JOB NO.: TCS00975/18

CEDD CONTRACT AGREEMENT NO. EDO/04/2018 - ENVIRONMENTAL TEAM FOR CROSS BAY LINK, TSEUNG KWAN O

QUARTERLY ENVIRONMENTAL MONITORING AND AUDIT (EM&A) SUMMARY REPORT

(JUNE TO AUGUST 2019)

PREPARED FOR
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT (CEDD)

Date	Reference No.	Prepared By	Certified By
12 March 2020	TCS00975/18/600/R0257v2		
		Martin Li (Environmental Consultant)	Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	25 September 2019	First Submission
2	12 March 2020	Amended against IEC's comments

Our ref: ASCL-2018009

AECOM Asia Company Limited
8/F., Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, New Territories, Hong Kong

Attention: Mr. Conrad NG

6 May 2020

Dear Sir,

Contract No. NE/2017/07 & NE/2017/08
Cross Bay Link, Tseung Kwan O
Quarterly EM&A Report for June to August 2019

I refer to the email of ET concerning the Quarterly EM&A Report for June to August 2019 (Version 2) with Ref. No. TCS00975/18/600/R0257v2. We have no adverse comment on it and verify the captioned according to section 1.9 of Environmental Permit with No. EP-459-2013.

Yours faithfully,

Li Wai Ming Kevin
Independent Environmental Checker

cc. Mr. T.W. TAM (ETL)
Mr. Wilson CHUNG (CEDD)

EXECUTIVE SUMMARY

ES01 Civil Engineering and Development Department (hereafter referred as "CEDD") is the Project Proponent and the Permit Holder of the Project Cross Bay Link, Tseung Kwan O (hereinafter referred as "the Project") which is a Designated Project to be implemented under Environmental Permit number EP-459/2013 (hereinafter referred as "the EP-459/2013" or "the EP").

ES02 AUES was awarded the CEDD Contract Agreement No. EDO/04/2018 - Environmental Team for Cross Bay Link, Tseung Kwan O (hereinafter called "the Service Contract"). The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the Approved EM&A Manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Agreement No. CE 43/2008 (HY) Cross Bay Link, Tseung Kwan O - Investigation and other relevant statutory requirements.

ES03 This is the **3rd** Quarterly EM&A report presenting the monitoring results and inspection findings for the reporting period from ***1st June 2019*** to ***31st August 2019*** (hereinafter 'the Reporting Period').

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES04 Environmental monitoring activities under the EM&A program in this Reporting Period are summarized in the following table.

Table ES-4 Summary Environmental Monitoring Activities Undertaken in the Reporting Period

Issues	Environmental Monitoring Parameters / Inspection		Sessions
Air Quality	1-Hour TSP		51
	24-Hr TSP		16
Construction Noise	Leq (30min) Daytime		13
	Leq (5min) Evening(Note 1)		10
Water Quality	Marine Water Sampling(Note 2)		38
Inspection / Audit	Contract 1	ET Regular Environmental Site Inspection	13
		Joint site audit with Project Consultant and IEC	3
	Contract 2	ET Regular Environmental Site Inspection	13
		Joint site audit with Project Consultant and IEC	3

Note 1 Total sessions are counted by every 3 consecutive Leq5min
Note 2 Total sessions are counted by monitoring days

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES05 No air quality monitoring exceedance was recorded in this Reporting Period. No daytime construction noise monitoring exceedance was recorded while ten (10) session of evening construction noise monitoring exceedances were recorded in this Reporting Period. For water quality monitoring, three (3) Action Level and seventeen (17) Limit Level exceedances were recorded for Dissolved Oxygen while three (3) Action Level and two (2) Limit Level exceedances were recorded for Suspended Solids in the reporting period. NOEs were issued to notify EPD, AFCD, WSD, IEC, the Contractor and the Project Consultant. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

Table ES-5 Summary Environmental Monitoring Parameter Exceedance in the Reporting Period

Environmental Issues	Monitoring Parameters	Action Level	Limit Level	Event & Action	
				Investigation Results	Corrective Actions
Air Quality	1-Hour TSP	0	0	--	--
	24-Hr TSP	0	0	--	--
Construction Noise	Leq_{30min} Daytime	0	0	--	--
	Leq_{5min} Evening	0	**10**	Not project related	NA
Water Quality (Marine Water)	DO	**3**	**17**	Not project related	NA
	Turbidity	0	0	--	--
	SS	**3**	**2**	Not project related	NA

Note: NOE – Notification of Exceedance

ES06 For evening construction noise monitoring and marine quality monitoring exceedance recorded in the reporting period, investigations were conducted and it is concluded that the exceedances were unlikely caused by the Project. Nevertheless, the Contractor was reminded to strictly follow the requirement stipulated in the applied CNP during evening works and check the implementation of silt curtain regularly to ensure no seepage of muddy water into the marine water body.

ENVIRONMENTAL COMPLAINT

ES07 No environmental complaint was recorded in this Reporting Period for the Project. The statistics of environmental complaint are summarized in the following table.

Table ES-6 Summary Environmental Complaint Records in the Reporting Period

Reporting Period	Contract	Environmental Complaint Statistics			Related with the Works Contract(s)
		Frequency	Cumulative	Complaint Nature	
1 June 2019 – 31 August 2019	1	0	1	NA	NA
	2	0	0	NA	NA

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES08 No environmental summons or prosecutions was received in this Reporting Period for the Project. The statistics of environmental summons or prosecutions are summarized in the following tables.

Table ES-7 Summary Environmental Summons Records in the Reporting Period

Reporting Period	Contract	Environmental Summons Statistics			Related with the Works Contract(s)
		Frequency	Cumulative	Complaint Nature	
1 June 2019 – 31 August 2019	1	0	0	NA	NA
	2	0	0	NA	NA

Table ES-8 Summary Environmental Prosecutions Records in the Reporting Period

Reporting Period	Contract	Environmental Prosecution Statistics			Related with the Works Contract(s)
		Frequency	Cumulative	Complaint Nature	
1 June 2019 – 31 August 2019	1	0	0	NA	NA
	2	0	0	NA	NA

SITE INSPECTION BY EXTERNAL PARTIES

ES09 No site inspection was undertaken by EPD and AFCD within the Reporting Period.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Civil Engineering and Development Department (hereafter referred as "CEDD") is the Project Proponent and the Permit Holder of the Project Cross Bay Link, Tseung Kwan O (hereinafter referred as "the Project") which is a Designated Project to be implemented under Environmental Permit number EP-459/2013 (hereinafter referred as "the EP-459/2013" or "the EP").

1.1.2 AUES was awarded the CEDD Contract Agreement No. EDO/04/2018 - Environmental Team for Cross Bay Link, Tseung Kwan O (hereinafter called "the Service Contract"). The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the Approved EM&A Manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Agreement No. CE 43/2008 (HY) Cross Bay Link, Tseung Kwan O - Investigation and other relevant statutory requirements.

1.1.3 As part of the EM&A programme, baseline monitoring shall be undertaken before the Project construction work commencement to determine the ambient environmental condition. The baseline air quality, background noise and water quality monitoring has been carried out between ***21st September 2018*** and ***13th November 2018*** at the designated and interim locations. The baseline monitoring report under the EP-459/2013 has been compiled by the ET and verified by Independent Environmental Checker (hereinafter the "IEC') prior submitted to EPD on ***19th November 2018*** for endorsement.

1.1.4 This is the **3rd** Quarterly EM&A report presenting the monitoring results and inspection findings for the reporting period from ***1st June 2019*** to ***31st August 2019*** (hereinafter 'the Reporting Period').

1.2 REPORT STRUCTURE

1.2.1 The Environmental Monitoring and Audit (EM&A) Monthly Report is structured into the following sections:-

Section 1	*Introduction*
Section 2	*Project Organization and Construction Progress*
Section 3	*Summary of Impact Monitoring Requirements*
Section 4	*Impact Monitoring Results*
Section 5	*Waste Management*
Section 6	*Site Inspections*
Section 7	*Landfill Gas Monitoring*
Section 8	*Environmental Complaints and Non-Compliance*
Section 9	*Implementation Status of Mitigation Measures*
Section 10	*Conclusions and Recommendations*

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS AND SUBMISSION

2.1 PROJECT ORGANIZATION

2.1.1 The project organization is shown in ***Appendix B***. The responsibilities of respective parties can be referred to Monthly Report.

2.2 CONSTRUCTION PROGRESS

2.2.1 3-month rolling construction program of each Works Contract is enclosed in ***Appendix C***; and the major construction activities undertaken in the Reporting Period is presented in below sub-sections.

Contract 1 (Contract No. NE/2017/07)

2.2.2 The major construction activities of Contract 1 undertaken in this Reporting Period are:-

- Pre-drilling and piling works at Portion II
- Welding of steel bracket for precast shell installation at Portion II
- Preparation of precast shell fabrication at Portion II
- Precast shell fabrication at Portion II
- Concrete Work at Portion V & Portion II
- Piling works at Portion II

Contract 2 (Contract No. NE/2017/08)

2.2.3 The major construction activities of Contract 2 undertaken in this Reporting Period are:-

- Pre-drill Work at Portion III & VI
- Bored Pile Work at Portion III, VI & VII
- Wheel Washing Bay & Weight Bridge Construction at Portion VI
- Trial Pit Work at Portion III and VI
- UU Detection Work at Portion III
- Excavation Work at Portion III and VI
- Pre-bored socket H pile at Portion VI

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 All the documents required under Environmental Permit No. EP-459/2013 were submitted within the required timeframe. The details can be referred to the Monthly Report.

2.3.2 Upon completed baseline monitoring, a Baseline Monitoring Report was verified by IEC on 19 November 2018 and submitted to EPD on that day for endorsement.

2.3.3 The notification of Project dedicated web site to EPD was made on 9 January 2019 (http://www.envcbltko.hk/).

3. SUMMARY OF ENVIRONMENTAL MONITORING PROGRAMMES AND REQUIREMENTS

3.1 GENERAL

3.1.1 The Environmental Monitoring and Audit Programmes and requirements are set out in the Approved EM&A manual. Environmental issues such as air quality, construction noise and water quality were identified as the key issues during the construction phase of the Project. A summary of EM&A programmes and requirements are presented in the sub-sections below.

3.2 MONITORING PARAMETERS

3.2.1 Monitoring parameters of air quality, noise and water quality are summarized in ***Table 3-1***.

Table 3-1 Summary of EM&A Requirements

Environmental Issue	Parameters
Air Quality	• 1-hour TSP by Real-Time Portable Dust Meter; and • 24-hour TSP by High Volume Air Sampler
Noise	• Leq (30min) in six consecutive Leq(5 min) between 07:00-19:00 on normal weekdays • Supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference.
Water Quality	• In-situ measurement – Dissolved Oxygen (DO) concentration (mg/L) & saturation (%), pH, Salinity (mg/L), Temperature (ºC) and Turbidity (NTU); and • Laboratory analysis – SS (mg/L)

3.3 MONITORING LOCATIONS

Air Quality and Construction Noise

3.3.1 According to the Approved EM&A Manual Section 5.4 and Section 6.3, three (3) representative air sensitive receivers (ASR) and four (4) representative noise sensitive receivers were designated as monitoring stations. The designated air quality and noise monitoring locations are listed in ***Table 3-2*** and ***Table 3-3,*** and illustrated in ***Appendix D***.

Table 3-2 Designated Air Quality Monitoring Location recommended in EM&A Manual

ID	Location in the EM&A Manual	Currently Situation
AM1	Tung Wah Group of Hospitals Aided Primary School & Secondary School	Not yet construct
AM2	Lohas Park Stage 2 (Planned Development in Area 86)	Under Construction
AM3	Lohas Park Stage 3 (Planned Development in Area 86)	Under Construction

Table 3-3 Designated Construction Noise Monitoring Location recommended by EM&A Manual

ID	Location	Currently Situation
CNMS-1	Lohas Park Stage 1(Planned Development in Area 86, Package 5) (Southeast facade)	Under Construction
CNMS-2	Lohas Park Stage 1 (Planned Development in Area 86, Package 6) (Southeast facade)	Under Construction
CNMS-3	Lohas Park Stage 3 (Planned Development in Area 86,Package 11) (West facade)	Under Construction
CNMS-4	Tung Wah Group of Hospitals Aided Primary School & Secondary School (Southwest facade)	Not yet construct

3.3.2 As observed and confirmed by ET and IEC during the joint site visit on 29th August 2018, the designated air quality and noise monitoring locations are under construction or yet to construct. It is considered that these designated locations are not appropriate to perform air quality and noise monitoring. In this regard, alternative locations were proposed as interim arrangement to carry out air quality and noise monitoring before occupation of the designated monitoring location. A letter enclosed with the alternative location proposal and IEC verification (Our Ref:

TCS00975/18/300/L0038) was sent to EPD on 19th October 2018 and the proposal was agreed by EPD. Therefore, air quality and construction noise impact monitoring would be performed at the agreed alternative locations until the designated sensitive receivers occupied and granted the premises.

3.3.3 The agreed alternative monitoring location for impact air quality and noise monitoring are summarized in Table 3-4 and illustrated in ***Appendix D***.

Table 3-4 Interim alternative location for air quality and noise monitoring

Location ID	Monitoring Parameter	Location
AM4	1-Hour TSP Air Quality	Podium of Lohas Park Phase 2A (Le Prestige)
AM5	24-Hour TSP Air Quality	Boundary of Site Office near Junction of Wan Po Road and Wan O Road
CNMS-5	Noise (L_{eq}, L_{10} & L_{90})	Podium of Lohas Park Phase 2A (Le Prestige)

Remark: Since 24-Hour TSP Air Quality monitoring is not granted at AM4 Lohas Park Phase 2A, the 24-Hour TSP monitoring was therefore proposed at AM5 which is located at the boundary of the project site office.

Water Quality

3.3.4 According to Table 7.1 of the approved EM&A Manual Section 7.4, two Control Stations (C3 & C4), six (6) sensitive receivers (CC1, CC2, CC3, CC4, CC13 & SWI1) and one (1) Gradient station (I1) are recommended to perform water quality monitoring. Details and coordinate of these water quality monitoring stations are described in ***Table 3-5*** and the locations is shown in ***Appendix D.***

Table 3-5 Location of Water Quality Monitoring Station

Station	Coordinates		Description
	Easting	Northing	
CC1	843201	816416	**Sensitive Receiver** – Coral Sites at Chiu Keng Wan
CC2	844076	817091	**Sensitive Receiver** – Coral Sites at Junk Bay
CC3	844606	817941	**Sensitive Receiver** – Coral Sites at Junk Island
CC4	845444	815595	**Sensitive Receiver** – Coral Sites at Fat Tong Chau West
CC13	844200	817495	**Sensitive Receiver** – Coral Sites at Junk Bay near Chiu Keng Wan
SWI1	845512	817442	**Sensitive Receiver** – Tseung Kwan O Salt Water Intake
C3	843821	816211	**Control Station** (Ebb Tide) – within Junk Bay
C4	844621	815770	**Control Station** (Flood Tide) – within Junk Bay
I1	844602	817675	**Gradient Station** – in between Lam Tin Tunnel (LTT) and CBL

3.4 MONITORING FREQUENCY AND PERIOD

3.4.1 To according with the approved *EM&A Manual*, impact monitoring requirements are presented as follows.

Air Quality Monitoring

3.4.2 Air quality impact monitoring frequency is as follows:

- Once every 6 days of 24-hour TSP and 3 times of 1-hour TSP monitoring; during course of works throughout the construction period

Construction Noise Monitoring

3.4.3 Construction noise monitoring frequency is as follows:

- One set of $Leq_{(30min)}$ measurements in a weekly basis between 07:00 and 19:00 hours on normal weekdays during course of works as throughout the construction period
- If construction works are extended to include works during the hours of 1900-0700, additional weekly impact monitoring shall be carried out during evening and night-time works. Applicable permits under the NCO shall be obtained by the Contractor.

Water Quality (Marine Water) Monitoring

3.4.4 Marine water impact monitoring frequency is as follows:

- Three days a week, at mid ebb and mid flood tides during course of pile excavation works for the bridge pier foundations underway. Moreover, the intervals between 2 consecutive sets of monitoring day shall not be less than 36 hours.

3.5 DETERMINATION OF ACTION/LIMIT (A/L) LEVELS

3.5.1 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. A summary of the Action/Limit (A/L) Levels for air quality, construction noise and water quality are shown in ***Tables 3-6, 3-7*** and ***3-8*** respectively.

Table 3-6 Action & Limit Levels of Air Quality (1-Hour & 24-Hr TSP)

Monitoring Station	Action Level (μg /m^3)		Limit Level (μg/m^3)	
	1-Hour TSP	24-Hr TSP	1-Hour TSP	24-Hr TSP
AM4	278	NA	500	NA
AM5	NA	190	NA	260
Note: 1-Hour & 24-Hr TSP of Action Level = (Average Baseline Results × 1.3 + Limit level)/2				

Table 3-7 Action and Limit Levels for Construction Noise, dB(A)

Monitoring Location	Action Level	Limit Level (Leq30min)
	Time Period: 0700-1900 hours on normal weekdays	
CNMS-5	When one or more documented complaints are received	***75*** dB(A)

Remarks:

1. *Construction noise monitoring will be resumed at the designated locations CNMS-1, CNMS-2, CNMS-3 and CNMS4 once they are available and permission are granted;*
2. *The designated locations CNMS-1, CNMS-2 and CNMS-3 are located at residential building which are still under construction, Limit Level of 75dB(A) will be adopted until they are occupied;*
3. *The designated location CNMS-4 is located at planned school and still not yet to construction. When the school occupied and operated, Limit Level of 70dB(A) should be adopted and should be reduced to 65dB(A) during examination period; and*
4. *If construction works are required during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority shall be followed.*

Table 3-8 Action and Limit Levels for Water Quality

Monitoring Station	Depth Average of SS (mg/L)			
	Action Level		Limit Level	
CC1	7.8	**OR** 120% of upstream control station at the same tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide), whichever is higher	9.3	**OR** 130% of upstream control station at the same tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide) , whichever is higher
CC2	9.0		9.2	
CC3	8.2		9.0	
CC4	13.8		15.4	
CC13	8.9		10.3	
SWI1	8 mg/L		10 mg/L	

Monitoring Location	Dissolved Oxygen (mg/L)			
	Depth Average of Surface and Mid-depth		Bottom	
	Action Level	Limit Level	Action Level	Limit Level
CC1	5.8	5.7	5.3	5.2
CC2	5.8	5.7	5.3	5.1
CC3	5.5	5.4	4.9	4.7
CC4	5.7	5.7	5.5	5.4
CC13	5.6	5.5	5.3	5.2

Monitoring Station	Depth Average of SS (mg/L)			
	Action Level		Limit Level	
SWI1	5.4	4.8	5.1	5.0

Monitoring Location	Depth Average of Turbidity (NTU)			
	Action Level		Limit Level	
CC1	5.8	**OR** 120% of upstream control station at the same tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide) , whichever is higher	6.0	**OR** 130% of upstream control station at the same tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide) , whichever is higher
CC2	4.6		5.5	
CC3	4.8		5.4	
CC4	6.1		7.1	
CC13	6.0		6.3	
SWI1	6.1		7.1	

3.5.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan as stated EM&A Manual.

4. IMPACT MONITORING RESULT

4.1 RESULTS OF AIR QUALITY MONITORING IN THE REPORTING MONTH

4.1.1 During the Reporting Period, ***51*** sessions of 1-hour TSP and ***16*** sessions of 24-hours TSP monitoring were carried out and the monitoring results are summarized in ***Table 4-1***. The relevant graphical plots are shown in ***Appendix E***.

Table 4-1 Summary of Air Quality Impact Monitoring Results

Monitoring Location	1-hour TSP (μg/m³)			24-hour TSP (μg/m³)		
	Min	Max	Average	Min	Max	Average
AMS-4	49	106	72			
Record Date	24-Jun-19	11-Jul-19	51 events			
AMS-5				60	172	111
Record Date				19-Aug-19	15-Jul-19	16 events

4.1.2 As shown in ***Table 4-1***, all the 1-hour TSP and 24-hour TSP monitoring results were below the Action / Limit Levels. No Notification of Exceedance (NOE) was issued in this Reporting Period.

4.1.3 No adverse impact due to weather condition on the monitoring result was observed in reporting quarter. The summary of meteorological information for the Reporting Period is shown in ***Appendix F***.

4.2 RESULTS OF CONSTRUCTION NOISE MONITORING

4.2.1 ***13*** sessions of daytime construction noise monitoring and ***10*** sessions of evening construction noise monitoring were performed at the interim alternative location CNMS-5 in the reporting period. The noise monitoring results at interim alternative location CNMS-5 is summarized in ***Table 4-2*** and ***Table 4-3.*** The relevant graphical plots are shown in ***Appendix E***.

Table 4-2 Summary of Daytime Construction Noise Impact Monitoring Results

Monitoring Location	Leq, 30min (dB((A))		
	Min	Max	Average
CNMS-5	62.3	69.4	65.1
Record Date	12-Jun-19	23-Jul-19	13 sessions

4.2.2 All the measured daytime construction noise results were below 75dB(A) of the acceptance criteria. Furthermore, no complaint on construction noise was registered, indicating no exceedance of Action Level. No non-compliance was therefore found during the Reporting Period.

Table 4-3 Summary of Evening Construction Noise Impact Monitoring Results

Monitoring Location	Leq, 5min (dB((A))		
	Min	Max	Average
CNMS-5	59.7	64.9	62.1
Record Date	7-Aug-19	14-Jun-19	10 sessions

4.2.3 A total of ten (10) session of evening noise monitoring limit level exceedances were recorded in the reporting period due to the measured results were higher than 55dB(A) of the acceptance criteria. Investigations were undertaken by ET accordingly and it was considered the exceedances recorded were unlikely due to the Project.

4.3 RESULTS OF WATER QUALITY MONITORING

4.3.1 In this Reporting Period, a total of ***38*** sampling days were performed for marine water monitoring at the nine designated locations. Monitoring results of 3 key parameters: dissolved oxygen (DO), turbidity and suspended solids are summarized in ***Tables 4-4*** to ***4-7*** and the graphical plots are shown in ***Appendix E***.

Table 4-4 Results Summary of Depth Average (Surface & Middle Layer) of DO (mg/L)

Tidal		CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
Mid-Ebb	Average	6.7	6.5	6.7	6.6	6.7	6.9	6.4	6.3	6.7
	Min	5.1	5.2	5.4	5.3	5.2	5.4	4.6	4.8	5.3
	Max	10.2	9.2	11.3	9.6	9.6	10.4	8.2	8.4	10.3
Mid-Flood	Average	6.8	6.5	6.5	6.6	6.7	7.0	6.4	6.4	6.5
	Min	5.4	5.1	5.3	5.3	5.5	5.4	5.0	5.2	5.3
	Max	9.5	9.3	8.8	9.6	10.3	10.6	8.6	7.8	9.0

Table 4-5 Results Summary of Bottom Depth of DO (mg/L)

Tidal		CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
Mid-Ebb	Average	5.6	5.4	5.4	NA	5.6	6.4	5.4	5.4	5.3
	Min	4.4	4.5	4.6	NA	4.5	5.0	4.3	4.3	4.6
	Max	7.0	6.1	6.8	NA	6.9	9.4	6.0	6.0	6.2
Mid-Flood	Average	5.6	5.4	5.3	NA	5.5	6.3	5.4	5.4	5.4
	Min	4.8	4.5	4.6	NA	4.8	4.8	4.4	4.3	4.4
	Max	7.5	6.0	6.6	NA	7.1	8.9	6.1	6.3	6.9

Remark: No Dissolved Oxygen (Bottom) monitoring data available for CC4 due to the water depth measured at CC4 during the monitoring days were less than 3 meters.

Table 4-6 Results Summary of Depth Average of Turbidity (NTU)

Tidal		CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
Mid-Ebb	Average	1.3	1.8	1.8	1.4	1.3	1.1	1.9	1.9	1.9
	Min	0.4	0.9	0.8	0.6	0.6	0.4	0.7	0.9	0.8
	Max	3.7	3.4	3.2	3.6	4.2	3.8	3.8	3.2	5.0
Mid-Flood	Average	1.5	1.9	2.0	1.5	1.5	1.2	1.8	1.7	1.9
	Min	0.8	0.7	0.7	0.6	0.7	0.4	0.9	0.5	0.6
	Max	3.3	4.4	4.1	4.8	3.4	3.3	3.3	3.6	4.1

Table 4-7 Results Summary of Depth Average of Suspended Solids (mg/L)

Tidal		CC1	CC2	CC3	CC4	CC13	SWI1	C3	C4	I1
Mid-Ebb	Average	4.0	4.2	4.5	4.1	4.2	4.0	4.1	4.3	4.7
	Min	1.3	1.5	2.4	1.0	1.6	1.3	1.5	1.5	2.1
	Max	9.0	7.6	9.5	9.3	8.2	8.5	9.7	7.9	7.5
Mid-Flood	Average	4.2	4.3	4.6	4.5	4.4	3.9	4.1	4.2	4.8
	Min	1.8	1.5	1.3	1.6	1.6	1.7	1.5	1.3	1.0
	Max	8.3	10.0	8.9	10.2	8.8	10.8	9.6	10.0	10.6

4.3.2 A summary of exceedances for the four parameters: dissolved oxygen (DO), turbidity and suspended solids (SS) are shown in ***Table 4-8.***

Table 4-8 Summary of Water Quality Exceedance

Station	DO (Ave of Top & mid-depth)		DO (Bottom Depth)		Turbidity (Depth Ave)		SS (Depth Ave)		Total Exceedance for the Station	
	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
CC1	0	**2**	0	**2**	0	0	0	0	0	**4**
CC2	0	**2**	0	**2**	0	0	**1**	0	**1**	**4**
CC3	**1**	**1**	0	**2**	0	0	**1**	**1**	**2**	**4**
CC4	0	**2**	NA	NA	0	0	0	0	0	**2**
CC13	**1**	**1**	0	**2**	0	0	0	0	**1**	**3**
SWI1	0	0	**1**	**1**	0	0	**1**	**1**	**2**	**2**
No of Exceedance	**2**	**8**	**1**	**9**	0	0	**3**	**2**	**6**	**19**

4.3.3 In this Reporting Period, three (3) Action Level and seventeen (17) Limit Level exceedances were recorded for Dissolved Oxygen while three (3) Action Level and two (2) Limit Level exceedances were recorded for Suspended Solids.

4.3.4 Upon confirmation of the monitoring result, Notification of Exceedances (NOEs) have been issued to relevant parties. Investigation for the cause of exceedance was carried out by ET subsequently and it is concluded that the exceedances recorded in this reporting period were unlikely caused by the Project. Nevertheless, the Contractor was reminded to check the implementation of silt curtain regularly to ensure no seepage of muddy water into the marine water body.

5. WASTE MANAGEMENT

5.1 GENERAL WASTE MANAGEMENT

5.1.1 Waste management would be carried out by an on-site Environmental Officer or an Environmental Consultant from time to time.

5.2 RECORDS OF WASTE QUANTITIES

5.2.1 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste; and
- General Refuse

5.2.2 According to the information provided by Contractor of Contract 1 and Contract 2, waste disposal was made in the Reporting period are summarized in ***Tables 5-1*** and ***5-2***.

Table 5-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Contract No	Quantity			Disposal Location
		Jun 2019	Jul 2019	Aug 2019	
Total Generated C&D Materials (Inert) (in '000m^3)	1	0.354	1.122	1.290	TKO 137
	2	1.127	2.468	4.401	
Reused in this Project (Inert) (in '000m^3)	1	0	0	0	-
	2	0	0	0	-
Reused in other Projects (Inert) (in '000m^3)	1	0	0	0	-
	2	0	0	0	-
Disposal as Public Fill (Inert) (in '000m^3)	1	0.354	1.122	1.290	TKO 137
	2	1.127	1.879	4.262	
Imported Fill (‘000m^3)	1	0	0	0	-
	2	0	0.589	0.140	-

Table 5-2 Summary of Quantities of C&D Wastes

Type of Waste	Contract No	Quantity			Disposal Location
		Jun 2019	Jul 2019	Aug 2019	
Recycled Metal (‘000kg)	1	0	0	0	-
	2	0	0	0	
Recycled Paper / Cardboard Packing (‘000kg)	1	0.087	0.060	0.075	Licensed collector
	2	0	0	0	
Recycled Plastic (‘000kg)	1	0	0	0	-
	2	0	0	0	
Chemical Wastes (‘000kg)	1	0	0	0	-
	2	0	0	0	
General Refuses (‘000m^3)	1	0.050	0.095	0.058	NENT
	2	0.019	0.031	0.004	

5.2.3 The Monthly Summary Waste Flow Table of the Contracts 1 and Contract 2 are shown in ***Appendix G***.

6. SITE INSPECTION

6.1 REQUIREMENTS

6.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulation by ET Leader. Weekly environmental site inspections should carry out to confirm the environmental performance.

6.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

Contract 1

6.2.1 In this Reporting Period, ***13*** events of weekly joint site inspection was carried out for Contract 1 to evaluate site environmental performance. The summaries of the findings during site inspection are presented in ***Table 6-1*** and the details of site inspection can be found in relevant EM&A monthly report.

Table 6-1 Summary of Site Observations of the Contract 1

Reporting Period	Date of site inspection	Nos. of Findings/ Deficiencies	Follow-Up Status
June 2019	5, 12, 19 & 26 June 2019	8	Completed
July 2019	4, 10, 18 & 25 July 2019	5	Completed
August 2019	1, 7, 14, 22 & 28 August 2019	6	Completed

6.2.2 In the Reporting Period, no non-compliance was recorded for Contract 1; however, ***19*** observations were recorded during the site inspections and the major findings were related to water quality and chemical management mitigation measures. Details of the findings of the inspection in the reporting period can be referred to the Monthly EM&A Report. The findings found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

Contract 2

6.2.3 In this Reporting Period, ***13*** events of weekly joint site inspection was carried out for Contract 2 to evaluate site environmental performance. The summaries of the findings during site inspection are presented in ***Table 6-2*** and the details of site inspection can be found in relevant EM&A monthly report.

Table 6-2 Summary of Site Observations of the Contract 2

Reporting Period	Date of site inspection	Nos. of Findings/ Deficiencies	Follow-Up Status
June 2019	5, 12, 19 & 26 June 2019	4	Completed
July 2019	4, 10, 18 & 25 July 2019	3	Completed
August 2019	1, 7, 14, 22 & 28 August 2019	3	Completed

6.2.4 In the Reporting Period, no non-compliance was recorded for Contract 2; however, ***10*** observations were recorded during the site inspections and the major findings were related to general housekeeping and chemical management mitigation measures. Details of the findings of the inspection in the reporting period can be referred to the Monthly EM&A Report. The findings found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

7. LANDFILL GAS MONITORING

7.1 GENERAL REQUIREMENT

7.1.1 Pursuant to Section 13 of the Project's EM&A Manual, Landfill gas monitoring shall perform during construction activities within the 250m Consultation Zone of Tseung Kwan O Stage II & III Landfill. For landfill gas monitoring requirements, pre entry and routine measurement shall be undertaken in accordance with the *Factories and Industrial Undertaking (Confined Spaces) Regulation*.

7.1.2 According to Environmental Mitigation Implementation Schedule (EMIS) S14.7.6, portable monitoring equipment can be used to conduct landfill gas monitoring. Moreover, the frequency and areas to be monitored should be set down prior to commencement of the works either by the Safety Officer or by an appropriately qualified person.

7.2 LIMIT LEVELS AND EVENT AND ACTION PLAN

7.2.1 In event of the trigger levels specified in Table 14.6 of the EIA report being exceeded, a person, such as the Safety Officer, shall be nominated, with deputies, to be responsible for dealing with any emergency which may occur due to LFG. In an emergency situation the nominated person, or his deputies, shall have the necessary authority and shall ensure that the confined space is evacuated and the necessary works implemented for reducing the concentrations of gas. The Limit levels and relevant Action Plans for landfill gas detected in utilities and any on-site areas following construction is listed in ***Table 9-1***.

Table 7-1 Actions in the Event of Landfill Gas Being Detected in Excavations

Parameter	Limit Level	Actions
Methane	>10% LEL (i.e. >0.5% by volume)	• Post "No Smoking" signs • Prohibit hot works • Ventilate to restore methane to <10% LEL
	>20% LEL (i.e. >1% by volume)	• Stop excavation 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 excavation works • Evacuate personnel/prohibit entry • Increase ventilation to restore carbon dioxide to <0.5%
Oxygen	<19%	Ventilation to restore oxygen >19%
	<18%	• Stop excavation works • Evacuate personnel/prohibit entry • Increase ventilation to restore oxygen to >19%

7.2.2 In the event of the trigger levels specified in Table 9-1 being exceeded, the Safety Officer shall be responsible for dealing with any emergency which may occur due to landfill gas.

7.3 LANDFILL GAS MONITORING

7.3.1 Since the major construction activities under the Project were not yet commenced within the 250m Consultation Zone of Tseung Kwan O Stage II & III Landfill, no landfill gas monitoring was undertaken by the Contractors in the Reporting Period.

8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1.1 In the Reporting Period, no environmental complaint, summons and prosecution under the EM&A Programme was lodged for the project. The statistical summary table of environmental complaint is presented in ***Tables 8-1, 8-2*** and ***8-3***. A summarized record of all complaints received was provided in ***Appendix H***.

Table 8-1 Statistical Summary of Environmental Complaints

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 30 June 2019	1	0	1	NA
1 – 31 July 2019		0	1	NA
1 – 30 August 2019		0	1	NA
1 – 30 June 2019	2	0	0	NA
1 – 31 July 2019		0	0	NA
1 – 30 August 2019		0	0	NA

Table 8-2 Statistical Summary of Environmental Summons

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 30 June 2019	1	0	0	NA
1 – 31 July 2019		0	0	NA
1 – 30 August 2019		0	0	NA
1 – 30 June 2019	2	0	0	NA
1 – 31 July 2019		0	0	NA
1 – 30 August 2019		0	0	NA

Table 8-3 Statistical Summary of Environmental Prosecution

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 30 June 2019	1	0	0	NA
1 – 31 July 2019		0	0	NA
1 – 30 August 2019		0	0	NA
1 – 30 June 2019	2	0	0	NA
1 – 31 July 2019		0	0	NA
1 – 30 August 2019		0	0	NA

9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

9.1 GENERAL REQUIREMENTS

9.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved EM&A Manual covered the issues of dust, noise, water and waste and they are summarized presented in ***Appendix I.***

9.1.2 The Contractors had been implementing the required environmental mitigation measures according to the Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by the Contractors in this Reporting Month are summarized in ***Table 9-1***.

Table 9-1 Environmental Mitigation Measures in the Reporting Period

Issues	Environmental Mitigation Measures
Construction Noise	• Regularly to maintain all plants, so only the good condition plants were used on-site ; • If possible, all mobile plants onsite operation has located far from NSRs; • When machines and plants (such as trucks) were not in using, it was switched off; • Wherever possible, plant was prevented oriented directly the nearby NSRs; • Provided quiet powered mechanical equipment to use onsite; • Weekly noise monitoring was conducted to ensure construction noise meet the criteria.
Air Quality	• Stockpile of dusty material was covered entirely with impervious sheeting or sprayed with water so as to maintain the entire surface wet; • The construction plants regularly maintained to avoid the emissions of black smoke; • The construction plants switched off when it not in use; • Water spraying on haul road and dry site area was provided regularly; • Where a vehicle leaving the works site is carrying a load of dusty materials, the load has covered entirely with clean impervious sheeting; and • Before any vehicle leaving the works site, wheel watering has been performed.
Water Quality	• Debris and refuse generated on-site collected daily; • Oils and fuels were stored in designated areas; • The chemical waste storage as sealed area provided; • Site hoarding with sealed foot were provided surrounding the boundary of working site to prevent wastewater or site surface water runoff get into public areas; and • Portable chemical toilets were provided on-site. A licensed contractor was regularly disposal and maintenance of these facilities. • Silt curtain was installed and maintained in accordance with EP condition
Waste and Chemical Management	• Excavated material reused on site as far as possible to minimize off-site disposal. • Scrap metals or abandoned equipment should be recycled if possible; • Waste arising kept to a minimum and be handled, transported and disposed of in a suitable manner; • Disposal of C&D wastes to any designated public filling facility and/or landfill followed a trip ticket system; and • Chemical waste handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.
General	• The site is generally kept tidy and clean. • Mosquito control is performed to prevent mosquito breeding on site.

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

10.1.1 This is the **3rd** Quarterly EM&A report as presented the monitoring results and inspection findings for the reporting period from ***1st June 2019*** to ***31st August 2019***.

10.1.2 In the Reporting Period, no daytime construction noise monitoring results that triggered the Limit Level was recorded and no noise complaint (which is an Action Level exceedance) was received by the Project Consultant, EPD and the Contractors. However, ten (10) sessions of evening construction noise monitoring results triggered the Limit Level. Investigation was undertaken by ET and it was considered that the exceedances recorded are unlikely caused by the Project.

10.1.3 In this Reporting Period, no 1-Hour TSP or 24-Hr TSP air quality monitoring exceedance was recorded. No NOE or the associated corrective actions were therefore issued.

10.1.4 For water quality monitoring, three (3) Action Level and seventeen (17) Limit Level exceedances were recorded for Dissolved Oxygen while three (3) Action Level and two (2) Limit Level exceedances were recorded for Suspended Solids in the reporting period. Investigation for the cause of exceedance was carried out by ET subsequently and it is concluded that the exceedances recorded in this reporting period were unlikely caused by the Project.

10.1.5 No documented complaint, notification of summons or prosecution was received and recorded for the Project.

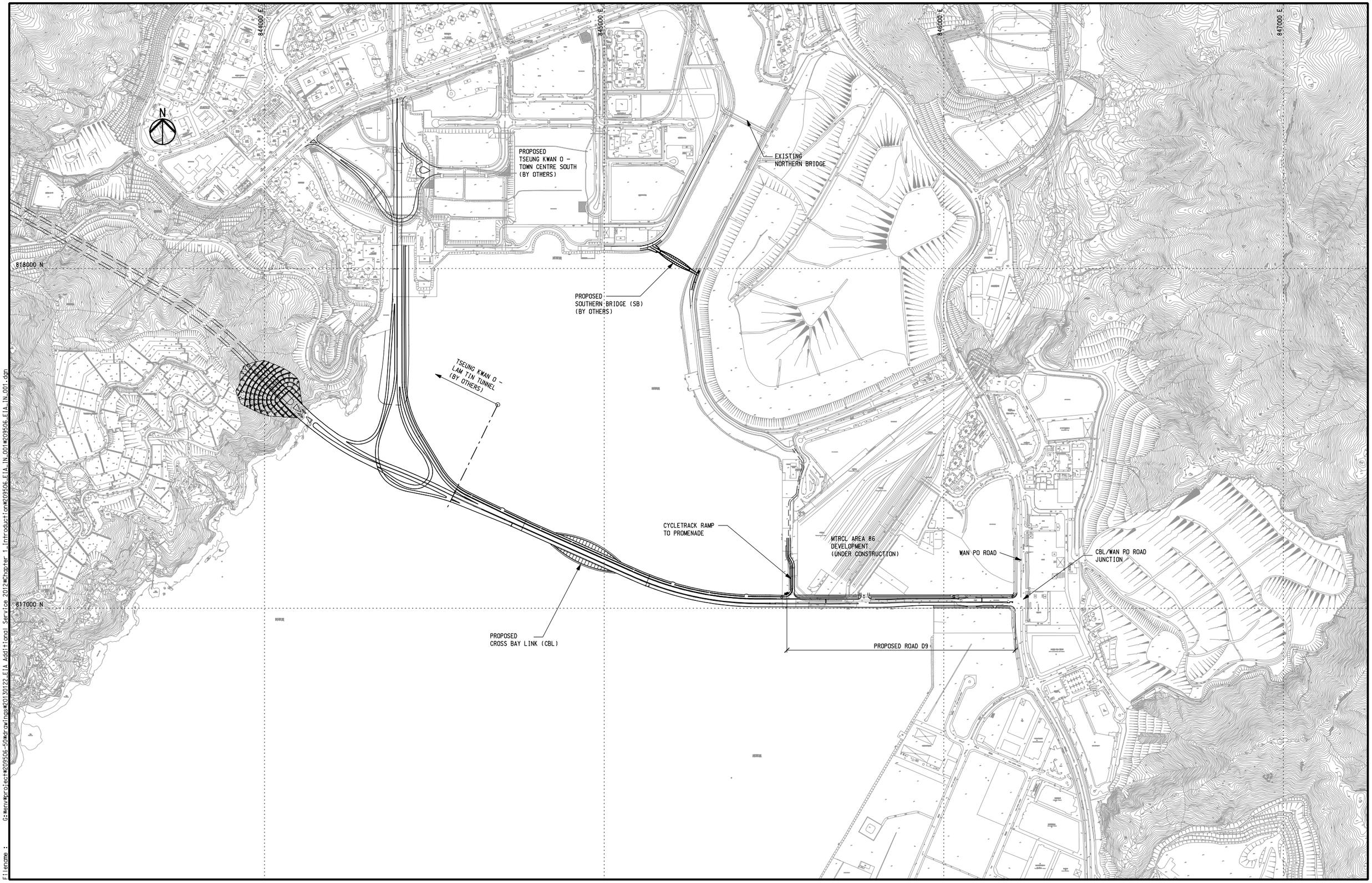
10.2 RECOMMENDATIONS

10.2.1 Due to wet season has approached, the Contractor was reminded that all the works to undertaking must be fulfill environmental statutory requirement, especially water quality mitigation measures to prevent surface runoff into nearby water bodies or public areas.

