Appendix L

Cumulative Statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions

 Table L1
 Cumulative Statistics on Exceedances

Parameters	Level of Exceedance	Total No. recorded in this reporting month	Total No. recorded since Contract commencement
1-hr TSP	Action	0	93
	Limit	0	7
24-hr TSP	Action	0	10
	Limit	0	4
Water Quality	Action	55	128
•	Limit	4	19
Impact Dolphin	Action	0	11
Monitoring	Limit	1	16

Table L2 Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period		Cumulative Statistics	
_	Complaints	Notifications of	Successful
		Summons	Prosecutions
This Reporting Month (August 2019)	0	0	0
Total No. received since Contract commencement	17	1	0

Environmental Resources Management

To Ramboll Hong Kong Limited (ENPO)

2507, 25/F One Harbourfront,

From ERM- Hong Kong, Limited

18 Tak Fung Street, Hung Hom, Hong Kong Telephone: (852) 2271 3113 Facsimile: (852) 2723 5660 E-mail: jasmine.ng@erm.com

Ref/Project number Contract No. HY/2012/08 Tuen Mun-Chek Lap

Kok Link-Northern Connection Sub-sea Tunnel

Section

Subject Notification of Exceedance for Water Quality

Impact Monitoring

Date 14 August 2019



Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330_7 August 2019_ Surface & Middle DO_E_Station IS(Mf)9

0212330_7 August 2019_ Surface & Middle DO_E_Station IS17

0212330_7 August 2019_ Bottom DO_E_Station IS17

0212330_7 August 2019_ Bottom DO_F_Station SR4a

0212330_7 August 2019_ Surface & Middle DO_F_Station IS(Mf)11

A total of five Action Level exceedances were recorded on 7 August 2019.

Regards,

Dr Jasmine Ng

Environmental Team Leader

CONFIDENTIALITY NOTICE



CONTRACT NO. HY/2012/08 TUEN MUN - CHEK LAP KOK LINK NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Log No.		Action Level Exceedance	
	0212330_7 Augu	st 2019_ Surface & Middle DO_E_9	Station IS(Mf)9
	0212330_7 Aug	gust 2019_ Surface & Middle DO_E	_Station IS17
	0212330_	7 August 2019_ Bottom DO_E_Stat	ion IS17
	0212330_1	7 August 2019_ Bottom DO_F_Stati	on SR4a
	0212330_7 Augus	st 2019_ Surface & Middle DO_F_S	station IS(Mf)11
		[Total No. of Exceedances = 5]	
Date		7 August 2019 (Measured)	
	8 Aug	ust 2019 (<i>In situ</i> results received by 1	ERM)
	16 Augus	st 2019 (Laboratory results received l	by ERM)
Monitoring	CS(Mf)5, SR4a, SR4(N2)	, IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3	(N), SR7, IS17, IS(Mf)11
Station			
Parameter(s)			
with		Dissolved Oxygen (mg/L)	
Exceedance(s)			
Action Levels	DO	Surface and Middle	Bottom
		5.0 mg/L	$4.7\mathrm{mg/L}$
Limit Levels	DO	Surface and Middle	Bottom
		4.2 mg/L	$3.6\mathrm{mg/L}$
Measured	Action Level Exceedance for DO (4.6 m	g/L) is observed at IS(Mf)9 at Surfa	ce & Middle Level during mid-ebb
Levels	tide.		
	Action Level Exceedance for DO (4.7 m	g/L) is observed at IS17 at Surface δ	& Middle Level during mid-ebb tide.
	Action Level Exceedance for DO (4.5 m	g/L) is observed at IS17 at Bottom I	evel during mid-ebb tide.
	Action Level Exceedance for DO (4.5 m	g/L) is observed at SR4a at Bottom	Level during mid-flood tide.
	Action Level Exceedance for DO (4.8 m	g/L) is observed at IS(Mf)11 at Surf	ace & Middle Level during mid-flood
	tide.		
Works	According to the information provided	by the Contractor, no marine works	s was carried out on 7 August 2019.
Undertaken (at	-		-
the time of			
monitoring			
event)			

Possible Reason	The exceedances are unlikely to be due to the Contract, in view of the following:
for Action or	
	No marine works was carried out on 7 August 2019.
Limit Level	• All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and
Exceedance(s)	Limit Levels during both mid-ebb and mid-flood tides on the same day.
	• IS(Mf)9, SR4a and IS(Mf)11 are far away (>2 km) from the Seawall Modification Works Area (Figure 1),
	thus the observed exceedance should not be affected by the marine works under this Contract. Moreover,
	IS(Mf)16 is closer to the works area and no exceedance was recorded. Therefore, the exceedances are unlikely to be related to this Contract.
	•
	• Surface & Middle-depth DO levels at IS(Mf)11 was similar to the corresponding control stations, CS(Mf)5,
	during mid-flood tide, in which the recorded Surface & Middle-depth DO levels at the corresponding
	control station were below Action Level.
	Bottom DO levels at SR4a was similar to the corresponding control stations, CS(Mf)5, during mid-flood
	tide, in which the recorded Bottom DO levels at the corresponding control station were below Action
	Level.
	 As reported by the marine mammal observer, no discharge of organic matters into waters from landside
	works area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest station
	to the Seawall Modification Works Area during both mid-ebb and mid-flood tide. Therefore, exceedances
	recorded at IS(Mf)9 and IS17 during mid-ebb tide and SR4a and IS(Mf)11 during mid-flood tide are
	unlikely to be caused by the marine works of this Contract.
Actions Taken/	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.
To Be Taken	•
Remarks	The monitoring results on 7 August 2019 and locations of water quality monitoring stations are attached.

TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07	Mid-Ebb	CS(Mf)5 CS(Mf)5 CS(Mf)5 CS(Mf)5 CS(Mf)5 CS(Mf)5 CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N)	18:10 18:10 18:10 18:10 18:10 18:10 17:25 17:25 17:25 17:25	Surface Surface Middle Middle Bottom Bottom Surface Surface Middle	1 1 2 2 3 3 1 1	1 2 1 2 1 2	28.7 28.7 27.9 27.9 27.7 27.7	7.8 7.9 7.8 7.9	21.8 21.4 24.2	5.7		3.8		<i>C</i> 1	
TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07	Mid-Ebb	CS(Mf)5 CS(Mf)5 CS(Mf)5 CS(Mf)5 CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N)	18:10 18:10 18:10 18:10 17:25 17:25 17:25	Middle Middle Bottom Bottom Surface Surface Middle	2 3	1 2 1	27.9 27.9 27.7	7.8						6.1	
TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07	Mid-Ebb	CS(Mf)5 CS(Mf)5 CS(Mf)5 CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N)	18:10 18:10 18:10 17:25 17:25 17:25 17:25	Middle Bottom Bottom Surface Surface Middle	2 3	1 2 1 2	27.9 27.7		24.2	5.7	5.3	3.8		5.5	
TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07	Mid-Ebb	CS(Mf)5 CS(Mf)5 CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N)	18:10 18:10 17:25 17:25 17:25 17:25	Bottom Bottom Surface Surface Middle	3	2 1 2	27.7	7.9	24.2	4.9	3.3	3.5	3.4	5.2	5.7
TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07	Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb	CS(Mf)5 CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N)	18:10 17:25 17:25 17:25 17:25	Bottom Surface Surface Middle	3 3 1 1	1 2 1			23.7	4.9		3.5	J. 4	5.9	5.1
TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07	Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb	CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N)	17:25 17:25 17:25 17:25	Surface Surface Middle	3 1 1	2	27.7	7.8	25.7	4.8	4.9	2.8		5.6	
TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07	Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb	CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N)	17:25 17:25 17:25	Surface Middle	1 1	1		7.9	25.1	4.9	1.2	2.7		6.0	
TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07	Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb	CS(Mf)3(N) CS(Mf)3(N) CS(Mf)3(N)	17:25 17:25	Middle	1	1	28.9	7.7	18.3	5.5		3.9		7.8	
TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07 2019/08/07 2019/08/07	Mid-Ebb Mid-Ebb Mid-Ebb Mid-Ebb	CS(Mf)3(N) CS(Mf)3(N)	17:25			2	28.9	7.8	18.0	5.5	5.2	3.8		8.1	
TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07 2019/08/07	Mid-Ebb Mid-Ebb Mid-Ebb	CS(Mf)3(N)			2	1	28.0	7.8	21.7	4.8	4	6.2	7.1	8.7	7.7
TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07 2019/08/07	Mid-Ebb Mid-Ebb		17.05	Middle	2	2	28.0	7.8	21.4	4.9		6.2	,,,	8.9	
TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07 2019/08/07	Mid-Ebb	ICS(Mf)3(N)	17:25	Bottom	3	1	28.0	7.8	23.3	5.1	5.2	11.3		6.5	
TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08 HY/2012/08	2019/08/07		` / ` /	17:25	Bottom	3	2	28.0	7.9	22.9	5.2		11.3		6.2	
TMCLKL TMCLKL TMCLKL TMCLKL TMCLKL	HY/2012/08 HY/2012/08 HY/2012/08			IS(Mf)16	16:47	Surface	1	1	28.4	7.8	21.6	5.5		5.5		9.8	
TMCLKL TMCLKL TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/07/	Mid-Ebb	IS(Mf)16	16:47	Surface	1	2	28.4	7.9	21.6	5.5	5.5	5.5		10.6	
TMCLKL TMCLKL TMCLKL	HY/2012/08	2010/00/07	Mid-Ebb	IS(Mf)16	16:47	Middle	2	1		+ +			-		6.5		9.7
TMCLKL TMCLKL		2019/08/07	Mid-Ebb	IS(Mf)16	16:47	Middle	2	2	20.1	7.0	22.2	£ 1	 	7 /		0.7	
TMCLKL	IHY//III//IIV	2019/08/07	Mid-Ebb	IS(Mf)16	16:47	Bottom	3	2	28.1	7.8	22.3	5.1	5.1	7.4		9.7	
		2019/08/07	Mid-Ebb	IS(Mf)16	16:47	Bottom	1	1	28.1	7.8	21.9	5.1	 	7.5		8.7	
<u> I WICL</u> KL	HY/2012/08	2019/08/07	Mid-Ebb	SR4a	16:39	Surface	1	1	28.5	7.8	20.8	5.8	 	4.5		11.3	
TMCLKL	HY/2012/08 HY/2012/08	2019/08/07 2019/08/07	Mid-Ebb Mid-Ebb	SR4a SR4a	16:39 16:39	Surface Middle	2	<u> </u>	28.5	7.9	20.4	5.9	5.9	4.6		10.6	
	HY/2012/08	2019/08/07	Mid-Ebb	SR4a SR4a	16:39	Middle	2	2					-		4.7		10.7
TMCLKL TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4a SR4a	16:39		2	<u> </u>	28.1	7.8	21.6	4.9	1	1.0	-	10.2	
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4a SR4a	16:39	Bottom Bottom	2	2	28.2	7.8	21.2	5.2	5.1	4.8 4.9	1	10.2	
TMCLKL TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Surface	1	1	28.5	7.8	20.9	5.6		6.5		9.8	
		2019/08/07	Mid-Ebb	SR4(N2)	16:35	Surface	1	2	28.5	7.8	20.6	5.7	1 1	6.4	1	10.7	
	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Middle	2	1	20.3	7.0	20.0	J.1	5.7	0.4	1	10.7	
	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Middle	2	2					1 1		8.1		9.1
	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Bottom	3	1	28.3	7.8	21.5	5.0		9.8		8.5	
	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Bottom	3	2	28.3	7.8	21.1	5.0	5.0	9.7	1	7.5	
	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Surface	1	1	28.4	7.8	21.4	5.5		6.5		7.1	
	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Surface	1	2	28.4	7.9	21.0	5.5	1	6.5	1	6.1	
	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Middle	2	1	2011		21.0	0.0	5.5	0.0	7.0	371	7.0
	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Middle	2	2					1		7.2		7.2
	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Bottom	3	1	28.1	7.8	22.2	5.0	5.0	7.9	1	7.4	
	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Bottom	3	2	28.1	7.9	21.8	5.0	5.0	7.9		8.1	
	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Surface	1	1	27.6	7.8	25.1	4.5		3.3		7.6	
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Surface	1	2	27.6	7.8	25.1	4.5	4.5	3.3		6.7	
	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Middle	2	1					4.5		12		6.0
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Middle	2	2							4.3		6.9
	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Bottom	3	1	28.0	7.8	21.0	7.0	7.0	5.3		6.7	
	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Bottom	3	2	28.0	7.8	21.0	7.0	7.0	5.3		6.6	
	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Surface	1	1	29.1	7.8	18.3	6.0		4.1		5.5	
	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Surface	1	2	29.1	7.8	18.0	5.8	5.5	4.1		5.9	
	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Middle	2	1	28.4	7.7	20.6	5.0]	5.1	4.9	14.4	9.4
	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Middle	2	2	28.4	7.8	20.3	5.1		5.1		12.6	7.1
	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Bottom	3	1	27.9	7.8	23.4	4.7	4.8	5.5		8.3	
	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Bottom	3	2	27.9	7.8	23.0	4.8		5.5		9.6	
	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Surface	1	1	28.7	7.8	20.5	5.7	↓	4.1		5.5	
	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Surface	1	2	28.7	7.9	20.1	5.7	5.7	4.2		4.8	
	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Middle	2	1		+					4.4		6.7
	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Middle	2	2	20.5		21.0		 	1.5		0.4	
	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Bottom	3	1	28.5	7.8	21.0	5.4	5.5	4.6		8.4	
	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Bottom	1	2	28.5	7.9	20.8	5.6		4.6		8.2	
	HY/2012/08	2019/08/07	Mid-Ebb	IS17	16:52	Surface	1	2	28.0	7.8	22.8	4.8	-	4.8		9.3	
	HY/2012/08	2019/08/07	Mid-Ebb	IS17	16:52	Surface	2	1	28.0	7.8	22.4	4.9	4.7	4.9		8.3	
	HY/2012/08 HY/2012/08		Mid-Ebb Mid-Ebb	IS17 IS17	16:52 16:52	Middle Middle	2	2	27.6 27.6	7.8 7.8	25.1 24.6	4.5 4.5		8.4 8.4	8.2	9.6 9.2	8.5

Project	Contract	Date (yyyy- mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	рH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS17	16:52	Bottom	3	1	27.6	7.8	25.2	4.5	4.5	11.4		6.9	
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS17	16:52	Bottom	3	2	27.6	7.8	24.7	4.5	4.3	11.4		7.9	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)5	10:29	Surface	1	1	28.0	7.8	21.3	4.6		4.0		6.5	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)5	10:29	Surface	1	2	27.6	7.8	21.3	4.6	4.6	4.0		5.8	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/07 2019/08/07	Mid-flood Mid-flood	CS(Mf)5 CS(Mf)5	10:29 10:29	Middle Middle	2	2	27.6 27.6	7.8 7.8	24.6 24.2	4.6 4.6		4.0	6.2	6.7	6.8
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)5	10:29	Bottom	3	1	27.5	7.8	26.5	4.0		10.6		7.0	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)5	10:29	Bottom	3	2	27.4	7.8	26.0	4.5	4.5	10.6	1	7.9	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)3(N)	11:19	Surface	1	1	28.2	7.7	19.8	5.0		5.1		9.1	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)3(N)	11:19	Surface	1	2	28.4	7.8	19.2	5.3	5.1	5.2		8.1	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)3(N)	11:19	Middle	2	1	28.2	7.7	19.9	5.0	J.1	6.0	5.8	10.5	9.7
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)3(N)	11:19	Middle	2	2	28.2	7.8	19.5	5.0		6.1		9.9	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/07 2019/08/07	Mid-flood Mid-flood	CS(Mf)3(N) CS(Mf)3(N)	11:19 11:19	Bottom Bottom	3	2	28.3 28.2	7.7 7.8	20.1 19.6	5.2 5.1	5.2	6.2 6.2		9.8	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Surface	1	1	28.5	7.8	20.7	5.6		5.9		8.7	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Surface	1	2	28.5	7.9	20.3	5.6		5.9	1	7.7	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Middle	2	1					5.6		8.1		7.9
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Middle	2	2							0.1		1.7
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Bottom	3	1	28.0	7.8	21.6	5.0	5.0	10.4	4	7.1	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Bottom	3	2	28.0	7.8	21.2	5.0		10.3		8.0	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/07 2019/08/07	Mid-flood Mid-flood	SR4a SR4a	12:32 12:32	Surface Surface	1	2	28.6 28.6	7.7 7.8	20.4	5.5 5.6		3.6	1	9.2 8.2	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4a	12:32	Middle	2	1	20.0	7.0	20.1	3.0	5.6	5.0		0.2	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4a	12:32	Middle	2	2					1		5.2		9.2
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4a	12:32	Bottom	3	1	28.0	7.7	21.7	4.5	4.5	6.7		9.6	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4a	12:32	Bottom	3	2	28.0	7.8	21.3	4.5	4.3	6.7		9.9	
	1			SR4(N2)	12:36	Surface	1	1	28.5	7.7	20.4	5.5		3.6	1	10.2	
TMCLKL	HY/2012/08	2019/08/07		SR4(N2)	12:36	Surface	1	2	28.4	7.8	20.0	5.6	5.6	3.6	-	9.2	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/07 2019/08/07	Mid-flood Mid-flood	SR4(N2) SR4(N2)	12:36 12:36	Middle Middle	2 2	2					-		3.9		9.3
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4(N2)	12:36	Bottom	3	<u>Z</u>	28.2	7.7	20.7	5.3		4.1	-	8.4	
TMCLKL	HY/2012/08	2019/08/07		SR4(N2)	12:36	Bottom	3	2	28.3	7.8	20.3	5.4	5.4	4.1	1	9.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS8(N)	12:41	Surface	1	1	28.3	7.7	20.8	5.2		5.6		9.7	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS8(N)	12:41	Surface	1	2	28.3	7.8	20.4	5.2	5.2	5.6		9.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS8(N)	12:41	Middle	2	1					J.2		7.6		9.1
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS8(N)	12:41	Middle	2	2	20.2	7.7	21.0	7.1		0.7	-	0.4	,,,
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/07 2019/08/07	Mid-flood Mid-flood	IS8(N) IS8(N)	12:41 12:41	Bottom Bottom	3	2	28.3 28.2	7.7 7.8	21.0 20.5	5.1 5.2	5.2	9.5 9.5	1	8.4 8.8	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:41	Surface	1	1	28.4	7.7	20.7	5.7		7.0		8.6	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Surface	1	2	28.4	7.8	20.3	5.7		7.0	1	8.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Middle	2	1					5.7		0 1		8.5
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Middle	2	2							8.1		0.3
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Bottom	3	1	28.3	7.7	20.8	5.3	5.4	9.3		8.6	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Bottom	3	2	28.3	7.8	20.5	5.4		9.2		8.6	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/07 2019/08/07	Mid-flood Mid-flood	IS(Mf)11 IS(Mf)11	10:55 10:55	Surface Surface	1	2	28.0 27.9	7.8 7.8	21.9 21.7	4.8 4.8		8.0 8.0	1	8.6 8.6	
TMCLKL	HY/2012/08 HY/2012/08	2019/08/07	Mid-flood	IS(Mf)11	10:55	Middle	2	1	27.9	7.8	22.0	4.8	4.8	7.3	†	9.4	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)11	10:55	Middle	2	2	27.9	7.8	21.7	4.8		7.3	9.1	10.3	13.7
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)11	10:55	Bottom	3	1	27.7	7.8	23.9	4.7	Λ 7	11.9]	24.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)11	10:55	Bottom	3	2	27.7	7.8	23.5	4.7	4.7	11.9		21.0	
TMCLKL	HY/2012/08	2019/08/07		SR7	10:48	Surface	1	1	28.2	7.8	21.2	5.0		4.5	1	4.0	
TMCLKL	HY/2012/08	2019/08/07		SR7	10:48	Surface	1	2	28.1	7.8	20.9	5.0	5.0	4.5	-	5.0	
TMCLKL	HY/2012/08	2019/08/07		SR7	10:48	Middle Middle	2	1							7.3		6.5
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/07 2019/08/07		SR7 SR7	10:48 10:48	Middle Bottom	2 3	<u> </u>	27.9	7.8	22.7	4.8		10.1	1	8.1	
TMCLKL	HY/2012/08	2019/08/07		SR7	10:48	Bottom	3	2	27.9	7.8	22.3	4.8	4.8	10.1	1	9.0	
TMCLKL	HY/2012/08	2019/08/07		IS17	12:01	Surface	1	1	28.3	7.8	21.3	5.3		2.5		7.9	
	HY/2012/08		Mid-flood		12:01	Surface	1	2	28.3	7.8	21.0	5.3	5.1	2.6]	8.8	
	HY/2012/08			IS17	12:01	Middle	2	1	28.0	7.8	22.3	4.9	J.1	3.5	3.2	8.5	8.1
	HY/2012/08	2019/08/07		IS17	12:01	Middle	2	2	28.0	7.8	22.0	4.9		3.5		7.6	0.1
	HY/2012/08	2019/08/07		IS17	12:01	Bottom	3	1	27.9	7.8	22.8	4.9	4.9	3.7	4	8.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS17	12:01	Bottom	3	2	27.9	7.8	22.4	4.9		3.6		7.3	

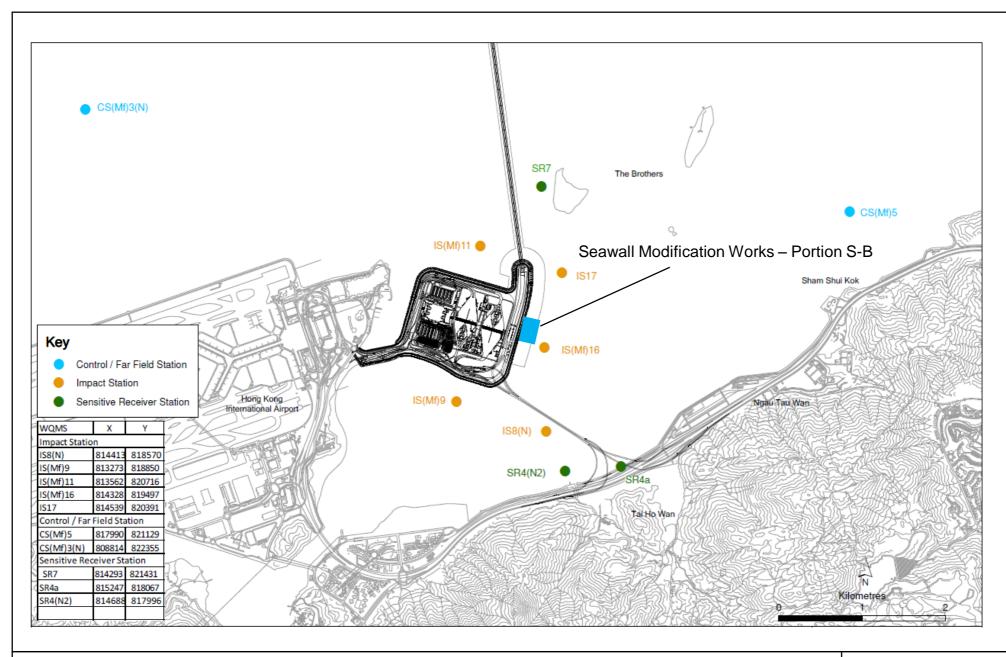


Figure 1





Environmental Resources Management

To Ramboll Hong Kong Limited (ENPO)

2507,

From

ERM- Hong Kong, Limited

25/F One Harbourfront, 18 Tak Fung Street, Hung Hom, Hong Kong Telephone: (852) 2271 3113 Facsimile: (852) 2723 5660 E-mail: jasmine.ng@erm.com

Ref/Project number

Contract No. HY/2012/08 Tuen Mun-Chek Lap

Kok Link-Northern Connection Sub-sea Tunnel

Section



Subject Notification of Exceedance for Water Quality

Impact Monitoring

Date 16 August 2019

ERM

Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330_12 August 2019_ Bottom DO_E_Station IS(Mf)11 0212330_12 August 2019_ Bottom DO_F_Station IS(Mf)11

A total of two Action Level exceedances were recorded on 12 August 2019.

