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	3	96
	Limit	0	8
24-hr TSP	Action	0	10
	Limit	0	4
Water Quality	Action	2	166
	Limit	0	19
Impact Dolphin Monitoring	Action	0	11
	Limit	0	16

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

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

Email message

Environmental Resources Management

2507, 25/F One Harbourfront
18 Tak Fung Street
Hunghom, Kowloon
Hong Kong
Telephone: (852) 2271 3000
Facsimile: (852) 2723 5660

To	Ramboll Hong Kong, Limited (ENPO)
From	ERM- Hong Kong, Limited
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 Air Quality Impact Monitoring
Date	24 October 2019

Dear Sir or Madam,

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

0212330_14October2019_1hrTSP_Station ASR1

One Action Level Exceedance was recorded on 14 October 2019.

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

Air Quality Impact Monitoring
Notification of Exceedance

Log No.	**<u>Action Level Exceedance</u> 0212330_14October2019_1hrTSP_Station ASR1 [Total No. of Exceedances = 1]**	
Date	14 October 2019 (Measured) 24 October 2019 (Laboratory results received by ERM)	
Monitoring Station	ASR1, ASR5, ASR6, ASR10 and AQMS1	
Parameter(s) with Exceedance(s)	1-hr TSP	
Action Levels	24-hr TSP (µg/m^3)	ASR1 = 213 ASR5 = 238 AQMS1 = 213 ASR6 = 238 ASR10 = 214
	1-hr TSP (µg/m^3)	ASR1 = 331 ASR5 = 340 AQMS1 = 335 ASR6 = 338 ASR10 = 337
Limit Levels	1-hr TSP (µg/m^3)	500
	24-hr TSP (µg/m^3)	260
Measured Levels	Action Level Exceedance for 1-hr TSP is observed at ASR1 (363 µg/m3) during 0950 – 1050 hrs.	
Works Undertaken (at the time of monitoring event)	On 14 October 2019, Road and Drainage Works were carried out on site.	
Possible Reason for Action or Limit Level Exceedance(s)	The exceedance is unlikely to be due to this Contract, in view of the following: • According to the construction information provided by the Contractor, only Road and Drainage Works were carried out on site on 14 October 2019. • The exceedance is unlikely to be due to this Contract as dust suppression measures were implemented properly on site. Water spraying was applied on site to prevent dust. Water spraying was also applied on exposed soil within the Project site and associated works areas. • With reference to the recorded wind direction (ranged between 65^o and 335^o, blowing from a North-easterly and North-westerly direction) and wind speed (0.4 m/s) during the works period, Stations ASR1 are located downstream to the construction works at Portion N-A. However, the exceedance was only recorded in the second hour of 1-hour TSP monitoring with the same construction works and dust mitigation measures being carried out. Road & Drainage Works carried out at Portion N-A are unlikely to cause significant dust impact. Based on the above, the exceedance is unlikely to be due to this Contract.	

Actions Taken / To Be Taken	The Contractor has been reminded to implement the required mitigation measures as per the EP, approved EIA and Updated EM&A Manual including watering to maintain all exposed road surfaces and dust sources wet, use of sprinklers for water spraying, covering the materials having the potential to create dust by clean tarpaulin, use of water truck and watering on all exposed soil within the Project site throughout the construction period.
Remarks	The monitoring results, wind data and the locations of air quality monitoring stations are attached.

Air quality monitoring results on 14/10/2019								
Project	Contract	Date	Station	Weather	Start time	Parameters	Results	Unit
TMCLKL	HY/2012/08	14/10/2019	AQMS1	Sunny	9:00	1-hour TSP	92	ug/m3
TMCLKL	HY/2012/08	14/10/2019	AQMS1	Sunny	10:02	1-hour TSP	66	ug/m3
TMCLKL	HY/2012/08	14/10/2019	AQMS1	Sunny	11:04	1-hour TSP	72	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR1	Sunny	8:48	1-hour TSP	93	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR1	Sunny	9:50	1-hour TSP	363	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR1	Sunny	10:52	1-hour TSP	117	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR10	Sunny	8:15	1-hour TSP	36	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR10	Sunny	9:17	1-hour TSP	35	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR10	Sunny	10:19	1-hour TSP	48	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR5	Sunny	8:37	1-hour TSP	278	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR5	Sunny	9:39	1-hour TSP	135	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR5	Sunny	10:41	1-hour TSP	154	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR6	Sunny	8:25	1-hour TSP	101	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR6	Sunny	9:27	1-hour TSP	77	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR6	Sunny	10:29	1-hour TSP	84	ug/m3
TMCLKL	HY/2012/08	14/10/2019	AQMS1	Sunny	12:06	24-hour TSP	72	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR1	Sunny	11:54	24-hour TSP	83	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR10	Sunny	11:21	24-hour TSP	41	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR5	Sunny	11:43	24-hour TSP	116	ug/m3
TMCLKL	HY/2012/08	14/10/2019	ASR6	Sunny	11:31	24-hour TSP	65	ug/m3

Meteorological Data for Impact Monitoring in the reporting period			
Date (yy-mm-dd)	**Time (24hrs)**	**Average of Wind Speed (m/s)**	**Average of Wind Direction(degree)**
19/10/14	0:00	0.4	165
19/10/14	1:00	0.4	336
19/10/14	2:00	0.9	77
19/10/14	3:00	0.9	66
19/10/14	4:00	1.3	65
19/10/14	5:00	0.9	80
19/10/14	6:00	0.4	178
19/10/14	7:00	0.4	187
19/10/14	8:00	0	-
19/10/14	9:00	0.4	65
19/10/14	10:00	0.4	335
19/10/14	11:00	0.9	60
19/10/14	12:00	1.3	64
19/10/14	13:00	0.9	83
19/10/14	14:00	0.9	3
19/10/14	15:00	1.3	30
19/10/14	16:00	1.3	344
19/10/14	17:00	1.3	114
19/10/14	18:00	0.4	123
19/10/14	19:00	0.4	81
19/10/14	20:00	0.9	65
19/10/14	21:00	0.9	86
19/10/14	22:00	1.3	83
19/10/14	23:00	2.7	62

Figure 1

Indicative Construction Works Area on 14 October 2019

DATE: 06/03/2013

Environmental Resources Management

ERM

Dragages Hong Kong	Contract No. HY/2012/08 Tuen Mun – Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section	**Weekly Water Spraying Record** **每週灑水檢查記錄**