10.2.2 In regards to the marine works, special attention should be paid on excavation works for the bridge pier foundations underway in which water quality mitigation measures such as erection of silt curtain should be properly implemented and maintained.

Appendix A

Project Layout Plan



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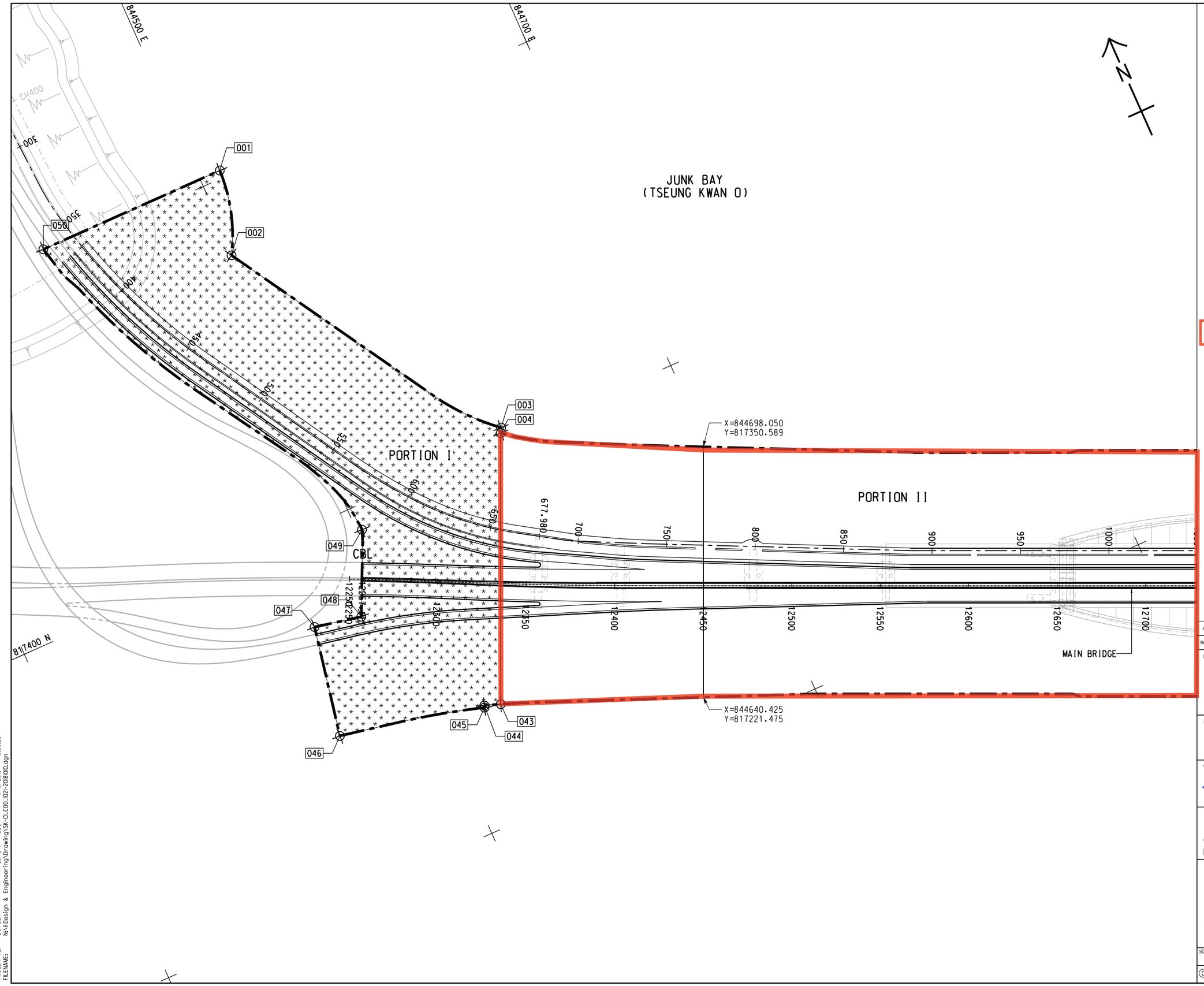
土木工程拓展署 Civil Engineering and Development Department	ARUP Ove Arup & Partners Hong Kong Limited	Job Title: **Agreement No. CE 43/2008(HY) Cross Bay Link, Tseung Kwan O – Investigation**
Drawing Title: GENERAL LAYOUT PLAN		

Rev.	Description	Date
B	SECOND ISSUE	01/13
A	FIRST ISSUE	07/11

Drawn: GL	Date: 01/13
Checked: JP	Approved: ST
Scale: 1:5000 on A1 & 1:10000 on A3	
Drawing No.: 209506/EIA/IN/001	
Status: FINAL	Rev.: B



NOTES:

1. ALL SETTING OUT POINTS SHOWN ON THIS SET OF DRAWINGS ARE FOR REFERENCE ONLY. THE EXACT LIMIT OF SITE BOUNDARY SHALL BE VERIFIED AND DETERMINED BY THE CONTRACTOR ON SITE.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/COO/1022 AND 1023.

LEGEND:

- SITE BOUNDARY
- PORTION I
- PORTION II
- PORTION III
- PORTION IV
- PORTION V
- PORTION VI
- PORTION VII
- WORKS AREA A
- WORKS AREA B
- Works area under Contract 1

Rev	Amendment	By	Chk.	App.	Date
A	FIRST ISSUE	HK	KN	AC	19/09/18

PROJECT MANAGER:

PROJECT MANAGER:

土木工程拓展署
Civil Engineering and Development Department

SUPERVISOR:

AECOM

CONTRACTOR:

中國路橋工程有限責任公司
China Road and Bridge Corp.

CONTRACT NO. AND TITLE:

Contract No. NE/2017/07

CROSS BAY LINK, TSEUNG KWAN O - MAIN BRIDGE AND ASSOCIATED WORKS

DRAWING TITLE:

SCALE @ A1
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SETTING OUT POINTS

POINTS	EASTING	NORTHING
001	844512.175	817604.422
002	844498.695	817557.993
003	844598.186	817407.065
004	844596.769	817404.339
005	845132.374	817153.641
006	845500.00	817088.580
007	845524.969	817088.226
008	845524.909	817236.307
009	845558.095	817236.307
010	845558.095	817195.885
011	845550.234	817174.288
012	845550.219	817158.042
013	845562.850	817139.744
014	845562.850	817035.700
015	845550.850	817035.670
016	845524.969	817035.670
017	846030.606	817036.089
018	846030.604	817038.387
019	846200.700	817038.418
020	846200.700	817038.796
021	846205.200	817042.796
022	846205.200	817138.796
023	846245.180	817138.796
024	846246.698	816900.099
025	846206.155	816900.099

SETTING OUT POINTS

POINTS	EASTING	NORTHING
026	846204.700	816926.589
027	846199.263	816926.590
028	846144.269	816926.589
029	846091.080	816926.744
030	845969.970	816926.504
031	846199.197	816975.364
032	846188.983	816993.582
033	846144.274	816999.997
034	846144.274	817000.722
035	846091.204	817000.679
036	845970.070	817000.581
037	845970.069	817000.099
038	845550.850	817000.099
039	845524.969	817000.099
040	845550.850	816953.291
041	845500.00	816952.636
042	845076.990	817029.022
043	844534.373	817264.536
044	844525.572	817267.627
045	844525.199	817266.527
046	844444.018	817285.203
047	844456.043	817347.194
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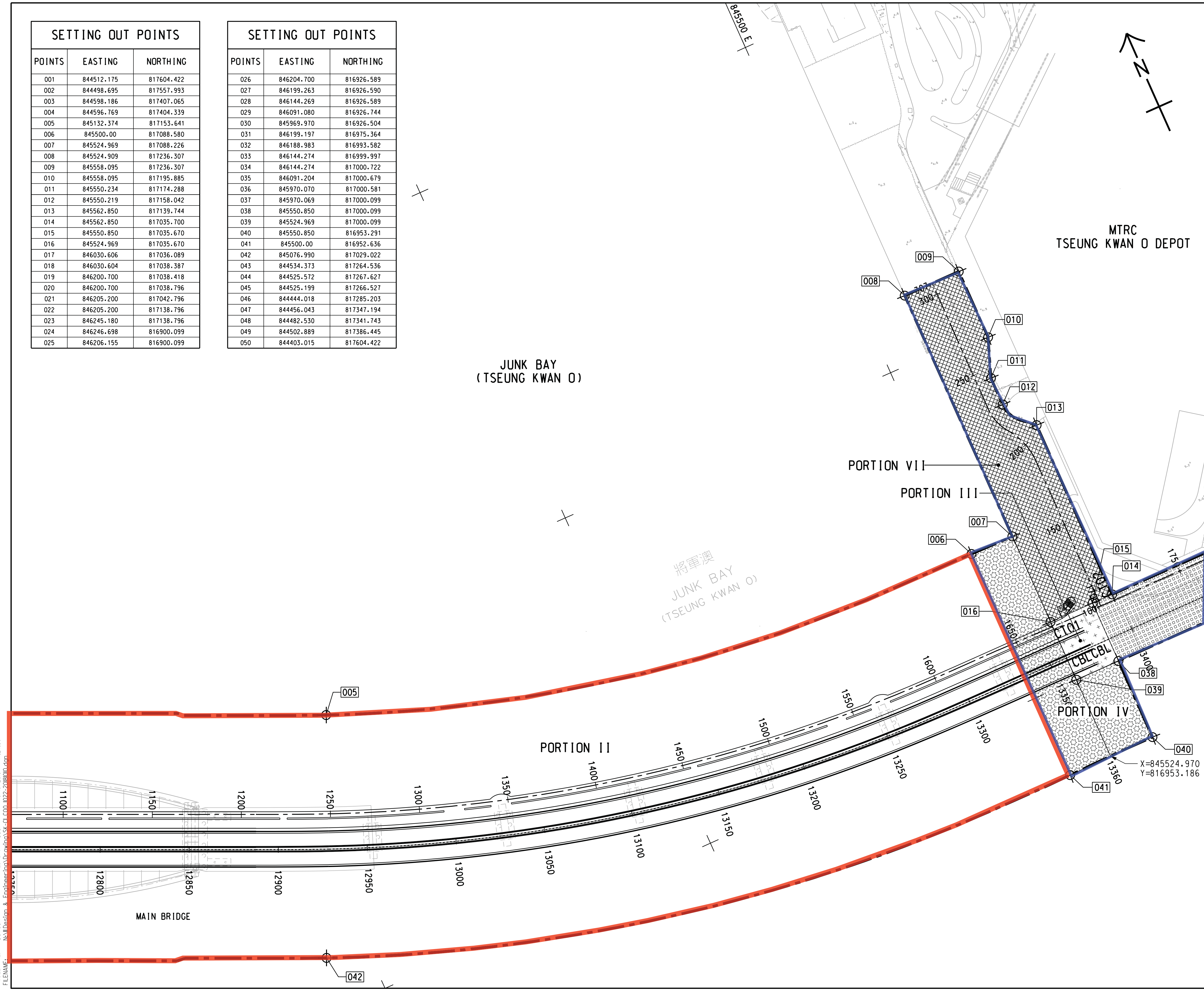

NOTE:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/C00/1021 AND 1023.

LEGEND:

Works area under Contract 1

Works area under Contract 2

Rev	Amendment	By	Chk.	App.	Date

PROJECT MANAGER:

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

SUPERVISOR:

AECOM

CONTRACTOR:

CRB 中國路橋工程有限責任公司 China Road and Bridge Corp.

CONTRACT NO. AND TITLE:

Contract No. NE/2017/07

CROSS BAY LINK, TSEUNG KWAN O - MAIN BRIDGE AND ASSOCIATED WORKS

DRAWING TITLE:

SCALE @ A1

DRAWING NO:

NOTE:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/C00/1021 AND 1022.

845700 E

845900 E

846100 E

N

MTRC
TSEUNG KWAN O DEPOT

817200 N

LOHAS PARK

CUT LINE B-B
SEE DRAWING NO. 60329339/C1/C00/1022

PORTION VI

817000 N

E=845869.991
N=817000.014

E=845869.970
N=816926.504

Loading &
Unloading Marine
Area

100m

WORKS AREA A

WORKS AREA B

PORTION V

JUNK BAY
(TSEUNG KWAN O)

816800 N

017 018 019 020 021 022 023 024 025 026 027 028 029 030 031 032 033 034 035 036 037

LEGEND:

Works area under Contract 1

Works area under Contract 2

Rev	Amendment	By	Chk.	App.	Date

PROJECT MANAGER:

PROJECT MANAGER:

土木工程拓展署
Civil Engineering and Development Department

SUPERVISOR:

AECOM

CONTRACTOR:

中國路橋工程有限責任公司
China Road and Bridge Corp.

CONTRACT NO. AND TITLE:

Contract No. NE/2017/07

CROSS BAY LINK, TSEUNG KWAN O -
MAIN BRIDGE AND ASSOCIATED WORKS

DRAWING TITLE:

SCALE @ A1

DRAWING NO:

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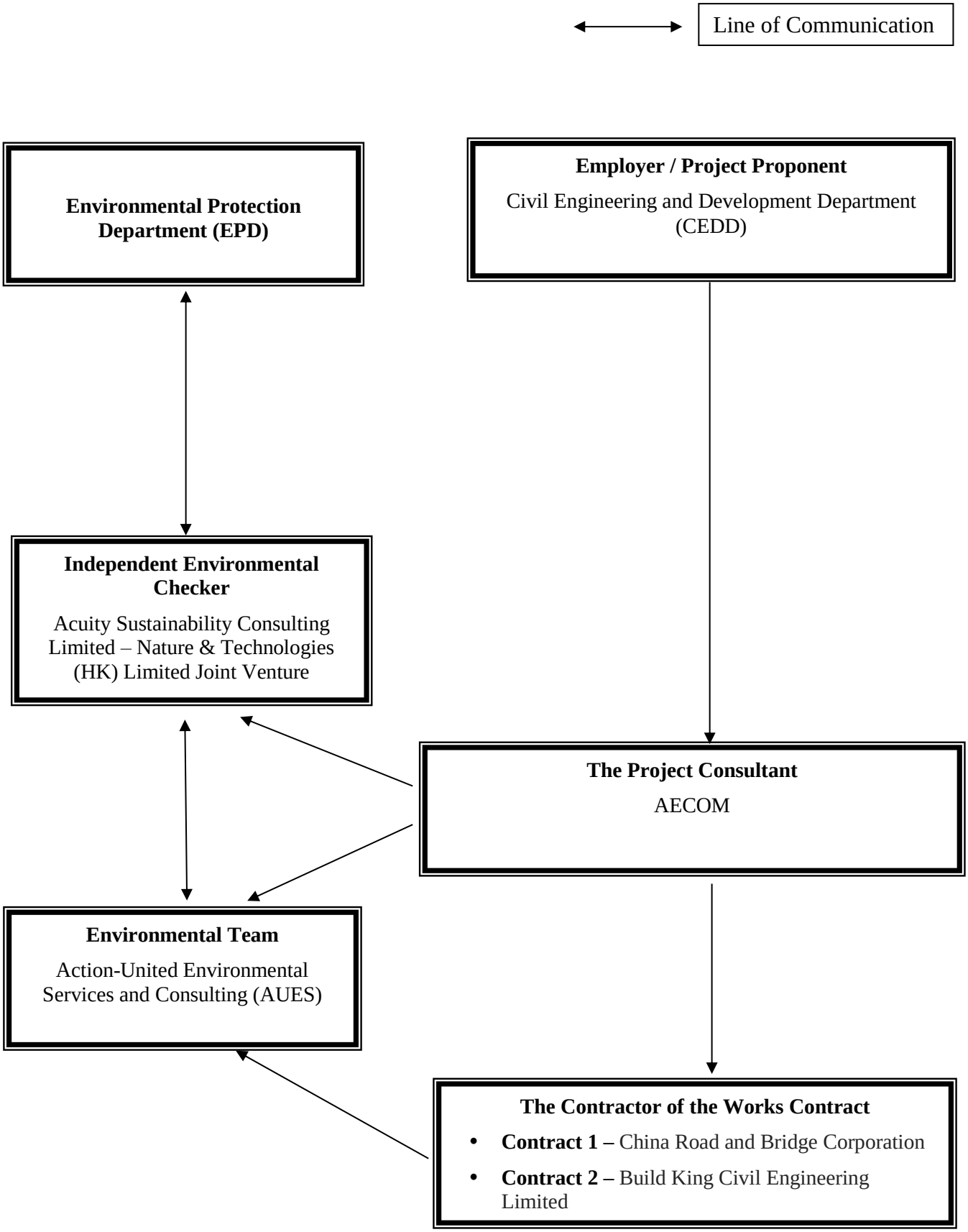
Appendix B

Project Organization Chart &
Contact Details of Key Personnel for the Project

Project Organization Structure



Contact Details of Key Personnel for the Project

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Project Proponent	C.K. Lam	2301 1398	2714 5174
CEDD	Project Proponent	Galen Tse	2301 1398	2714 5174
AECOM	Senior Resident Engineer	Jackie Chan	3595 8045	3596 6118
AECOM	Resident Engineer	Kingman Chan	3595 8045	3596 6118
ASC – N&T JV	Independent Environmental Checker	Kevin Li	2698 6833	2698 9383
ASC – N&T JV	Senior Environmental Consultant	Tandy Tse	2698 6833	2698 9383
AUES	Environmental Team Leader	T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Ben Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Martin Li	2959 6059	2959 6079
CRBC	Site Agent	Raymond Suen	6026 5971	2283 1689
CRBC	Environmental Officer	Calvin So	9724 6254	2283 1689
CRBC	Environmental Supervisor	Lila Lui	9790 5433	2283 1689
Build King	Site Agent	Stephen Leung	9071 7657	TBA
Build King	Environmental Officer	Chris Cheng	9487 8108	TBA
Build King	Environmental Supervisor	Anthony Chan	6704 4800	TBA

Legend:

CEDD (Employer) – Civil Engineering and Development Department

AECOM (Project Consultant) – AECOM Asia Co. Ltd.

ASC – N&T JV (IEC) – Acuity Sustainability Consulting Limited – Nature & Technologies (HK) Limited Joint Venture

AUES (ET) – Action-United Environmental Services & Consulting

CRBC (the Main Contractor of the Works Contract 1) – China Road and Bridge Corporation

Build King (the Main Contractor of the Works Contract 2) - Build King Civil Engineering Limited

Appendix C

3-Month Rolling Construction Programme

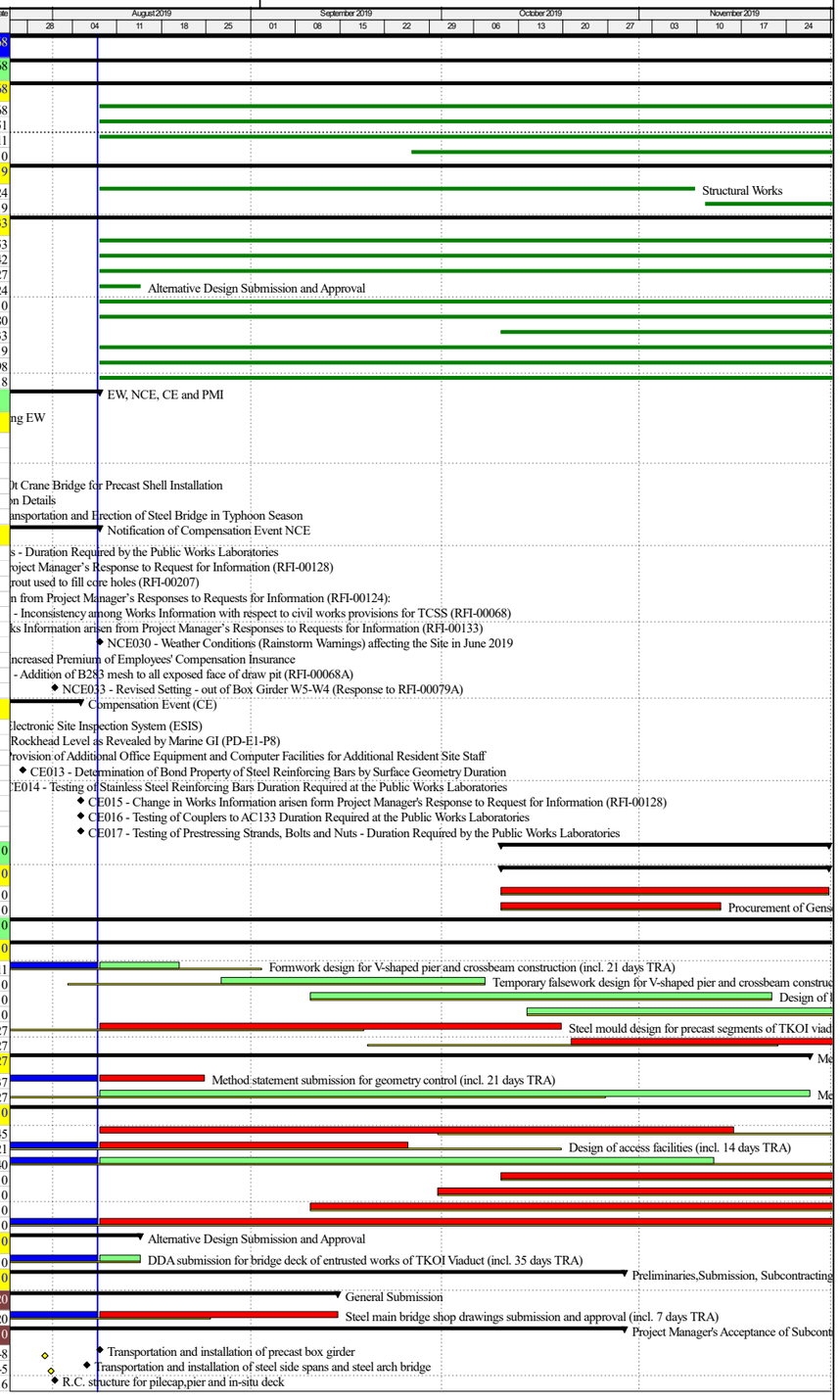
Contract 1

Data Date : 08-Aug-19

Page: 1

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	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
Cross Bay Link,Tseung Kwan O Main Bridge and Associated Works Aug -19 Piling Sequen		1484	1011	29-Jun-18 A	29-Jun-18	14-May-22	21-Jul-22	274			68
Executive Summary Programme		1484	1011	29-Jun-18 A	29-Jun-18	14-May-22	21-Jul-22	-91			68
ESP Section 2 of Works-All Works within Portion II,III,IV and VI		1240	1011	17-Sep-18 A	28-Feb-19	14-May-22	21-Jul-22	-91			68
ESP10920	CBL Main Bridge and Marine Viaduct	1240	1011	17-Sep-18 A	28-Feb-19	14-May-22	21-Jul-22	-91	18.47%	0	68
ESP10960	Piling Works	671	208	17-Nov-18 A	18-Apr-19	02-Mar-20	16-Feb-21	85	69%	0	351
ESP10980	Pile Cap	321	311	23-Jul-19 A	08-Jul-19	13-Jun-20	02-Jun-20	112	3.12%	0	-11
ESP11160	E&M Works for CBL Main Bridge and Marine Viaduct	962	962	26-Sep-19	30-Sep-19	14-May-22	14-May-22	-91	0%	0	0
ESP Section 5 of the Works-All Works within Portion V (CBL E&M Plantroom)		264	150	01-Apr-19 A	16-Apr-19	04-Jan-20	16-Dec-19	32			-19
ESP11260	Structural Works	232	94	01-Apr-19 A	16-Apr-19	09-Nov-19	03-Dec-19	28	59.48%	0	24
ESP11280	Architectural & External Works	55	55	11-Nov-19	25-Oct-19	04-Jan-20	16-Dec-19	32	0%	0	-19
Preliminaries, Contractor's Design & Method Statement Submission & Approval		1105	700	29-Jun-18 A	29-Jun-18	07-Jul-21	04-Jun-21	19			-33
ESP10400	Temporary Works Design	695	488	13-Aug-18 A	13-Aug-18	07-Dec-20	07-Jul-20	29	29.78%	0	-153
ESP10420	Method Statement Submission for Major Construction Works	736	532	27-Aug-18 A	27-Aug-18	20-Jan-21	31-Aug-20	13	27.72%	0	-142
ESP10440	Contractor's Design Submission and Approval	869	629	06-Aug-18 A	06-Aug-18	27-Apr-21	21-Dec-20	90	27.62%	0	-127
ESP10460	Alternative Design Submission and Approval	397	7	07-Aug-18 A	07-Aug-18	14-Aug-19	07-Sep-19	146	98.24%	0	24
ESP10480	General Submission	843	438	29-Jun-18 A	29-Jun-18	18-Oct-20	18-Oct-20	58	48.04%	0	0
ESP10500	Project Manager's Acceptance of Subcontractors	556	208	14-Aug-18 A	21-Feb-19	02-Mar-20	29-Aug-20	346	62.59%	0	180
ESP10560	Procurement, Factory Acceptance Test, Delivery and Temporary Storage of Major E&M Equipment	637	637	10-Oct-19	10-Oct-19	07-Jul-21	04-Jun-21	-17	0%	0	-33
ESP10600	Precasting of Precast Shell	745	524	08-Nov-18 A	28-Apr-19	12-Jan-21	11-May-21	155	29.66%	0	119
ESP10620	Fabrication of Precast Box Girder	713	528	10-Nov-18 A	13-May-19	16-Jan-21	24-Apr-21	21	25.95%	0	98
ESP10640	Fabrication of Steel Arch Bridge and Side Spans	623	483	28-Mar-19 A	08-Apr-19	02-Dec-20	20-Dec-20	-34	22.47%	0	18
EW, NCE, CE and PMI		0	0	18-Jan-19 A		08-Aug-19		1285			
Early Warning EW		0	0	18-Jan-19 A		15-Jul-19 A					
EW0341	EW014 - No Early access to Contract Road P2 and Contract 6	0	0	18-Jan-19 A					100%		
EW0361	EW015 - Delay due to design and Production of the Mastic Asphalt and the 11mm Stone Mastic Asphalt	0	0	18-Jan-19 A					100%		
EW0381	EW016 - Delay due to Late Subcontracting Work for Main Arch Bridge and Steel Side Span	0	0	15-Feb-19 A					100%		
EW0401	EW017 - Late Issuance of Operating License of 1000t Crane Bridge for Precast Shell Installation	0	0	14-Jun-19 A					100%		
EW0421	EW018 - Cable Hanger Connection Details	0	0	28-Jun-19 A					100%		
EW0441	EW019 -Transportation and Erection of Steel Bridge in Typhoon Season	0	0	15-Jul-19 A					100%		
Notification of Compensation Event NCE		0	0	11-Jun-19 A		08-Aug-19		1285			
NCE0441	NCE023 - Testing of Prestressing Strands, Bolts and Nuts - Duration Required by the Public Works Laborator	0	0	11-Jun-19 A					100%		
NCE0461	NCE024 - Change in Works Information arisen from Project Manager's Response to Request for Information	0	0	12-Jun-19 A					100%		
NCE0501	NCE026 - Inconsistency in strength requirement of grout used to fill core holes (RFI-00207)	0	0	14-Jun-19 A					100%		
NCE0521	NCE027 - Change in Works Information arisen from Project Manager's Responses to Requests for Informatio	0	0	19-Jun-19 A					100%		
NCE0541	NCE028 - Inconsistency among Works Information with respect to civil works provisions for TCSS (RFI-000	0	0	17-Jul-19 A					100%		
NCE0561	NCE029 - Change in Works Information arisen from Project Manager's Responses to Requests for Informatio	0	0	04-Jul-19 A					100%		
NCE0581	NCE030 - Weather Conditions (Rainstorm Warnings) affecting the Site in June 2019	0	0	08-Aug-19				1285	0%		
NCE0601	NCE031 - Increased Premium of Employees' Compensation Insurance	0	0	15-Jul-19 A					100%		
NCE0621	NCE032 - Addition of B283 mesh to all exposed face of draw pit (RFI-00068A)	0	0	17-Jul-19 A					100%		
NCE0641	NCE033 - Revised Setting - out of Box Girder W5-W4 (Response to RFI-00079A)	0	0	01-Aug-19 A					100%		
Compensation Event (CE)		0	0	11-Jul-19 A		05-Aug-19 A					
CE0161	CE010 - Electronic Site Inspection System (ESIS)	0	0	16-Jul-19 A					100%		
CE0181	CE011 - Deeper Rockhead Level as Revealed by Marine GI (PD-E1-P8)	0	0	11-Jul-19 A					100%		
CE0201	CE012 - Provision of Additional Office Equipment and Computer Facilities for Additional Resident Site Staff	0	0	16-Jul-19 A					100%		
CE0221	CE013 - Determination of Bond Property of Steel Reinforcing Bars by Surface Geometry Duration	0	0	27-Jul-19 A					100%		
CE0241	CE014 - Testing of Stainless Steel Reinforcing Bars Duration Required at the Public Works Laboratories	0	0	23-Jul-19 A					100%		
CE0261	CE015 - Change in Works Information arisen form Project Manager's Response to Request for Information (R	0	0	05-Aug-19 A					100%		
CE0281	CE016 - Testing of Couplers to AC133 Duration Required at the Public Works Laboratories	0	0	05-Aug-19 A					100%		
CE0301	CE017 - Testing of Prestressing Strands, Bolts and Nuts - Duration Required by the Public Works Laboratories	0	0	05-Aug-19 A					100%		
Procurement, Factory Acceptance Test, Delivery and Temporary Storage of Major E&M Equip		45	45	10-Oct-19	10-Oct-19	30-Nov-19	30-Nov-19	15			0
Procurement		45	45	10-Oct-19	10-Oct-19	30-Nov-19	30-Nov-19	15			0
P-PC10120	Procurement of LV Switch Board	45	45	10-Oct-19	10-Oct-19	30-Nov-19	30-Nov-19	15	0%	Procu	0
P-PC10160	Procurement of Genset	30	30	10-Oct-19	10-Oct-19	13-Nov-19	13-Nov-19	15	0%	Procu	0
Preliminaries, Contractor's Design & Method Statement Submission & Approval		353	231	28-Mar-19 A	08-Apr-19	25-Mar-20	25-Mar-20	83			0
Temporary Works Design		239	198	06-Jun-19 A	21-Jun-19	25-Mar-20	25-Mar-20	71			0
TDS2010	Formwork design for V-shaped pier and crossbeam construction (incl. 21 days TRA)	63	11	06-Jun-19 A	21-Jun-19	20-Aug-19	02-Sep-19	21	82.54%	Design	11
TDS2020	Temporary falsework design for V-shaped pier and crossbeam construction (incl. 21 days TRA)	36	36	27-Aug-19	03-Aug-19	07-Oct-19	07-Oct-19	21	0%	Design	0
TDS2080	Design of lifting frame for full-span lifting of precast box girder (incl. 35 days TRA)	63	63	10-Sep-19	10-Sep-19	21-Nov-19	21-Nov-19	178	0%		0
TDS2140	Design of temporary works for superstructure of steel bridge (incl. 35 days TRA)	141	141	14-Oct-19	14-Oct-19	25-Mar-20	25-Mar-20	70	0%		0
TDS2160	Steel mould design for precast segments of TKOI viaducts (incl. 21 days TRA)	63	63	08-Aug-19	08-Jul-19	19-Oct-19	18-Sep-19	-14	0%	Design	-27
TDS2180	Design of Pier bracket for erection of pier-head segments (incl. 21 days TRA)	56	56	21-Oct-19	19-Sep-19	24-Dec-19	22-Nov-19	-14	0%		-27
Method Statement Submission for Major Construction Works		185	96	28-Mar-19 A	26-Apr-19	27-Nov-19	26-Oct-19	172			-27
MDS1135	Method statement submission for geometry control (incl. 21 days TRA)	67	15	28-Mar-19 A	26-Apr-19	24-Aug-19	12-Jul-19	-8	77.61%	struction	-37
MDS1140	Method statement submission for assembly of steel arch bridge (incl. 35 days TRA)	96	96	08-Aug-19	08-Jul-19	27-Nov-19	26-Oct-19	172	0%	struction	-27
Contractor's Design Submission and Approval		241	169	15-Apr-19 A	28-May-19	23-Jan-20	23-Jan-20	4			0
CDS1040	Design of arch rib inspection cradle + Under bridge gantry	86	86	08-Aug-19	30-Sep-19	15-Nov-19	07-Jan-20	-35	0%	0	45
CDS1060	Design of access facilities (incl. 14 days TRA)	125	42	05-May-19 A	28-May-19	25-Sep-19	19-Oct-19	1	66.4%	Design	21
CDS1080	Design of Tuned Mass Damper(TMD) (incl. 7 days TRA)	150	83	15-Apr-19 A	08-Jul-19	12-Nov-19	28-Dec-19	21	44.67%	Design	40
CDS1100	Design of de-humidification system	83	83	10-Oct-19	10-Oct-19	14-Jan-20	14-Jan-20	-33	0%	0	0
CDS1160	Design of Electrical system for the E&M plant room	100	100	30-Sep-19	30-Sep-19	07-Jan-20	07-Jan-20	-38	0%	0	0
CDS1180	Design of Building Services system for the E&M plant room	100	100	10-Sep-19	10-Sep-19	18-Dec-19	18-Dec-19	-38	0%	0	0
CDS1200	Design of Structural health monitoring system (incl. 14 days TRA)	172	145	12-Jun-19 A	08-Jul-19	23-Jan-20	23-Jan-20	3	15.7%	Design	0
Alternative Design Submission and Approval		111	6	30-Mar-19 A	08-Apr-19	14-Aug-19	14-Aug-19	125			0
ADS1030	DDA submission for bridge deck of entrusted works of TKOI Viaduct (incl. 35 days TRA)	111	6	30-Mar-19 A	08-Apr-19	14-Aug-19	14-Aug-19	125	94.59%	Design	0
Preliminaries,Submission, Subcontracting and Procurement		205	83	28-Mar-19 A	08-Apr-19	29-Oct-19	29-Oct-19	231			0
General Submission		140	38	28-Mar-19 A	08-Apr-19	14-Sep-19	25-Aug-19	-30			-20
P-GS1480	Steel main bridge shop drawings submission and approval (incl. 7 days TRA)	140	38	28-Mar-19 A	08-Apr-19	14-Sep-19	25-Aug-19	-30	72.86%	Design	-20
Project Manager's Acceptance of Subcontractors		102	83	19-Jul-19 A	15-Jul-19	29-Oct-19	29-Oct-19	231			0
P-SP1400	Transportation and installation of precast box girder	0	0			08-Aug-19	30-Jul-19	99	0%	PMAS	-8
P-SP1440	Transportation and installation of steel side spans and steel arch bridge	0	0			06-Aug-19 A	31-Jul-19		100%	PMAS	-5
P-SP1500	R.C. structure for pilecap,pier and in-situ deck	0	0			01-Aug-19 A	15-Jul-19		100%	PMAS	-16



Remaining Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone
Summary

CRBC
Three Month Rolling Programme

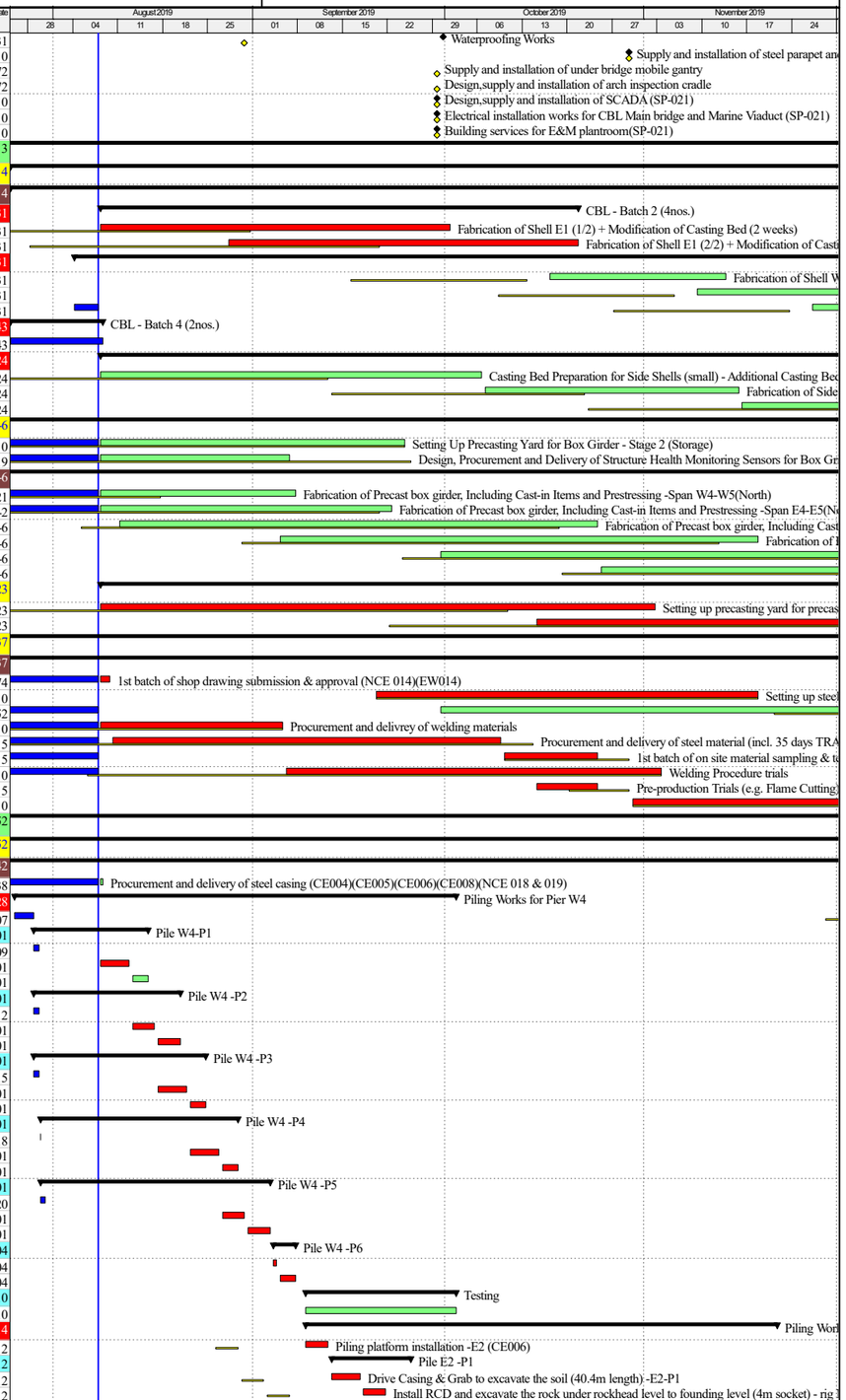
Date	Revision	Checked	Approved
08-Aug-19	Monthly updated on 8 Aug 2019		