Regards,

Dr Jasmine Ng

Environmental Team Leader

CONFIDENTIALITY NOTICE



CONTRACT NO. HY/2012/08 TUEN MUN - CHEK LAP KOK LINK NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Log No.	0212330_12 Aı	Action Level Exceedance Igust 2019_ Bottom DO_E_Station Igust 2019_ Bottom DO_F_Station [Total No. of Exceedances = 2]	
Date	21 August 2	12 August 2019 (Measured) st 2019 (<i>In situ</i> results received by E 2019 (Laboratory results received by	v ERM)
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS	58(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N	N), SR7, IS17, IS(Mf)11
Parameter(s) with Exceedance(s)		Dissolved Oxygen (mg/L)	
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
Measured Levels	Action Level Exceedance for DO (3.9 r Action Level Exceedance for DO (4.3 r tide.	0. /	· ·
Works Undertaken (at the time of monitoring event)	According to the information provided 12 August 2019.	d by the Contractor, Seawall Modif	ication Works was carried out on
Possible Reason for Action or Limit Level Exceedance(s)	 and Limit Levels during both many No discharge of organic matters IS(Mf)11 is far away (>2 km) from the observed exceedance should not the IS(Mf)16 is closer to the works at the unlikely to be related to this Cor Bottom-depth DO levels at IS(M) during both mid-ebb and mid-fluctorresponding control station with the corresponding control station with the specific point of the corresponding control station with the corresponding control station with	of DO, at all monitoring stations we id-ebb and mid-flood tides on the sinto waters from landside works arm the Seawall Modification Works to be affected by the marine works urea and no exceedance was recordentract. f)11 was similar to the correspondition ood tide, in which the recorded Bothere below Action Level.	ere in compliance with the Action same day. rea was recorded. Area (Figure 1), thus the nder this Contract. Moreover, ed. Therefore, the exceedance is ang control stations, CS(Mf)5, ttom-depth DO levels at the
Actions Taken/ To Be Taken	No immediate action is considered ne	cessary. The ET will monitor for f	uture trends in exceedances.
Remarks	The monitoring results on 12 August 2	2019 and locations of water quality	monitoring stations are attached.

Project	Contract	Date (yyyy- mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Surface	1	1	29.9	8.0	16.6	6.7		5.2		5.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Surface	1	2	29.9	7.9	16.9	6.6	5.9	5.3		5.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Middle	2	1	28.6	7.9	20.7	5.2	3.9	6.1	7.3	6.0	5.9
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Middle	2	2	28.6	7.8	21.1	5.2		6.2	1.5	5.0	3.7
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Bottom	3	1	27.9	7.9	27.4	4.3	4.2	10.5	_	6.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Bottom	3	2	27.9	7.8	28.4	4.1	1.2	10.5		7.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Surface	1	1	29.8	8.0	15.2	6.3	4	5.8	_	5.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Surface	1	2	29.8	7.9	15.4	6.3	5.7	5.5	_	5.2	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Middle	2	1	29.1	7.9	19.6	5.1	4	5.7	5.9	4.6	4.7
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Middle	2	2	29.1	7.8	20.0	5.0	ļ	5.7	1	3.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Bottom	3	1	28.7	7.9	23.3	4.5	4.5	6.5	1	4.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Bottom	3	2	28.7	7.8	23.7	4.4		6.3		5.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Surface	1	1	30.0	8.1	17.5	7.0	4	6.7	-	10.4	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Surface	1	2	30.0	8.0	17.8	7.0	7.0	6.9	-	11.2	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Middle	2	1		 		 	-		5.2		9.3
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Middle	2	2	20.7	0.0	10.1	C 4		2.7	4	7.0	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Bottom	3	1	29.7	8.0	19.1	6.4	6.4	3.7	4	7.8	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Bottom	<u>5</u>	1	29.7	7.9	19.5	6.4		3.5		7.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4a	9:47	Surface	1	1	30.1	8.1	16.1	7.4	-	3.2	-	5.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4a	9:47	Surface	2	<u></u>	30.1	8.0	16.4	7.3	7.4	3.4	1	5.3	1
TMCLKL	HY/2012/08 HY/2012/08	2019/08/12	Mid-Ebb Mid-Ebb	SR4a SR4a	9:47 9:47	Middle Middle	2	2		 		 	-		4.8		5.4
TMCLKL	HY/2012/08 HY/2012/08	2019/08/12	Mid-Ebb	SR4a SR4a	9:47		2	<u>Z</u>	30.0	8.1	16.9	6.0		6.2	-	6.2	1
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/12 2019/08/12	Mid-Ebb	SR4a SR4a	9:47	Bottom Bottom	2	2	30.0	8.0	17.2	6.8	6.8	6.3	-	6.2 5.1	1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:47	Surface	1	<u>Z</u>	30.0	8.1	16.5	7.0		11.0		6.6	
		2019/08/12	Mid-Ebb	SR4(N2)	9:42	Surface	1	2	30.2	8.0	16.8	7.0	-	10.2	+	6.3	1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:42	Middle	2	<u>Z</u> 1	30.2	0.0	10.0	7.0	7.0	10.2	+	0.5	1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:42	Middle	2	2					1		11.5		6.1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:42	Bottom	3	1	30.2	8.1	16.6	6.8		12.1	†	6.4	1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:42	Bottom	3	2.	30.2	8.0	16.9	6.8	6.8	12.7	1	4.9	1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Surface	1	1	30.2	8.1	16.6	7.6		5.7		9.4	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Surface	1	2.	30.2	8.1	16.9	7.6	-	5.7	1	8.4	1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Middle	2	1	2012	0.1	1017	7.0	7.6	3.7	1	0.1	1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Middle	2	2.					1		5.5		7.4
TMCLKL		2019/08/12	Mid-Ebb	IS8(N)	9:37	Bottom	3	1	30.2	8.1	16.6	7.6	7.6	5.3	1	6.0	1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Bottom	3	2	30.2	8.1	16.9	7.6	7.6	5.2	1	5.8	1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Surface	1	1	30.2	8.1	16.8	7.5		4.2		5.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Surface	1	2	30.2	8.1	17.1	7.4	7.	4.4]	6.2]
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Middle	2	1					7.5		5.6		5.0
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Middle	2	2							5.6		5.0
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Bottom	3	1	30.2	8.1	16.7	7.5	7.5	6.9]	3.8]
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Bottom	3	2	30.2	8.1	17.1	7.5	1.5	6.9		4.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Surface	1	1	30.1	8.0	15.0	6.9	_	4.7]	4.2	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Surface	1	2	30.1	7.9	15.3	6.8	6.5	4.7	1	4.8	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Middle	2	1	29.9	8.0	15.7	6.1		5.8	6.3	5.9	5.1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Middle	2	2	29.9	7.9	16.0	6.1		5.9		4.7	3.1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Bottom	3	1	28.0	7.9	27.0	3.9	3.9	8.4	_	5.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Bottom	3	2	28.0	7.8	27.6	3.8	3.7	8.4		5.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Surface	1	1	30.1	8.0	15.1	7.0	4	4.4	4	3.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Surface	1	2	30.1	7.9	15.3	7.0	7.0	4.5	4	4.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Middle	2	1				 	4		4.7		4.4
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Middle	2	2	2.7						4		'''
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Bottom	3	1	30.0	8.0	15.2	6.9	6.9	4.8	4	4.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Bottom	3	2	30.0	7.9	15.5	6.9		4.9	-	5.0	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS17	10:03	Surface	1	1	29.9	8.0	16.6	6.7	-	4.2	-	6.2	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS17	10:03	Surface	1	2	29.9	7.9	16.9	6.7	6.7	4.9	1	6.1	
	HY/2012/08		Mid-Ebb	IS17	10:03	Middle	2	1	29.6	8.0	16.9	6.6	-	3.3	3.8	5.5	5.9
MCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS17	10:03	Middle	2	2	29.6	7.9	17.2	6.6		3.9	_	5.8	

Project	Contract	Date (yyyy- mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08			IS17	10:03	Bottom	3	1	29.5	8.0	19.7	6.1	6.1	3.1		5.3	
TMCLKL	HY/2012/08		Mid-Ebb	IS17	10:03	Bottom	3	2	29.5	7.9	19.9	6.1	0.1	3.5		6.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Surface	1	1	30.0	8.0	15.8	7.2]	3.0		3.9	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Surface	1	2	30.0	8.0	16.1	7.1	6.5	2.7]	4.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Middle	2	1	29.2	8.0	20.1	5.9	0.5	3.1	4.8	4.8	4.7
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Middle	2	2	29.2	7.9	20.4	5.9		3.1	4.0	5.1	7.7
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Bottom	3	1	28.0	7.8	27.7	4.5	4.5	8.7]	5.4	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Bottom	3	2	28.0	7.8	28.3	4.5	4.5	8.4		4.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)3(N)	4:03	Surface	1	1	29.9	8.0	14.7	6.7		5.7]	6.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)3(N)	4:03	Surface	1	2	29.9	7.9	14.9	6.6	6.7	5.6]	4.3	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)3(N)	4:03	Middle	2	1	29.9	8.1	15.2	6.7	0.7	7.1	8.2	5.5	4.6
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)3(N)	4:03	Middle	2	2	29.9	7.9	15.4	6.7		7.9	0.2	4.7	T.O
TMCLKL	HY/2012/08	†		CS(Mf)3(N)	4:03	Bottom	3	1	29.9	8.0	16.1	6.5	6.5	11.4		3.9	
TMCLKL	HY/2012/08		Mid-flood	CS(Mf)3(N)	4:03	Bottom	3	2	29.9	7.9	16.3	6.5	0.5	11.6		3.3	
rmclkl_	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)16	4:43	Surface	1	1	29.9	8.1	16.7	6.9		3.7		7.6	
TMCLKL	HY/2012/08	†	Mid-flood	IS(Mf)16	4:43	Surface	1	2	29.9	7.9	17.0	6.9	6.9	4.4		7.0	
TMCLKL	HY/2012/08	 	Mid-flood	IS(Mf)16	4:43	Middle	2	1							3.9		7.7
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)16	4:43	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)16	4:43	Bottom	3	1	29.8	8.0	17.6	6.5	6.5	3.4	. I	7.7	
<u>rmclkl</u>	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)16	4:43	Bottom	3	2	29.8	7.9	17.9	6.5	J	4.2		8.4	
<u>rmclkl</u>	HY/2012/08			SR4a	4:52	Surface	1	1	30.3	8.1	16.5	7.4		4.4	, l	6.2	
MCLKL	HY/2012/08	2019/08/12		SR4a	4:52	Surface	1	2	30.3	8.0	16.8	7.5	7.5	5.1		7.1	
rmclkl	HY/2012/08	†		SR4a	4:52	Middle	2	1							5.2		6.9
rmclkl	HY/2012/08			SR4a	4:52	Middle	2	2				_					".
r MCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4a	4:52	Bottom	3	1	30.3	8.1	16.8	7.4	7.4	5.3		7.6	
				SR4a	4:52	Bottom	3	2	30.3	7.9	17.1	7.4		5.8		6.8	
MCLKL	HY/2012/08	2019/08/12		SR4(N2)	4:57	Surface	1	1	30.1	8.1	16.3	7.2		4.0		7.7	
MCLKL	HY/2012/08	†	Mid-flood	SR4(N2)	4:57	Surface	1	2	30.1	8.0	16.6	7.2	7.2	4.0		7.1	
	HY/2012/08	†		SR4(N2)	4:57	Middle	2	1							4.1		7.5
MCLKL	HY/2012/08			SR4(N2)	4:57	Middle	2	2	22.1		45.4	7.2				<i>T</i> ^	
MCLKL	HY/2012/08	2019/08/12		SR4(N2)	4:57	Bottom	3	<u>l</u>	30.1	8.1	16.4	7.2	7.2	4.1		7.3	
	HY/2012/08	2019/08/12		SR4(N2)	4:57	Bottom	3	2	30.1	8.0	16.7	7.2		4.1		7.8	
rmclkl	HY/2012/08			IS8(N)	5:02	Surface	1	1	29.9	8.1	16.0	7.0		3.3		3.9	
	HY/2012/08			IS8(N)	5:02	Surface	1	2	29.9	7.9	16.3	6.9	7.0	4.1		4.2	
	HY/2012/08	†		IS8(N)	5:02	Middle	2	1							7.5		5.7
rmclkl	HY/2012/08	2019/08/12		IS8(N)	5:02	Middle	2	2	20.0	0.1	160	7.0		11.4	- I	7 4	
	HY/2012/08			IS8(N)	5:02	Bottom	3	1	29.9	8.1	16.0	7.0	7.0	11.4	 	7.4	
FMCLKL	HY/2012/08	2019/08/12		IS8(N)	5:02 5:00	Bottom	<u>3</u>	1	29.9	7.9	16.3	6.9		11.1		7.2	
FMCLKL	HY/2012/08			IS(Mf)9	5:09 5:00	Surface	1	1	29.9	8.1	16.3	7.0		5.5	·	6.1	
	HY/2012/08			IS(Mf)9	5:09 5:00	Surface	1	1	29.9	7.9	16.6	6.9	7.0	5.3	-	6.7	
	HY/2012/08	2019/08/12		IS(Mf)9	5:09 5:00	Middle Middle	2	<u> </u>				-			5.7		6.0
TMCLKL	HY/2012/08			IS(Mf)9	5:09 5:00	Middle Rottom	2		20.0	0 1	1 <i>6 A</i>	7.0		60	 	5 1	
TMCLKL	HY/2012/08	2019/08/12		IS(Mf)9	5:09 5:09	Bottom	3	2	29.9	8.1	16.4	7.0	7.0	6.0 5.8	 	5.4 5.9	
	HY/2012/08			IS(Mf)9		Bottom	1	<u></u>	29.9	7.9	16.7	6.9				-	
ΓMCLKL ΓMCLKL	HY/2012/08 HY/2012/08	2019/08/12 2019/08/12		IS(Mf)11 IS(Mf)11	3:36 3:36	Surface Surface	<u>1</u>	2	29.8 29.8	8.0 7.9	15.0 15.2	6.6 6.5		<u>4.1</u> 4.9	{	4.6 5.4	
	HY/2012/08	_		IS(Mf)11	3:36	Surrace Middle	2		30.0	8.1	15.2	6.9	6.7	3.8	 		
IMCLKL IMCLKL	HY/2012/08 HY/2012/08			IS(Mf)11	3:36 3:36	Middle	2	2	30.0	8.1	15.9 16.2	6.8	}	3.8	5.3	5.1 4.5	5.1
	HY/2012/08	†		IS(Mf)11	3:36	Bottom	3		28.0	7.9	22.7	4.3		7.4	 	4.5	1
TMCLKL TMCLKL	HY/2012/08	2019/08/12		IS(Mf)11	3:36	Bottom	3	2	28.0	7.9	22.7	4.3	4.3	7.4	{		
	HY/2012/08 HY/2012/08			SR7	3:36	Surface	<u>J</u>		28.0	8.0	22.7 14.6	6.6		3.9		6.1	
	HY/2012/08			SR7	3:30	Surface Surface	1	<u> </u>	29.9	7.9	14.6 14.9	6.6	 	3.9	 	5.4	1
	HY/2012/08			SR7	3:30	Surrace Middle	2		∠y . ∀	1.9	14.7	0.0	6.6	3.0	{	J.4	
	HY/2012/08			SR7	3:30	Middle	2	2							5.8		5.5
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	†		SR7	3:30	Bottom	3		29.9	8.0	15.7	6.4		7.9	 	5.0	1
	HY/2012/08	2019/08/12		SR7	3:30	Bottom	3	7	29.9	7.9	15.9	6.4	6.4	7.5	1 1	5.7	1
	HY/2012/08			IS17	4:36	Surface	<u>J</u>		30.0	8.1	15.9	7.1		3.5		7.5	
TMCLKL	HY/2012/08			IS17	4:36	Surface	1	7	30.0	8.0	16.6	7.1		4.1	1 1	7.3	
TMCLKL	HY/2012/08		Mid-flood	IS17	4:36	Middle	2	1	30.0	8.1	16.3	7.1	7.1	3.2	1 1	7.1	
TMCLKL	HY/2012/08		Mid-flood	IS17	4:36	Middle	2	7	30.0	8.0	16.6	7.1	 		3.5	8.1	7.4
	HY/2012/08			IS17	4:36	Bottom	3	1	30.0	8.1	16.7	7.1		3.9	1 1	7.6	
	HY/2012/08			IS17	4:36	Bottom	3	7	30.0	7.9	17.0	7.1	7.1	3.1	1 1	6.2	
	111/2012/00	2017/00/12	1V11U=11UUU	101 /	4.30	שטווטווו	J	<i>L</i>	20.0	1.7	17.0	1.0		J.1		U . Z	Ī

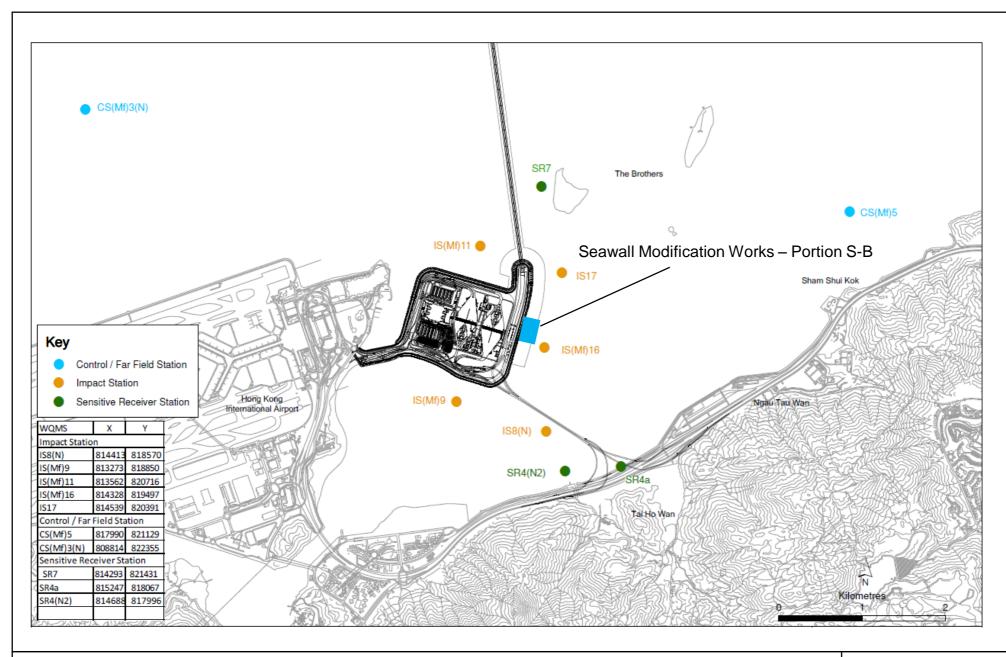


Figure 1





Environmental Resources Management

To Ramboll Hong Kong Limited (ENPO)

2507,

From

ERM- Hong Kong, Limited

25/F One Harbourfront, 18 Tak Fung Street, Hung Hom, Hong Kong Telephone: (852) 2271 3113 Facsimile: (852) 2723 5660

Ref/Project number

Contract No. HY/2012/08 Tuen Mun-Chek Lap Kok Link-Northern Connection Sub-sea Tunnel

Facsimile: (852) 2723 5660 E-mail: jasmine.ng@erm.com

Section

Subject Notification of Exceedance for Water Quality

Impact Monitoring

FRM

Date 20 August 2019

Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330_14 August 2019_ Bottom DO_E_Station IS(Mf)16 0212330_14 August 2019_ Bottom DO_E_Station IS17 0212330_14 August 2019_ Bottom DO_F_Station IS(Mf)11

A total of three Action Level exceedances were recorded on 14 August 2019.

Regards,

Dr Jasmine Ng

Environmental Team Leader

CONFIDENTIALITY NOTICE



CONTRACT NO. HY/2012/08 TUEN MUN - CHEK LAP KOK LINK NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Log No.		Action Level Exceedance	
	0212330_14 Au	gust 2019_ Bottom DO_E_Station	IS(Mf)16
	0212330_14 A	August 2019_Bottom DO_E_Statio	on IS17
	0212330_14 Au	gust 2019_ Bottom DO_F_Station	IS(Mf)11
	[7	Total No. of Exceedances = 3]	
Date		14 August 2019 (Measured)	
	16 August	2019 (In situ results received by E	RM)
	23 August 20	019 (Laboratory results received by	ERM)
Monitoring	CS(Mf)5, SR4a, SR4(N2), IS	8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N	I), SR7, IS17, IS(Mf)11
Station			
Parameter(s)			
with		Dissolved Oxygen (mg/L)	
Exceedance(s)		, , , , , , , , , , , , , , , , , , , ,	
Action Levels	DO	Surface and Middle	Bottom
		5.0 mg/L	4.7 mg/L
Limit Levels	DO	Surface and Middle	Bottom
		$4.2\mathrm{mg/L}$	3.6 mg/L
Measured	Action Level Exceedance for DO (4.6 mg		
Levels	Action Level Exceedance for DO (4.4 mg		e e
	Action Level Exceedance for DO (4.6 mg		ē .
Works	According to the information provided		
Undertaken (at	14 August 2019.	,	
the time of	8		
monitoring			
event)			
Possible Reason	The exceedances are unlikely to be due	to the Contract, in view of the follo	owing:
for Action or	All monitored parameters, except		•
Limit Level	and Limit Levels during both mid	_	_
Exceedance(s)	 No discharge of organic matters in 		-
	• IS(Mf)11 is far away (>2 km) from		
	exceedance should not be affected		9
	exceedance is unlikely to be relate	-	ormaca Triererere, trie
	The DO pattern at IS(Mf)16 and IS		11 during mid-flood tide were
	• • • • • • • • • • • • • • • • • • • •		
	similar to the their corresponding		-
	lower. Lower bottom-depth DO le		_
	summer when the freshwater disc	_	
	salinity water, which is probably r	-	
	middle levels compared to the hig		_
	The stratification of seawater in th	e water column is likely a contribu	iting tactor to the results of lower
	levels of DO at the bottom level.		
Actions Taken/	No immediate action is considered nece	ssary. The ET will monitor for fu	ture trends in exceedances.
To Be Taken			
Remarks	The monitoring results on 14 August 20	19 and locations of water quality n	nonitoring stations are attached.