Site Location 地盤位置: Northern Landfall

Date 日期: 14 Oct 2019 to 至 20 Oct 2019

	Time 時間	Monday 星期一	Tuesday 星期二	Wednesday 星期三	Thursday 星期四	Friday 星期五	Saturday 星期六	Sunday 星期日
1	8:00 – 8:45	√	√	—	—	√	—	—
2	8:45 – 9:30	—	—	—	—	—	—	—
3	9:30 – 10:15	—	—	—	—	—	—	—
4	10:15 – 11:00	—	—	—	—	—	—	—
5	11:00 – 11:45	—	—	—	—	—	—	—
6	11:45 – 12:30	—	—	—	—	—	—	—
7	12:30 – 13:15	—	—	—	—	—	—	—
8	13:15 – 14:00	—	—	—	—	—	—	—
9	14:00 – 14:45	—	—	—	—	—	—	—
10	14:45 – 15:30	—	—	—	—	—	—	—
11	15:30 – 16:45	—	—	—	—	—	—	—
12	16:45 – 17:30	—	—	—	—	—	—	—
	Verified by Site Foreman 地盤科文簽署確認	7	7	7	7	7	7	7

Night shift 夜間工作 (if necessary 如需要)								
	17:30 – 19:00							
	19:00 – 20:30							
	20:30 – 22:00							
	22:00 – 23:00							

*Please - tick (√) in the box if complete the spraying of water.
circle (O) in the box if it is raining.

*如果 - 已經完成灑水, 請於方格內加上剔號(√)。
是下雨天, 請於方格內加上圓圈(O)。

Remarks:

(1) Pursuant to EP Clause 3.15, the Permit Holder shall undertake watering at least 12 times per day on all exposed soil within the Project site and associated work areas in Tuen Mun area throughout the construction phase.
(2) Spraying position includes the main haul road, open area, slopes, stockpiles and any other dusty materials.
(3) If it is raining, no water spraying is needed.
(4) The no of spraying will be increased due to site condition.

備註:

(1) 根據環境許可證 3. 15 條例，在整個施工階段內，許可證持有人須每天至少 12 次在屯門區項目工地和相關的工作區域內的所有暴露土壤灑水。
(2) 灑水位置包括主要運輸道路，空曠地帶，斜坡，存料堆，以及任何其他產生塵埃物料。
(3) 當下雨時，地盤將不需要灑水。
(4) 如果地盤情況更改或有需要時，灑水次數會相應增加。

Email message

Environmental Resources Management

2507, 25/F One Harbourfront
18 Tak Fung Street
Hunghom, Kowloon
Hong Kong
Telephone: (852) 2271 3000
Facsimile: (852) 2723 5660

To	Ramboll Hong Kong, Limited (ENPO)
From	ERM- Hong Kong, Limited
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 Air Quality Impact Monitoring
Date	24 October 2019

ERM

Dear Sir or Madam,

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

0212330_17October2019_1hrTSP_Station ASR1
0212330_17October2019_1hrTSP_Station ASR1

Two Action Level Exceedances were recorded on 17 October 2019.

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

Air Quality Impact Monitoring
Notification of Exceedance

Log No.	**<u>Action Level Exceedance</u> 0212330_17October2019_1hrTSP_Station ASR1 0212330_17October2019_1hrTSP_Station ASR1 [Total No. of Exceedances = 2]**	
Date	17 October 2019 (Measured) 24 October 2019 (Laboratory results received by ERM)	
Monitoring Station	ASR1, ASR5, ASR6, ASR10 and AQMS1	
Parameter(s) with Exceedance(s)	1-hr TSP	
Action Levels	24-hr TSP (µg/m^3)	ASR1 = 213 ASR5 = 238 AQMS1 = 213 ASR6 = 238 ASR10 = 214
	1-hr TSP (µg/m^3)	ASR1 = 331 ASR5 = 340 AQMS1 = 335 ASR6 = 338 ASR10 = 337
Limit Levels	1-hr TSP (µg/m^3)	500
	24-hr TSP (µg/m^3)	260
Measured Levels	Action Level Exceedance for 1-hr TSP is observed at ASR1 (354 µg/m3) during 0941 – 1041 hrs. Action Level Exceedance for 1-hr TSP is observed at ASR1 (385 µg/m3) during 1043 – 1143 hrs.	
Works Undertaken (at the time of monitoring event)	On 17 October 2019, Road and Drainage Works were carried out on site.	
Possible Reason for Action or Limit Level Exceedance(s)	The exceedance is unlikely to be due to this Contract, in view of the following: • According to the construction information provided by the Contractor, only Road and Drainage Works were carried out on site on 17 October 2019. • The exceedance is unlikely to be due to this Contract as dust suppression measures were implemented properly on site. Water spraying was applied on site to prevent dust. Water spraying was also applied on exposed soil within the Project site and associated works areas. • With reference to the recorded wind direction (ranged between 67^o and 98^o, blowing from a north-easterly direction) and wind speed (ranged between 1.3 and 1.8 m/s) during the works period, Stations ASR1 are located downstream to the construction works at Portion N-A. However, only Road & Drainage Works was carried out at Portion N-A on 17 October 2019, which are unlikely to cause significant dust impact. Based on the above, the exceedance is unlikely to be due to this Contract.	

Actions Taken / To Be Taken	The Contractor has been reminded to implement the required mitigation measures as per the EP, approved EIA and Updated EM&A Manual including watering to maintain all exposed road surfaces and dust sources wet, use of sprinklers for water spraying, covering the materials having the potential to create dust by clean tarpaulin, use of water truck and watering on all exposed soil within the Project site throughout the construction period.
Remarks	The monitoring results, wind data and the locations of air quality monitoring stations are attached.

Air quality monitoring results on 17/10/2019								
Project	Contract	Date	Station	Weather	Start time	Parameters	Results	Unit
TMCLKL	HY/2012/08	17/10/2019	AQMS1	Sunny	8:50	1-hour TSP	103	ug/m3
TMCLKL	HY/2012/08	17/10/2019	AQMS1	Sunny	9:52	1-hour TSP	114	ug/m3
TMCLKL	HY/2012/08	17/10/2019	AQMS1	Sunny	10:54	1-hour TSP	110	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR1	Sunny	8:39	1-hour TSP	331	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR1	Sunny	9:41	1-hour TSP	354	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR1	Sunny	10:43	1-hour TSP	385	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR10	Sunny	8:04	1-hour TSP	68	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR10	Sunny	9:06	1-hour TSP	73	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR10	Sunny	10:08	1-hour TSP	68	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR5	Sunny	8:27	1-hour TSP	288	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR5	Sunny	9:29	1-hour TSP	230	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR5	Sunny	10:31	1-hour TSP	165	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR6	Sunny	8:15	1-hour TSP	128	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR6	Sunny	9:17	1-hour TSP	112	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR6	Sunny	10:19	1-hour TSP	96	ug/m3
TMCLKL	HY/2012/08	17/10/2019	AQMS1	Sunny	11:56	24-hour TSP	64	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR1	Sunny	11:45	24-hour TSP	144	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR10	Sunny	11:10	24-hour TSP	56	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR5	Sunny	11:33	24-hour TSP	100	ug/m3
TMCLKL	HY/2012/08	17/10/2019	ASR6	Sunny	11:21	24-hour TSP	81	ug/m3

