)	Y	Incestigation result shows that the percussive noise nuisance was generated from Portion IVC. The construction work started after 0700 and no limit level of daytime noise exceedance was recorded. The details shall be referred to CIR-N130	Closed
518A	1-Mar-20	27 Feb 2021 / Non-specific	Non-specific	Noise	Percussive noise nuisance at morning (C1)	Y	See complaint #518	Closed
518B	1-Mar-20	25 feb 2021 / Non-specific	Resident of Hong Pak Court	Noise	Percussive noise nuisance at morning (C1)	Y	See complaint #518	
517	8-Feb-21	8/2/2021 / Non-specific	Resident of Ocean Shores	Noise	Noise Nuisance from Excavator	Y	No clear judgement was made as the complainant's information is too vague and it is hard to pinpoint the excavator mentioned in the complaint was in fact the one located at the project site. The details shall be referred to CIR-N129.	Closed
516	26-Jan-21	21-Feb-2021 / Non-specific	Resident of Ocean Shores	Noise / Operating Hours	Continous Noise Nuisance during Nighttime (Jan 2021)	N	No PME was operating on-site on the date of complaint. The details shall be referred to CIR-N128	Closed
515	23-Jan-21	12-13 & 18 Feb 2021 / Non-specific	Resident of Yau Lei Estate & Hong Pak Court	Noise		N	See complaint #504	Closed
514	22-Jan-21	8/2/2021 / Non-specific	Resident of Ocean Shores	Noise		Y	See complaint #511	Closed
513	22-Jan-21	15-Jan-2021 / Zone D	Resident of Ocean Shores	Air	Air quality impact due to open stockpile	N	See Complaint #508	Closed
512	22-Jan-21	20-Jan-2021 / Zone D				N		
511	20-Jan-21	6/1/2021 & 15/1/2021 / Portion IX of C2	Resident of Ocean Shores	Noise	Continous Noise Nuisance during Nighttime (Jan 2021)	Y	The complaint is considered as project-related as barge was operating in during time of complaint. The details shall be referred to CIR-N128	Closed
510	19-Jan-21	Non-specific / Portion IX of C2	Resident of Ocean Shores	Noise		N	See complaint #505	Closed
509	15-Jan-21	15/1/2021 / Portion IX of C2	Resident of Ocean Shores	Noise		N	See complaint #505	Closed
508	13-Jan-21	5/1/2020 / Storage Area of C3	Resident of Ocean Shores	Air	Air quality impact due to open stockpile	N	The Complaint was found project-related. The dust origin was from the stockpile at Zone A of C3. The Contractor had sprayed water regularly to suppress the dust emission and improvement had been observed over Jan 2021. Details shall be referred to CIR-A20.	Closed
507			Resident of Ocean Shores	Air		N		
506	7-Jan-21	6-Jan-2020 / Portion IX	Resident of Ocean Shores	Noise	Continous Noise Nuisance during Nighttime (Jan 2021)	Y	See Complaint #500	Closed
505	4-Jan-21	22-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		N	No clear judgement was made. Other than the construction site, other source for low-frequncy noise was also identified. Details shall be referred to CIR-N128	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
504	4-Jan-21	1-Jan-2020/C1	Resident of Yau Lai Est.	Noise	Suspected noise nuisance from work site	N	The complaint was considered non-project-related as there was no PME working on site. The details shall be referred to CIR-N127.	Closed
503	30-Dec-20	21-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise	Noise nuisance at nighttime on a weekday	Y	See complaint #500	Closed
502	28-Dec-20	22&23-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		Y		Closed
501B	23-Dec-20	22-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		Y		Closed
501A	23-Dec-20	22-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		N	No direct evidence show that the Contractor operated barges at the time of complaint. Therefore the complaint was considered as non-project-related. The details shall be referred to CIR-N126.	Closed
501	23-Dec-20	22-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		Y	The Contractor operated PME(s) at evening-/night- time without an approved valid CNP. The complaint is considered as project-related.The details shall be referred to CIR-N126.	Closed
500	22-Dec-20	22-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		Y		Closed
499	21-Dec-20	20/12/2020 / marine works area	Resident of Ocean Shores	Operating hours / Noise	Horning noise nuisance on Sunday	N	The complaint is considered as non-project-related as no barge was working under the TKOLTT project at the time of complaint. The details shall be referred to CIR-O6.	Closed
498	18-Dec-20	17-Dec-2020 / Marine Works Area	Resident of Ocean Shores	Noise	Low frequency noise & occasional piling noise nuisance during night-time	Y	The complaint is considered as project-related as the noise nuisance was coming from water pumps that working 24/7. Details shall be referring to CIR-N125.	Closed
497	9-Dec-20	Days on/before 9/12/2020 / Portion IVC	Resident of Yau Lai Estate	Air & Noise	Dust & Noise Nuisance near Lam Tin Interchange (December)	Y	See Complaint #494	Closed
496	3-Dec-20	Days before 3-Dec-20 / Lam Tin Tunnel	Resident of Hong Pak Court	Noise	Dust & Noise Nuisance near Lam Tin Interchange (December)	Y	See Complaint #494	Closed
495	16-Dec-20	12-Dec-2020 / Po Yap Road	Resident of Park Central	Noise	Night time machenical noise nuisance	Y	The complaint is considered as project-related as the noise nuisance was coming from water pumps that working 24/7. Details shall be referring to N124.	Closed
494	5-Dec-20	Early Dec 2020 / Portion III	Resident of Lung Pak House / Staff from Elderly Hoouse nearby	Noise	Noise Nuisance near Lam Tin Interchange (December)	Y	The complaint is considered as project-related and no non-compliance in CNMP had been recorded. The contractor is reminded to ensure the effectiveness of noise mitigation measures by various measures including repairing damaged noise barrier. The details shall be referred to CIR-C40.	Closed
493	8-Dec-20	25-Nov-2020 & 2-Dec-2020 / Works area nearby Park Central	Resident of Park Central	Noise	Percussive noise nuisance from at early morning	N	The complaint is considered as non-project-related. No operating PME(s) under TKO-LTT project at the time of complaint was known to emit percussive noise at the time of complaint. The details shall be referred to CIR-N123.	Closed
492	18-Nov-20	18-Nov-2020 / Portion VIII (C2)	Resident of Ocean Shores	Noise	Construction Noise nuisance at Morning	Y	Prelimary result reveals that pre-boring and breaking works had been conducted at the time of complaint. The details shall be referred to CIR-N122.	Closed
491	18-Nov-20	16-Nov-2020 / C1	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Restricted Hour)	Y	See Complaint #490.	Closed
490	13 & 16 Nov 20	5-12 & 14-Nov-2020 / C1	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Restricted Hour)	Y	The complaint is considered as project-related. The origin of noise nuisance was believed to be construction works at Tunnel S1 and S2. No non-compliance was found and the details shall be referred to CIR-N121	Closed
489	13-Nov-20	13-Nov-2020 / C1	Resident of Yau Lai Estate	Air & Noise	Dust and Noise Nuisance in Portion IVC	Y	The complaint was found project-related. The contractor had adpoted various noise mitigation measures suc as rock splitting method and erection of semi-enclosure to further reduce the noise impact to its surrounding. The details shall be referred to CIR-C39.	Closed
488	13-Nov-20	10-Nov-2020 / C2	Resident of Ocean Shores	Air	Dust emission from construction works	N	The complaint was found project-related. The Contractor is recommended to spray water more requently to suppress the dust nuisance. The details shall be referred to CIR-A19.	Closed
487	11-Nov-20	5-Nov-2020 / Portion IVC	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Late September to November)	Y	See Compliant #468	Closed
486	11-Nov-20	6-Nov-2020 / Portion IVC	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Late September to November)	Y	See Compliant #468	Closed

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485	7-Nov-20	7-Nov-20	Resident of Park Central	Noise	Precussive noise nearby Park Central	Y	The complaint is considered non-project-related as no PME that know to emit percussive noise was operating during the time of complaint. The details shall be referred to CIR-N120.	Closed
484	7-Nov-20	7-Nov-20 / Portion IV	Resident of Ocean Shores	Noise	Noise Nuisance from Excavation Works	Y	See complaint #481	Closed
483	6-Nov-20	6-Nov-20	Resident of Ocean Shores	Noise	Low-frequency noise at night (Oct&Nov 2020)	N	The low-frequency noise was found coming from the water pumps that works 24/7 and other source may also contribute to the noise nuisace. The Contractor had followed the approved CNP. The complaint is considered project-related and shall be referred to CIR-N119	Closed
482	30-Oct-20	29-Oct-2020 / C2	Non-specific	Air	Dust emission from construction works	N	Despite the contractor had sprinkle water regularly, the haul road was found dry during site audit session. The Contractor is reminded to sprinkle water more frequently and cover stockpiles of dusty material to reduce dust emission. The details shall be referred to CIR-A19	Closed
481	3-Nov-20	2-Nov-2020 /Portion IV	Resident of Ocean Shores	Noise	Noise Nuisance from Excavation Works	Y	The complaint is considered project-related as no other possible noise origin is know to emit such kind of noise at the surrounding. The Contractor had been reminded to applied lubricants and tighten the screws to reduce noise level. The details shall be referred to CIR-N118	Closed
480	3-Nov-20	3-Nov-2020 / Portion IVC	Resident of Yau Lai Est	Noise	Noise Nuisance near Lam Tin Interchange (Late September to November)	Y	See Complaint #469	Closed
479	3-Nov-20	2-Nov-2020 / Portion IVC	Resident of Yau Lai Est	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	See Complaint #469	Closed
478	3-Nov-20	30-Oct-2020 / Portion IVC	Mr. Wong from District Councilers	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	See Complaint #469	Closed
477	30-Oct-20	15-Oct-2020 / Portion IVC	Non-specific	Air	Air & Noise Nuisance near Lam Tin Interchange (October)	N	See Complaint #469	Closed
476	29-Oct-20	29-Oct-2020 / Portion IVC	Resident of Yau Lai Est	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	See Compliant #468	Closed
475	28-Oct-20	Not specific / Lam Tin interchange	Non-specified (near Yau Lai Estate)	Noise	Air & Noise Nuisance near Lam Tin Interchange (October)	Y	See Complaint #469	Closed
474	23-Oct-20	23-Oct-20 / Portion IX	Resident from Ocean Shores	Noise	Low-frequency noise at night (Oct-Nov 2020)	N	The low-frequency noise was found coming from the water pumps that works 24/7 and other source may also contribute to the noise nuisace. The Contractor had followed the approved CNP. The complaint is considered project-related and shall be referred to CIR-N119	Closed
473	21-Oct-20	19-Oct-20 / Portion IX	Resident from Ocean Shores	Noise	Noise Nuisance near Portion IX	Y	See complaint #459	Draft CIR submitted
472	20-Oct-20	20-Oct-20 / Portion IV	Resident from Ocean Shores	Noise	Noise Nuisance from Excavation Works	Y	Preliminary results show the noise source was from the backhoe at Portion IV. The Contractor had applied mitigation measures such as adding lubricant to mounting parts to alleviate the problem. The details shall be referred to CIR-N118	Closed
471	6-Oct-20	6-Oct-20 / Portion IX	Resident from Ocean Shores	Noise	Noise nuisance at morning (Oct 2020)	Y	See complaint #459	Draft CIR submitted
470	10-Oct-20	3-10 Oct 20 / Portion IVC	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	See Compliant #468	Closed
469	10-Oct-20	9-10 Oct 20 / Lam Tin Interchange	DC Member (Mr. Wang)	Noise	Air & Noise Nuisance near Lam Tin Interchange (October)	Y	The complaint is considered as project-related and no non-compliance in CNMP had been recorded. The contractor had adopted mitigation measures such as deploying noise absorbing materials among construction site and spraying water near dust generating activities. The details shall be referred to CIR-C38.	Closed
468	5-Oct-20	Mondays - Saturdays / Portion IVC	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	See complaint #468A	Closed

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468A	5-Oct-20	Mondays - Saturdays / Portion IVC	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	The complaint was considered project-related. Mitigation measures such as deploying noise barrier and attempts on blocking direct line of sight from NSR was observed. The details shall be referred to CIR-N117.	Closed
467	23-Sep-20	19-Sep-2020 / Portion IX	Resident of Ocean Shores	Noise	Daytime noise nuisance (mid-September)	Y	See complaint #459	On-going
466	22-Sep-20	20-Sep-2020 / Portion IX		Noise / Working Hours	Noise nuisance on Sunday	Y	Investigation result shows none of the contract under TKOLTT conducted works on Sunday. The details shall be referred to CIR-O5	Closed
465	20-Sep-20	20-Sep-.2020 / Portion IX				Y		Closed
464	17-Sep-20	August 2020 / Portion IX	Resident of Ocean Shores	Noise	Continuous Noise Nuisance over Aug 2020	Y	The investigation shows no non-compliance and action level for noise is triggered. The details shall be referred to CIR-N113	Closed
463	15-Sep-20	15-Sep-2020 / Non-specific	Anonymous	Noise	Percussive noise nuisance at early morning	Y	The complaint is considered non-project-related. The investigation pointed out the Contractor had maintain wastewater treatment facilities properly and no action or limit level of surface SS was triggerred after the incident. The muddy water was coming from DSD desilting compound. Details shall be referred to CIR-W16	Closed
462	8-Sep-20	10-Sep-2020 / Potion IX	Anonymous	Noise	Suspected muddy water discharge	N		Closed
461	5-Sep-20	5-Sep-2020 / Portion IX	Resident of Ocean Shores	Noise	Squeaky noise on a Saturnday Morning	Y	The squeaky noise believed was coming from operating barges at C6. No non compliance was found. Details shall be referred to CIR-N115	Closed
460	8-Sep-20	8-Sep-2020 / Portion IVC	Resident of Yau Lai Estate	Noise	Noise nuisance near East Habour Cross Tunnel	Y	See complaint #456	Closed
459	4-Sep-20	1-Sep-2020 / Portion IX	Resident of Ocean Shores	Noise	Noise nuisance at morning (Early Sep 2020)	Y	The complainant had repeatedly complaint about the continuous noise nuisace from September to October 2020. The complaint is considered as project-related. The result of noise monitoring had been reviewed and no limit level of exceedance was found. The details of complaint shall be referred to CIR-N114.	Draft CIR submitted
458	28-Aug-20	Early August 20 / Lam Tin Tunnel	Resident from Yau Lai Estate	Noise	Long-term noise nuisance since early August	Y	See complaint #456	Closed
457	27-Aug-20	24&25-Aug-20 / Portion IX	Rersident from Ocean Shores	Noise	Noise nuisance at morning (Late August 2020)	Y	See complaint #456	Closed
456	18-Aug-20	18-Aug-20 / Portion IVC	Resident from Yau Lai Estate	Noise	Noise nuisance near East Habour Cross Tunnel	Y	Investigation showed the nuisance was generated by breaking works. The contractor had promised to complete the semi-enclosure by October 2020. The details shall be referred to CIR-N112	Closed
455	18-Aug-20	Dates on/before 1-Aug-20 / Lam Tin Tunnel	Resident from Yau Lai Estate	Noise	Noise nuisance from tunnel works	Y	Breaking had been conducted during the time of complaint. The details shall be referred to CIR-N111	Closed
454	11-Aug-20	2-Aug-20 / Sea outside Ocean Shores	Resident from Ocean Shores	Operation Hours	Working on restricted hours and public holiday	N	The working barge was believed to be working under the Cross Bay Link project. None of the barges working on the time of complaint belongs to TKOLTT project. Despite works had been conducted, no PME was turned on during the time of complaint. The details shall be referred to CIR-O4.	Closed
453	3-Aug-20	3-Aug-20 / Western Marine Works Area	Resident from Ocean Shores	Water	Suspected muddy water and worn out silt curtain	N	The suspected muddy water was due to the strong tidal movement under typhoon influence. The silt curtain was not deployed properly when the typhoon was landed. Details shall be referred to CIR-W15	Closed
452	1-Aug-20	31-Jul-20 / Marine Works Area	Resident from Ocean Shores	Noise	Squeaky noise during nighttime	Y	The noise was originated from the wires that used for tightening the barge. The Contractor had not fasten the wire completely as strong wave and wind actionmay tear up the wire and made the barge stranded. The details shall be referred to CIR-N110.	Closed
451	28-Jul-20	28-Jul-20 / Portion IX	Resident from Ocean Shores	Noise	Breaking noise on the morning	Y	Breaking had been conducted during the time of complaint. The details shall be referred to CIR-N109	Closed
450	23-Jul-20 24-Jul-20	23&24-Jul-20 / Works area nearby Ocean Shores	Residents from Ocean Shores	Noise	Noise nuisance on weekdays	Y	The noise nuisance was originated from high-noise level works such as breaking and drilling. The details shall be referred to CIR-N108	Draft CIR submitted
449	16-Jul-20	12-Jul-20 / Lam Tin Tunnel	Resident of Hong Pak Court	Noise	Noise Nuisance Suspected from Tunnel (C1)	Y	Breaking work was conducted near the underground of Hong Pak Court. No non-conformance of CNP was identified, contractor is reminded to strictly follow the conditions of CNP and the time period of CNP. The details shall be referred to CIR-N110.	Closed
448	4-Jul-20	4-Jul-20 noon / Marine works area nearby Ocean Shores	Resident of Ocean Shores	Air	Dark Smoke Emission from Barge	N	The dark smoke was originated from the barge. It is common that dark smoke will be released when the barge's engine was starting. The details shall be referred to CIR-A18.	Closed

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447C	10-Jul-20	28-Jun-2020 / TKO South open sea	Anonymous	Water	Suspected oil leakage at the TKO south open sea	N	The suspected oil leakage was believed to be an algae bloom over the whole bay area. The noise nuisance from speeding was considered not project related. The details shall be referred to CIR-C37	Closed
447B	10-Jul-20	29-Jun-2020 / TKO south open sea & flyover towards TKO Chinese Permanent Cemetery		Water / Noise	Suspected muddy water spillage and noise nuisance due to speeding	N		
447A	10-Jul-20	24-Jun-2020 / Non-specific		Noise	Long-term noise nuisance and insufficient noise mitigation measures	Y		
446	12-Jun-20	31-May-2020 / Area nearby Yau Lai Est	Resident of Yau Lai Estate	Noise	Noise nuisance at Morning nearby East Habour Crossing	Y	See complaint 442.	Closed
445	11-Jun-20	11-Jun-20 / Park Central	Resident of Park Central	Air	Pungent smell suspected coming from the work sites	N	See complaint 443B.	Closed
444	6-Jun-20	6-Jun-20 / Portion IX	Residents of Ocean Shores	Water	Flooding within work site and suspected muddy water spillage after downpour	N	The flooding is a normal phenonmenon as the site boundary have been embarked. The suspected muddy water is wide-spread among the open sea at TKO south and no exceedance of SS were recordede after the incident. The complaint is considered non-project-related and details shall be referred to CIR-W14.	Closed
443B	6-May-20	Non-specific	Anonymous	Air/Noise	Odour nuisance nearby TKO MTR Station	N	The preliminary result showed no direct relationship between the nuisance and the construction works. The details shall be referred to CIR-A17.	Closed
443A					Noise nuisance at Night and Air Quality Impact from Works	Y	The complaint is considered non-project-related. There is no direct evidence showing the project site is the origin of the nuisance. The details shall be refered to CIR-C36	Closed
442	22-May-20	22-May-20 / LT Tunnel	Resident from Hong Pak Court	Noise	Noise nuisance from Tunnel Works	Y	The noise is believed to be breakin inside the tunnel. The CNP was compiled with and contractor is reminded to review breaking schedule to less sensitive hour. The details shall refer to CIR-N105.	Closed
441	8&9-Apr-20	9-Apr-20 / TKO surcharge area	Residents of Ocean Shores	Air/Noise	Noise Nuisance on early morning and Air Quality Works from Excavation Works	Y	The work schedule of C2 had been reviewed. The"beeping" noise is originated from C2 due to safety issue (for mobilization of materials with crane). The noise nuisance is believed to be coming from the vibration hammer. The Contractor had water the exposed area regular to reduce dust impact to the surrounding. The details shall be referred to CIR-C35	Closed
440	13&17-May-20	13-May-2020/Surcharge Area of TKO	Residents of Ocean Shores	Noise	Noise generation in early mornings of early May	Y	The work schedule of C2. C3 & C6 had been reviewed. The noise source is believed to be generated from C2 due to sheet-piling. The details shall be referred to CIR-N104.	Closed
439	7-Apr-20 & 24-Apr-20	April 2020 / Works area near Park Central (non-specific)	Residents of Park Central	Odour	Continuous diesel fuel odour nuisance near Park Central	N	No direct evidence proved that the odour source was originated from the work sites of TKOLTT. The details shall be referred to CIR-A16.	Closed
438	18-Apr-20	18-Apr-20 / Marine Works Area at TKO	Residents of Ocean Shores	Noise/ Light	Blasting, High Frequency Noise and Light in Tseung Kwan O	Y	The complaint was valid in regard of noise. Blasting had been carried out during the midnight and the Contractor is reminded to strictl follow requirements of CNP. The light source was originated from the construction vessels due to safety reason and guard watching. Details shall be referred to CIR-C34.	Closed
437	27-Mar-20	27-Mar-2020 / Surcharge Area (C2)	Resident of Ocean Shores	Noise	Low Frequency Noise during Midnight	Y	The noise source was the malfunctioned dewatering pumps. The details shall be referred to CIR-N103	Closed
436	26-Mar-20	26-Mar-20/ Portion IVC	District Council Member (Mr. Wong)	Noise	Noise nuisance, vibration and spectedly insufficient mitigation measures in Lam Tin	Y	See complaint #431-433.	Closed
435	23-Mar-20	23-Mar-20/ Lam Tin Tunnel	Resident of Cha Kwo Ling Village	Noise	Groundborne Noise from Blasting in the Evening	Y	Blasting was conducted at the time of complaint. The vibration monitoring conducted near Tin Hau Temple was considered the vibration level was acceptable. The details shall be referred to CIR-N102.	Closed
434	23-Mar-20	20-Mar-20/ Lam Tin	District Council Member (Mr. Wong)	Noise	Noise nuisance from Construction Works during Holiday	Y	See compliant #427.	Closed

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433	20-Mar-20	20-Mar-20/ Lam Tin	Resident of Hong Pak Court	Noise	Noise nuisance, vibration and suspectedly insufficient mitigation measures in Lam Tin	Y	The time period and PMEs of major works conducted during daytime of the complaints, no non-compliance in CNMP and during site audits has been recorded. The Contractor is recommended to provide alternative noise mitigation measures such as acoustic box for noisy PMEs and regularly repair materials of the noise mitigation measures. Details shall be referred to CIR-N101.	Closed
432	18-Mar-20	18-Mar-20 / Portion IVC	Resident of Yau Lai Estate	Noise	Noise nuisance, vibration and suspectedly insufficient mitigation measures in Lam Tin	Y		
431	14-Mar-20	14-Mar-20 / Portion IVC	Residents of Yau Lai Estate	Noise	Noise nuisance, vibration and suspectedly insufficient mitigation measures in Lam Tin	Y		
430	17-Mar-20	17-Mar-20 / Surcharge Area / C2	Anonymous	Water	Muddy Water at the Surcharge Area	N	The "muddy water" was created by the tug boat's screw propeller. The Contractor claimed the propeller stirred up seedbed sediment and generated "muddy water". The details shall be referred to CIR-W13.	Closed
429	10-Mar-20	10-Mar-20 / Site Nearby Park Central	Resident of Park Central	Noise	Noise nuisance in early morning (Mar 2020)	Y	No construction works had been conducted at the time of complaint for C3 and the major works area in C2 was at least 300m away from the complainant. It is believed that the major noise source was coming from ASD's work site. The details shall be referred to CIR-N100	Closed
428	4-Mar-20	Not Specified / Tseung Kwan O	Mr. Lui, Sai Kung District Council	Odour / Noise	Odour and low frequency noise nuisance from construction site	Y	Only minor works had been conducted at the time of complaint. No direct evidence showed that the odour source was originated from C3. The suspected nuisance source is believed to be ASD's works area. The details shall be referred to CIR-C33	Closed
427	1-Mar-20	1-Mar-20 / Portion IVC	Resident of Yung Kai House	Noise	Noise nuisance from Construction Works during Holiday	Y	No construction works were conducted at the concerned locations and no direct evidence showing the complaint is project-related. The details shall be referred to CIR-N99	Closed
426	19-Feb-20	11-Feb-20 / Works area outside TKL Sports Centre	Anonymous	Noise	Noise nuisance from breaking works	Y	Refer to complaint #423 and #424.	Closed
425	18-Feb-20	29-Jan-2020 / Marine works Area	Mr. Chan from Ocean Shore		Noise nuisance from barge in morning	Y	No works had been conducted in the time period of complaint. The noise is believed to be non-project-related. The details shall be referred to CIR-N95.	Closed
424	11-Feb-20	8 and 11-Feb-2020 / Site near TKL Station	Resident of Park Central		Noise nuisance from breaking works	Y	The complaint was valid and the contractor had been operating only 1 breaker at a time. The contractor is suggested to further increase the mitigation measures to reduce impact to the surrounding neighborhood. The details shall be referred to CIR-N97	Closed
423	3-Feb-20	03-Feb-2020 / Site Near TKL Station				Y		
422	3-Feb-20	2-Feb-20 / Lam Tin Interchange	Resident of Cheuk Lai House, Yau Lai Estate		Noise nuisance suspected to be related to works involving metal hammering on Site near EHC	Y	No construction activities were conducted at the concerned locations during the period of complaint. The Contractor is reminded to keep conducting good site practice and strictly follows the requirements of approved CNP. The details shall be referred to CIR-N98	Closed
421	21-Jan-20	21-Jan-20 / Portion IX	Ocean Shores Residents	Noise	Noise nuisance due to Blasting at midnight	Y	Blasting was conducted around 1:30am due to the vicinity of the Railway protection zone of MTR. The Contractor is reminded to keep the blast door closed during blasting to minimize noise impacts and re-schedule blasting to less sensitive hours as far as practicable. The details shall be referred to CIR-N96.	Closed
420	7-Jan-20	7-Jan-20 / Portion IX	Ocean Shores Residents		Irritating loud noise nuisance from Portion IX (C2)	Y	See complaint #417	Closed
419	7-Jan-20	Sundays before 7-Jan-20 / Tunnel Works	Resident of Hong Pak Court		Noise nuisance from Tunnel Works	Y	See Complaint #416.	Closed
418	7-Jan-20	5-6-Jan-20 / C1 Marine Works Area	Ocean Shores Residents		High-frequency noise during night-time	Y	The high frequency noise was believe to be noise emitted from the marine works area of C1. The details shall be referred to CIR-N94.	Closed
417	3-Jan-20	2-Jan-20 / Portion IX	Former District Member (Mr. Chan)		Annoying noise emission and inefficient noise mitigation measures	Y	The noise source is believed to come from a breaker and mitigation was insufficient. The Contractor was requested to strictly follow the Noise Mitigation Plan. The details shall be referred to CIR-N93.	Closed
416	29-Dec-19	29-Dec-19 / Non-specific	Resident of Hong Pak Court	Noise	Groundborne Noise from Works area	Y	Project-related with valid CNP. Contractor is reminded to reduce noise emission and prevent breaking and noisy activities during restricted hours. The details shall be referred to CIR-N92.	Closed

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415	27-Dec-19	25-Dec-19 / Lam Tin Interchange (Portion IVC)	Resident of Yau Estate	Noise	Noise nuisance from Portion IVC	Y	Non project-related due to maintenance works of East Cross-harbor Tunnel. The details shall be referred to CIR-N91.	Closed
414	24-Dec-19	22-Dec-19 / Lam Tin Interchange (Portion IVC)	Resident of Yau Estate	Noise	Piling noise nuisance near Lam Tin Interchange	Y	Project-related with valid CNP. Contractor is reminded to reduce noise emission and prevent breaking and noisy activities during restricted hours. The details shall be referred to CIR-N91.	Closed
413	24-Dec-19	24-Dec-19 / Portion IX of Contract 2	Resident of Capri & Ocean Shores	Noise	Loud and continuous noise emission from Portion IX	Y	No breaking activity was conducted by the C3. It was believed that C2 was the major noise source and the mitigation measures were insufficient. The details shall be referred to CIR-C32.	Closed
412	19-Dec-19	14-Dec-19 / marine works area	Resident of Ocean Shores	Noise	Noise nuisance from the marine works area	Y	The major construction work was driven by pin piles. The noise emitted due to the construction activities is considered to be reduced to an acceptable level as no NSR falls under the ambit of 300m study area of the work site. Details should be referred to CIR-N90.	Closed
411	2-Dec-19	30-Nov-19 / Construction Sites Outside TKL Sports Center	Resident of Park Central	Air / Noise	Non-effective noise mitigation measures and related dust and noise nuisance	Y	The construction noise created by breaking works are considered non-project related due to the large separation distance between noise source and the Complainant's Location. Major dust emission from the works area next to C3 was recorded. The Contractor is reminded to provide regular watering to dusty works. Details should be referred to CIR-C31.	Closed
410	28-Nov-19	25-Nov-19 / Portion 4C	Anonymous	Noise	Noise nuisance from Lam Tin Works Area and operation hours	Y	Refer to Complaint #408	Closed
409	27-Nov-19	20&27-Nov-19 / Construction Sites near Po Yap Road & Chui Ling Road	Resident of Park Central	Air / Noise	Dust emission due to excavation works and noise nuisance from Piling works	Y	Although noise barrier had been erected and around the breakers, the direct line of sight to the NSRs at Park Central could not be totally blocked. The Contractor is recommended to provide cantilevered noise barrier with noise absorbing materials to minimise noise impact as far as practicable. Details should be referred to CIR-C31.	Closed
408	25-Nov-19	Non-specific (Nov-19) / Portion 4C	Resident of Yau Lai Estate	Noise	Serious Noise Nuisance from Lam Tin Works Area	Y	Despite the Contractor had applied different noise mitigation measures (e.g. semi enclosure and noise barrier). Environmental deficiency was observed during site audit session. The Contractor is recommended to apply alternative noise mitigation measures to improve the situation. The details shall be refer to CIR-N89.	Closed
407	12-Nov-19	Non-specific (Nov-19) / LT Construction Site	Non-specified(Complainant has previously made complaints on LTI)	Operation Hours	Inquiries on operating hours & Noise Nuisance	N	The time of complaint falls under day-time. According to the Contractor and RE, the general starting time of construction works are 08:15 on normal week days. The Contractor had avoid conduct noisy works on morning to minimize noise impacts for the nearby residents. The details shall be refer to CIR-O3	Closed
406	5-Nov-19	5-Nov-19 / Tunnel near TKO	District Council Member (Mr. Chan)	Noise	Noise nuisance from Blasting activities during night-time	Y	No blasting was carried out on that night. The construction activities were conducted inside the tunnel with the blast door closed. The CNP that the Contractor held remained valid during the time of complaint. The details shall be refer to CIR-N88	Closed
405	29-Oct-19	17-Oct-2019 / Marine Works area near Ocean Shore	District Council Member (Mr. Chan)	Noise	Daytime times noise nuisance	Y	The complaint details does not tally up with the information provided with the Contractor and RE. Referring to the Contractor, there was construction works was starting at 09:00. Noise mitigation measures, such as acoustic mats, were applied to minimize noise impact. The details shall be refer to CIR-N87	Closed
404	15-Oct-19	12-Oct-19 / Marine Works area near Ocean Shore	Residents of Ocean Shores	Noise / Working Hours	Noise nuisance due to operation of barge on Saturday early morning	Y	The time of complaint falls within daytime and the major works conducted are dredging and reclamation. The contractor did not require any extra mitigation measures. The contractor had applied sound-proofing mat on the engine floor of the barges and is recommended to strictly follow the requirements of noise mitigation plan. The details shall be refer to CIR-N86	Closed
403	15-Oct-19	Oct-19 (Not Specified) / C2 Construction Site	Residents of Ocean Shores	Noise / Working Hours	Operation of marine construction works during late hours	Y	The major construction works is trimming works for the rock mount during the time period of complaint. Mitigation measures provided by the Contractor included provision of noise insulating mats to the engine floor of the barges and shorten the work hours by ending construction works on or before 21:00 since early Oct 2019. Details shall be referred to CIR-N85.	Closed
402	10-Oct-19	09-Oct-2019/ Site near TKO CPC	Residents of Ocean Shores	Noise	Noise nuisance of construction works at marine work area during early morning	Y	No construction activity at both the Cavern near the BCMCP Bridge and Platform 1B, including the barge, in particular during the complaint period between 2am and 3am on 9 Oct 2019. Since no works had conducted during the time of complaint, no mitigation measures are required. The details shall be referred to CIR-N84.	Closed

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401	5-Oct-19	05-Oct-2019 / C2 Portion IX	District Council Member (Mr. Chan)	Noise	High noise level from works area during daytime	Y	The time period of complaint falls under day-time and therefore the Contractor is required to carry out mitigation measures according to the latest CNMP only. The construction activities had been reviewed and no non-compliance was identified. No Limit Level of Exceedance at daytime was recorded during October 2019. For mitigation measures, the Contractor had set up sound-proofing mats and SlientUp to reduce noise impact. The details shall be refer to CIR-N83.	Closed
400	16-Sep-19	10-Sep-19 / TKO Marine Works Area	District Council Member (Mr. Chan)	Water	Muddy water discharge and deficiency in water quality mitigation measures	N	With accordance to the Contractor and RE, the silt curtains were deployed regarding to SCDP ver. 8 since 10-Sep-19, site inspection on 12-Sep-19 also showed the silt curtains were deployed properly. Despite there are chances of accidental muddy water discharge due to the removal of cofferdam on 13-Sep-19, local silt curtain had been place in order to minimize the unavoidable impact by related loading and unloading of fill materials. No muddy water had been observed outside the silt curtain area. Nevertheless, the Contractor is recommend to expand the coverage of the local silt curtain in order to well-confine the muddy water released from the grab. On top of that, the Contractor shall always follow the SCDP to ensure the minimization of impacts. Details should be referred to CIR-C30.	Closed
399	16-Sep-19	16-Sep-19 (Not Specified) / LT Interchange Potion III	Resident of Bik Lai House, Yau Lai Estate	Noise	Noise emission from the tunnel entrance (Potion III)	Y	No construction works was carried out during the time of complaint. Details should be referred to CIR-N82.	Closed
398	16-Sep-19	13-Sep-19 / Works Area of LT-TKO Tunnel outside Tiu King Leng MTR Station	Anonymous	Air / Water	Dark smoke emission and muddy water discharge from the marine work vessels near shore	N	No dark smoke emission was observed during the site inspection conducted in the week of the complaint. The Contractor has applied an air filtering tank to clean the exhaust from the barge before emission. Details should be referred to CIR-C30.	Closed
397	6-Sep-19	30 Aug-19 / Works area near Ocean Shores	Resident of Ocean Shores	Noise / Working hours	Noise emitted from Barge during Evening times	Y	The unloading works had been reviewed and no limit level of exceedance were recorded during August to early September. Since the period of complaint falls under evening times, no mitigation measures were required by the CNP. Details should be referred to CIR-N81.	Closed
396	6-Sep-19	30 Aug-19 / Works area near Ocean Shores	Resident	Noise	Noise nuisance from LT-TKO Tunnel	Y	The major works conducted were shortcreting, mucking out, maintaining, drilling and unloading. No limit level of exceedance in the restricted hours (19:00-23:00) between late August and early September were recorded. The Contractor is recommended to keep following noise mitigation plan to minimize noise nuisance. Details should be referred to CIR-N80.	Closed
395	6-Sep-19	31 Aug-19 / Works area near Ocean Shores	District Council Member (Mr. Chan)	Noise	Noise Nuisance during evening and night times	Y		Closed
394	6-Sep-19	Not specified (Sep-19) / Works area near Ocean Shores	Anonymous	Noise / Operating Hours	Noise nuisance during Evening & occasionally in Night time	Y		Closed
393	30-Aug-19	30 Aug-19 / Marine works Area	District Council Member (Mr. Chan)	Water	Alleged muddy water discharge	N	High rainfall was recorded during period of complaint, therefore muddy water discharge at outfall from upstream and some surface runoff within the site is expected. However, no major silt curtain deficiency was observed during on-site observation and no leakage of muddy water from the marine works area was observed. Details should be referred to CIR-W12.	Closed
392	29-Aug-19	20-27 Aug-19/ Portion 4C	Resident of Bik Lai House, Yau Lai Estate	Noise	Noise nuisance from the operation of heavy machineries and missing of noise mitigation measures at Portion 4C	Y	A noise insulating cover was erected before the period of complaint, however, due to restricted site condition in the relocated breaking works area, the erection of the cover could not be carried out. Nevertheless, movable noise barriers and local semi-enclosure was adopted for breaking works. Details should be referred to CIR-N79.	Closed
391	26-Aug-19	10-Jul-19 / Construction site near Ocean shore	District Council Member (Mr. Chan)	Noise	Operation of construction works during late hours	Y	1 derrick barge was operated during the period of complaint with valid CNP. Regular maintenance and checking should be conducted for all operating barges. Details should be referred to CIR-N78.	Closed
390	26-Aug-19	31-Jul-19 / Construction site near Ocean shore	District Council Member (Mr. Chan)	Noise	Intermittent noise emitted from collision during night-time	Y	The noise source is suspected to be the collision between cofferdam and its broken part as the cofferdam was found damaged next morning. No construction was conducted at night time of 31 July. The contractor is recommended to maintain and check cofferdam regularly. Details should be referred to CIR-N77.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
389	29-Jul-19	17 to 24-Jul-19 / Marine Construction Site near O King Road	Resident of Ocean Shore	Noise	Noise nuisance from the barge operating in reclamation works area near O King Road during evening times.	Y	1 derrick barge was operated during the period of complaint with valid CNP. Regular maintenance should be provided for all operating barges. Details shall refer to CIR-N76.	Closed
388	12-Jul-19	8-Jul-19 / Construction Site near Ocean Shores	District Council Member (Mr. Chan)	Noise	Noise nuisance and inadequate noise barrier at the construction site near Ocean shore	Y	Although Contractor has adopted a noise mitigation measure of drill rigs at Portion IV near Ocean Shore such as noise barrier with sound insulating fabric, the existing noise barrier in Portion IX and some in Portion IV are not adequate in screening the direct line of sight to Ocean Shore. Details should be referred to CIR-N75.	Closed
387	12-Jul-19	8 to 12-Jul-19 / Portion 4C of C1 Construction Site	Resident of Bik Lai House	Noise	Breaking noise emitted from the operation of 2 PMEs at Portion 4C during weekday daytime.	Y	Two breakers were operated intermittently at the Portion 4C of C1 construction site during the period of complaint between 07:00 to 19:00. As observed during the site inspection/noise monitoring, movable noise barrier could not completely screen off the direct line-of-sight from PMEs to Yau Lai Estate. Contractor has adopted mitigation measure to minimize the noise impact from breakers including using a noise barrier with noise insulating fabric, adopted a less noisy hydraulic spiting method for breaking works and has been developing a semi-enclosure noise barrier to replace the existing movable noise barrier. Details should be referred to CIR-N74.	Closed
386	10-Jul-19	9 to 10-Jul-19 / Not Specific	District Council Member (Mr. Chan)	Noise	Noise nuisance and disturbance from the TKOLT tunnel construction site involves intermittent noise emitted from collision during night-time.	Y	No construction works was carried out during the time of complaint. Details should be referred to CIR-N73.	Closed
385	4-Jul-19	Late Jun-19 to 4-Jul-19 / Reclamation Area	Resident of Ocean Shore	Noise	The reclamation works continued into the evening during weekdays and works were also operated on Sunday.	Y	See Complaint no 384.	Closed
384	3-Jul-19	3-Jul-19 / Near Ocean Shore	District Council	Noise	The construction site was constantly emitting metallic percussion noise in the early morning.	Y	The concerned metallic percussion noise source was suspected from the collision between the detached sheet pile and the adjacent sheet pile of the broken cofferdam. The detached sheet pile was fixed by re-sealing it to the adjacent sheet pile. Details should be referred to CIR-N72.	Closed
383	29-Jun-19	Jun-19 / Lam Tin Interchange	Resident of Yau Lai Estate, Yung Lai House	Noise	Noise nuisance from construction works during weekday daytime and evening times. Noise barriers was found missing in certain parts of the construction areas.	Y	Some noise mitigation measures were observed during the site inspection including idle equipment were turned off and noise barrier has been erected close to noisy PMEs in the right direction facing Yau Lai Estate. However, the above mitigation measures were not applied to whole construction site such as noise barriers were not placed close enough to the noisy PMEs due to the uneven surface and other inconvenience. Details should be referred to CIR-N71.	Closed
382 (N08/RE/00011019-19)	17-Jun-19	6-Jun-19 / Cofferdam area	District Council	Air	Dark smoke nuisance from the tug boat inside the cofferdam area.	N	During site audit, no violation of the Air Pollution Control (Smoke) Regulation from the construction site was observed by the ET. Air filter has been replaced on derrick barge to reduce the dark smoke emission upon the receipt of the complaint. The Contractor is recommended to replace the air filters regularly. Details should be referred to CIR-A15.	Closed
381 (N08/RE/00015098-19)	11-Jun-19	1-Jun-19 / Near confferdam	District Council	Water	Muddy water discharge from construction site near the cofferdam area on 4 June 19	N	High volume of upstream muddy water was collected due high rainfall according to reports and observation. As a result, the muddy water from upstream was discharged into the Junk Bay via various outfalls in Junk Bay, as observed during the rainstorm events. No sand plume within the cofferdam area and no muddy water discharge at the designated discharge point within the Site was identified during the site inspection and water quality monitoring. Details should be referred to CIR-W11.	Closed
380	11-Jun-19	6-Jun-19 / Near Tong Yin Street	Resident of Ocean Shore	Air	Odour nuisance from construction site near Tong Yin Street	N	No oil leakage from mobile crane was observed during the site inspection in June 2019. According to the testing reports, all ULSD fuel applied in the PMEs during the construction period contains sulphur content lower than 0.005% by weight, which complied with the Air Pollution Control (Fuel Restriction) Regulations. Details should be referred to CIR-A14.	Closed
379	11-Jun-19	4-Jun-19 / Near cofferdam area	General Public	Water	Discharge of mud water into Junk Bay from TKOLT construction site	N	See Complaint no 381.	Closed

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378	11-Jun-19	13-Apr-19 / Near cofferdam area	General Public	Air	Dark smoke nuisance from construction site involves derrick barge operation near cofferdam area (daytime)	N	No violation of the Air Pollution Control (Smoke) Regulation was recorded from the construction site was observed. The contractor was recommended to install carbon filter at smoke exhaust of the barge as a more effective mitigation measures. Details should be referred to CIR-C27.	Closed
377	11-Jun-19	2-Jun-19 / Lam Tin Interchange	General Public	Noise	Complaint about the noise nuisance from Lam Tin Interchange construction site in daytime holiday.	Y	Only drilling works inside the tunnel was conducted during daytime under valid CNP. Groundborne noise is considered as the major factor contributing to the noise nuisance, the Contractor are recommended to re-schedule the drilling works inside the tunnel to less sensitive hours. Details should be referred to CIR-N70.	Closed
376	11-Jun-19	9-Jun-19 / Near Yau Lai Estate	Resident of Yau Lai Estate	Noise	Complaint about the noise nuisance near Yau Lai Estate involves vehicle movement (roller) during morning to 15:00 in holiday.	Y	No works involving roller was involved. Only drilling works inside the tunnel and ddismantling of crusher shelter was conducted during Sunday daytime under valid CNP. Groundborne noise is considered as the major factor contributing to the noise nuisance, the Contractor are recommended to re-schedule the drilling works inside the tunnel to less sensitive hours. Details should be referred to CIR-N70.	Closed
375	11-Jun-19	9-Jun-19 / Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complaint about the noise nuisance from Lam Tin Interchange construction site in daytime holiday.	Y	See Complaint no. 376.	Closed
374	4-Jun-19	3-Jun-19 / Near Ping Tin Estate	Resident of Ping Sin House in Ping Tin Estate	Noise	Vibration from the construction of Lam Tin Interchange in evening time at around 20:00	Y	Groundborne noise is considered as the major factor contributing to the noise nuisance. The reverse circulation drilling works may have emitted groundborne noise, however, only 1 unit was used in Portion II. Therefore, blasting is considered as the major cause for the vibration. Details should be referred to CIR-N69.	Closed
373	4-Jun-19	2-Jun-19 / Near ocean Shore	Resident of Ocean Shore	Noise	Complaint about the noise nuisance from the construction site near Ocean Shore and the construction site operation in day time holiday.	Y	No construction activity was conducted at the time of complaint as confirmed by Engineer. Therefore, the noise nuisance was not due to the construction site. Details should be referred to CIR-N68.	Closed
372	4-Jun-19	1-Jun-19 / Near ocean Shore	Resident of Ocean Shore	Others	Complaint about the construction site operation in the early morning on Saturday.	N	See Complaint no. 373.	Closed
371	30-May-19	30-May-19 / Near Ocean Shore	Resident of Ocean Shore	Noise	Noise nuisance from construction site near Ocean Shore during night time.	Y	See Complaint no. 373.	Closed
370 (N08/RE/000150 98-19)	29-May-19	19 & 26-May-19 / Near Ocean Shore	Resident of Ocean Shore	Noise	Noise nuisance about dredging mud and loudspeaker in the construction site near Ocean Shore during daytime holiday.	Y	Noise barriers/ Noise absorptive materials have been used to mitigate the noise generated from the construction works. Only walkie-talkies were used for communication in the construction site. Details should be referred to CIR-N67.	Closed
369	13-May-19	Not specific / Lam Tin interchange	Resident of Yau Lai Estate	Noise	Noise nuisance from the blasting work inside tunnel which involves explosion noise impact during midnight	Y	Contractor has adopted a mitigation measure for reduce the blasting noise impact from the tunnel such as blasting doors and did not conduct blasting works during mid-night blasting since mid-May 2019. Details should be referred to CIR-N66.	Closed
368	19-May-19	19-May-19 / Near cofferdam area	General Public	Noise	Noise nuisance from barge with in cofferdam area in daytime holiday	Y	See Investigation / Mitigation Action for complaint no. 361.	Closed
367	5-May-19	5-May-19 / Lam Tin Tunnel - TKO entrance	Resident near Lam Tin Tunnel - TKO entrance	Noise & Air	Noise and air nuisance from construction near Lam Tin Tunnel - TKO entrance	Y	The major works during the period of complaint is scaling by breaker on day time holiday (Sunday). The works is compiled with CNP and no air quality action and noise limit level exceedance during the monitoring. Regarding the existing air quality mitigation measures, the water spray for the breaker was insufficient and the dust emission during unloading of dusty materials was observed. As the review of exiting noise mitigation measure, a broken noise SilentMat was found on the hammer of breaker. According to the above observation, Contractor has adopted serval improvement such as conduct a sufficient water spray during breaking and unloading materials, replaced the noise SilentMat of the breaker and placed the noise barrier between PME and NSRs. Details should be referred to CIR-C29.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
366	4-May-19	4-May-19 / Lam Tin Interchange	Resident of Ping Tin Estate	Noise	Noise nuisance from construction of Lam Tin Interchange in daytime.	Y	Regarding the observation during site inspection, the hammer of the breaker was surrounded by a broken noise absorption material and a noise barrier of a driller was placed in the incorrect direction of NSRs. Contractor has improved the above mitigation measures including replaced the noise absorption materials and relocated the noise barrier to facing the NSRs. Details should be referred to CIR-N65.	Closed
365	1-May-19	1-May-19 / Lam Tin Interchange	Resident of Ping Tin Estate	Noise	Noise nuisance from construction of Lam Tin Interchange in daytime.	Y	See investigation / mitigation actions for Complaint No.366	Closed
364	1-May-19	1-May-19 / Lam Tin Interchange	Resident of Ping Tin Estate	Noise	Noise nuisance from construction of Lam Tin Interchange in daytime	Y	See investigation / mitigation actions for Complaint No.366	Closed
363	30-Apr-19	6th – 22th April -19 / Lam Tin Interchange	Resident of Ping Tin Estate	Noise	Noise nuisance from construction of Lam Tin Interchange in daytime and evening time	Y	See investigation / mitigation actions for Complaint No.366	Closed
362 (N08/RE/00013396-19)	8-May-19	7-May-2019 / Junk Bay	District Council	Noise	Noise nuisance from marine works in the Junk Bay in the night-time (06:45)	Y	No marine works in the Junk Bay was conducted as confirmed by RE. No CCTV footage was recorded during the time of complaint. It was suggested that Contractor should conduct 24 hours CCTV monitoring. Details should be referred to CIR-N64.	Closed
361	7-May-19	28 Apr 2019 / Cofferdam Area	General Public	Noise	Noise nuisance from construction site at cofferdam area in holiday	Y	The reclamation works involves barges during the time of complaints has been compiled with the CNP. As review of existing mitigation measure, the sound proofing canvases for the barges were hanged up. Details should be referred to CIR-N63.	Closed
360	2-May-19	27-04-2019/ Construction in Tong Tin Street	General Public	Noise	The complaint about the noise nuisance from cofferdam area during daytime and evening-time.	Y	The light source was found from the lighting of derrick barge within the cofferdam area and the noise source was found from the barge during filling works. Contractor has adopted The sound proofing canvases for the derrick barge was hanged up but no light mitigation measure. Details should be referred to CIR-C28.	Closed
359	30-Apr-19	30-04-2019/ Near Ocean Shore	Resident of Ocean Shore	Noise	The complaint about the noise nuisance involve percussion noise near Ocean Shore during daytime.	Y		Closed
358	30-Apr-19	27-04-2019/ Near cofferdam area	General Public	Noise	The complaint about the noise nuisance during evening time.	Y		Closed
357	23-Apr-19	20-04-2019/ Near cofferdam area	General Public	Noise	The complaint about the noise nuisance near cofferdam area during daytime.	Y		Closed
356	23-Apr-19	19-04-2019/ Near cofferdam area	General Public	Noise	The complaint about the noise nuisance near cofferdam area during holiday.	Y		Closed
355	17-Apr-19	17-04-2019/ Near cofferdam area	General Public	Noise & light	The complaint about the noise nuisance and light pollution near cofferdam area during evening-time.	Y		Closed
354	30-Apr-19	20 Apr 2019 / Cofferdam Area 19 Apr 2019 / Cofferdam Area 15 Apr 2019 / Cofferdam Area 07 Apr 2019 / Cofferdam Area 31 Mar 2019 / Cofferdam Area	Resident of Ocean Shore (Mr. Chan)	Others	The construction site near O King Road is operated in holiday during day-time and weekday during night-time.	N	The marine reclamation works at the Portion IX in C2 construction site was the major construction activity during the period of complaints. The concerned reclamation works is compiled with the relevant CNP. Details should be referred to CIR-O2.	Closed