Data Date : 08-Aug-19

Page: 2

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	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
P-SP1540	Waterproofing Works	0	0			30-Sep-19	30-Aug-19	260	0%	PMAS	-31
P-SP1560-0	Supply and installation of steel parapet and sign gantry	0	0			29-Oct-19	29-Oct-19	-75	0%	PMAS	0
P-SP1600	Supply and installation of under bridge mobile gantry	0	0			19-Jul-19 A	29-Sep-19		100%	PMAS	72
P-SP1620	Design,supply and installation of arch inspection cradle	0	0			19-Jul-19 A	29-Sep-19		100%	PMAS	72
P-SP1680	Design,supply and installation of SCADA (SP-021)	0	0			29-Sep-19	29-Sep-19	-45	0%	PMAS	0
P-SP1700	Electrical installation works for CBL Main bridge and Marine Viaduct (SP-021)	0	0			29-Sep-19	29-Sep-19	-45	0%	PMAS	0
P-SP1760	Building services for E&M plantroom(SP-021)	0	0			29-Sep-19	29-Sep-19	-38	0%	PMAS	0
Precasting & Fabrication Works		297	167	08-Dec-18 A	08-Apr-19	21-Jan-20	24-Jan-20	77			3
Fabrication of Precast Shell and Precast Segments		175	140	25-Jul-19 A	08-Jul-19	25-Dec-19	29-Dec-19	97			4
Precast Shell		175	140	25-Jul-19 A	08-Jul-19	25-Dec-19	29-Dec-19	97			4
CBL - Batch 2 (4nos.)		75	75	08-Aug-19	08-Jul-19	21-Oct-19	20-Sep-19	11			-31
P-PS3135	Fabrication of Shell E1 (1/2) + Modification of Casting Bed (2 weeks)	55	55	08-Aug-19	08-Jul-19	01-Oct-19	31-Aug-19	11	0%	struction	-31
P-PS3137	Fabrication of Shell E1 (2/2) + Modification of Casting Bed (2 weeks)	55	55	28-Aug-19	28-Jul-19	21-Oct-19	20-Sep-19	11	0%	struction	-31
CBL - Batch 3 (4nos.)		69	69	04-Aug-19 A	16-Sep-19	24-Dec-19	23-Nov-19	84			-31
P-PS3068	Fabrication of Shell W1 (1/2)	28	28	17-Oct-19	16-Sep-19	13-Nov-19	13-Oct-19	51	0%		-31
P-PS3069	Fabrication of Shell W1 (2/2)	28	28	09-Nov-19	09-Oct-19	06-Dec-19	05-Nov-19	51	0%		-31
P-PS3138	Fabrication of Shell E2	28	28	04-Aug-19 A	27-Oct-19	24-Dec-19	23-Nov-19	84	0%		-31
CBL - Batch 4 (2nos.)		28	0	25-Jul-19 A	02-Dec-19	08-Aug-19 A	29-Dec-19				143
P-PS3142	Fabrication of Shell W4	28	0	25-Jul-19 A	02-Dec-19	08-Aug-19 A	29-Dec-19		100%		143
CBL - E1 and W1 Side Shells (4nos.)		140	140	08-Aug-19	15-Jul-19	25-Dec-19	01-Dec-19	104			-24
P-PS9010	Casting Bed Preparation for Side Shells (small) - Additional Casting Beds	60	60	08-Aug-19	15-Jul-19	06-Oct-19	12-Sep-19	70	0%	struction	-24
P-PS9020	Fabrication of Side Shells (small) x2 Sides E1	40	40	07-Oct-19	13-Sep-19	15-Nov-19	22-Oct-19	70	0%		-24
P-PS9040	Fabrication of Side Shells (small) x2 Sides W1	40	40	16-Nov-19	23-Oct-19	25-Dec-19	01-Dec-19	104	0%		-24
Fabrication of Precast Box Girder		225	153	08-Dec-18 A	28-May-19	07-Jan-20	01-Jan-20	46			-6
P-BG1415	Setting Up Precasting Yard for Box Girder - Stage 2 (Storage)	120	48	08-Dec-18 A	28-May-19	24-Sep-19	24-Sep-19	151	60%	struction	0
P-BG1435	Design, Procurement and Delivery of Structure Health Monitoring Sensors for Box Griders	80	30	12-Jun-19 A	08-Jul-19	06-Sep-19	25-Sep-19	21	62.5%	mercial	19
Box Girder Fabrication - 1st Batch (8 Pieces)		218	153	28-May-19 A	04-Jun-19	07-Jan-20	01-Jan-20	21			-6
P-BG1381	Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span W4-W5(North)	75	31	28-May-19 A	04-Jun-19	07-Sep-19	17-Aug-19	47	58.67%	struction	-21
P-BG1382	Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span E4-E5(North)	75	46	05-Jun-19 A	08-Jul-19	22-Sep-19	20-Sep-19	28	38.67%	struction	-2
P-BG1383	Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span W3-W4(South)	75	75	11-Aug-19	05-Aug-19	24-Oct-19	18-Oct-19	21	0%	struction	-6
P-BG1384	Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span E5-E6 (North)	75	75	05-Sep-19	30-Aug-19	18-Nov-19	12-Nov-19	21	0%	0	-6
P-BG1385	Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span W4-W5(South)	75	75	30-Sep-19	24-Sep-19	13-Dec-19	07-Dec-19	21	0%	0	-6
P-BG1390	Fabrication of Precast box girder, Including Cast-in Items and Prestressing -Span E6-E7(South)	75	75	25-Oct-19	19-Oct-19	07-Jan-20	01-Jan-20	21	0%	0	-6
Fabrication of Precast Pier		167	167	08-Aug-19	16-Jul-19	21-Jan-20	29-Dec-19	1			-23
P-PF1220	Setting up precasting yard for precast pier (incl. 18 days TRA)	87	87	08-Aug-19	16-Jul-19	02-Nov-19	10-Oct-19	1	0%	struction	-23
P-PF1230	Fabrication of Precast pier (1st batch 4 nos) - E4, E5, E6, E7	99	99	15-Oct-19	22-Sep-19	21-Jan-20	29-Dec-19	1	0%	0	-23
Fabrication of Steel Arch Bridge and Side Spans		292	133	28-Mar-19 A	08-Apr-19	18-Dec-19	24-Jan-20	8			37
Fabrication of Steel Arch Bridge		292	133	28-Mar-19 A	08-Apr-19	18-Dec-19	24-Jan-20	8			37
P-PF1035	1st batch of shop drawing submission & approval (NCE 014)(EW014)	50	2	28-Mar-19 A	08-Apr-19	09-Aug-19	27-May-19	-90	96%	struction	-74
P-PF1040	Setting up steel work fabrication yard	60	60	20-Sep-19	20-Sep-19	18-Nov-19	18-Nov-19	-95	0%	0	0
P-PF1045	Remaining shop drawing submission & approval (NCE 014)	65	65	29-Jun-19 A	21-Nov-19	03-Dec-19	24-Jan-20	23	0%	struction	52
P-PF1047	Procurement and delivrey of welding materials	90	29	06-Jun-19 A	08-Jun-19	05-Sep-19	05-Sep-19	-95	67.78%	struction	0
P-PF1050	Procurement and delivery of steel material (incl. 35 days TRA)	125	61	19-Apr-19 A	12-Jun-19	09-Oct-19	14-Oct-19	-90	51.2%	struction	5
P-PF1055	1st batch of on site material sampling & testing	20	15	25-Jun-19 A	10-Oct-19	24-Oct-19	29-Oct-19	-90	25%	0	5
P-PF1065	Welding Procedure trials	90	59	29-Jun-19 A	06-Aug-19	03-Nov-19	03-Nov-19	-95	34.44%	0	0
P-PF1075	Pre-production Trials (e.g. Flame Cutting)	10	10	15-Oct-19	20-Oct-19	24-Oct-19	29-Oct-19	-90	0%		5
P-PF1095	Material Pre-Treatment	50	50	30-Oct-19	30-Oct-19	18-Dec-19	18-Dec-19	-95	0%		0
Section 2 of Works-All Works within Portion II,III,IV and VI		427	315	23-Nov-18 A	18-Apr-19	17-Jun-20	08-Aug-20	68			52
CBL Main Bridge and Marine Viaduct		427	315	23-Nov-18 A	18-Apr-19	17-Jun-20	08-Aug-20	68			52
Piling Works		254	142	23-Nov-18 A	18-Apr-19	27-Dec-19	07-Feb-20	109			42
S2-PW1010	Procurement and delivery of steel casing (CE004)(CE005)(CE006)(CE008)(NCE 018 & 019)	75	1	23-Nov-18 A	18-Apr-19	08-Aug-19	01-Jul-19	31	98.67%	struction	-38
Piling Works for Pier W4		56	56	26-Jul-19 A	29-Nov-19	02-Oct-19	07-Feb-20	195			128
S2-PW50	Piling platform installation -W4	4	0	26-Jul-19 A	29-Nov-19	29-Jul-19 A	03-Dec-19		100%	0	107
Pile W4-P1		7	7	29-Jul-19 A	04-Dec-19	15-Aug-19	14-Dec-19	21			101
S2-PW:	Drive Casing & Grab to excavate the soil (40.4m length) -W4-P1	3	0	29-Jul-19 A	04-Dec-19	29-Jul-19 A	06-Dec-19		100%	0	109
S2-PW:	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	08-Aug-19	07-Dec-19	12-Aug-19	11-Dec-19	17	0%	0	101
S2-PW:	Install steel cage and concreting -W4-P1	3	3	13-Aug-19	12-Dec-19	15-Aug-19	14-Dec-19	21	0%	0	101
Pile W4 -P2		7	7	29-Jul-19 A	07-Dec-19	20-Aug-19	19-Dec-19	20			101
S2-PW:	Drive Casing & Grab to excavate the soil (40.4m length) -W4-P2	3	0	29-Jul-19 A	07-Dec-19	29-Jul-19 A	10-Dec-19		100%	0	112
S2-PW:	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	13-Aug-19	12-Dec-19	16-Aug-19	16-Dec-19	17	0%	0	101
S2-PW:	Install steel cage and concreting -W4-P2	3	3	17-Aug-19	17-Dec-19	20-Aug-19	19-Dec-19	20	0%	0	101
Pile W4 -P3		7	7	29-Jul-19 A	11-Dec-19	24-Aug-19	24-Dec-19	19			101
S2-PW:	Drive Casing & Grab to excavate the soil (40.4m length) -W4-P3	3	0	29-Jul-19 A	11-Dec-19	29-Jul-19 A	13-Dec-19		100%	0	115
S2-PW:	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	17-Aug-19	17-Dec-19	21-Aug-19	20-Dec-19	17	0%	0	101
S2-PW:	Install steel cage and concreting -W4-P3	3	3	22-Aug-19	21-Dec-19	24-Aug-19	24-Dec-19	19	0%	0	101
Pile W4 -P4		7	7	30-Jul-19 A	14-Dec-19	29-Aug-19	31-Dec-19	18			101
S2-PW:	Drive Casing & Grab to excavate the soil (40.4m length) -W4-P4	3	0	30-Jul-19 A	14-Dec-19	30-Jul-19 A	17-Dec-19		100%	0	118
S2-PW:	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	22-Aug-19	21-Dec-19	26-Aug-19	27-Dec-19	17	0%	0	101
S2-PW:	Install steel cage and concreting -W4-P4	3	3	27-Aug-19	28-Dec-19	29-Aug-19	31-Dec-19	18	0%	0	101
Pile W4 -P5		8	7	30-Jul-19 A	18-Dec-19	03-Sep-19	06-Jan-20	17			101
S2-PW:	Drive Casing & Grab to excavate the soil (40.4m length) -W4-P5	3	0	30-Jul-19 A	18-Dec-19	30-Jul-19 A	20-Dec-19		100%	0	120
S2-PW:	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	27-Aug-19	28-Dec-19	30-Aug-19	02-Jan-20	17	0%	0	101
S2-PW:	Install steel cage and concreting -W4-P5	3	3	31-Aug-19	03-Jan-20	03-Sep-19	06-Jan-20	17	0%	0	101
Pile W4 -P6		4	4	04-Sep-19	10-Jan-20	07-Sep-19	14-Jan-20	17			104
S2-PW:	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	1	1	04-Sep-19	10-Jan-20	04-Sep-19	10-Jan-20	17	0%	0	104
S2-PW:	Install steel cage and concreting -W4-P6	3	3	05-Sep-19	11-Jan-20	07-Sep-19	14-Jan-20	17	0%	0	104
Testing		21	21	09-Sep-19	15-Jan-20	02-Oct-19	07-Feb-20	167			110
S2-PW-	Sonic Test, interface core and full core for bored pile -W4	21	21	09-Sep-19	15-Jan-20	02-Oct-19	07-Feb-20	167	0%	0	110
Piling Works for Pier E2		74	74	09-Sep-19	26-Aug-19	21-Nov-19	07-Nov-19	20			-14
S2-PW85	Piling platform installation -E2 (CE006)	4	4	09-Sep-19	26-Aug-19	12-Sep-19	29-Aug-19	17	0%	0	-12
Pile E2 -P1		10	10	13-Sep-19	30-Aug-19	25-Sep-19	10-Sep-19	21			-12
S2-PW:	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P1	3	3	13-Sep-19	30-Aug-19	17-Sep-19	02-Sep-19	17	0%	0	-12
S2-PW:	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4	18-Sep-19	03-Sep-19	21-Sep-19	06-Sep-19	17	0%	0	-12



Remaining Level of Effort | Remaining Work | Milestone

Primary Baseline | Critical Remaining Work | Summary

Actual Work | Baseline Milestone

CRBC

Three Month Rolling Programme

Date	Revision	Checked	Approved
08-Aug-19	Monthly updated on 8 Aug 2019		

Data Date : 08-Aug-19

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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	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
S2-PW	Install steel cage and concreting -E2-P1	3	3	23-Sep-19	07-Sep-19	25-Sep-19	10-Sep-19	21	0%	0	-12
Pile E2 -P2		11	11	18-Sep-19	03-Sep-19	30-Sep-19	16-Sep-19	20			-12
S2-PW	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P2	3	3	18-Sep-19	03-Sep-19	20-Sep-19	05-Sep-19	18	0%	0	-12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4	23-Sep-19	07-Sep-19	26-Sep-19	11-Sep-19	17	0%	0	-12
S2-PW	Install steel cage and concreting -E2-P2	3	3	27-Sep-19	12-Sep-19	30-Sep-19	16-Sep-19	20	0%	0	-12
Pile E2 -P3		12	12	21-Sep-19	06-Sep-19	05-Oct-19	20-Sep-19	19			-12
S2-PW	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P3	3	3	21-Sep-19	06-Sep-19	24-Sep-19	09-Sep-19	19	0%	0	-12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4	27-Sep-19	12-Sep-19	02-Oct-19	17-Sep-19	17	0%	0	-12
S2-PW	Install steel cage and concreting -E2-P3	3	3	03-Oct-19	18-Sep-19	05-Oct-19	20-Sep-19	19	0%	0	-12
Pile E2 -P4		13	13	25-Sep-19	10-Sep-19	11-Oct-19	25-Sep-19	18			-12
S2-PW	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P4	3	3	25-Sep-19	10-Sep-19	27-Sep-19	12-Sep-19	20	0%	0	-12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4	03-Oct-19	18-Sep-19	08-Oct-19	21-Sep-19	17	0%	0	-12
S2-PW	Install steel cage and concreting -E2-P4	3	3	09-Oct-19	23-Sep-19	11-Oct-19	25-Sep-19	18	0%	0	-12
Pile E2 -P5		14	14	28-Sep-19	13-Sep-19	16-Oct-19	30-Sep-19	17			-12
S2-PW	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P5	3	3	28-Sep-19	13-Sep-19	02-Oct-19	17-Sep-19	21	0%	0	-12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4	09-Oct-19	23-Sep-19	12-Oct-19	26-Sep-19	17	0%	0	-12
S2-PW	Install steel cage and concreting -E2-P5	3	3	14-Oct-19	27-Sep-19	16-Oct-19	30-Sep-19	17	0%	0	-12
Pile E2 -P6		10	10	17-Oct-19	02-Oct-19	28-Oct-19	14-Oct-19	17			-12
S2-PW	Drive Casing & Grab to excavate the soil (40.4m length) -E2-P6	3	3	17-Oct-19	02-Oct-19	19-Oct-19	04-Oct-19	17	0%	0	-12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4	21-Oct-19	05-Oct-19	24-Oct-19	10-Oct-19	17	0%	0	-12
S2-PW	Install steel cage and concreting -E2-P6	3	3	25-Oct-19	11-Oct-19	28-Oct-19	14-Oct-19	17	0%	0	-12
Testing		21	21	29-Oct-19	15-Oct-19	21-Nov-19	07-Nov-19	17			-12
S2-PW	Sonic Test, interface core and full core for bored pile -E2	21	21	29-Oct-19	15-Oct-19	21-Nov-19	07-Nov-19	17	0%	0	-12
Piling Works for Pier W3		26	26	29-Oct-19	15-Oct-19	27-Nov-19	13-Nov-19	61			-12
S2-PW21	Piling platform installation -W3	4	4	29-Oct-19	15-Oct-19	01-Nov-19	18-Oct-19	61	0%	0	-12
Pile W3 -P1		10	10	02-Nov-19	19-Oct-19	13-Nov-19	30-Oct-19	64			-12
S2-PW	Drive Casing & Grab to excavate the soil (42m length) -W3-P1	3	3	02-Nov-19	19-Oct-19	05-Nov-19	22-Oct-19	61	0%	0	-12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	06-Nov-19	23-Oct-19	09-Nov-19	26-Oct-19	61	0%	0	-12
S2-PW	Install steel cage and concreting -W3-P1	3	3	11-Nov-19	28-Oct-19	13-Nov-19	30-Oct-19	64	0%	0	-12
Pile W3 -P2		11	11	06-Nov-19	23-Oct-19	18-Nov-19	04-Nov-19	63			-12
S2-PW	Drive Casing & Grab to excavate the soil (42m length) -W3-P2	3	3	06-Nov-19	23-Oct-19	08-Nov-19	25-Oct-19	62	0%	0	-12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	11-Nov-19	28-Oct-19	14-Nov-19	31-Oct-19	61	0%	0	-12
S2-PW	Install steel cage and concreting -W3-P2	3	3	15-Nov-19	01-Nov-19	18-Nov-19	04-Nov-19	63	0%	0	-12
Pile W3 -P3		12	12	09-Nov-19	26-Oct-19	22-Nov-19	08-Nov-19	62			-12
S2-PW	Drive Casing & Grab to excavate the soil (42m length) -W3-P3	3	3	09-Nov-19	26-Oct-19	12-Nov-19	29-Oct-19	63	0%	0	-12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	15-Nov-19	01-Nov-19	19-Nov-19	05-Nov-19	61	0%	0	-12
S2-PW	Install steel cage and concreting -W3-P3	3	3	20-Nov-19	06-Nov-19	22-Nov-19	08-Nov-19	62	0%	0	-12
Pile W3 -P4		13	13	13-Nov-19	30-Oct-19	27-Nov-19	13-Nov-19	61			-12
S2-PW	Drive Casing & Grab to excavate the soil (42m length) -W3-P4	3	3	13-Nov-19	30-Oct-19	15-Nov-19	01-Nov-19	64	0%	0	-12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	20-Nov-19	06-Nov-19	23-Nov-19	09-Nov-19	61	0%	0	-12
S2-PW	Install steel cage and concreting -W3-P4	3	3	25-Nov-19	11-Nov-19	27-Nov-19	13-Nov-19	61	0%	0	-12
Pile W3 -P5		7	7	16-Nov-19	02-Nov-19	23-Nov-19	09-Nov-19	64			-12
S2-PW	Drive Casing & Grab to excavate the soil (42m length) -W3-P5	3	3	16-Nov-19	02-Nov-19	19-Nov-19	05-Nov-19	64	0%	0	-12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	20-Nov-19	06-Nov-19	23-Nov-19	09-Nov-19	64	0%	0	-12
Piling Works for Pier W1		115	115	04-Sep-19	02-Aug-19	27-Dec-19	25-Nov-19	3			-32
S2-PW20	Piling platform installation -W1	4	4	04-Sep-19	02-Aug-19	07-Sep-19	06-Aug-19	2	0%	0	-28
Pile W1 -P1		11	11	09-Sep-19	07-Aug-19	21-Sep-19	19-Aug-19	17			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P1	4	4	09-Sep-19	07-Aug-19	12-Sep-19	10-Aug-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	13-Sep-19	12-Aug-19	18-Sep-19	15-Aug-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P1	3	3	19-Sep-19	16-Aug-19	21-Sep-19	19-Aug-19	17	0%	0	-28
Pile W1 -P10		11	11	24-Oct-19	19-Sep-19	05-Nov-19	02-Oct-19	8			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P10	4	4	24-Oct-19	19-Sep-19	28-Oct-19	23-Sep-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting	4	4	29-Oct-19	24-Sep-19	01-Nov-19	27-Sep-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P10	3	3	02-Nov-19	28-Sep-19	05-Nov-19	02-Oct-19	8	0%	0	-28
Pile W1 -P11		11	11	29-Oct-19	24-Sep-19	09-Nov-19	08-Oct-19	7			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P11	4	4	29-Oct-19	24-Sep-19	01-Nov-19	27-Sep-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting	4	4	02-Nov-19	28-Sep-19	06-Nov-19	03-Oct-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P11	3	3	07-Nov-19	04-Oct-19	09-Nov-19	08-Oct-19	7	0%	0	-28
Pile W1 -P12		11	11	02-Nov-19	28-Sep-19	14-Nov-19	12-Oct-19	6			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P12	4	4	02-Nov-19	28-Sep-19	06-Nov-19	03-Oct-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting	4	4	07-Nov-19	04-Oct-19	11-Nov-19	09-Oct-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P12	3	3	12-Nov-19	10-Oct-19	14-Nov-19	12-Oct-19	6	0%	0	-28
Pile W1 -P13 (Dia. 1000mm)		11	11	07-Nov-19	04-Oct-19	19-Nov-19	17-Oct-19	5			-28
S2-PW	Drive Casing & Grab to excavate the soil (43.4m length) -W1-P13	4	4	07-Nov-19	04-Oct-19	11-Nov-19	09-Oct-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	12-Nov-19	10-Oct-19	15-Nov-19	14-Oct-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P13	3	3	16-Nov-19	15-Oct-19	19-Nov-19	17-Oct-19	5	0%	0	-28
Pile W1 -P14 (Dia. 1000mm)		11	11	12-Nov-19	10-Oct-19	23-Nov-19	22-Oct-19	4			-28
S2-PW	Drive Casing & Grab to excavate the soil (43.4m length) -W1-P14	4	4	12-Nov-19	10-Oct-19	15-Nov-19	14-Oct-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	16-Nov-19	15-Oct-19	20-Nov-19	18-Oct-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P14	3	3	21-Nov-19	19-Oct-19	23-Nov-19	22-Oct-19	4	0%	0	-28
Pile W1 -P15 (Dia. 1000mm)		11	11	16-Nov-19	15-Oct-19	28-Nov-19	26-Oct-19	3			-28
S2-PW	Drive Casing & Grab to excavate the soil (43.4m length) -W1-P15	4	4	16-Nov-19	15-Oct-19	20-Nov-19	18-Oct-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	21-Nov-19	19-Oct-19	25-Nov-19	23-Oct-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P15	3	3	26-Nov-19	24-Oct-19	28-Nov-19	26-Oct-19	3	0%	0	-28
Pile W1 -P16 (Dia. 1000mm)		11	11	21-Nov-19	19-Oct-19	03-Dec-19	31-Oct-19	2			-28
S2-PW	Drive Casing & Grab to excavate the soil (43.4m length) -W1-P16	4	4	21-Nov-19	19-Oct-19	25-Nov-19	23-Oct-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	26-Nov-19	24-Oct-19	29-Nov-19	28-Oct-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P16	3	3	30-Nov-19	29-Oct-19	03-Dec-19	31-Oct-19	2	0%	0	-28
Testing		21	21	04-Dec-19	01-Nov-19	27-Dec-19	25-Nov-19	2			-28
S2-PW	Sonic Test, interface core and full core for bored pile -W1	21	21	04-Dec-19	01-Nov-19	27-Dec-19	25-Nov-19	2	0%	0	-28
Pile W1 -P2		11	11	13-Sep-19	12-Aug-19	26-Sep-19	23-Aug-19	16			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P2	4	4	13-Sep-19	12-Aug-19	18-Sep-19	15-Aug-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	19-Sep-19	16-Aug-19	23-Sep-19	20-Aug-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P2	3	3	24-Sep-19	21-Aug-19	26-Sep-19	23-Aug-19	16	0%	0	-28
Pile W1 -P3		11	11	19-Sep-19	16-Aug-19	02-Oct-19	28-Aug-19	15			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P3	4	4	19-Sep-19	16-Aug-19	23-Sep-19	20-Aug-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	24-Sep-19	21-Aug-19	27-Sep-19	24-Aug-19	2	0%	0	-28

Remaining Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone
Summary

CRBC

Three Month Rolling Programme

Date	Revision	Checked	Approved
08-Aug-19	Monthly updated on 8 Aug 2019		

Data Date : 08-Aug-19

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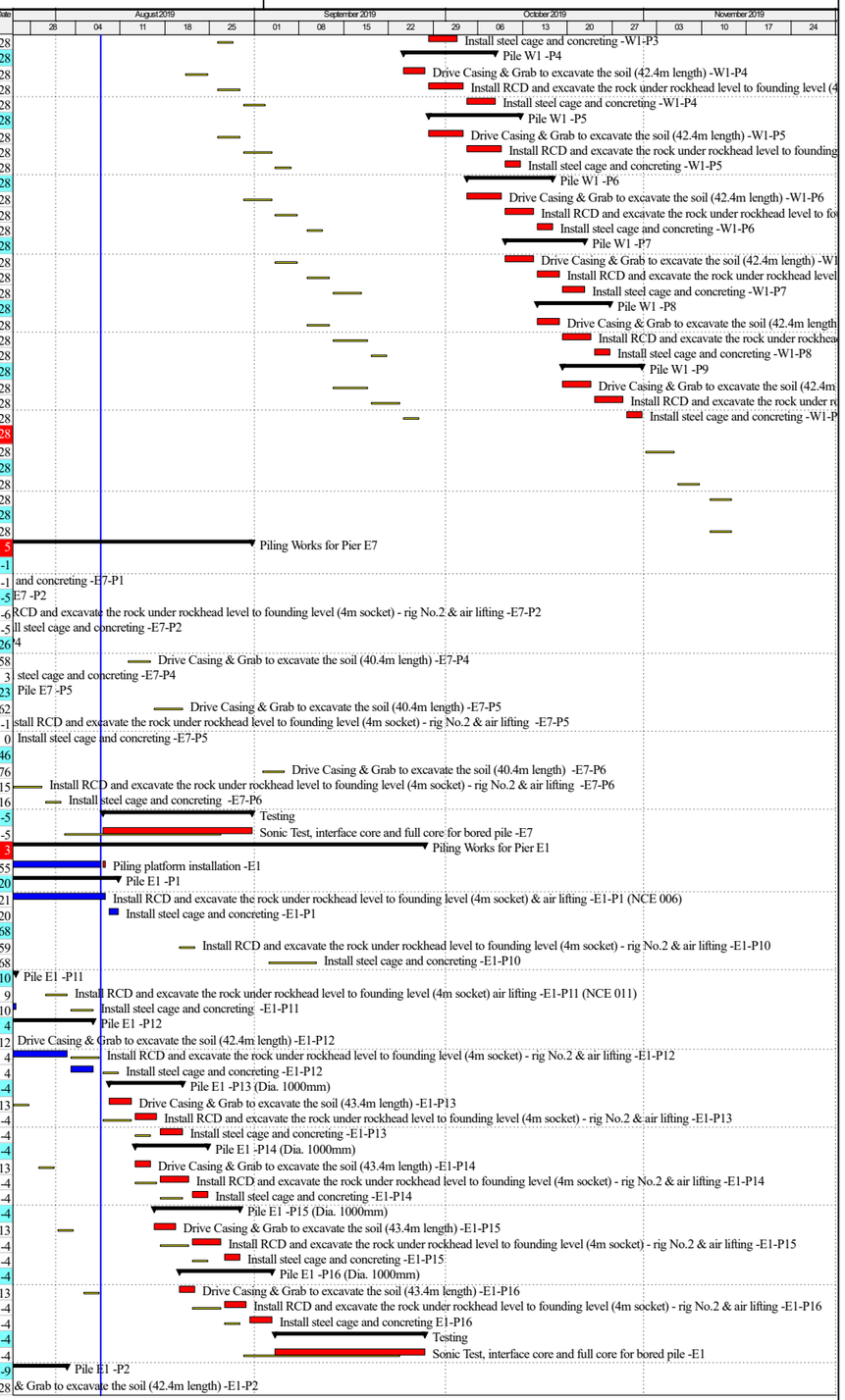
Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
S2-PW	Install steel cage and concreting -W1-P3	3	3	28-Sep-19	26-Aug-19	02-Oct-19	28-Aug-19	15	0%	0	-28
Pile W1 -P4		11	11	24-Sep-19	21-Aug-19	08-Oct-19	02-Sep-19	14			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P4	4	4	24-Sep-19	21-Aug-19	27-Sep-19	24-Aug-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	28-Sep-19	26-Aug-19	03-Oct-19	29-Aug-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P4	3	3	04-Oct-19	30-Aug-19	08-Oct-19	02-Sep-19	14	0%	0	-28
Pile W1 -P5		11	11	28-Sep-19	26-Aug-19	12-Oct-19	06-Sep-19	13			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P5	4	4	28-Sep-19	26-Aug-19	03-Oct-19	29-Aug-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	04-Oct-19	30-Aug-19	09-Oct-19	03-Sep-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P5	3	3	10-Oct-19	04-Sep-19	12-Oct-19	06-Sep-19	13	0%	0	-28
Pile W1 -P6		11	11	04-Oct-19	30-Aug-19	17-Oct-19	11-Sep-19	12			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P6	4	4	04-Oct-19	30-Aug-19	09-Oct-19	03-Sep-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	10-Oct-19	04-Sep-19	14-Oct-19	07-Sep-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P6	3	3	15-Oct-19	09-Sep-19	17-Oct-19	11-Sep-19	12	0%	0	-28
Pile W1 -P7		11	11	10-Oct-19	04-Sep-19	22-Oct-19	17-Sep-19	11			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P7	4	4	10-Oct-19	04-Sep-19	14-Oct-19	07-Sep-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	15-Oct-19	09-Sep-19	18-Oct-19	12-Sep-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P7	3	3	19-Oct-19	13-Sep-19	22-Oct-19	17-Sep-19	11	0%	0	-28
Pile W1 -P8		11	11	15-Oct-19	09-Sep-19	26-Oct-19	21-Sep-19	10			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P8	4	4	15-Oct-19	09-Sep-19	18-Oct-19	12-Sep-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	19-Oct-19	13-Sep-19	23-Oct-19	18-Sep-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P8	3	3	24-Oct-19	19-Sep-19	26-Oct-19	21-Sep-19	10	0%	0	-28
Pile W1 -P9		11	11	19-Oct-19	13-Sep-19	31-Oct-19	26-Sep-19	9			-28
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -W1-P9	4	4	19-Oct-19	13-Sep-19	23-Oct-19	18-Sep-19	2	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	24-Oct-19	19-Sep-19	28-Oct-19	23-Sep-19	2	0%	0	-28
S2-PW	Install steel cage and concreting -W1-P9	3	3	29-Oct-19	24-Sep-19	31-Oct-19	26-Sep-19	9	0%	0	-28
Piling Works for Pier W5		12	12	04-Dec-19	01-Nov-19	17-Dec-19	14-Nov-19	67			-28
S2-PW53	Piling platform installation -W5	4	4	04-Dec-19	01-Nov-19	07-Dec-19	05-Nov-19	67	0%	0	-28
Pile W5 -P1		8	8	09-Dec-19	06-Nov-19	17-Dec-19	14-Nov-19	67			-28
S2-PW	Drive Casing & Grab to excavate the soil (40.4m length) -W5-P1	4	4	09-Dec-19	06-Nov-19	12-Dec-19	09-Nov-19	67	0%	0	-28
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.1 & air lifting -	4	4	13-Dec-19	11-Nov-19	17-Dec-19	14-Nov-19	67	0%	0	-28
Pile W5 -P2		4	4	13-Dec-19	11-Nov-19	17-Dec-19	14-Nov-19	67			-28
S2-PW	Drive Casing & Grab to excavate the soil (40.4m length) -W5-P2	4	4	13-Dec-19	11-Nov-19	17-Dec-19	14-Nov-19	67	0%	0	-28
Piling Works for Pier E7		29	24	06-Jun-19 A	08-Jul-19	31-Aug-19	05-Sep-19	20			5
Pile E7 -P1		3	0	09-Jul-19 A	08-Jul-19	11-Jul-19 A	10-Jul-19				-1
S2-PW	Install steel cage and concreting -E7-P1	3	0	09-Jul-19 A	08-Jul-19	11-Jul-19 A	10-Jul-19		100%	0	-1
Pile E7 -P2		7	0	08-Jul-19 A	08-Jul-19	20-Jul-19 A	15-Jul-19				-5
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	0	08-Jul-19 A	08-Jul-19	18-Jul-19 A	11-Jul-19		100%	0	-6
S2-PW	Install steel cage and concreting -E7-P2	3	0	19-Jul-19 A	12-Jul-19	20-Jul-19 A	15-Jul-19		100%	0	-5
Pile E7 -P4		8	0	06-Jun-19 A	17-Jul-19	16-Jul-19 A	15-Aug-19				26
S2-PW	Drive Casing & Grab to excavate the soil (40.4m length) -E7-P4	4	0	06-Jun-19 A	12-Aug-19	07-Jun-19 A	15-Aug-19		100%	0	58
S2-PW	Install steel cage and concreting -E7-P4	3	0	15-Jul-19 A	17-Jul-19	16-Jul-19 A	19-Jul-19		100%	0	3
Pile E7 -P5		8	0	06-Jun-19 A	17-Jul-19	24-Jul-19 A	20-Aug-19				23
S2-PW	Drive Casing & Grab to excavate the soil (40.4m length) -E7-P5	4	0	06-Jun-19 A	16-Aug-19	07-Jun-19 A	20-Aug-19		100%	0	62
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting	4	0	15-Jul-19 A	17-Jul-19	22-Jul-19 A	20-Jul-19		100%	0	-1
S2-PW	Install steel cage and concreting -E7-P5	3	0	23-Jul-19 A	22-Jul-19	24-Jul-19 A	24-Jul-19		100%	0	0
Pile E7 -P6		10	0	06-Jun-19 A	25-Jul-19	13-Jul-19 A	05-Sep-19				46
S2-PW	Drive Casing & Grab to excavate the soil (40.4m length) -E7-P6	4	0	06-Jun-19 A	02-Sep-19	07-Jun-19 A	05-Sep-19		100%	0	76
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting	4	0	05-Jul-19 A	25-Jul-19	11-Jul-19 A	29-Jul-19		100%	0	15
S2-PW	Install steel cage and concreting -E7-P6	3	0	12-Jul-19 A	30-Jul-19	13-Jul-19 A	01-Aug-19		100%	0	16
Testing		21	21	08-Aug-19	02-Aug-19	31-Aug-19	26-Aug-19	17			-5
S2-PW	Sonic Test, interface core and full core for bored pile -E7	21	21	08-Aug-19	02-Aug-19	31-Aug-19	26-Aug-19	17	0%	0	-5
Piling Works for Pier E1		124	51	08-May-19 A	30-May-19	27-Sep-19	30-Sep-19	19			3
S2-PW75	Piling platform installation -E1	4	1	17-May-19 A	30-May-19	08-Aug-19	03-Jun-19	2	75%	0	-55
Pile E1 -P1		5	0	18-Jul-19 A	11-Jul-19	10-Aug-19 A	18-Jul-19				-20
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) & air lifting -E1-P1 (NC	4	0	18-Jul-19 A	11-Jul-19	08-Aug-19 A	15-Jul-19		100%	0	-21
S2-PW	Install steel cage and concreting -E1-P1	3	0	09-Aug-19 A	16-Jul-19	10-Aug-19 A	18-Jul-19		100%	0	-20
Pile E1 -P10		19	0	07-Jun-19 A	20-Aug-19	21-Jun-19 A	10-Sep-19				68
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	3	0	07-Jun-19 A	20-Aug-19	13-Jun-19 A	22-Aug-19		100%	0	59
S2-PW	Install steel cage and concreting -E1-P10	7	0	14-Jun-19 A	03-Sep-19	21-Jun-19 A	10-Sep-19		100%	0	68
Pile E1 -P11		7	0	09-Jul-19 A	30-Jul-19	25-Jul-19 A	06-Aug-19				10
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) air lifting -E1-P11 (NC	4	0	09-Jul-19 A	30-Jul-19	23-Jul-19 A	02-Aug-19		100%	0	9
S2-PW	Install steel cage and concreting -E1-P11	3	0	24-Jul-19 A	03-Aug-19	25-Jul-19 A	06-Aug-19		100%	0	10
Pile E1 -P12		31	0	09-Jul-19 A	22-Jul-19	06-Aug-19 A	10-Aug-19				4
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -E1-P12	3	0	09-Jul-19 A	22-Jul-19	10-Jul-19 A	24-Jul-19		100%	0	12
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	0	18-Jul-19 A	03-Aug-19	02-Aug-19 A	07-Aug-19		100%	0	4
S2-PW	Install steel cage and concreting -E1-P12	3	0	03-Aug-19 A	08-Aug-19	06-Aug-19 A	10-Aug-19		100%	0	4
Pile E1 -P13 (Dia. 1000mm)		10	10	09-Aug-19	25-Jul-19	20-Aug-19	15-Aug-19	5			-4
S2-PW	Drive Casing & Grab to excavate the soil (43.4m length) -E1-P13	3	3	09-Aug-19	25-Jul-19	12-Aug-19	27-Jul-19	2	0%	0	-13
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4	13-Aug-19	08-Aug-19	16-Aug-19	12-Aug-19	2	0%	0	-4
S2-PW	Install steel cage and concreting -E1-P13	3	3	17-Aug-19	13-Aug-19	20-Aug-19	15-Aug-19	5	0%	0	-4
Pile E1 -P14 (Dia. 1000mm)		11	11	13-Aug-19	29-Jul-19	24-Aug-19	20-Aug-19	4			-4
S2-PW	Drive Casing & Grab to excavate the soil (43.4m length) -E1-P14	3	3	13-Aug-19	29-Jul-19	15-Aug-19	31-Jul-19	3	0%	0	-13
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4	17-Aug-19	13-Aug-19	21-Aug-19	16-Aug-19	2	0%	0	-4
S2-PW	Install steel cage and concreting -E1-P14	3	3	22-Aug-19	17-Aug-19	24-Aug-19	20-Aug-19	4	0%	0	-4
Pile E1 -P15 (Dia. 1000mm)		12	12	16-Aug-19	01-Aug-19	29-Aug-19	24-Aug-19	3			-4
S2-PW	Drive Casing & Grab to excavate the soil (43.4m length) -E1-P15	3	3	16-Aug-19	01-Aug-19	19-Aug-19	03-Aug-19	4	0%	0	-13
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4	22-Aug-19	17-Aug-19	26-Aug-19	21-Aug-19	2	0%	0	-4
S2-PW	Install steel cage and concreting -E1-P15	3	3	27-Aug-19	22-Aug-19	29-Aug-19	24-Aug-19	3	0%	0	-4
Pile E1 -P16 (Dia. 1000mm)		13	13	20-Aug-19	05-Aug-19	03-Sep-19	29-Aug-19	2			-4
S2-PW	Drive Casing & Grab to excavate the soil (43.4m length) -E1-P16	3	3	20-Aug-19	05-Aug-19	22-Aug-19	07-Aug-19	5	0%	0	-13
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	4	27-Aug-19	22-Aug-19	30-Aug-19	26-Aug-19	2	0%	0	-4
S2-PW	Install steel cage and concreting E1-P16	3	3	31-Aug-19	27-Aug-19	03-Sep-19	29-Aug-19	2	0%	0	-4
Testing		21	21	04-Sep-19	30-Aug-19	27-Sep-19	23-Sep-19	16			-4
S2-PW	Sonic Test, interface core and full core for bored pile -E1	21	21	04-Sep-19	30-Aug-19	27-Sep-19	23-Sep-19	16	0%	0	-4
Pile E1 -P2		14	0	08-May-19 A	11-Jul-19	02-Aug-19 A	23-Jul-19				-9
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -E1-P2	3	0	08-May-19 A	11-Jul-19	10-Jun-19 A	13-Jul-19		100%	0	28