Meteorological Data for Impact Monitoring in the reporting period			
Date (yy-mm-dd)	**Time (24hrs)**	**Average of Wind Speed (m/s)**	**Average of Wind Direction(degree)**
19/10/17	0:00	0.4	153
19/10/17	1:00	0.4	108
19/10/17	2:00	0.4	7
19/10/17	3:00	0.4	69
19/10/17	4:00	0.4	183
19/10/17	5:00	0	-
19/10/17	6:00	0.4	111
19/10/17	7:00	1.3	101
19/10/17	8:00	2.2	67
19/10/17	9:00	1.8	84
19/10/17	10:00	1.3	98
19/10/17	11:00	1.8	67
19/10/17	12:00	1.3	98
19/10/17	13:00	1.8	44
19/10/17	14:00	1.3	56
19/10/17	15:00	0.9	74
19/10/17	16:00	0.9	27
19/10/17	17:00	0.9	329
19/10/17	18:00	0.9	345
19/10/17	19:00	0.9	356
19/10/17	20:00	0.9	337
19/10/17	21:00	0.9	351
19/10/17	22:00	1.3	335
19/10/17	23:00	1.3	339

Figure 1

Indicative Construction Works Area on 17 October 2019

DATE: 06/03/2013

Environmental Resources Management

ERM

Dragages Hong Kong	Contract No. HY/2012/08 Tuen Mun – Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section	**Weekly Water Spraying Record** **每週灑水檢查記錄**

Site Location 地盤位置: Northern Landfall

Date 日期: 14 Oct 2019 to 至 20 Oct 2019

	Time 時間	Monday 星期一	Tuesday 星期二	Wednesday 星期三	Thursday 星期四	Friday 星期五	Saturday 星期六	Sunday 星期日
1	8:00 – 8:45	√	√	—	—	√	—	—
2	8:45 – 9:30	—	—	—	—	—	—	—
3	9:30 – 10:15	—	—	—	—	—	—	—
4	10:15 – 11:00	—	—	—	—	—	—	—
5	11:00 – 11:45	—	—	—	—	—	—	—
6	11:45 – 12:30	—	—	—	—	—	—	—
7	12:30 – 13:15	—	—	—	—	—	—	—
8	13:15 – 14:00	—	—	—	—	—	—	—
9	14:00 – 14:45	—	—	—	—	—	—	—
10	14:45 – 15:30	—	—	—	—	—	—	—
11	15:30 – 16:45	—	—	—	—	—	—	—
12	16:45 – 17:30	—	—	—	—	—	—	—
	Verified by Site Foreman 地盤科文簽署確認	7	7	7	7	7	7	7

Night shift 夜間工作 (if necessary 如需要)								
	17:30 – 19:00							
	19:00 – 20:30							
	20:30 – 22:00							
	22:00 – 23:00							

*Please - tick (√) in the box if complete the spraying of water.
circle (O) in the box if it is raining.

*如果 - 已經完成灑水, 請於方格內加上剔號(√)。
是下雨天, 請於方格內加上圓圈(O)。

Remarks:

(1) Pursuant to EP Clause 3.15, the Permit Holder shall undertake watering at least 12 times per day on all exposed soil within the Project site and associated work areas in Tuen Mun area throughout the construction phase.
(2) Spraying position includes the main haul road, open area, slopes, stockpiles and any other dusty materials.
(3) If it is raining, no water spraying is needed.
(4) The no of spraying will be increased due to site condition.

備註:

(1) 根據環境許可證 3. 15 條例，在整個施工階段內，許可證持有人須每天至少 12 次在屯門區項目工地和相關的工作區域內的所有暴露土壤灑水。
(2) 灑水位置包括主要運輸道路，空曠地帶，斜坡，存料堆，以及任何其他產生塵埃物料。
(3) 當下雨時，地盤將不需要灑水。
(4) 如果地盤情況更改或有需要時，灑水次數會相應增加。

Email message

Environmental Resources Management

2507,
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

To	Ramboll Hong Kong Limited (ENPO)
From	ERM- Hong Kong, Limited
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	17 October 2019

Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:
Action Level Exceedance
0212330_2 October 2019_ Depth_averaged SS_F_Station SR7

A total of one Action Level exceedance was recorded on 2 October 2019.

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_2 October 2019_ Depth_averaged SS_F_Station SR7** **[Total No. of Exceedances = 1]**	
Date	2 October 2019 (Measured) 4 October 2019 (*In situ* results received by ERM) 11 October 2019 (Laboratory results received by ERM)	
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11	
Parameter(s) with Exceedance(s)	Suspended solids (mg/L)	
Action Levels	SS	120% of upstream control station at the same tide of the same day and 95%-ile of baseline data, i.e., 23.5 mg/L
Limit Levels	SS	130% of upstream control station at the same tide of the same day and 10mg/L for WSD Seawater Intakes at Tuen Mun and 99%-ile of baseline data, i.e., 34.4 mg/L
Measured Levels	Action Level Exceedance 1. Mid-flood at SR7 (Depth-averaged SS = 26.2 mg/L)	
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 2 October 2019.	
Possible Reason for Action or Limit Level Exceedance(s)	The exceedances are unlikely to be due to the Contract, in view of the following: • All monitored parameters, except SS, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day. • SR7 is 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. Therefore, the exceedance is unlikely to be related to this Contract. • 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, exceedance recorded at SR7 during mid-flood tide is unlikely to be caused by the marine works of this Contract.	
Actions Taken / To Be Taken	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.	
Remarks	The monitoring results on 2 October 2019 and locations of water quality monitoring stations are attached.	