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353	13-Apr-19	13-04-2019/Cofferdam Area	Resident of Ocean Shore (Mr. Chan)	Air	According to the complainant, large amount of smoke and exhaust was seen emitting from barges working within the cofferdam	N	See Investigation / Mitigation Action for complaint no. 329.	Closed
352	13-Apr-19	13-04-2019/Cofferdam Area	Resident of Ocean Shore	Noise	The complainant complained about the noise nuisance from the cofferdam area in Tiu Keng Leng during day-time.	Y	The major works during the time of complaints was a crawler crane unloading H piles to the Portion V of C2 construction site. Noise barriers were erected between the crane and NSRs to reduce noise impact. Details should be referred to CIR-N62.	Closed
351	13-Apr-19	13-04-2019/Cofferdam Area	Resident of Ocean Shore	Noise	The complainant complained the noise nuisance from the cofferdam area in Tiu Keng Leng during day-time.	Y		
350	8-Apr-19	07 Apr 2019 / Cofferdam Area in TKO	-	Air & Others	The complainant complained the dark smoke generation and the construction works from the cofferdam area in Tiu Keng Leng during holiday.	N	See Investigation / Mitigation Action for complaint no. 329.	Closed
349	7-Apr-19	07-04-2019/Cofferdam Area	Resident of Ocean Shore	Air	Dark smoke generation from the cofferdam area in Tiu Keng Leng during day-time.	N		Closed
348	2-Apr-19	02 Apr 2019 / LTT-TKO	-	Others	The complainant complained the LTT construction site was working during holiday.	N		Closed
347	1-Apr-19	01 Apr 2019 / Cofferdam Area	Resident of Ocean Shore	Noise	Percussive noise from the cofferdam area in Tiu Keng Leng during day-time.	Y		Closed
346	31-Mar-19	31st March 2019 / Construction of Road P2	District Council	Others	Complaint about the construction site operation of Road P2 in day time holiday	N	A tug boat and a derrick barge were operated for the marine reclamation work within the cofferdam area during the time of complaint. As the review of relevant CNP, no violation was observed. Details should be referred to CIR-O1.	Closed
345	26-Mar-19	26th March 2019 / Construction of Road D4	Resident of Park Central	Noise	Complaint about the noise nuisance in day time.	Y	See Investigation / Mitigation Action for complaint no. 329.	Closed
344	28-Mar-19	26th March 2019 / Construction of Road P2	District Council	Noise	Complaint letter received regarding noise nuisance and dark smoke generation from the marine barges	Y	See Investigation / Mitigation Action for complaint no. 378.	Closed
343	25-Mar-19	25th March 2019 / Construction of Road D4	Resident of Park Central	Noise	Complaint about the noise nuisance sound like a breaking works in day time.	Y	See Investigation / Mitigation Action for complaint no. 329.	Closed
342	25-Mar-19	24th March 2019 / Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the noise nuisance from the construction of Lam Tin Interchange in day time hoilday (Sunday). The noise monitoring was conducted in Hong Nga Court by staff after the complaint and the noise level is result in acceptable level, but the complainant replied that the noise monitoring is meaningless and the noise nuisance is not acceptable for her.	Y	See Investigation / Mitigation Action for complaint no. 330.	Closed

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341	24-Mar-19	24th March 2019 / Lam Tin Interchange	Management Section of Hong Nga Court	Noise	Complaint about the noise nuisance from Lam Tin Tunnel construction works in day time.	Y		Closed
340	24-Mar-19	24th March 2019 / Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the noise nuisance from the construction site day time holiday (Sunday).	Y		Closed
339	21-Mar-19	21st March 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the construction noise nuisance involving percussive noise in early morning (07:00)	Y		Closed
338	21-Mar-19	21st March 2019 / Construction of Lam Tin Interchange	Resident of Ocean Shore	Noise	Construction noise	Y	See Investigation / Mitigation Action for complaint no. 323.	Closed
337	20-Mar-19	19th March 2019 / Construction of Road D4 and Footbridge between Tiu Keng Leng Sport Centre and Park Central	Resident of Park Central	Noise	Complaint about the noise nuisance from the construction vehicle near Park Central in night time.	Y	See Investigation / Mitigation Action for complaint no. 329.	Closed
336	20-Mar-19	20th March 2019 / Construction of Road P2	Resident of Park Central	Noise & Pest	Complaint about the noise and pest nuisance from the construction site near Park Central in evening time.	Y		Closed
335	19-Mar-19	19th March 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Construction noise nuisance from reclamation works near the TKO-LTT reclamation site during the evening time (19:00-23:00).	Y	See Investigation / Mitigation Action for complaint no. 323.	Closed
334	19-Mar-19	19th March 2019 / Construction of Road P2	District Council	Noise	Construction noise nuisance from the TKO-LTT reclamation site during evening time (after 19:00).	Y		Closed
333	19-Mar-19	18th - 19th March 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Construction noise nuisance from construction noise in evening time (around 20:30).	Y		Closed
332	18-Mar-19	18th March 2019 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complaint about the noise nuisance during day time, evening time and night time.	Y	The construction activities in the complaint dates are complied with CNP. No noise limited level exceedance was recorded. During the site inspection, no noise barriers were erected between noisy PMEs and NSRs at LTI. Regarding the observation in the inspection, Contractor has adopted an improvement such as placed the noise barriers between the PMEs and NSPs to reduce noise nuisance. Details should be referred to CIR-N61.	Closed
331	18-Mar-19	18th March 2019 / Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	Complaint about the noise nuisance in night time and the past few days. (Before 07:00)	Y		Closed
330	17-Mar-19	17th March 2019 / Construction of Lam Tin Interchange	General Public	Noise	Complaint about the noise nuisance from in night time holiday.	Y		Closed
329	15-Mar-19	15th March 2019 / Construction of Road D4	Resident of Park Central	Noise & Air	Complaint about the noise from the construction works and the odour nuisance involves engine oil from construction machine	Y	The construction activities in the complaint dates are compiled with the CNMP. No noise and air quality limit level exceedance were recorded. Contractor had implemented the mitigation measures for the noise and odour nuisances including acoustic mat was erected between the PME and NSR, ultra-low sulphur diesel was applied as fuel oil in PME and general refuses were disposed properly. Details should be referred to CIR-C26.	Closed

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328	14-Mar-19	9th March 2019 / Construction Site of Footbridge between Tiu Keng Leng Sport Centre and Park Central	Resident of Park Central	Noise	Complaint about the noise nuisance involve drilling work in the day time (08:00).	Y	A formation works was conducted in 7 am to 7pm on 9 Mar 2019. No noise limit level exceedance was recorded in the nearest noise monitoring result. However, there was no any adoption of mitigation measure to minimize the noise nuisance from the site. As response the received complaint, the contractor should place the noise barrier between the PMEs and NSR. Details should be referred to CIR-N58.	Closed
327	13-Mar-19	13th March 2019 / Construction of Lam Tin Interchange	Resident of Bik Lai House	Noise	Noise nuisance suspected from the construction works involving chiseling during evening time (22:07).	Y	A handing processed rock at Lam Tin Interchange was conducted on the complaint date in 7 pm to 11 pm involving dump truck and excavator which construction activities was compiled with the CNP. No noise limit level exceedance was record in the evening time monitoring. However, the noise barrier was not placed in the direction of the Yau Lai Estate during breaking works, the contractor had implemented a mitigation measure such as placed the noise barrier to reduce noise level from the breaker but the noise barrier was far from the concerned breaker. Details should be referred to CIR-N59.	Closed
326	13-Mar-19	13th March 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Noise nuisance suspected from marine works near Ocean Shores in the day time (16:30)	Y	See Investigation / Mitigation Action for complaint no. 322.	Closed
325	9-Mar-19	9th March 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the noise nuisance involve machine and percussive noise in night time (02:00 -03:00).	Y	Only drilling works were conducted inside the tunnel in early morning under valid CNP. Groundborne noise is considered as the factor that contributes to the noise nuisance. The Contractor is recommended to reschedule drilling works to less sensitive hours. Details should be referred to CIR-N56.	Closed
324	7-Mar-19	7th March 2019 / Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	Complaint about the noise nuisance involving chiseling noise from the construction site near Hong Pak Court during day time and evening time in the past few months.	Y	Only drilling works were conducted inside the tunnel in early morning and daytime under valid CNP. Groundborne noise is considered as the factor that contributes to the noise nuisance. The Contractor is recommended to reschedule drilling works to less sensitive hours. Details should be referred to CIR-N56.	Closed
323 (EPD-N08/RE/00006523-19)	4-Mar-19	4th March 2019/ Cofferdam Area	Resident of Ocean Shore	Noise	Construction noise (Evening time)	Y	Only 1 derrick barge and a tug boat was used in the evening time under valid CNP. No Limit Level Exceedances were recorded at Station CM6(A) during evening time. Acoustic mat should be used to screen the engine of the barge to reduce the noise nuisance from the reclamation works. Lubricants should be applied to the barge to reduce the noise emission during barge movement.	Closed
322	13-Mar-19	1st March 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Noise nuisance suspected from a yellow excavator near Ocean Shores in day time (15:44).	Y	No noise limit level exceedance was recorded and the number of operating PMEs complied with the CNMP. The sound proofing canvases were not always adopted as a mitigation measure to screen the noise emitted from the engine of the barge. Contractor should adopt the aforementioned mitigation measures as far as practicable. The contractor was also be recommended to enhance the mitigation measure including frequently checking the noise barriers/sound proofing canvases, frequent checking and repair the gaps or broken acoustic sheets and continue to strictly follow the requirements in the approved CNMP.	Closed
321	28-Feb-19	28th February 2019 / Construction of Lam Tin Interchange	Management Section of Yau Lai Estate	Noise	Construction noise (Night time)	Y	Only drilling works were conducted inside the tunnel in early morning under valid CNP. Groundborne noise is considered as the factor that contributes to the noise nuisance. The Contractor is recommended to reschedule drilling works to less sensitive hours. Details should be referred to CIR-N55.	Closed
320	22-Feb-19	22nd February 2019 / Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	Complaint about the noise nuisance involving percussive noise in early morning (Day time). Complainant said the construction should be operated after 08:00.	Y	See Investigation / Mitigation Action for complaint no. 313.	Closed
319	21-Feb-19	21st February 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the noise nuisance involving percussive noise in night time	Y		Closed
318	21-Feb-19	21st February 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the noise nuisance involving percussive noise from the construction in night time	Y		Closed

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317	25-Feb-19	23th February 2019 / Construction of Road P2	Resident in O King Road	Air	Complained about the odour nuisance of petroleum smell	N	See Investigation/ Mitigation Action on Complaint no.294. Details should be referred to CIR-A12.	Closed
316	18-Feb-19	18th February 2019 / Construction of Road P2	Resident in O King Road	Air	Complaint about the dark smoke and odour nuisances	N		Closed
315	17-Feb-19	15th February 2019 / Construction of Lam Tin Interchange, Road P2 and Tseung Kwan O Interchange	General Public	Noise	Complained about construction noise (Daytime)	Y	The metal wire used for anchoring the barge inside the cofferdam area are the source for the noise nuisance. Ropes were used to replace metal wire to reduce noise nuisance from metal collision while mooring boats. Details should be referred to CIR-N54.	Closed
314	17-Feb-19	16th February 2019 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Air	Dust nuisance suspected from the construction works and absence of water spraying near Lam Tin Interchange in daytime.	N	No Air Quality action level or limit level exceedance during the monitoring conducted by ETL. Contractor had implemented mitigation measure to reduce and prevent dust emission including conducted water sprays and covered the cement bags. Details should be referred to CIR-A13.	Closed
313	17-Feb-19	17th February 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Construction noise nuisance from the drilling and breaking works at Branch Tunnel in the morning (Day time)	Y	Breaking and drilling works were conducted during the time of complaint. The breakers were often seen wrapped with acoustic mat, however, they are easily damaged during the breaking works. Noise barrier are more effective in reducing the noise nuisance than the acoustic mat, but the erection of noise barrier are not often adopted properly to screen the noise from the NSR due to the additional works involved and the landform on site. Groundborne noise could also be a factor contributing to noise nuisance. Details should be referred to CIR-N53.	Closed
312	16-Feb-19	16th February 2019 / Construction of Lam Tin Interchange	District Council	Noise	Complained about the explosion noise (Daytime)	Y	No exceedances were recorded and recommendation were made to further enhance the mitigation measures, such as regularly and reviewing the noise control activities that are being carried out on site regularly to ensure compliance with statutory requirement, provide training for the workers to prevent unnecessary noise disturbance and frequently check and maintain the absorptive lining adhered on blasting doors on a regular basis.	Closed
311	15-Feb-19	15th February 2019 / Construction of Lam Tin Interchange	Public	Noise	Complained about the explosion noise (Daytime)	Y	See Investigation / Mitigation Action for complaint no. 312.	Closed
310	14-Feb-19	14th February 2019 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Construction noise nuisance about the rock handling work at LTI (Daytime)	Y	Dump truck and excavator was used to transfer crushed rocks from the crusher with valid CNP. Additional noise barrier was added at the site boundary near Shun Lai house, Yau Lai Estate to reduce the direct-line of sight from the NSRs to the site. Details should be referred to the CIR-N51.	Closed
309	13-Feb-19	13th February 2019 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Construction noise nuisance about the rock handling work at LTI (evening time)	Y		Closed
308	13-Feb-19	1th - 13th February 2019 / Construction of works at the TKO-Lam Tin tunnel	Management Section of Kwong Tin Estate	Noise	Complaint about construction noise (Night time)	Y	See Investigation/ Mitigation Action on Complaint no.302. Details should be referred to CIR-N48.	Closed
307	13-Feb-19	13th February 2019 / Construction at Tsueng Kwan O (C1)	Resident of Ocean Shore	Noise	The complaint about the noise nuisance in day time	Y	Noise nuisance was originated from the beeping noise emitted during vehicle reversing of the loader. The total length of beeping noise should be less than 5 mins. The reverse alarm system is a necessary safety measure that cannot be revoked. Details should be referred to CIR-N50.	Closed
306	13-Feb-19	13th February 2019 / Construction of works at the TKO-Lam Tin tunnel	Resident of Hong Nga Court	Noise	Noise nuisance suspected from the construction works involving chiseling noise in night time	Y	See Investigation/ Mitigation Action on Complaint no.302. Details should be referred to CIR-N48.	Closed
305	12-Feb-19	12th February 2019 / Construction of works at the TKO-Lam Tin tunnel	Resident of Hong Nga Court	Noise	Noise nuisance suspected from the construction works involving chiseling noise in night time.	Y		Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
304	8-Feb-19	8th February 2019 / Construction of Road P2 and Associated Works	Resident of Ocean Shore	Noise	Noise nuisance suspected from marine works near Ocean Shores in the day time	Y	There were two construction activities in the site including dredging and trimming in day time on 8 Feb 2019. Details should be referred to CIR-N49.	Closed
303	2-Feb-19	27th January - 2nd February 2019 / Construction of works at the TKO-Lam Tin tunnel	Resident of Ping Tin Estate	Noise	Noise nuisance suspected from the construction works involving chiseling noise during day time, evening time and night time.	Y	Project-related. The following recommendations were made to further enhance the mitigation measures: □ Frequent checking and repair the gaps or broken acoustic sheets; □ Replace any broken SilentMat for wrapping the breaker head; □ To adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; □ The deployment of Cantilever noise barrier should screen the line-of-sight from sensitive receivers; □ To continue to strictly follow the requirements in the approved CNMP; □ To conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer; and □ Engineer should monitor the plant and machine to ensure construction activities are in compliance of CNP.	Closed
302	2-Feb-19	27th January - 2nd February 2019 / Construction of works at the TKO-Lam Tin tunnel	Resident of Hong Pak Court	Noise	Noise nuisance suspected from the construction works involving chiseling noise during day time	Y		Closed
301	31 Jan 2019	27th - 31th January 2019 / Construction of Lam Tin Interchange	Management Section of Hong Nga Court	Noise	Noise nuisance suspected from the	Y	See Investigation/ Mitigation Action on Complaint no.290. Details should be referred to CIR-N45.	Closed
300	30 Jan 2019	30th January 2019 / Construction Site of Footbridge between Tiu Keng Leng Sport Centre and Park Central	Resident of Park Central	Noise	Beeping Noise nuisance suspected from the construction works involving mobile crane	Y	See investigation / Mitigation Action for complaint no. 296. Details should be referred to CIR-N47.	Closed
299	30 Jan 2019	27th - 29th January 2019 / Construction Site of Footbridge between Tiu Keng Leng Sport Centre and Park Central	Resident of Park Central	Noise	Beeping Noise nuisance suspected from the construction works involving mobile crane and also suspected from elevation platform	Y	See investigation / Mitigation Action for complaint no. 296. Details should be referred to CIR-N47.	Closed
298	30 Jan 2019	Not specific / Near Po Shun Road	Resident of Park Central	Noise & Air Quality	The dust generation and noise nuisance from the construction site near Po Shun Road	Y	There were several construction activities in the site including the removal of steel mould & scaffolding of bridge deck, erection of scaffolding for staircase and construction of Pour 1 of main deck (GL4-5) during time of complaint. Details should be referred to CIR-C25.	Closed
297	30 Jan 2019	27th - 30th January 2019 / Construction works at TKO-Lam Tin tunnel	Resident of Hong Nga Court	Noise	Noise nuisance suspected from the construction involving chiselling works	Y	See Investigation/ Mitigation Action on Complaint no.290. Details should be referred to CIR-N45.	Closed
296	29 Jan 2019	27th - 29th January 2019 / Construction Site of Footbridge near Tiu Keng Leng Sport Centre.	Resident of Park Central	Noise	Beeping Noise nuisance suspected from the mobile crane at the Footbridge near Park Central Block 6	Y	Project-related. The following recommendations were made to further enhance the mitigation measures: □ To arrange a signalman instead of mobile crane reversing signal for minimize the beeping noise disturbance; □ Frequent checking and repair the operating PME; □ The deployment of Cantilever noise barrier should screen the line-of-sight from sensitive receivers; □ To continue to strictly follow the requirements in the approved CNMP; □ To ensure noise barrier and sound proofing canvases wrapped on PME are intact and in good condition.	Closed
295	29 Jan 2019	29th January 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complaint about the noise nuisance from the steel cable wire for anchoring between barge and pier	Y	There was a salvage works for the sunken barge (CS306) in a whole day on 27 Jan, 12 am to 3 pm on 28 Jan and 11:40 am on 29 Jan 2019. Details should be referred to CIR-N46.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
294	29 Jan 2019	29th January 2019 / Construction of Road P2	Resident in O King Road	Air Quality	Complaint about the dark smoke and odour nuisances from barge.	Y	The sulphur content percentage of the adopted diesel fuel was lower than 0.05% which is compiled with the Hong Kong Air Pollution Control (Marine Light Diesel) Regulation, therefore the odour problem should be minimised. Smoke filtering tanks were adopted on deck level of derrick barges to reduce emission of dark smoke and exhaust smell. The situation has improved after the filter has been replaced. Details should be referred to CIR-A12.	Closed
293 (EPD-K15/RE/00003291-19)	29 Jan 2019	29th January 2019 / Construction of Lam Tin Interchange	Cha Kwo Ling Tsuen	Noise & Air Quality	Complained about construction noise & dust (Day & Night time)	Y	See investigation / Mitigation Action for complaint no. 270. Details should be referred to CIR-C29.	Closed
292	29 Jan 2019	29th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from breaking work.	Y	Project-related. The following recommendations were made to further enhance the mitigation measures: □ To arrange a signalman instead of mobile crane reversing signal for minimize the beeping noise disturbance; □ Frequent checking and repair the operating PME; □ The deployment of Cantilever noise barrier should screen the line-of-sight from sensitive receivers; □ To continue to strictly follow the requirements in the approved CNMP; □ To ensure noise barrier and sound proofing canvases wrapped on PME are intact and in good condition.	Closed
291	29 Jan 2019	29th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	Complained about the construction noise from breaking work.	Y		Closed
290	29 Jan 2019	29th January 2019 / Construction of Lam Tin Interchange	District Council	Noise	Complained about the construction noise from Tunnel Works	Y		Closed
289 (EPD-N08/RE/00000859-19)	24 Jan 2019	Early December 2018 - 24-Jan-2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from Tunnel Works	Y	See Investigation/ Mitigation Action on Complaint no.288. Details should be referred to CIR-N44.	Closed
288	18 Jan 2019	18th January 2019 (Non-specific)/ Construction of Road P2	Public	Noise	Complained about the construction noise from Tunnel Works	Y	No major construction works at the concerned night time. There was only salvage operation carried out in 11 pm to 12 pm on 17 Jan 2019. No violation of CNP nor Noise Control Ordinance is found in this regard. Details should be referred to CIR-N44.	Closed
287	17 Jan 2019	17th January 2019 / Construction of Lam Tin Interchange	Resident of Yung Lai House	Noise	Complained about the construction noise from Kam Tin Interchange.	Y	Project-related. The following recommendations are made to further enhance the mitigation measures: □ To regularly check and review the noise control activities that are being carried out on site to ensure compliance with statutory requirement. □ Machines may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. □ To provide training for the workers to prevent unnecessary noise disturbance. □ To provide cantilever barrier to screen the construction noise from the NSRs	Closed
286	17 Jan 2019	17th January 2019 / Construction of Road D4	Resident of Park Central	Noise	High frequency machine noise nuisance involving air compressor from the construction site near the Park Central in day time	N	See Investigation/ Mitigation Action on Complaint no. 285. The concerned air compressor has been removed on 16th Jan 2019. Details should be referred to CIR-N41.	Closed
285	17 Jan 2019	17th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the construction noise from an air blower/fan with generator near Tiu Keng Leng Sport Centre and Park Central.	N	The concerned air compressor was removed from the construction site since 16 January 2019 afternoon, but the high frequency noise nuisance complaints were received on 17 January 2019. According to the CM8(A) noise monitoring record by environmental team, the other noise source from construction site are beeping noise of the reverse alarm system of the plant. Therefore, the high frequency noise nuisance is considered project related after 16 January 2019. Details should be referred to CIR-N41.	Closed
284	16 Jan 2019	16th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the construction noise from an air compressor near Tiu Keng Leng Sport Centre and Park Central.	N	See Investigation/ Mitigation Action on Complaint no. 272. Additional noise barrier was erected around the said air compressor. Details should be referred to CIR-N41.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
283	15 Jan 2019	15th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the construction noise from an air compressor near Tiu Keng Leng Sport Centre and Park Central.	N	See Investigation/ Mitigation Action on Complaint no. 272. Additional noise barrier was erected around the said air compressor. Details should be referred to CIR-N41.	Closed
282	15 Jan 2019	15th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the construction noise from an air compressor near Tiu Keng Leng Sport Centre and Park Central.	N	See Investigation/ Mitigation Action on Complaint no. 272. Additional noise barrier was erected around the said air compressor. Details should be referred to CIR-N41.	Closed
281	15 Jan 2019	15th January 2019 / Construction of Road D4	Resident of Park Central	Noise	High frequency machine noise nuisance involving air compressor from the construction site near Chui Ling Road roundabout and Tiu Keng Leng Sport Centre in day time.	N	See Investigation/ Mitigation Action on Complaint no. 272. Additional noise barrier was erected around the said air compressor. Details should be referred to CIR-N41.	Closed
280	14 Jan 2019	14th January 2019 / Construction of Road D4	Resident of Park Central	Noise	High frequency machine noise nuisance involving air compressor from the construction site near Chui Ling Road roundabout and Tiu Keng Leng Sport Centre in day time.	N	See Investigation/ Mitigation Action on Complaint no. 272. Details should be referred to CIR-N41.	Closed
279	14 Jan 2019	14th January 2019 / Construction of Road D4	Resident of Park Central	Noise	High frequency machine noise nuisance involving air compressor from the construction site near Tiu Keng Leng Sport Centre in day time Saturday and Holiday (Sunday).	N	See Investigation/ Mitigation Action on Complaint no. 272. Details should be referred to CIR-N41.	Closed
278	12 Jan 2019	12th January 2019 / Construction of Road D4	Resident of Park Central	Noise	High frequency machine noise nuisance involving air compressor from the construction site between Tiu Keng Leng Sport Centre and Park Central in day time	Y	See Investigation/ Mitigation Action on Complaint no. 272. Details should be referred to CIR-N41.	Closed
277	12 Jan 2019	12th January 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the noise from breaking activities.	N	See investigation/ Mitigation Action on Complaint no. 264. Details should be referred to N39.	Closed
276	11 - 12 January 2019	11th - 12th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	The complaints are considered as project-related. The following recommendations were made to further enhance the mitigation measures: □ Frequent checking and repair the gaps or broken acoustic sheets; □ Replace any broken SilentMat for wrapping the breaker head; □ To adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; □ The deployment of Cantilever noise barrier □ To continue to strictly follow the requirements in the relevant CNP. □ To conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer □ Engineer should monitor the plant and machine to ensure construction activities are in compliance of CNP. Details can be referred to CIR-N40.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
275	11 Jan 2019	11th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the construction noise from a crane near footbridge between Tiu Keng Leng Sport Centre and Park Central	Y	See Investigation/ Mitigation Action on Complaint no. 272.	Closed
274 (EPD-N08/RE/00001234-19)	11 Jan 2019	11th January 2019 / Construction of Road D4	Public	Noise	Complaint about the high frequency machine noise nuisance from the construction site of footbridge between Tiu Keng Leng Sport Centre and park Central.	Y	No high-frequency noise was detected near the complaint location, however, the noise similar to description was detected within the renovation works inside Park Central. Details should be referred to complaint no. 272 and CIR-N41.	Closed
273	10 Jan 2019	10th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	The complaints are considered as project-related. The following recommendations were made to further enhance the mitigation measures: □ Frequent checking and repair the gaps or broken acoustic sheets; □ Replace any broken SilentMat for wrapping the breaker head; □ To adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; □ The deployment of Cantilever noise barrier □ To continue to strictly follow the requirements in the relevant CNP. □ To conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer □ Engineer should monitor the plant and machine to ensure construction activities are in compliance of CNP.	Closed
272	8 Jan 2019	8th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complaint about the high frequency machine noise nuisance from the construction site near Park Central in day time.	Y	High frequency noise emitted from an air compressor was suspected. Noise barrier was seen erected. Noise barrier using material with higher absorption coefficient such as mineral wool is recommended. Details should be referred to CIR-N41.	Closed
271	8 Jan 2019	8th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	The complaints are considered as project-related. The following recommendations were made to further enhance the mitigation measures: □ Frequent checking and repair the gaps or broken acoustic sheets; □ Replace any broken SilentMat for wrapping the breaker head; □ To adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; □ The deployment of Cantilever noise barrier □ To continue to strictly follow the requirements in the relevant CNP. □ To conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer □ Engineer should monitor the plant and machine to ensure construction activities are in compliance of CNP.	Closed
270 (EPD-K15/RE/00000691-19)	7 Jan 2019	7th January 2019 / Construction of Lam Tin Interchange	Cha Kwo Ling Tsuen	Noise & Air Quality	Complained about construction noise & dust (Day & Night-time)	Y	Regular noise monitoring results for day time and night time show full compliance of the noise criteria. Air quality monitoring result in all stations show that no adverse air quality impact has been brought about to the nearby sensitive receivers during the time of complain. During Site audit, damaged acoustic material on the breaker was observed. Watering was provided at during rock breaking to avoid dust generation. The Contractor was reminded to deploy noise barrier to screen the line-of-sight from sensitive receiver.	Closed
269	7 Jan 2019	7th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the night time construction noise near Park Central.	Y	No noticeable high frequency noise was detected from the air compressor and noise barrier was seen erected in the line-of-sight from the NSR to the Air compressor. Refer to CIR-41 for details.	Closed
							No exceedances were record at the nearest monitoring station. The following recommendation were made to further enhance the mitigation measure: □ Frequent checking and repair the gaps or broken acoustic sheets; □ Replace any broken Silent Mat for wrapping the breaker head; □ To adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively;	

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
268	7 Jan 2019	7th January 2019 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the construction noise at Lam Tin Interchange.	Y	The deployment of Cantilever noise barrier should screen the line-of-sight from sensitive receiver; To continue to strictly follow the requirements in the relevant CNP; To conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer; and Engineer should monitor the plant and machine to ensure construction activities are in compliance of CNP.	Closed
267	7 Jan 2019	7th January 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from breaking activities.	Y	Refer to Investigation/ Mitigation Action on Complaint no. 264. Details should be referred to N39.	Closed
266	7 Jan 2019	7th January 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from breaking activities.	Y	No exceedances were recorded at the nearest monitoring station, however, the approved location for noise monitoring was located at the podium of Ocean Shores. Due to inaccessibility to private unit, it is not possible to perform monitoring at higher floor. ET will keep approaching Ocean Shore Management Office for impact noise monitoring at higher floor. The recommendations for Contractor is as follows: · only well-maintained plant on-site and plant should be serviced regularly during the construction program; · Plants known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby noise sensitive receivers; Machines and plants that may be in intermittent use should be shut down between works periods or should be throttled down to minimum.	Closed
265	7 Jan 2019	7th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	No exceedances were record at the nearest monitoring station. The following recommendation were made to further enhance the mitigation measure: Frequent checking and repair the gaps or broken acoustic sheets; Replace any broken Silent Mat for wrapping the breaker head; To adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; The deployment of Cantilever noise barrier should screen the line-of-sight from sensitive receiver; To continue to strictly follow the requirements in the relevant CNP; To conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer; and Engineer should monitor the plant and machine to ensure construction activities are in compliance of CNP.	Closed
264	2nd January 2019	2nd January 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from breaking activities.	Y	No noise limit level exceedance was recorded at the noise monitoring stations near ocean shores. The contractor has applied lubricants to the joint of the excavators to dampen the noise emitted from the PMEs. The contractor is recommended to use noise barriers to screen the PMEs from the NSRs as per the Noise mitigation plan.	Closed
263 (EPD-)	1st January 2019	31st December 2018 / Coastal near TKO cemetery	General Public	Water	Complained concerning oil leakage/ on the sea surface near the sunken barge at C2 site.	N	Oil leakage happened due to the derrick lighter was submerged to the sea within the cofferdam. As the oil leakage was found outside the cofferdam during site inspection, there was a gap in the cofferdam. The oil leakage was cleaned up and the floating oil absorber has been used to surround the cofferdam by Contractor. The Contractor are reminded to1) regular check if the site vessels and cofferdam are in good-condition; 2) To regular monitor the operation of any activities in the cofferdam area; 3) To implement the proposed site vessels safety and the emergency responses including clearance measures. Details of the investigation should be referred to CIR-W10.	Closed
262	30 Dec 2018	26th December 2018/ Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	Complained about the construction noise from tunnel works of Lam Tin Interchange.	Y	Refer to investigation for complaint no. 254	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
261	26 Dec 2018	26th December 2018/ Construction of Lam Tin Interchange	Management Section of Hong Nga Court	Noise	Complained about the construction noise from tunnel works of Lam Tin Interchange.	Y	Refer to investigation for complaint no. 254	Closed
260	26 Dec 2018	26th December 2018/ Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise of Lam Tin Interchange.	Y	Refer to investigation for complaint no. 254	Closed
259	26 Dec 2018	26th December 2018/ Construction of Lam Tin Interchange	Management Section of Hong Nga Court	Noise	Complained about the construction noise of Lam Tin Interchange.	Y	Refer to investigation for complaint no. 254	Closed
258	18 Dec 2018	18th December 2018/ Construction of Lam Tin Interchange	Engineering Section of Ocean Shore	Noise	Complained about the construction noise from the marine works.	Y	There was no major construction works at the concerned area during the time of complaint and confirmed by the Resident Engineer. Steel cable wire for anchoring between barge and pier is considered as a possible noise source. The complaint is considered project related.	Closed
258								
258							Mitigation measures:	
258							Cable wire for anchoring between barge and pier has been replaced by rope between 27 Dec and 2 Jan to reduce noise impact. In addition, other good site practices recommended in the "Implementation Schedule of Proposed Mitigation Measures" of EM&A Manual and the approved CNMP of this Contract had been implemented by the Contractor, including the following:	
258							Ÿ Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program;	
258							Ÿ Plants known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby noise sensitive receivers;	
258							Ÿ Machines and plants that may be in intermittent use should be shut down between works periods or should be throttled down to minimum.	
257	18 Dec 2018	18th December 2018/ Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from the marine works.	Y	There was no major construction works at the concerned area during the time of complaint and confirmed by the Resident Engineer. Steel cable wire for anchoring between barge and pier is considered as a possible noise source. The Contractor has replaced the cable wire for anchoring between barge and pier with ropes between 27 Dec and 2 Jan to reduce noise impact.	Closed
256	17 Dec 2018	15th December 2018/ Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from breaking and piling activities	N	No exceedance was recorded in the noise monitoring result. The number of PME operated in LTI was consistent with the proposed Construction Noise mitigation Plan (CNMP)	Closed
							The following recommendations were made for the Contractor to enhance the mitigation measures:	
							Ÿ To frequently check and repair operating PME if any loosen or worn parts of the equipment to reduce excessive noise disturbance;	
							Ÿ Noise barriers should be designed and erected around the noise sources to block the direct line-of-sight from the NSR as per the CNMP;	
							To ensure all erected noise barriers and sound proofing canvases wrapped on PME are intact and in good condition.	
254	16 Dec 2018	16th December 2018/ Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	Ÿ The night-time works were only conducted inside the tunnels with valid CNP. The noise nuisances are not considered as air-borne in nature, but ground-borne noise. 2.17 In order to confirm the possible ground-borne nature of the noise nuisances for complaints summarized in this report, CEDD has engaged the environmental team to conduct ad hoc ground-borne noise monitoring with the coordination of the Engineer. The findings will be provided in a separate report for the ad hoc monitoring.	Closed
253	15 Dec 2018	15th December 2018/ Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	Refer to the investigation for complaint no. 254	Closed
252	30 Nov 2018	30th November 2018/ Construction of Road D4	Resident of Park Central	Noise & Air	Complained about the construction noise and dust resuspension in Road	Y	The number of PMEs operated on site and on-time percentage from 19 to 30 November complied with the CNMP, thus, no violation was identified.	Closed
							Based on the noise and air monitoring results in November 2018, no Limit Level Exceedance was recorded.	
							Mitigation Measures	

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
		Construction of Road D4			D4.		Ÿ A more effective acoustic barrier was erected between the drill rig and Park Central. Ÿ Frequent water spraying along the Po Yap Road for eight times a day, Stockpile are covered with impervious material to avoid dust resuspension	
251 251 251	28 Nov 2018	27th November 2018/ Construction of TKO portal	Public	Noise	Complained about the construction noise from the marine works.	Y	The complaint lodged on 25th November 2018 is considered as non-project related, as no works was conducted on that day. The complaint on 27th November 2018 is considered project related. The contractor is reminded to 1) frequently check and repair operating PME if any loosen or worn parts of the equipment to reduce excessive noise disturbance; 2) Ensure no further use of PA system for marine works.	Closed
250	26 Nov 2018	26th November 2018/ Public sea in TKO	Resident of Ocean Shore	Noise	Complained about the noise nuisance from the operation of derrick barge on Sunday.	Y	Refer to the investigation for complaint no. 251	Closed
249	25 Nov 2018	20th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the noise nuisance from the Excavators in LTI on Sunday morning.	Y	Refer to the investigation for complaint no. 251	Closed
248	20 Nov 2018	20th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the noise nuisance during transfer of material in evening time at LTI	Y	Regular noise monitoring results for restricted and non-restricted hours show full compliance of the noise criteria (night-time noise exceedance is considered non-project related). The contractor is reminded to adopt cantilever noise barriers at Lam Tin Interchange to screen noise effectively by screening the line-of-sight from sensitive receivers	Closed
247	20 Nov 2018	19th November 2018/ Lam Tin Interchange	Public	Noise	Complained about the noise nuisance from rock dropping during evening time	Y	Refer to the investigation for complaint no. 248	Closed
246	19 Nov 2018	19th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the noise nuisance from dump truck in evening time	Y	Refer to the investigation for complaint no. 248	Closed
245	8 Nov 2018	8th November 2018/ Lam Tin Interchange	Public	Noise	Complained about construction noise during night time from LTI	Y	Refer to the investigation for complaint no. 248	Closed
243	8 Nov 2018	8th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the construction noise during evening time from LTI.	Y	Refer to the investigation for complaint no. 248	Closed
242	7 Nov 2018	7th November 2018/ Lam Tin Interchange	Public	Noise	Complained about the construction noise and dust nuisance.	Y	Refer to the investigation for complaint no. 248	Closed
241	6 Nov 2018	6th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the noise nuisance from LTI during evening time	Y	Refer to the investigation for complaint no. 248	Closed
240	6 Nov 2018	6th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the noise nuisance from LTI during evening time	Y	Refer to the investigation for complaint no. 248	Closed

Appendix O - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions

Table O2 - Summary of Cumulative Complaint Log for Tseung Kwan O - Lam Tin Tunnel

Reporting Month/Year	Number of Complaints in Reporting Month	Number of Summons in Reporting Month	Number of Prosecutions in Reporting Month
2016	11	0	0
2017	99	1	0
2018	150	0	1
2019	156	0	0
2020	88	0	0
Jan-21	12	0	0
Feb-21	3	0	0
Mar-21	14	0	0
Apr-21	16	0	0
May-21	4	0	0
Jun-21	3	0	0
Jul-21	3	0	0
Aug-21	3	0	0
Total	**562**	**1**	**1**

Table O3 - Cumulative Log for Notifications of Summons

Contract No.	Log Ref.	Date/Location	Subject	Status	Total no. Received in this Reporting Month	Total no. Received since project commencement
NE/2015/01	--	--	--	--	--	--
NE/2015/02	KTS24138/2017	25 June 2017/ Marine construction site at Junk Bay	Contrary to: Sections 6 (1) (b) and 6 (5), Noise Control Ordinance, Cap.400	The Summon was issued on 22 Dec 2017 First hearing on 29/3/2018	Noise nuisance during nighttime (C1 - Apr 2021)	1
NE/2015/03	--	--	--	--	--	--
NE/2017/01	--	--	--	--	--	--
NE/2017/02	--	--	--	--	--	--
NE/2017/06	--	--	--	--	--	--
NE/2017/07	--	--	--	--	--	--

Table O4 - Cumulative Log for Successful Prosecutions

Contract No.	Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
NE/2015/01	--	--	--	--	--	--
NE/2015/02	KTS24138/2017	25 June 2017/ Marine construction site at Junk Bay	Contrary to: Sections 6 (1) (b) and 6 (5), Noise Control Ordinance, Cap.400	Successful prosecution to the subcontractor on 27 June 2018	1	1
NE/2015/03	--	--	--	--	--	--
NE/2017/01	--	--	--	--	--	--
NE/2017/02	--	--	--	--	--	--
NE/2017/06	--	--	--	--	--	--
NE/2017/07	--	--	--	--	--	--

APPENDIX P
WASTE GENERATION IN THE REPORTING MONTH

Name of Department: Civil Engineering Development Department

Contract No.: NE/2015/01

Monthly Summary Waste Flow Table for Aug 2021

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a.Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
January	11.091	6.430	0.000	6.430	4.661	0.000	0.000	0.000	0.000	0.000	0.239
February	14.149	4.329	0.000	4.329	9.820	0.000	0.000	0.000	0.000	0.000	0.533
March	9.334	5.356	0.000	5.356	3.978	0.000	0.000	0.000	0.000	0.000	0.901
April	24.397	4.352	0.000	4.352	20.045	0.000	0.000	0.000	0.000	1.680	0.675
May	18.246	2.529	0.000	2.529	15.717	0.000	0.000	0.000	0.000	0.165	0.502
June	10.865	2.010	0.000	2.010	8.855	0.000	0.000	0.000	0.000	0.000	0.599
Sub-total	88.082	25.006	0.000	25.006	63.076	0.000	0.000	0.000	0.000	1.845	3.449
July	15.102	2.042	0.000	2.042	13.060	0.000	0.000	0.000	0.000	0.000	0.627
August	9.861	0.869	0.000	0.869	8.992	0.000	0.000	0.000	0.000	0.000	0.881
September											
October											
November											
December											
Total	113.045	27.917	0.000	27.917	85.128	0.000	0.000	0.000	0.000	1.845	4.957

Total inert C&D waste generated = c+d+e

Total inert C&D waste recycled = c+d

% of recycled inert C&D waste = Total C&D waste recycled / Total C&D waste generated

Notes: (1) The performance target are given in PS Clause 6(14)

(2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

(4) The Contractor shall also submit the latest forecast of the amount of C&D materials expected to be generated from the Works, together with a break down of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m3. (PS Clause 1.105(4) refers)

(5) All recyclable materials, including metals, paper / cardboard packaging, plastics, etc. will be collected by registered collector for recycling.

(6) Conversion factors for reporting purpose:

in-situ: rock = 2.5 tonnes/m^3; soil = 2.0 tonnes/m^3

(7) excavated: rock = 2.0 tonnes/m^3; soil = 1.8 tonnes/m^3; broken concrete and bitumen = 2.4 tonnes/m^3, soil and rock = 1.9 tonnes/m^3

(8) C&D Waste = 0.9 tonnes/m^3; bentonite slurry = 2.8 tonnes/m^3

Diesel density: 0.8kg/l

Numbers are rounded off to the nearest three decimal places

The "Total Quantity Generated" equals to the sum of "Reuse in the Contract", "Reuse in Other Projects" and "Disposed as Public Fill"

Monthly Summary Waste Flow Table for 2021 Year

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 Borken Concrete	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics (See note 3)	Chemical Waste	Other, e.g. general refuse
	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m^3]
Jan	2.66301	0.00000	0.00000	0.00000	2.66301	0.00000	0.00000	0.00000	0.00000	0.00000	0.11320
Feb	0.89033	0.00000	0.00000	0.00000	0.89033	0.00000	14.25000	0.00000	0.00000	0.00000	0.12088
Mar	0.44910	0.00000	0.00000	0.00000	0.44910	0.00000	24.99000	0.00000	0.00000	0.00000	0.09580
Apr	1.77404	0.00000	0.00000	0.00000	1.77404	0.00000	42.72000	0.00000	0.00000	0.00000	0.11686
May	4.14261	0.00000	0.00000	0.00000	4.14261	0.00000	17.80000	0.00000	0.00000	0.00000	0.17156
June	4.91083	0.00000	0.00000	0.00000	4.91083	0.00000	28.40000	0.00000	0.00000	0.00000	0.63252
SUB-TOTAL	14.82991	0.00000	0.00000	0.00000	14.82991	0.00000	128.16000	0.00000	0.00000	0.00000	1.25082
Jul	5.10758	0.00000	0.00000	0.00000	5.10758	0.00000	82.40000	0.00000	0.00000	0.00000	0.16568
Aug	5.63826	0.00000	0.00000	0.00000	5.63826	0.00000	68.64000	0.00000	0.00000	0.00000	0.15174
Sep	0.00000										
Oct	0.00000										
Nov	0.00000										
Dec	0.00000										
TOTAL	25.57574	0.00000	0.00000	0.00000	25.57574	0.00000	279.20000	0.00000	0.00000	0.00000	1.56824

Note: Conversion to 1000m^3 for general refuse is weight in 1000kg multiply by 0.002

Conversion to 1000m^3 for Inert C&D is weight in 1000kg multiply by 0.0005

Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material

Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material

Monthly Summary of Waste Flow Table for 2021

Name of Person completing the Record: Steve Wong

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete *(see Note 1)*	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics *(see Note 2)*	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000m^3)
Jan	0.5830	0	0	0	0.5830	0	0	0	0	0.0032
Feb	0.2614	0	0	0	0.2614	0	0	0	0	0.0081
Mar	0.7659	0	0	0	0.7659	0	0	0	0	0.0078
Apr	0.1487	0	0	0	0.1487	0	0	0	0	0.0089
May	0.1876	0	0	0	0.1876	0	0	0	0	0.0053
Jun	0.1218	0	0	0	0.1218	0	0	0	0	0.0149
Sub-total	2.0684	0	0	0	2.0684	0	0	0	0	0.0482
Jul	0.3437	0	0	0	0.3437	0	0	0	0	0.0114
Aug	0.0399	0	0	0	0.0399	0	0	0	0	0.0141
Sep	0.0000	0	0	0	0.0000	0	0	0	0	0
Oct	0.0000	0	0	0	0.0000	0	0	0	0	0
Nov	0.0000	0	0	0	0.0000	0	0	0	0	0
Dec	0.0000	0	0	0	0.0000	0	0	0	0	0
Total	2.4520	0	0	0	2.4520	0	0	0	0	0.0737

Notes:

(1) Broken concrete for recycling into aggregates.