Project	Contract	Date (yyyy- mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Surface	1	1	30.1	8.0	18.4	6.1		3.0		4.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Surface	1	2	30.0	8.0	18.4	6.1	5.6	3.0		4.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Middle	2	1	29.3	7.9	21.1	5.0	5.0	4.5	5.1	4.5	6.1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Middle	2	2	29.3	7.9	21.2	5.0		4.6	3.1	5.7	0.1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Bottom	3	1	28.0	7.9	26.6	3.8	3.8	7.7		8.8	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Bottom	3	2	28.0	7.9	26.6	3.8	3. 0	7.6		9.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)3(N)	12:03	Surface	1	1	30.6	7.9	16.4	6.1	4	2.9	4	7.0	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)3(N)	12:03	Surface	1	2	30.6	7.9	16.5	6.1	5.8	2.9	_	6.8	-
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)3(N)	12:03	Middle	2	1	29.7	7.9	18.9	5.4	-	3.9	3.8	6.9	8.3
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/14	Mid-Ebb Mid-Ebb	CS(Mf)3(N) CS(Mf)3(N)	12:03 12:03	Middle	2	<u>Z</u>	29.7 29.6	7.9	18.9 19.7	5.4 5.3		3.8 4.5	+	8.4	1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)3(N)	12:03	Bottom Bottom	3	2	29.0	7.9	19.6	5.3	5.3	4.5	+	10.3	1
TMCLKL	HY/2012/08 HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	12:03	Surface	1	<u> </u>	30.1	8.0	18.5	6.2		4.8		5.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Surface	1	2	30.2	8.0	18.5	6.2	 	4.8	1	5.4	1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Middle	2	1	30.2	3.0	10.5	5.2	6.2	1.0	1	J.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Middle	2	2					1		7.4		6.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Bottom	3	1	28.6	7.9	24.5	4.6	1.6	9.9	1	7.8	1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Bottom	3	2	28.6	7.9	24.4	4.6	4.6	9.9	1	8.2	1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Surface	1	1	30.4	8.0	17.4	6.4		3.2		6.6	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Surface	1	2	30.4	8.0	17.3	6.4		3.2		7.3]
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Middle	2	1					6.4] _{// 1}		7.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Middle	2	2							4.1		7.0
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Bottom	3	1	30.0	7.9	18.6	5.6	5.6	4.9		8.3	1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Bottom	3	2	30.0	7.9	18.6	5.6	5.0	4.9		8.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4(N2)	11:00	Surface	1	1	30.5	8.0	17.4	6.3		3.3	_	5.1	1 1
			Mid-Ebb	SR4(N2)	11:00	Surface	1	2	30.5	8.0	17.4	6.3	6.3	3.3		6.3	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4(N2)	11:00	Middle	2	1					0.5		5.8		6.4
TMCLKL		2019/08/14	Mid-Ebb	SR4(N2)	11:00	Middle	2	2							3.0		0.1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4(N2)	11:00	Bottom	3	1	30.0	7.9	18.8	5.6	5.6	8.2	1	7.2	1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4(N2)	11:00	Bottom	3	2	30.0	7.9	18.8	5.6		8.2		6.9	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS8(N)	10:55	Surface	1	1	30.4	8.0	18.2	6.1	-	9.9	4	4.3	- 1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS8(N)	10:55	Surface	2	2	30.4	8.0	18.2	6.1	6.1	9.9	4	4.1	-
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS8(N)	10:55	Middle	2	1					-		11.0		6.0
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS8(N)	10:55	Middle	2	2	20.0	0.0	10.0	5.0		10.0	4	7.2	-
TMCLKL	HY/2012/08 HY/2012/08	2019/08/14	Mid-Ebb Mid-Ebb	IS8(N) IS8(N)	10:55 10:55	Bottom	2	2	29.9 29.9	8.0	19.0 19.0	5.6 5.6	5.6	12.2	1	7.2	1
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:55	Bottom Surface	<u>J</u>	<u></u>	30.6	8.0	19.0	6.6		3.3		7.5	
TMCLKL TMCLKL		2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Surface	1	2	30.6	8.1	17.7	6.6	1	3.3	1	7.5	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Middle	2	<u></u>	30.0	0.1	1/./	0.0	6.6	٥.٥	1	1.3	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Middle	2	2		 			-		3.5		8.0
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Bottom	3	1	30.4	8.1	17.8	6.5		3.6	1	7.9	†
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Bottom	3	2	30.4	8.1	17.8	6.4	6.5	3.6	1	9.0	1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Surface	1	1	30.2	8.0	16.9	6.3		2.7		4.6	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Surface	1	2	30.2	8.0	17.0	6.3		2.6	1	5.1	1
TMCLKL		2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Middle	2	1	29.7	7.9	18.4	5.6	6.0	3.3	1	7.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Middle	2	2	29.7	7.9	18.4	5.6	<u> </u>	3.2	3.4	8.3	7.6
TMCLKL		2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Bottom	3	1	29.6	7.9	19.0	5.5	5.5	4.2		10.2]
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Bottom	3	2	29.6	7.9	19.0	5.5	5.5	4.2	<u></u>	10.4	<u> </u>
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Surface	1	1	30.2	7.9	16.8	6.3	_	2.2		5.4	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Surface	1	2	30.2	8.0	16.8	6.3	6.3	2.2]	5.6]
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Middle	2	1					0.3		2.9		5.7
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Middle	2	2							۷.۶		J.1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Bottom	3	1	29.8	7.9	18.7	5.7	5.7	3.6]	5.8]
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Bottom	3	2	29.8	7.9	18.6	5.7	J.1	3.5		6.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Surface	1	1	30.3	8.0	18.5	6.3	_	4.9	_	5.0]
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Surface	1	2	30.3	8.0	18.5	6.3	6.1	4.9	1	4.3	.
	HY/2012/08		Mid-Ebb	IS17	11:22	Middle	2	1	29.9	8.0	19.1	5.9		3.8	5.2	4.7	5.9
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Middle	2	2	29.9	8.0	19.0	5.9		3.8]	5.6	

Project	Contract	Date (yyyy-	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature	pН	Salinity (ppt)	DO (mg/L)	Average	Turbidity	Depth- Averaged	SS (mg/L)	Depth- Averaged
		mm-dd)				·	-	•	(°C)		, u1,		DO (mg/L)	(NTU)	Turbidity	()	SS
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Bottom	3	1	28.5	7.9	25.0	4.4	4.4	6.8		7.7	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Bottom	3	2	28.5	7.9	25.0	4.4	4.4	6.8		7.9	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Surface	1	1	30.1	7.9	16.8	6.2		3.2		6.3	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Surface	1	2	30.1	7.9	16.8	6.2	6.1	3.2		7.3	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Middle	2	1	29.9	7.9	19.2	6.0		2.0	2.4	8.1	7.9
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Middle	2	2	29.9	7.9	19.2	6.0		2.0		7.5	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Bottom	3	2	28.5	7.9	25.3	4.7	4.7	2.0	-	9.7	
TMCLKL	HY/2012/08	2019/08/14		CS(Mf)5	4:38	Bottom	3	1	28.5	7.9	25.3	4.7		2.0		8.3	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/14		CS(Mf)3(N) CS(Mf)3(N)	5:56 5:56	Surface Surface	1 1	2	29.9 29.9	7.9 7.9	16.6 16.6	6.0	 	4.2	1	4.3 5.1	
ΓMCLKL ΓMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)3(N)	5:56	Middle	2	1	29.9	7.9	17.1	5.9	6.0	4.2	1	6.6	
MCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)3(N)	5:56	Middle	2	2.	29.9	7.9	17.1	5.9		4.0	5.9	6.1	6.2
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)3(N)	5:56	Bottom	3	1	29.7	7.9	18.9	5.5		9.4	1	7.5	1
TMCLKL	HY/2012/08	2019/08/14	1	CS(Mf)3(N)	5:56	Bottom	3	2	29.7	7.9	18.9	5.4	5.5	9.3	1	7.6	
ΓMCLKL	HY/2012/08	2019/08/14		IS(Mf)16	6:18	Surface	1	1	30.0	8.0	18.0	6.2		3.5		6.9	
ГМСLKL	HY/2012/08			IS(Mf)16	6:18	Surface	1	2	30.0	8.0	18.1	6.2	60	3.5]	7.5]
ΓMCLKL	HY/2012/08	2019/08/14	1	IS(Mf)16	6:18	Middle	2	1					6.2		3.5		7.9
ГМСLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)16	6:18	Middle	2	2							٥.১		1.9
ΓMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)16	6:18	Bottom	3	1	30.0	8.0	18.0	6.2	6.2	3.6] [8.0	
ГМСLKL	HY/2012/08	2019/08/14		IS(Mf)16	6:18	Bottom	3	2	30.0	8.0	18.0	6.2	0.2	3.5		9.0	
MCLKL	HY/2012/08			SR4a	6:27	Surface	1	1	30.2	8.0	17.5	5.9		4.1		5.5	
MCLKL	HY/2012/08	2019/08/14	1	SR4a	6:27	Surface	1	2	30.2	8.0	17.5	6.0	6.0	4.1		6.0	
MCLKL	HY/2012/08	2019/08/14		SR4a	6:27	Middle	2	1				 	""		5.6		6.4
MCLKL	HY/2012/08	2019/08/14		SR4a	6:27	Middle	2	2	20.0	7.0	10.5						
MCLKL	HY/2012/08	2019/08/14		SR4a	6:27	Bottom	3	1	29.9	7.9	18.7	5.3	5.3	7.1		6.2	
	HY/2012/08			SR4a	6:27	Bottom	1	1	29.9	7.9	18.7	5.3		7.1		7.7	
MCLKL	HY/2012/08 HY/2012/08	2019/08/14 2019/08/14	i	SR4(N2) SR4(N2)	6:32 6:32	Surface Surface	1	2	30.1 30.1	8.0	17.2 17.2	6.1		3.5	1	6.4 5.6	
MCLKL MCLKL	HY/2012/08	2019/08/14		SR4(N2) SR4(N2)	6:32	Middle	2	<u>Z</u>	30.1	8.0	17.2	6.1	6.1	3.4	1	3.0	
	HY/2012/08	2019/08/14		SR4(N2)	6:32	Middle	2	2					1		4.4		5.8
MCLKL	HY/2012/08	2019/08/14		SR4(N2)	6:32	Bottom	3	1	30.0	8.0	18.0	5.9		5.4	1	6.0	
	HY/2012/08	2019/08/14	1	SR4(N2)	6:32	Bottom	3	2	30.0	8.0	18.0	5.9	5.9	5.3	1	5.2	
	HY/2012/08	2019/08/14		IS8(N)	6:38	Surface	1	1	30.0	8.0	17.3	6.1		4.1		10.0	
	HY/2012/08	2019/08/14		IS8(N)	6:38	Surface	1	2	30.0	8.0	17.3	6.1	[4.2	1	10.2	
	HY/2012/08			IS8(N)	6:38	Middle	2	1					6.1		1		10.6
	HY/2012/08	2019/08/14	1	IS8(N)	6:38	Middle	2	2					1		4.7		13.6
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS8(N)	6:38	Bottom	3	1	30.0	8.0	17.5	6.0	6.0	5.3		17.1	
TMCLKL	HY/2012/08	2019/08/14		IS8(N)	6:38	Bottom	3	2	30.0	8.0	17.5	6.0	6.0	5.3		16.9	
	HY/2012/08	2019/08/14		IS(Mf)9	6:45	Surface	1	1	29.9	8.0	17.3	6.1]	4.8]	6.3	
	HY/2012/08			IS(Mf)9	6:45	Surface	1	2	29.9	8.0	17.3	6.1	6.1	4.9		6.1	
TMCLKL	HY/2012/08	2019/08/14		IS(Mf)9	6:45	Middle	2	1					0.1		5.9		8.9
	HY/2012/08	2019/08/14		IS(Mf)9	6:45	Middle	2	2							"."		
rmclkl	HY/2012/08	2019/08/14		IS(Mf)9	6:45	Bottom	3	1	29.9	8.0	17.8	6.1	6.1	6.9		11.9	
	HY/2012/08	2019/08/14		IS(Mf)9	6:45	Bottom	3	2	29.9	8.0	17.8	6.1		7.0		11.1	
	HY/2012/08	2019/08/14	1	IS(Mf)11	6:00	Surface	1	1	30.1	8.0	17.2	6.2		3.6		4.4	
	HY/2012/08	2019/08/14	i e	IS(Mf)11	6:00	Surface	2	<u></u>	30.1	8.0	17.2	6.2 5.2	5.8	3.6		4.2	-
	HY/2012/08 HY/2012/08	2019/08/14	1	IS(Mf)11 IS(Mf)11	6:00 6:00	Middle Middle	2	<u>1</u>	29.5 29.5	8.0	20.6 20.7	5.3 5.3		4.8	8.0	7.3 6.5	6.4
	HY/2012/08	2019/08/14		IS(Mf)11	6:00	Bottom	3	<u> </u>	29.5	7.9	24.5	4.6		15.7	1	8.4	1
	HY/2012/08	2019/08/14		IS(Mf)11	6:00	Bottom	3	7	28.7	7.9	24.5	4.6	4.6	15.7	1 1	7.3	1
	HY/2012/08	2019/08/14		SR7	4:58	Surface	1	1	30.0	7.9	17.1	5.9		3.6		5.8	
	HY/2012/08			SR7	4:58	Surface	1	2	30.0	7.9	17.1	5.9	[3.6	1	5.4	1
	HY/2012/08	2019/08/14		SR7	4:58	Middle	2	1	20.0	,	2.14	1 2.7	5.9	2.0		2.1	
	HY/2012/08			SR7	4:58	Middle	2	2							3.6		6.4
	HY/2012/08	2019/08/14		SR7	4:58	Bottom	3	1	29.9	7.9	17.4	6.0	60	3.6]	6.9]
TMCLKL	HY/2012/08	2019/08/14		SR7	4:58	Bottom	3	2	29.9	7.9	17.4	6.0	6.0	3.6		7.4	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS17	6:11	Surface	1	1	30.0	8.0	18.0	6.2		3.4		7.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS17	6:11	Surface	1	2	30.0	8.0	18.0	6.2	6.2	3.4] [6.4	
TMCLKL	HY/2012/08	2019/08/14		IS17	6:11	Middle	2	1	30.0	8.0	18.1	6.1	0.2	3.4	3 3	6.2	7.3
TMCLKL	HY/2012/08	2019/08/14		IS17	6:11	Middle	2	2	30.0	8.0	18.2	6.1		3.4		11	1.5
	HY/2012/08	2019/08/14		IS17	6:11	Bottom	3	1	29.8	8.0	18.9	5.9	5.9	3.1		8.1	
rmclkl_	HY/2012/08	2019/08/14	Mid-flood	IS17	6:11	Bottom	3	2	29.8	8.0	18.9	5.9	5.7	3.1		9.2	

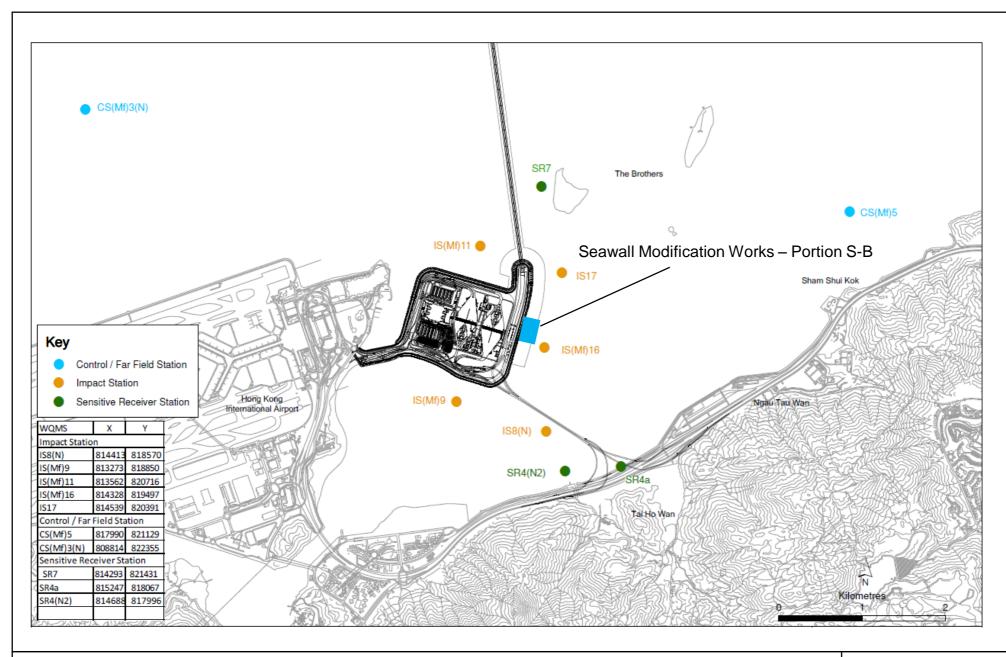


Figure 1





Environmental Resources Management

To Ramboll Hong Kong Limited (ENPO)

2507,

From

ERM- Hong Kong, Limited

25/F One Harbourfront, 18 Tak Fung Street, Hung Hom, Hong Kong Telephone: (852) 2271 3113 Facsimile: (852) 2723 5660

Ref/Project number

Contract No. HY/2012/08 Tuen Mun-Chek Lap Kok Link-Northern Connection Sub-sea Tunnel Facsimile: (852) 2723 5660 E-mail: jasmine.ng@erm.com

Section

Subject Notification of Exceedance for Water Quality

Impact Monitoring

FDM

Date 30 August 2019

Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330_19 August 2019_ Surface & Middle DO_E_Station IS(Mf)16

0212330_19 August 2019_ Bottom DO_E_Station IS(Mf)16

0212330_19 August 2019_ Surface & Middle DO_E_Station SR4a

0212330_19 August 2019_ Bottom DO_E_Station SR4a

0212330_19 August 2019_ Surface & Middle DO_E_Station SR4(N2)

0212330_19 August 2019_ Bottom DO_E_Station SR4(N2)

0212330_19 August 2019_ Bottom DO_E_Station IS8(N)

0212330_19 August 2019_ Bottom DO_E_Station IS(Mf)11

0212330_19 August 2019_ Bottom DO_E_Station IS17

0212330_19 August 2019_ Surface & Middle DO_F_Station IS(Mf)11

0212330_19 August 2019_ Bottom DO_F_Station IS(Mf)11

A total of eleven Action Level exceedances were recorded on 19 August 2019.

Regards.

Dr Jasmine Ng

Environmental Team Leader

CONFIDENTIALITY NOTICE



CONTRACT NO. HY/2012/08 TUEN MUN - CHEK LAP KOK LINK NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Log No.		Action Level Exceedance	
	0212330_19 August 20	019_ Surface & Middle DO_E_Stat	ion IS(Mf)16
	0212330_19 Aug	ust 2019_ Bottom DO_E_Station IS	6(Mf)16
	0212330_19 August	2019_ Surface & Middle DO_E_St	ation SR4a
	0212330_19 At	agust 2019_ Bottom DO_E_Station	SR4a
	0212330_19 August 20	019_Surface & Middle DO_E_Stat	ion SR4(N2)
	0212330_19 Aug	gust 2019_ Bottom DO_E_Station S	R4(N2)
	0212330_19 Au	gust 2019_ Bottom DO_E_Station l	IS8(N)
	0212330_19 Aug	ust 2019_ Bottom DO_E_Station IS	6(Mf)11
	0212330_19 A	ugust 2019_ Bottom DO_E_Station	IS17
	0212330_19 August 20	019_ Surface & Middle DO_F_Stat	ion IS(Mf)11
	0212330_19 Aug	rust 2019_ Bottom DO_F_Station IS	6(Mf)11
	[To	otal No. of Exceedances = 11]	
Date	1	19 August 2019 (Measured)	
	21 August	2019 (<i>In situ</i> results received by ERI	M)
	28 August 201	19 (Laboratory results received by I	ERM)
Monitoring	CS(Mf)5, SR4a, SR4(N2), IS8	(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N),	SR7, IS17, IS(Mf)11
Station			
Parameter(s)			
with		Dissolved Oxygen (mg/L)	
Exceedance(s)			
Action Levels	DO	Surface and Middle	Bottom
		5.0 mg/L	$4.7\mathrm{mg/L}$
Limit Levels	DO	Surface and Middle	Bottom
		4.2 mg/L	3.6 mg/L
Measured	Action Level Exceedance for DO (4.8 mg/	L) is observed at IS(Mf)16 at Surface	e & Middle Level during mid-
Levels	ebb tide.		_
	Action Level Exceedance for DO (4.3 mg/	L) is observed at IS(Mf)16 at Botton	n Level during mid-ebb tide.
	Action Level Exceedance for DO (4.7 mg/	L) is observed at SR4a at Surface &	Middle Level during mid-ebb
	tide.		Ü
	Action Level Exceedance for DO (4.5 mg/	L) is observed at SR4a at Bottom Le	evel during mid-ebb tide.
	Action Level Exceedance for DO (4.8 mg/	•	<u> </u>
	ebb tide.	, , ,	0
	Action Level Exceedance for DO (4.6 mg/	L) is observed at SR4(N2) at Botton	n Level during mid-ebb tide.
	Action Level Exceedance for DO (4.6 mg/	,	ě.
	Action Level Exceedance for DO (4.2 mg/		=
	Action Level Exceedance for DO (4.2 mg/		_
	Action Level Exceedance for DO (4.7 mg/	•	_
	flood tide.	,	
	Action Level Exceedance for DO (4.3 mg/	L) is observed at IS/Mf)11 at Bottor	n Level during mid-flood tide
Works	According to the information provided by	, , ,	
Undertaken	August 2019.	, the Contractor, Seawan Modificat	ton vyorks was carried out off 19
(at the time of	August 2019.		
monitoring			
event)			
eveni,			

Possible	The exceedances are unlikely to be due to the Contract, in view of the following:
Reason for	All monitored parameters, except DO, at all monitoring stations were in compliance with the Action
Action or	and Limit Levels during both mid-ebb and mid-flood tides on the same day.
Limit Level	No discharge of organic matters into waters from landside works area was recorded.
Exceedance(s)	• IS(Mf)11, SR4a, SR4(N2) and IS8(N) are far away (>1.5 km) from the Seawall Modification Works Area (Figure 1), thus the observed exceedance should not be affected by the marine works under this
	Contract. Therefore, the exceedance is unlikely to be related to this Contract.
	The DO pattern at IS(Mf)16, SR4a, SR4(N2), IS8(N), IS(Mf)11 and IS17 during mid-ebb tide and IS(Mf)11 during mid-flood tide were similar to the their corresponding control station where the bottom-depth DO levels were generally lower. Lower bottom-depth DO levels may be possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River
	tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level.
	 Bottom-depth DO levels at IS(Mf)11 was similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level.
	 Surface & Middle-depth DO levels at IS(Mf)11 were similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Surface & Middle-depth DO levels at the corresponding control station were below Action Level.
	 As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Therefore, the exceedance recorded at IS(Mf)16 during mid-ebb tide is likely to be due to natural fluctuation of water quality and is unlikely to be related to this Contract. Exceedances recorded at SR4a, SR4(N2), IS(N), IS(Mf)11 and IS17 during mid-ebb tide and
	IS(Mf)11 during mid-flood tide are unlikely to be related to this Contract as these stations are further than IS(Mf)16.
Actions Taken	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.
/To Be Taken	
Remarks	The monitoring results on 19 August 2019 and locations of water quality monitoring stations are attached.