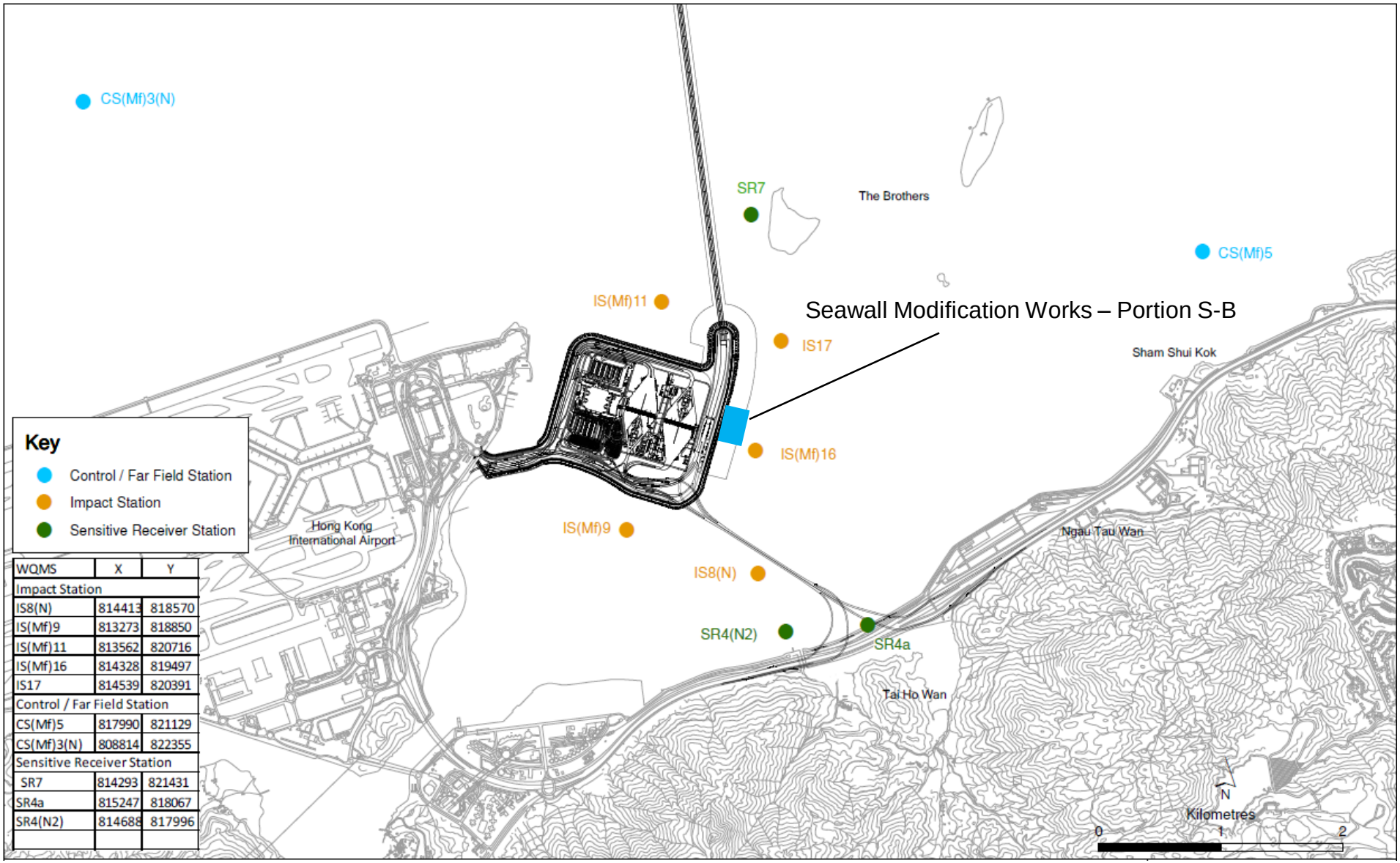
Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)5	15:37	Surface	1	1	29.6	7.9	26.4	5.3	5.4	5.0	8.5	8.9	9.9
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)5	15:37	Surface	1	2	28.6	7.9	25.0	5.5		4.9		8.7	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)5	15:37	Middle	2	1	29.5	7.9	26.7	5.2		6.4		9.8	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)5	15:37	Middle	2	2	28.5	7.9	25.1	5.4		6.1		10.2	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)5	15:37	Bottom	3	1	29.3	7.9	26.6	5.1	5.2	14.4		11.0	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)5	15:37	Bottom	3	2	28.4	7.9	25.5	5.3		14.2		10.6	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)3(N)	14:58	Surface	1	1	29.7	7.9	26.6	5.6	5.5	4.9	9.3	8.4	10.5
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)3(N)	14:58	Surface	1	2	28.7	7.9	24.2	5.7		4.6		8.0	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)3(N)	14:58	Middle	2	1	29.4	7.9	26.5	5.3		9.8		10.9	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)3(N)	14:58	Middle	2	2	28.4	7.9	24.5	5.5		9.2		10.7	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)3(N)	14:58	Bottom	3	1	29.4	7.9	26.5	5.3	5.4	13.9		12.2	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	CS(Mf)3(N)	14:58	Bottom	3	2	28.4	7.9	24.7	5.5		13.2		12.5	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)16	14:14	Surface	1	1	29.7	7.9	26.4	5.7	5.8	5.3	5.6	11.6	12.0
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)16	14:14	Surface	1	2	28.7	7.9	24.9	5.9		5.4		11.9	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)16	14:14	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)16	14:14	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)16	14:14	Bottom	3	1	29.7	7.9	26.7	5.7	5.8	6.0		12.3	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)16	14:14	Bottom	3	2	28.7	7.9	25.0	5.9		5.7		12.0	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4a	14:04	Surface	1	1	29.6	7.9	26.6	5.8	5.9	4.5	5.2	8.0	8.5
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4a	14:04	Surface	1	2	28.9	7.9	24.7	6.0		4.5		7.7	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4a	14:04	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4a	14:04	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4a	14:04	Bottom	3	1	29.5	7.9	26.5	5.5	5.6	6.0		8.9	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4a	14:04	Bottom	3	2	28.5	7.9	24.9	5.6		5.8		9.4	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4(N2)	14:00	Surface	1	1	30.0	7.9	26.6	5.8	5.9	5.1	5.4	8.3	8.3
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4(N2)	14:00	Surface	1	2	29.0	7.9	24.7	6.0		5.0		8.0	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4(N2)	14:00	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4(N2)	14:00	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4(N2)	14:00	Bottom	3	1	30.0	7.9	26.5	5.9	6.0	5.4		8.4	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR4(N2)	14:00	Bottom	3	2	29.0	7.9	24.7	6.1		6.0		8.6	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS8(N)	13:54	Surface	1	1	29.9	7.9	26.3	5.8	5.9	5.6	6.1	11.2	11.2
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS8(N)	13:54	Surface	1	2	28.9	7.9	24.8	6.0		5.5		11.1	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS8(N)	13:54	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS8(N)	13:54	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS8(N)	13:54	Bottom	3	1	29.8	7.9	26.7	5.8	5.9	6.2		11.3	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS8(N)	13:54	Bottom	3	2	28.8	7.9	24.9	6.0		6.9		11.1	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)9	13:48	Surface	1	1	29.8	7.9	26.5	5.6	5.7	7.4	10.5	10.8	12.0
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)9	13:48	Surface	1	2	28.8	7.9	25.1	5.7		7.3		10.9	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)9	13:48	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)9	13:48	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)9	13:48	Bottom	3	1	29.5	7.9	26.5	5.4	5.5	13.5		13.1	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)9	13:48	Bottom	3	2	28.5	7.9	25.1	5.5		13.6		13.3	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)11	14:29	Surface	1	1	29.8	7.9	26.7	5.6	5.6	5.4	6.6	9.7	10.9
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)11	14:29	Surface	1	2	28.8	7.9	24.4	5.7		5.1		10.1	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)11	14:29	Middle	2	1	29.6	7.9	26.4	5.4		6.2		11.7	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)11	14:29	Middle	2	2	28.6	7.9	24.8	5.6		6.6		12.0	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)11	14:29	Bottom	3	1	29.5	7.9	26.6	5.4	5.5	8.1		10.6	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS(Mf)11	14:29	Bottom	3	2	28.5	7.9	24.9	5.6		8.1		11.0	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR7	15:21	Surface	1	1	29.7	7.9	26.4	5.6	5.7	6.4	7.4	9.0	9.7
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR7	15:21	Surface	1	2	28.7	7.9	24.3	5.7		6.4		8.7	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR7	15:21	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR7	15:21	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR7	15:21	Bottom	3	1	29.5	7.9	26.7	5.6	5.7	8.7		10.4	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	SR7	15:21	Bottom	3	2	28.5	7.9	24.6	5.7		8.0		10.8	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS17	14:21	Surface	1	1	29.7	7.9	26.4	5.4	5.5	6.8	8.5	8.3	9.4
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS17	14:21	Surface	1	2	28.7	7.9	24.8	5.6		6.4		8.2	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS17	14:21	Middle	2	1	29.5	7.9	26.6	5.3		9.3		8.8	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS17	14:21	Middle	2	2	28.5	7.9	25.0	5.5		10.0		9.4	