Remaining Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone
Summary

CRBC

Three Month Rolling Programme

Date	Revision	Checked	Approved
08-Aug-19	Monthly updated on 8 Aug 2019		

Data Date : 08-Aug-19

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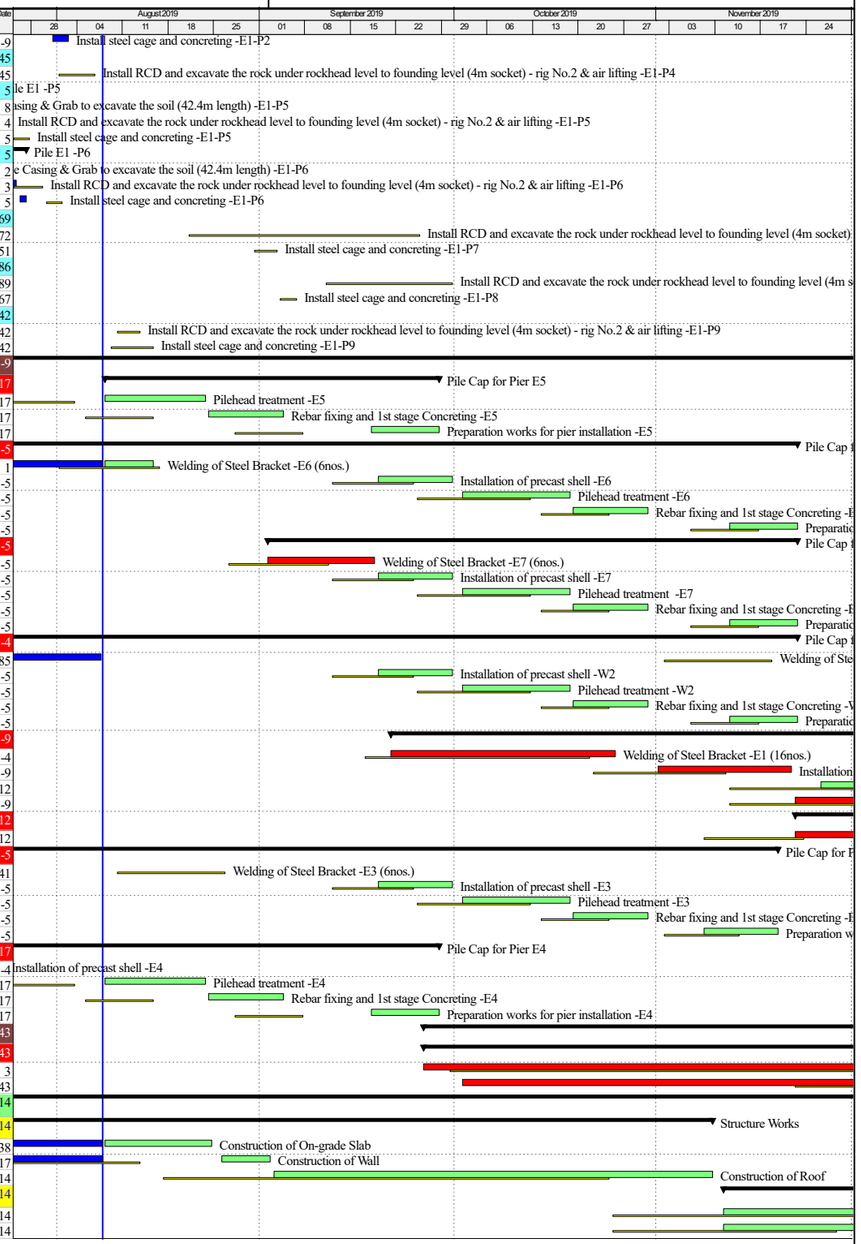
Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Planned Start	Finish	Planned Finish	Total Float	Activity % Complete	TRA	Variance - Finish Date
S2-PW	Install steel cage and concreting -E1-P2	3	0	31-Jul-19 A	20-Jul-19	02-Aug-19 A	23-Jul-19		100%	0	-9
Pile E1 -P4		5	0	07-Jun-19 A	01-Aug-19	13-Jun-19 A	06-Aug-19				45
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	5	0	07-Jun-19 A	01-Aug-19	13-Jun-19 A	06-Aug-19		100%	0	45
Pile E1 -P5		12	0	05-Jul-19 A	15-Jul-19	22-Jul-19 A	27-Jul-19				5
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -E1-P5	3	0	05-Jul-19 A	15-Jul-19	08-Jul-19 A	17-Jul-19		100%	0	8
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	0	09-Jul-19 A	20-Jul-19	19-Jul-19 A	24-Jul-19		100%	0	4
S2-PW	Install steel cage and concreting -E1-P5	3	0	20-Jul-19 A	25-Jul-19	22-Jul-19 A	27-Jul-19		100%	0	5
Pile E1 -P6		13	0	16-Jul-19 A	18-Jul-19	27-Jul-19 A	01-Aug-19				5
S2-PW	Drive Casing & Grab to excavate the soil (42.4m length) -E1-P6	3	0	16-Jul-19 A	18-Jul-19	18-Jul-19 A	20-Jul-19		100%	0	2
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	4	0	19-Jul-19 A	25-Jul-19	25-Jul-19 A	29-Jul-19		100%	0	3
S2-PW	Install steel cage and concreting -E1-P6	3	0	26-Jul-19 A	30-Jul-19	27-Jul-19 A	01-Aug-19		100%	0	5
Pile E1 -P7		30	0	16-Jun-19 A	21-Aug-19	05-Jul-19 A	25-Sep-19				69
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting	30	0	16-Jun-19 A	21-Aug-19	02-Jul-19 A	25-Sep-19		100%	0	72
S2-PW	Install steel cage and concreting -E1-P7	3	0	03-Jul-19 A	31-Aug-19	05-Jul-19 A	03-Sep-19		100%	0	51
Pile E1 -P8		22	0	11-Jun-19 A	04-Sep-19	19-Jun-19 A	30-Sep-19				86
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	16	0	11-Jun-19 A	11-Sep-19	15-Jun-19 A	30-Sep-19		100%	0	89
S2-PW	Install steel cage and concreting -E1-P8	3	0	17-Jun-19 A	04-Sep-19	19-Jun-19 A	06-Sep-19		100%	0	67
Pile E1 -P9		6	0	14-Jun-19 A	09-Aug-19	26-Jun-19 A	15-Aug-19				42
S2-PW	Install RCD and excavate the rock under rockhead level to founding level (4m socket) - rig No.2 & air lifting -	3	0	14-Jun-19 A	10-Aug-19	24-Jun-19 A	13-Aug-19		100%	0	42
S2-PW	Install steel cage and concreting -E1-P9	6	0	25-Jun-19 A	09-Aug-19	26-Jun-19 A	15-Aug-19		100%	0	42
Pile Cap		142	136	25-May-19 A	08-Jul-19	20-Jan-20	09-Jan-20	175			-9
Pile Cap for Pier E5		44	44	08-Aug-19	19-Jul-19	28-Sep-19	07-Sep-19	187			-17
S2-PC25	Pilehead treatment -E5	14	14	08-Aug-19	19-Jul-19	23-Aug-19	03-Aug-19	187	0%	0	-17
S2-PC25	Rebar fixing and 1st stage Concreting -E5	10	10	24-Aug-19	05-Aug-19	04-Sep-19	15-Aug-19	187	0%	0	-17
S2-PC28	Preparation works for pier installation -E5	10	10	18-Sep-19	28-Aug-19	28-Sep-19	07-Sep-19	187	0%	0	-17
Pile Cap for Pier E6		95	89	18-Jun-19 A	01-Aug-19	22-Nov-19	16-Nov-19	175			-5
S2-PC25	Welding of Steel Bracket -E6 (6nos.)	14	7	18-Jun-19 A	01-Aug-19	15-Aug-19	16-Aug-19	30	50%		1
S2-PC26	Installation of precast shell -E6	10	10	19-Sep-19	12-Sep-19	30-Sep-19	24-Sep-19	175	0%	0	-5
S2-PC26	Pilehead treatment -E6	14	14	02-Oct-19	25-Sep-19	18-Oct-19	12-Oct-19	175	0%	0	-5
S2-PC26	Rebar fixing and 1st stage Concreting -E6	10	10	19-Oct-19	14-Oct-19	30-Oct-19	24-Oct-19	175	0%	0	-5
S2-PC28	Preparation works for pier installation -E6	10	10	12-Nov-19	06-Nov-19	22-Nov-19	16-Nov-19	175	0%	0	-5
Pile Cap for Pier E7		68	68	02-Sep-19	27-Aug-19	22-Nov-19	16-Nov-19	210			-5
S2-PC26	Welding of Steel Bracket -E7 (6nos.)	14	14	02-Sep-19	27-Aug-19	18-Sep-19	11-Sep-19	16	0%		-5
S2-PC26	Installation of precast shell -E7	10	10	19-Sep-19	12-Sep-19	30-Sep-19	24-Sep-19	32	0%	0	-5
S2-PC26	Pilehead treatment -E7	14	14	02-Oct-19	25-Sep-19	18-Oct-19	12-Oct-19	210	0%	0	-5
S2-PC27	Rebar fixing and 1st stage Concreting -E7	10	10	19-Oct-19	14-Oct-19	30-Oct-19	24-Oct-19	210	0%	0	-5
S2-PC28	Preparation works for pier installation -E7	10	10	12-Nov-19	06-Nov-19	22-Nov-19	16-Nov-19	210	0%	0	-5
Pile Cap for Pier W2		54	54	25-May-19 A	12-Sep-19	22-Nov-19	18-Nov-19	180			-4
S2-PC19	Welding of Steel Bracket -W2 (6nos.)	14	0	25-May-19 A	02-Nov-19	07-Aug-19 A	18-Nov-19		100%		85
S2-PC20	Installation of precast shell -W2	10	10	19-Sep-19	12-Sep-19	30-Sep-19	24-Sep-19	180	0%	0	-5
S2-PC20	Pilehead treatment -W2	14	14	02-Oct-19	25-Sep-19	18-Oct-19	12-Oct-19	180	0%	0	-5
S2-PC20	Rebar fixing and 1st stage Concreting -W2	10	10	19-Oct-19	14-Oct-19	30-Oct-19	24-Oct-19	180	0%	0	-5
S2-PC20	Preparation works for pier installation -W2	10	10	12-Nov-19	06-Nov-19	22-Nov-19	16-Nov-19	180	0%	0	-5
Pile Cap for Pier E1		99	99	21-Sep-19	17-Sep-19	20-Jan-20	09-Jan-20	49			-9
S2-PC24	Welding of Steel Bracket -E1 (16nos.)	28	28	21-Sep-19	17-Sep-19	25-Oct-19	21-Oct-19	14	0%		-4
S2-PC24	Installation of precast shell -E1	18	18	01-Nov-19	22-Oct-19	21-Nov-19	11-Nov-19	9	0%	0	-9
S2-PC24	Installation of pre-cast side shell (small) and construction of strucutre gap x2 sides -E1	40	40	26-Nov-19	12-Nov-19	14-Jan-20	30-Dec-19	54	0%		-12
S2-PC24	Pilehead treatment -E1	48	48	22-Nov-19	12-Nov-19	20-Jan-20	09-Jan-20	9	0%	0	-9
Pile Cap for Pier E2		14	14	22-Nov-19	08-Nov-19	07-Dec-19	23-Nov-19	17			-12
S2-PC22	Welding of Steel Bracket -E2 (6nos.)	14	14	22-Nov-19	08-Nov-19	07-Dec-19	23-Nov-19	17	0%		-12
Pile Cap for Pier E3		84	51	24-Jun-19 A	10-Aug-19	19-Nov-19	13-Nov-19	225			-5
S2-PC23	Welding of Steel Bracket -E3 (6nos.)	14	0	24-Jun-19 A	10-Aug-19	09-Jul-19 A	26-Aug-19		100%		41
S2-PC23	Installation of precast shell -E3	10	10	19-Sep-19	12-Sep-19	30-Sep-19	24-Sep-19	201	0%	0	-5
S2-PC23	Pilehead treatment -E3	14	14	02-Oct-19	25-Sep-19	18-Oct-19	12-Oct-19	225	0%	0	-5
S2-PC24	Rebar fixing and 1st stage Concreting -E3	10	10	19-Oct-19	14-Oct-19	30-Oct-19	24-Oct-19	225	0%	0	-5
S2-PC29	Preparation works for pier installation -E3	10	10	08-Nov-19	02-Nov-19	19-Nov-19	13-Nov-19	225	0%	0	-5
Pile Cap for Pier E4		44	44	23-Jul-19 A	08-Jul-19	28-Sep-19	07-Sep-19	181			-17
S2-PC24	Installation of precast shell -E4	10	0	23-Jul-19 A	08-Jul-19	23-Jul-19 A	18-Jul-19		100%	0	-4
S2-PC25	Pilehead treatment -E4	14	14	08-Aug-19	19-Jul-19	23-Aug-19	03-Aug-19	181	0%	0	-17
S2-PC25	Rebar fixing and 1st stage Concreting -E4	10	10	24-Aug-19	05-Aug-19	04-Sep-19	15-Aug-19	181	0%	0	-17
S2-PC28	Preparation works for pier installation -E4	10	10	18-Sep-19	28-Aug-19	28-Sep-19	07-Sep-19	181	0%	0	-17
Associated, E&M Works for CBL Main Bridge and Marine Viaduct		214	214	26-Sep-19	30-Sep-19	17-Jun-20	08-Aug-20	-33			43
Procurement and Delivery of Associated, E&M Works		214	214	26-Sep-19	30-Sep-19	17-Jun-20	08-Aug-20	-33			43
S2-AW20	Procurement and delivery of under bridge mobile gantry	180	180	26-Sep-19	30-Sep-19	08-May-20	12-May-20	1	0%	0	3
S2-AW20	Procurement and delivery of arch inspection cradle	210	210	02-Oct-19	22-Nov-19	17-Jun-20	08-Aug-20	-34	0%	0	43
Section 5 of the Works-All Works within Portion V (CBL E&M Plantroom)		174	123	08-May-19 A	08-Jun-19	04-Jan-20	16-Dec-19	24			-14
Structure Works		129	78	08-May-19 A	08-Jun-19	09-Nov-19	24-Oct-19	24			-14
S5-PR2045	Construction of On-grade Slab	28	15	08-May-19 A	08-Jun-19	24-Aug-19	11-Jul-19	24	46.43%	0	-38
S5-PR2046	Construction of Wall	28	7	27-May-19 A	12-Jul-19	02-Sep-19	13-Aug-19	24	75%	0	-17
S5-PR2047	Construction of Roof	56	56	03-Sep-19	17-Aug-19	09-Nov-19	24-Oct-19	24	0%	0	-14
Finish Works		45	45	11-Nov-19	25-Oct-19	04-Jan-20	16-Dec-19	24			-14
S5-PR2080	Architectural works	45	45	11-Nov-19	25-Oct-19	04-Jan-20	16-Dec-19	24	0%	0	-14
S5-PR2090	Cladding works	30	30	11-Nov-19	25-Oct-19	14-Dec-19	28-Nov-19	24	0%	0	-14



Remaining Level of Effort | Remaining Work | Milestone

Primary Baseline | Critical Remaining Work | Summary

Actual Work | Baseline Milestone

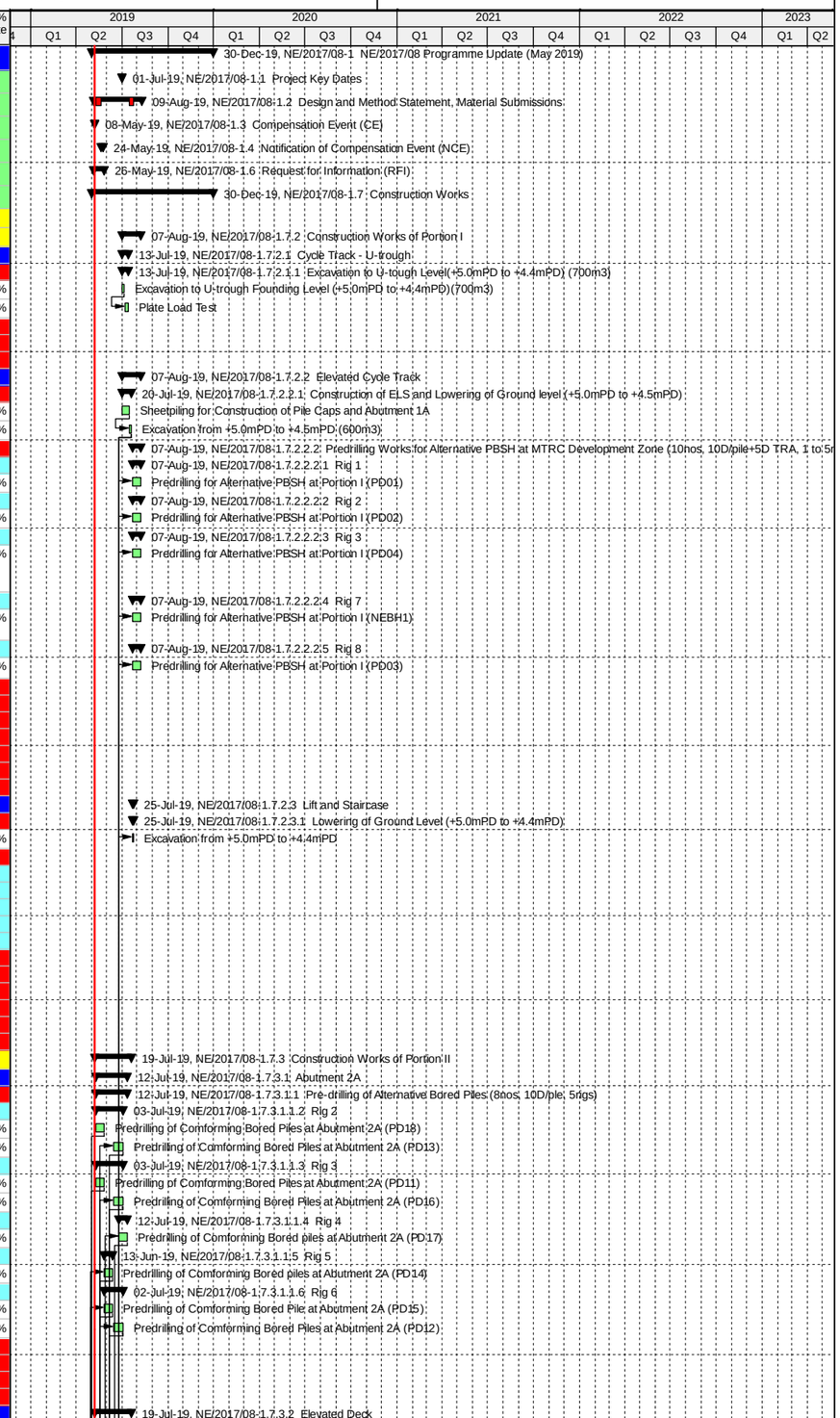
CRBC

Three Month Rolling Programme

Date	Revision	Checked	Approved
08-Aug-19	Monthly updated on 8 Aug 2019		

Contract 2

Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Total Float	TRA	Activity % Complete
NE/2017/08-1	NE/2017/08 Programme Update (May 2019)	199	6	194		02-May-19 A	30-Dec-19	940		
NE/2017/08-1.1	Project Key Dates	0	0	0		01-Jul-19	01-Jul-19	0		
NE/2017/08-1.2	Design and Method Statement, Material Submissions	80	3	77		05-May-19 A	09-Aug-19	326		
NE/2017/08-1.3	Compensation Event (CE)	0	0	0	NE/2017/08(7days)	08-May-19	08-May-19	56		
NE/2017/08-1.4	Notification of Compensation Event (NCE)	5	0	5	NE/2017/08(7days)	19-May-19	24-May-19	181		
NE/2017/08-1.6	Request for Information (RFI)	18	0	0	NE/2017/08(7days)	06-May-19 A	26-May-19	0		
NE/2017/08-1.7	Construction Works	199	6	194		02-May-19 A	30-Dec-19	940		
NE/2017/08-1.7.1	Preliminaries	0	0	0				0		
NE/2017/08-1.7.2	Construction Works of Portion I	32	0	32		02-Jul-19	07-Aug-19	328		
NE/2017/08-1.7.2.1	Cycle Track - U-trough	11	0	11		02-Jul-19	13-Jul-19	349		
NE/2017/08-1.7.2.1.1	Excavation to U-tough Level(+5.0mPD to +4.4mPD) (700m3)	11	0	11		02-Jul-19	13-Jul-19	349		
PORI.UT.EX1010	Excavation to U-trough Founding Level (+5.0mPD to +4.4mPD)(700m3)	5	0	5	NE/2017/08(6days)	02-Jul-19	06-Jul-19	349	0	0%
PORI.UT.EX1020	Plate Load Test	7	0	7	NE/2017/08(7days)	07-Jul-19	13-Jul-19	428	0	0%
NE/2017/08-1.7.2.1.2	Construction of U-trough Structure (9 Bays, 27D/Bay, 1 Team)	0	0	0				0		
NE/2017/08-1.7.2.1.3	Backfilling to Interim Formation Level (+4.4mPD to +5.0mPD) (2 Layers, 5D/layer)	0	0	0				0		
NE/2017/08-1.7.2.1.4	Remaining Works	0	0	0				0		
NE/2017/08-1.7.2.2	Elevated Cycle Track	32	0	32		02-Jul-19	07-Aug-19	2		
NE/2017/08-1.7.2.2.1	Construction of ELS and Lowering of Ground level (+5.0mPD to +4.5mPD)	17	0	17	NE/2017/08(6days)	02-Jul-19	20-Jul-19	2		
PORI.ED.EX1020	Sheetpiling for Construction of Pile Caps and Abutment 1A	12	0	12	NE/2017/08(6days)	02-Jul-19	15-Jul-19	2	0	0%
PORI.ED.EX1040	Excavation from +5.0mPD to +4.5mPD (600m3)	5	0	5	NE/2017/08(6days)	16-Jul-19	20-Jul-19	2	0	0%
NE/2017/08-1.7.2.2.2	Predrilling Works for Alternative PBSH at MTRC Development Zone (10nos, 10D/pile+5D TRA, 1 to 5rigs)	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2		
NE/2017/08-1.7.2.2.2.1	Rig 1	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2		
PORI.ED.PD1010	Predrilling for Alternative PBSH at Portion I (PD01)	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2	5	0%
NE/2017/08-1.7.2.2.2.2	Rig 2	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2		
PORI.ED.PD1020	Predrilling for Alternative PBSH at Portion I (PD02)	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2	5	0%
NE/2017/08-1.7.2.2.2.3	Rig 3	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2		
PORI.ED.PD1050	Predrilling for Alternative PBSH at Portion I (PD04)	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2	5	0%
NE/2017/08-1.7.2.2.2.4	Rig 7	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2		
PORI.ED.PD1030	Predrilling for Alternative PBSH at Portion I (NEBH1)	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2	5	0%
NE/2017/08-1.7.2.2.2.5	Rig 8	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2		
PORI.ED.PD1040	Predrilling for Alternative PBSH at Portion I (PD03)	15	0	15	NE/2017/08(6days)	22-Jul-19	07-Aug-19	2	5	0%
NE/2017/08-1.7.2.2.3	Construction of Alternative PBSH (24nos, 7D/pile, 5rigs)	0	0	0				0		
NE/2017/08-1.7.2.2.4	Excavation to Pile Cap Level (+5.0mPD to +2.8mPD) (2000m3)	0	0	0				0		
NE/2017/08-1.7.2.2.5	Construction of Pile Caps (10 PC, 14D/Cap, 4teams)	0	0	0				0		
NE/2017/08-1.7.2.2.6	Construction of Columns and Abutment (16pcs, 18D/column, 5 teams)	0	0	0				0		
NE/2017/08-1.7.2.2.7	Backfilling to Interim Formation Level (+2.8mPD to +4.4mPD) (6 Layers, 5D/layer)	0	0	0				0		
NE/2017/08-1.7.2.2.8	Construction of Deck Structure (9bays, 45D/bay, 3Teams)	0	0	0				0		
NE/2017/08-1.7.2.2.9	Drainage Works	0	0	0				0		
NE/2017/08-1.7.2.3	Lift and Staircase	4	0	4		22-Jul-19	25-Jul-19	28		
NE/2017/08-1.7.2.3.1	Lowering of Ground Level (+5.0mPD to +4.4mPD)	4	0	4	NE/2017/08(6days)	22-Jul-19	25-Jul-19	28		
PORI.LS.EX1020	Excavation from +5.0mPD to +4.4mPD	4	0	4	NE/2017/08(6days)	22-Jul-19	25-Jul-19	28	0	0%
NE/2017/08-1.7.2.3.2	Predrilling Works for PBSH (5nos, 10D/pile+5D TRA, 5rigs)	0	0	0				0		
NE/2017/08-1.7.2.3.2.1	Rig 1	0	0	0				0		
NE/2017/08-1.7.2.3.2.2	Rig 2	0	0	0				0		
NE/2017/08-1.7.2.3.2.3	Rig 3	0	0	0				0		
NE/2017/08-1.7.2.3.2.4	Rig 7	0	0	0				0		
NE/2017/08-1.7.2.3.2.5	Rig 8	0	0	0				0		
NE/2017/08-1.7.2.3.3	Construction of PBSH (14nos, 7D/pile, 5rigs)	0	0	0				0		
NE/2017/08-1.7.2.3.4	Excavation to Pile Cap Level (+4.4mPD to +2.8mPD) (300m3)	0	0	0				0		
NE/2017/08-1.7.2.3.5	Construction of Pile Caps (5 PC, 14D/Cap, 3teams)	0	0	0				0		
NE/2017/08-1.7.2.3.6	Construction of Column (4pcs, 18D/column, 4teams)	0	0	0				0		
NE/2017/08-1.7.2.3.7	Backfilling to Interim Formation Level (+2.8mPD to +4.4mPD) (6 Layers, 5D/layer)	0	0	0				0		
NE/2017/08-1.7.2.3.8	Construction of Lift and Staircase	0	0	0				0		
NE/2017/08-1.7.3	Construction Works of Portion II	60	1	59		08-May-19 A	19-Jul-19	12		
NE/2017/08-1.7.3.1	Abutment 2A	53	0	53		09-May-19	12-Jul-19	14		
NE/2017/08-1.7.3.1.1	Pre-drilling of Alternative Bored Piles (8nos, 10D/pile, 5rigs)	53	0	53	NE/2017/08(6days)	09-May-19	12-Jul-19	14		
NE/2017/08-1.7.3.1.1.2	Rig 2	45	0	45	NE/2017/08(6days)	09-May-19	03-Jul-19	2		
PORII.AB.PD.BP1030	Predrilling of Comforming Bored Piles at Abutment 2A (PD18)	15	0	15	NE/2017/08(6days)	09-May-19	27-May-19	2	5	0%
PORII.AB.PD.BP1040	Predrilling of Comforming Bored Piles at Abutment 2A (PD13)	15	0	15	NE/2017/08(6days)	15-Jun-19	03-Jul-19	2	5	0%
NE/2017/08-1.7.3.1.1.3	Rig 3	45	0	45	NE/2017/08(6days)	09-May-19	03-Jul-19	2		
PORII.AB.PD.BP1050	Predrilling of Comforming Bored Piles at Abutment 2A (PD11)	15	0	15	NE/2017/08(6days)	09-May-19	27-May-19	2	5	0%
PORII.AB.PD.BP1060	Predrilling of Comforming Bored Piles at Abutment 2A (PD16)	15	0	15	NE/2017/08(6days)	15-Jun-19	03-Jul-19	2	5	0%
NE/2017/08-1.7.3.1.1.4	Rig 4	15	0	15	NE/2017/08(6days)	25-Jun-19	12-Jul-19	14		
PORII.AB.PD.BP1090	Predrilling of Comforming Bored piles at Abutment 2A (PD17)	15	0	15	NE/2017/08(6days)	25-Jun-19	12-Jul-19	14	5	0%
NE/2017/08-1.7.3.1.1.5	Rig 5	15	0	15	NE/2017/08(6days)	27-May-19	13-Jun-19	9		
PORII.AB.PD.BP1080	Predrilling of Comforming Bored piles at Abutment 2A (PD14)	15	0	15	NE/2017/08(6days)	27-May-19	13-Jun-19	9	5	0%
NE/2017/08-1.7.3.1.1.6	Rig 6	30	0	30	NE/2017/08(6days)	27-May-19	02-Jul-19	9		
PORII.AB.PD.BP1070	Predrilling of Comforming Bored Pile at Abutment 2A (PD15)	15	0	15	NE/2017/08(6days)	27-May-19	13-Jun-19	9	5	0%
PORII.AB.PD.BP1075	Predrilling of Comforming Bored Piles at Abutment 2A (PD12)	15	0	15	NE/2017/08(6days)	14-Jun-19	02-Jul-19	9	5	0%
NE/2017/08-1.7.3.1.2	Sheet Piling and Lowering of Existing Ground Level	0	0	0				0		
NE/2017/08-1.7.3.1.3	Construction of Alternative Bored Pile (8nos, 21D/pile, 1 to 4 teams)	0	0	0				0		
NE/2017/08-1.7.3.1.4	Construction of Abutment Structure	0	0	0				0		
NE/2017/08-1.7.3.1.5	Drainage Works	0	0	0				0		
NE/2017/08-1.7.3.2	Elevated Deck	60	1	59		08-May-19 A	19-Jul-19	12		



Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
summary

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

Contract No.: NE/2017/08
Cross Bay Link, Tseung Kwan O
Road D9 and Associated Works

Build King

Date	Revision	Checked	Approved
08-Apr-19 ...	Monthly Programme Update (Apr 2019)	HY	StL

Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Total Float	TRA	Activity % Complete
NE/2017/08-1.7.3.2.1	Predrilling of Comforming Bored Piles (Elevated Deck)(1 no in Port II, 10D/pile+5D TRA, 1rig)	15	1	14	NE/2017/08(6days)	08-May-19 A	25-May-19	9		
NE/2017/08-1.7.3.2.1.1	Rig 6	15	1	14	NE/2017/08(6days)	08-May-19 A	25-May-19	9		
PORII.ED.PD.BP1150	Predrilling of Comforming Bored Piles at Elevated Deck (PD36)	15	1	14	NE/2017/08(6days)	08-May-19 A	25-May-19	9	5	6.67%
NE/2017/08-1.7.3.2.2	Sheet Piling and Lowering of Existing Ground Level	0	0	0				0		
NE/2017/08-1.7.3.2.3	Construction of Bored Pile (1 no. in Port II, 21D/pile, 1 teams in total)	21	0	21	NE/2017/08(6days)	27-May-19	20-Jun-19	36		
PORII.ED.BP1010	Construction of Bored Pile (1no in Portion II,21D/pile,4teams in total)	21	0	21	NE/2017/08(6days)	27-May-19	20-Jun-19	36	0	0%
NE/2017/08-1.7.3.2.4	Predrilling of PBSH (Elevated Deck) (2nos in Port II, 10D/pile+5D TRA, 2rigs in total)	15	0	15		03-Jul-19	19-Jul-19	9		
NE/2017/08-1.7.3.2.4.1	Rig 4	0	0	0				0		
NE/2017/08-1.7.3.2.4.2	Rig 5	15	0	15	NE/2017/08(6days)	03-Jul-19	19-Jul-19	9		
PORIII.ED.PD.HP1180	Predrilling of PBSH at Elevated Deck (PD85)	15	0	15	NE/2017/08(6days)	03-Jul-19	19-Jul-19	9	5	0%
NE/2017/08-1.7.3.2.5	Construction of Alternative PBSH (5nos in Port II, 7D/pile, 1 to 5rigs)	0	0	0				0		
NE/2017/08-1.7.3.2.6	Excavation to Pile Cap Level (+4.4mPD to +2.3mPD)	0	0	0				0		
NE/2017/08-1.7.3.2.7	Construction of Elevated Deck Pile Cap (Northern Part)(2nos, 14D/cap, 2 teams)	0	0	0				0		
NE/2017/08-1.7.3.2.8	Backfilling to interim Formation Level (Northern Area)(7 layers, 5D/layer)	0	0	0				0		
NE/2017/08-1.7.3.2.9	Construction of Column (Northern Area) (2nos, 18D/Column, 2teams)	0	0	0				0		
NE/2017/08-1.7.3.2.11	Construction of Pile Cap at Bored Pile Area(Elevated Deck)(cap+ cantilever beam, 21D/pc,1team)	0	0	0				0		
NE/2017/08-1.7.3.2.12	Backfilling to Interim Formation Level (Bored Pile Area)(7 Layers, 5D/layer)	0	0	0				0		
NE/2017/08-1.7.3.2.13	Construction of Columns (Bored Pile Area) (2nos, 18D/no, 2 teams)	0	0	0				0		
NE/2017/08-1.7.4	Construction Works of Portion III	99	5	94		03-May-19 A	29-Aug-19	1040		
NE/2017/08-1.7.4.1	Construction of Elevated Deck and Abutment 2B	72	0	72		11-May-19	06-Aug-19	103		
NE/2017/08-1.7.4.1.1	Predrilling of Comforming Bored Piles (ED+Ab 2B)(12 nos in Por III, 10D/pile+5D TRA, 5rigs in total)	15	0	15		28-May-19	14-Jun-19	2		
NE/2017/08-1.7.4.1.1.1	Rig 1	0	0	0				0		
NE/2017/08-1.7.4.1.1.2	Rig 2	15	0	15	NE/2017/08(6days)	28-May-19	14-Jun-19	2		
PORIII.ED.PD.BP1250	Predrilling of Comforming Bored piles at Elevated Deck (PD44)	15	0	15	NE/2017/08(6days)	28-May-19	14-Jun-19	2	5	0%
NE/2017/08-1.7.4.1.1.3	Rig 3	15	0	15	NE/2017/08(6days)	28-May-19	14-Jun-19	2		
PORIII.ED.PD.BP1160	Predrilling of Comforming Bored Pile at Elevated Deck (PD45)	15	0	15	NE/2017/08(6days)	28-May-19	14-Jun-19	2	5	0%
NE/2017/08-1.7.4.1.1.4	Rig 4	0	0	0				0		
NE/2017/08-1.7.4.1.1.5	Rig 5	0	0	0				0		
NE/2017/08-1.7.4.1.2	Sheet Piling and Lowering of Existing Ground Level	20	0	20	NE/2017/08(6days)	11-May-19	04-Jun-19	155		
PORIII.ED.EX1040	Sheet Piling Works along Northern Footpath (Grid 3 to Grid 6)	4	0	4	NE/2017/08(6days)	11-May-19	16-May-19	167	0	0%
PORIII.ED.EX1050	Abandon of Unexpected Gas Main (Grid 11 to Grid 24) (by others)	10	0	10	NE/2017/08(6days)	20-May-19	30-May-19	155	0	0%
PORIII.ED.EX1060	Sheet Piling Works along Northern Footpath (Grid 10 to Grid 13)	4	0	4	NE/2017/08(6days)	31-May-19	04-Jun-19	155	0	0%
NE/2017/08-1.7.4.1.3	Construction of Bored Pile (12nos in Port III, 21D/pile, 1 to 4 teams in total)	0	0	0				0		
NE/2017/08-1.7.4.1.4	Predrilling of PBSH (Elevated Deck) (18nos in Port III, 10D/pile+5D TRA, 8rigs in total)	31	0	31	NE/2017/08(6days)	02-Jul-19	06-Aug-19	9		
NE/2017/08-1.7.4.1.4.1	Rig 1	15	0	15	NE/2017/08(6days)	04-Jul-19	20-Jul-19	2		
PORIII.ED.PD.HP1040	Predrilling of PBSH at Elevated Deck (PD86)	15	0	15	NE/2017/08(6days)	04-Jul-19	20-Jul-19	2	5	0%
NE/2017/08-1.7.4.1.4.2	Rig 2	15	0	15	NE/2017/08(6days)	04-Jul-19	20-Jul-19	2		
PORIII.ED.PD.HP1050	Predrilling of PBSH at Elevated Deck (PD22)	15	0	15	NE/2017/08(6days)	04-Jul-19	20-Jul-19	2	5	0%
NE/2017/08-1.7.4.1.4.3	Rig 3	15	0	15	NE/2017/08(6days)	04-Jul-19	20-Jul-19	2		
PORIII.ED.PD.HP1070	Predrilling of PBSH at Elevated Deck (PD23)	15	0	15	NE/2017/08(6days)	04-Jul-19	20-Jul-19	2	5	0%
NE/2017/08-1.7.4.1.4.4	Rig 4	15	0	15	NE/2017/08(6days)	13-Jul-19	30-Jul-19	14		
PORIII.ED.PD.HP1090	Predrilling of PBSH at Elevated Deck (PD24)	15	0	15	NE/2017/08(6days)	13-Jul-19	30-Jul-19	14	5	0%
NE/2017/08-1.7.4.1.4.5	Rig 5	15	0	15	NE/2017/08(6days)	20-Jul-19	06-Aug-19	9		
PORIII.ED.PD.HP1110	Predrilling of PBSH at Elevated Deck (PD25)	15	0	15	NE/2017/08(6days)	20-Jul-19	06-Aug-19	9	5	0%
NE/2017/08-1.7.4.1.4.6	Rig 6	30	0	30	NE/2017/08(6days)	03-Jul-19	06-Aug-19	9		
PORIII.ED.PD.HP1130	Predrilling of PBSH at Elevated Deck (PD19)	15	0	15	NE/2017/08(6days)	03-Jul-19	19-Jul-19	9	5	0%
PORIII.ED.PD.HP1140	Predrilling of PBSH at Elevated Deck (NEBH3)	15	0	15	NE/2017/08(6days)	20-Jul-19	06-Aug-19	9	5	0%
NE/2017/08-1.7.4.1.4.7	Rig 7	15	0	15	NE/2017/08(6days)	02-Jul-19	18-Jul-19	4		
PORIII.ED.PD.HP1150	Predrilling of PBSH at Elevated Deck (PD20)	15	0	15	NE/2017/08(6days)	02-Jul-19*	18-Jul-19	4	5	0%
NE/2017/08-1.7.4.1.4.8	Rig 8	15	0	15	NE/2017/08(6days)	02-Jul-19	18-Jul-19	4		
PORIII.ED.PD.HP1170	Predrilling of PBSH at Elevated Deck (PD21)	15	0	15	NE/2017/08(6days)	02-Jul-19*	18-Jul-19	4	5	0%
NE/2017/08-1.7.4.1.5	Construction of Alternative PBSH (45nos in Port III, 7D/pile, 1 to 5rigs in total)	0	0	0				0		
NE/2017/08-1.7.4.1.6	Excavation to Pile Cap Level (+4.4mPD to +2.3mPD)	0	0	0				0		
NE/2017/08-1.7.4.1.7	Construction of PC42 (16D) + Abutment 2B (28D) + Bearing Installation (14D)	0	0	0				0		
NE/2017/08-1.7.4.1.8	Construction of Elevated Deck Pile Cap (Northern Part) (18nos, 14D/cap, 5 teams)	0	0	0				0		
NE/2017/08-1.7.4.1.9	Backfilling to Formation Level (Northern Area)(7 layers, 5D/layer)	0	0	0				0		
NE/2017/08-1.7.4.1.10	Construction of Column (18nos, 18D/Column, 5teams)	0	0	0				0		
NE/2017/08-1.7.4.1.11	Construction of Pile Cap at Bored Pile Area(Elevated Deck)(9nos cap+cantilever beam, 21D/pc,5teams)	0	0	0				0		
NE/2017/08-1.7.4.1.12	Backfilling to Formation Level (Bored Pile Area) (7Layers, 5D/layer)	0	0	0				0		
NE/2017/08-1.7.4.1.14	Construction of Columns (18nos, 18D/no, 4 teams)	0	0	0				0		
NE/2017/08-1.7.4.1.15	Construction of Beam/Slab (11bays, 30D/bay incl. topping, 6 teams)	0	0	0				0		
NE/2017/08-1.7.4.1.16	Drainage Works	0	0	0				0		
NE/2017/08-1.7.4.1.17	Construction of Semi Noise Enclosure (CH13360.1 to CH13482.1) (Portion II + III)	0	0	0				0		
NE/2017/08-1.7.4.1.18	Construction of 600mm Wall (11bays, 16D/Bay, 2 Teams)	0	0	0				0		
NE/2017/08-1.7.4.2	Construction of U-trough Structure	99	5	94		03-May-19 A	29-Aug-19	1040		
NE/2017/08-1.7.4.2.1	Pre-drilling of Comforming Bored Piles (U-trough)(8nos, 10D/pile+5D TRA, 5rigs)	49	5	44		03-May-19 A	02-Jul-19	9		
NE/2017/08-1.7.4.2.1.1	Rig 1	15	5	10	NE/2017/08(6days)	03-May-19 A	21-May-19	1		
PORIII.UT.PD.BP1020	Predrilling of Comforming Bored Piles at U-trough (PD53) (Current Drill Depth: 14m)	15	5	10	NE/2017/08(6days)	03-May-19 A	21-May-19	1	5	33.33%
NE/2017/08-1.7.4.2.1.2	Rig 2	0	0	0				0		
NE/2017/08-1.7.4.2.1.3	Rig 3	0	0	0				0		
NE/2017/08-1.7.4.2.1.4	Rig 4	30	0	30	NE/2017/08(6days)	20-May-19	24-Jun-19	14		
PORIII.UT.PD.BP1085	Predrilling of Comforming Bored Piles at U-trough (PD51)	15	0	15	NE/2017/08(6days)	20-May-19	05-Jun-19	14	5	0%

Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
summary

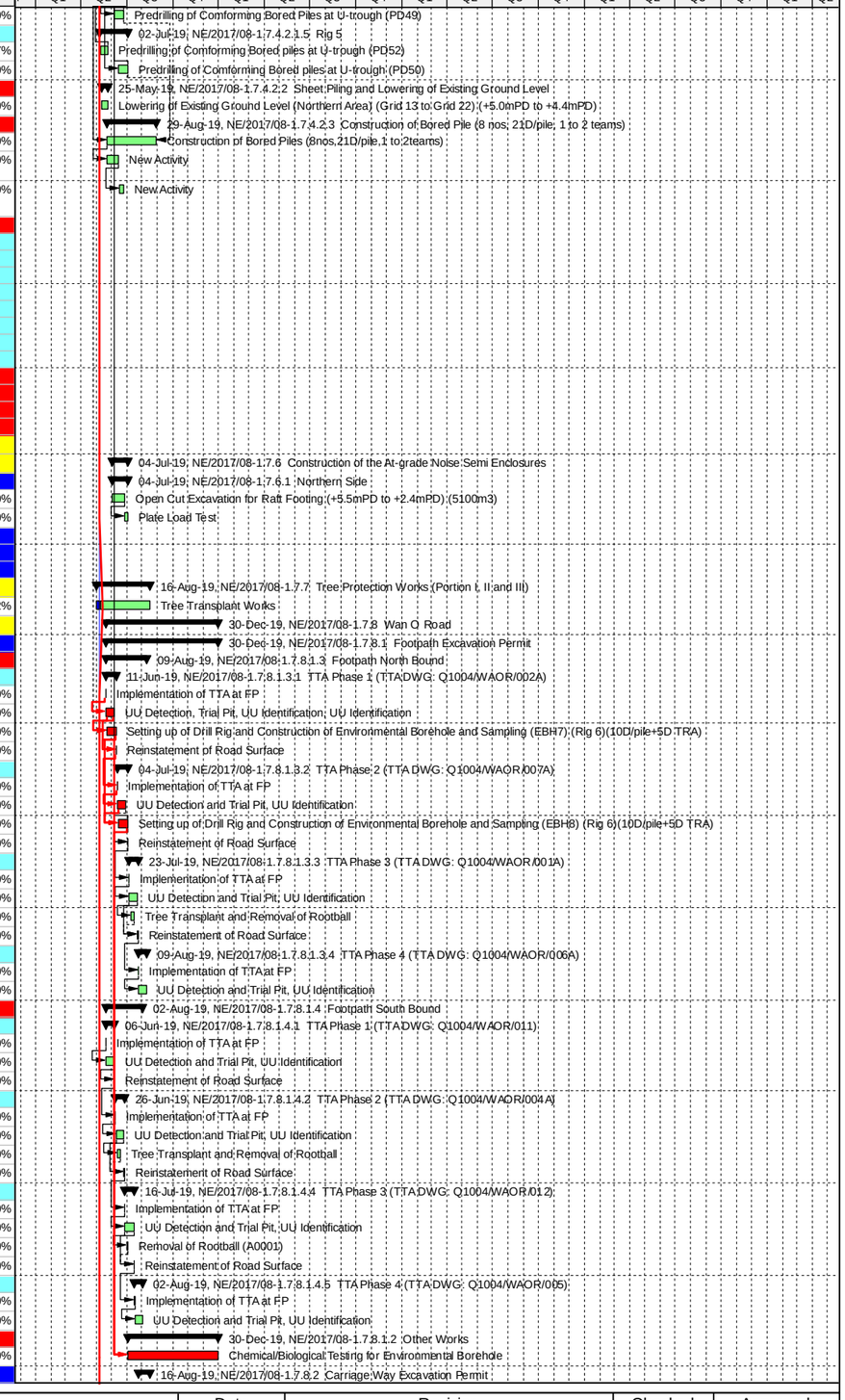
土木工程拓展署 Civil Engineering and Development Department

Contract No.: NE/2017/08
Cross Bay Link, Tseung Kwan O
Road D9 and Associated Works

Build King

Date	Revision	Checked	Approved
08-Apr-19 ...	Monthly Programme Update (Apr 2019)	HY	StL

Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Total Float	TRA	Activity % Complete
PORIII.UT.PD.BP1087	Predrilling of Comforming Bored Piles at U-trough (PD49)	15	0	15	NE/2017/08(6days)	06-Jun-19	24-Jun-19	14	5	0%
NE/2017/08-1.7.4.2.1.5 Rig 5		45	1	44	NE/2017/08(6days)	08-May-19 A	02-Jul-19	9		
PORIII.UT.PD.BP1090	Predrilling of Comforming Bored piles at U-trough (PD52)	15	1	14	NE/2017/08(6days)	08-May-19 A	25-May-19	9	5	6.67%
PORIII.UT.PD.BP1095	Predrilling of Comforming Bored piles at U-trough (PD50)	15	0	15	NE/2017/08(6days)	14-Jun-19	02-Jul-19	9	5	0%
NE/2017/08-1.7.4.2.2 Sheet Piling and Lowering of Existing Ground Level		12	0	12	NE/2017/08(6days)	11-May-19	25-May-19	93		
PORIII.UT.EX1030	Lowering of Existing Ground Level (Northern Area) (Grid 13 to Grid 22) (+5.0mPD to +4.4mPD)	12	0	12	NE/2017/08(6days)	11-May-19	25-May-19	93	0	0%
NE/2017/08-1.7.4.2.3 Construction of Bored Pile (8 nos, 21D/pile, 1 to 2 teams)		84	0	84	NE/2017/08(6days)	22-May-19	29-Aug-19	1040		
PORIII.UT.BP1010	Construction of Bored Piles (8nos,21D/pile,1 to 2teams)	84	0	84	NE/2017/08(6days)	22-May-19	29-Aug-19	250	0	0%
PORIII.UT.BP1020	New Activity	21	0	21	NE/2017/08(6days)	22-May-19	15-Jun-19	1095		0%
PORIII.UT.BP1040	New Activity	8	0	8	NE/2017/08(6days)	17-Jun-19	25-Jun-19	1095		0%
NE/2017/08-1.7.4.2.4 Pre-drilling of alternative PBSH (U-trough)(16nos, 10D/pile+5D TRA, 8rigs)		0	0	0				0		
NE/2017/08-1.7.4.2.4.1 Rig 1		0	0	0				0		
NE/2017/08-1.7.4.2.4.2 Rig 2		0	0	0				0		
NE/2017/08-1.7.4.2.4.3 Rig 3		0	0	0				0		
NE/2017/08-1.7.4.2.4.4 Rig 4		0	0	0				0		
NE/2017/08-1.7.4.2.4.5 Rig 5		0	0	0				0		
NE/2017/08-1.7.4.2.4.6 Rig 6		0	0	0				0		
NE/2017/08-1.7.4.2.4.7 Rig 7		0	0	0				0		
NE/2017/08-1.7.4.2.4.8 Rig 8		0	0	0				0		
NE/2017/08-1.7.4.2.5 Construction of Alternative PBSH (40nos, 7D/pile, 1 to 5rigs)		0	0	0				0		
NE/2017/08-1.7.4.2.6 Construction of U-trough Structure		0	0	0				0		
NE/2017/08-1.7.4.2.7 Drainage Works		0	0	0				0		
NE/2017/08-1.7.4.2.8 Construction of Semi-Noise Enclosure (CH13482.1 to 13580.3)		0	0	0				0		
NE/2017/08-1.7.5 Modification of Seawall (Portion II and III)		0	0	0				0		
NE/2017/08-1.7.6 Construction of the At-grade Noise Semi Enclosures		26	0	26		03-Jun-19	04-Jul-19	26		
NE/2017/08-1.7.6.1 Northern Side		26	0	26		03-Jun-19	04-Jul-19	26		
PORIII.AG.N1010	Open Cut Excavation for Raft Footing (+5.5mPD to +2.4mPD) (5100m3)	21	0	21	NE/2017/08(6days)	03-Jun-19	27-Jun-19	25	0	0%
PORIII.AG.N1020	Plate Load Test	7	0	7	NE/2017/08(7days)	28-Jun-19	04-Jul-19	31	0	0%
NE/2017/08-1.7.6.2 Southern Side		0	0	0				0		
NE/2017/08-1.7.6.3 Backfilling to Interim Formation Level at At-grade Road Area (3 layers, 5D/layer)		0	0	0				0		
NE/2017/08-1.7.6.4 Construction of Noise Barrier		0	0	0				0		
NE/2017/08-1.7.7 Tree Protection Works (Portion I, II and III)		88	6	82	NE/2017/08(6days)	02-May-19 A	16-Aug-19	137		
TP1020	Tree Transplant Works	88	6	82	NE/2017/08(6days)	02-May-19 A	16-Aug-19	137	0	6.82%
NE/2017/08-1.7.8 Wan O Road		186	0	186		20-May-19	30-Dec-19	0		
NE/2017/08-1.7.8.1 Footpath Excavation Permit		186	0	186		20-May-19	30-Dec-19	0		
NE/2017/08-1.7.8.1.3 Footpath North Bound		69	0	69	NE/2017/08(6days)	20-May-19	09-Aug-19	5		
NE/2017/08-1.7.8.1.3.1 TTA Phase 1 (TTA DWG: Q1004/WAOR/002A)		19	0	19	NE/2017/08(6days)	20-May-19	11-Jun-19	0		
WO.FP.NB1.1000	Implementation of TTA at FP	1	0	1	NE/2017/08(6days)	20-May-19	20-May-19	0	0	0%
WO.FP.NB1.1010	UU Detection, Trial Pit, UU Identification, UU Identification	14	0	14	NE/2017/08(6days)	21-May-19	05-Jun-19	0	0	0%
WO.FP.NB1.1020	Setting up of Drill Rig and Construction of Environmental Borehole and Sampling (EBH7) (Rig 6)(10D/pile+5D TRA)	15	0	15	NE/2017/08(6days)	23-May-19	10-Jun-19	0	5	0%
WO.FP.NB1.1040	Reinstatement of Road Surface	1	0	1	NE/2017/08(6days)	11-Jun-19	11-Jun-19	0	0	0%
NE/2017/08-1.7.8.1.3.2 TTA Phase 2 (TTA DWG: Q1004/WAOR/007A)		19	0	19	NE/2017/08(6days)	12-Jun-19	04-Jul-19	5		
WO.FP.NB2.1000	Implementation of TTA at FP	1	0	1	NE/2017/08(6days)	12-Jun-19	12-Jun-19	0	0	0%
WO.FP.NB2.1010	UU Detection and Trial Pit, UU Identification	14	0	14	NE/2017/08(6days)	13-Jun-19	28-Jun-19	0	0	0%
WO.FP.NB2.1020	Setting up of Drill Rig and Construction of Environmental Borehole and Sampling (EBH8) (Rig 6)(10D/pile+5D TRA)	15	0	15	NE/2017/08(6days)	15-Jun-19	03-Jul-19	0	5	0%
WO.FP.NB2.1040	Reinstatement of Road Surface	1	0	1	NE/2017/08(6days)	04-Jul-19	04-Jul-19	5	0	0%
NE/2017/08-1.7.8.1.3.3 TTA Phase 3 (TTA DWG: Q1004/WAOR/001A)		16	0	16	NE/2017/08(6days)	05-Jul-19	23-Jul-19	5		
WO.FP.NB3.1000	Implementation of TTA at FP	1	0	1	NE/2017/08(6days)	05-Jul-19	05-Jul-19	5	0	0%
WO.FP.NB3.1010	UU Detection and Trial Pit, UU Identification	14	0	14	NE/2017/08(6days)	06-Jul-19	22-Jul-19	5	0	0%
WO.FP.NB3.1030	Tree Transplant and Removal of Rootball	7	0	7	NE/2017/08(6days)	09-Jul-19	16-Jul-19	10	0	0%
WO.FP.NB3.1040	Reinstatement of Road Surface	1	0	1	NE/2017/08(6days)	23-Jul-19	23-Jul-19	5	0	0%
NE/2017/08-1.7.8.1.3.4 TTA Phase 4 (TTA DWG: Q1004/WAOR/006A)		15	0	15	NE/2017/08(6days)	24-Jul-19	09-Aug-19	5		
WO.FP.NB4.1000	Implementation of TTA at FP	1	0	1	NE/2017/08(6days)	24-Jul-19	24-Jul-19	5	0	0%
WO.FP.NB4.1010	UU Detection and Trial Pit, UU Identification	14	0	14	NE/2017/08(6days)	25-Jul-19	09-Aug-19	5	0	0%
NE/2017/08-1.7.8.1.4 Footpath South Bound		63	0	63	NE/2017/08(6days)	20-May-19	02-Aug-19	11		
NE/2017/08-1.7.8.1.4.1 TTA Phase 1 (TTA DWG: Q1004/WAOR/011)		16	0	16	NE/2017/08(6days)	20-May-19	06-Jun-19	11		
WO.FP.SB1.1000	Implementation of TTA at FP	1	0	1	NE/2017/08(6days)	20-May-19	20-May-19	11	0	0%
WO.FP.SB1.1010	UU Detection and Trial Pit, UU Identification	14	0	14	NE/2017/08(6days)	21-May-19	05-Jun-19	11	0	0%
WO.FP.SB1.1030	Reinstatement of Road Surface	1	0	1	NE/2017/08(6days)	06-Jun-19	06-Jun-19	11	0	0%
NE/2017/08-1.7.8.1.4.2 TTA Phase 2 (TTA DWG: Q1004/WAOR/004A)		16	0	16	NE/2017/08(6days)	08-Jun-19	26-Jun-19	11		
WO.FP.SB2.1000	Implementation of TTA at FP	1	0	1	NE/2017/08(6days)	08-Jun-19	08-Jun-19	11	0	0%
WO.FP.SB2.1010	UU Detection and Trial Pit, UU Identification	14	0	14	NE/2017/08(6days)	10-Jun-19	25-Jun-19	11	0	0%
WO.FP.SB2.1030	Tree Transplant and Removal of Rootball	7	0	7	NE/2017/08(6days)	12-Jun-19	19-Jun-19	16	0	0%
WO.FP.SB2.1060	Reinstatement of Road Surface	1	0	1	NE/2017/08(6days)	26-Jun-19	26-Jun-19	11	0	0%
NE/2017/08-1.7.8.1.4.4 TTA Phase 3 (TTA DWG: Q1004/WAOR/012)		16	0	16	NE/2017/08(6days)	27-Jun-19	16-Jul-19	11		
WO.FP.SB4.1000	Implementation of TTA at FP	1	0	1	NE/2017/08(6days)	27-Jun-19	27-Jun-19	11	0	0%
WO.FP.SB4.1010	UU Detection and Trial Pit, UU Identification	14	0	14	NE/2017/08(6days)	28-Jun-19	15-Jul-19	11	0	0%
WO.FP.SB4.1030	Removal of Rootball (A0001)	2	0	2	NE/2017/08(6days)	02-Jul-19	03-Jul-19	21	0	0%
WO.FP.SB4.1040	Reinstatement of Road Surface	1	0	1	NE/2017/08(6days)	16-Jul-19	16-Jul-19	11	0	0%
NE/2017/08-1.7.8.1.4.5 TTA Phase 4 (TTA DWG: Q1004/WAOR/005)		15	0	15	NE/2017/08(6days)	17-Jul-19	02-Aug-19	11		
WO.FP.SB5.1000	Implementation of TTA at FP	1	0	1	NE/2017/08(6days)	17-Jul-19	17-Jul-19	11	0	0%
WO.FP.SB5.1010	UU Detection and Trial Pit, UU Identification	14	0	14	NE/2017/08(6days)	18-Jul-19	02-Aug-19	11	0	0%
NE/2017/08-1.7.8.1.2 Other Works		180	0	180	NE/2017/08(7days)	04-Jul-19	30-Dec-19	0		
WO.FT.EB1030	Chemical/Biological Testing for Environmental Borehole	180	0	180	NE/2017/08(7days)	04-Jul-19	30-Dec-19	0	0	0%
NE/2017/08-1.7.8.2 Carriage Way Excavation Permit		20	0	20		25-Jul-19	16-Aug-19	0		



Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
summary

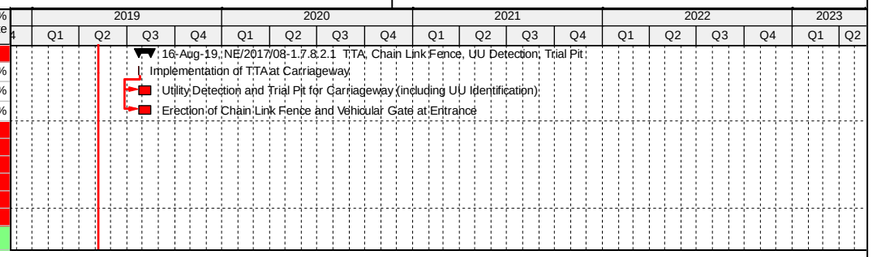
CEDD 土木工程拓展署 Civil Engineering and Development Department

Contract No.: NE/2017/08
Cross Bay Link, Tseung Kwan O
Road D9 and Associated Works

Build King

Date	Revision	Checked	Approved
08-Apr-19 ...	Monthly Programme Update (Apr 2019)	HY	StL

Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Total Float	TRA	Activity % Complete
NE/2017/08-1.7.8.2.1	**TTA, Chain Link Fence, UU Detection, Trial Pit**	20	0	20	NE/2017/08(6days)	25-Jul-19	16-Aug-19	0		
WO.CW.TTA1010	Implementation of TTA at Carriageway	1	0	1	NE/2017/08(6days)	25-Jul-19	25-Jul-19	0	0	0%
WO.CW.TTA1020	Utility Detection and Trial Pit for Carriageway (including UU Identification)	20	0	20	NE/2017/08(6days)	25-Jul-19	16-Aug-19	0	0	0%
WO.CW.TTA1030	Erection of Chain Link Fence and Vehicular Gate at Entrance	20	0	20	NE/2017/08(6days)	25-Jul-19	16-Aug-19	0	0	0%
NE/2017/08-1.7.8.2.2	**Predrilling of PBSH**	0	0	0				0		
NE/2017/08-1.7.8.2.3	**Construction of PBSH**	0	0	0				0		
NE/2017/08-1.7.8.2.5	**Construction of ELS**	0	0	0				0		
NE/2017/08-1.7.8.2.6	**Structural Works**	0	0	0				0		
NE/2017/08-1.7.8.2.7	**Noise Barrier**	0	0	0				0		
NE/2017/08-1.7.8.2.8	**Remaining Works**	0	0	0				0		
NE/2017/08-1.8	**Miscellaneous Works (Portion I, II and III)**	0	0	0				0		



Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
summary

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

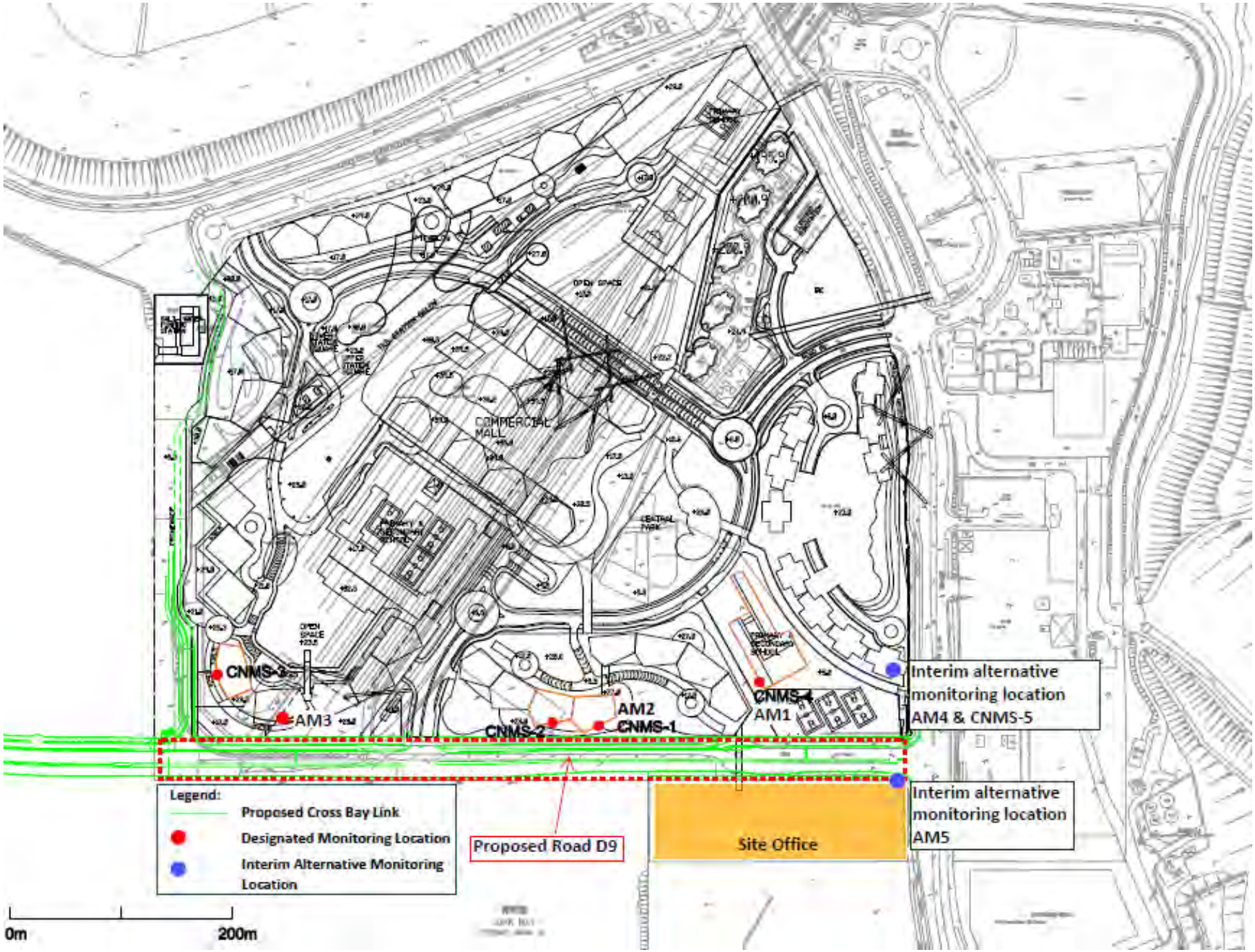
Contract No.: NE/2017/08
Cross Bay Link, Tseung Kwan O
Road D9 and Associated Works

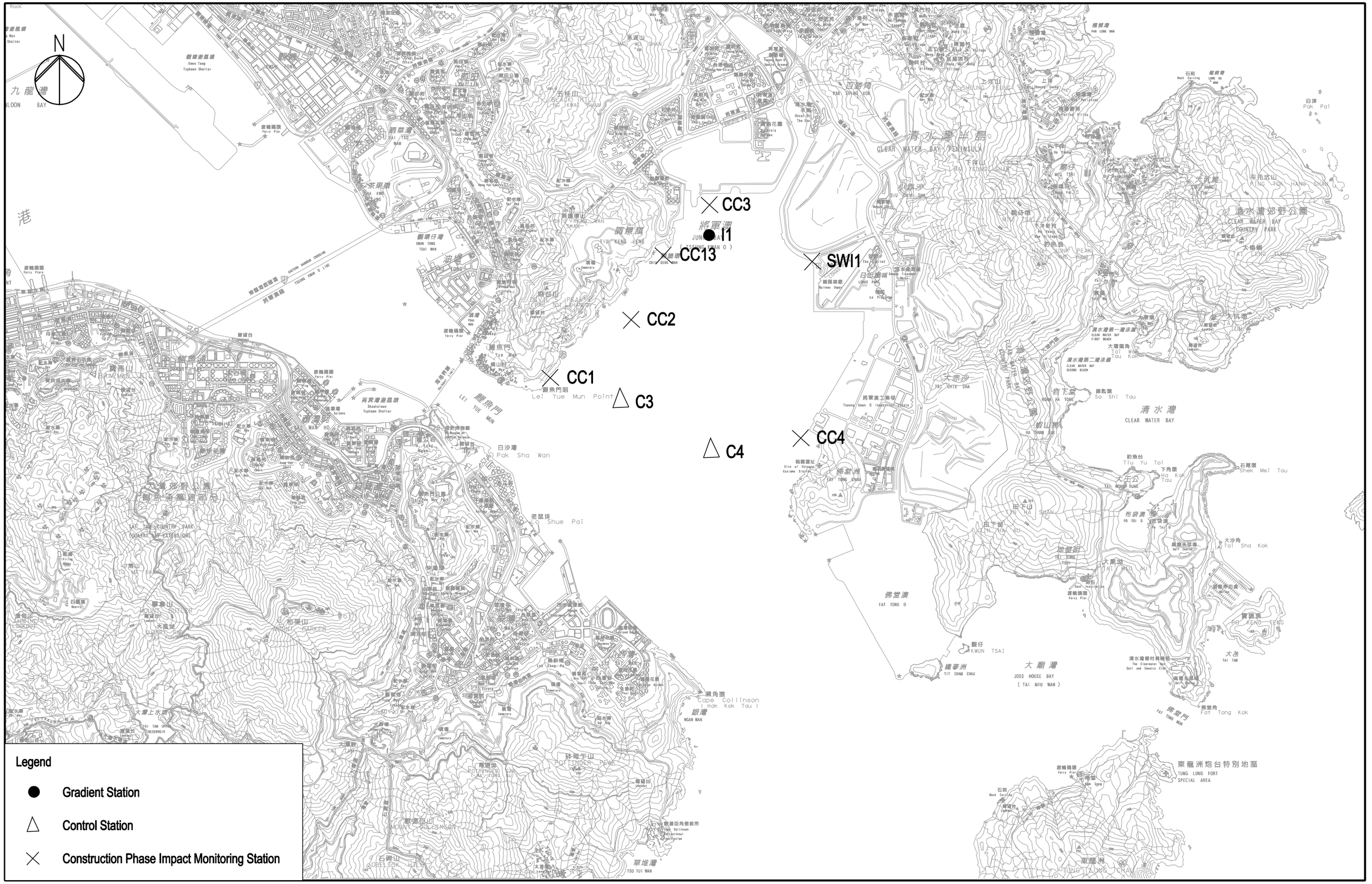
Build King

Date	Revision	Checked	Approved
08-Apr-19 ...	Monthly Programme Update (Apr 2019)	HY	StL

Appendix D

Monitoring Location
(Air Quality, Noise and Water Quality)


COMMERCIAL
MALL
CNMS-3
AM3
CNMS-2
AM2
CNMS-1
CNMS-4
AM1
Interim alternative monitoring location AM4 & CNMS-5
Interim alternative monitoring location AM5
Site Office
Proposed Road D9
Legend:
Proposed Cross Bay Link
Designated Monitoring Location
Interim Alternative Monitoring Location
0m
200m



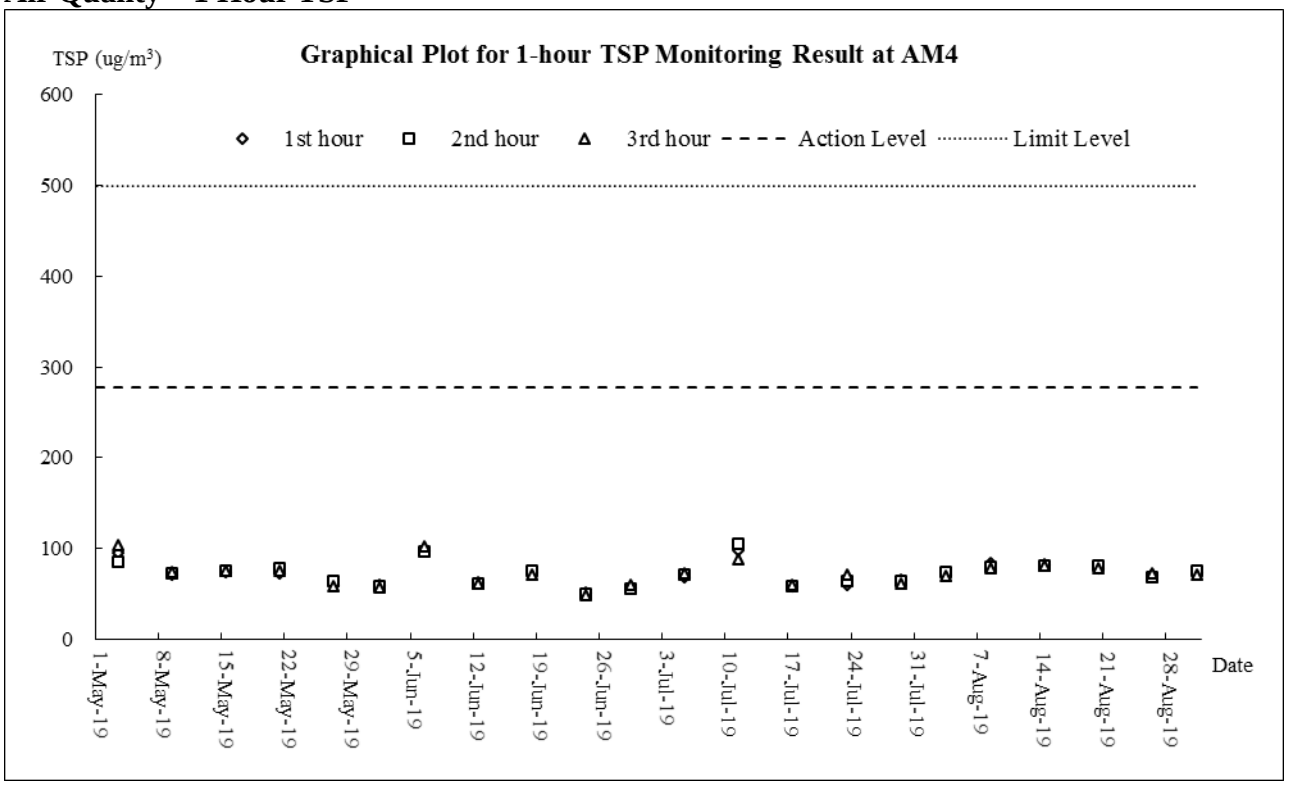
土木工程拓展署 Civil Engineering and Development Department	ARUP Ove Arup & Partners Hong Kong Limited	Job Title: **Agreement No. CE 43/2008(HY) Cross Bay Link, Tseung Kwan O - Investigation**	Drawing Title: Locations of Water Quality Monitoring Stations	C THIRD ISSUE 03/13 B SECOND ISSUE 01/13 A FIRST ISSUE 03/11 Rev. Description Date	Drawn GL; Date 03/13; Checked JP; Approved ST; Scale 1:30000 (A3)	Drawing No. 209506/EMA/WQ/001; Status FINAL; Rev. C

Plotted by:
File name:

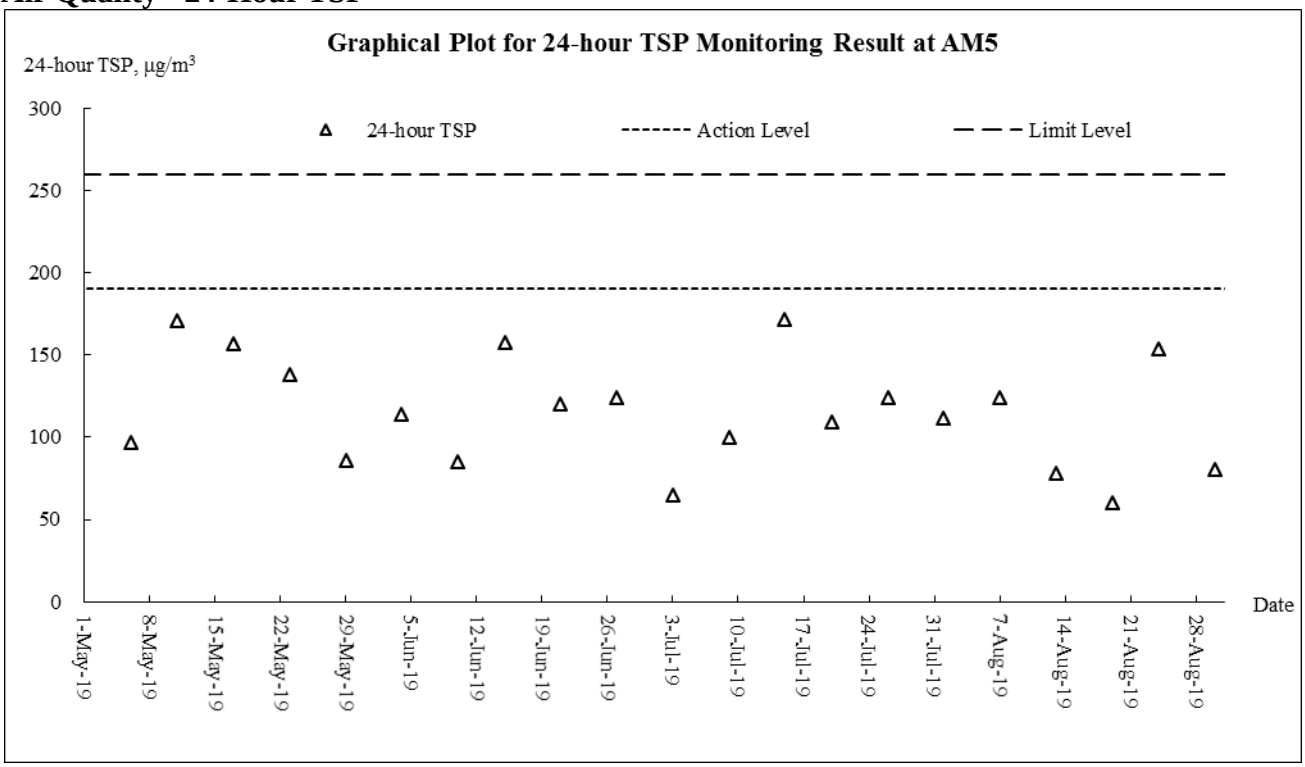
Appendix E

Graphical Plots of Monitoring Results

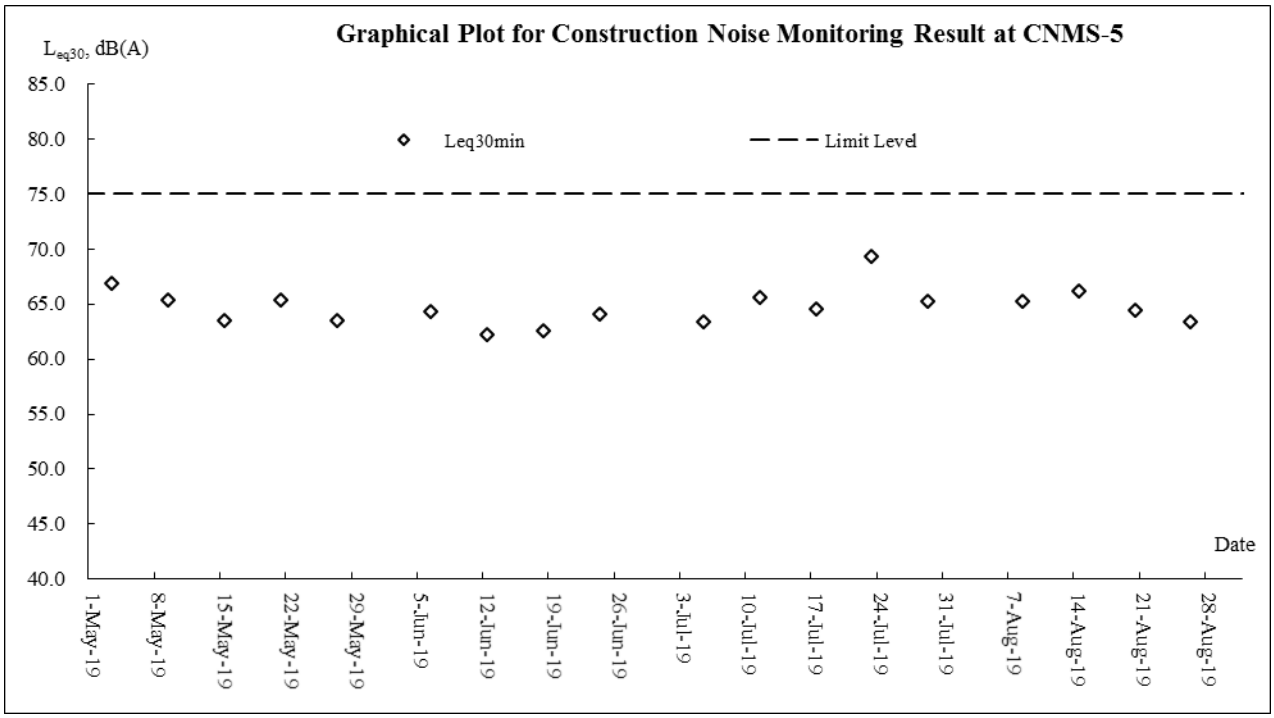
Air Quality – 1 Hour TSP



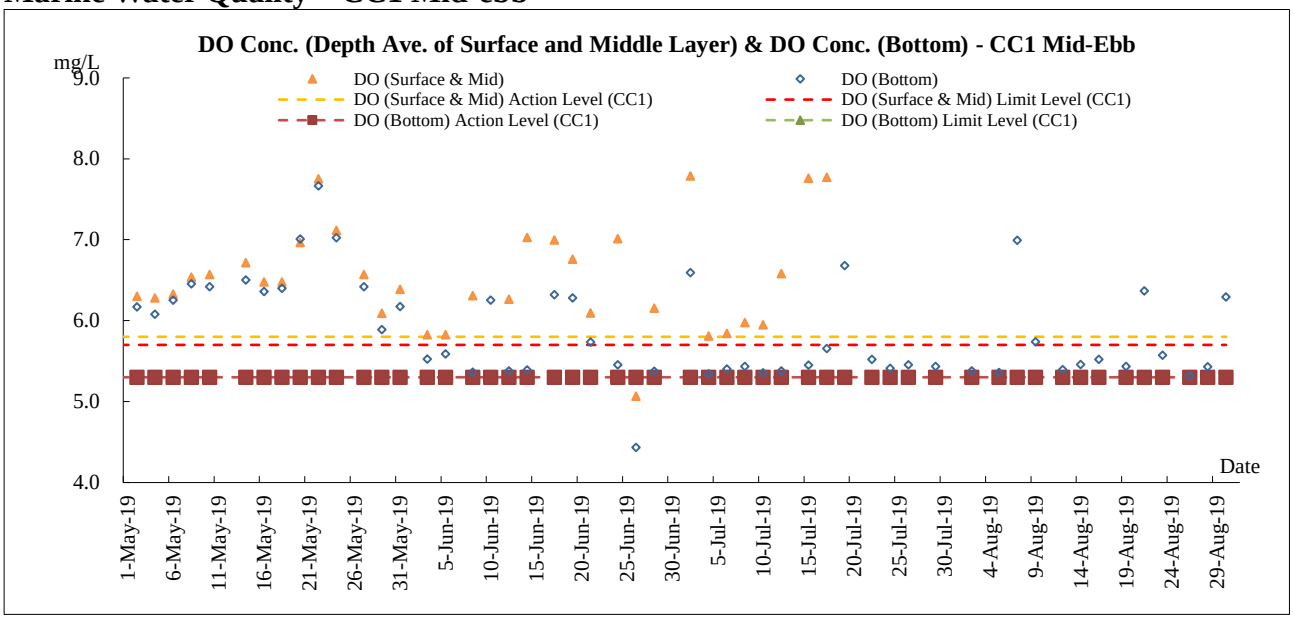
Air Quality - 24-Hour TSP

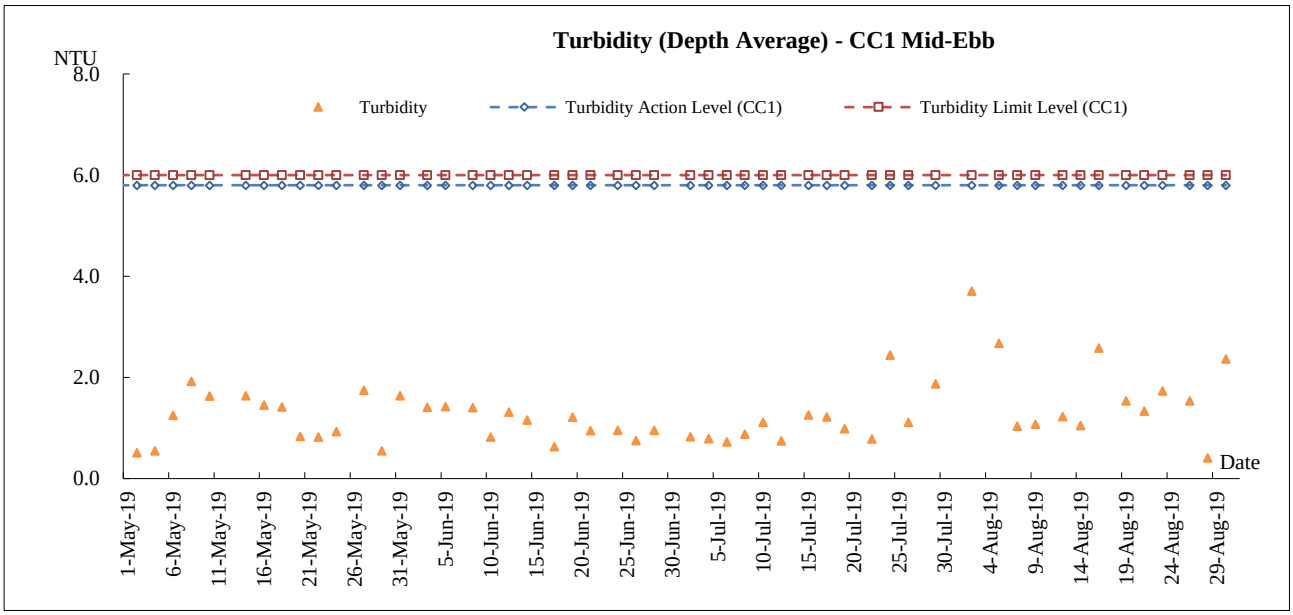


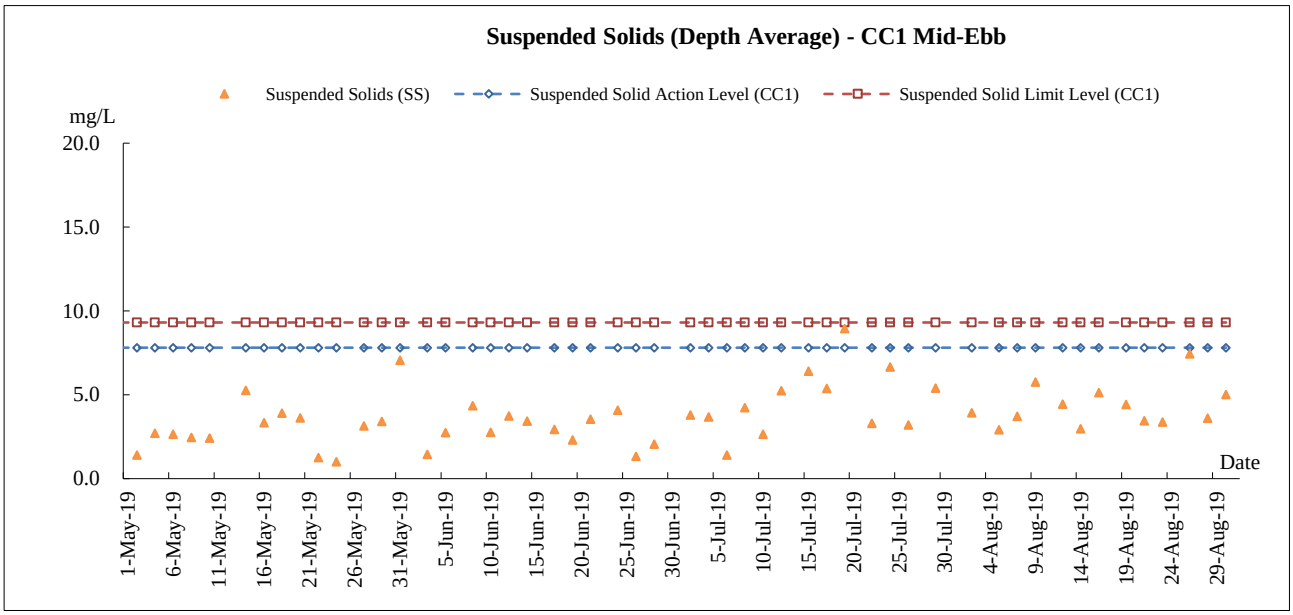
Construction Noise



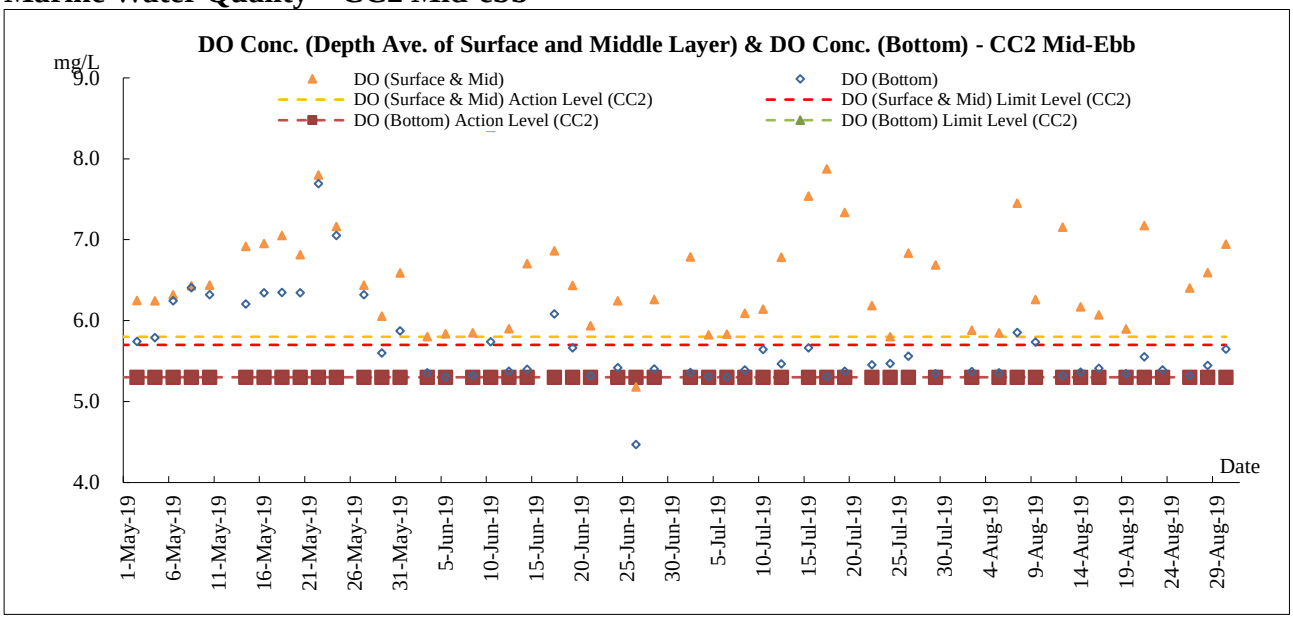
Marine Water Quality – CC1 Mid-ebb

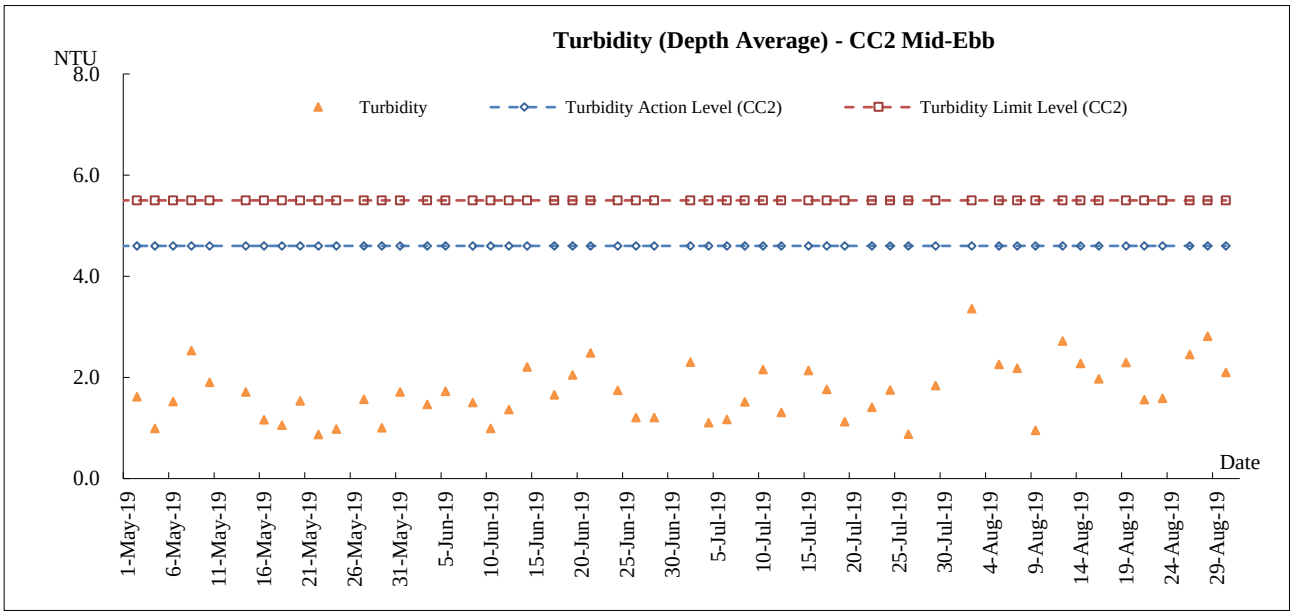


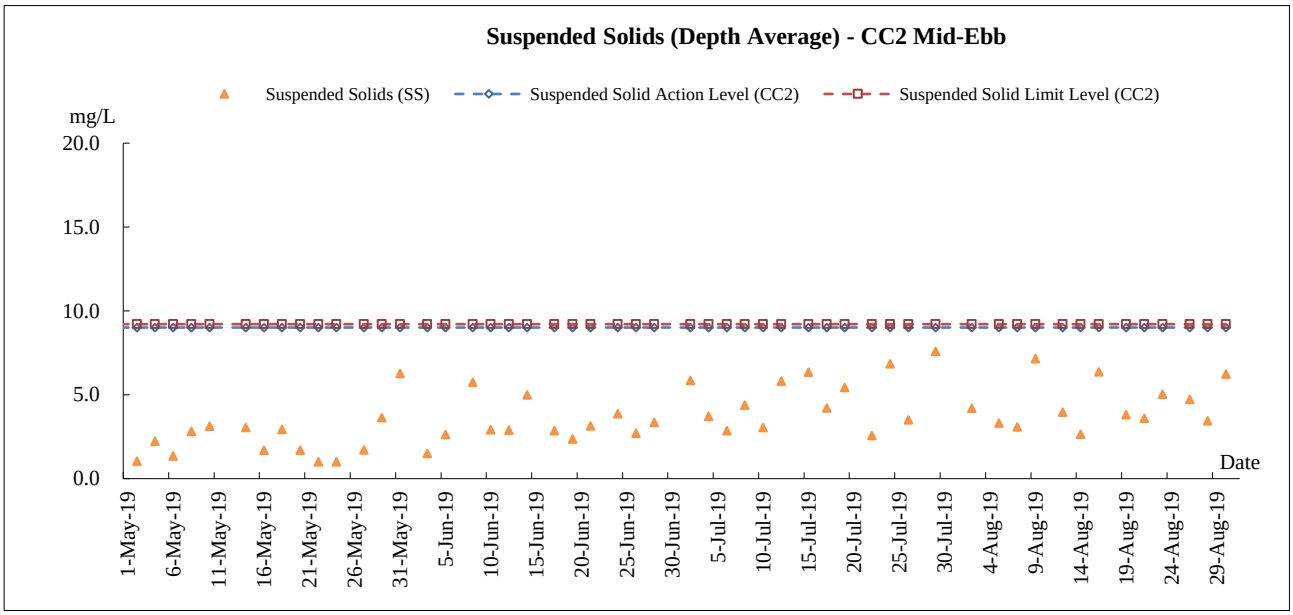




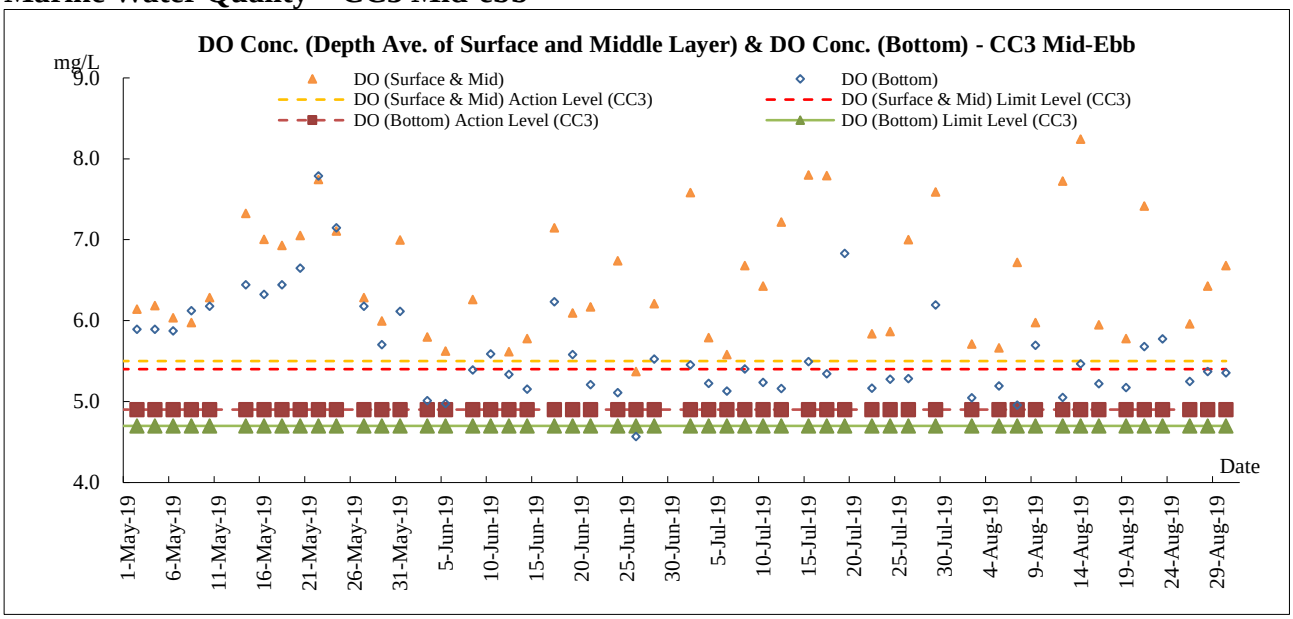
Marine Water Quality – CC2 Mid-ebb

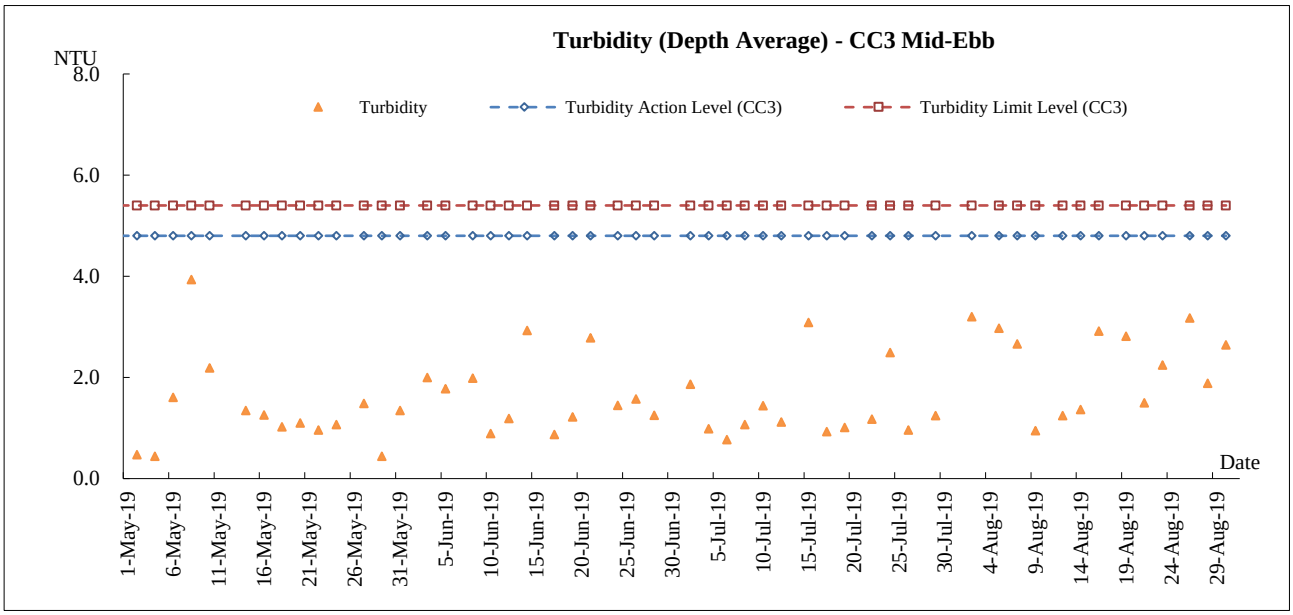


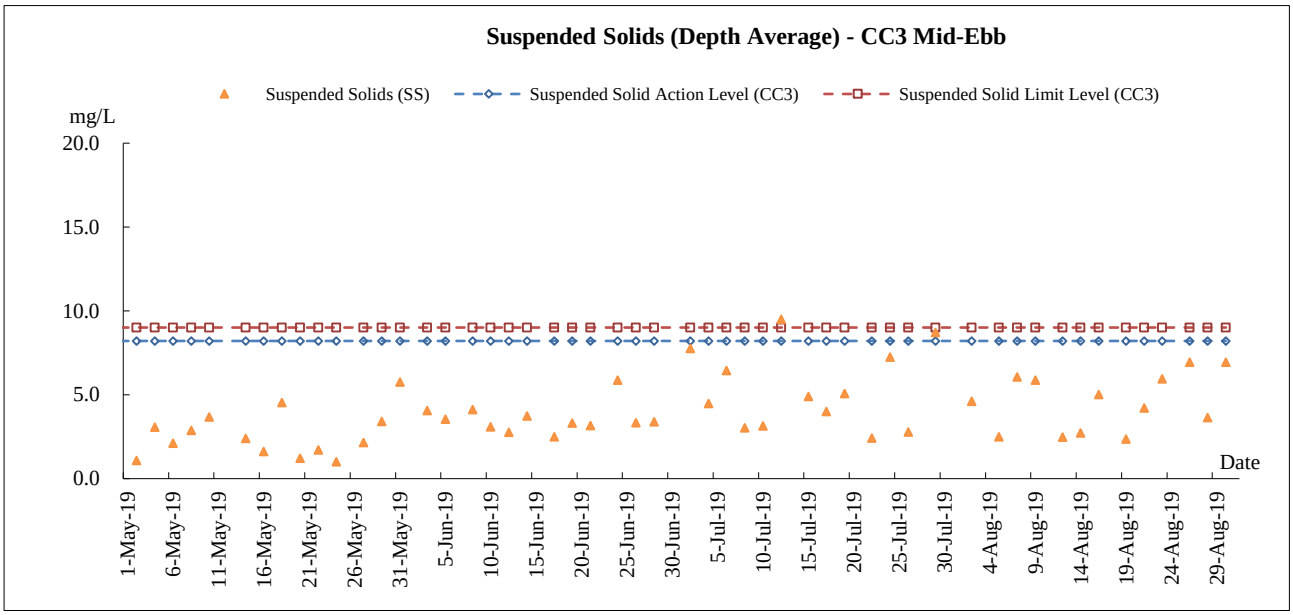




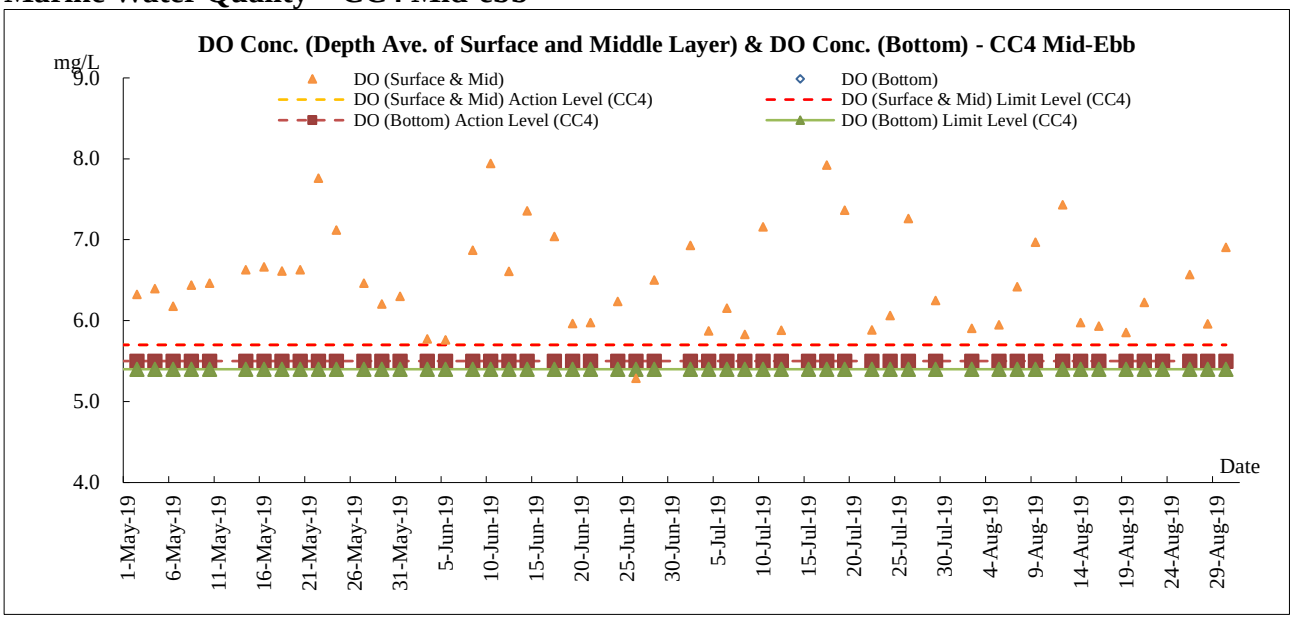
Marine Water Quality – CC3 Mid-ebb

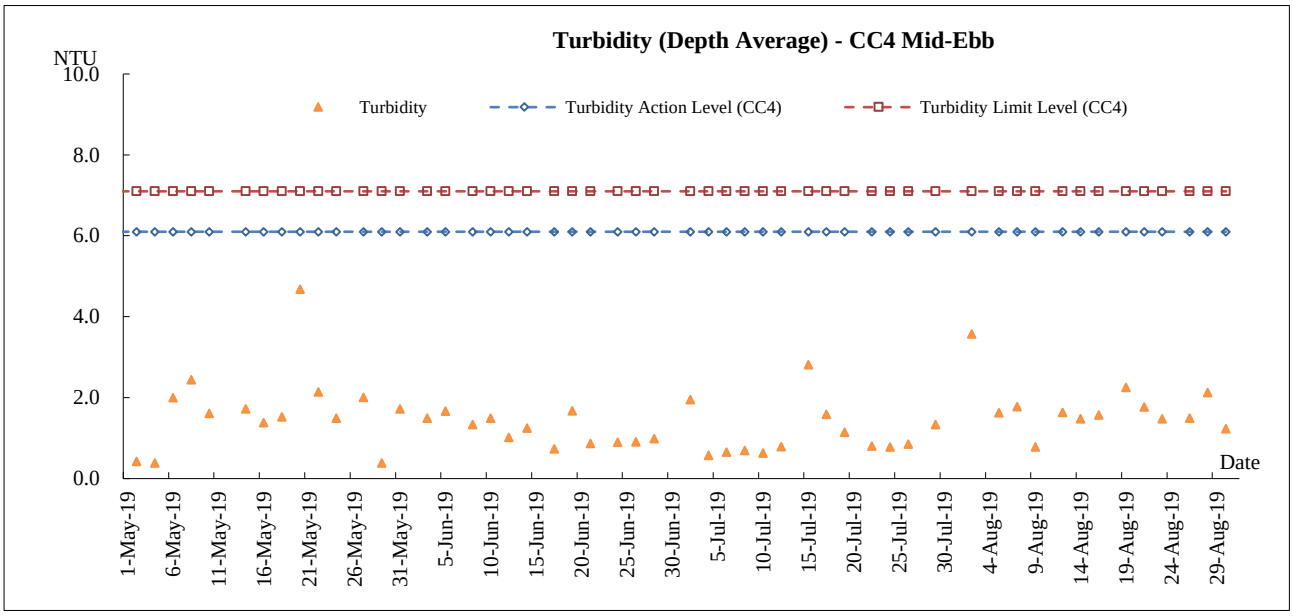


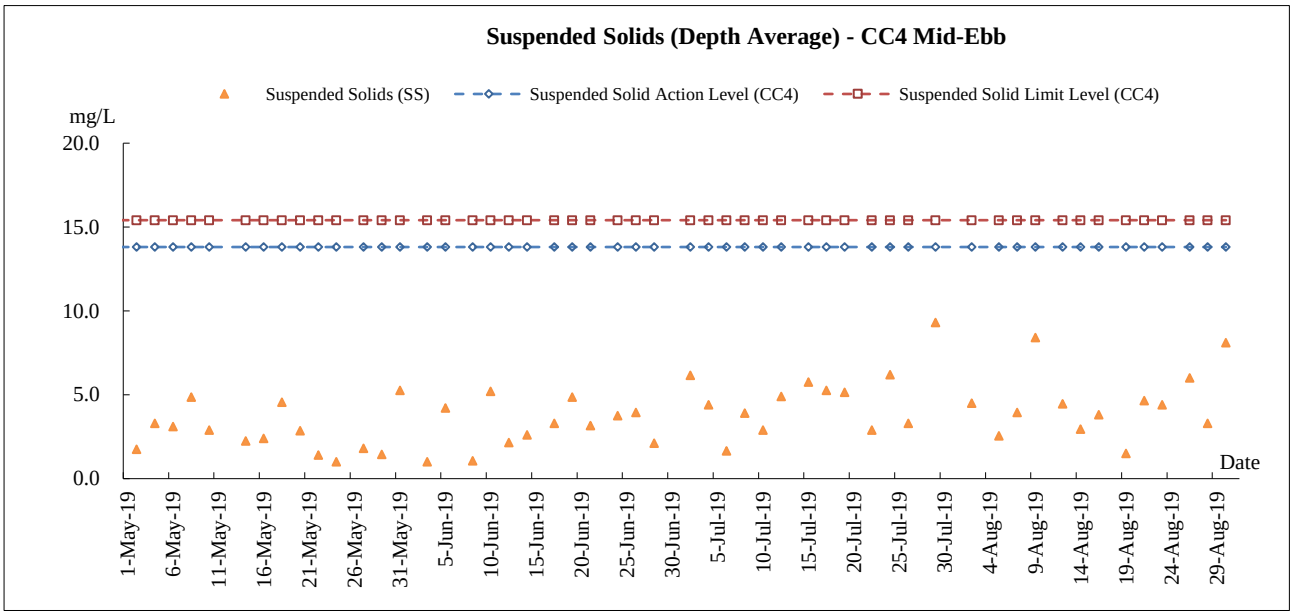




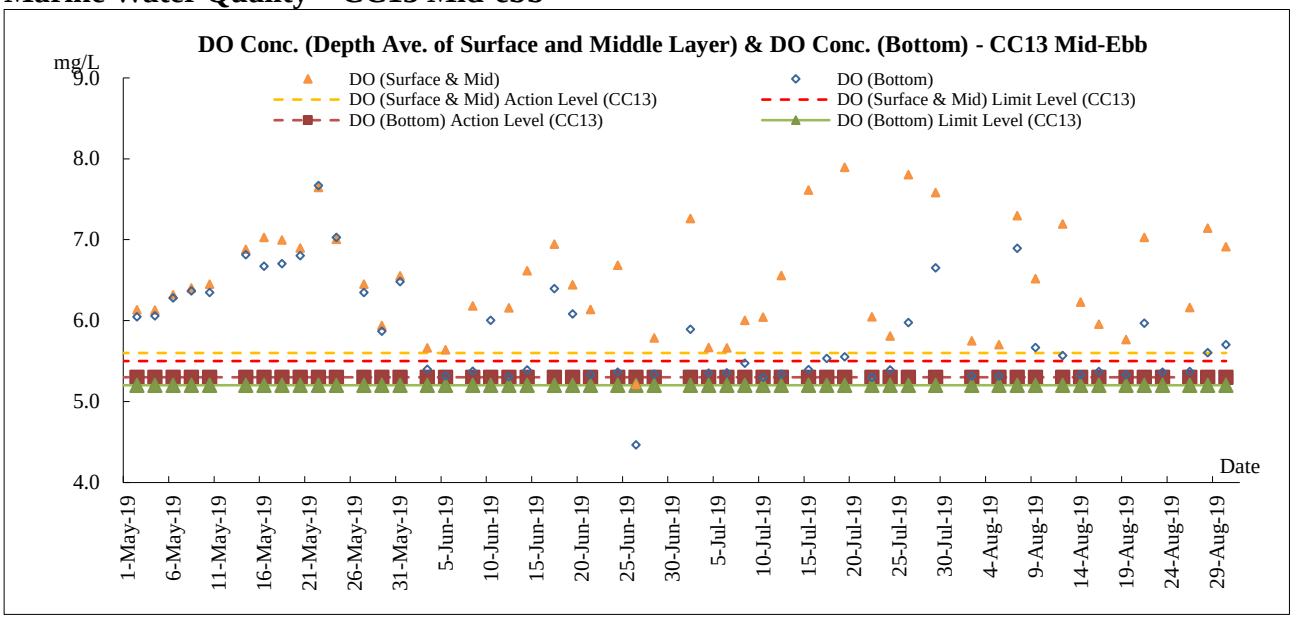
Marine Water Quality – CC4 Mid-ebb