Project	Contract	Date (yyyy- mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Surface	1	1	28.2	8.0	22.2	5.0		3.8		3.8	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Surface	1	2	28.9	7.9	21.8	5.0	4.6	4.1]	3.6	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Middle	2	1	26.6	8.0	26.8	4.1	4.0	8.2	8.9	3.6	4.0
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Middle	2	2	27.3	7.9	26.4	4.1		8.0	0.9	3.7	4.0
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Bottom	3	1	25.8	8.1	30.1	3.8	3.8	14.4]	4.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Bottom	3	2	26.5	7.9	29.7	3.7	J.0	14.6		4.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Surface	1	1	28.9	8.0	19.6	5.6	_	3.0		1.9	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Surface	1	2	29.7	7.9	19.2	5.5	5.3	3.1		1.9	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Middle	2	1	28.0	8.0	22.9	5.1] 3.5	4.8	4.9	2.1	2.1
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Middle	2	2	28.8	7.9	22.4	5.1		4.9	7.7	2.1	2.1
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Bottom	3	1	27.5	8.0	24.5	4.9	4.8	6.5	1	2.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Bottom	3	2	28.3	7.9	24.0	4.7	1.0	6.9		2.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Surface	1	1	27.8	8.1	23.3	4.8		7.8	1	9.2	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Surface	1	2	28.6	7.9	22.9	4.8	4.8	7.2	1	8.8	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Middle	2	1							6.4		8.7
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Middle	2	2						_]		.,
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Bottom	3	1	26.2	8.0	28.5	4.4	4.3	5.2	4	8.5	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Bottom	3	2	27.0	7.9	28.1	4.2		5.4		8.2	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Surface	1	1	27.8	8.0	22.9	4.6		8.6	1	8.9	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Surface	1	2	28.5	7.9	22.6	4.7	4.7	8.2	1	8.3	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Middle	2	1					11.7		10.1		6.1
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Middle	2	2									""
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Bottom	3	1	27.6	8.0	23.7	4.5	4.5	11.9	1	3.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Bottom	3	2	28.4	7.9	23.3	4.5	110	11.8		3.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Surface	1	1	28.0	8.0	22.3	4.7		10.0	1	8.4	
		2019/08/19	Mid-Ebb	SR4(N2)	13:42	Surface	1	2	28.7	7.9	22.0	4.8	4.8	10.0	1	8.1	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Middle	2	1							10.8		9.0
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Middle	2	2							10.0		,,,,
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Bottom	3	1	27.8	8.0	22.8	4.6	4.6	11.7	1	9.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Bottom	3	2	28.6	7.9	22.5	4.6		11.6		9.6	
<u>rmclkl</u>	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Surface	1	1	27.9	8.1	22.9	5.1	4	10.6	1	14.4	
<u>rmclkl</u>	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Surface	1	2	28.6	7.9	22.7	5.1	5.1	10.4	1	13.4	
<u>rmclkl</u>	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Middle	2	1					J 311		10.7		12.1
<u>rmclkl</u>	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Middle	2	2							1		
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Bottom	3	1	27.6	8.1	23.8	4.6	4.6	10.9	_	10.6	
rmclkl	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Bottom	3	2	28.3	7.9	23.5	4.5		10.9		9.9	
MCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Surface	1	1	28.7	8.0	21.4	5.6	4	3.9	4	8.1	
MCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Surface	1	2	29.5	8.0	21.1	5.6	5.6	4.1	4	7.8	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Middle	2	<u>l</u>					-		4.6		6.1
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Middle	2	2	20.4		21.6			<i>r</i> 2	4	4.5	
FMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Bottom	3	1	28.4	8.0	21.6	5.5	5.5	5.2	4	4.5	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Bottom	3	2	29.1	8.0	21.3	5.5		5.1		4.0	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Surface	1	2	29.3	8.1	19.7	5.7	-	2.3	-	2.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Surface	1	2	30.1	7.9	19.4	5.6	5.4	2.4	-	2.7	
FMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Middle	Z	1	28.6	8.1	20.5	5.2	-	3.3	4.1	1.6	1.8
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Middle	2	1	29.4	7.9	20.1	5.2		3.4	4	1.5	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Bottom	3	1	26.3	8.1	28.6	4.2	4.2	6.4	4	1.5	
FMCL KL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Bottom	1	1	27.1	7.9	28.0	4.1		6.9		1.3	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Surface	1	2	28.5	8.1	20.9	5.4	-	2.9	4	1.9	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Surface	1	2	29.3	7.9	20.5	5.4	5.4	3.0	-	1.6	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Middle	2	1				 	-		3.5		2.2
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Middle	2	2	20.2	0.1	01.7	E 4		4.0	-	2.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Bottom	3	1	28.2	8.1	21.5	5.4	5.4	4.0	4	2.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Bottom	3	2	29.0	7.9	21.2	5.3		4.0		2.9	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Surface	1	2	28.8	8.0	20.2	5.3	-	3.8	-	2.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Surface	2	1	29.6	7.9	20.0	5.3	5.1	3.9	4	3.1	
	HY/2012/08		Mid-Ebb	IS17	14:03	Middle Middle	2	1	27.8	8.0	22.4	5.0	-	6.2	6.3	4.7	5.0
MCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Middle	2	2	28.4	7.9	22.3	4.9		6.5	J	4.2	

Project	Contract	Date (yyyy- mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	рH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Bottom	3	1	27.0	8.1	26.8	4.2	4.2	8.9		7.6	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Bottom	3	2	27.9	7.9	26.6	4.1	4.2	8.3		7.8	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)5	7:56	Surface	1	1	28.8	7.8	20.1	5.0		3.3		3.1	1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)5	7:56	Surface	1	2	28.0	8.0	20.4	5.0	4.6	3.3		2.7	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/19	Mid-flood Mid-flood	CS(Mf)5 CS(Mf)5	7:56 7:56	Middle Middle	2	2	27.6 26.8	7.8 8.0	25.7 26.2	4.2		4.9 4.9	6.6	3.6	3.6
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)5	7:56	Bottom	3	1	26.7	7.8	29.5	3.7		11.5		4.1	1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)5	7:56	Bottom	3	2	25.9	8.0	29.9	3.8	3.8	11.5		4.1	1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)3(N)	8:44	Surface	1	1	28.4	8.0	17.0	5.5		3.7		5.5	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)3(N)	8:44	Surface	1	2	29.2	7.9	16.7	5.5	5.4	3.7		5.2]
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)3(N)	8:44	Middle	2	1	28.2	8.0	19.2	5.4	J. T	4.6	4.3	4.2	4.7
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)3(N)	8:44	Middle	2	2	29.0	7.8	18.9	5.3		4.7		4.7	"
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/19	Mid-flood Mid-flood	CS(Mf)3(N) CS(Mf)3(N)	8:44 8:44	Bottom Bottom	3	2	28.2 29.0	8.0 7.9	19.4 19.1	5.4 5.3	5.4	4.6 4.7		4.4	-
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Surface	1	1	28.0	8.1	21.6	5.2		4.7		2.6	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Surface	1	2	28.7	7.9	21.3	5.2		4.9	1	2.7	1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Middle	2	1				=	5.2		6.0		3.6
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Middle	2	2							6.0		٥.٥
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Bottom	3	1	27.8	8.1	22.2	5.3	5.2	7.4		4.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Bottom	3	2	28.6	8.0	21.8	5.1		7.3		4.8	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/19 2019/08/19	Mid-flood Mid-flood	SR4a SR4a	9:37 9:37	Surface Surface	1	1	28.0 28.7	8.1 7.9	21.2 20.9	5.2 5.2		4.7 4.8		5.2	
TMCLKL	HY/2012/08 HY/2012/08	2019/08/19	Mid-flood	SR4a SR4a	9:37	Surrace Middle	2	<u> </u>	20.7	1.9	۷۵.۶	J. <u>Z</u>	5.2	4.8		4.8	1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4a	9:37	Middle	2	2							6.6		5.4
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4a	9:37	Bottom	3	1	27.9	8.1	21.9	4.9	4.0	8.2		5.8	1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4a	9:37	Bottom	3	2	28.6	8.0	21.6	4.9	4.9	8.8		5.8	
	1		Mid-flood		9:42	Surface	1	1	28.0	8.1	21.1	5.4		4.4		8.6]
TMCLKL	HY/2012/08	2019/08/19		SR4(N2)	9:42	Surface	1	2	28.8	7.9	20.7	5.3	5.4	4.4		8.7	.
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4(N2)	9:42	Middle	2	2							4.9		6.6
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/19	Mid-flood Mid-flood	SR4(N2) SR4(N2)	9:42 9:42	Middle Bottom	2 3	<u>Z</u>	28.0	8.1	21.2	5.5		5.9		4.3	
TMCLKL	HY/2012/08	2019/08/19		SR4(N2)	9:42	Bottom	3	2.	28.7	7.9	20.8	5.5	5.5	5.0		4.8	1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Surface	1	1	28.0	8.1	21.1	5.2		5.3		5.0	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Surface	1	2	28.8	7.9	20.7	5.1	5.2	5.9		4.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Middle	2	1					5.2		7.0		6.1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Middle	2	2						. ~	7.0		
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Bottom	3	1	27.8	8.1	22.0	5.1	5.1	8.5		7.4	- 1
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/19 2019/08/19	Mid-flood Mid-flood	IS8(N) IS(Mf)9	9:49 9:56	Bottom Surface	3	<u>Z</u>	28.6 28.1	7.9 8.1	21.6 21.3	5.0 5.4		8.2 4.4		7.2 5.5	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Surface	1	2.	28.9	7.9	20.9	5.4		4.7		5.3	1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Middle	2	1	20.7	7.2	20.9	5.1	5.4	1.7	6.0	3.3	1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Middle	2	2							6.3		5.5
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Bottom	3	1	28.0	8.1	21.6	5.5	5.5	8.0		5.7	<u> </u>
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Bottom	3	2	28.7	7.9	21.3	5.5	J.J	8.1		5.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)11	8:20	Surface	1	1	28.7	7.9	20.5	5.1		4.5		4.9	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/19 2019/08/19	Mid-flood Mid-flood	IS(Mf)11 IS(Mf)11	8:20 8:20	Surface Middle	2	2	28.7 28.0	7.9 7.9	20.5 24.6	5.1 4.3	4.7	4.5 13.5		4.9	
TMCLKL	HY/2012/08 HY/2012/08	2019/08/19	Mid-flood	IS(MI)11 IS(Mf)11	8:20 8:20	Middle	2	2	28.0	7.9	24.6	4.3		13.5	10.4	4.9	4.7
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)11	8:20	Bottom	3	1	27.9	7.9	24.9	4.3	4.0	13.2		4.9	1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)11	8:20	Bottom	3	2	27.9	7.9	24.9	4.3	4.3	13.2		4.2	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR7	8:13	Surface	1	1	28.6	7.9	19.8	5.2		5.3		4.8	
TMCLKL	HY/2012/08	2019/08/19		SR7	8:13	Surface	1	2	27.8	8.0	20.2	5.1	5.2	5.0		4.1	
TMCLKL	HY/2012/08	2019/08/19		SR7	8:13	Middle	2	1							6.9		5.1
TMCLKL	HY/2012/08	2019/08/19		SR7	8:13	Middle	2	2	20.2	7.0	22.0	1.0		0.5		<i></i>	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/19		SR7 SR7	8:13 8:13	Bottom Bottom	3	2	28.2 27.4	7.9 8.0	23.0 23.5	4.6 4.7	4.7	8.5 8.9		5.7	
TMCLKL	HY/2012/08 HY/2012/08	2019/08/19		IS17	9:21	Surface	1	<u> </u>	28.0	8.0	23.5	5.2		3.6		3.2	
	HY/2012/08		Mid-flood		9:21	Surface	1	2	28.7	7.9	21.7	5.1		3.6		3.5	1
				IS17	9:21	Middle	2	1	27.7	8.1	22.7	4.9	5.0	3.5	26	4.2	1 1 2
	HY/2012/08	2019/08/19	Mid-flood	IS17	9:21	Middle	2	2	28.4	7.9	22.6	4.8		3.7	3.6	4.6	4.3
	HY/2012/08	2019/08/19		IS17	9:21	Bottom	3	1	27.4	8.1	23.8	4.9	4.9	3.5		5.1	<u> </u>
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS17	9:21	Bottom	3	2	28.2	7.9	23.4	4.8	1.7	3.5		5.3	

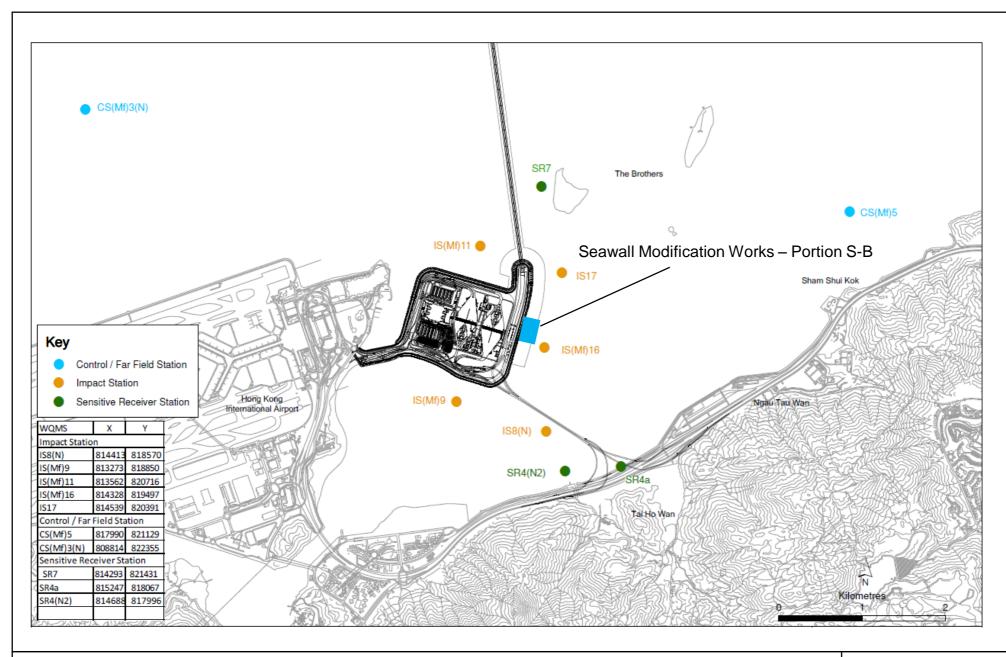


Figure 1





Subject

Date

Environmental Resources Management

To Ramboll Hong Kong Limited (ENPO) 2507,

From

25/F One Harbourfront, 18 Tak Fung Street, Hung Hom, Hong Kong Telephone: (852) 2271 3113

ERM- Hong Kong, Limited

Facsimile: (852) 2723 5660 E-mail: jasmine.ng@erm.com

Ref/Project number

Contract No. HY/2012/08 Tuen Mun-Chek Lap

Kok Link-Northern Connection Sub-sea Tunnel

Section

Notification of Exceedance for Water Quality

Impact Monitoring

30 August 2019



Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330_21 August 2019_ Surface & Middle DO_E_Station IS17

0212330_21 August 2019_ Bottom DO_E_Station IS17

0212330_21 August 2019_ Surface & Middle DO_F_Station IS(Mf)11

0212330_21 August 2019_ Bottom DO_F_Station SR7

0212330_21 August 2019_ Surface & Middle DO_F_Station IS17

A total of five Action Level exceedances were recorded on 21 August 2019.

Regards,

Dr Jasmine Ng

Environmental Team Leader

CONFIDENTIALITY NOTICE



CONTRACT NO. HY/2012/08 TUEN MUN - CHEK LAP KOK LINK NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Log No.	<u> 4</u>	Action Level Exceedance	
	0212330_21 August 2	2019_ Surface & Middle DO_E_St	ation IS17
	0212330_21 Au	gust 2019_ Bottom DO_E_Station	IS17
	0212330_21 August 201	19_ Surface & Middle DO_F_Stati	on IS(Mf)11
		gust 2019_ Bottom DO_F_Station	
	0212330_21 August 2	2019_ Surface & Middle DO_F_St	ation IS17
	[То	tal No. of Exceedances = 5]	
Date		August 2019 (Measured)	
	0	019 (<i>In situ</i> results received by ERN	·
	<u> </u>	(Laboratory results received by E	,
Monitoring	CS(Mf)5, SR4a, SR4(N2), IS8(I	N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N),	SR7, IS17, IS(Mf)11
Station			
Parameter(s)			
with	Γ	Dissolved Oxygen (mg/L)	
Exceedance(issorved expgen (mg/ 2)	
s)			
Action	DO	Surface and Middle	Bottom
Levels		5.0 mg/L	4.7 mg/L
Limit Levels	DO	Surface and Middle	Bottom
		4.2 mg/L	3.6 mg/L
Measured	Action Level Exceedance for DO (4.9 mg/L)		Ç
Levels	Action Level Exceedance for DO (4.5 mg/L)	is observed at IS17 at Bottom Leve	el during mid-ebb tide.
	Action Level Exceedance for DO (4.6 mg/L)	is observed at IS(Mf)11 at Surface	& Middle Level during mid-
	flood tide.		
	Action Level Exceedance for DO (4.3 mg/L)	is observed at SR7 at Bottom Leve	el during mid-flood tide.
	Action Level Exceedance for DO (4.8 mg/L)	is observed at IS17 at Surface & M	liddle Level during mid-flood
	tide.		
Works	According to the information provided by t	he Contractor, Seawall Modification	on Works was carried out on 21
Undertaken	August 2019.		
(at the time			
of			
monitoring			
event)			

Possible	The exceedances are unlikely to be due to the Contract, in view of the following:
Reason for	All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and
Action or	Limit Levels during both mid-ebb and mid-flood tides on the same day.
Limit Level	• IS(Mf)11, IS17 and SR7 are far away (>1.5 km) from the Seawall Modification Works Area (Figure 1), thus
Exceedance(the observed exceedance should not be affected by the marine works under this Contract. Moreover,
s)	IS(Mf)16 is closer to the works area and no exceedance was recorded. Therefore, the exceedance is
	unlikely to be related to this Contract.
	Bottom-depth DO levels at SR7 was similar to the corresponding control stations, CS(Mf)5, during mid-
	flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were
	below Action Level.
	Surface & Middle-depth DO levels at IS17 and IS(Mf)11 were similar to the corresponding control
	stations, CS(Mf)5, during mid-flood tide, in which the recorded Surface & Middle-depth DO levels at the
	corresponding control station were below Action Level.
	As reported by the marine mammal observer, no discharge of organic matters into waters from landside
	works area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest
	station to the Seawall Modification Works Area during mid-ebb tide. Therefore, exceedances recorded
	at IS17 during mid-ebb tide are unlikely to be caused by the marine works of this Contract.
Actions	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.
Taken/To	
Be Taken	
Remarks	The monitoring results on 21 August 2019 and locations of water quality monitoring stations are attached.

Project	Contract	Date (yyyy- mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Surface	1	1	29.4	8.0	21.7	5.5		1.6		8.8	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Surface	1	2	29.4	8.0	21.7	5.5	5.4	1.3]	8.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Middle	2	1	28.7	8.0	23.1	5.2	J.4	1.4	2.0	6.2	6.4
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Middle	2	2	28.7	8.0	23.1	5.2		1.6	2.0	6.7	0.4
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Bottom	3	1	28.6	8.0	23.5	5.3	5.3	2.9	_	4.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Bottom	3	2	28.6	8.0	23.5	5.3	"	2.9		4.2	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)3(N)	15:44	Surface	1	1	29.6	8.0	21.0	5.6	_	3.5	4	9.9	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)3(N)	15:44	Surface	2	2	29.6	8.0	21.0	5.6	5.4	3.5	4	9.4	-
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)3(N)	15:44	Middle	2	1	28.7	8.0	23.0	5.2	-	3.2	3.8	9.6	11.0
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21	Mid-Ebb Mid-Ebb	CS(Mf)3(N) CS(Mf)3(N)	15:44 15:44	Middle Bottom	3		28.7 28.6	8.0	23.1	5.2 5.3		3.2 4.8	+	10.4	1
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)3(N)	15:44	Bottom	3	2	28.6	8.0	23.5	5.3	5.3	4.8	1	12.9	1
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Surface	1	1	28.5	8.0	24.2	5.3		1.5		12.0	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Surface	1	2	28.5	8.0	24.2	5.3	1	1.5	†	11.8	1
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Middle	2	<u></u>		5.0		2.0	5.3		1	11.0	10.4
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Middle	2	2					1		2.2		13.4
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Bottom	3	1	28.1	8.0	24.7	5.6	5.6	3.0		14.9]
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Bottom	3	2	28.1	8.0	24.7	5.6	5.6	2.9		14.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Surface	1	1	29.1	8.0	23.1	5.8		1.5		17.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Surface	1	2	29.1	8.0	23.1	5.8	5.8	1.5]	17.8	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Middle	2	1					J.0		2.8		13.4
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Middle	2	2							2.0		15.1
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Bottom	3	1	28.2	7.9	24.4	4.7	4.7	4.1	4	9.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Bottom	3	2	28.2	7.9	24.4	4.7		4.2		9.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4(N2)	14:45	Surface	1	1	29.4	7.9	22.7	5.7	-	2.9	-	6.1	
			Mid-Ebb	SR4(N2)	14:45	Surface	1	1	29.4	7.9	22.7	5.7	5.7	2.9	-	5.5	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb Mid-Ebb	SR4(N2)	14:45 14:45	Middle Middle	2	2		+ +			-		3.6		7.7
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21	Mid-Ebb	SR4(N2) SR4(N2)	14:45 14:45	Middle Bottom	2		28.2	7.9	24.3	4.7		4.2	1	9.4	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4(N2)	14:45	Bottom	3	2	28.2	7.9	24.3	4.7	4.7	4.2	1	9.4	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:43	Surface	1	1	29.1	7.9	23.2	5.5		4.2		11.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:39	Surface	1	2	29.1	7.9	23.2	5.6	_	4.2	1	11.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:39	Middle	2	1	۵/،1	,,,	25.2	5.0	5.6	1 • 🗠	1	11.5	100
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:39	Middle	2	2					1		5.0		10.3
TMCLKL		2019/08/21	Mid-Ebb	IS8(N)	14:39	Bottom	3	1	28.9	7.9	23.5	5.4	5 A	5.8]	8.9]
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:39	Bottom	3	2	28.9	7.9	23.5	5.4	5.4	5.8		9.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Surface	1	1	29.3	8.1	23.0	6.0		2.3		9.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Surface	1	2	29.3	8.1	23.0	6.0	6.0	2.4]	8.9]
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Middle	2	1					0.0		2.1		9.2
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Middle	2	2							2.1		J.2
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Bottom	3	1	28.9	8.2	23.3	5.8	5.8	1.8	4	9.8	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Bottom	3	2	28.9	8.1	23.3	5.7		1.9		8.5	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)11	15:12	Surface	1	<u> </u>	29.9	8.0	20.7	5.6	-	1.2	-	4.4	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)11	15:12 15:12	Surface	2	<u></u> 1	29.9	8.0 7.9	20.7	5.6 5.0	5.3	1.2 2.8	1	4.7	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21	Mid-Ebb Mid-Ebb	IS(Mf)11 IS(Mf)11	15:12	Middle Middle	2	<u>1</u>	28.7 28.7	7.9	23.3	5.0	-	2.8	2.4	5.5 5.6	6.5
TMCLKL	HY/2012/08 HY/2012/08	2019/08/21	Mid-Ebb	IS(MI)11 IS(Mf)11	15:12	Bottom	3		28.7	7.9	25.6	4.7		3.2	1	9.2	1
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)11	15:12	Bottom	3	2	27.7	7.9	25.6	4.7	4.7	3.2	†	9.2	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Surface	1	1	29.2	8.1	22.0	5.4		1.3		4.8	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Surface	1	2	29.2	8.1	22.0	5.4	1	1.3	1	4.9	1
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Middle	2	1					5.4	1.0	1		[
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Middle	2	2					1		2.1		5.4
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Bottom	3	1	28.4	8.1	23.8	5.4	5 A	2.8]	5.6]
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Bottom	3	2	28.4	8.1	23.8	5.3	5.4	2.8		6.2	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Surface	1	1	28.9	8.0	23.8	5.2		2.9		10.5	
	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Surface	1	2	28.9	8.0	23.7	5.2	4.9	2.8]	9.7	ļ l
	HY/2012/08		Mid-Ebb	IS17	15:04	Middle	2	1	28.0	8.0	25.4	4.5	T.)	4.7	4.5	11.8	11.5
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Middle	2	2	28.0	8.0	25.4	4.5		4.7]	11.0	