(2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(3) Use the conversion factor: 1 full load of 24t / 30t dumping truck being equivalent to 6.5m3 / 8.125 m3 by volume.

GTECH Services (Hong Kong) Limited

Name of Department: Civil Engineering & Development Department

Contract No.: NE/2017/06

Monthly Summary Waste Flow Table For 2021

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Chemical Waste	Others, e.g. General Refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	0	0	0	0	0	0	0	0	0	0	0.003
Feb	0	0	0	0	0	0	0	0	0	0	0.006
Mar	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0.003
Jun	0	0	0	0	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0	0	0	0	0.012
Jul	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0
Sep											
Oct											
Nov											
Dec											
Total	0	0	0	0	0	0	0	0	0	0	0.012

Notes:
(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.
(3) Each dump truck carries 6m^3 of general refuse.
(4) The commencement date of the Contract is 9 November 2018. The current reporting period is from 1 August 2021 to 31 August 2021.

Tseung Kwan O - Lam Tin Tunnel - Tseung Kwan O Interchange and Associated Works
(NE/2017/01)

俊和－上隧－中冶聯營
CW - STEC - CMGC JV

Monthly Summary Waste Flow Table for 2021

Name of Department: Civil Engineering and Development Department

Contract No.: NE/2017/01

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	0.0132	0.0000	0.0000	0.0000	0.0132	0.0000	9.0500	0.0000	0.0000	0.0000	0.0107
Feb	0.0374	0.0000	0.0000	0.0000	0.0374	0.0000	0.0000	0.0000	0.0000	0.0000	0.0077
Mar	0.4590	0.0000	0.0000	0.0000	0.0459	0.0000	0.0000	0.0000	0.0000	0.0000	0.0123
Apr	0.0058	0.0000	0.0000	0.0000	0.0058	0.0000	14.4200	0.0000	0.0000	0.0000	0.0216
May	0.0224	0.0000	0.0000	0.0000	0.0224	0.0000	28.3400	0.0000	0.0000	0.0000	0.0296
Jun	0.0061	0.0000	0.0000	0.0000	0.0061	0.0000	51.5900	0.0000	0.0000	0.0000	0.0137
Sub-total	0.5439	0.0000	0.0000	0.0000	0.1309	0.0000	103.4000	0.0000	0.0000	0.0000	0.0956
Jul	0.0110	0.0000	0.0000	0.0000	0.0110	0.0000	134.480	0.0000	0.0000	0.0000	0.0169
Aug	0.0051	0.0000	0.0000	0.0000	0.0051	0.0000	0.0000	0.0000	0.0000	0.0000	0.0418
Sep											
Oct											
Nov											
Dec											
Total	0.5600	0.0000	0.0000	0.0000	0.1470	0.0000	237.8800	0.0000	0.0000	0.0000	0.1543

Notes:

1. Assume the density of soil fill is 2 ton/m^3.
2. Assume the density of rock and broken concrete is 2.5 ton/m^3.
3. Assume the density of mixed rock and soil is 1.9 ton/m^3.
4. Assume the density of slurry and bentonite is 2.8 ton/m^3.
5. The slurry and bentonite are disposed at Tseung Kwan O Area 137 Fill Bank.
6. Assume the density of C&D waste is 0.9 ton/m^3.
7. The non-inert C&D wastes are disposed at NENT.

Monthly Summary Waste Flow Table for 2021 (year)

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

Project : Cross Bay Link, TKO, Main Bridge and Associated Works

Contract No.: NE/2017/07

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m^3)
Jan	0.132	0.000	0.000	0.000	0.132	0.000	0.000	0.113	0.000	0.000	0.399
Feb	0.108	0.000	0.000	0.000	0.108	0.000	0.000	0.186	0.000	0.000	0.351
Mar	0.060	0.000	0.000	0.000	0.060	0.000	0.000	0.099	0.000	0.000	0.512
Apr	0.018	0.000	0.000	0.000	0.018	0.000	0.000	0.121	0.000	0.000	0.283
May	0.576	0.000	0.000	0.000	0.576	0.000	0.000	0.103	0.000	0.000	0.278
Jun	1.170	0.000	0.000	0.000	1.170	0.000	0.000	0.210	0.000	0.000	0.437
Sub-total	2.064	0.000	0.000	0.000	2.064	0.000	0.000	0.832	0.000	0.000	2.259
Jul	0.060	0.000	0.000	0.000	0.060	0.000	0.000	0.155	0.000	0.000	0.204
Aug	0.018	0.000	0.000	0.000	0.018	0.000	0.000	0.170	0.000	0.000	0.157
Sep	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	2.142	0.000	0.000	0.000	2.142	0.000	0.000	1.157	0.000	0.000	2.620

Note:

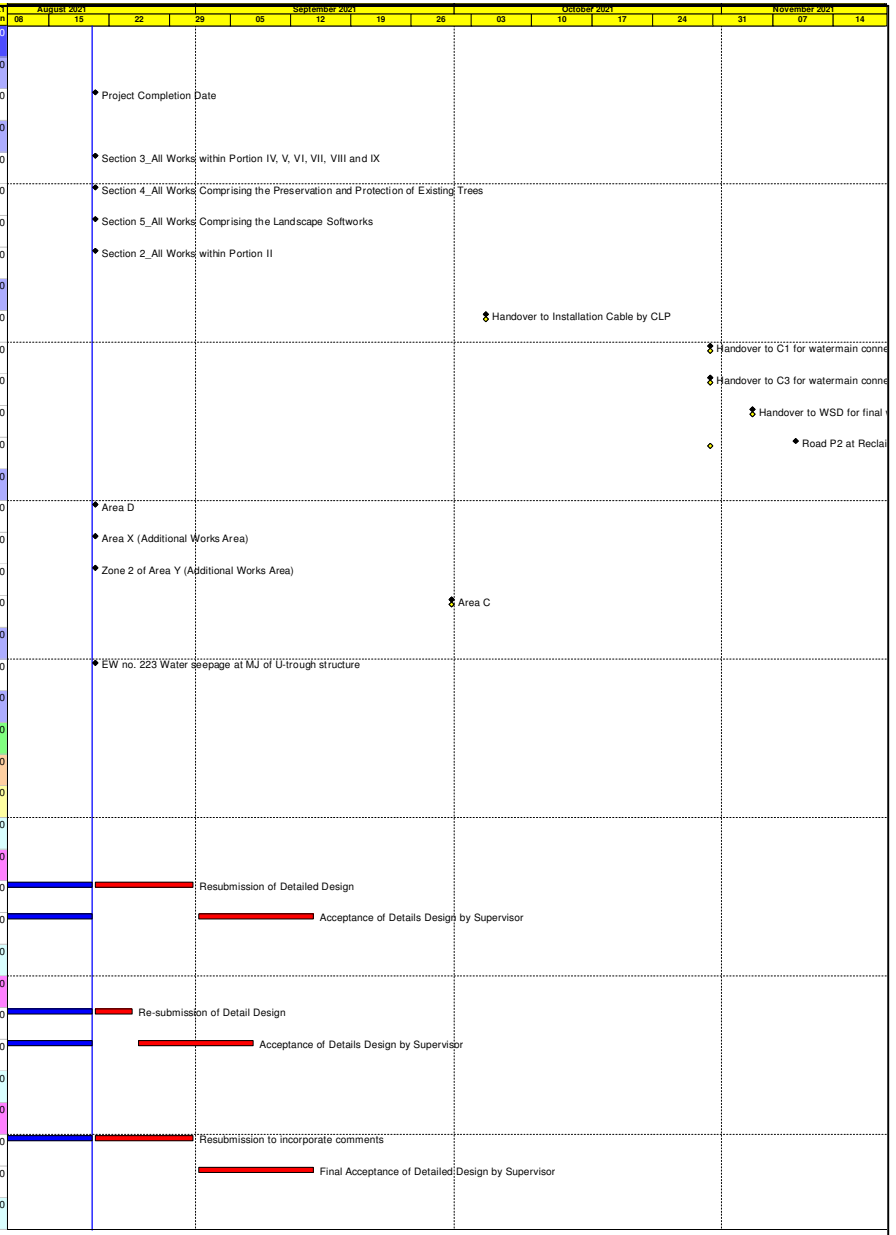
1. For non-inert portion of C&D material, assume the density of 1 m^3 general refuse is equal to 200 kg.
2. For inert portion of C&D material, assume 6 m^3 per each full-filled dump truck.
3. All values are round off to the third decimal places.

APPENDIX Q
TENTATIVE CONSTRUCTION PROGRAMME

High Level 3 Months Look Ahead Programme

Activities	Sep-21	Oct-21	Nov-21
Lam Tin Interchange			
EHC2 U-Trough			
Site Formation - Area 1G1 & 1G2 &5			
Site Formation - Area 2			
Site Formation - Slope Stabilisation			
Site Formation - Retaining Wall			
Administration Building			
West Ventilation Building			
Bridge Construction			
Emergency Stormwater storage tank + Stormwater pumping station			
S01_2, EHC1 & 4 Construction			
CKLR Underground Utilities			
Landscape Deck			
LTI Drainage			
Tunnel			
Main Tunnel Lining Works			
S02_2 Excavation & Lining			
TKO Interchange			
Bridge Construction			
East Ventilation Building			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Duration
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Aug			1475.0	254.0	12-Jan-17 A	30-Jun-22	307.0		-131.0
Project Commencement and Completion			0.0	0.0	20-Aug-21	20-Aug-21	-196.0		0.0
P2-Cal.A	K10020	Project Completion Date	0.0	0.0		20-Aug-21*	-196.0	0%	0.0
Possible Contract Key Date & Section Completion of the Works under CE154, 159,			0.0	0.0	20-Aug-21	20-Aug-21	-26.0		3.0
P2-Cal.A	K10419-17	Section 3_All Works within Portion IV, V, VI, VII, VIII and IX	0.0	0.0		20-Aug-21*	-26.0	0%	0.0
P2-Cal.A	K10419-18	Section 4_All Works Comprising the Preservation and Protection of Existing Trees	0.0	0.0		20-Aug-21*	-26.0	0%	0.0
P2-Cal.A	K10419-19	Section 5_All Works Comprising the Landscape Softworks	0.0	0.0		20-Aug-21*	-29.0	0%	0.0
P2-Cal.A	K10419-16	Section 2_All Works within Portion II	0.0	0.0		20-Aug-21*	-26.0	0%	0.0
Interface Issue			30.0	30.0	04-Oct-21	09-Nov-21	494.0		-4.0
P2-Cal.A	K10419-25	Handover to Installation Cable by CLP	0.0	0.0		04-Oct-21	-374.5	0%	0.0
P2-Cal.C	K10419-56	Handover to C1 for watermain connection	0.0	0.0		30-Oct-21	502.0	0%	0.0
P2-Cal.C	K10419-57	Handover to C3 for watermain connection	0.0	0.0		30-Oct-21	502.0	0%	0.0
P2-Cal.A	K10419-55	Handover to WSD for final watermain connection	0.0	0.0		04-Nov-21	603.0	0%	0.0
P2-Cal.A	K10419-23	Road P2 at Reclaimed Area for access by C4 (TCSS) (S200 CH809 to P2 CH318)	0.0	0.0		09-Nov-21	598.0	0%	0.0
Area Handover Date			42.0	42.0	20-Aug-21	30-Sep-21	0.0		31.0
P2-Cal.A	A10680	Area D	0.0	0.0		20-Aug-21*	-50.0	0%	0.0
P2-Cal.A	A10700	Area X (Additional Works Area)	0.0	0.0		20-Aug-21*	-51.0	0%	0.0
P2-Cal.A	A10730	Zone 2 of Area Y (Additional Works Area)	0.0	0.0		20-Aug-21*	-50.0	0%	0.0
P2-Cal.A	A10660	Area C	0.0	0.0		30-Sep-21*	0.0	0%	0.0
Early Warning (EW)			0.0	0.0	20-Aug-21 A	20-Aug-21 A			0.0
P2-Cal.C	B53280	EW no. 223 Water seepage at MJ of U-trough structure	0.0	0.0	20-Aug-21 A			100%	0.0
Preliminaries, Submission, Contractor's Design Submission and Approval			474.0	135.0	15-Sep-20 A	01-Jan-22	-225.5		-9.0
Contractor's Design Submission and Acceptance			315.0	32.0	04-Dec-20 A	20-Sep-21	-287.5		13.0
E&M Design			315.0	26.0	04-Dec-20 A	14-Sep-21	-281.5		13.0
Detail Design for E&M Works (Tunnel and associated)			315.0	26.0	04-Dec-20 A	14-Sep-21	-281.5		13.0
MVAC Detail Design			185.0	26.0	04-Dec-20 A	14-Sep-21	-390.5		-100.0
Underpass			185.0	26.0	04-Dec-20 A	14-Sep-21	-390.5		-100.0
P2-Cal.A	S11640-20	Resubmission of Detailed Design	21.0	12.0	04-Dec-20 A	31-Aug-21	-390.5	42.86%	-250.0
P2-Cal.A	S11640-23	Acceptance of Details Design by Supervisor	14.0	14.0	10-Apr-21 A	14-Sep-21	-390.5	0%	-144.0
FS Detail Design			67.0	19.0	19-Dec-20 A	07-Sep-21	-298.5		-196.0
Underpass and Plant Room			67.0	19.0	19-Dec-20 A	07-Sep-21	-298.5		-196.0
P2-Cal.A	S11651-50	Re-submission of Detail Design	21.0	5.0	19-Dec-20 A	24-Aug-21	-298.5	76.19%	-228.0
P2-Cal.A	S11651-51	Acceptance of Details Design by Supervisor	4.0	14.0	10-Feb-21 A	07-Sep-21	-298.5	0%	-206.0
Plumbing and Drainage Detail Design			34.0	26.0	29-Jul-21 A	14-Sep-21	-283.5		0.0
Underpass and Plant Room			34.0	26.0	29-Jul-21 A	14-Sep-21	-283.5		0.0
P2-Cal.A	S11660	Resubmission to incorporate comments	34.0	12.0	29-Jul-21 A	31-Aug-21	-283.5	64.71%	0.0
P2-Cal.A	S11663	Final Acceptance of Detailed Design by Supervisor	14.0	14.0	01-Sep-21	14-Sep-21	-283.5	0%	0.0
Electrical Detail Design			287.0	26.0	19-Dec-20 A	14-Sep-21	-281.5		0.0



Actual Work
Remaining Work
Critical Remaining Work
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NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2
and Associated Works

3 Months Rolling Programme
Update

Date	Revision	Checked	Approved
20-Aug-21			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Duration
Underpass Lighting			77.0	26.0	19-Dec-20 A	14-Sep-21	-281.5		-193.0
P2-Cal.A	S11660-78	Re-submission of Detail Design	21.0	12.0	19-Dec-20 A	31-Aug-21	-281.5	42.86%	-235.0
P2-Cal.A	S11660-80	Acceptance of Detail Design	14.0	14.0	10-Feb-21 A	14-Sep-21	-281.5	0%	-203.0
Plantroom			43.0	26.0	20-Jul-21 A	14-Sep-21	-281.5		0.0
P2-Cal.A	S11688-02	Resubmission for Final Acceptance	43.0	12.0	20-Jul-21 A	31-Aug-21	-281.5	72.09%	0.0
P2-Cal.A	S11688-2	Final acceptance	14.0	14.0	01-Sep-21	14-Sep-21	-281.5	0%	0.0
FS System			31.0	32.0	17-Aug-21 A	20-Sep-21	-338.5		0.0
P2-Cal.A	S11790	Formal Submission to Supervisor /Submission of Form WWO46 Part I/II	14.0	11.0	17-Aug-21 A	30-Aug-21	-338.5	21.43%	0.0
P2-Cal.A	S11800	Review and Accept Submission and associated elements	21.0	21.0	31-Aug-21	20-Sep-21	-338.5	0%	0.0
Procurement of Major Material			474.0	135.0	15-Sep-20 A	01-Jan-22	-225.5		-9.0
Civil/Structural			231.0	78.0	02-Mar-21 A	05-Nov-21	-168.5		-49.0
P2-Cal.A	S14997	Offsite Fabrication of Steel Works for the Sign Gantry (DS22) (affected by NCE333/CE308)	70.0	51.0	10-May-21 A	09-Oct-21	-149.5	27.14%	-83.0
P2-Cal.A	S14999	Offsite Fabrication of Traffic and directional signs	60.0	51.0	02-Mar-21 A	09-Oct-21	-141.5	15%	-162.0
P2-Cal.A	S14998	Offsite Fabrication of Steel Works for the Sign Gantry (FVMS & FADS35)	90.0	78.0	08-Aug-21 A	05-Nov-21	-284.5	13.33%	0.0
Architectural			170.0	56.0	28-May-21 A	14-Oct-21	-341.5		30.0
P2-Cal.A	S15142-02	Manufacturing of Precast Concrete Panel (1st batch)	170.0	42.0	28-May-21 A	30-Sep-21	-341.5	75.29%	44.0
P2-Cal.A	S15142-01	Manufacturing of VE Panel (1st batch)	150.0	42.0	01-Jun-21 A	30-Sep-21	-341.5	72%	28.0
P2-Cal.A	S15142-03	Delivery of VE Panel and Precast Concrete Panel (1st batch)	14.0	14.0	01-Oct-21	14-Oct-21	-341.5	0%	0.0
E&M			474.0	135.0	15-Sep-20 A	01-Jan-22	-357.5		-9.0
P2-Cal.A	S15180	Procument and Delivery of ELV Equipment (SCADA and ELV)	48.0	16.0	20-May-21 A	04-Sep-21	-238.5	66.67%	-60.0
P2-Cal.A	S15146	Procurement and Delivery of FS Equipment	24.0	24.0	08-Sep-21	01-Oct-21	-298.5	0%	0.0
P2-Cal.A	S15190	Procurement and Delivery of LED Lighting	98.0	43.0	31-May-21 A	01-Oct-21	-298.5	56.12%	-26.0
P2-Cal.A	S15148	Procurement and Delivery of P/D Equipment	280.0	32.0	15-Sep-20 A	16-Oct-21	-283.5	88.57%	-117.0
P2-Cal.A	S15144	Procurement and Delivery of MVAC Plant	100.0	100.0	15-Sep-21	23-Dec-21	-390.5	0%	0.0
P2-Cal.A	S15150	Procurement and Delivery of EL Equipment	135.0	135.0	20-Aug-21	01-Jan-22	-390.5	0%	0.0
Section 2 of the Works (All Works Within Portion II)			433.0	87.0	10-Jun-20 A	02-Dec-21	-150.5		-26.0
Roadworks			433.0	87.0	10-Jun-20 A	02-Dec-21	-150.5		-26.0
SR1 CH0.00 to P2 CH650			211.0	24.0	10-Jun-20 A	16-Sep-21	-87.5		-168.0
P2-Cal.C	LC12104	Construction of Road Kerb/Sign Post	14.0	10.0	10-Jun-20 A	31-Aug-21	-87.5	28.57%	-351.0
P2-Cal.C	LC12124	Installation of Type II Railing/ Granite Stone Facing	21.0	14.0	02-Dec-20 A	16-Sep-21	-87.5	33.33%	-213.0
Adjacent to site office (SMH SR06 & SR07)			146.0	87.0	16-Jun-21 A	02-Dec-21	-176.5		-13.0
P2-Cal.C	LC12164	Construction of ELS for SMH-SR07 (Sheetpile installation)	36.0	14.0	16-Jun-21 A	04-Sep-21	-176.5	61.11%	-33.0
P2-Cal.C	LC12164-10	Construction of ELS for SMH-SR07 (Excavation)	12.0	12.0	06-Sep-21	18-Sep-21	-176.5	0%	-1.0
P2-Cal.C	LC12174	Construction of SMH-SR07 (Manhole base slab and hauching)	6.0	6.0	20-Sep-21	27-Sep-21	-176.5	0%	0.0
P2-Cal.C	LC12174-10	Construction of SMH-SR07 (Manhole Walls and top slab)	6.0	6.0	28-Sep-21	05-Oct-21	-176.5	0%	0.0
P2-Cal.C	LC12184	Construction of drainages and connection	14.0	14.0	06-Oct-21	22-Oct-21	-176.5	0%	0.0
P2-Cal.C	LC12194	Construction of catchpit and u-channel	14.0	14.0	23-Oct-21	08-Nov-21	-176.5	0%	0.0
P2-Cal.C	LC12204	Backfilling to formation level	21.0	21.0	09-Nov-21	02-Dec-21	-176.5	0%	0.0

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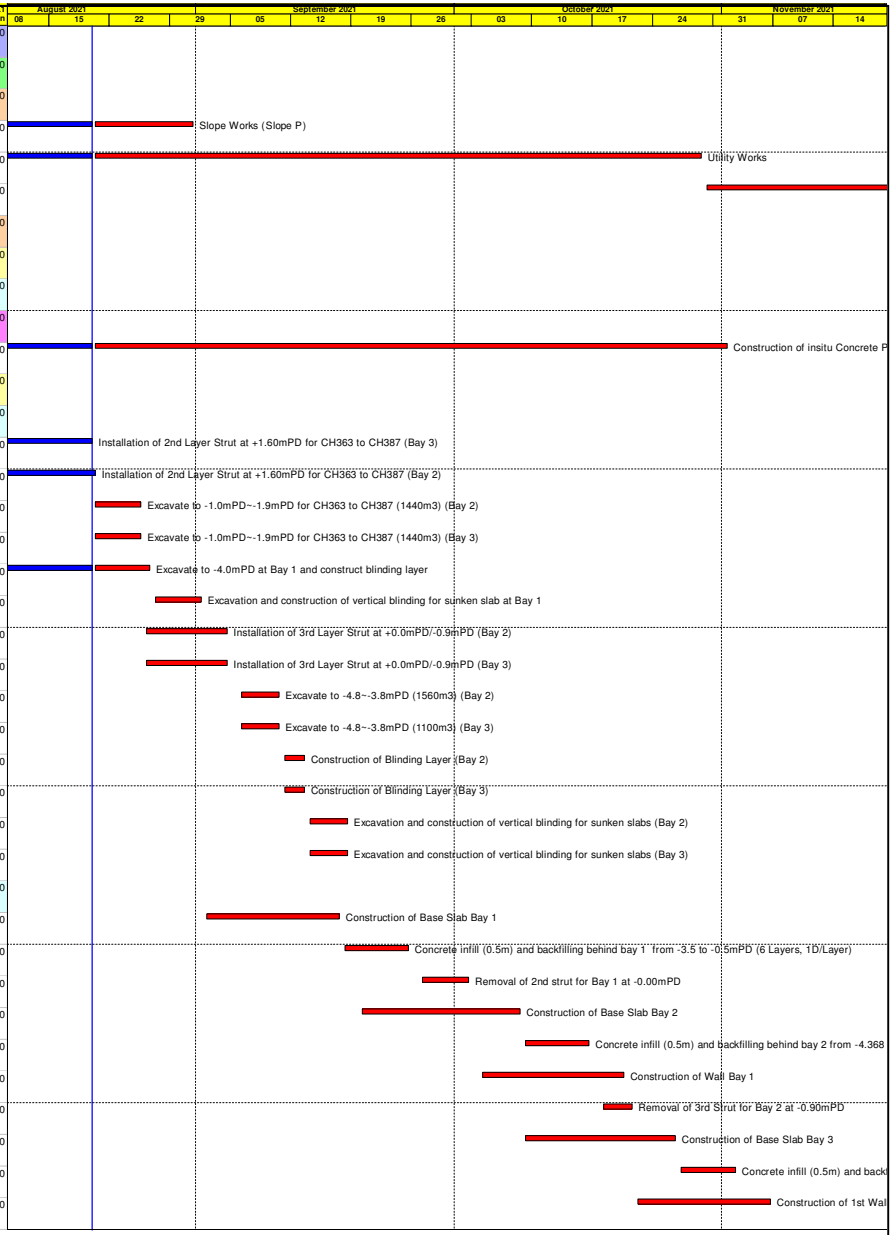
Section 3 of the Works All Works within Portion IV, V, VI, VII,VIII, and IX			1114.0	252.0	06-Apr-18 A	28-Jun-22	309.0		-129.0
Existing Land Section			1104.0	252.0	06-Apr-18 A	28-Jun-22	-315.5		-149.0
Retaining Wall P2-A CH 500- 650			655.0	87.0	20-Sep-19 A	02-Dec-21	-239.5		-26.0
P2-Cal.C	LC11933	Slope Works (Slope P)	45.0	10.0	20-Sep-19 A	31-Aug-21	-191.5	77.78%	-532.0
P2-Cal.C	LC12003	Utility Works	30.0	58.0	20-Feb-21 A	29-Oct-21	-239.5	0%	-175.0
P2-Cal.C	LC12013	Road Works at Tong Yin Street	29.0	29.0	30-Oct-21	02-Dec-21	-239.5	0%	0.0
P2 Road			216.0	93.0	12-Mar-21 A	09-Dec-21	-156.5		-28.0
P2 CH 318 - 363			81.0	60.0	12-Mar-21 A	01-Nov-21	-282.5		-109.0
Structure P2 CH 318 - 363 & SR2 CH100-110 (U Trough B)			81.0	60.0	12-Mar-21 A	01-Nov-21	-282.5		-109.0
Bay 1			81.0	60.0	12-Mar-21 A	01-Nov-21	-282.5		-109.0
P2-Cal.C	LC13410	Construction of insitu Concrete Profile Barrier (2moulds) (NCE193 & NCE219)	81.0	60.0	12-Mar-21 A	01-Nov-21	-282.5	25.93%	-109.0
P2 CH 363 - 411			115.0	93.0	03-Aug-21 A	09-Dec-21	-245.5		-14.0
ELS P2 CH 363 - 411			48.0	26.0	03-Aug-21 A	18-Sep-21	-330.5		-3.0
P2-Cal.C	LC15300-10	Installation of 2nd Layer Strut at +1.60mPD for CH363 to CH387 (Bay 3)	9.0	0.0	09-Aug-21 A	20-Aug-21 A		100%	-1.0
P2-Cal.C	LC15300	Installation of 2nd Layer Strut at +1.60mPD for CH363 to CH387 (Bay 2)	8.0	0.0	09-Aug-21 A	20-Aug-21 A		100%	-2.0
P2-Cal.C	LC15310	Excavate to -1.0mPD~-1.9mPD for CH363 to CH387 (1440m3) (Bay 2)	5.0	5.0	20-Aug-21	25-Aug-21	-345.5	0%	0.0
P2-Cal.C	LC15310-00	Excavate to -1.0mPD~-1.9mPD for CH363 to CH387 (1440m3) (Bay 3)	5.0	5.0	20-Aug-21	25-Aug-21	-330.5	0%	0.0
P2-Cal.C	LC15340-02	Excavate to -4.0mPD at Bay 1 and construct blinding layer	6.0	6.0	03-Aug-21 A	26-Aug-21	-344.5	0%	-15.0
P2-Cal.C	LC15340-12	Excavation and construction of vertical blinding for sunken slab at Bay 1	5.0	5.0	27-Aug-21	01-Sep-21	-344.5	0%	0.0
P2-Cal.C	LC15320	Installation of 3rd Layer Strut at +0.0mPD/-0.9mPD (Bay 2)	9.0	9.0	26-Aug-21	04-Sep-21	-345.5	0%	0.0
P2-Cal.C	LC15320-00	Installation of 3rd Layer Strut at +0.0mPD/-0.9mPD (Bay 3)	9.0	9.0	26-Aug-21	04-Sep-21	-330.5	0%	0.0
P2-Cal.C	LC15330	Excavate to -4.8~-3.8mPD (1560m3) (Bay 2)	5.0	5.0	06-Sep-21	10-Sep-21	-345.5	0%	0.0
P2-Cal.C	LC15330-10	Excavate to -4.8~-3.8mPD (1100m3) (Bay 3)	5.0	5.0	06-Sep-21	10-Sep-21	-330.5	0%	-1.0
P2-Cal.C	LC15340	Construction of Blinding Layer (Bay 2)	2.0	2.0	11-Sep-21	13-Sep-21	-345.5	0%	0.0
P2-Cal.C	LC15340-00	Construction of Blinding Layer (Bay 3)	2.0	2.0	11-Sep-21	13-Sep-21	-330.5	0%	0.0
P2-Cal.C	LC15340-01	Excavation and construction of vertical blinding for sunken slabs (Bay 2)	5.0	5.0	14-Sep-21	18-Sep-21	-345.5	0%	0.0
P2-Cal.C	LC15340-01-00	Excavation and construction of vertical blinding for sunken slabs (Bay 3)	5.0	5.0	14-Sep-21	18-Sep-21	-330.5	0%	0.0
Structure P2 CH 363 - 411 (U Trough B) (Team 9 & 10)			82.0	82.0	02-Sep-21	09-Dec-21	-245.5		0.0
P2-Cal.C	LC14110	Construction of Base Slab Bay 1	14.0	14.0	02-Sep-21	17-Sep-21	-344.5	0%	0.0
P2-Cal.C	LC14190-10	Concrete infill (0.5m) and backfilling behind bay 1 from -3.5 to -0.5mPD (6 Layers, 1D/Layer)	6.0	6.0	18-Sep-21	25-Sep-21	-337.5	0%	0.0
P2-Cal.C	LC14200-10	Removal of 2nd strut for Bay 1 at -0.00mPD	5.0	5.0	27-Sep-21	02-Oct-21	-337.5	0%	0.0
P2-Cal.C	LC14130	Construction of Base Slab Bay 2	15.0	15.0	20-Sep-21	08-Oct-21	-345.5	0%	0.0
P2-Cal.C	LC14190	Concrete infill (0.5m) and backfilling behind bay 2 from -4.368 to -1.3mPD (10 Layers, 1D/Layer)	6.0	6.0	09-Oct-21	16-Oct-21	-345.5	0%	0.0
P2-Cal.C	LC14220	Construction of Wall Bay 1	14.0	14.0	04-Oct-21	20-Oct-21	-337.5	0%	0.0
P2-Cal.C	LC14200	Removal of 3rd Strut for Bay 2 at -0.90mPD	4.0	4.0	18-Oct-21	21-Oct-21	-345.5	0%	0.0
P2-Cal.C	LC14140	Construction of Base Slab Bay 3	14.0	14.0	09-Oct-21	26-Oct-21	-345.5	0%	0.0
P2-Cal.C	LC14190-01	Concrete infill (0.5m) and backfilling behind bay 3 from -4.368 to -1.3mPD (10 Layers, 1D/Layer)	6.0	6.0	27-Oct-21	02-Nov-21	-345.5	0%	0.0
P2-Cal.C	LC14230	Construction of 1st Wall Bay 2 up to +3.4mPD (with box out for 2nd layer of struts)	14.0	14.0	22-Oct-21	06-Nov-21	-341.5	0%	0.0



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Remaining Work

Critical Remaining Work

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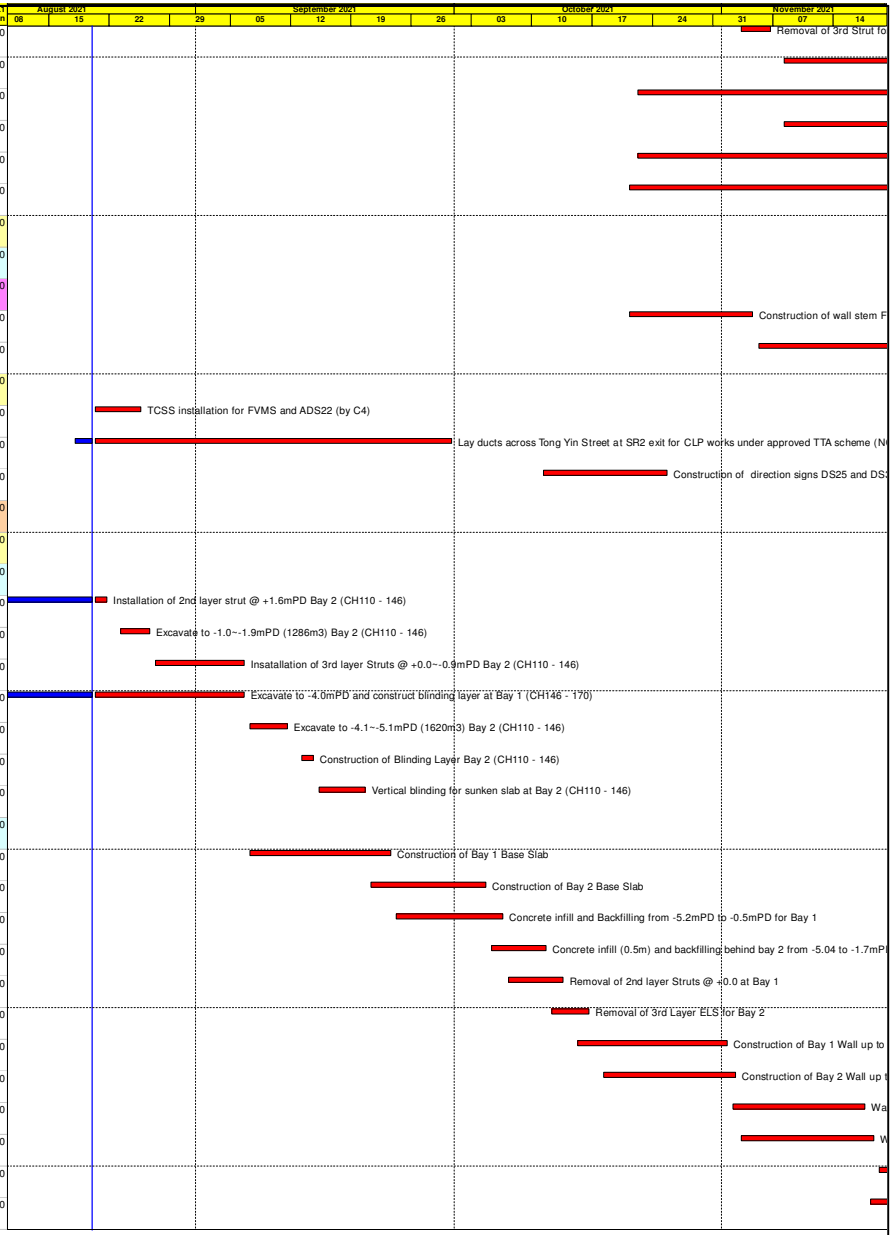
P2-Cal.C	LC14200-01	Removal of 3rd Strut for Bay 3 at -0.90mPD	4.0	4.0	03-Nov-21	06-Nov-21	-345.5	0%	0.0
P2-Cal.C	LC14230-20	Formwork removal, waterproofing and backfilling from -1.0 to +1.40mPD at Bay 2	12.0	12.0	08-Nov-21	20-Nov-21	-341.5	0%	0.0
P2-Cal.C	LC14240-10	Construction of 1st rise Feature Wall at Bay 3 up to +1.0mPD	26.0	26.0	22-Oct-21	20-Nov-21	-331.5	0%	0.0
P2-Cal.C	LC14240	Construction of 1st Wall Bay 3 up to +3.40 mPD	14.0	14.0	08-Nov-21	23-Nov-21	-345.5	0%	0.0
P2-Cal.C	LC14230-10	Construction of 1st rise Feature Wall at Bay 2 up to +1.0mPD	30.0	30.0	22-Oct-21	25-Nov-21	-345.5	0%	0.0
P2-Cal.C	LC14330	Backfill, Removal of remaining ELS, closing of temporary box out and site clearance at Bay 1	43.0	43.0	21-Oct-21	09-Dec-21	-245.5	0%	0.0
P2 CH 411- 500			27.0	27.0	21-Oct-21	20-Nov-21	-322.5		0.0
Structure P2 CH 411 - 500 (U Trough A)			27.0	27.0	21-Oct-21	20-Nov-21	-322.5		0.0
Wall Stem			27.0	27.0	21-Oct-21	20-Nov-21	-322.5		0.0
P2-Cal.C	LC15230	Construction of wall stem Final Pour at Bay 1	13.0	13.0	21-Oct-21	04-Nov-21	-322.5	0%	0.0
P2-Cal.C	LC15242	Backfilling and Removal of Sheetpile after Bay 1 final pour completed	14.0	14.0	05-Nov-21	20-Nov-21	-322.5	0%	0.0
Remaining Works			54.0	54.0	18-Aug-21 A	25-Oct-21	-117.5		6.0
P2-Cal.C	LC20950	TCSS installation for FVMS and ADS22 (by C4)	5.0	5.0	20-Aug-21	25-Aug-21	-157.5	0%	0.0
P2-Cal.C	LC20970	Lay ducts across Tong Yin Street at SR2 exit for CLP works under approved TTA scheme (NCE345)	25.0	35.0	18-Aug-21 A	30-Sep-21	-299.5	0%	-12.0
P2-Cal.C	LC20905	Construction of direction signs DS25 and DS36 (include footings)	12.0	12.0	11-Oct-21	25-Oct-21	-117.5	0%	0.0
SR2			1081.0	252.0	06-Apr-18 A	28-Jun-22	-315.5		-186.0
SR2 CH110 - 170			105.0	80.0	22-Jul-21 A	24-Nov-21	-281.5		-14.0
ELS			52.0	27.0	22-Jul-21 A	20-Sep-21	-301.5		-13.0
P2-Cal.C	LC16190	Installation of 2nd layer strut @ +1.6mPD Bay 2 (CH110 - 146)	7.0	2.0	04-Aug-21 A	21-Aug-21	-301.5	71.43%	-9.0
P2-Cal.C	LC16200	Excavate to -1.0~-1.9mPD (1286m3) Bay 2 (CH110 - 146)	4.0	4.0	23-Aug-21	26-Aug-21	-301.5	0%	0.0
P2-Cal.C	LC16210	Insatallation of 3rd layer Struts @ +0.0~-0.9mPD Bay 2 (CH110 - 146)	9.0	9.0	27-Aug-21	06-Sep-21	-301.5	0%	0.0
P2-Cal.C	LC16230-01	Excavate to -4.0mPD and construct blinding layer at Bay 1 (CH146 - 170)	15.0	15.0	22-Jul-21 A	06-Sep-21	-312.5	0%	-25.0
P2-Cal.C	LC16220	Excavate to -4.1~-5.1mPD (1620m3) Bay 2 (CH110 - 146)	5.0	5.0	07-Sep-21	11-Sep-21	-301.5	0%	0.0
P2-Cal.C	LC16230	Construction of Blinding Layer Bay 2 (CH110 - 146)	2.0	2.0	13-Sep-21	14-Sep-21	-301.5	0%	0.0
P2-Cal.C	LC16230-11	Vertical blinding for sunken slab at Bay 2 (CH110 - 146)	5.0	5.0	15-Sep-21	20-Sep-21	-301.5	0%	0.0
Structure SR2 CH110 - 170 (U Trough B) (team 11 - 13)			65.0	65.0	07-Sep-21	24-Nov-21	-281.5		11.0
P2-Cal.C	LC16240	Construction of Bay 1 Base Slab	14.0	14.0	07-Sep-21	23-Sep-21	-312.5	0%	0.0
P2-Cal.C	LC16260	Construction of Bay 2 Base Slab	10.0	10.0	21-Sep-21	04-Oct-21	-301.5	0%	0.0
P2-Cal.C	LC16250-10	Concrete infill and Backfilling from -5.2mPD to -0.5mPD for Bay 1	10.0	10.0	24-Sep-21	06-Oct-21	-312.5	0%	0.0
P2-Cal.C	LC16290	Concrete infill (0.5m) and backfilling behind bay 2 from -5.04 to -1.7mPD	6.0	6.0	05-Oct-21	11-Oct-21	-280.5	0%	0.0
P2-Cal.C	LC16250-20	Removal of 2nd layer Struts @ +0.0 at Bay 1	6.0	6.0	07-Oct-21	13-Oct-21	-312.5	0%	0.0
P2-Cal.C	LC16300	Removal of 3rd Layer ELS for Bay 2	4.0	4.0	12-Oct-21	16-Oct-21	-280.5	0%	0.0
P2-Cal.C	LC16310	Construction of Bay 1 Wall up to 3.0mPD	15.0	15.0	15-Oct-21	01-Nov-21	-312.5	0%	0.0
P2-Cal.C	LC16330	Construction of Bay 2 Wall up to +1.2mPD	14.0	14.0	18-Oct-21	02-Nov-21	-280.5	0%	0.0
P2-Cal.C	LC16320-10	Waterproofing and backfilling behind Bay 1 from -0.5 to 3.0mPD	14.0	14.0	02-Nov-21	17-Nov-21	-312.5	0%	0.0
P2-Cal.C	LC16380	Waterproofing and Backfilling from -1.7mPD to +0.6mPD for Bay 2	14.0	14.0	03-Nov-21	18-Nov-21	-280.5	0%	0.0
P2-Cal.C	LC16390	Removal of 2nd Layer ELS @ +1.6mPD for Bay 2	4.0	4.0	19-Nov-21	23-Nov-21	-280.5	0%	0.0
P2-Cal.C	LC16320-20	Removal of 1st layer Struts @ +4.0 at Bay 1	6.0	6.0	18-Nov-21	24-Nov-21	-312.5	0%	0.0



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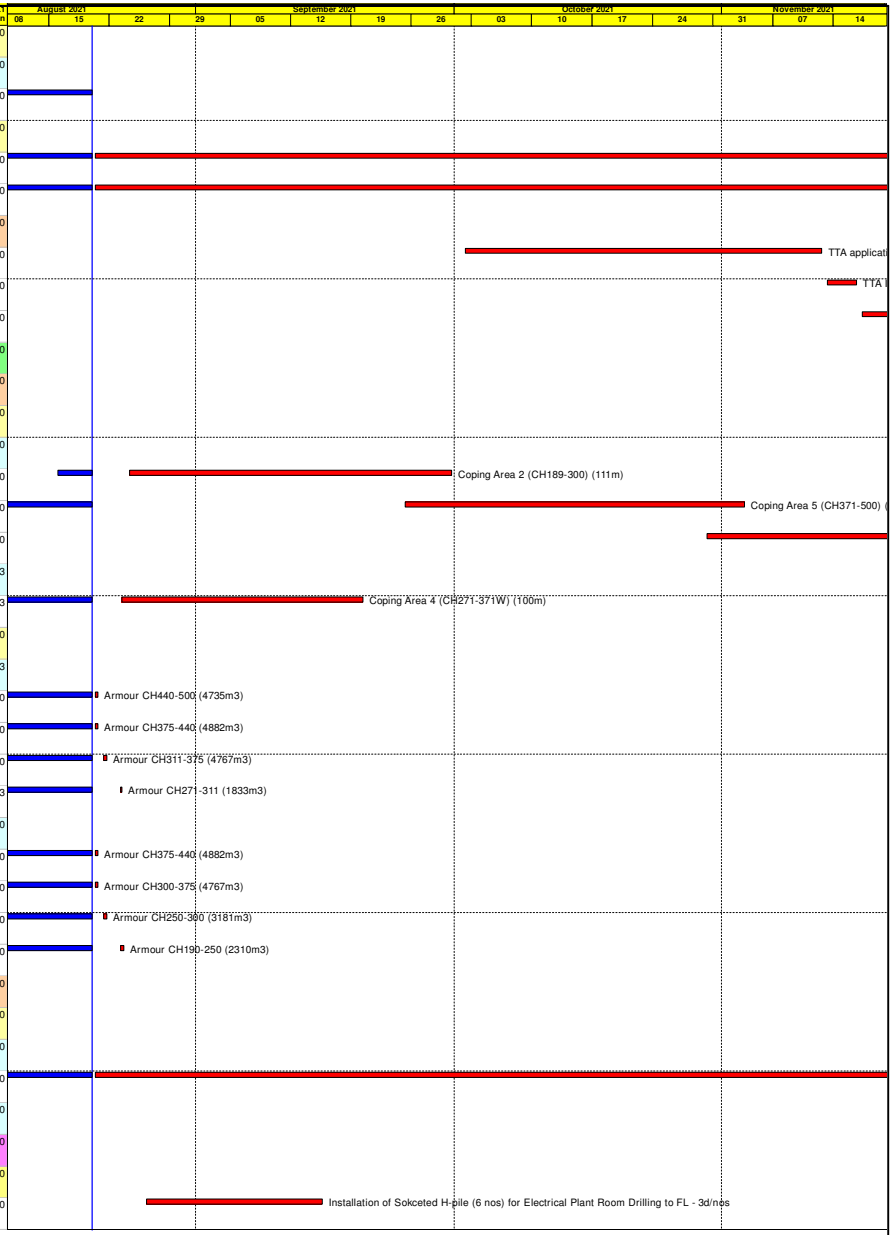
SR2 CH170 - 250			40.0	5.0	28-Feb-19 A	29-Dec-21	-312.5		-801.0
Structure SR2 CH 170 - 250 (U Trough A)			40.0	5.0	28-Feb-19 A	29-Dec-21	-312.5		-801.0
P2-Cal.C	LC17510	Waterproofing, Backfilling and Remove sheetpile	40.0	5.0	28-Feb-19 A	29-Dec-21	-312.5	87.5%	-801.0
Road and Drainage & Utilities Works (P2 CH318 - 650 & SR2 CH100 - 310)			328.0	252.0	06-Apr-18 A	28-Jun-22	-315.5		-925.0
P2-Cal.C	LC17590	Road and Drainage & Utilities Works (SR2 CH100 - 250)	260.0	252.0	28-Jun-18 A	28-Jun-22	-315.5	3.08%	-925.0
P2-Cal.C	LC17560	Road and Drainage & Utilities Works (P2 CH318 - 500)	300.0	252.0	06-Apr-18 A	28-Jun-22	-315.5	16%	-953.0
TKO Town Centre South Reinstatement (PS Cl. 1.45)			68.0	68.0	02-Oct-21	21-Dec-21	-276.5		0.0
P2-Cal.C	LC17720	TTA application of road works (After handover of Area C)	35.0	35.0	02-Oct-21	12-Nov-21	-276.5	0%	0.0
P2-Cal.C	LC17721	TTA Implementation	3.0	3.0	13-Nov-21	16-Nov-21	-276.5	0%	0.0
P2-Cal.C	LC17722	Reinstatement of existing footpath	30.0	30.0	17-Nov-21	21-Dec-21	-276.5	0%	0.0
New Reclaimed Section			633.0	252.0	16-Nov-19 A	28-Jun-22	309.0		-129.0
Marine Works			592.0	85.0	03-Jan-20 A	30-Nov-21	-148.5		25.0
Concrete Coping			501.0	82.7	27-Apr-20 A	30-Nov-21	-148.5		25.0
Eastern Seawall			101.0	82.0	16-Dec-20 A	30-Nov-21	-148.5		-155.0
P2-Cal.C	MC13475	Coping Area 2 (CH189-300) (111m)	48.0	32.0	16-Aug-21 A	30-Sep-21	-257.5	33.33%	9.0
P2-Cal.C	MC13515	Coping Area 5 (CH371-500) (129m)	32.0	32.0	16-Dec-20 A	03-Nov-21	-125.5	65.4%	-228.0
P2-Cal.C	MC13435	Coping Area 2 (CH160-189) (29m)	27.0	27.0	30-Oct-21	30-Nov-21	-175.5	0%	0.0
Western Seawall			15.0	24.0	27-Apr-20 A	20-Sep-21	-178.8		-402.3
P2-Cal.C	MC13555	Coping Area 4 (CH271-371W) (100m)	15.0	24.0	27-Apr-20 A	20-Sep-21	-178.8	96.7%	-402.3
Armour Protection			182.0	3.0	03-Jan-20 A	23-Aug-21	-179.5		-303.0
Laying of Armour Rock (West)			133.0	2.3	03-Jan-20 A	23-Aug-21	-178.8		-351.3
P2-Cal.C	MC13755	Armour CH440-500 (4735m3)	15.0	1.0	11-May-20 A	20-Aug-21	-177.5	93.33%	-367.0
P2-Cal.C	MC13735	Armour CH375-440 (4882m3)	15.0	1.0	15-May-20 A	20-Aug-21	-178.8	93.33%	-363.0
P2-Cal.C	MC13715	Armour CH311-375 (4767m3)	7.0	1.0	22-May-20 A	21-Aug-21	-178.8	85.71%	-366.0
P2-Cal.C	MC13695	Armour CH271-311 (1833m3)	8.0	0.3	03-Jan-20 A	23-Aug-21	-178.8	96.69%	-476.3
Laying of Armour Rock (East)			156.0	3.0	13-Jan-20 A	23-Aug-21	-252.5		-321.0
P2-Cal.C	MC13955	Armour CH375-440 (4882m3)	12.0	1.0	14-Mar-20 A	20-Aug-21	-250.5	91.67%	-413.0
P2-Cal.C	MC13935	Armour CH300-375 (4767m3)	12.0	1.0	06-Feb-20 A	20-Aug-21	-257.5	91.67%	-445.0
P2-Cal.C	MC13915	Armour CH250-300 (3181m3)	10.0	1.0	13-Jan-20 A	21-Aug-21	-257.5	90%	-466.0
P2-Cal.C	MC13895	Armour CH190-250 (2310m3)	9.0	1.0	13-Aug-20 A	23-Aug-21	-257.5	88.89%	-296.0
Land Works			633.0	252.0	16-Nov-19 A	28-Jun-22	309.0		-129.0
Road P2 Underpass (CH105-CH318)			633.0	252.0	16-Nov-19 A	28-Jun-22	-315.5		-139.0
Instrumentation and Monitoring for Road P2 Structure Construction			460.0	252.0	16-Nov-19 A	28-Jun-22	-315.5		-312.0
P2-Cal.C	LC17760	Monitoring of Instrumentation	460.0	252.0	16-Nov-19 A	28-Jun-22	-315.5	45.22%	-312.0
Underpass			140.0	113.0	26-Jun-21 A	05-Jan-22	-234.5		-19.0
Underpass P2 CH 105 - 318			138.0	111.0	26-Jun-21 A	03-Jan-22	-241.5		-39.0
Foundation (On Top Surcharge)			34.0	34.0	26-Aug-21	06-Oct-21	-304.5		0.0
P2-Cal.C	LC17823-1	Installation of Sokceted H-pile (6 nos) for Electrical Plant Room Drilling to FL - 3d/nos	18.0	18.0	26-Aug-21	15-Sep-21	-304.5	0%	0.0