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS17	14:21	Bottom	3	1	29.5	7.9	26.6	5.4	5.5	9.5		10.8	
TMCLKL	HY/2012/08	2019/10/02	Mid-Ebb	IS17	14:21	Bottom	3	2	28.5	7.9	25.1	5.6		9.2		10.6	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)5	9:05	Surface	1	1	29.5	7.9	26.7	5.4	5.4	5.1	10.7	8.7	8.9
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)5	9:05	Surface	1	2	28.5	7.9	24.8	5.5		5.1		8.7	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)5	9:05	Middle	2	1	29.3	7.9	26.6	5.2		11.7		8.6	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)5	9:05	Middle	2	2	28.3	7.9	25.1	5.4		12.6		8.9	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)5	9:05	Bottom	3	1	29.3	7.9	26.5	5.1	5.2	14.9		9.4	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)5	9:05	Bottom	3	2	28.3	7.9	25.5	5.2		15.0		9.2	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)3(N)	9:48	Surface	1	1	29.4	7.9	26.1	5.4	5.5	10.3	14.1	20.2	22.6
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)3(N)	9:48	Surface	1	2	28.4	7.9	24.3	5.6		10.2		20.5	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)3(N)	9:48	Middle	2	1	29.4	7.9	26.4	5.4		13.6		23.3	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)3(N)	9:48	Middle	2	2	28.4	7.9	24.3	5.6		13.9		23.1	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)3(N)	9:48	Bottom	3	1	29.4	7.9	26.7	5.5	5.6	18.3		24.3	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	CS(Mf)3(N)	9:48	Bottom	3	2	28.4	7.9	24.3	5.7		18.2		24.2	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)16	10:31	Surface	1	1	29.4	7.9	26.5	5.5	5.6	13.3	12.8	21.0	21.3
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)16	10:31	Surface	1	2	28.5	7.9	24.7	5.7		13.1		21.2	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)16	10:31	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)16	10:31	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)16	10:31	Bottom	3	1	29.4	7.9	26.6	5.5	5.6	12.4		21.5	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)16	10:31	Bottom	3	2	28.4	7.9	24.8	5.7		12.2		21.6	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4a	10:40	Surface	1	1	29.3	7.9	26.4	5.4	5.5	5.8	5.8	9.3	10.1
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4a	10:40	Surface	1	2	28.3	7.9	24.9	5.6		5.9		9.4	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4a	10:40	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4a	10:40	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4a	10:40	Bottom	3	1	29.3	7.9	26.5	5.5	5.6	6.0		10.7	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4a	10:40	Bottom	3	2	28.3	7.9	25.0	5.7		5.3		11.0	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4(N2)	10:45	Surface	1	1	29.3	7.9	26.4	5.4	5.5	8.2	10.1	11.1	15.1
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4(N2)	10:45	Surface	1	2	28.3	7.9	25.0	5.6		8.6		10.7	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4(N2)	10:45	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4(N2)	10:45	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4(N2)	10:45	Bottom	3	1	29.3	7.9	26.6	5.4	5.5	11.7		19.4	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR4(N2)	10:45	Bottom	3	2	28.3	7.9	25.0	5.6		11.7		19.1	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS8(N)	10:51	Surface	1	1	29.5	7.9	26.5	5.6	5.7	5.6	6.0	8.4	8.6
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS8(N)	10:51	Surface	1	2	28.5	7.9	24.7	5.7		5.4		8.1	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS8(N)	10:51	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS8(N)	10:51	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS8(N)	10:51	Bottom	3	1	29.5	7.9	26.7	5.7	5.8	6.4		8.6	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS8(N)	10:51	Bottom	3	2	28.5	7.9	24.8	5.8		6.7		9.1	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)9	10:59	Surface	1	1	29.4	7.9	26.5	5.4	5.5	8.2	8.6	11.9	12.7
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)9	10:59	Surface	1	2	28.4	7.9	25.1	5.6		8.6		12.3	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)9	10:59	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)9	10:59	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)9	10:59	Bottom	3	1	29.3	7.9	26.2	5.5	5.6	8.8		13.4	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)9	10:59	Bottom	3	2	28.3	7.9	25.1	5.7		8.9		13.0	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)11	10:17	Surface	1	1	29.4	7.9	26.3	5.4	5.5	13.7	15.2	17.7	18.6
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)11	10:17	Surface	1	2	28.4	7.9	24.8	5.6		13.9		18.1	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)11	10:17	Middle	2	1	29.3	7.9	26.5	5.3		15.1		22.0	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)11	10:17	Middle	2	2	28.3	7.9	24.8	5.5		15.7		21.6	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)11	10:17	Bottom	3	1	29.3	7.9	26.8	5.4	5.5	16.3		16.3	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS(Mf)11	10:17	Bottom	3	2	28.3	7.9	24.9	5.5		16.4		16.0	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR7	9:24	Surface	1	1	29.4	7.9	26.4	5.4	5.5	10.8	11.8	24.1	26.2
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR7	9:24	Surface	1	2	28.4	7.9	24.7	5.5		10.8		24.4	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR7	9:24	Middle	2	1									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR7	9:24	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR7	9:24	Bottom	3	1	29.4	7.9	26.5	5.4	5.5	12.7		28.3	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	SR7	9:24	Bottom	3	2	28.4	7.9	24.7	5.6		12.9		27.9	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS17	10:24	Surface	1	1	29.5	7.9	26.8	5.4	5.4	7.6	13.1	10.5	15.3
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS17	10:24	Surface	1	2	28.5	8.0	24.9	5.5		7.3		10.8	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS17	10:24	Middle	2	1	29.3	7.9	26.6	5.3		14.3		14.9	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS17	10:24	Middle	2	2	28.3	7.9	24.9	5.5		14.4		15.1	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS17	10:24	Bottom	3	1	29.3	7.9	26.3	5.4	5.6	17.7		19.8	
TMCLKL	HY/2012/08	2019/10/02	Mid-flood	IS17	10:24	Bottom	3	2	28.3	7.9	24.9	5.7		17.2		20.4	