Project	Contract	Date (yyyy- mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	рH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Bottom	3	1	27.1	7.9	27.1	4.5	4.5	5.9		13.3	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Bottom	3	2	27.1	7.9	27.2	4.5	4.3	6.0		12.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)5	9:19	Surface	1	1	28.4	8.0	23.2	4.9		1.1		3.6	1
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)5	9:19	Surface	2	2	28.4	8.0	23.2	4.9	4.8	1.1		3.4	4
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21	Mid-flood Mid-flood	CS(Mf)5 CS(Mf)5	9:19 9:19	Middle Middle	2	2	27.9 27.9	8.0	24.6 24.6	4.6 4.6		1.3	1.5	5.9 6.2	5.8
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)5	9:19	Bottom	3	1	27.4	8.0	25.9	4.6		2.1		8.3	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)5	9:19	Bottom	3	2	27.4	8.0	25.9	4.6	4.6	2.1		7.6	1
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)3(N)	10:07	Surface	1	1	29.2	8.0	20.5	5.1		1.6		2.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)3(N)	10:07	Surface	1	2	29.2	8.0	20.5	5.1	5.0	1.5		2.2	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)3(N)	10:07	Middle	2	1	28.5	8.0	22.6	4.9		4.3	3.4	3.7	3.4
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)3(N)	10:07	Middle	2	2	28.5	8.0	22.6	4.9		4.3		3.7	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21	Mid-flood Mid-flood	CS(Mf)3(N) CS(Mf)3(N)	10:07 10:07	Bottom Bottom	3	2	28.5 28.5	8.0	22.7 22.7	5.0 5.0	5.0	4.4 4.4		3.9	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Surface	1	1	28.5	8.0	23.2	5.1		2.1		13.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Surface	1	2	28.5	8.0	23.2	5.1	<u>5</u> 1	2.1]	12.6]
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Middle	2	1					5.1		3.2		10.3
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Middle	2	2							J.L		10.5
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Bottom	3	1	28.0	8.0	24.0	4.8	4.8	4.3		7.6	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21	Mid-flood Mid-flood	IS(Mf)16 SR4a	10:54 11:04	Bottom Surface	3	2	28.0 29.0	8.0	24.1 22.6	4.8 5.2		4.3		7.7 4.7	
TMCLKL	HY/2012/08 HY/2012/08	2019/08/21	Mid-flood	SR4a SR4a	11:04	Surface	1	2.	29.0	8.0	22.6	5.2		1.2	1	4.7	1
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4a	11:04	Middle	2	1	27.0	0.0	22.0	J.U	5.2	1.4	2.	1.7	† ,
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4a	11:04	Middle	2	2							2.0		4.7
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4a	11:04	Bottom	3	1	28.4	8.0	23.4	4.7	4.7	2.7		4.8]
TMCLKL	HY/2012/08	2019/08/21		SR4a	11:04	Bottom	3	2	28.4	8.0	23.4	4.7	7./	2.7		4.6	
	1		Mid-flood		11:08	Surface	1	1	29.4	8.0	22.6	5.4		2.6		4.0	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21	Mid-flood Mid-flood	SR4(N2) SR4(N2)	11:08 11:08	Surface Middle	2	1	29.4	8.0	22.6	5.4	5.4	2.5	-	4.5	1
TMCLKL	HY/2012/08	2019/08/21		SR4(N2)	11:08	Middle	2	2					-		3.1		5.7
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4(N2)	11:08	Bottom	3	1	28.4	8.0	23.5	4.8	4.0	3.6		6.7	1
TMCLKL	HY/2012/08	2019/08/21		SR4(N2)	11:08	Bottom	3	2	28.4	8.0	23.5	4.8	4.8	3.5		7.5	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS8(N)	11:13	Surface	1	1	29.1	8.0	22.8	5.1		2.8		5.4	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS8(N)	11:13	Surface	1	2	29.1	8.0	22.8	5.1	5.1	2.8		5.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS8(N)	11:13	Middle	2	1							3.5		4.5
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21	Mid-flood Mid-flood	IS8(N) IS8(N)	11:13 11:13	Middle Bottom	3	1	28.2	8.0	23.7	5.2		4.2		4.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS8(N)	11:13	Bottom	3	2.	28.2	8.0	23.7	5.2	5.2	4.2		3.5	1
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Surface	1	1	28.4	8.1	23.1	5.3		1.7		5.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Surface	1	2	28.4	8.1	23.1	5.3	5.3	1.7		5.8	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Middle	2	1					. J.J		1.9		6.6
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Middle	2	2	20. 1	0.1	22.2	<i>r</i> .		0.1		7.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Bottom	3	1	28.4	8.1	23.2	5.4 5.4	5.4	2.1	-	7.1	4
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21	Mid-flood Mid-flood	IS(Mf)9 IS(Mf)11	11:20 10:40	Bottom Surface	1	1 1	28.4 28.3	8.1	23.3 23.6	5.4 4.8		2.1		7.8 4.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Surface	1	2	28.3	8.1	23.6	4.8		2.0		4.0	†
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Middle	2	1	27.7	8.2	25.0	4.4	4.6	4.1	2.5	5.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Middle	2	2	27.7	8.2	25.0	4.4		4.1	3.5	5.4	6.3
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Bottom	3	1	27.6	8.3	25.3	5.0	5.0	4.5		9.2]
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Bottom	3	2	27.7	8.2	25.1	5.0	J.0	4.4		8.5	
TMCLKL	HY/2012/08	2019/08/21		SR7	9:39	Surface	1	1	28.7	8.0	21.9	5.3		2.3		6.2	4
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21		SR7 SR7	9:39 9:39	Surface Middle	2	<u>2</u> 1	28.7	8.0	21.9	5.3	5.3	2.3		6.3	1
TMCLKL	HY/2012/08	2019/08/21		SR7	9:39	Middle	2	2							3.3		8.0
TMCLKL	HY/2012/08	2019/08/21		SR7	9:39	Bottom	3	1	27.5	8.1	25.9	4.3	4.0	4.2	1	10.1	1
TMCLKL	HY/2012/08	2019/08/21		SR7	9:39	Bottom	3	2	27.5	8.1	25.9	4.3	4.3	4.2		9.3	<u> </u>
TMCLKL	HY/2012/08	2019/08/21		IS17	10:47	Surface	1	1	28.0	8.1	24.3	4.8		3.6		7.6	
	HY/2012/08		Mid-flood		10:47	Surface	1	2	28.0	8.1	24.3	4.8	4.8	3.6		7.9	.
	HY/2012/08	2019/08/21		IS17	10:47	Middle	2	1	28.0	8.1	24.3	4.8		3.2	3.3	10.9	10.7
	HY/2012/08 HY/2012/08	2019/08/21 2019/08/21		IS17 IS17	10:47 10:47	Middle Bottom	3	1	28.0 28.0	8.1	24.3 24.4	4.8 5.0		3.2	-	10.6 14.0	1
	HY/2012/08			IS17 IS17	10:47	Bottom	3	2	28.0	8.1	24.4	5.0	5.0	3.1	1	13.0	1
TIVICLIAL	11112012100	2017100121	17114 11UUU	TO 1 /	10.⊤/	POUGHI	J	<i>L</i>	۷۰.0	0.1	∠⊤• ⊤			J.1	I.	13.0	

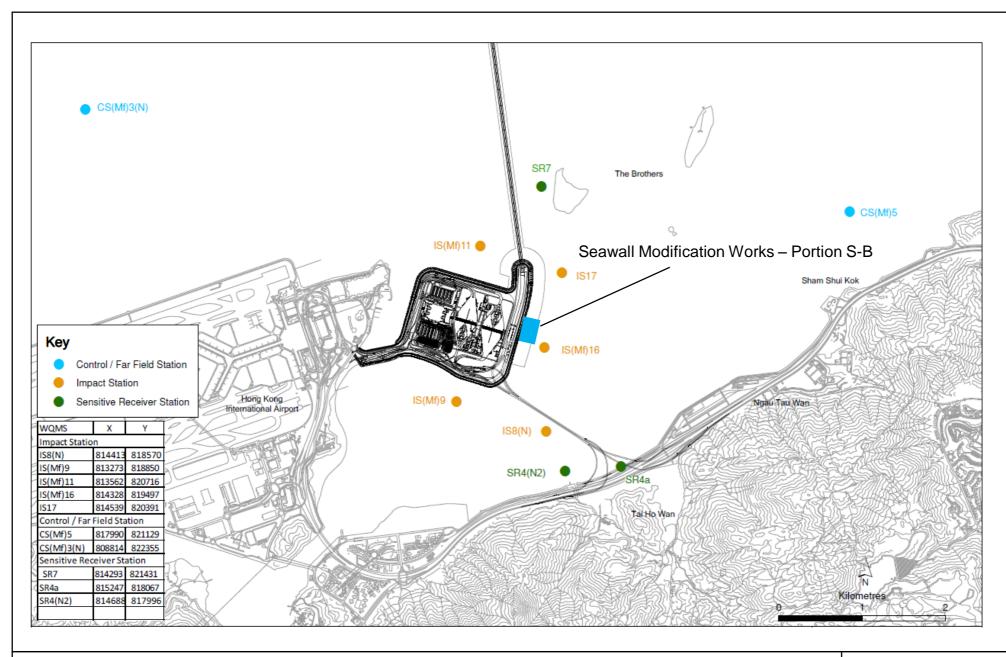


Figure 1





Environmental Resources Management

To Ramboll Hong Kong Limited (ENPO)

2507,

From

Subject

ERM- Hong Kong, Limited

25/F One Harbourfront, 18 Tak Fung Street, Hung Hom, Hong Kong Telephone: (852) 2271 3113 Facsimile: (852) 2723 5660

E-mail: jasmine.ng@erm.com

Ref/Project number

Contract No. HY/2012/08 Tuen Mun-Chek Lap

Kok Link-Northern Connection Sub-sea Tunnel

Section

Notification of Exceedance for Water Quality

Impact Monitoring

Date 30 August 2019



Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330_23 August 2019_ Bottom DO_E_Station IS17

A total of one Action Level exceedance was recorded on 23 August 2019.

Regards.

Dr Jasmine Ng

Environmental Team Leader

CONFIDENTIALITY NOTICE



CONTRACT NO. HY/2012/08 TUEN MUN - CHEK LAP KOK LINK NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Log No.		Action Level Exceedance	
		August 2019_ Bottom DO_E_Station	on IS17
	Ι	Total No. of Exceedances = 1]	
Date		23 August 2019 (Measured)	
	26 Augus	t 2019 (<i>In situ</i> results received by E	RM)
	3 September 2	2019 (Laboratory results received b	y ERM)
Monitoring	CS(Mf)5, SR4a, SR4(N2), IS	8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N	I), SR7, IS17, IS(Mf)11
Station			
Parameter(s)			
with		Dissolved Oxygen (mg/L)	
Exceedance(s)			
Action Levels	DO	Surface and Middle	Bottom
		5.0 mg/L	4.7 mg/L
Limit Levels	DO	Surface and Middle	Bottom
		4.2 mg/L	3.6 mg/L
Measured	Action Level Exceedance for DO (4.2 m	g/L) is observed at IS17 at Bottom	Level during mid-ebb tide.
Levels			
Works	According to the information provided	by the Contractor, Seawall Modifie	cation Works was carried out on
Undertaken (at	23 August 2019.		
the time of			
monitoring			
event)			
Possible Reason	The exceedances are unlikely to be due	to the Contract, in view of the follo	owing:
for Action or	-	DO, at all monitoring stations were	-
Limit Level	and Limit Levels during both mid	l-ebb and mid-flood tides on the sa	me day.
Exceedance(s)	 No discharge of organic matters i 	nto waters from landside works ar	ea was recorded.
	-	vas similar to the corresponding co	. , , , ,
		ed Bottom-depth DO levels at the o	corresponding control station
	were below Action Level.		
Actions Taken/	No immediate action is considered necessity	essary. The ET will monitor for fu	ture trends in exceedances.
To Be Taken			
Remarks	The monitoring results on 23 August 20	19 and locations of water quality n	nonitoring stations are attached.

Project	Contract	Date (yyyy- mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Surface	1	1	29.0	8.4	20.1	7.1		1.5		5.6	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Surface	1	2	29.0	8.4	20.1	7.1	6.6	1.5		5.5	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Middle	2	1	27.8	8.4	23.5	6.1	0.0	1.3	1.5	4.5	4.5
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Middle	2	2	27.9	8.4	23.4	6.1		1.3	1.5	4.2	4.5
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Bottom	3	1	27.1	8.4	26.5	5.7	5.7	1.7		3.4	1
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Bottom	3	2	27.1	8.4	26.5	5.7	5.7	1.6		3.9	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Surface	1	1	29.4	8.4	16.4	6.3	_	3.2		6.5	1
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Surface	1	2	29.4	8.4	16.3	6.3	5.2	3.2		6.1	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Middle	2	1	27.4	8.4	25.6	4.1	J 3.2	4.2	4.3	7.8	7.9
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Middle	2	2	27.4	8.4	25.4	4.1		4.1	1	7.6	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Bottom	3	<u>l</u>	27.2	8.4	26.5	4.1	4.1	5.5	_	9.3	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Bottom	3	2	27.2	8.4	26.5	4.1		5.5		9.8	ļ
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Surface	1	1	28.4	8.5	23.5	5.9	4	8.7		10.4	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Surface	1	2	28.4	8.5	23.4	5.9	5.9	8.7	4	10.0	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Middle	2	1					-		8.9		13.0
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Middle	2	1	20.1	0.5	24.0	5 1		0.1	-	15.0	-
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Bottom	3	2	28.1	8.5	24.0	5.4	5.4	9.1	-	15.2	-
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Bottom	1	<u></u>	28.0	8.5	24.1	5.3		9.1		16.4	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4a	16:18	Surface	1	2	29.3	8.5	20.3	7.3	-	2.1	-	6.3	1
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb Mid-Ebb	SR4a SR4a	16:18	Surface Middle	2	<u></u>	29.3	8.5	20.3	7.3	7.3	2.2	-	6.2	1
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/23 2019/08/23	Mid-Ebb	SR4a SR4a	16:18 16:18	Middle	2	2		+ +					3.3		8.7
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4a SR4a	16:18	Bottom	2		28.3	8.4	23.1	5.5		4.4	_	11.1	1
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4a	16:18	Bottom	3	2	28.3	8.4	23.2	5.5	5.5	4.4	_	11.3	1
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Surface	1	<u>Z</u> 1	29.0	8.5	21.6	6.3		5.2		7.9	
			Mid-Ebb	SR4(N2)	16:15	Surface	1	2	29.0	8.5	21.7	6.3	1	5.2		8.5	1
	HY/2012/08	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Middle	7	1	27.0	0.5	21.1	0.3	6.3	J.2		0.5	1
TMCLKL	1	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Middle	2	7					1		7.3		12.7
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Bottom	3	1	28.2	8.4	23.5	5.2		9.3	_	17.0	1
	HY/2012/08	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Bottom	3	2.	28.2	8.4	23.5	5.2	5.2	9.3	_	17.2	†
	HY/2012/08	2019/08/23	Mid-Ebb	IS8(N)	16:09	Surface	1	1	29.1	8.6	21.8	6.9		5.8		8.7	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS8(N)	16:09	Surface	1	2	29.1	8.6	21.8	6.9	1	5.8		8.4	1
	HY/2012/08		Mid-Ebb	IS8(N)	16:09	Middle	2	1		1	21.0	3,7	6.9				10.5
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS8(N)	16:09	Middle	2	2					1		7.3		10.7
		2019/08/23	Mid-Ebb	IS8(N)	16:09	Bottom	3	1	28.3	8.5	23.4	5.8	7.0	8.8		12.3	1
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS8(N)	16:09	Bottom	3	2	28.3	8.5	23.4	5.8	5.8	8.7	<u></u>	13.2	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Surface	11	1	29.0	8.7	22.2	7.3		3.2		9.2	
MCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Surface	1	2	29.0	8.7	22.2	7.3	7.2	3.1		9.9]
ΓMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Middle	2	1					7.3		4.5		10.2
ΓMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Middle	2	2							4.3		10.2
ГМСLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Bottom	3	1	28.8	8.6	22.6	7.0	7.0	5.9	_	10.5]
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Bottom	3	2	28.8	8.6	22.6	7.0	7.0	5.9		11.0	
	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Surface	1	1	29.2	8.5	17.9	7.4	4	2.3	_	5.4]
	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Surface	1	2	29.2	8.5	17.9	7.4	7.0	2.4	_	5.2	1
TMCLKL			Mid-Ebb	IS(Mf)11	16:42	Middle	2	1	28.6	8.5	20.4	6.6		1.3	2.9	7.1	6.8
<u>rmclkl</u>	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Middle	2	2	28.6	8.5	20.4	6.6		1.3		6.9]
<u>rmclkl</u>		2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Bottom	3	1	26.5	8.4	28.6	4.7	4.7	5.0	_	8.2	4
rmclkl	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Bottom	3	2	26.5	8.4	28.6	4.6		5.0		7.9	
	HY/2012/08	2019/08/23	Mid-Ebb	SR7	17:38	Surface	1	1	29.4	8.5	16.1	7.3	4	2.9	_	5.7	4
			Mid-Ebb	SR7	17:38	Surface	1	2	29.4	8.5	16.1	7.3	7.3	2.9	4	5.6	
	HY/2012/08	2019/08/23	Mid-Ebb	SR7	17:38	Middle	2	2		+			-		4.3		6.1
			Mid-Ebb	SR7	17:38	Middle	2	2	20.0	0.4	10.0	7 1		<i></i>	4	6.5	4
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR7	17:38	Bottom	3	1	28.9	8.4	19.0	7.1	7.1	5.7	4	6.5	
	HY/2012/08	2019/08/23	Mid-Ebb	SR7	17:38	Bottom	3	2	28.9	8.4	19.1	7.1		5.7		6.7	
	HY/2012/08		Mid-Ebb	IS17	16:34	Surface	1	2	28.3	8.5	21.7	6.0	-	2.1	-	4.5	-
. I [V/II] I I/ I	HY/2012/08	2019/08/23	Mid-Ebb Mid-Ebb	IS17 IS17	16:34 16:34	Surface Middle	2	1	28.4 28.0	8.5	21.7 23.3	6.0 5.4	5.7	2.1 3.3	4	4.8 5.5	-
	HY/2012/08	1001010000					, ,		. /X []	. × >	73.3	· 3/		4.4	4.0		6.0

Project	Contract	Date (yyyy- mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	рН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS17	16:34	Bottom	3	1	26.3	8.4	28.9	4.2	4.2	6.5]	7.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS17	16:34	Bottom	3	2	26.3	8.5	28.9	4.2	4.2	6.4		8.5	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Surface	1	1	28.6	8.1	15.4	6.1	<u> </u>	2.9]	5.3	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Surface	1	2	28.6	8.1	15.4	6.1	5.7	2.9]	5.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Middle	2	1	28.3	8.1	20.3	5.3	5.7	3.3	3.6	6.5	7.0
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Middle	2	2	28.4	8.1	20.3	5.4		3.3	3.0	6.1	7.0
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Bottom	3	1	28.0	8.1	23.0	5.2	5.0	4.7		8.9	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Bottom	3	2	28.0	8.1	23.0	5.2	5.2	4.7		9.1	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Surface	1	1	29.1	8.2	13.0	6.4		2.3		5.7	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Surface	1	2	29.1	8.2	13.0	6.5	6.1	2.3		5.5	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Middle	2	1	28.6	8.1	17.0	5.8	6.1	4.0	4.1	6.5	6.8
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Middle	2	2	28.7	8.2	17.0	5.8		3.9	4.1	6.2	0.0
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Bottom	3	1	27.9	8.1	23.8	5.0	5.0	6.1]	8.7	
TMCLKL	HY/2012/08		Mid-flood	CS(Mf)3(N)	11:52	Bottom	3	2	27.9	8.1	23.8	5.0	J.U	6.2	8.1	8.1	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)16	12:35	Surface	1	1	28.4	8.3	21.7	5.7		3.6]	14.2	
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)16	12:35	Surface	1	2	28.4	8.3	21.7	5.7	5.7	3.6] [13.9	
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)16	12:35	Middle	2	1					J.1		4.5		20.0
TMCLKL	HY/2012/08			IS(Mf)16	12:35	Middle	2	2							1.2		20.0
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)16	12:35	Bottom	3	1	28.1	8.3	23.4	5.4	5.4	5.4] [25.0	
TMCLKL	HY/2012/08			IS(Mf)16	12:35	Bottom	3	2	28.1	8.3	23.4	5.3	J . 4	5.3		26.8	
TMCLKL	HY/2012/08	+		SR4a	12:44	Surface	1	1	28.7	8.3	20.2	6.2		2.2]	7.7	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4a	12:44	Surface	1	2	28.7	8.3	20.2	6.2	6.2	2.1	j [7.9	
TMCLKL	HY/2012/08			SR4a	12:44	Middle	2	1					0.2		3.1		7.9
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4a	12:44	Middle	2	2							J.1		1.7
TMCLKL	HY/2012/08			SR4a	12:44	Bottom	3	1	28.4	8.3	21.8	5.8	5.8	4.1	ļ l	8.1	
				SR4a	12:44	Bottom	3	2	28.3	8.3	21.8	5.8	٥,٠٥	4.0		8.0	
TMCLKL	HY/2012/08			SR4(N2)	12:49	Surface	1	1	28.8	8.3	20.2	6.3		2.8]	5.4	
TMCLKL	HY/2012/08			SR4(N2)	12:49	Surface	1	2	28.8	8.3	20.2	6.3	6.3	2.8		5.7	
TMCLKL	HY/2012/08			SR4(N2)	12:49	Middle	2	1					0.5		3.3		7.0
TMCLKL	HY/2012/08			SR4(N2)	12:49	Middle	2	2]		ļ ,.o
TMCLKL	HY/2012/08			SR4(N2)	12:49	Bottom	3	1	28.4	8.3	21.3	5.8	5.8	3.7		8.2	
TMCLKL	HY/2012/08			SR4(N2)	12:49	Bottom	3	2	28.4	8.3	21.3	5.8	٥.٥	3.7		8.7	
TMCLKL	HY/2012/08			IS8(N)	12:54	Surface	1	1	28.8	8.3	20.0	6.4		2.2		3.7	
TMCLKL	HY/2012/08			IS8(N)	12:54	Surface	1	2	28.8	8.3	20.0	6.4	6.4	2.2		4.3	
TMCLKL	HY/2012/08			IS8(N)	12:54	Middle	2	1					0.1		3.9		6.8
TMCLKL	HY/2012/08			IS8(N)	12:54	Middle	2	2]]
TMCLKL	HY/2012/08			IS8(N)	12:54	Bottom	3	1	28.6	8.4	22.7	6.3	6.3	5.7		9.9	
TMCLKL	HY/2012/08			IS8(N)	12:54	Bottom	3	2	28.6	8.4	22.7	6.3	0.5	5.6		9.3	
TMCLKL	HY/2012/08			IS(Mf)9	13:01	Surface	1	1	28.6	8.3	21.5	5.8		4.4		9.1	
TMCLKL	HY/2012/08	+		IS(Mf)9	13:01	Surface	1	2	28.7	8.3	21.5	5.8	5.8	4.4		8.8	
TMCLKL	HY/2012/08			IS(Mf)9	13:01	Middle	2	1					2.0		5.4		10.8
TMCLKL	HY/2012/08			IS(Mf)9	13:01	Middle	2	2]		10.0
TMCLKL	HY/2012/08			IS(Mf)9	13:01	Bottom	3	1	28.4	8.3	23.3	5.2	5.2	6.3		12.8	
TMCLKL	HY/2012/08			IS(Mf)9	13:01	Bottom	3	2	28.4	8.3	23.4	5.1	J. L	6.3		12.3	
TMCLKL	HY/2012/08			IS(Mf)11	12:20	Surface	1	1	28.8	8.3	16.9	6.5		2.9		5.3	
TMCLKL	HY/2012/08			IS(Mf)11	12:20	Surface	1	2	28.8	8.3	16.9	6.5	6.2	2.9		5.5	
TMCLKL	HY/2012/08			IS(Mf)11	12:20	Middle	2	1	28.3	8.3	20.4	5.8	0.2	3.5	3.8	6.3	7.1
TMCLKL	HY/2012/08			IS(Mf)11	12:20	Middle	2	2	28.4	8.3	20.3	5.8		3.4]	6.3	,.,
TMCLKL	HY/2012/08			IS(Mf)11	12:20	Bottom	3	1	28.0	8.3	22.4	5.4	5.4	5.0		9.8	
TMCLKL	HY/2012/08			IS(Mf)11	12:20	Bottom	3	2	28.0	8.3	22.3	5.4	J. 1	5.0		9.2	
TMCLKL	HY/2012/08			SR7	11:24	Surface	1	1	28.5	8.1	18.4	5.8		2.8		7.7	
TMCLKL	HY/2012/08			SR7	11:24	Surface	1	2	28.5	8.1	18.4	5.8	5.8	2.8	ļ l	7.0	
TMCLKL	HY/2012/08			SR7	11:24	Middle	2	1					٥.٠		3.0		9.4
TMCLKL	HY/2012/08			SR7	11:24	Middle	2	2							J.0		J.7
TMCLKL	HY/2012/08			SR7	11:24	Bottom	3	1	28.4	8.1	21.0	5.5	5.5	3.2	ļ l	11.8	
TMCLKL	HY/2012/08			SR7	11:24	Bottom	3	2	28.3	8.1	21.2	5.4	٠,٦	3.2		10.9	
TMCLKL	HY/2012/08		Mid-flood		12:27	Surface	1	1	28.1	8.3	23.4	5.4		2.8		15.6	
1	HY/2012/08			IS17	12:27	Surface	1	2	28.1	8.3	23.4	5.4	5.3	2.8		14.8	
TMCLKL	_		3 61 1 61 1	TO 17	12:27	Middle	2	1	27.7	8.3	24.4	5.2	5.5	3.1		11.2	12.1
TMCLKL	HY/2012/08			IS17				1					l -		1 7× 1		191
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/23	Mid-flood	IS17	12:27	Middle	2	2	27.7	8.3	24.4	5.2		3.1	2.8	11.4	12.1
TMCLKL TMCLKL TMCLKL	HY/2012/08	2019/08/23 2019/08/23	Mid-flood	IS17 IS17			2 3	2					5.2		2.8		12.1