Actual Work
Remaining Work
Critical Remaining Work
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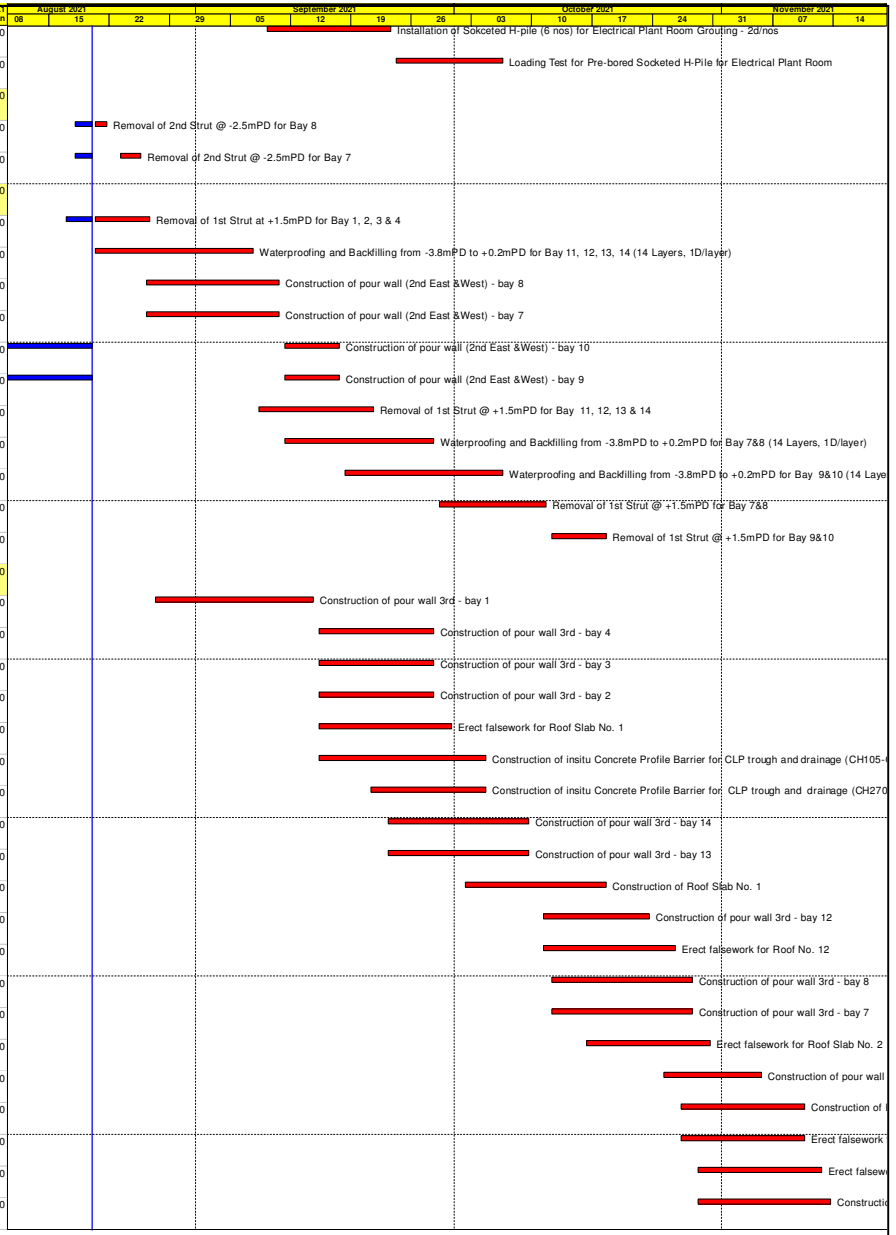
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2
and Associated Works

3 Months Rolling Programme Update

Date	Revision	Checked	Approved
20-Aug-21			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Duration
P2-Cal.C	LC17825-1	Installation of Sokceted H-pile (6 nos) for Electrical Plant Room Grouting - 2d/nos	12.0	12.0	09-Sep-21	23-Sep-21	-304.5	0%	0.0
P2-Cal.C	LC17840-01	Loading Test for Pre-bored Socketed H-Pile for Electrical Plant Room	10.0	10.0	24-Sep-21	06-Oct-21	-304.5	0%	0.0
1st Wall (Team 1 to 6)			15.0	5.0	18-Aug-21 A	25-Aug-21	-304.5		8.0
P2-Cal.C	LC18200-06	Removal of 2nd Strut @ -2.5mPD for Bay 8	10.0	2.0	18-Aug-21 A	21-Aug-21	-304.5	80%	6.0
P2-Cal.C	LC18200-08	Removal of 2nd Strut @ -2.5mPD for Bay 7	5.0	3.0	18-Aug-21 A	25-Aug-21	-304.5	40%	-2.0
2nd Wall (Team 1 to 6)			52.0	48.0	30-Jul-21 A	18-Oct-21	-181.5		-3.0
P2-Cal.C	LC18274-06	Removal of 1st Strut at +1.5mPD for Bay 1, 2, 3 & 4	25.0	6.0	17-Aug-21 A	26-Aug-21	-309.5	76%	16.0
P2-Cal.C	LC18275-11	Waterproofing and Backfilling from -3.8mPD to +0.2mPD for Bay 11, 12, 13, 14 (14 Layers, 1D/layer)	16.0	16.0	20-Aug-21	07-Sep-21	-299.5	0%	42.0
P2-Cal.C	LC18240	Construction of pour wall (2nd East &West) - bay 8	14.0	14.0	26-Aug-21	10-Sep-21	-293.5	0%	0.0
P2-Cal.C	LC18245	Construction of pour wall (2nd East &West) - bay 7	14.0	14.0	26-Aug-21	10-Sep-21	-293.5	0%	0.0
P2-Cal.C	LC18230	Construction of pour wall (2nd East &West) - bay 10	11.0	6.0	30-Jul-21 A	17-Sep-21	-158.5	45.45%	-32.0
P2-Cal.C	LC18235	Construction of pour wall (2nd East &West) - bay 9	11.0	6.0	30-Jul-21 A	17-Sep-21	-268.5	45.45%	-32.0
P2-Cal.C	LC18275-16	Removal of 1st Strut @ +1.5mPD for Bay 11, 12, 13 & 14	12.0	12.0	08-Sep-21	21-Sep-21	-299.5	0%	37.0
P2-Cal.C	LC18275-04	Waterproofing and Backfilling from -3.8mPD to +0.2mPD for Bay 7&8 (14 Layers, 1D/layer)	14.0	14.0	11-Sep-21	28-Sep-21	-293.5	0%	0.0
P2-Cal.C	LC18275-01	Waterproofing and Backfilling from -3.8mPD to +0.2mPD for Bay 9&10 (14 Layers, 1D/layer)	14.0	14.0	18-Sep-21	06-Oct-21	-268.5	0%	0.0
P2-Cal.C	LC18275-06	Removal of 1st Strut @ +1.5mPD for Bay 7&8	10.0	10.0	29-Sep-21	11-Oct-21	-293.5	0%	0.0
P2-Cal.C	LC18275-02	Removal of 1st Strut @ +1.5mPD for Bay 9&10	5.0	5.0	12-Oct-21	18-Oct-21	-272.5	0%	0.0
3rd Wall & Top Slab (Team 1 to 6)			81.0	81.0	27-Aug-21	02-Dec-21	-250.5		-9.0
P2-Cal.C	LC18347	Construction of pour wall 3rd - bay 1	16.0	16.0	27-Aug-21	14-Sep-21	-309.5	0%	-3.0
P2-Cal.C	LC18335	Construction of pour wall 3rd - bay 4	11.0	11.0	15-Sep-21	28-Sep-21	-296.5	0%	0.0
P2-Cal.C	LC18340	Construction of pour wall 3rd - bay 3	11.0	11.0	15-Sep-21	28-Sep-21	-296.5	0%	0.0
P2-Cal.C	LC18345	Construction of pour wall 3rd - bay 2	11.0	11.0	15-Sep-21	28-Sep-21	-283.5	0%	0.0
P2-Cal.C	LC18348-25	Erect falsework for Roof Slab No. 1	13.0	13.0	15-Sep-21	30-Sep-21	-309.5	0%	0.0
P2-Cal.C	LC18585-01	Construction of insitu Concrete Profile Barrier for CLP trough and drainage (CH105-CH223) (4moulds) (NCE193 & 219)	15.0	15.0	15-Sep-21	04-Oct-21	-301.5	0%	0.0
P2-Cal.C	LC18595-01	Construction of insitu Concrete Profile Barrier for CLP trough and drainage (CH270-CH318) (4moulds) (NCE193 & 219)	10.0	10.0	21-Sep-21	04-Oct-21	-301.5	0%	0.0
P2-Cal.C	LC18290	Construction of pour wall 3rd - bay 14	14.0	14.0	23-Sep-21	09-Oct-21	-299.5	0%	1.0
P2-Cal.C	LC18295	Construction of pour wall 3rd - bay 13	14.0	14.0	23-Sep-21	09-Oct-21	-299.5	0%	-3.0
P2-Cal.C	LC18348-26	Construction of Roof Slab No. 1	13.0	13.0	02-Oct-21	18-Oct-21	-309.5	0%	0.0
P2-Cal.C	LC18300	Construction of pour wall 3rd - bay 12	11.0	11.0	11-Oct-21	23-Oct-21	-297.5	0%	0.0
P2-Cal.C	LC18348-01	Erect falsework for Roof No. 12	13.0	13.0	11-Oct-21	26-Oct-21	-299.5	0%	0.0
P2-Cal.C	LC18320	Construction of pour wall 3rd - bay 8	14.0	14.0	12-Oct-21	28-Oct-21	-281.5	0%	0.0
P2-Cal.C	LC18325	Construction of pour wall 3rd - bay 7	14.0	14.0	12-Oct-21	28-Oct-21	-293.5	0%	0.0
P2-Cal.C	LC18348-19	Erect falsework for Roof Slab No. 2	13.0	13.0	16-Oct-21	30-Oct-21	-309.5	0%	0.0
P2-Cal.C	LC18305	Construction of pour wall 3rd - bay 11	11.0	11.0	25-Oct-21	05-Nov-21	-294.5	0%	0.0
P2-Cal.C	LC18348-02	Construction of Roof Slab No. 12	13.0	13.0	27-Oct-21	10-Nov-21	-295.5	0%	0.0
P2-Cal.C	LC18348-09	Erect falsework for Roof No. 11	13.0	13.0	27-Oct-21	10-Nov-21	-299.5	0%	0.0
P2-Cal.C	LC18348-18-01	Erect falsework for Roof No. 6	13.0	13.0	29-Oct-21	12-Nov-21	-293.5	0%	0.0
P2-Cal.C	LC18315	Construction of pour wall 3rd - bay 9	14.0	14.0	29-Oct-21	13-Nov-21	-281.5	0%	0.0



Actual Work
Remaining Work
Critical Remaining Work
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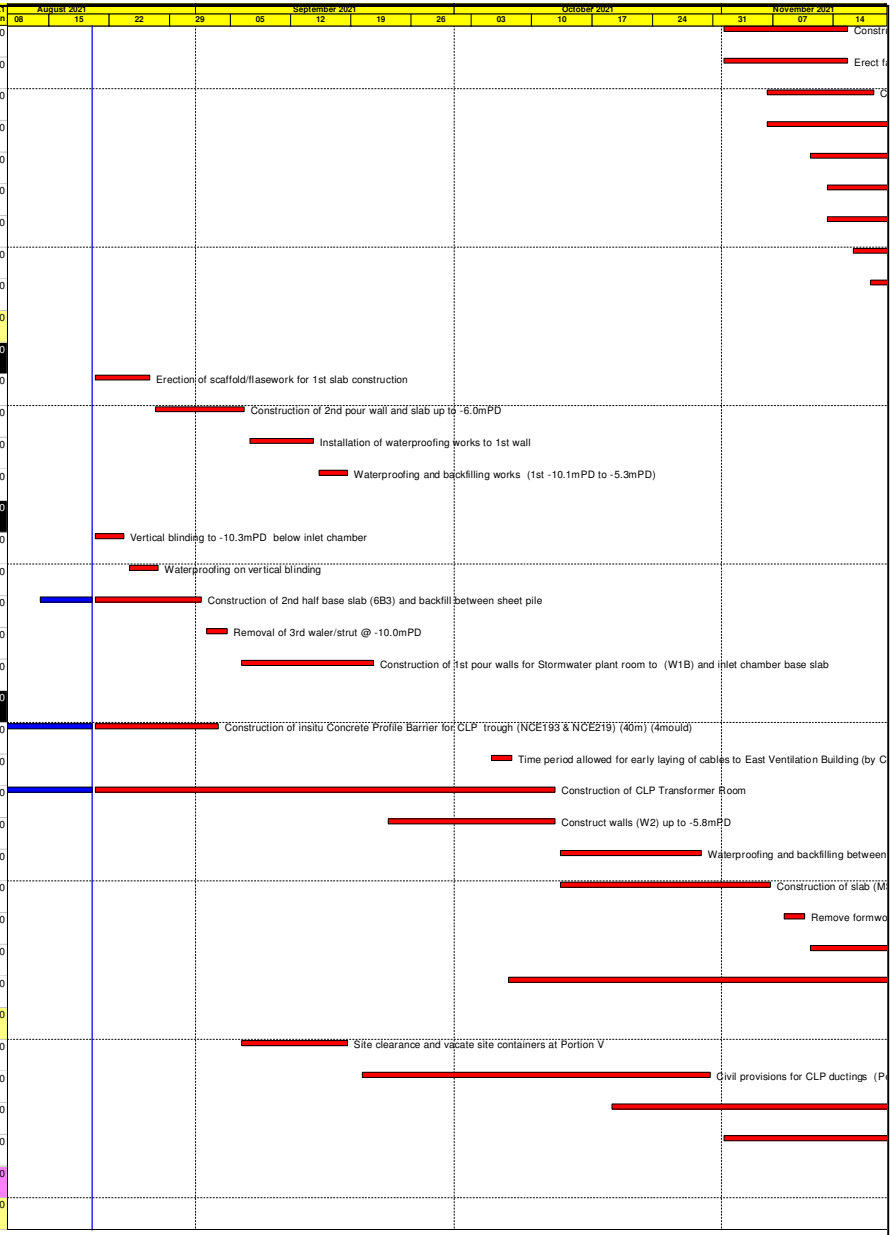
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2
and Associated Works

3 Months Rolling Programme Update

Date	Revision	Checked	Approved
20-Aug-21			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Duration
P2-Cal.C	LC18348-20	Construction of Roof Slab No. 2	13.0	13.0	01-Nov-21	15-Nov-21	-307.5	0%	0.0
P2-Cal.C	LC18348-21	Erect falsework for Roof Slab No. 3	13.0	13.0	01-Nov-21	15-Nov-21	-309.5	0%	0.0
P2-Cal.C	LC18310	Construction of pour wall 3rd - bay 10	11.0	11.0	06-Nov-21	18-Nov-21	-285.5	0%	0.0
P2-Cal.C	LC18348-13	Erect falsework for Roof No. 9	13.0	13.0	06-Nov-21	20-Nov-21	-294.5	0%	0.0
P2-Cal.C	LC18350	Construction of upstand wall at bay 14	10.0	10.0	11-Nov-21	22-Nov-21	-241.5	0%	0.0
P2-Cal.C	LC18348-17	Erect falsework for Roof No. 7	13.0	13.0	13-Nov-21	27-Nov-21	-293.5	0%	0.0
P2-Cal.C	LC18348-18-02	Construction of Roof Slab No. 6	13.0	13.0	13-Nov-21	27-Nov-21	-273.5	0%	0.0
P2-Cal.C	LC18348-10	Construction of Roof Slab No. 11	13.0	13.0	16-Nov-21	30-Nov-21	-299.5	0%	0.0
P2-Cal.C	LC18348-22	Construction of Roof Slab No. 3	13.0	13.0	18-Nov-21	02-Dec-21	-309.5	0%	0.0
Fixed Foam Room/Sump Pit Room/Stormwater Plant Room			118.0	91.0	26-Jun-21 A	07-Dec-21	-304.5		-19.0
Fixed Foam Room/Sump Pit Room (Team 7)			26.0	26.0	20-Aug-21	18-Sep-21	-306.5		0.0
P2-Cal.C	LC18405	Erection of scaffold/flasework for 1st slab construction	6.0	6.0	20-Aug-21	26-Aug-21	-306.5	0%	0.0
P2-Cal.C	LC18410	Construction of 2nd pour wall and slab up to -6.0mPD	9.0	9.0	27-Aug-21	06-Sep-21	-306.5	0%	0.0
P2-Cal.C	LC18395	Installation of waterproofing works to 1st wall	7.0	7.0	07-Sep-21	14-Sep-21	-306.5	0%	0.0
P2-Cal.C	LC18400	Waterproofing and backfilling works (1st -10.1mPD to -5.3mPD)	4.0	4.0	15-Sep-21	18-Sep-21	-306.5	0%	0.0
Stormwater Plant Room (Team 7 & 8)			51.0	28.0	14-Aug-21 A	21-Sep-21	-348.5		5.0
P2-Cal.C	LC18510	Vertical blinding to -10.3mPD below inlet chamber	3.0	3.0	20-Aug-21	23-Aug-21	-341.5	0%	0.0
P2-Cal.C	LC18515	Waterproofing on vertical blinding	4.0	4.0	24-Aug-21	27-Aug-21	-341.5	0%	0.0
P2-Cal.C	LC18470	Construction of 2nd half base slab (6B3) and backfill between sheet pile	14.0	11.0	14-Aug-21 A	01-Sep-21	-348.5	21.43%	-2.0
P2-Cal.C	LC18475	Removal of 3rd waler/strut @ -10.0mPD	3.0	3.0	02-Sep-21	04-Sep-21	-348.5	0%	0.0
P2-Cal.C	LC18480	Construction of 1st pour walls for Stormwater plant room to (W1B) and inlet chamber base slab	14.0	14.0	06-Sep-21	21-Sep-21	-348.5	0%	0.0
Fixed Foam Room/Sump Pit Room/Stormwater Plant Room (Up to -5.0mPD) (Team 7 & 8)			118.0	91.0	26-Jun-21 A	07-Dec-21	-304.5		-19.0
P2-Cal.C	LC18580-00	Construction of insitu Concrete Profile Barrier for CLP trough (NCE193 & NCE219) (40m) (4mould)	10.0	13.0	20-Jul-21 A	03-Sep-21	-297.5	0%	-30.0
P2-Cal.C	LC18580-12	Time period allowed for early laying of cables to East Ventilation Building (by CLP)	3.0	3.0	05-Oct-21	07-Oct-21	-301.5	0%	0.0
P2-Cal.C	LC18590	Construction of CLP Transformer Room	91.0	44.0	26-Jun-21 A	12-Oct-21	-264.5	51.65%	1.0
P2-Cal.C	LC18521	Construct walls (W2) up to -5.8mPD	16.0	16.0	23-Sep-21	12-Oct-21	-348.5	0%	0.0
P2-Cal.C	LC18521-02	Waterproofing and backfilling between inlet chamber and sheetpiles	14.0	14.0	13-Oct-21	29-Oct-21	-338.5	0%	0.0
P2-Cal.C	LC18524	Construction of slab (MS1+6B5) at -5.0mPD	21.0	21.0	13-Oct-21	06-Nov-21	-348.5	0%	0.0
P2-Cal.C	LC18524-10	Remove formworks and mass infill behind slab 6B5 up to -6.3mPD	3.0	3.0	08-Nov-21	10-Nov-21	-348.5	0%	0.0
P2-Cal.C	LC18520	Removal of 2nd waler/strut @ -4.0mPD	10.0	10.0	11-Nov-21	22-Nov-21	-348.5	0%	0.0
P2-Cal.C	LC18600	Construction of Electrical Plant Room	52.0	52.0	07-Oct-21	07-Dec-21	-304.5	0%	0.0
Footpath, Cycle Track, Road and Drainage Works P2 CH 105 - 318			97.0	97.0	06-Sep-21	03-Jan-22	-241.5		-97.0
P2-Cal.C	LC18435	Site clearance and vacate site containers at Portion V	12.0	12.0	06-Sep-21	18-Sep-21	-296.5	0%	-12.0
P2-Cal.C	LC18450	Civil provisions for CLP ductings (Portion V)	33.0	33.0	20-Sep-21	30-Oct-21	-296.5	0%	-33.0
P2-Cal.C	LC18460	Backfill for CLP cable open laying between CLP transformer Room and Pillar Boxes on CT01	42.0	42.0	19-Oct-21	06-Dec-21	-220.5	0%	-42.0
P2-Cal.C	LC18455-05	Drainage and outfall	52.0	52.0	01-Nov-21	03-Jan-22	-296.5	0%	-52.0
E&M Works			76.0	76.0	05-Oct-21	05-Jan-22	-266.5		0.0
Stormwater Plant Room			76.0	76.0	05-Oct-21	05-Jan-22	-266.5		0.0



Actual Work
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Critical Remaining Work
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NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2
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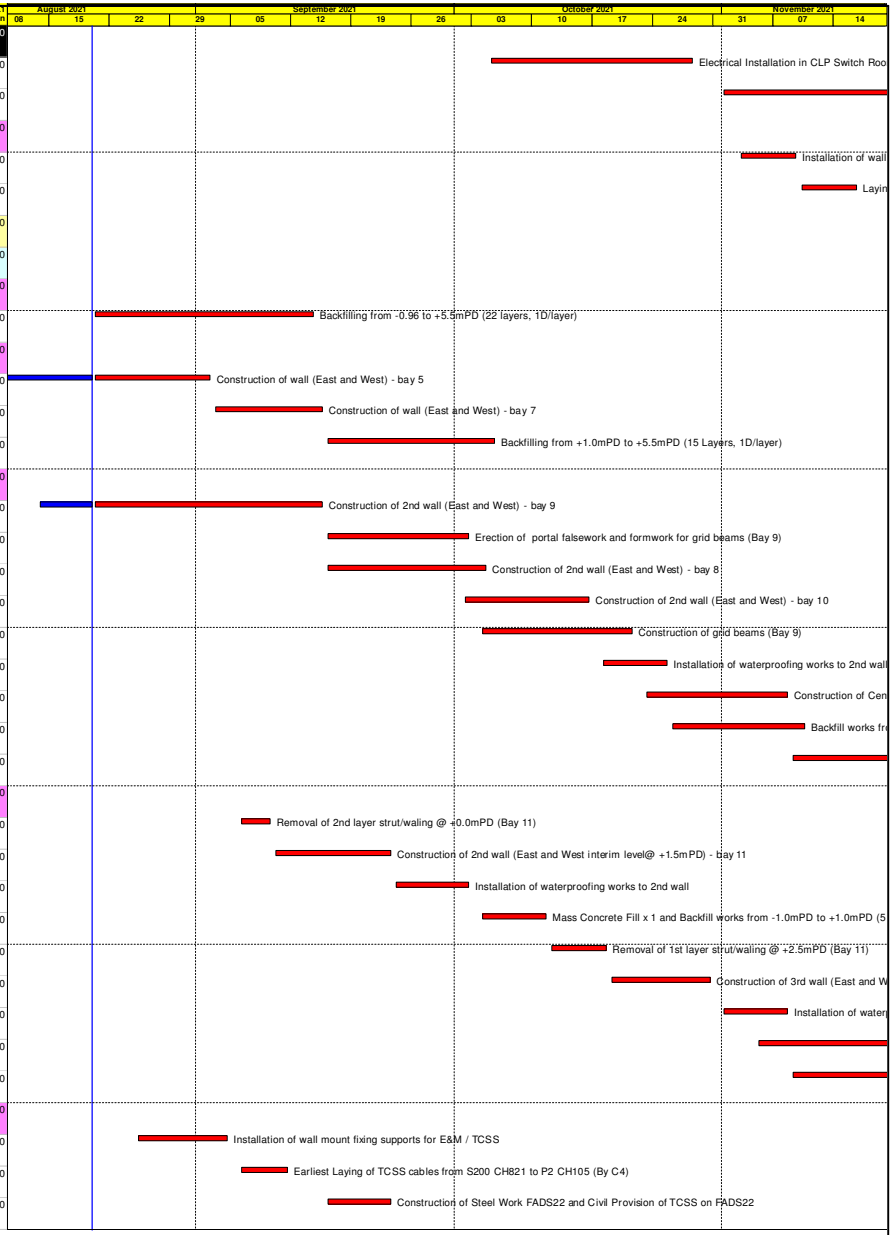
20-Aug-21			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Duration
CLP Switch Room/ Electrical Plant Room Installation			76.0	76.0	05-Oct-21	05-Jan-22	-266.5		0.0
P2-Cal.C	LC19458	Electrical Installation in CLP Switch Room including self T&C and Submission of WR1	20.0	20.0	05-Oct-21	28-Oct-21	-264.5	0%	18.0
P2-Cal.C	LC19462	Handover to CLP	54.0	54.0	01-Nov-21	05-Jan-22	-266.5	0%	-16.0
Remaining Works			12.0	12.0	03-Nov-21	16-Nov-21	-194.5		0.0
P2-Cal.C	LC10870	Installation of wall mount fixing supports for E&M / TCSS	6.0	6.0	03-Nov-21	09-Nov-21	-194.5	0%	0.0
P2-Cal.C	LC10880	Laying of TCSS cables from P2 CH105 to P2 CH318 (By C4)	6.0	6.0	10-Nov-21	16-Nov-21	-194.5	0%	0.0
U-Trough A and B			268.0	98.0	07-Dec-20 A	15-Dec-21	463.0		-11.0
"U-Trough A Type 3 and U-Trough B Type 4" from S200 CH821 to P2 CH105			125.0	98.0	31-Jul-21 A	15-Dec-21	-196.5		6.0
Structure S200 CH821 - CH845 (No Waler/Strut) (team 14)			22.0	22.0	20-Aug-21	14-Sep-21	-186.5		0.0
P2-Cal.C	LC21200	Backfilling from -0.96 to +5.5mPD (22 layers, 1D/layer)	22.0	22.0	20-Aug-21	14-Sep-21	-186.5	0%	0.0
Structure S200 CH845 - CH926 (1 Layer Waler/Strut) (team 15)			54.0	38.0	10-Aug-21 A	05-Oct-21	-202.5		-17.0
P2-Cal.C	LC21150	Construction of wall (East and West) - bay 5	11.0	12.0	10-Aug-21 A	02-Sep-21	-302.5	0%	-10.0
P2-Cal.C	LC21160	Construction of wall (East and West) - bay 7	11.0	11.0	03-Sep-21	15-Sep-21	-302.5	0%	0.0
P2-Cal.C	LC21190	Backfilling from +1.0mPD to +5.5mPD (15 Layers, 1D/layer)	15.0	15.0	16-Sep-21	05-Oct-21	-202.5	0%	0.0
Structure S200 CH926 - CH969 (2 Layer Waler/Strut) (team 16)			106.0	79.0	14-Aug-21 A	23-Nov-21	-216.5		1.0
P2-Cal.C	LC25860	Construction of 2nd wall (East and West) - bay 9	12.0	23.0	14-Aug-21 A	15-Sep-21	-302.5	0%	-16.0
P2-Cal.C	LC25970	Erection of portal falsework and formwork for grid beams (Bay 9)	13.0	13.0	16-Sep-21	02-Oct-21	-188.5	0%	13.0
P2-Cal.C	LC25840	Construction of 2nd wall (East and West) - bay 8	14.0	14.0	16-Sep-21	04-Oct-21	-302.5	0%	0.0
P2-Cal.C	LC25880	Construction of 2nd wall (East and West) - bay 10	12.0	12.0	02-Oct-21	16-Oct-21	-302.5	0%	0.0
P2-Cal.C	LC25980	Construction of grid beams (Bay 9)	15.0	15.0	04-Oct-21	21-Oct-21	-188.5	0%	11.0
P2-Cal.C	LC25920	Installation of waterproofing works to 2nd wall	7.0	7.0	18-Oct-21	25-Oct-21	-232.5	0%	0.0
P2-Cal.C	LC25960	Construction of Central Feature Wall - bay 10	14.0	14.0	23-Oct-21	08-Nov-21	-302.5	0%	0.0
P2-Cal.C	LC25940	Backfill works from +1.5mPD to +5.5mPD (14 layers, 1D/layer)	14.0	14.0	26-Oct-21	10-Nov-21	-232.5	0%	0.0
P2-Cal.C	LC25970-10	Erection of portal falsework and formwork for grid beams (Bay 10)	13.0	13.0	09-Nov-21	23-Nov-21	-216.5	0%	-13.0
Structure S200 CH965 - P2 CH105 (3 Layer Waler/Strut) (team 14)			67.0	67.0	06-Sep-21	25-Nov-21	-245.5		16.0
P2-Cal.C	LC26160	Removal of 2nd layer strut/waling @ +0.0mPD (Bay 11)	4.0	4.0	06-Sep-21	09-Sep-21	-298.5	0%	0.0
P2-Cal.C	LC26180	Construction of 2nd wall (East and West interim level@ +1.5mPD) - bay 11	11.0	11.0	10-Sep-21	23-Sep-21	-298.5	0%	0.0
P2-Cal.C	LC26220	Installation of waterproofing works to 2nd wall	7.0	7.0	24-Sep-21	02-Oct-21	-298.5	0%	0.0
P2-Cal.C	LC26240	Mass Concrete Fill x 1 and Backfill works from -1.0mPD to +1.0mPD (5 layers, 1D/layer)	7.0	7.0	04-Oct-21	11-Oct-21	-298.5	0%	0.0
P2-Cal.C	LC26260	Removal of 1st layer strut/waling @ +2.5mPD (Bay 11)	5.0	5.0	12-Oct-21	18-Oct-21	-298.5	0%	0.0
P2-Cal.C	LC26280	Construction of 3rd wall (East and West) - bay 11	11.0	11.0	19-Oct-21	30-Oct-21	-298.5	0%	0.0
P2-Cal.C	LC26320	Installation of waterproofing works to 3rd wall	7.0	7.0	01-Nov-21	08-Nov-21	-245.5	0%	0.0
P2-Cal.C	LC26350	Construction of Central Feature Wall - bay 11	14.0	14.0	05-Nov-21	20-Nov-21	-302.5	0%	0.0
P2-Cal.C	LC26340	Backfill works from +1.0mPD to +5.5mPD (15 Layers, 1D/layer)	15.0	15.0	09-Nov-21	25-Nov-21	-245.5	0%	0.0
Remaning Works			115.0	94.0	31-Jul-21 A	15-Dec-21	-196.5		-30.0
P2-Cal.C	LC26403	Installation of wall mount fixing supports for E&M / TCSS	10.0	10.0	25-Aug-21	04-Sep-21	-185.5	0%	0.0
P2-Cal.C	LC26403-01	Earliest Laying of TCSS cables from S200 CH821 to P2 CH105 (By C4)	6.0	6.0	06-Sep-21	11-Sep-21	-185.5	0%	0.0
P2-Cal.C	LC26430	Construction of Steel Work FADS22 and Civil Provision of TCSS on FADS22	6.0	6.0	16-Sep-21	23-Sep-21	-133.5	0%	0.0



Actual Work
Remaining Work
Critical Remaining Work
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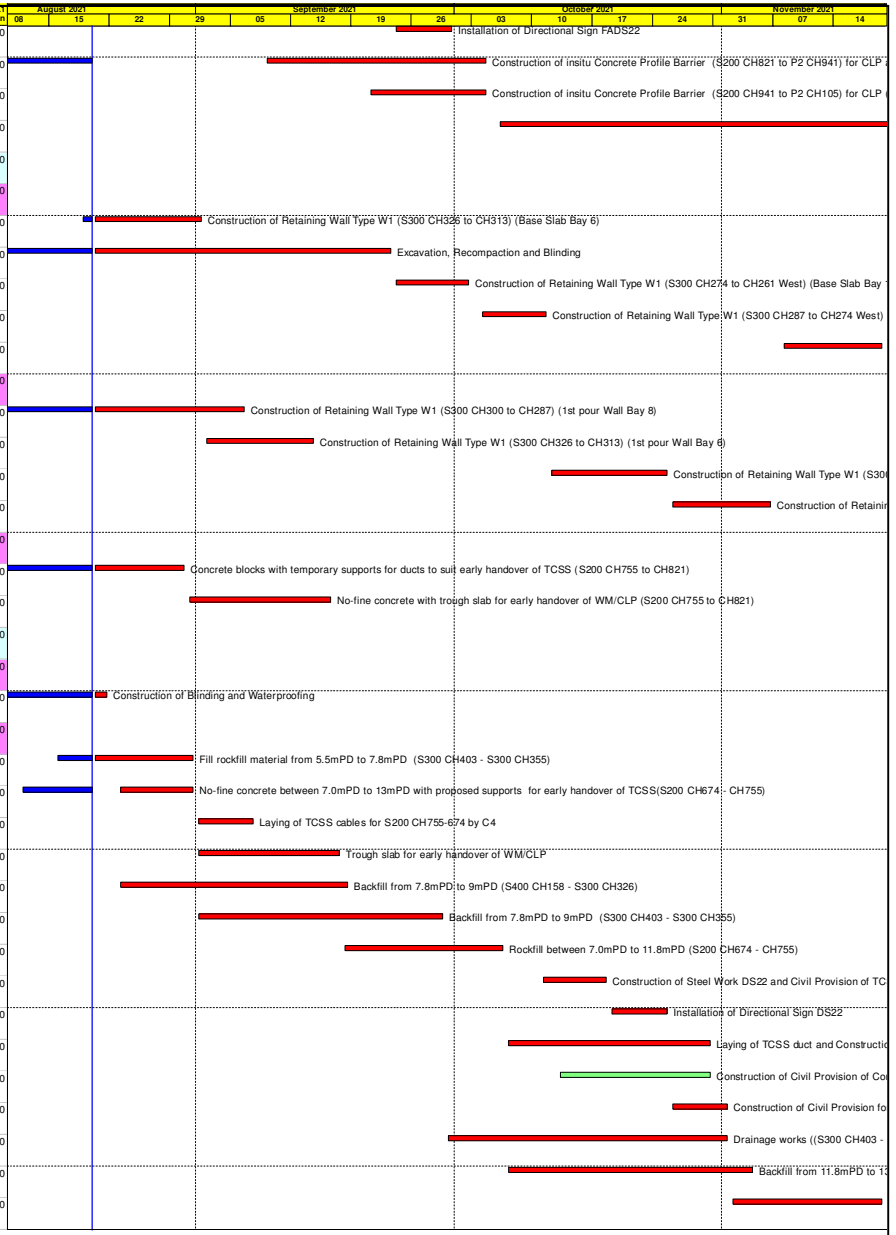
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2
and Associated Works

3 Months Rolling Programme Update

Date	Revision	Checked	Approved
20-Aug-21			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Duration
P2-Cal.C	LC26440	Installation of Directional Sign FADS22	6.0	6.0	24-Sep-21	30-Sep-21	-133.5	0%	0.0
P2-Cal.C	LC26390	Construction of insitu Concrete Profile Barrier (S200 CH821 to P2 CH941) for CLP and WM (4 moulds) (NCE193 & NCE219)	15.0	20.0	31-Jul-21 A	04-Oct-21	-301.5	0%	-39.0
P2-Cal.C	LC26400-10	Construction of insitu Concrete Profile Barrier (S200 CH941 to P2 CH105) for CLP (4moulds) (NCE193 & NCE219)	10.0	10.0	21-Sep-21	04-Oct-21	-301.5	0%	0.0
P2-Cal.C	LC26410	Construction of Road and Drains (S200 CH821 to P2 CH926)	60.0	60.0	06-Oct-21	15-Dec-21	-202.5	0%	0.0
Retaining Wall Type W1 S200 CH755 - CH821/ S300 CH326 - CH261			229.0	76.0	05-Feb-21 A	19-Nov-21	-340.5		-18.0
Construction of Base Slab (team 17-22)			229.0	76.0	05-Feb-21 A	19-Nov-21	-340.5		-68.0
P2-Cal.C	LC21440-060	Construction of Retaining Wall Type W1 (S300 CH326 to CH313) (Base Slab Bay 6)	7.0	11.0	19-Aug-21 A	01-Sep-21	-333.5	0%	-5.0
P2-Cal.C	LC21440-01	Excavation, Recompaction and Blinding	15.0	29.0	05-Feb-21 A	23-Sep-21	-340.5	0%	-171.0
P2-Cal.C	LC21440-064	Construction of Retaining Wall Type W1 (S300 CH274 to CH261 West) (Base Slab Bay 10)	7.0	7.0	24-Sep-21	02-Oct-21	-340.5	0%	0.0
P2-Cal.C	LC21440-063	Construction of Retaining Wall Type W1 (S300 CH287 to CH274 West) (Base Slab Bay 9)	7.0	7.0	04-Oct-21	11-Oct-21	-340.5	0%	0.0
P2-Cal.C	LC21440-061	Construction of Retaining Wall Type W1 (S300 CH313 to CH300) (Base Slab Bay 7)	11.0	11.0	08-Nov-21	19-Nov-21	-340.5	0%	-4.0
Construction of 1st Pour Wall (team 17-22)			78.0	65.0	06-Aug-21 A	06-Nov-21	-340.5		-2.0
P2-Cal.C	LC21440-112	Construction of Retaining Wall Type W1 (S300 CH300 to CH287) (1st pour Wall Bay 8)	11.0	15.0	06-Aug-21 A	06-Sep-21	-319.5	0%	-16.0
P2-Cal.C	LC21440-110	Construction of Retaining Wall Type W1 (S300 CH326 to CH313) (1st pour Wall Bay 6)	11.0	11.0	02-Sep-21	14-Sep-21	-333.5	0%	0.0
P2-Cal.C	LC21440-114	Construction of Retaining Wall Type W1 (S300 CH274 to CH261 West) (1st pour Wall Bay 10)	11.0	11.0	12-Oct-21	25-Oct-21	-340.5	0%	0.0
P2-Cal.C	LC21440-113	Construction of Retaining Wall Type W1 (S300 CH287 to CH274 West) (1st pour Wall Bay 9)	11.0	11.0	26-Oct-21	06-Nov-21	-340.5	0%	0.0
Remaining Works			42.0	24.0	29-Jul-21 A	16-Sep-21	-288.5		-24.0
P2-Cal.C	LC21450-00	Concrete blocks with temporary supports for ducts to suit early handover of TCSS (S200 CH755 to CH821)	9.0	9.0	29-Jul-21 A	30-Aug-21	-288.5	0%	-19.0
P2-Cal.C	LC21450-10	No-fine concrete with trough slab for early handover of WM/CLP (S200 CH755 to CH821)	15.0	15.0	31-Aug-21	16-Sep-21	-288.5	0%	-5.0
"U-Trough A Type 1 & 2" from S200 CH674 - CH821, S100/CH280, S300/CH403.5 & S400/CH158.1			263.0	93.0	07-Dec-20 A	09-Dec-21	468.0		-6.0
ELS (S300/CH403.5 & S400/CH158.1)			3.0	2.0	07-Dec-20 A	21-Aug-21	-255.5		-205.0
P2-Cal.C	LC22830	Construction of Blinding and Waterproofing	3.0	2.0	07-Dec-20 A	21-Aug-21	-255.5	93.8%	-205.0
Remaining Works			99.0	93.0	12-Aug-21 A	09-Dec-21	468.0		39.0
P2-Cal.C	LC23355	Fill rockfill material from 5.5mPD to 7.8mPD (S300 CH403 - S300 CH355)	14.0	10.0	16-Aug-21 A	31-Aug-21	-280.5	28.57%	0.0
P2-Cal.C	LC23350-00-00	No-fine concrete between 7.0mPD to 13mPD with proposed supports for early handover of TCSS(S200 CH674 - CH755)	16.0	8.0	12-Aug-21 A	31-Aug-21	-289.5	50%	-1.0
P2-Cal.C	LC23440	Laying of TCSS cables for S200 CH755-674 by C4	6.0	6.0	01-Sep-21	07-Sep-21	-259.5	0%	0.0
P2-Cal.C	LC23350-00-00-01	Trough slab for early handover of WM/CLP	15.0	15.0	01-Sep-21	17-Sep-21	-289.5	0%	-15.0
P2-Cal.C	LC23353-00	Backfill from 7.8mPD to 9mPD (S400 CH158 - S300 CH326)	24.0	24.0	23-Aug-21	18-Sep-21	-244.5	0%	0.0
P2-Cal.C	LC23355-00	Backfill from 7.8mPD to 9mPD (S300 CH403 - S300 CH355)	24.0	24.0	01-Sep-21	29-Sep-21	-252.5	0%	0.0
P2-Cal.C	LC23350-00-001	Rockfill between 7.0mPD to 11.8mPD (S200 CH674 - CH755)	14.0	14.0	18-Sep-21	06-Oct-21	-268.5	0%	0.0
P2-Cal.C	LC23360	Construction of Steel Work DS22 and Civil Provision of TCSS on DS22	6.0	6.0	11-Oct-21	18-Oct-21	-123.5	0%	0.0
P2-Cal.C	LC23370	Installation of Directional Sign DS22	6.0	6.0	19-Oct-21	25-Oct-21	-123.5	0%	0.0
P2-Cal.C	LC23460	Laying of TCSS duct and Construction of TCSS Drawpits for S300 CH403 - S300 CH355	20.0	20.0	07-Oct-21	30-Oct-21	-211.5	0%	0.0
P2-Cal.C	LC23410-01	Construction of Civil Provision of Controller Cabinet and Earthing Provision	15.0	15.0	13-Oct-21	30-Oct-21	502.0	0%	0.0
P2-Cal.C	LC23410	Construction of Civil Provision for CCTV on High Mast	6.0	6.0	26-Oct-21	01-Nov-21	-123.5	0%	0.0
P2-Cal.C	LC23355-10	Drainage works ((S300 CH403 - S300 CH355 and S400 CH158 - S300 CH326)	26.0	26.0	30-Sep-21	01-Nov-21	-252.5	0%	0.0
P2-Cal.C	LC23350-00-01	Backfill from 11.8mPD to 13mPD (S200 CH755 - S200 CH674/S100 CH280)	24.0	24.0	07-Oct-21	04-Nov-21	-268.5	0%	0.0
P2-Cal.C	LC23350-017	Insitu Concrete Profile Barrier Construction for S300 CH403-S300 CH355 (6moulds) (NCE193&NCE219)	16.0	16.0	02-Nov-21	19-Nov-21	-252.5	0%	0.0



Actual Work
Remaining Work
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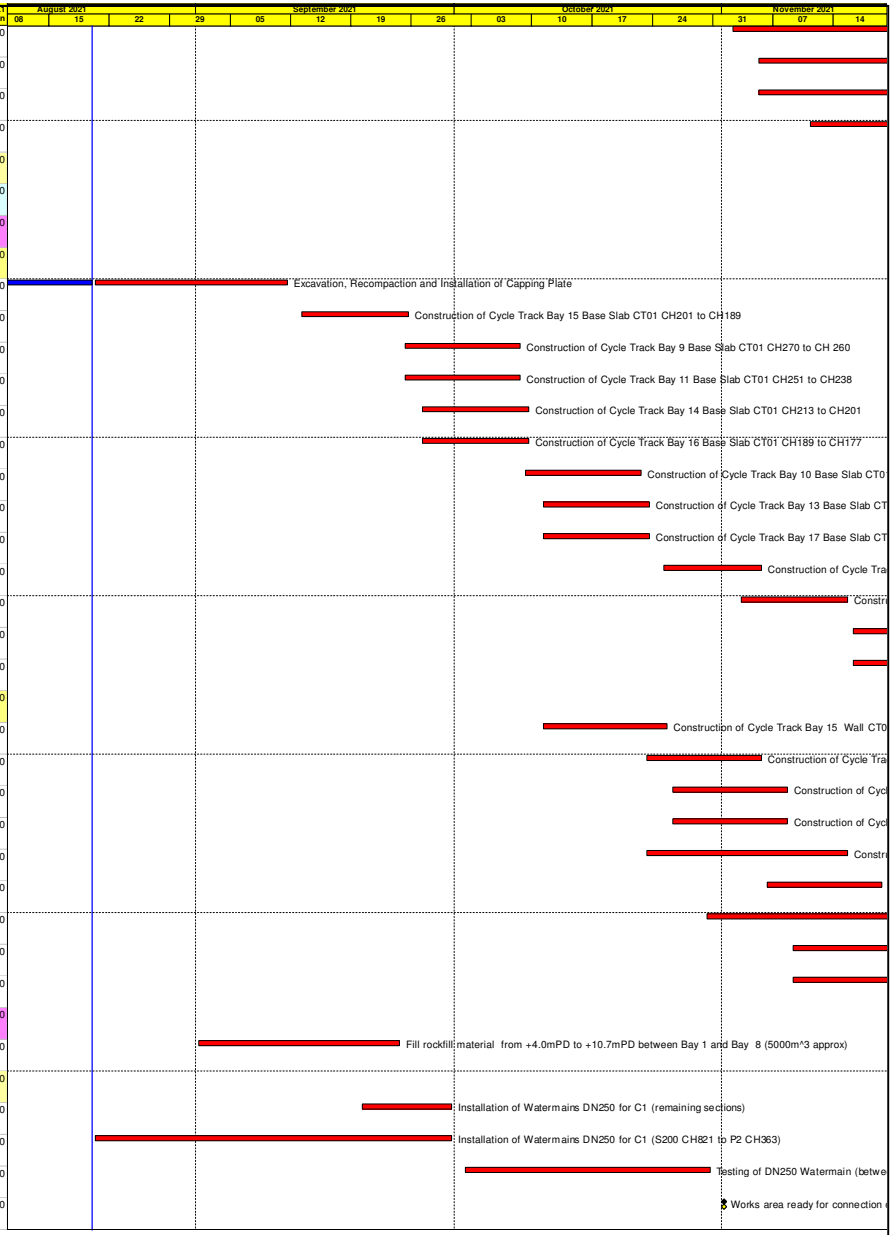
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works