Note:

Indicates Exceedance of Action Level

Indicates Exceedance of Limit Level



WQMS	X	Y
Impact Station		
IS8(N)	814413	818570
IS(Mf)9	813273	818850
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR7	814293	821431
SR4a	815247	818067
SR4(N2)	814688	817996

Figure 1

Environmental Resources Management

ERM

Email message

Environmental Resources Management

2507,
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

To	Ramboll Hong Kong Limited (ENPO)
From	ERM- Hong Kong, Limited
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	6 November 2019

ERM

Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:
Action Level Exceedance
0212330_28 October 2019_ Depth_averaged SS_F_Station SR7

A total of one Action Level exceedance was recorded on 28 October 2019.

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.	**<u>Action Level Exceedance</u> 0212330_28 October 2019_ Depth_averaged SS_F_Station SR7 [Total No. of Exceedances = 1]**	
Date	28 October 2019 (Measured) 29 October 2019 (*In situ* results received by ERM) 5 November 2019 (Laboratory results received by ERM)	
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11	
Parameter(s) with Exceedance(s)	Suspended solids (mg/L)	
Action Levels	SS	120% of upstream control station at the same tide of the same day and 95%-ile of baseline data, i.e., 23.5 mg/L
Limit Levels	SS	130% of upstream control station at the same tide of the same day and 10mg/L for WSD Seawater Intakes at Tuen Mun and 99%-ile of baseline data, i.e., 34.4 mg/L
Measured Levels	Action Level Exceedance 1. Mid-flood at SR7 (Depth-averaged SS = 25.4 mg/L)	
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 28 October 2019.	
Possible Reason for Action or Limit Level Exceedance(s)	The exceedances are unlikely to be due to the Contract, in view of the following: • All monitored parameters, except SS, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day. • SR7 is 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. Therefore, the exceedance is unlikely to be related to this Contract. • 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, exceedance recorded at SR7 during mid-flood tide is unlikely to be caused by the marine works of this Contract.	
Actions Taken / To Be Taken	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.	
Remarks	The monitoring results on 28 October 2019 and locations of water quality monitoring stations are attached.	