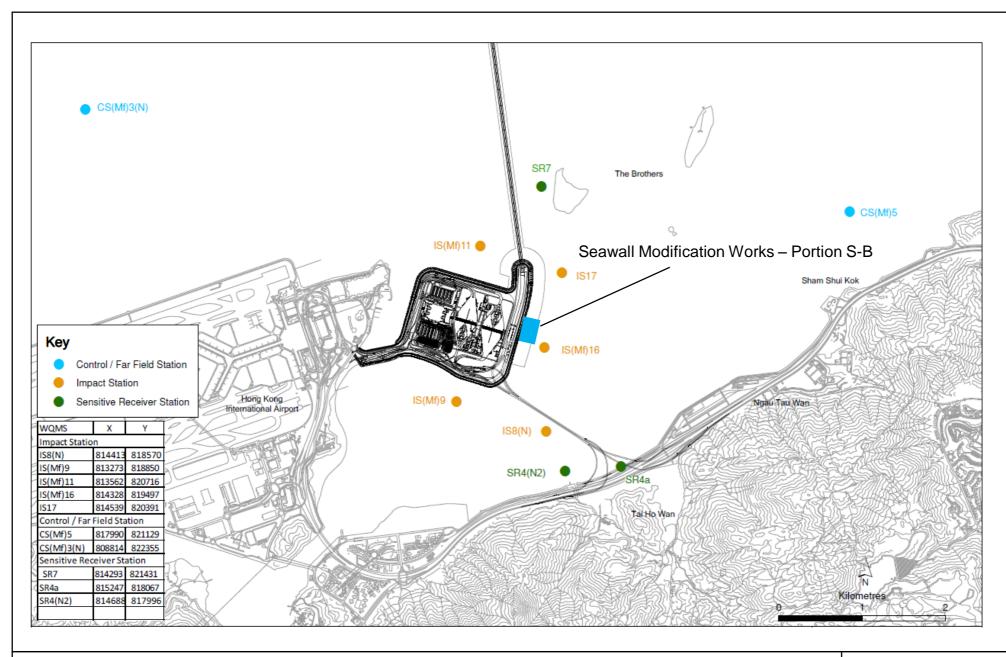


Figure 1





Environmental Resources Management

To Ramboll Hong Kong Limited (ENPO)

2507,

From

Subject

ERM- Hong Kong, Limited

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Ref/Project number

Contract No. HY/2012/08 Tuen Mun-Chek Lap

Notification of Exceedance for Water Quality

Kok Link-Northern Connection Sub-sea Tunnel

Section



Impact Monitoring

Date 30 August 2019

Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Limit Level Exceedance

0212330_26 August 2019_ Bottom DO_E_Station IS(Mf)11 0212330_26 August 2019_ Bottom DO_F_Station IS(Mf)11

A total of two Limit Level exceedances were recorded on 26 August 2019.

Regards,

Dr Jasmine Ng

Environmental Team Leader

CONFIDENTIALITY NOTICE



ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08 TUEN MUN - CHEK LAP KOK LINK NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring Notification of Exceedance

Log No.		Limit Level Exceedance													
	0212330_26 Au	gust 2019_ Bottom DO_E_Station l	IS(Mf)11												
	0212330_26 Au	gust 2019_ Bottom DO_F_Station l	S(Mf)11												
		Total No. of Exceedances = 2]													
Date		26 August 2019 (Measured)													
	28 August	2019 (<i>In situ</i> results received by EF	RM)												
	_	2019 (Laboratory results received by													
Monitoring	CS(Mf)5, SR4a, SR4(N2), IS	8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11												
Station															
Parameter(s)															
with		Dissolved Oxygen (mg/L)													
Exceedance(s)															
Action Levels	DO	Surface and Middle	Bottom												
		5.0 mg/L 4.7 mg/L													
Limit Levels	DO														
		4.2 mg/L	3.6 mg/L												
Measured	Limit Level Exceedance for DO (3.2 mg/	L) is observed at IS(Mf)11 at Botto	m Level during mid-ebb tide.												
Levels	Limit Level Exceedance for DO (2.9 mg/	L) is observed at IS(Mf)11 at Botto	m Level during mid-flood tide.												
Works	According to the information provided	by the Contractor, Seawall Modific	ation Works was carried out on												
Undertaken (at	26 August 2019.														
the time of															
monitoring															
event)															
Possible Reason	The exceedances are unlikely to be due		<u> </u>												
for Action or		DO, at all monitoring stations were	_												
Limit Level	_	-ebb and mid-flood tides on the sar	-												
Exceedance(s)		the Seawall Modification Works A	e e e e e e e e e e e e e e e e e e e												
		by the marine works under this Co	ontract. Therefore, the												
	exceedance is unlikely to be relate														
	* /	11 were similar to the correspondir	` ,												
	9	ne recorded Bottom-depth DO level	s at the corresponding control												
	station were below Limit Level.														
	- ' '	milar to the control station where t	-												
	•	epth DO levels may be possibly cau	-												
		e freshwater discharged from the F													
		er, which is probably responsible fo	-												
	the surface and middle levels com	pared to the higher Salinity record	ed at the bottom level of the												
	_	tion of seawater in the water colum	ın is likely a contributing factor												
	to the results of lower levels of DC) at the bottom level.													
	 As reported by the marine mamm 	al observer, no discharge of organi	c matters into waters from												
	landside works area was recorded	l. Moreover, no exceedance was re	ecorded at IS(Mf)16 which is the												
		ification Works Area during both n													
	Therefore, exceedances recorded a	at IS(Mf)11 during both mid-ebb an	d mid-flood tide are unlikely to												
	be caused by the marine works of	this Contract.													

Actions Taken/	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.
To Be Taken	
Remarks	The monitoring results on 26 August 2019 and locations of water quality monitoring stations are attached.

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Surface	1	1	28.3	7.9	19.8	6.0		1.6		3.6	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Surface	1	2	28.3	7.9	20.2	6.0	6.0	1.7		3.7]
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Middle	2	1	28.3	7.9	20.3	5.9	6.0	1.6	2.2	4.0	3.2
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Middle	2	2	28.3	7.9	20.7	5.9		1.6	۷.۷	3.9	3.2
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Bottom	3	1	27.0	7.8	27.6	4.2	4.3	3.2		2.2	<u> </u>
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Bottom	3	2	27.0	7.8	28.3	4.3	71.5	3.3		1.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Surface	1	1	28.5	7.9	14.2	6.3	<u>↓</u>	2.6		4.8	_
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Surface	1	2	28.5	7.8	14.5	6.4	6.1	2.5		4.5	_
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Middle	2	1	28.4	7.9	16.6	5.8		2.5	2.7	3.9	4.4
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Middle	2	2	28.5	7.8	16.8	5.8		2.5		4.7	-
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Bottom	3	1	27.8	7.9	22.8	5.1	5.2	2.9		4.7	4
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Bottom	3	2	27.8	7.8	23.6	5.2		3.0		3.7	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Surface	<u>l</u>	1	28.3	8.0	19.9	6.2	-	7.7		9.0	4
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Surface	1	2	28.3	7.9	20.3	6.2	6.2	7.5		8.2	4
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Middle	2	2					┪ ┃		8.7		8.3
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Middle	L	2	20.2	0.0	22.2	<i>E</i> (0.5		0.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Bottom	3	2	28.3	8.0	22.3	5.6	5.6	9.5	-	8.4	-
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Bottom	3	2	28.3	7.9	23.0	5.6		10.0		7.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Surface	1	1	28.2	8.0	18.2	5.9	 	5.1	-	13.6	-
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Surface	2	2	28.2	7.9	18.6	6.0	6.0	5.2	-	12.4	-
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Middle	L	2					-		5.6		11.6
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Middle	2	2	20.2	7.0	20.5	F 1		5.0	-	10.6	-
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Bottom	3	2	28.3	7.9	22.5	5.1	5.1	5.9	-	10.6	-
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Bottom	1	<u>Z</u>	28.3	7.8	23.0	5.1		6.0		9.6	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4(N2)	10:04	Surface	1	2	28.4	7.9	16.3	5.2	1	11.1	-	7.0	1
TMCLKL	HY/2012/08 HY/2012/08	2019/08/26 2019/08/26	Mid-Ebb Mid-Ebb	SR4(N2) SR4(N2)	10:04 10:04	Surface Middle	1		28.4	7.8	16.6	5.2	5.2	11.1	-	8.0	1
		2019/08/26	Mid-Ebb	SR4(N2)	10:04	Middle	2	2					 		9.9		8.5
TMCLKL		2019/08/26	Mid-Ebb	SR4(N2)	10:04		3	Δ 1	28.7	7.9	21.2	5.1		8.5	-	9.1	1
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4(N2)	10:04	Bottom Bottom	3	2	28.8	7.8	21.5	5.1 5.1	5.1	8.7	-	10.0	1
TMCLKL		2019/08/26	Mid-Ebb	IS8(N)	10:04	Surface	1	<u>Z</u>	28.1	8.0	18.3	6.4		5.6		7.6	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS8(N)	10:09	Surface	1	2	28.1	7.9	18.7	6.4	†	5.5		7.2	1
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS8(N)	10:09	Middle	2	1	20.1	1.7	10.7	0.4	6.4	J.J	-	1.2	1
TMCLKL		2019/08/26	Mid-Ebb	IS8(N)	10:09	Middle	2	2					†		7.8		7.6
TMCLKL		2019/08/26	Mid-Ebb	IS8(N)	10:09	Bottom	3	1	28.4	8.0	20.8	6.1		10.1	1	8.2	1
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS8(N)	10:09	Bottom	3	2.	28.4	7.9	21.2	6.0	6.1	10.1		7.2	1
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Surface	1	1	20.1	1.5	21.2	0.0		10.1		7.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Surface	1	2.					† <u>.</u> .				1
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Middle	2	1	28.5	7.9	19.7	5.9	5.9	4.1	1	8.8	1
TMCLKL		2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Middle	2	2	28.5	7.8	19.9	5.9	†	4.0	4.1	7.8	8.3
TMCLKL		2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Bottom	3	1		111			WD 17 1/01		1		1
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Bottom	3	2					#DIV/0!				1
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Surface	1	1	28.3	7.9	17.1	6.2		1.9		3.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Surface	1	2	28.3	7.9	17.4	6.2] ,	1.9		4.8]
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Middle	2	1	28.3	7.9	22.7	5.3	5.8	2.3	2.0	4.4	20
TMCLKL		2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Middle	2	2	28.3	7.8	23.7	5.3		2.1	2.6	4.3	3.9
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Bottom	3	1	25.9	7.8	30.1	3.2	3.2	3.9		3.6]
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Bottom	3	2	25.9	7.8	30.7	3.2	5.2	3.6		2.6	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR7	8:34	Surface	1	1	28.4	7.9	17.1	6.1		2.2		2.9]
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR7	8:34	Surface	1	2	28.4	7.8	17.4	6.1	6.1	2.0		3.8]
TMCLKL		2019/08/26	Mid-Ebb	SR7	8:34	Middle	2	1					0.1		2.7		3.6
TMCLKL		2019/08/26	Mid-Ebb	SR7	8:34	Middle	2	2							۷.1		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR7	8:34	Bottom	3	1	28.4	7.9	18.2	6.1	6.1	3.3		4.3]
TMCLKL		2019/08/26	Mid-Ebb	SR7	8:34	Bottom	3	2	28.4	7.8	19.1	6.1	U . 1	3.1		3.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS17	9:41	Surface	1	1	28.3	8.0	18.5	6.1	<u> </u>	2.9		5.2]
TMCLKL		2019/08/26	Mid-Ebb	IS17	9:41	Surface	1	2	28.3	7.9	18.9	6.1	6.0	3.0		4.3]
		2019/08/26	Mid-Ebb	IS17	9:41	Middle	2	1	28.3	7.9	19.6	5.9		3.2	3.3	5.0	4.4
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS17	9:41	Middle	2	2	28.3	7.9	20.0	6.0		3.3] 3.5	5.7] '.'

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS17	9:41	Bottom	3	1	28.2	7.9	24.7	5.1	5.0	3.8		3.7	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS17	9:41	Bottom	3	2	28.2	7.9	24.2	4.9	5.0	3.7		2.7	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Surface	1	1	28.5	8.0	16.4	6.7		2.0		6.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Surface	1	2	28.5	7.8	16.7	6.7	5.3	2.1]	5.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Middle	2	1	26.2	7.8	28.9	3.9	3.3	3.3	4.8	3.9	4.8
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Middle	2	2	26.1	7.7	29.6	3.8		3.0	7.0	4.6	7.0
TMCLKL	HY/2012/08		Mid-flood	CS(Mf)5	17:22	Bottom	3	1	25.0	7.8	31.4	3.4	3.4	9.3		3.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Bottom	3	2	25.0	7.7	32.0	3.4	5.1	9.2		4.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Surface	1	1	28.7	7.8	14.9	6.2	4	3.2		6.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Surface	1	2	28.7	7.8	15.2	6.2	6.1	3.1		6.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Middle	2	1	28.6	7.8	16.1	6.0	-} ⊦	5.2	6.8	6.0	5.6
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Middle	2	2	28.6	7.8	16.4	6.0		5.2		5.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Bottom	2	2	28.2 28.2	7.7	18.8	5.1	5.2	12.1	-	5.2	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/26 2019/08/26	Mid-flood Mid-flood	CS(Mf)3(N) IS(Mf)16	16:29 15:53	Bottom Surface	1	<u>Z</u>	28.2	7.7	19.1 17.2	5.2 6.7		12.0 3.4		4.2 8.9	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Surface	1	2	28.5	7.9	17.5	6.7	┪ ト	3.4	1	8.7	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Middle	2	1	20.3	7.9	17.3	0.7	6.7	3.2	1	0.7	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Middle	2	2					┪ ┢		6.4		8.3
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Bottom	3	1	28.4	7.8	18.5	6.7		9.4	1	8.1	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Bottom	3	2	28.4	7.8	18.8	6.7	6.7	9.7		7.4	
TMCLKL	HY/2012/08		Mid-flood	SR4a	15:42	Surface	1	1	28.2	8.0	15.9	6.5		5.7		10.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4a	15:42	Surface	1	2	28.2	7.9	16.6	6.5	†	5.6	1	11.5	
TMCLKL	HY/2012/08		Mid-flood	SR4a	15:42	Middle	2	1	20.2	7.0	10.0	0.5	6.5	2.0		11.5	100
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4a	15:42	Middle	2	2					† †		6.6		10.9
TMCLKL	HY/2012/08		Mid-flood	SR4a	15:42	Bottom	3	1	28.4	7.9	19.3	6.0	<i>C</i> 1	7.4	1	11.0	
TMCLKL	HY/2012/08		Mid-flood	SR4a	15:42	Bottom	3	2	28.5	7.9	19.5	6.1	6.1	7.6	1	10.7	
	HY/2012/08			SR4(N2)	15:37	Surface	1	1	28.3	8.0	16.8	6.5		4.7		11.0	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Surface	1	2	28.3	7.9	17.2	6.5	6.5	4.6]	10.0	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Middle	2	1					0.5		5 1		11.2
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Middle	2	2							5.1		11.2
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Bottom	3	1	28.4	7.9	18.5	6.6	6.6	5.6		12.3	
	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Bottom	3	2	28.0	7.9	19.1	6.6	0.0	5.3		11.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Surface	1	1	28.5	8.0	16.8	6.8	↓	8.6		9.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Surface	1	2	28.5	7.9	17.1	6.8	6.8	8.8		10.1	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Middle	2	1					4 5.5		6.4		10.2
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Middle	2	2	20.5	0.0	160					10.0	
	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Bottom	3	1	28.5	8.0	16.9	6.8	6.8	4.1		10.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Bottom	3	2	28.5	7.9	17.3	6.8		4.1		11.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)9	15:21	Surface	1	2					-		-		
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/26 2019/08/26	Mid-flood Mid-flood	IS(Mf)9 IS(Mf)9	15:21 15:21	Surface Middle	2	<u>Z</u>	28.5	7.8	18.1	6.9	6.9	5.0	1	0.8	
	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)9	15:21	Middle	2	2	28.5	7.9	18.4	6.8	┪ ト	5.0 5.2	5.1	9.8 8.8	9.3
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)9	15:21	Bottom	3	1	20.3	7.9	10.4	0.0		J.Z	1	0.0	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)9	15:21	Bottom	3	2.					#DIV/0!				
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Surface	1	1	28.5	7.9	17.4	6.2		3.2		3.2	
	HY/2012/08		Mid-flood	IS(Mf)11	16:54	Surface	1	2	28.5	7.8	17.8	6.3	† __	3.1		4.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Middle	2	1	28.1	7.9	22.0	5.2	5.7	3.9		3.9	4.0
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Middle	2	2	28.1	7.8	22.4	5.1	†	3.6	6.0	4.9	4.0
	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Bottom	3	1	26.2	7.8	29.1	2.9	2.0	11.1]	3.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Bottom	3	2	26.2	7.7	29.8	2.8	2.9	11.0		3.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Surface	1	1	28.4	7.9	16.9	6.2		5.8		3.5	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Surface	1	2	28.4	7.8	17.2	6.2	6.2	5.8		4.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Middle	2	1					U . ∠		6.9		4.6
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Middle	2	2							U.7		7.0
TMCLKL	HY/2012/08		Mid-flood	SR7	17:00	Bottom	3	1	28.3	7.9	19.4	5.9	5.8	8.0		5.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Bottom	3	2	28.3	7.8	20.0	5.7	2.0	7.8		4.8	
	HY/2012/08	2019/08/26	Mid-flood	IS17	15:59	Surface	1	1	28.4	7.9	17.9	6.3	↓	3.2		4.1	
	HY/2012/08		Mid-flood		15:59	Surface	1	2	28.4	7.8	18.2	6.3	6.1	2.9		3.3	
	HY/2012/08		1	IS17	15:59	Middle	2	1	28.2	7.9	19.9	5.8	4	3.7	3.5	3.8	4.4
	HY/2012/08		Mid-flood	IS17	15:59	Middle	2	2	28.2	7.8	20.3	5.8		3.7		3.3	
		2019/08/26	Mid-flood	IS17	15:59	Bottom	3	1	28.1	7.9	20.3	5.9	5.9	3.6		6.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS17	15:59	Bottom	3	2	28.2	7.8	20.8	5.9		3.6		5.6	

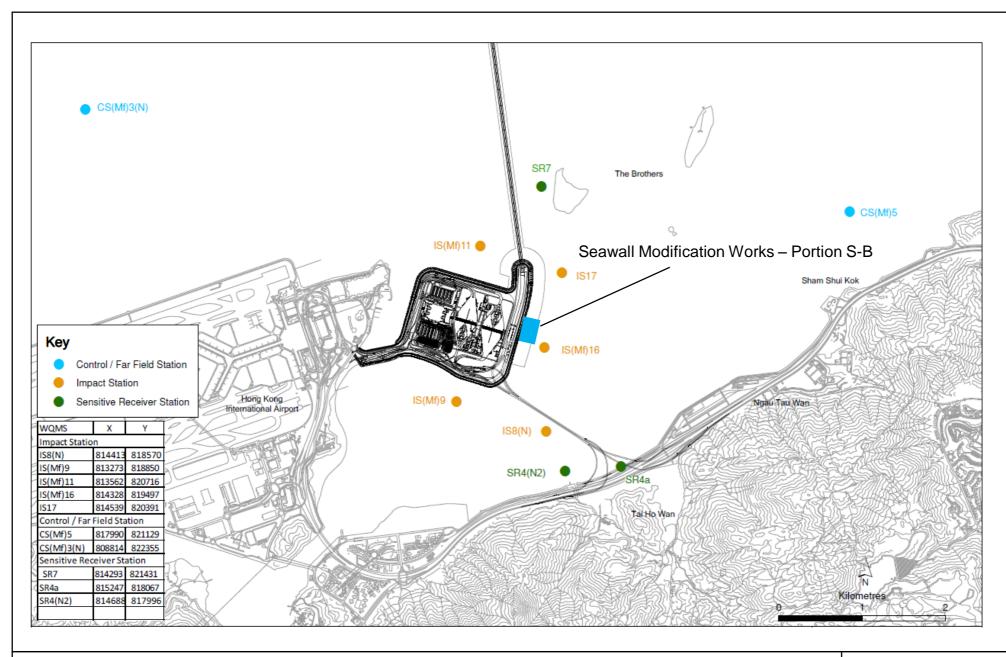


Figure 1





Email message

Environmental Resources Management

To Ramboll Hong Kong Limited (ENPO)

2507, 25/F One Harbourfront, 18 Tak Fung Street, Hung Hom, Hong Kong

From ERM- Hong Kong, Limited

Hung Hom, Hong Kong Telephone: (852) 2271 3113 Facsimile: (852) 2723 5660 E-mail: jasmine.ng@erm.com

Contract No. HY/2012/08 Tuen Mun-Chek Lap

Kok Link-Northern Connection Sub-sea Tunnel

Section

Subject Notification of Exceedance for Water Quality

Impact Monitoring

Date 3 September 2019



Dear Sir or Madam,

Ref/Project number

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330_28 August 2019_ Surface & Middle DO_E_Station IS(Mf)16

0212330_28 August 2019_ Surface & Middle DO_E_Station SR4a

0212330_28 August 2019_ Bottom DO_E_Station SR4a

0212330_28 August 2019_ Surface & Middle DO_E_Station SR4(N2)

0212330_28 August 2019_ Surface & Middle DO_E_Station IS8(N)

0212330_28 August 2019_ Bottom DO_E_Station IS8(N)

0212330_28 August 2019_ Surface & Middle DO_E_Station IS(Mf)11

0212330_28 August 2019_ Surface & Middle DO_E_Station IS17

0212330_28 August 2019_ Bottom DO_E_Station IS17

0212330_28 August 2019_ Bottom DO_F_Station SR4a

0212330_28 August 2019_ Surface & Middle DO_F_Station IS(Mf)11

0212330_28 August 2019_ Bottom DO_F_Station IS(Mf)11

0212330_28 August 2019_ Bottom DO_F_Station SR7

0212330_28 August 2019_ Surface & Middle DO_F_Station IS17

0212330_28 August 2019_ Bottom DO_F_Station IS17

0212330_28 August 2019_ Depth-averaged SS_F_Station SR7

Limit Level Exceedance

0212330_28 August 2019_ Bottom DO_E_Station SR4(N2)

0212330_28 August 2019_ Bottom DO_E_Station IS(Mf)11

A total of sixteen Action Level and two Limit Level exceedances were recorded on 28 August 2019.