3 Months Rolling Programme Update

Date	Revision	Checked	Approved
20-Aug-21			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Duration
P2-Cal.C	LC23460-1	TCSS and control cabinet installation for Sign Gantry DS22 (by C4)	20.0	20.0	02-Nov-21	24-Nov-21	-232.5	0%	0.0
P2-Cal.C	LC23350-012	Drainage works (S200 CH755 - CH674)	26.0	26.0	05-Nov-21	04-Dec-21	-268.5	0%	0.0
P2-Cal.C	LC23350-01	Construction of Insitu Concrete Profile Barrier for S200 CH755-CH674 (3moulds for 8 bays) (NCE193 & NCE219)	27.0	27.0	05-Nov-21	06-Dec-21	-260.5	0%	0.0
P2-Cal.C	LC23350-015	Insitu Concrete Profile Barrier Construction for S400 CH158-S300 CH326 (6moulds) (NCE193&NCE219)	25.0	25.0	11-Nov-21	09-Dec-21	-252.5	0%	0.0
U-Trough C Structures			292.0	83.0	09-Nov-20 A	27-Nov-21	-265.5		-6.0
"U-Trough C Type 1, 2, 3 & 4" from CT01 CH117.156 - CH366			292.0	83.0	09-Nov-20 A	27-Nov-21	-265.5		-6.0
ELS & Structure "U-Trough C Type 1, 2, 3 & 4" from CT01 CH117.156 - CH366			292.0	83.0	09-Nov-20 A	27-Nov-21	-265.5		-6.0
Base Slab (Team 29)			292.0	83.0	09-Nov-20 A	27-Nov-21	-276.5		-26.0
P2-Cal.C	LC23470	Excavation, Recompaction and Installation of Capping Plate	35.0	20.0	09-Nov-20 A	11-Sep-21	-277.5	42.86%	-215.0
P2-Cal.C	LC23620	Construction of Cycle Track Bay 15 Base Slab CT01 CH201 to CH189	11.0	11.0	13-Sep-21	25-Sep-21	-277.5	0%	0.0
P2-Cal.C	LC23560	Construction of Cycle Track Bay 9 Base Slab CT01 CH270 to CH 260	11.0	11.0	25-Sep-21	08-Oct-21	-280.5	0%	0.0
P2-Cal.C	LC23580	Construction of Cycle Track Bay 11 Base Slab CT01 CH251 to CH238	11.0	11.0	25-Sep-21	08-Oct-21	-263.5	0%	0.0
P2-Cal.C	LC23610	Construction of Cycle Track Bay 14 Base Slab CT01 CH213 to CH201	11.0	11.0	27-Sep-21	09-Oct-21	-248.5	0%	0.0
P2-Cal.C	LC23630	Construction of Cycle Track Bay 16 Base Slab CT01 CH189 to CH177	11.0	11.0	27-Sep-21	09-Oct-21	-277.5	0%	0.0
P2-Cal.C	LC23570	Construction of Cycle Track Bay 10 Base Slab CT01 CH260 to CH251	11.0	11.0	09-Oct-21	22-Oct-21	-280.5	0%	0.0
P2-Cal.C	LC23600	Construction of Cycle Track Bay 13 Base Slab CT01 CH226 to CH213	11.0	11.0	11-Oct-21	23-Oct-21	-246.5	0%	0.0
P2-Cal.C	LC23640	Construction of Cycle Track Bay 17 Base Slab CT01 CH177 to CH165	11.0	11.0	11-Oct-21	23-Oct-21	-277.5	0%	0.0
P2-Cal.C	LC23650	Construction of Cycle Track Bay 18 Base Slab CT01 CH165 to CH153	11.0	11.0	25-Oct-21	05-Nov-21	-277.5	0%	0.0
P2-Cal.C	LC23670	Construction of Cycle Track Bay 20 Base Slab CT01 CH141 to CH129	11.0	11.0	03-Nov-21	15-Nov-21	-277.5	0%	0.0
P2-Cal.C	LC23660	Construction of Cycle Track Bay 19 Base Slab CT01 CH153 to CH141	11.0	11.0	16-Nov-21	27-Nov-21	-277.5	0%	0.0
P2-Cal.C	LC23680	Construction of Cycle Track Bay 21 Base Slab CT01 CH129 to CH117	11.0	11.0	16-Nov-21	27-Nov-21	-277.5	0%	0.0
1st Wall (Team 30)			36.0	36.0	11-Oct-21	22-Nov-21	-260.5		39.0
P2-Cal.C	LC23830	Construction of Cycle Track Bay 15 Wall CT01 CH201 to CH189	12.0	12.0	11-Oct-21	25-Oct-21	-272.5	0%	0.0
P2-Cal.C	LC23775	Construction of Cycle Track Bay 9 Wall (West) CT01 CH270 - CH260	12.0	12.0	23-Oct-21	05-Nov-21	-270.5	0%	0.0
P2-Cal.C	LC23820	Construction of Cycle Track Bay 14 Wall CT01 CH213 to CH201	12.0	12.0	26-Oct-21	08-Nov-21	-260.5	0%	0.0
P2-Cal.C	LC23840	Construction of Cycle Track Bay 16 Wall CT01 CH189 to CH177	12.0	12.0	26-Oct-21	08-Nov-21	-272.5	0%	0.0
P2-Cal.C	LC23770	Construction of Cycle Track Bay 9 Wall (East) CT01 CH270 to CH 260	20.0	20.0	23-Oct-21	15-Nov-21	-280.5	0%	0.0
P2-Cal.C	LC23795	Construction of Cycle Track Bay 11 Wall (West) CT01 CH251 to CH238	12.0	12.0	06-Nov-21	19-Nov-21	-270.5	0%	0.0
P2-Cal.C	LC23790	Construction of Cycle Track Bay 11 Wall (East) CT01 CH251 to CH238	20.0	20.0	30-Oct-21	22-Nov-21	-280.5	0%	0.0
P2-Cal.C	LC23810	Construction of Cycle Track Bay 13 Wall CT01 CH226 to CH213	12.0	12.0	09-Nov-21	22-Nov-21	-260.5	0%	0.0
P2-Cal.C	LC23850	Construction of Cycle Track Bay 17 Wall CT01 CH177 to CH165	12.0	12.0	09-Nov-21	22-Nov-21	-272.5	0%	0.0
Footpath, Cycle Track, Road and Drainage Works CT01 CH117.156 - CH366			20.0	20.0	01-Sep-21	24-Sep-21	-280.5		0.0
P2-Cal.C	LC24110	Fill rockfill material from +4.0mPD to +10.7mPD between Bay 1 and Bay 8 (5000m^3 approx)	20.0	20.0	01-Sep-21	24-Sep-21	-280.5	0%	0.0
Assoicated Works			109.0	113.0	25-Aug-21 A	05-Jan-22	448.0		11.0
P2-Cal.C	LC25550	Installation of Watermains DN250 for C1 (remaining sections)	9.0	9.0	20-Sep-21	30-Sep-21	-232.5	0%	3.0
P2-Cal.C	LC25235	Installation of Watermains DN250 for C1 (S200 CH821 to P2 CH363)	45.0	35.0	25-Aug-21 A	30-Sep-21	-232.5	22.22%	14.0
P2-Cal.C	LC25550-02	Testing of DN250 Watermain (between C1 and C3 connections)	24.0	24.0	02-Oct-21	30-Oct-21	-212.5	0%	0.0
P2-Cal.C	LC25550-04	Works area ready for connection of watermain by C3	0.0	0.0	01-Nov-21		-212.5	0%	0.0



Actual Work
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NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2
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3 Months Rolling Programme Update

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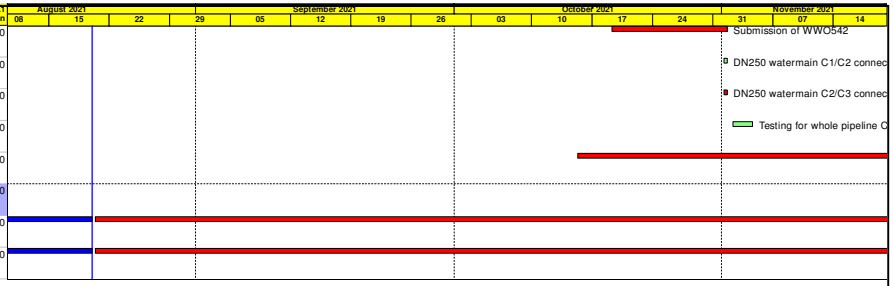
20-Aug-21			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Duration
P2-Cal.A	LC25570	Submission of WWO542	14.0	14.0	19-Oct-21	01-Nov-21	-264.5	0%	0.0
P2-Cal.C	LC25550-03	DN250 watermain C1/C2 connection by C1	1.0	1.0	01-Nov-21	01-Nov-21	498.0	0%	0.0
P2-Cal.C	LC25550-05	DN250 watermain C2/C3 connection by C3	1.0	1.0	01-Nov-21	01-Nov-21	-212.5	0%	0.0
P2-Cal.C	LC25550-06	Testing for whole pipeline C1/C2/C3 before final connection	3.0	3.0	02-Nov-21	04-Nov-21	498.0	0%	0.0
P2-Cal.C	LC25210-05	Architectural Finishes for Internal wall of U-trough structure SR2 CH200 - 250 and P2 CH430-500 (VE and PC Panel)	68.0	68.0	15-Oct-21	05-Jan-22	-275.5	0%	6.0
Section 4 of the Works - Preservation and Protection of Existing Trees			1563.0	315.0	12-Jan-17 A	30-Jun-22	-391.5		-433.0
P2-Cal.A	LC25260	Preservation and Protection of Existing Trees	1451.0	315.0	12-Jan-17 A	30-Jun-22	-391.5	78.29%	-545.0
P2-Cal.A	LC25280	Nursery Transplanted Trees at the Contractor's holding nursery	1177.0	315.0	28-Apr-17 A	30-Jun-22	-391.5	73.24%	-713.0



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NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2
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3 Months Rolling Programme Update

Date	Revision	Checked	Approved
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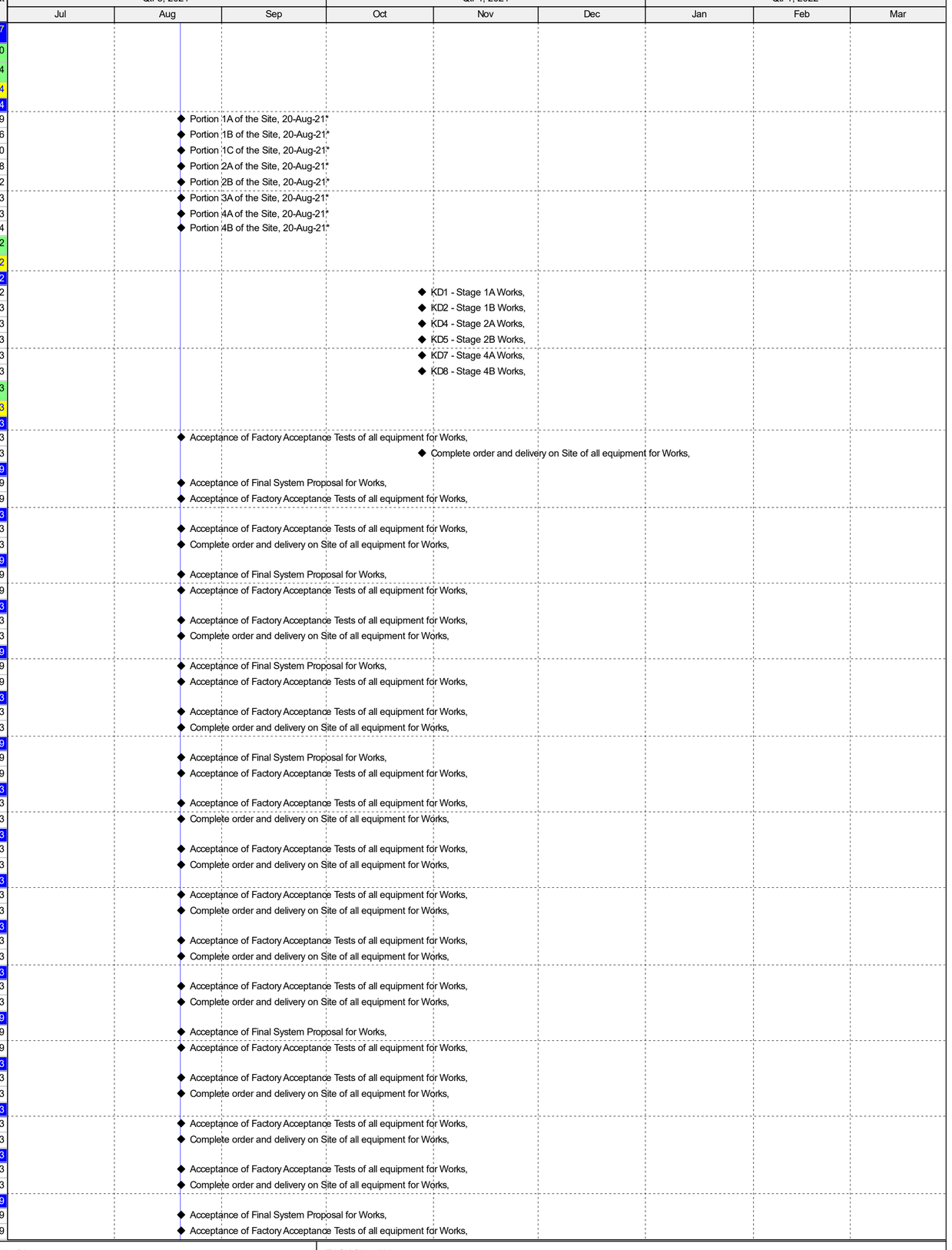
NE/2017/02

High Level 3 Months Look Ahead Programme			
Activities	Sep -21	Oct -21	Nov-21
Trial pit			
Underground utilities detection			
Temporary traffic arrangement Setup			
Road construction			
Asphalt Paving			
Pier, Staircase and lift shaft construction			
Bridge Construction			

Activity ID	Activity Name	Planned Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float
NE/2017/06	NE/2017/06 TKO-LTT TCSS_3MRP	84	57	0%	09-Aug-21 A	28-Oct-21	677
NE/2017/06.CW	Contract Award / Commencement of Works	0	0	0%			0
NE/2017/06.AD	Access Date	0	0	0%	20-Aug-21	20-Aug-21	-84
NE/2017/06.AD.000	General	0	0	0%	20-Aug-21	20-Aug-21	-84
NE/2017/06.AD.000.AD	Access Date	0	0	0%	20-Aug-21	20-Aug-21	-84
DWP10670	Portion 1A of the Site	0	0	0%	20-Aug-21*		-119
DWP10672	Portion 1B of the Site	0	0	0%	20-Aug-21*		-116
DWP10674	Portion 1C of the Site	0	0	0%	20-Aug-21*		-170
DWP10676	Portion 2A of the Site	0	0	0%	20-Aug-21*		-108
DWP10678	Portion 2B of the Site	0	0	0%	20-Aug-21*		-112
DWP10680	Portion 3A of the Site	0	0	0%	20-Aug-21*		-153
DWP10682	Portion 4A of the Site	0	0	0%	20-Aug-21*		-123
DWP10684	Portion 4B of the Site	0	0	0%	20-Aug-21*		-84
NE/2017/06.KD	Key Date and Stages / Sections of the Achievement	0	0	0%	28-Oct-21	28-Oct-21	-122
NE/2017/06.KD.000	General	0	0	0%	28-Oct-21	28-Oct-21	-122
NE/2017/06.KD.000.03	Key Date and Stages / Sections of the Achievement	0	0	0%	28-Oct-21	28-Oct-21	-122
DWP8100	KD1 - Stage 1A Works	0	0	0%		28-Oct-21*	-122
DWP8110	KD2 - Stage 1B Works	0	0	0%		28-Oct-21*	-123
DWP8130	KD4 - Stage 2A Works	0	0	0%		28-Oct-21*	-123
DWP8140	KD5 - Stage 2B Works	0	0	0%		28-Oct-21*	-123
DWP8160	KD7 - Stage 4A Works	0	0	0%		28-Oct-21*	-123
DWP8170	KD8 - Stage 4B Works	0	0	0%		28-Oct-21*	-123
NE/2017/06.MD	Cost Centre Milestone Dates	57	57	0%	20-Aug-21	28-Oct-21	263
NE/2017/06.MD.1	General	57	57	0%	20-Aug-21	28-Oct-21	263
NE/2017/06.MD.1.1	CC B - Central System - TKOLTT	70	70	0%	20-Aug-21	28-Oct-21	-123
DWP8850	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP8860	Complete order and delivery on Site of all equipment for Works	0	0	0%		28-Oct-21	-123
NE/2017/06.MD.1.2	CC B1 - Central System - CBL	0	0	0%	20-Aug-21	20-Aug-21	379
DWP8900	Acceptance of Final System Proposal for Works	0	0	0%		20-Aug-21	379
DWP8910	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	379
NE/2017/06.MD.1.3	CC C - Traffic Control Devices - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP8970	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP8980	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.4	CC C1 - Traffic Control Devices - CBL	0	0	0%	20-Aug-21	20-Aug-21	379
DWP9020	Acceptance of Final System Proposal for Works	0	0	0%		20-Aug-21	379
DWP9030	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	379
NE/2017/06.MD.1.5	CC D - Communication System - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP9150	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9160	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.6	CC D1 - Communication System - CBL	0	0	0%	20-Aug-21	20-Aug-21	379
DWP9080	Acceptance of Final System Proposal for Works	0	0	0%		20-Aug-21	379
DWP9090	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	379
NE/2017/06.MD.1.7	CC E - CCTV System - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP9210	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9220	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.8	CC E1 - CCTV System - CBL	0	0	0%	20-Aug-21	20-Aug-21	379
DWP9260	Acceptance of Final System Proposal for Works	0	0	0%		20-Aug-21	379
DWP9270	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	379
NE/2017/06.MD.1.9	CC F - Building PABX System - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP9330	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9340	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.11	CC G - ET System - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP9450	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9460	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.10	CC H - PA System - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP9390	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9400	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.12	CC I - Radio System - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP9510	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9520	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.13	CC J - Detection System - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP9570	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9580	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.15	CC J1 - Detection System - CBL	0	0	0%	20-Aug-21	20-Aug-21	379
DWP9680	Acceptance of Final System Proposal for Works	0	0	0%		20-Aug-21	379
DWP9690	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	379
NE/2017/06.MD.1.14	CC K - Manual Fallback System - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP9630	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9640	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.16	CC L - Operation Facilities - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP9750	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9760	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.17	CC M - Power Distribution System - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP9810	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9820	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.18	CC M1 - Power Distribution System - CBL	0	0	0%	20-Aug-21	20-Aug-21	379
DWP9860	Acceptance of Final System Proposal for Works	0	0	0%		20-Aug-21	379
DWP9870	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	379



Actual Level of Effort | Actual Work | Remaining Work | Critical Remaining Work | ◆ Milestone

TASK filter: 3M.

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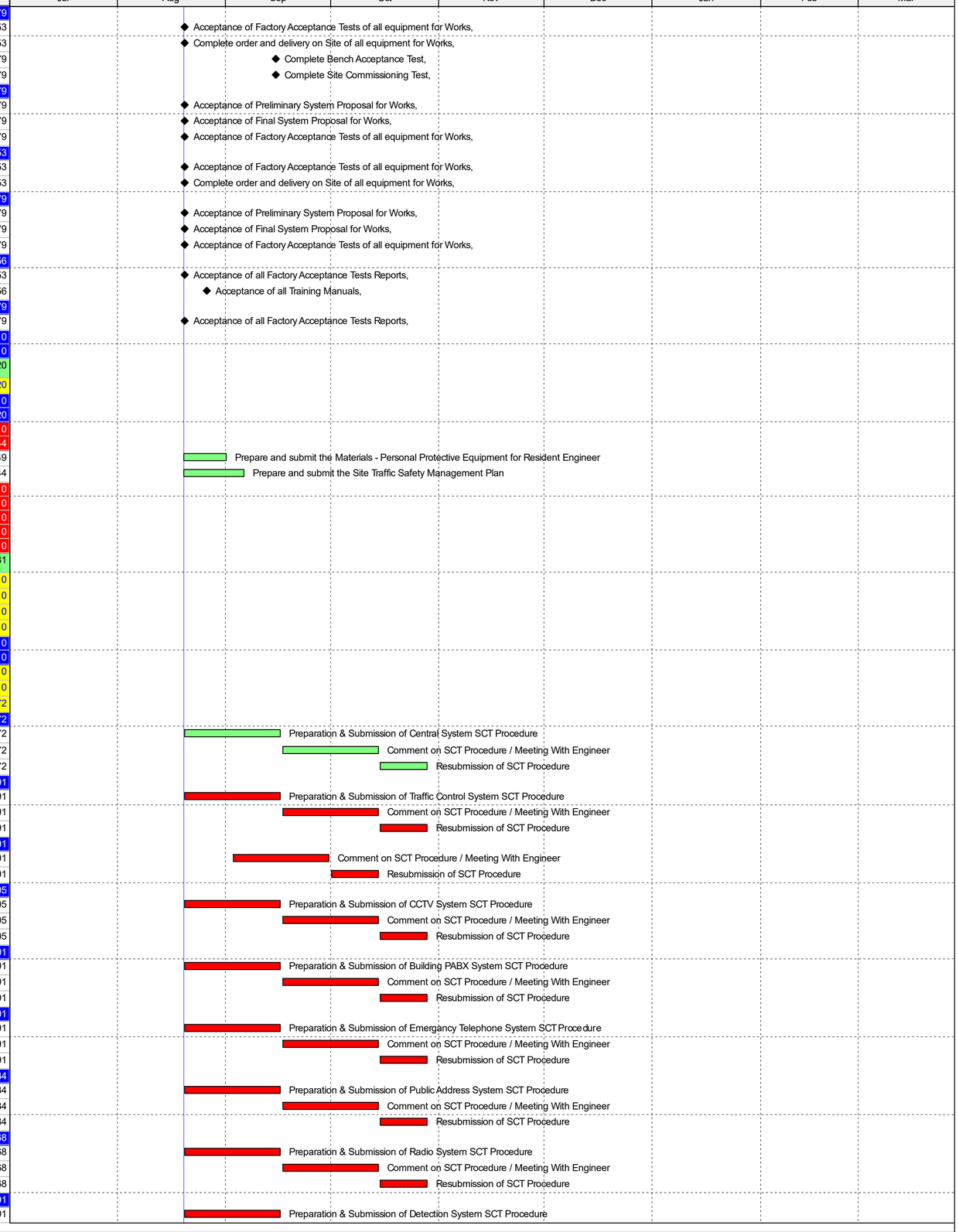
Activity ID	Activity Name	Planned Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float
NE/2017/06.MD.1.19	CC N - Speed Enforcement System - TKOLTT	26	26	0%	20-Aug-21	15-Sep-21	-79
DWP9930	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9940	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP9950	Complete Bench Acceptance Test	0	0	0%		15-Sep-21	-79
DWP9952	Complete Site Commissioning Test	0	0	0%		15-Sep-21	-79
NE/2017/06.MD.1.20	CC N1 - Speed Enforcement System - CBL	0	0	0%	20-Aug-21	20-Aug-21	379
DWP10390	Acceptance of Preliminary System Proposal for Works	0	0	0%		20-Aug-21	379
DWP10400	Acceptance of Final System Proposal for Works	0	0	0%		20-Aug-21	379
DWP10410	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	379
NE/2017/06.MD.1.21	CC O - Government Optical Fibre System - TKOLTT	0	0	0%	20-Aug-21	20-Aug-21	-53
DWP10050	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	-53
DWP10060	Complete order and delivery on Site of all equipment for Works	0	0	0%		20-Aug-21	-53
NE/2017/06.MD.1.22	CC O1 - Government Optical Fibre System - CBL	0	0	0%	20-Aug-21	20-Aug-21	379
DWP10090	Acceptance of Preliminary System Proposal for Works	0	0	0%		20-Aug-21	379
DWP10100	Acceptance of Final System Proposal for Works	0	0	0%		20-Aug-21	379
DWP10110	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%		20-Aug-21	379
NE/2017/06.MD.1.23	CC P - Training and Documentation - TKOLTT	7	7	0%	20-Aug-21	26-Aug-21	56
DWP10210	Acceptance of all Factory Acceptance Tests Reports	0	0	0%		20-Aug-21	-53
DWP10220	Acceptance of all Training Manuals	0	0	0%		26-Aug-21	56
NE/2017/06.MD.1.24	CC P1 - Training and Documentation - CBL	0	0	0%	20-Aug-21	20-Aug-21	379
DWP10150	Acceptance of all Factory Acceptance Tests Reports	0	0	0%		20-Aug-21	379
NE/2017/06.MD.1.25	CC Q - Comprehensive Maintenance Services and DLP - TKOLTT	0	0	0%			0
NE/2017/06.MD.1.26	CC Q1 - Comprehensive Maintenance Services and DLP - CBL	0	0	0%			0
NE/2017/06.1	Preliminary	14	14	0%	20-Aug-21	06-Sep-21	720
NE/2017/06.1.A0	Preliminary and General	14	14	0%	20-Aug-21	06-Sep-21	720
NE/2017/06.1.A0.GEN	General	0	0	0%			0
NE/2017/06.1.A0.3	Management System	14	14	0%	20-Aug-21	06-Sep-21	720
NE/2017/06.1.A0.3.0	QP Quality Management Plan	0	0	0%			0
NE/2017/06.1.A0.3.2	Safety Management	17	17	0%	20-Aug-21	06-Sep-21	844
GEN.0.05C	Prepare and submit the Materials - Personal Protective Equipment for Resident Engineer	12	12	0%	20-Aug-21	01-Sep-21	849
GEN.0.05D	Prepare and submit the Site Traffic Safety Management Plan	17	17	0%	20-Aug-21	06-Sep-21	844
NE/2017/06.1.A0.3.1	Environmenta; Management Plan	0	0	0%			0
NE/2017/06.1.A0.3.3	Sub-Contract Management	0	0	0%			0
NE/2017/06.1.A0.3.4	Risk Management	0	0	0%			0
NE/2017/06.1.A0.3.5	Software Management	0	0	0%			0
NE/2017/06.1.A0.3.6	Interface Management	0	0	0%			0
NE/2017/06.DS	Design Stage	57	57	0%	20-Aug-21	28-Oct-21	231
NE/2017/06.DS.PSP	Prepare / Submission of PSP for TKO-LTT TCSS and CBL TCSS	0	0	0%			0
NE/2017/06.DS.FSP	Prepare / Submission of FSP For TKO-LTT TCSS and CBL TCSS	0	0	0%			0
NE/2017/06.DS.FDS	Preparation of Functional Design Specification (FDS)	0	0	0%			0
NE/2017/06.DS.SWD	Software Development (except GUI) for TKO-LTT TCSS and CBL TCSS	0	0	0%			0
NE/2017/06.DS.SWD.2	Allocation of New Functionality to Existing or New Modules	0	0	0%			0
NE/2017/06.DS.SWD.6	Traffic Plan Coding	0	0	0%			0
NE/2017/06.DS.GUI	GUI Development for TKO-LTT TCSS and CBL TCSS	0	0	0%			0
NE/2017/06.DS.FAT	Preparation / Submission of FAT Procedures	0	0	0%			0
NE/2017/06.DS.SCT	Preparation / Submission of SCT Procedures	70	70	0%	20-Aug-21	28-Oct-21	272
NE/2017/06.DS.SCT.1	Central System	70	70	0%	20-Aug-21	28-Oct-21	272
DWP8260	Preparation & Submission of Central System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	272
DWP8270	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	272
DWP8280	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	272
NE/2017/06.DS.SCT.2	Traffic Control Devices	70	70	0%	20-Aug-21	28-Oct-21	-191
DWP8300	Preparation & Submission of Traffic Control System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-191
DWP8310	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-191
DWP8320	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-191
NE/2017/06.DS.SCT.3	Communication System	42	42	0%	03-Sep-21	14-Oct-21	-191
DWP8350	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	03-Sep-21	30-Sep-21	-191
DWP8360	Resubmission of SCT Procedure	14	14	0%	01-Oct-21	14-Oct-21	-191
NE/2017/06.DS.SCT.4	CCTV System	70	70	0%	20-Aug-21	28-Oct-21	-205
DWP8380	Preparation & Submission of CCTV System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-205
DWP8390	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-205
DWP8400	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-205
NE/2017/06.DS.SCT.5	Building PABX System	70	70	0%	20-Aug-21	28-Oct-21	-191
DWP8420	Preparation & Submission of Building PABX System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-191
DWP8430	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-191
DWP8440	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-191
NE/2017/06.DS.SCT.6	Emergancy Telephone System	70	70	0%	20-Aug-21	28-Oct-21	-191
DWP8460	Preparation & Submission of Emergancy Telephone System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-191
DWP8470	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-191
DWP8480	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-191
NE/2017/06.DS.SCT.7	Public Address System	70	70	0%	20-Aug-21	28-Oct-21	-184
DWP8500	Preparation & Submission of Public Address System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-184
DWP8510	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-184
DWP8520	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-184
NE/2017/06.DS.SCT.8	Radio System	70	70	0%	20-Aug-21	28-Oct-21	-168
DWP8540	Preparation & Submission of Radio System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-168
DWP8550	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-168
DWP8560	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-168
NE/2017/06.DS.SCT.9	Detection System	70	70	0%	20-Aug-21	28-Oct-21	-191
DWP8580	Preparation & Submission of Detection System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-191



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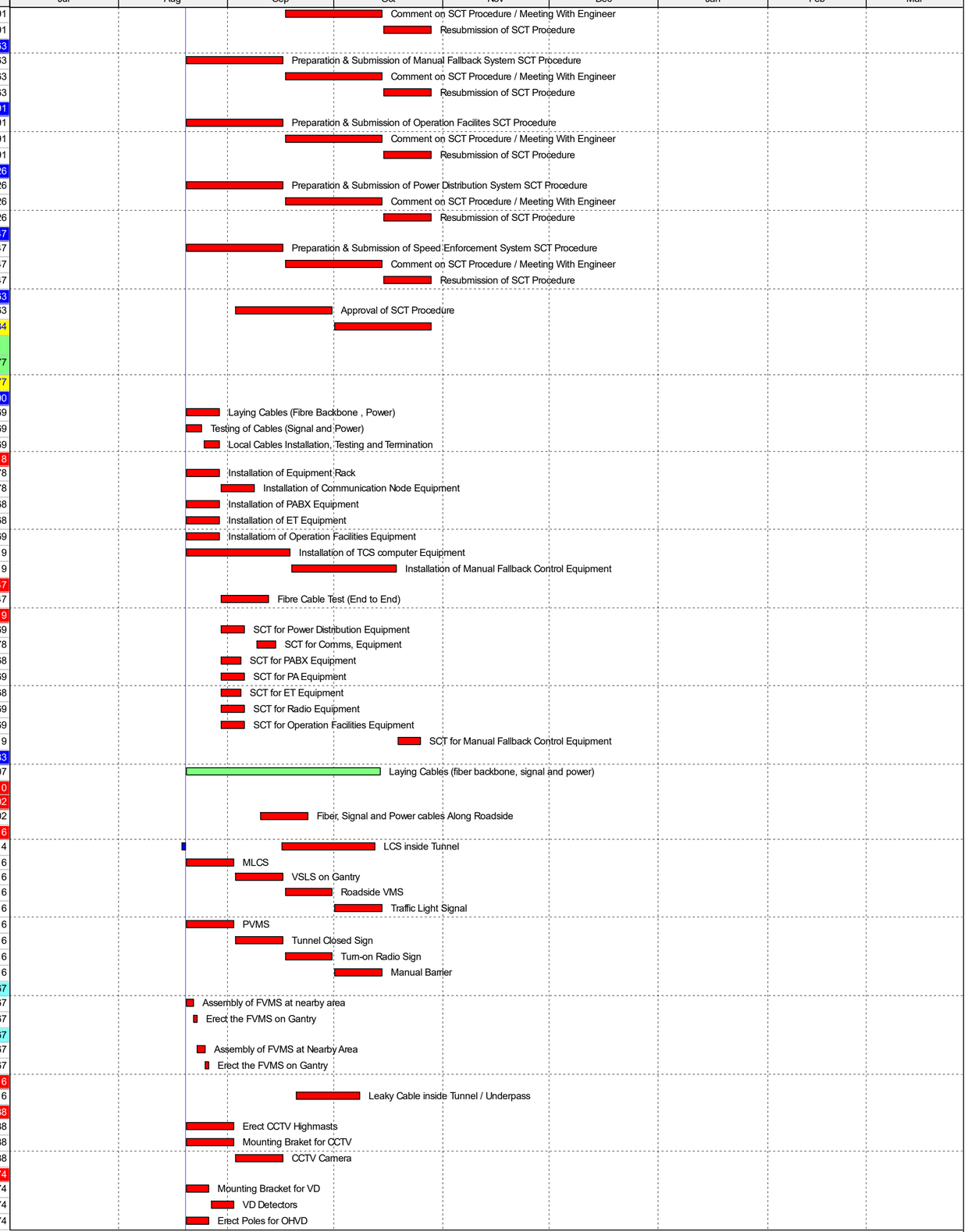
Activity ID	Activity Name	Planned Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float
DWP8590	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-191
DWP8600	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-191
NE/2017/06.DS.SCT.10	Manual Fallback System	70	70	0%	20-Aug-21	28-Oct-21	-163
DWP8620	Preparation & Submission of Manual Fallback System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-163
DWP8630	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-163
DWP8640	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-163
NE/2017/06.DS.SCT.11	Operation Facilities	70	70	0%	20-Aug-21	28-Oct-21	-191
DWP8660	Preparation & Submission of Operation Facilites SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-191
DWP8670	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-191
DWP8680	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-191
NE/2017/06.DS.SCT.12	Power Distribution System	70	70	0%	20-Aug-21	28-Oct-21	-226
DWP8700	Preparation & Submission of Power Distribution System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-226
DWP8710	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-226
DWP8720	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-226
NE/2017/06.DS.SCT.13	Speed Enforcement System	70	70	0%	20-Aug-21	28-Oct-21	-147
DWP8740	Preparation & Submission of Speed Enforcement System SCT Procedure	28	28	0%	20-Aug-21	16-Sep-21	-147
DWP8750	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	17-Sep-21	14-Oct-21	-147
DWP8760	Resubmission of SCT Procedure	14	14	0%	15-Oct-21	28-Oct-21	-147
NE/2017/06.DS.SCT.14	Optical Fibre system	28	28	0%	03-Sep-21	30-Sep-21	-163
DWP8810	Approval of SCT Procedure	28	28	0%	03-Sep-21	30-Sep-21	-163
NE/2017/06.DS.SAT	Preparation / Submission of SAT Procedures	22	22	0%	01-Oct-21	28-Oct-21	-134
NE/2017/06.EMT	Equipment Manufacturing and FAT Stage for TKO-LTT TCSS an	9	0	0%	09-Aug-21 A	09-Aug-21 A	
NE/2017/06.CST	Construction Stage for TKO-LTT TCSS	58	57	0%	19-Aug-21 A	28-Oct-21	677
NE/2017/06.CST.S1A1B	Works For Section 1A and Section 1B	58	57	0%	19-Aug-21 A	28-Oct-21	677
NE/2017/06.CST.S1A1B.1A	Stage 1A Works (ADB within Portion 1A)	67	67	0%	20-Aug-21	25-Oct-21	-90
DWP4140	Laying Cables (Fibre Backbone , Power)	10	10	0%	20-Aug-21	29-Aug-21	-69
DWP4150	Testing of Cables (Signal and Power)	5	5	0%	20-Aug-21	24-Aug-21	-69
DWP4160	Local Cables Installation, Testing and Termination	5	5	0%	25-Aug-21	29-Aug-21	-69
NE/2017/06.CST.S1A1B.1A.3	Administration Building	60	60	0%	20-Aug-21	18-Oct-21	-118
DWP4190	Installation of Equipment Rack	10	10	0%	20-Aug-21	29-Aug-21	-78
DWP4200	Installation of Communication Node Equipment	10	10	0%	30-Aug-21	08-Sep-21	-78
DWP4210	Installation of PABX Equipment	10	10	0%	20-Aug-21	29-Aug-21	-68
DWP4230	Installation of ET Equipment	10	10	0%	20-Aug-21	29-Aug-21	-68
DWP4250	Installatiom of Operation Facilities Equipment	10	10	0%	20-Aug-21	29-Aug-21	-69
DWP4260	Installation of TCS computer Equipment	30	30	0%	20-Aug-21	18-Sep-21	-119
DWP4270	Installation of Manual Fallback Control Equipment	30	30	0%	19-Sep-21	18-Oct-21	-119
NE/2017/06.CST.S1A1B.1A.1	Site Commissioning Test of Fibre Cable	14	14	0%	30-Aug-21	12-Sep-21	-47
DWP4170	Fibre Cable Test (End to End)	14	14	0%	30-Aug-21	12-Sep-21	-47
NE/2017/06.CST.S1A1B.1A.2	Sub-system Site Comissioning Test	57	57	0%	30-Aug-21	25-Oct-21	-119
DWP4280	SCT for Power Distribution Equipment	7	7	0%	30-Aug-21	05-Sep-21	-69
DWP4290	SCT for Comms, Equipment	6	6	0%	09-Sep-21	14-Sep-21	-78
DWP4300	SCT for PABX Equipment	6	6	0%	30-Aug-21	04-Sep-21	-68
DWP4310	SCT for PA Equipment	7	7	0%	30-Aug-21	05-Sep-21	-69
DWP4320	SCT for ET Equipment	6	6	0%	30-Aug-21	04-Sep-21	-68
DWP4330	SCT for Radio Equipment	7	7	0%	30-Aug-21	05-Sep-21	-69
DWP4340	SCT for Operation Facilities Equipment	7	7	0%	30-Aug-21	05-Sep-21	-69
DWP4350	SCT for Manual Fallback Control Equipment	7	7	0%	19-Oct-21	25-Oct-21	-119
NE/2017/06.CST.S1A1B.1B	Stage 1B Works (Tunnel, Underpass and Open Roads within Portion 1B)	52	51	0%	19-Aug-21 A	21-Oct-21	683
DWP4400	Laying Cables (fiber backbone, signal and power)	55	55	0%	20-Aug-21	14-Oct-21	807
NE/2017/06.CST.S1A1B.1B.1	Installation of Cable Containment	0	0	0%			0
NE/2017/06.CST.S1A1B.1B.2	Laying Cables	14	14	0%	10-Sep-21	23-Sep-21	-102
DWP4430	Fiber, Signal and Power cables Along Roadside	14	14	0%	10-Sep-21	23-Sep-21	-102
NE/2017/06.CST.S1A1B.1B.3	Installation of Traffic Control Field Equipment	57	56	0%	19-Aug-21 A	14-Oct-21	-116
DWP4500	LCS inside Tunnel	30	27	3.33%	19-Aug-21 A	12-Oct-21	-114
DWP4510	MLCS	14	14	0%	20-Aug-21	02-Sep-21	-116
DWP4520	VSLS on Gantry	14	14	0%	03-Sep-21	16-Sep-21	-116
DWP4530	Roadside VMS	14	14	0%	17-Sep-21	30-Sep-21	-116
DWP4540	Traffic Light Signal	14	14	0%	01-Oct-21	14-Oct-21	-116
DWP4550	PVMS	14	14	0%	20-Aug-21	02-Sep-21	-116
DWP4560	Tunnel Closed Sign	14	14	0%	03-Sep-21	16-Sep-21	-116
DWP4570	Turn-on Radio Sign	14	14	0%	17-Sep-21	30-Sep-21	-116
DWP4580	Manual Barrier	14	14	0%	01-Oct-21	14-Oct-21	-116
NE/2017/06.CST.S1A1B.1B.3.2	FVMS- FVMS/101/A	3	3	0%	20-Aug-21	23-Aug-21	-67
DWP4440	Assembly of FVMS at nearby area	2	2	0%	20-Aug-21	22-Aug-21	-67
DWP4450	Erect the FVMS on Gantry	1	1	0%	22-Aug-21	23-Aug-21	-67
NE/2017/06.CST.S1A1B.1B.3.1	FVMS- FVMS/102/A	3	3	0%	23-Aug-21	26-Aug-21	-67
DWP4460	Assembly of FVMS at Nearby Area	2	2	0%	23-Aug-21	25-Aug-21	-67
DWP4470	Erect the FVMS on Gantry	1	1	0%	25-Aug-21	26-Aug-21	-67
NE/2017/06.CST.S1A1B.1B.4	Installation of Leaky Cable and Radio Equipment	14	14	0%	20-Sep-21	08-Oct-21	-16
DWP4590	Leaky Cable inside Tunnel / Underpass	14	14	0%	20-Sep-21	08-Oct-21	-16
NE/2017/06.CST.S1A1B.1B.5	Installation of CCTV	28	28	0%	20-Aug-21	16-Sep-21	-88
DWP4600	Erect CCTV Highmasts	14	14	0%	20-Aug-21	02-Sep-21	-88
DWP4610	Mounting Braket for CCTV	14	14	0%	20-Aug-21	02-Sep-21	-88
DWP4620	CCTV Camera	14	14	0%	03-Sep-21	16-Sep-21	-88
NE/2017/06.CST.S1A1B.1B.6	Installation of Vehicle Detectors	14	14	0%	20-Aug-21	02-Sep-21	-74
DWP4630	Mounting Bracket for VD	7	7	0%	20-Aug-21	26-Aug-21	-74
DWP4640	VD Detectors	7	7	0%	27-Aug-21	02-Sep-21	-74
DWP4650	Erect Poles for OHVD	7	7	0%	20-Aug-21	26-Aug-21	-74



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Activity ID	Activity Name	Planned Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float
DWP4660	OHVD	7	7	0%	27-Aug-21	02-Sep-21	-74
NE/2017/06.CST.S1A1B.1B.7	Installation of ET Equipment insideTunnel	7	7	0%	20-Aug-21	26-Aug-21	-67
DWP7800	Installation of ET Equipment Inside Tunnel	7	7	0%	20-Aug-21	26-Aug-21	-67
NE/2017/06.CST.S1A1B.1B.8	Installation of PA Equipment	14	14	0%	25-Aug-21	07-Sep-21	-79
DWP7790	Installation of PA Equipment	14	14	0%	25-Aug-21	07-Sep-21	-79
NE/2017/06.CST.S1A1B.1B.9	Installation of Enforcement Equipment	7	7	0%	20-Aug-21	26-Aug-21	-81
DWP4665	Installation of Enforcement Equipment	5	5	0%	20-Aug-21	24-Aug-21	-79
DWP4670	SEC inside Tunnel	7	7	0%	20-Aug-21	26-Aug-21	-84
DWP4680	WeightBridge	7	7	0%	20-Aug-21	26-Aug-21	-84
NE/2017/06.CST.S1A1B.1B.10	Installation of Control Cabinet	14	14	0%	22-Aug-21	05-Sep-21	-93
DWP4690	Control Cabinets for TCSS	14	14	0%	22-Aug-21	05-Sep-21	-93
DWP4700	Control Cabinets for SEC	7	7	0%	22-Aug-21	29-Aug-21	-86
NE/2017/06.CST.S1A1B.1B.11	Local Cables Installation, Testing and Termination	33	33	0%	29-Aug-21	30-Sep-21	-102
DWP4710	Cables Installation, Testing and Termination aat TCSS Cabinet	10	10	0%	05-Sep-21	15-Sep-21	-93
DWP4720	Cabinet Installation, Testing and Termination at SEC Cabinet	10	10	0%	29-Aug-21	08-Sep-21	-86
DWP4730	Fibre Cable Termination	7	7	0%	24-Sep-21	30-Sep-21	-102
NE/2017/06.CST.S1A1B.1B.12	Site Commissioning Test of TCD and fibre Cable	56	56	0%	27-Aug-21	21-Oct-21	-116
DWP4740	SCT for Power Distribution Equipment	7	7	0%	15-Sep-21	22-Sep-21	-86
DWP4750	SCT for Traffic Control Device	7	7	0%	15-Oct-21	21-Oct-21	-116
DWP4760	SCT for ET inside Tunnel	7	7	0%	27-Aug-21	02-Sep-21	-67
DWP4770	SCT for PA Equipment	7	7	0%	08-Sep-21	14-Sep-21	-79
DWP4780	SCT for CCTV	7	7	0%	17-Sep-21	23-Sep-21	-88
DWP4790	SCT for VD	7	7	0%	15-Sep-21	22-Sep-21	-86
DWP4800	SCT for OHVD	7	7	0%	15-Sep-21	22-Sep-21	-86
DWP4810	SCT For SEC	7	7	0%	08-Sep-21	15-Sep-21	-79
DWP4820	SCT for Weighbridge	7	7	0%	08-Sep-21	15-Sep-21	-79
DWP4830	Fibre Cable Test (End to End)	7	7	0%	01-Oct-21	07-Oct-21	-102
NE/2017/06.CST.S1A1B.1C	Stage 1C Works (EVB and WVB within Portion 1C)	70	70	0%	20-Aug-21	28-Oct-21	-93
DWP4840	Portion 1C Access Date	0	0	0%	20-Aug-21	20-Aug-21	-170
DWP4850	Inspection of Civil provicions and Submit Inspection Report	7	7	0%	20-Aug-21	26-Aug-21	-170
DWP4860	Rectifications of Civil Provisions Defects by others	3	3	0%	27-Aug-21	29-Aug-21	-170
DWP4870	Installation of Cable Containment	7	7	0%	30-Aug-21	05-Sep-21	-121
DWP4880	Laying Cables (fibre backbone, power)	10	10	0%	06-Sep-21	15-Sep-21	-121
DWP4890	Test of Cables (signal and power)	3	3	0%	09-Oct-21	12-Oct-21	-121
DWP4900	Local Cables Installation , Testing and Termination	7	7	0%	12-Oct-21	19-Oct-21	-121
NE/2017/06.CST.S1A1B.1C.5	Site Commissioning Test of Fibre Cable	7	7	0%	19-Oct-21	26-Oct-21	-91
DWP5250	Fibre Cable Test (End to End)	7	7	0%	19-Oct-21	26-Oct-21	-91
NE/2017/06.CST.S1A1B.1C.2	West Ventilation Building	50	50	0%	30-Aug-21	18-Oct-21	-120
DWP4910	Installation of Equiipment Rack	8	8	0%	30-Aug-21	06-Sep-21	-88
DWP4920	Installation of Communication Node Equipment	10	10	0%	06-Sep-21	16-Sep-21	-88
DWP4930	Installation of PABX Equipment	10	10	0%	30-Aug-21	08-Sep-21	-80
DWP4940	Installation of PA Equipment	10	10	0%	30-Aug-21	08-Sep-21	-80
DWP4950	Installation of ET Equipment	10	10	0%	30-Aug-21	08-Sep-21	-80
DWP4960	Installation of Radio Equipment (Incl. Antenna and Feeder)	10	10	0%	30-Aug-21	08-Sep-21	-80
DWP4970	Installation of Operation Facilities Equipment	10	10	0%	30-Aug-21	08-Sep-21	-80
DWP4975	Installation of TCS Computer Equipment	50	50	0%	30-Aug-21	18-Oct-21	-170
NE/2017/06.CST.S1A1B.1C.1	Sub-systems Site Commissioning Test	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP4990	SCT for Power Distribution Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5000	SCT for Comms, Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5010	SCT for PABX Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5020	SCT for PA Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5030	SCT for ET Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5040	SCT for Radio Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5050	SCT for Operation Facilities Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
NE/2017/06.CST.S1A1B.1C.3	East Ventilation Building	60	60	0%	30-Aug-21	28-Oct-21	-130
DWP5080	Installation of Equiipment Rack	7	7	0%	19-Oct-21	25-Oct-21	-137
DWP5100	Installation of PABX Equipment	10	10	0%	30-Aug-21	08-Sep-21	-80
DWP5110	Installation of PA Equipment	10	10	0%	30-Aug-21	08-Sep-21	-80
DWP5120	Installation of ET Equipment	10	10	0%	30-Aug-21	08-Sep-21	-80
DWP5130	Installation of Radio Equipment (Incl. Antenna and Feeder)	10	10	0%	30-Aug-21	08-Sep-21	-80
DWP5140	Installation of Operation Facilities Equipment	14	14	0%	30-Aug-21	12-Sep-21	-84
DWP5145	Installation of TCS Computer Equipment	60	60	0%	30-Aug-21	28-Oct-21	-130
DWP5150	Installation of Manual Fallback Control Equipment	60	60	0%	30-Aug-21	28-Oct-21	-130
NE/2017/06.CST.S1A1B.1C.4	Sub-systems Site Commissioning Test-1	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5170	SCT for Power Distribution Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5190	SCT for PABX Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5200	SCT for PA Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5210	SCT for ET Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5220	SCT for Radio Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
DWP5230	SCT for Operation Facilities Equipment	7	7	0%	19-Oct-21	26-Oct-21	-121
NE/2017/06.CST.S1A1B.2A	Stage 2A Works (Within Portion 2A)	55	55	0%	20-Aug-21	13-Oct-21	807
DWP5790	Handover of Holding-down Bolts for Pole Foundation to Civil	1	1	0%	20-Aug-21	21-Aug-21	861
DWP5800	Portion 2A Access Date	0	0	0%	20-Aug-21	20-Aug-21	-108
DWP5810	Inspection of Civil Provisions and Submit Inspection Report	10	10	0%	20-Aug-21	29-Aug-21	-108
DWP5820	Rectification of Civil Provisions Defects by others	7	7	0%	30-Aug-21	05-Sep-21	-108
NE/2017/06.CST.S1A1B.2A.1	Laying Cables (Fibre , Signal and Power)	16	16	0%	06-Sep-21	21-Sep-21	-103
DWP5675	Laying Cables (Fibre , Signal and Power)	16	16	0%	06-Sep-21	21-Sep-21	-103
NE/2017/06.CST.S1A1B.2A.1.1	Installation of Cable Containment	8	8	0%	06-Sep-21	13-Sep-21	-103