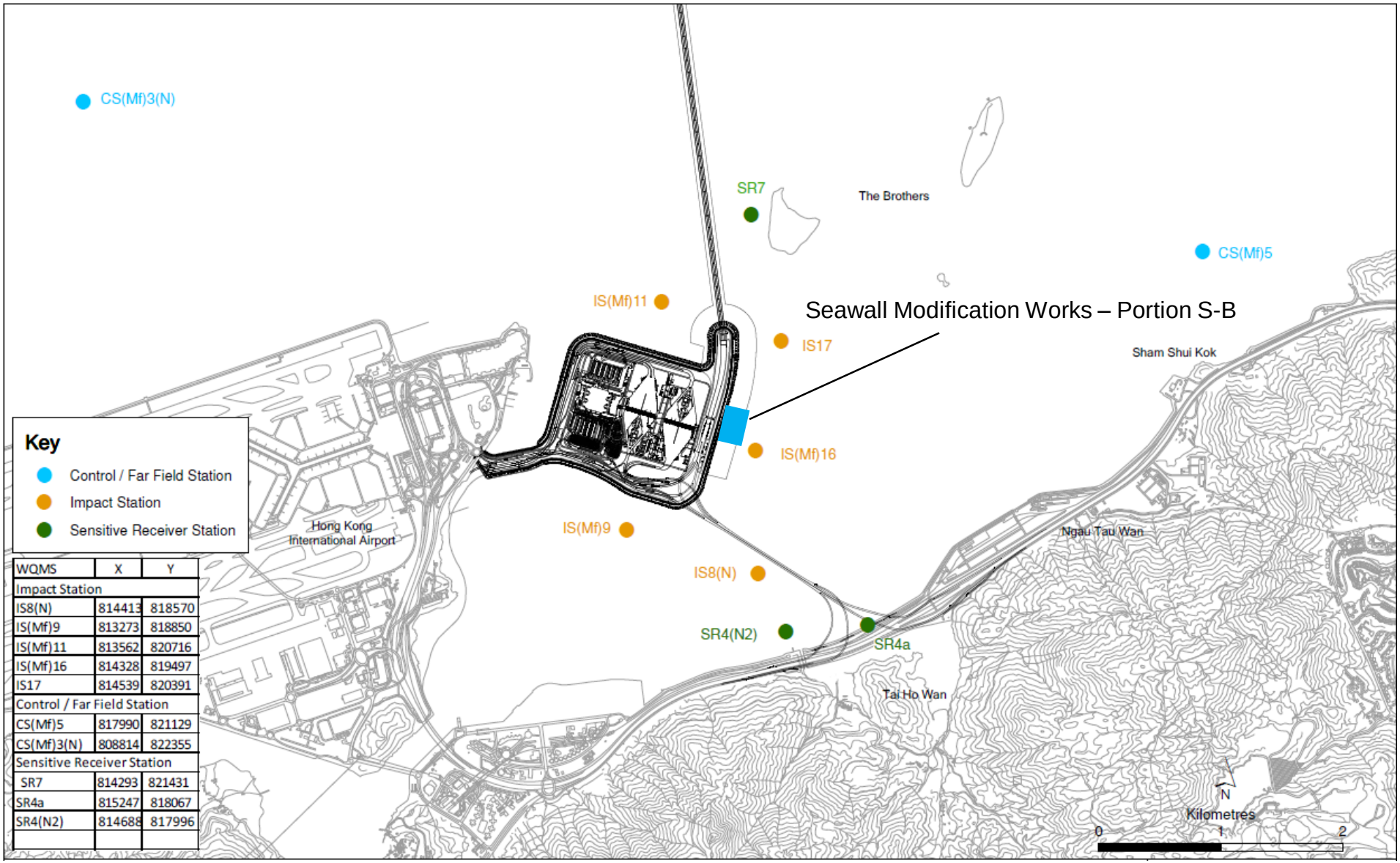
Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (^{o}C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)5	13:26	Surface	1	1	27.6	8.2	30.1	5.6		12.1		25.4	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)5	13:26	Surface	1	2	27.6	8.2	29.9	5.6	5.6	12.2		26.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)5	13:26	Middle	2	1	27.6	8.2	30.1	5.6		11.2	13.1	25.0	26.1
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)5	13:26	Middle	2	2	27.6	8.2	29.9	5.6		11.2		25.6	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)5	13:26	Bottom	3	1	27.6	8.3	30.1	5.6	5.6	16.0		27.6	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)5	13:26	Bottom	3	2	27.6	8.3	29.9	5.6		16.1		27.1	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)3(N)	12:40	Surface	1	1	27.5	8.2	29.5	5.8		9.6		15.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)3(N)	12:40	Surface	1	2	27.5	8.2	29.3	5.8	5.8	9.4		14.6	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)3(N)	12:40	Middle	2	1	27.5	8.3	29.7	5.9		11.7	11.9	14.5	13.9
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)3(N)	12:40	Middle	2	2	27.5	8.3	29.5	5.8		11.6		14.1	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)3(N)	12:40	Bottom	3	1	27.4	8.3	30.0	5.9	5.9	14.2		12.8	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	CS(Mf)3(N)	12:40	Bottom	3	2	27.4	8.3	29.9	5.9		14.6		12.4	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)16	11:45	Surface	1	1	27.6	8.2	29.7	5.7		12.8		13.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)16	11:45	Surface	1	2	27.6	8.2	29.6	5.7	5.7	12.8		13.7	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)16	11:45	Middle	2	1							15.4		15.6
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)16	11:45	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)16	11:45	Bottom	3	1	27.5	8.2	30.0	5.6	5.6	18.0		17.2	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)16	11:45	Bottom	3	2	27.5	8.2	29.9	5.6		17.9		18.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4a	11:34	Surface	1	1	27.6	8.3	29.7	5.7		5.4		5.9	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4a	11:34	Surface	1	2	27.6	8.3	29.6	5.7	5.7	5.2		5.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4a	11:34	Middle	2	1							6.0		6.1
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4a	11:34	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4a	11:34	Bottom	3	1	27.5	8.3	29.7	5.9	5.9	6.8		6.8	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4a	11:34	Bottom	3	2	27.5	8.3	29.6	5.8		6.7		6.2	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4(N2)	11:28	Surface	1	1	27.4	8.3	29.7	5.6		8.1		9.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4(N2)	11:28	Surface	1	2	27.4	8.3	29.5	5.6	5.6	8.0		9.7	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4(N2)	11:28	Middle	2	1							8.3		9.5
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4(N2)	11:28	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4(N2)	11:28	Bottom	3	1	27.4	8.3	29.7	5.8	5.8	8.5		9.8	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR4(N2)	11:28	Bottom	3	2	27.4	8.3	29.5	5.7		8.4		9.4	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS8(N)	11:21	Surface	1	1	27.5	8.4	29.5	5.8		8.6		9.1	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS8(N)	11:21	Surface	1	2	27.5	8.4	29.4	5.8	5.8	8.4		8.9	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS8(N)	11:21	Middle	2	1							9.0		9.4
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS8(N)	11:21	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS8(N)	11:21	Bottom	3	1	27.4	8.4	29.5	6.0	6.0	9.7		10.2	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS8(N)	11:21	Bottom	3	2	27.4	8.4	29.4	6.0		9.4		9.5	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)9	11:16	Surface	1	1	27.5	8.4	29.6	5.8		6.5		4.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)9	11:16	Surface	1	2	27.5	8.4	29.5	5.8	5.8	6.4		4.2	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)9	11:16	Middle	2	1							6.8		4.7
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)9	11:16	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)9	11:16	Bottom	3	1	27.5	8.4	29.7	5.9	5.9	7.0		5.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)9	11:16	Bottom	3	2	27.5	8.4	29.6	5.9		7.1		4.9	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)11	12:03	Surface	1	1	27.8	8.2	29.6	5.9		6.2		6.9	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)11	12:03	Surface	1	2	27.8	8.2	29.5	5.9	5.8	6.2		7.2	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)11	12:03	Surface	2	1	27.5	8.2	29.8	5.6		9.1	9.4	10.3	10.4
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)11	12:03	Surface	2	2	27.5	8.2	29.7	5.6		8.9		9.7	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)11	12:03	Surface	3	1	27.6	8.2	30.3	5.6	5.6	12.8		14.2	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS(Mf)11	12:03	Surface	3	2	27.6	8.2	30.2	5.6		12.9		14.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR7	13:07	Surface	1	1	27.6	8.3	29.3	5.9		9.7		10.9	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR7	13:07	Surface	1	2	27.7	8.3	29.1	5.9	5.9	9.4		11.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR7	13:07	Surface	2	1							10.2		10.8
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR7	13:07	Surface	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR7	13:07	Surface	3	1	27.6	8.3	29.4	6.0	6.0	10.7		10.4	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	SR7	13:07	Surface	3	2	27.6	8.3	29.3	6.0		10.8		10.7	