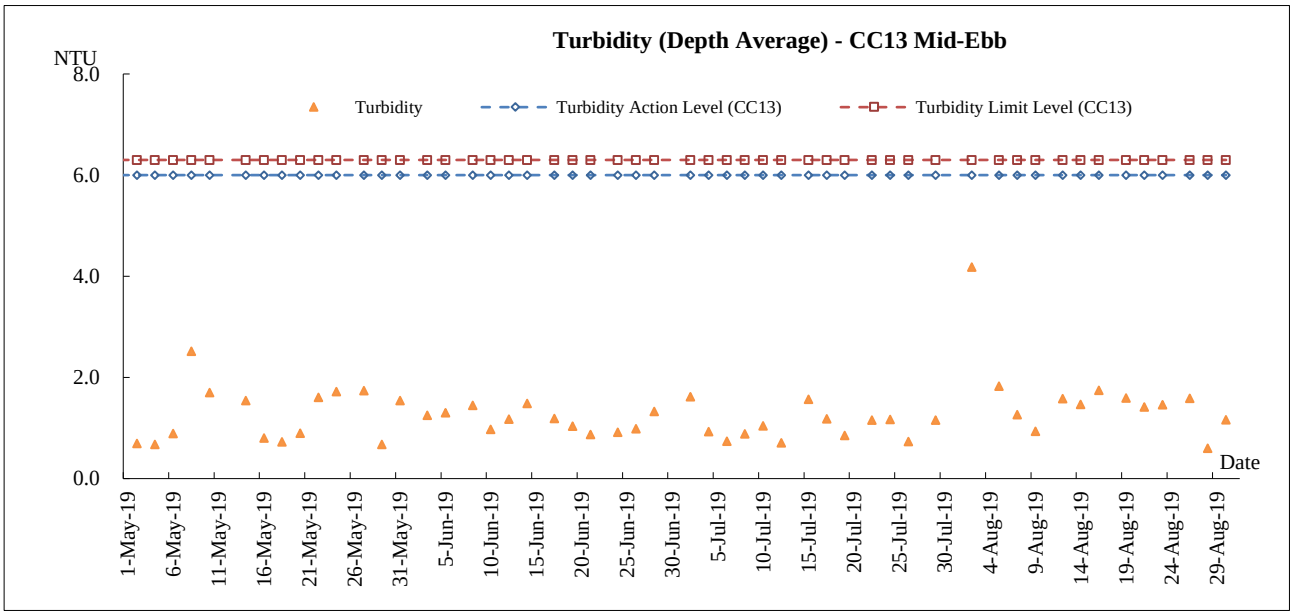


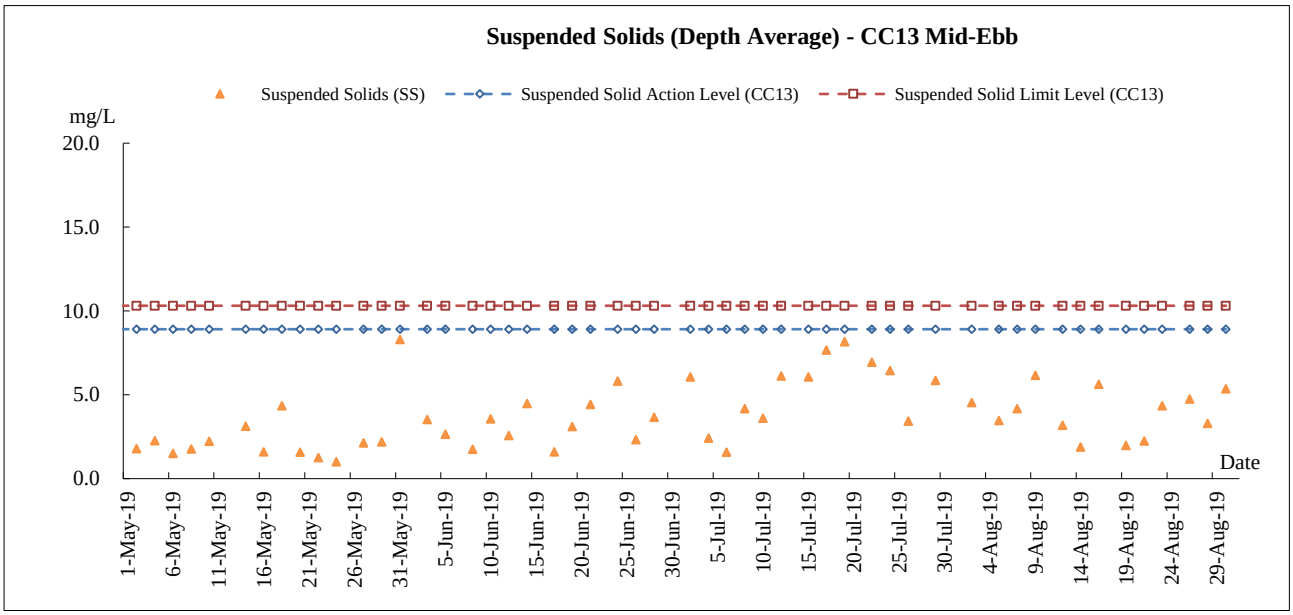




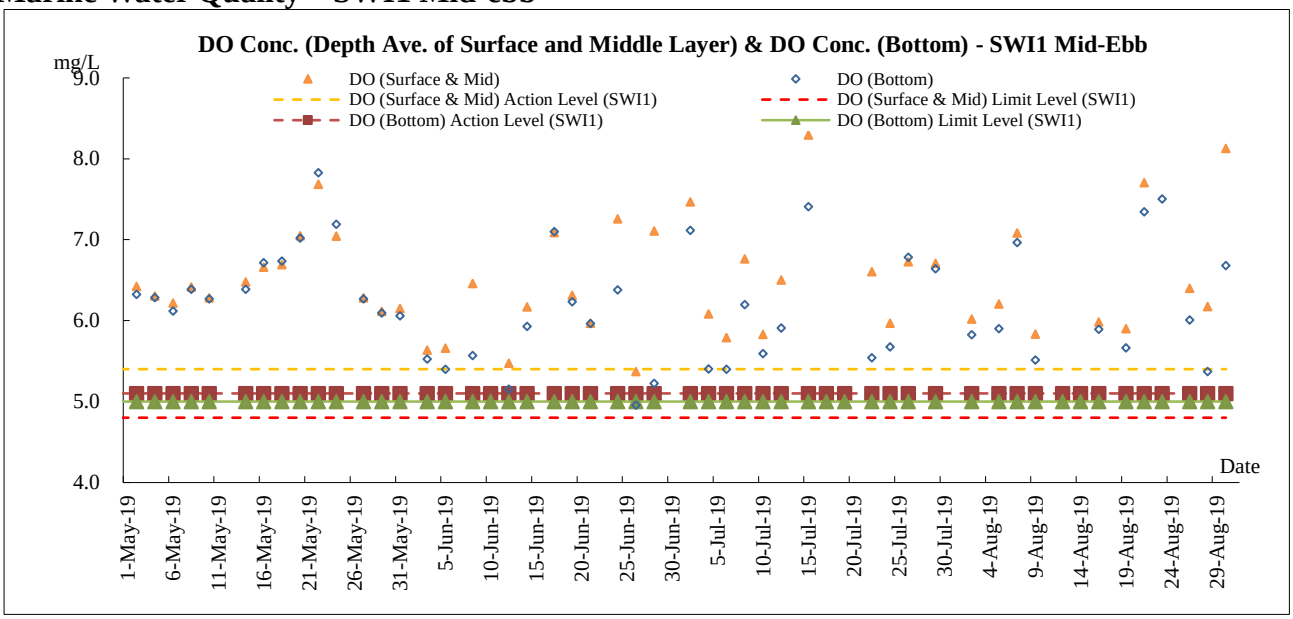
Marine Water Quality – CC13 Mid-ebb

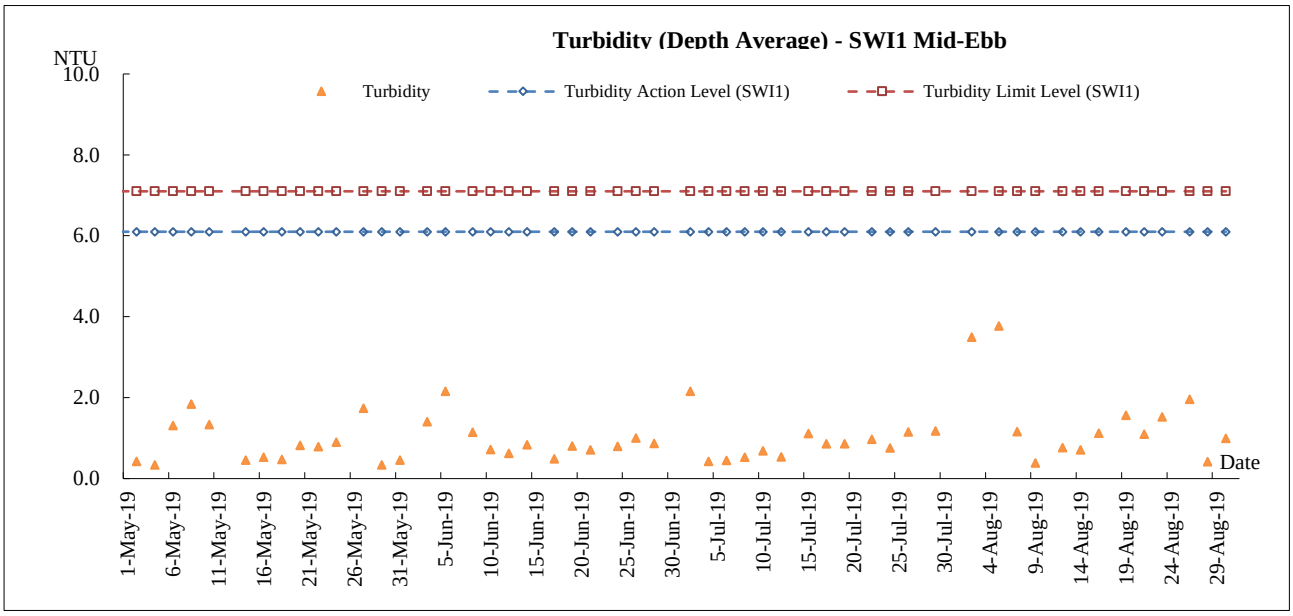


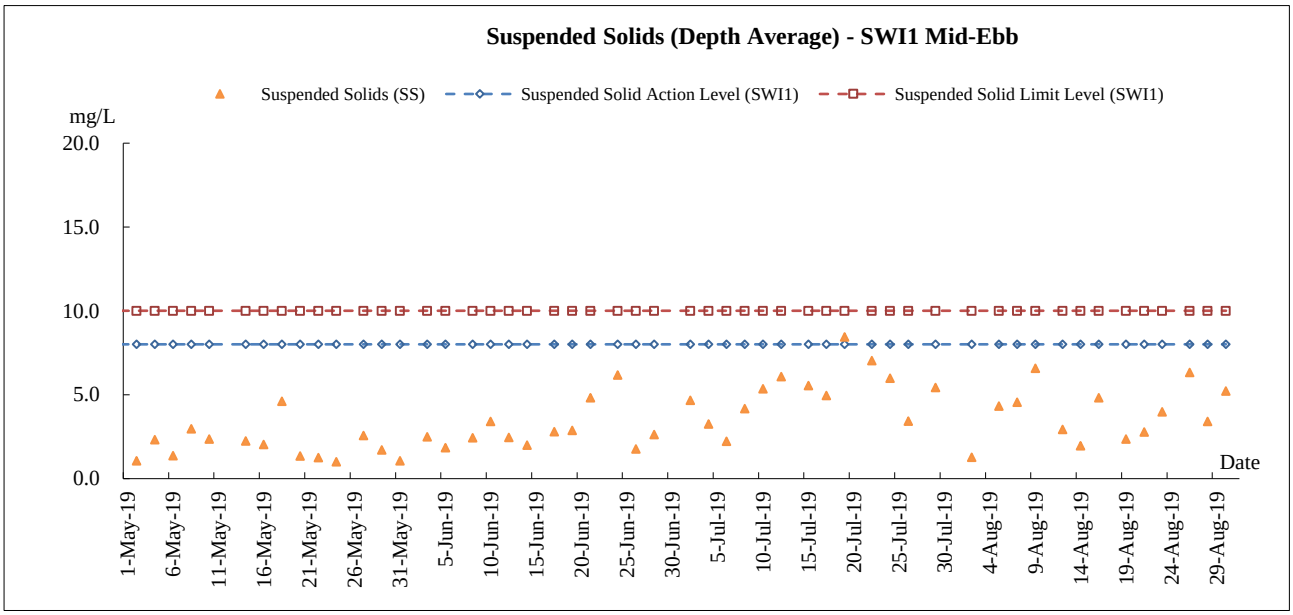




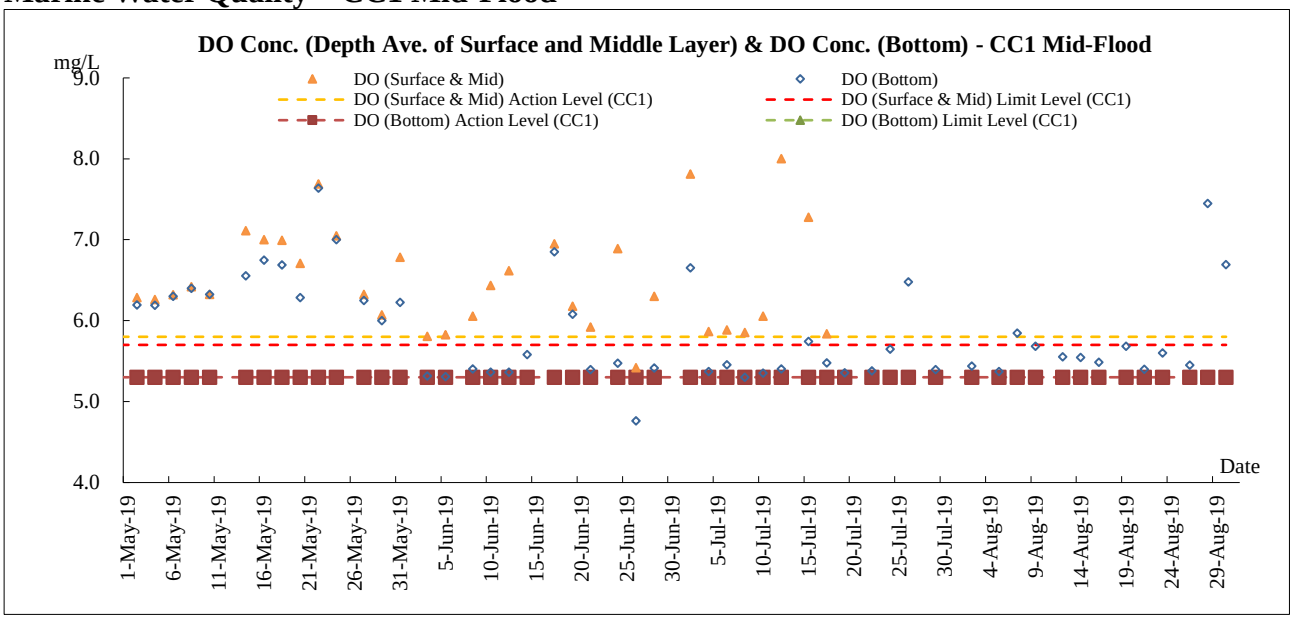
Marine Water Quality – SWI1 Mid-ebb

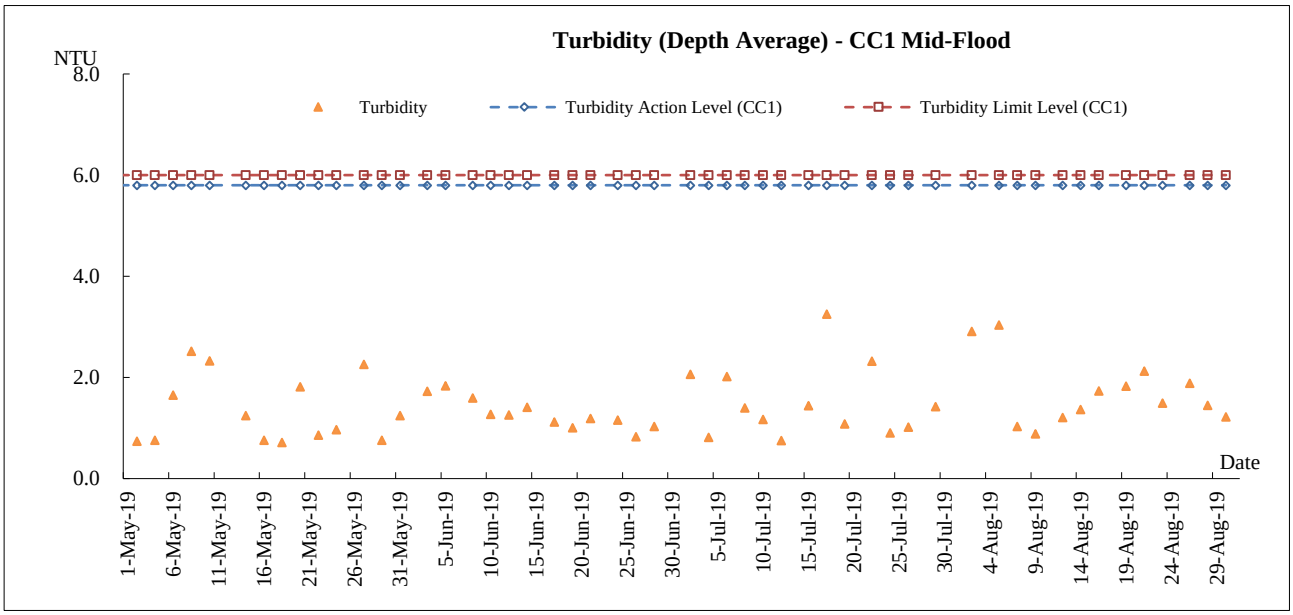


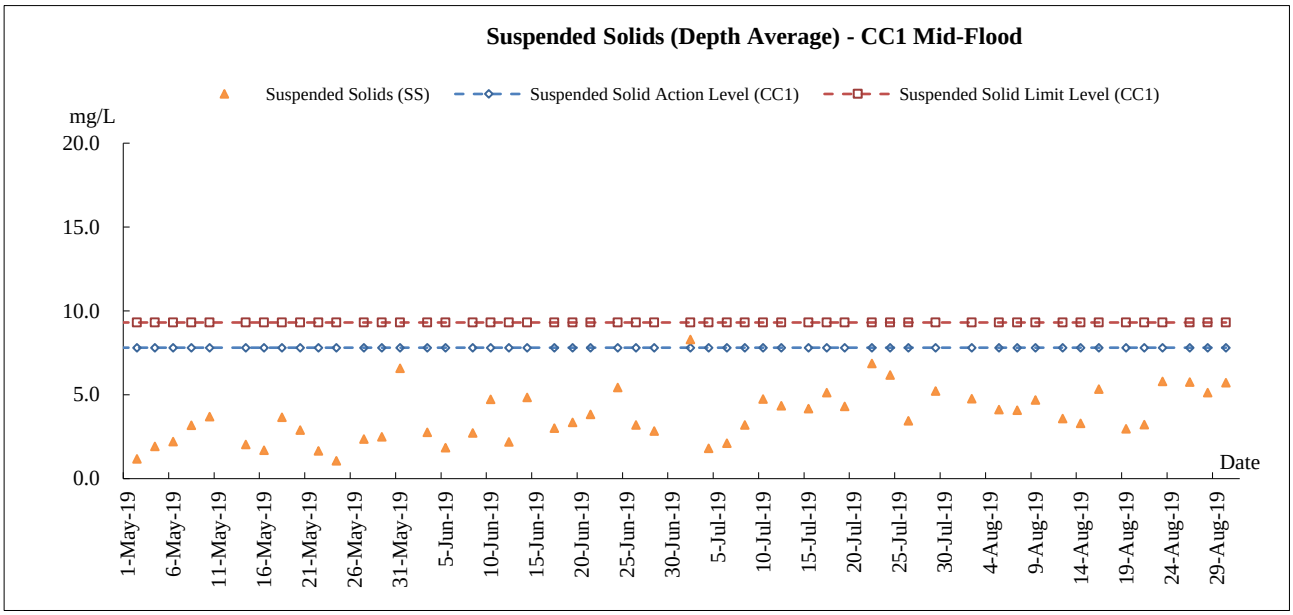




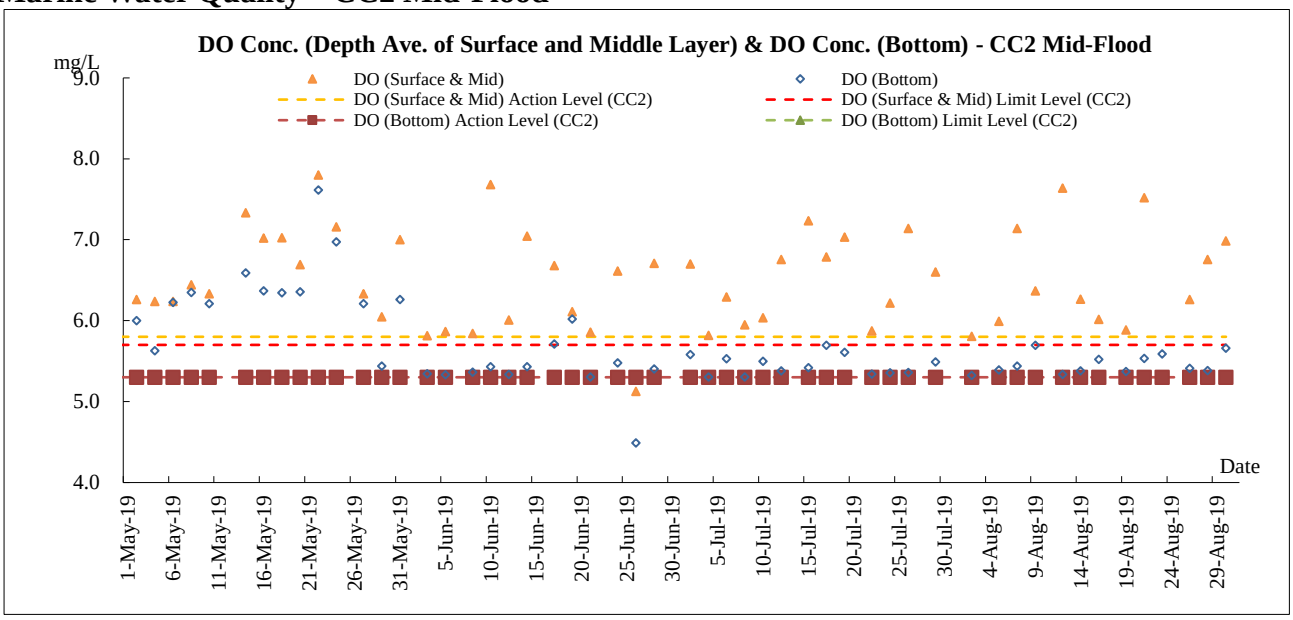
Marine Water Quality – CC1 Mid-Flood

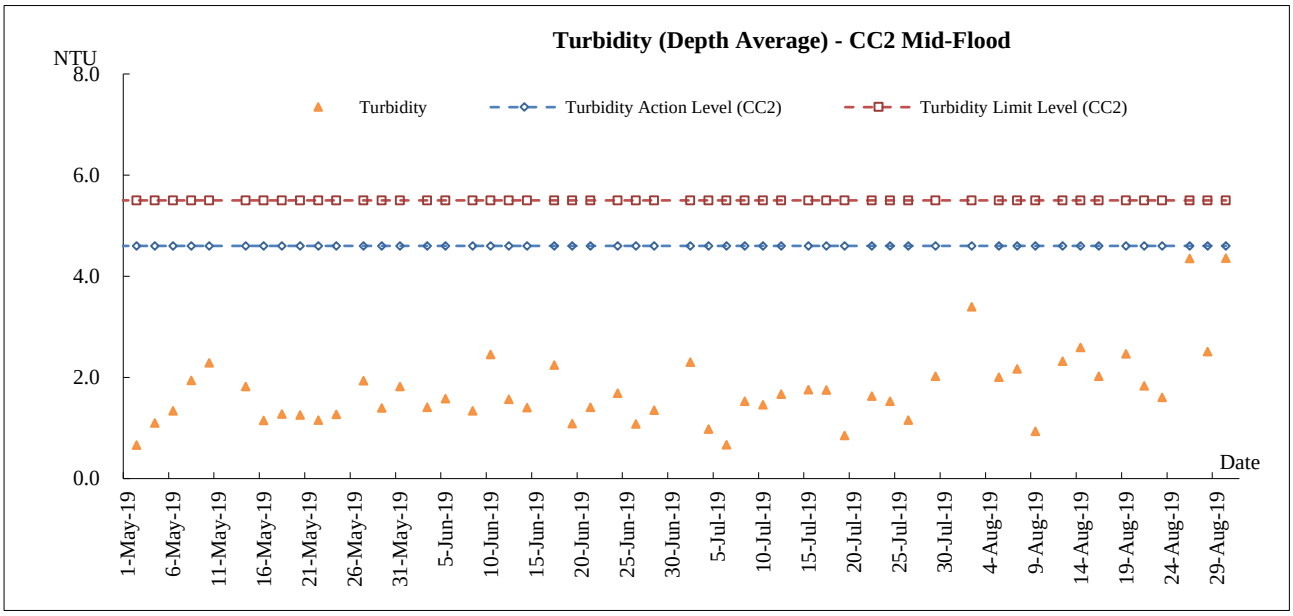


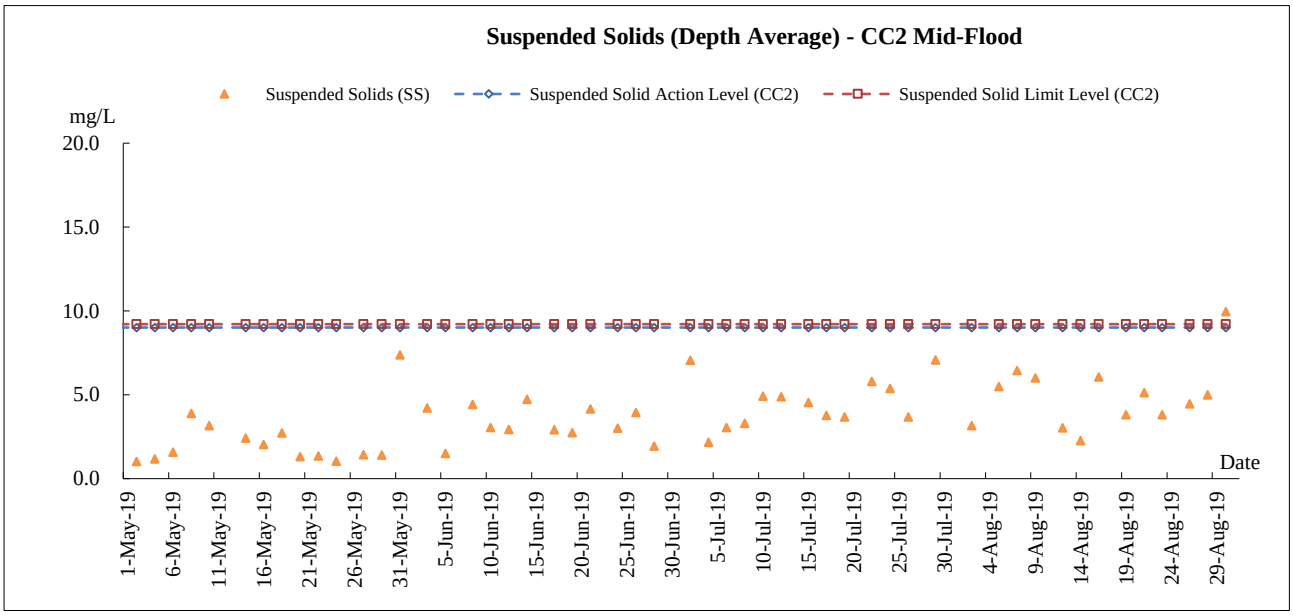




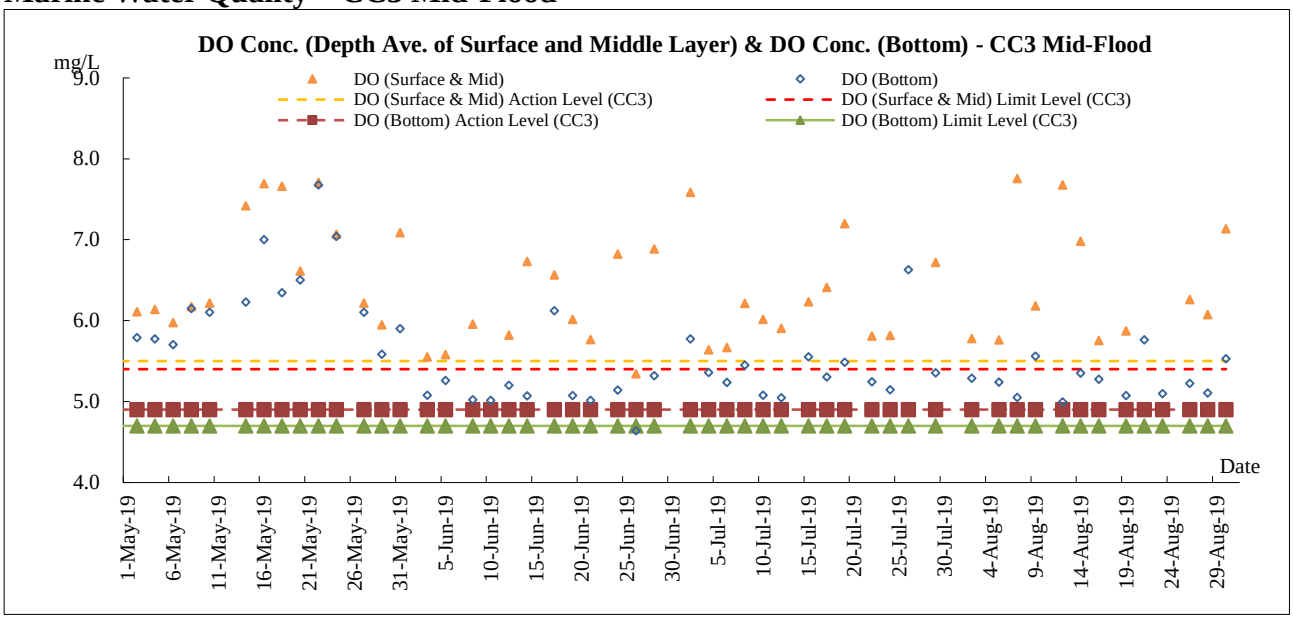
Marine Water Quality – CC2 Mid-Flood

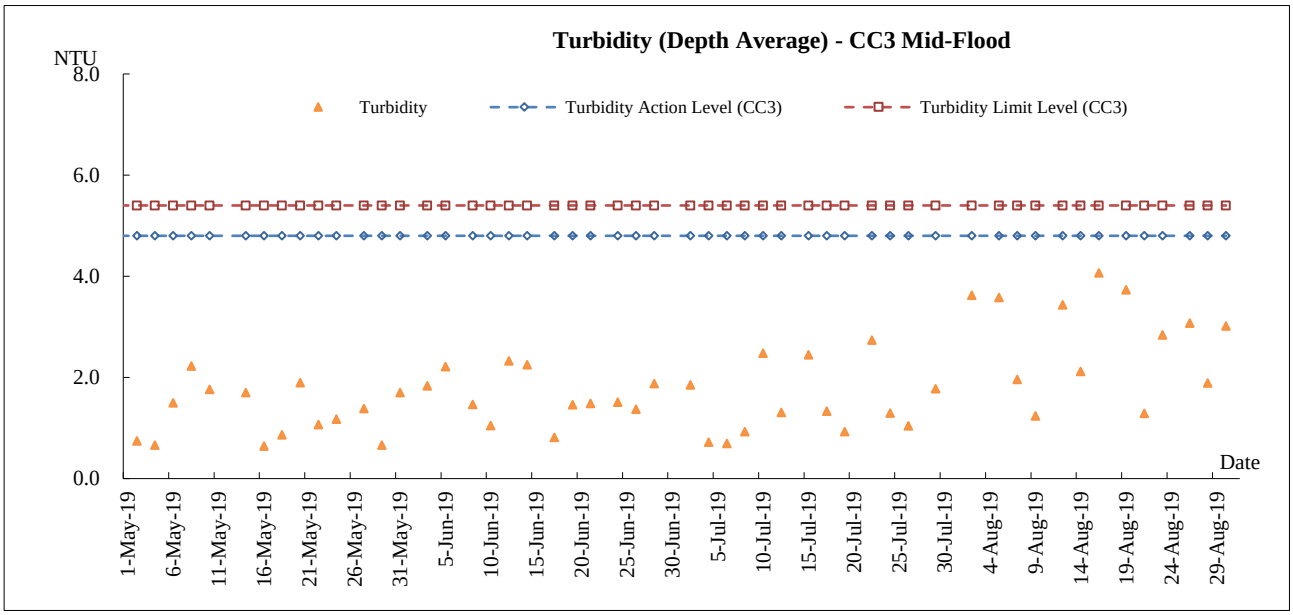


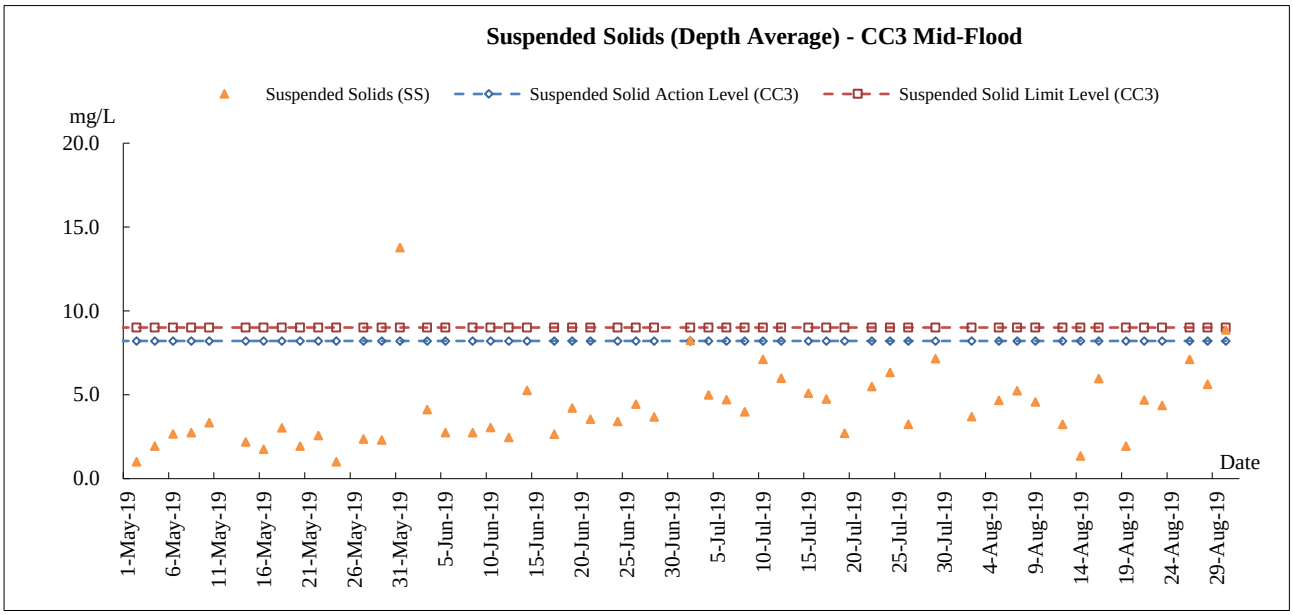




Marine Water Quality – CC3 Mid-Flood







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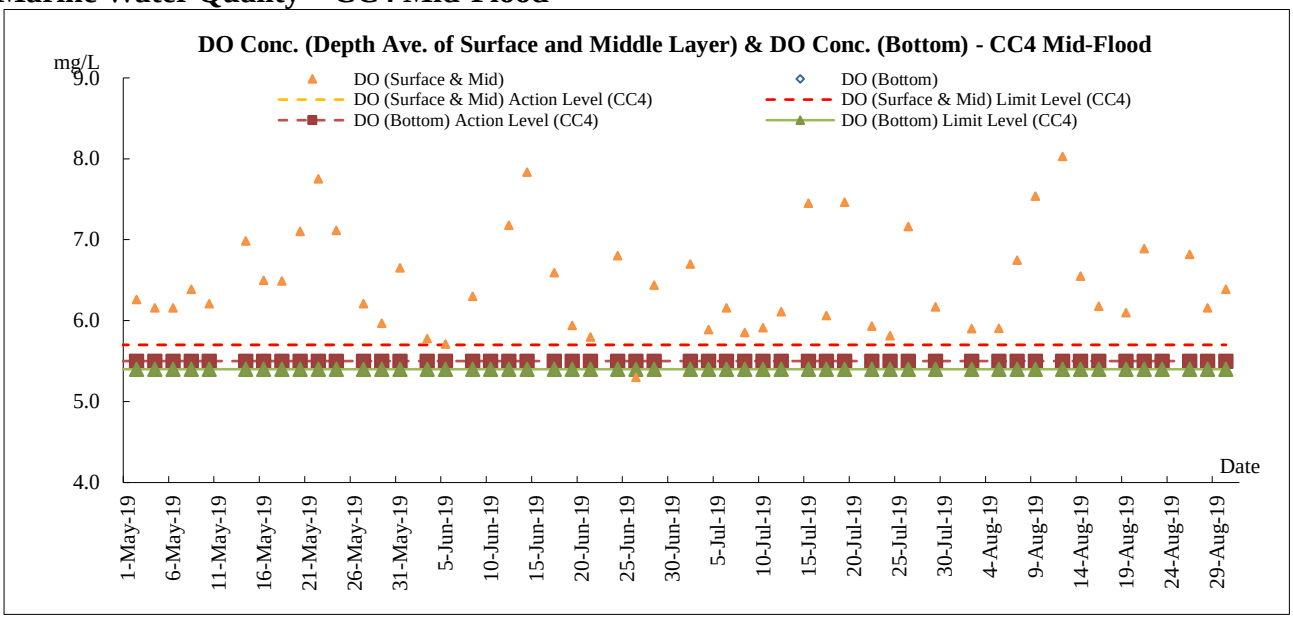