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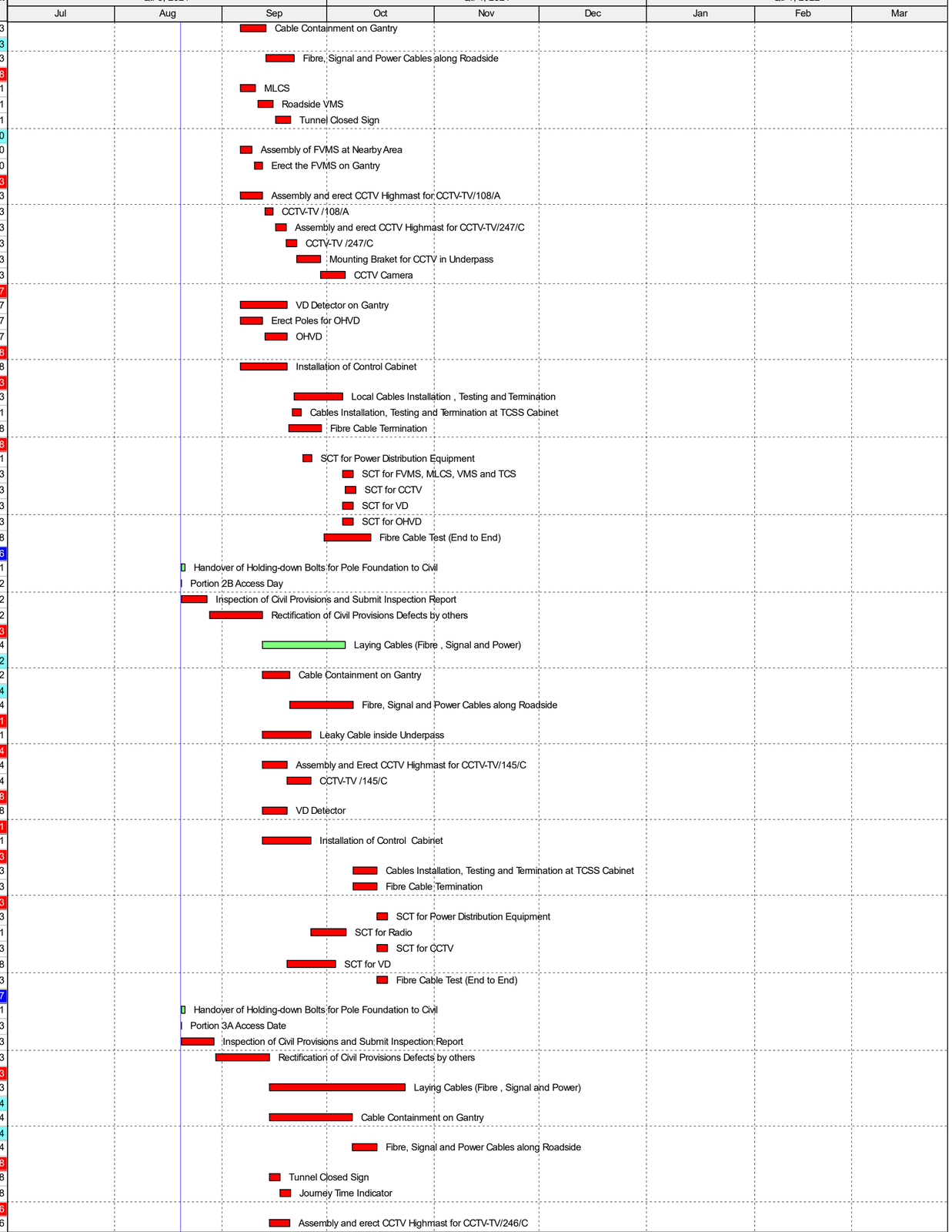
Activity ID	Activity Name	Planned Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float
DWP5680	Cable Containment on Gantry	8	8	0%	06-Sep-21	13-Sep-21	-103
NE/2017/06.CST.S1A1B.2A.1.2	Laying Cables	8	8	0%	13-Sep-21	21-Sep-21	-103
DWP5670	Fibre, Signal and Power Cables along Roadside	8	8	0%	13-Sep-21	21-Sep-21	-103
NE/2017/06.CST.S1A1B.2A.2	Installation of Traffic Control Field Equipment	15	15	0%	06-Sep-21	20-Sep-21	-88
DWP5940	MLCS	5	5	0%	06-Sep-21	10-Sep-21	-91
DWP5950	Roadside VMS	5	5	0%	11-Sep-21	15-Sep-21	-91
DWP5960	Tunnel Closed Sign	5	5	0%	16-Sep-21	20-Sep-21	-91
NE/2017/06.CST.S1A1B.2A.2.1	FVMS - FVMS/201/A	7	7	0%	06-Sep-21	12-Sep-21	-80
DWP5920	Assembly of FVMS at Nearby Area	4	4	0%	06-Sep-21	09-Sep-21	-80
DWP5930	Erect the FVMS on Gantry	3	3	0%	10-Sep-21	12-Sep-21	-80
NE/2017/06.CST.S1A1B.2A.3	Installation of CCTV	30	30	0%	06-Sep-21	06-Oct-21	-103
DWP5690	Assembly and erect CCTV Highmast for CCTV-TV/108/A	7	7	0%	06-Sep-21	12-Sep-21	-103
DWP5700	CCTV-TV /108/A	3	3	0%	13-Sep-21	15-Sep-21	-103
DWP5860	Assembly and erect CCTV Highmast for CCTV-TV/247/C	3	3	0%	16-Sep-21	19-Sep-21	-103
DWP5870	CCTV-TV /247/C	3	3	0%	19-Sep-21	22-Sep-21	-103
DWP5880	Mounting Braket for CCTV in Underpass	7	7	0%	22-Sep-21	29-Sep-21	-103
DWP5890	CCTV Camera	7	7	0%	29-Sep-21	06-Oct-21	-103
NE/2017/06.CST.S1A1B.2A.4	Installation of Vehicle Detectors	14	14	0%	06-Sep-21	19-Sep-21	-87
DWP5720	VD Detector on Gantry	14	14	0%	06-Sep-21	19-Sep-21	-87
DWP5900	Erect Poles for OHVD	7	7	0%	06-Sep-21	12-Sep-21	-87
DWP5910	OHVD	7	7	0%	13-Sep-21	19-Sep-21	-87
NE/2017/06.CST.S1A1B.2A.5	Installation of Control Cabinet	14	14	0%	06-Sep-21	19-Sep-21	-108
DWP7830	Installation of Control Cabinet	14	14	0%	06-Sep-21	19-Sep-21	-108
NE/2017/06.CST.S1A1B.2A.6	Local Cables Installation , Testing and Termination	16	16	0%	20-Sep-21	05-Oct-21	-103
DWP5725	Local Cables Installation , Testing and Termination	14	14	0%	21-Sep-21	05-Oct-21	-103
DWP5730	Cables Installation, Testing and Termination at TCSS Cabinet	3	3	0%	21-Sep-21	23-Sep-21	-91
DWP5740	Fibre Cable Termination	10	10	0%	20-Sep-21	29-Sep-21	-108
NE/2017/06.CST.S1A1B.2A.7	Site Comissioning Test of TCD and Fibre Cable	20	20	0%	24-Sep-21	13-Oct-21	-108
DWP5750	SCT for Power Distribution Equipment	3	3	0%	24-Sep-21	26-Sep-21	-91
DWP5760	SCT for FVMS, MLCS, VMS and TCS	3	3	0%	05-Oct-21	08-Oct-21	-103
DWP5770	SCT for CCTV	3	3	0%	06-Oct-21	09-Oct-21	-103
DWP5780	SCT for VD	3	3	0%	05-Oct-21	08-Oct-21	-103
DWP5840	SCT for OHVD	3	3	0%	05-Oct-21	08-Oct-21	-103
DWP5850	Fibre Cable Test (End to End)	14	14	0%	30-Sep-21	13-Oct-21	-108
NE/2017/06.CST.S1A1B.2B	Stage 2B Works (Within Portion 2B)	48	48	0%	20-Aug-21	18-Oct-21	686
DWP5270	Handover of Holding-down Bolts for Pole Foundation to Civil	1	1	0%	20-Aug-21	21-Aug-21	861
DWP5280	Portion 2B Access Day	0	0	0%	20-Aug-21	20-Aug-21	-112
DWP5290	Inspection of Civil Provisions and Submit Inspection Report	8	8	0%	20-Aug-21	27-Aug-21	-112
DWP5300	Rectification of Civil Provisions Defects by others	16	16	0%	28-Aug-21	12-Sep-21	-112
NE/2017/06.CST.S1A1B.2B.1	Laying Cables (Fibre , Signal and Power)	21	21	0%	12-Sep-21	08-Oct-21	693
DWP2315	Laying Cables (Fibre , Signal and Power)	24	24	0%	12-Sep-21	06-Oct-21	814
NE/2017/06.CST.S1A1B.2B.1.1	Installation of Cable Containment	8	8	0%	12-Sep-21	20-Sep-21	-112
DWP5320	Cable Containment on Gantry	8	8	0%	12-Sep-21	20-Sep-21	-112
NE/2017/06.CST.S1A1B.2B.1.2	Laying Cables	14	14	0%	20-Sep-21	08-Oct-21	-94
DWP5310	Fibre, Signal and Power Cables along Roadside	14	14	0%	20-Sep-21	08-Oct-21	-94
NE/2017/06.CST.S1A1B.2B.2	Installation of Leaky Cable and Radio Equipment	14	14	0%	12-Sep-21	26-Sep-21	-101
DWP5350	Leaky Cable inside Underpass	14	14	0%	12-Sep-21	26-Sep-21	-101
NE/2017/06.CST.S1A1B.2B.3	Installation of CCTV	14	14	0%	12-Sep-21	26-Sep-21	-94
DWP5330	Assembly and Erect CCTV Highmast for CCTV-TV/145/C	7	7	0%	12-Sep-21	19-Sep-21	-94
DWP5340	CCTV-TV /145/C	7	7	0%	19-Sep-21	26-Sep-21	-94
NE/2017/06.CST.S1A1B.2B.4	Installation of Vehicle Detectors	7	7	0%	12-Sep-21	19-Sep-21	-98
DWP5360	VD Detector	7	7	0%	12-Sep-21	19-Sep-21	-98
NE/2017/06.CST.S1A1B.2B.5	Installation of Control Cabinet	14	14	0%	12-Sep-21	26-Sep-21	-101
DWP7850	Installation of Control Cabinet	14	14	0%	12-Sep-21	26-Sep-21	-101
NE/2017/06.CST.S1A1B.2B.6	Local Cables Installation , Testing and Termination	7	7	0%	08-Oct-21	15-Oct-21	-113
DWP5370	Cables Installation, Testing and Termination at TCSS Cabinet	7	7	0%	08-Oct-21	15-Oct-21	-113
DWP5380	Fibre Cable Termination	7	7	0%	08-Oct-21	15-Oct-21	-113
NE/2017/06.CST.S1A1B.2B.7	Site Comissioning Test of TCD and Fibre Cable	29	29	0%	19-Sep-21	18-Oct-21	-113
DWP5390	SCT for Power Distribution Equipment	3	3	0%	15-Oct-21	18-Oct-21	-113
DWP5400	SCT for Radio	10	10	0%	26-Sep-21	06-Oct-21	-101
DWP5410	SCT for CCTV	3	3	0%	15-Oct-21	18-Oct-21	-113
DWP5420	SCT for VD	14	14	0%	19-Sep-21	03-Oct-21	-98
DWP5430	Fibre Cable Test (End to End)	3	3	0%	15-Oct-21	18-Oct-21	-113
NE/2017/06.CST.S1A1B.3	Stage 3 Works (Within Portion 3A)	65	65	0%	20-Aug-21	23-Oct-21	797
DWP5440	Handover of Holding-down Bolts for Pole Foundation to Civil	1	1	0%	20-Aug-21	21-Aug-21	861
DWP5450	Portion 3A Access Date	0	0	0%	20-Aug-21	20-Aug-21	-153
DWP5460	Inspection of Civil Provisions and Submit Inspection Report	10	10	0%	20-Aug-21	29-Aug-21	-153
DWP5470	Rectification of Civil Provisions Defects by others	16	16	0%	30-Aug-21	14-Sep-21	-153
NE/2017/06.CST.S1A1B.3.1	Laying Cables (fibre , signal and power)	39	39	0%	14-Sep-21	23-Oct-21	-153
DWP5475	Laying Cables (Fibre , Signal and Power)	39	39	0%	14-Sep-21	23-Oct-21	-153
NE/2017/06.CST.S1A1B.3.1.1	Installation of Cable Containment	24	24	0%	14-Sep-21	08-Oct-21	-144
DWP5490	Cable Containment on Gantry	24	24	0%	14-Sep-21	08-Oct-21	-144
NE/2017/06.CST.S1A1B.3.1.2	Laying Cables	7	7	0%	08-Oct-21	15-Oct-21	-144
DWP5480	Fibre, Signal and Power Cables along Roadside	7	7	0%	08-Oct-21	15-Oct-21	-144
NE/2017/06.CST.S1A1B.3.2	Installation of Traffic Control Field Equipment	6	6	0%	14-Sep-21	20-Sep-21	-88
DWP5500	Tunnel Closed Sign	3	3	0%	14-Sep-21	17-Sep-21	-88
DWP5510	Journey Time Indicator	3	3	0%	17-Sep-21	20-Sep-21	-88
NE/2017/06.CST.S1A1B.3.3	Installation of CCTV	11	11	0%	14-Sep-21	25-Sep-21	-96
DWP6020	Assembly and erect CCTV Highmast for CCTV-TV/246/C	6	6	0%	14-Sep-21	20-Sep-21	-96



Actual Level of Effort | Actual Work | Remaining Work | Critical Remaining Work | ◆ Milestone

TASK filter: 3M.

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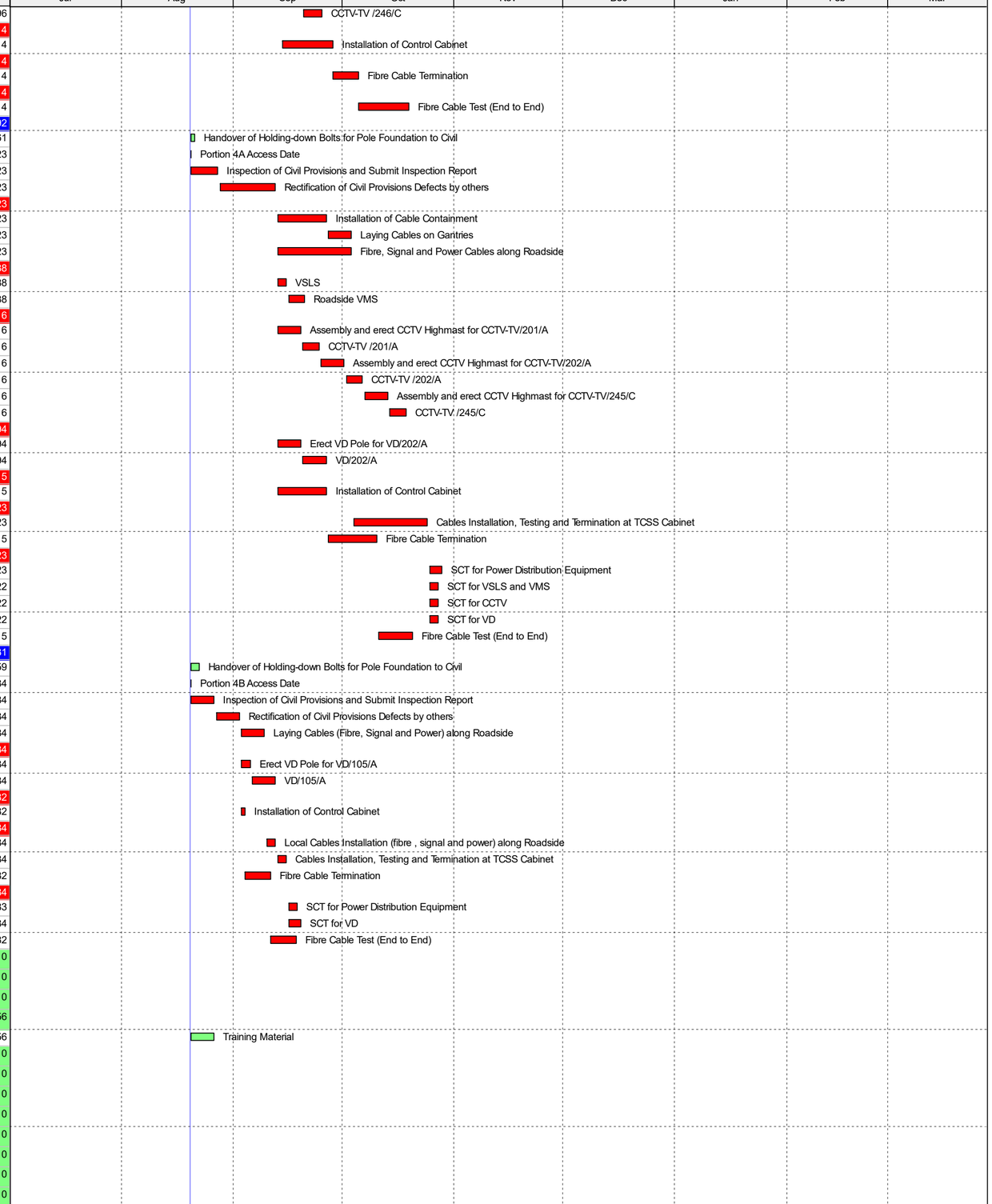
Activity ID	Activity Name	Planned Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float
DWP6030	CCTV-TV /246/C	5	5	0%	20-Sep-21	25-Sep-21	-96
NE/2017/06.CST.S1A1B.3.5 Installation of Control Cabinet		14	14	0%	14-Sep-21	28-Sep-21	-114
DWP1111	Installation of Control Cabinet	14	14	0%	14-Sep-21	28-Sep-21	-114
NE/2017/06.CST.S1A1B.3.6 Local Cables Installation , Testing and Termination		7	7	0%	28-Sep-21	05-Oct-21	-114
DWP5530	Fibre Cable Termination	7	7	0%	28-Sep-21	05-Oct-21	-114
NE/2017/06.CST.S1A1B.3.7 Site Comissioning Test of TCD and Fibre Cable		14	14	0%	05-Oct-21	19-Oct-21	-114
DWP5570	Fibre Cable Test (End to End)	14	14	0%	05-Oct-21	19-Oct-21	-114
NE/2017/06.CST.S1A1B.4A Stage 4A Works (Bridges within Portion 4A)		70	70	0%	20-Aug-21	28-Oct-21	792
DWP5970	Handover of Holding-down Bolts for Pole Foundation to Civil	1	1	0%	20-Aug-21	21-Aug-21	861
DWP5980	Portion 4A Access Date	0	0	0%	20-Aug-21	20-Aug-21	-123
DWP5990	Inspection of Civil Provisions and Submit Inspection Report	8	8	0%	20-Aug-21	27-Aug-21	-123
DWP6000	Rectification of Civil Provisions Defects by others	16	16	0%	28-Aug-21	12-Sep-21	-123
NE/2017/06.CST.S1A1B.4A.1 Laying Cables (fibre , signal and power)		21	21	0%	13-Sep-21	03-Oct-21	-123
DWP6120	Installation of Cable Containment	14	14	0%	13-Sep-21	26-Sep-21	-123
DWP6130	Laying Cables on Gantries	7	7	0%	27-Sep-21	03-Oct-21	-123
DWP6140	Fibre, Signal and Power Cables along Roadside	21	21	0%	13-Sep-21	03-Oct-21	-123
NE/2017/06.CST.S1A1B.4A.2 Installation of Traffic Control Field Equipment		8	8	0%	13-Sep-21	20-Sep-21	-88
DWP5660	VSLS	3	3	0%	13-Sep-21	15-Sep-21	-88
DWP5665	Roadside VMS	5	5	0%	16-Sep-21	20-Sep-21	-88
NE/2017/06.CST.S1A1B.4A.3 Installation of CCTV		36	36	0%	13-Sep-21	18-Oct-21	-116
DWP6040	Assembly and erect CCTV Highmast for CCTV-TV/201/A	7	7	0%	13-Sep-21	19-Sep-21	-116
DWP6050	CCTV-TV /201/A	5	5	0%	20-Sep-21	24-Sep-21	-116
DWP6060	Assembly and erect CCTV Highmast for CCTV-TV/202/A	7	7	0%	25-Sep-21	01-Oct-21	-116
DWP6070	CCTV-TV /202/A	5	5	0%	02-Oct-21	06-Oct-21	-116
DWP6080	Assembly and erect CCTV Highmast for CCTV-TV/245/C	7	7	0%	07-Oct-21	13-Oct-21	-116
DWP6090	CCTV-TV /245/C	5	5	0%	14-Oct-21	18-Oct-21	-116
NE/2017/06.CST.S1A1B.4A.4 Installation of Vehicle Detectors		14	14	0%	13-Sep-21	26-Sep-21	-94
DWP6100	Erect VD Pole for VD/202/A	7	7	0%	13-Sep-21	19-Sep-21	-94
DWP6110	VD/202/A	7	7	0%	20-Sep-21	26-Sep-21	-94
NE/2017/06.CST.S1A1B.4A.5 Installation of Control Cabinet		14	14	0%	13-Sep-21	26-Sep-21	-115
DWP7860	Installation of Control Cabinet	14	14	0%	13-Sep-21	26-Sep-21	-115
NE/2017/06.CST.S1A1B.4A.6 Local Cables Installation , Testing and Termination		28	28	0%	27-Sep-21	24-Oct-21	-123
DWP5600	Cables Installation, Testing and Termination at TCSS Cabinet	21	21	0%	04-Oct-21	24-Oct-21	-123
DWP5610	Fibre Cable Termination	14	14	0%	27-Sep-21	10-Oct-21	-115
NE/2017/06.CST.S1A1B.4A.7 Site Comissioning Test of TCD and Fibre Cable		18	18	0%	11-Oct-21	28-Oct-21	-123
DWP5620	SCT for Power Distribution Equipment	4	4	0%	25-Oct-21	28-Oct-21	-123
DWP5625	SCT for VSLS and VMS	3	3	0%	25-Oct-21	27-Oct-21	-122
DWP5640	SCT for CCTV	3	3	0%	25-Oct-21	27-Oct-21	-122
DWP5645	SCT for VD	3	3	0%	25-Oct-21	27-Oct-21	-122
DWP5650	Fibre Cable Test (End to End)	10	10	0%	11-Oct-21	20-Oct-21	-115
NE/2017/06.CST.S1A1B.4B Stage 4B Works (Bridges within Portion 4B)		31	31	0%	20-Aug-21	19-Sep-21	831
DWP6220	Handover of Holding-down Bolts for Pole Foundation to Civil	3	3	0%	20-Aug-21	22-Aug-21	859
DWP6225	Portion 4B Access Date	0	0	0%	20-Aug-21	20-Aug-21	-84
DWP6230	Inspection of Civil Provisions and Submit Inspection Report	7	7	0%	20-Aug-21	26-Aug-21	-84
DWP6260	Rectification of Civil Provisions Defects by others	7	7	0%	27-Aug-21	02-Sep-21	-84
DWP6270	Laying Cables (Fibre, Signal and Power) along Roadside	7	7	0%	03-Sep-21	09-Sep-21	-84
NE/2017/06.CST.S1A1B.4B.4 Installation of Vehicle Detectors		10	10	0%	03-Sep-21	12-Sep-21	-84
DWP6200	Erect VD Pole for VD/105/A	3	3	0%	03-Sep-21	05-Sep-21	-84
DWP6210	VD/105/A	7	7	0%	06-Sep-21	12-Sep-21	-84
NE/2017/06.CST.S1A1B.4B.1 Insstallation of Control Cabinet		1	1	0%	03-Sep-21	04-Sep-21	-82
DWP7870	Installation of Control Cabinet	1	1	0%	03-Sep-21	04-Sep-21	-82
NE/2017/06.CST.S1A1B.4B.6 Local Cables Installation , Testing and Termination		12	12	0%	04-Sep-21	15-Sep-21	-84
DWP6145	Local Cables Installation (fibre , signal and power) along Roadside	3	3	0%	10-Sep-21	12-Sep-21	-84
DWP6150	Cables Installation, Testing and Termination at TCSS Cabinet	3	3	0%	13-Sep-21	15-Sep-21	-84
DWP6160	Fibre Cable Termination	7	7	0%	04-Sep-21	11-Sep-21	-82
NE/2017/06.CST.S1A1B.4B.7 Site Comissioning Test of TCD and Fibre Cable		9	9	0%	11-Sep-21	19-Sep-21	-84
DWP6170	SCT for Power Distribution Equipment	3	3	0%	16-Sep-21	18-Sep-21	-83
DWP6180	SCT for VD	4	4	0%	16-Sep-21	19-Sep-21	-84
DWP6190	Fibre Cable Test (End to End)	7	7	0%	11-Sep-21	18-Sep-21	-82
NE/2017/06.SATT SAT for TKO-LTT TCSS		0	0	0%			0
NE/2017/06.OPTT Operability Period Test for the TKO-LTT TCSS		0	0	0%			0
NE/2017/06.DLPT DLP for the TKO-LTT TCSS		0	0	0%			0
NE/2017/06.DOC1 Documentation Submission for TKO-LTT TCSS		7	7	0%	20-Aug-21	26-Aug-21	56
DWP10810	Training Material	7	7	0%	20-Aug-21	26-Aug-21	56
NE/2017/06.TRT Training for TKO-LTT TCSS		0	0	0%			0
NE/2017/06.EMC Equipment Manufacturing and Delivery for CBL TCSS		0	0	0%			0
NE/2017/06.CSC1 Construction Stage for CBL TCSS		0	0	0%			0
NE/2017/06.SATC SAT for CBL TCSS		0	0	0%			0
NE/2017/06.OPTC Operability Period Test For the CBL TCSS		0	0	0%			0
NE/2017/06.DLPC DLP for the CBL TCSS		0	0	0%			0
NE/2017/06.DOC Documentation Submission for CBL TCSS		0	0	0%			0
NE/2017/06.TRC Training for CBL TCSS		0	0	0%			0



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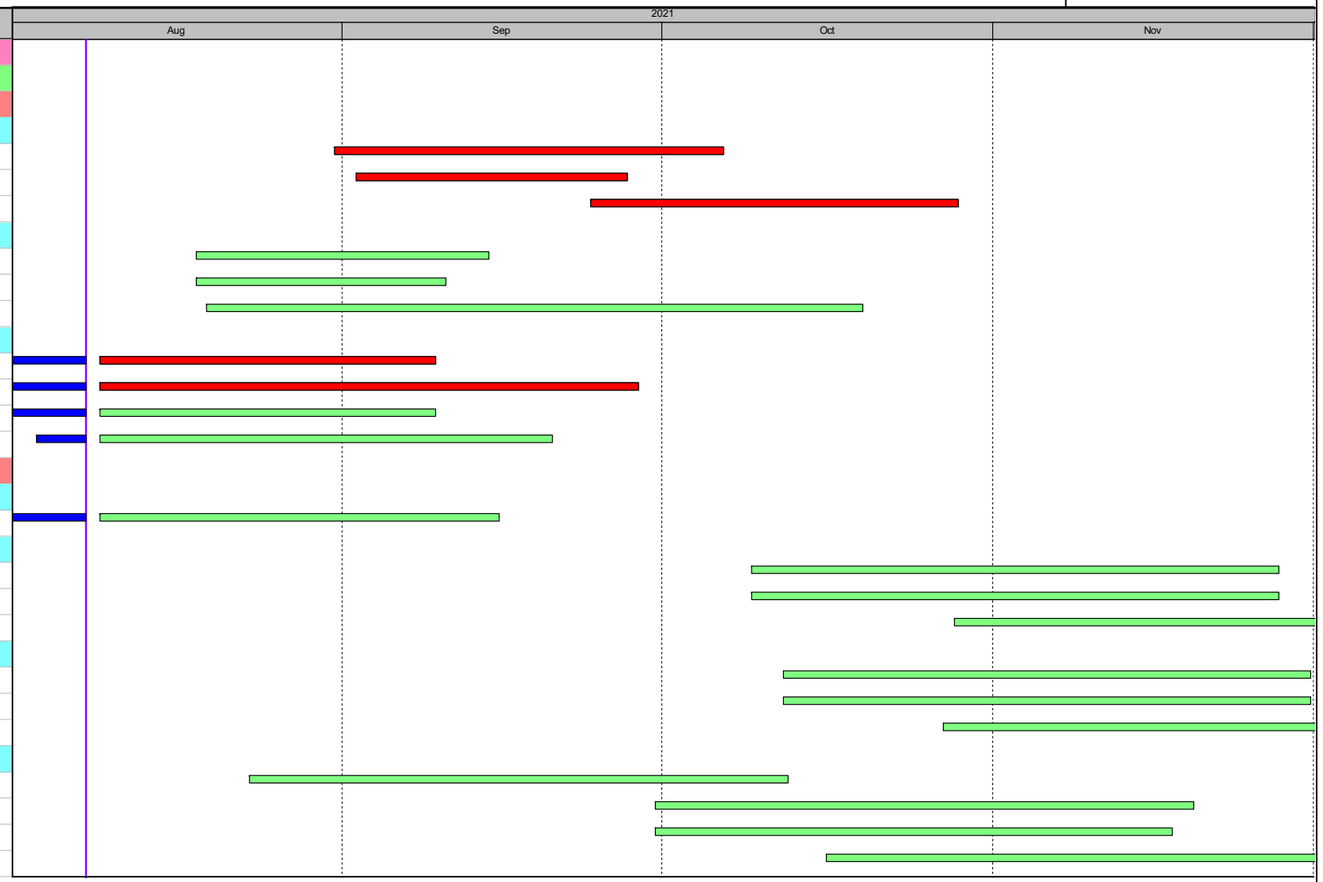
NE/2017/01 Tseung Kwan O - Lam Tin Tunnel- Tseung Kwan O Interchange and Associated Works

4-months Rolling programme

Activity ID	Activity Name	Original Duration	Start	Finish
Tseung Kwan O Interchange and Associated Works 202108-0 _20210804		134	10-Jul-21 A	16-Dec-21
Construction Work		134	10-Jul-21 A	16-Dec-21
Bridge Parapet & Utility Trough		91	12-Jul-21 A	28-Oct-21
Bridge S300		48	31-Aug-21	28-Oct-21
CON-15420	Installation of Parapet Wall Skin for Bridge S300	30	31-Aug-21	06-Oct-21
CON-15411	Installation of Movement Joint for Bridge S300	21	02-Sep-21	27-Sep-21
CON-15430	Construction of RC barrier & Installation of Traffic Sign, Sign Gantry & TCSS Civil Provision for Bridge S300	28	24-Sep-21	28-Oct-21
Bridge S200		51	18-Aug-21	19-Oct-21
CON-15460	Installation of Parapet Wall Skin for Bridge S200	24	18-Aug-21	14-Sep-21
CON-15451	Installation of Movement Joint for Bridge S200	21	18-Aug-21	10-Sep-21
CON-15470	Construction of RC barrier for Bridge S200	50	19-Aug-21	19-Oct-21
Bridge S100		67	12-Jul-21 A	28-Sep-21
CON-15500	Installation of Parapet Wall Skin for Bridge S100 (3C to 3F)	52	12-Jul-21 A	09-Sep-21
CON-15520	Construction of RC barrier & Installation of Traffic Sign, Sign Gantry & TCSS Civil Provision for Bridge S100 (3C to 3F)	60	20-Jul-21 A	28-Sep-21
CON-15501	Construction of Utility trough - R.C. Partitions for Bridge S100 (3C to 3F)	45	20-Jul-21 A	09-Sep-21
CON-15510	Installation of Cable Duct/Water Main & Tray for Utility for Bridge S100	42	03-Aug-21 A	20-Sep-21
Bridge Furniture & Road Work		134	10-Jul-21 A	16-Dec-21
Bridge ML		58	10-Jul-21 A	15-Sep-21
CON-15560	Road Pavement and Road Marking for Bridge ML	58	10-Jul-21 A	15-Sep-21
Bridge S300		58	09-Oct-21	16-Dec-21
CON-15570	Installation of Steel Parapet Post and Rail for Bridge S300	42	09-Oct-21	27-Nov-21
CON-15580	Installation of Road Drainage and Drain Pipe for Bridge S300	42	09-Oct-21	27-Nov-21
CON-15590	Road Pavement and Road Marking for Bridge S300	43	28-Oct-21	16-Dec-21
Bridge S200		55	12-Oct-21	15-Dec-21
CON-15600	Installation of Steel Parapet Post and Rail for Bridge S200	42	12-Oct-21	30-Nov-21
CON-15610	Installation of Road Drainage and Drain Pipe for Bridge S200	42	12-Oct-21	30-Nov-21
CON-15620	Road Pavement and Road Marking for Bridge S200	43	27-Oct-21	15-Dec-21
Bridge S100		93	23-Aug-21	11-Dec-21
CON-15630	Installation of Steel Parapet Post and Rail for Bridge S100	42	23-Aug-21	12-Oct-21
CON-15640	Installation of Road Drainage and Drain Pipe for Bridge S100	42	30-Sep-21	19-Nov-21
CON-15629	Install Precast Cover for Bridge S100	40	30-Sep-21	17-Nov-21
CON-15650	Road Pavement and Road Marking for Bridge S100	49	16-Oct-21	11-Dec-21

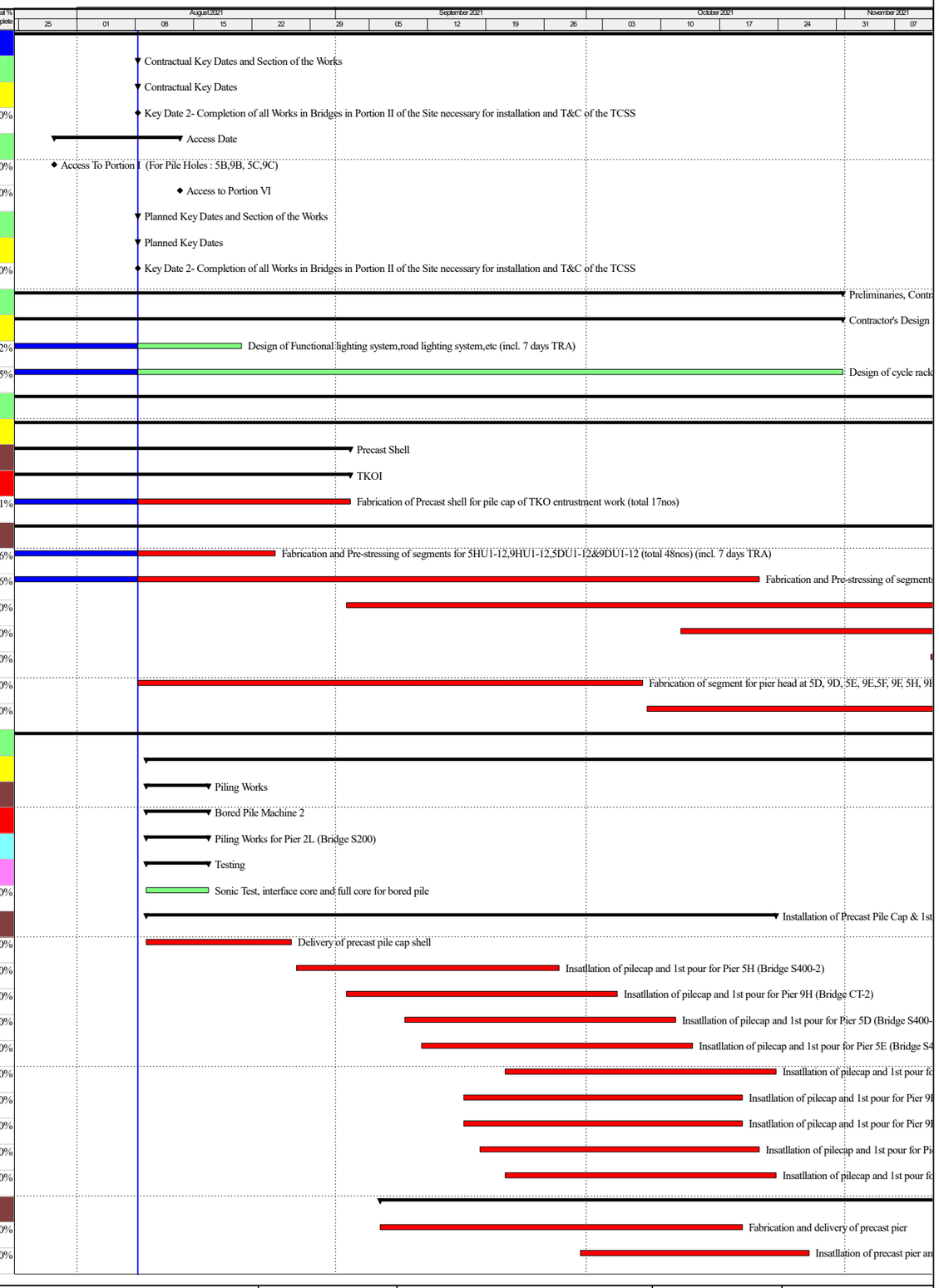


Works Critical Works Actual

Data Date :08-Aug-21
Sheet 1of 6

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete
Cross Bay Link,Tseung Kwan O Main Bridge and Associated Works		515	180	24-Apr-20 A	03-Feb-22	
Contractual Key Dates and Section of the Works		0	0	08-Aug-21	08-Aug-21	
Contractual Key Dates		0	0	08-Aug-21	08-Aug-21	
KDS1240	Key Date 2- Completion of all Works in Bridges in Portion II of the Site necessary for installation and T&C of the TCSS	0	0		08-Aug-21*	0%
Access Date		5	0	29-Jul-21 A	13-Aug-21	
PAD1030	Access To Portion I (For Pile Holes : 5B,9B, 5C,9C)	0	0	29-Jul-21 A		100%
PAD1110	Access to Portion VI	0	0	13-Aug-21*		0%
Planned Key Dates and Section of the Works		0	0	08-Aug-21	08-Aug-21	
Planned Key Dates		0	0	08-Aug-21	08-Aug-21	
KDS1060	Key Date 2- Completion of all Works in Bridges in Portion II of the Site necessary for installation and T&C of the TCSS	0	0		08-Aug-21*	0%
Preliminaries, Contractor's Design & Method Statement Submission & Approval		149	85	24-Apr-20 A	31-Oct-21	
Contractor's Design Submission and Approval		149	85	24-Apr-20 A	31-Oct-21	
CDS1140	Design of Functional lighting system,road lighting system,etc (incl. 7 days TRA)	97	13	24-Apr-20 A	20-Aug-21	82%
CDS1230	Design of cycle rack (incl. 14 days TRA)	111	85	12-Jun-21 A	31-Oct-21	35%
Precasting & Fabrication Works		391	180	09-Dec-20 A	03-Feb-22	
Fabrication of Precast Shell and Precast Segments		391	180	09-Dec-20 A	03-Feb-22	
Precast Shell		240	26	09-Dec-20 A	02-Sep-21	
TKOI		240	26	09-Dec-20 A	02-Sep-21	
P-PS3145	Fabrication of Precast shell for pile cap of TKO entrustment work (total 17nos)	240	26	09-Dec-20 A	02-Sep-21	94.1%
Precast Segments (TKOI Entrustment Works)		301	180	18-Apr-21 A	03-Feb-22	
P-PF1182	Fabrication and Pre-stressing of segments for 5HU1-12,9HU1-12,5DU1-12&9DU1-12 (total 48nos) (incl. 7 days TRA)	90	17	18-Apr-21 A	24-Aug-21	91.6%
P-PF1183	Fabrication and Pre-stressing of segments for 5EU1-12,9EU1-12,1KNU0-15,1LSU2-15,1LNU2-15(total 70nos) (incl.7 days TRA)	90	75	24-Jul-21 A	21-Oct-21	6%
P-PF1184	Fabrication and Pre-stressing of segments for 1KSU0-15,5AU4-12,9AU4-12,5BU1-13,9BU1-12(total 59nos) (incl.7 days TRA)	85	85	02-Sep-21	25-Nov-21	0%
P-PF1185	Fabrication and Pre-stressing of segments for 5CU1-13,9CU1-12,5FU1-13,9FU1-12,5GU1-13(total 53nos) (incl.7 days TRA)	85	85	12-Oct-21	04-Jan-22	0%
P-PF1186	Fabrication and Pre-stressing of segments for 9GU1-12, 2JU1-13, 2KU1-13, 2LU1-13 (total 51nos) (incl.7 days TRA)	85	85	11-Nov-21	03-Feb-22	0%
P-PF1187	Fabrication of segment for pier head at 5D, 9D, 5E, 9E,5F, 9F, 5H, 9H & 1L (total 18nos) (incl. 3 days TRA)	61	61	08-Aug-21	07-Oct-21	0%
P-PF1188	Fabrication of segment for pier head at 5A, 9A, 5B, 9B, 5C, 9C 5G, 9G, 2J, 2K & 2L (total 17nos) (incl. 3 days TRA)	58	58	08-Oct-21	04-Dec-21	0%
Section 1 of the Works- All Works within Portion I of the Site (Entrusted Works of TKOI Viaduct)		167	151	24-Jul-21 A	06-Jan-22	
Construction Work (Works Available for Piles 5D,9D,5E, 9E, 5F, 9F, 5H, 9H, 1L, 2L)		108	108	09-Aug-21	24-Nov-21	
Piling Works		7	7	09-Aug-21	16-Aug-21	
Bored Pile Machine 2		7	7	09-Aug-21	16-Aug-21	
Piling Works for Pier 2L (Bridge S200)		7	7	09-Aug-21	16-Aug-21	
Testing		7	7	09-Aug-21	16-Aug-21	
S1-PW2060	Sonic Test, interface core and full core for bored pile	7	7	09-Aug-21	16-Aug-21	0%
Installation of Precast Pile Cap & 1st Pour for Pile Cap		63	63	09-Aug-21	23-Oct-21	
S1-PC1000	Delivery of precast pile cap shell	16	16	09-Aug-21	26-Aug-21	0%
S1-PC1020	Insatllation of pilecap and 1st pour for Pier 5H (Bridge S400-2)	26	26	27-Aug-21	27-Sep-21	0%
S1-PC1040	Insatllation of pilecap and 1st pour for Pier 9H (Bridge CT-2)	26	26	02-Sep-21	04-Oct-21	0%
S1-PC1060	Insatllation of pilecap and 1st pour for Pier 5D (Bridge S400-1)	26	26	09-Sep-21	11-Oct-21	0%
S1-PC1080	Insatllation of pilecap and 1st pour for Pier 5E (Bridge S400-1)	26	26	11-Sep-21	13-Oct-21	0%
S1-PC1100	Insatllation of pilecap and 1st pour for Pier 1L (Bridge ML-3-2)	26	26	21-Sep-21	23-Oct-21	0%
S1-PC1120	Insatllation of pilecap and 1st pour for Pier 9D (Bridge CT-1)	26	26	16-Sep-21	19-Oct-21	0%
S1-PC1140	Insatllation of pilecap and 1st pour for Pier 9E (Bridge CT-1)	26	26	16-Sep-21	19-Oct-21	0%
S1-PC1160	Insatllation of pilecap and 1st pour for Pier 5F (Bridge S400-2)	26	26	18-Sep-21	21-Oct-21	0%
S1-PC1180	Insatllation of pilecap and 1st pour for Pier 9F (Bridge CT-2)	26	26	21-Sep-21	23-Oct-21	0%
Installation of Precast Pier & 2nd Pour for Pile Cap		61	61	06-Sep-21	18-Nov-21	
S1-PP1000	Fabrication and delivery of precast pier	35	35	06-Sep-21*	19-Oct-21	0%
S1-PP1020	Insatllation of precast pier and 2st pour for pile cap -5H	22	22	30-Sep-21	27-Oct-21	0%