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Email message

Regards,

Dr Jasmine Ng

Environmental Team Leader



ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08 TUEN MUN - CHEK LAP KOK LINK NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring Notification of Exceedance

Log No.		Action Level Exceedance												
	0212330_28 August 20	019_Surface & Middle DO_E_Stati	ion IS(Mf)16											
	0212330_28 August	2019_ Surface & Middle DO_E_Sta	ation SR4a											
	0212330_28 Au	igust 2019_ Bottom DO_E_Station	SR4a											
		019_ Surface & Middle DO_E_Stat												
		2019_ Surface & Middle DO_E_Sta	· · · ·											
	_	 gust 2019_ Bottom DO_E_Station I	· ·											
		119_ Surface & Middle DO_E_Stati	` '											
	O	2019_Surface & Middle DO_E_St	` '											
	_	ugust 2019_ Bottom DO_E_Station												
		igust 2019_ Bottom DO_F_Station												
		019_Surface & Middle DO_F_Stati												
			` ′											
		0212330_28 August 2019_ Bottom DO_F_Station IS(Mf)11 0212330_28 August 2019_ Bottom DO_F_Station SR7												
		2019_ Surface & Middle DO_F_St												
		ugust 2019_ Bottom DO_F_Station												
		st 2019_ Depth-averaged SS_F_Sta												
	0 =1= 000_=011 g	30 - 025_ 2												
		Limit Level Exceedance												
	0212330 28 Aug	rust 2019_ Bottom DO_E_Station S	R4(N2)											
		ust 2019_ Bottom DO_E_Station IS	` '											
		otal No. of Exceedances = 18]	()											
Date	-	<u> </u>												
Date		28 August 2019 (Measured)												
	9	2019 (<i>In situ</i> results received by ERN	· ·											
3.6 ''		119 (Laboratory results received by	·											
Monitoring	CS(Mf)5, SR4a, SR4(N2), IS8	(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N),	SR7, IS17, IS(Mf)11											
Station														
Parameter(s)														
with	Dissolved Ox	ygen (mg/L), Suspended Solids(mg	g/L)											
Exceedance(70 (0, /, 1	<i>,</i>											
s) Action	DO	Conference AM: 141e	Datton											
Levels	DO	Surface and Middle	Bottom											
Levels	90	5.0 mg/L	4.7 mg/L											
	SS	120% of upstream control station												
		and 95%-ile of baselin												
Limit Levels	DO	Surface and Middle	Bottom											
		4.2 mg/L	3.6 mg/L											
	SS	130% of upstream control station												
		and 10mg/L for WSD Seawater 1												
		of baseline data	, i.e., 34.4 mg/L											
	of baseline data, i.e., 34.4 mg/L													

Measured Action Level Exceedance for DO (4.9 mg/L) is observed at IS(Mf)16 at Surface & Middle Level during mid-ebb Levels Action Level Exceedance for DO (4.8 mg/L) is observed at SR4a at Surface & Middle Level during mid-ebb Action Level Exceedance for DO (4.0 mg/L) is observed at SR4a at Bottom Level during mid-ebb tide. Action Level Exceedance for DO (4.3 mg/L) is observed at SR4(N2) at Surface & Middle Level during mid-ebb Action Level Exceedance for DO (4.7 mg/L) is observed at IS8(N) at Surface & Middle Level during mid-ebb Action Level Exceedance for DO (4.4 mg/L) is observed at IS8(N) at Bottom Level during mid-ebb tide. Action Level Exceedance for DO (4.8 mg/L) is observed at IS(Mf)11 at Surface & Middle Level during mid-ebb Action Level Exceedance for DO (4.9 mg/L) is observed at IS17 at Surface & Middle Level during mid-ebb tide. Action Level Exceedance for DO (4.6 mg/L) is observed at IS17 at Bottom Level during mid-ebb tide. Action Level Exceedance for DO (4.2 mg/L) is observed at SR4a at Bottom Level during mid-flood tide. Action Level Exceedance for DO (4.8 mg/L) is observed at IS(Mf)11at Surface & Middle Level during mid-Action Level Exceedance for DO (3.8 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-flood tide. Action Level Exceedance for DO (4.3 mg/L) is observed at SR7 at Bottom Level during mid-flood tide. Action Level Exceedance for DO (4.8 mg/L) is observed at IS17 at Surface & Middle Level during mid-flood Action Level Exceedance for DO (4.3 mg/L) is observed at IS17 at Bottom Level during mid-flood tide. Action Level Exceedance for Depth-averaged SS (26.8 mg/L) is observed at SR7 during mid-flood tide. Limit Level Exceedance for DO (3.5 mg/L) is observed at SR4(N2) at Bottom Level during mid-ebb tide. Limit Level Exceedance for DO (3.5 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-ebb tide. Works According to the information provided by the Contractor, Seawall Modification Works was carried out on 28 Undertaken August 2019. (at the time of monitoring event)

Possible	The exceedances are unlikely to be due to the Contract, in view of the following:
Reason for	• SR4a, SR4(N2), IS8(N), IS(Mf)11 and SR7 is far away (>2 km) from the Seawall Modification Works Area
Action or	(Figure 1), thus the observed exceedance should not be affected by the marine works under this Contract.
Limit Level	Therefore, the exceedance is unlikely to be related to this Contract.
Exceedance(Bottom-depth DO levels at SR4a, IS8(N) and IS17 was similar to the corresponding control stations,
s)	CS(Mf)3(N), during mid-ebb tide, in which the recorded Bottom-depth DO levels at the corresponding
	control station were below Action Level.
	• Surface & Middle-depth DO levels at IS(Mf)16, SR4a, SR4(N2), IS8(N), IS(Mf)11 and IS17 was similar to
	the corresponding control stations, CS(Mf)3(N), during mid-ebb tide, in which the recorded Surface &
	Middle-depth DO levels at the corresponding control station were below Action Level.
	The DO pattern at SR4(N2) and IS(Mf)11 during mid-ebb tide were similar to the their corresponding
	control station where the bottom-depth DO levels were generally lower. Lower bottom-depth DO levels
	may be possibly caused by the stratification of seawater during summer when the freshwater discharged
	from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible
	for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded
	at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely
	a contributing factor to the results of lower levels of DO at the bottom level.
	Bottom-depth DO levels at SR4a, IS(Mf)11, SR7 and IS17 was similar to the corresponding control
	stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom-depth DO levels at the
	corresponding control station were below Action Level.
	 Surface & Middle-depth DO levels at IS(Mf)11 and IS17 was similar to the corresponding control stations,
	CS(Mf)5, during mid-flood tide, in which the recorded Surface & Middle-depth DO levels at the
	corresponding control station were below Action Level.
	For the exceedance of SS level at SR7 during mid-flood tide, SR7 is far away (>2km) from the Seawall
	Modification Works Area (<i>Figure 1</i>), thus the observed exceedance should not be affected by the marine
	works under this Contract. Moreover, no exceedance of SS was recoded at IS(Mf)16 and IS17 during
	mid-flood tide, which are closer to the Seawall Modification Works Area than SR7. Therefore, the
	exceedance is unlikely to be related to this Contract.
	As reported by the marine mammal observer, no discharge of organic matters into waters from landside
	works area was recorded. Therefore, the exceedance recorded at IS(Mf)16 is likely to be due to natural
	fluctuation of water quality and is unlikely to be related to this Contract. Exceedances recorded at
	IS(Mf)16, SR4a, SR4(N2), IS8(N), IS(Mf)11 and IS17 during mid-ebb tide and SR4a, IS(Mf)11, SR7 and IS17
	during mid-flood tide are unlikely to be related to this Contract as these stations are further than
	IS(Mf)16.
Actions	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.
Taken/To	·
Be Taken	
Remarks	The monitoring results on 28 August 2019 and locations of water quality monitoring stations are attached.

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Surface	1	1	27.7	7.8	23.3	5.1		2.1		16.9	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Surface	1	2	27.7	7.9	22.9	5.1	1 15	1.9		16.0]
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Middle	2	1	25.9	7.8	28.8	3.9	4.5	1.5	2.3	12.9	12.0
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Middle	2	2	25.9	7.8	28.2	3.9		1.6	2.3	12.0	12.0
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Bottom	3	1	24.8	7.7	31.6	3.2	3.2	3.5		6.2	<u> </u>
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Bottom	3	2	24.8	7.7	30.9	3.2	3.2	3.4		7.9	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Surface	1	1	28.7	7.8	20.4	4.9	<u>↓</u>	1.2		12.6	_
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Surface	1	2	28.7	7.8	20.0	4.9	4.5	1.2		11.6	4
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Middle	2	1	27.9	7.7	23.6	4.0	4	4.8	5.2	12.1	11.2
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Middle	2	2	27.9	7.7	23.1	4.0		4.9		11.1	4
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Bottom	3	1	27.2	7.7	26.0	3.7	3.7	9.3		10.2	4
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Bottom	3	2	27.2	7.6	25.5	3.7		9.8		9.5	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Surface	1	1	28.3	7.8	22.7	4.9	-	7.8		19.2	4
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Surface	2	2	28.3	7.8	22.1	4.9	4.9	7.9		18.0	4
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Middle	2	2							8.2		14.3
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Middle Pattam	L	1	07.5	7.0	24.2	4.0		0.2		10.4	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Bottom	3	2	27.5	7.8	24.3	4.9	4.9	8.3	-	10.4	1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Bottom	3	<u> </u>	27.8	7.8	24.3	4.8		8.9		9.4	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Surface	1	2	28.1	_	21.5	4.8	-	6.5	-	8.1	-
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Surface	2	<u> </u>	28.1	7.8	21.1	4.8	4.8	6.1	-	7.1	-
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Middle Middle	2	2					-		7.4		8.4
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Middle	3	<u>Z</u>	27.4	77	24.7	4.0		9.0	-	0.5	1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Bottom	3	2	27.4 27.4	7.7	24.7	4.0	4.0	8.9	-	9.5 8.7	1
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/28 2019/08/28	Mid-Ebb Mid-Ebb	SR4a SR4(N2)	12:01 12:09	Bottom	<u>J</u>	<u>Z</u>	28.2	7.7	24.2 21.9	4.0		8.2		7.0	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4(N2)	12:09	Surface	<u> </u>	2	28.2	7.7	21.5	4.3	1	9.4 9.6	-	7.7	1
			Mid-Ebb	SR4(N2)	12:09	Surface Middle	2	<u>Z</u> 1	20.2	1.0	21.3	4.3	4.3	9.0	-	7.7	1
		2019/08/28	Mid-Ebb	SR4(N2)	12:09	Middle	2	2		+			-		10.0		7.2
TMCLKL		2019/08/28	Mid-Ebb	SR4(N2)	12:09	Bottom	3	<u>Z</u> 1	27.6	7.7	24.0	3.5		10.5	-	6.5	1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4(N2)	12:09	Bottom	3	7	27.6	7.7	23.7	3.5	3.5	10.5	-	7.5	1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Surface	1	1	28.0	7.7	22.9	4.6		7.6		7.2	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Surface	1	7	28.0	7.7	22.4	4.7		7.3	1	8.3	1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Middle	2	1	20.0	7.7	22.1	71.7	4.7	1.5		0.5	1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Middle	2	2.							9.1		8.1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Bottom	3	1	27.5	7.7	24.4	4.2		10.7		8.2	1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Bottom	3	2.	27.7	7.7	23.4	4.5	4.4	10.8		8.5	1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Surface	1	1		1	2011	,,,,		1010		3.0	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Surface	1	2					†		1		1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Middle	2	1	29.0	7.8	21.5	5.6	5.6	3.8	0.6	8.7	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Middle	2	2	29.0	7.8	21.1	5.6	1	3.3	3.6	9.7	9.2
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Bottom	3	1					#DIX//01]]
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Bottom	3	2					#DIV/0!				<u> </u>
	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Surface	1	1	28.6	7.8	19.6	5.0		1.7		9.8	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Surface	1	2	28.6	7.8	19.3	5.0	4.0	1.7		8.9]
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Middle	2	1	28.2	7.8	20.9	4.5	4.8	3.8	2.0	7.2] 70
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Middle	2	2	28.2	7.8	20.6	4.5		3.1	3.2	6.3	7.0
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Bottom	3	1	26.0	7.8	28.7	3.5	3.5	4.4		5.6]
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Bottom	3	2	26.0	7.7	28.2	3.5	3.5	4.4		4.2	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Surface	1	1	28.4	7.7	20.9	5.0]	2.8		8.1]
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Surface	1	2	28.4	7.6	20.4	5.0	5.0	2.5		8.1]
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Middle	2	1					٠.٠		3.2		6.7
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Middle	2	2							J.2		_
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Bottom	3	1	28.3	7.7	21.3	5.1	5.1	3.7		5.8]
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Bottom	3	2	28.3	7.5	20.9	5.0	J.1	3.6		4.8	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Surface	1	1	28.3	7.8	21.1	5.0		4.8		8.3	1
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Surface	1	2	28.3	7.8	20.7	5.0	4.9	4.8		7.6]
	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Middle	2	1	27.9	7.8	22.4	4.7	1.9	7.2	6.9	6.5	6.7
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Middle	2	2	27.9	7.8	22.1	4.7		7.2]	5.6],

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Bottom	3	1	27.7	7.8	23.8	4.6	4.6	8.6		5.6	
	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Bottom	3	2	27.7	7.7	23.5	4.6	11.0	8.8		6.6	<u> </u>
	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)5	18:53	Surface	1	1	27.8	7.8	24.0	4.9	-	2.5	-	5.8	-
	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)5	18:53	Surface	1	2	27.8	7.9	23.5	4.9	4.2	2.4	-	5.4	4
	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)5	18:53	Middle	2	2	25.4	7.8	30.1	3.5	4	10.9	8.1	5.3	5.7
	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)5	18:53	Middle	3	<u>Z</u>	25.4	7.8	29.5	3.5		10.7	1	5.6	1
	HY/2012/08 HY/2012/08	2019/08/28 2019/08/28	Mid-flood Mid-flood	CS(Mf)5 CS(Mf)5	18:53 18:53	Bottom	2	1	25.4 25.4	7.8 7.8	30.1 29.5	3.6 3.6	3.6	10.6	1	5.6	1
	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Bottom Surface	<u> </u>	2 1	29.8	7.8	15.1	5.5		11.3 5.9		6.6 7.7	
	HY/2012/08	2019/08/28	Mid-flood	CS(MI)3(N) $CS(Mf)3(N)$	17:56	Surface	1	2	29.8	7.8	13.1	5.4	1	5.1	1	7.7	1
	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Middle	2	1	29.8	7.8	15.2	5.1	5.3	6.0	1	8.1	†
	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Middle	2	2	29.8	7.7	14.9	5.2	†	5.9	5.9	7.7	7.2
	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Bottom	3	1	28.2	7.7	19.9	4.5		6.2	1	5.4	1
	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Bottom	3	2	28.4	7.7	20.3	4.4	4.5	6.3	†	6.4	1
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Surface	1	1	28.7	7.9	22.0	5.8		9.1		8.4	
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Surface	1	2	28.7	7.9	21.6	5.8	1	9.0	1	8.8	1
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Middle	2	1					5.8	- · -	10.4		0.1
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Middle	2	2					 		10.4		8.1
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Bottom	3	1	28.7	7.9	22.1	5.8	F 0	11.6]	7.0]
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Bottom	3	2	28.6	7.8	21.7	5.8	5.8	11.9		8.0	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Surface	1	1	28.5	7.9	22.2	5.6		5.9		7.1	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Surface	1	2	28.5	7.9	21.7	5.6	5.6	5.7]	7.7]
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Middle	2	1					5.0		6.7		7.9
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Middle	2	2							0.7] 1.9
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Bottom	3	1	28.1	7.8	23.0	4.2	4.2	7.9	1	8.9]
	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Bottom	3	2	28.1	7.8	22.5	4.2	7•∠	7.4		7.9	
	HY/2012/08	2019/08/28		SR4(N2)	17:04	Surface	1	1	29.4	7.9	21.2	6.1	<u>↓</u>	7.9	1	9.1]
	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Surface	1	2	29.4	7.9	20.8	6.1	6.1	7.9	_	8.9	1
	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Middle	2	1							10.6		8.7
	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Middle	2	2							10.0] ""
	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Bottom	3	1	28.8	7.9	22.0	5.2	5.2	13.4	1	8.8	-
	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Bottom	3	2	28.8	7.8	21.7	5.2		13.0		7.8	
	HY/2012/08	2019/08/28	Mid-flood	IS8(N)	16:58	Surface	1	1	28.9	7.9	21.5	5.8	4	8.5	-	7.4	4
	HY/2012/08	2019/08/28	Mid-flood	IS8(N)	16:58	Surface	2	2	28.9	7.9	21.1	5.8	5.8	8.5	-	6.4	-
	HY/2012/08	2019/08/28	Mid-flood	IS8(N)	16:58	Middle	2	1					+		9.6		7.6
	HY/2012/08 HY/2012/08	2019/08/28 2019/08/28	Mid-flood Mid-flood	IS8(N) IS8(N)	16:58 16:58	Middle	3	2	28.9	7.9	21.5	50		11.0	1	8.7	1
	HY/2012/08	2019/08/28	Mid-flood	IS8(N)	16:58	Bottom Bottom	3	2	28.9	7.9	21.3	5.8 5.8	5.8	10.2	+	7.9	1
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Surface	<u> </u>		20.9	7.0	21.1	3.0		10.2		1.9	
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Surface	1	2					†		†		1
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Middle	2	1	28.8	8.0	21.9	6.1	6.2	8.4	†	8.7	1
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Middle	2.	2.	28.8	7.9	21.5	6.2		8.9	8.7	7.7	8.2
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Bottom	3	1	20.0	, ,,	21.0	5.2	1122 AA A 10 .	J.,/	1	, , ,	1
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Bottom	3	2					#DIV/0!		1		1
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Surface	1	1	29.1	7.8	18.7	5.5		4.7		7.5	
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Surface	1	2	29.1	7.8	18.3	5.4	4.0	4.6		6.5]
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Middle	2	1	27.4	7.8	24.3	4.1	4.8	11.1	126	5.4	127
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Middle	2	2	27.4	7.8	23.9	4.3		11.0	13.6	6.2	13.7
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Bottom	3	1	27.0	7.8	25.8	3.7	3.8	25.0]	30.2]
	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Bottom	3	2	27.0	7.8	25.3	3.8	3.0	24.9		26.4	
	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Surface	1	1	28.2	7.8	21.4	5.1	<u> </u>	6.8	_	6.8	-
	HY/2012/08	2019/08/28	+	SR7	18:30	Surface	1	2	28.2	7.8	20.9	5.1	5.1	6.7	1	7.7	-
	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Middle	2	1							9.5		26.8
	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Middle	2	2			<u> </u>]		-
	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Bottom	3	1	27.7	7.8	24.2	4.3	4.3	12.5	4	44.1	-
	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Bottom	3	2	27.6	7.8	23.8	4.3		12.1		48.5	
	HY/2012/08	2019/08/28		IS17	17:29	Surface	1	1	28.5	7.9	21.9	5.1		3.7	-	6.9	4 l
		2019/08/28	Mid-flood		17:29	Surface	1	2	28.5	7.8	21.5	5.1	4.8	3.8	-	6.0	1
	HY/2012/08	2019/08/28		IS17	17:29	Middle	2	1	27.6	7.8	24.3	4.5		4.8	4.7	6.6	7.2
	HY/2012/08	2019/08/28 2019/08/28		IS17 IS17	17:29	Middle Rottom	3	2	27.5	7.8 7.8	23.9	4.5		4.8	1	6.2	1
	HY/2012/08 HY/2012/08	2019/08/28		IS17 IS17	17:29	Bottom	2	2	27.5 27.4	7.7	24.6	4.3	4.3	6.0 5.0	1	9.2	1
TMCLKL	111/2012/08	7012/00/70	1V11U-11000	1191 /	17:29	Bottom	3	L	Z1.4	/./	24.3	4.3		J.U	<u> </u>	0.3	

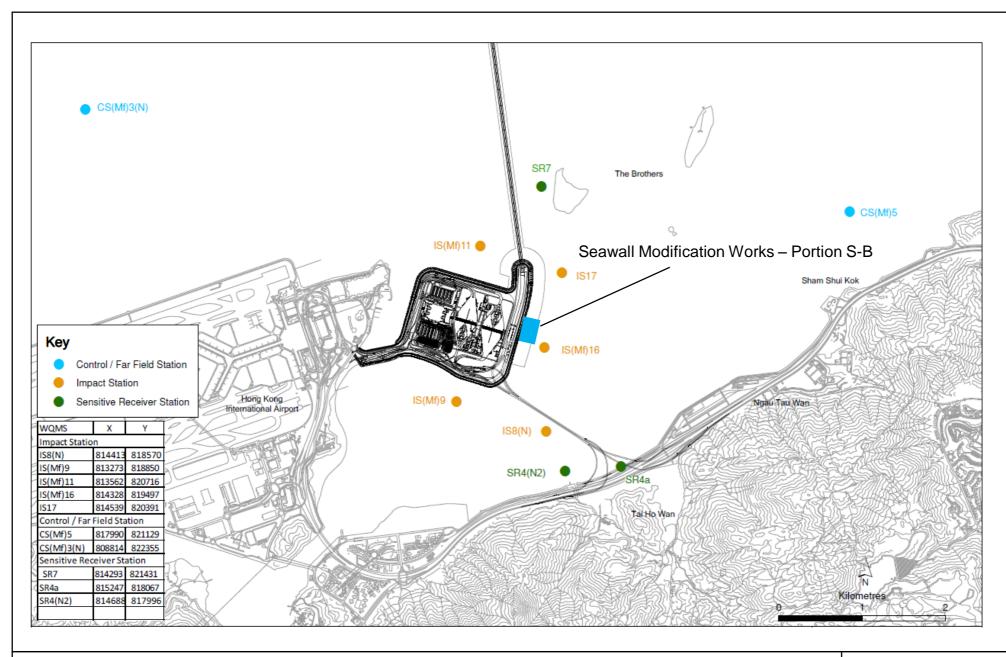


Figure 1





Email message

Subject

Environmental Resources Management

To Ramboll Hong Kong Limited (ENPO)

2507, 25/F One H

From ERM- Hong Kong, Limited

25/F One Harbourfront, 18 Tak Fung Street, Hung Hom, Hong Kong Telephone: (852) 2271 3113 Facsimile: (852) 2723 5660 E-mail: jasmine.ng@erm.com

Ref/Project number Contract No. HY/2012/08 Tuen Mun-Chek Lap

Kok Link-Northern Connection Sub-sea Tunnel

Section

Notification of Exceedance for Water Quality

Impact Monitoring

Date 9 September 2019



Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330_30 August 2019_ Surface & Middle DO_E_Station SR4a

0212330_30 August 2019_ Bottom DO_E_Station SR4a

0212330_30 August 2019_ Surface & Middle DO_E_Station SR4(N2)

0212330_30 August 2019_ Surface & Middle DO_E_Station IS8(N)

0212330_30 August 2019_ Surface & Middle DO_E_Station IS(Mf)11

0212330_30 August 2019_ Bottom DO_E_Station IS(Mf)11

0212330_30 August 2019_ Surface & Middle DO_E_Station SR7

0212330_30 August 2019_ Bottom DO_E_Station SR7

0212330_30 August 2019_ Surface & Middle DO_E_Station IS17

0212330_30 August 2019_ Bottom DO_F_Station SR4a

0212330_30 August 2019_ Surface & Middle DO_F_Station SR4(N2)

0212330_30 August 2019_ Surface & Middle DO_F_Station SR7

A total of twelve Action Level exceedances were recorded on 30 August 2019.