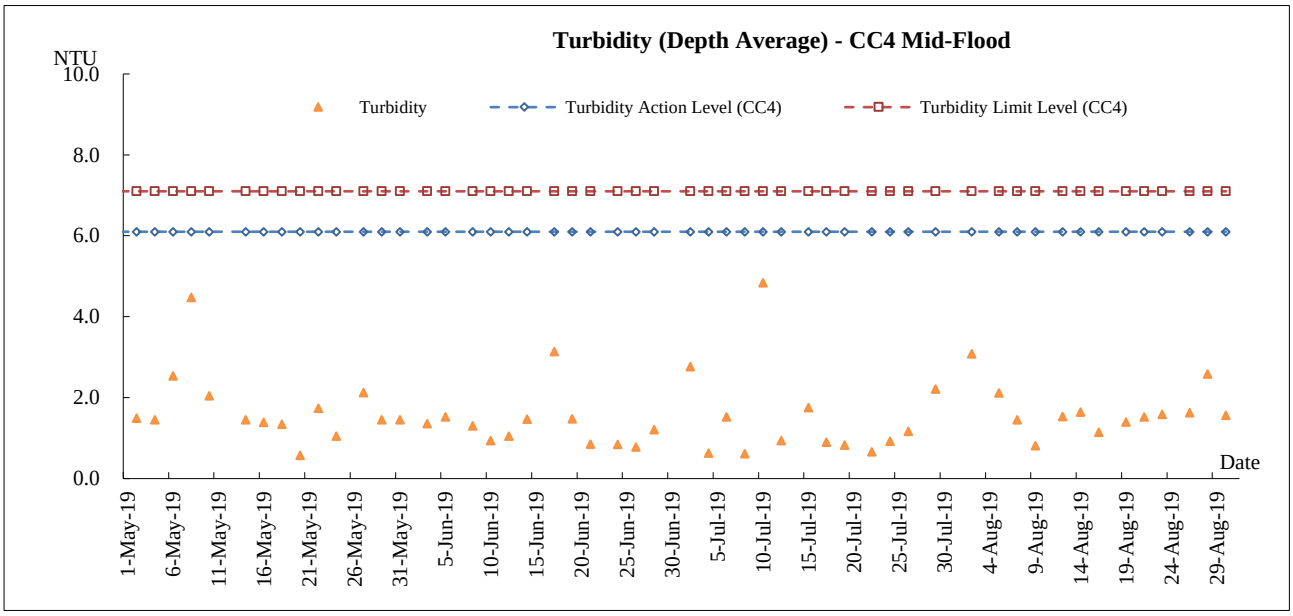

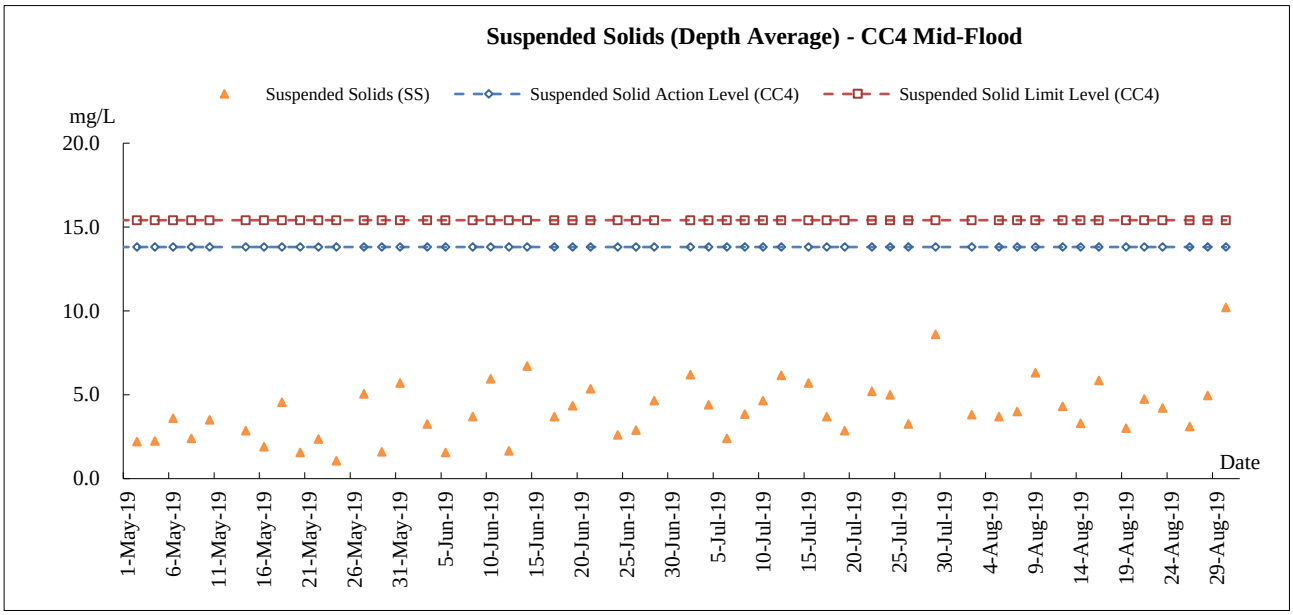

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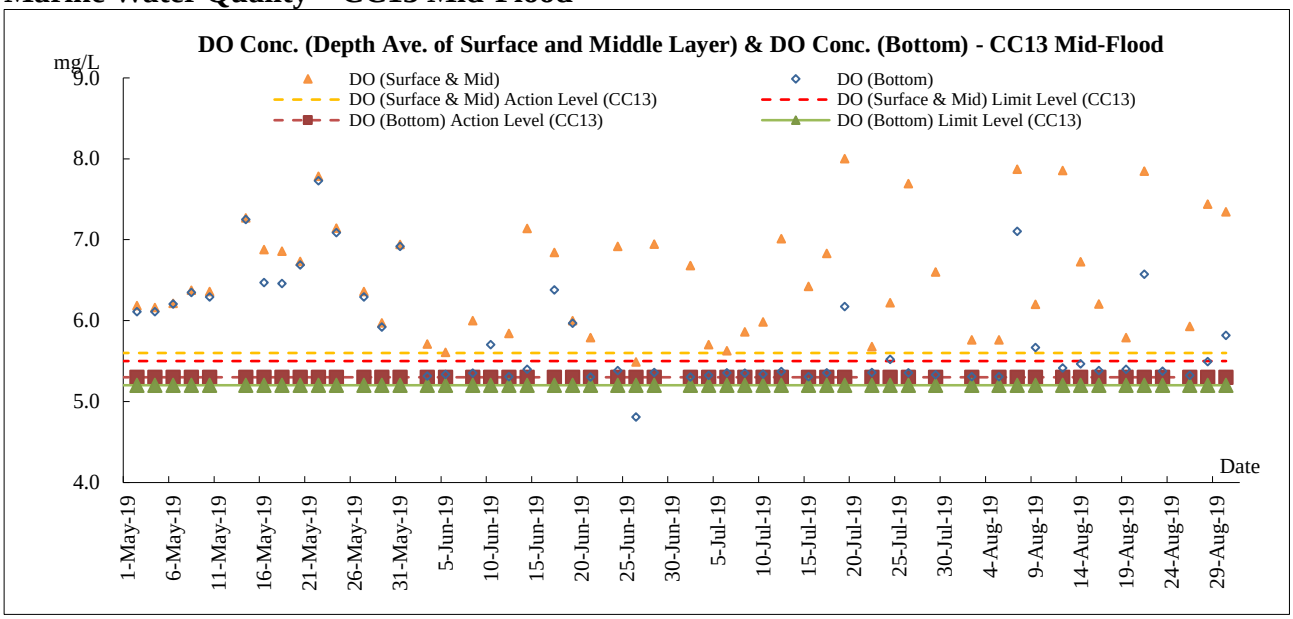
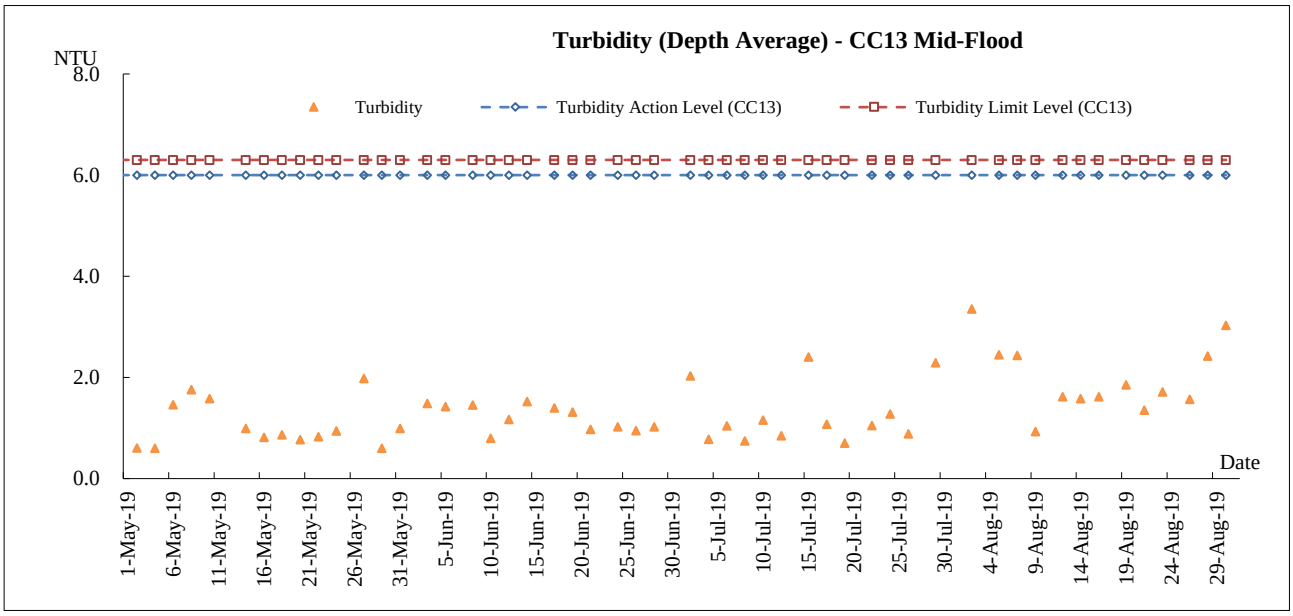
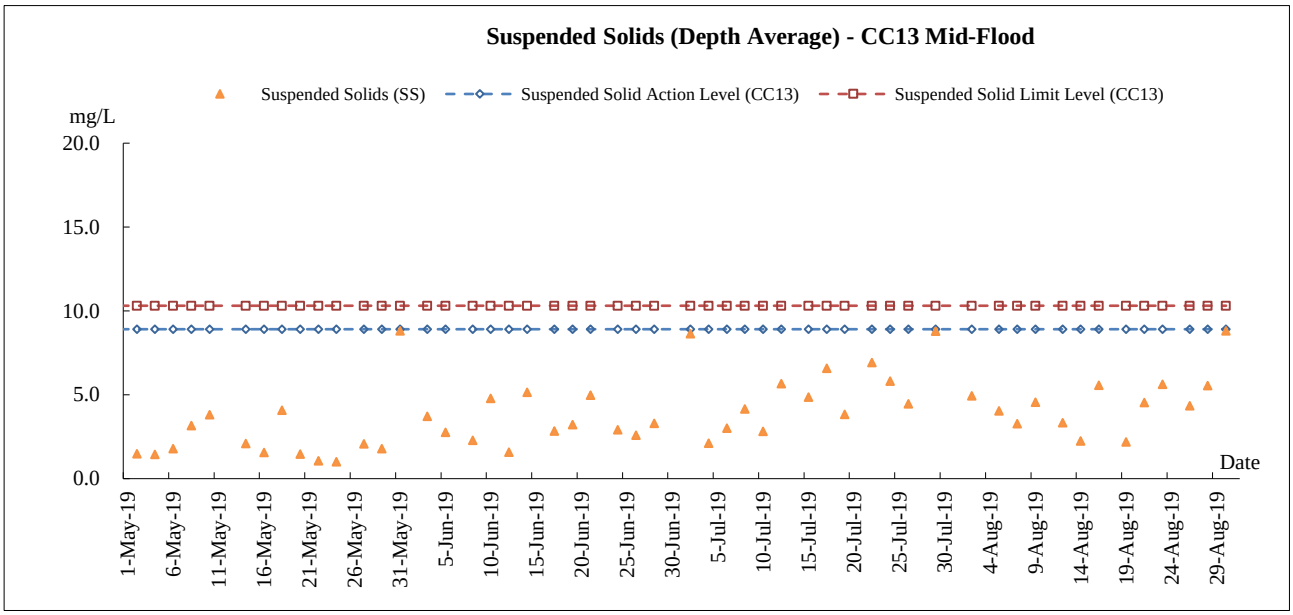
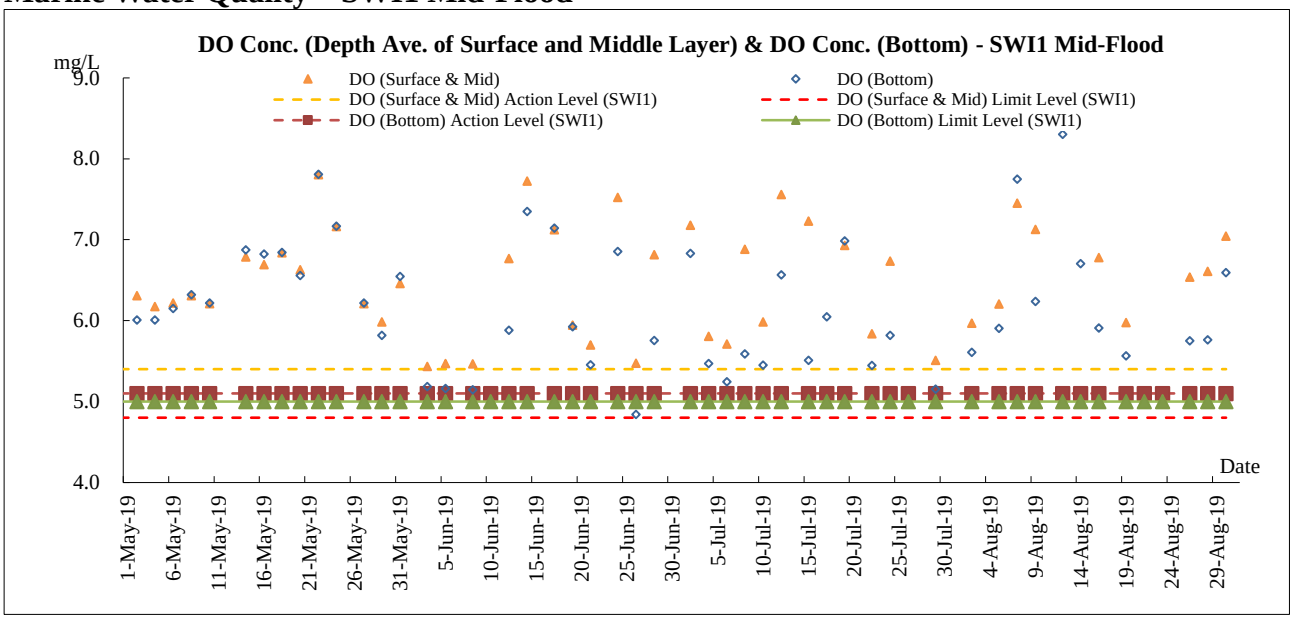
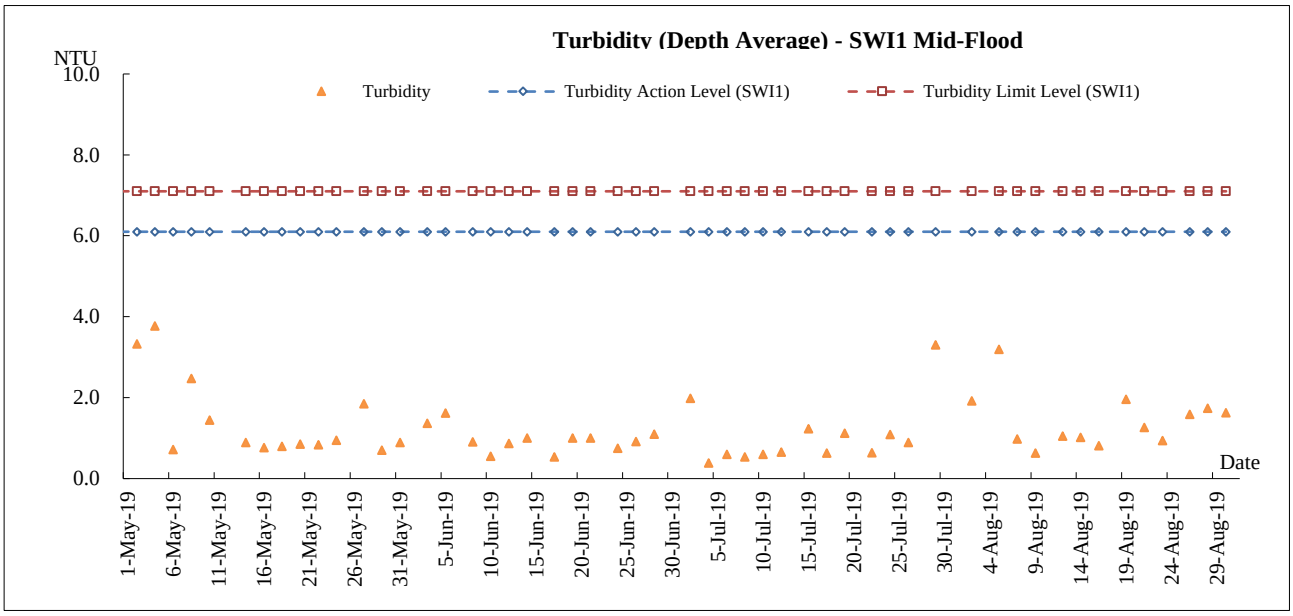


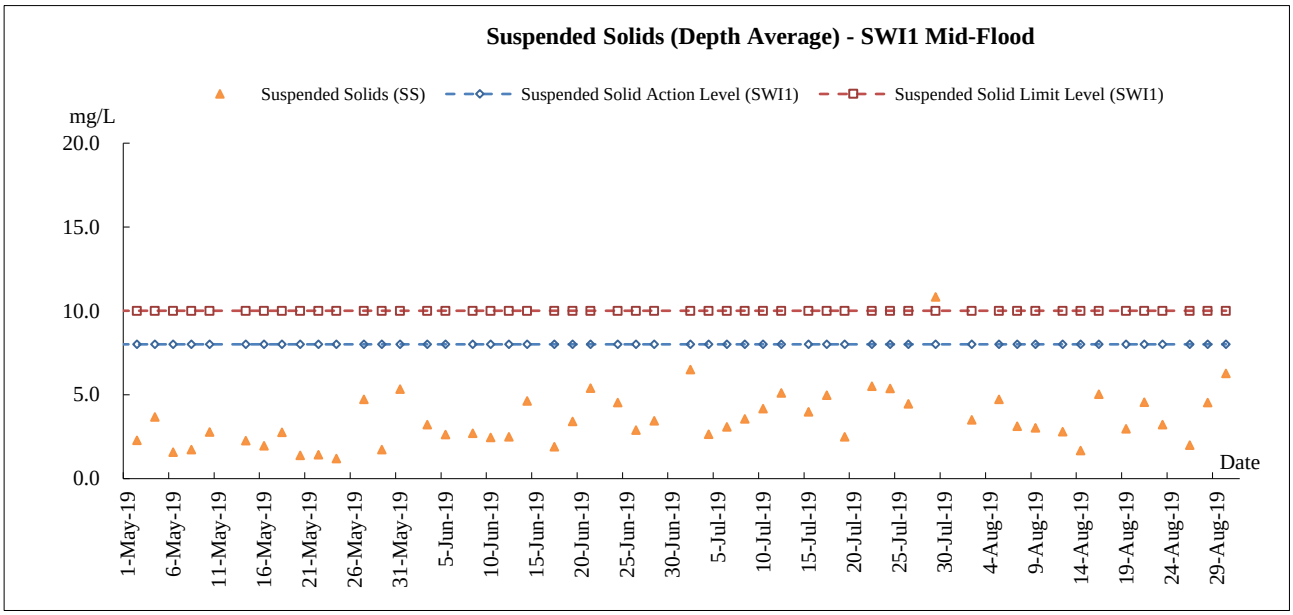




Marine Water Quality – SWI1 Mid-Flood







Appendix F

Meteorological Information

The weather of June 2019

Mainly attributing to the warmer than normal sea surface temperature and stronger than usual southerly flow in the lower atmosphere over the northern part of the South China Sea, June 2019 was much hotter than usual in Hong Kong. The monthly mean temperature of 29.0 degrees was 1.1 degree above the normal figure of 27.9 degrees, one of the third highest on record for June. Moreover, the first half of this year from January to June 2019 was exceptionally warm. The mean temperature of 23.0 degrees, mean minimum temperature of 21.3 degrees and mean maximum temperature of 25.4 degrees were all the highest on record for the same period. The monthly rainfall of June 2019 was 429.1 millimetres, about 6 percent below the normal of 456.1 millimetres. The accumulated rainfall recorded in the first six months of the year was 1109.4 millimetres, slightly higher than the normal figure of 1096.9 millimetres for the same period.

The weather of July 2019

July 2019 was much hotter than usual in Hong Kong, mainly attributing to the warmer than normal sea surface temperature over the northern part of the South China Sea. The monthly mean minimum temperature of 27.7 degrees was 0.9 degree above the normal figure of 26.8 degrees, the highest on record for July. The monthly mean temperature of 29.5 degrees was 0.7 degree above the normal figure of 28.8 degrees, one of the sixth highest on record for July. The month was also cloudier than usual with the mean amount of cloud of 79%, about 10% above the normal figure of 69% and one of the fifth highest on record for July. The duration of bright sunshine in the month was only 150.5 hours, about 29% below the normal figure of 212.0 hours and the seventh lowest on record for July. The monthly rainfall was 328.5 millimetres, about 13 percent below the normal of 376.5 millimetres. The accumulated rainfall recorded in the first seven months of the year was 1437.9 millimetres, slightly lower than the normal figure of 1473.3 millimetres for the same period.

The weather of August 2019

August 2019 was hotter than usual in Hong Kong, mainly attributing to the warmer than normal sea surface temperature over the northern part of the South China Sea. The monthly mean temperature of 29.0 degrees was 0.4 degree above the normal figure of 28.6 degrees. Moreover, the summer of this year from June to August was exceptionally hot. The mean minimum temperature of 27.2 degrees, mean temperature of 29.2 degrees and mean maximum temperature of 31.8 degrees were respectively the second, third and fourth highest on record for the same period. Due to the heavy rain brought by tropical cyclones Wipha and Bailu, the month was wetter than normal with the monthly total rainfall amounting to 596.4 millimetres, about 38 percent above the normal figure of 432.2 millimetres. The accumulated rainfall recorded in the first eight months of the year was 2034.3 millimetres, a surplus of 7 percent compared to the normal of 1905.5 millimetres for the same period.

*The detailed meterological data for each successive day can be referred to in the Monthly EM&A Reports (June 2019, July 2019, and August 2019).

Appendix G

Waste Flow Table

Contract 1

Monthly Summary Waste Flow Table for 2018 (year)

Name of Person completing the record: Kanny Cho (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											
Feb											
Mar											
Apr											
May											
Jun											
Sub-total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.837
Sep	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.305
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.065	0.000	0.000	0.008
Nov	0.000	0.000	0.000	0.000	0.000	0.320	0.000	0.000	0.000	0.000	0.009
Dec	0.000	0.000	0.000	0.000	0.276	0.000	0.000	0.000	0.000	0.000	0.004
Total	0.000	0.000	0.000	0.000	0.276	0.320	0.000	0.065	0.000	0.000	1.163

Note:

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

Monthly Summary Waste Flow Table for 2019 (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	0.845	0.000	0.000	0.000	0.845	0.000	0.000	0.023	0.000	0.000	0.077
Feb	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.036
Mar	0.042	0.000	0.000	0.000	0.042	0.000	0.000	0.029	0.000	0.000	0.081
Apr	1.760	0.000	0.000	0.000	1.760	0.000	0.000	0.509	0.000	0.000	0.012
May	1.026	0.000	0.000	0.000	1.026	0.000	0.000	0.094	0.000	0.000	0.030
Jun	0.354	0.000	0.000	0.000	0.354	0.000	0.000	0.087	0.000	0.000	0.050
Sub-total	4.027	0.000	0.000	0.000	4.027	0.000	0.000	0.774	0.000	0.000	0.286
Jul	1.122	0.000	0.000	0.000	1.122	0.000	0.000	0.060	0.000	0.000	0.095
Aug	1.290	0.000	0.000	0.000	1.290	0.000	0.000	0.075	0.000	0.000	0.058
Sep											
Oct											
Nov											
Dec											
Total	6.439	0.000	0.000	0.000	6.439	0.000	0.000	0.909	0.000	0.000	0.439

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.

Contract 2

Monthly Summary Waste Flow Table for 2019 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	0.358	0.000	0.358	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.357
Feb	0.022	0.000	0.000	0.000	0.022	0.000	0.000	0.000	0.000	0.000	0.728
Mar	0.106	0.000	0.000	0.000	0.106	0.000	0.000	0.000	0.000	0.000	0.229
Apr	3.013	0.000	0.000	0.000	3.013	0.000	0.000	0.000	0.000	0.000	0.013
May	3.621	0.000	0.000	0.000	3.621	0.000	0.000	0.000	0.000	0.000	0.022
June	1.127	0.000	0.000	0.000	1.127	0.000	0.000	0.000	0.000	0.000	0.019
SUB-TOTAL	8.247	0.000	0.358	0.000	7.889	0.000	0.000	0.000	0.000	0.000	1.368
Jul	2.468	0.000	0.000	0.000	1.879	0.589	0.000	0.000	0.000	0.000	0.031
Aug	4.401	0.000	0.000	0.000	4.262	0.140	0.000	0.000	0.000	0.000	0.004
Sep											
Oct											
Nov											
Dec											
TOTAL	15.116	0.000	0.358	0.000	14.030	0.728	0.000	0.000	0.000	0.000	1.403

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

Assume the loaded volume of a dump truck for internal inert waste transfer is 17.9 m^3

Appendix H

Complaint Summary

Complaint Summary for Cross Bay Link, Tseung Kwan O

Log ref.	Date of Complaint Received	Complaint Location	Complaint nature	Complaint details	Follow up action
1	14-Mar-19	Junk Bay	Marine Water	The complainant said muddy water and mud was discharged from work barges under CBL between 7:00 - 10pm. The complainant said he observed the act during his recent fishing activities in the nearby area.	According to ET's investigation, Contractor of Contract 1 (CRBC) had provided proper water mitigation measures to minimize the water impact of marine piling work to the nearby waterbody. No abnormal and turbid water discharged from site was observed. Nevertheless, the Contractor of Contract 1 was reminded to strictly implement all the water mitigation measures as stated in EP and EM&A Manual and ET will keep closely inspect the site condition in subsequent weekly site inspection. .

Appendix I

Implementation Schedule for Environmental Mitigation Measures

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
Dust Impact (Contraction Phase)						
S5.5.5.1	Regular watering under good site practice shall be adopted. In accordance with the "Control of Open Fugitive Dust Sources" (USEPA AP-42), watering once per hour on exposed worksites and haul road is recommended to achieve dust removal efficiency of 91.7%.	Good construction site practices to control the dust impact on the nearby sensitive receivers to within the relevant criteria	All construction sites	Contractor	Construction stage	• APCO (Cap. 311); and • Air Pollution Control (Construction Dust) Regulation
S5.5.5.3	The following dust suppression measures shall also be incorporated by the Contractor to control the dust nuisance throughout the construction phase: • Any excavated or stockpiled dusty material shall be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed shall be wetted with water and cleared from the surface of roads; • A stockpile of dusty material shall not extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site shall be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet shall be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point shall be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high shall be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading to the construction site that is within 30m of a vehicle entrance or exit shall be kept clear	Good construction site practices to control the dust impact on the nearby sensitive receivers to within the relevant criteria	All construction sites	Contractor	Construction stage	• APCO (Cap. 311); and • Air Pollution Control (Construction Dust) Regulation

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
	of dusty materials; • Surfaces where any pneumatic or power driven drilling, cutting, polishing or other mechanical breaking operation takes place shall be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities shall be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting shall be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport shall be totally enclosed by impervious sheeting; • Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S5.5.5.4	For the barging facilities at the site compound, the following good site practice is required: • All road surfaces within the barging facilities shall be paved. • Vehicles should pass through designated wheel wash facilities. • Continuous water spray shall be installed at the loading point.	Good construction site practices to control the dust impact on the nearby sensitive receivers to within the relevant criteria	Site compound	Contractor	Construction stage	• APCO (Cap. 311); and • Air Pollution Control (Construction Dust) Regulation
S5.5.5.5	An audit and monitoring programme during the construction phase should be implemented by the Contractor to ensure that the construction dust impacts are controlled to within the HKAQO. Detailed requirements for the audit and monitoring programmes are given separately in the EM&A manual.	Monitor the 1-Hour and 24-Hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period	Selected representative dust monitoring station (**Drawing no. 209506/EMA/ AIR/001**)	Contractor	Construction stage	• APCO (Cap. 311); and • Air Pollution Control (Construction Dust) Regulation
Noise Impact (Contraction Phase)						

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
S6.6.4.3	Good site practice and noise management techniques: • Only well-maintained plant shall be operated on-site and the plant shall be serviced regularly during the construction programme; • Machines and plant (such as trucks, cranes) that are in intermittent use shall be shut down between work periods or throttled down to a minimum; • Plant known to emit noise strongly in one direction, where possible, shall be orientated so that the noise is directed away from nearby NSRs; • Silencers or mufflers on construction equipment shall be properly fitted and maintained during the construction works; • Mobile plant shall be sited as far away from NSRs as possible and practicable; and • Material stockpiles, site office and other structures shall be effectively utilised, where practicable, to screen noise from on-site construction activities.	To minimize construction noise impact arising from the Project on the affected NSRs	All construction sites	Contractor	Construction stage	• Annex 5, TM-EIAO
S6.6.4.5-6	Use of quiet powered mechanical equipment and working methods	Reduce noise levels of plant items	All construction sites	Contractor	Construction stage	• Annex 5, TM-EIAO
S6.6.4.7	Install site hoarding at the site boundaries between noisy construction activities and NSRs	Reduce the construction noise levels at low-level zone of NSRs through partial screening	All construction sites	Contractor	Construction stage	• Annex 5, TM-EIAO
S6.6.4.8-11	Use of temporary or movable noise barriers and full enclosure for relatively fixed plant source	Screen the noisy plant items to be used at all construction sites	For plant items listed in Table 6.7 and Appendix 6.1 of the EIA report at all construction sites	Contractor	Construction stage	• Annex 5, TM-EIAO
	Implement a noise monitoring programme under the EM&A manual	Monitor the construction noise levels at the selected representative locations	Selected representative noise monitoring stations (**Drawing no. 209506/EMA/NS/001** & **209506/EMA/NS/002**)	Contractor	Construction stage	• Annex 5, TM-EIAO
S6.7.3.1	Partial enclosures along Road D9 and application of low noise surfacing material along CBL and Road D9	To minimize road traffic noise impact arising from the CBL and Road D9 on the affected NSRs	CBL and Road D9 (**Drawing no. 209506/EMA/NS/003**)	CEDD/ Contractor	During operational stage	• Annex 5, TM-EIAO

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
Water Quality Impact (Contraction Phase)						
S8.6.4.3	Marine Piling and Pile Excavation Works Marine piling and pile excavation works shall be undertaken in such a manner as to minimize re-suspension of sediments. Standard good practice measures shall be implemented, including the following requirements: • All marine piling and pile excavation works shall be conducted within a floating single silt curtain. • Mechanical closed grabs (with a size of5m3) shall be designed and maintained to avoid spillage and should seal tightly while being lifted. • Barges shall have tight fitting seals to their bottom openings to prevent leakage of material. • Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes. • Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water. Barges shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation. • 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. • All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash. • The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.	To control potential impacts from marine piling and pile excavation works	During marine piling and pile excavation works	Contractor	Construction stage	• TM-EIAO; and • WPCO
S8.6.4.4	Construction Site Runoff In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, shall include the following: • The design of efficient silt removal facilities shall be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The	Control potential water quality impacts from construction site run-off	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
	detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction; • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m3 shall be covered with tarpaulin or similar fabric during rainstorms. Measures shall be taken to prevent the washing away of construction materials, soil, silt or debris into any marine water bodies; • All vehicles and plant shall be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities shall be provided at every construction site exit where practicable. Wash-water shall have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road shall be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Construction solid waste, debris and rubbish on site shall be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas shall be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby; and • Regular environmental audit on the construction site shall be carried out in order to prevent any malpractices. Notices shall be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds.					
S8.6.4.6	Sewage from workforce • Portable chemical toilets and sewage holding tanks shall be provided for handling the construction sewage generated by the workforce; • A licensed contractor shall be employed to provide	Control potential water quality impacts from sewage	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO

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	appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.					
	Monitoring Implement a marine water quality monitoring programme under the EM&A on level of suspended solids (SS) / turbidity and dissolved oxygen (DO) shall be carried out.	Control potential water quality impacts from marine piling and pile excavation works	Selected monitoring stations (**Drawing no. 209506/EMA/WQ/001**)	Contractor	Construction station	• TM-EIAO; and • WPCO
S8.7.3.2	**Operational phase – Runoff from road surface** Proper drainage systems with silt traps and oil interceptors shall be installed, maintained and cleaned at regular intervals.	Control potential water quality impacts from road surface runoff	CBL and Road D9	Contractor	Construction and operational stage	• TM-EIAO; and • WPCO
Waste Management (Contraction Phase)						
S9.5.2	**Good Site Practices** Recommendations for good site practices: • Nomination of an approved personnel to be responsible for the implementation of good site practices, arrangements for collection and effective deposal to an appropriate facility of all wastes generated at the site; • Training of site personnel in proper waste management and chemical handling procedures; • Provision of sufficient waste disposal points and regular collection for disposal; • Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • Implementation of a recording system for the amount of wastes generated/recycled and disposal sites.	Good site practices which ensure waste generated during construction phase is properly managed	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005

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S9.5.4	**Waste Reduction Measures** Recommendations for achieving waste reduction include: • On-site reuse of any material excavated as far as practicable; • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of material and their proper disposal; • Collection of aluminum cans and waste paper by individual collectors during construction should be encouraged. Separately labelled recycling bins should also be provided to segregate these wastes from other general refuse by the workforce; • Recycling of any unused chemicals and those with remaining functional capacity as far as possible; • Prevention of the potential damage or contamination to the construction materials though proper storage and good site practices; • Planning and stocking of construction materials should be made carefully to minimize amount of waste generated avoid unnecessary generation of waste; and • Training on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling should be provided to workers.	To reduce amount of waste generated during construction phase	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005
S9.5.5-6	**Storage, Collection and Transportation of Waste** Recommendations for proper storage include: • Waste such as soil should be handled and stored well to ensure secure containment; • Stockpiling area should be provided with covers and water spraying system to prevent materials from being washed away and to reduce wind-blown litter; and • Different locations should be designated to stockpile each material to enhance reuse. With respect to the collection and transportation of waste from the construction works, the following is recommended: • Remove waste in a timely manner; • Employ trucks with cover or enclosed containers for waste transportations; • Obtain relevant waste disposal permits from the appropriate	To reduce the environmental implications of improper storage	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005

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	authorities; and • Disposal of waste should be done at licensed waste disposal facilities.					
S9.5.8-11	**C&D Materials** The following mitigation measures shall be implemented in handling the waste: • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; • Disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation; • Standard formwork or pre-fabrication order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage; and • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005 • ETWB TCW No. 06/2010
S9.5.13	**Excavated Marine Sediments** During transportation and disposal of the excavated marine sediments, the following measures shall be taken to minimize potential environmental impacts: • Bottom opening of barges should be fitted with tight fitting	To minimize potential impacts on water quality	All construction sites where applicable	Contractor	Construction stage	• ETWBTC (Works) No. 34/2002

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	seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved; • Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation; • Transport barges or vessels should be equipped with automatic self-monitoring devices as specified by the DEP; and • Barges should not be filled to a level that would cause the overflow of materials or sediment-laden water during loading or transportation.					
S9.5.14-17	For those processes which generate chemical waste, the Contractor shall identify any alternatives that generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste. If chemical waste is produced at the construction site, the Contractor is required to register with EPD as chemical waste producers. Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows. Containers used for storage of chemical wastes shall: • Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; • Have a capacity of less than 450 L unless the specification have been approved by EPD; and • Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. The storage area for chemical wastes shall: • Be clearly labelled and used solely for the storage of chemical wastes; • Be enclosed on at least 3 sides; • Have an impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest;	To ensure proper management of chemical waste	All construction sites	Contractor	Construction stage	• Waste Disposal (Chemical Waste) (General) Regulation; • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste

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	• Have adequate ventilation; • Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste, if necessary); and • Be arranged so that incompatible materials are adequately separated. Disposal of chemical waste shall: • Be via a licensed waste collector; and • Be to a facility licensed to receive chemical waste, such as the CWTC which also offers a chemical waste collection service and can supply the necessary storage containers; or • Be to a re-user of the waste, under approval from EPD.					
S9.5.18	**Sewage** An adequate number of portable toilets shall be provided for the on-site construction workers. Any waste shall be transferred to a sewage treatment works by a licensed collector.	Proper handling of sewage from worker to avoid odour, pest and litter impacts	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54)
S9.5.19	**General Refuse** General refuse generated on-site shall be stored in enclosed bins or compaction units separately from construction and chemical wastes. Recycling bins shall also be provided to encourage recycling. A reputable waste collector shall be employed by the Contractor to remove general refuse from the site on a daily basis separately from the construction and chemical wastes. Burning of refuse on construction sites is prohibited by law.	Minimize production of general refuse and avoid odour, pest and litter impacts	All construction sites	Contractor	Construction stage	• Waste Disposal Ordinance (Cap. 54)
S10.7.2.4	Good Site Practices – The integrity and effectiveness of all silt curtains shall be regularly inspected. Effluent monitoring should be incorporated to make sure that the discharged effluent from construction sites meets the relevant effluent discharge guidelines.	To minimize potential impacts on water quality and protect marine communities within Junk Bay	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO
S10.7.2.5	Site runoff control – For works on land, standard site runoff control measures will be established and strictly enforced to ensure that discharge of contaminated or silt-laden runoff into marine waters is minimized.	To minimize potential impacts on water quality and protect marine communities within Junk Bay	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO
S10.9.1.1	The marine water quality monitoring programme recommended in Chapter 8 of this EIA report and this EMIS would also serve to protect the marine communities inside Junk Bay.	To minimize potential impacts on water quality and protect marine	Selected monitoring stations (**Drawing no. 209506/EMA/WQ/001**)	Contractor	Construction stage	• TM-EIAO; and • WPCO

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		communities within Junk Bay				
S11.6.2.2	Good Site Practices: – The integrity and effectiveness of all silt curtains should be regularly inspected. Effluent monitoring shall be incorporated to make sure that the discharged effluent from construction sites meets the relevant effluent discharge guidelines.	To minimize potential impacts on water quality and protect fishery resources	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO
S11.6.2.3	Site runoff control - For works on land, standard site runoff control measures will be established and strictly enforced to ensure that discharge of contaminated or silt-laden runoff is minimized.	To minimize potential impacts on water quality and protect fishery resources	All construction sites	Contractor	Construction stage	• TM-EIAO; and • WPCO
S11.8.1.1	The marine water quality monitoring programme recommended in Chapter 8 of this EIA report and this EMIS would also serve to protect the fishery resources.	To minimize potential impacts on water quality and protect fishery resources	Selected monitoring stations (**Drawing no. 209506/EMA/WQ/001**)	Contractor	Construction stage	• TM-EIAO; and • WPCO
Landscape and Visual						
S13.8.1.2	The following mitigation measures should be implemented in the construction stage • CM1 – The construction area and contractor's temporary works areas should be minimized to avoid impacts on adjacent landscape. • CM2 – Reduction of construction period to practical minimum. • CM3 – Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where the soil material meets acceptable criteria and where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate. • CM4 – Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, 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).	Minimize effects of landscape and visual impacts	Work site/during construction	Funded and implemented by CEDD	Construction stage	

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	• CM5 – Trees unavoidably affected by the works shall be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. • CM6 – Advance screen planting to proposed roads and associated structures. • CM7 – hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone). • CM8 – Screening of construction works by hoardings/noise barriers around works area in visually unobtrusive colours, to screen Works. • CM9 – Control night-time lighting and glare by hooding all lights. • CM10 – Ensure no run-off into water body adjacent to the Project Area. • CM11 – Avoidance of excessive height and bulk of buildings and structures					
S13.8.1.2	OM1 – Compensatory tree planting for all felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006.	Minimize effects of landscape and visual impacts	Within the site boundary of the proposed works	Funded and implemented by CEDD. Maintained by CEDD and LCSD.	Design, construction and operational stages	
S13.8.1.2	The following mitigation measures should be implemented in the operational stage: • OM2 – A continuous belt of screen planting along the roads. Planting of the belt of trees shall be carried out as advance works ahead of other site formation and building works. • OM3 – Maximise soft landscape of the site, where space permits, roadside berms /slope treatment works should be created. • OM4 – During detailed design, refine structure layout to create a planting strips along the roads to enhance greenery. • OM5 – Use appropriate (visually unobtrusive and	Minimize effects of landscape and visual impacts	CBL and Road D9/during construction and operation	Funded and implemented by CEDD. Maintained by CEDD and LCSD.	Design, construction and operational stages	

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	non-reflective) building materials and colours, and aesthetic design in built structures. • OM6 – Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the local context, and minimizes potential negative landscape and visual impacts. Lighting units should be directional and minimize unnecessary light spill. • OM7 – Avoidance of excessive height and bulk of buildings and structures					
Landfill Gas						
S14.7.5	Precautionary measures The following guidance has been extracted from the EPD's Landfill Gas Hazard Assessment Guidance Note Guidance to ensure a robust and comprehensive set of measures to protect workers are provided. • During all works, safety procedures shall be implemented to minimize the risks of fires and explosions, asphyxiation of workers (especially in confined space) and toxicity effects resulting from contact with contaminated soils and groundwater. • Safety officers who are specifically trained with regard to LFG and leachate related hazards and the appropriate actions to take in adverse circumstances shall be present on all worksites throughout the works. • All personnel who work on site and all visitors to the site shall be made aware of the possibility of ignition of gas in the vicinity of the works, the possible presence of contaminated water and the need to avoid physical contact with it. • Those staff who work in, or have responsibility for "at risk" areas, including all excavation workers, supervisors and engineers working within the consultation zone, shall receive appropriate training on working in areas susceptible to LFG hazards. • Enhanced personal hygiene practices including washing thoroughly after working and eating only in "clean" areas shall be adopted where contact may have been made with any groundwater which is thought to be contaminated with	Health and safety of the workers	Construction sites within 250m Consultation Zone (**Drawing no. 209506/EMA/LFG/001**)	Contractor	Construction stage	• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97)

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	leachate. • Ground level construction plant shall be fitted with vertical exhausts at least 0.6m above ground level and with spark arrestors. • During piping assembly or ducting construction, all valves/seals shall be closed immediately after installation. As construction progresses, all valves/seals should be closed as installed to prevent the migration of gases through the pipeline/conduit. All piping /ducting shall be capped at the end of each working day. • Mobile offices, equipment stores, mess rooms etc. shall be located on an area which has been proven to be gas free (by survey with portable gas detectors) and ongoing monitoring shall be carried out to ensure that these areas remain gas free. Alternatively, such buildings shall be raised clear of the ground. If buildings are raised clear of the ground, the minimum, clear separation distance (as measured from the highest point on the ground surface to the underside of the lowest floor joist) shall be 500mm. However, in this case, it is highly recommended that all the site offices, equipment stores and mess rooms should be located outside the 250m Consultation Zone. • Smoking and naked flames shall be prohibited within confined spaces. "No Smoking" and "No Naked Flame" notices in Chinese and English shall be posted prominently around the construction site. Safety notices shall be posted warning of the potential hazards. • Welding, flame-cutting or other hot works may only be carried out in confined spaces when controlled by a "permit to work" procedure, properly authorized by the Safety Office. The permit to work procedure shall set down clearly the requirements for continuous monitoring of methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure shall also require the presence of an appropriately qualified person who shall be responsible for reviewing the gas measurements as they are made, and who shall have executive responsibility for suspending the work in the event of					

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	unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise shall be permitted to carry out hot works in confined areas. • During the construction works, adequate fire extinguishers and breathing apparatus sets shall be made available on site and appropriate training given in their use.					
S14.7.6	**Landfill gas monitoring** The following monitoring shall be undertaken when construction works are carried out in confined space within the 250m Consultation Zone: • The works area shall be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring requirements and procedures specified in Paragraphs 8.23 to 8.28 of EPD's Guidance Note shall be followed. The monitoring frequency and areas to be monitored shall be set down prior to commencement of the works. Depending on the results of the measurements, actions required will vary. As a minimum these shall encompass the actions specified in Table 14.6 of the EIA report. • When portable monitoring equipment is used, the frequency and areas to be monitored should be set down prior to commencement of the works either by the Safety Officer or by an appropriately qualified person. • All measurements shall be made with the monitoring tube located not more than 10mm from the surface. • A standard form, detailing the location, time of monitoring and equipment used together with the gas concentrations measured, shall be used when undertaking manual monitoring to ensure that all relevant data are recorded. • If methane (flammable gas) or carbon dioxide concentrations are in excess of the trigger levels or that of oxygen is below the level specified in the Emergency Management in the following section, then evacuation shall be initiated.	Health and safety of the workers	Confined space of construction sites within 250m Consultation Zone	Contractor	Construction stage	• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97)
S14.7.8-9	**Emergency management** In the event of the trigger levels specified in Table 14.6 of the EIA report being exceeded, a person, such as the Safety	Health and safety of the workers	Confined space of construction sites within 250m Consultation Zone	Contractor	Construction stage	• Landfill Gas Hazard Assessment

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	Officer, shall be nominated, with deputies, to be responsible for dealing with any emergency which may occur due to LFG. In an emergency situation the nominated person, or his deputies, shall have the necessary authority and shall ensure that the confined space is evacuated and the necessary works implemented for reducing the concentrations of gas.					Guidance Note (EPD/TR8/97)
S14.7.16	**Protection measures – Operational phase** • An assumed presence of landfill gas shall be adopted at all times by maintenance workers; • all maintenance workers inspecting any manhole shall be fully trained in the issue of LFG hazard; • any manhole which is large enough to permit to access to personnel shall be subject to entry safety procedure; • Code of Practice on Safety and Health at Work in Confined Spaces shall be followed to ensures compliance with the Factories and Industrial Undertakings (Confined Spaces) Regulations of the Factories and Industrial Undertakings Ordinance; • a strictly regulated "work permit procedure" shall be implemented and the relevant safety procedures must be rigidly followed; and • Adequate communication with maintenance staff shall be maintained with respect to LFG.	Health and safety of the workers	Utility maintenance areas within 250m Consultation Zone/during operational period	Utility companies	Operational stage	• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97); and • Code of Practice on Safety and Health at Work in Confined Space
S14.7.17	**General recommended precautionary & protection measures – Operational phase** LGF surveillance exercise shall be undertaken by the utility companies at the utility manholes/inspection chambers. The surveillance exercise shall be undertaken for the duration of the site occupancy, or until such time that EPD agree that surveillance is no longer required and this shall be based on all the available monitoring data for methane, carbon dioxide and oxygen.	Health and safety of the workers	Utility maintenance areas within 250m Consultation Zone/during operational period	Utility companies	Operational stage	• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97); and • Code of Practice on Safety and Health at Work in Confined Space