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

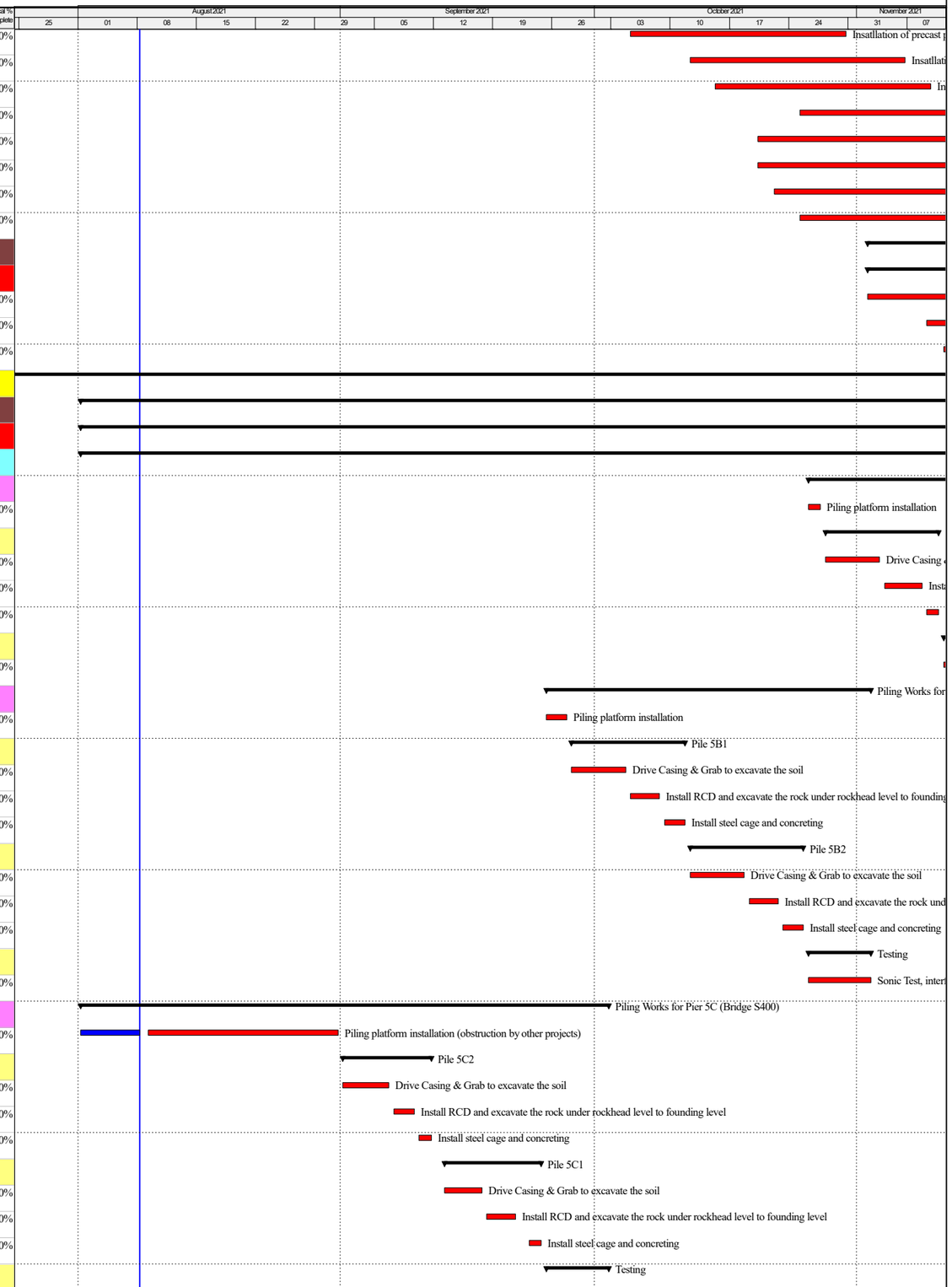
Three Month Rolling Programme (August 2021 - November 2021)

Date	Revision	Checked	Approved
08-Aug-21	3MRP (Aug 21 - Nov 21)		

Data Date :08-Aug-21
Sheet 2of 6

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete
S1-PP1040	Insatllation of precast pier and 2st pour for pile cap -9H	22	22	05-Oct-21	30-Oct-21	0%
S1-PP1060	Insatllation of precast pier and 2st pour for pile cap -5D	22	22	12-Oct-21	06-Nov-21	0%
S1-PP1080	Insatllation of precast pier and 2st pour for pile cap -5E	22	22	15-Oct-21	09-Nov-21	0%
S1-PP1100	Insatllation of precast pier and 2st pour for pile cap -1L	22	22	25-Oct-21	18-Nov-21	0%
S1-PP1120	Insatllation of precast pier and 2st pour for pile cap -9D	22	22	20-Oct-21	13-Nov-21	0%
S1-PP1140	Insatllation of precast pier and 2st pour for pile cap -9E	22	22	20-Oct-21	13-Nov-21	0%
S1-PP1160	Insatllation of precast pier and 2st pour for pile cap -5F	22	22	22-Oct-21	16-Nov-21	0%
S1-PP1180	Insatllation of precast pier and 2st pour for pile cap -9F	22	22	25-Oct-21	18-Nov-21	0%
Stage 1 - Erection of Bridge Segments		20	20	02-Nov-21	24-Nov-21	
Erection for Bridge S400 and Bridge CT		20	20	02-Nov-21	24-Nov-21	
S1-EB1000	Delivery for Stage 1 Bridge Segment Erection (10 Sets of Segments)	20	20	02-Nov-21	24-Nov-21	0%
S1-EB1010	Segment erection between Pier 5H and Pier W5 - Stage 1-1	5	5	09-Nov-21	13-Nov-21	0%
S1-EB1020	Segment erection between Pier 9H and Pier W5 - Stage 1-2	5	5	11-Nov-21	16-Nov-21	0%
Construction Work (Works Available for Piles 5B,9B,5C,9C,5G,9G,2K)		167	151	24-Jul-21 A	06-Jan-22	
Construction Work for Piers 5B, 9B, 5C,9C, 5G,9G		151	151	01-Aug-21 A	06-Jan-22	
Piling Works (For Pier 5B, 9B, 5C, 9C, 5G, 9G)		101	101	01-Aug-21 A	17-Nov-21	
Bored Pile Machine 1		89	101	01-Aug-21 A	17-Nov-21	
Piling Works for Pier 5G (Bridge S400)		20	20	26-Oct-21	17-Nov-21	
S1-PW3320	Piling platform installation	2	2	26-Oct-21	27-Oct-21	0%
Pile 5G1		12	12	28-Oct-21	10-Nov-21	
S1-PW3340	Drive Casing & Grab to excavate the soil	6	6	28-Oct-21	03-Nov-21	0%
S1-PW3360	Install RCD and excavate the rock under rockhead level to founding level	4	4	04-Nov-21	08-Nov-21	0%
S1-PW3380	Install steel cage and concreting	2	2	09-Nov-21	10-Nov-21	0%
Pile 5G2		6	6	11-Nov-21	17-Nov-21	
S1-PW3400	Drive Casing & Grab to excavate the soil	6	6	11-Nov-21	17-Nov-21	0%
Piling Works for Pier 5B (Bridge S400)		39	39	25-Sep-21	02-Nov-21	
S1-PW3160	Piling platform installation	2	2	25-Sep-21	27-Sep-21	0%
Pile 5B1		11	11	28-Sep-21	11-Oct-21	
S1-PW3180	Drive Casing & Grab to excavate the soil	5	5	28-Sep-21	04-Oct-21	0%
S1-PW3200	Install RCD and excavate the rock under rockhead level to founding level	4	4	05-Oct-21	08-Oct-21	0%
S1-PW3220	Install steel cage and concreting	2	2	09-Oct-21	11-Oct-21	0%
Pile 5B2		11	11	12-Oct-21	25-Oct-21	
S1-PW3240	Drive Casing & Grab to excavate the soil	5	5	12-Oct-21	18-Oct-21	0%
S1-PW3260	Install RCD and excavate the rock under rockhead level to founding level	4	4	19-Oct-21	22-Oct-21	0%
S1-PW3280	Install steel cage and concreting	2	2	23-Oct-21	25-Oct-21	0%
Testing		7	7	26-Oct-21	02-Nov-21	
S1-PW3300	Sonic Test, interface core and full core for bored pile	7	7	26-Oct-21	02-Nov-21	0%
Piling Works for Pier 5C (Bridge S400)		43	55	01-Aug-21 A	02-Oct-21	
S1-PW3000	Piling platform installation (obstruction by other projects)	22	20	01-Aug-21 A	31-Aug-21	100%
Pile 5C2		10	10	01-Sep-21	11-Sep-21	
S1-PW3020	Drive Casing & Grab to excavate the soil	5	5	01-Sep-21	06-Sep-21	0%
S1-PW3040	Install RCD and excavate the rock under rockhead level to founding level	3	3	07-Sep-21	09-Sep-21	0%
S1-PW3060	Install steel cage and concreting	2	2	10-Sep-21	11-Sep-21	0%
Pile 5C1		10	10	13-Sep-21	24-Sep-21	
S1-PW3080	Drive Casing & Grab to excavate the soil	5	5	13-Sep-21	17-Sep-21	0%
S1-PW3100	Install RCD and excavate the rock under rockhead level to founding level	3	3	18-Sep-21	21-Sep-21	0%
S1-PW3120	Install steel cage and concreting	2	2	23-Sep-21	24-Sep-21	0%
Testing		7	7	25-Sep-21	02-Oct-21	



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

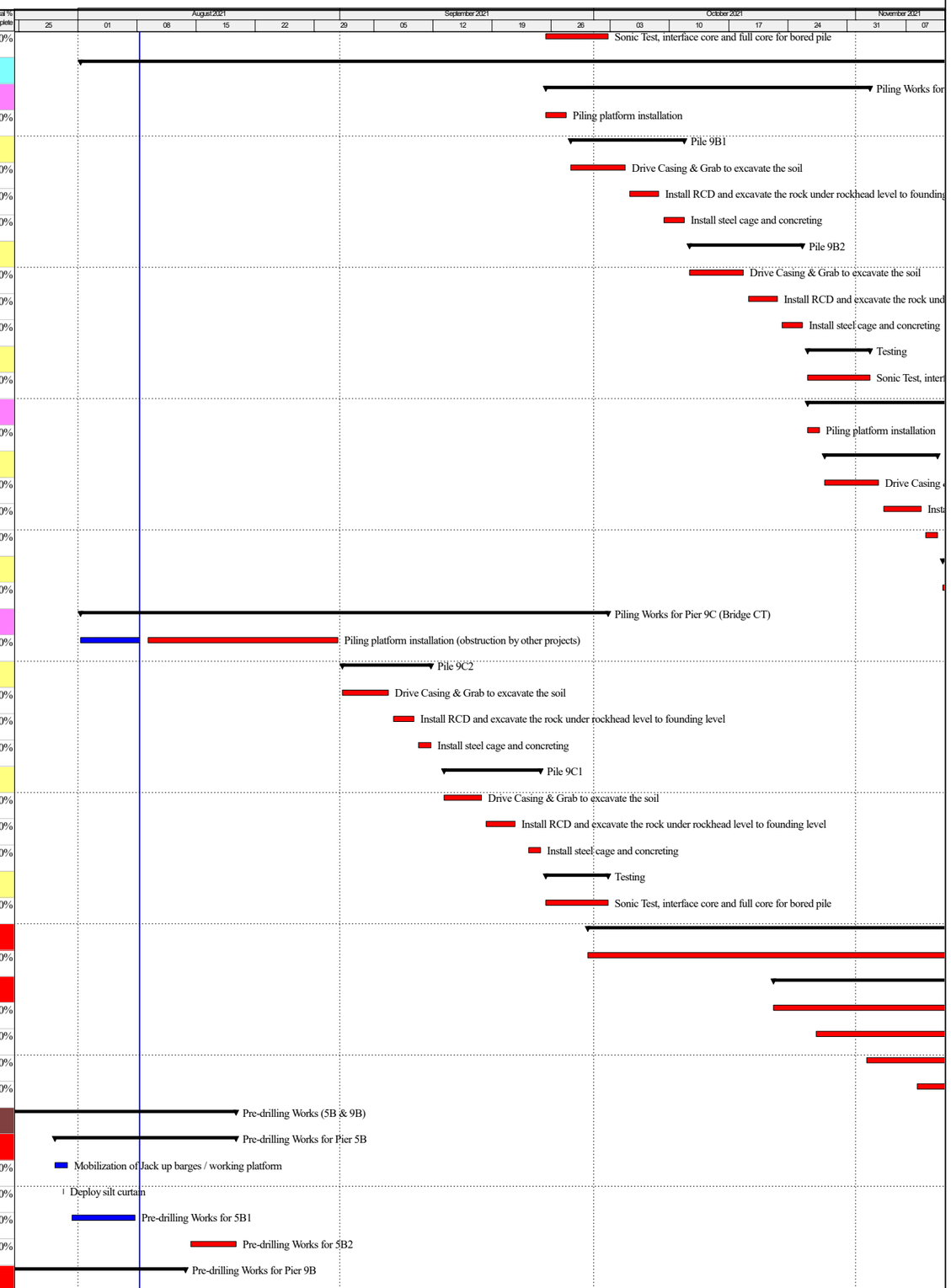
Three Month Rolling Programme (August 2021 - November 2021)

Date	Revision	Checked	Approved
08-Aug-21	3MRP (Aug 21 - Nov 21)		

Data Date :08-Aug-21
Sheet 3of 6

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete
S1-PW3140	Sonic Test, interface core and full core for bored pile	7	7	25-Sep-21	02-Oct-21	0%
Bored Pile Machine 2		101	101	01-Aug-21 A	17-Nov-21	
Piling Works for Pier 9B (Bridge CT)		39	39	25-Sep-21	02-Nov-21	
S1-PW3640	Piling platform installation	2	2	25-Sep-21	27-Sep-21	0%
Pile 9B1		11	11	28-Sep-21	11-Oct-21	
S1-PW3660	Drive Casing & Grab to excavate the soil	5	5	28-Sep-21	04-Oct-21	0%
S1-PW3680	Install RCD and excavate the rock under rockhead level to founding level	4	4	05-Oct-21	08-Oct-21	0%
S1-PW3700	Install steel cage and concreting	2	2	09-Oct-21	11-Oct-21	0%
Pile 9B2		11	11	12-Oct-21	25-Oct-21	
S1-PW3720	Drive Casing & Grab to excavate the soil	5	5	12-Oct-21	18-Oct-21	0%
S1-PW3740	Install RCD and excavate the rock under rockhead level to founding level	4	4	19-Oct-21	22-Oct-21	0%
S1-PW3760	Install steel cage and concreting	2	2	23-Oct-21	25-Oct-21	0%
Testing		7	7	26-Oct-21	02-Nov-21	
S1-PW3780	Sonic Test, interface core and full core for bored pile	7	7	26-Oct-21	02-Nov-21	0%
Piling Works for Pier 9G (Bridge CT)		20	20	26-Oct-21	17-Nov-21	
S1-PW3800	Piling platform installation	2	2	26-Oct-21	27-Oct-21	0%
Pile 9G1		12	12	28-Oct-21	10-Nov-21	
S1-PW3820	Drive Casing & Grab to excavate the soil	6	6	28-Oct-21	03-Nov-21	0%
S1-PW3840	Install RCD and excavate the rock under rockhead level to founding level	4	4	04-Nov-21	08-Nov-21	0%
S1-PW3860	Install steel cage and concreting	2	2	09-Nov-21	10-Nov-21	0%
Pile 9G2		6	6	11-Nov-21	17-Nov-21	
S1-PW3880	Drive Casing & Grab to excavate the soil	6	6	11-Nov-21	17-Nov-21	0%
Piling Works for Pier 9C (Bridge CT)		55	55	01-Aug-21 A	02-Oct-21	
S1-PW3480	Piling platform installation (obstruction by other projects)	22	20	01-Aug-21 A	31-Aug-21	0%
Pile 9C2		10	10	01-Sep-21	11-Sep-21	
S1-PW3500	Drive Casing & Grab to excavate the soil	5	5	01-Sep-21	06-Sep-21	0%
S1-PW3520	Install RCD and excavate the rock under rockhead level to founding level	3	3	07-Sep-21	09-Sep-21	0%
S1-PW3540	Install steel cage and concreting	2	2	10-Sep-21	11-Sep-21	0%
Pile 9C1		10	10	13-Sep-21	24-Sep-21	
S1-PW3560	Drive Casing & Grab to excavate the soil	5	5	13-Sep-21	17-Sep-21	0%
S1-PW3580	Install RCD and excavate the rock under rockhead level to founding level	3	3	18-Sep-21	21-Sep-21	0%
S1-PW3600	Install steel cage and concreting	2	2	23-Sep-21	24-Sep-21	0%
Testing		7	7	25-Sep-21	02-Oct-21	
S1-PW3620	Sonic Test, interface core and full core for bored pile	7	7	25-Sep-21	02-Oct-21	0%
Installation of Precast Pier & 2nd Pour for Pile Cap		80	80	30-Sep-21	06-Jan-22	
S1-PP2000	Fabrication and delivery of precast pier	80	80	30-Sep-21*	06-Jan-22	0%
Installation of Precast Pile Cap & 1st Pour for Pile Cap		40	40	22-Oct-21	07-Dec-21	
S1-PC2000	Delivery of precast pile cap shell	24	24	22-Oct-21	18-Nov-21	0%
S1-PC2020	Insatllation of pilecap and 1st pour for Pier 5C (Bridge 400-1)	26	26	27-Oct-21	25-Nov-21	0%
S1-PC2040	Insatllation of pilecap and 1st pour for Pier 9C (Bridge CT-1)	26	26	02-Nov-21	01-Dec-21	0%
S1-PC2060	Insatllation of pilecap and 1st pour for Pier 2L (Bridge S200-3)	26	26	08-Nov-21	07-Dec-21	0%
Pre-drilling Works (5B & 9B)		23	10	24-Jul-21 A	19-Aug-21	
Pre-drilling Works for Pier 5B		19	5	29-Jul-21 A	19-Aug-21	
S1-PD3000	Mobilization of Jack up barges / working platform	2	0	29-Jul-21 A	30-Jul-21 A	100%
S1-PD3020	Deploy silt curtain	2	0	30-Jul-21 A	30-Jul-21 A	100%
S1-PD3040	Pre-drilling Works for 5B1	5	0	31-Jul-21 A	07-Aug-21 A	100%
S1-PD3060	Pre-drilling Works for 5B2	5	5	14-Aug-21	19-Aug-21	0%
Pre-drilling Works for Pier 9B		23	5	24-Jul-21 A	13-Aug-21	



Remaining Level of Effort
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Three Month Rolling Programme (August 2021 - November 2021)

Date	Revision	Checked	Approved
08-Aug-21	3MRP (Aug 21 - Nov 21)		

Data Date :08-Aug-21
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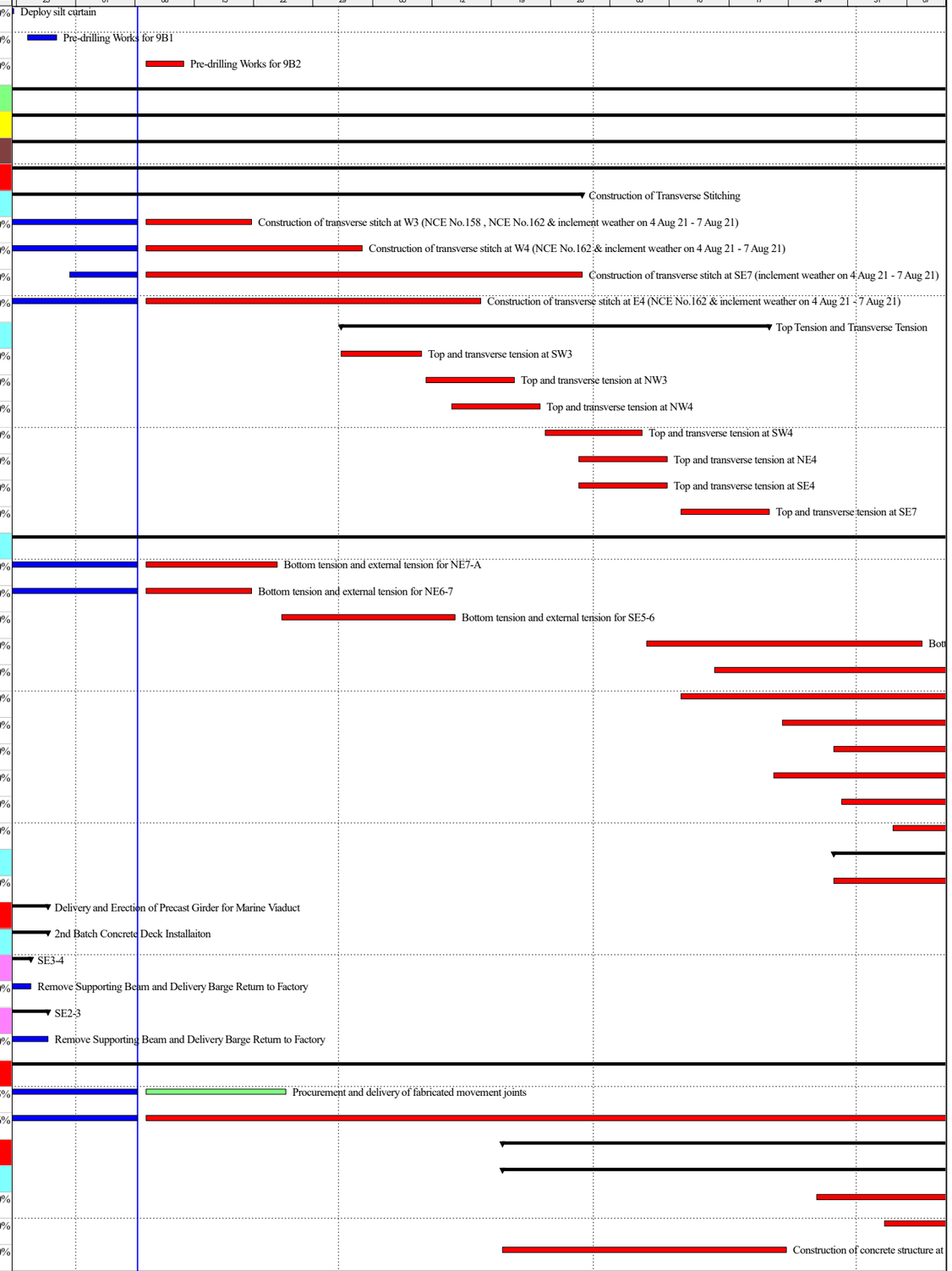
Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete
S1-PD3120	Deploy silt curtain	2	0	24-Jul-21 A	24-Jul-21 A	100%
S1-PD3140	Pre-drilling Works for 9B1	5	0	26-Jul-21 A	29-Jul-21 A	100%
S1-PD3160	Pre-drilling Works for 9B2	5	5	09-Aug-21	13-Aug-21	0%
Section 2 of Works-All Works within Portion II,III,IV and VI		393	121	03-Sep-20 A	06-Dec-21	
CBL Main Bridge and Marine Viaduct		393	121	03-Sep-20 A	06-Dec-21	
Concrete Bridge		393	120	03-Sep-20 A	06-Dec-21	
Construction of Stitching and Tension		141	100	21-Jun-21 A	06-Dec-21	
Construction of Transverse Stitching		89	44	21-Jun-21 A	29-Sep-21	
S2-CB3020	Construction of transverse stitch at W3 (NCE No.158 , NCE No.162 & inclement weather on 4 Aug 21 - 7 Aug 21)	48	12	21-Jun-21 A	21-Aug-21	0%
S2-CB3040	Construction of transverse stitch at W4 (NCE No.162 & inclement weather on 4 Aug 21 - 7 Aug 21)	48	23	03-Jul-21 A	03-Sep-21	0%
S2-CB3045	Construction of transverse stitch at SE7 (inclement weather on 4 Aug 21 - 7 Aug 21)	48	44	31-Jul-21 A	29-Sep-21	0%
S2-CB3050	Construction of transverse stitch at E4 (NCE No.162 & inclement weather on 4 Aug 21 - 7 Aug 21)	48	35	22-Jul-21 A	17-Sep-21	0%
Top Tension and Transverse Tension		41	41	01-Sep-21	21-Oct-21	
S2-CB3100	Top and transverse tension at SW3	9	9	01-Sep-21	10-Sep-21	0%
S2-CB3105	Top and transverse tension at NW3	9	9	11-Sep-21	21-Sep-21	0%
S2-CB3120	Top and transverse tension at NW4	9	9	14-Sep-21	24-Sep-21	0%
S2-CB3125	Top and transverse tension at SW4	9	9	25-Sep-21	06-Oct-21	0%
S2-CB3140	Top and transverse tension at NE4	9	9	29-Sep-21	09-Oct-21	0%
S2-CB3145	Top and transverse tension at SE4	9	9	29-Sep-21	09-Oct-21	0%
S2-CB3160	Top and transverse tension at SE7	9	9	11-Oct-21	21-Oct-21	0%
Bottom Tension and External Tension		87	100	25-Jun-21 A	06-Dec-21	
S2-CB3210	Bottom tension and external tension for NE7-A	18	14	23-Jul-21 A	24-Aug-21	0%
S2-CB3220	Bottom tension and external tension for NE6-7	27	12	25-Jun-21 A	21-Aug-21	100%
S2-CB3230	Bottom tension and external tension for SE5-6	18	18	25-Aug-21	14-Sep-21	0%
S2-CB3245	Bottom tension and external tension for NW4-3	27	27	07-Oct-21	08-Nov-21	0%
S2-CB3250	Bottom tension and external tension for SW4-3	27	27	15-Oct-21	15-Nov-21	0%
S2-CB3260	Bottom tension and external tension for NE4-5	27	27	11-Oct-21	11-Nov-21	0%
S2-CB3265	Bottom tension and external tension for SE4-5	27	27	23-Oct-21	23-Nov-21	0%
S2-CB3267	Bottom tension and external tension for SE3-4	27	27	29-Oct-21	29-Nov-21	0%
S2-CB3270	Bottom tension and external tension for SE6-7	27	27	22-Oct-21	22-Nov-21	0%
S2-CB3280	Bottom tension and external tension for SE7-A	27	27	30-Oct-21	30-Nov-21	0%
S2-CB3320	Bottom tension and external tension for NE3-4	27	27	05-Nov-21	06-Dec-21	0%
Construction of Long Stitching		27	27	29-Oct-21	29-Nov-21	
S2-CB3440	Construction of long stitching for E5-E6	27	27	29-Oct-21	29-Nov-21	0%
Delivery and Erection of Precast Girder for Marine Viaduct		11	0	22-Jul-21 A	28-Jul-21 A	
2nd Batch Concrete Deck Installaiton		11	0	22-Jul-21 A	28-Jul-21 A	
SE3-4		10	0	22-Jul-21 A	26-Jul-21 A	
S2-CB2430	Remove Supporting Beam and Delivery Barge Return to Factory	10	0	22-Jul-21 A	26-Jul-21 A	100%
SE2-3		10	0	24-Jul-21 A	28-Jul-21 A	
S2-CB2460	Remove Supporting Beam and Delivery Barge Return to Factory	10	0	24-Jul-21 A	28-Jul-21 A	100%
Procurement and Delivery		224	93	03-Sep-20 A	27-Nov-21	
S2-CB2486	Procurement and delivery of fabricated movement joints	180	15	20-Oct-20 A	25-Aug-21	85%
S2-CB2488	Procurement and delivery of bituminous materials	180	93	03-Sep-20 A	27-Nov-21	56%
Construction of Concrete Structure Above Deck and Waterproofing Works		63	63	20-Sep-21	04-Dec-21	
Construction of Concrete Structure Above Deck		63	63	20-Sep-21	04-Dec-21	
S2-CB3600	Construction of concrete structure at NE5-6	27	27	27-Oct-21	26-Nov-21	0%
S2-CB3605	Construction of concrete structure at SE5-6	27	27	04-Nov-21	04-Dec-21	0%
S2-CB3620	Construction of concrete structure at NE6-7	27	27	20-Sep-21	23-Oct-21	0%



Remaining Level of Effort
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Three Month Rolling Programme (August 2021 - November 2021)

Date	Revision	Checked	Approved
08-Aug-21	3MRP (Aug 21 - Nov 21)		

Data Date :08-Aug-21
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Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete
S2-CB3640	Construction of concrete structure at NE7-A	27	27	07-Oct-21	08-Nov-21	0%
Make Good Concrete Surfacing		31	31	25-Oct-21	29-Nov-21	
S2-CB3800	Make good concrete surfacing at NE6-7	18	18	25-Oct-21	13-Nov-21	0%
S2-CB3820	Make good concrete surfacing at NE7-A	18	18	09-Nov-21	29-Nov-21	0%
Steel Bridge		180	112	01-Jun-21 A	27-Nov-21	
Welding & Painting Works		150	93	01-Jun-21 A	27-Nov-21	
Preparation Works		131	74	01-Jun-21 A	05-Nov-21	
5% NDT (Eddy Current)		131	74	01-Jun-21 A	05-Nov-21	
S2-SB1540	Deck steel box	70	22	01-Jun-21 A	02-Sep-21	50%
S2-SB1560	Arch ribs	45	45	11-Sep-21	05-Nov-21	0%
Painting of the Ring Weld		7	7	08-Nov-21	15-Nov-21	
S2-SB2060	Painting of the east side span ring weld	7	7	08-Nov-21	15-Nov-21	0%
Welding Works		117	93	12-Jul-21 A	27-Nov-21	
Secondary Deck Facilities Welding		42	42	30-Sep-21	19-Nov-21	
S2-SB2120	Secondary deck facilities welding	42	42	30-Sep-21	19-Nov-21	0%
Repair of the Welding Joint Cracks at N19		20	20	05-Nov-21	27-Nov-21	
S2-SB2160	Assembly of the working platform for the welding joint repair of N19	5	5	05-Nov-21	10-Nov-21	0%
S2-SB2180	Welding repair and re-coating	15	15	11-Nov-21	27-Nov-21	0%
Welding of the Joint between Main Span and the East Side Span		90	75	15-Jul-21 A	06-Nov-21	
S2-SB1680	Welding of the ring weld of east side span	7	0	15-Jul-21 A	06-Aug-21 A	100%
S2-SB1700	NDT for the ring weld of the east side span	5	5	09-Aug-21	13-Aug-21	0%
S2-SB1720	Assembly of the working platform for welding of U trough and in-fill	15	15	09-Aug-21	25-Aug-21	0%
S2-SB1740	Welding of the U-rib and I-rib at the void between two boxes	30	30	26-Aug-21	30-Sep-21	0%
S2-SB1760	Welding of the in-fill of ring weld (incl. NDT)	60	60	26-Aug-21	06-Nov-21	0%
S2-SB1780	Completion of the joint of east side span	0	0		06-Nov-21	0%
Welding of the Joint between Main Span and the West Side Span		107	83	12-Jul-21 A	16-Nov-21	
S2-SB1840	Push side span to main span (2stages), final tune the position of west side span (NCE No.162 & inclement weather 4-8Aug)	18	2	12-Jul-21 A	10-Aug-21	100%
S2-SB1860	Installation of the wind shelter on the deck	1	1	11-Aug-21	11-Aug-21	0%
S2-SB1880	Installation of the welding access platform (inclined ones)	5	5	12-Aug-21	17-Aug-21	0%
S2-SB1900	Welding of the ring weld of west side span	10	10	18-Aug-21	28-Aug-21	0%
S2-SB1920	NDT for the ring weld of the west side span	5	5	30-Aug-21	03-Sep-21	0%
S2-SB1940	Assembly of the working platform for welding of U trough and in-fill	15	15	18-Aug-21	03-Sep-21	0%
S2-SB1960	Welding of the U trough at the void between two boxes	30	30	04-Sep-21	11-Oct-21	0%
S2-SB1980	Welding of the in-fill of ring weld (incl. NDT)	60	60	04-Sep-21	16-Nov-21	0%
Construction of Steel-Concrete Transition Zone		101	101	08-Aug-21	16-Nov-21	
Construction of the west side transition		7	7	09-Nov-21	16-Nov-21	
S2-CT1040	Concreting of the transition section	7	7	09-Nov-21	16-Nov-21	0%
Construction of the east side transition		7	7	05-Nov-21	12-Nov-21	
S2-CT1160	Concreting of the transition section	7	7	05-Nov-21	12-Nov-21	0%
Road Works and Surface Furniture		24	24	08-Aug-21	31-Aug-21	
S2-RW1000	Waterproofing works on central reserve and planter area	15	15	14-Aug-21	31-Aug-21	0%
S2-RW1040	Completion of Key Date 2	0	0		08-Aug-21	0%
Section 5 of the Works-All Works within Portion V (CBL E&M Plantroom)		372	100	30-Jul-20 A	06-Dec-21	
Remianing Work		339	68	30-Jul-20 A	29-Oct-21	
S5-PR2120	External works (inclluding lanscaping)	90	45	30-Jul-20 A	30-Sep-21	75%
S5-PR2200	Water works,pluming and drainage works	60	23	30-Jul-20 A	29-Oct-21	78%
S5-PR2290	Cable Installation Work After Access Permitted (Portion VI)	63	63	13-Aug-21	28-Oct-21	0%
Major Services System		346	100	28-Sep-20 A	06-Dec-21	

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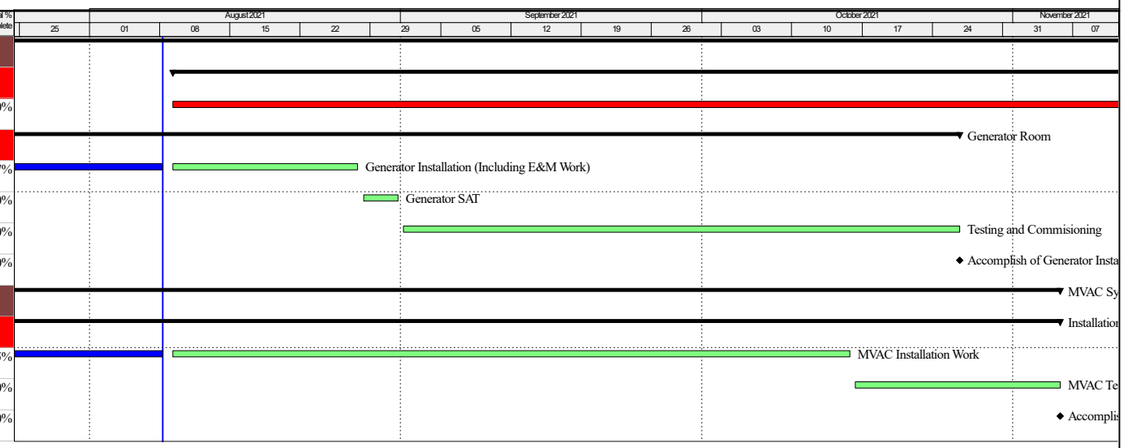
Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete
Electrical System		224	100	02-Oct-20 A	06-Dec-21	
UPS Room		100	100	09-Aug-21	06-Dec-21	
S5-PR2580	UPS Installation (Including E&M Work)	100	100	09-Aug-21	06-Dec-21	0%
Generator Room		189	65	02-Oct-20 A	26-Oct-21	
S5-PR2500	Generator Installation (Including E&M Work)	90	17	02-Oct-20 A	27-Aug-21	57%
S5-PR2540	Generator SAT	3	3	28-Aug-21	31-Aug-21	0%
S5-PR2545	Testing and Commisioning	45	45	01-Sep-21	26-Oct-21	0%
S5-PR2560	Accomplish of Generator Installation	0	0		26-Oct-21	0%
MVAC System		320	74	28-Sep-20 A	05-Nov-21	
Installation of MVAC System		320	74	28-Sep-20 A	05-Nov-21	
S5-PR2840	MVAC Installation Work	70	56	28-Sep-20 A	15-Oct-21	75%
S5-PR2900	MVAC Testing and Commisioning	18	18	16-Oct-21	05-Nov-21	0%
S5-PR2920	Accomplish of MVAC Installation	0	0		05-Nov-21	0%



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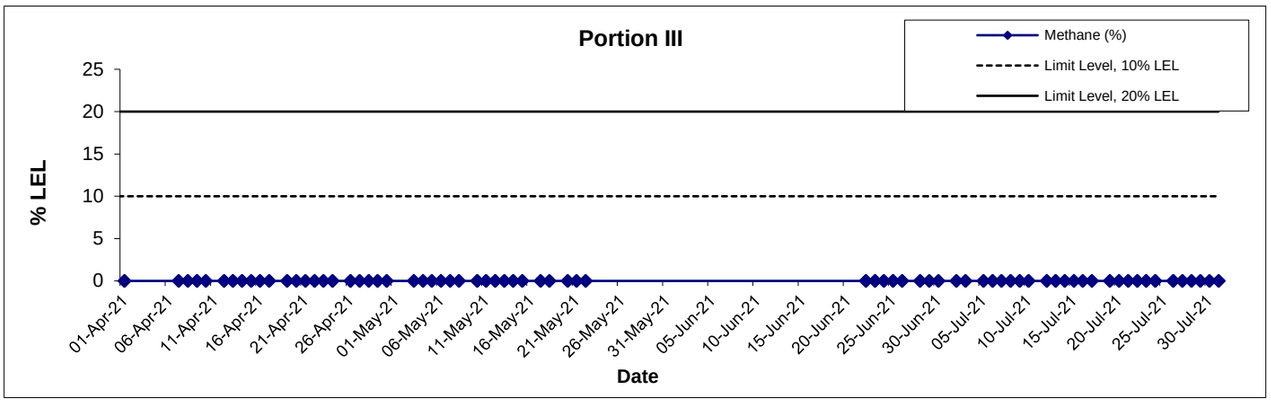
APPENDIX R
RECORD OF LANDFILL GAS MONITORING BY CONTRACTOR

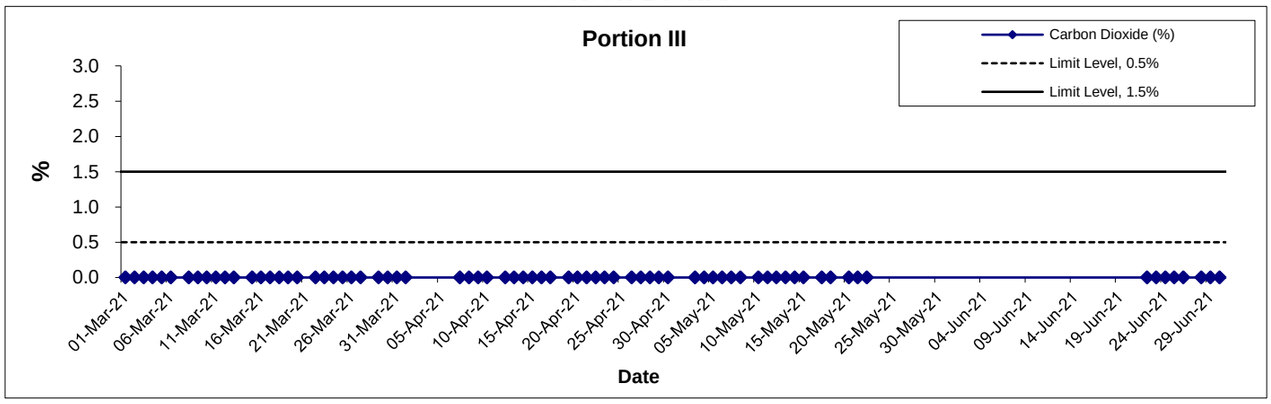
APPENDIX R - RECORD OF LANDFILL GAS MONITORING BY THE CONTRACTOR

Location	Date of Measurement	Sampling time	Weather Condition	Temperature (°C)	Methane (%)	Carbon dioxide (%)	Oxygen (%)
Portion III	2-Aug-21	8:30	Cloudy	30	0	0	20.9
Portion III	2-Aug-21	13:30	Cloudy	31	0	0	20.9
Portion III	3-Aug-21	8:30	Cloudy	30	0	0	20.9
Portion III	3-Aug-21	14:00	Cloudy	31	0	0	20.9
Portion III	4-Aug-21	8:15	Rainy	26.5	0	0	20.9
Portion III	4-Aug-21	13:30	Rainy	30	0	0	20.9
Portion III	5-Aug-21	8:30	Rainy	26.5	0	0	20.9
Portion III	5-Aug-21	13:50	Rainy	28	0	0	20.9
Portion III	6-Aug-21	8:30	Rainy	26.8	0	0	20.9
Portion III	6-Aug-21	13:15	Rainy	29	0	0	20.9
Portion III	7-Aug-21	8:30	Cloudy	28	0	0	20.9
Portion III	7-Aug-21	13:15	Cloudy	29.5	0	0	20.9
Portion III	9-Aug-21	8:30	Cloudy	27.4	0	0	20.9
Portion III	9-Aug-21	14:00	Rainy	30	0	0	20.9
Portion III	10-Aug-21	8:45	Cloudy	28	0	0	20.9
Portion III	10-Aug-21	13:45	Rainy	29.5	0	0	20.9
Portion III	11-Aug-21	8:15	Rainy	28	0	0	20.9
Portion III	11-Aug-21	14:00	Cloudy	29.5	0	0	20.9
Portion III	12-Aug-21	8:20	Cloudy	27.2	0	0	20.9
Portion III	12-Aug-21	13:45	Cloudy	31	0	0	20.9
Portion III	13-Aug-21	8:30	Cloudy	27.5	0	0	20.9
Portion III	13-Aug-21	13:15	Cloudy	29.2	0	0	20.9
Portion III	14-Aug-21	8:45	Cloudy	27.2	0	0	20.9
Portion III	14-Aug-21	13:30	Cloudy	29	0	0	20.9
Portion III	16-Aug-21	8:30	Rainy	27	0	0	20.9
Portion III	16-Aug-21	13:15	Rainy	30	0	0	20.9
Portion III	17-Aug-21	8:15	Sunny	28.2	0	0	20.9
Portion III	17-Aug-21	13:15	Sunny	31.2	0	0	20.9
Portion III	18-Aug-21	8:20	Sunny	29	0	0	20.9
Portion III	18-Aug-21	13:10	Sunny	31.2	0	0	20.9
Portion III	19-Aug-21	8:15	Cloudy	27	0	0	20.9
Portion III	19-Aug-21	13:20	Rainy	30	0	0	20.9
Portion III	20-Aug-21	8:15	Cloudy	28	0	0	20.9
Portion III	20-Aug-21	13:45	Rainy	29.8	0	0	20.9
Portion III	21-Aug-21	8:15	Sunny	28.5	0	0	20.9
Portion III	21-Aug-21	13:15	Sunny	31	0	0	20.9
Portion III	23-Aug-21	8:15	Rainy	28.5	0	0	20.9
Portion III	23-Aug-21	13:15	Cloudy	31.5	0	0	20.9
Portion III	24-Aug-21	8:15	Rainy	27.5	0	0	20.9
Portion III	24-Aug-21	13:00	Rainy	31.8	0	0	20.9
Portion III	25-Aug-21	8:20	Cloudy	28.5	0	0	20.9
Portion III	25-Aug-21	13:35	Cloudy	34	0	0	20.9
Portion III	26-Aug-21	8:20	Cloudy	28	0	0	20.9
Portion III	26-Aug-21	13:15	Cloudy	29	0	0	20.9
Portion III	27-Aug-21	8:15	Rainy	24.5	0	0	20.9
Portion III	27-Aug-21	13:00	Rainy	29	0	0	20.9
Portion III	28-Aug-21	8:10	Cloudy	25.5	0	0	20.9
Portion III	28-Aug-21	13:10	Cloudy	28.5	0	0	20.9
Portion III	30-Aug-21	8:15	Cloudy	28	0	0	20.9
Portion III	30-Aug-21	14:00	Cloudy	29.5	0	0	20.9
Portion III	31-Aug-21	8:30	Rainy	28.2	0	0	20.9
Portion III	31-Aug-21	14:00	Cloudy	31	0	0	20.9

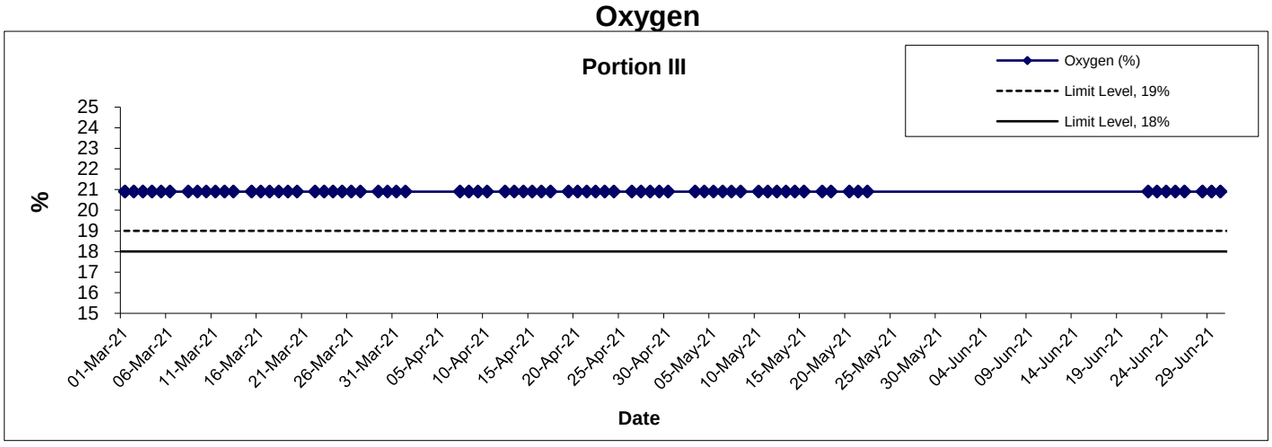
Methane



Carbon Dioxide



Oxygen



*No monitoring between 22-May-21 and 21-June-21 due to calibration of the gas detector

Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel – Design and Construction	Scale N.T.S Date Jul-21	Project No. MA16034 Appendix R	CINOTECH

APPENDIX T
CULTURAL HERITAGE MONITORING RESULTS

Appendix T – Cultural Heritage Monitoring Results

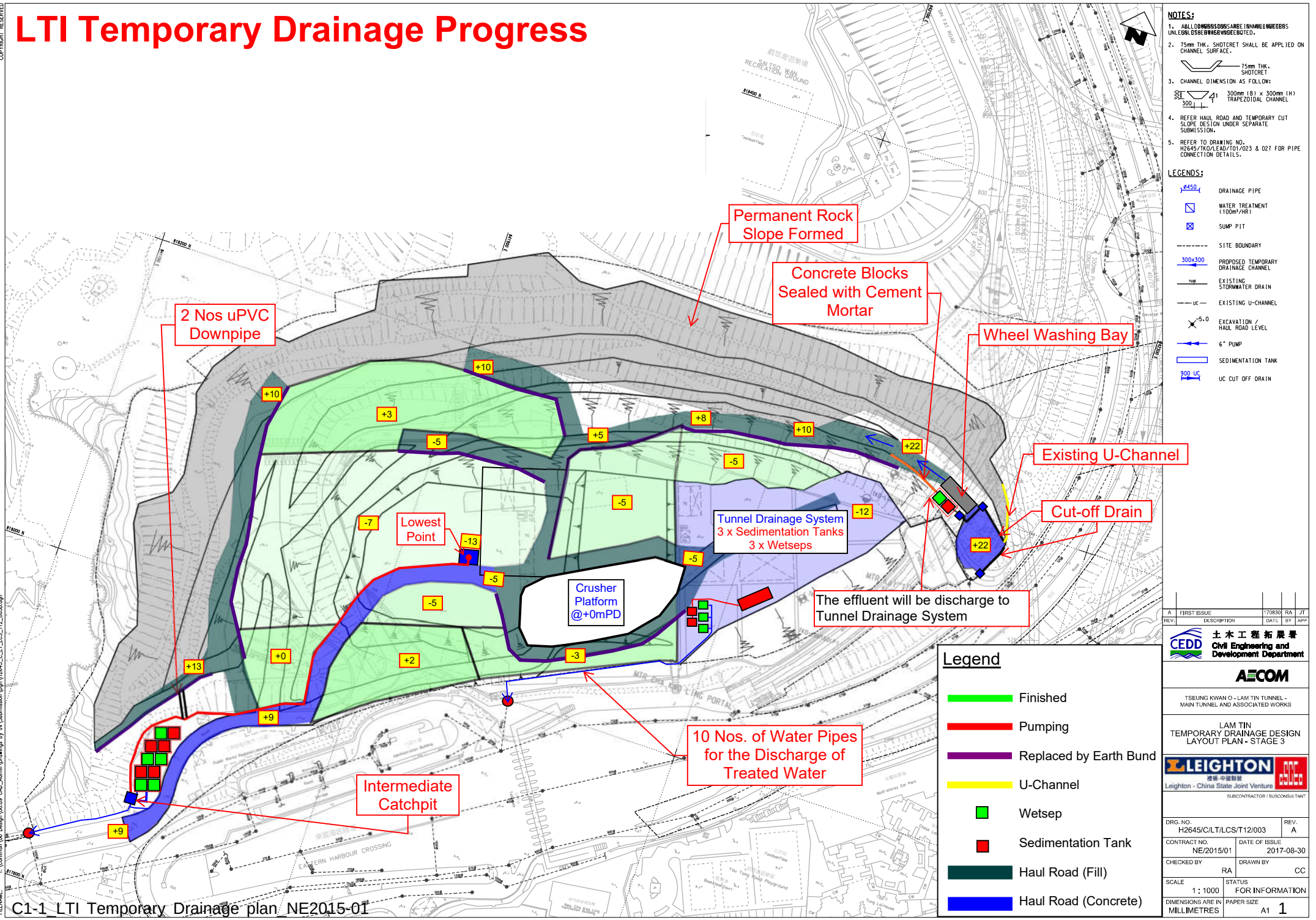
Date	Tilting				Settlement (mm)			Vibration (mm/s)		
								Measurement Direction		
	THT-TM-01	THT-TM-02	THT-TM-03	THT-TM-04	THT-BSP-1	THT-BSP-2	THT-BSP-3	Tran	Vertical	Longitude
2-Aug-21	Obstructed by THT renovation work							0.150	0.189	0.134
3-Aug-21								0.173	0.268	0.150
4-Aug-21								0.095	0.126	0.102
5-Aug-21								0.095	0.134	0.102
6-Aug-21								0.102	0.142	0.087
7-Aug-21								0.118	0.181	0.095
9-Aug-21								0.110	0.197	0.110
10-Aug-21								0.095	0.126	0.126
11-Aug-21								0.150	0.110	0.118
12-Aug-21								0.102	0.150	0.118
13-Aug-21								0.221	0.221	0.142
14-Aug-21								0.292	0.331	0.221
16-Aug-21								0.292	0.300	0.213
17-Aug-21								0.150	0.142	0.142
18-Aug-21								0.102	0.110	0.102
19-Aug-21								0.134	0.189	0.158
20-Aug-21								0.095	0.229	0.126
21-Aug-21								0.150	0.142	0.173
23-Aug-21								0.181	0.197	0.150
24-Aug-21								0.110	0.102	0.158
25-Aug-21								0.197	0.142	0.276
26-Aug-21								0.260	0.221	0.181
27-Aug-21								0.292	0.339	0.268
28-Aug-21								0.347	0.307	0.528
30-Aug-21								0.229	0.252	0.355
31-Aug-21								0.118	0.110	0.118
Alert Level	1:2000				6			4.5		
Alarm Level	1:1500				8			4.8		
Action Level	1:1000				10			5		

Note:
Bold means Alert Level exceedance
Bold Italic means Alarm Level exceedance
Bold Italic with underline means Action Level exceedance

APPENDIX V
SURFACE RUNOFF MANAGEMENT PLAN

Contract No. NE/2015/01

LTI Temporary Drainage Progress



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. 75mm THK. SHOTCRET SHALL BE APPLIED ON CHANNEL SURFACE.
3. CHANNEL DIMENSION AS FOLLOW:
4. REFER HAUL ROAD AND TEMPORARY CUT SLOPE DESIGN UNDER SEPARATE SUBMISSION.
5. REFER TO DRAWING NO. H2645/TKO/LEAD/T01/023 & 027 FOR PIPE CONNECTION DETAILS.