Regards,

Dr Jasmine Ng

Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08 TUEN MUN - CHEK LAP KOK LINK NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring Notification of Exceedance

Log No.		Action Level Exceedance	
O	0212330_30 Aug	ust 2019_ Surface & Middle DO_E	Station SR4a
	9	August 2019_ Bottom DO_E_Stati	
		et 2019_ Surface & Middle DO_E_S	
		st 2019_ Surface & Middle DO_E_	, ,
	_	t 2019_ Surface & Middle DO_E_S	
	_	august 2019_ Bottom DO_E_Station	
		ust 2019_ Surface & Middle DO_F	
	0212330_30	August 2019_ Bottom DO_E_Stat	cion SR7
	0212330_30 Aug	ust 2019_ Surface & Middle DO_E	S_Station IS17
	0212330_30	August 2019_ Bottom DO_F_Stati	ion SR4a
	0212330_30 Augus	st 2019_ Surface & Middle DO_F_S	Station SR4(N2)
	0212330_30 Aug	ust 2019_ Surface & Middle DO_I	F_Station SR7
		[Total No. of Exceedances = 12]	
Date		30 August 2019 (Measured)	
	-	ber 2019 (In situ results received by	•
		r 2019 (Laboratory results received	
Monitoring	CS(Mf)5, SR4a, SR4(N2),	IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11
Station			
Parameter(s)			
with		Dissolved Oxygen (mg/L)	
Exceedance(2133011 ett entygen (mg/ 2)	
s)	7.0		
Action	DO	Surface and Middle	Bottom
Levels		5.0 mg/L	4.7 mg/L
Limit Levels	DO	Surface and Middle	Bottom
		4.2 mg/L	3.6 mg/L
Measured	Action Level Exceedance for DO (4.5 mg/L	•	S
Levels	Action Level Exceedance for DO (4.5 mg/L		9
	Action Level Exceedance for DO (4.8 mg/L		e e
	Action Level Exceedance for DO (4.9 mg/L		<u>o</u>
	Action Level Exceedance for DO (4.8 mg/L		e e
	Action Level Exceedance for DO (4.3 mg/L		e e
	Action Level Exceedance for DO (4.6 mg/L	•	o a constant of the constant o
	Action Level Exceedance for DO (4.6 mg/L	•	<u> </u>
	Action Level Exceedance for DO (4.9 mg/L		9
	Action Level Exceedance for DO (4.1 mg/L		_
	Action Level Exceedance for DO (4.9 mg/L		_
*** 1	Action Level Exceedance for DO (4.8 mg/L		=
Works	According to the information provided by	the Contractor, Seawall Modification	on Works was carried out on 30 August
Undertaken	2019.		
(at the time			
of			
monitoring			
event)			

Possible	The exceedances are unlikely to be due to the Contract, in view of the following:
Reason for	All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and Limit
Action or	Levels during both mid-ebb and mid-flood tides on the same day.
Limit Level	• SR4a, SR4(N2), IS8(N), IS(Mf)11 and SR7 are far away (>2 km) from the Seawall Modification Works Area
Exceedance((<i>Figure 1</i>), thus the observed exceedance should not be affected by the marine works under this Contract.
s)	Therefore, the exceedance is unlikely to be related to this Contract.
	• Surface & Middle-depth DO levels at SR4a, SR4(N2), IS8(N), IS(Mf)11, SR7 and IS17 were similar to the
	corresponding control stations, CS(Mf)3(N), during mid-ebb tide, in which the recorded Surface & Middle-
	depth DO levels at the corresponding control station were below Action Level.
	The DO pattern at SR4a, IS(Mf)11 and SR7 during mid-ebb tide were similar to the their corresponding control
	station where the bottom-depth DO levels were generally lower. Lower bottom-depth DO levels may be
	possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl
	River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity
	recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the
	monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the
	results of lower levels of DO at the bottom level.
	Bottom-depth DO levels at SR4a was similar to the corresponding control stations, CS(Mf)5, during mid-flood
	tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action
	Level.
	Surface & Middle-depth DO levels at SR4(N2) and SR7 were similar to the corresponding control stations,
	CS(Mf)5, during mid-flood tide, in which the recorded Surface & Middle-depth DO levels at the corresponding
	control station were below Action Level.
	As reported by the marine mammal observer, no discharge of organic matters into waters from landside works
	area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest station to the
	Seawall Modification Works Area during both mid-ebb and mid-flood tide. Therefore, exceedances recorded
	at SR4a, SR4(N2), IS8(N), IS(Mf)11, SR7 and IS17 during mid-ebb tide and SR4a, SR4(N2) and SR7 during mid-
	flood tide are unlikely to be caused by the marine works of this Contract.
Actions	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.
Taken/To	
Be Taken	
Remarks	The monitoring results on 30 August 2019 and locations of water quality monitoring stations are attached.

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Surface	1	1	27.4	7.8	24.4	5.1		4.7		7.4	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Surface	1	2	27.4	7.8	24.3	5.2	5.0	4.7		8.3	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Middle	2	1	27.1	7.8	25.4	4.8	5.0	6.0	6.3	8.8	8.6
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Middle	2	2	27.1	7.8	25.4	4.8		6.1	0.5	8.3	0.0
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Bottom	3	1	26.5	7.8	27.7	4.4	4.4	8.3		8.8]
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Bottom	3	2	26.5	7.8	27.7	4.3	71.1	8.2		9.8	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Surface	1	1	27.8	7.8	23.5	4.8	<u>↓</u>	7.1		8.4	↓
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Surface	1	2	27.8	7.8	23.5	4.8	4.8	7.1		8.6	4
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Middle	2	1	27.7	7.8	24.2	4.8	4	9.2	8.7	9.2	8.1
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Middle	2	2	27.7	7.8	24.2	4.8		9.3		9.5	-
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Bottom	3	1	27.6	7.8	24.7	5.0	5.0	10.0		6.8	4
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Bottom	3	2	27.6	7.8	24.7	5.0		9.3		5.8	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Surface	1	1	27.2	7.8	24.9	5.1	-	9.7	-	11.8	-
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Surface	2	1	27.4	7.8	24.7	5.1	5.1	9.4	-	12.1	-
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Middle	2	2					-		10.3		12.2
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Middle	L	<u> </u>	26.9	7.0	27.2	4.0		11.0	-	12.0	-
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Bottom	3	2	26.8	7.8	27.2	4.8	4.8	11.0	-	12.9	- 1
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Bottom	3	<u> </u>	26.8	7.8	27.2	4.7		10.9		12.0	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Surface	1	2	27.4	7.8	24.7	4.5	-	10.2	-	12.7	- 1
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Surface	2	<u> </u>	27.4	7.8	24.5	4.5	4.5	9.9	-	14.6	- 1
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Middle Middle	2	2					-		10.3		14.5
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Middle	3	<u>Z</u>	26.9	7.8	26.9	15		10.7	-	14.2	1
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Bottom	3	2	26.8 26.8	7.8	26.8	4.5	4.5	10.7	-	14.3	1
TMCLKL TMCLKL	HY/2012/08 HY/2012/08	2019/08/30 2019/08/30	Mid-Ebb Mid-Ebb	SR4a SR4(N2)	13:16 13:21	Bottom Surface	1	<u>Z</u>	27.6	7.8	26.8 23.5	4.4		10.4		16.4 9.0	+
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4(N2)	13:21	1	1	2	27.6	7.8	23.5	4.8	1	11.9	-	10.2	1
			Mid-Ebb	SR4(N2)	13:21	Surface Middle	2	<u>Z</u> 1	27.0	7.0	23.3	4.8	4.8	11.9	-	10.2	1
		2019/08/30	Mid-Ebb	SR4(N2)	13:21	Middle	2	2					-		14.1		11.4
TMCLKL		2019/08/30	Mid-Ebb	SR4(N2)	13:21	Bottom	3	<u>Z</u>	27.1	7.8	24.9	4.9		16.2	-	13.3	-
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4(N2)	13:21	Bottom	3	7	27.2	7.8	24.9	4.9	4.9	16.2	-	13.1	1
	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Surface	1	1	27.6	7.8	24.0	4.9		9.2		11.8	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Surface	1	7	27.6	7.8	24.1	4.9		8.3	1	11.2	1
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Middle	2	1	21.0	7.0	21.1	7.2	4.9	0.5		11.2	1
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Middle	2	2.							11.3		11.8
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Bottom	3	1	27.1	7.8	24.4	4.7		13.8		12.4	1
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Bottom	3	2.	27.2	7.8	24.6	4.8	4.8	13.8		11.8	1
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Surface	1	1	27.8	7.8	24.3	5.1		9.7		7.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Surface	1	2	27.8	7.8	24.3	5.1	†	9.9	1	8.9	1
TMCLKL		2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Middle	2	1					5.1		0.5		0.5
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Middle	2	2					1		9.5		8.5
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Bottom	3	1	27.8	7.8	24.2	5.2	5.0	9.2]	8.4	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Bottom	3	2	27.8	7.8	24.2	5.1	5.2	9.1		8.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Surface	1	1	27.8	7.8	23.7	5.0		6.9		13.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Surface	1	2	27.8	7.8	23.7	5.0	4.0	7.0		12.1]
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Middle	2	1	27.2	7.8	24.7	4.6	4.8	15.7	12.0	11.3	11.0
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Middle	2	2	27.4	7.8	24.6	4.6		15.5	13.0	10.3	11.2
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Bottom	3	1	26.5	7.8	27.8	4.3	4.3	16.4		10.6]
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Bottom	3	2	26.5	7.8	27.8	4.3	4.5	16.3		9.2	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Surface	1	1	27.4	7.8	25.0	4.6		10.5		6.2]
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Surface	1	2	27.4	7.8	24.8	4.6	4.6	10.2		6.4]
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Middle	2	1					4.0		12.8		6.4
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Middle	2	2							12.0		_ 0.4
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Bottom	3	1	27.3	7.8	25.4	4.6	4.6	15.9		6.1]
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Bottom	3	2	27.3	7.8	25.4	4.6	Τ.∪	14.7		6.7	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Surface	1	1	27.6	7.8	24.1	4.9		8.3		8.8]
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Surface	1	2	27.6	7.8	24.1	4.9	4.9	8.1		9.6]
	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Middle	2	1	27.5	7.8	24.6	4.9	1.9	8.6	8.5	8.8	8.7
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Middle	2	2	27.5	7.8	24.6	4.9		8.5]	7.9]

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pН	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth- Averaged Turbidity	SS (mg/L)	Depth- Averaged SS
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Bottom	3	1	27.1	7.8	25.9	4.9	4.9	8.7		8.0	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Bottom	3	2	27.1	7.8	25.8	4.8	4.9	8.6		8.8	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)5	19:52	Surface	1	1	27.4	7.8	25.0	4.8	_	5.4		7.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)5	19:52	Surface	1	2	27.4	7.8	25.1	4.8	4.7	5.4		7.1	
TMCLKL	HY/2012/08		Mid-flood	CS(Mf)5	19:52	Middle	2	1	26.8	7.8	26.7	4.6		7.0	6.9	7.8	8.8
TMCLKL	HY/2012/08		Mid-flood	CS(Mf)5	19:52	Middle	2	2	27.0	7.8	26.1	4.6		7.0	0.5	7.9	
TMCLKL	HY/2012/08		Mid-flood	CS(Mf)5	19:52	Bottom	3	1	26.6	7.8	27.3	4.6	4.6	8.6		11.7	
TMCLKL	HY/2012/08		Mid-flood	CS(Mf)5	19:52	Bottom	3	2	26.6	7.8	27.3	4.6		8.1		10.4	
TMCLKL	HY/2012/08		Mid-flood	CS(Mf)3(N)	19:01	Surface	1	2	28.7	7.7	18.4	4.8	┥	11.1		8.9	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08		Mid-flood Mid-flood	CS(Mf)3(N)	19:01 19:01	Surface Middle	2	<u>Z</u>	28.7 28.6	7.7 7.7	18.4 18.7	4.8 4.9	4.8	11.9		8.0	
TMCLKL	HY/2012/08		Mid-flood	CS(Mf)3(N) CS(Mf)3(N)	19:01	Middle	2	2	28.7	7.7	18.7	4.9	┪ ト	13.7	13.6	9.2 8.5	8.6
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)3(N)	19:01	Bottom	3	1	28.6	7.7	18.9	4.0		15.7		8.9	
TMCLKL	HY/2012/08		Mid-flood	CS(Mf)3(N)	19:01	Bottom	3	2	28.6	7.7	18.9	4.9	4.9	15.3		7.9	
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)16	18:27	Surface	1	1	27.7	7.9	24.2	5.3		17.1		8.9	
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)16	18:27	Surface	1	2	27.7	7.9	24.2	5.3	† []	17.8		8.4	
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)16	18:27	Middle	2	1		7.12		0.0	5.3	1,10	10.6	511	0.6
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)16	18:27	Middle	2	2					1 1		18.6		9.6
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)16	18:27	Bottom	3	1	27.7	7.9	24.5	5.3	<i>F</i> 2	19.9		10.4	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)16	18:27	Bottom	3	2	27.7	7.9	24.5	5.3	5.3	19.4		10.6	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4a	18:20	Surface	1	1	27.6	7.9	24.0	5.0		10.4		14.5	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4a	18:20	Surface	1	2	27.7	7.9	23.9	5.0	5.0	10.2		12.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4a	18:20	Middle	2	1					3.0		12.4		13.7
TMCLKL	HY/2012/08		Mid-flood	SR4a	18:20	Middle	2	2							12 . 4		13.7
TMCLKL	HY/2012/08		Mid-flood	SR4a	18:20	Bottom	3	1	27.3	7.9	26.5	4.1	4.1	14.1		14.0	
TMCLKL	HY/2012/08		Mid-flood	SR4a	18:20	Bottom	3	2	27.3	7.9	26.5	4.0	1.1	14.8		13.2	
	HY/2012/08			SR4(N2)	18:17	Surface	1	1	27.5	7.9	24.6	4.9	4	9.6		10.9	
TMCLKL	HY/2012/08		Mid-flood	SR4(N2)	18:17	Surface	1	2	27.5	7.9	24.4	4.9	4.9	9.9		12.3	
TMCLKL	HY/2012/08		Mid-flood	SR4(N2)	18:17	Middle	2	2					- <mark>-</mark> -		9.9		13.2
TMCLKL	HY/2012/08 HY/2012/08		Mid-flood	SR4(N2)	18:17	Middle	3	<u>Z</u>	27.4	7.9	24.9	5.0		0.0		12.0	
TMCLKL TMCLKL	HY/2012/08		Mid-flood Mid-flood	SR4(N2) SR4(N2)	18:17 18:17	Bottom Bottom	3	2	27.4	7.9	24.8 24.8	5.0 4.9	5.0	9.9		13.9 15.7	
TMCLKL	HY/2012/08		Mid-flood	IS8(N)	18:13	Surface	1	1	27.7	7.9	24.3	5.3		10.0		10.4	
TMCLKL	HY/2012/08		Mid-flood	IS8(N)	18:13	Surface	1	2	27.7	7.9	24.2	5.3	┪ け	10.3		9.5	
TMCLKL	HY/2012/08		Mid-flood	IS8(N)	18:13	Middle	2.	1	21.1	1.7	21.2	3.3	5.3	10.5		7.5	
TMCLKL	HY/2012/08		Mid-flood	IS8(N)	18:13	Middle	2	2					† †		10.6		11.2
TMCLKL	HY/2012/08		Mid-flood	IS8(N)	18:13	Bottom	3	1	27.7	7.9	24.4	5.4		10.9		13.0	
TMCLKL	HY/2012/08		Mid-flood	IS8(N)	18:13	Bottom	3	2	27.7	7.9	24.4	5.4	5.4	10.9		11.7	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)9	18:05	Surface	1	1	27.7	8.0	24.5	5.8		16.8		8.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)9	18:05	Surface	1	2	27.7	8.0	24.5	5.8	5.8	16.6		7.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)9	18:05	Middle	2	1					3.0		18.0		8.2
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)9	18:05	Middle	2	2							10.0		0.2
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)9	18:05	Bottom	3	1	27.7	8.0	24.5	5.9	5.9	19.3		8.1	
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)9	18:05	Bottom	3	2	27.7	8.0	24.5	5.8	3.7	19.3		7.7	
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)11	18:40	Surface	1	1	27.9	7.9	23.3	5.3	-	6.9		9.0	
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)11	18:40	Surface	1	2	28.0	7.9	22.8	5.3	5.3	6.8		8.1	
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)11	18:40	Middle	2	1	27.6	7.9	24.4	5.3	4	9.4	9.0	8.4	9.2
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)11	18:40	Middle	2	2	27.6	7.9	24.4	5.3		9.8		7.9	
TMCLKL	HY/2012/08		Mid-flood	IS(Mf)11	18:40	Bottom	3	2	27.6	7.9	24.5	5.4	5.4	10.6		10.7	
TMCLKL TMCLKL	HY/2012/08 HY/2012/08		Mid-flood Mid-flood	IS(Mf)11 SR7	18:40 19:32	Bottom Surface	1	<u> </u>	27.6 27.6	7.9 7.8	24.5 24.3	5.4 4.8		10.4		10.9 5.0	
TMCLKL	HY/2012/08 HY/2012/08		Mid-flood	SR7	19:32	Surface	1	2	27.6	7.8	24.3	4.8	-	10.4		6.8	
TMCLKL	HY/2012/08 HY/2012/08		Mid-flood	SR7	19:32	Middle	2	1	21.0	1.0	۷4.3	4.0	4.8	10.2		0.0	
TMCLKL	HY/2012/08		Mid-flood	SR7	19:32	Middle	2	2					-		13.0		5.4
TMCLKL	HY/2012/08		Mid-flood	SR7	19:32	Bottom	3	1	27.6	7.8	24.3	5.0		15.5		4.4	
TMCLKL	HY/2012/08		Mid-flood	SR7	19:32	Bottom	3	2	27.6	7.8	24.3	5.0	5.0	16.0		5.4	
TMCLKL	HY/2012/08		Mid-flood	IS17	18:35	Surface	1	1	27.9	7.8	23.2	5.0		6.0		12.0	
	HY/2012/08		Mid-flood		18:35	Surface	1	2	27.9	7.8	23.0	5.0		5.7		10.4	
	HY/2012/08		Mid-flood	IS17	18:35	Middle	2	1	27.7	7.9	24.0	5.0	5.0	7.3	10.0	11.8	11 5
	HY/2012/08		Mid-flood	IS17	18:35	Middle	2	2	27.7	7.9	23.9	5.0		7.8	10.0	12.1	11.5
	HY/2012/08		Mid-flood	IS17	18:35	Bottom	3	1	27.4	7.9	24.8	5.0	5.0	16.7		11.8	
	HY/2012/08		Mid-flood	IS17	18:35	Bottom	3	2	27.5	7.9	24.7	5.0	J.0	16.3		10.9	

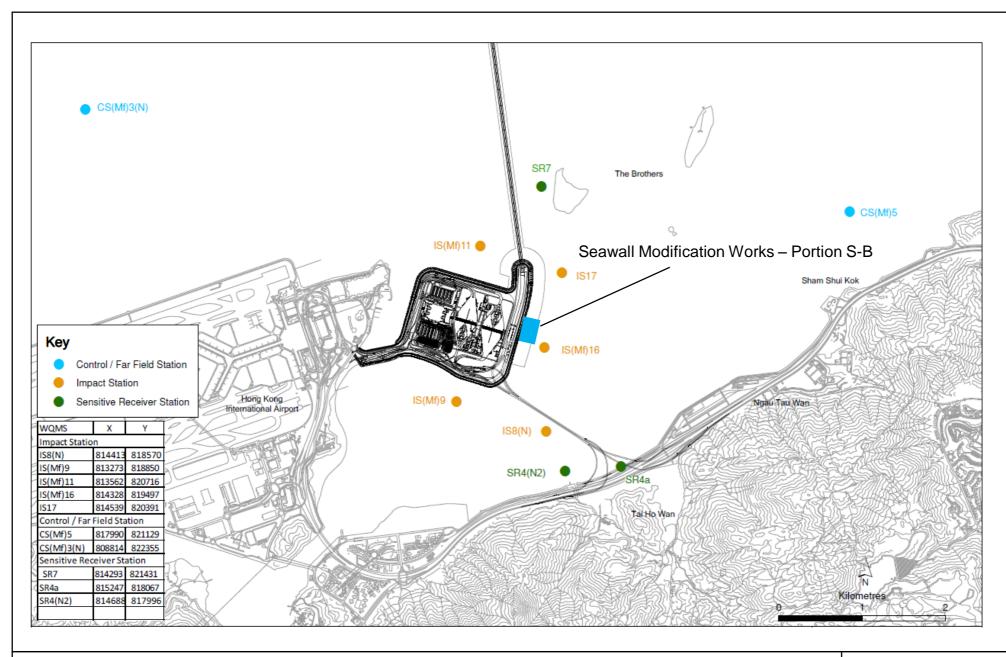


Figure 1