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (^{o}C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS17	11:53	Surface	1	1	27.5	8.2	29.9	5.6		12.1		19.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS17	11:53	Surface	1	2	27.5	8.2	29.8	5.6	5.6	11.9		19.7	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS17	11:53	Surface	2	1	27.5	8.2	30.1	5.6		12.4	13.6	20.2	19.9
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS17	11:53	Surface	2	2	27.5	8.2	29.9	5.6		12.2		20.1	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS17	11:53	Surface	3	1	27.5	8.2	30.2	5.8	5.8	16.4		20.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-Ebb	IS17	11:53	Surface	3	2	27.5	8.2	30.0	5.7		16.6		19.7	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)5	6:15	Surface	1	1	27.5	8.0	29.7	5.7		6.7		7.5	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)5	6:15	Surface	1	2	27.5	8.0	29.6	5.7	5.6	6.8		8.4	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)5	6:15	Middle	2	1	27.5	8.0	30.1	5.5		9.0	10.1	11.4	10.0
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)5	6:15	Middle	2	2	27.5	8.0	29.9	5.5		8.8		11.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)5	6:15	Bottom	3	1	27.6	8.0	30.4	5.5	5.5	14.5		10.6	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)5	6:15	Bottom	3	2	27.6	8.0	30.3	5.5		14.6		10.9	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)3(N)	7:07	Surface	1	1	27.3	8.1	29.0	6.0		12.6		17.7	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)3(N)	7:07	Surface	1	2	27.3	8.1	28.8	6.0	6.0	12.8		17.8	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)3(N)	7:07	Middle	2	1	27.3	8.1	29.0	6.0		14.3	14.5	20.1	20.2
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)3(N)	7:07	Middle	2	2	27.3	8.1	28.8	6.0		14.5		20.5	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)3(N)	7:07	Bottom	3	1	27.4	8.1	29.1	6.1	6.1	16.7		22.1	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	CS(Mf)3(N)	7:07	Bottom	3	2	27.4	8.1	29.0	6.1		16.3		22.8	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)16	7:52	Surface	1	1	27.4	8.1	29.6	5.8		10.4		12.7	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)16	7:52	Surface	1	2	27.4	8.1	29.5	5.8	5.8	10.3		11.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)16	7:52	Middle	2	1							11.5		13.0
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)16	7:52	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)16	7:52	Bottom	3	1	27.4	8.1	29.6	6.0	6.0	12.6		13.8	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)16	7:52	Bottom	3	2	27.4	8.1	29.5	6.0		12.6		14.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4a	8:04	Surface	1	1	27.3	8.1	29.5	5.6		6.0		7.4	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4a	8:04	Surface	1	2	27.3	8.1	29.4	5.6	5.6	5.9		8.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4a	8:04	Middle	2	1							7.0		9.8
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4a	8:04	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4a	8:04	Bottom	3	1	27.3	8.1	29.7	5.9	5.9	8.1		11.6	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4a	8:04	Bottom	3	2	27.3	8.1	29.5	5.9		8.0		12.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4(N2)	8:08	Surface	1	1	27.4	8.1	29.5	5.5		7.4		9.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4(N2)	8:08	Surface	1	2	27.3	8.1	29.3	5.5	5.5	7.0		9.4	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4(N2)	8:08	Middle	2	1							7.2		10.8
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4(N2)	8:08	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4(N2)	8:08	Bottom	3	1	27.3	8.1	29.5	5.7	5.7	7.1		12.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR4(N2)	8:08	Bottom	3	2	27.3	8.1	29.4	5.6		7.3		12.6	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS8(N)	8:15	Surface	1	1	27.4	8.1	29.6	5.7		9.3		8.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS8(N)	8:15	Surface	1	2	27.4	8.1	29.4	5.7	5.7	9.2		9.4	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS8(N)	8:15	Middle	2	1							9.4		9.4
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS8(N)	8:15	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS8(N)	8:15	Bottom	3	1	27.4	8.1	29.6	5.7	5.7	9.6		9.3	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS8(N)	8:15	Bottom	3	2	27.4	8.1	29.5	5.7		9.6		10.4	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)9	8:23	Surface	1	1	27.4	8.1	29.7	5.7		8.2		9.2	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)9	8:23	Surface	1	2	27.4	8.1	29.6	5.7	5.7	7.9		9.6	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)9	8:23	Middle	2	1							9.1		10.8
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)9	8:23	Middle	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)9	8:23	Bottom	3	1	27.4	8.1	29.8	5.9	5.9	10.2		12.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)9	8:23	Bottom	3	2	27.4	8.1	29.6	5.9		10.1		12.5	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)11	6:43	Surface	1	1	27.5	8.1	29.7	5.7		13.1		16.1	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)11	6:43	Surface	1	2	27.5	8.1	29.6	5.7	5.7	13.0		16.7	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)11	6:43	Surface	2	1	27.5	8.1	29.7	5.7		12.4	14.2	19.6	19.6
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)11	6:43	Surface	2	2	27.5	8.1	29.6	5.7		12.3		19.1	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)11	6:43	Surface	3	1	27.5	8.1	29.7	5.7	5.7	17.0		22.8	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS(Mf)11	6:43	Surface	3	2	27.5	8.1	29.6	5.7		17.1		23.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR7	6:34	Surface	1	1	27.4	8.0	29.5	5.9		14.1		24.8	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR7	6:34	Surface	1	2	27.4	8.0	29.3	5.9	5.9	14.2		25.2	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR7	6:34	Surface	2	1							15.9		25.4
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR7	6:34	Surface	2	2									
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR7	6:34	Surface	3	1	27.4	8.0	29.6	6.1	6.1	17.8		25.5	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	SR7	6:34	Surface	3	2	27.4	8.0	29.4	6.1		17.5		25.9	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS17	7:44	Surface	1	1	27.5	8.1	29.8	5.7		14.4		20.0	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS17	7:44	Surface	1	2	27.5	8.1	29.7	5.7	5.7	14.8		20.7	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS17	7:44	Surface	2	1	27.5	8.1	29.8	5.8		17.0	16.6	17.9	18.4
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS17	7:44	Surface	2	2	27.5	8.1	29.7	5.7		16.8		17.4	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS17	7:44	Surface	3	1	27.5	8.1	29.8	6.0	6.0	18.5		16.9	
TMCLKL	HY/2012/08	2019/10/28	Mid-flood	IS17	7:44	Surface	3	2	27.5	8.1	29.6	6.0		18.2		17.3	

Note:

Indicates Exceedance of Action Level

Indicates Exceedance of Limit Level



WQMS	X	Y
Impact Station		
IS8(N)	814413	818570
IS(Mf)9	813273	818850
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR7	814293	821431
SR4a	815247	818067
SR4(N2)	814688	817996

Figure 1

Environmental Resources Management

ERM