75mm THK. SHOTCRET

300mm (B) x 300mm (H) TRAPEZOIDAL CHANNEL

LEGENDS:

- DRAINAGE PIPE
- WATER TREATMENT (100m³/HR)
- SUMP PIT
- SITE BOUNDARY
- PROPOSED TEMPORARY DRAINAGE CHANNEL
- EXISTING STORMWATER DRAIN
- EXISTING U-CHANNEL
- EXCAVATION / HAUL ROAD LEVEL
- 6" PUMP
- SEDIMENTATION TANK
- UC CUT OFF DRAIN

Legend

- Finished
- Pumping
- Replaced by Earth Bund
- U-Channel
- Wetsep
- Sedimentation Tank
- Haul Road (Fill)
- Haul Road (Concrete)

REV.	DESCRIPTION	DATE	BY	APP
A	FIRST ISSUE	170830	RA	JT

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

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TSEUNG KWAN O - LAM TIN TUNNEL - MAIN TUNNEL AND ASSOCIATED WORKS

LAM TIN TEMPORARY DRAINAGE DESIGN LAYOUT PLAN - STAGE 3

LEIGHTON 禮頓-中建聯營 Leighton - China State Joint Venture

SUBCONTRACTOR / SUBCONSULTANT

DRG. NO. H2645/C/LT/LCS/T12/003	REV. A
CONTRACT NO. NE/2015/01	DATE OF ISSUE 2017-08-30
CHECKED BY RA	DRAWN BY CC
SCALE 1 : 1000	STATUS FOR INFORMATION
DIMENSIONS ARE IN MILLIMETRES	PAPER SIZE A1

1

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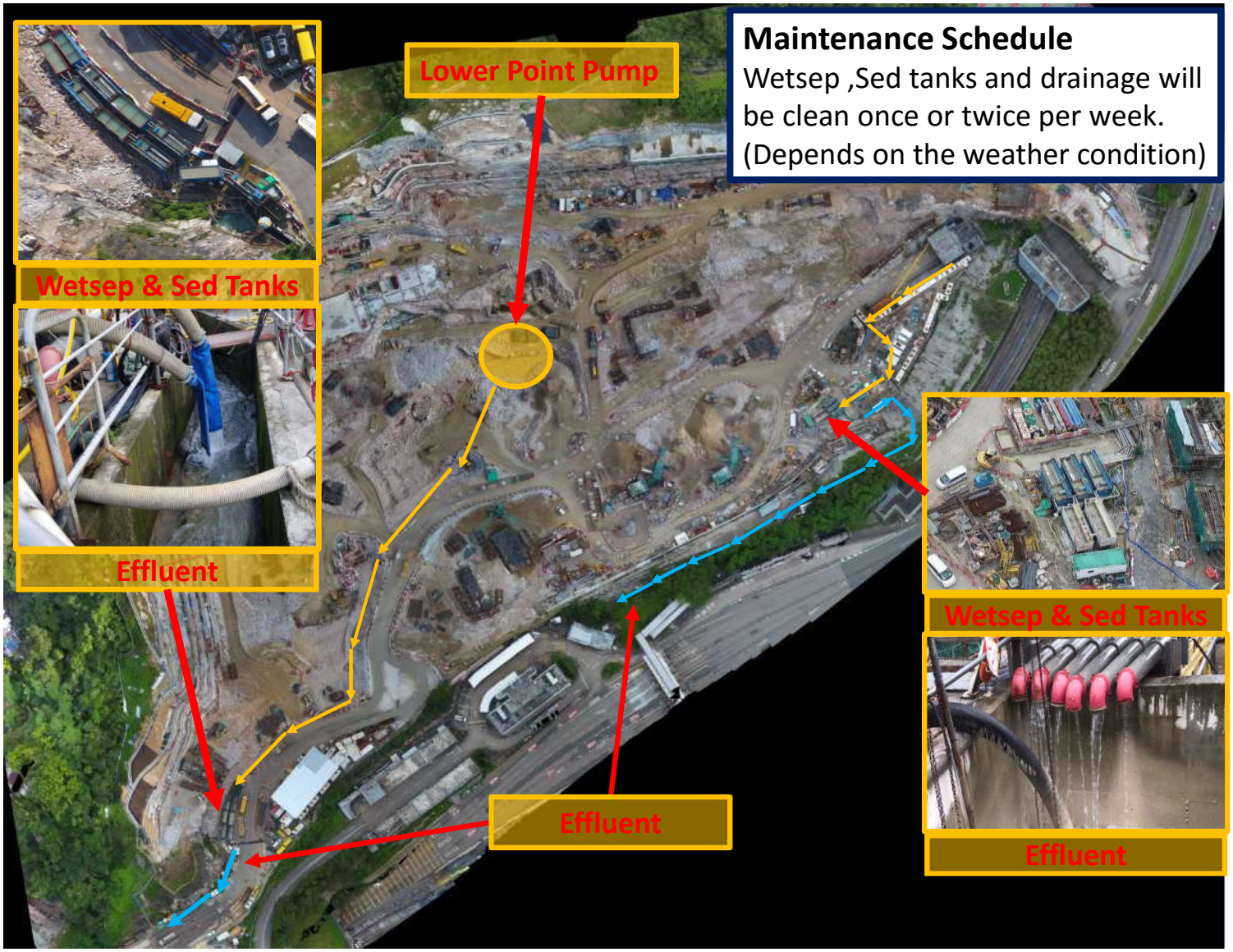
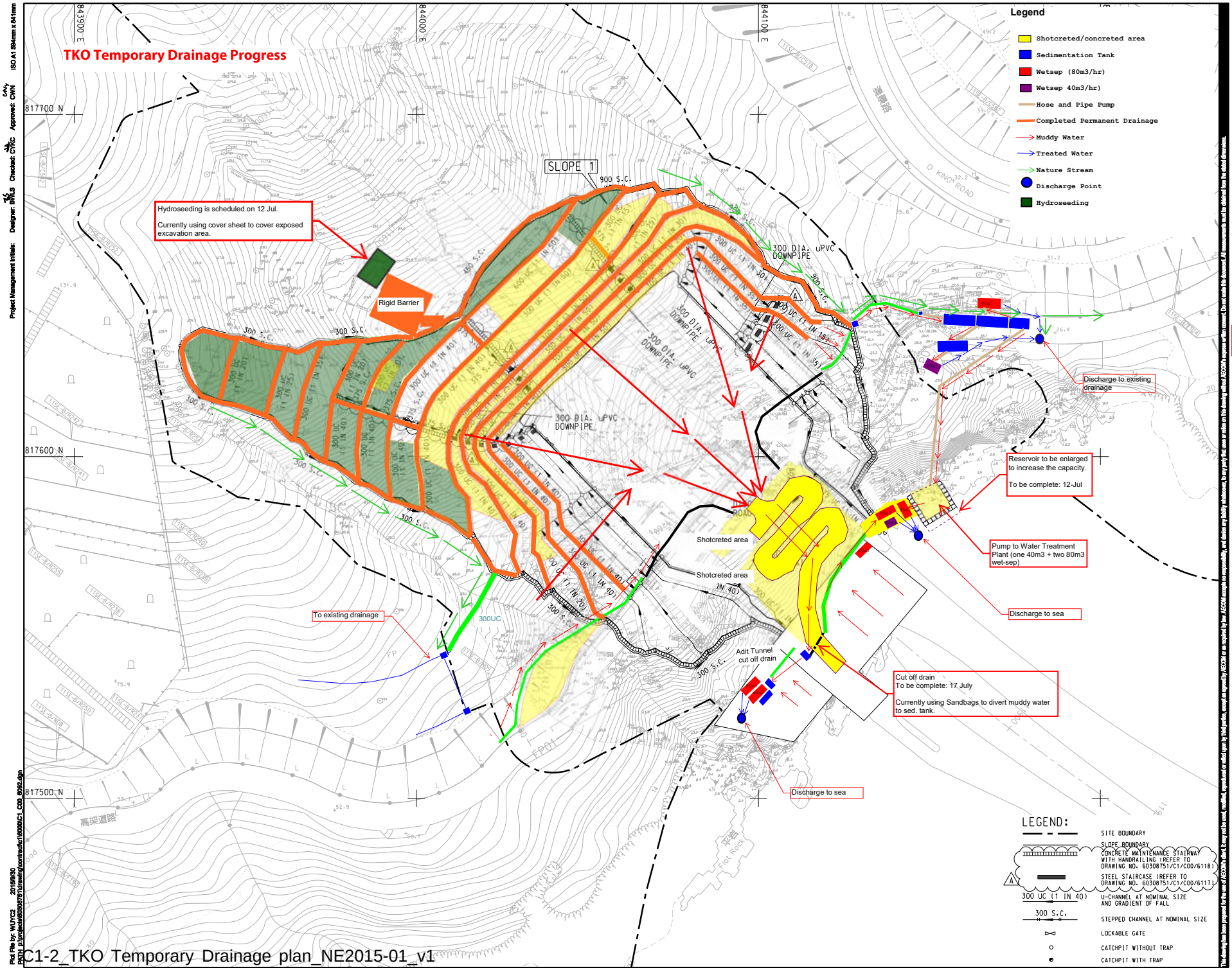
C1-1_LTI Temporary Drainage plan_NE2015-01


Lower Point Pump
Maintenance Schedule
Wetsep ,Sed tanks and drainage will be clean once or twice per week.
(Depends on the weather condition)
Wetsep & Sed Tanks
Effluent
Wetsep & Sed Tanks
Effluent
Effluent



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PROJECT
TSEUNG KWAN O - LAM TIN TUNNEL

CONTRACT TITLE
TSEUNG KWAN O - LAM TIN TUNNEL MAIN TUNNEL AND ASSOCIATED WORKS

CLIENT
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B	JUL. 16	WORKING DRAWING	ALC
A	OCT.15	TENDER ADDENDUM NO.1	CYKC
-	AUG.15	TENDER DRAWING	CYKC
DR.	DATE	DESCRIPTION	CHK.

STATUS
WORKING DRAWING

SCALE
A1 1:500

DIMENSION UNIT
METRES

KEY PLAN

PROJECT NO.
60308751

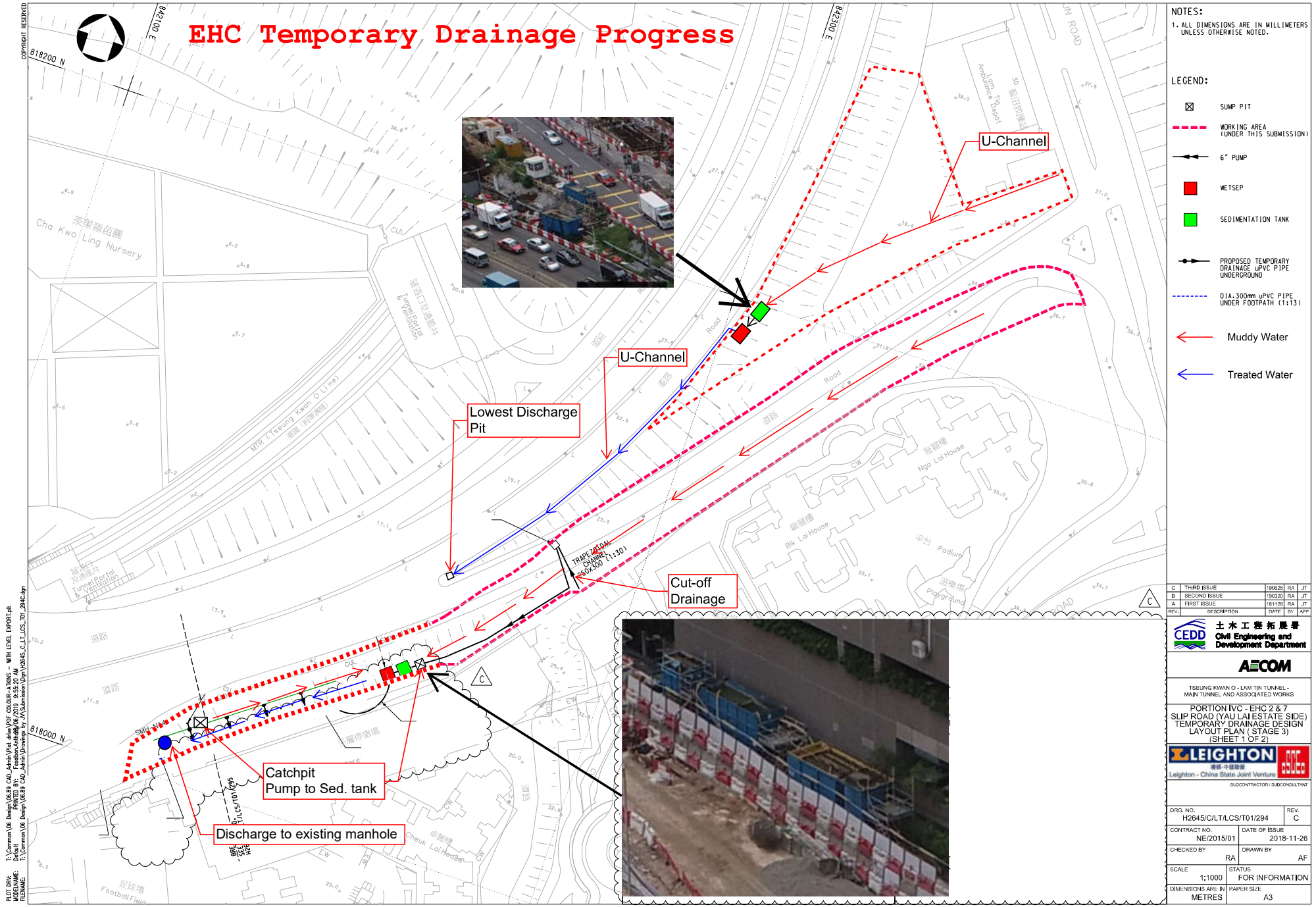
CONTRACT NO.
NE/2015/01

SHEET TITLE
TSEUNG KWAN O PORTAL
SITE FORMATION
DRAINAGE LAYOUT PLAN

SHEET NUMBER
60308751/C1/C00/6092B

Designer: BWLS Checked: CYKC Approved: CWN
Project Management Initials:
ISO A1 594mm x 841mm
Plot File by: WUYC2 2016/9/30
PATH: p:\projects\60308751\drawing\contract\c1\60000\C1_C00_6092.dgn

Maintenance Schedule
Wetsep ,Sed tanks and drainage will be clean once or twice per week.
(Depends on the weather condition)
Sed tanks
Site Clearance & provide cover to exposed excavation area
Contract Number NE/2015/01
Wetsep
Effluent
Extension of Sed tanks


EHC Temporary Drainage Progress
U-Channel
U-Channel
Lowest Discharge Pit
Cut-off Drainage
Catchpit
Pump to Sed. tank
Discharge to existing manhole
NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
LEGEND:
SUMP PIT
WORKING AREA (UNDER THIS SUBMISSION)
6" PUMP
WETSEP
SEDIMENTATION TANK
PROPOSED TEMPORARY DRAINAGE uPVC PIPE UNDERGROUND
DIA.300mm uPVC PIPE UNDER FOOTPATH (1:13)
Muddy Water
Treated Water
TSEUNG KWAN O - LAM TIN TUNNEL - MAIN TUNNEL AND ASSOCIATED WORKS
PORTION IVC - EHC 2 & 7
SLIP ROAD (YAU LAI ESTATE SIDE)
TEMPORARY DRAINAGE DESIGN
LAYOUT PLAN (STAGE 3)
(SHEET 1 OF 2)
DRG. NO. H2645/C/LT/LCS/T01/294
REV. C
CONTRACT NO. NE/2015/01
DATE OF ISSUE 2018-11-26
CHECKED BY RA
DRAWN BY AF
SCALE 1:1000
STATUS FOR INFORMATION
DIMENSIONS ARE IN METRES
PAPER SIZE A3

CRBC-Build King Joint Venture

Our Ref.:JV/TKO-P2/NE201502/19.00.00.00/017621/L
Your Ref.: TLT/(NE/2015/02)/C30/650/(0205)

29 March 2021

* N E - 0 0 0 1 7 5 7 0 *

AECOM Asia Company Limited
8/F, Tower 2, Grand Central Plaza
138 Shatin Rural Committee Road
Shatin, Hong Kong

By Hand

Attn.: Mr C. W. Lam, Dominic (CRE)

Dear Sir,

Contract No.: NE/2015/02
Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works
Submission of Layout Plan for Site Surface Run-off Control

We would like to submit herewith a Layout Plan for Site Surface Run-off Control so as to illustrate our site preparedness for the coming typhoon and wet season as per PS Clause 25.08.

Yours faithfully,
For and on behalf of
CRBC-Build King Joint Venture

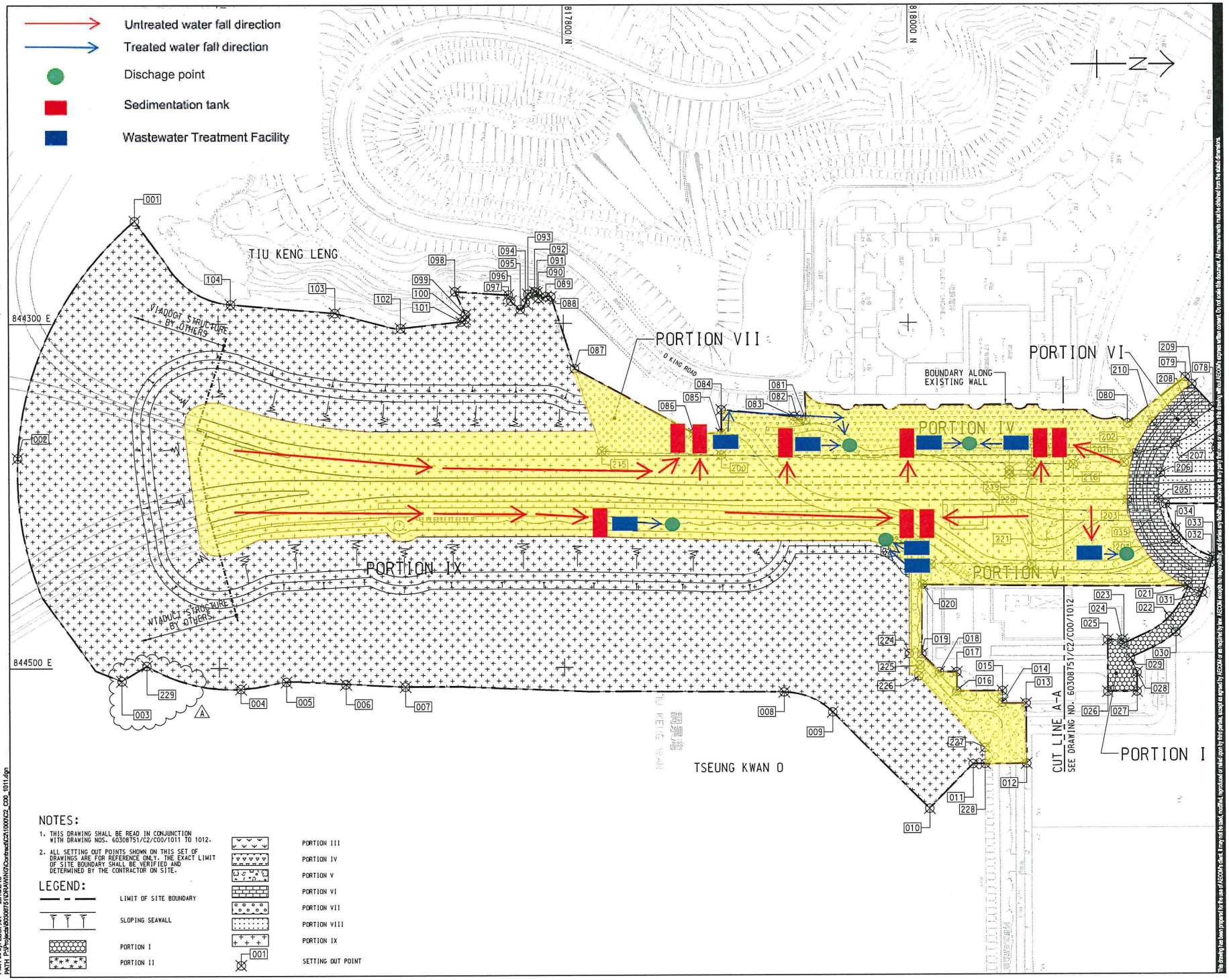
YU Man Kit, Andy
Site Agent

Encl.

c.c.:
The Project Manager for the contract, (CE/E1, CEDD) – Attn.: Mr. Sunny SP LO Fax: 2739 0076
The Project Manager's Delegate, AECOM (HO) - Attn: Mr. Ivan Tsang Fax: 3922 9797

AY/GN/WW/RP/KC

香港北角渣華道 191 號嘉華國際中心 23 A 字樓 07 - 11 室
Units 07-11, 23A/F., K. Wah Centre, 191 Java Road, North Point, Hong Kong
Tel: 852-2283 1688 Fax: 852-2283 1689



Project Management Initials: Designer: ATH Checked: RPCM Approved: GWN

ISO A1 594mm x 841mm

Plot File by: LUOFA 2016/2/18
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PROJECT
TSEUNG KWAN O - LAM TIN TUNNEL

CONTRACT TITLE
TSEUNG KWAN O - LAM TIN TUNNEL ROAD P2 AND ASSOCIATED WORKS

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CONSULTANT
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I/R	DATE	DESCRIPTION	CHK
B	SEP. 16	WORKING DRAWING	RPCM
A	FEB.16	TENDER ADDENDUM NO. 1	RPCM
-	JAN.16	TENDER DRAWING	RPCM

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SCALE
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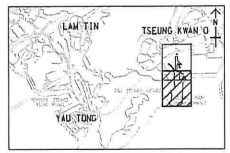
DIMENSION UNIT
METRES

KEY PLAN A1 1 : 50000



PROJECT NO.
60308751

CONTRACT NO.
NE/2015/02

SHEET TITLE
PORTION OF SITE

SHEET 1 OF 2

SHEET NUMBER
60308751/C2/C00/1011B

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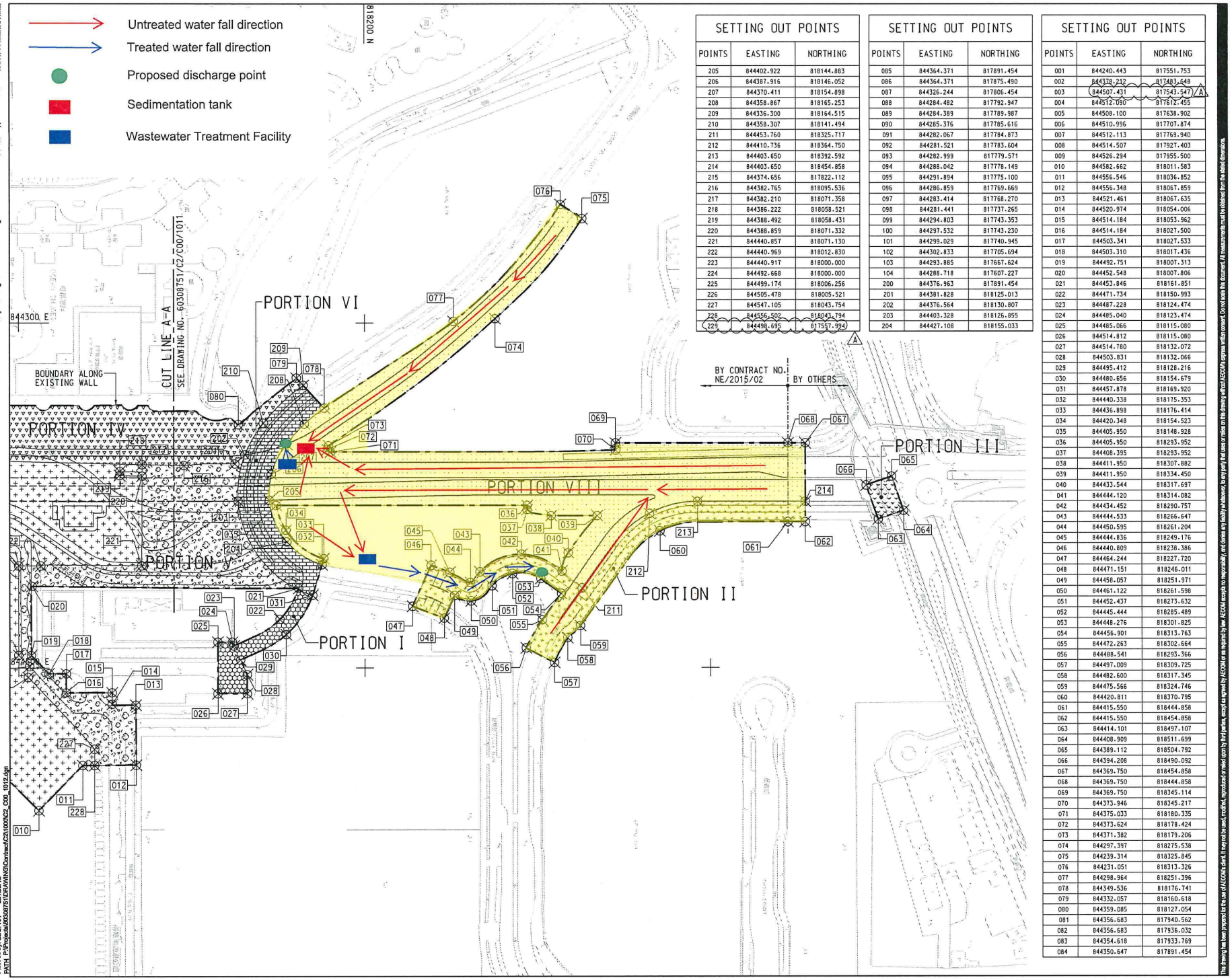

SETTING OUT POINTS

POINTS	EASTING	NORTHING
205	844402.922	818144.883
206	844387.916	818146.052
207	844370.411	818154.898
208	844358.867	818165.253
209	844336.300	818164.515
210	844358.307	818141.494
211	844453.760	818325.717
212	844410.736	818364.750
213	844403.650	818392.592
214	844403.650	818454.858
215	844374.656	817822.112
216	844382.765	818095.536
217	844382.210	818071.358
218	844386.222	818058.521
219	844388.492	818058.431
220	844388.859	818071.332
221	844440.857	818071.130
222	844440.969	818012.830
223	844440.917	818000.000
224	844492.668	818000.000
225	844499.174	818006.256
226	844505.478	818005.521
227	844547.105	818043.754
228	844556.502	818041.794
229	844498.695	817557.994

SETTING OUT POINTS

POINTS	EASTING	NORTHING
085	844364.371	817891.454
086	844364.371	817875.490
087	844326.244	817806.454
088	844284.482	817792.947
089	844284.389	817789.987
090	844285.376	817785.616
091	844282.067	817784.873
092	844281.521	817783.604
093	844282.999	817779.571
094	844288.042	817778.149
095	844291.894	817775.100
096	844286.859	817769.669
097	844283.414	817768.270
098	844281.441	817737.265
099	844294.803	817743.353
100	844297.532	817743.230
101	844299.029	817740.945
102	844302.833	817705.694
103	844293.885	817667.624
104	844288.718	817607.227
200	844376.963	817891.454
201	844381.828	818125.013
202	844376.564	818130.807
203	844403.328	818126.855
204	844427.108	818155.033

SETTING OUT POINTS

POINTS	EASTING	NORTHING
001	844240.443	817551.753
002	844378.212	817483.648
003	844507.431	817543.547
004	844512.090	817612.455
005	844508.100	817638.902
006	844510.996	817707.874
007	844512.113	817769.940
008	844514.507	817927.403
009	844526.294	817955.500
010	844582.662	818011.583
011	844556.546	818036.852
012	844556.348	818067.859
013	844521.461	818067.635
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017	844503.341	818027.533
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021	844453.846	818161.851
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065	844389.112	818504.792
066	844394.208	818490.092
067	844369.750	818454.858
068	844369.750	818444.858
069	844369.750	818345.114
070	844373.946	818345.217
071	844375.033	818180.335
072	844373.624	818178.424
073	844371.382	818179.206
074	844297.397	818275.538
075	844239.314	818325.845
076	844231.051	818313.326
077	844298.964	818251.396
078	844349.536	818176.741
079	844332.057	818160.618
080	844359.085	818127.054
081	844356.683	817940.562
082	844356.683	817936.032
083	844354.618	817933.769
084	844350.647	817891.454

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PROJECT
TSEUNG KWAN O - LAM TIN TUNNEL

CONTRACT TITLE
TSEUNG KWAN O - LAM TIN TUNNEL ROAD P2 AND ASSOCIATED WORKS

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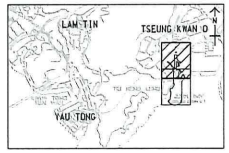
A	FEB.16	TENDER ADDENDUM NO. 1	RPCM
-	JAN.16	TENDER DRAWING	RPCM

STATUS
WORKING DRAWING

SCALE A1 1 : 1000
DIMENSION UNIT METRES

KEY PLAN A1 1 : 60000



PROJECT NO. 60308751
CONTRACT NO. NE/2015/02

SHEET TITLE
PORTION OF SITE

SHEET 2 OF 2

SHEET NUMBER
60308751/C2/C00/1012B

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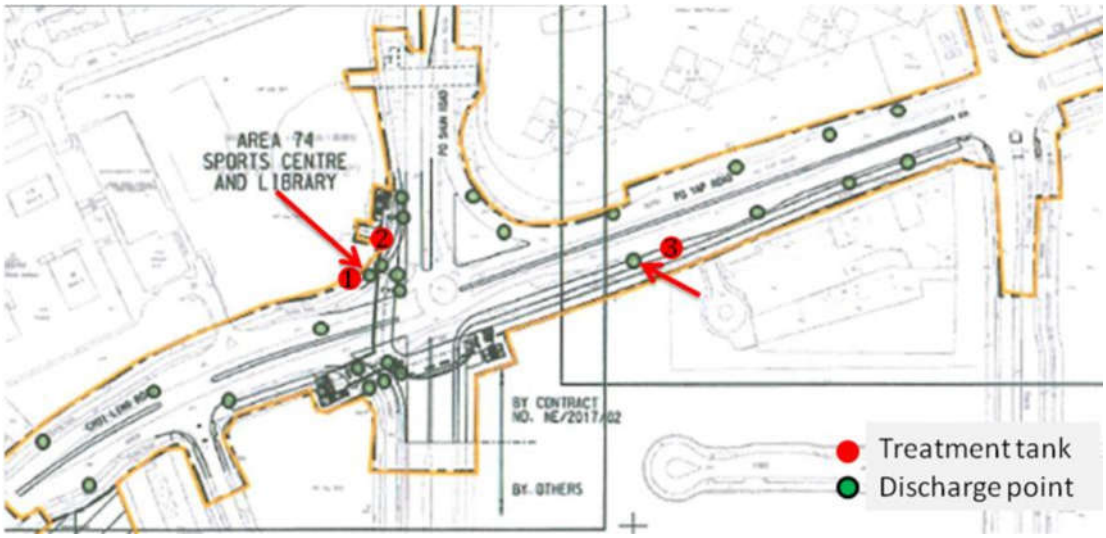
ISO A1 594mm x 841mm
Approved: CWN
Checked: RPCM
Designer: ATKH
Project Management Initials:
Plot File by: LUOFXA 2018/2/18
PATH: P:\Projects\60308751\DRAWING\Contract\C2\1000\C2_C00_1012.dgn

Contract No.: NE/2017/02

Contract Title: Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works

Flooding Mitigation Plan

Treatment facility

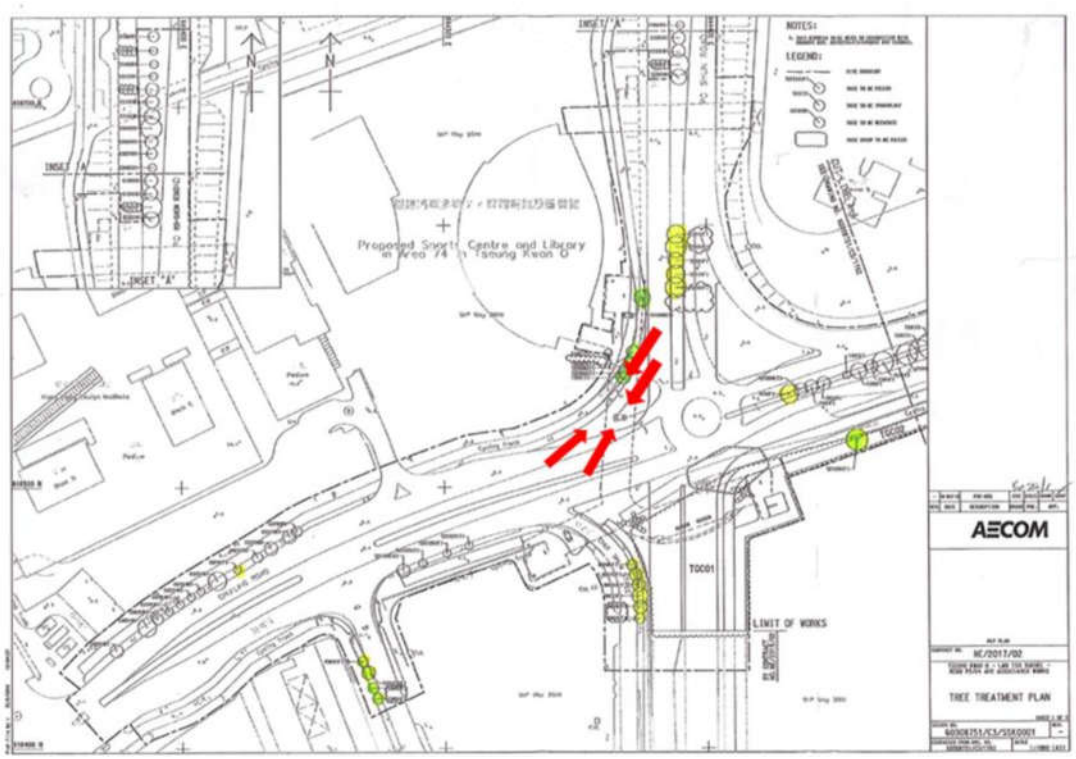


Three treatment facilities are provided on-site.

Bunding

Bunding is provided to prevent the surface runoff.

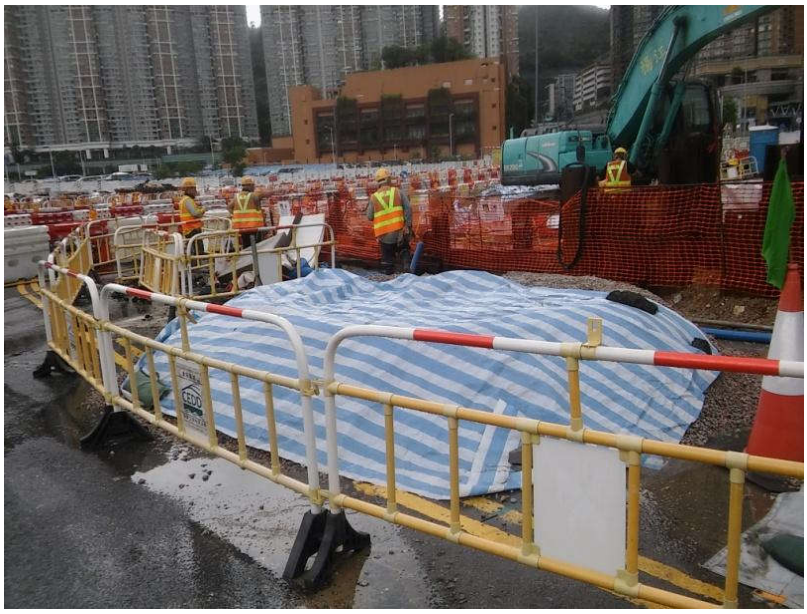
Surface runoff collection



Height difference between the road and site area to form a natural flow. Sump pit was provided for wastewater collection.

Gully Protection
Gully were protected and covered by geotextile.

Stockpile Cover



Stockpile Should be proper cover with tarpaulin.

CATCHPIT SCHEDULE

U/S ID	D/S ID	U/S G.L. (mPD)	D/S G.L. (mPD)	LENGTH (m)	GRADIENT 1 IN	U/S I.L. (mPD)	D/S I.L. (mPD)	UC SIZE (mm)	U/S ID TYPE	UC MATERIAL	BEDDING
CP01	CP02	6.50	6.50	6	100	6.275	6.219	225	CATCHPIT	CONCRETE	B
CP03	CP04	8.00	5.60	6	2	7.775	5.342	225	CATCHPIT	CONCRETE	B

Water Flow
Precautionary measures
Silt Measurement
Sedimentation tank
Sampling Point

Geotextiles are on the top of gully cover along the site as a filter to avoid any muddy water discharge directly into the drainage system.

Works Area B

Sedimentation tank

Sampling & Discharge Point

CONNECTED FROM LIFT SHAFT DRAINAGE SYSTEM (DRAWING NO. 60308751/C5/M00/8101 AND 8120 REFER)

DOWN PIPE FROM DECK CONNECT TO 300 U

DOWN PIPE FROM DECK

Sedimentation tank

Sampling & Discharge Point

DOWN PIPE FROM DECK

FOOTBRIDGE NOT SHOWN FOR CLARITY

AREA 74 SPORTS CENTRE AND LIBRARY

PARK CENTRAL

818650 N

818600 N

PO SHUN ROAD

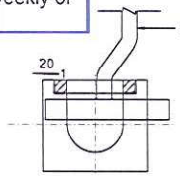
Exposed slope is covered by taupaulin

Sandbag is placed along the water barrier boundary to avoid the surface runoff.

Manhole Inspection for Silt measurement,we have regular cleaning the channel weekly or in an emergency

Manhole Inspection for Silt measurement,we have regular cleaning the channel weekly or in an emergency

DN400 to [illegible] culvert



DOWN PIPE

DETAILS CONNECTION OF DOWNPIPE TO U-CHANNEL WITH GRATING

WIP May 2014

AECOM

PROJECT
TSEUNG KWAN O - LAM TIN TUNNEL

CONTRACT TITLE
TSEUNG KWAN O - LAM TIN TUNNEL NORTHERN FOOTBRIDGE

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

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

-	AUG.16	TENDER DRAWING	AH(L)
VER	DATE	DESCRIPTION	CHK

STATUS

SCALE: A1 1 : 250
DIMENSION UNIT: METRES

KEY PLAN

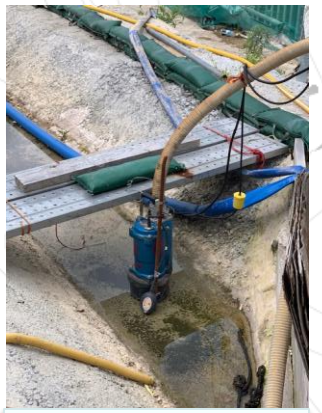
PROJECT NO.: 60308751
CONTRACT NO.: NE/2015/03

SHEET TITLE
DRAINAGE LAYOUT

SHEET NUMBER
60308751/C5/C00/1301

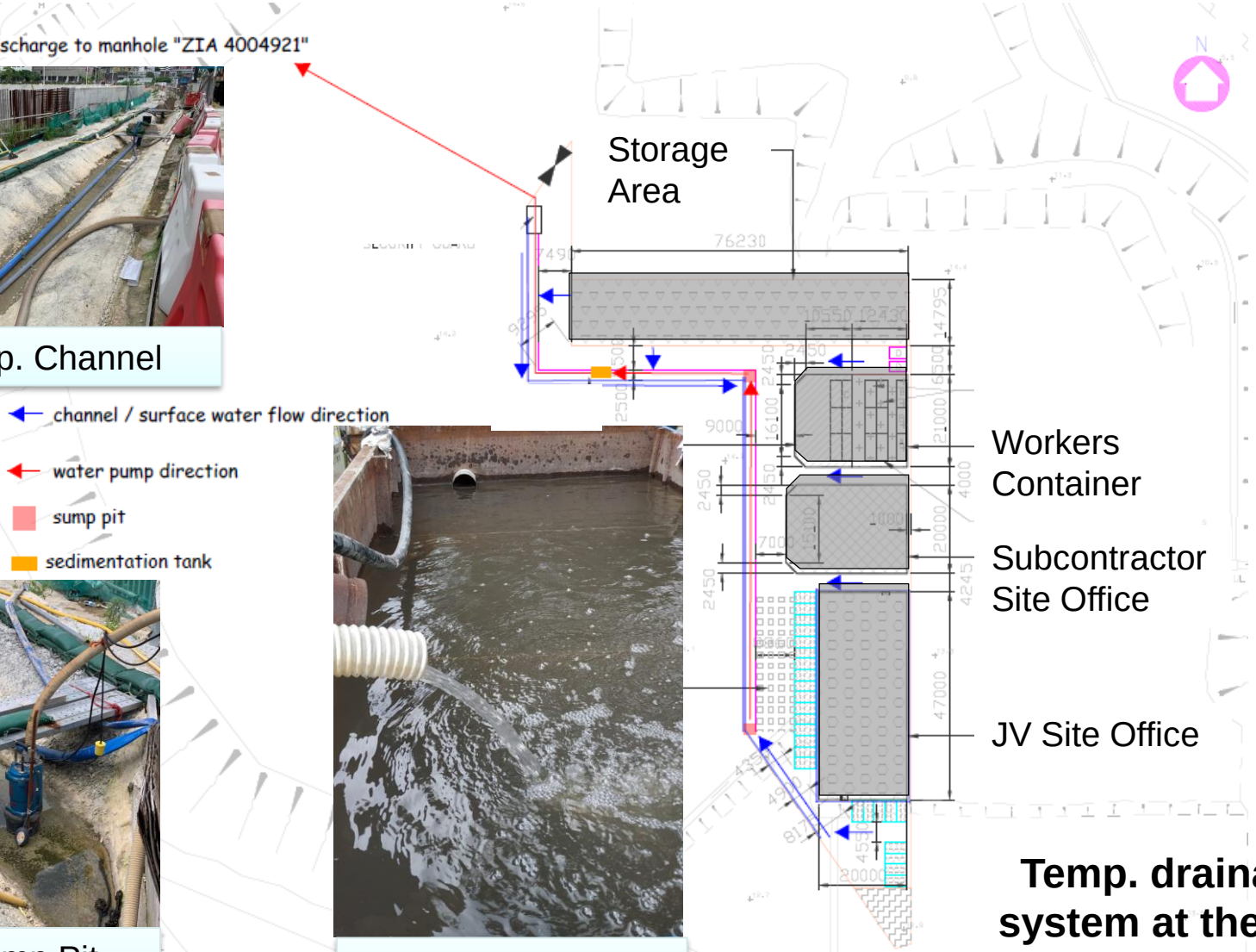
Site Surface Runoff Measures

Temp. Channel



Sump Pit

Sedimentation Tank



Temp. drainage system at the site office area